

CITYWIDE TRAFFIC ANALYSIS

CITY OF TORRANCE



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EXECUTIVE SUMMARY

RBF Consulting (RBF) was hired by City of Torrance in November 2004 to prepare a comprehensive Citywide Traffic Study addressing existing, near-term future, and long-range future traffic conditions in the City of Torrance. Long-range traffic conditions assume buildout of the City of Torrance General Plan, as well as buildout of the South Bay area in accordance with Southern California Association of Governments (SCAG) projections. As part of the work effort, RBF has prepared a Citywide traffic analysis model capable of evaluating a variety of traffic analysis scenarios.

This citywide analysis evaluates 166 signalized intersections throughout the City during both weekday and weekend peak hour traffic conditions, calculating the operating level of service (LOS) of the intersections based on both the delay-based *Highway Capacity Manual (HCM)* analysis methodology as well as the capacity-based *Intersection Capacity Utilization (ICU)* analysis methodology. Level of service (LOS) grades A through F are used to describe the operation of an intersection or roadway; LOS A represents unimpeded/un-congested LOS operation, while LOS F represents severely congested LOS operation. The *HCM* intersection analysis methodology correlates LOS operation to seconds of delay experience by motorists at an intersection, while the *ICU* analysis methodology correlates LOS operation to the amount of intersection capacity utilized by vehicles passing through the intersection. See Chapter 2 for further information.

Average daily traffic (ADT) roadway volumes were collected at 170 roadway segments during both weekday and weekend traffic conditions. At 39 of the 170 roadway segments, vehicle classification data was collected to determine what percentage of all vehicular traffic truck traffic constitutes. Vehicles are counted by stretching a tube across the surface of a roadway segment; when vehicles drive over the tube, the number of vehicles driving over the tube is recorded. See Chapter 1 for further information.

Weekday and weekend traffic volumes were collected at 43 intersections and 16 roadway segments in the vicinity of the Del Amo Fashion Center during the Holiday Season for comparison to non-Holiday Season traffic volumes at the same locations. See Chapter 1 for further information.

The traffic study also includes a pass-through analysis along 11 arterial roadways to determine the number vehicles that pass-through the City with no destination within City limits. Individual vehicles were observed entering the City limits on specific roadways and checked as the roadways exited the City limits to determine whether the individual vehicles exited the City within a specific timeframe, hence, passing through the City. See Chapter 1 for further information.

Based on the results of the analysis, RBF has identified improvements to the City intersection system to achieve acceptable intersection LOS operation for near-term future and long-range traffic conditions. The identified improvements are shown on exhibits at each improved intersection for the appropriate time period (near-term future or long-range future) to allow the City to plan for the identified improvements as future development occurs in the City.



City of Torrance City Hall

The City of Torrance is in the process of updating the City General Plan. RBF has coordinated with the consultant hired by the City to update the General Plan regarding proposed land uses and related trip generation factors. One of the goals of the Citywide Traffic Study is to support the Goals, Objectives, and Policies of the updated General Plan to provide the City with direction and context for future circulation planning decision-making, and in correlation with the Land Use Element, express the City’s vision of the form and function of the City of Torrance. Additionally, RBF supported City staff at multiple Traffic Commission hearings, where City staff solicited Commission and resident comments to modify and refine the Goals, Objectives and Policies, the Transportation and Infrastructure Plan, and other related transportation issues included in the General Plan Circulation Element.

The Citywide Traffic Study is presented in six chapters:

Chapter 1 provides in-depth background information on data collection and intersection analysis methodologies, Holiday Season and non-Holiday Season ADT traffic volumes, and pass-through traffic percentages.

Chapter 2 provides descriptions of existing roadways, and the results of existing intersection operation analysis utilizing both *HCM* and *ICU* analysis methodologies based on existing intersection traffic volumes.

Chapter 3 provides the results of the forecast near-term future conditions intersection analysis, which includes forecast trip generation of approved projects and ambient traffic growth in the vicinity of City of Torrance, utilizing both *HCM* and *ICU* analysis methodologies.

Chapter 4 provides the results of the forecast long-range future conditions intersection analysis based on Southern California Association of Governments (SCAG) long-range traffic projections and future changes in land use within the City of Torrance utilizing both *HCM* and *ICU* analysis methodologies.

Chapter 5 summarizes the level of service for intersections operating at a deficient level of service (LOS E or worse) for forecast near-term future conditions and forecast long-range future conditions based on *HCM* analysis methodology and *ICU* analysis methodology. Additionally, improvements are identified for the deficiently operating intersections for the appropriate time period (near-term future or long-range future) to improve the level of service to acceptable operation (LOS D or better) based on the *HCM* analysis methodology and *ICU* analysis methodology.

Chapter 6 contains exhibits showing weekday a.m. peak hour, weekday mid-day peak hour, weekday p.m. peak hour, and weekend mid-day peak hour volumes, as well as intersection geometry.

Overall, this study will provide City decision-makers, City residents, community stakeholders, and City staff with a tool for planning and informational purposes to better address the functional elements of the City's transportation system.

CHAPTER 1 – INTRODUCTION

Background and Purpose

RBF Consulting (RBF) was hired by City of Torrance (City) staff to provide a full-range of transportation planning services for the Citywide Traffic Study per City staff direction. The proposal was prepared in menu-format to allow City staff to select from a variety of tasks to best meet the City's needs. In a coordinated effort, RBF worked with City staff and attended several meetings, including Planning Commission meetings, to obtain feedback on the traffic conditions currently experienced by motorists in the City of Torrance and to obtain clarity on the goals set out by City staff in regards to traffic and the relieving of traffic congestion.

The purpose of this traffic study is to document and analyze the existing operation of the City of Torrance roadway circulation system, as well as forecast near-term traffic conditions (analysis incorporating forecast trip generation of approved projects, identified by City staff, located in and in the vicinity of City of Torrance, as well as incorporating a growth rate of one percent per year to existing volumes to account for forecast ambient growth within City of Torrance) and forecast long-range traffic conditions (analysis documenting long-range traffic conditions utilizing a growth rate derived from the Southern California Association of Governments (SCAG) growth rate projection model runs for the Torrance area, as well as the change in land uses throughout the City based on projected changes identified in the City of Torrance General Plan) assuming buildout of the City General Plan. Thus, this document may be used as a tool by City decision-makers, community stakeholders, City residents, and City staff for planning and informational purposes.

City of Torrance General Information

City of Torrance maintains a well-balanced mix of residential, commercial, and industrial communities, and is considered a full-service City. The City of Torrance is centrally located in the South Bay and is accessible by Interstate 405, Interstate 110, and State Route 91. With approximately 0.8 miles of ocean beach frontage, City of Torrance offers the ideal climate along the Pacific Coast. Within the approximately 21.2 square miles of the City of Torrance boundary, the population is approximately 147,405 persons, with a peak daytime (2:00 p.m.) population of approximately 203,011 persons. Contributing to the peak daytime population are several employers, which include the following companies:

- Toyota Motor Credit/Corporation;
- American Honda;
- Honeywell Aerospace;
- Alcoa Fastening Systems;
- Robinson Helicopter Company;
- Boeing Electron Dynamics/Devices;
- Adecco North America, LLC; and
- Exxon/Mobil Oil Corporation.

The residential component of the City of Torrance includes a broad range of home prices and rental rates, mixed-use housing developments, and senior housing. Complementing the residential component are over 25 colleges within a 20-mile radius, as well as over 40 schools in the independently-run Torrance Unified School District, many of which have been named California Distinguished Schools and Blue Ribbon Award winners.

Overall, City of Torrance has so much to offer to almost every lifestyle: a warm climate; nearby golf courses; bike paths; municipal parks; a swimming pool, gym, and tennis courts; diverse workforce; Torrance Cultural Arts Center; the second largest shopping mall in the United States of America, the Del Amo Fashion Center; cultural and recreational activities, including community art, dance and exercise classes, Torrance Beach Cities Triathlon, Arts Alive Festival; and so much more.

Study Area

This study evaluates the following one hundred sixty-six (166) signalized intersections in the City of Torrance during the weekday a.m. peak hour, weekday mid-day peak hour, weekday p.m. peak hour, and weekend mid-day peak hour (The study area in which the intersection is located, as well as Caltrans intersections, are also identified):

1. Abalone Avenue/Carson Street (Area 5);
2. Aero Way/Pacific Coast Highway (SR-1) (Area 10; Caltrans);
3. Ainsworth Avenue/Redondo Beach Boulevard (Area 1);
4. Airport Drive/Pacific Coast Highway (SR-1) (Area 10; Caltrans);
5. Amie Avenue/Torrance Boulevard (Area 4);
6. Amie Avenue-Freeman Avenue/Redondo Beach Boulevard (Area 1);
7. Anza Avenue/190th Street (Area 3);
8. Anza Avenue/Halison Street (Area 3);
9. Anza Avenue/Del Amo Boulevard (Area 3);
10. Anza Avenue/Spencer Street (Area 3);
11. Anza Avenue/Emerald Street (Area 3);
12. Anza Avenue/Torrance Boulevard (Area 6);
13. Anza Avenue/Lenore Street (Area 6);
14. Anza Avenue/Carson Street (Area 6);
15. Anza Avenue/Sepulveda Boulevard (Area 6);
16. Anza Avenue/226th Street (Area 9);
17. Anza Avenue/Lomita Boulevard (Area 9);
18. Anza Avenue/Calle Mayor (Area 9);
19. Anza Avenue/Pacific Coast Highway (SR-1) (Area 9; Caltrans);
20. Arlington Avenue/Torrance Boulevard (Area 5);
21. Arlington Avenue/Carson Street (Area 5);

22. Arlington Avenue/Plaza Del Amo-Washington Avenue (Area 8);
23. Arlington Avenue/Sepulveda Boulevard (Area 8);
24. Arlington Avenue/231st Street (Area 8);
25. Arlington Avenue/235th Street (Area 8);
26. Cabrillo Avenue/Carson Street (Area 5);
27. Cabrillo Avenue/Sepulveda Boulevard (Area 8);
28. Cabrillo Avenue-Van Ness Avenue/Torrance Boulevard (Area 5);
29. Calle Mayor/Pacific Coast Highway (SR-1) (Area 9; Caltrans);
30. Carlow Road/Calle Mayor (Area 9);
31. Casimir Avenue/Artesia Boulevard (Area 2);
32. Cota Avenue/Torrance Boulevard (Area 5);
33. Crenshaw Boulevard/Redondo Beach Boulevard (Area 2);
34. Crenshaw Boulevard/16th Street-Cherry Avenue (Area 2);
35. Crenshaw Boulevard/Artesia Boulevard (Area 2);
36. Crenshaw Boulevard/182nd Street (Area 2);
37. Crenshaw Boulevard/190th Street (Area 4);
38. Crenshaw Boulevard/Del Amo Boulevard (Area 4);
39. Crenshaw Boulevard/208th Street (Area 4);
40. Crenshaw Boulevard/Maricopa Street (Area 4);
41. Crenshaw Boulevard/Torrance Boulevard (Area 4);
42. Crenshaw Boulevard/El Dorado Street (Area 7);
43. Crenshaw Boulevard/Carson Street (Area 7);
44. Crenshaw Boulevard/Jefferson Street (Area 7);
45. Crenshaw Boulevard/Plaza Del Amo (Area 7);
46. Crenshaw Boulevard/Park Del Amo-Scroc Avenue (Area 7);
47. Crenshaw Boulevard/Sepulveda Boulevard (Area 8);
48. Crenshaw Boulevard/235th Street (Area 8);
49. Crenshaw Boulevard/237th Street (Area 8);
50. Crenshaw Boulevard/Lomita Boulevard (Area 8);
51. Crenshaw Boulevard/Torrance Crossroads (Area 8);
52. Crenshaw Boulevard/Skypark Drive-Amsler Street (Area 8);
53. Crenshaw Boulevard/Airport Drive (Area 10);
54. Crenshaw Boulevard/Pacific Coast Highway (SR-1) (Area 10; Caltrans);
55. Crenshaw Boulevard/Crest Road (Area 10);
56. Crenshaw Boulevard/Rolling Hills Road (Area 10);

57. Del Amo Circle/Carson Street (Area 7);
58. Del Amo Circle East/Carson Street (Area 7);
59. Del Amo Circle East/Sepulveda Boulevard (Area 7);
60. Denny Road-Robinson Avenue/Pacific Coast Highway (SR-1) (Area 10; Caltrans);
61. Doty Avenue/182nd Street (Area 1);
62. Early Avenue/Lomita Boulevard (Area 10);
63. El Prado Avenue/Carson Street (Area 5);
64. Entradero Avenue/Del Amo Boulevard (Area 3);
65. Entradero Avenue-Meyer Lane/190th Street (Area 3);
66. Fern Avenue/Torrance Boulevard (Area 4);
67. Garnier Street/Lomita Boulevard (Area 10);
68. Gramercy Place/190th Street (Area 2);
69. Hawthorne Boulevard/Redondo Beach Boulevard (Area 1);
70. Hawthorne Boulevard/Artesia Boulevard (Area 1);
71. Hawthorne Boulevard (SR-107)/177th Street (Area 1; Caltrans);
72. Hawthorne Boulevard (SR-107)/182nd Street (Area 1; Caltrans);
73. Hawthorne Boulevard (SR-107)/186th Street (Area 1; Caltrans);
74. Hawthorne Boulevard (SR-107)/190th Street (Area 3; Caltrans);
75. Hawthorne Boulevard (SR-107)/Talisman Street (Area 3; Caltrans);
76. Hawthorne Boulevard (SR-107)/Halison Street (Area 3; Caltrans);
77. Hawthorne Boulevard (SR-107)/Del Amo Boulevard (Area 3; Caltrans);
78. Hawthorne Boulevard (SR-107)/Spencer Street (Area 3; Caltrans);
79. Hawthorne Boulevard (SR-107)/Emerald Street (Area 3; Caltrans);
80. Hawthorne Boulevard (SR-107)/Torrance Boulevard (Area 6; Caltrans);
81. Hawthorne Boulevard (SR-107)/Village Lane-Fashion Way (Area 6; Caltrans);
82. Hawthorne Boulevard (SR-107)/Del Amo Circle-Del Amo Circle North (Area 6; Caltrans);
83. Hawthorne Boulevard (SR-107)/Carson Street (Area 6; Caltrans);
84. Hawthorne Boulevard (SR-107)/Center Way (Area 6; Caltrans);
85. Hawthorne Boulevard (SR-107)/Sepulveda Boulevard (Area 6; Caltrans);
86. Hawthorne Boulevard (SR-107)/230th Street (Area 9; Caltrans);
87. Hawthorne Boulevard (SR-107)/Lomita Boulevard (Area 9; Caltrans);
88. Hawthorne Boulevard (SR-107)/Skypark Drive (Area 9; Caltrans);

89. Hawthorne Boulevard (SR-107)/Pacific Coast Highway (SR-1) (Area 9; Caltrans);
90. Hawthorne Boulevard (SR-107)/244th Street (Area 10; Caltrans);
91. Hawthorne Boulevard (SR-107)/Newton Street (Area 10; Caltrans);
92. Hawthorne Boulevard (SR-107)/Via Valmonte Street (Area 10; Caltrans);
93. Hawthorne Boulevard (SR-107)/Rolling Hills Road (Area 10; Caltrans);
94. Henrietta Street/Del Amo Boulevard (Area 3);
95. Henrietta Street/Torrance Boulevard (Area 6);
96. Hickory Street/Torrance Boulevard (Area 4);
97. Hickory Street/Sepulveda Boulevard (Area 7);
98. I-405 Southbound Off-Ramp-Osage Avenue/Redondo Beach Boulevard (Area 1; Caltrans);
99. I-405 Northbound Ramps/Artesia Boulevard (Area 1; Caltrans);
100. I-405 Northbound Ramps/182nd Street (Area 2; Caltrans);
101. I-405 Southbound Ramps/Crenshaw Boulevard (Area 2; Caltrans);
102. I-405 Northbound Ramps/Western Avenue (Area 2; Caltrans);
103. I-405 Southbound Ramps/190th Street (Area 2; Caltrans);
104. Inglewood Avenue/190th Street (Area 3);
105. Juniper Avenue/235th Street (Area 10);
106. Madison Avenue/Sepulveda Boulevard (Area 7);
107. Madison Street/Skypark Drive (Area 10);
108. Madison Street/Pacific Coast Highway (SR-1) (Area 10; Caltrans);
109. Madrona Avenue/Spencer Street (Area 4);
110. Madrona Avenue/Emerald Street (Area 4);
111. Madrona Avenue/Torrance Boulevard (Area 4);
112. Madrona Avenue/Fashion Way (Area 7);
113. Madrona Avenue/Carson Street (Area 7);
114. Madrona Avenue/Plaza Del Amo (Area 7);
115. Madrona Avenue/Sepulveda Boulevard (Area 7);
116. Maple Avenue/Maricopa Street (Area 4);
117. Maple Avenue/Torrance Boulevard (Area 4);
118. Maple Avenue/Carson Street (Area 7);
119. Maple Avenue/Plaza Del Amo (Area 7);
120. Maple Avenue/Sepulveda Boulevard (Area 7);
121. Maple Avenue/226th Street-Nadine Circle (Area 7);

122. Maple Avenue/Nadine Circle (Area 10);
123. Mobile Oil Entrance/190th Street (Area 4);
124. Ocean Avenue/Sepulveda Boulevard (Area 6);
125. Ocean Avenue/Lomita Boulevard (Area 9);
126. Palos Verdes Boulevard/Torrance Boulevard (Area 6);
127. Palos Verdes Boulevard/Sepulveda Boulevard (Area 6);
128. Palos Verdes Boulevard/Pacific Coast Highway (SR-1) (Area 9; Caltrans);
129. Palos Verdes Boulevard/Catalina-Camino Del Campo (Area 9);
130. Palos Verdes Boulevard/Calle Miramar (Area 9);
131. Palos Verdes Boulevard/Calle Mayor (Area 9);
132. Plaza Del Amo/Carson Street (Area 5);
133. Prairie Avenue/Redondo Beach Boulevard (Area 1);
134. Prairie Avenue/Artesia Boulevard (Area 1);
135. Prairie Avenue/182nd Street (Area 1);
136. Prairie Avenue/190th Street (Area 4);
137. Prairie Avenue/Del Amo Boulevard (Area 4);
138. Prospect Avenue/Torrance Boulevard (Area 6);
139. Prospect Avenue-Vista Del Parque/Pacific Coast Highway (SR-1) (Area 9; Caltrans);
140. Rolling Hills Way/Pacific Coast Highway (SR-1) (Area 10; Caltrans);
141. Sartori Avenue/Torrance Boulevard (Area 5);
142. Van Ness Avenue/Redondo Beach Boulevard (Area 2);
143. Van Ness Avenue/166th Street (Area 2);
144. Van Ness Avenue/Artesia Boulevard (Area 2);
145. Van Ness Avenue/182nd Street (Area 2);
146. Van Ness Avenue/190th Street (Area 5);
147. Van Ness Avenue/195th Street (Area 5);
148. Van Ness Avenue/Del Amo Boulevard (Area 5);
149. Van Ness Avenue/Dominguez Street (Area 5);
150. Victor Street/Del Amo Boulevard (Area 3);
151. Victor Street/Torrance Boulevard (Area 6);
152. Village Lane/Torrance Boulevard (Area 6);
153. Western Avenue (SR-213)/Artesia Boulevard (Area 2; Caltrans);
154. Western Avenue (SR-213)/182nd Street (Area 2; Caltrans);
155. Western Avenue (SR-213)/190th Street (Area 2; Caltrans);

156. Western Avenue (SR-213)/195th Street (Area 5; Caltrans);
157. Western Avenue (SR-213)/Del Amo Boulevard (Area 5; Caltrans);
158. Western Avenue (SR-213)/Torrance Boulevard (Area 5; Caltrans);
159. Western Avenue (SR-213)/213th Street (Area 5; Caltrans);
160. Western Avenue (SR-213)/Carson Street (Area 5; Caltrans);
161. Western Avenue (SR-213)/220th Street (Area 8; Caltrans);
162. Western Avenue (SR-213)/223rd Street (Area 8; Caltrans);
163. Western Avenue (SR-213)/Sepulveda Boulevard (Area 8; Caltrans);
164. Yukon Avenue/Redondo Beach Boulevard (Area 1);
165. Yukon Avenue/Artesia Boulevard (Area 1); and
166. Yukon Avenue/182nd Street (Area 1).

As part of this analysis, a citywide network consisting of the 166 intersections, listed above and shown in Exhibit 1-1 (page 16), was created in *Traffix* (a traffic modeling software program). The *Traffix* software program was utilized to analyze intersection operation for the following study scenarios:

- Existing Conditions – Chapter 2;
- Forecast Near-Term Conditions – Chapter 3;
- Forecast Long-Term Conditions – Chapter 4;
- Forecast Improved Near-Term Conditions – Chapter 5; and
- Forecast Improved Long-Term Conditions – Chapter 5.

It should be noted, due to the size of the City of Torrance study area, ten sub-areas have been identified and are also identified on Exhibit 1-1 (page 16).

Holiday Season Data Collection

In December 2004, intersection movement counts were collected at 43 intersections and 16 roadway segments in the vicinity of the Del Amo Fashion Center. This data shall be used by the City to analyze differences in traffic volumes between the holiday season and non-holiday season. Exhibits 1-2 and 1-3 (pages 17 and 18) show Holiday Season weekday and weekend roadway segment ADT around the Del Amo Fashion Center. Exhibits 1-4 and 1-5 (pages 19 and 20) show weekday and weekend ADT percent change from Non-Holiday Season 2005 to Holiday Season 2004.

Non-Holiday Season Data Collection

To analyze existing operation of the study intersections, a.m. peak hour, weekday mid-day peak hour, weekday p.m. peak hour, and weekend mid-day peak hour intersection movement counts were collected in March 2005 through May 2005 on a typical weekday (Tuesday, Wednesday, or Thursday for the weekday counts) and on a weekend-day (Saturday or Sunday for the weekend mid-day count) during the following time periods:

- Weekday a.m. peak period intersection counts were taken from 7:00 a.m. to 9:00 a.m.;
- Weekday mid-day peak period intersection counts were taken from 11:00 a.m. to 1:00 p.m.;
- Weekday p.m. peak period intersection counts were taken from 4:00 p.m. to 6:00 p.m.; and
- Weekend mid-day peak period intersection counts were taken from 11:00 a.m. to 1:00 p.m.

The counts used in this analysis were taken from the highest one hour within the peak period counted. Additionally, average daily traffic (ADT) volumes for the roadway circulation system were collected at 170 roadway segment locations (a portion of a facility (a length of highway or roadway composed of connected sections, segments, and points) defined by two endpoints, usually two intersections) in February 2005 through March 2005. Exhibits 1-6 and 1-7 (pages 21 and 22) show non-Holiday Season weekday and weekend roadway segment ADT at the 170 roadway segment locations. At 39 of the 170 roadway segment locations, truck classification counts were collected, which identifies the approximate percentage of trucks versus passenger cars at the classification count roadway segment locations. Exhibits 1-8 and 1-9 (pages 23 and 24) show weekday and weekend truck classification traffic percentage at the 39 classification count locations in the City of Torrance.

Detailed peak hour traffic count data is bound under separate cover (*City of Torrance Citywide Traffic Study Existing 2005 Intersection Data*, RBF Consulting). Detailed roadway segment count data is bound under separate cover (*City of Torrance Citywide Traffic Study Existing 2005 Roadway Segment Data*, RBF Consulting).

Additionally, fieldwork was conducted between January 2005 and March 2005, which included collecting data such as intersection traffic control type, intersection geometry, intersection signal phasing, roadway geometry, speed limits, on-street parking, and photo-documentation.

Truck Classification Methodology

Representative sampling methodology for vehicle classification counts (traffic counts providing the approximate traffic volume for each of the various vehicle classes traversing a roadway segment; for example, Class 1 – Motorcycles; Class 2 – Passenger cars; Class 3 – Pickups, vans, and other two-axle, four-tire single unit vehicles; Class 4 – Buses; Class 5 – Two-axle, six-tire single unit trucks; and so on) was utilized in this analysis. Representative sampling assumes the outside and inside lane (adjacent raised median) of a major arterial is studied using the classification machine data recorder (hose count data recorder equipped for axle information). The percentage of trucks was then also applied to the lanes not physically counted.



Red Car Brewery

Analysis Methodology

Level of service (LOS) is commonly used as a qualitative description of intersection operation and is based on the type of traffic control and delay experienced at the intersection. This study summarizes LOS operation of the study intersection using both the 2000 Highway Capacity Manual (*HCM*) analysis methodology and the Intersection Capacity Utilization (*ICU*) analysis methodology. For purposes of this traffic analysis, deficient intersection operation is defined by City of Torrance as an intersection operating at LOS E or F.

HCM Intersection Analysis

The 2000 *Highway Capacity Manual (HCM)* analysis methodology for *Signalized Intersections* is utilized to determine the operating LOS of the study intersections.

The 2000 *HCM* analysis methodology describes the operation of an intersection using a range of LOS from LOS A (free-flow conditions) to LOS F (severely congested conditions), which is based on the corresponding ranges of stopped delay experienced per vehicle shown in Table 1-1.

**Table 1-1
HCM LOS & Delay Ranges
for Signalized Intersections**

LOS	Delay (seconds/vehicle)
A	≤ 10.0
B	$> 10.0 \leq 20.0$
C	$> 20.0 \leq 35.0$
D	$> 35.0 \leq 55.0$
E	$> 55.0 \leq 80.0$
F	> 80.0

Source: 2000 Highway Capacity Manual

Level of service is based on the average stopped delay per vehicle for all movements of signalized intersections.

ICU Intersection Analysis

The ICU intersection analysis methodology describes the operation of a signalized intersection using a range of LOS from LOS A (free-flow conditions) to LOS F (severely congested conditions), which is based on corresponding volume/capacity (V/C) ratios shown in Table 1-2.

**Table 1-2
ICU LOS & V/C Ratios
for Signalized Intersections**

LOS	V/C Ratio
A	≤ 0.60
B	$> 0.60 \leq 0.70$
C	$> 0.70 \leq 0.80$
D	$> 0.80 \leq 0.90$
E	$> 0.90 \leq 1.00$
F	> 1.00

Source: 1990 Transportation Research Board

Performance Criteria

The City of Torrance target for peak hour intersection operation is **LOS D** or better.

Pass-Through Methodology

A pass-through traffic analysis was performed to determine the percentage of traffic passing through the City, otherwise known as pass-through traffic. Pass-through traffic is defined as traffic with no destination within the City of Torrance. Pass-through traffic data was collected along 11 corridors, which are shown in Exhibit 1-10 (page 25); pass-through percentages for each study pass-through corridor for each study time period are shown on Exhibits 1-10a, 1-10b, 1-10c, and 1-10d.

The pass-through data collection method included stationing of staff-persons adjacent the study roadway segment and videotaping vehicles as they pass both entry and exit gateway sites simultaneously. Entry and exit locations are identified as gateway sites. After videotaping, the

sub-consultant viewed the video in 20-minute segments at the entry gateway sites, recording information about each vehicle (time, car type, color, driver details, etc.). The sub-consultant then skipped forward a designated time based on drive-time between gateway sites, and viewed another 20 minutes to match vehicles. The drive-time was determined by driving between the two gateway sites, for each time period.



Hawthorne Boulevard at Del Amo Circle

For example, viewer recorded information at gateway site A of vehicles from 8:00 a.m. to 8:20 a.m., and then skipped forward to 8:40 a.m. and matched vehicle information at gateway site B until 9:00 a.m. This example assumed the average drive-time between gateway sites is 20 minutes.

Congestion Management Program (CMP) Intersections

In June 2005, peak hour count data sheets for the ten (10) Congestion Management Program (CMP) intersections located in the City of Torrance and listed in Table 1-3 were submitted to the City for inclusion in the *Metropolitan Transportation Authority 2005 Congestion Management Program for Los Angeles County*. The counts were collected in March and April 2005 on a typical weekday (Tuesday, Wednesday, or Thursday) from 7:00 a.m. to 9:00 a.m., 12:00 p.m. to 2:00 p.m., and 4:00 p.m. to 6:00 p.m., and on a typical weekend-day (Saturday or Sunday) from

12:00 p.m. to 2:00 p.m. It should be noted, the CMP Intersection Number shown in Table 1-3 corresponds to the number that identifies the CMP intersection as it is found in the *Metropolitan Transportation Authority 2005 Congestion Management Program for Los Angeles County* document.

Exhibit 1-11 (page 26) shows the location of the ten (10) CMP study intersections.

**Table 1-3
City of Torrance CMP Intersections**

CMP Intersection Number¹	CMP Route	Cross Street
147	Artesia Boulevard	Crenshaw Boulevard
148	Artesia Boulevard	Hawthorne Blvd
149	Hawthorne Boulevard	190 th Street
150	Hawthorne Boulevard	Sepulveda Boulevard
151	Pacific Coast Highway	Crenshaw Boulevard
152	Pacific Coast Highway	Hawthorne Boulevard
153	Pacific Coast Highway	Palos Verdes Boulevard
154	Western Avenue	190 th Street
155	Western Avenue	Carson Street
156	Western Avenue	Sepulveda Boulevard

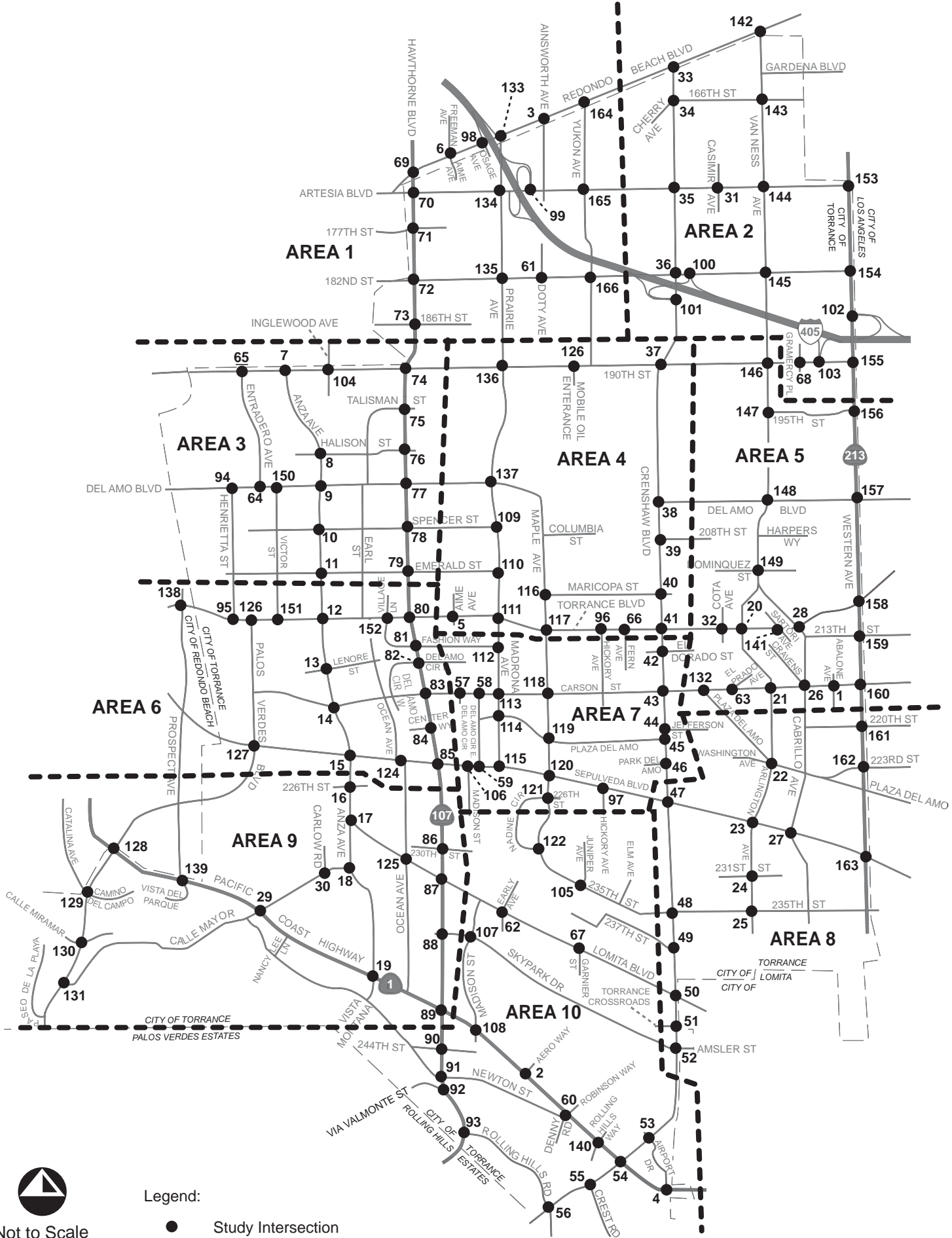
¹ = CMP Intersection number as identified in the *Metropolitan Transportation Authority 2005 Congestion Management Program for Los Angeles County* document.

Concurrent Citywide Projects

In concurrence with the RBF-prepared traffic analysis, City staff is working on the City of Torrance intelligent transportation systems (ITS) program and the General Plan Circulation Element update.

The ITS program is utilized to provide an efficient transportation system that will reduce congestion, improve mobility, maximize traffic flow, and improve the quality of life in the community. Additionally, the ITS program can be used to monitor traffic conditions and provide unobstructed flow of emergency response vehicles.

The City of Torrance General Plan provides a snapshot of Torrance today, a vision for Torrance tomorrow, development policy guidance for decision-makers, and a work program that outlines the steps required to get from today to tomorrow. To respond to physical, environmental, economic, social, and demographic changes in the community, the City has embarked on an exciting process to update the General Plan, which includes the City's Circulation Element that discusses traffic and transportation related issues within the City.



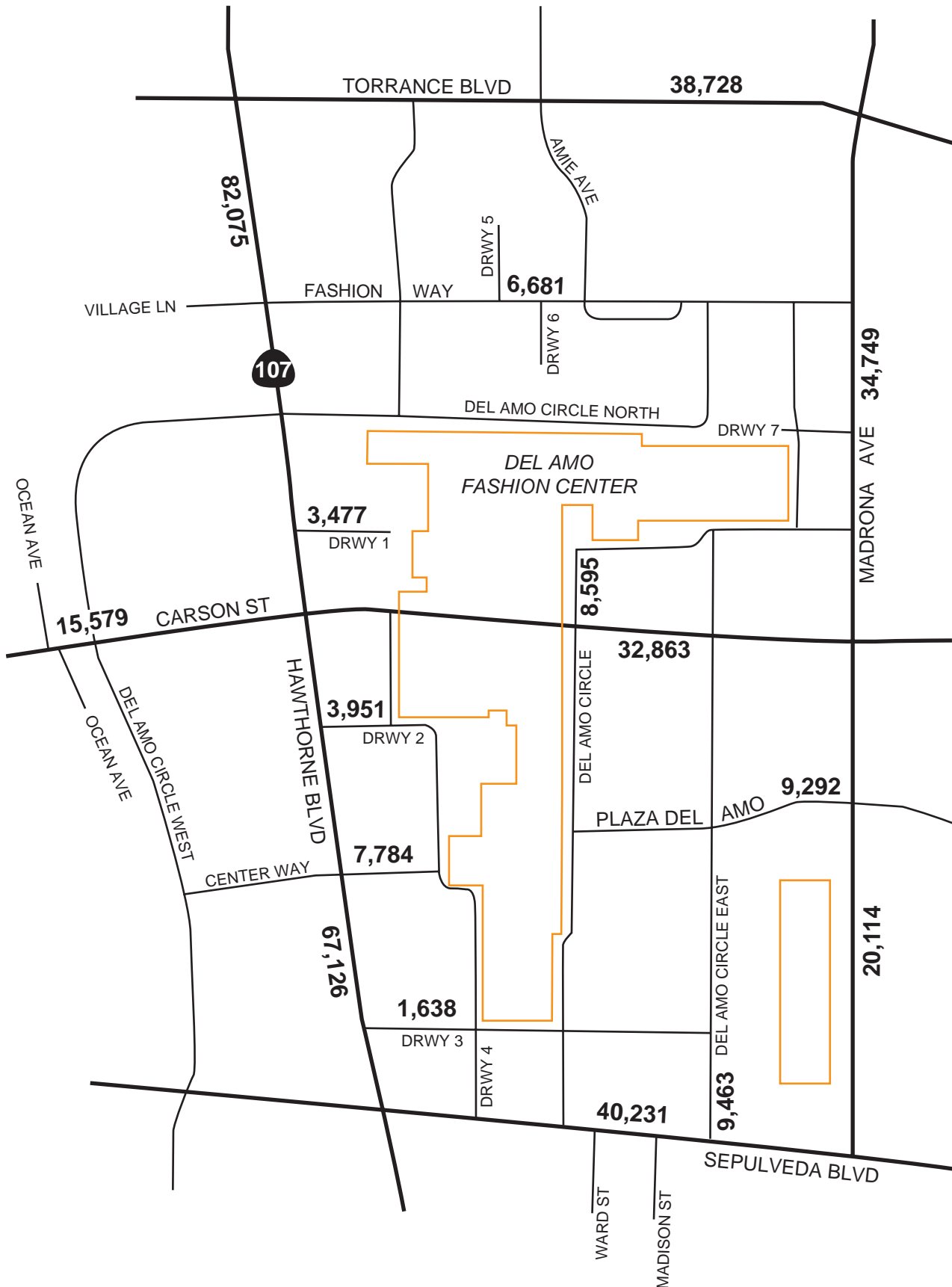
Not to Scale



Legend:

- Study Intersection
- - - Area Boundary

City of Torrance Study Areas

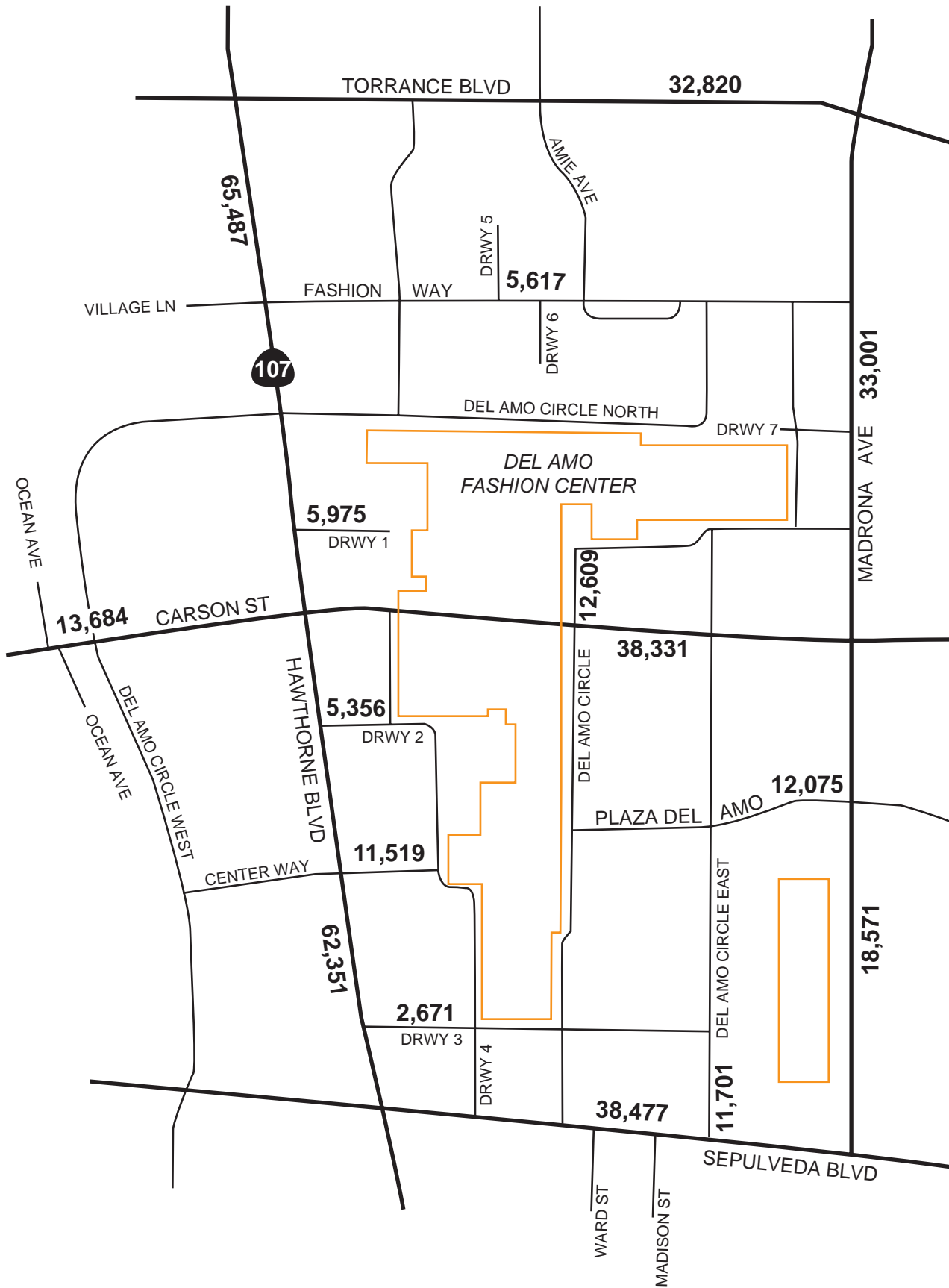


Not to Scale



Legend:
X,XXX Roadway ADT

Roadway Segment Holiday 2004 Weekday ADT



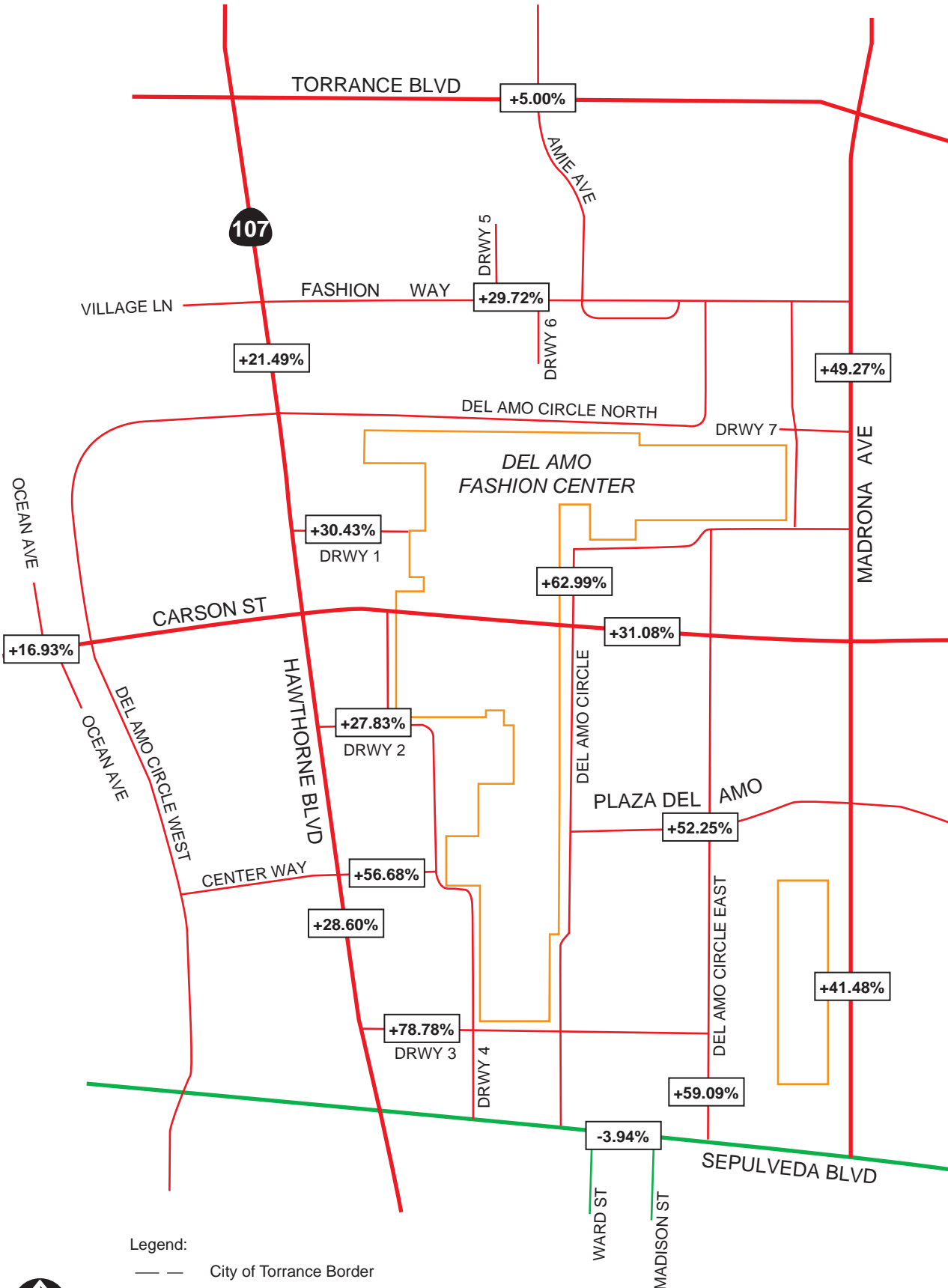
Not to Scale



Legend:

X,XXX Roadway ADT

Roadway Segment Holiday 2004 Weekend ADT



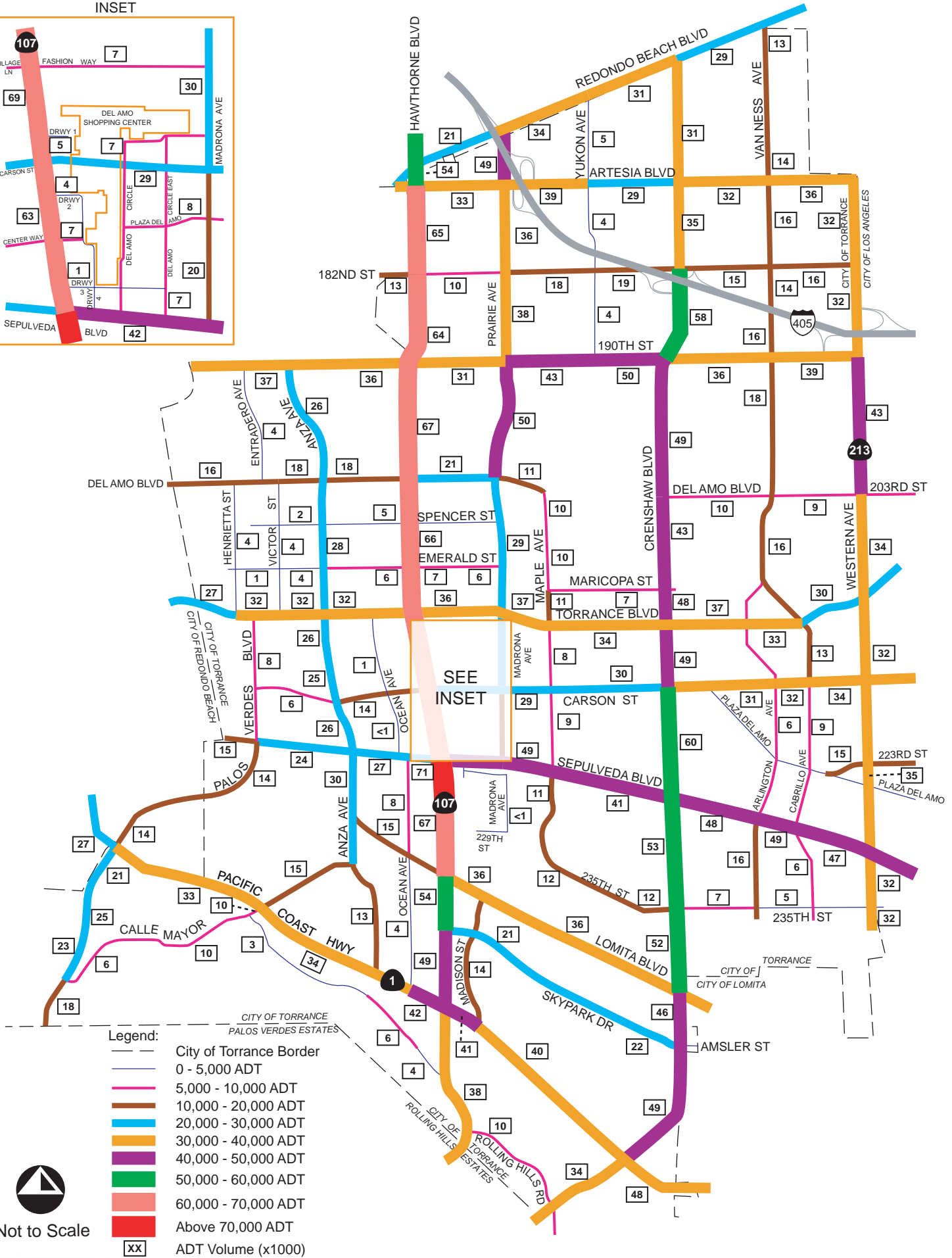
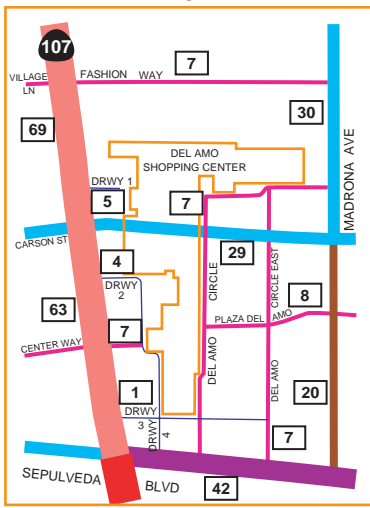
Legend:
 --- City of Torrance Border
 — Increase in Holiday ADT
 — Decrease in Holiday ADT
 [XX%] Percent Change

Not to Scale



Weekend ADT Percent Change from Non-Holiday Season 2005 to Holiday Season 2004

INSET

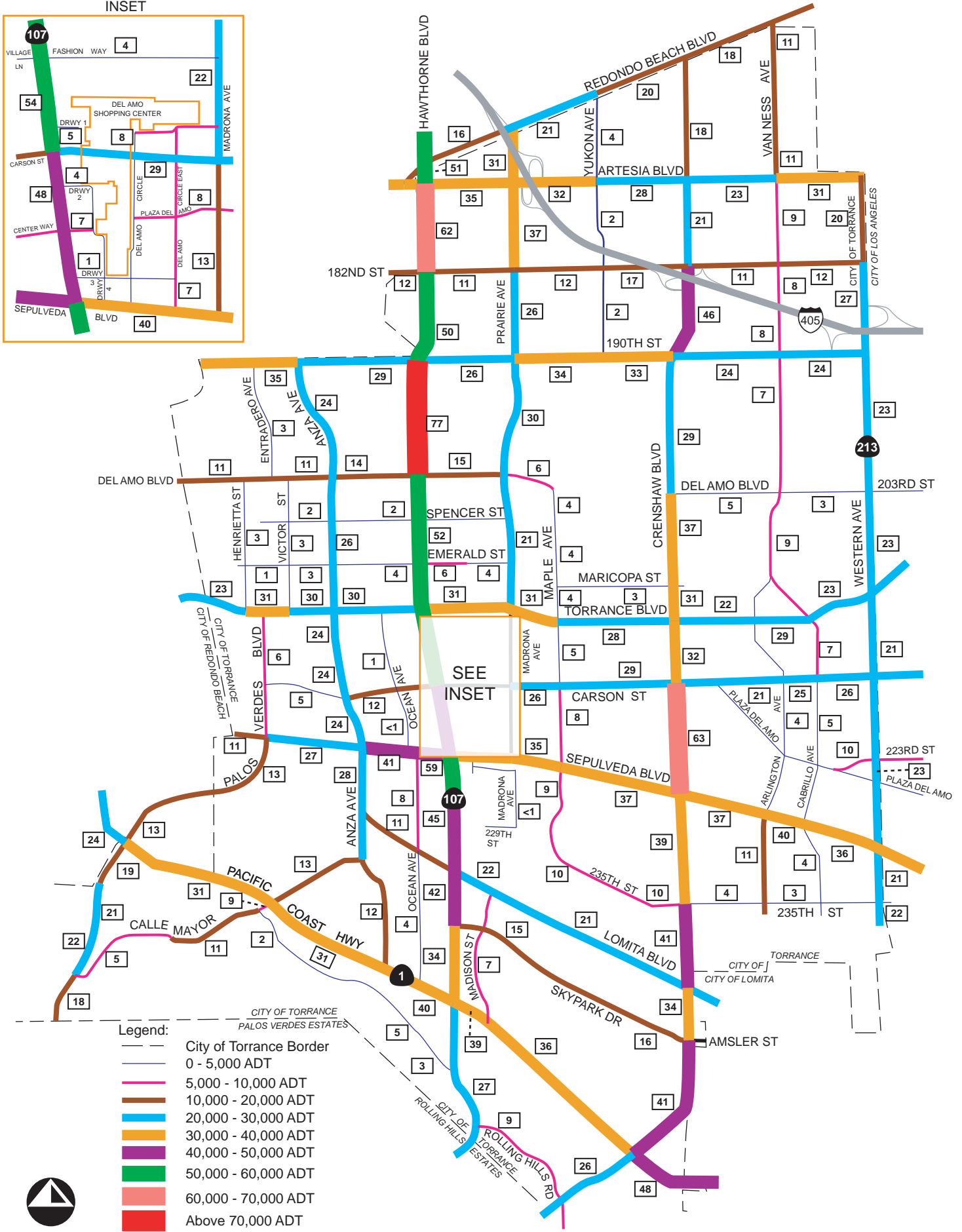
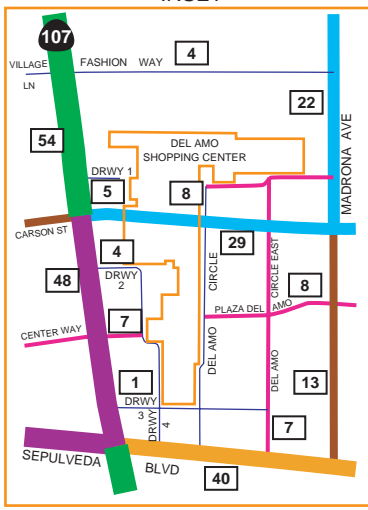


Not to Scale



Existing (2005) Weekday Roadway Segment ADT (x1000)

INSET



Legend:

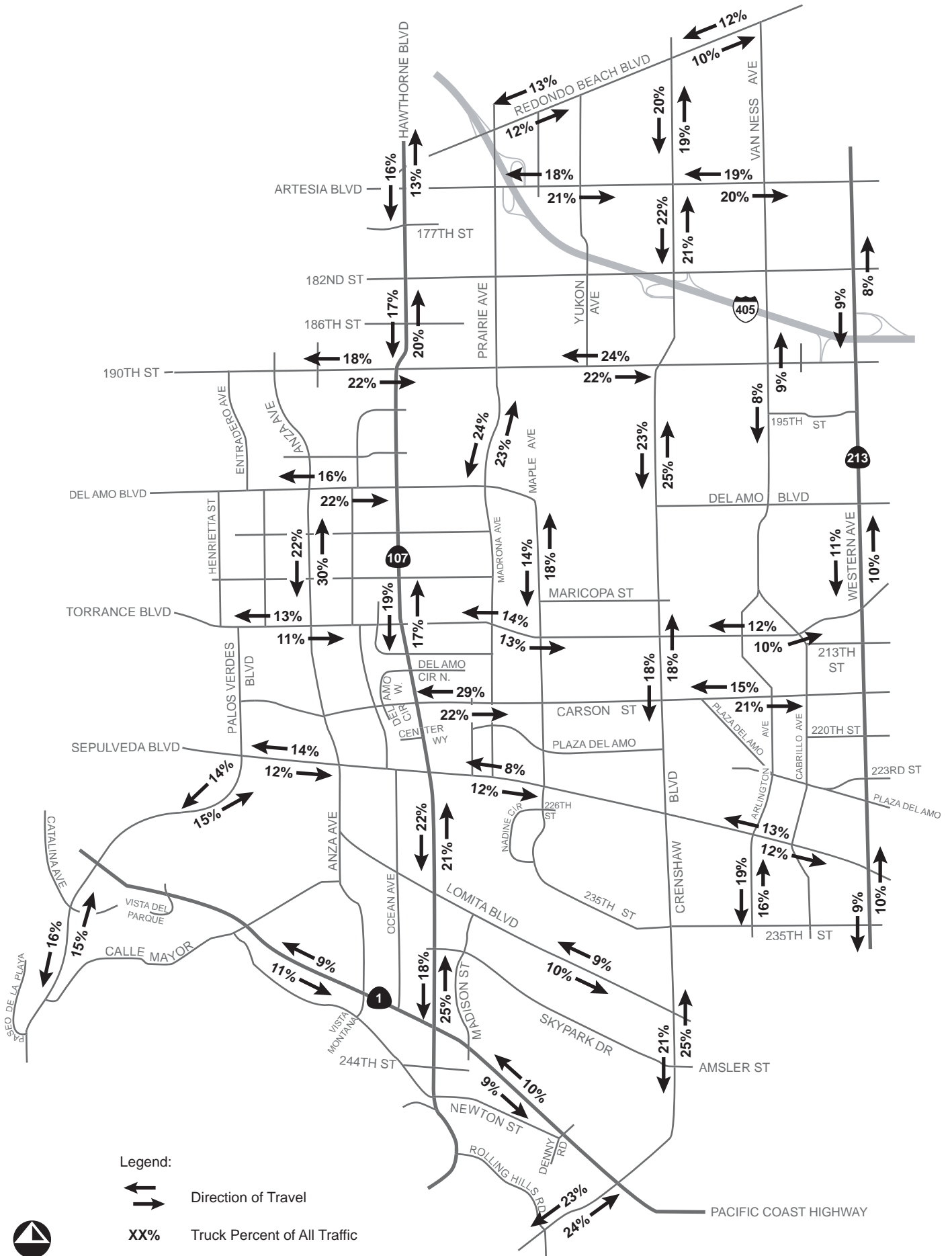
- City of Torrance Border
- 0 - 5,000 ADT
- 5,000 - 10,000 ADT
- 10,000 - 20,000 ADT
- 20,000 - 30,000 ADT
- 30,000 - 40,000 ADT
- 40,000 - 50,000 ADT
- 50,000 - 60,000 ADT
- 60,000 - 70,000 ADT
- Above 70,000 ADT
- ADT Volume (x1000)



Not to Scale



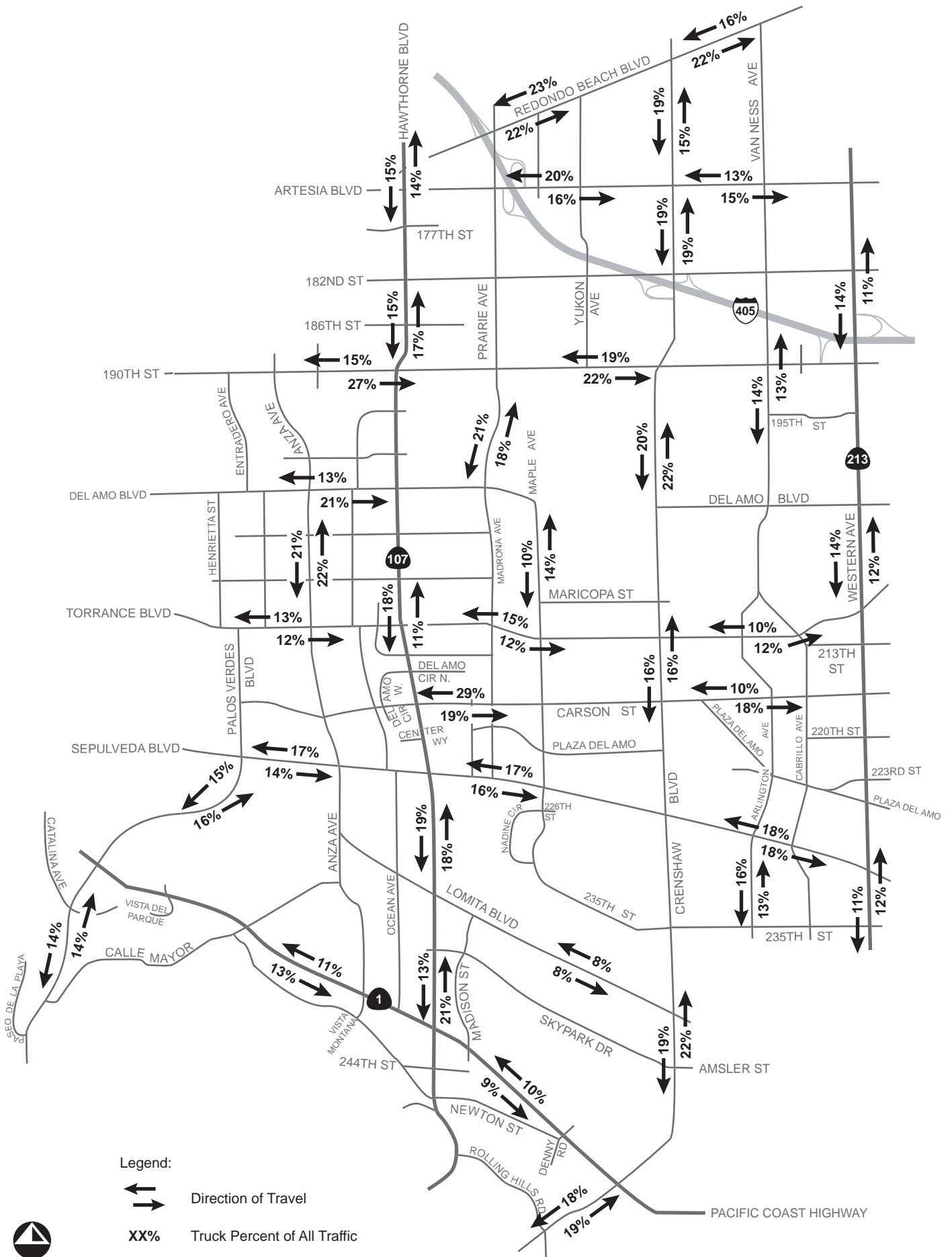
Existing (2005) Weekend Roadway Segment ADT (x1000)



Not to Scale



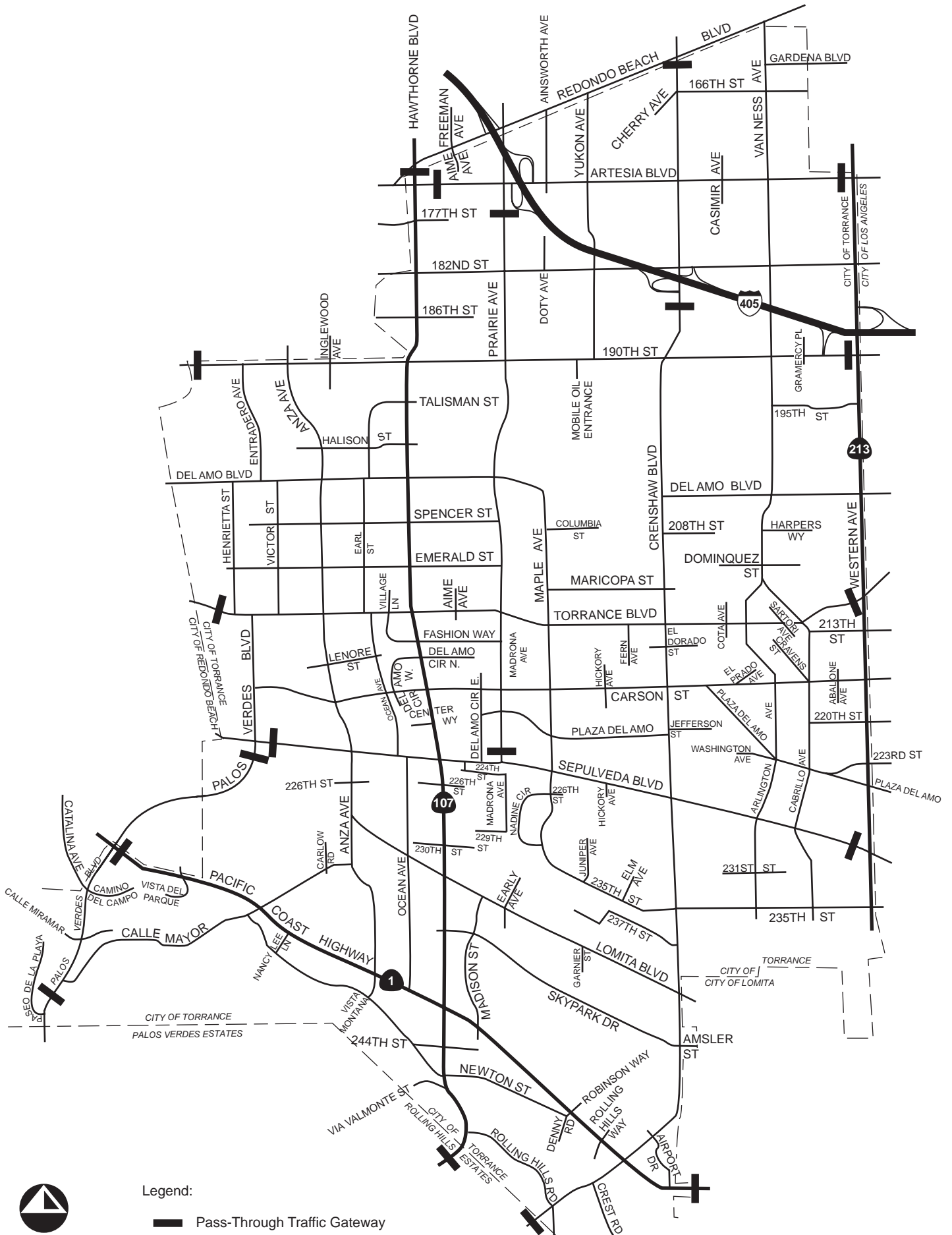
Weekday Truck Classification Traffic Percentage



Not to Scale



Weekend Truck Classification Traffic Percentage



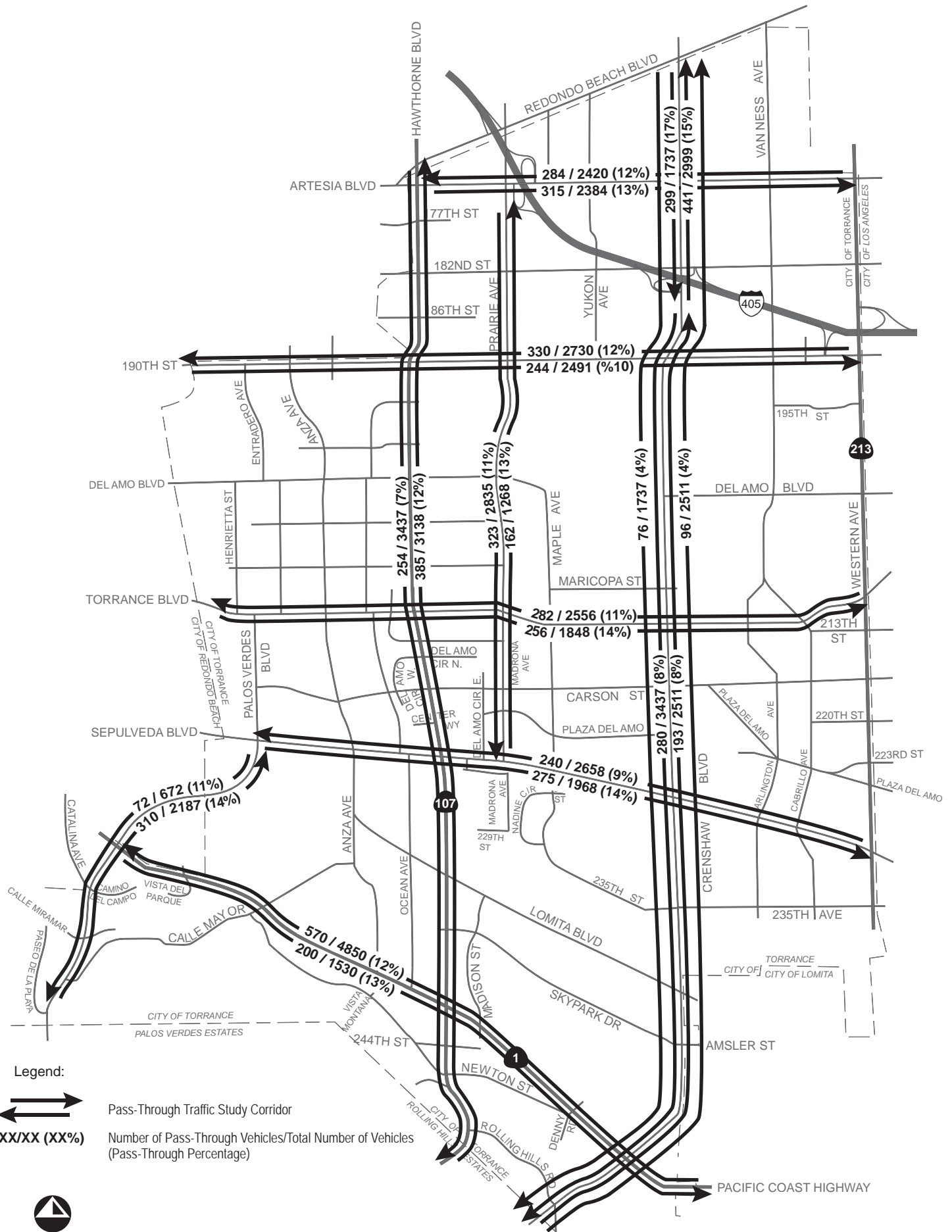
Legend:
 Pass-Through Traffic Gateway



Not to Scale



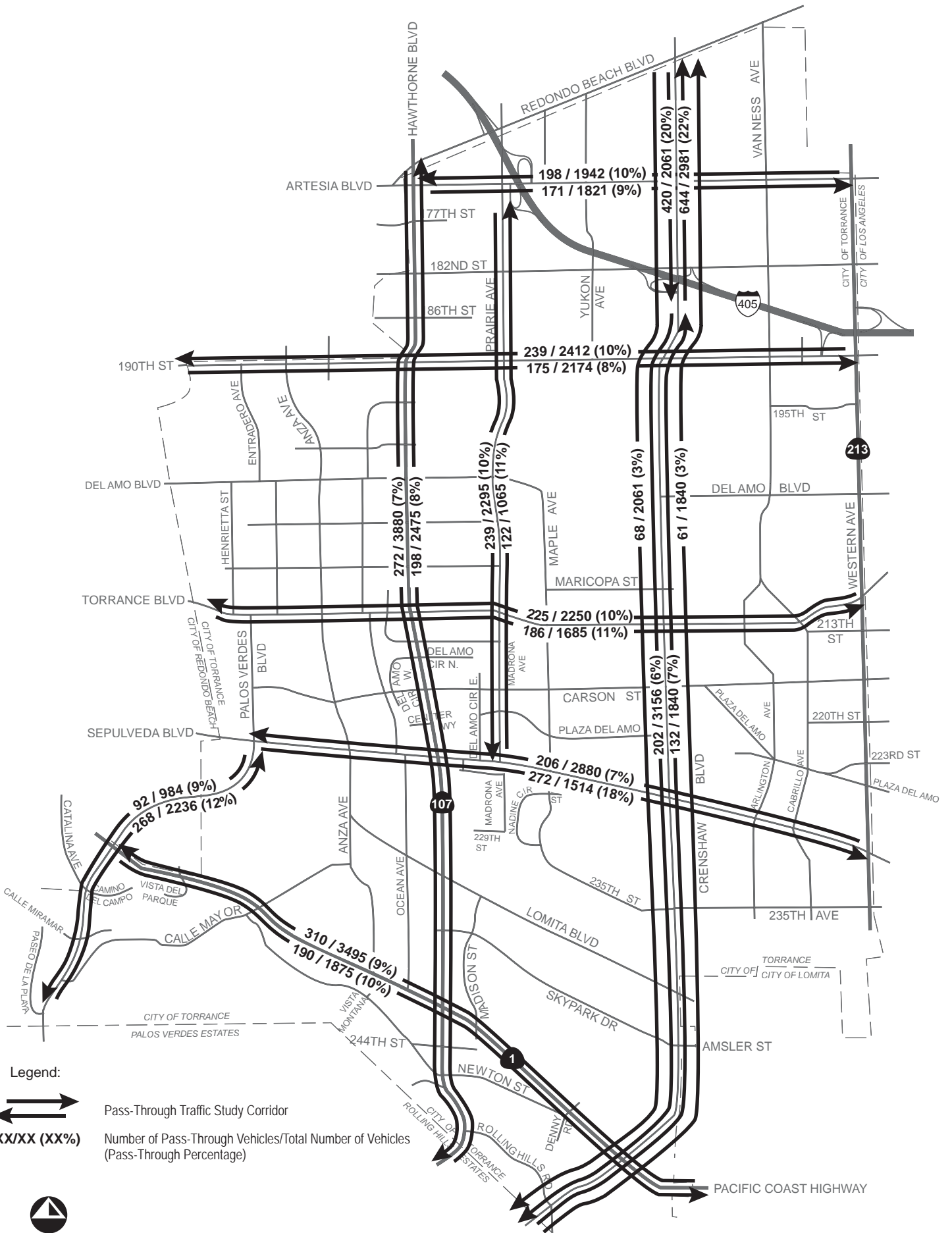
Pass-Through Traffic Gateway Sites



Not to Scale



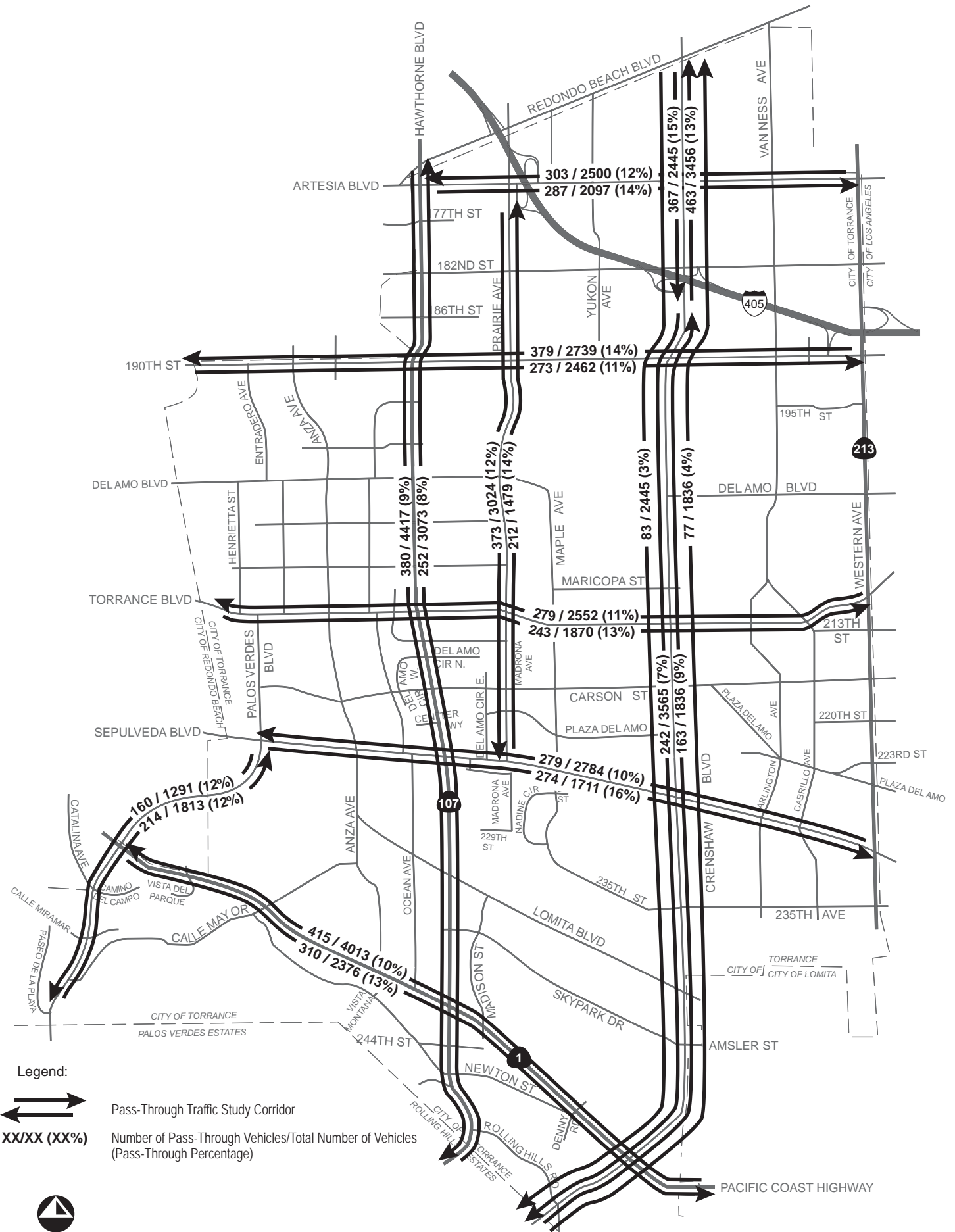
Weekday AM Peak Period Pass-Through Traffic Percentage



Not to Scale



Weekday Mid-Day Peak Period Pass-Through Traffic Percentage



Legend:



Pass-Through Traffic Study Corridor

XX/XX (XX%)

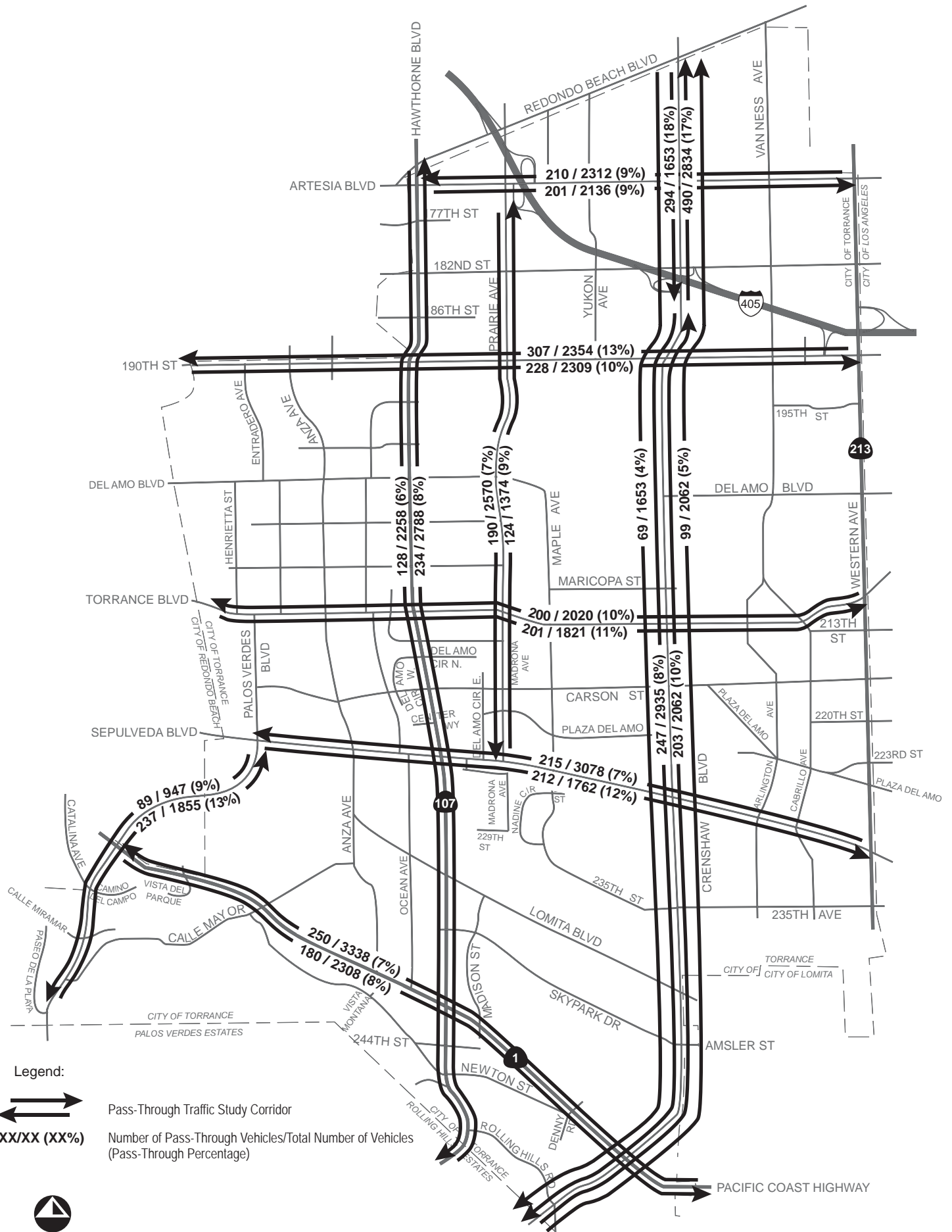
Number of Pass-Through Vehicles/Total Number of Vehicles (Pass-Through Percentage)



Not to Scale



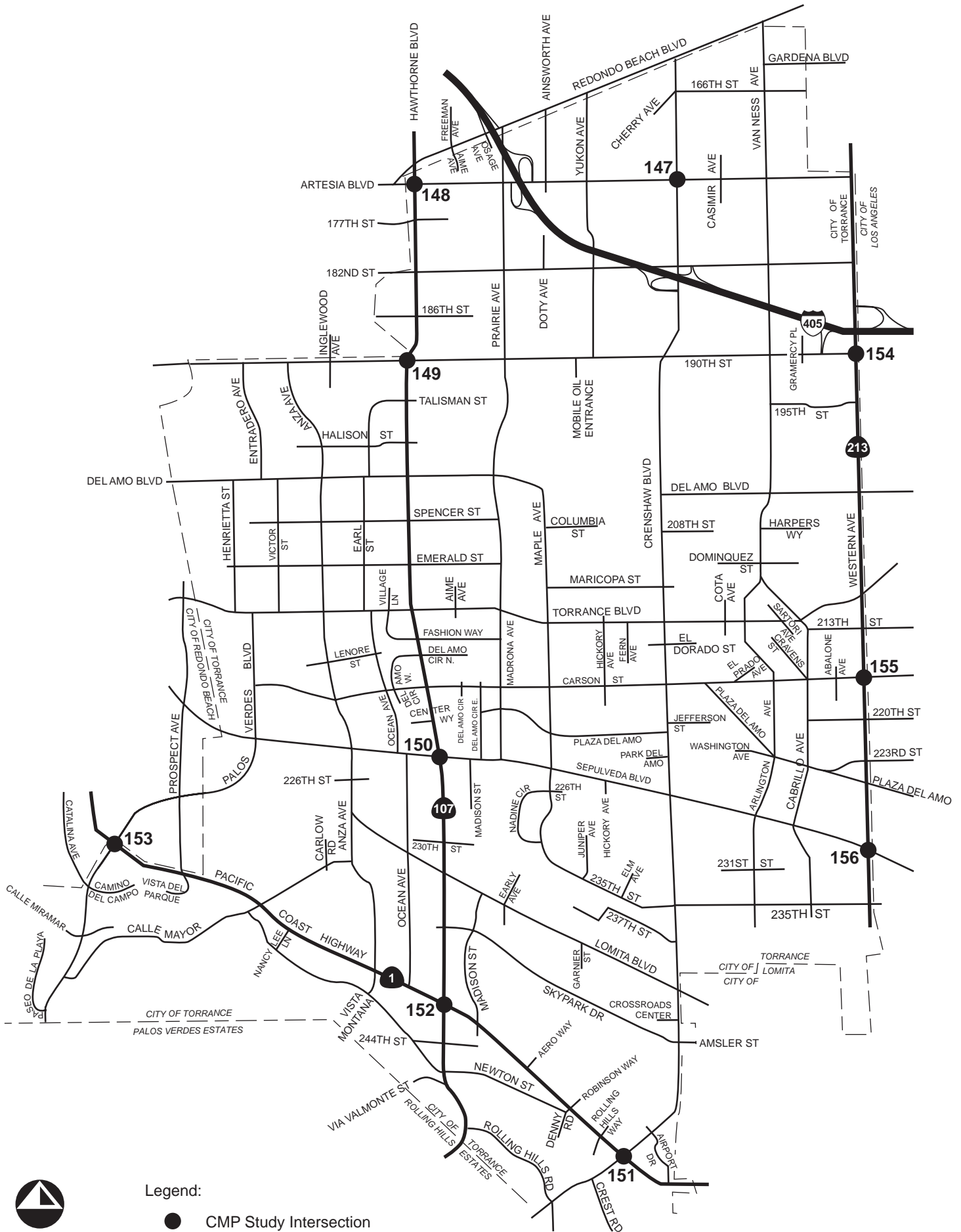
Weekday PM Peak Period Pass-Through Traffic Percentage



Not to Scale



Weekend Mid-Day Peak Period Pass-Through Traffic Percentage



Legend:

● CMP Study Intersection



CMP Study Intersection Locations

CHAPTER 2 – EXISTING CONDITIONS

This chapter discusses existing (2005) conditions operation at the 166 study intersections located in the City of Torrance, which are shown on Exhibit 2-1 (page 62). To determine the operation at each study intersection, which is referred to as the intersection level of service (LOS), intersection movement counts were collected in March 2005 through May 2005 on a typical weekday (Tuesday, Wednesday, or Thursday) and a typical weekend-day (Saturday or Sunday). Intersection movement counts identify the number of vehicles traveling through the intersection. The LOS at each study intersection was then calculated in *Traffix* (a traffic modeling software program) utilizing both the *HCM* analysis methodology, which is based on corresponding ranges of stopped delay experienced per vehicle at an intersection, as well as the *ICU* analysis methodology, which is based on corresponding volume to capacity (V/C) ratios at an intersection; the LOS based on each analysis methodology is shown later in this chapter.



City of Torrance

ROADWAY DESCRIPTION

The characteristics of the study roadway system in the City of Torrance are described below:

166th Street is a two-lane undivided roadway trending in an east-west direction. On-street parking is permitted on 166th Street.

177th Street is a two-lane undivided discontinuous roadway trending in an east-west direction. On-street parking is permitted on 177th Street. 177th Street transitions to a four-lane undivided roadway west of Hawthorne Boulevard (SR-107).

182nd Street is a four-lane undivided roadway trending in an east-west direction. Between I-405 Northbound Ramps and Van Ness Avenue, 182nd Street is a four-lane divided roadway with a continuous left-turn lane. 182nd Street transitions to a two-lane undivided roadway west of Hawthorne Boulevard (SR-107). On-street parking is permitted on segments of 182nd Street.

186th Street is a two-lane undivided discontinuous roadway trending in an east-west direction. On-street parking is permitted on 186th Street.

190th Street varies from a four-lane undivided roadway to a five-lane divided roadway with a continuous left-turn lane trending in an east-west direction. On-street parking is prohibited on 190th Street east of Hawthorne Boulevard (SR-107). On-street parking is permitted on the north side of 190th Street west of Hawthorne Boulevard (SR-107).

195th Street is a four-lane undivided roadway trending in an east-west direction. 195th Street terminates on the east at Western Avenue (SR-213) and on the west at Van Ness Avenue. On-street parking is prohibited on 195th Street.

208th Street is a two-lane undivided roadway trending in an east-west direction. On-street parking is prohibited on 208th Street. 208th Street terminates on the west at Crenshaw Boulevard.

213th Street is a four-lane undivided roadway trending in an east-west direction. On-street parking is prohibited on 213th Street. 213th Street terminates on the west at Cabrillo Avenue.

220th Avenue is a two-lane undivided roadway trending in an east-west direction. On-street parking is permitted on 220th Avenue. 220th Avenue terminates on the west at Marina Avenue.

223rd Street is a four-lane divided roadway with a continuous left-turn lane trending in an east-west direction. On-street parking is prohibited on 223rd Street west of Western Avenue (SR-213) and permitted on 223rd Street east of Western Avenue (SR-213).

226th Street is a two-lane undivided discontinuous roadway trending in an east-west direction. 226th Street terminates on the west at Maple Avenue. On-street parking is permitted on 226th Street.

230th Street is a two-lane undivided discontinuous roadway trending in an east-west direction. On-street parking is permitted on 230th Street.

231st Street is a two-lane undivided discontinuous roadway trending in an east-west direction. On-street parking is permitted on 231st Street.

235th Street is a two-lane undivided discontinuous roadway trending in an east-west direction. On-street parking is permitted on 235th Street. 235th Street varies from a two-lane undivided roadway to a two-lane divided roadway with a painted median to a two-lane divided roadway with a continuous left-turn lane.

237th Street is a two-lane undivided roadway trending in an east-west direction. On-street parking is permitted on 237th Street. 237th Street terminates on the east at President Avenue and has a break between Walnut Street and Western Avenue (SR-213). 237th Street terminates west of Crenshaw Boulevard.

244th Street is a two-lane undivided roadway trending in an east-west direction. On-street parking is permitted on 244th Street. 244th Street terminates on the west at Ocean Avenue and on the east at Madison Street.

Abalone Avenue is a two-lane undivided roadway trending in a north-south direction. On-street parking is permitted Abalone Avenue.

Aero Way (Also known as Zamperini Way) is a five-lane divided roadway with a raised median trending in a north-south direction. Aero Way terminates on the north at Airport Drive and on the south at Pacific Coast Highway (SR-1).

Ainsworth Avenue is a two-lane undivided roadway trending in a north-south direction. On-street parking is permitted on Ainsworth Avenue. Ainsworth Avenue terminates on the north at Redondo Beach Boulevard.

Airport Drive is a two-lane undivided roadway trending in an east-west direction. On-street parking is prohibited on Airport Drive.

Amie Avenue is a two-lane undivided discontinuous roadway trending in a north-south direction. On-street parking is prohibited on Amie Avenue south of Torrance Boulevard. On-street parking is permitted on Amie Avenue north of Torrance Avenue. Amie Avenue terminates on the north at Redondo Beach Boulevard.

Amsler Street is a two-lane undivided roadway trending in an east-west direction. Amsler Street terminates on the west at Crenshaw Boulevard and on the east in a parking lot. On-street parking is permitted on Amsler Street.

Anza Avenue is a four-lane divided roadway with a continuous left-turn lane trending in a north-south direction. On-street parking is prohibited on Anza Avenue. Anza Avenue transitions to a four-lane divided roadway with a raised median south of Sepulveda Boulevard; on-street parking is permitted. Anza Avenue terminates on the south at Pacific Coast Highway (SR-1) and on the north at 190th Street.

Arlington Avenue is a two-lane divided roadway with a continuous left-turn lane trending in a north-south direction. On-street parking is permitted on Arlington Avenue. Arlington Avenue terminates on the north at 190th Street, where it changes name to Van Ness Avenue, and on the south at El Dorado Street.

Artesia Boulevard varies from a four- to six-lane divided roadway with a raised median trending in an east-west direction. On-street parking is prohibited on Artesia Boulevard. Artesia Boulevard terminates on the west at Pacific Coast Highway (SR-1) and on the east at Interstate 60 in Riverside, California.



Cabrillo Avenue at Carson Street and Cravens Avenue

Cabrillo Avenue is a two-lane divided roadway with a continuous left-turn lane trending in a north-south direction. On-street parking is permitted on Cabrillo Avenue. Cabrillo Avenue terminates on the north at Torrance Boulevard and on the south at 238th Street.

Calle Mayor is a four-lane divided roadway with a continuous left-turn lane trending in an east-west direction. Calle Mayor terminates on the east at Camino De Encanto and on the west at Palos Verdes Boulevard. On-street parking is permitted on Calle Mayor.

Calle Miramar is a two-lane divided roadway with a raised median trending in an east-west direction. On-street parking is permitted on Calle Miramar.

Camino Del Campo is a two-lane undivided roadway trending in an east-west direction. On-street parking is permitted on Camino Del Campo. Camino Del Campo terminates on the west at Palos Verdes Boulevard.

Carlow Road is a two-lane undivided roadway trending in a north-south direction. On-street parking is permitted on Carlow Road.



Carson Street

Carson Street is a four-lane divided roadway with a continuous left-turn lane trending in an east-west direction. The Del Amo Fashion Center spans Carson Street between Hawthorne Boulevard (SR-107) and Del Amo Circle. Carson Street transitions to a six-lane roadway with a painted median east of the Del Amo Fashion Center. On-street parking is prohibited on Carson Street.

Casimir Avenue is a two-lane undivided discontinuous roadway trending in a north-south direction. On-street parking is permitted on Casimir Avenue.

Catalina Avenue is a two-lane undivided roadway trending in an east-west direction and transitions to a two-lane undivided roadway trending in a north-south direction west of Vista Del Mar. On-street parking is permitted on Catalina Avenue. Catalina Avenue terminates on the east at Palos Verdes Boulevard.

Center Way is a four-lane divided roadway trending in an east-west direction. Center Way transitions from a four-lane divided roadway with a raised median west of Hawthorne Boulevard (SR-107) to a four-lane undivided roadway east of Hawthorne Boulevard (SR-107). Center Way provides access to parking for the Del Amo Fashion. On-street parking is prohibited on Center Way.

Cherry Avenue is a two-lane undivided roadway trending in an east-west direction. Cherry Avenue terminates on the east at Crenshaw Boulevard and on the west at 168th Street. On-street parking is permitted on Cherry Avenue.

Cota Avenue is a two-lane undivided roadway trending in a north-south direction. On-street parking is permitted on Cota Avenue.

Crenshaw Boulevard varies from a four- to six-lane divided roadway with a continuous left-turn lane to a six-lane divided roadway with a raised median trending in a north-south direction. On-street parking is prohibited on Crenshaw Boulevard. On-street parking is permitted on 190th Street.

Crest Road is a two-lane undivided roadway trending in an east-west direction. On-street parking is permitted on Crest Road. Crest Road terminates on the east at Delos Drive and on the west at Crenshaw Boulevard.

Del Amo Boulevard is a four-lane divided discontinuous roadway with a raised median trending in an east-west direction. Del Amo Boulevard transitions to a four-lane undivided roadway west of Madrona and transitions to a four-lane roadway with a continuous left-turn lane west of Hawthorne Boulevard (SR-107). On-street parking is prohibited on Del Amo Boulevard west of Hawthorne Boulevard (SR-107) and east of Madrona Avenue.

Del Amo Circle East is a four-lane divided roadway with a continuous left-turn lane trending in a north-south direction. Del Amo Circle East terminates on the south at Sepulveda Boulevard. Del Amo Circle East provides access to parking for the Del Amo Fashion Center. On-street parking is prohibited on Del Amo Circle East.

Del Amo Circle West is a four-lane divided roadway with a continuous left-turn lane trending in a north-south direction. On-street parking is prohibited on Del Amo Circle West.

Dominguez Street is a two-lane undivided roadway trending in an east-west direction. On-street parking is permitted on Dominguez Street. Dominguez Street terminates on the east at Van Ness Avenue.

Doty Avenue is a two lane undivided discontinuous roadway trending in a north-south direction. On-street parking is permitted on Doty Avenue.

Driveways #1, #2, and #3 are two-lane undivided driveways providing access to Del Amo Fashion Center from Hawthorne Boulevard (SR-107). Driveways 1, 2, and 3 terminate on the east at Hawthorne Boulevard (SR-107) and trend in an east-west direction. On-street parking is prohibited on Driveways 1, 2, and 3.

Early Avenue is a two-lane undivided roadway trending in a north-south direction. On-street parking is prohibited on Early Avenue. Early Avenue terminates on the north at Fujita Street and on the south at Lomita Boulevard.

El Dorado Street is a two-lane undivided roadway trending in an east-west direction. On-street parking is permitted on El Dorado Street.

El Prado Avenue is a two-lane divided roadway with a raised median trending in a north-south direction. Parking is permitted on El Prado Avenue.

Emerald Street is a two-lane undivided roadway trending in an east-west direction. On-street parking is permitted on Emerald Street. Emerald Street terminates on the west at Henrietta Street and on the east at Madrona Avenue.

Entradero Avenue is a two-lane undivided roadway trending in a north-south direction. On-street parking is permitted on Entradero Avenue. Entradero Avenue terminates on the north at 190th Street, where it changes name to Meyer Lane, and on the south at Onyx Street with a break between Del Amo Boulevard and Spencer Street.

Fashion Way is a four-lane undivided roadway trending in an east-west direction. Fashion Way provides access to the Del Amo Fashion Center. On-street parking is prohibited on Fashion Way.

Fern Avenue is a two-lane undivided discontinuous roadway trending in a north-south direction. On-street parking is permitted on Fern Avenue. Fern Avenue terminates on the north at Torrance Boulevard and on the south at Monterey Street.

Freeman Avenue is a two-lane undivided roadway trending in a north-south direction. On-street parking is permitted on Freeman Avenue. Freeman Avenue terminates on the south at Redondo Beach Boulevard.

Garnier Street is a two-lane undivided roadway trending in a north-south direction. On-street parking is permitted on Garnier Street. Garnier Street terminates on the north at Lomita Boulevard and on the south at Skypark Drive.

Gramercy Place is a two-lane undivided roadway trending in a north-south direction. On-street parking is permitted on Gramercy Place.

Halison Street is a two-lane undivided roadway trending in an east-west direction. On-street parking is permitted on Halison Street west of Hawthorne Boulevard (SR-107).

Hawthorne Boulevard (SR-107) is an eight-lane divided roadway with a raised median trending in a north-south direction. On-street parking is prohibited on Hawthorne Boulevard (SR-107). Hawthorne Boulevard (SR-107) provides access to the Del Amo Fashion Center and residential areas from Interstate 405. On-street parking is permitted south of Skypark Drive.

Henrietta Street is a two-lane undivided roadway trending in a north-south direction. On-street parking is permitted on Henrietta Street. Henrietta Street terminates on the north at Del Amo Boulevard and on the south at Torrance Boulevard.

Hickory Street is a two-lane undivided discontinuous roadway trending in a north-south direction. On-street parking is permitted on Hickory Street.

Inglewood Avenue is a four-lane undivided roadway trending in a north-south direction. On-street parking is prohibited on Inglewood Avenue. Inglewood Avenue transitions to a two-lane undivided roadway south of 190th Street. On-street parking permitted south of 190th Street.

Jefferson Street is a two-lane undivided roadway trending in an east-west direction. On-street parking is prohibited on Jefferson Street. Jefferson Street terminates on the west at Crenshaw Boulevard.

Juniper Avenue is a two-lane undivided discontinuous roadway trending in a north-south direction. On-street parking is permitted on Juniper Avenue. Juniper Avenue terminates on the north at 226th Street and on the south at 235th Street.

Lenore Street is a two-lane undivided roadway trending in an east-west direction. On-street parking is permitted on Lenore Street.



Crenshaw Boulevard at Lomita Boulevard

Lomita Boulevard is a four-lane divided roadway with a continuous left-turn lane trending in an east-west direction. On-street parking is prohibited on Lomita Boulevard. On-street parking is permitted on Lomita Boulevard east of Crenshaw Boulevard. Lomita Boulevard terminates on the west at Anza Avenue.

Madison Street is a two-lane undivided roadway trending in a north-south direction. On-street parking is permitted on Madison Avenue. Madison Street terminates on the north at Sepulveda Boulevard and on the south at Lomita Boulevard.

Madrona Avenue is a six-lane divided roadway with a raised median trending in a north-south direction. Madrona Avenue transitions to a four-lane divided roadway with a raised median south of Carson Street. On-street parking is prohibited on Madrona Avenue. Madrona Avenue terminates on the north at Del Amo Boulevard where it changes name to Prairie Avenue.

Maple Avenue is a four-lane divided roadway with a continuous left-turn lane trending in a north-south direction. On-street parking is prohibited on Maple Avenue. Maple Avenue is a two-lane divided roadway with a continuous left-turn lane south of Carson Avenue, and a two-lane undivided roadway north of Carson Street. Maple Avenue transitions to a three-lane undivided roadway north of Torrance Avenue.

Maricopa Street is a four-lane undivided discontinuous roadway trending in an east-west direction. On-street parking is permitted on the south side of the Maricopa Street west of Hawthorne Boulevard (SR-107). Maricopa Street transitions to a two-lane undivided roadway east of Hawthorne Boulevard (SR-107). On-street parking is permitted on Maricopa Street east of Hawthorne Boulevard (SR-107).

Meyer Lane is a two-lane undivided roadway trending in a north-south direction. On-street parking is permitted on Meyer Lane. Meyer Lane terminates on the south at 190th Street where it changes name to Entradero Avenue.

Nadine Circle is a two-lane undivided roadway that trends in a semi-circular shape west of Maple Avenue. On-street parking is permitted on Nadine Circle. Nadine Circle terminates at both ends on the east at Maple Avenue.

Newton Street is a two-lane undivided roadway trending in an east-west direction. Newton Street terminates on the west at Calle Mayor and on the east at Pacific Coast Highway (SR-1). On-street parking is permitted on Newton Street.

Ocean Avenue is a two-lane undivided roadway trending in a north-south direction. On-street parking is prohibited on Ocean Avenue.

Osage Avenue is a two-lane undivided discontinuous roadway trending in a north-south direction. On-street parking is permitted on Osage Avenue. Osage Avenue terminates on the north at Redondo Beach Boulevard.



Palos Verdes Boulevard at Pacific Coast Highway (SR-1)

Pacific Coast Highway (SR-1) is a six-lane divided roadway trending in an east-west direction. Pacific Coast Highway (SR-1) transitions from a six-lane divided roadway with a continuous left-turn lane to a six-lane roadway divided with a raised median between Crenshaw Boulevard and Hawthorne Boulevard (SR-107). On-street parking is prohibited on Pacific Coast Highway (SR-1).

Palos Verdes Boulevard is a four-lane divided roadway with a raised median trending in a north-south direction. Palos Verdes Boulevard transitions to a four-lane divided roadway with a continuous left-turn lane south of Pacific Coast Highway (SR-1). On-street parking is prohibited on Palos Verdes Boulevard. Palos Verdes Boulevard terminates on the north at Torrance Boulevard and on the south at Palos Verdes Boulevard N/Palos Verdes Boulevard W.

Park Del Amo is a four-lane divided roadway with a raised median trending in an east-west direction. Parking is prohibited on Park Del Amo. Park Del Amo terminates on the east at Crenshaw Boulevard.

Plaza Del Amo is a two-lane undivided roadway trending in an east-west direction. Plaza Del Amo transitions to a four-lane divided roadway with a continuous left-turn lane west of Del Amo Circle East. Parking is prohibited on Del Amo Circle East. On-street parking is prohibited on Plaza Del Amo. Plaza Del Amo is blocked off west of Western Avenue (SR-213) prohibiting through traffic.

Plaza Lane is a four-lane undivided roadway trending in a north-south direction. Plaza Lane provides access to Little Company of Mary Hospital Plaza. Plaza Lane terminates on the south at Torrance Boulevard.

Prairie Avenue varies from a four-lane divided roadway with a continuous left-turn lane and a raised median to a six-lane divided roadway with a raised median trending in a north-south direction. On-street parking is permitted on the east side of Prairie Avenue north of 182nd Street. Prairie Avenue terminates on the south at Del Amo Boulevard where it changes name to Madrona Avenue.

Prospect Avenue is a four-lane undivided roadway trending in a north-south direction. On-street parking is permitted on Prospect Avenue.

Redondo Beach Boulevard is a four-lane divided roadway with a continuous left-turn lane trending in an east-west direction. Redondo Beach Boulevard transitions to a four-lane undivided roadway west of Hawthorne Boulevard (SR-107) and terminates on the west at Artesia Boulevard. On-street parking is permitted on the north side of Redondo Beach Boulevard west of Van Ness Avenue.

Robinson Way is a four-lane undivided roadway trending in a north-south direction. On-street parking is permitted on Robinson Way on the east side of the roadway. Robinson Way terminates on the south at Pacific Coast Highway (SR-1).

Rolling Hills Road is a four-lane divided roadway with a raised median trending in an east-west direction and transitions to a four-lane divided roadway trending in a north-south direction east of Crenshaw Boulevard. On-street parking is prohibited on Rolling Hills Road. Rolling Hills Road terminates on the west at Hawthorne Boulevard (SR-107) and on the south at Palos Verdes Drive North.

Rolling Hills Way is a two-lane divided roadway with a continuous left-turn lane trending in a north-south direction. On-street parking is permitted on Rolling Hills Way. Rolling Hills Way transitions to a two-lane undivided roadway with on-street parking prohibited.

Sartori Avenue is a two-lane divided roadway with a raised median trending in a north-south direction. On-street parking is permitted on Sartori Avenue.

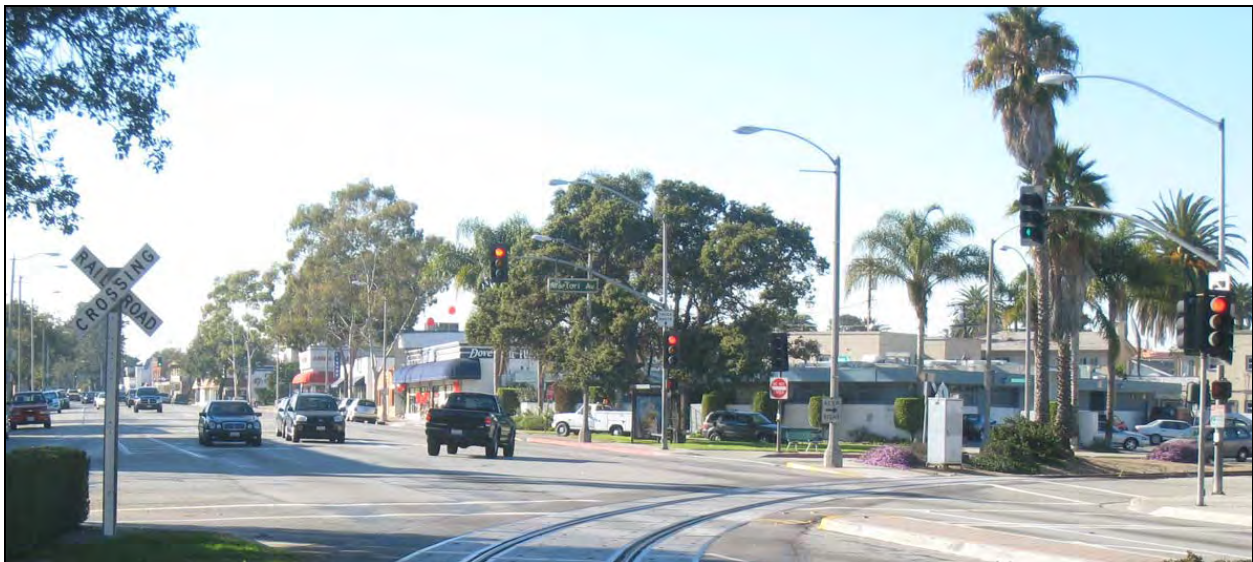
Scroc Avenue is a two-lane undivided roadway trending in an east-west direction. On-street parking is prohibited on Scroc Avenue. Scroc Avenue terminates on the west at Crenshaw Boulevard.

Sepulveda Boulevard is a six-lane divided roadway with a continuous left-turn lane trending in an east-west direction. On-street parking is prohibited on Sepulveda Boulevard. Sepulveda Boulevard terminates on the west at Palos Verdes Boulevard.

Skypark Drive is a four-lane divided roadway with a continuous left-turn lane trending in an east-west direction. On-street parking is prohibited on Skypark Drive.

Spencer Street is a two-lane undivided roadway trending in an east-west direction. On-street parking is permitted on the south side of Spencer Street. Spencer Street terminates on the west at Henrietta Street and on the east at Madrona Avenue.

Talisman Street is a two-lane undivided roadway trending in an east-west direction and transitions to trending in a north-south direction. On-street parking is permitted on Talisman Street. Talisman Street terminates on the west at Hawthorne Boulevard (SR-107) and on the south at Del Amo Boulevard.



Torrance Boulevard at Sartori Avenue

Torrance Boulevard is a six-lane divided roadway with a continuous left-turn lane trending in an east-west direction. On-street parking is prohibited on Torrance Boulevard east of Anza Avenue and west of Henrietta Street. Torrance Boulevard transitions to a four-lane divided roadway with a painted median east of Prairie Avenue. On-street parking is prohibited on Torrance Boulevard east of Prairie Avenue.

Van Ness Avenue is a four-lane undivided roadway trending in a north-south direction. On-street parking is permitted on Van Ness Avenue. Van Ness terminates on the south at Torrance Boulevard.

Via Valmonte Street is a two-lane undivided roadway trending in an east-west direction. Via Valmonte Street terminates on the east at Hawthorne Boulevard (SR-107) and on the west at Paseo Del Campo. On-street parking is prohibited on Via Valmonte Street.

Victor Street is a two-lane undivided roadway trending in a north-south direction. On-street parking is permitted on Victor Street. Victor Street terminates on the north at Del Amo Boulevard and on the south at Torrance Boulevard.



Village Lane

Village Lane is a two-lane undivided roadway trending in an east-west direction and transitions to a north-south direction. Village Lane terminates on the east at Hawthorne Boulevard (SR-107) and on the north at Maricopa Street. On-street parking is prohibited on Village Lane.

Vista Del Parque is a two-lane undivided roadway trending in a north-south direction. On-street parking is permitted on Vista Del Parque. Vista Del Parque terminates on the north at Pacific Coast Highway (SR-1).

Washington Avenue is a two-lane undivided roadway trending in an east-west direction. On-street parking is permitted on Washington Avenue.

Western Avenue (SR-213) is a four-lane divided roadway with a continuous left-turn lane trending in a north-south direction. Western Avenue (SR-213) transitions to a six-lane divided roadway with a continuous left-turn lane between 182nd Street and 190th Street; on-street parking is prohibited. Western Avenue (SR-213) transitions to a five-lane divided roadway with a raised median between Del Amo Boulevard and Carson Street; on-street parking is permitted on the east side of Western Avenue (SR-213) between Del Amo Boulevard and Carson Street. Western Avenue (SR-213) transitions to a four-lane divided roadway with a raised median south of Carson Street; on-street parking is permitted.

Yukon Avenue is a two lane undivided roadway trending in a north-south direction. On-street parking is prohibited on Yukon Avenue. Yukon Avenue terminates on the north at Redondo Beach Boulevard and on the south at 190th Street.

EXISTING TRAFFIC VOLUMES

Existing Conditions Peak Hour Traffic Volumes

As discussed in the first part of this chapter, in order to analyze existing operation of the study intersections, weekday a.m. peak hour, weekday mid-day peak hour, and weekday p.m. peak hour intersection movement counts were collected on a typical weekday (Tuesday, Wednesday, or Thursday). Additionally, weekend mid-day peak hour intersection movement counts were collected on a weekend-day (Saturday or Sunday). The intersection movement counts were collected in March 2005 through May 2005 during the following time periods:

- Weekday a.m. peak period intersection counts were taken from 7:00 a.m. to 9:00 a.m.;
- Weekday mid-day peak period intersection counts were taken from 11:00 a.m. to 1:00 p.m.;
- Weekday p.m. peak period intersection counts were taken from 4:00 p.m. to 6:00 p.m.; and
- Weekend mid-day peak period intersection counts were taken from 11:00 a.m. to 1:00 p.m.

The counts used in this analysis were taken from the highest one hour within the peak period counted.

Detailed peak hour traffic count data is bound under separate cover (City of Torrance Citywide Traffic Study Existing 2005 Intersection Data, RBF Consulting). Detailed roadway segment count data is bound under separate cover (*City of Torrance Citywide Traffic Study Existing 2005 Roadway Segment Data*, RBF Consulting).

As previously noted in Chapter 1, for purposes of this traffic analysis, deficient intersection operation is defined by the City of Torrance as an intersection operating at LOS E or F.

EXISTING CONDITIONS PEAK HOUR LEVEL OF SERVICE – HCM METHODOLOGY

Table 2-1 summarizes existing conditions weekday a.m. peak hour, mid-day peak hour, p.m. peak hour, and weekend mid-day peak hour LOS of the 166 study intersections utilizing the HCM analysis methodology, which is based on corresponding ranges of stopped delay experienced per vehicle; detailed LOS analysis sheets are contained in Appendix A.

Table 2-1
Existing Peak Hour LOS – HCM Methodology
Existing Conditions Weekday AM, Mid-Day, PM, and Weekend Mid-Day Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	Abalone Ave/Carson St (Area 5)	3.5	A	5.2	A	6.1	A	2.2	A
2	Aero Way/Pacific Coast Hwy (SR-1) (Area 10)	1.6	A	2.9	A	6.6	A	3.0	A
3	Ainsworth Ave/Redondo Beach Blvd (Area 1)	6.4	A	3.8	A	3.3	A	4.9	A
4	Airport Dr/Pacific Coast Hwy (SR-1) (Area 10)	3.5	A	12.0	B	9.8	A	8.1	A
5	Amie Ave/Torrance Blvd (Area 4)	10.0	B	10.8	B	11.9	B	11.8	B
6	Amie Ave-Freeman Ave/Redondo Beach Blvd (Area 1)	8.4	A	6.8	A	7.0	A	7.1	A
7	Anza Ave/190 th St (Area 3)	27.7	C	27.0	C	26.0	C	25.8	C
8	Anza Ave/Halison St (Area 3)	9.0	A	3.7	A	4.2	A	3.4	A
9	Anza Ave/Del Amo Blvd (Area 3)	37.5	D	33.1	C	35.4	D	32.4	C
10	Anza Ave/Spencer St (Area 3)	7.0	A	7.3	A	7.7	A	5.7	A
11	Anza Ave/Emerald St (Area 3)	8.3	A	8.7	A	6.7	A	4.4	A
12	Anza Ave/Torrance Blvd (Area 6)	36.3	D	39.7	D	40.4	D	41.7	D
13	Anza Ave/Lenore St (Area 6)	6.8	A	3.0	A	5.1	A	3.2	A
14	Anza Ave/Carson St (Area 6)	24.4	C	25.4	C	28.2	C	22.7	C
15	Anza Ave/Sepulveda Blvd (Area 6)	48.7	D	41.0	D	54.8	D	44.4	D
16	Anza Ave/226 th St (Area 9)	5.8	A	2.3	A	3.9	A	2.5	A
17	Anza Ave/Lomita Blvd (Area 9)	26.2	C	23.2	C	25.6	C	23.1	C
18	Anza Ave/Calle Mayor (Area 9)	20.7	C	14.2	B	14.8	B	14.0	B
19	Anza Ave/Pacific Coast Hwy (SR-1) (Area 9)	27.7	C	25.2	C	28.1	C	28.5	C
20	Arlington Ave/Torrance Blvd (Area 5)	8.4	A	6.5	A	14.1	B	4.6	A

Note: Delay shown in seconds per vehicle.

Table 2-1 (Cont.)
Existing Peak Hour LOS – HCM Methodology
Existing Conditions Weekday AM, Mid-Day, PM, and Weekend Mid-Day Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
21	Arlington Ave/Carson St (Area 5)	10.9	B	9.8	A	10.0	B	10.4	B
22	Arlington Ave/Plaza Del Amo-Washington Ave (Area 8)	35.7	D	29.3	C	32.4	C	30.5	C
23	Arlington Ave/Sepulveda Blvd (Area 8)	31.0	C	25.8	C	28.5	C	23.4	C
24	Arlington Ave/231 st St (Area 8)	2.8	A	3.4	A	6.9	A	3.7	A
25	Arlington Ave/235 th St (Area 8)	16.6	B	12.9	B	15.6	B	12.8	B
26	Cabrillo Ave/Carson St (Area 5)	12.6	B	17.8	B	19.0	B	14.2	B
27	Cabrillo Ave/Sepulveda Blvd (Area 8)	21.4	C	10.8	B	13.8	B	12.5	B
28	Cabrillo Ave-Van Ness Ave/Torrance Blvd (Area 5)	22.6	C	24.0	C	22.3	C	13.1	B
29	Calle Mayor/Pacific Coast Hwy (SR-1) (Area 9)	30.1	C	26.0	C	30.4	C	25.5	C
30	Carlow Road/Calle Mayor (Area 9)	7.0	A	3.9	A	5.4	A	7.1	A
31	Casimir Ave/Artesia Blvd (Area 2)	10.3	B	4.0	A	4.5	A	4.4	A
32	Cota Ave/Torrance Blvd (Area 5)	2.8	A	2.0	A	2.0	A	4.6	A
33	Crenshaw Blvd/Redondo Beach Blvd (Area 2)	38.2	D	37.2	D	38.2	D	39.6	D
34	Crenshaw Blvd/16 th St-Cherry Ave (Area 2)	9.3	A	8.1	A	7.8	A	5.8	A
35	Crenshaw Blvd/Artesia Blvd (Area 2)	40.0	D	31.0	C	38.0	D	37.7	D
36	Crenshaw Blvd/182 nd St (Area 2)	33.6	C	27.8	C	31.7	C	29.4	C
37	Crenshaw Blvd/190 th St (Area 4)	39.7	D	33.6	C	49.4	D	36.7	D
38	Crenshaw Blvd/Del Amo Blvd (Area 4)	9.3	A	11.4	B	11.3	B	5.6	A
39	Crenshaw Blvd/208 th St (Area 4)	0.9	A	1.8	A	2.7	A	1.7	A
40	Crenshaw Blvd/Maricopa St (Area 4)	13.9	B	9.6	A	15.7	B	11.6	B
41	Crenshaw Blvd/Torrance Blvd (Area 4)	33.2	C	34.6	C	38.0	D	30.5	C
42	Crenshaw Blvd/El Dorado St (Area 7)	3.7	A	1.3	A	4.0	A	2.3	A

Note: Delay shown in seconds per vehicle.

Table 2-1 (Cont.)
Existing Peak Hour LOS – HCM Methodology
Existing Conditions Weekday AM, Mid-Day, PM, and Weekend Mid-Day Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
43	Crenshaw Blvd/Carson St (Area 7)	33.3	C	32.1	C	39.3	D	35.3	D
44	Crenshaw Blvd/Jefferson St (Area 7)	3.5	A	3.8	A	4.7	A	10.6	B
45	Crenshaw Blvd/Plaza Del Amo (Area 7)	10.5	B	8.4	A	10.8	B	8.7	A
46	Crenshaw Blvd/Park Del Amo-Scroc Ave (Area 7)	1.4	A	3.5	A	6.4	A	2.0	A
47	Crenshaw Blvd/Sepulveda Blvd (Area 8)	39.6	D	40.2	D	39.2	D	32.3	C
48	Crenshaw Blvd/235 th St (Area 8)	19.5	B	19.1	B	20.2	C	20.4	C
49	Crenshaw Blvd/237 th St (Area 8)	11.1	B	8.6	A	15.7	B	5.2	A
50	Crenshaw Blvd/Lomita Blvd (Area 8)	40.1	D	40.6	D	77.1	E	34.9	D
51	Crenshaw Blvd/Torrance Crossroads (Area 8)	5.3	A	11.4	B	11.2	B	8.3	A
52	Crenshaw Blvd/Skypark Dr-Amsler St (Area 8)	22.8	C	27.3	C	24.9	C	87.7	F
53	Crenshaw Blvd/Airport Dr (Area 10)	12.3	B	25.8	C	26.2	C	33.7	C
54	Crenshaw Blvd/Pacific Coast Hwy (SR-1) (Area 10)	52.0	D	43.7	D	104.3	F	69.8	E
55	Crenshaw Blvd/Crest Road (Area 10)	7.7	A	4.8	A	3.9	A	4.2	A
56	Crenshaw Blvd/Rolling Hills Road (Area 10)	23.1	C	24.8	C	25.0	C	22.3	C
57	Del Amo Circle/Carson St (Area 7)	3.1	A	26.4	C	25.3	C	28.4	C
58	Del Amo Circle East/Carson St (Area 7)	3.9	A	12.4	B	9.3	A	12.5	B
59	Del Amo Circle East/Sepulveda Blvd (Area 7)	22.5	C	25.9	C	29.0	C	28.2	C
60	Denny Rd-Robinson Ave/Pacific Coast Hwy (SR-1) (Area 10)	7.7	A	8.4	A	9.3	A	8.9	A
61	Doty Ave/182 nd St (Area 1)	7.3	A	5.2	A	2.6	A	4.8	A
62	Early Ave/Lomita Blvd (Area 10)	16.2	B	24.0	C	24.1	C	4.7	A
63	El Prado Ave/Carson St (Area 5)	4.4	A	0.8	A	0.8	A	1.3	A

Note: Delay shown in seconds per vehicle; Deficient intersection operation shown in **bold italics**.

Table 2-1 (Cont.)
Existing Peak Hour LOS – HCM Methodology
Existing Conditions Weekday AM, Mid-Day, PM, and Weekend Mid-Day Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
64	Entradero Ave/Del Amo Blvd (Area 3)	9.4	A	6.3	A	6.7	A	6.8	A
65	Entradero Ave-Meyer Lane/190 th St (Area 3)	13.1	B	7.3	A	8.0	A	8.2	A
66	Fern Ave/Torrance Blvd (Area 4)	1.9	A	0.6	A	2.8	A	0.5	A
67	Garnier St/Lomita Blvd (Area 10)	1.1	A	5.7	A	4.6	A	7.1	A
68	Gramercy Place/190 th St (Area 2)	7.1	A	10.6	B	10.7	B	1.5	A
69	Hawthorne Blvd (SR-107)/Redondo Beach Blvd (Area 1)	30.6	C	33.5	C	38.0	D	31.0	C
70	Hawthorne Blvd (SR-107)/Artesia Blvd (Area 1)	31.2	C	32.1	C	33.6	C	33.9	C
71	Hawthorne Blvd (SR-107)/177 th St (Area 1)	4.1	A	17.0	B	15.8	B	22.1	C
72	Hawthorne Blvd (SR-107)/182 nd St (Area 1)	17.7	B	21.9	C	28.5	C	7.8	A
73	Hawthorne Blvd (SR-107)/186 th St (Area 1)	6.1	A	8.2	A	8.3	A	5.3	A
74	Hawthorne Blvd (SR-107)/190 th St (Area 3)	34.4	C	33.6	C	36.5	D	35.9	D
75	Hawthorne Blvd (SR-107)/Talisman St (Area 3)	4.4	A	17.9	B	12.8	B	17.9	B
76	Hawthorne Blvd (SR-107)/Halison St (Area 3)	5.4	A	16.4	B	13.1	B	16.1	B
77	Hawthorne Blvd (SR-107)/Del Amo Blvd (Area 3)	33.2	C	28.2	C	32.6	C	25.9	C
78	Hawthorne Blvd (SR-107)/Spencer St (Area 3)	15.4	B	12.9	B	14.3	B	8.5	A
79	Hawthorne Blvd (SR-107)/Emerald St (Area 3)	16.7	B	14.1	B	15.4	B	16.5	B
80	Hawthorne Blvd (SR-107)/Torrance Blvd (Area 6)	37.4	D	39.4	D	43.7	D	48.3	D
81	Hawthorne Blvd (SR-107)/Village Lane-Fashion Way (Area 6)	8.0	A	15.0	B	14.3	B	12.3	B
82	Hawthorne Blvd (SR-107)/Del Amo Circle-Del Amo Circle N (Area 6)	5.6	A	14.0	B	12.2	B	11.5	B
83	Hawthorne Blvd (SR-107)/Carson St (Area 6)	30.3	C	35.5	D	44.3	D	35.2	D
84	Hawthorne Blvd (SR-107)/Center Way (Area 6)	3.4	A	15.8	B	11.7	B	16.3	B
85	Hawthorne Blvd (SR-107)/Sepulveda Blvd (Area 6)	39.4	D	40.3	D	50.4	D	67.4	E

Note: Delay shown in seconds per vehicle; Deficient intersection operation shown in **bold italics**.

Table 2-1 (Cont.)
Existing Peak Hour LOS – HCM Methodology
Existing Conditions Weekday AM, Mid-Day, PM, and Weekend Mid-Day Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
86	Hawthorne Blvd (SR-107)/230 th St (Area 9)	13.8	B	22.7	C	17.6	B	14.6	B
87	Hawthorne Blvd (SR-107)/Lomita Blvd (Area 9)	40.1	D	43.5	D	48.5	D	42.1	D
88	Hawthorne Blvd (SR-107)/Skypark Dr (Area 9)	19.3	B	25.7	C	26.6	C	22.9	C
89	Hawthorne Blvd (SR-107)/Pacific Coast Hwy (SR-1) (Area 9)	43.3	D	43.4	D	44.5	D	51.9	D
90	Hawthorne Blvd (SR-107)/244 th St (Area 10)	1.9	A	3.2	A	2.2	A	2.6	A
91	Hawthorne Blvd (SR-107)/Newton St (Area 10)	7.7	A	6.0	A	4.6	A	11.5	B
92	Hawthorne Blvd (SR-107)/Via Valmonte St (Area 10)	7.4	A	8.2	A	6.3	A	7.6	A
93	Hawthorne Blvd (SR-107)/Rolling Hills Road (Area 10)	15.0	B	13.9	B	15.4	B	15.5	B
94	Henrietta St/Del Amo Blvd (Area 3)	11.8	B	7.1	A	7.8	A	9.0	A
95	Henrietta St/Torrance Blvd (Area 6)	7.7	A	3.9	A	4.6	A	4.1	A
96	Hickory St/Torrance Blvd (Area 4)	4.8	A	2.6	A	4.8	A	3.3	A
97	Hickory St/Sepulveda Blvd (Area 7)	27.0	B	24.0	C	22.7	C	24.0	C
98	I-405 SB Off-Ramp-Osage Ave/Redondo Beach Blvd (Area 1)	16.0	B	17.3	B	18.7	B	17.6	B
99	I-405 NB Ramps/Artesia Blvd (Area 1)	12.3	B	17.1	B	18.3	B	17.5	B
100	I-405 NB Ramps/182 nd St (Area 2)	17.2	B	17.6	B	19.7	B	17.8	B
101	I-405 SB Ramps/Crenshaw Blvd (Area 2)	25.1	C	19.8	B	23.4	C	18.4	B
102	I-405 NB Ramps/Western Ave (SR-213) (Area 2)	20.4	C	16.6	B	14.7	B	17.1	B
103	I-405 SB Ramps/190 th St (Area 2)	36.6	D	28.2	C	33.5	C	26.0	C
104	Inglewood Ave/190 th St (Area 3)	32.5	C	79.0	E	32.0	C	56.6	E
105	Juniper Ave/235 th St (Area 10)	4.3	A	3.1	A	4.3	A	3.3	A
106	Madison Ave/Sepulveda Blvd (Area 7)	9.3	A	9.5	A	8.4	A	6.2	A
107	Madison St/Skypark Dr (Area 10)	14.8	B	15.1	B	15.5	B	12.7	B

Note: Delay shown in seconds per vehicle; Deficient intersection operation shown in **bold italics**.

Table 2-1 (Cont.)
Existing Peak Hour LOS – HCM Methodology
Existing Conditions Weekday AM, Mid-Day, PM, and Weekend Mid-Day Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
108	Madison St/Pacific Coast Hwy (SR-1) (Area 10)	15.8	B	17.2	B	18.2	B	13.4	B
109	Madrona Ave/Spencer St (Area 4)	8.7	A	6.8	A	6.6	A	4.2	A
110	Madrona Ave/Emerald St (Area 4)	10.7	B	9.7	A	8.9	A	8.1	A
111	Madrona Ave/Torrance Blvd (Area 4)	31.5	C	34.5	C	35.9	D	35.8	D
112	Madrona Ave/Fashion Way (Area 7)	7.4	A	7.9	A	7.4	A	11.6	B
113	Madrona Ave/Carson St (Area 7)	25.7	C	26.5	C	26.9	C	28.0	C
114	Madrona Ave/Plaza Del Amo (Area 7)	20.1	C	19.8	B	14.4	B	18.3	B
115	Madrona Ave/Sepulveda Blvd (Area 7)	26.4	C	26.8	C	30.2	C	28.6	C
116	Maple Ave/Maricopa St (Area 4)	18.1	B	19.0	B	18.5	B	13.0	B
117	Maple Ave/Torrance Blvd (Area 4)	17.4	B	17.8	B	17.1	B	13.5	B
118	Maple Ave/Carson St (Area 7)	20.9	C	16.7	B	20.2	C	14.1	B
119	Maple Ave/Plaza Del Amo (Area 7)	10.3	B	13.1	B	14.1	B	13.1	B
120	Maple Ave/Sepulveda Blvd (Area 7)	26.6	C	23.0	C	27.2	C	25.6	C
121	Maple Ave/226 th St-Nadine Circle (Area 7)	10.3	B	4.9	A	7.3	A	7.8	A
122	Maple Ave/Nadine Circle (Area 10)	4.8	A	5.7	A	7.8	A	5.4	A
123	Mobile Oil Entrance/190 th St (Area 4)	2.6	A	2.2	A	4.7	A	1.1	A
124	Ocean Ave/Sepulveda Blvd (Area 6)	12.9	B	16.9	B	13.9	B	15.7	B
125	Ocean Ave/Lomita Blvd (Area 9)	14.5	B	13.2	B	12.3	B	11.9	B
126	Palos Verdes Blvd/Torrance Blvd (Area 6)	22.0	C	18.4	B	22.5	C	17.3	B
127	Palos Verdes Blvd/Sepulveda Blvd (Area 6)	22.9	C	21.2	C	21.7	C	20.3	C
128	Palos Verdes Blvd/Pacific Coast Hwy (SR-1) (Area 9)	35.7	D	35.3	D	39.4	D	36.1	D
129	Palos Verdes Blvd/Catalina-Camino Del Campo (Area 9)	8.3	A	12.6	B	14.8	B	15.2	B

Note: Delay shown in seconds per vehicle.

Table 2-1 (Cont.)
Existing Peak Hour LOS – HCM Methodology
Existing Conditions Weekday AM, Mid-Day, PM, and Weekend Mid-Day Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
130	Palos Verdes Blvd/Calle Miramar (Area 9)	8.5	A	6.3	A	6.4	A	7.5	A
131	Palos Verdes Blvd/Calle Mayor (Area 9)	7.4	A	6.9	A	6.4	A	7.4	A
132	Plaza Del Amo/Carson St (Area 5)	19.2	B	9.9	A	12.7	B	11.1	B
133	Prairie Ave/Redondo Beach Blvd (Area 1)	46.4	D	42.1	D	60.0	E	38.8	D
134	Prairie Ave/Artesia Blvd (Area 1)	36.4	D	34.4	C	36.1	D	39.4	D
135	Prairie Ave/182 nd St (Area 1)	32.7	C	26.1	C	31.2	C	28.2	C
136	Prairie Ave/190 th St (Area 4)	38.3	D	34.9	C	40.2	C	34.3	C
137	Prairie Ave/Del Amo Blvd (Area 4)	30.8	C	30.0	C	35.7	D	25.5	C
138	Prospect Ave/Torrance Blvd (Area 6)	31.2	C	27.3	C	29.8	C	21.7	C
139	Prospect Ave-Vista Del Parque/Pacific Coast Hwy (SR-1) (Area 9)	15.3	B	14.5	B	14.3	B	14.1	B
140	Rolling Hills Way/Pacific Coast Hwy (SR-1) (Area 10)	8.0	A	8.7	A	10.9	B	9.4	A
141	Sartori Ave/Torrance Blvd (Area 5)	4.4	A	6.6	A	4.7	A	3.4	A
142	Van Ness Ave/Redondo Beach Blvd (Area 2)	30.2	C	30.3	C	33.5	C	30.6	C
143	Van Ness Ave/166 th St (Area 2)	16.1	B	13.6	B	13.8	B	15.0	B
144	Van Ness Ave/Artesia Blvd (Area 2)	24.5	C	25.6	C	28.6	C	23.5	C
145	Van Ness Ave/182 nd St (Area 2)	15.6	B	14.7	B	16.1	B	14.8	B
146	Van Ness Ave/190 th St (Area 5)	27.8	C	27.4	C	28.2	C	22.5	C
147	Van Ness Ave/195 th St (Area 5)	1.7	A	3.6	A	7.1	A	0.4	A
148	Van Ness Ave/Del Amo Blvd (Area 5)	24.3	C	24.4	C	14.6	B	16.0	B
149	Van Ness Ave/Dominguez St (Area 5)	3.8	A	10.3	B	14.4	B	5.3	A
150	Victor St/Del Amo Blvd (Area 3)	11.5	B	7.9	A	7.7	A	7.2	A
151	Victor St/Torrance Blvd (Area 6)	5.2	A	3.1	A	4.3	A	2.5	A

Note: Delay shown in seconds per vehicle; Deficient intersection operation shown in **bold italics**.

Table 2-1 (Cont.)
Existing Peak Hour LOS – HCM Methodology
Existing Conditions Weekday AM, Mid-Day, PM, and Weekend Mid-Day Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
152	Village Lane/Torrance Blvd (Area 6)	11.6	B	17.7	B	14.7	B	23.1	C
153	Western Ave (SR-213)/Artesia Blvd (Area 2)	38.8	D	37.7	D	39.9	D	39.0	D
154	Western Ave (SR-213)/182 nd St (Area 2)	14.6	B	12.5	B	14.8	B	12.7	B
155	Western Ave (SR-213)/190 th St (Area 2)	35.0	D	34.0	C	35.1	D	29.2	C
156	Western Ave (SR-213)/195 th St (Area 5)	5.1	A	11.9	B	16.2	B	7.8	A
157	Western Ave (SR-213)/Del Amo Blvd (Area 5)	13.2	B	32.0	C	14.9	B	12.2	B
158	Western Ave (SR-213)/Torrance Blvd (Area 5)	19.1	B	27.1	C	24.7	C	24.8	C
159	Western Ave (SR-213)/213 th St (Area 5)	8.9	A	10.3	B	12.2	B	7.8	A
160	Western Ave (SR-213)/Carson St (Area 5)	21.3	C	20.0	C	20.2	C	20.3	C
161	Western Ave (SR-213)/220 th St (Area 8)	12.8	B	6.9	A	59.6	E	7.4	A
162	Western Ave (SR-213)/223 rd St (Area 8)	14.9	B	14.3	B	17.4	B	14.3	B
163	Western Ave (SR-213)/Sepulveda Blvd (Area 8)	45.5	D	45.8	D	62.3	E	41.3	D
164	Yukon Ave/Redondo Beach Blvd (Area 1)	7.4	A	5.0	A	5.8	A	5.6	A
165	Yukon Ave/Artesia Blvd (Area 1)	18.4	B	14.4	B	18.4	B	15.1	B
166	Yukon Ave/182 nd St (Area 1)	12.6	B	12.3	B	13.1	B	13.4	B

Note: Delay shown in seconds per vehicle; Deficient intersection operation shown in ***bold italics***.

DEFICIENT INTERSECTION OPERATION BASED ON *HCM* METHODOLOGY

As shown in Table 2-1, the following eight study intersections are currently operating at a deficient LOS (LOS E or worse) according to City of Torrance performance criteria based on *HCM* analysis methodology for weekday a.m. peak hour, weekday mid-day peak hour, weekday p.m. peak hour, and/or weekend mid-day peak hour:

50. Crenshaw Boulevard/Lomita Boulevard
(weekday p.m. peak hour only);
52. Crenshaw Boulevard/Skypark Drive-Amsler Street
(weekend mid-day peak hour only);
54. Crenshaw Boulevard/Pacific Coast Highway (SR-1)
(weekday p.m. and weekend mid-day peak hours);
85. Hawthorne Boulevard/Sepulveda Boulevard
(weekend mid-day peak hour only);
104. Inglewood Avenue/190th Street
(weekday mid-day and weekend mid-day peak hours);
133. Prairie Avenue/Redondo Beach Boulevard
(weekday p.m. peak hour only);
161. Western Avenue/220th Street
(weekday p.m. peak hour only); and
163. Western Avenue/Sepulveda Boulevard
(weekday p.m. peak hour only).



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EXISTING CONDITIONS PEAK HOUR LEVEL OF SERVICE – *ICU* METHODOLOGY

Table 2-2 summarizes existing conditions weekday a.m. peak hour, mid-day peak hour, p.m. peak hour, and weekend mid-day peak hour LOS of the study intersections utilizing the *ICU* analysis methodology, which is based on corresponding volume to capacity (V/C) ratios; detailed LOS analysis sheets are contained in Appendix B.

Table 2-2
Existing Peak Hour LOS – ICU Methodology
Existing Conditions Weekday AM, Mid-Day, PM, and Weekend Mid-Day Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
1	Abalone Ave/Carson St (Area 5)	0.43	A	0.48	A	0.52	A	0.42	A
2	Aero Way/Pacific Coast Hwy (SR-1) (Area 10)	0.42	A	0.38	A	0.44	A	0.46	A
3	Ainsworth Ave/Redondo Beach Blvd (Area 1)	0.55	A	0.43	A	0.58	A	0.45	A
4	Airport Dr/Pacific Coast Hwy (SR-1) (Area 10)	0.66	B	0.62	B	0.67	B	0.66	B
5	Amie Ave/Torrance Blvd (Area 4)	0.39	A	0.39	A	0.52	A	0.47	A
6	Amie Ave-Freeman Ave/Redondo Beach Blvd (Area 1)	0.40	A	0.39	A	0.48	A	0.42	A
7	Anza Ave/190 th St (Area 3)	0.84	D	0.83	D	0.79	C	0.79	C
8	Anza Ave/Halison St (Area 3)	0.46	A	0.37	A	0.35	A	0.38	A
9	Anza Ave/Del Amo Blvd (Area 3)	0.70	B	0.53	A	0.66	B	0.52	A
10	Anza Ave/Spencer St (Area 3)	0.45	A	0.39	A	0.55	A	0.42	A
11	Anza Ave/Emerald St (Area 3)	0.46	A	0.45	A	0.53	A	0.44	A
12	Anza Ave/Torrance Blvd (Area 6)	0.72	C	0.78	C	0.82	D	0.86	D
13	Anza Ave/Lenore St (Area 6)	0.48	A	0.43	A	0.48	A	0.46	A
14	Anza Ave/Carson St (Area 6)	0.66	B	0.68	B	0.78	C	0.68	B
15	Anza Ave/Sepulveda Blvd (Area 6)	0.99	E	0.83	D	1.05	F	0.96	E
16	Anza Ave/226 th St (Area 9)	0.44	A	0.31	A	0.47	A	0.40	A
17	Anza Ave/Lomita Blvd (Area 9)	0.77	C	0.53	A	0.70	B	0.63	B
18	Anza Ave/Calle Mayor (Area 9)	0.71	C	0.45	A	0.64	B	0.42	A
19	Anza Ave/Pacific Coast Hwy (SR-1) (Area 9)	0.77	C	0.67	B	0.78	C	0.78	C
20	Arlington Ave/Torrance Blvd (Area 5)	0.64	B	0.55	A	0.88	D	0.44	A
21	Arlington Ave/Carson St (Area 5)	0.63	B	0.54	A	0.70	B	0.56	A

Note: V/C = volume/capacity ratio; Deficient intersection operation shown in **bold italics**.

Table 2-2 (Cont.)
Existing Peak Hour LOS – ICU Methodology
Existing Conditions Weekday AM, Mid-Day, PM, and Weekend Mid-Day Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
22	Arlington Ave/Plaza Del Amo-Washington Ave (Area 8)	0.91	E	0.84	D	0.81	D	0.88	D
23	Arlington Ave/Sepulveda Blvd (Area 8)	0.86	D	0.70	B	0.83	D	0.63	B
24	Arlington Ave/231 st St (Area 8)	0.50	A	0.41	A	0.54	A	0.34	A
25	Arlington Ave/235 th St (Area 8)	0.74	C	0.46	A	0.70	B	0.40	A
26	Cabrillo Ave/Carson St (Area 5)	0.47	A	0.55	A	0.69	B	0.57	A
27	Cabrillo Ave/Sepulveda Blvd (Area 8)	0.78	C	0.50	A	0.58	A	0.49	A
28	Cabrillo Ave-Van Ness Ave/Torrance Blvd (Area 5)	0.77	C	0.65	B	0.78	C	0.42	A
29	Calle Mayor/Pacific Coast Hwy (SR-1) (Area 9)	0.73	C	0.62	B	0.81	D	0.73	C
30	Carlow Road/Calle Mayor (Area 9)	0.36	A	0.18	A	0.30	A	0.22	A
31	Casimir Ave/Artesia Blvd (Area 2)	0.57	A	0.36	A	0.54	A	0.38	A
32	Cota Ave/Torrance Blvd (Area 5)	0.51	A	0.47	A	0.55	A	0.47	A
33	Crenshaw Blvd/Redondo Beach Blvd (Area 2)	0.79	C	0.67	B	0.78	C	0.78	C
34	Crenshaw Blvd/16 th St-Cherry Ave (Area 2)	0.66	B	0.48	A	0.59	A	0.43	A
35	Crenshaw Blvd/Artesia Blvd (Area 2)	0.90	D	0.58	A	0.86	D	0.81	D
36	Crenshaw Blvd/182 nd St (Area 2)	0.93	E	0.80	C	0.92	E	0.73	C
37	Crenshaw Blvd/190 th St (Area 4)	0.98	E	0.74	C	1.07	F	0.80	C
38	Crenshaw Blvd/Del Amo Blvd (Area 4)	0.66	B	0.54	A	0.67	B	0.43	A
39	Crenshaw Blvd/208 th St (Area 4)	0.56	A	0.46	A	0.56	A	0.37	A
40	Crenshaw Blvd/Maricopa St (Area 4)	0.70	B	0.56	A	0.72	C	0.50	A
41	Crenshaw Blvd/Torrance Blvd (Area 4)	0.82	D	0.82	D	0.95	E	0.60	A
42	Crenshaw Blvd/El Dorado St (Area 7)	0.58	A	0.44	A	0.56	A	0.36	A
43	Crenshaw Blvd/Carson St (Area 7)	0.92	E	0.81	D	0.94	E	0.68	B

Note: V/C = volume/capacity ratio; Deficient intersection operation shown in **bold italics**.

Table 2-2 (Cont.)
Existing Peak Hour LOS – ICU Methodology
Existing Conditions Weekday AM, Mid-Day, PM, and Weekend Mid-Day Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
44	Crenshaw Blvd/Jefferson St (Area 7)	0.54	A	0.46	A	0.59	A	0.48	A
45	Crenshaw Blvd/Plaza Del Amo (Area 7)	0.53	A	0.54	A	0.65	B	0.45	A
46	Crenshaw Blvd/Park Del Amo-Scroc Ave (Area 7)	0.54	A	0.47	A	0.64	B	0.28	A
47	Crenshaw Blvd/Sepulveda Blvd (Area 8)	0.83	D	0.85	D	0.88	D	0.65	B
48	Crenshaw Blvd/235 th St (Area 8)	0.80	C	0.77	C	0.81	D	0.84	D
49	Crenshaw Blvd/237 th St (Area 8)	0.59	A	0.64	B	0.75	C	0.61	B
50	Crenshaw Blvd/Lomita Blvd (Area 8)	0.95	E	0.91	E	1.23	F	0.84	D
51	Crenshaw Blvd/Torrance Crossroads (Area 8)	0.40	A	0.55	A	0.63	B	0.64	B
52	Crenshaw Blvd/Skypark Dr-Amsler St (Area 8)	0.49	A	0.63	B	0.76	C	1.37	F
53	Crenshaw Blvd/Airport Dr (Area 10)	0.52	A	0.68	B	0.70	B	0.84	D
54	Crenshaw Blvd/Pacific Coast Hwy (SR-1) (Area 10)	1.12	F	0.94	E	1.31	F	1.15	F
55	Crenshaw Blvd/Crest Road (Area 10)	0.51	A	0.36	A	0.42	A	0.39	A
56	Crenshaw Blvd/Rolling Hills Road (Area 10)	0.69	B	0.61	B	0.69	B	0.61	B
57	Del Amo Circle/Carson St (Area 7)	0.31	A	0.64	B	0.63	B	0.71	C
58	Del Amo Circle East/Carson St (Area 7)	0.34	A	0.56	A	0.59	A	0.63	B
59	Del Amo Circle East/Sepulveda Blvd (Area 7)	0.74	C	0.75	C	0.90	D	0.86	D
60	Denny Rd-Robinson Ave/Pacific Coast Hwy (SR-1) (Area 10)	0.47	A	0.43	A	0.49	A	0.26	A
61	Doty Ave/182 nd St (Area 1)	0.42	A	0.26	A	0.38	A	0.54	A
62	Early Ave/Lomita Blvd (Area 10)	0.61	B	0.66	B	0.72	C	0.31	A
63	El Prado Ave/Carson St (Area 5)	0.59	A	0.43	A	0.57	A	0.39	A
64	Entradero Ave/Del Amo Blvd (Area 3)	0.40	A	0.24	A	0.36	A	0.43	A
65	Entradero Ave-Meyer Lane/190 th St (Area 3)	0.68	B	0.53	A	0.61	B	0.30	A
66	Fern Ave/Torrance Blvd (Area 4)	0.48	A	0.47	A	0.58	A	0.57	A

Note: V/C = volume/capacity ratio; Deficient intersection operation shown in **bold italics**.

Table 2-2 (Cont.)
Existing Peak Hour LOS – ICU Methodology
Existing Conditions Weekday AM, Mid-Day, PM, and Weekend Mid-Day Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
67	Garnier St/Lomita Blvd (Area 10)	0.56	A	0.60	A	0.62	B	0.44	A
68	Gramercy Place/190 th St (Area 2)	0.49	A	0.43	A	0.61	B	0.39	A
69	Hawthorne Blvd (SR-107)/Redondo Beach Blvd (Area 1)	0.89	D	0.72	C	0.87	D	0.29	A
70	Hawthorne Blvd (SR-107)/Artesia Blvd (Area 1)	0.84	D	0.69	B	0.80	C	0.68	B
71	Hawthorne Blvd (SR-107)/177 th St (Area 1)	0.60	A	0.57	A	0.62	B	0.78	C
72	Hawthorne Blvd (SR-107)/182 nd St (Area 1)	0.66	B	0.62	B	0.82	D	0.74	C
73	Hawthorne Blvd (SR-107)/186 th St (Area 1)	0.61	B	0.53	A	0.63	B	0.54	A
74	Hawthorne Blvd (SR-107)/190 th St (Area 3)	0.88	D	0.76	C	0.91	E	0.54	A
75	Hawthorne Blvd (SR-107)/Talisman St (Area 3)	0.54	A	0.77	C	0.68	B	0.83	D
76	Hawthorne Blvd (SR-107)/Harrison St (Area 3)	0.50	A	0.74	C	0.62	B	0.62	B
77	Hawthorne Blvd (SR-107)/Del Amo Blvd (Area 3)	0.77	C	0.69	B	0.80	C	0.61	B
78	Hawthorne Blvd (SR-107)/Spencer St (Area 3)	0.63	B	0.66	B	0.74	C	0.69	B
79	Hawthorne Blvd (SR-107)/Emerald St (Area 3)	0.70	B	0.61	B	0.69	B	0.55	A
80	Hawthorne Blvd (SR-107)/Torrance Blvd (Area 6)	0.77	C	0.80	C	0.97	E	0.96	E
81	Hawthorne Blvd (SR-107)/Village Lane-Fashion Way (Area 6)	0.52	A	0.64	B	0.71	C	1.06	F
82	Hawthorne Blvd (SR-107)/Del Amo Circle-Del Amo Circle N (Area 6)	0.51	A	0.70	B	0.71	C	0.57	A
83	Hawthorne Blvd (SR-107)/Carson St (Area 6)	0.70	B	0.84	D	1.02	F	0.58	A
84	Hawthorne Blvd (SR-107)/Center Way (Area 6)	0.45	A	0.71	C	0.58	A	0.94	E
85	Hawthorne Blvd (SR-107)/Sepulveda Blvd (Area 6)	0.88	D	0.97	E	1.13	F	0.77	C
86	Hawthorne Blvd (SR-107)/230 th St (Area 9)	0.67	B	0.88	D	0.86	D	1.22	F
87	Hawthorne Blvd (SR-107)/Lomita Blvd (Area 9)	0.94	E	0.97	E	1.05	F	0.73	C

Note: V/C = volume/capacity ratio; Deficient intersection operation shown in **bold italics**.

Table 2-2 (Cont.)
Existing Peak Hour LOS – ICU Methodology
Existing Conditions Weekday AM, Mid-Day, PM, and Weekend Mid-Day Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
88	Hawthorne Blvd (SR-107)/Skypark Dr (Area 9)	0.66	B	0.69	B	0.77	C	0.95	E
89	Hawthorne Blvd (SR-107)/Pacific Coast Hwy (SR-1) (Area 9)	0.93	E	0.88	D	0.92	E	0.68	B
90	Hawthorne Blvd (SR-107)/244 th St (Area 10)	0.48	A	0.38	A	0.50	A	1.03	F
91	Hawthorne Blvd (SR-107)/Newton St (Area 10)	0.54	A	0.44	A	0.51	A	0.38	A
92	Hawthorne Blvd (SR-107)/Via Valmonte St (Area 10)	0.53	A	0.47	A	0.60	A	0.53	A
93	Hawthorne Blvd (SR-107)/Rolling Hills Road (Area 10)	0.74	C	0.55	A	0.61	B	0.51	A
94	Henrietta St/Del Amo Blvd (Area 3)	0.51	A	0.28	A	0.36	A	0.55	A
95	Henrietta St/Torrance Blvd (Area 6)	0.47	A	0.43	A	0.46	A	0.32	A
96	Hickory St/Torrance Blvd (Area 4)	0.53	A	0.49	A	0.67	B	0.42	A
97	Hickory St/Sepulveda Blvd (Area 7)	0.81	D	0.76	C	0.78	C	0.37	A
98	I-405 SB Off-Ramp-Osage Ave/Redondo Beach Blvd (Area 1)	0.52	A	0.48	A	0.65	B	0.77	C
99	I-405 NB Ramps/Artesia Blvd (Area 1)	0.55	A	0.49	A	0.62	B	0.55	A
100	I-405 NB Ramps/182 nd St (Area 2)	0.74	C	0.67	B	0.85	D	0.49	A
101	I-405 SB Ramps/Crenshaw Blvd (Area 2)	0.99	E	0.80	C	0.94	E	0.57	A
102	I-405 NB Ramps/Western Ave (SR-213) (Area 2)	0.74	C	0.64	B	0.76	C	0.50	A
103	I-405 SB Ramps/190 th St (Area 2)	0.89	D	0.63	B	0.93	E	0.61	B
104	Inglewood Ave/190 th St (Area 3)	0.94	E	1.22	F	0.91	E	0.71	C
105	Juniper Ave/235 th St (Area 10)	0.41	A	0.40	A	0.47	A	0.47	A
106	Madison Ave/Sepulveda Blvd (Area 7)	0.46	A	0.44	A	0.51	A	0.50	A
107	Madison St/Skypark Dr (Area 10)	0.39	A	0.58	A	0.58	A	1.14	F
108	Madison St/Pacific Coast Hwy (SR-1) (Area 10)	0.58	A	0.58	A	0.59	A	0.38	A

Note: V/C = volume/capacity ratio; Deficient intersection operation shown in **bold italics**.

Table 2-2 (Cont.)
Existing Peak Hour LOS – ICU Methodology
Existing Conditions Weekday AM, Mid-Day, PM, and Weekend Mid-Day Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
109	Madrona Ave/Spencer St (Area 4)	0.40	A	0.40	A	0.45	A	0.50	A
110	Madrona Ave/Emerald St (Area 4)	0.42	A	0.40	A	0.48	A	0.39	A
111	Madrona Ave/Torrance Blvd (Area 4)	0.68	B	0.67	B	0.85	D	0.61	B
112	Madrona Ave/Fashion Way (Area 7)	0.33	A	0.36	A	0.40	A	0.39	A
113	Madrona Ave/Carson St (Area 7)	0.57	A	0.59	A	0.62	B	0.35	A
114	Madrona Ave/Plaza Del Amo (Area 7)	0.54	A	0.46	A	0.44	A	0.68	B
115	Madrona Ave/Sepulveda Blvd (Area 7)	0.77	C	0.81	D	0.93	E	0.40	A
116	Maple Ave/Maricopa St (Area 4)	0.49	A	0.39	A	0.44	A	0.61	B
117	Maple Ave/Torrance Blvd (Area 4)	0.70	B	0.73	C	0.81	D	0.37	A
118	Maple Ave/Carson St (Area 7)	0.67	B	0.61	B	0.78	C	0.86	D
119	Maple Ave/Plaza Del Amo (Area 7)	0.31	A	0.30	A	0.35	A	0.20	A
120	Maple Ave/Sepulveda Blvd (Area 7)	0.64	B	0.72	C	0.80	C	0.50	A
121	Maple Ave/226 th St-Nadine Circle (Area 7)	0.52	A	0.40	A	0.49	A	0.66	B
122	Maple Ave/Nadine Circle (Area 10)	0.40	A	0.42	A	0.58	A	0.36	A
123	Mobile Oil Entrance/190 th St (Area 4)	0.50	A	0.43	A	0.61	B	0.76	C
124	Ocean Ave/Sepulveda Blvd (Area 6)	0.54	A	0.47	A	0.53	A	0.45	A
125	Ocean Ave/Lomita Blvd (Area 9)	0.53	A	0.35	A	0.58	A	0.42	A
126	Palos Verdes Blvd/Torrance Blvd (Area 6)	0.56	A	0.51	A	0.59	A	0.45	A
127	Palos Verdes Blvd/Sepulveda Blvd (Area 6)	0.65	B	0.51	A	0.62	B	0.41	A
128	Palos Verdes Blvd/Pacific Coast Hwy (SR-1) (Area 9)	0.77	C	0.67	B	0.86	D	0.36	A
129	Palos Verdes Blvd/Catalina-Camino Del Campo (Area 9)	0.54	A	0.50	A	0.69	B	0.47	A
130	Palos Verdes Blvd/Calle Miramar (Area 9)	0.57	A	0.37	A	0.51	A	0.49	A
131	Palos Verdes Blvd/Calle Mayor (Area 9)	0.53	A	0.36	A	0.50	A	0.69	B

Note: V/C = volume/capacity ratio; Deficient intersection operation shown in **bold italics**.

Table 2-2 (Cont.)
Existing Peak Hour LOS – ICU Methodology
Existing Conditions Weekday AM, Mid-Day, PM, and Weekend Mid-Day Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
132	Plaza Del Amo/Carson St (Area 5)	0.83	D	0.57	A	0.75	C	0.63	B
133	Prairie Ave/Redondo Beach Blvd (Area 1)	0.94	E	0.81	D	1.07	F	0.43	A
134	Prairie Ave/Artesia Blvd (Area 1)	0.83	D	0.67	B	0.83	D	0.44	A
135	Prairie Ave/182 nd St (Area 1)	0.89	D	0.67	B	0.88	D	0.57	A
136	Prairie Ave/190 th St (Area 4)	0.91	E	0.68	B	0.96	E	0.75	C
137	Prairie Ave/Del Amo Blvd (Area 4)	0.63	B	0.57	A	0.89	D	0.86	D
138	Prospect Ave/Torrance Blvd (Area 6)	0.70	B	0.58	A	0.69	B	0.73	C
139	Prospect Ave-Vista Del Parque/Pacific Coast Hwy (SR-1) (Area 9)	0.60	A	0.52	A	0.65	B	0.70	B
140	Rolling Hills Way/Pacific Coast Hwy (SR-1) (Area 10)	0.49	A	0.52	A	0.69	B	0.41	A
141	Sartori Ave/Torrance Blvd (Area 5)	0.53	A	0.55	A	0.65	B	0.46	A
142	Van Ness Ave/Redondo Beach Blvd (Area 2)	0.66	B	0.68	B	0.81	D	0.65	B
143	Van Ness Ave/166 th St (Area 2)	0.48	A	0.30	A	0.45	A	0.63	B
144	Van Ness Ave/Artesia Blvd (Area 2)	0.53	A	0.49	A	0.76	C	0.38	A
145	Van Ness Ave/182 nd St (Area 2)	0.52	A	0.37	A	0.59	A	0.75	C
146	Van Ness Ave/190 th St (Area 5)	0.76	C	0.56	A	0.78	C	0.30	A
147	Van Ness Ave/195 th St (Area 5)	0.33	A	0.55	A	0.44	A	0.48	A
148	Van Ness Ave/Del Amo Blvd (Area 5)	0.68	B	0.63	B	0.47	A	0.34	A
149	Van Ness Ave/Dominguez St (Area 5)	0.34	A	0.35	A	0.42	A	0.45	A
150	Victor St/Del Amo Blvd (Area 3)	0.51	A	0.25	A	0.35	A	0.21	A
151	Victor St/Torrance Blvd (Area 6)	0.45	A	0.50	A	0.51	A	0.29	A
152	Village Lane/Torrance Blvd (Area 6)	0.38	A	0.50	A	0.55	A	0.14	A
153	Western Ave (SR-213)/Artesia Blvd (Area 2)	0.84	D	0.70	B	0.87	D	0.22	A
154	Western Ave (SR-213)/182 nd St (Area 2)	0.51	A	0.56	A	0.67	B	0.40	A

Note: V/C = volume/capacity ratio; Deficient intersection operation shown in **bold italics**.

Table 2-2 (Cont.)
Existing Peak Hour LOS – ICU Methodology
Existing Conditions Weekday AM, Mid-Day, PM, and Weekend Mid-Day Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
155	Western Ave (SR-213)/190 th St (Area 2)	0.90	D	0.71	C	0.80	C	0.53	A
156	Western Ave (SR-213)/195 th St (Area 5)	0.51	A	0.53	A	0.67	B	0.76	C
157	Western Ave (SR-213)/Del Amo Blvd (Area 5)	0.73	C	0.90	D	0.67	B	0.43	A
158	Western Ave (SR-213)/Torrance Blvd (Area 5)	0.60	A	0.62	B	0.71	C	0.46	A
159	Western Ave (SR-213)/213 th St (Area 5)	0.61	B	0.47	A	0.68	B	0.40	A
160	Western Ave (SR-213)/Carson St (Area 5)	0.82	D	0.74	C	0.87	D	0.45	A
161	Western Ave (SR-213)/220 th St (Area 8)	0.71	C	0.47	A	1.29	F	0.52	A
162	Western Ave (SR-213)/223 rd St (Area 8)	0.76	C	0.64	B	0.98	E	0.46	A
163	Western Ave (SR-213)/Sepulveda Blvd (Area 8)	0.97	E	0.92	E	1.09	F	0.73	C
164	Yukon Ave/Redondo Beach Blvd (Area 1)	0.57	A	0.45	A	0.55	A	0.48	A
165	Yukon Ave/Artesia Blvd (Area 1)	0.70	B	0.46	A	0.69	B	0.69	B
166	Yukon Ave/182 nd St (Area 1)	0.45	A	0.35	A	0.58	A	0.56	A

Note: V/C = volume/capacity ratio; Deficient intersection operation shown in **bold italics**.

DEFICIENT INTERSECTION OPERATION BASED ON *ICU* METHODOLOGY

As shown in Table 2-2, the following 30 study intersections are currently operating at a deficient LOS (LOS E or worse) according to City of Torrance performance criteria based on *ICU* analysis methodology for weekday a.m. peak hour, weekday mid-day peak hour, weekday p.m. peak hour, and/or weekend mid-day peak hour:

15. Anza Avenue/Sepulveda Boulevard
(weekday a.m., weekday p.m., and weekend mid-day peak hours);
22. Arlington Avenue/Plaza Del Amo-Washington Avenue
(weekday a.m. peak hour);
36. Crenshaw Boulevard/182nd Street
(weekday a.m. and p.m. peak hours);
37. Crenshaw Boulevard/190th Street
(weekday a.m. and p.m. peak hours);
41. Crenshaw Boulevard/Torrance Boulevard
(weekday p.m. peak hour only);
43. Crenshaw Boulevard/Carson Street
(weekday a.m. and p.m. peak hours);
50. Crenshaw Boulevard/Lomita Boulevard
(weekday a.m., weekday mid-day, and weekday p.m. peak hours);
52. Crenshaw Boulevard/Skypark Drive-Amsler Street
(weekend mid-day peak hour only);
54. Crenshaw Boulevard/Pacific Coast Highway (SR-1)
(weekday a.m., weekday mid-day, weekday p.m., and weekend mid-day peak hours);
74. Hawthorne Boulevard (SR-107)/190th Street
(weekday p.m. peak hour only);
80. Hawthorne Boulevard (SR-107)/Torrance Boulevard
(weekday p.m. and weekend mid-day peak hours);
81. Hawthorne Boulevard (SR-107)/Village Lane-Fashion Way
(weekend mid-day peak hour only);
83. Hawthorne Boulevard (SR-107)/Carson Street
(weekday p.m. peak hour only);
84. Hawthorne Boulevard (SR-107)/Center Way
(weekend mid-day peak hour only);
85. Hawthorne Boulevard (SR-107)/Sepulveda Boulevard
(weekday mid-day and p.m. peak hours);
86. Hawthorne Boulevard (SR-107)/230th Street
(weekend mid-day peak hour only);
87. Hawthorne Boulevard (SR-107)/Lomita Boulevard
(weekday a.m., mid-day, and p.m. peak hours);

- 88. Hawthorne Boulevard (SR-107)/Skypark Drive
(weekend min-day peak hour only);
- 89. Hawthorne Boulevard (SR-107)/Pacific Coast Highway (SR-1)
(weekday a.m. and p.m. peak hours);
- 90. Hawthorne Boulevard (SR-107)/244th Street
(weekend mid-day peak hour only);
- 101. I-405 Southbound Ramps/Crenshaw Boulevard
(weekday a.m. and p.m. peak hours);
- 103. I-405 Southbound Ramps/190th Street
(weekday p.m. peak hour only);
- 104. Inglewood Avenue/190th Street
(weekday a.m., mid-day, and p.m. peak hours);
- 107. Madison Street/Skypark Drive
(weekend mid-day peak hour only);
- 115. Madrona Avenue/Sepulveda Boulevard
(weekend p.m. peak hour only);
- 133. Prairie Avenue/Redondo Beach Boulevard
(weekday a.m. and p.m. peak hours);
- 136. Prairie Avenue/190th Street
(weekday a.m. and p.m. peak hours);
- 161. Western Avenue (SR-213)/220th Street
(weekday p.m. peak hour only);
- 162. Western Avenue (SR-213)/223rd Street
(weekday p.m. peak hour only); and
- 163. Western Avenue (SR-213)/Sepulveda Boulevard
(weekday a.m., mid-day, and p.m. peak hours).

EXISTING CONDITIONS DEFICIENT INTERSECTION OPERATION SUMMARY

Table 2-3 summarizes existing conditions weekday a.m. peak hour, weekday mid-day peak hour, weekday p.m. peak hour, and weekend mid-day peak hour LOS of the study intersections operating at a deficient LOS (LOS E or worse) based on *HCM* analysis methodology and *ICU* analysis methodology during one or more study analysis periods; detailed LOS analysis sheets are contained in Appendices A and B.

Table 2-3
Existing Peak Hour LOS Summary – HCM & ICU Methodology
Existing Conditions Weekday AM, Mid-Day, PM, and Weekend Mid-Day Deficient Intersection Operation Summary

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		HCM	ICU	HCM	ICU	HCM	ICU	HCM	ICU
		Delay – LOS	V/C – LOS	Delay – LOS	V/C – LOS	Delay – LOS	V/C – LOS	Delay – LOS	V/C – LOS
15	Anza Ave/Sepulveda Blvd (Area 6)	48.7 – D	0.99 – E	41.0 – D	0.83 – D	54.8 – D	1.05 – F	44.4 – D	0.96 – E
22	Arlington Ave/Plaza Del Amo-Washington Ave (Area 8)	35.7 – D	0.91 – E	29.3 – C	0.84 – D	32.4 – C	0.81 – D	30.5 – C	0.88 – D
36	Crenshaw Blvd/182 nd St (Area 2)	33.6 – C	0.93 – E	27.8 – C	0.80 – C	31.7 – C	0.92 – E	29.4 – C	0.73 – C
37	Crenshaw Blvd/190 th St (Area 4)	39.7 – D	0.98 – E	33.6 – C	0.74 – C	49.4 – D	1.07 – F	36.7 – D	0.80 – C
41	Crenshaw Blvd/Torrance Blvd (Area 4)	33.2 – C	0.82 – D	34.6 – C	0.82 – D	38.0 – D	0.95 – E	30.5 – C	0.60 – A
43	Crenshaw Blvd/Carson St (Area 7)	33.3 – C	0.92 – E	32.1 – C	0.81 – D	39.3 – D	0.94 – E	35.3 – D	0.68 – B
50	Crenshaw Blvd/Lomita Blvd (Area 8)	40.1 – D	0.95 – E	40.6 – D	0.91 – E	77.1 – E	1.23 – F	34.9 – D	0.84 – D
52	Crenshaw Blvd/Skypark Dr-Amsler St (Area 8)	22.8 – C	0.49 – A	27.3 – C	0.63 – B	24.9 – C	0.76 – C	87.7 – F	1.37 – F
54	Crenshaw Blvd/Pacific Coast Hwy (SR-1) (Area 10)	52.0 – D	1.12 – F	43.7 – D	0.94 – E	104.3 – F	1.31 – F	69.8 – E	1.15 – F
74	Hawthorne Blvd (SR-107)/190 th St (Area 3)	34.4 – C	0.88 – D	33.6 – C	0.76 – C	36.5 – D	0.91 – E	35.9 – D	0.54 – A
80	Hawthorne Blvd (SR-107)/Torrance Blvd (Area 6)	37.4 – D	0.77 – C	39.4 – D	0.80 – C	43.7 – D	0.97 – E	48.3 – D	0.96 – E
81	Hawthorne Blvd (SR-107)/Village Lane-Fashion Way (Area 6)	8.0 – A	0.52 – A	15.0 – B	0.64 – B	14.3 – B	0.71 – C	12.3 – B	1.06 – F
83	Hawthorne Blvd (SR-107)/Carson St (Area 6)	30.3 – C	0.70 – B	35.5 – D	0.84 – D	44.3 – D	1.02 – F	35.2 – D	0.58 – A
84	Hawthorne Blvd (SR-107)/Center Way (Area 6)	3.4 – A	0.45 – A	15.8 – B	0.71 – C	11.7 – B	0.58 – A	16.3 – B	0.94 – E
85	Hawthorne Blvd (SR-107)/Sepulveda Blvd (Area 6)	39.4 – D	0.88 – D	40.3 – D	0.97 – E	50.4 – D	1.13 – F	67.4 – E	0.77 – C

Note: Delay shown in seconds per vehicle; V/C = volume/capacity ratio; Deficient intersection operation shown in **bold italics**.

Table 2-3 (Cont.)
Existing Peak Hour LOS – HCM & ICU Methodology
Existing Conditions Weekday AM, Mid-Day, PM, and Weekend Mid-Day Deficient Intersection Operation Summary

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		HCM	ICU	HCM	ICU	HCM	ICU	HCM	ICU
		Delay – LOS	V/C – LOS	Delay – LOS	V/C – LOS	Delay – LOS	V/C – LOS	Delay – LOS	V/C – LOS
86	Hawthorne Blvd (SR-107)/230 th St (Area 9)	13.8 – B	0.67 – B	22.7 – C	0.88 – D	17.6 – B	0.86 – D	14.6 – B	1.22 – F
87	Hawthorne Blvd (SR-107)/Lomita Blvd (Area 9)	40.1 – D	0.94 – E	43.5 – D	0.97 – E	48.5 – D	1.05 – F	42.1 – D	0.73 – C
88	Hawthorne Blvd (SR-107)/Skypark Dr (Area 9)	19.3 – B	0.66 – B	25.7 – C	0.69 – B	26.6 – C	0.77 – C	22.9 – C	0.95 – E
89	Hawthorne Blvd (SR-107)/Pacific Coast Hwy (SR-1) (Area 9)	43.3 – D	0.93 – E	43.4 – D	0.88 – D	44.5 – D	0.92 – E	51.9 – D	0.68 – B
90	Hawthorne Blvd/244 th St (Area 10)	1.9 – A	0.48 – A	3.2 – A	0.38 – A	2.2 – A	0.50 – A	2.6 – A	1.03 – F
101	I-405 SB Ramps/Crenshaw Blvd (Area 2)	25.1 – C	0.99 – E	19.8 – B	0.80 – C	23.4 – C	0.94 – E	18.4 – B	0.57 – A
103	I-405 SB Ramps/190 th St (Area 2)	36.6 – D	0.89 – D	28.2 – C	0.63 – B	33.5 – C	0.93 – E	26.0 – C	0.61 – B
104	Inglewood Ave/190 th St (Area 3)	32.5 – C	0.94 – E	79.0 – E	1.22 – F	32.0 – C	0.91 – E	56.6 – E	0.71 – C
107	Madison St/Skypark Dr (Area 10)	14.8 – B	0.39 – A	15.1 – B	0.58 – A	15.5 – B	0.58 – A	12.7 – B	1.14 – F
115	Madrona Ave/Sepulveda Blvd (Area 7)	26.4 – C	0.77 – C	26.8 – C	0.84 – D	30.2 – C	0.93 – E	28.6 – C	0.40 – A
133	Prairie Ave/Redondo Beach Blvd (Area 1)	46.4 – D	0.94 – E	42.1 – D	0.81 – D	60.0 – E	1.07 – F	38.8 – D	0.43 – A
136	Prairie Ave/190 th St (Area 4)	38.3 – D	0.91 – E	34.9 – C	0.68 – B	40.2 – C	0.96 – E	34.3 – C	0.75 – C
161	Western Ave (SR-213)/220 th St (Area 8)	12.8 – B	0.71 – C	6.9 – A	0.47 – A	59.6 – E	1.29 – F	7.4 – A	0.52 – A
162	Western Ave (SR-213)/223 rd St (Area 8)	14.9 – B	0.76 – C	14.3 – B	0.64 – B	17.4 – B	0.98 – E	14.3 – B	0.46 – A
163	Western Ave (SR-213)/Sepulveda Blvd (Area 8)	45.5 – D	0.97 – E	45.8 – D	0.92 – E	62.3 – E	1.09 – F	41.3 – D	0.73 – C

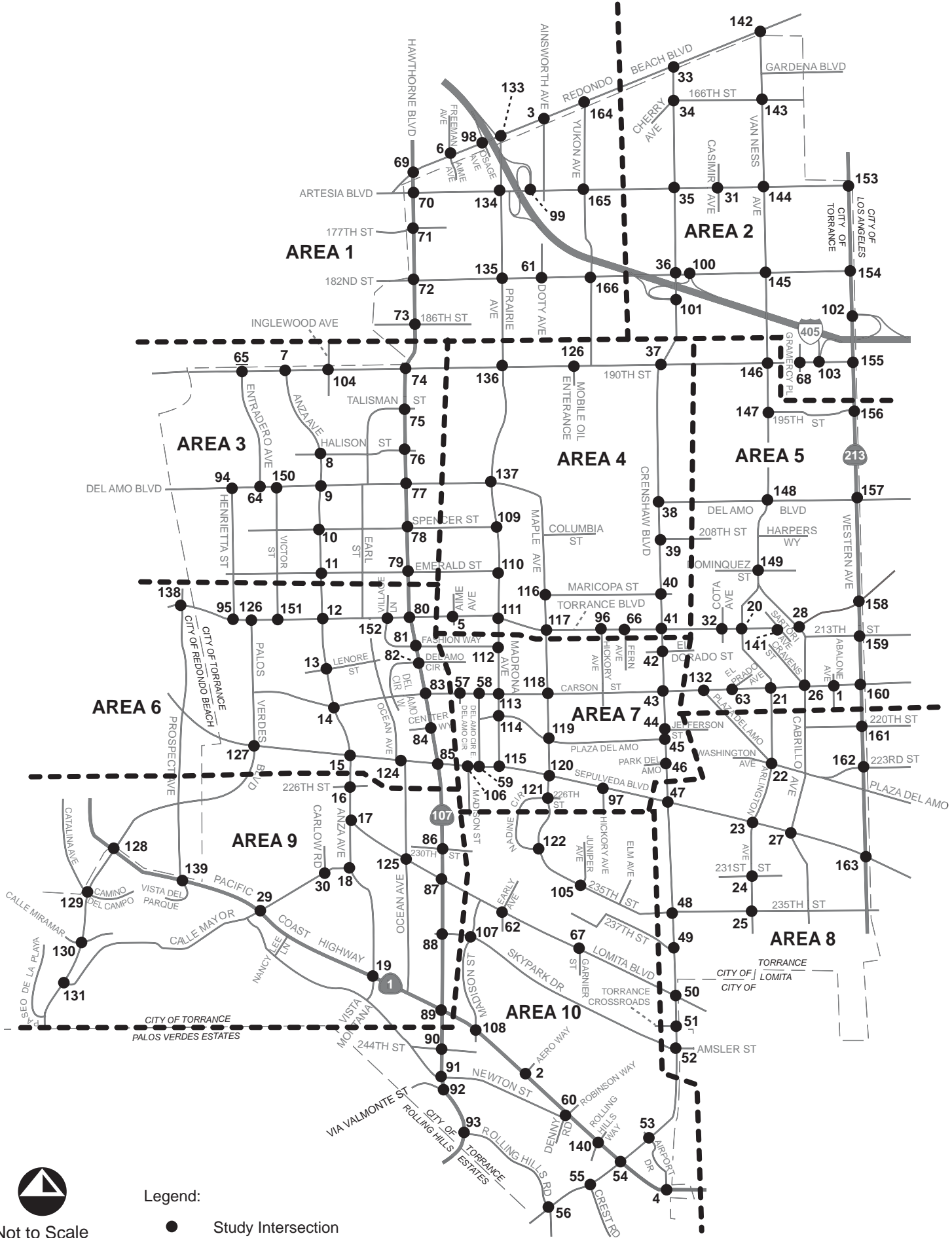
Note: Delay shown in seconds per vehicle; V/C = volume/capacity ratio; Deficient intersection operation shown in **bold italics**.

DEFICIENT INTERSECTIONS BASED ON *HCM* AND *ICU* METHODOLOGY

As shown in Table 2-3, the following 30 study intersections are currently operating at a deficient LOS (LOS E or worse) according to City of Torrance performance criteria based on *HCM* analysis methodology and *ICU* analysis methodology during the weekday a.m. peak hour, weekday mid-day peak hour, weekday p.m. peak hour, and/or weekend mid-day peak hour:

15. Anza Avenue/Sepulveda Boulevard;
22. Arlington Avenue/Plaza Del Amo-Washington Avenue;
36. Crenshaw Boulevard/182nd Street;
37. Crenshaw Boulevard/190th Street;
41. Crenshaw Boulevard/Torrance Boulevard;
43. Crenshaw Boulevard/Carson Street;
50. Crenshaw Boulevard/Lomita Boulevard;
52. Crenshaw Boulevard/Skypark Drive-Amsler Street;
54. Crenshaw Boulevard/Pacific Coast Highway (SR-1);
74. Hawthorne Boulevard (SR-107)/190th Street;
80. Hawthorne Boulevard (SR-107)/Torrance Boulevard;
81. Hawthorne Boulevard (SR-107)/Village Lane-Fashion Way;
83. Hawthorne Boulevard (SR-107)/Carson Street;
84. Hawthorne Boulevard (SR-107)/Center Way;
85. Hawthorne Boulevard (SR-107)/Sepulveda Boulevard;
86. Hawthorne Boulevard (SR-107)/230th Street;
87. Hawthorne Boulevard (SR-107)/Lomita Boulevard;
88. Hawthorne Boulevard (SR-107)/Skypark Drive;
89. Hawthorne Boulevard (SR-107)/Pacific Coast Highway (SR-1);
90. Hawthorne Boulevard (SR-107)/244th Street;
101. I-405 Southbound Ramps/Crenshaw Boulevard;
103. I-405 Southbound Ramps/190th Street;
104. Inglewood Avenue/190th Street;
107. Madison Street/Skypark Drive;
115. Madrona Avenue/Sepulveda Boulevard;
133. Prairie Avenue/Redondo Beach Boulevard;
136. Prairie Avenue/190th Street;
161. Western Avenue (SR-213)/220th Street;
162. Western Avenue (SR-213)/223rd Street; and
163. Western Avenue (SR-213)/Sepulveda Boulevard.

Exhibit 2-2 (page 63) shows the locations of the above deficient LOS intersections.



Not to Scale

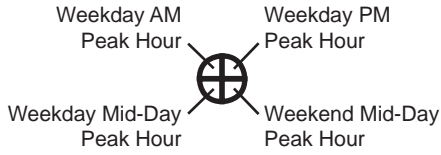


Legend:

- Study Intersection
- - - Area Boundary

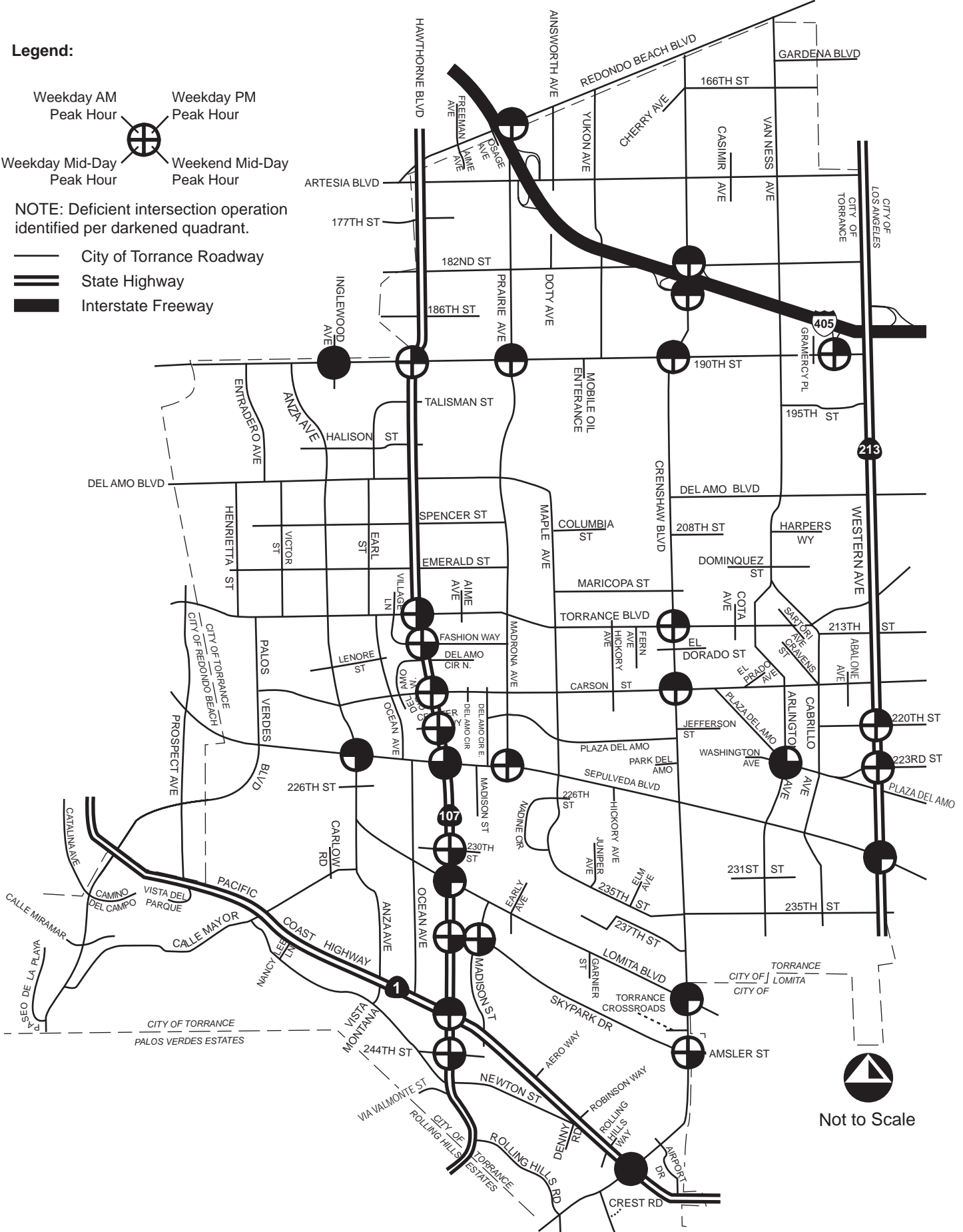
City of Torrance Study Areas

Legend:



NOTE: Deficient intersection operation identified per darkened quadrant.

- City of Torrance Roadway
- State Highway
- Interstate Freeway



Not to Scale

Existing Conditions - Locations of Intersections Operating at a Deficient LOS (HCM and ICU Methodology)



CHAPTER 3 – FORECAST NEAR-TERM CONDITIONS

This chapter discusses forecast near-term conditions operation at the 166 study intersections located in the City of Torrance, which are shown on Exhibit 3-1 (page 96). To determine the operation at each study intersection, which is referred to as the intersection level of service (LOS), intersection movement counts were collected in March 2005 through May 2005 on a typical weekday (Tuesday, Wednesday, or Thursday) and a typical weekend-day (Saturday or Sunday). Intersection movement counts identify the number of vehicles traveling through the intersection. The LOS at each study intersection was then calculated in *Traffix* (a traffic modeling software program) utilizing both the *HCM* analysis methodology, which is based on corresponding ranges of stopped delay experienced per vehicle at an intersection, as well as the *ICU* analysis methodology, which is based on corresponding volume to capacity (V/C) ratios at an intersection; the LOS based on each analysis methodology is shown later in this chapter.



Carson Street at Crenshaw Boulevard

Forecast near-term conditions citywide traffic volumes were derived by applying an annual growth rate of one percent per year (a growth rate factor used to account for ambient growth in the Los Angeles County basin) to existing traffic volumes as directed by City staff. This is a conservative assumption, since the growth rate factor is applied to all vehicle movements at the study intersections. Additionally, trips were added from 48 filed projects in, and in the vicinity of, the City of Torrance identified by City staff, which are listed in the *Del Amo Fashion Center Expansion Project Traffic Study* (Kaku Associates, October 2005), which have already been filed, but have not yet been approved and/or constructed, and therefore are not yet generating traffic. The projects filed with City of Torrance are identified in Table 3-1.

Table 3-1
List of Projects Filed with City of Torrance

Project Location	Land Use	Size
Del Amo Fashion Center Expansion	Shopping Center	106-tsf
25904 Rolling Hills Rd	Bank	8-tsf
Maricopa St and Hawaii Ave	Single-Family Residential	104-du
131 Palos Verdes Blvd	Condominium Commercial	23-dwelling units 8-tsf
4330 190 th St	Storage	15-tsf
2440-2444 Andreo Ave	Condominium	6-dwelling units
20536 Earl St	Condominium	32-dwelling units
4343 190 th St	Condominium	22-dwelling units
6226 Pacific Coast Hwy	Condominium	16-dwelling units
1021 Cravens Ave	Condominium	20-dwelling units
3520 Torrance Blvd	Senior Condominium	60-dwelling units
4004 Sepulveda Blvd	Senior Condominium	44-dwelling units
3120 Sepulveda Blvd	Senior Condominium	62-dwelling units
22525 Kent Ave	Condominium	21-dwelling units
NW corner of Pacific Cast Hwy and Crenshaw Blvd	Shopping Center	43-tsf
2700 Border Ave	Condominium	28-dwelling units
Oak St/Jefferson St	Condominium Senior Housing	217-dwelling units 60-du
195 th St btw Van Ness Ave and Western Ave	Financial Center Service Center	63.0-tsf 32.0-tsf
Hawthorne Blvd/Carson St	Shopping Center	370-tsf
1226 Engracia Ave	Townhomes	13-dwelling units
21345 Hawthorne Blvd	Senior Housing Units	112-dwelling units
2708 Cabrillo Ave	Condominium Senior Housing Units	48-dwelling units 52-dwelling units
745 Border Ave	Condominium	9-dwelling units
2264 Dominguez St	Condominium	13-dwelling units
3531 Torrance Blvd	Hotel	66 rooms
1620 Gramercy Ave	Condominium	7-dwelling units
2749 Gramercy Ave	Condominium	3-dwelling units
2303 Jefferson St	Condominium	81-dwelling units
1907 Abalone Ave	Warehouse	23-tsf
14105 S. Normandie Ave	Warehouse	44-tsf

Table 3-1 (Cont.)
List of Projects Filed with City of Torrance

Project Location	Land Use	Size
1465 W. Redondo Beach Blvd	Senior Apartments	42-dwelling units
15617 & 15625 South Vermont Ave	Condominium	10-dwelling units
14020 & 14108 South Western Ave	Warehouse	24-tsf
2222 Palos Verdes Dr North	Church	41-tsf
901 Deep Valley Dr	Condominium	41-dwelling units
981 Silver Spur Rd	Condominium	18-dwelling units
Normandie Ave/Torrance Blvd	Single-Family Residential	63-dwelling units
1748-1754 West 27 th St	Condominium	6-dwelling units
26001 Eshelman Ave & 26005 Avocado St	Single-Family Residential	6-dwelling units
2247-2261 West 241 st St	Townhomes	16-dwelling units
2423 Border Ave	Condominium	2-dwelling units
18324 & 18326 Mansel Ave	Condominium	2-dwelling units
18312 Grevillea Ave	Condominium	2-dwelling units
1020 Cravens Ave	Condominium	3-dwelling units
25322 Cypress St	Senior Housing Units	6-dwelling units
25316 Ebony Ln	Senior Housing Units	42-dwelling units
25312-25318 Narbonne Ave	Senior Housing Units	24-dwelling units
25829-25837 Eshelman Ave	Condominium	15-dwelling units

Note: tsf = thousand square feet; W/O = west of; NW = Northwest.

Source: *Del Amo Fashion Center Expansion Project Traffic Study (Kaku Associates, October 2005).*

FORECAST TRIP ASSIGNMENT OF PROJECTS FILED WITH CITY OF TORRANCE

This analysis utilizes the trip assignment of projects filed with City of Torrance and listed in the *Del Amo Fashion Center Expansion Project Traffic Study*. Exhibits showing forecast weekday a.m. peak hour, weekday mid-day peak hour, weekday p.m. peak hour, and weekend mid-day peak hour trip assignment of the filed projects are contained in Chapter 6. Exhibits 3-2 and 3-3 (pages 97 and 98) show forecast near-term conditions weekday and weekend roadway segment ADT volumes generated by the filed projects.

FORECAST NEAR-TERM CONDITIONS TRAFFIC VOLUMES

Exhibits showing forecast near-term conditions weekday a.m. peak hour, weekday mid-day peak hour, weekday p.m. peak hour, and weekend mid-day peak hour volumes at the study intersections are contained in Chapter 6. Exhibits 3-4 and 3-5 (pages 99 and 100) show forecast near-term conditions weekday and weekend ADT volumes for the roadway circulation system.

As previously noted in Chapter 1, for purposes of this traffic analysis, deficient intersection operation is defined by the City of Torrance as an intersection operating at LOS E or F.



Airport Drive at Crenshaw Boulevard

FORECAST NEAR-TERM CONDITIONS WEEKDAY PEAK HOUR LEVEL OF SERVICE – *HCM* METHODOLOGY

Table 3-2 summarizes forecast near-term conditions weekday a.m. peak hour, weekday mid-day peak hour, weekday p.m. peak hour, and weekend mid-day peak hour LOS of the study intersections utilizing *HCM* analysis methodology, which is based on corresponding ranges of stopped delay experienced per vehicle; detailed LOS analysis sheets are contained in Appendix C.

Table 3-2
Forecast Near-Term Conditions Peak Hour LOS – HCM Methodology
Weekday AM, Mid-Day, & PM, and Weekend Mid-Day Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	Abalone Ave/Carson St (Area 5)	3.3	A	5.0	A	5.8	A	2.3	A
2	Aero Way/Pacific Coast Hwy (SR-1) (Area 10)	1.6	A	2.9	A	6.4	A	3.0	A
3	Ainsworth Ave/Redondo Beach Blvd (Area 1)	6.5	A	3.8	A	3.4	A	4.9	A
4	Airport Dr/Pacific Coast Hwy (SR-1) (Area 10)	3.6	A	12.0	B	9.9	A	8.1	A
5	Amie Ave/Torrance Blvd (Area 4)	10.0	B	11.2	B	12.4	B	12.2	B
6	Amie Ave-Freeman Ave/Redondo Beach Blvd (Area 1)	8.4	A	6.9	A	7.0	A	7.1	A
7	Anza Ave/190 th St (Area 3)	29.7	C	29.6	C	30.0	C	28.9	C
8	Anza Ave/Halison St (Area 3)	8.6	A	3.4	A	3.8	A	3.1	A
9	Anza Ave/Del Amo Blvd (Area 3)	42.3	D	34.2	C	40.7	D	33.5	C
10	Anza Ave/Spencer St (Area 3)	6.7	A	6.8	A	7.3	A	5.2	A
11	Anza Ave/Emerald St (Area 3)	7.9	A	8.2	A	6.3	A	4.0	A
12	Anza Ave/Torrance Blvd (Area 6)	39.0	D	43.4	D	46.9	D	49.5	D
13	Anza Ave/Lenore St (Area 6)	6.7	A	2.9	A	4.9	A	3.1	A
14	Anza Ave/Carson St (Area 6)	25.7	C	27.5	C	31.6	C	26.1	C
15	Anza Ave/Sepulveda Blvd (Area 6)	53.3	D	42.1	D	71.2	E	52.1	D
16	Anza Ave/226 th St (Area 9)	5.6	A	2.3	A	3.6	A	2.3	A
17	Anza Ave/Lomita Blvd (Area 9)	26.8	C	23.4	C	25.8	C	22.8	C
18	Anza Ave/Calle Mayor (Area 9)	20.8	C	14.2	B	14.4	B	13.7	B
19	Anza Ave/Pacific Coast Hwy (SR-1) (Area 9)	29.4	C	25.3	C	31.3	C	31.5	C
20	Arlington Ave/Torrance Blvd (Area 5)	8.2	A	5.9	A	14.6	B	4.2	A

Note: Delay shown in seconds per vehicle; Deficient intersection operation shown in **bold italics**.

Table 3-2 (Cont.)

Forecast Near-Term Conditions Peak Hour LOS – HCM Methodology

Forecast Near-Term Conditions Weekday AM, Mid-Day, & PM, and Weekend Mid-Day Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
21	Arlington Ave/Carson St (Area 5)	11.0	B	9.7	A	10.0	B	10.0	B
22	Arlington Ave/Plaza Del Amo-Washington Ave (Area 8)	37.0	D	30.0	C	32.9	C	31.1	C
23	Arlington Ave/Sepulveda Blvd (Area 8)	32.1	C	26.0	C	29.4	C	23.5	C
24	Arlington Ave/231 st St (Area 8)	2.9	A	3.4	A	6.9	A	3.7	A
25	Arlington Ave/235 th St (Area 8)	16.8	B	12.9	B	15.9	B	12.9	B
26	Cabrillo Ave/Carson St (Area 5)	12.1	B	17.1	B	18.9	B	13.5	B
27	Cabrillo Ave/Sepulveda Blvd (Area 8)	21.7	C	11.0	B	13.9	B	12.5	B
28	Cabrillo Ave-Van Ness Ave/Torrance Blvd (Area 5)	23.1	C	23.2	C	22.7	C	11.2	B
29	Calle Mayor/Pacific Coast Hwy (SR-1) (Area 9)	30.4	C	26.0	C	31.7	C	25.6	C
30	Carlow Road/Calle Mayor (Area 9)	7.0	A	3.9	A	5.4	A	7.2	A
31	Casimir Ave/Artesia Blvd (Area 2)	10.4	B	4.1	A	4.6	A	4.4	A
32	Cota Ave/Torrance Blvd (Area 5)	2.6	A	1.9	A	2.0	A	4.0	A
33	Crenshaw Blvd/Redondo Beach Blvd (Area 2)	39.8	D	37.3	D	41.1	D	42.0	D
34	Crenshaw Blvd/16 th St-Cherry Ave (Area 2)	8.8	A	6.9	A	6.8	A	4.7	A
35	Crenshaw Blvd/Artesia Blvd (Area 2)	44.6	D	30.1	C	43.3	D	40.8	D
36	Crenshaw Blvd/182 nd St (Area 2)	38.1	D	30.5	C	44.9	D	31.9	C
37	Crenshaw Blvd/190 th St (Area 4)	50.8	D	34.5	C	100.9	F	43.1	D
38	Crenshaw Blvd/Del Amo Blvd (Area 4)	58.7	E	72.5	E	131.7	F	41.7	D
39	Crenshaw Blvd/208 th St (Area 4)	0.9	A	2.0	A	3.4	A	2.3	A
40	Crenshaw Blvd/Maricopa St (Area 4)	14.7	B	10.4	B	19.7	B	13.3	B
41	Crenshaw Blvd/Torrance Blvd (Area 4)	39.3	D	40.2	D	58.0	E	34.4	C

Note: Delay shown in seconds per vehicle; Deficient intersection operation shown in **bold italics**.

Table 3-2 (Cont.)

Forecast Near-Term Conditions Peak Hour LOS – HCM Methodology

Forecast Near-Term Conditions Weekday AM, Mid-Day, & PM, and Weekend Mid-Day Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
42	Crenshaw Blvd/El Dorado St (Area 7)	4.6	A	1.5	A	4.2	A	3.4	A
43	Crenshaw Blvd/Carson St (Area 7)	37.2	D	35.9	D	53.1	D	38.0	D
44	Crenshaw Blvd/Jefferson St (Area 7)	6.8	A	7.0	A	8.2	A	11.9	B
45	Crenshaw Blvd/Plaza Del Amo (Area 7)	9.8	A	7.7	A	10.5	B	7.5	A
46	Crenshaw Blvd/Park Del Amo-Scroc Ave (Area 7)	1.4	A	3.2	A	6.3	A	1.5	A
47	Crenshaw Blvd/Sepulveda Blvd (Area 8)	40.6	D	41.6	D	44.3	D	34.0	C
48	Crenshaw Blvd/235 th St (Area 8)	19.7	B	19.1	B	21.0	C	20.8	C
49	Crenshaw Blvd/237 th St (Area 8)	10.5	B	8.3	A	15.6	B	5.1	A
50	Crenshaw Blvd/Lomita Blvd (Area 8)	44.8	D	45.0	D	84.4	F	37.7	D
51	Crenshaw Blvd/Torrance Crossroads (Area 8)	4.8	A	10.4	B	10.4	B	7.7	A
52	Crenshaw Blvd/Skypark Dr-Amsler St (Area 8)	20.6	C	25.5	C	24.4	C	93.1	F
53	Crenshaw Blvd/Airport Dr (Area 10)	11.3	B	25.2	C	26.1	C	37.3	D
54	Crenshaw Blvd/Pacific Coast Hwy (SR-1) (Area 10)	59.9	E	50.7	D	130.1	F	91.1	F
55	Crenshaw Blvd/Crest Road (Area 10)	7.0	A	3.8	A	3.0	A	3.5	A
56	Crenshaw Blvd/Rolling Hills Road (Area 10)	23.0	C	23.6	C	24.7	C	21.8	C
57	Del Amo Circle/Carson St (Area 7)	7.8	A	26.5	C	26.7	C	32.4	C
58	Del Amo Circle East/Carson St (Area 7)	3.6	A	11.5	B	8.4	A	11.4	B
59	Del Amo Circle East/Sepulveda Blvd (Area 7)	23.2	C	26.7	C	32.7	C	29.7	C
60	Denny Rd-Robinson Ave/Pacific Coast Hwy (SR-1) (Area 10)	7.6	A	8.2	A	8.9	A	8.7	A
61	Doty Ave/182 nd St (Area 1)	7.4	A	5.3	A	2.6	A	4.8	A
62	Early Ave/Lomita Blvd (Area 10)	16.4	B	24.2	C	24.4	C	4.7	A

Note: Delay shown in seconds per vehicle; Deficient intersection operation shown in **bold italics**.

Table 3-2 (Cont.)

Forecast Near-Term Conditions Peak Hour LOS – HCM Methodology

Forecast Near-Term Conditions Weekday AM, Mid-Day, & PM, and Weekend Mid-Day Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
63	El Prado Ave/Carson St (Area 5)	4.4	A	0.8	A	0.9	A	1.3	A
64	Entradero Ave/Del Amo Blvd (Area 3)	6.7	A	2.8	A	4.0	A	3.8	A
65	Entradero Ave-Meyer Lane/190 th St (Area 3)	13.1	B	6.5	A	7.9	A	8.0	A
66	Fern Ave/Torrance Blvd (Area 4)	2.1	A	0.6	A	3.4	A	1.3	A
67	Garnier St/Lomita Blvd (Area 10)	1.1	A	5.7	A	4.7	A	7.0	A
68	Gramercy Place/190 th St (Area 2)	6.8	A	10.2	B	10.6	B	1.4	A
69	Hawthorne Blvd (SR-107)/Redondo Beach Blvd (Area 1)	31.7	C	32.9	C	40.2	D	30.2	C
70	Hawthorne Blvd (SR-107)/Artesia Blvd (Area 1)	31.7	C	32.0	C	34.5	C	34.2	C
71	Hawthorne Blvd (SR-107)/177 th St (Area 1)	4.1	A	16.3	B	15.3	B	21.6	C
72	Hawthorne Blvd (SR-107)/182 nd St (Area 1)	17.6	B	21.7	C	33.4	C	11.7	B
73	Hawthorne Blvd (SR-107)/186 th St (Area 1)	6.0	A	7.8	A	8.2	A	5.0	A
74	Hawthorne Blvd (SR-107)/190 th St (Area 3)	36.1	D	34.2	C	41.2	D	36.7	D
75	Hawthorne Blvd (SR-107)/Talisman St (Area 3)	4.3	A	17.9	B	12.4	B	17.1	B
76	Hawthorne Blvd (SR-107)/Halison St (Area 3)	5.3	A	16.2	B	12.4	B	15.4	B
77	Hawthorne Blvd (SR-107)/Del Amo Blvd (Area 3)	62.8	E	44.7	D	49.6	D	36.5	D
78	Hawthorne Blvd (SR-107)/Spencer St (Area 3)	15.3	B	12.9	B	14.5	B	8.2	A
79	Hawthorne Blvd (SR-107)/Emerald St (Area 3)	16.6	B	13.8	B	15.1	B	17.2	B
80	Hawthorne Blvd (SR-107)/Torrance Blvd (Area 6)	39.7	D	42.3	D	58.7	E	86.8	F
81	Hawthorne Blvd (SR-107)/Village Lane-Fashion Way (Area 6)	7.6	A	14.6	B	14.2	B	11.4	B
82	Hawthorne Blvd (SR-107)/Del Amo Circle-Del Amo Circle N (Area 6)	5.9	A	14.1	B	12.1	B	11.1	B
83	Hawthorne Blvd (SR-107)/Carson St (Area 6)	33.2	C	46.7	D	96.0	F	76.1	E

Note: Delay shown in seconds per vehicle; Deficient intersection operation shown in **bold italics**.

Table 3-2 (Cont.)
Forecast Near-Term Conditions Peak Hour LOS – HCM Methodology
Forecast Near-Term Conditions Weekday AM, Mid-Day, & PM, and Weekend Mid-Day Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
84	Hawthorne Blvd (SR-107)/Center Way (Area 6)	3.4	A	15.6	B	11.2	B	16.1	B
85	Hawthorne Blvd (SR-107)/Sepulveda Blvd (Area 6)	40.5	D	42.4	D	56.8	E	87.2	F
86	Hawthorne Blvd (SR-107)/230 th St (Area 9)	13.7	B	22.9	C	17.9	B	14.5	B
87	Hawthorne Blvd (SR-107)/Lomita Blvd (Area 9)	41.7	D	46.2	D	58.9	E	44.7	D
88	Hawthorne Blvd (SR-107)/Skypark Dr (Area 9)	19.0	B	25.7	C	27.3	C	22.7	C
89	Hawthorne Blvd (SR-107)/Pacific Coast Hwy (SR-1) (Area 9)	45.7	D	45.3	D	49.0	D	62.7	E
90	Hawthorne Blvd (SR-107)/244 th St (Area 10)	1.8	A	3.0	A	2.0	A	2.3	A
91	Hawthorne Blvd (SR-107)/Newton St (Area 10)	7.5	A	5.6	A	4.4	A	10.6	B
92	Hawthorne Blvd (SR-107)/Via Valmonte St (Area 10)	7.2	A	7.8	A	6.0	A	7.1	A
93	Hawthorne Blvd (SR-107)/Rolling Hills Road (Area 10)	15.0	B	13.1	B	15.0	B	14.6	B
94	Henrietta St/Del Amo Blvd (Area 3)	8.6	A	3.3	A	4.4	A	5.0	A
95	Henrietta St/Torrance Blvd (Area 6)	7.2	A	3.5	A	4.0	A	3.5	A
96	Hickory St/Torrance Blvd (Area 4)	5.0	A	2.6	A	5.1	A	3.9	A
97	Hickory St/Sepulveda Blvd (Area 7)	27.7	C	24.7	C	23.9	C	24.8	C
98	I-405 SB Off-Ramp-Osage Ave/Redondo Beach Blvd (Area 1)	16.1	B	17.4	B	19.0	B	17.7	B
99	I-405 NB Ramps/Artesia Blvd (Area 1)	12.4	B	17.2	B	18.5	B	17.6	B
100	I-405 NB Ramps/182 nd St (Area 2)	18.8	B	19.7	B	25.2	C	20.2	C
101	I-405 SB Ramps/Crenshaw Blvd (Area 2)	53.9	D	27.3	C	49.3	D	24.1	C
102	I-405 NB Ramps/Western Ave (SR-213) (Area 2)	21.4	C	16.8	B	15.1	B	17.2	B
103	I-405 SB Ramps/190 th St (Area 2)	41.6	D	29.9	C	43.1	D	27.7	C
104	Inglewood Ave/190 th St (Area 3)	34.1	C	106.2	F	34.3	C	66.5	E

Note: Delay shown in seconds per vehicle; Deficient intersection operation shown in **bold italics**.

Table 3-2 (Cont.)

Forecast Near-Term Conditions Peak Hour LOS – HCM Methodology

Forecast Near-Term Conditions Weekday AM, Mid-Day, & PM, and Weekend Mid-Day Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
105	Juniper Ave/235 th St (Area 10)	4.3	A	3.1	A	4.3	A	3.3	A
106	Madison Ave/Sepulveda Blvd (Area 7)	9.4	A	9.4	A	8.3	A	6.1	A
107	Madison St/Skypark Dr (Area 10)	14.9	B	15.2	B	15.6	B	12.8	B
108	Madison St/Pacific Coast Hwy (SR-1) (Area 10)	15.6	B	17.1	B	17.8	B	13.1	B
109	Madrona Ave/Spencer St (Area 4)	8.5	A	6.5	A	6.4	A	4.4	A
110	Madrona Ave/Emerald St (Area 4)	10.5	B	10.1	B	9.5	A	8.7	A
111	Madrona Ave/Torrance Blvd (Area 4)	32.4	C	35.3	D	37.8	D	36.8	D
112	Madrona Ave/Fashion Way (Area 7)	7.2	A	7.9	A	7.0	A	10.9	B
113	Madrona Ave/Carson St (Area 7)	26.3	C	27.3	C	28.5	C	29.4	C
114	Madrona Ave/Plaza Del Amo (Area 7)	20.1	C	19.8	B	14.4	B	18.2	B
115	Madrona Ave/Sepulveda Blvd (Area 7)	27.1	C	27.7	C	34.4	C	30.0	C
116	Maple Ave/Maricopa St (Area 4)	18.1	B	18.9	B	18.4	B	12.9	B
117	Maple Ave/Torrance Blvd (Area 4)	17.8	B	18.6	B	18.2	B	14.3	B
118	Maple Ave/Carson St (Area 7)	21.0	C	16.2	B	20.7	C	14.1	B
119	Maple Ave/Plaza Del Amo (Area 7)	10.4	B	13.1	B	14.1	B	13.1	B
120	Maple Ave/Sepulveda Blvd (Area 7)	26.7	C	23.1	C	27.5	C	25.8	C
121	Maple Ave/226 th St-Nadine Circle (Area 7)	10.4	B	4.9	A	7.3	A	7.8	A
122	Maple Ave/Nadine Circle (Area 10)	4.8	A	5.8	A	7.8	A	5.4	A
123	Mobile Oil Entrance/190 th St (Area 4)	2.6	A	2.2	A	4.6	A	1.1	A
124	Ocean Ave/Sepulveda Blvd (Area 6)	12.8	B	16.7	B	13.8	B	15.3	B
125	Ocean Ave/Lomita Blvd (Area 9)	14.5	B	13.2	B	12.4	B	11.8	B
126	Palos Verdes Blvd/Torrance Blvd (Area 6)	21.7	C	17.3	B	22.4	C	16.1	B

Note: Delay shown in seconds per vehicle.

Table 3-2 (Cont.)

Forecast Near-Term Conditions Peak Hour LOS – HCM Methodology

Forecast Near-Term Conditions Weekday AM, Mid-Day, & PM, and Weekend Mid-Day Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
127	Palos Verdes Blvd/Sepulveda Blvd (Area 6)	22.9	C	21.1	C	21.9	C	20.2	C
128	Palos Verdes Blvd/Pacific Coast Hwy (SR-1) (Area 9)	36.6	D	35.7	D	41.6	D	36.6	D
129	Palos Verdes Blvd/Catalina-Camino Del Campo (Area 9)	8.3	A	12.7	B	14.9	B	15.4	B
130	Palos Verdes Blvd/Calle Miramar (Area 9)	8.5	A	6.4	A	6.4	A	7.5	A
131	Palos Verdes Blvd/Calle Mayor (Area 9)	7.4	A	6.9	A	6.5	A	7.4	A
132	Plaza Del Amo/Carson St (Area 5)	19.5	B	9.7	A	13.1	B	10.8	B
133	Prairie Ave/Redondo Beach Blvd (Area 1)	49.0	D	43.7	D	71.6	E	40.3	D
134	Prairie Ave/Artesia Blvd (Area 1)	37.4	D	35.1	D	37.8	D	41.7	D
135	Prairie Ave/182 nd St (Area 1)	34.6	C	26.3	C	33.8	D	28.8	C
136	Prairie Ave/190 th St (Area 4)	44.3	D	39.5	D	57.7	E	39.9	D
137	Prairie Ave/Del Amo Blvd (Area 4)	36.9	D	35.2	D	60.2	E	33.2	C
138	Prospect Ave/Torrance Blvd (Area 6)	31.9	C	26.4	C	29.9	C	18.6	B
139	Prospect Ave-Vista Del Parque/Pacific Coast Hwy (SR-1) (Area 9)	15.1	B	14.3	B	14.0	B	13.9	B
140	Rolling Hills Way/Pacific Coast Hwy (SR-1) (Area 10)	7.9	A	8.6	A	10.6	B	9.2	A
141	Sartori Ave/Torrance Blvd (Area 5)	4.0	A	5.9	A	4.6	A	2.8	A
142	Van Ness Ave/Redondo Beach Blvd (Area 2)	30.5	C	30.6	C	34.1	C	31.1	C
143	Van Ness Ave/166 th St (Area 2)	16.1	B	13.6	B	13.8	B	14.9	B
144	Van Ness Ave/Artesia Blvd (Area 2)	24.7	C	25.8	C	29.1	C	23.7	C
145	Van Ness Ave/182 nd St (Area 2)	15.7	B	14.7	B	16.2	B	14.9	B
146	Van Ness Ave/190 th St (Area 5)	28.2	C	27.1	C	29.0	C	21.2	C
147	Van Ness Ave/195 th St (Area 5)	1.7	A	3.6	A	7.1	A	0.4	A

Note: Delay shown in seconds per vehicle; Deficient intersection operation shown in **bold italics**.

Table 3-2 (Cont.)

Forecast Near-Term Conditions Peak Hour LOS – HCM Methodology

Forecast Near-Term Conditions Weekday AM, Mid-Day, & PM, and Weekend Mid-Day Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
148	Van Ness Ave/Del Amo Blvd (Area 5)	31.9	C	70.8	E	31.4	C	20.9	C
149	Van Ness Ave/Dominguez St (Area 5)	4.2	A	10.5	B	14.4	B	5.6	A
150	Victor St/Del Amo Blvd (Area 3)	8.3	A	3.5	A	4.8	A	3.4	A
151	Victor St/Torrance Blvd (Area 6)	4.8	A	2.9	A	3.8	A	2.1	A
152	Village Lane/Torrance Blvd (Area 6)	11.1	B	17.1	B	14.4	B	23.0	C
153	Western Ave (SR-213)/Artesia Blvd (Area 2)	40.6	D	38.1	D	41.1	D	39.6	D
154	Western Ave (SR-213)/182 nd St (Area 2)	14.4	B	12.5	B	14.8	B	12.7	B
155	Western Ave (SR-213)/190 th St (Area 2)	36.3	D	34.3	C	36.2	D	29.6	C
156	Western Ave (SR-213)/195 th St (Area 5)	22.1	C	25.1	C	30.5	C	11.7	B
157	Western Ave (SR-213)/Del Amo Blvd (Area 5)	273.7	F	328.4	F	332.1	F	286.9	F
158	Western Ave (SR-213)/Torrance Blvd (Area 5)	21.4	C	28.1	C	27.0	C	25.7	C
159	Western Ave (SR-213)/213 th St (Area 5)	7.8	A	9.6	A	11.4	B	7.7	A
160	Western Ave (SR-213)/Carson St (Area 5)	23.9	C	21.3	C	24.2	C	21.0	C
161	Western Ave (SR-213)/220 th St (Area 8)	12.5	B	6.4	A	110.7	F	7.3	A
162	Western Ave (SR-213)/223 rd St (Area 8)	14.8	B	13.9	B	19.2	B	14.3	B
163	Western Ave (SR-213)/Sepulveda Blvd (Area 8)	60.2	E	49.8	D	96.4	F	42.5	D
164	Yukon Ave/Redondo Beach Blvd (Area 1)	7.5	A	5.0	A	5.8	A	5.6	A
165	Yukon Ave/Artesia Blvd (Area 1)	18.6	B	14.5	B	18.6	B	15.2	B
166	Yukon Ave/182 nd St (Area 1)	12.6	B	12.3	B	13.2	B	13.5	B

Note: Delay shown in seconds per vehicle; Deficient intersection operation shown in **bold italics**.

DEFICIENT INTERSECTION OPERATION BASED ON *HCM* METHODOLOGY

As shown in Table 3-2, the following 21 study intersections are forecast to operate at a deficient LOS (LOS E or worse) according to City of Torrance performance criteria based on *HCM* analysis methodology during the weekday a.m. peak hour, weekday mid-day peak hour, and/or weekday p.m. peak hour for forecast near-term conditions:

15. Anza Avenue/Sepulveda Boulevard
(weekday p.m. peak hour only);
37. Crenshaw Boulevard/190th Street
(weekday p.m. peak hour only);
38. Crenshaw Boulevard/Del Amo Boulevard
(weekday a.m., mid-day, and p.m. peak hours);
41. Crenshaw Boulevard/Torrance Boulevard
(weekday p.m. peak hour only);
50. Crenshaw Boulevard/Lomita Boulevard
(weekday p.m. peak hour only);
52. Crenshaw Boulevard/Skypark Drive-Amsler Street
(weekend mid-day peak hour only);
54. Crenshaw Boulevard/Pacific Coast Highway (SR-1)
(weekday a.m., weekday p.m., and weekend mid-day peak hours);
77. Hawthorne Boulevard (SR-107)/Del Amo Boulevard
(weekday a.m. peak hour only);
80. Hawthorne Boulevard (SR-107)/Torrance Boulevard
(weekday p.m. and weekend mid-day peak hours);
83. Hawthorne Boulevard (SR-107)/Carson Street
(weekday p.m. and weekend mid-day peak hours);
85. Hawthorne Boulevard (SR-107)/Sepulveda Boulevard
(weekday p.m. and weekend mid-day peak hours);
87. Hawthorne Boulevard (SR-107)/Lomita Boulevard
(weekday p.m. peak hour only);
89. Hawthorne Boulevard (SR-107)/Pacific Coast Highway (SR-1)
(weekend mid-day peak hour only);
104. Inglewood Avenue/190th Street
(weekday mid-day and weekend mid-day peak hours);
133. Prairie Avenue/Redondo Beach Boulevard
(weekday p.m. peak hour only);
136. Prairie Avenue/190th Street
(weekday p.m. peak hour only);
137. Prairie Avenue/Del Amo Boulevard
(weekday p.m. peak hour only);
148. Van Ness Avenue/Del Amo Boulevard
(weekday mid-day peak hour only);

- 157. Western Avenue (SR-213)/Del Amo Boulevard
(weekday a.m., mid-day, p.m., and weekend mid-day peak hours);
- 161. Western Avenue (SR-213)/220th Street
(weekday p.m. peak hour only); and
- 163. Western Avenue (SR-213)/Sepulveda Boulevard
(weekday a.m. and p.m. peak hours).



Lomita Boulevard

**FORECAST NEAR-TERM CONDITIONS WEEKDAY PEAK HOUR LEVEL OF SERVICE –
ICU METHODOLOGY**

Table 3-3 summarizes forecast near-term conditions weekday a.m. peak hour, weekday mid-day peak hour, weekday p.m. peak hour, and weekend mid-day peak hour LOS of the study intersections utilizing the *ICU* analysis methodology, which is based on corresponding volume to capacity (*V/C*) ratios; detailed LOS analysis sheets are contained in Appendix D.

Table 3-3
Forecast Near-Term Conditions Peak Hour LOS – ICU Methodology
Forecast Near-Term Conditions Weekday AM, Mid-Day, & PM, and Weekend Mid-Day Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
1	Abalone Ave/Carson St (Area 5)	0.47	A	0.53	A	0.57	A	0.49	A
2	Aero Way/Pacific Coast Hwy (SR-1) (Area 10)	0.44	A	0.39	A	0.48	A	0.49	A
3	Ainsworth Ave/Redondo Beach Blvd (Area 1)	0.57	A	0.44	A	0.60	A	0.46	A
4	Airport Dr/Pacific Coast Hwy (SR-1) (Area 10)	0.69	B	0.65	B	0.72	C	0.70	B
5	Amie Ave/Torrance Blvd (Area 4)	0.46	A	0.42	A	0.57	A	0.52	A
6	Amie Ave-Freeman Ave/Redondo Beach Blvd (Area 1)	0.42	A	0.40	A	0.49	A	0.43	A
7	Anza Ave/190 th St (Area 3)	0.89	D	0.91	E	0.89	D	0.89	D
8	Anza Ave/Halison St (Area 3)	0.50	A	0.42	A	0.40	A	0.43	A
9	Anza Ave/Del Amo Blvd (Area 3)	0.96	E	0.77	C	0.97	E	0.74	C
10	Anza Ave/Spencer St (Area 3)	0.49	A	0.44	A	0.60	A	0.47	A
11	Anza Ave/Emerald St (Area 3)	0.50	A	0.50	A	0.59	A	0.50	A
12	Anza Ave/Torrance Blvd (Area 6)	0.80	C	0.86	D	0.98	E	1.01	F
13	Anza Ave/Lenore St (Area 6)	0.52	A	0.46	A	0.51	A	0.49	A
14	Anza Ave/Carson St (Area 6)	0.70	B	0.74	C	0.86	D	0.78	C
15	Anza Ave/Sepulveda Blvd (Area 6)	1.05	F	0.88	D	1.15	F	1.05	F
16	Anza Ave/226 th St (Area 9)	0.47	A	0.33	A	0.53	A	0.45	A
17	Anza Ave/Lomita Blvd (Area 9)	0.79	C	0.55	A	0.76	C	0.70	B
18	Anza Ave/Calle Mayor (Area 9)	0.73	C	0.46	A	0.66	B	0.44	A
19	Anza Ave/Pacific Coast Hwy (SR-1) (Area 9)	0.83	D	0.71	C	0.83	D	0.85	D

Note: V/C = volume/capacity ratio; Deficient intersection operation shown in **bold italics**.

Table 3-3 (Cont.)
Forecast Near-Term Conditions Peak Hour LOS – ICU Methodology
Forecast Near-Term Conditions Weekday AM, Mid-Day, & PM, and Weekend Mid-Day Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
20	Arlington Ave/Torrance Blvd (Area 5)	0.74	C	0.65	B	1.02	F	0.56	A
21	Arlington Ave/Carson St (Area 5)	0.68	B	0.59	A	0.77	C	0.63	B
22	Arlington Ave/Plaza Del Amo-Washington Ave (Area 8)	0.93	E	0.87	D	0.83	D	0.91	E
23	Arlington Ave/Sepulveda Blvd (Area 8)	0.90	D	0.73	C	0.86	D	0.66	B
24	Arlington Ave/231 st St (Area 8)	0.51	A	0.42	A	0.56	A	0.35	A
25	Arlington Ave/235 th St (Area 8)	0.76	C	0.47	A	0.72	C	0.41	A
26	Cabrillo Ave/Carson St (Area 5)	0.51	A	0.61	B	0.75	C	0.64	B
27	Cabrillo Ave/Sepulveda Blvd (Area 8)	0.84	D	0.53	A	0.61	B	0.53	A
28	Cabrillo Ave-Van Ness Ave/Torrance Blvd (Area 5)	0.87	D	0.75	C	0.91	E	0.50	A
29	Calle Mayor/Pacific Coast Hwy (SR-1) (Area 9)	0.77	C	0.65	B	0.87	D	0.78	C
30	Carlow Road/Calle Mayor (Area 9)	0.37	A	0.19	A	0.31	A	0.23	A
31	Casimir Ave/Artesia Blvd (Area 2)	0.58	A	0.37	A	0.55	A	0.39	A
32	Cota Ave/Torrance Blvd (Area 5)	0.60	A	0.58	A	0.66	B	0.60	A
33	Crenshaw Blvd/Redondo Beach Blvd (Area 2)	0.90	D	0.79	C	0.94	E	0.92	E
34	Crenshaw Blvd/16 th St-Cherry Ave (Area 2)	0.76	C	0.60	A	0.74	C	0.57	A
35	Crenshaw Blvd/Artesia Blvd (Area 2)	1.00	E	0.70	B	1.01	F	0.96	E
36	Crenshaw Blvd/182 nd St (Area 2)	1.04	F	0.96	E	1.14	F	0.92	E
37	Crenshaw Blvd/190 th St (Area 4)	1.09	F	0.85	D	1.27	F	0.97	E
38	Crenshaw Blvd/Del Amo Blvd (Area 4)	1.17	F	1.17	F	1.40	F	1.07	F
39	Crenshaw Blvd/208 th St (Area 4)	0.61	B	0.60	A	0.71	C	0.52	A

Note: V/C = volume/capacity ratio; Deficient intersection operation shown in **bold italics**.

Table 3-3 (Cont.)
Forecast Near-Term Conditions Peak Hour LOS – ICU Methodology
Forecast Near-Term Conditions Weekday AM, Mid-Day, & PM, and Weekend Mid-Day Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
40	Crenshaw Blvd/Maricopa St (Area 4)	0.75	C	0.73	C	0.95	E	0.73	C
41	Crenshaw Blvd/Torrance Blvd (Area 4)	0.97	E	0.95	E	1.11	F	0.73	C
42	Crenshaw Blvd/El Dorado St (Area 7)	0.69	B	0.52	A	0.66	B	0.48	A
43	Crenshaw Blvd/Carson St (Area 7)	1.00	E	0.93	E	1.08	F	0.82	D
44	Crenshaw Blvd/Jefferson St (Area 7)	0.67	B	0.60	A	0.77	C	0.61	B
45	Crenshaw Blvd/Plaza Del Amo (Area 7)	0.60	A	0.62	B	0.77	C	0.55	A
46	Crenshaw Blvd/Park Del Amo-Scroc Ave (Area 7)	0.61	B	0.57	A	0.76	C	0.38	A
47	Crenshaw Blvd/Sepulveda Blvd (Area 8)	0.86	D	0.90	D	0.99	E	0.75	C
48	Crenshaw Blvd/235 th St (Area 8)	0.87	D	0.87	D	0.91	E	0.96	E
49	Crenshaw Blvd/237 th St (Area 8)	0.66	B	0.72	C	0.84	D	0.71	C
50	Crenshaw Blvd/Lomita Blvd (Area 8)	1.03	F	0.98	E	1.27	F	0.93	E
51	Crenshaw Blvd/Torrance Crossroads (Area 8)	0.46	A	0.63	A	0.74	C	0.75	C
52	Crenshaw Blvd/Skypark Dr-Amsler St (Area 8)	0.56	A	0.70	B	0.86	D	1.38	F
53	Crenshaw Blvd/Airport Dr (Area 10)	0.59	A	0.76	C	0.81	D	0.93	E
54	Crenshaw Blvd/Pacific Coast Hwy (SR-1) (Area 10)	1.16	E	1.00	E	1.42	F	1.21	F
55	Crenshaw Blvd/Crest Road (Area 10)	0.59	A	0.44	A	0.52	A	0.49	A
56	Crenshaw Blvd/Rolling Hills Road (Area 10)	0.80	C	0.74	C	0.85	D	0.75	C
57	Del Amo Circle/Carson St (Area 7)	0.38	A	0.73	C	0.69	B	0.84	D
58	Del Amo Circle East/Carson St (Area 7)	0.37	A	0.62	B	0.68	B	0.71	C

Note: V/C = volume/capacity ratio; Deficient intersection operation shown in **bold italics**.

Table 3-3 (Cont.)
Forecast Near-Term Conditions Peak Hour LOS – ICU Methodology
Forecast Near-Term Conditions Weekday AM, Mid-Day, & PM, and Weekend Mid-Day Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
59	Del Amo Circle East/Sepulveda Blvd (Area 7)	0.78	C	0.80	D	0.95	E	0.91	E
60	Denny Rd-Robinson Ave/Pacific Coast Hwy (SR-1) (Area 10)	0.50	A	0.45	A	0.53	A	0.58	A
61	Doty Ave/182 nd St (Area 1)	0.43	A	0.27	A	0.39	A	0.32	A
62	Early Ave/Lomita Blvd (Area 10)	0.63	B	0.68	B	0.74	C	0.41	A
63	El Prado Ave/Carson St (Area 5)	0.64	B	0.48	A	0.64	B	0.50	A
64	Entradero Ave/Del Amo Blvd (Area 3)	0.76	C	0.53	A	0.61	B	0.47	A
65	Entradero Ave-Meyer Lane/190 th St (Area 3)	0.70	B	0.64	B	0.64	B	0.61	B
66	Fern Ave/Torrance Blvd (Area 4)	0.51	A	0.49	A	0.63	B	0.50	A
67	Garnier St/Lomita Blvd (Area 10)	0.58	A	0.62	B	0.64	B	0.41	A
68	Gramercy Place/190 th St (Area 2)	0.54	A	0.46	A	0.66	B	0.34	A
69	Hawthorne Blvd (SR-107)/Redondo Beach Blvd (Area 1)	0.95	E	0.79	C	0.95	E	0.75	C
70	Hawthorne Blvd (SR-107)/Artesia Blvd (Area 1)	0.88	D	0.72	C	0.84	D	0.82	D
71	Hawthorne Blvd (SR-107)/177 th St (Area 1)	0.64	B	0.63	B	0.68	B	0.78	C
72	Hawthorne Blvd (SR-107)/182 nd St (Area 1)	0.71	C	0.68	B	0.95	E	0.66	B
73	Hawthorne Blvd (SR-107)/186 th St (Area 1)	0.65	B	0.58	A	0.69	B	0.59	A
74	Hawthorne Blvd (SR-107)/190 th St (Area 3)	0.94	E	0.78	C	0.97	E	0.87	D
75	Hawthorne Blvd (SR-107)/Talisman St (Area 3)	0.58	A	0.81	D	0.73	C	0.66	B
76	Hawthorne Blvd (SR-107)/Halison St (Area 3)	0.55	A	0.79	C	0.67	B	0.66	B
77	Hawthorne Blvd (SR-107)/Del Amo Blvd (Area 3)	1.14	F	1.03	F	1.07	F	0.95	E
78	Hawthorne Blvd (SR-107)/Spencer St (Area 3)	0.67	B	0.71	C	0.81	D	0.60	A

Note: V/C = volume/capacity ratio; Deficient intersection operation shown in **bold italics**.

Table 3-3 (Cont.)
Forecast Near-Term Conditions Peak Hour LOS – ICU Methodology
Forecast Near-Term Conditions Weekday AM, Mid-Day, & PM, and Weekend Mid-Day Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
79	Hawthorne Blvd (SR-107)/Emerald St (Area 3)	0.73	C	0.65	B	0.75	C	1.02	F
80	Hawthorne Blvd (SR-107)/Torrance Blvd (Area 6)	0.82	D	0.87	D	1.05	F	1.25	F
81	Hawthorne Blvd (SR-107)/Village Lane-Fashion Way (Area 6)	0.57	A	0.70	B	0.80	C	0.66	B
82	Hawthorne Blvd (SR-107)/Del Amo Circle-Del Amo Circle N (Area 6)	0.56	A	0.76	C	0.81	D	0.67	B
83	Hawthorne Blvd (SR-107)/Carson St (Area 6)	0.79	C	1.03	F	1.27	F	1.23	F
84	Hawthorne Blvd (SR-107)/Center Way (Area 6)	0.49	A	0.75	C	0.63	B	0.82	D
85	Hawthorne Blvd (SR-107)/Sepulveda Blvd (Area 6)	0.90	D	0.99	E	1.14	F	1.20	F
86	Hawthorne Blvd (SR-107)/230 th St (Area 9)	0.71	C	0.93	E	0.91	E	0.78	C
87	Hawthorne Blvd (SR-107)/Lomita Blvd (Area 9)	0.95	E	1.00	E	1.13	F	0.98	E
88	Hawthorne Blvd (SR-107)/Skypark Dr (Area 9)	0.69	B	0.73	C	0.82	D	0.73	C
89	Hawthorne Blvd (SR-107)/Pacific Coast Hwy (SR-1) (Area 9)	0.98	E	0.93	E	0.99	E	1.10	F
90	Hawthorne Blvd (SR-107)/244 th St (Area 10)	0.51	A	0.43	A	0.55	A	0.43	A
91	Hawthorne Blvd (SR-107)/Newton St (Area 10)	0.58	A	0.49	A	0.57	A	0.59	A
92	Hawthorne Blvd (SR-107)/Via Valmonte St (Area 10)	0.57	A	0.52	A	0.66	B	0.57	A
93	Hawthorne Blvd (SR-107)/Rolling Hills Road (Area 10)	0.79	C	0.60	A	0.69	B	0.62	B
94	Henrietta St/Del Amo Blvd (Area 3)	0.87	D	0.60	A	0.63	B	0.54	A
95	Henrietta St/Torrance Blvd (Area 6)	0.53	A	0.51	A	0.56	A	0.53	A
96	Hickory St/Torrance Blvd (Area 4)	0.55	A	0.51	A	0.69	B	0.43	A
97	Hickory St/Sepulveda Blvd (Area 7)	0.85	D	0.80	C	0.83	D	0.82	D
98	I-405 SB Off-Ramp-Osage Ave/Redondo Beach Blvd (Area 1)	0.54	A	0.49	A	0.67	B	0.50	A

Note: V/C = volume/capacity ratio; Deficient intersection operation shown in **bold italics**.

Table 3-3 (Cont.)
Forecast Near-Term Conditions Peak Hour LOS – ICU Methodology
Forecast Near-Term Conditions Weekday AM, Mid-Day, & PM, and Weekend Mid-Day Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
99	I-405 NB Ramps/Artesia Blvd (Area 1)	0.57	A	0.51	A	0.64	B	0.59	A
100	I-405 NB Ramps/182 nd St (Area 2)	0.79	C	0.80	C	1.03	F	0.78	C
101	I-405 SB Ramps/Crenshaw Blvd (Area 2)	1.20	F	1.00	E	1.18	F	0.94	E
102	I-405 NB Ramps/Western Ave (SR-213) (Area 2)	0.80	C	0.66	B	0.79	C	0.49	A
103	I-405 SB Ramps/190 th St (Area 2)	0.94	E	0.67	B	1.02	F	0.56	A
104	Inglewood Ave/190 th St (Area 3)	0.97	E	1.33	F	0.96	E	1.20	F
105	Juniper Ave/235 th St (Area 10)	0.42	A	0.41	A	0.48	A	0.39	A
106	Madison Ave/Sepulveda Blvd (Area 7)	0.47	A	0.47	A	0.54	A	0.53	A
107	Madison St/Skypark Dr (Area 10)	0.40	A	0.60	A	0.59	A	0.40	A
108	Madison St/Pacific Coast Hwy (SR-1) (Area 10)	0.61	B	0.60	A	0.63	B	0.64	B
109	Madrona Ave/Spencer St (Area 4)	0.44	A	0.44	A	0.51	A	0.44	A
110	Madrona Ave/Emerald St (Area 4)	0.43	A	0.45	A	0.54	A	0.41	A
111	Madrona Ave/Torrance Blvd (Area 4)	0.70	B	0.69	B	0.89	D	0.70	B
112	Madrona Ave/Fashion Way (Area 7)	0.34	A	0.38	A	0.43	A	0.43	A
113	Madrona Ave/Carson St (Area 7)	0.60	A	0.65	B	0.71	C	0.76	C
114	Madrona Ave/Plaza Del Amo (Area 7)	0.55	A	0.47	A	0.45	A	0.38	A
115	Madrona Ave/Sepulveda Blvd (Area 7)	0.79	C	0.84	D	0.96	E	0.89	D
116	Maple Ave/Maricopa St (Area 4)	0.50	A	0.40	A	0.46	A	0.20	A
117	Maple Ave/Torrance Blvd (Area 4)	0.72	C	0.76	C	0.85	D	0.53	A
118	Maple Ave/Carson St (Area 7)	0.73	C	0.67	B	0.87	D	0.75	C

Note: V/C = volume/capacity ratio; Deficient intersection operation shown in **bold italics**.

Table 3-3 (Cont.)
Forecast Near-Term Conditions Peak Hour LOS – ICU Methodology
Forecast Near-Term Conditions Weekday AM, Mid-Day, & PM, and Weekend Mid-Day Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
119	Maple Ave/Plaza Del Amo (Area 7)	0.32	A	0.31	A	0.36	A	0.37	A
120	Maple Ave/Sepulveda Blvd (Area 7)	0.66	B	0.75	C	0.83	C	0.79	C
121	Maple Ave/226 th St-Nadine Circle (Area 7)	0.53	A	0.41	A	0.50	A	0.46	A
122	Maple Ave/Nadine Circle (Area 10)	0.41	A	0.43	A	0.59	A	0.43	A
123	Mobile Oil Entrance/190 th St (Area 4)	0.52	A	0.45	A	0.67	B	0.51	A
124	Ocean Ave/Sepulveda Blvd (Area 6)	0.57	A	0.50	A	0.56	A	0.44	A
125	Ocean Ave/Lomita Blvd (Area 9)	0.54	A	0.37	A	0.59	A	0.39	A
126	Palos Verdes Blvd/Torrance Blvd (Area 6)	0.61	B	0.59	A	0.66	B	0.57	A
127	Palos Verdes Blvd/Sepulveda Blvd (Area 6)	0.68	B	0.55	A	0.66	B	0.54	A
128	Palos Verdes Blvd/Pacific Coast Hwy (SR-1) (Area 9)	0.81	D	0.71	C	0.93	E	0.75	C
129	Palos Verdes Blvd/Catalina-Camino Del Campo (Area 9)	0.56	A	0.52	A	0.71	C	0.65	B
130	Palos Verdes Blvd/Calle Miramar (Area 9)	0.59	A	0.39	A	0.53	A	0.44	A
131	Palos Verdes Blvd/Calle Mayor (Area 9)	0.54	A	0.37	A	0.51	A	0.45	A
132	Plaza Del Amo/Carson St (Area 5)	0.89	D	0.62	B	0.82	D	0.63	B
133	Prairie Ave/Redondo Beach Blvd (Area 1)	0.99	E	0.87	D	1.14	F	0.81	D
134	Prairie Ave/Artesia Blvd (Area 1)	0.86	D	0.72	C	0.90	D	0.92	E
135	Prairie Ave/182 nd St (Area 1)	0.93	E	0.72	C	0.93	E	0.80	C
136	Prairie Ave/190 th St (Area 4)	0.96	E	0.78	C	1.16	F	0.84	D
137	Prairie Ave/Del Amo Blvd (Area 4)	0.85	D	0.78	C	1.14	F	0.59	A
138	Prospect Ave/Torrance Blvd (Area 6)	0.77	C	0.66	B	0.79	C	0.55	A

Note: V/C = volume/capacity ratio; Deficient intersection operation shown in **bold italics**.

Table 3-3 (Cont.)
Forecast Near-Term Conditions Peak Hour LOS – ICU Methodology
Forecast Near-Term Conditions Weekday AM, Mid-Day, & PM, and Weekend Mid-Day Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
139	Prospect Ave-Vista Del Parque/Pacific Coast Hwy (SR-1) (Area 9)	0.63	B	0.55	A	0.71	C	0.70	B
140	Rolling Hills Way/Pacific Coast Hwy (SR-1) (Area 10)	0.52	A	0.54	A	0.73	C	0.67	B
141	Sartori Ave/Torrance Blvd (Area 5)	0.63	B	0.66	B	0.77	C	0.46	A
142	Van Ness Ave/Redondo Beach Blvd (Area 2)	0.68	B	0.70	B	0.84	D	0.77	C
143	Van Ness Ave/166 th St (Area 2)	0.49	A	0.31	A	0.46	A	0.31	A
144	Van Ness Ave/Artesia Blvd (Area 2)	0.55	A	0.50	A	0.78	C	0.50	A
145	Van Ness Ave/182 nd St (Area 2)	0.54	A	0.38	A	0.60	A	0.35	A
146	Van Ness Ave/190 th St (Area 5)	0.81	D	0.59	A	0.85	D	0.52	A
147	Van Ness Ave/195 th St (Area 5)	0.34	A	0.57	A	0.45	A	0.22	A
148	Van Ness Ave/Del Amo Blvd (Area 5)	1.09	F	1.28	F	1.06	F	0.86	D
149	Van Ness Ave/Dominguez St (Area 5)	0.36	A	0.37	A	0.43	A	0.16	A
150	Victor St/Del Amo Blvd (Area 3)	0.87	D	0.58	A	0.62	B	0.45	A
151	Victor St/Torrance Blvd (Area 6)	0.51	A	0.59	A	0.61	B	0.51	A
152	Village Lane/Torrance Blvd (Area 6)	0.41	A	0.56	A	0.60	A	0.59	A
153	Western Ave (SR-213)/Artesia Blvd (Area 2)	0.89	D	0.71	C	0.89	D	0.78	C
154	Western Ave (SR-213)/182 nd St (Area 2)	0.56	A	0.58	A	0.70	B	0.44	A
155	Western Ave (SR-213)/190 th St (Area 2)	0.94	E	0.70	B	0.81	D	0.47	A
156	Western Ave (SR-213)/195 th St (Area 5)	0.89	D	0.80	C	1.00	E	0.46	A
157	Western Ave (SR-213)/Del Amo Blvd (Area 5)	1.87	F	2.03	F	1.99	F	1.76	F
158	Western Ave (SR-213)/Torrance Blvd (Area 5)	0.81	D	0.74	C	0.86	D	0.61	B
159	Western Ave (SR-213)/213 th St (Area 5)	0.77	C	0.53	A	0.79	C	0.48	A

Note: V/C = volume/capacity ratio; Deficient intersection operation shown in **bold italics**.

Table 3-3 (Cont.)
Forecast Near-Term Conditions Peak Hour LOS – ICU Methodology
Forecast Near-Term Conditions Weekday AM, Mid-Day, & PM, and Weekend Mid-Day Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
160	Western Ave (SR-213)/Carson St (Area 5)	1.00	E	0.85	D	1.10	F	0.81	D
161	Western Ave (SR-213)/220 th St (Area 8)	0.87	D	0.53	A	1.49	F	0.51	A
162	Western Ave (SR-213)/223 rd St (Area 8)	0.92	E	0.71	C	1.17	F	0.71	C
163	Western Ave (SR-213)/Sepulveda Blvd (Area 8)	1.11	F	0.99	E	1.25	F	0.87	D
164	Yukon Ave/Redondo Beach Blvd (Area 1)	0.59	A	0.46	A	0.57	A	0.44	A
165	Yukon Ave/Artesia Blvd (Area 1)	0.72	C	0.48	A	0.70	B	0.57	A
166	Yukon Ave/182 nd St (Area 1)	0.46	A	0.36	A	0.59	A	0.45	A

Note: V/C = volume/capacity ratio; Deficient intersection operation shown in **bold italics**.

DEFICIENT INTERSECTION OPERATION BASED ON *ICU* METHODOLOGY

As shown in Table 3-3, the following 52 study intersections are forecast to operate at a deficient LOS (LOS E or worse) according to City of Torrance performance criteria based on *ICU* analysis methodology during the weekday a.m. peak hour, weekday mid-day peak hour, and/or weekday p.m. peak hour for forecast near-term conditions:

7. Anza Avenue/190th Street
(weekday mid-day peak hour only);
9. Anza Avenue/Del Amo Boulevard
(weekday a.m. and p.m. peak hours);
12. Anza Avenue/Torrance Boulevard
(weekday p.m. and weekend mid-day peak hours);
15. Anza Avenue/Sepulveda Boulevard
(weekday a.m., p.m., and weekend mid-day peak hours);
20. Arlington Avenue/Torrance Boulevard
(weekday p.m. peak hour only);
22. Arlington Avenue/Plaza Del Amo-Washington Avenue
(weekday a.m. and weekend mid-day peak hours);
28. Cabrillo Avenue-Van Ness Avenue/Torrance Boulevard
(weekday p.m. peak hour only);
33. Crenshaw Boulevard/Redondo Beach Boulevard
(weekday pm. and weekend mid-day peak hours);
35. Crenshaw Boulevard/Artesia Boulevard
(weekday a.m., p.m., and weekend mid-day peak hours);
36. Crenshaw Boulevard/182nd Street
(weekday a.m., mid-day, p.m., and weekend mid-day peak hours);
37. Crenshaw Boulevard/190th Street
(weekday a.m., p.m., and weekend mid-day peak hours);
38. Crenshaw Boulevard/Del Amo Boulevard
(weekday a.m., mid-day, p.m., and weekend mid-day peak hours);
40. Crenshaw Boulevard/Maricopa Street
(weekday p.m. peak hour only);
41. Crenshaw Boulevard/Torrance Boulevard
(weekday a.m., mid-day, and p.m. peak hours);
43. Crenshaw Boulevard/Carson Street
(weekday a.m., mid-day, and p.m. peak hours);
47. Crenshaw Boulevard/Sepulveda Boulevard
(weekday p.m. peak hour only);
48. Crenshaw Boulevard/235th Street
(weekday p.m. and weekend mid-day peak hours);
50. Crenshaw Boulevard/Lomita Boulevard
(weekday a.m., mid-day, p.m., and weekend mid-day peak hours);

52. Crenshaw Boulevard/Skypark Drive-Amsler Street
(weekend mid-day peak hour only);
53. Crenshaw Boulevard/Airport Drive
(weekend mid-day peak hour only);
54. Crenshaw Boulevard/Pacific Coast Highway (SR-1)
(weekday a.m., mid-day, p.m., and weekend mid-day peak hours);
59. Del Amo Circle East/Sepulveda Boulevard
(weekday p.m. and weekend mid-day peak hours);
69. Hawthorne Boulevard (SR-107)/Redondo Beach Boulevard
(weekday a.m. and p.m. peak hours);
72. Hawthorne Boulevard (SR-107)/182nd Street
(weekday pm. peak hour only);
74. Hawthorne Boulevard (SR-107)/190th Street
(weekday a.m. and p.m. peak hours);
77. Hawthorne Boulevard (SR-107)/Del Amo Boulevard
(weekday a.m., mid-day, p.m., and weekend mid-day peak hours);
79. Hawthorne Boulevard (SR-107)/Emerald Street
(weekend mid-day peak hour only);
80. Hawthorne Boulevard (SR-107)/Torrance Boulevard
(weekday p.m. and weekend mid-day peak hours);
83. Hawthorne Boulevard (SR-107)/Carson Street
(weekday mid-day, p.m., and weekend mid-day peak hours);
85. Hawthorne Boulevard (SR-107)/Sepulveda Boulevard
(weekday mid-day, p.m., and weekend mid-day peak hours);
86. Hawthorne Boulevard (SR-107)/230th Street
(weekday mid-day and p.m. peak hours);
87. Hawthorne Boulevard (SR-107)/Lomita Boulevard
(weekday a.m., mid-day, p.m., and weekend mid-day peak hours);
89. Hawthorne Boulevard (SR-107)/Pacific Coast Highway (SR-1)
(weekday a.m., mid-day, p.m., and weekend mid-day peak hours);
100. I-405 Northbound Ramps/182nd Street
(weekday p.m. peak hour only);
101. I-405 Southbound Ramps/Crenshaw Boulevard
(weekday a.m., mid-day, p.m., and weekend mid-day peak hours);
103. I-405 Southbound Ramps/190th Street
(weekday a.m. and p.m. peak hours);
104. Inglewood Avenue/190th Street
(weekday a.m., mid-day, p.m., and weekend mid-day peak hours);
115. Madrona Avenue/Sepulveda Boulevard
(weekday p.m. peak hour only);

128. Palos Verdes Boulevard/Pacific Coast Highway (SR-1)
(weekday p.m. peak hour only);
133. Prairie Avenue/Redondo Beach Boulevard
(weekday a.m. and p.m. peak hours);
134. Prairie Avenue/Artesia Boulevard
(weekend mid-day peak hour only);
135. Prairie Avenue/182nd Street
(weekday a.m. and p.m. peak hours);
136. Prairie Avenue/190th Street
(weekday a.m. and p.m. peak hours);
137. Prairie Avenue/Del Amo Boulevard
(weekday p.m. peak hour only);
148. Van Ness Avenue/Del Amo Boulevard
(weekday a.m., mid-day, and p.m. peak hours);
155. Western Avenue (SR-213)/190th Street
(weekday a.m. peak hour only);
156. Western Avenue (SR-213)/195th Street
(weekday p.m. peak hour only);
157. Western Avenue (SR-213)/Del Amo Boulevard
(weekday a.m., mid-day, p.m., and weekend mid-day peak hours);
160. Western Avenue (SR-213)/Carson Street
(weekday a.m. and p.m. peak hours);
161. Western Avenue (SR-213)/220th Street
(weekday p.m. peak hour only);
162. Western Avenue (SR-213)/223rd Street
(weekday a.m. and p.m. peak hours); and
163. Western Avenue (SR-213)/Sepulveda Boulevard
(weekday a.m., mid-day, and p.m. peak hours).

FORECAST NEAR-TERM CONDITIONS DEFICIENT INTERSECTION OPERATION SUMMARY

Table 3-4 summarizes forecast near-term conditions weekday a.m. peak hour, weekday mid-day peak hour, weekday p.m. peak hour, and weekend mid-day peak hour LOS of the study intersections operating at a deficient LOS (LOS E or worse) based on *HCM* analysis methodology and *ICU* analysis methodology during one or more study analysis periods; detailed LOS analysis sheets are contained in Appendices C and D.

Table 3-4
Forecast Near-Term LOS Summary – HCM & ICU Methodology
Forecast Near-Term Conditions Weekday AM, Mid-Day, PM,
and Weekend Mid-Day Deficient Intersection Operation Summary

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		HCM	ICU	HCM	ICU	HCM	ICU	HCM	ICU
		Delay – LOS	V/C – LOS	Delay – LOS	V/C – LOS	Delay – LOS	V/C – LOS	Delay – LOS	V/C – LOS
7	Anza Ave/190 th St (Area 3)	29.7 – C	0.89 – D	29.6 – C	0.91 – E	30.0 – C	0.89 – D	28.9 – C	0.89 – D
9	Anza Ave/Del Amo Blvd (Area 3)	42.3 – D	0.96 – E	34.2 – C	0.77 – C	40.7 – D	0.97 – E	33.5 – C	0.74 – C
12	Anza Ave/Torrance Blvd (Area 6)	39.0 – D	0.80 – C	43.4 – D	0.86 – D	46.9 – D	0.98 – E	49.5 – D	1.01 – F
15	Anza Ave/Sepulveda Blvd (Area 6)	53.3 – D	1.05 – F	42.1 – D	0.88 – D	71.2 – E	1.15 – F	52.1 – D	1.05 – F
20	Arlington Ave/Torrance Blvd (Area 5)	8.2 – A	0.74 – C	5.9 – A	0.65 – B	14.6 – B	1.02 – F	4.2 – A	0.56 – A
22	Arlington Ave/Plaza Del Amo-Washington Ave (Area 8)	37.0 – D	0.93 – E	30.0 – C	0.87 – D	32.9 – C	0.83 – D	31.1 – C	0.91 – E
28	Cabrillo Ave-Van Ness Ave/Torrance Blvd (Area 5)	23.1 – C	0.87 – D	23.2 – C	0.75 – C	22.7 – C	0.91 – E	11.2 – B	0.50 – A
33	Crenshaw Blvd/Redondo Beach Blvd (Area 2)	39.8 – D	0.90 – D	37.3 – D	0.79 – C	41.1 – D	0.94 – E	42.0 – D	0.92 – E
35	Crenshaw Blvd/Artesia Blvd (Area 2)	44.6 – D	1.00 – E	30.1 – C	0.70 – B	43.3 – D	1.01 – F	40.8 – D	0.96 – E
36	Crenshaw Blvd/182 nd St (Area 2)	38.1 – D	1.04 – F	30.5 – C	0.96 – E	44.9 – D	1.14 – F	31.9 – C	0.92 – E
37	Crenshaw Blvd/190 th St (Area 4)	50.8 – D	1.09 – F	34.5 – C	0.85 – D	100.9 – F	1.27 – F	43.1 – D	0.97 – E
38	Crenshaw Blvd/Del Amo Blvd (Area 4)	58.7 – E	1.17 – F	72.5 – E	1.17 – F	131.7 – F	1.40 – F	41.7 – D	1.07 – F

Note: Delay shown in seconds per vehicle; V/C = volume/capacity ratio; Deficient intersection operation shown in **bold italics**.

Table 3-4 (Cont.)
Forecast Near-Term LOS Summary – HCM & ICU Methodology
Forecast Near-Term Conditions Weekday AM, Mid-Day, PM,
and Weekend Mid-Day Deficient Intersection Operation Summary

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		HCM	ICU	HCM	ICU	HCM	ICU	HCM	ICU
		Delay – LOS	V/C – LOS	Delay – LOS	V/C – LOS	Delay – LOS	V/C – LOS	Delay – LOS	V/C – LOS
40	Crenshaw Blvd/Maricopa St (Area 4)	14.7 – B	0.75 – C	10.4 – B	0.73 – C	19.7 – B	0.95 – E	13.3 – B	0.73 – C
41	Crenshaw Blvd/Torrance Blvd (Area 4)	39.3 – D	0.97 – E	40.2 – D	0.95 – E	58.0 – E	1.11 – F	34.4 – C	0.82 – D
43	Crenshaw Blvd/Carson St (Area 7)	37.2 – D	1.00 – E	35.9 – D	0.93 – E	53.1 – D	1.08 – F	38.0 – D	0.82 – D
47	Crenshaw Blvd/Sepulveda Blvd (Area 8)	40.6 – D	0.86 – D	41.6 – D	0.90 – D	44.3 – D	0.99 – E	34.0 – C	0.75 – C
48	Crenshaw Blvd/235 th St (Area 8)	19.7 – B	0.87 – D	19.1 – B	0.87 – D	21.0 – C	0.91 – E	20.8 – C	0.96 – E
50	Crenshaw Blvd/Lomita Blvd (Area 8)	44.8 – D	1.03 – F	45.0 – D	0.98 – E	84.4 – F	1.27 – F	37.7 – D	0.93 – E
52	Crenshaw Blvd/Skypark Dr-Amsler St (Area 8)	20.6 – C	0.56 – A	25.5 – C	0.70 – B	24.4 – C	0.86 – D	93.1 – F	1.38 – F
53	Crenshaw Blvd/Airport Dr (Area 10)	11.3 – B	0.59 – A	25.2 – C	0.76 – C	26.1 – C	0.81 – D	37.3 – D	0.93 – E
54	Crenshaw Blvd/Pacific Coast Hwy (SR-1) (Area 10)	59.9 – E	1.16 – E	50.7 – D	1.00 – E	130.1 – F	1.42 – F	91.1 – F	1.21 – F
59	Del Amo Circle East/Sepulveda Blvd (Area 7)	23.2 – C	0.78 – C	26.7 – C	0.80 – D	32.7 – C	0.95 – E	29.7 – C	0.91 – E
69	Hawthorne Blvd (SR-107)/Redondo Beach Blvd (Area 1)	31.7 – C	0.95 – E	32.9 – C	0.79 – C	40.2 – D	0.95 – E	30.2 – C	0.75 – C
72	Hawthorne Blvd (SR-107)/182 nd St (Area 1)	17.6 – B	0.71 – C	21.7 – C	0.68 – B	33.4 – C	0.95 – E	11.7 – B	0.66 – B
74	Hawthorne Blvd (SR-107)/190 th St (Area 3)	36.1 – D	0.94 – E	34.2 – C	0.78 – C	41.2 – D	0.97 – E	36.7 – D	0.87 – D
77	Hawthorne Blvd (SR-107)/Del Amo Blvd (Area 3)	62.8 – E	1.14 – F	44.7 – D	1.03 – F	49.6 – D	1.07 – F	36.5 – D	0.95 – E

Note: Delay shown in seconds per vehicle; V/C = volume/capacity ratio; Deficient intersection operation shown in **bold italics**.

Table 3-4 (Cont.)
Forecast Near-Term LOS Summary – HCM & ICU Methodology
Forecast Near-Term Conditions Weekday AM, Mid-Day, PM,
and Weekend Mid-Day Deficient Intersection Operation Summary

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		HCM	ICU	HCM	ICU	HCM	ICU	HCM	ICU
		Delay – LOS	V/C – LOS	Delay – LOS	V/C – LOS	Delay – LOS	V/C – LOS	Delay – LOS	V/C – LOS
79	Hawthorne Blvd (SR-107)/Emerald St (Area 3)	16.6 – B	0.73 – C	13.8 – B	0.65 – B	15.1 – B	0.75 – C	17.2 – B	1.02 – F
80	Hawthorne Blvd (SR-107)/Torrance Blvd (Area 6)	39.7 – D	0.82 – D	42.3 – D	0.87 – D	58.7 – E	1.05 – F	86.8 – F	1.25 – F
83	Hawthorne Blvd (SR-107)/Carson St (Area 6)	33.2 – C	0.79 – C	46.7 – D	1.03 – F	96.0 – F	1.27 – F	76.1 – E	1.23 – F
85	Hawthorne Blvd (SR-107)/Sepulveda Blvd (Area 6)	40.5 – D	0.90 – D	42.4 – D	0.99 – E	56.8 – E	1.14 – F	87.2 – F	1.20 – F
86	Hawthorne Blvd (SR-107)/230 th St (Area 9)	13.7 – B	0.71 – C	22.9 – C	0.93 – E	17.9 – B	0.91 – E	14.5 – B	0.78 – C
87	Hawthorne Blvd (SR-107)/Lomita Blvd (Area 9)	41.7 – D	0.95 – E	46.2 – D	1.00 – E	58.9 – E	1.13 – F	44.7 – D	0.98 – E
89	Hawthorne Blvd (SR-107)/Pacific Coast Hwy (SR-1) (Area 9)	45.7 – D	0.98 – E	45.3 – D	0.93 – E	49.0 – D	0.99 – E	62.7 – E	1.10 – F
100	I-405 NB Ramps/182 nd St (Area 2)	18.8 – B	0.79 – C	19.7 – B	0.80 – C	25.2 – C	1.03 – F	20.2 – C	0.78 – C
101	I-405 SB Ramps/Crenshaw Blvd (Area 2)	53.9 – D	1.20 – F	27.3 – C	1.00 – E	49.3 – D	1.18 – F	24.1 – C	0.94 – E
103	I-405 SB Ramps/190 th St (Area 2)	41.6 – D	0.94 – E	29.9 – C	0.67 – B	43.1 – D	1.02 – F	27.7 – C	0.56 – A
104	Inglewood Ave/190 th St (Area 3)	34.1 – C	0.97 – E	106.2 – F	1.33 – F	34.3 – C	0.96 – E	66.5 – E	1.20 – F
115	Madrona Ave/Sepulveda Blvd (Area 7)	27.1 – C	0.79 – C	27.7 – C	0.84 – D	34.4 – C	0.96 – E	30.0 – C	0.89 – D
128	Palos Verdes Blvd/Pacific Coast Hwy (SR-1) (Area 9)	36.6 – D	0.81 – D	35.7 – D	0.71 – C	41.6 – D	0.93 – E	36.6 – D	0.75 – C
133	Prairie Ave/Redondo Beach Blvd (Area 1)	49.0 – D	0.99 – E	43.7 – D	0.87 – D	71.6 – E	1.14 – F	40.3 – D	0.81 – D

Note: Delay shown in seconds per vehicle; V/C = volume/capacity ratio; Deficient intersection operation shown in **bold italics**.

Table 3-4 (Cont.)
Forecast Near-Term LOS Summary – HCM & ICU Methodology
Forecast Near-Term Conditions Weekday AM, Mid-Day, PM,
and Weekend Mid-Day Deficient Intersection Operation Summary

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday Mid-Day Peak Hour		Weekday PM Peak Hour		Weekend Mid-Day Peak Hour	
		HCM	ICU	HCM	ICU	HCM	ICU	HCM	ICU
		Delay – LOS	V/C – LOS	Delay – LOS	V/C – LOS	Delay – LOS	V/C – LOS	Delay – LOS	V/C – LOS
134	Prairie Ave/Artesia Blvd (Area 1)	37.4 – D	0.86 – D	35.1 – D	0.72 – C	37.8 – D	0.90 – D	41.7 – D	0.92 – E
135	Prairie Ave/182 nd St (Area 1)	34.6 – C	0.93 – E	26.3 – C	0.72 – C	33.8 – D	0.93 – E	28.8 – C	0.80 – C
136	Prairie Ave/190 th St (Area 4)	44.3 – D	0.96 – E	39.5 – D	0.78 – C	57.7 – E	1.16 – F	39.9 – D	0.84 – D
137	Prairie Ave/Del Amo Blvd (Area 4)	36.9 – D	0.85 – D	35.2 – D	0.78 – C	60.2 – E	1.14 – F	33.2 – C	0.59 – A
148	Van Ness Ave/Del Amo Blvd (Area 5)	31.9 – C	1.09 – F	70.8 – E	1.28 – F	31.4 – C	1.06 – F	20.9 – C	0.86 – D
155	Western Ave (SR-213)/190 th St (Area 2)	36.3 – D	0.94 – E	34.3 – C	0.70 – B	36.2 – D	0.81 – D	29.6 – C	0.47 – A
156	Western Ave (SR-213)/195 th St (Area 5)	22.1 – C	0.89 – D	25.1 – C	0.80 – C	30.5 – C	1.00 – E	11.7 – B	0.46 – A
157	Western Ave (SR-213)/Del Amo Blvd (Area 5)	273.7 – F	1.87 – F	328.4 – F	2.03 – F	332.1 – F	1.99 – F	286.9 – F	1.76 – F
160	Western Ave (SR-213)/Carson St (Area 5)	23.9 – C	1.00 – E	21.3 – C	0.85 – D	24.2 – C	1.10 – F	21.0 – C	0.81 – D
161	Western Ave (SR-213)/220 th St (Area 8)	12.5 – B	0.87 – D	6.4 – A	0.53 – A	110.7 – F	1.49 – F	7.3 – A	0.51 – A
162	Western Ave (SR-213)/223 rd St (Area 8)	14.8 – B	0.92 – E	13.9 – B	0.71 – C	19.2 – B	1.17 – F	14.3 – B	0.71 – C
163	Western Ave (SR-213)/Sepulveda Blvd (Area 8)	60.2 – E	1.11 – F	49.8 – D	0.99 – E	96.4 – F	1.25 – F	42.5 – D	0.87 – D

Note: Delay shown in seconds per vehicle; V/C = volume/capacity ratio; Deficient intersection operation shown in **bold italics**.

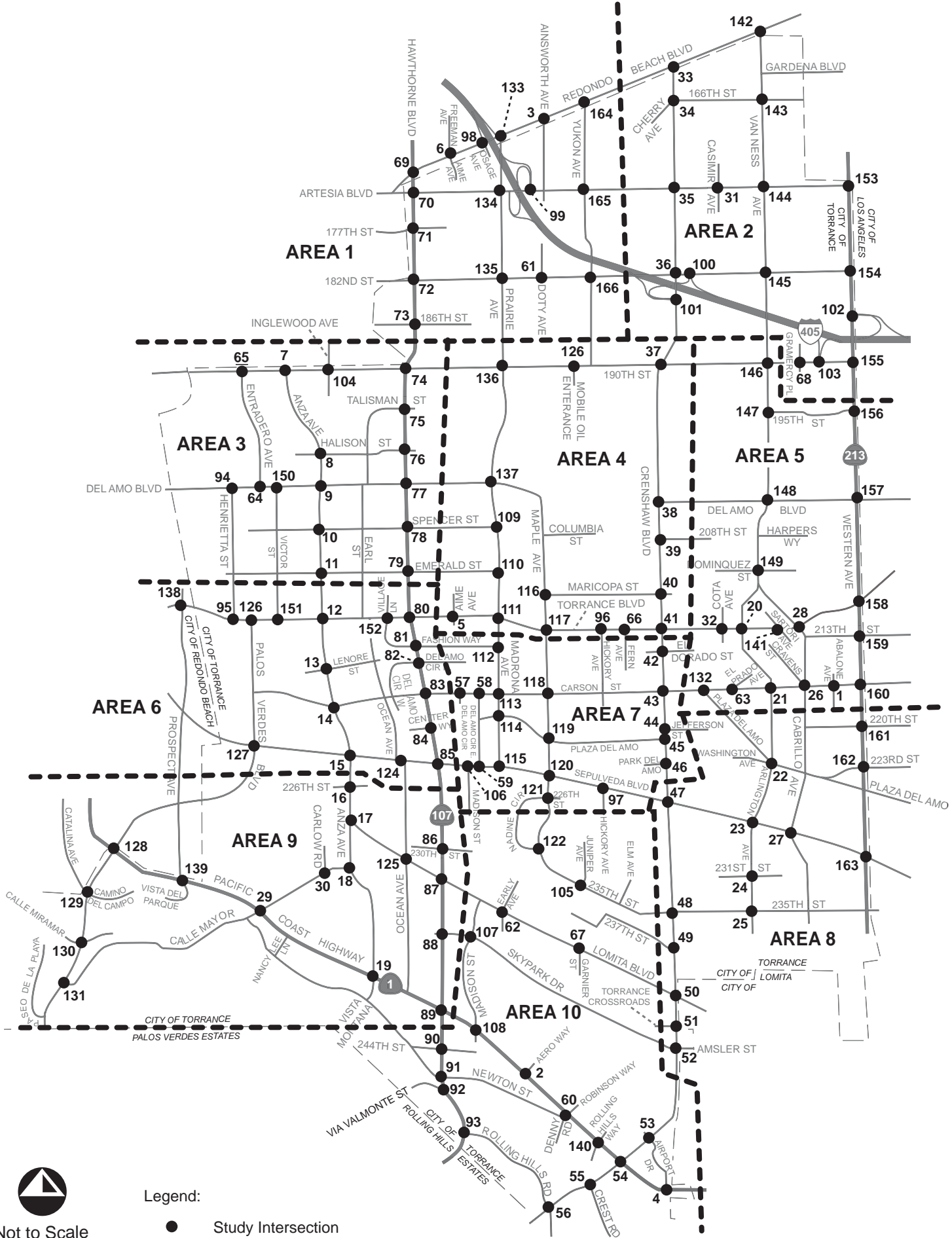
DEFICIENT INTERSECTIONS BASED ON *HCM* AND *ICU* METHODOLOGY

As shown in Table 3-4, the following 52 study intersections are forecast to operate at a deficient LOS (LOS E or worse) according to City of Torrance performance criteria based on *HCM* analysis methodology and *ICU* analysis methodology during the weekday a.m. peak hour, weekday mid-day peak hour, weekday p.m. peak hour, and/or weekend mid-day peak hour for forecast near-term conditions:

7. Anza Avenue/190th Street;
9. Anza Avenue/Del Amo Boulevard
12. Anza Avenue/Torrance Boulevard;
15. Anza Avenue/Sepulveda Boulevard;
20. Arlington Avenue/Torrance Boulevard;
22. Arlington Avenue/Plaza Del Amo-Washington Avenue;
28. Cabrillo Avenue-Van Ness Avenue/Torrance Boulevard;
33. Crenshaw Boulevard/Redondo Beach Boulevard;
35. Crenshaw Boulevard/Artesia Boulevard;
36. Crenshaw Boulevard/182nd Street;
37. Crenshaw Boulevard/190th Street;
38. Crenshaw Boulevard/Del Amo Boulevard;
40. Crenshaw Boulevard/Maricopa Street;
41. Crenshaw Boulevard/Torrance Boulevard;
43. Crenshaw Boulevard/Carson Street;
47. Crenshaw Boulevard/Sepulveda Boulevard;
48. Crenshaw Boulevard/235th Street;
50. Crenshaw Boulevard/Lomita Boulevard;
52. Crenshaw Boulevard/Skypark Drive-Amsler Street;
53. Crenshaw Boulevard/Airport Drive;
54. Crenshaw Boulevard/Pacific Coast Highway (SR-1);
59. Del Amo Circle East/Sepulveda Boulevard;
69. Hawthorne Boulevard (SR-107)/Redondo Beach Boulevard;
72. Hawthorne Boulevard (SR-107)/182nd Street;
74. Hawthorne Boulevard (SR-107)/190th Street;
77. Hawthorne Boulevard (SR-107)/Del Amo Boulevard;
79. Hawthorne Boulevard (SR-107)/Emerald Street;
80. Hawthorne Boulevard (SR-107)/Torrance Boulevard;

83. Hawthorne Boulevard (SR-107)/Carson Street;
85. Hawthorne Boulevard (SR-107)/Sepulveda Boulevard;
86. Hawthorne Boulevard (SR-107)/230th Street;
87. Hawthorne Boulevard (SR-107)/Lomita Boulevard;
89. Hawthorne Boulevard (SR-107)/Pacific Coast Highway (SR-1);
100. I-405 Northbound Ramps/182nd Street;
101. I-405 Southbound Ramps/Crenshaw Boulevard;
103. I-405 Southbound Ramps/190th Street;
104. Inglewood Avenue/190th Street;
115. Madrona Avenue/Sepulveda Boulevard;
128. Palos Verdes Boulevard/Pacific Coast Highway (SR-1);
133. Prairie Avenue/Redondo Beach Boulevard;
134. Prairie Avenue/Artesia Boulevard;
135. Prairie Avenue/182nd Street;
136. Prairie Avenue/190th;
137. Prairie Avenue/Del Amo Boulevard;
148. Van Ness Avenue/Del Amo Boulevard;
155. Western Avenue (SR-213)/190th Street;
156. Western Avenue (SR-213)/195th Street;
157. Western Avenue (SR-213)/Del Amo Boulevard;
160. Western Avenue (SR-213)/Carson Street;
161. Western Avenue (SR-213)/220th Street;
162. Western Avenue (SR-213)/223rd Street; and
163. Western Avenue (SR-213)/Sepulveda Boulevard.

Exhibit 3-6 (page 101) shows the locations of forecast near-term conditions deficient LOS intersections.



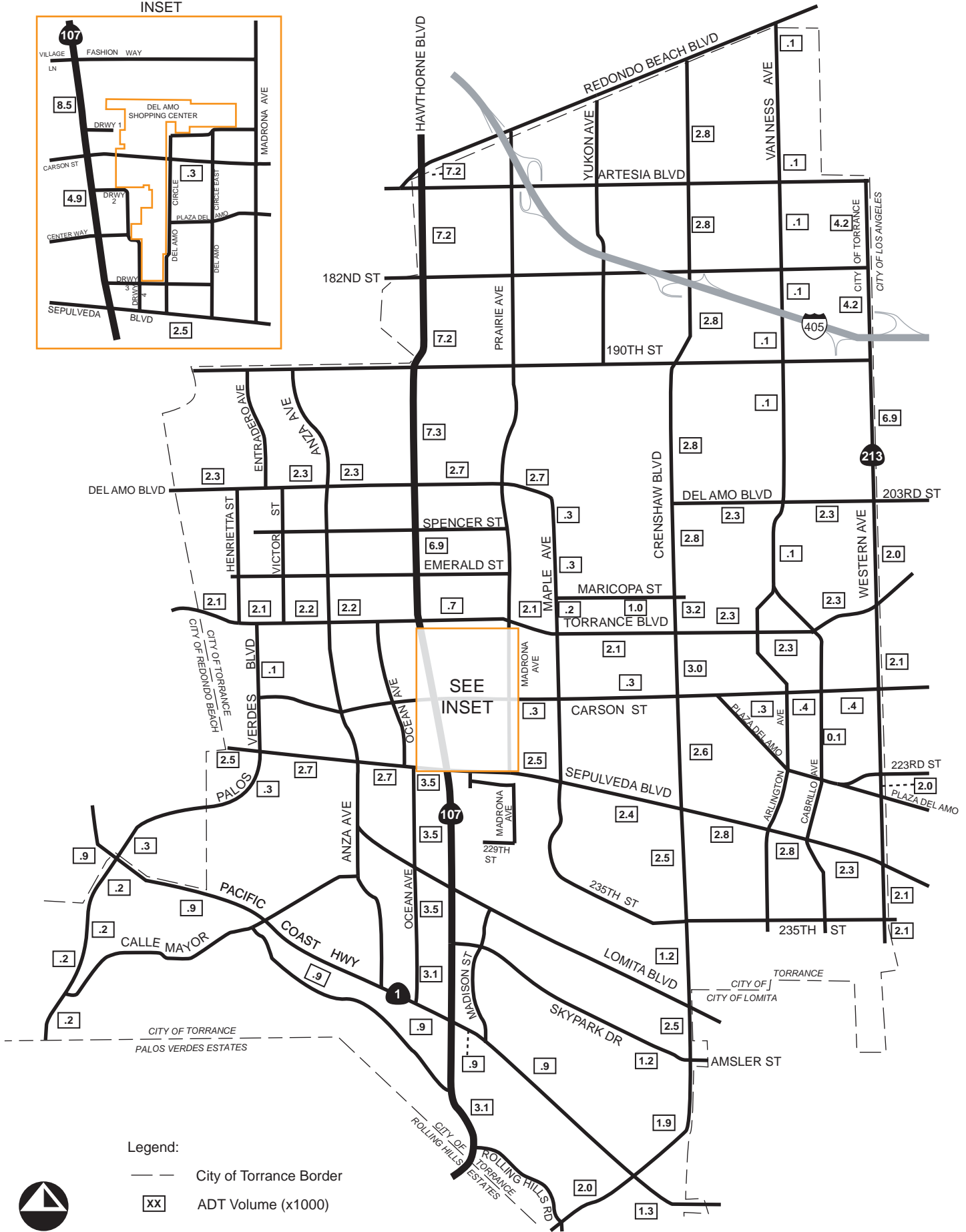
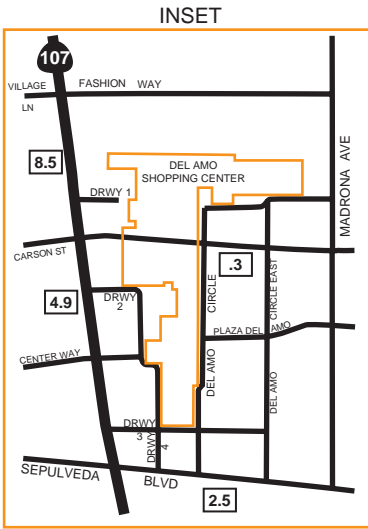
Not to Scale



Legend:

- Study Intersection
- - - Area Boundary

City of Torrance Study Areas



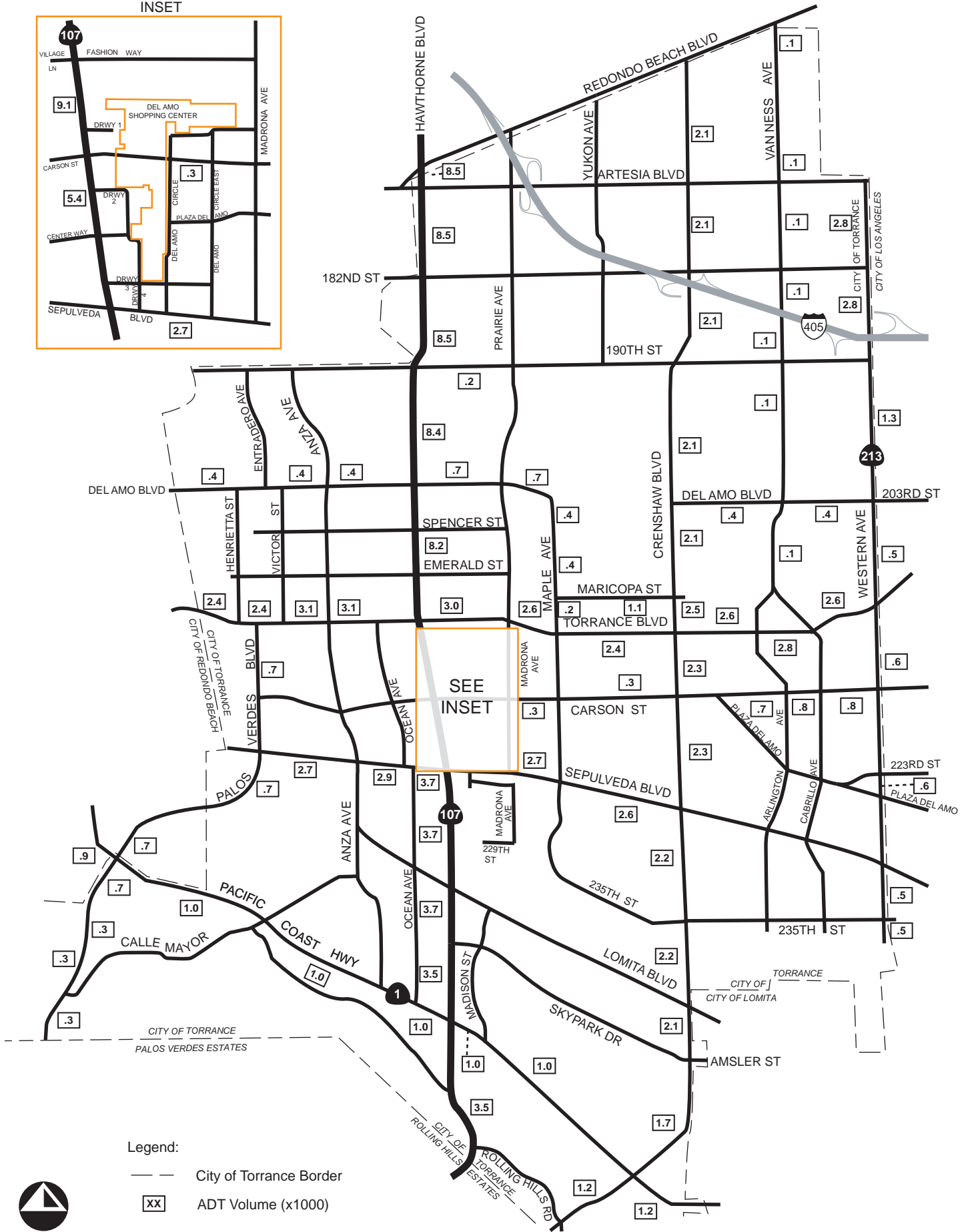
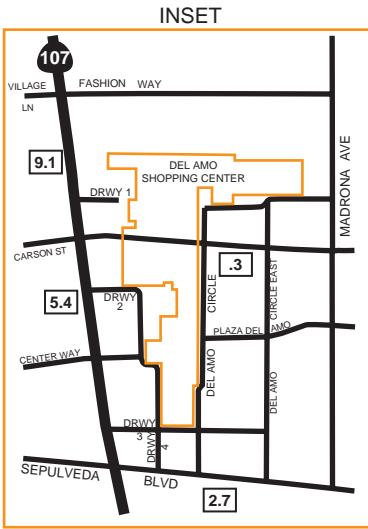
- Legend:
- City of Torrance Border
 - ADT Volume (x1000)



Not to Scale



Forecast Near-Term Conditions Weekday Roadway Segment ADT Assignment of Approved Projects (x1000)



- Legend:
- City of Torrance Border
 - XX ADT Volume (x1000)

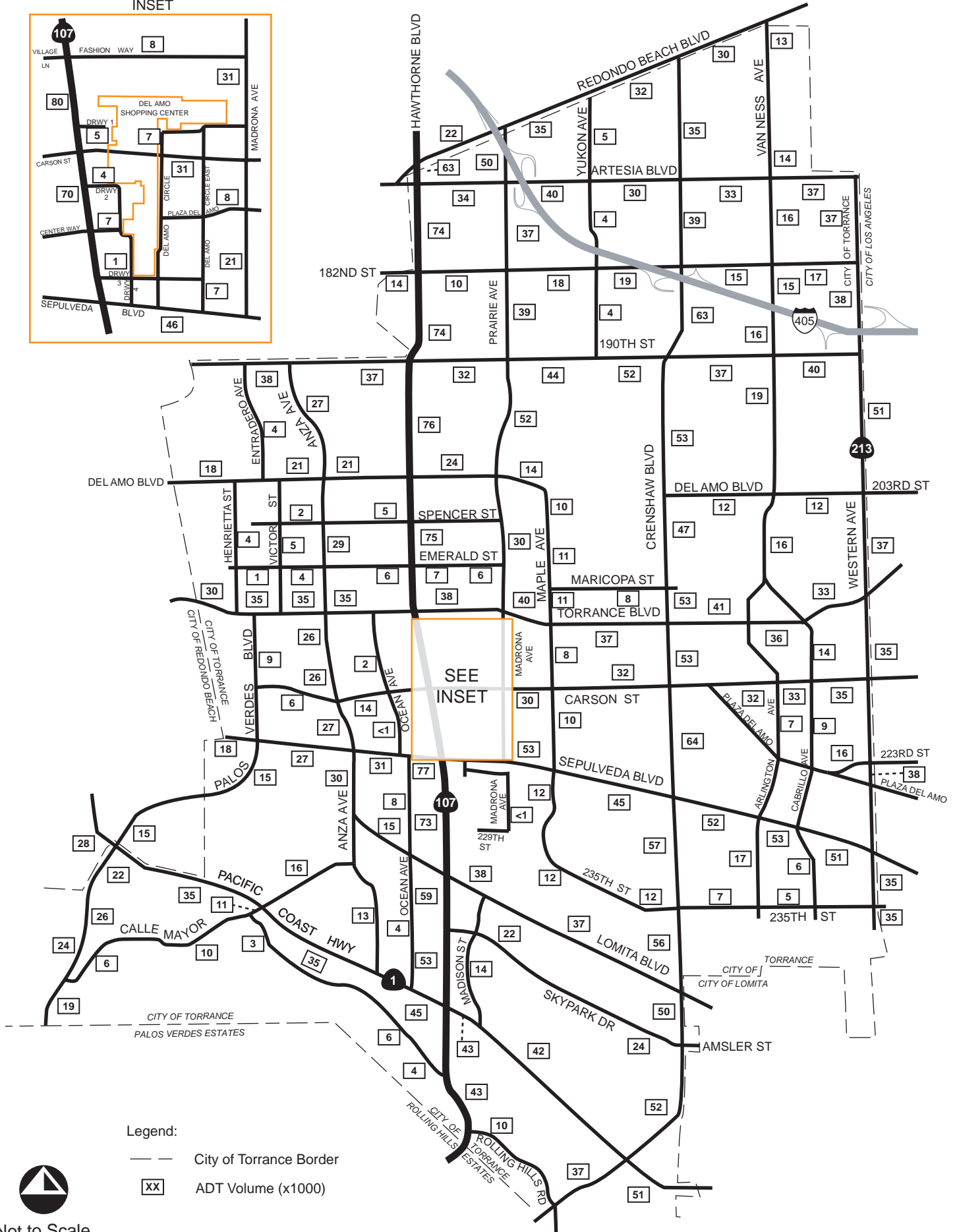
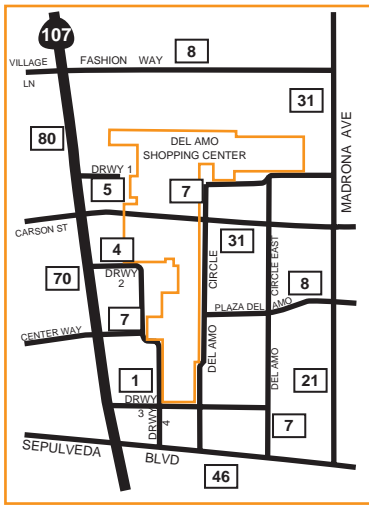


Not to Scale



Forecast Near-Term Conditions Weekend Roadway Segment ADT Assignment of Approved Projects (x1000)

INSET



- Legend:
- City of Torrance Border
 - XX ADT Volume (x1000)

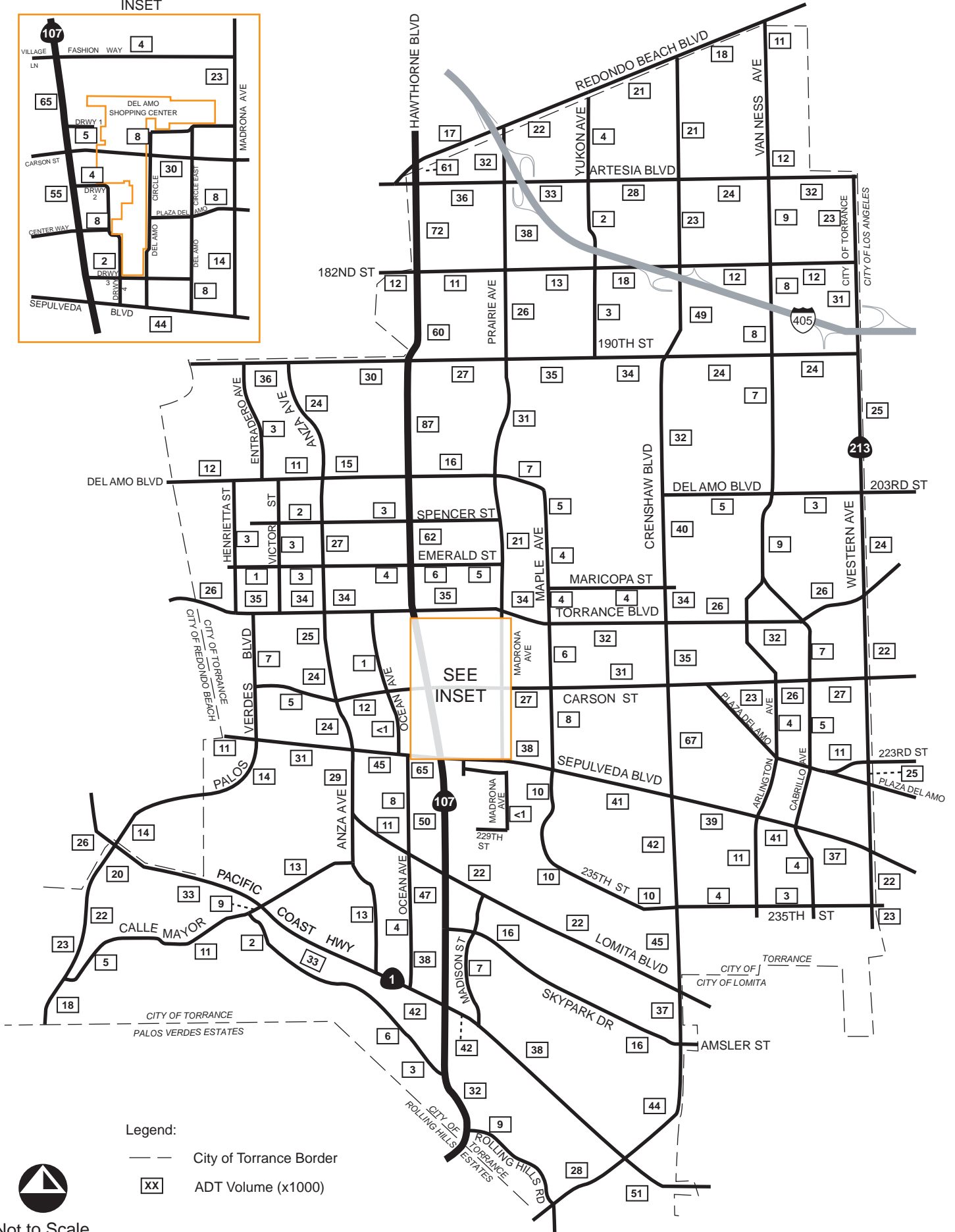
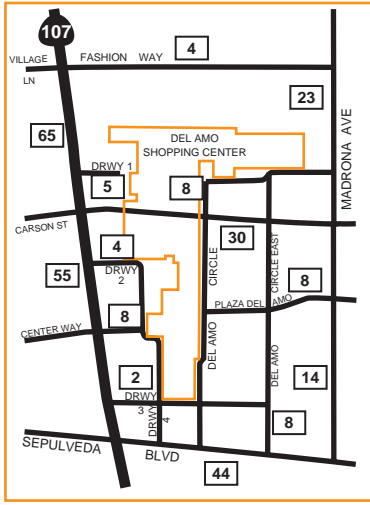


Not to Scale



Forecast Near-Term Conditions Weekday Roadway Segment ADT (x1000)

INSET



Legend:

- City of Torrance Border
- XX ADT Volume (x1000)

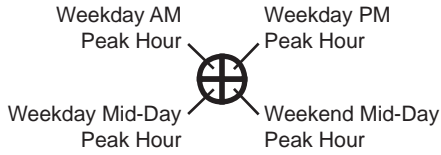


Not to Scale



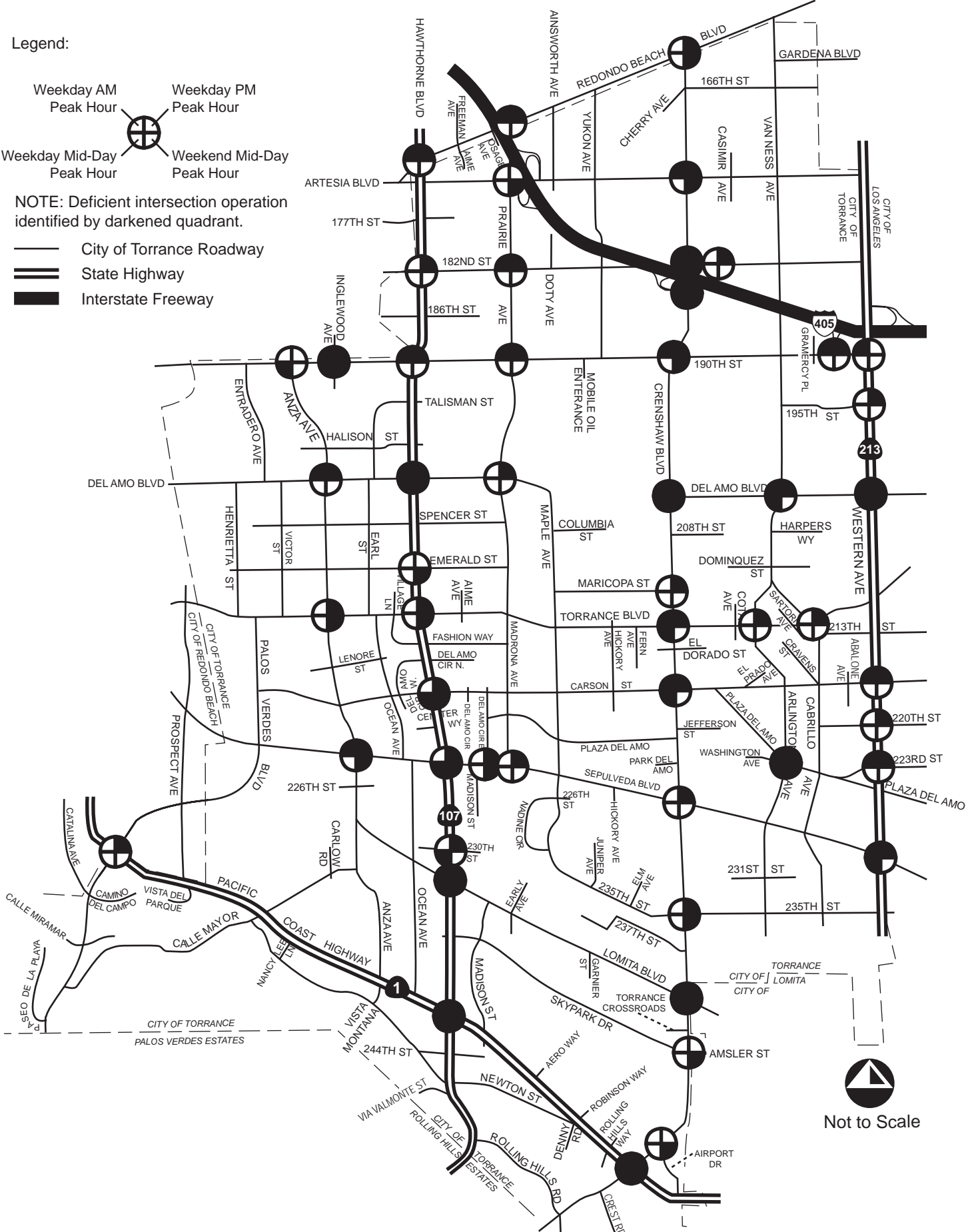
Forecast Near-Term Conditions Weekend Roadway Segment ADT (x1000)

Legend:



NOTE: Deficient intersection operation identified by darkened quadrant.

- City of Torrance Roadway
- State Highway
- Interstate Freeway



Not to Scale

Forecast Near-Term Conditions - Locations of Intersections Operating at a Deficient LOS (HCM and ICU Methodology)



CHAPTER 4 – FORECAST LONG-RANGE FUTURE CONDITIONS

This chapter discusses forecast long-range future conditions at the 166 study intersections located in the City of Torrance, which are shown on Exhibit 4-1 (page 122). It should be noted, intersection improvements identified for forecast near-term conditions are not assumed implemented for forecast long-range future conditions.

Forecast long-range future conditions assumes the following:

- Intersection improvements identified for forecast near-term conditions;
- Rebalance of land uses within the City of Torrance based on the proposed General Plan;
- City-planned extension of Del Amo Boulevard between Maple Avenue and Crenshaw Boulevard, as well as other enhancements to the circulation system; and
- SCAG socio-economic and demographic forecasts for the South Bay area.

As a result, some traffic patterns within the City of Torrance are forecast to change within the City at some intersections, thereby affecting the LOS at those intersections. As such, intersections, which are forecast to operate at a deficient level of service for near-term conditions, are forecast to operate at an acceptable level of service for forecast long-range future conditions; thus, no improvements are identified to improve intersection operation from deficient LOS (LOS E or worse) to acceptable LOS (LOS D or better).

FORECAST LONG-RANGE FUTURE CONDITIONS TRAFFIC VOLUMES

Forecast long-range future volumes were derived utilizing Southern California Association of Governments (SCAG) long-range traffic projections and future changes in land use within the City of Torrance. Since the SCAG long-range traffic projections only provide data for the weekday a.m. peak period and weekday p.m. peak period, the long-range future LOS at the 166 study intersections is only calculated for the weekday a.m. peak hour and weekday p.m. peak hour for forecast long-range future conditions.

Exhibits showing forecast long-range future conditions weekday a.m. and p.m. peak hour volumes at the study intersections are contained in Chapter 6. Exhibit 4-2 (page 123) show forecast long-range future conditions weekday ADT volumes for the roadway circulation system.

FORECAST LONG-RANGE FUTURE CONDITIONS WEEKDAY PEAK HOUR LEVEL OF SERVICE – HCM METHODOLOGY

Table 4-1 summarizes forecast long-range future conditions weekday a.m. peak hour and weekday p.m. peak hour LOS of the study intersections based on *HCM* analysis methodology; detailed LOS analysis sheets are contained in Appendix E.

Table 4-1
Forecast Long-Range Future Conditions – HCM Methodology
Forecast Long-Range Future Conditions AM & PM Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday PM Peak Hour	
		Delay	LOS	Delay	LOS
1	Abalone Ave/Carson St (Area 5)	3.7	A	6.1	A
2	Aero Way/Pacific Coast Hwy (SR-1) (Area 10)	1.3	A	6.1	A
3	Ainsworth Ave/Redondo Beach Blvd (Area 1)	6.2	A	3.6	A
4	Airport Dr/Pacific Coast Hwy (SR-1) (Area 10)	3.5	A	9.8	A
5	Amie Ave/Torrance Blvd (Area 4)	11.8	B	11.5	B
6	Amie Ave-Freeman Ave/Redondo Beach Blvd (Area 1)	8.6	A	6.6	A
7	Anza Ave/190 th St (Area 3)	27.8	C	28.4	C
8	Anza Ave/Halison St (Area 3)	9.7	A	3.8	A
9	Anza Ave/Del Amo Blvd (Area 3)	41.7	D	37.3	D
10	Anza Ave/Spencer St (Area 3)	7.9	A	7.7	A
11	Anza Ave/Emerald St (Area 3)	8.9	A	7.1	A
12	Anza Ave/Torrance Blvd (Area 6)	38.4	D	43.9	D
13	Anza Ave/Lenore St (Area 6)	6.6	A	4.6	A
14	Anza Ave/Carson St (Area 6)	24.3	C	28.8	C
15	Anza Ave/Sepulveda Blvd (Area 6)	45.4	D	55.8	E
16	Anza Ave/226 th St (Area 9)	5.5	A	3.6	A
17	Anza Ave/Lomita Blvd (Area 9)	26.4	C	28.1	C
18	Anza Ave/Calle Mayor (Area 9)	20.8	C	16.9	B
19	Anza Ave/Pacific Coast Hwy (SR-1) (Area 9)	28.0	C	28.0	C
20	Arlington Ave/Torrance Blvd (Area 5)	9.1	A	15.1	B
21	Arlington Ave/Carson St (Area 5)	12.3	B	9.3	A
22	Arlington Ave/Plaza Del Amo-Washington Ave (Area 8)	36.3	D	32.2	C
23	Arlington Ave/Sepulveda Blvd (Area 8)	32.4	C	30.7	C
24	Arlington Ave/231 st St (Area 8)	2.8	A	6.8	A
25	Arlington Ave/235 th St (Area 8)	16.8	B	15.7	B
26	Cabrillo Ave/Carson St (Area 5)	13.8	B	21.0	C
27	Cabrillo Ave/Sepulveda Blvd (Area 8)	23.4	C	16.6	B
28	Cabrillo Ave-Van Ness Ave/Torrance Blvd (Area 5)	23.7	C	23.0	C
29	Calle Mayor/Pacific Coast Hwy (SR-1) (Area 9)	31.5	C	38.7	D

Note: Delay shown in seconds per vehicle; Deficient intersection operation shown in **bold italics**.

Table 4-1 (Cont.)
Forecast Long-Range Future Conditions – HCM Methodology
Forecast Long-Range Future Conditions AM & PM Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday PM Peak Hour	
		Delay	LOS	Delay	LOS
30	Carlow Road/Calle Mayor (Area 9)	6.7	A	5.0	A
31	Casimir Ave/Artesia Blvd (Area 2)	9.0	A	4.2	A
32	Cota Ave/Torrance Blvd (Area 5)	2.9	A	2.0	A
33	Crenshaw Blvd/Redondo Beach Blvd (Area 2)	39.5	D	39.6	D
34	Crenshaw Blvd/16 th St-Cherry Ave (Area 2)	8.7	A	6.4	A
35	Crenshaw Blvd/Artesia Blvd (Area 2)	48.5	D	44.2	D
36	Crenshaw Blvd/182 nd St (Area 2)	33.8	C	34.5	C
37	Crenshaw Blvd/190 th St (Area 4)	33.4	C	38.5	D
38	Crenshaw Blvd/Del Amo Blvd (Area 4)	26.4	C	32.0	C
39	Crenshaw Blvd/208 th St (Area 4)	0.9	A	2.6	A
40	Crenshaw Blvd/Maricopa St (Area 4)	14.4	B	19.0	B
41	Crenshaw Blvd/Torrance Blvd (Area 4)	32.9	C	38.4	D
42	Crenshaw Blvd/El Dorado St (Area 7)	3.5	A	3.4	A
43	Crenshaw Blvd/Carson St (Area 7)	34.5	C	47.9	D
44	Crenshaw Blvd/Jefferson St (Area 7)	4.1	A	4.9	A
45	Crenshaw Blvd/Plaza Del Amo (Area 7)	9.5	A	12.0	B
46	Crenshaw Blvd/Park Del Amo-Scroc Ave (Area 7)	1.5	A	6.0	A
47	Crenshaw Blvd/Sepulveda Blvd (Area 8)	40.4	D	43.2	D
48	Crenshaw Blvd/235 th St (Area 8)	20.9	C	20.1	C
49	Crenshaw Blvd/237 th St (Area 8)	11.1	B	15.1	B
50	Crenshaw Blvd/Lomita Blvd (Area 8)	41.5	D	53.7	D
51	Crenshaw Blvd/Torrance Crossroads (Area 8)	5.1	A	10.4	B
52	Crenshaw Blvd/Skypark Dr-Amsler St (Area 8)	15.9	B	24.2	C
53	Crenshaw Blvd/Airport Dr (Area 10)	11.8	B	26.4	C
54	Crenshaw Blvd/Pacific Coast Hwy (SR-1) (Area 10)	35.8	D	53.3	D
55	Crenshaw Blvd/Crest Road (Area 10)	7.4	A	3.8	A
56	Crenshaw Blvd/Rolling Hills Road (Area 10)	23.0	C	25.6	C
57	Del Amo Circle/Carson St (Area 7)	3.5	A	26.0	C
58	Del Amo Circle East/Carson St (Area 7)	4.9	A	9.1	A
59	Del Amo Circle East/Sepulveda Blvd (Area 7)	23.2	C	35.1	C
60	Denny Road-Robinson Ave/Pacific Coast Hwy (SR-1) (Area 10)	8.2	A	9.1	A

Note: Delay shown in seconds per vehicle; Deficient intersection operation shown in **bold italics**.

Table 4-1 (Cont.)
Forecast Long-Range Future Conditions – HCM Methodology
Forecast Long-Range Future Conditions AM & PM Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday PM Peak Hour	
		Delay	LOS	Delay	LOS
61	Doty Ave/182 nd St (Area 1)	7.8	A	3.2	A
62	Early Ave/Lomita Blvd (Area 10)	16.2	B	23.8	C
63	El Prado Ave/Carson St (Area 5)	4.5	A	1.0	A
64	Entradero Ave/Del Amo Blvd (Area 3)	9.2	A	6.7	A
65	Entradero Ave-Meyer Lane/190 th St (Area 3)	13.8	B	7.8	A
66	Fern Ave/Torrance Blvd (Area 4)	2.1	A	3.1	A
67	Garnier St/Lomita Blvd (Area 10)	1.6	A	4.8	A
68	Gramercy Place/190 th St (Area 2)	6.3	A	9.5	A
69	Hawthorne Blvd (SR-107)/Redondo Beach Blvd (Area 1)	29.0	C	64.8	E
70	Hawthorne Blvd (SR-107)/Artesia Blvd (Area 1)	33.9	C	42.3	D
71	Hawthorne Blvd (SR-107)/177 th St (Area 1)	4.3	A	14.6	B
72	Hawthorne Blvd (SR-107)/182 nd St (Area 1)	17.7	B	28.3	C
73	Hawthorne Blvd (SR-107)/186 th St (Area 1)	6.3	A	8.2	A
74	Hawthorne Blvd (SR-107)/190 th St (Area 3)	34.8	C	46.6	D
75	Hawthorne Blvd (SR-107)/Talisman St (Area 3)	5.0	A	9.5	A
76	Hawthorne Blvd (SR-107)/Harrison St (Area 3)	6.7	A	14.4	B
77	Hawthorne Blvd (SR-107)/Del Amo Blvd (Area 3)	36.4	D	35.5	D
78	Hawthorne Blvd (SR-107)/Spencer St (Area 3)	15.2	B	15.1	B
79	Hawthorne Blvd (SR-107)/Emerald St (Area 3)	17.4	B	15.5	B
80	Hawthorne Blvd (SR-107)/Torrance Blvd (Area 6)	38.0	D	42.4	D
81	Hawthorne Blvd (SR-107)/Village Lane-Fashion Way (Area 6)	7.8	A	16.2	B
82	Hawthorne Blvd (SR-107)/Del Amo Circle-Del Amo Circle N (Area 6)	5.4	A	12.6	B
83	Hawthorne Blvd (SR-107)/Carson St (Area 6)	27.4	C	37.9	D
84	Hawthorne Blvd (SR-107)/Center Way (Area 6)	3.3	A	10.8	B
85	Hawthorne Blvd (SR-107)/Sepulveda Blvd (Area 6)	38.0	D	42.7	D
86	Hawthorne Blvd (SR-107)/230 th St (Area 9)	13.1	B	16.8	B
87	Hawthorne Blvd (SR-107)/Lomita Blvd (Area 9)	41.3	D	49.8	D
88	Hawthorne Blvd (SR-107)/Skypark Dr (Area 9)	20.2	C	28.5	C
89	Hawthorne Blvd (SR-107)/Pacific Coast Hwy (SR-1) (Area 9)	43.5	D	46.6	D
90	Hawthorne Blvd (SR-107)/244 th St (Area 10)	1.9	A	2.1	A
91	Hawthorne Blvd (SR-107)/Newton St (Area 10)	8.0	A	4.8	A

Note: Delay shown in seconds per vehicle; Deficient intersection operation shown in **bold italics**.

Table 4-1 (Cont.)
Forecast Long-Range Future Conditions – HCM Methodology
Forecast Long-Range Future Conditions AM & PM Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday PM Peak Hour	
		Delay	LOS	Delay	LOS
92	Hawthorne Blvd (SR-107)/Via Valmonte St (Area 10)	7.4	A	6.5	A
93	Hawthorne Blvd (SR-107)/Rolling Hills Road (Area 10)	15.7	B	15.5	B
94	Henrietta St/Del Amo Blvd (Area 3)	11.7	B	8.3	A
95	Henrietta St/Torrance Blvd (Area 6)	8.2	A	5.0	A
96	Hickory St/Torrance Blvd (Area 4)	4.9	A	5.1	A
97	Hickory St/Sepulveda Blvd (Area 7)	26.7	C	24.5	C
98	I-405 SB Off-Ramp-Osage Ave/Redondo Beach Blvd (Area 1)	16.6	B	19.3	B
99	I-405 NB Ramps/Artesia Blvd (Area 1)	11.9	B	20.8	C
100	I-405 NB Ramps/182 nd St (Area 2)	17.1	B	19.7	B
101	I-405 SB Ramps/Crenshaw Blvd (Area 2)	27.7	C	29.3	C
102	I-405 NB Ramps/Western Ave (SR-213) (Area 2)	21.4	C	13.5	B
103	I-405 SB Ramps/190 th St (Area 2)	41.7	D	37.3	D
104	Inglewood Ave/190 th St (Area 3)	24.4	C	26.5	C
105	Juniper Ave/235 th St (Area 10)	4.7	A	5.0	A
106	Madison Ave/Sepulveda Blvd (Area 7)	8.9	A	7.5	A
107	Madison St/Skypark Dr (Area 10)	14.8	B	15.8	B
108	Madison St/Pacific Coast Hwy (SR-1) (Area 10)	14.7	B	18.4	B
109	Madrona Ave/Spencer St (Area 4)	11.4	B	5.1	A
110	Madrona Ave/Emerald St (Area 4)	11.9	B	8.5	A
111	Madrona Ave/Torrance Blvd (Area 4)	32.8	C	43.2	D
112	Madrona Ave/Fashion Way (Area 7)	9.4	A	9.9	A
113	Madrona Ave/Carson St (Area 7)	25.7	C	27.9	C
114	Madrona Ave/Plaza Del Amo (Area 7)	18.5	B	14.2	B
115	Madrona Ave/Sepulveda Blvd (Area 7)	27.1	C	34.5	C
116	Maple Ave/Maricopa St (Area 4)	15.6	B	15.1	B
117	Maple Ave/Torrance Blvd (Area 4)	21.4	C	25.8	C
118	Maple Ave/Carson St (Area 7)	24.9	C	21.8	C
119	Maple Ave/Plaza Del Amo (Area 7)	10.2	B	13.9	B
120	Maple Ave/Sepulveda Blvd (Area 7)	27.8	C	29.5	C
121	Maple Ave/226 th St-Nadine Circle (Area 7)	10.0	A	7.1	A
122	Maple Ave/Nadine Circle (Area 10)	6.1	A	8.1	A

Note: Delay shown in seconds per vehicle; Deficient intersection operation shown in **bold italics**.

Table 4-1 (Cont.)
Forecast Long-Range Future Conditions – HCM Methodology
Forecast Long-Range Future Conditions AM & PM Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday PM Peak Hour	
		Delay	LOS	Delay	LOS
123	Mobile Oil Entrance/190 th St (Area 4)	3.4	A	3.4	A
124	Ocean Ave/Sepulveda Blvd (Area 6)	12.4	B	12.9	B
125	Ocean Ave/Lomita Blvd (Area 9)	14.1	B	11.5	B
126	Palos Verdes Blvd/Torrance Blvd (Area 6)	23.0	C	26.7	C
127	Palos Verdes Blvd/Sepulveda Blvd (Area 6)	23.9	C	21.8	C
128	Palos Verdes Blvd/Pacific Coast Hwy (SR-1) (Area 9)	38.0	D	42.2	D
129	Palos Verdes Blvd/Catalina-Camino Del Campo (Area 9)	8.7	A	16.2	B
130	Palos Verdes Blvd/Calle Miramar (Area 9)	8.5	A	6.3	A
131	Palos Verdes Blvd/Calle Mayor (Area 9)	7.7	A	6.3	A
132	Plaza Del Amo/Carson St (Area 5)	19.3	B	16.5	B
133	Prairie Ave/Redondo Beach Blvd (Area 1)	40.8	D	48.9	D
134	Prairie Ave/Artesia Blvd (Area 1)	40.1	D	39.5	D
135	Prairie Ave/182 nd St (Area 1)	35.9	D	34.0	C
136	Prairie Ave/190 th St (Area 4)	37.7	D	40.8	D
137	Prairie Ave/Del Amo Blvd (Area 4)	36.8	D	40.2	D
138	Prospect Ave/Torrance Blvd (Area 6)	31.8	C	31.6	C
139	Prospect Ave-Vista Del Parque/Pacific Coast Hwy (SR-1) (Area 9)	14.8	B	15.0	B
140	Rolling Hills Way/Pacific Coast Hwy (SR-1) (Area 10)	7.1	A	10.6	B
141	Sartori Ave/Torrance Blvd (Area 5)	4.6	A	4.8	A
142	Van Ness Ave/Redondo Beach Blvd (area 2)	31.4	C	34.6	C
143	Van Ness Ave/166 th St (Area 2)	15.8	B	13.5	B
144	Van Ness Ave/Artesia Blvd (Area 2)	26.0	C	29.9	C
145	Van Ness Ave/182 nd St (Area 2)	16.0	B	16.2	B
146	Van Ness Ave/190 th St (Area 5)	29.2	C	31.3	C
147	Van Ness Ave/195 th St (Area 5)	1.6	A	6.2	A
148	Van Ness Ave/Del Amo Blvd (Area 5)	24.7	C	20.6	C
149	Van Ness Ave/Dominguez St (Area 5)	7.5	A	12.8	B
150	Victor St/Del Amo Blvd (Area 3)	11.8	B	9.1	A
151	Victor St/Torrance Blvd (Area 6)	5.5	A	5.3	A
152	Village Lane/Torrance Blvd (Area 6)	11.1	B	14.1	B
153	Western Ave (SR-213)/Artesia Blvd (Area 2)	44.5	D	48.4	D

Note: Delay shown in seconds per vehicle; Deficient intersection operation shown in **bold italics**.

Table 4-1 (Cont.)
Forecast Long-Range Future Conditions – HCM Methodology
Forecast Long-Range Future Conditions AM & PM Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday PM Peak Hour	
		Delay	LOS	Delay	LOS
154	Western Ave (SR-213)/182 nd St (Area 2)	14.9	B	15.7	B
155	Western Ave (SR-213)/190 th St (Area 2)	36.3	D	36.5	D
156	Western Ave (SR-213)/195 th St (Area 5)	4.9	A	14.5	B
157	Western Ave (SR-213)/Del Amo Blvd (Area 5)	14.9	B	15.8	B
158	Western Ave (SR-213)/Torrance Blvd (Area 5)	21.2	C	27.9	C
159	Western Ave (SR-213)/213 th St (Area 5)	8.6	A	12.1	B
160	Western Ave (SR-213)/Carson St (Area 5)	21.7	C	21.5	C
161	Western Ave (SR-213)/220 th St (Area 8)	11.3	B	47.3	D
162	Western Ave (SR-213)/223 rd St (Area 8)	15.0	B	17.2	B
163	Western Ave (SR-213)/Sepulveda Blvd (Area 8)	38.6	D	53.1	D
164	Yukon Ave/Redondo Beach Blvd (Area 1)	7.3	A	5.8	A
165	Yukon Ave/Artesia Blvd (Area 1)	17.9	B	17.7	B
166	Yukon Ave/182 nd St (Area 1)	12.5	B	13.4	B

Note: Delay shown in seconds per vehicle; Deficient intersection operation shown in **bold italics**.

DEFICIENT INTERSECTION OPERATION BASED ON HCM METHODOLOGY

As shown in Table 4-1, the following two study intersections are forecast to operate at a deficient LOS (LOS E or worse) according to City of Torrance performance criteria based on HCM analysis methodology during the weekday a.m. peak hour and/or weekday p.m. peak hour for forecast long-range future conditions:

- 15. Anza Avenue/Sepulveda Boulevard (weekday p.m. peak hour only); and
- 69. Hawthorne Boulevard (SR-107)/Redondo Beach Boulevard (weekday p.m. peak hour only).

FORECAST LONG-RANGE FUTURE CONDITIONS WEEKDAY PEAK HOUR LEVEL OF SERVICE – ICU METHODOLOGY

Table 4-2 summarizes forecast long-range future conditions weekday a.m. peak hour and weekday p.m. peak hour LOS of the study intersections based on ICU analysis methodology; detailed LOS analysis sheets are contained in Appendix F.

Table 4-2
Forecast Long-Range Future Conditions – ICU Methodology
Forecast Long-Range Future Conditions AM & PM Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday PM Peak Hour	
		V/C	LOS	V/C	LOS
1	Abalone Ave/Carson St (Area 5)	0.45	A	0.59	A
2	Aero Way/Pacific Coast Hwy (SR-1) (Area 10)	0.43	A	0.47	A
3	Ainsworth Ave/Redondo Beach Blvd (Area 1)	0.55	A	0.57	A
4	Airport Dr/Pacific Coast Hwy (SR-1) (Area 10)	0.68	B	0.70	B
5	Amie Ave/Torrance Blvd (Area 4)	0.51	A	0.59	A
6	Amie Ave-Freeman Ave/Redondo Beach Blvd (Area 1)	0.40	A	0.52	A
7	Anza Ave/190 th St (Area 3)	0.83	D	0.86	D
8	Anza Ave/Halison St (Area 3)	0.55	A	0.39	A
9	Anza Ave/Del Amo Blvd (Area 3)	0.88	D	0.77	C
10	Anza Ave/Spencer St (Area 3)	0.54	A	0.56	A
11	Anza Ave/Emerald St (Area 3)	0.52	A	0.54	A
12	Anza Ave/Torrance Blvd (Area 6)	0.82	D	0.89	D
13	Anza Ave/Lenore St (Area 6)	0.52	A	0.51	A
14	Anza Ave/Carson St (Area 6)	0.70	B	0.82	D
15	Anza Ave/Sepulveda Blvd (Area 6)	0.94	E	1.07	F
16	Anza Ave/226 th St (Area 9)	0.47	A	0.51	A
17	Anza Ave/Lomita Blvd (Area 9)	0.79	C	0.84	D
18	Anza Ave/Calle Mayor (Area 9)	0.73	D	0.70	B
19	Anza Ave/Pacific Coast Hwy (SR-1) (Area 9)	0.82	D	0.83	D
20	Arlington Ave/Torrance Blvd (Area 5)	0.68	B	0.95	E
21	Arlington Ave/Carson St (Area 5)	0.69	B	0.68	B
22	Arlington Ave/Plaza Del Amo-Washington Ave (Area 8)	0.95	E	0.83	D
23	Arlington Ave/Sepulveda Blvd (Area 8)	0.89	D	0.94	E
24	Arlington Ave/231 st St (Area 8)	0.51	A	0.54	A
25	Arlington Ave/235 th St (Area 8)	0.76	C	0.72	C
26	Cabrillo Ave/Carson St (Area 5)	0.50	A	0.77	C
27	Cabrillo Ave/Sepulveda Blvd (Area 8)	0.81	D	0.71	C
28	Cabrillo Ave-Van Ness Ave/Torrance Blvd (Area 5)	0.83	D	0.89	D

Note: V/C = volume/capacity ratio; Deficient intersection operation shown in **bold italics**.

Table 4-2 (Cont.)
Forecast Long-Range Future Conditions – ICU Methodology
Forecast Long-Range Future Conditions AM & PM Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday PM Peak Hour	
		V/C	LOS	V/C	LOS
29	Calle Mayor/Pacific Coast Hwy (SR-1) (Area 9)	0.78	C	0.98	E
30	Carlow Road/Calle Mayor (Area 9)	0.38	A	0.33	A
31	Casimir Ave/Artesia Blvd (Area 2)	0.67	B	0.65	B
32	Cota Ave/Torrance Blvd (Area 5)	0.54	A	0.59	A
33	Crenshaw Blvd/Redondo Beach Blvd (Area 2)	0.87	D	0.88	D
34	Crenshaw Blvd/16 th St-Cherry Ave (Area 2)	0.72	C	0.61	B
35	Crenshaw Blvd/Artesia Blvd (Area 2)	1.01	F	0.98	E
36	Crenshaw Blvd/182 nd St (Area 2)	0.98	E	0.98	E
37	Crenshaw Blvd/190 th St (Area 4)	0.87	D	0.92	E
38	Crenshaw Blvd/Del Amo Blvd (Area 4)	1.17	F	1.14	F
39	Crenshaw Blvd/208 th St (Area 4)	0.59	A	0.57	A
40	Crenshaw Blvd/Maricopa St (Area 4)	0.71	C	0.81	D
41	Crenshaw Blvd/Torrance Blvd (Area 4)	0.82	D	0.91	E
42	Crenshaw Blvd/EI Dorado St (Area 7)	0.63	B	0.64	B
43	Crenshaw Blvd/Carson St (Area 7)	0.96	E	1.04	F
44	Crenshaw Blvd/Jefferson St (Area 7)	0.57	A	0.69	B
45	Crenshaw Blvd/Plaza Del Amo (Area 7)	0.56	A	0.74	C
46	Crenshaw Blvd/Park Del Amo-Scroc Ave (Area 7)	0.57	A	0.69	B
47	Crenshaw Blvd/Sepulveda Blvd (Area 8)	0.84	D	0.95	E
48	Crenshaw Blvd/235 th St (Area 8)	0.86	D	0.87	D
49	Crenshaw Blvd/237 th St (Area 8)	0.66	B	0.76	C
50	Crenshaw Blvd/Lomita Blvd (Area 8)	0.93	E	1.05	F
51	Crenshaw Blvd/Torrance Crossroads (Area 8)	0.42	A	0.67	B
52	Crenshaw Blvd/Skypark Dr-Amsler St (Area 8)	0.45	A	0.79	C
53	Crenshaw Blvd/Airport Dr (Area 10)	0.52	A	0.75	C
54	Crenshaw Blvd/Pacific Coast Hwy (SR-1) (Area 10)	0.83	D	1.04	F
55	Crenshaw Blvd/Crest Road (Area 10)	0.51	A	0.48	A
56	Crenshaw Blvd/Rolling Hills Road (Area 10)	0.68	B	0.86	D

Note: V/C = volume/capacity ratio; Deficient intersection operation shown in **bold italics**.

Table 4-2 (Cont.)
Forecast Long-Range Future Conditions – ICU Methodology
Forecast Long-Range Future Conditions AM & PM Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday PM Peak Hour	
		V/C	LOS	V/C	LOS
57	Del Amo Circle/Carson St (Area 7)	0.32	A	0.67	B
58	Del Amo Circle East/Carson St (Area 7)	0.31	A	0.66	B
59	Del Amo Circle East/Sepulveda Blvd (Area 7)	0.78	C	0.99	E
60	Denny Road-Robinson Ave/Pacific Coast Hwy (SR-1) (Area 10)	0.51	A	0.53	A
61	Doty Ave/182 nd St (Area 1)	0.40	A	0.44	A
62	Early Ave/Lomita Blvd (Area 10)	0.70	B	0.76	C
63	El Prado Ave/Carson St (Area 5)	0.64	B	0.63	B
64	Entradero Ave/Del Amo Blvd (Area 3)	0.45	A	0.41	A
65	Entradero Ave-Meyer Lane/190 th St (Area 3)	0.70	B	0.64	B
66	Fern Ave/Torrance Blvd (Area 4)	0.48	A	0.61	B
67	Garnier St/Lomita Blvd (Area 10)	0.63	B	0.65	B
68	Gramercy Place/190 th St (Area 2)	0.50	A	0.62	B
69	Hawthorne Blvd (SR-107)/Redondo Beach Blvd (Area 1)	0.90	D	1.11	F
70	Hawthorne Blvd (SR-107)/Artesia Blvd (Area 1)	0.93	E	0.98	E
71	Hawthorne Blvd (SR-107)/177 th St (Area 1)	0.65	B	0.67	B
72	Hawthorne Blvd (SR-107)/182 nd St (Area 1)	0.76	C	0.96	E
73	Hawthorne Blvd (SR-107)/186 th St (Area 1)	0.64	B	0.70	B
74	Hawthorne Blvd (SR-107)/190 th St (Area 3)	0.92	E	1.05	F
75	Hawthorne Blvd (SR-107)/Talisman St (Area 3)	0.61	B	0.65	B
76	Hawthorne Blvd (SR-107)/Halison St (Area 3)	0.60	A	0.71	C
77	Hawthorne Blvd (SR-107)/Del Amo Blvd (Area 3)	0.87	D	0.89	D
78	Hawthorne Blvd (SR-107)/Spencer St (Area 3)	0.71	C	0.80	C
79	Hawthorne Blvd (SR-107)/Emerald St (Area 3)	0.79	C	0.76	C
80	Hawthorne Blvd (SR-107)/Torrance Blvd (Area 6)	0.78	C	0.86	D
81	Hawthorne Blvd (SR-107)/Village Lane-Fashion Way (Area 6)	0.52	A	0.77	C
82	Hawthorne Blvd (SR-107)/Del Amo Circle-Del Amo Circle N (Area 6)	0.54	A	0.77	C
83	Hawthorne Blvd (SR-107)/Carson St (Area 6)	0.59	A	0.84	D
84	Hawthorne Blvd (SR-107)/Center Way (Area 6)	0.49	A	0.61	B
85	Hawthorne Blvd (SR-107)/Sepulveda Blvd (Area 6)	0.84	D	1.00	E
86	Hawthorne Blvd (SR-107)/230 th St (Area 9)	0.71	C	0.90	D

Note: V/C = volume/capacity ratio; Deficient intersection operation shown in **bold italics**.

Table 4-2 (Cont.)
Forecast Long-Range Future Conditions – ICU Methodology
Forecast Long-Range Future Conditions AM & PM Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday PM Peak Hour	
		V/C	LOS	V/C	LOS
87	Hawthorne Blvd (SR-107)/Lomita Blvd (Area 9)	0.97	E	1.06	F
88	Hawthorne Blvd (SR-107)/Skypark Dr (Area 9)	0.67	B	0.79	C
89	Hawthorne Blvd (SR-107)/Pacific Coast Hwy (SR-1) (Area 9)	0.91	E	0.91	E
90	Hawthorne Blvd (SR-107)/244 th St (Area 10)	0.50	A	0.52	A
91	Hawthorne Blvd (SR-107)/Newton St (Area 10)	0.56	A	0.54	A
92	Hawthorne Blvd (SR-107)/Via Valmonte St (Area 10)	0.54	A	0.62	B
93	Hawthorne Blvd (SR-107)/Rolling Hills Road (Area 10)	0.76	C	0.64	B
94	Henrietta St/Del Amo Blvd (Area 3)	0.57	A	0.47	A
95	Henrietta St/Torrance Blvd (Area 6)	0.55	A	0.52	A
96	Hickory St/Torrance Blvd (Area 4)	0.53	A	0.68	B
97	Hickory St/Sepulveda Blvd (Area 7)	0.81	D	0.85	D
98	I-405 SB Off-Ramp-Osage Ave/Redondo Beach Blvd (Area 1)	0.53	A	0.69	B
99	I-405 NB Ramps/Artesia Blvd (Area 1)	0.64	B	0.72	C
100	I-405 NB Ramps/182 nd St (Area 2)	0.79	C	0.87	D
101	I-405 SB Ramps/Crenshaw Blvd (Area 2)	1.04	F	1.02	F
102	I-405 NB Ramps/Western Ave (SR-213) (Area 2)	0.79	C	0.76	C
103	I-405 SB Ramps/190 th St (Area 2)	0.92	E	0.99	E
104	Inglewood Ave/190 th St (Area 3)	0.79	C	0.83	D
105	Juniper Ave/235 th St (Area 10)	0.42	A	0.47	A
106	Madison Ave/Sepulveda Blvd (Area 7)	0.49	A	0.54	A
107	Madison St/Skypark Dr (Area 10)	0.39	A	0.64	B
108	Madison St/Pacific Coast Hwy (SR-1) (Area 10)	0.59	A	0.66	B
109	Madrona Ave/Spencer St (Area 4)	0.50	A	0.50	A
110	Madrona Ave/Emerald St (Area 4)	0.45	A	0.56	A
111	Madrona Ave/Torrance Blvd (Area 4)	0.70	B	1.01	F
112	Madrona Ave/Fashion Way (Area 7)	0.39	A	0.50	A
113	Madrona Ave/Carson St (Area 7)	0.55	A	0.66	B
114	Madrona Ave/Plaza Del Amo (Area 7)	0.55	A	0.50	A
115	Madrona Ave/Sepulveda Blvd (Area 7)	0.78	C	0.97	E
116	Maple Ave/Maricopa St (Area 4)	0.54	A	0.55	A

Note: V/C = volume/capacity ratio; Deficient intersection operation shown in **bold italics**.

Table 4-2 (Cont.)
Forecast Long-Range Future Conditions – ICU Methodology
Forecast Long-Range Future Conditions AM & PM Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday PM Peak Hour	
		V/C	LOS	V/C	LOS
117	Maple Ave/Torrance Blvd (Area 4)	0.73	C	0.96	E
118	Maple Ave/Carson St (Area 7)	0.78	C	0.83	D
119	Maple Ave/Plaza Del Amo (Area 7)	0.35	A	0.38	A
120	Maple Ave/Sepulveda Blvd (Area 7)	0.68	B	0.84	D
121	Maple Ave/226 th St-Nadine Circle (Area 7)	0.55	A	0.51	A
122	Maple Ave/Nadine Circle (Area 10)	0.42	A	0.58	A
123	Mobile Oil Entrance/190 th St (Area 4)	0.50	A	0.62	B
124	Ocean Ave/Sepulveda Blvd (Area 6)	0.56	A	0.56	A
125	Ocean Ave/Lomita Blvd (Area 9)	0.54	A	0.63	B
126	Palos Verdes Blvd/Torrance Blvd (Area 6)	1.43	F	0.67	B
127	Palos Verdes Blvd/Sepulveda Blvd (Area 6)	0.68	B	0.72	C
128	Palos Verdes Blvd/Pacific Coast Hwy (SR-1) (Area 9)	0.83	D	0.94	E
129	Palos Verdes Blvd/Catalina-Camino Del Campo (Area 9)	0.57	A	0.72	C
130	Palos Verdes Blvd/Calle Miramar (Area 9)	0.58	A	0.54	A
131	Palos Verdes Blvd/Calle Mayor (Area 9)	0.54	A	0.51	A
132	Plaza Del Amo/Carson St (Area 5)	0.90	D	0.82	D
133	Prairie Ave/Redondo Beach Blvd (Area 1)	0.89	D	0.94	E
134	Prairie Ave/Artesia Blvd (Area 1)	0.90	D	0.94	E
135	Prairie Ave/182 nd St (Area 1)	0.97	E	0.97	E
136	Prairie Ave/190 th St (Area 4)	0.80	C	0.95	E
137	Prairie Ave/Del Amo Blvd (Area 4)	0.78	C	0.90	D
138	Prospect Ave/Torrance Blvd (Area 6)	0.78	C	0.82	D
139	Prospect Ave-Vista Del Parque/Pacific Coast Hwy (SR-1) (Area 9)	0.67	B	0.72	C
140	Rolling Hills Way/Pacific Coast Hwy (SR-1) (Area 10)	0.50	A	0.74	C
141	Sartori Ave/Torrance Blvd (Area 5)	0.57	A	0.75	C
142	Van Ness Ave/Redondo Beach Blvd (area 2)	0.74	C	0.85	D
143	Van Ness Ave/166 th St (Area 2)	0.49	A	0.46	A
144	Van Ness Ave/Artesia Blvd (Area 2)	0.68	B	0.85	D
145	(Area 6)	0.60	A	0.68	B

Note: V/C = volume/capacity ratio; Deficient intersection operation shown in **bold italics**.

Table 4-2 (Cont.)
Forecast Long-Range Future Conditions – ICU Methodology
Forecast Long-Range Future Conditions AM & PM Peak Hour Intersection LOS

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday PM Peak Hour	
		V/C	LOS	V/C	LOS
146	Van Ness Ave/190 th St (Area 5)	0.80	C	0.90	D
147	Van Ness Ave/195 th St (Area 5)	0.35	A	0.48	A
148	Van Ness Ave/Del Amo Blvd (Area 5)	0.66	B	0.63	B
149	Van Ness Ave/Dominguez St (Area 5)	0.39	A	0.39	A
150	Victor St/Del Amo Blvd (Area 3)	0.59	A	0.42	A
151	Victor St/Torrance Blvd (Area 6)	0.50	A	0.57	A
152	Village Lane/Torrance Blvd (Area 6)	0.47	A	0.65	B
153	Western Ave (SR-213)/Artesia Blvd (Area 2)	0.98	E	1.01	F
154	Western Ave (SR-213)/182 nd St (Area 2)	0.60	A	0.76	C
155	Western Ave (SR-213)/190 th St (Area 2)	0.94	E	0.80	C
156	Western Ave (SR-213)/195 th St (Area 5)	0.51	A	0.69	B
157	Western Ave (SR-213)/Del Amo Blvd (Area 5)	0.81	D	0.69	B
158	Western Ave (SR-213)/Torrance Blvd (Area 5)	0.65	B	0.79	C
159	Western Ave (SR-213)/213 th St (Area 5)	0.64	B	0.68	B
160	Western Ave (SR-213)/Carson St (Area 5)	0.85	D	0.96	E
161	Western Ave (SR-213)/220 th St (Area 8)	0.68	B	1.33	F
162	Western Ave (SR-213)/223 rd St (Area 8)	0.76	C	1.06	F
163	Western Ave (SR-213)/Sepulveda Blvd (Area 8)	0.89	D	1.08	F
164	Yukon Ave/Redondo Beach Blvd (Area 1)	0.57	A	0.54	A
165	Yukon Ave/Artesia Blvd (Area 1)	0.79	C	0.80	C
166	Yukon Ave/182 nd St (Area 1)	0.47	A	0.60	A

Note: V/C = volume/capacity ratio; Deficient intersection operation shown in **bold italics**.

DEFICIENT INTERSECTION OPERATION BASED ON *ICU* METHODOLOGY

As shown in Table 4-2, the following 39 study intersections are forecast to operate at a deficient LOS (LOS E or worse) according to City of Torrance performance criteria based on *ICU* analysis methodology during the weekday a.m. peak hour and/or weekday p.m. peak hour for forecast long-range future conditions:

15. Anza Avenue/Sepulveda Boulevard
(weekday a.m. and p.m. peak hours);
20. Arlington Avenue/Torrance Boulevard
(weekday p.m. peak hour only);
22. Arlington Avenue/Plaza Del Amo-Washington Avenue
(weekday a.m. peak hour only);
23. Arlington Avenue/Sepulveda Boulevard
(weekday p.m. peak hour only);
29. Calle Mayor/Pacific Coast Highway (SR-1)
(weekday p.m. peak hour only);
35. Crenshaw Boulevard/Artesia Boulevard
(weekday a.m. and p.m. peak hours);
36. Crenshaw Boulevard/182nd Street
(weekday a.m. and p.m. peak hours);
37. Crenshaw Boulevard/190th Street
(weekday p.m. peak hour only);
38. Crenshaw Boulevard/Del Amo Boulevard
(weekday a.m. and pm. peak hours);
41. Crenshaw Boulevard/Torrance Boulevard
(weekday p.m. peak hour only);
43. Crenshaw Boulevard/Carson Street
(weekday a.m. and p.m. peak hours);
47. Crenshaw Boulevard/Sepulveda Boulevard
(weekday p.m. peak hour only);
50. Crenshaw Boulevard/Lomita Boulevard
(weekday a.m. and p.m. peak hours);
54. Crenshaw Boulevard/Pacific Coast Highway (SR-1)
(weekday p.m. peak hour only);
59. Del Amo Circle East/Sepulveda Boulevard
(weekday p.m. peak hour only);
69. Hawthorne Boulevard (SR-107)/Redondo Beach Boulevard
(weekday p.m. peak hour only);
70. Hawthorne Boulevard (SR-107)/Artesia Boulevard
(weekday a.m. and p.m. peak hours);

72. Hawthorne Boulevard (SR-107)/182nd Street
(weekday pm. peak hour only);
74. Hawthorne Boulevard (SR-107)/190th Street
(weekday a.m. and p.m. peak hours);
85. Hawthorne Boulevard (SR-107)/Sepulveda Boulevard
(weekday p.m. peak hour only);
87. Hawthorne Boulevard (SR-107)/Lomita Boulevard
(weekday a.m. and p.m. peak hours);
89. Hawthorne Boulevard (SR-107)/Pacific Coast Highway (SR-1)
(weekday a.m. and p.m. peak hours);
101. I-405 Southbound Ramps/Crenshaw Boulevard
(weekday a.m. and p.m. peak hours);
103. I-405 Southbound Ramps/190th Street
(weekday a.m. and p.m. peak hours);
111. Madrona Avenue/Torrance Boulevard
(weekday p.m. peak hour only);
115. Madrona Avenue/Sepulveda Boulevard
(weekday p.m. peak hour only);
117. Maple Avenue/Torrance Boulevard
(weekday p.m. peak hour only);
126. Palos Verdes Boulevard/Torrance Boulevard
(weekday a.m. peak hour only);
128. Palos Verdes Boulevard/Pacific Coast Highway (SR-1)
(weekday p.m. peak hour only);
133. Prairie Avenue/Redondo Beach Boulevard
(weekday p.m. peak hour only);
134. Prairie Avenue/Artesia Boulevard
(weekday p.m. peak hour only);
135. Prairie Avenue/182nd Street
(weekday a.m. and p.m. peak hours);
136. Prairie Avenue/190th Street
(weekday p.m. peak hour only);
153. Western Avenue (SR-213)/Artesia Boulevard
(weekday a.m. and p.m. peak hours);
155. Western Avenue (SR-213)/190th Street
(weekday a.m. peak hour only);
160. Western Avenue (SR-213)/Carson Street
(weekday p.m. peak hour only);

161. Western Avenue (SR-213)/220th Street (weekday p.m. peak hour only);
162. Western Avenue (SR-213)/223rd Street (weekday p.m. peak hour only); and
163. Western Avenue (SR-213)/Sepulveda Boulevard (weekday p.m. peak hour only).



190th Street

FORECAST LONG-RANGE FUTURE CONDITIONS DEFICIENT INTERSECTION OPERATION SUMMARY

Table 4-3 summarizes forecast long-range future conditions weekday a.m. peak hour, weekday mid-day peak hour, weekday p.m. peak hour, and weekend mid-day peak hour LOS of the study intersections operating at a deficient LOS (LOS E or worse) based on *HCM* analysis methodology and *ICU* analysis methodology during one or more study analysis periods; detailed LOS analysis sheets are contained in Appendices E and F.

Table 4-3
Forecast Long-Range Future LOS Summary – HCM & ICU Methodology
Forecast Long-Range Future Conditions Weekday AM, Mid-Day, PM,
and Weekend Mid-Day Deficient Intersection Operation Summary

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday PM Peak Hour	
		Delay – LOS	V/C – LOS	Delay – LOS	V/C – LOS
15	Anza Ave/Sepulveda Blvd (Area 6)	45.4 – D	0.94 – E	55.8 – E	1.07 – F
20	Arlington Ave/Torrance Blvd (Area 5)	9.1 – A	0.68 – B	15.1 – B	0.95 – E
22	Arlington Ave/Plaza Del Amo-Washington Ave (Area 8)	36.3 – D	0.95 – E	32.2 – C	0.83 – D
23	Arlington Ave/Sepulveda Blvd (Area 8)	32.4 – C	0.89 – D	30.7 – C	0.94 – E
29	Calle Mayor/Pacific Coast Hwy (SR-1) (Area 9)	31.5 – C	0.78 – C	38.7 – D	0.98 – E
35	Crenshaw Blvd/Artesia Blvd (Area 2)	48.5 – D	1.01 – F	44.2 – D	0.98 – E
36	Crenshaw Blvd/182 nd St (Area 2)	33.8 – C	0.98 – E	34.5 – C	0.98 – E
37	Crenshaw Blvd/190 th St (Area 4)	33.4 – C	0.87 – D	38.5 – D	0.92 – F
38	Crenshaw Blvd/Del Amo Blvd (Area 4)	26.4 – C	1.17 – F	32.0 – C	1.14 – F
41	Crenshaw Blvd/Torrance Blvd (Area 4)	32.9 – C	0.82 – D	38.4 – D	0.91 – E
43	Crenshaw Blvd/Carson St (Area 7)	34.5 – C	0.96 – E	47.9 – D	1.04 – F
47	Crenshaw Blvd/Sepulveda Blvd (Area 8)	40.4 – D	0.84 – D	43.2 – D	0.95 – E
50	Crenshaw Blvd/Lomita Blvd (Area 8)	41.5 – D	0.93 – E	53.7 – D	1.05 – F
54	Crenshaw Blvd/Pacific Coast Hwy (SR-1) (Area 10)	35.8 – D	0.83 – D	53.3 – D	1.04 – F
59	Del Amo Circle East/Sepulveda Blvd (Area 7)	23.2 – C	0.78 – C	35.1 – C	0.99 – E
69	Hawthorne Blvd (SR-107)/Redondo Beach Blvd (Area 1)	29.0 – C	0.90 – D	64.8 – E	1.11 – F
70	Hawthorne Blvd (SR-107)/Artesia Blvd (Area 1)	33.9 – C	0.93 – E	42.3 – D	0.98 – E
72	Hawthorne Blvd (SR-107)/182 nd St (Area 1)	17.7 – B	0.76 – C	28.3 – C	0.96 – E
74	Hawthorne Blvd (SR-107)/190 th St (Area 3)	34.8 – C	0.92 – E	46.6 – D	1.05 – F
85	Hawthorne Blvd (SR-107)/Sepulveda Blvd (Area 6)	38.0 – D	0.84 – D	42.7 – D	1.00 – F
87	Hawthorne Blvd (SR-107)/Lomita Blvd (Area 9)	41.3 – D	0.97 – E	49.8 – D	1.06 – F
89	Hawthorne Blvd (SR-107)/Pacific Coast Hwy (SR-1) (Area 9)	43.5 – D	0.91 – E	46.6 – D	0.91 – E

Note: Delay shown in seconds per vehicle; V/C = volume to capacity ratio; Deficient intersection operation shown in **bold italics**.

Table 4-3 (Cont.)
Forecast Long-Range Future LOS Summary – HCM & ICU Methodology
Forecast Long-Range Future Conditions Weekday AM, Mid-Day, PM,
and Weekend Mid-Day Deficient Intersection Operation Summary

Int. #	Study Intersection	Weekday AM Peak Hour		Weekday PM Peak Hour	
		Delay – LOS	V/C – LOS	Delay – LOS	V/C – LOS
101	I-405 SB Ramps/Crenshaw Blvd (Area 2)	27.7 – C	1.04 – F	29.3 – C	1.02 – F
103	I-405 SB Ramps/190 th St (Area 2)	41.7 – D	0.92 – E	37.3 – D	0.99 – E
111	Madrona Ave/Torrance Blvd (Area 4)	32.8 – C	0.70 – B	43.2 – D	1.01 – F
115	Madrona Ave/Sepulveda Blvd (Area 7)	27.1 – C	0.78 – C	34.5 – C	0.97 – E
117	Maple Ave/Torrance Blvd (Area 4)	21.4 – C	0.73 – C	25.8 – C	0.96 – E
126	Palos Verdes Blvd/Torrance Blvd (Area 6)	23.0 – C	1.43 – F	26.7 – C	0.67 – B
128	Palos Verdes Blvd/Pacific Coast Hwy (SR-1) (Area 9)	38.0 – D	0.83 – D	42.2 – D	0.94 – E
133	Prairie Ave/Redondo Beach Blvd (Area 1)	40.8 – D	0.89 – D	48.9 – D	0.94 – F
134	Prairie Ave/Artesia Blvd (Area 1)	40.1 – D	0.90 – D	39.5 – D	0.94 – E
135	Prairie Ave/182 nd St (Area 1)	35.9 – D	0.97 – E	34.0 – C	0.97 – E
136	Prairie Ave/190 th St (Area 4)	37.7 – D	0.80 – C	40.8 – D	0.95 – E
153	Western Ave (SR-213)/Artesia Blvd (Area 2)	44.5 – D	0.98 – E	48.4 – D	1.01 – F
155	Western Ave (SR-213)/190 th St (Area 2)	36.3 – D	0.94 – E	36.5 – D	0.80 – C
160	Western Ave (SR-213)/Carson St (Area 5)	21.7 – C	0.85 – D	21.5 – C	0.96 – E
161	Western Ave (SR-213)/220 th St (Area 8)	11.3 – B	0.68 – C	47.3 – D	1.33 – F
162	Western Ave (SR-213)/223 rd St (Area 8)	15.0 – B	0.76 – C	17.2 – B	1.06 – F
163	Western Ave (SR-213)/Sepulveda Blvd (Area 8)	38.6 – D	0.89 – D	53.1 – D	1.08 – F

Note: Delay shown in seconds per vehicle; V/C = volume to capacity ratio; Deficient intersection operation shown in **bold italics**.

DEFICIENT INTERSECTIONS BASED ON *HCM* AND *ICU* METHODOLOGY

As shown in Table 4-3, the following 39 study intersections are forecast to operate at a deficient LOS (LOS E or worse) according to City of Torrance performance criteria based on *HCM* and *ICU* analysis methodology during the weekday a.m. peak hour, weekday mid-day peak hour, weekday p.m. peak hour, and/or weekend mid-day peak hour for forecast long-range future conditions:

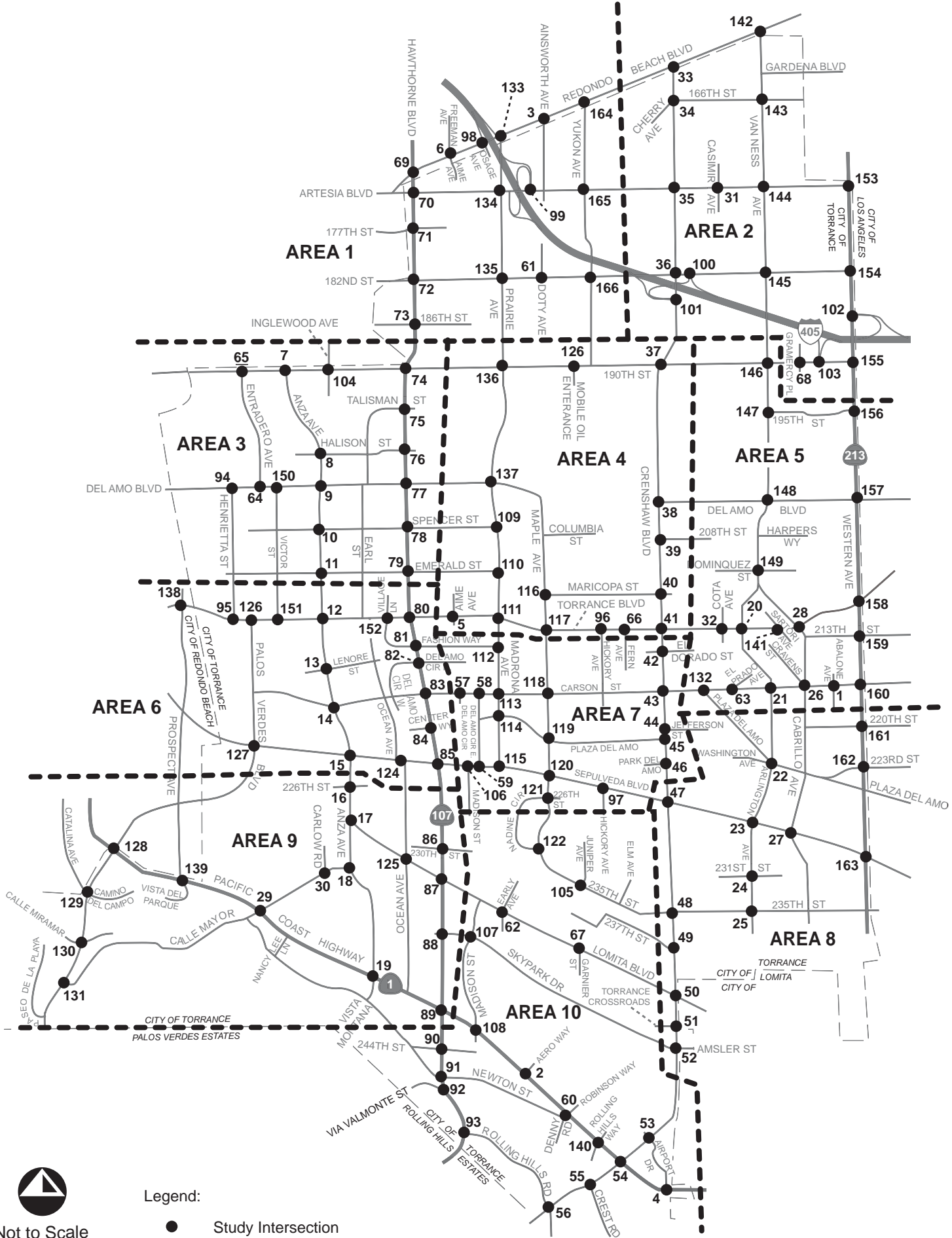
15. Anza Avenue/Sepulveda;
20. Arlington Avenue/Torrance Boulevard;
22. Arlington Avenue/Plaza Del Amo-Washington Avenue;
23. Arlington Avenue/Sepulveda Boulevard;
29. Calle Mayor/Pacific Coast Highway (SR-1);
35. Crenshaw Boulevard/Artesia Boulevard;
36. Crenshaw Boulevard/182nd Street;
37. Crenshaw Boulevard/190th Street;
38. Crenshaw Boulevard/Del Amo Boulevard;
41. Crenshaw Boulevard/Torrance Boulevard;
43. Crenshaw Boulevard/Carson Street;
47. Crenshaw Boulevard/Sepulveda Boulevard;
50. Crenshaw Boulevard/Lomita Boulevard;
54. Crenshaw Boulevard/Pacific Coast Highway (SR-1);
59. Del Amo Circle East/Sepulveda Boulevard;
69. Hawthorne Boulevard (SR-107)/Redondo Beach Boulevard;
70. Hawthorne Boulevard (SR-107)/Artesia Boulevard;
72. Hawthorne Boulevard (SR-107)/182nd Street;
74. Hawthorne Boulevard (SR-107)/190th Street;
85. Hawthorne Boulevard (SR-107)/Sepulveda Boulevard;
87. Hawthorne Boulevard (SR-107)/Lomita Boulevard;
89. Hawthorne Boulevard (SR-107)/Pacific Coast Highway (SR-1);
101. I-405 Southbound Ramps/Crenshaw Boulevard;
103. I-405 Southbound Ramps/190th Street;
111. Madrona Avenue/Torrance Boulevard;
115. Madrona Avenue/Sepulveda Boulevard;

117. Maple Avenue/Torrance Boulevard;
126. Palos Verdes Boulevard/Torrance Boulevard;
128. Palos Verdes Boulevard/Pacific Coast Highway (SR-1);
133. Prairie Avenue/Redondo Beach Boulevard;
134. Prairie Avenue/Artesia;
135. Prairie Avenue/182nd Street;
136. Prairie Avenue/190th Street;
153. Western Avenue (SR-213)/Artesia Boulevard;
155. Western Avenue (SR-213)/190th Street;
160. Western Avenue (SR-213)/Carson Street;
161. Western Avenue (SR-213)/220th Street;
162. Western Avenue (SR-213)/223rd Street; and
163. Western Avenue (SR-213)/Sepulveda Boulevard.

Exhibit 4-3 (page 124) shows the locations of forecast long-range future conditions deficient LOS intersections.



Torrance Boulevard



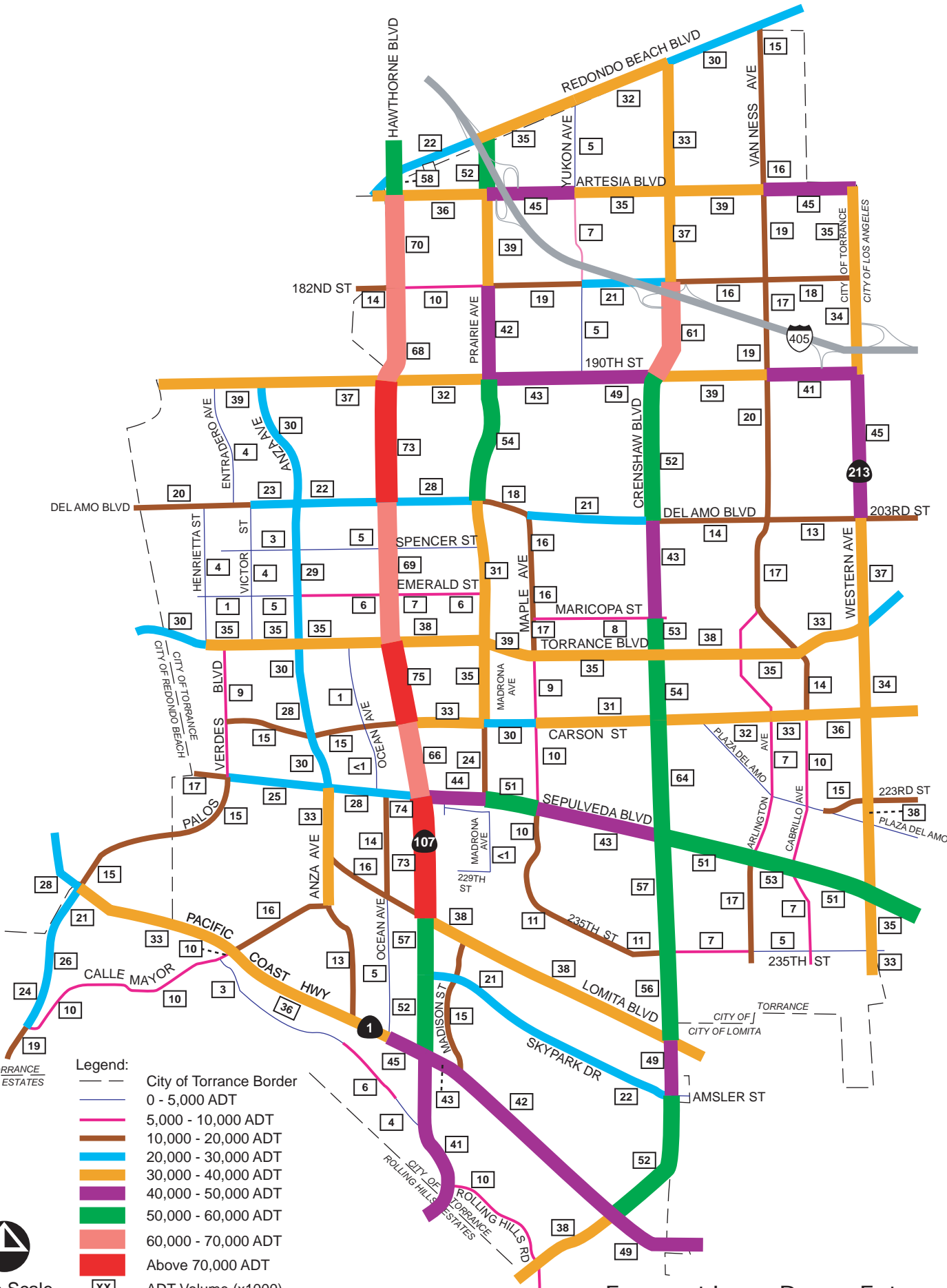
Not to Scale



Legend:

- Study Intersection
- - - Area Boundary

City of Torrance Study Areas



- Legend:
- City of Torrance Border
 - 0 - 5,000 ADT
 - 5,000 - 10,000 ADT
 - 10,000 - 20,000 ADT
 - 20,000 - 30,000 ADT
 - 30,000 - 40,000 ADT
 - 40,000 - 50,000 ADT
 - 50,000 - 60,000 ADT
 - 60,000 - 70,000 ADT
 - Above 70,000 ADT
 - xx ADT Volume (x1000)



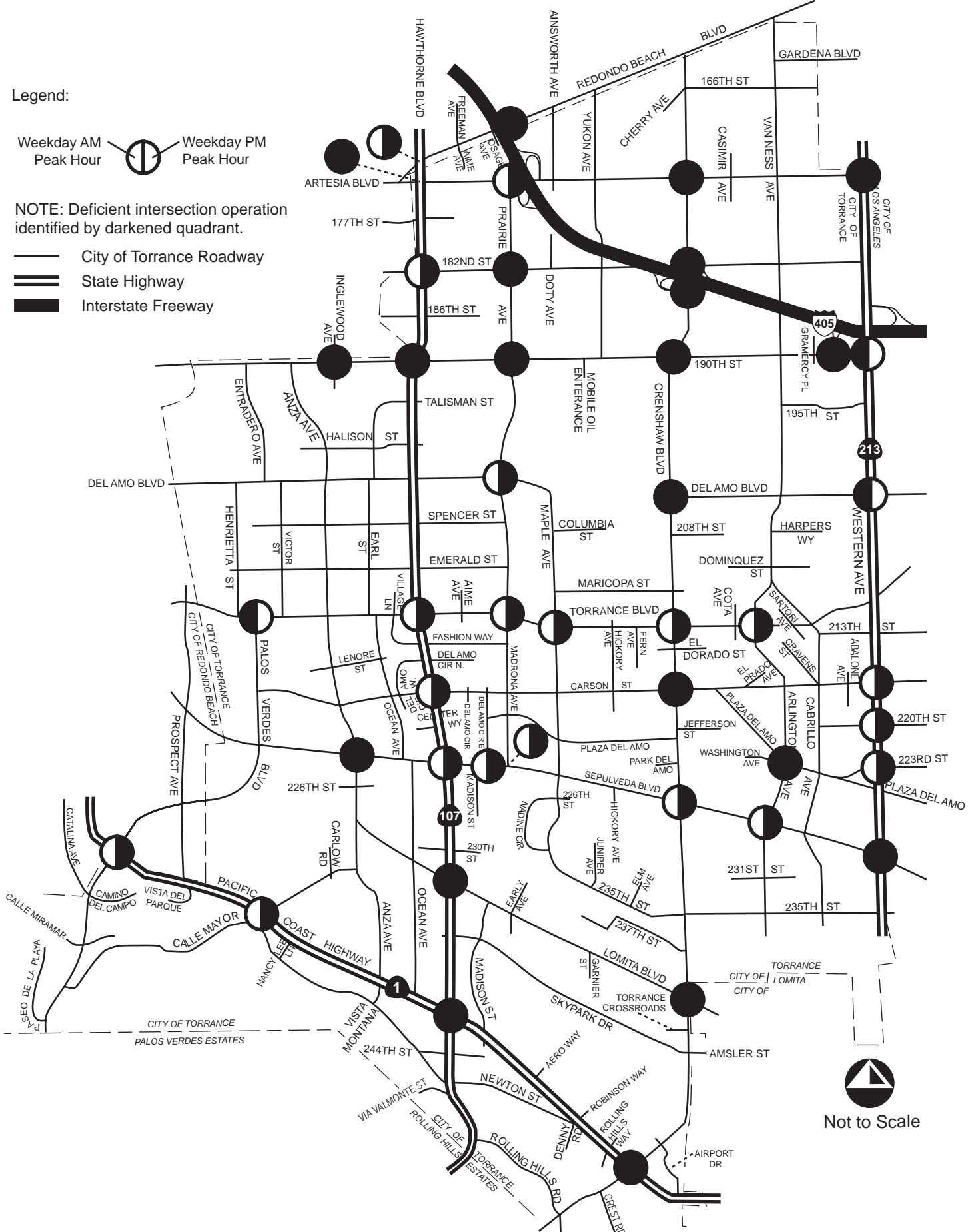
Forecast Long-Range Future Conditions Weekday Roadway Segment ADT (x1000)

Legend:



NOTE: Deficient intersection operation identified by darkened quadrant.

- City of Torrance Roadway
- State Highway
- Interstate Freeway



Not to Scale

Forecast Long-Range Future Conditions - Locations of Intersections Operating at a Deficient LOS (HCM and ICU Methodology)



CHAPTER 5 – DEFICIENT INTERSECTION LOS AND CONSIDERATIONS

This chapter summarizes the intersections operating at a deficient LOS during any of the four study time periods for forecast near-term conditions and forecast long-range future conditions, as well as the identified intersection improvements at intersections operating at a deficient LOS based on the *HCM* analysis methodology and *ICU* analysis methodology for forecast near-term conditions and long-range future conditions. As previously noted, deficient intersection operation is defined by the City of Torrance as an intersection operating at LOS E or F.

Forecast Improved Near-Term Conditions Intersections Based on *HCM* Methodology

Improvements are identified at the following 21 study intersections to achieve acceptable LOS operation for forecast improved near-term conditions based on the *HCM* analysis methodology:

15. Anza Ave/Sepulveda Blvd
37. Crenshaw Blvd/190th St
38. Crenshaw Blvd/Del Amo Blvd
41. Crenshaw Blvd/Torrance Blvd
50. Crenshaw Blvd/Lomita Blvd
52. Crenshaw Blvd/Skypark Dr-Amsler Ave
54. Crenshaw Blvd/Pacific Coast Hwy (SR-1)
77. Hawthorne Blvd (SR-107)/Del Amo Blvd
80. Hawthorne Blvd (SR-107)/Torrance Blvd
83. Hawthorne Blvd (SR-107)/Carson St
85. Hawthorne Blvd (SR-107)/Sepulveda Blvd
87. Hawthorne Blvd (SR-107)/Lomita Blvd
89. Hawthorne Blvd (SR-107)/Pacific Coast Hwy (SR-1)
104. Inglewood Ave/190th St
133. Prairie Ave/Redondo Beach Blvd
136. Prairie Ave/190th St
137. Prairie Ave/Del Amo Blvd
148. Van Ness Ave/Del Amo Blvd
157. Western Ave (SR-213)/Del Amo Blvd
161. Western Ave (SR-213)/220th St
163. Western Ave (SR-213)/Sepulveda Blvd

Exhibit 5-1 (page 215) identifies intersections operating at a deficient LOS (LOS E or worse) for forecast near-term conditions based on the *HCM* analysis methodology.

Forecast Improved Long-Range Future Conditions Intersections Based on *HCM* Methodology

Forecast long-range future conditions assumes the following:

- Intersection improvements identified for forecast near-term conditions;
- Rebalance of land uses within the City of Torrance based on the proposed General Plan;
- City-planned extension of Del Amo Boulevard between Maple Avenue and Crenshaw Boulevard, as well as other enhancements to the circulation system; and
- SCAG socio-economic and demographic forecasts for the South Bay area.

As a result, some traffic patterns within the City of Torrance are forecast to change within the City at some intersections, thereby affecting the LOS at those intersections. As such, intersections, which are forecast to operate at a deficient level of service for near-term conditions, are forecast to operate at an acceptable level of service for forecast long-range future conditions; thus, no improvements are identified to improve intersection operation from deficient LOS (LOS E or worse) to acceptable LOS (LOS D or better).

Improvements are identified at the following two study intersections to achieve acceptable LOS operation for forecast improved long-range future conditions based on the *HCM* analysis methodology:

15. Anza Ave/Sepulveda Blvd; and
69. Hawthorne Blvd (SR-107)/Redondo Beach Blvd.

Exhibit 5-2 (page 216) identifies intersections operating at a deficient LOS (LOS E or worse) for forecast long-range future conditions based on the *HCM* analysis methodology.

FORECAST IMPROVED NEAR-TERM AND LONG-RANGE FUTURE CONDITIONS IDENTIFIED INTERSECTION IMPROVEMENTS – *HCM* METHODOLOGY

The following sub-sections of this chapter identify the intersection improvements at the deficiently operating study intersections to achieve acceptable LOS operation for forecast improved near-term conditions and forecast long-range future conditions based on the *HCM* analysis methodology.

Each sub-section consists of the following:

- Intersection Summary Cover Sheet;
- AutoCAD exhibit identifying intersection improvements; and
- Corresponding Cost Estimate for the identified intersection improvements.

**Refer to PDF files under separate cover
for each improved study intersection**



Anza Avenue

FORECAST IMPROVED NEAR-TERM CONDITIONS LOS SUMMARY

It should be noted, intersection improvements identified for forecast near-term conditions are assumed implemented for forecast long-range future conditions.

Table 5-1 summarizes forecast improved near-term conditions weekday a.m. peak hour, weekday mid-day peak hour, and weekday p.m. peak hour LOS of improved study intersections assuming implementation of the identified intersection improvements; detailed LOS analysis sheets are contained in Appendix G.

Table 5-1
Forecast Improved Near-Term Conditions LOS Summary – HCM Methodology
Forecast Improved Near-Term Conditions Weekday AM, Mid-Day, PM, and Weekend Mid-Day Peak Hour Intersection LOS

Study Intersection	Forecast Near-Term Conditions				Improved Forecast Near-Term Conditions			
	Weekday			Weekend	Weekday			Weekend
	AM Peak Hour	Mid-Day Peak Hour	PM Peak Hour	Mid-Day Peak Hour	AM Peak Hour	Mid-Day Peak Hour	PM Peak Hour	Mid-Day Peak Hour
	Delay – LOS	Delay – LOS	Delay – LOS	Delay – LOS	Delay – LOS	Delay – LOS	Delay – LOS	Delay – LOS
Anza Ave/Sepulveda Blvd	53.3 – D	42.1 – D	71.2 – E	52.1 – D	46.8 – D	40.1 – D	52.3 – D	45.1 – D
Crenshaw Blvd/190 th St	50.8 – D	34.5 – C	100.9 – F	43.1 – D	37.3 – D	30.3 – C	45.4 – D	34.2 – C
Crenshaw Blvd/Del Amo Blvd	58.7 – E	72.5 – E	131.7 – F	41.7 – D	23.9 – C	23.9 – C	32.9 – C	20.8 – C
Crenshaw Blvd/Torrance Blvd	39.3 – D	40.2 – D	58.0 – E	34.4 – C	37.0 – D	36.6 – D	44.8 – D	34.0 – C
Crenshaw Blvd/Lomita Blvd	44.8 – D	45.0 – D	84.4 – F	37.7 – D	42.5 – D	42.5 – D	54.0 – D	35.6 – D
Crenshaw Blvd/Skypark Dr-Amsler Ave	20.6 – C	25.5 – C	24.4 – C	93.1 – F	16.5 – B	25.1 – C	24.1 – C	50.2 – D
Crenshaw Blvd/Pacific Coast Hwy (SR-1)	59.9 – E	50.7 – D	130.1 – F	91.1 – F	37.2 – D	41.5 – D	52.8 – D	52.6 – D
Hawthorne Blvd (SR-107)/Del Amo Blvd	62.8 – E	44.7 – D	49.6 – D	36.5 – D	39.5 – D	37.2 – D	47.5 – D	33.6 – C
Hawthorne Blvd (SR-107)/Torrance Blvd	39.7 – D	42.3 – D	58.7 – E	86.8 – F	37.4 – D	40.1 – D	46.5 – D	54.9 – D
Hawthorne Blvd (SR-107)/Carson St	33.2 – C	46.7 – D	96.0 – F	76.1 – E	29.8 – C	35.7 – D	42.6 – D	38.2 – D
Hawthorne Blvd (SR-107)/Sepulveda Blvd	40.5 – D	42.4 – D	56.8 – E	87.2 – F	37.6 – D	39.1 – D	40.5 – D	54.9 – D
Hawthorne Blvd (SR-107)/Lomita Blvd	41.7 – D	46.2 – E	58.9 – E	44.7 – D	38.7 – D	37.3 – D	41.6 – D	35.2 – D
Hawthorne Blvd (SR-107)/Pacific Coast Hwy (SR-1)	45.7 – D	45.3 – D	49.0 – D	62.7 – E	43.3 – D	43.5 – D	45.5 – D	53.2 – D
Inglewood Ave/190 th St	34.1 – C	106.2 – F	34.3 – C	66.5 – E	27.9 – C	34.1 – C	31.1 – C	39.8 – D
Prairie Ave/Redondo Beach Blvd	49.0 – D	43.7 – D	71.6 – E	40.3 – D	41.1 – D	39.0 – D	50.6 – D	36.5 – D
Prairie Ave/190 th St	44.3 – D	39.5 – D	57.7 – E	39.9 – D	41.2 – D	38.8 – D	48.9 – D	38.9 – D
Prairie Ave/Del Amo Blvd	36.9 – D	35.2 – D	60.2 – E	33.2 – C	36.7 – D	34.7 – C	44.4 – D	33.2 – C
Van Ness Ave/Del Amo Blvd	31.9 – C	70.8 – E	31.4 – C	20.9 – C	24.7 – C	30.2 – C	23.8 – C	18.1 – B
Western Ave (SR-213)/Del Amo Blvd	273.7 – F	328.4 – F	332.1 – F	286.9 – F	24.5 – C	33.5 – C	33.1 – C	21.9 – C
Western Ave (SR-213)/220 th St	12.5 – B	6.4 – A	110.7 – F	7.3 – A	9.2 – A	5.1 – A	28.6 – C	5.4 – A
Western Ave (SR-213)/Sepulveda Blvd	60.2 – E	49.8 – D	96.4 – F	42.5 – D	42.0 – D	40.3 – D	54.1 – D	36.8 – D

Note: Delay shown in seconds per vehicle; Deficient intersection operation shown in **bold italics**.

As shown in Table 5-1, assuming implementation of the intersection improvements, the LOS at the 21 improved study intersections is reduced to an acceptable LOS (LOS D or better) during the weekday a.m. peak hour, mid-day peak hour, p.m. peak hour, and weekend mid-day peak hour for forecast improved near-term conditions.

FORECAST IMPROVED LONG-RANGE FUTURE CONDITIONS LOS SUMMARY

As previously noted, intersection improvements identified for forecast near-term conditions are assumed implemented for forecast long-range future conditions.

Table 5-2 summarizes forecast improved long-range future conditions weekday a.m. peak hour and p.m. peak hour LOS of the improved study intersections assuming implementation of the identified intersection improvements; detailed LOS analysis sheets are contained in Appendix H.

Table 5-2
Forecast Improved Long-Range Future
Conditions LOS Summary – HCM Methodology
Forecast Improved Long-Range Future Conditions Study Intersection LOS

Study Intersection	Forecast Long-Range Future Conditions		Forecast Improved Long-Range Future Conditions	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
	Delay – LOS	Delay – LOS	Delay – LOS	Delay – LOS
Anza Ave/Sepulveda Blvd	45.4 – D	55.8 – E	41.3 – D	48.5 – D
Hawthorne Blvd (SR-107)/Redondo Beach Blvd	29.0 – C	64.8 – E	23.2 – C	36.8 – D

Note: Delay shown in seconds per vehicle; Deficient intersection operation shown in **bold italics**.

As shown in Table 5-2, assuming implementation of the following identified intersection improvements, the LOS at the two improved study intersections is reduced to an acceptable LOS (LOS D or better) during the weekday a.m. peak hour and p.m. peak hour for forecast improved long-range future weekday conditions:

- **Anza Avenue/Sepulveda Boulevard** – Widen the southbound Anza Avenue approach from one left-turn lane, two through lanes, and one right-turn lane to consist of two left-turn lanes, two through lanes, and one right-turn lane (refer to page 128); and
- **Hawthorne Boulevard (SR-107)/Redondo Beach Boulevard** – Widen the westbound Redondo Beach Boulevard approach from one left-turn lane, two through lanes, and one right-turn lane to consist of two left-turn lanes, two through lanes, and one right-turn lane (refer to page 149).



Skypark Drive at Crenshaw Boulevard

FORECAST IMPROVED NEAR-TERM AND LONG-RANGE FUTURE CONDITIONS IDENTIFIED INTERSECTION IMPROVEMENTS – *ICU* METHODOLOGY

This section summarizes the identified intersection improvements to achieve acceptable LOS operation for forecast improved near-term conditions and forecast improved long-range future conditions based on the *ICU* analysis methodology.

Identification of intersection improvements based on the *ICU* analysis methodology include the following, which range from relatively simple improvements with low implementation costs to improvements with higher implementation costs and possible need for acquisition of right-of-way:

- Modification of right-turn signal phasing to include a right-turn overlap;
- Addition of one or more right-turn lanes;
- Addition of one or more left-turn lanes; and
- Addition of one or more through lanes.

It should be noted, intersection improvements identified below do not account for any City-planned intersection improvements implemented since 2005.

Forecast Improved Near-Term Conditions Intersections Based on *ICU* Methodology

Improvements are identified at the following 52 study intersections to achieve acceptable LOS operation for forecast improved near-term conditions based on the *ICU* analysis methodology:

7. Anza Avenue/190th Street
 - Add one eastbound through lane.

Results:

Weekday AM: 0.88 – D; Weekday Mid-Day: 0.78 – C;
Weekday PM: 0.78 – C; Weekend Mid-Day: 0.81 – D.

9. Anza Avenue/Del Amo Boulevard
- Add one westbound through lane; and
 - Add one eastbound through lane.
- Results:
- Weekday AM: 0.86 – D; Weekday Mid-Day: 0.68 – B;
Weekday PM: 0.81 – D; Weekend Mid-Day: 0.64 – B.
12. Anza Avenue/Torrance Boulevard
- Add one westbound through lane.
- Results:
- Weekday AM: 0.78 – C; Weekday Mid-Day: 0.85 – D;
Weekday PM: 0.85 – D; Weekend Mid-Day: 0.89 – D.
15. Anza Avenue/Sepulveda Boulevard
- Add one northbound left-turn lane;
 - Add one northbound through lane;
 - Add one southbound left-turn lane;
 - Add one southbound through lane;
 - Add one eastbound through lane; and
 - Add one westbound through lane.
- Results:
- Weekday AM: 0.76 – C; Weekday Mid-Day: 0.63 – B;
Weekday PM: 0.82 – D; Weekend Mid-Day: 0.74 – C.
20. Arlington Avenue/Torrance Boulevard
- Add one eastbound through lane.
- Results:
- Weekday AM: 0.74 – C; Weekday Mid-Day: 0.65 – B;
Weekday PM: 0.83 – D; Weekend Mid-Day: 0.48 – A.
22. Arlington Avenue/Plaza Del Amo-Washington Avenue
- Modify the southbound geometry to consist of one left-turn lane, one through lane, and one shared through/right-turn lane.
- Results:
- Weekday AM: 0.85 – D; Weekday Mid-Day: 0.80 – C;
Weekday PM: 0.81 – D; Weekend Mid-Day: 0.86 – D.

28. Cabrillo Avenue-Van Ness Avenue/Torrance Boulevard

- Add one eastbound through lane.

Results:

Weekday AM: 0.80 – C; Weekday Mid-Day: 0.75 – C;
Weekday PM: 0.78 – D; Weekend Mid-Day: 0.50 – A.

33. Crenshaw Boulevard/Redondo Beach Boulevard

- Add one northbound through lane

Results:

Weekday AM: 0.83 – D; Weekday Mid-Day: 0.75 – C;
Weekday PM: 0.90 – D; Weekend Mid-Day: 0.81 – D.

35. Crenshaw Boulevard/Artesia Boulevard

- Add one northbound through lane

Results:

Weekday AM: 0.85 – D; Weekday Mid-Day: 0.63 – B;
Weekday PM: 0.85 – D; Weekend Mid-Day: 0.82 – D.

36. Crenshaw Boulevard/182nd Street

- Add two northbound through lanes;
- Add two southbound through lanes; and
- Add one westbound right-turn lane.

Results:

Weekday AM: 0.81 – D; Weekday Mid-Day: 0.68 – B;
Weekday PM: 0.87 – D; Weekend Mid-Day: 0.69 – B.

37. Crenshaw Boulevard/190th Street

- Add one northbound left-turn lane;
- Add two northbound through lanes;
- Add one southbound through lane; and
- Add two westbound through lanes.

Results:

Weekday AM: 0.86 – D; Weekday Mid-Day: 0.68 – B;
Weekday PM: 0.89 – D; Weekend Mid-Day: 0.69 – B.

38. Crenshaw Boulevard/Del Amo Boulevard
- Widen northbound approach to consist of one left-turn lane, five through lanes, and one right-turn lane;
 - Widen southbound approach to consist of one left-turn lane, five through lanes, and one right-turn lane;
 - Add one eastbound through lane; and
 - Add two westbound through lanes.

Results:

Weekday AM: 0.76 – C; Weekday Mid-Day: 0.74 – C;

Weekday PM: 0.85 – D; Weekend Mid-Day: 0.66 – B.

40. Crenshaw Boulevard/Maricopa Street

- Add one southbound through lane.

Results:

Weekday AM: 0.64 – B; Weekday Mid-Day: 0.61 – B;

Weekday PM: 0.80 – C; Weekend Mid-Day: 0.61 – B.

41. Crenshaw Boulevard/Torrance Boulevard

- Add one northbound through lane;
- Add one southbound through lane; and
- Add one eastbound through lane.

Results:

Weekday AM: 0.81 – D; Weekday Mid-Day: 0.75 – C;

Weekday PM: 0.88 – D; Weekend Mid-Day: 0.64 – B.

43. Crenshaw Boulevard/Carson Street

- Add one northbound through lane;
- Add two southbound through lanes; and
- Add one westbound through lane.

Results:

Weekday AM: 0.75 – C; Weekday Mid-Day: 0.67 – B;

Weekday PM: 0.90 – D; Weekend Mid-Day: 0.70 – B.

47. Crenshaw Boulevard/Sepulveda Boulevard

- Add one southbound through lane.

Results:

Weekday AM: 0.82 – D; Weekday Mid-Day: 0.85 – D;

Weekday PM: 0.89 – D; Weekend Mid-Day: 0.69 – B.

48. Crenshaw Boulevard/235th Street
- Add one northbound through lane; and
 - Add one southbound through lane.
- Results:
- Weekday AM: 0.76 – C; Weekday Mid-Day: 0.75 – C;
Weekday PM: 0.78 – C; Weekend Mid-Day: 0.83 – D.
50. Crenshaw Boulevard/Lomita Boulevard
- Add one northbound through lane;
 - Add one northbound free right-turn lane;
 - Add one southbound left-turn lane;
 - Add one southbound through lane;
 - Add one eastbound through lane; and
 - Add one westbound through lane.
- Results:
- Weekday AM: 0.74 – C; Weekday Mid-Day: 0.78 – C;
Weekday PM: 0.87 – D; Weekend Mid-Day: 0.75 – C.
52. Crenshaw Boulevard/Skypark Drive-Amsler Street
- Add southbound right-turn overlap signal phasing;
 - Add one southbound through lane; and
 - Add one eastbound right-turn lane.
- Results:
- Weekday AM: 0.52 – A; Weekday Mid-Day: 0.61 – B;
Weekday PM: 0.73 – C; Weekend Mid-Day: 0.80 – C.
53. Crenshaw Boulevard/Airport Drive
- Add one northbound through lane.
- Results:
- Weekday AM: 0.49 – A; Weekday Mid-Day: 0.72 – C;
Weekday PM: 0.81 – D; Weekend Mid-Day: 0.90 – D.

54. Crenshaw Boulevard/Pacific Coast Highway (SR-1)
- Add northbound right-turn overlap signal phasing;
 - Add one northbound through lane;
 - Add two southbound left-turn lanes;
 - Add one southbound through lane;
 - Add one eastbound through lane; and
 - Add one westbound through lane.
- Results:
- Weekday AM: 0.78 – C; Weekday Mid-Day: 0.77 – C;
Weekday PM: 0.82 – D; Weekend Mid-Day: 0.87 – D.
59. Del Amo Circle East/Sepulveda Boulevard
- Add one eastbound through lane.
- Results:
- Weekday AM: 0.70 – B; Weekday Mid-Day: 0.73 – C;
Weekday PM: 0.86 – D; Weekend Mid-Day: 0.82 – D.
69. Hawthorne Boulevard (SR-107)/Redondo Beach Boulevard
- Add one westbound left-turn lane.
- Results:
- Weekday AM: 0.82 – D; Weekday Mid-Day: 0.68 – B;
Weekday PM: 0.81 – D; Weekend Mid-Day: 0.65 – B.
72. Hawthorne Boulevard (SR-107)/182nd Street
- Add one northbound through lane; and
 - Add one southbound through lane.
- Results:
- Weekday AM: 0.63 – B; Weekday Mid-Day: 0.61 – B;
Weekday PM: 0.86 – D; Weekend Mid-Day: 0.57 – A.
74. Hawthorne Boulevard (SR-107)/190th Street
- Add one northbound through lane; and
 - Add one southbound through lane.
- Results:
- Weekday AM: 0.86 – D; Weekday Mid-Day: 0.72 – C;
Weekday PM: 0.89 – D; Weekend Mid-Day: 0.81 – D.

77. Hawthorne Boulevard (SR-107)/Del Amo Boulevard

- Add one northbound through lane;
- Add one southbound through lane;
- Add one eastbound through lane; and
- Add one westbound through lane.

Results:

Weekday AM: 0.87 – D; Weekday Mid-Day: 0.81 – D;
Weekday PM: 0.85 – D; Weekend Mid-Day: 0.77 – C.

79. Hawthorne Boulevard (SR-107)/Emerald Street

- Add two southbound through lanes.

Results:

Weekday AM: 0.73 – C; Weekday Mid-Day: 0.65 – B;
Weekday PM: 0.67 – B; Weekend Mid-Day: 0.88 – D.

80. Hawthorne Boulevard (SR-107)/Torrance Boulevard

- Add one southbound left-turn lane;
- Add two southbound through lanes;
- Add one eastbound left-turn lane;
- Add one eastbound through lane;
- Add one eastbound right-turn lane;
- Add eastbound right-turn overlap signal phasing;
- Add one westbound through lane.

Results:

Weekday AM: 0.68 – B; Weekday Mid-Day: 0.69 – B;
Weekday PM: 0.83 – D; Weekend Mid-Day: 0.89 – D.

83. Hawthorne Boulevard (SR-107)/Carson Street

- Add two northbound through lanes;
- Add one southbound left-turn lane;
- Add one eastbound through lane; and
- Add westbound right-turn overlap signal phasing.

Results:

Weekday AM: 0.60 – A; Weekday Mid-Day: 0.76 – C;
Weekday PM: 0.86 – D; Weekend Mid-Day: 0.88 – D.

85. Hawthorne Boulevard (SR-107)/Sepulveda Boulevard

- Add three northbound through lanes;
- Add northbound right-turn overlap signal phasing;
- Add one southbound through lane;
- Add one eastbound through lane;
- Add one westbound left-turn lane; and
- Add one westbound through lane.

Results:

Weekday AM: 0.66 – B; Weekday Mid-Day: 0.89 – D;
Weekday PM: 0.88 – D; Weekend Mid-Day: 0.85 – D.

86. Hawthorne Boulevard (SR-107)/230th Street

- Add one southbound left-turn lane.

Results:

Weekday AM: 0.68 – B; Weekday Mid-Day: 0.81 – D;
Weekday PM: 0.83 – D; Weekend Mid-Day: 0.69 – B.

87. Hawthorne Boulevard (SR-107)/Lomita Boulevard

- Add one northbound through lane;
- Add one southbound through lane; and
- Add westbound right-turn overlap signal phasing.

Results:

Weekday AM: 0.86 – D; Weekday Mid-Day: 0.78 – C;
Weekday PM: 0.88 – D; Weekend Mid-Day: 0.76 – C.

89. Hawthorne Boulevard (SR-107)/Pacific Coast Highway (SR-1)

- Add two northbound through lanes;
- Add one southbound through lane;
- Add one eastbound left-turn lane; and
- Add one eastbound through lane.

Results:

Weekday AM: 0.73 – C; Weekday Mid-Day: 0.78 – C;
Weekday PM: 0.88 – D; Weekend Mid-Day: 0.88 – D.

100. I-405 Northbound Ramps/182nd Street

- Widen eastbound approach to consist of two eastbound through lanes and two eastbound right-turn lanes.

Results:

Weekday AM: 0.79 – C; Weekday Mid-Day: 0.68 – B;
Weekday PM: 0.86 – D; Weekend Mid-Day: 0.69 – B.

101. I-405 Southbound Ramps/Crenshaw Boulevard
- Add one northbound left-turn lane; and
 - Add two southbound through lanes.
- Results:
- Weekday AM: 0.84 – D; Weekday Mid-Day: 0.69 – B;
Weekday PM: 0.85 – D; Weekend Mid-Day: 0.65 – B.
103. I-405 Southbound Ramps/190th Street
- Add one eastbound through lane; and
 - Add one westbound through lane.
- Results:
- Weekday AM: 0.80 – C; Weekday Mid-Day: 0.59 – A;
Weekday PM: 0.80 – C; Weekend Mid-Day: 0.49 – A.
104. Inglewood Avenue/190th Street
- Modify north-south signal phasing from split signal phasing to permitted left-turn signal phasing;
 - Add two eastbound left-turn lanes; and
 - Add one westbound through lane.
- Results:
- Weekday AM: 0.72 – C; Weekday Mid-Day: 0.85 – D;
Weekday PM: 0.73 – C; Weekend Mid-Day: 0.75 – C.
115. Madrona Avenue/Sepulveda Boulevard
- Add one eastbound through lane.
- Results:
- Weekday AM: 0.72 – C; Weekday Mid-Day: 0.76 – C;
Weekday PM: 0.87 – D; Weekend Mid-Day: 0.81 – D.
128. Palos Verdes Boulevard/Pacific Coast Highway (SR-1)
- Add one northbound left-turn lane.
- Results:
- Weekday AM: 0.67 – B; Weekday Mid-Day: 0.61 – B;
Weekday PM: 0.83 – D; Weekend Mid-Day: 0.68 – B.

133. Prairie Avenue/Redondo Beach Boulevard

- Add one northbound left-turn lane;
- Add one northbound through lane;
- Add one southbound left-turn lane; and
- Add one southbound through lane.

Results:

Weekday AM: 0.77 – C; Weekday Mid-Day: 0.69 – B;
Weekday PM: 0.90 – D; Weekend Mid-Day: 0.64 – B.

134. Prairie Avenue/Artesia Boulevard

- Add one westbound through lane.

Results:

Weekday AM: 0.86 – D; Weekday Mid-Day: 0.69 – B;
Weekday PM: 0.85 – D; Weekend Mid-Day: 0.79 – C.

135. Prairie Avenue/182nd Street

- Add one northbound through lane; and
- Add one southbound through lane.

Results:

Weekday AM: 0.78 – C; Weekday Mid-Day: 0.60 – A;
Weekday PM: 0.78 – C; Weekend Mid-Day: 0.67 – B.

136. Prairie Avenue/190th Street

- Add one northbound through lane;
- Add northbound right-turn overlap signal phasing;
- Add one southbound through lane; and
- Add one westbound through lane.

Results:

Weekday AM: 0.80 – C; Weekday Mid-Day: 0.68 – B;
Weekday PM: 0.87 – D; Weekend Mid-Day: 0.73 – C.

137. Prairie Avenue/Del Amo Boulevard

- Add southbound right-turn overlap signal phasing; and
- Add two westbound through lanes.

Results:

Weekday AM: 0.85 – D; Weekday Mid-Day: 0.76 – C;
Weekday PM: 0.86 – D; Weekend Mid-Day: 0.57 – A.

148. Van Ness Avenue/Del Amo Boulevard
- Add one northbound through lane; and
 - Add one eastbound through lane; and
 - Add one westbound through lane.
- Results:
- Weekday AM: 0.76 – C; Weekday Mid-Day: 0.84 – D;
Weekday PM: 0.69 – B; Weekend Mid-Day: 0.53 – A.
155. Western Avenue (SR-213)/190th Street
- Add one southbound through lane.
- Results:
- Weekday AM: 0.83 – D; Weekday Mid-Day: 0.69 – B;
Weekday PM: 0.78 – C; Weekend Mid-Day: 0.47 – A.
156. Western Avenue (SR-213)/195th Street
- Add one southbound through lane; and
 - Add eastbound right-turn overlap signal phasing.
- Results:
- Weekday AM: 0.63 – B; Weekday Mid-Day: 0.57 – A;
Weekday PM: 0.77 – C; Weekend Mid-Day: 0.39 – A.
157. Western Avenue (SR-213)/Del Amo Boulevard
- Modify north-south signal phasing from permitted left-turn signal phasing to protected left-turn signal phasing;
 - Add two northbound through lanes;
 - Widen southbound approach to consist of one left-turn lane, six through lanes, and one right-turn lane;
 - Add southbound right-turn overlap signal phasing;
 - Add three eastbound through lanes; and
 - Widen westbound approach to consist of one left-turn lane, one shared left-turn/through lane, and one shared through/right-turn lane.
- Results:
- Weekday AM: 0.88 – D; Weekday Mid-Day: 0.86 – D;
Weekday PM: 0.86 – D; Weekend Mid-Day: 0.75 – C.

160. Western Avenue (SR-213)/Carson Street
- Add one northbound through lane;
 - Add one southbound through lane; and
 - Add one westbound through lane.
- Results:
- Weekday AM: 0.79 – C; Weekday Mid-Day: 0.65 – C;
Weekday PM: 0.89 – D; Weekend Mid-Day: 0.72 – C.
161. Western Avenue (SR-213)/220th Street
- Add one northbound through lane;
 - Add two southbound through lanes;
 - Widen eastbound approach to consist of one shared left-turn/through lane, one through lane, and one right-turn lane; and
 - Widen westbound approach to consist of one shared left-turn/through lane and one shared through/right-turn lane.
- Results:
- Weekday AM: 0.59 – A; Weekday Mid-Day: 0.37 – A;
Weekday PM: 0.81 – D; Weekend Mid-Day: 0.35 – A.
162. Western Avenue (SR-213)/223rd Street
- Add one northbound through lane; and
 - Add two southbound through lanes.
- Results:
- Weekday AM: 0.73 – C; Weekday Mid-Day: 0.58 – A;
Weekday PM: 0.84 – D; Weekend Mid-Day: 0.56 – A.
163. Western Avenue (SR-213)/Sepulveda Boulevard
- Add one northbound through lane;
 - Add two southbound through lanes;
 - Add one eastbound left-turn lane;
 - Add two eastbound through lanes;
 - Add one westbound left-turn lane; and
 - Add one westbound through lane.
- Results:
- Weekday AM: 0.80 – C; Weekday Mid-Day: 0.76 – C;
Weekday PM: 0.86 – D; Weekend Mid-Day: 0.62 – B.

Exhibit 5-3 (page 217) identifies intersections operating at a deficient LOS (LOS E or worse) for forecast near-term conditions based on the *ICU* analysis methodology.

Forecast Improved Long-Range Future Conditions Intersections Based on *ICU* Methodology

Improvements are identified at the following 39 study intersections to achieve acceptable LOS operation for forecast improved long-range future conditions based on the *ICU* analysis methodology:

15. Anza Avenue/Sepulveda Boulevard
 - Add one northbound left-turn lane;
 - Add one southbound left-turn lane;
 - Add one southbound through lane;
 - Add one eastbound through lane; and
 - Add one westbound left-turn lane.Results:
Weekday AM: 0.82 – D; Weekday PM: 0.89 – D.
20. Arlington Avenue/Torrance Boulevard
 - Add one eastbound through lane.Results:
Weekday AM: 0.68 – B; Weekday PM: 0.78 – C.
22. Arlington Avenue/Plaza Del Amo-Washington Avenue
 - Modify the southbound geometry to consist of one left-turn lane, one through lane, and one shared through/right-turn lane.Results:
Weekday AM: 0.85 – D; Weekday PM: 0.81 – D.
23. Arlington Avenue/Sepulveda Boulevard
 - Add one westbound through lane.Results:
Weekday AM: 0.89 – D; Weekday PM: 0.85 – D.
29. Calle Mayor/Pacific Coast Highway (SR-1)
 - Add one westbound left-turn lane.Results:
Weekday AM: 0.75 – C; Weekday PM: 0.88 – D.

35. Crenshaw Boulevard/Artesia Boulevard
- Add one northbound through lane.
- Results:
Weekday AM: 0.89 – D; Weekday PM: 0.88 – D.
36. Crenshaw Boulevard/182nd Street
- Add one northbound through lane; and
 - Add one southbound through lane.
- Results:
Weekday AM: 0.84 – D; Weekday PM: 0.85 – D.
37. Crenshaw Boulevard/190th Street
- Add one northbound left-turn lane;
 - Add one northbound through lane;
 - Add one southbound through lane; and
 - Add two westbound through lanes.
- Results:
Weekday AM: 0.75 – C; Weekday PM: 0.73 – D.
38. Crenshaw Boulevard/Del Amo Boulevard
- Widen northbound approach to consist of one left-turn lane, three through lanes, and two right-turn lanes;
 - Add northbound right-turn overlap signal phasing;
 - Add two southbound left-turn lanes;
 - Add eastbound right-turn overlap signal phasing;
 - Add one westbound left-turn lane; and
 - Add westbound right-turn overlap signal phasing.
- Results:
Weekday AM: 0.82 – D; Weekday PM: 0.73 – C.
41. Crenshaw Boulevard/Torrance Boulevard
- Add one northbound through lane;
 - Add one southbound through lane; and
 - Add one eastbound through lane.
- Results:
Weekday AM: 0.72 – C; Weekday PM: 0.81 – D.

43. Crenshaw Boulevard/Carson Street
- Add one northbound through lane;
 - Widen southbound approach to consist of two left-turn lanes, three through lanes, and one right-turn lane;
 - Add one westbound through lane.
- Results:
Weekday AM: 0.72 – C; Weekday PM: 0.87 – D.
47. Crenshaw Boulevard/Sepulveda Boulevard
- Add one southbound through lane.
- Results:
Weekday AM: 0.83 – D; Weekday PM: 0.86 – D.
50. Crenshaw Boulevard/Lomita Boulevard
- Add one southbound through lane; and
 - Add one eastbound left-turn lane.
- Results:
Weekday AM: 0.87 – C; Weekday PM: 0.89 – D.
54. Crenshaw Boulevard/Pacific Coast Highway (SR-1)
- Add one southbound left-turn lane;
 - Add one eastbound left-turn lane; and
 - Add one westbound through lane.
- Results:
Weekday AM: 0.82 – D; Weekday PM: 0.83 – D.
59. Del Amo Circle East/Sepulveda Boulevard
- Add one eastbound through lane.
- Results:
Weekday AM: 0.70 – B; Weekday PM: 0.89 – D.
69. Hawthorne Boulevard (SR-107)/Redondo Beach Boulevard
- Add one westbound left-turn lane.
- Results:
Weekday AM: 0.78 – C; Weekday PM: 0.90 – D.
70. Hawthorne Boulevard (SR-107)/Artesia Boulevard
- Widen northbound approach to consist of two left-turn lanes, four through lanes, and one shared through/right-turn lane.
- Results:
Weekday AM: 0.84 – D; Weekday PM: 0.90 – D.

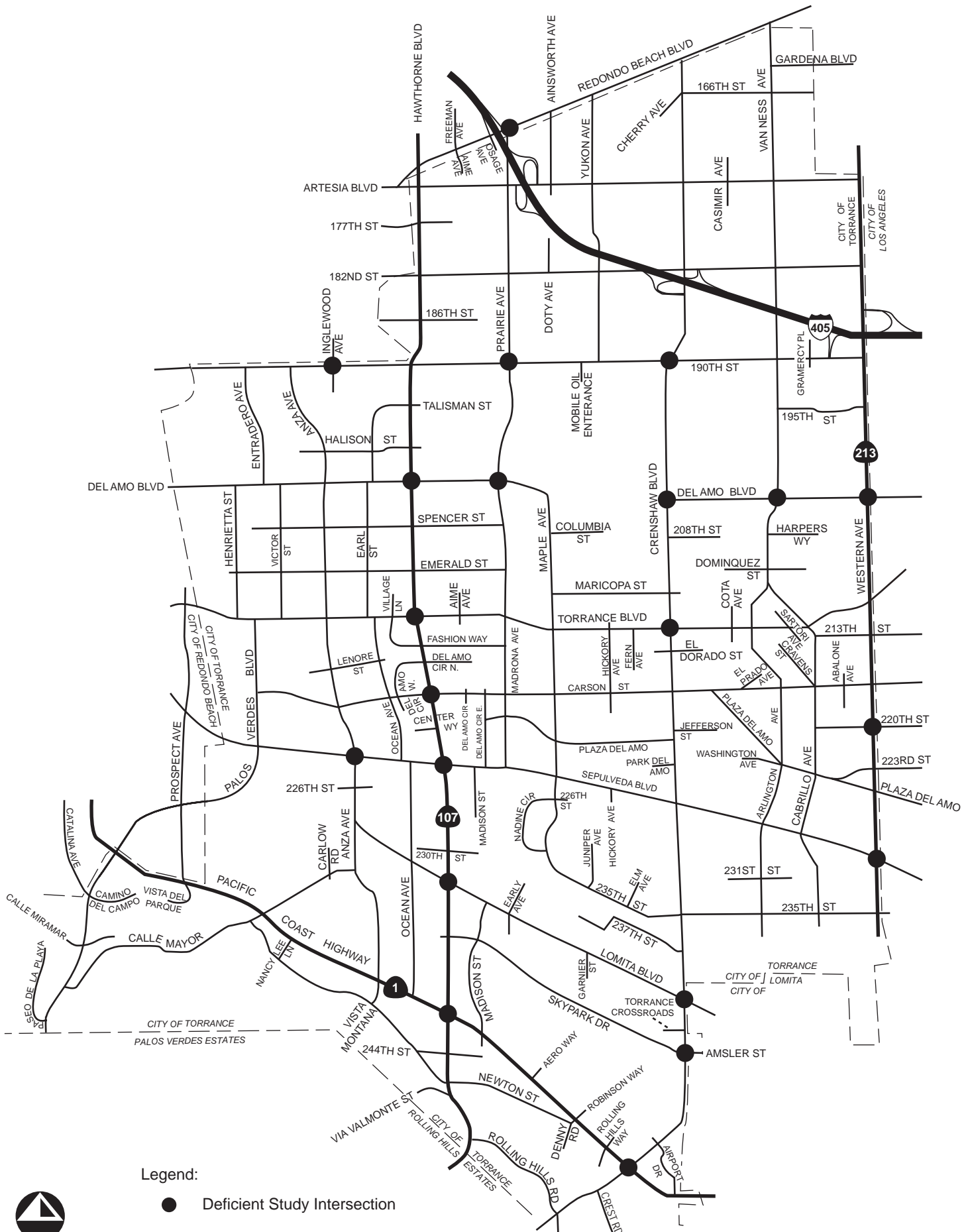
72. Hawthorne Boulevard (SR-107)/182nd Street
- Add one southbound through lane.
- Results:
Weekday AM: 0.76 – C; Weekday PM: 0.86 – D.
74. Hawthorne Boulevard (SR-107)/190th Street
- Add one northbound through lane;
 - Add one southbound through lane; and
 - Add eastbound right-turn overlap signal phasing.
- Results:
Weekday AM: 0.84 – D; Weekday PM: 0.86 – D.
85. Hawthorne Boulevard (SR-107)/Sepulveda Boulevard
- Add one northbound through lane;
 - Add one northbound right-turn lane;
 - Add one southbound through lane; and
 - Add one eastbound through lane.
- Results:
Weekday AM: 0.76 – C; Weekday PM: 0.79 – C.
87. Hawthorne Boulevard (SR-107)/Lomita Boulevard
- Add one northbound left-turn lane;
 - Add one northbound through lane;
 - Add one southbound through lane; and
 - Add one westbound left-turn lane.
- Results:
Weekday AM: 0.86 – D; Weekday PM: 0.87 – D.
89. Hawthorne Boulevard (SR-107)/Pacific Coast Highway (SR-1)
- Add one eastbound left-turn lane; and
 - Add one westbound left-turn lane.
- Results:
Weekday AM: 0.80 – C; Weekday PM: 0.82 – D.
101. I-405 Southbound Ramps/Crenshaw Boulevard
- Add one northbound left-turn lane; and
 - Add one southbound through lane.
- Results:
Weekday AM: 0.81 – D; Weekday PM: 0.85 – D.

103. I-405 Southbound Ramps/190th Street
- Add one eastbound through lane; and
 - Add one westbound through lane.
- Results:
Weekday AM: 0.78 – C; Weekday PM: 0.77 – C.
111. Madrona Avenue/Torrance Boulevard
- Add one northbound through lane; and
 - Add one eastbound through lane.
- Results:
Weekday AM: 0.58 – A; Weekday PM: 0.80 – C.
115. Madrona Avenue/Sepulveda Boulevard
- Add one eastbound through lane.
- Results:
Weekday AM: 0.71 – C; Weekday PM: 0.87 – D.
117. Maple Avenue/Torrance Boulevard
- Add one eastbound through lane; and
 - Add one westbound through lane.
- Results:
Weekday AM: 0.60 – A; Weekday PM: 0.82 – D.
126. Palos Verdes Boulevard/Torrance Boulevard
- Add one northbound left-turn lane.
- Results:
Weekday AM: 0.62 – B; Weekday PM: 0.66 – B.
128. Palos Verdes Boulevard/Pacific Coast Highway (SR-1)
- Add one northbound left-turn lane.
- Results:
Weekday AM: 0.67 – B; Weekday PM: 0.84 – D.
133. Prairie Avenue/Redondo Beach Boulevard
- Add one southbound left-turn lane;
 - Add one southbound through lane; and
 - Add one eastbound left-turn lane.
- Results:
Weekday AM: 0.79 – C; Weekday PM: 0.89 – D.

134. Prairie Avenue/Artesia Boulevard
- Add one westbound through lane.
- Results:
- Weekday AM: 0.90 – D; Weekday PM: 0.88 – D.
135. Prairie Avenue/182nd Street
- Add one northbound through lane; and
 - Add one southbound through lane.
- Results:
- Weekday AM: 0.82 – D; Weekday PM: 0.83 – D.
136. Prairie Avenue/190th Street
- Add one eastbound left-turn lane.
- Results:
- Weekday AM: 0.80 – C; Weekday PM: 0.88 – D.
153. Western Avenue (SR-213)/Artesia Boulevard
- Add one northbound through lane;
 - Add one eastbound through lane; and
 - Add one westbound through lane.
- Results:
- Weekday AM: 0.85 – D; Weekday PM: 0.89 – D.
155. Western Avenue (SR-213)/190th Street
- Widen southbound approach to consist of two left-turn lanes, three through lanes, and one right-turn lane; and
 - Add southbound right-turn overlap signal phasing.
- Results:
- Weekday AM: 0.83 – D; Weekday PM: 0.78 – C.
160. Western Avenue (SR-213)/Carson Street
- Add one southbound through lane.
- Results:
- Weekday AM: 0.85 – D; Weekday PM: 0.80 – C.

161. Western Avenue (SR-213)/220th Street
- Add one northbound through lane;
 - Add two southbound through lanes; and
 - Add one eastbound through lane.
- Results:
- Weekday AM: 0.54 – A; Weekday PM: 0.89 – D.
162. Western Avenue (SR-213)/223rd Street
- Add one southbound through lane.
- Results:
- Weekday AM: 0.76 – C; Weekday PM: 0.89 – D.
163. Western Avenue (SR-213)/Sepulveda Boulevard
- Add one northbound left-turn lane;
 - Add one southbound through lane; and
 - Add one westbound left-turn lane.
- Results:
- Weekday AM: 0.89 – D; Weekday PM: 0.88 – D.

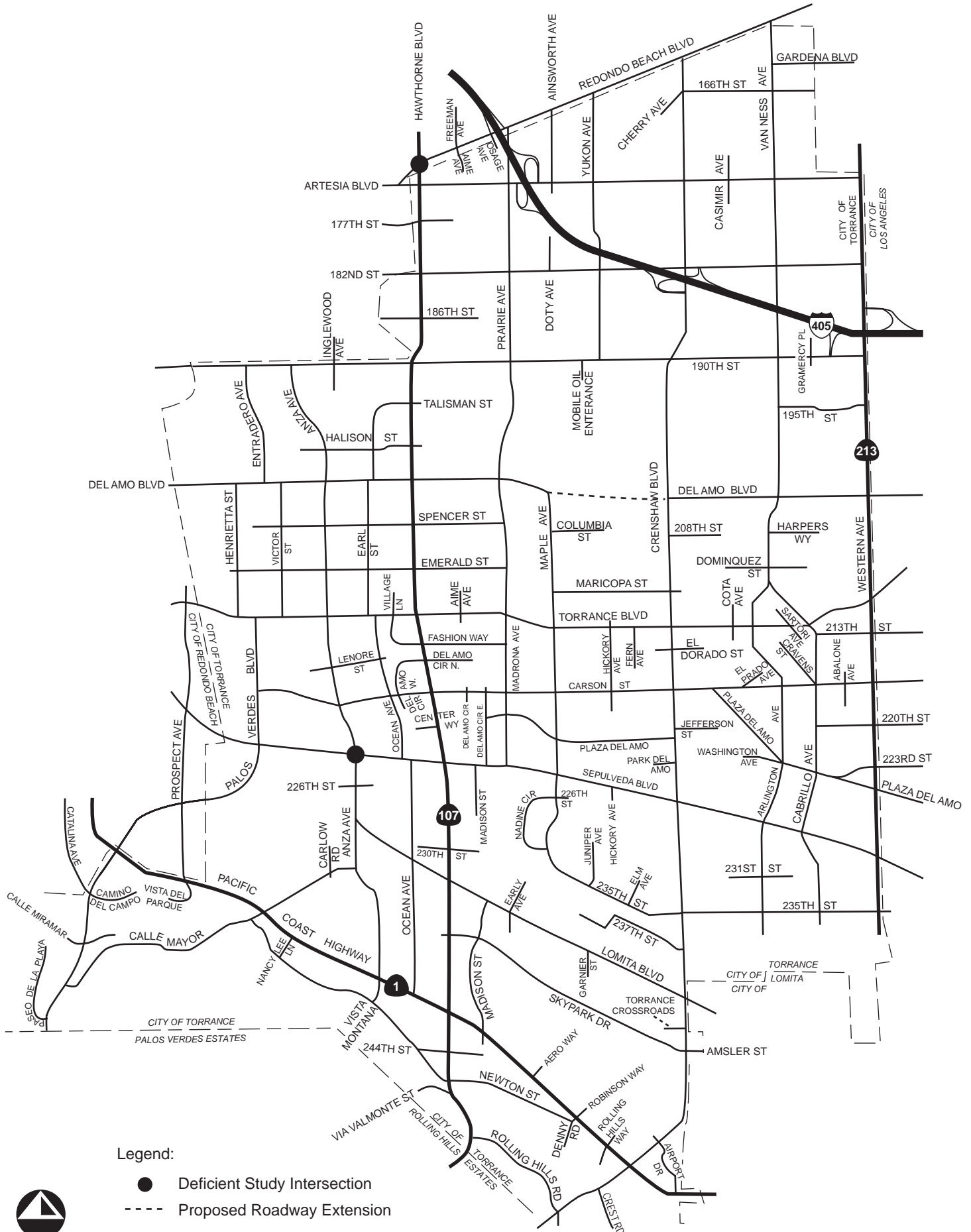
Exhibit 5-4 (page 218) identifies intersections operating at a deficient LOS (LOS E or worse) for forecast long-range future conditions based on the *ICU* analysis methodology.



Legend:
 ● Deficient Study Intersection

Intersections Forecast to Operate at a Deficient LOS for Forecast Near-Term Conditions (HCM Methodology)





Legend:

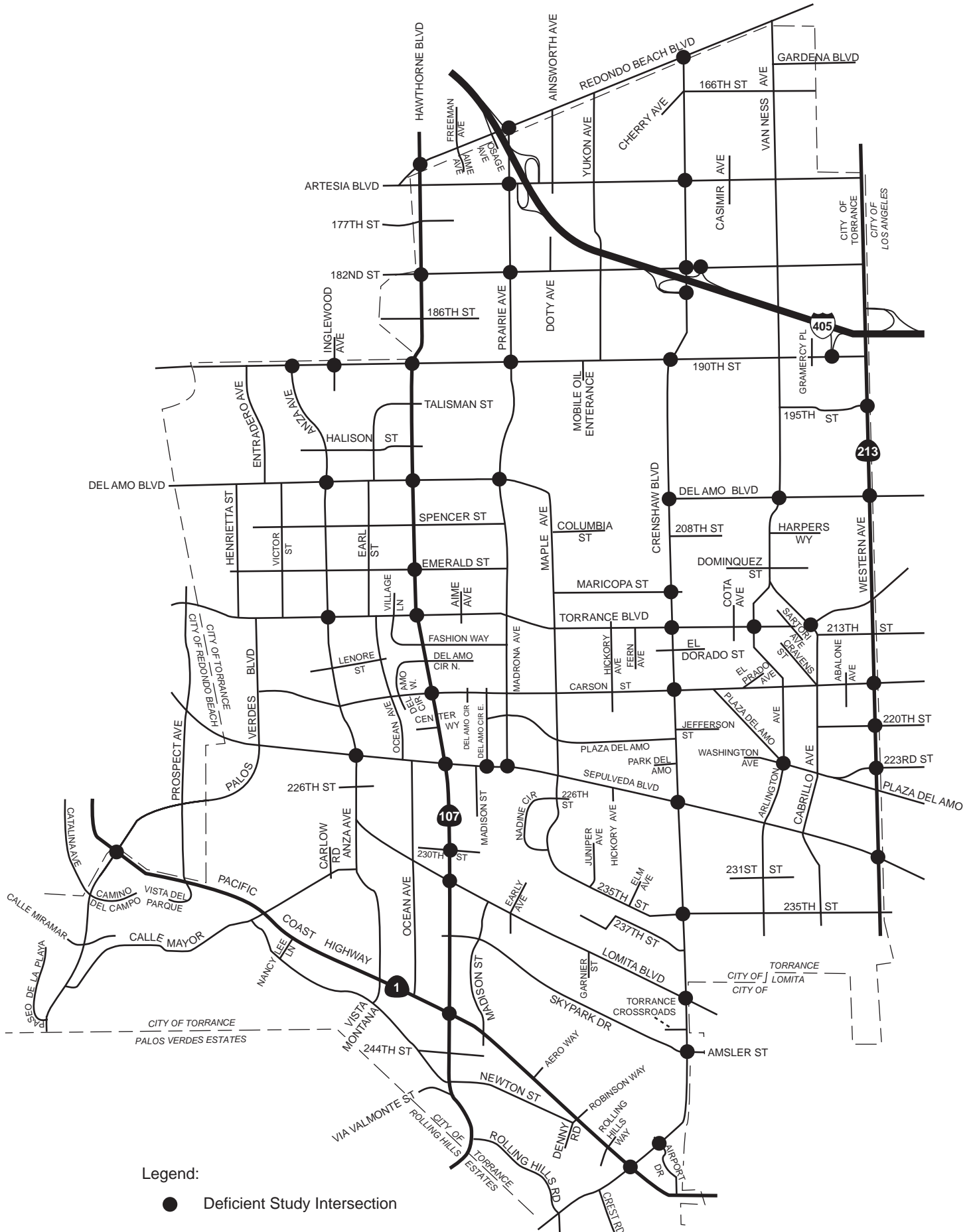
- Deficient Study Intersection
- - - - Proposed Roadway Extension



Not to Scale



Intersections Forecast to Operate at a Deficient LOS for Forecast Long-Range Future Conditions (HCM Methodology)

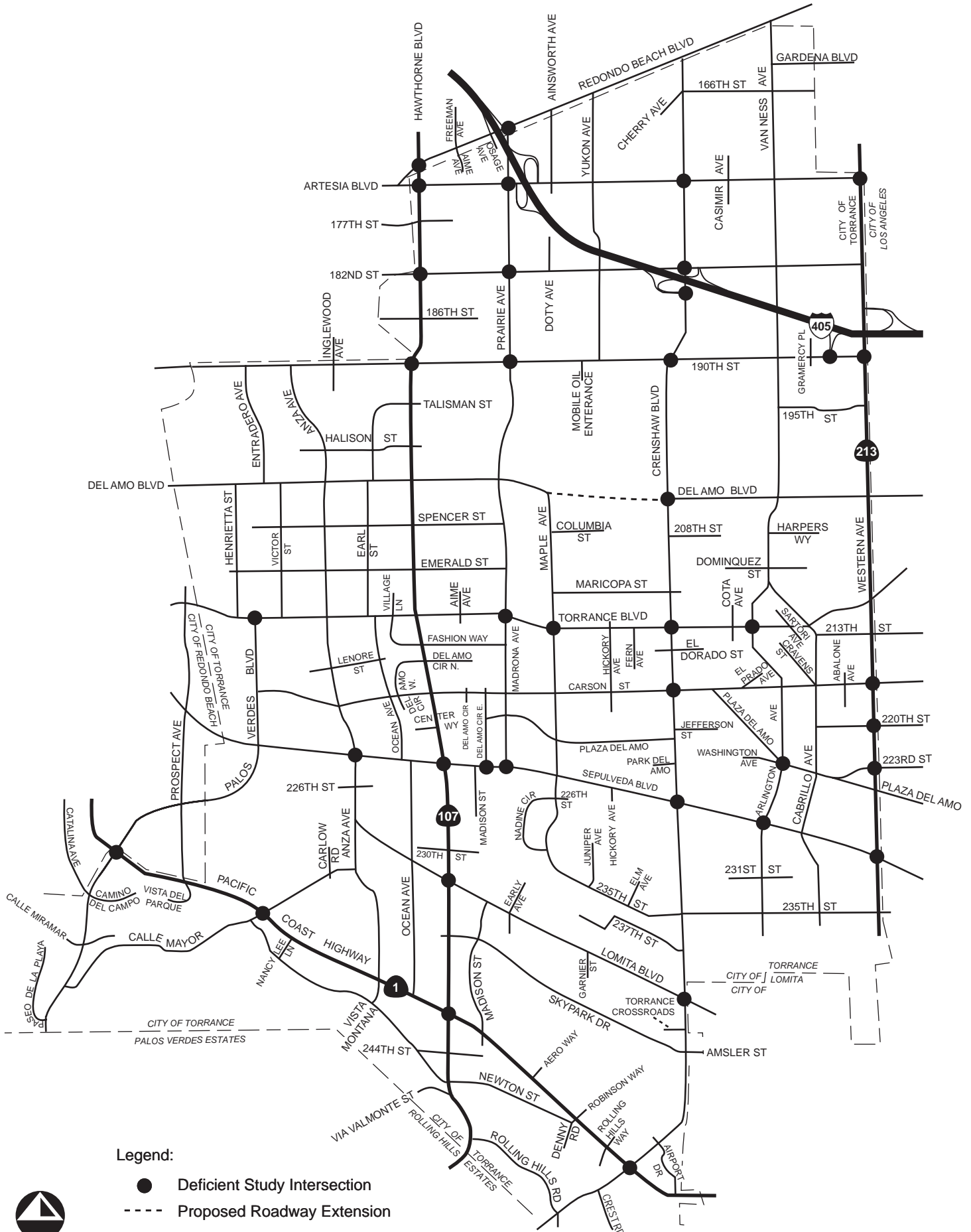


Legend:
 ● Deficient Study Intersection

Intersections Forecast to Operate at a Deficient LOS for Forecast Near-Term Conditions (ICU Methodology)

Not to Scale





Legend:

- Deficient Study Intersection
- - - Proposed Roadway Extension



Not to Scale



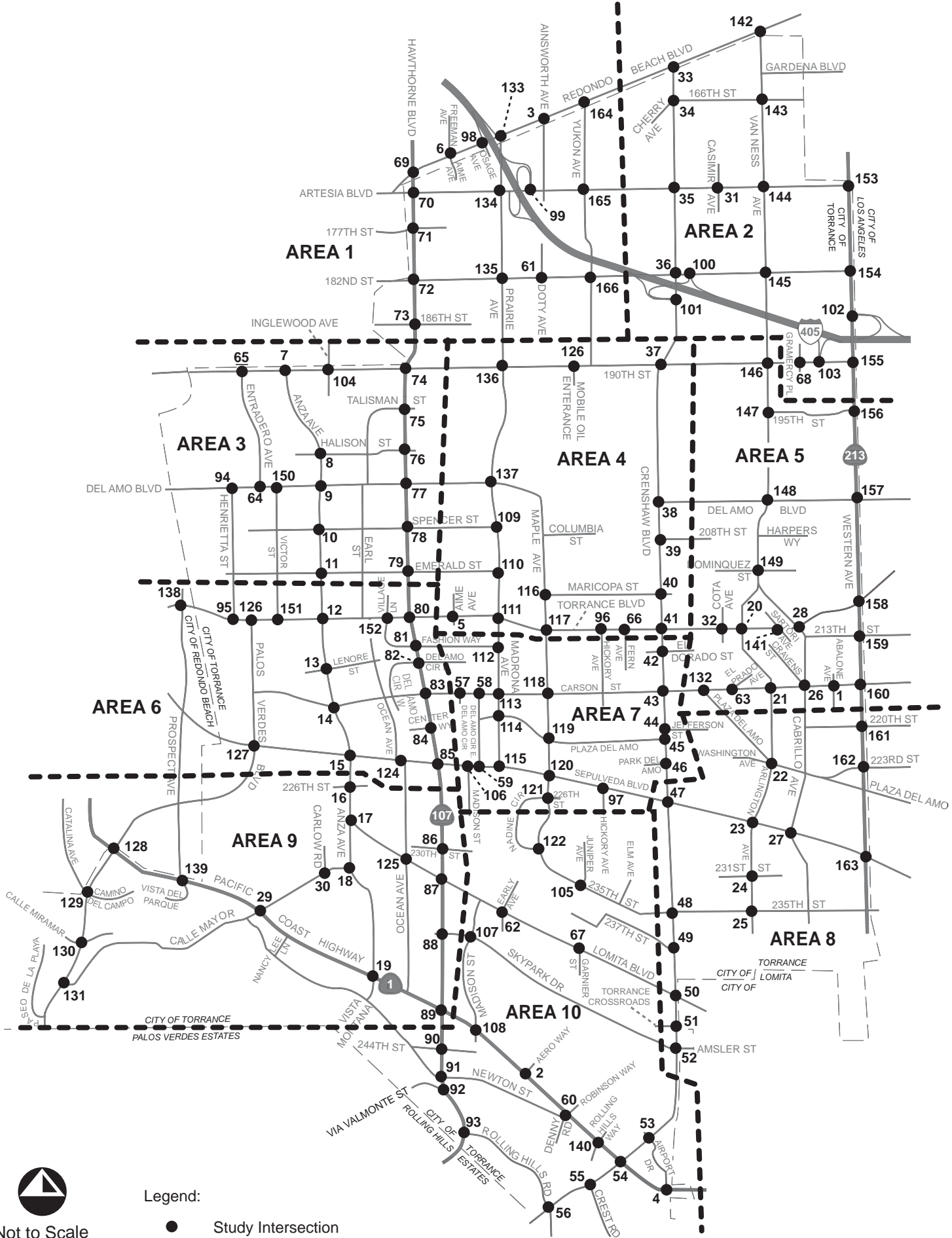
Intersections Forecast to Operate at a Deficient LOS for Forecast Long-Range Future Conditions (ICU Methodology)

CHAPTER 6 – INTERSECTION VOLUME AND GEOMETRY EXHIBITS

The exhibits contained in this chapter show weekday a.m. peak hour, weekday mid-day peak hour, weekday p.m. peak hour, and weekend mid-day peak hour volumes, as well as intersection geometry. The intersections are grouped into ten areas within the City of Torrance, as shown in Exhibit 6-1 (page 220).

Each sub-section of this chapter consists of the following thirteen exhibits:

- Existing Weekday AM/PM Peak Hour Intersection Volumes;
- Existing Weekday Mid-Day Peak Hour Intersection Volumes;
- Existing Weekend Mid-Day Peak Hour Intersection Volumes;
- Existing Intersection/Roadway Geometry;
- Forecast Weekday AM/PM Peak Hour Trip Assignment of Approved Projects;
- Forecast Weekday Mid-Day Peak Hour Trip Assignment of Approved Projects;
- Forecast Weekend Mid-Day Peak Hour Trip Assignment of Approved Projects;
- Forecast Near-Term Conditions Weekday AM/PM Peak Hour Intersection Volumes;
- Forecast Near-Term Conditions Weekday Mid-Day Peak Hour Intersection Volumes;
- Forecast Near-Term Conditions Weekend Mid-Day Peak Hour Intersection Volumes;
- Forecast Long-Range Future Conditions Weekday AM/PM Peak Hour Intersection Volumes;
- Forecast Improved Near-Term Conditions Intersection/Roadway Geometry; and
- Forecast Improved Long-Range Future Conditions Intersection/Roadway Geometry.



Not to Scale

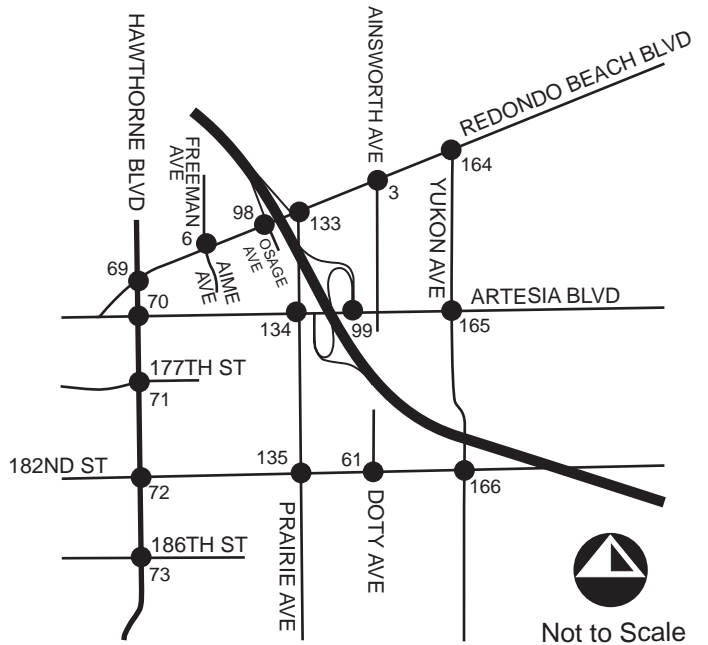
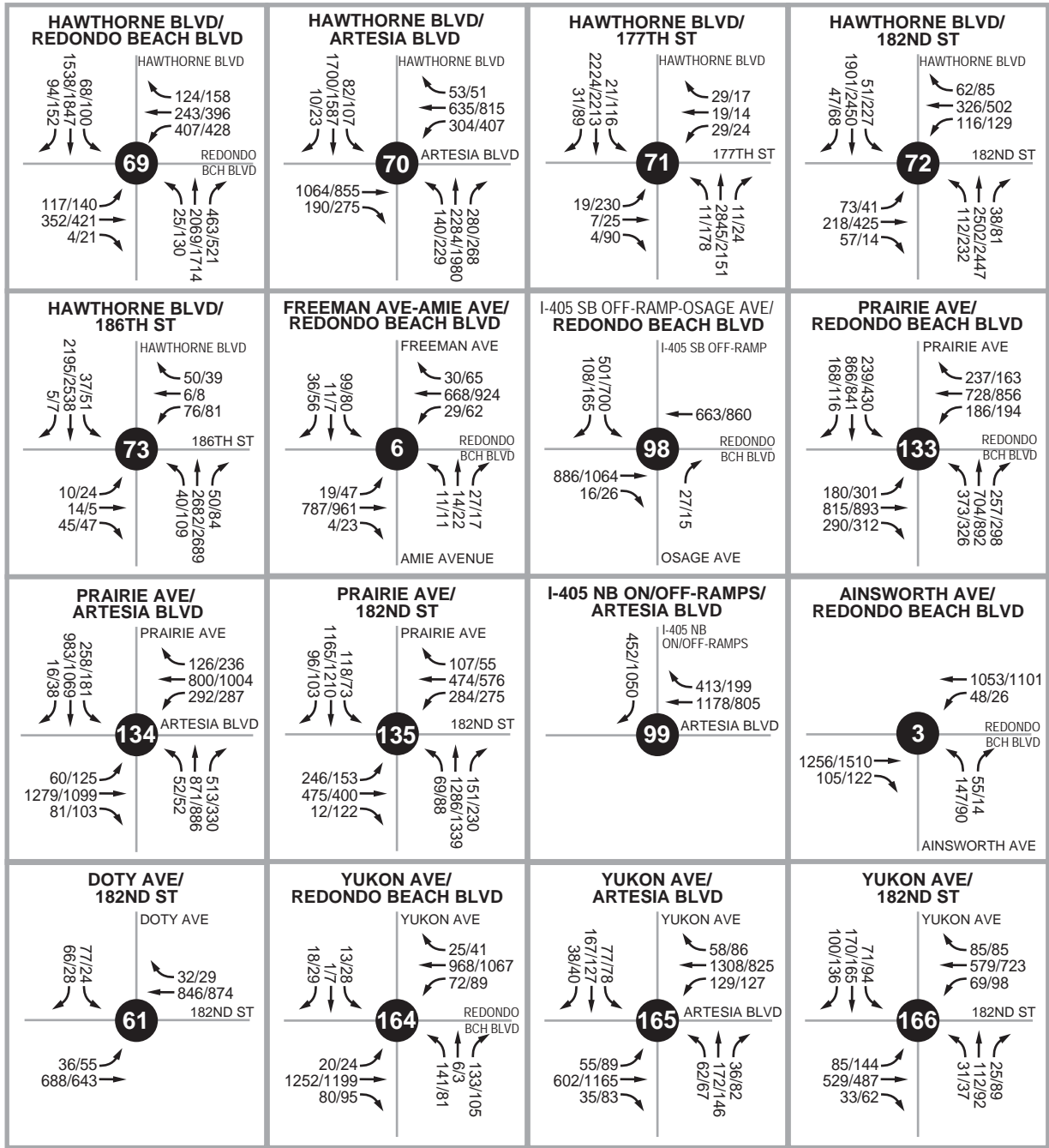


Legend:

- Study Intersection
- - - Area Boundary

City of Torrance Study Areas

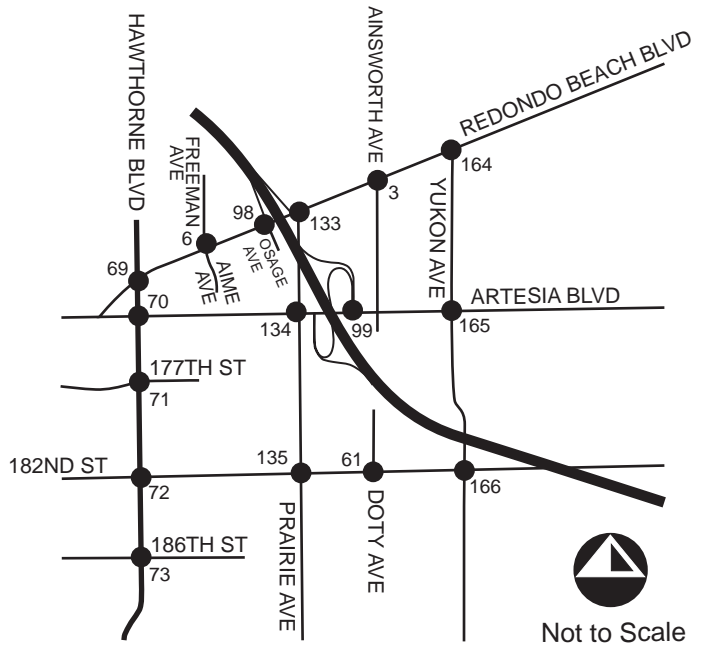
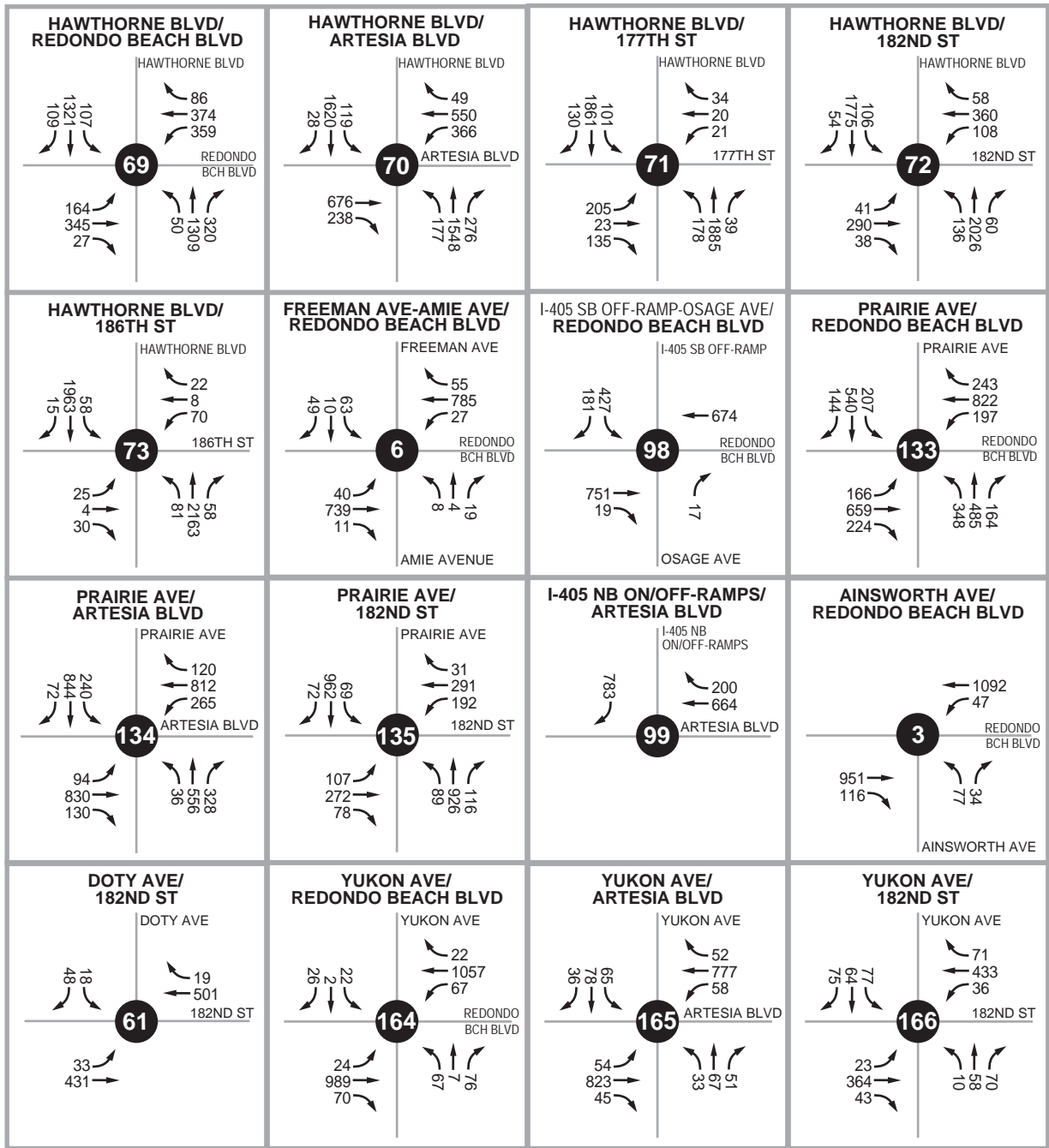
Study Area 1



Legend:
 XX/XX AM/PM Peak Hour Volumes

Area 1 - Existing Weekday AM/PM Peak Hour Intersection Volumes

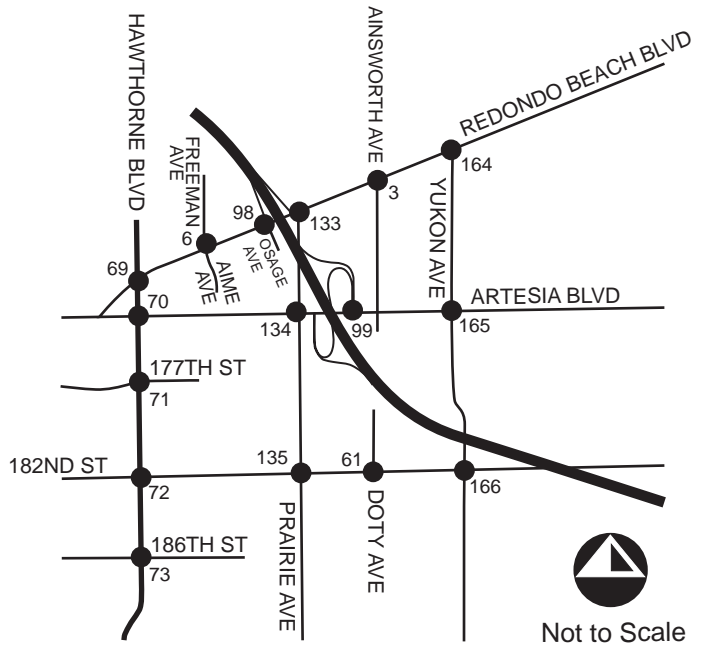
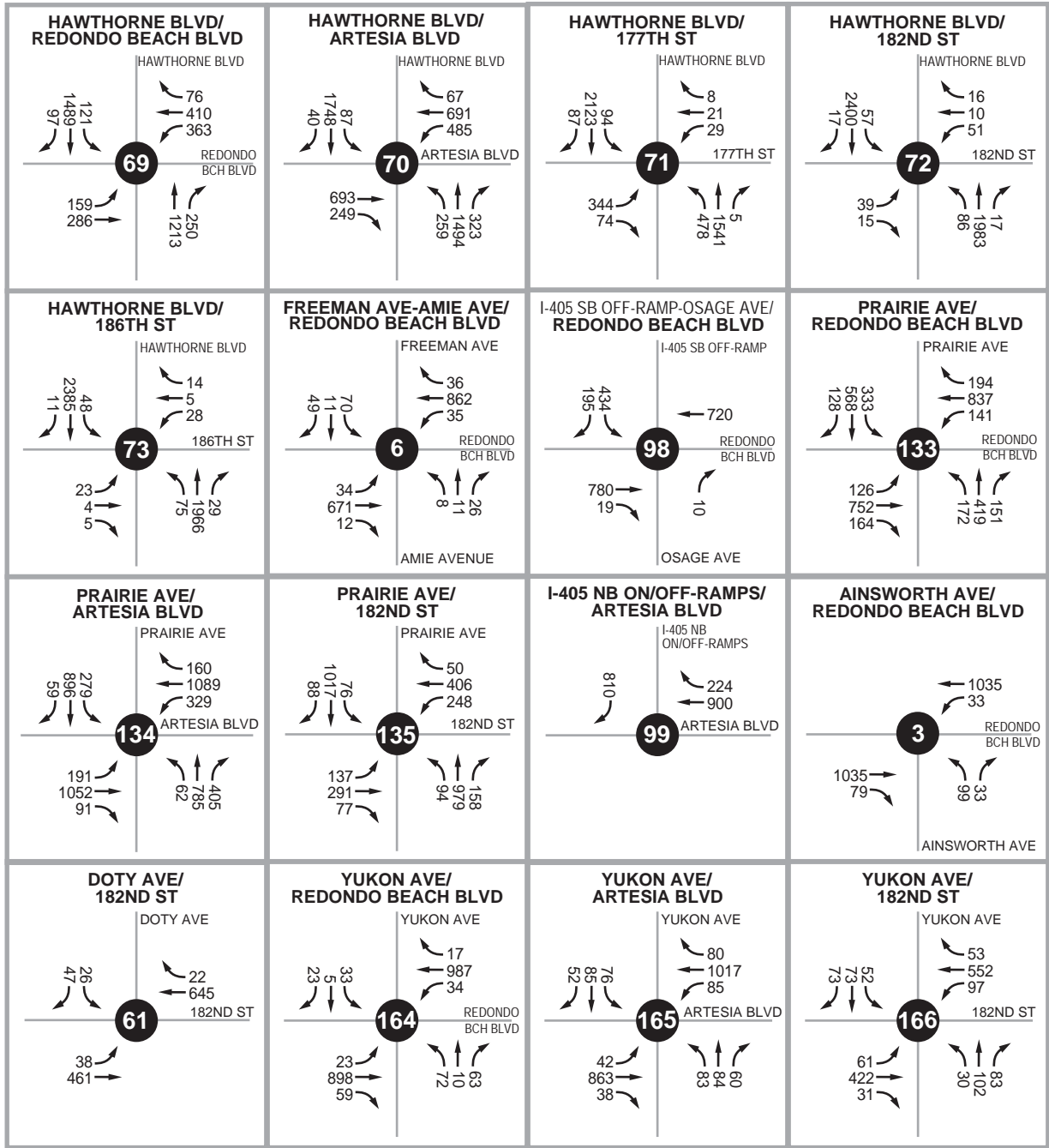




Legend:
XX Mid-Day Peak Hour Volumes

Area 1 - Existing Weekday Mid-Day Peak Hour Intersection Volumes

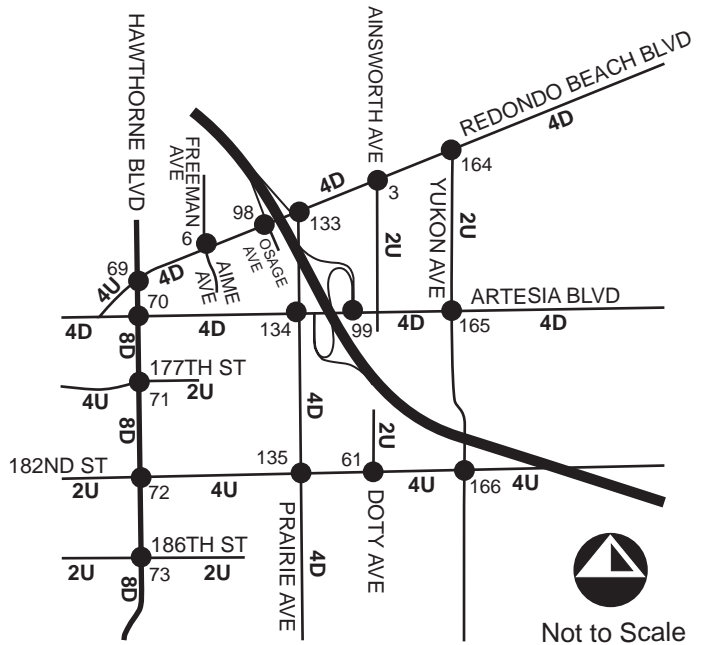
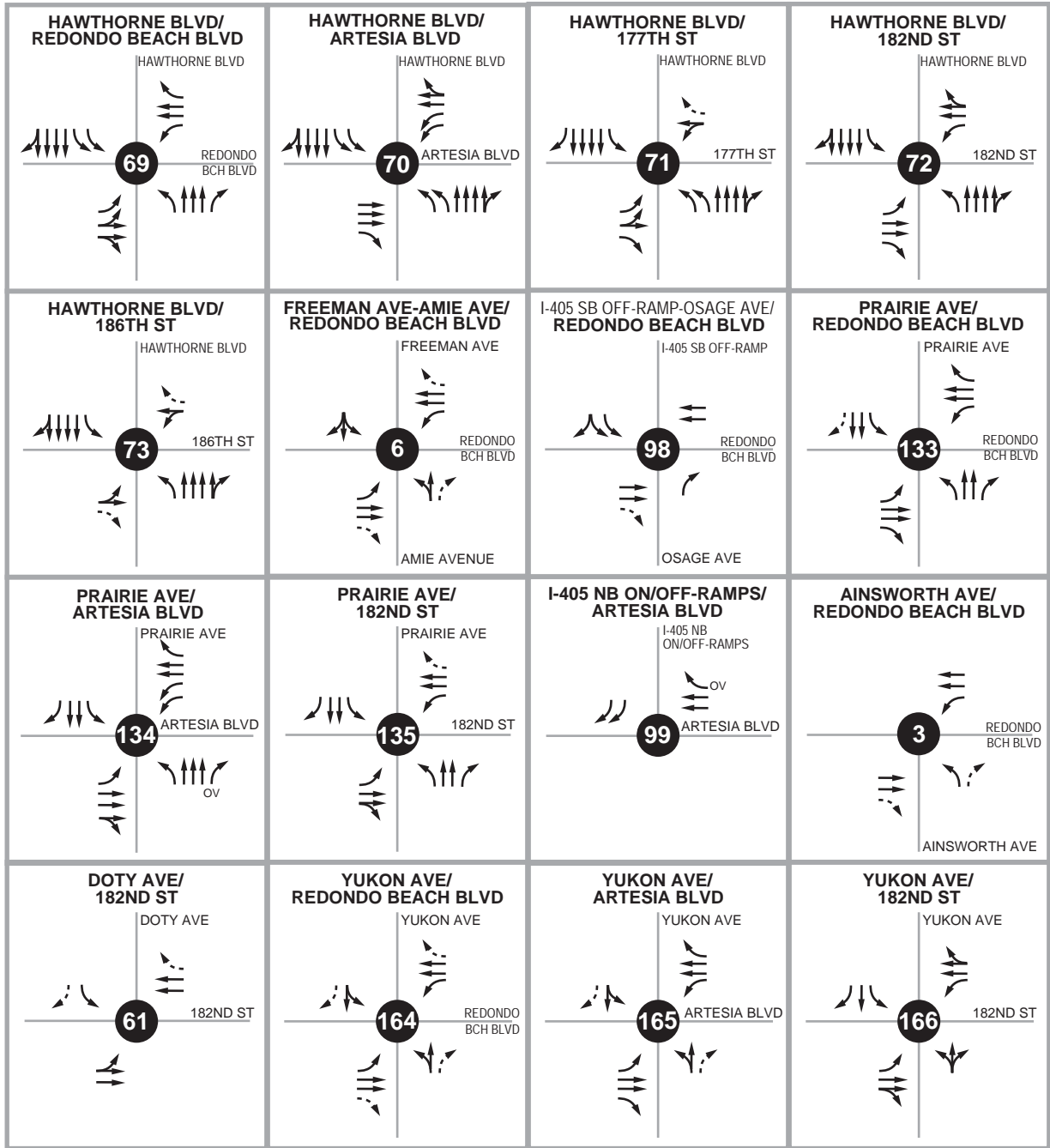




Legend:
 XX Mid-Day Peak Hour Volumes

Area 1 - Existing Weekend Mid-Day Peak Hour Intersection Volumes

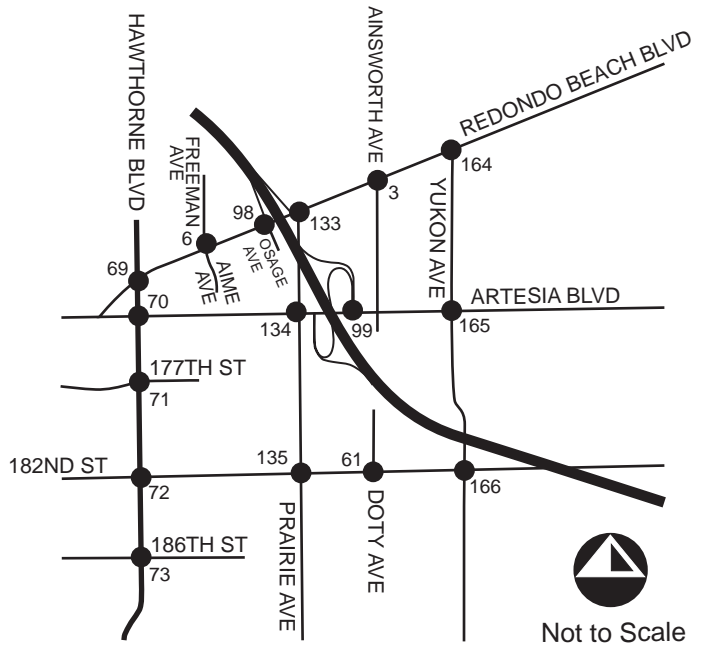
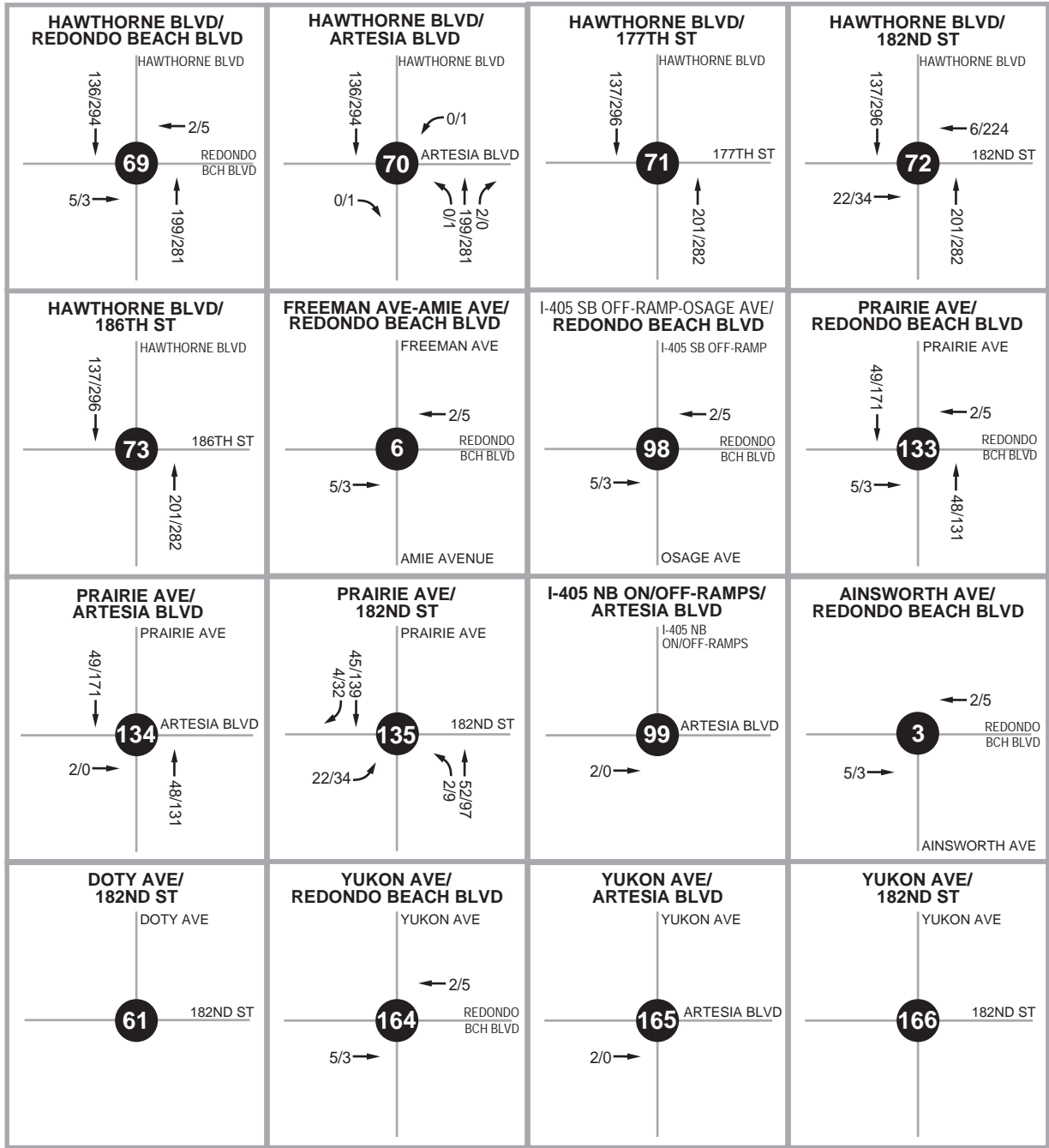




Not to Scale

- Legend:
- Existing Lane
 - Free Right-Turn Lane
 - Defacto Right-Turn Lane
 - Overlap Right-Turn Lane
 - 2U 2-lane Undivided roadway
 - 4U 4-lane Undivided roadway
 - 4D 4-lane Divided roadway
 - 8D 8-lane Divided roadway

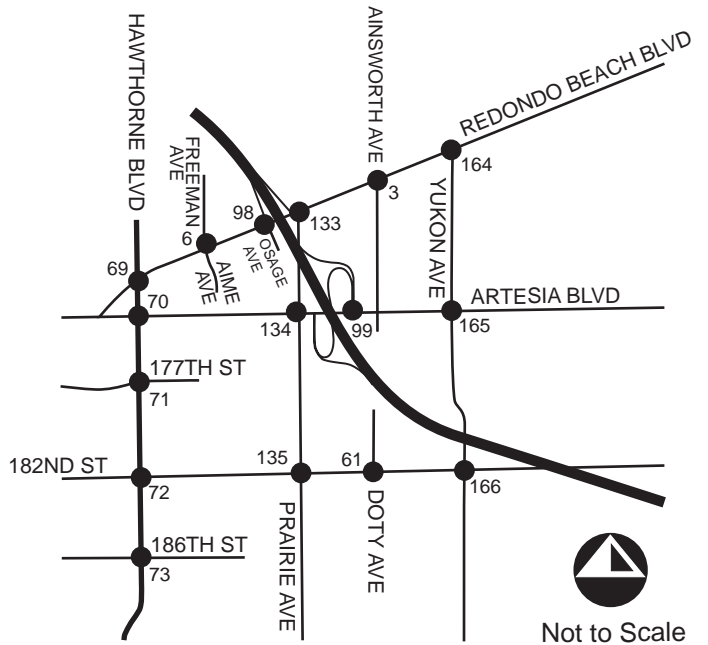
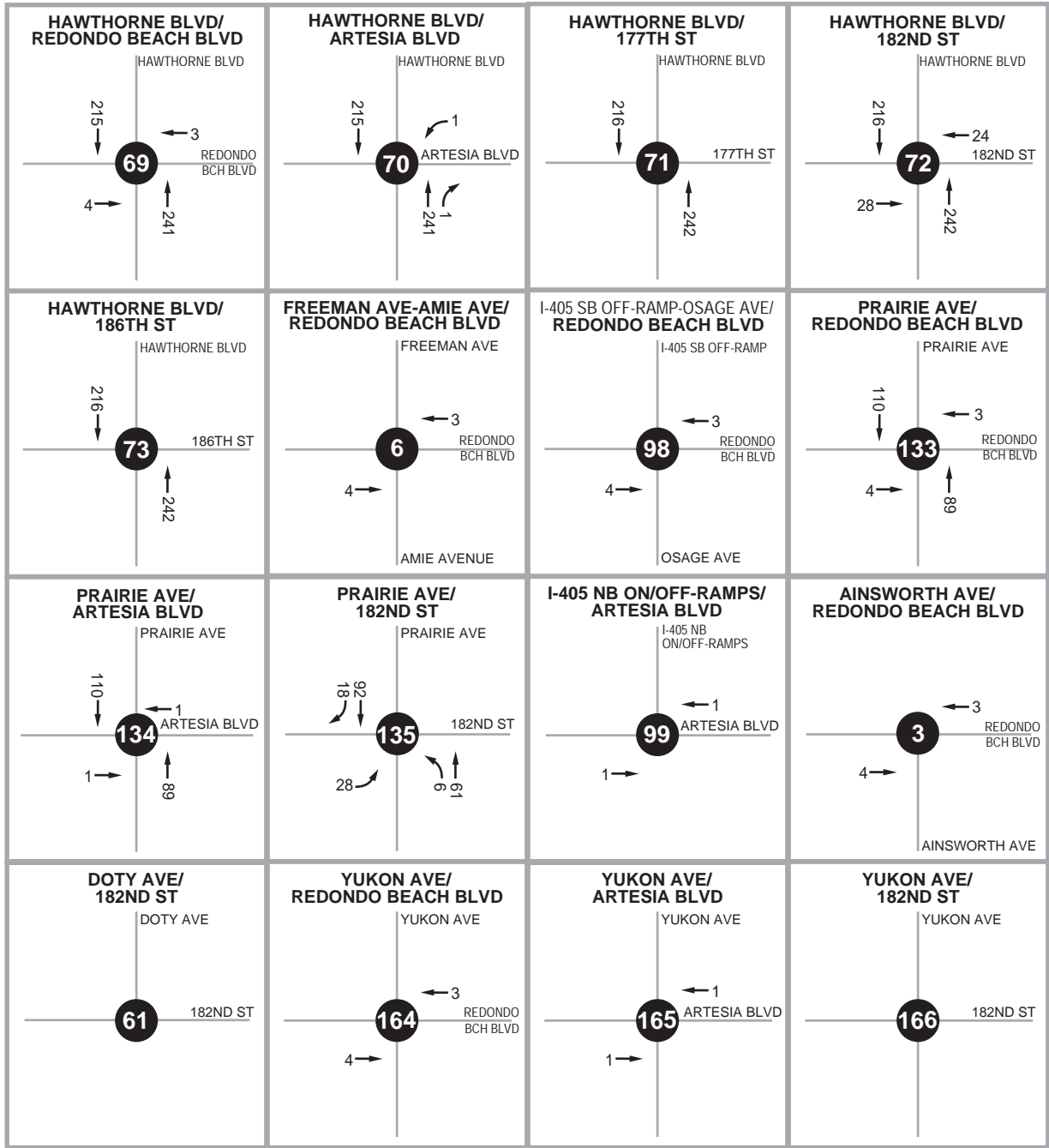




Legend:
 XX/XX AM/PM Peak Hour Volumes



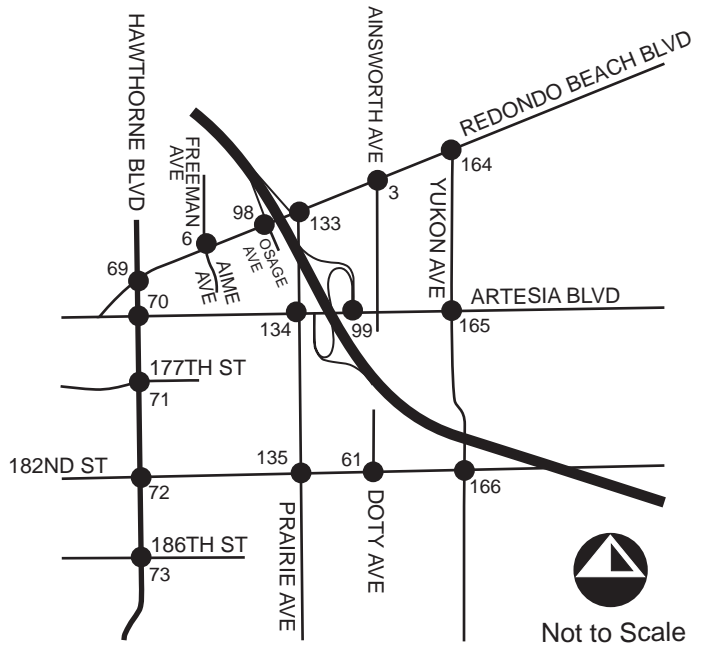
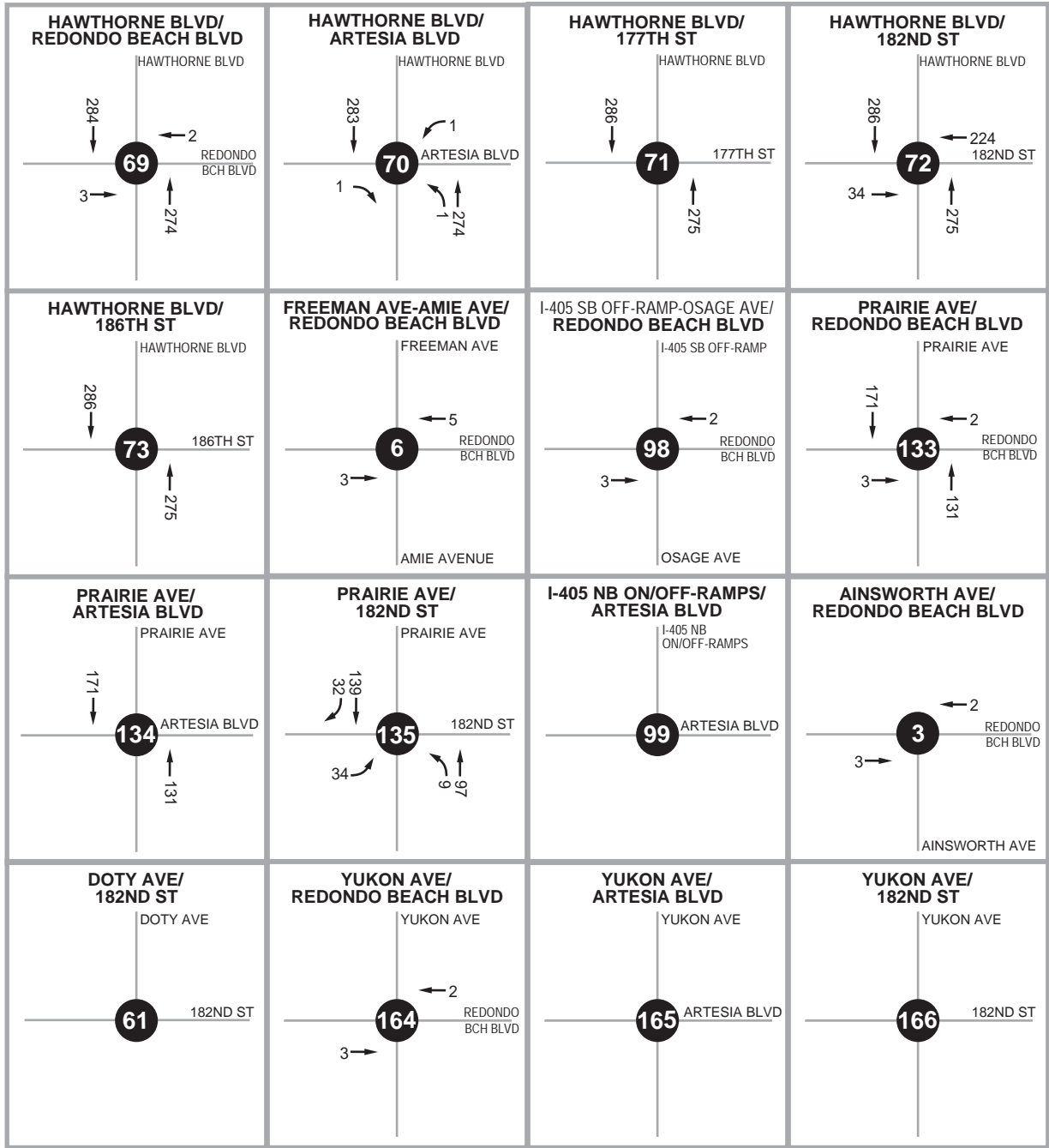
Area 1 - Forecast Weekday AM/PM Peak Hour Trip Assignment of Approved Projects

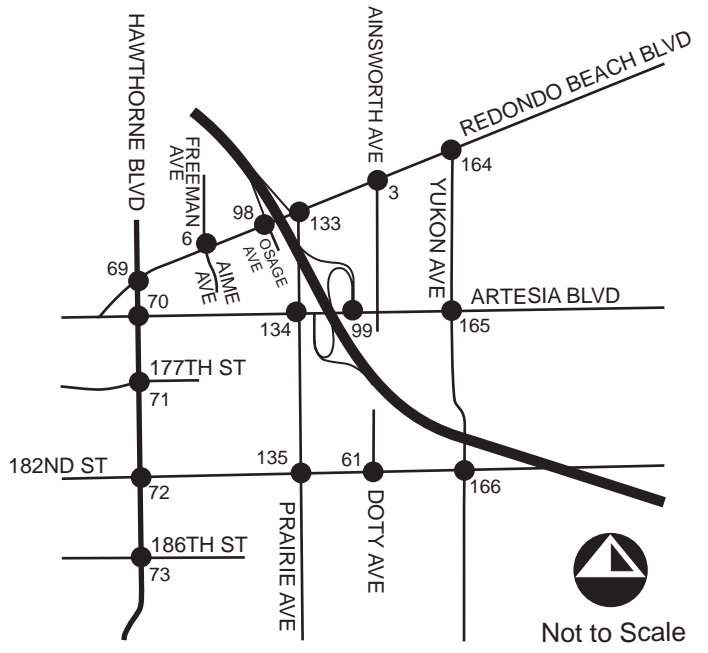
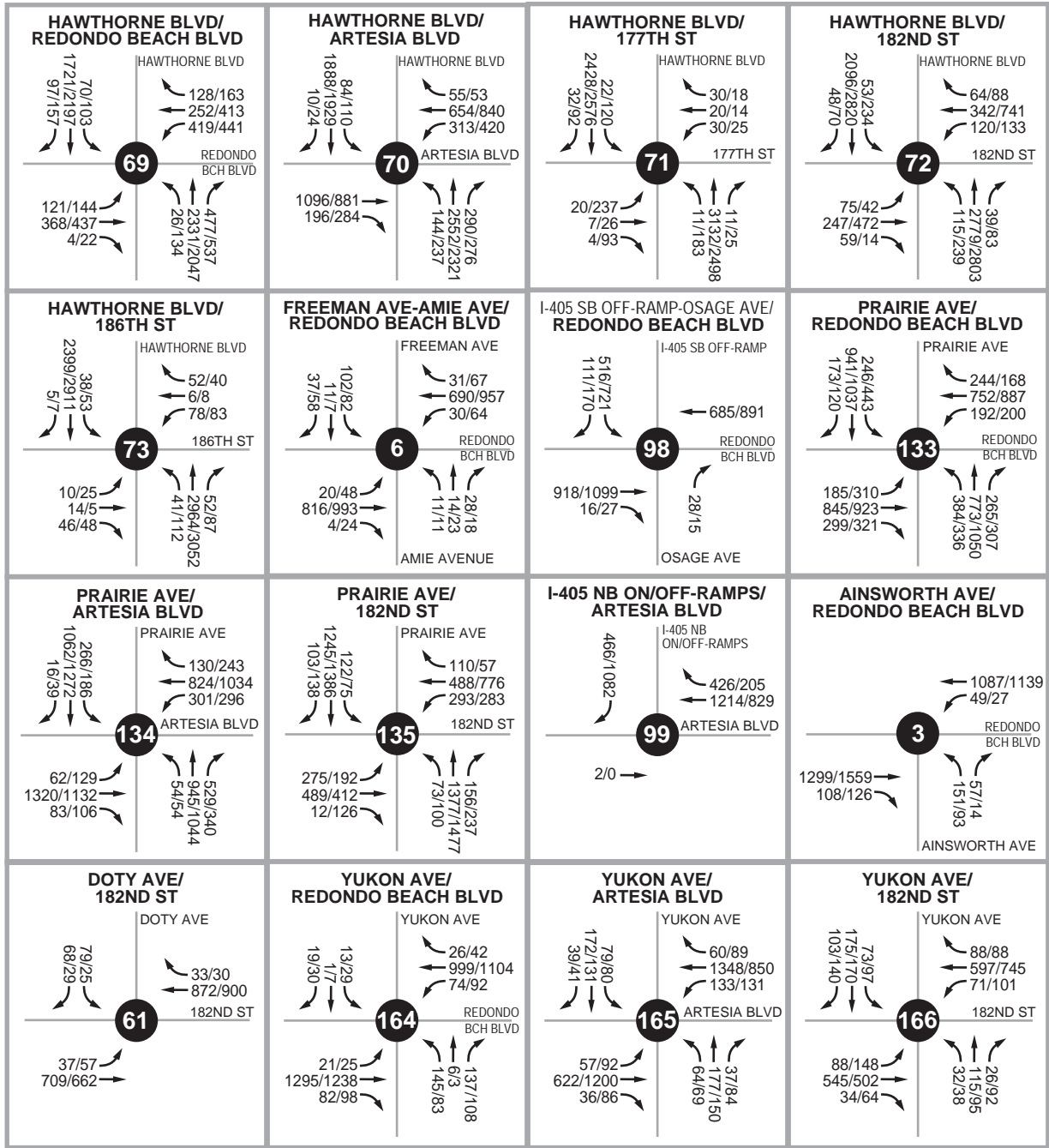


Legend:
 XX Mid-Day Peak Hour Volumes



Area 1 - Forecast Weekday Mid-Day Peak Hour Trip Assignment of Approved Projects

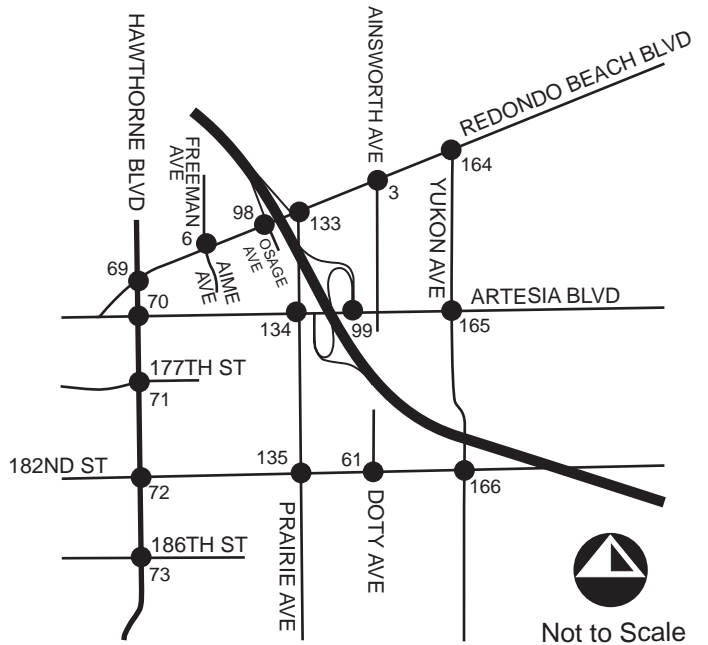
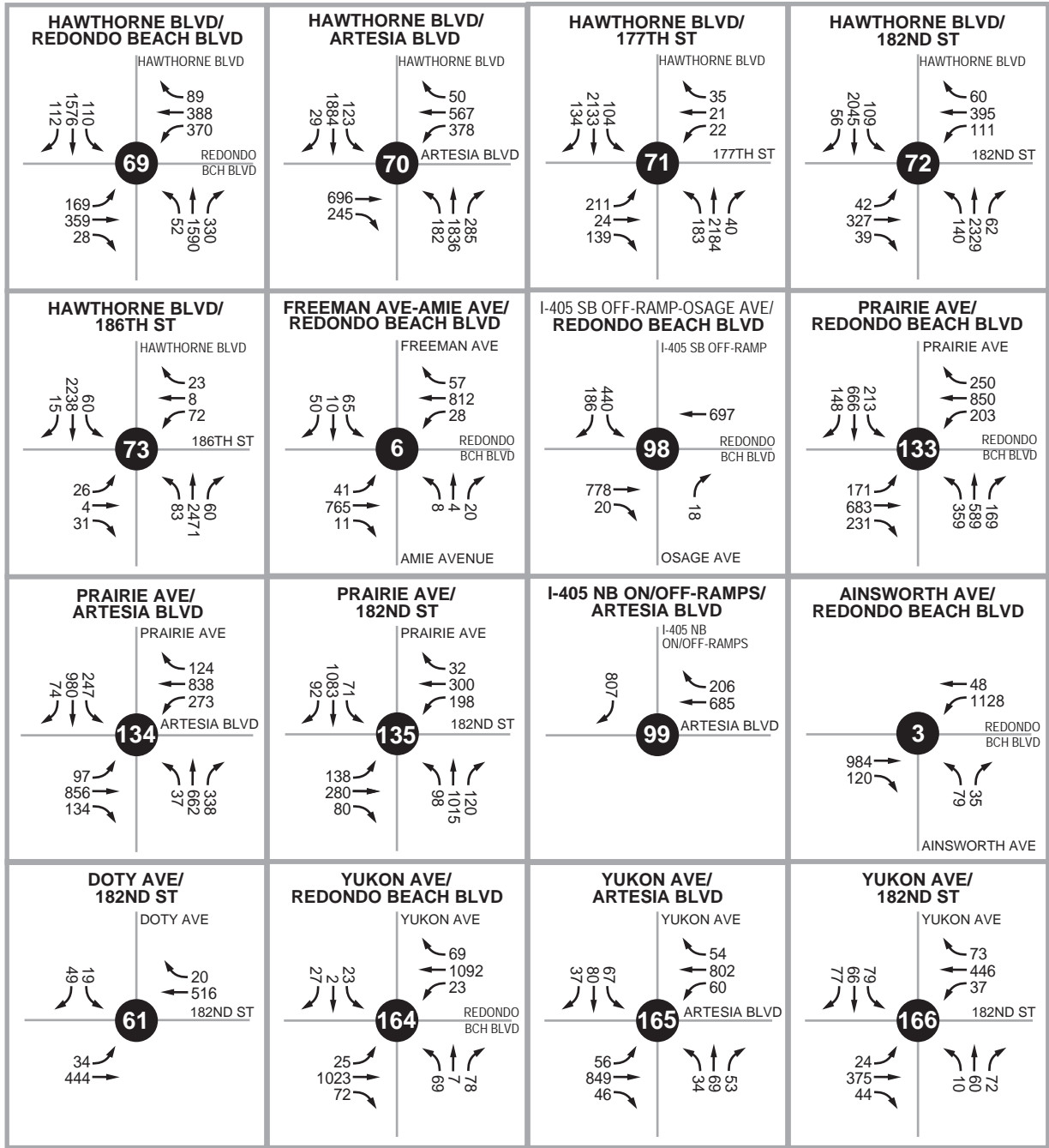




Legend:
 XX/XX AM/PM Peak Hour Volumes

Area 1 - Forecast Near-Term Conditions Weekday AM/PM Peak Hour Intersection Volumes

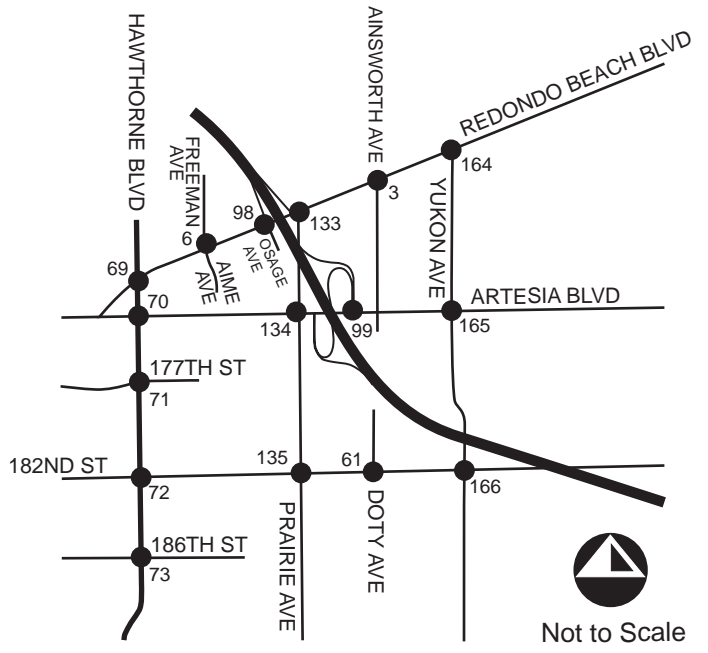
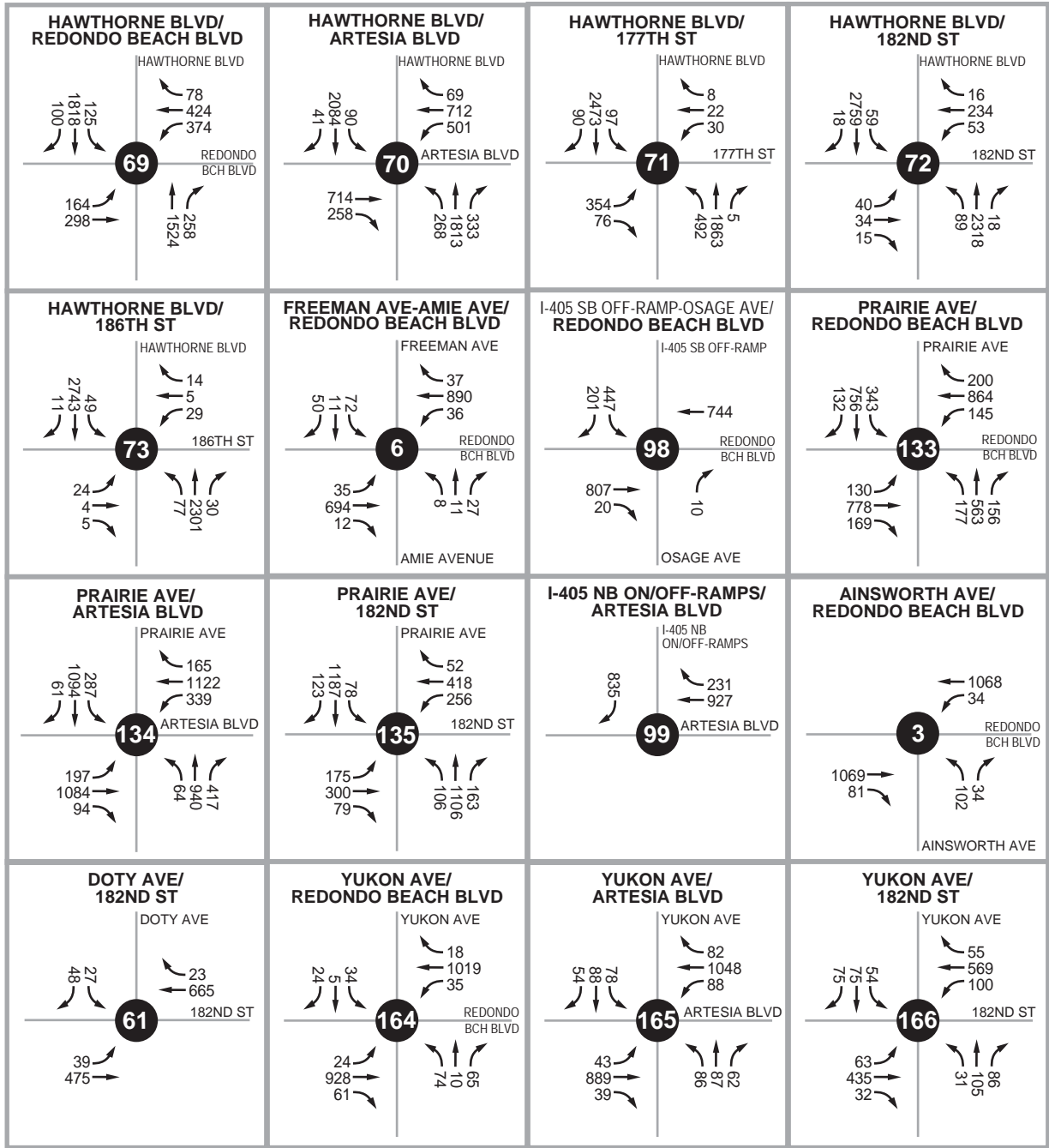




Legend:
 XX Mid-Day Peak Hour Volumes



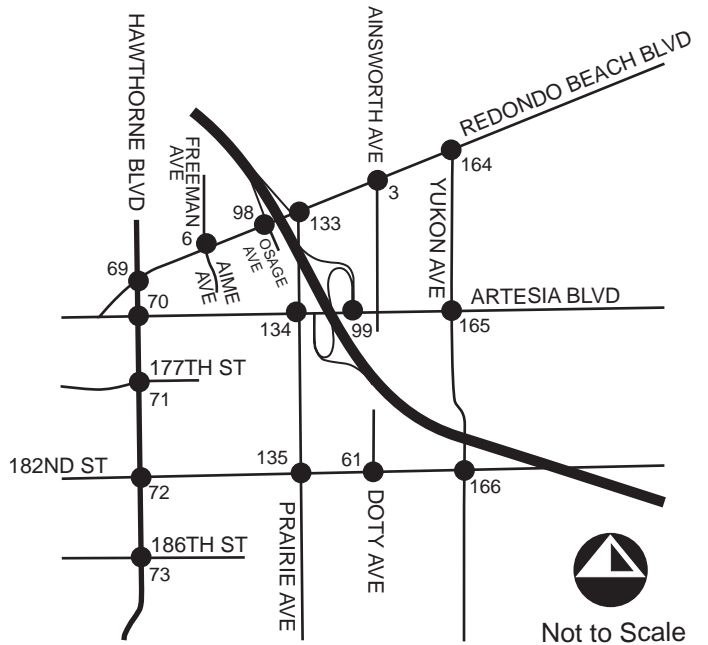
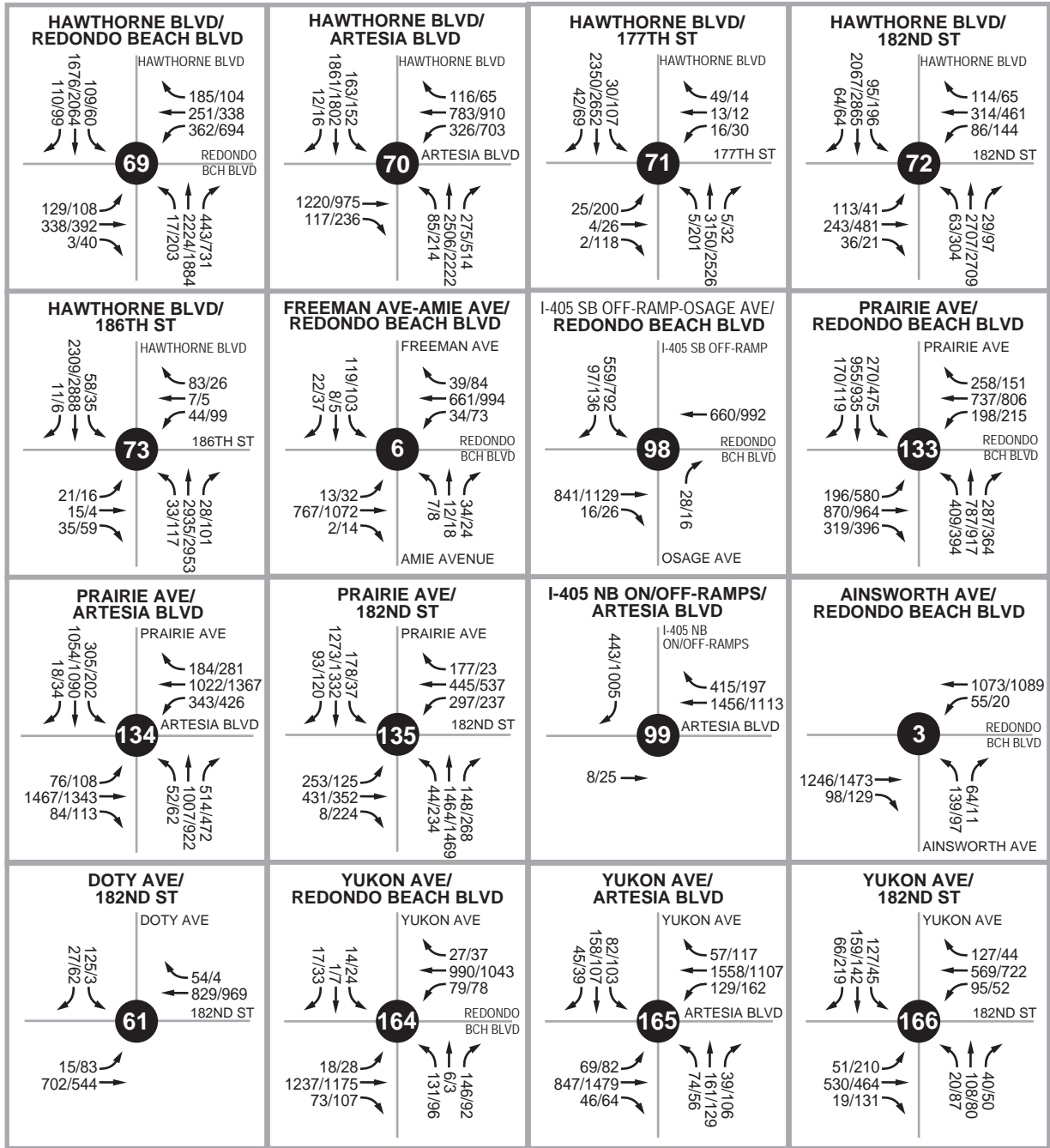
Area 1 - Forecast Near-Term Conditions Weekday Mid-Day Peak Hour Intersection Volumes



Legend:
 XX Mid-Day Peak Hour Volumes



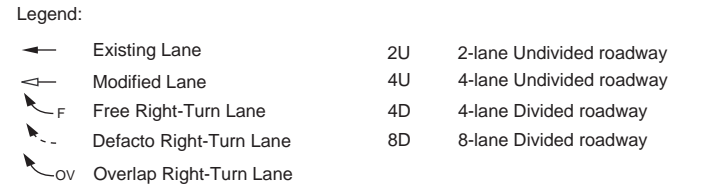
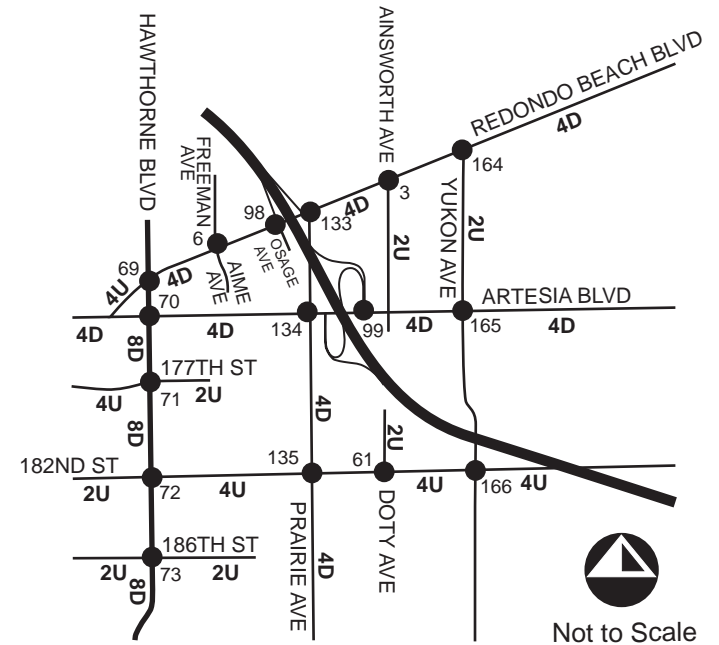
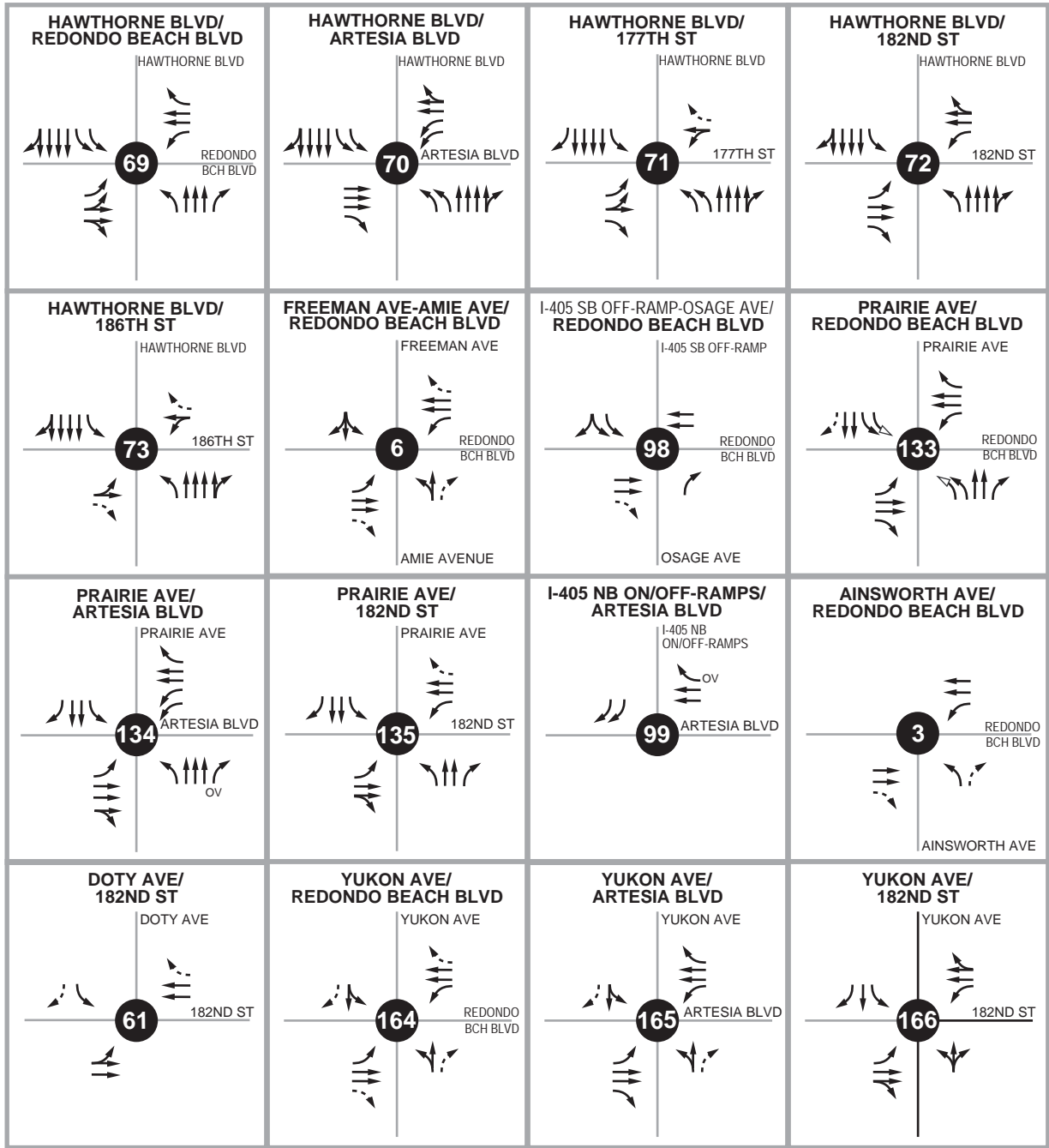
Area 1 - Forecast Near-Term Conditions Weekend Mid-Day Peak Hour Intersection Volumes

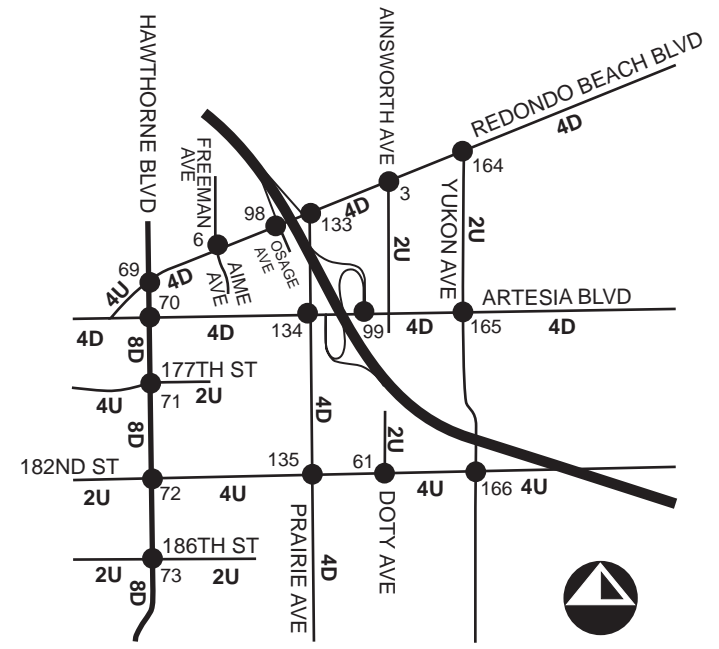
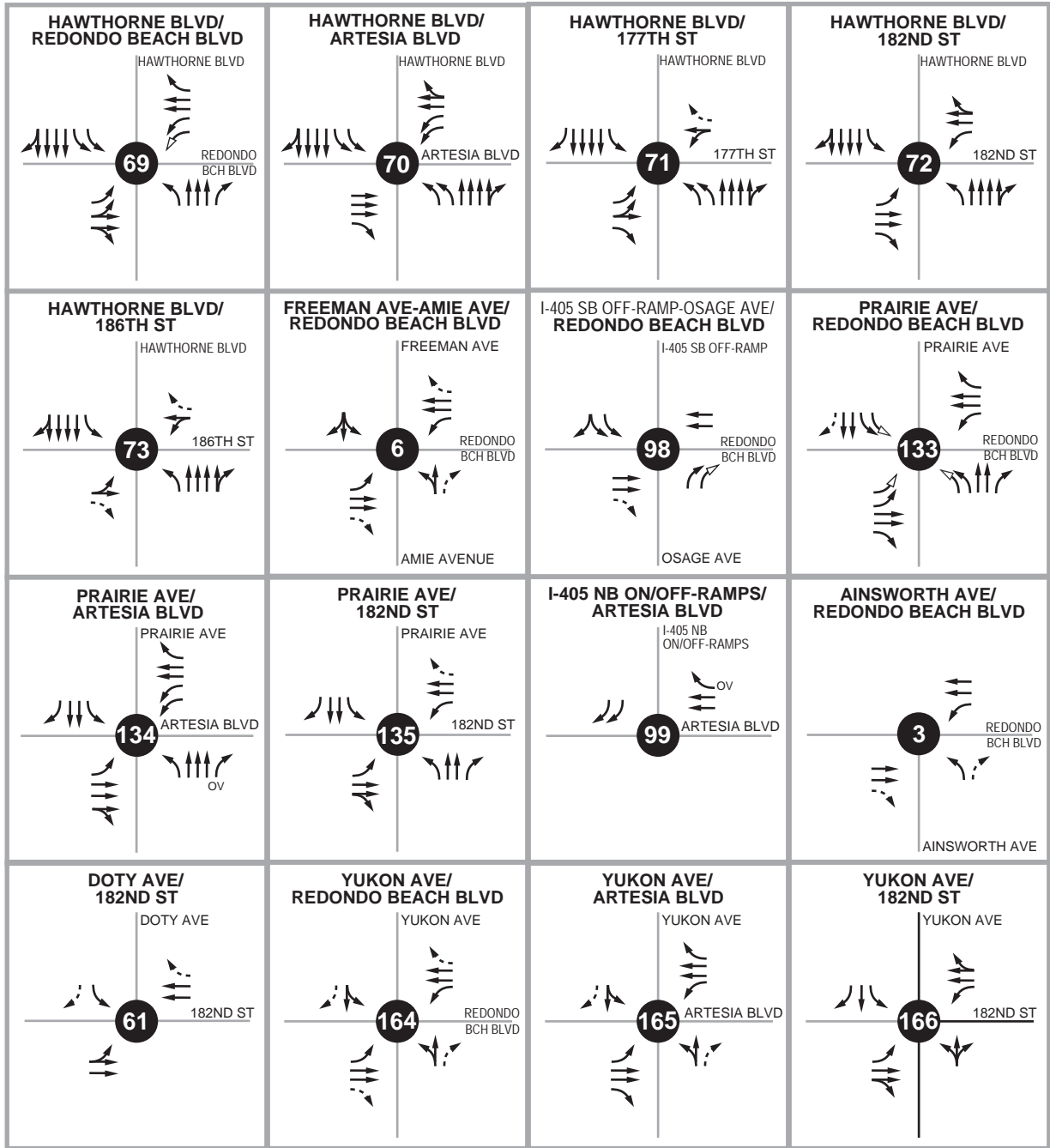


Legend:
 XX/XX AM/PM Peak Hour Volumes



Area 1 - Forecast Long-Range Future Conditions Weekday AM/PM Peak Hour Intersection Volumes

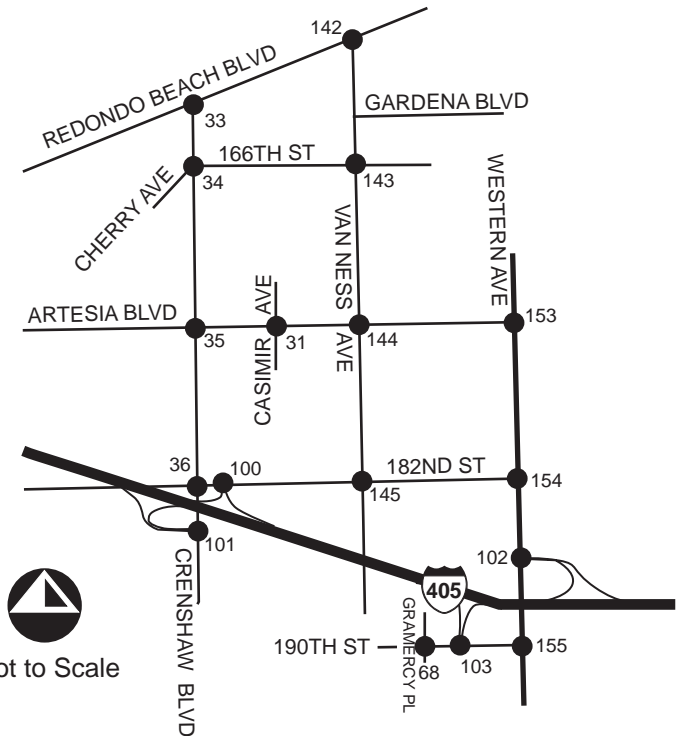
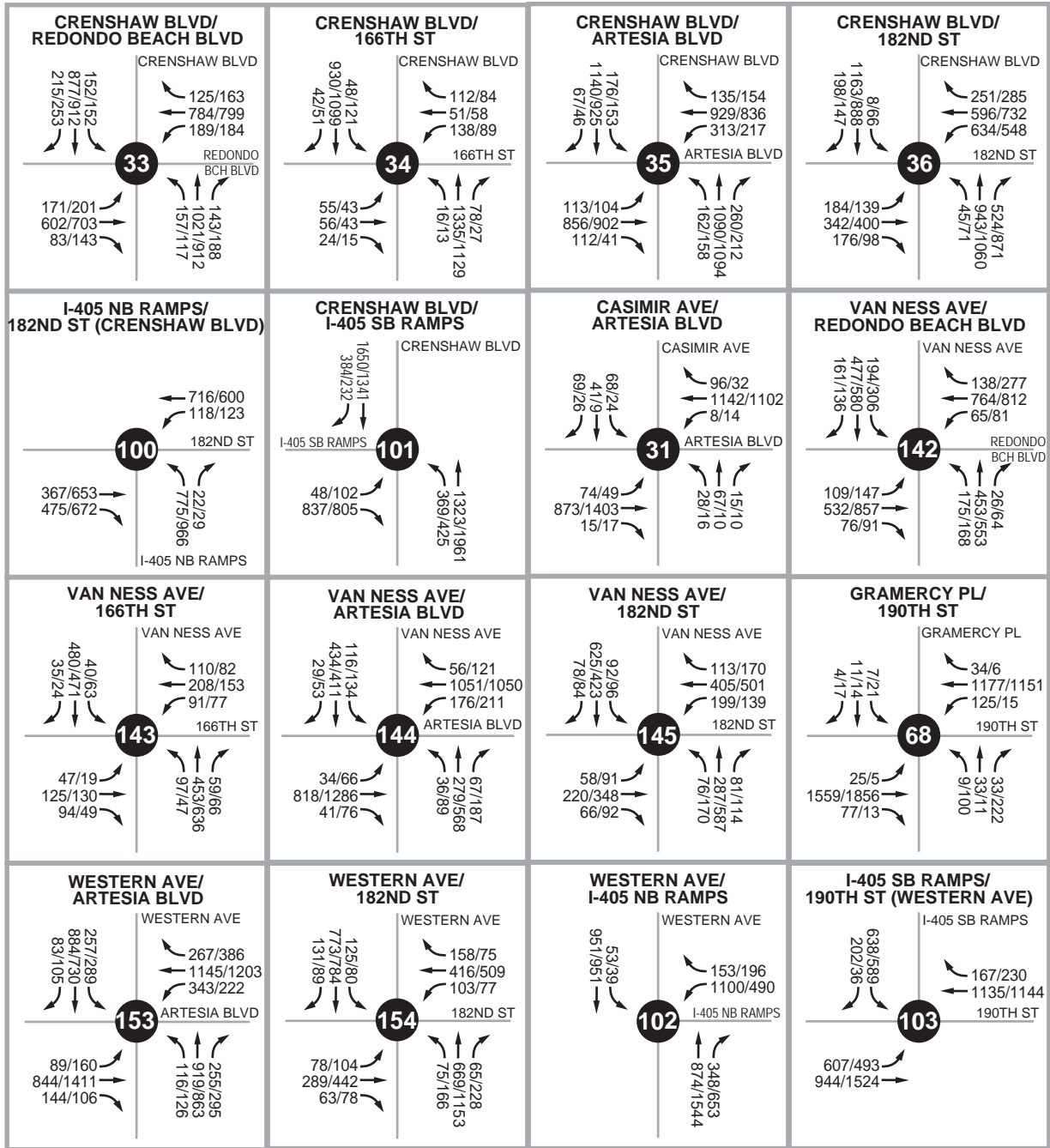




Not to Scale

- Legend:
- Existing Lane
 - Modified Lane
 - Free Right-Turn Lane
 - Defacto Right-Turn Lane
 - Overlap Right-Turn Lane
 - 2U 2-lane Undivided roadway
 - 4U 4-lane Undivided roadway
 - 4D 4-lane Divided roadway
 - 8D 8-lane Divided roadway

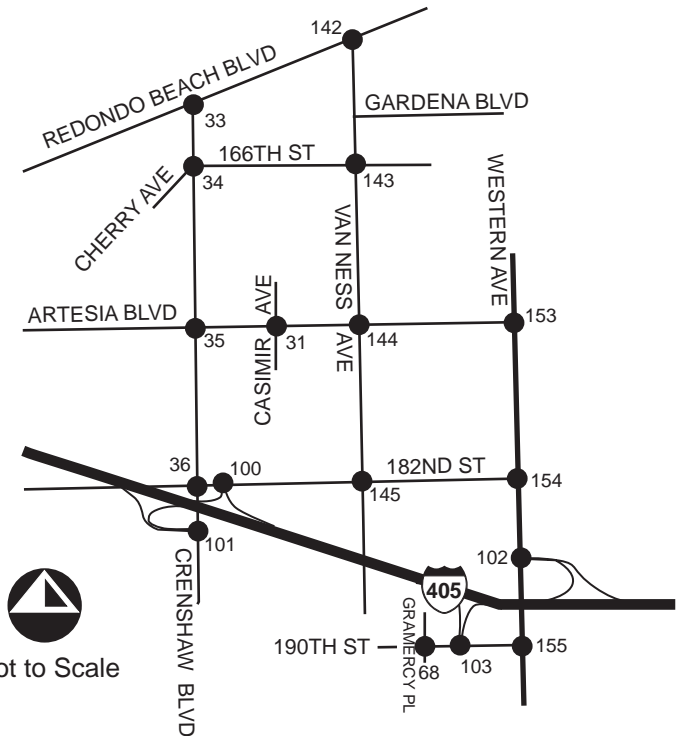
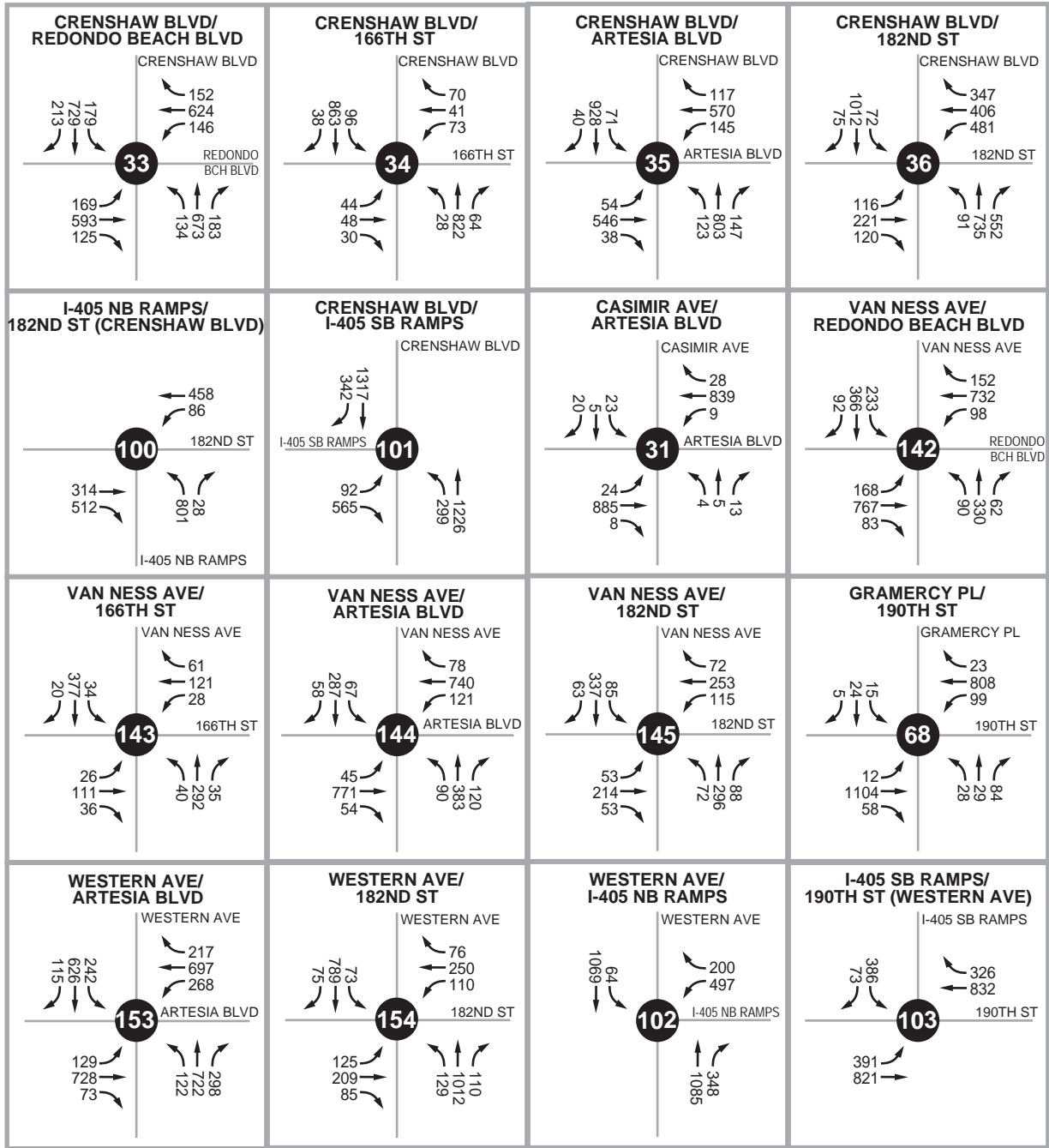
Study Area 2



Not to Scale

Legend:
XX/XX AM/PM Peak Hour Volumes



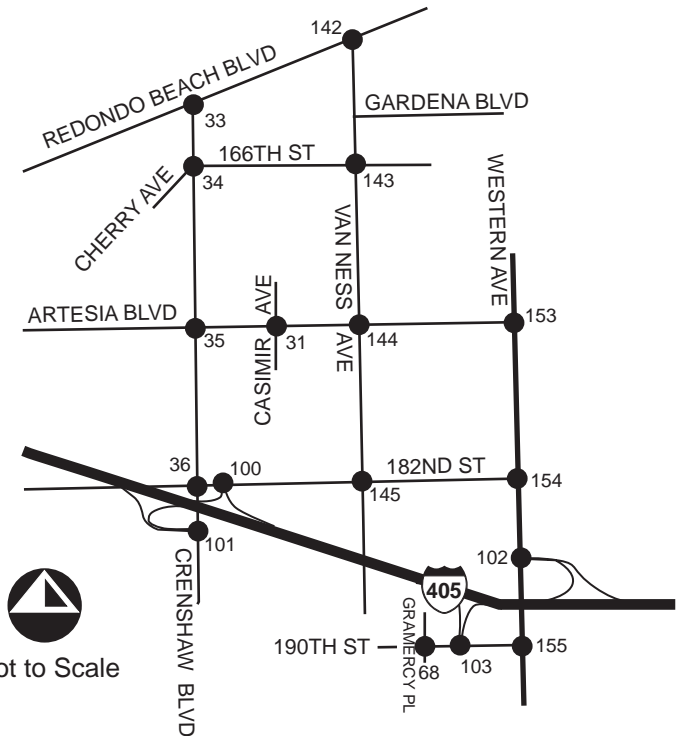
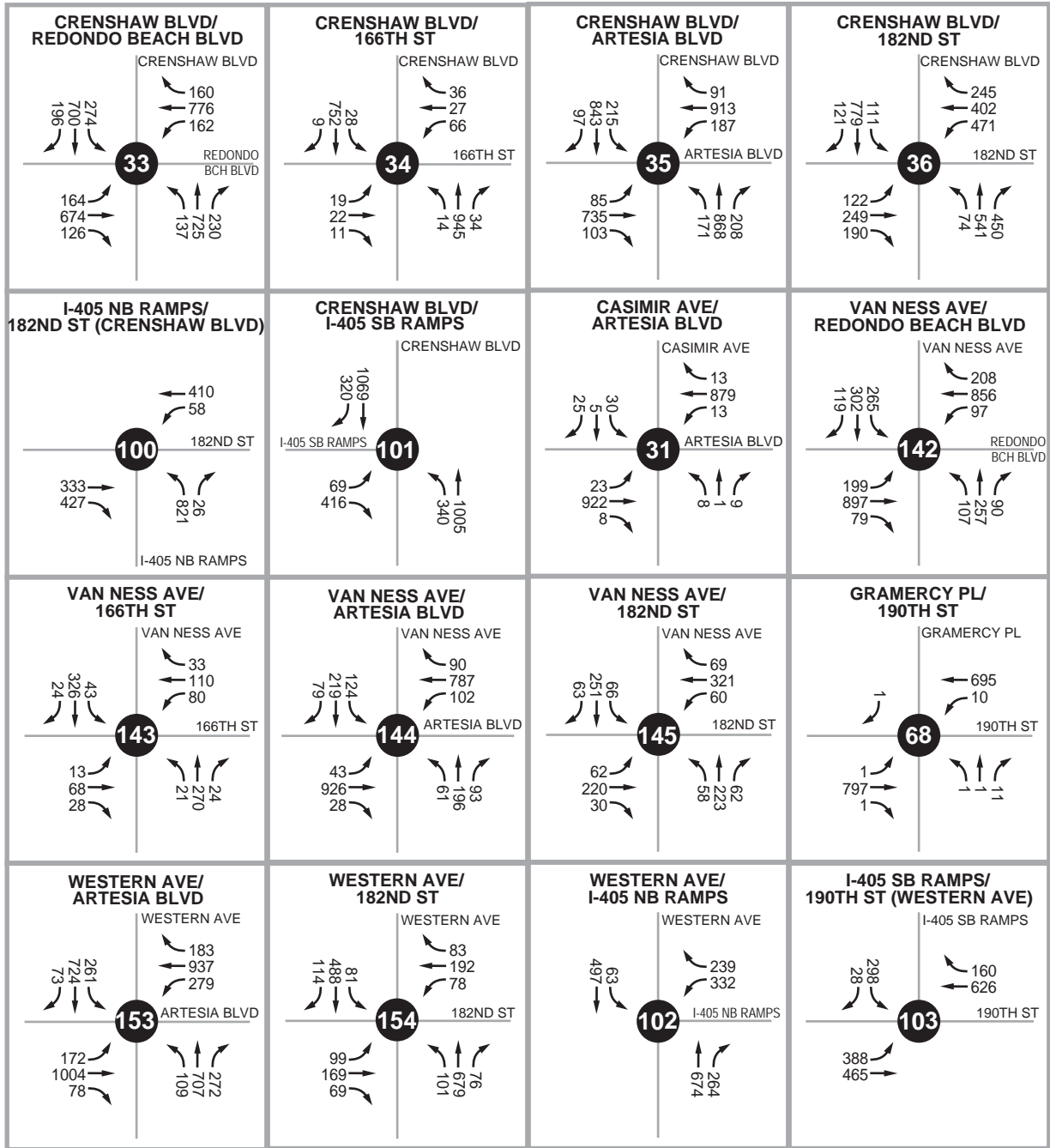


Not to Scale

Legend:
XX Mid-Day Peak Hour Volumes

Area 2 - Existing Weekday Mid-Day Peak Hour Intersection Volumes



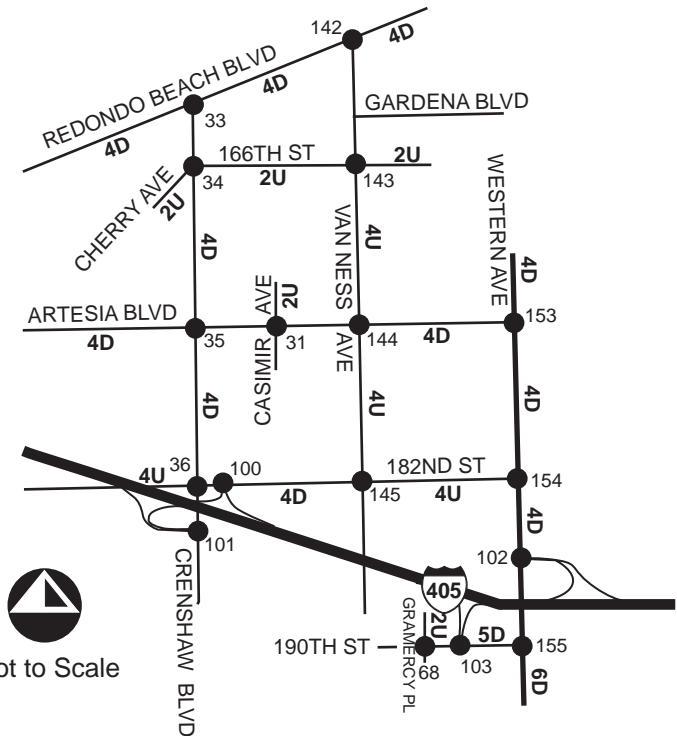
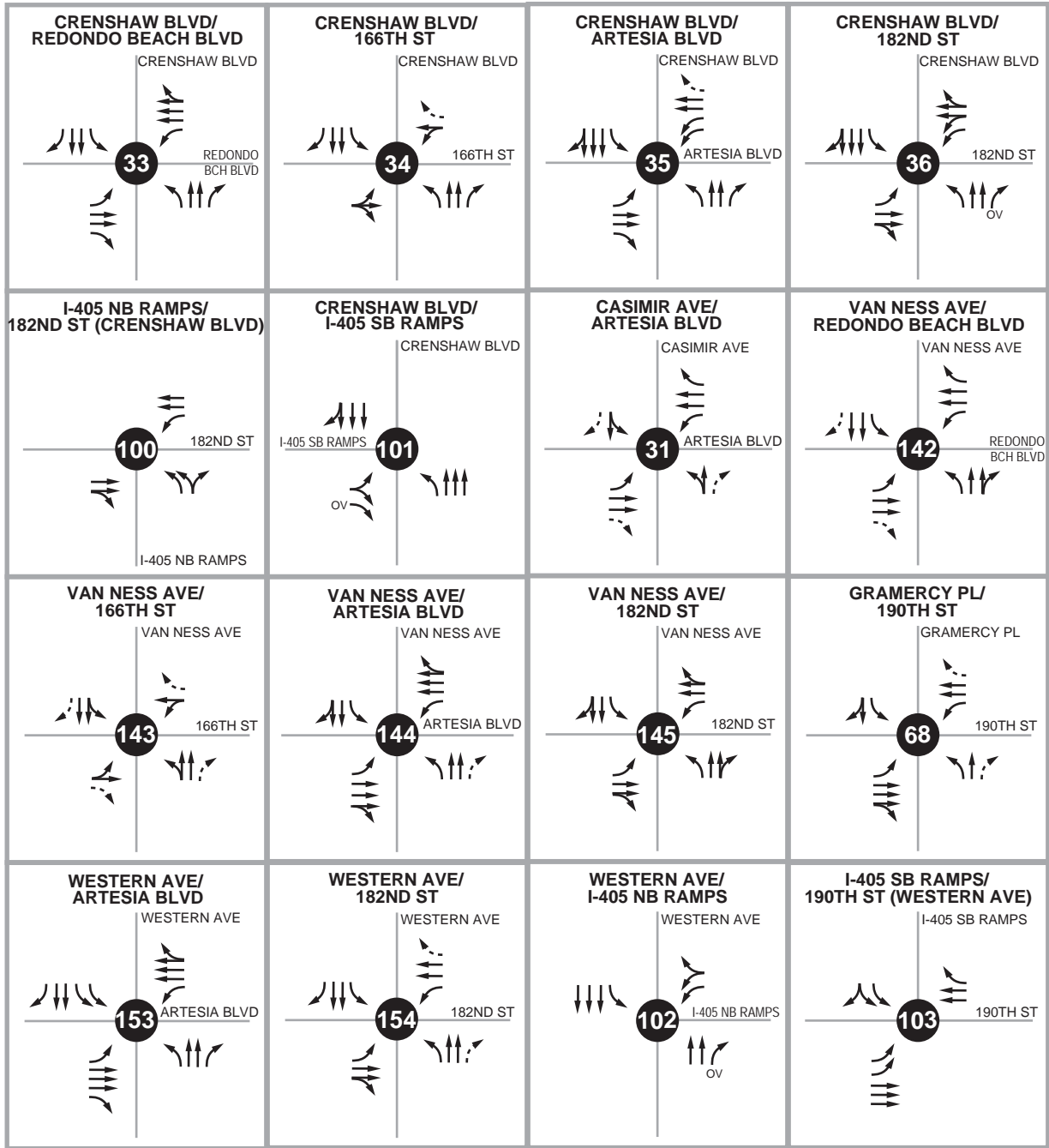


Not to Scale

Legend:
XX Mid-Day Peak Hour Volumes

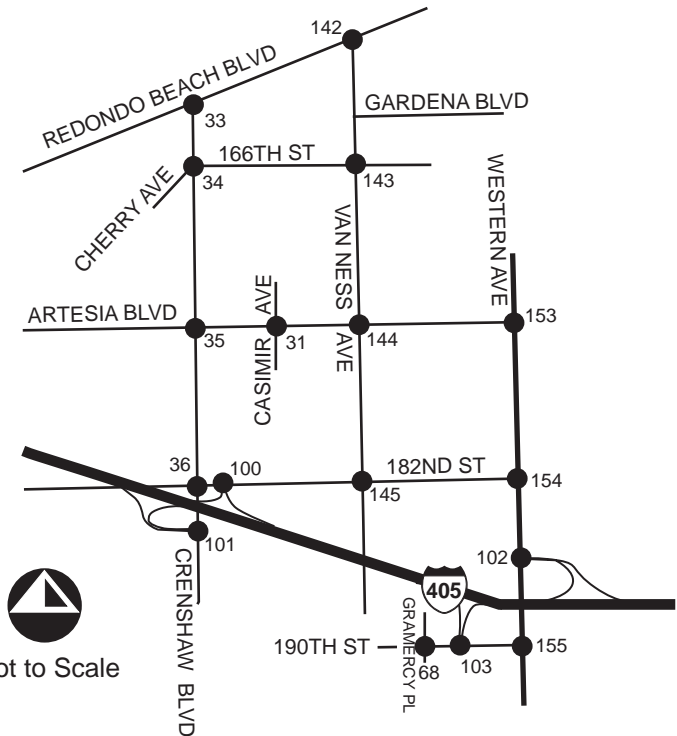
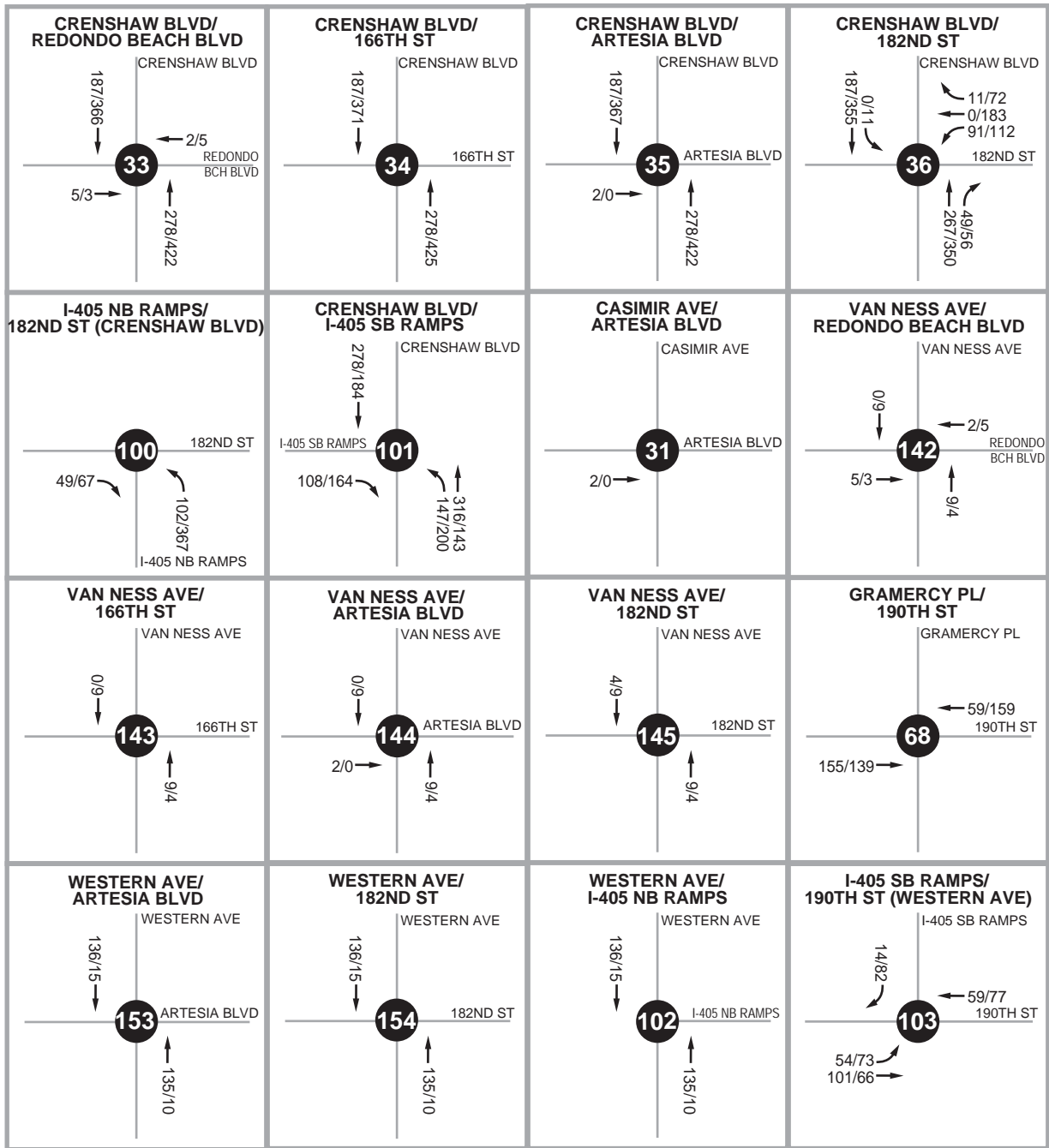
Area 2 - Existing Weekend Mid-Day Peak Hour Intersection Volumes





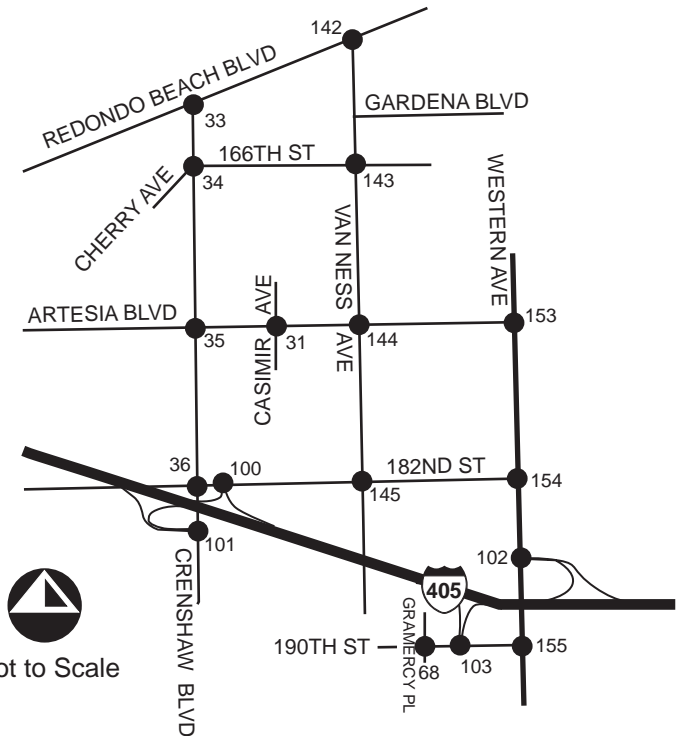
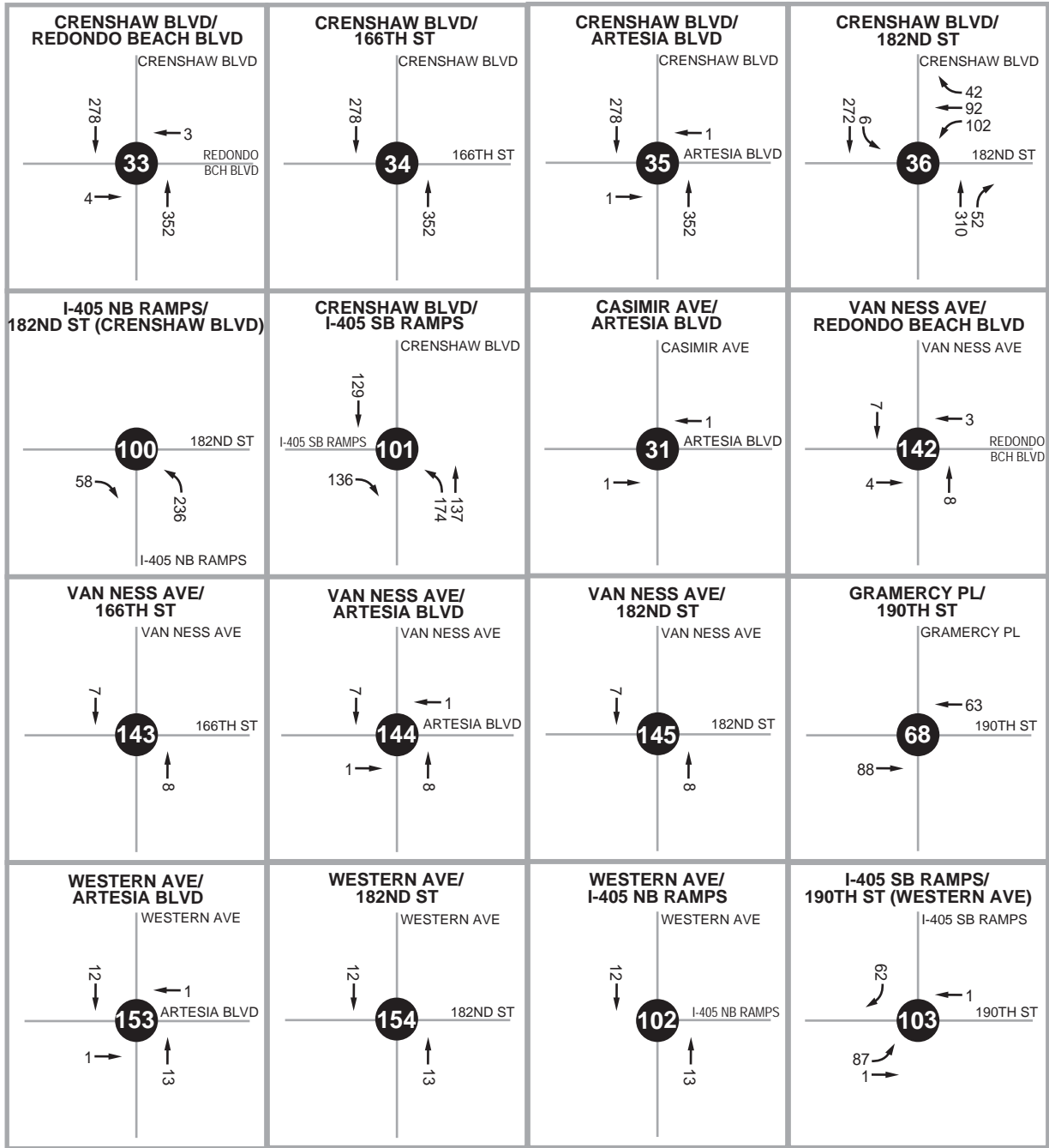
- Legend:
- Existing Lane
 - Free Right-Turn Lane
 - Defacto Right-Turn Lane
 - Overlap Right-Turn Lane
 - 2U 2-lane Undivided roadway
 - 4U 4-lane Undivided roadway
 - 4D 4-lane Divided roadway
 - 5D 5-lane Divided roadway (3 east, 2 west)
 - 6D 6-lane Divided roadway





Legend:
XX/XX AM/PM Peak Hour Volumes



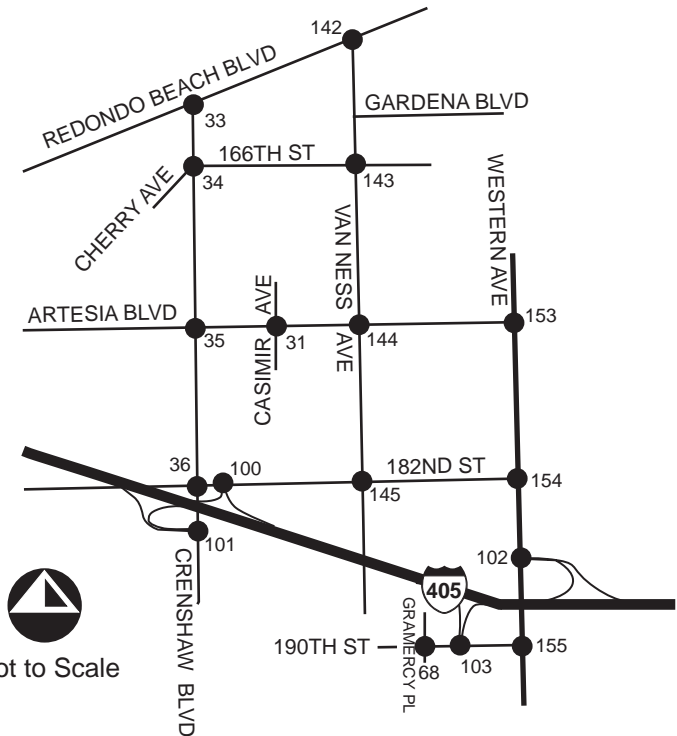
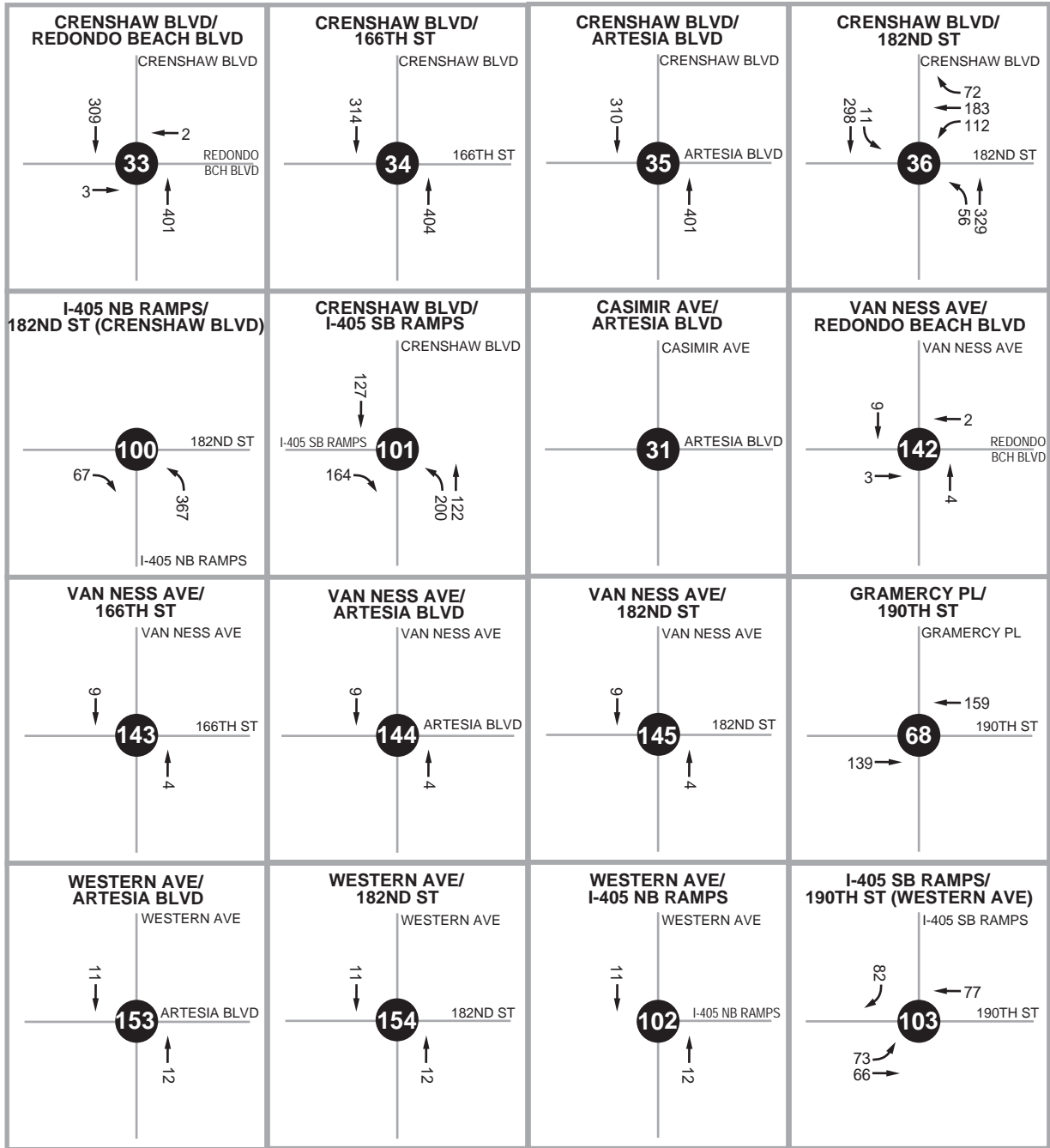


Not to Scale

Legend:
XX Mid-Day Peak Hour Volumes



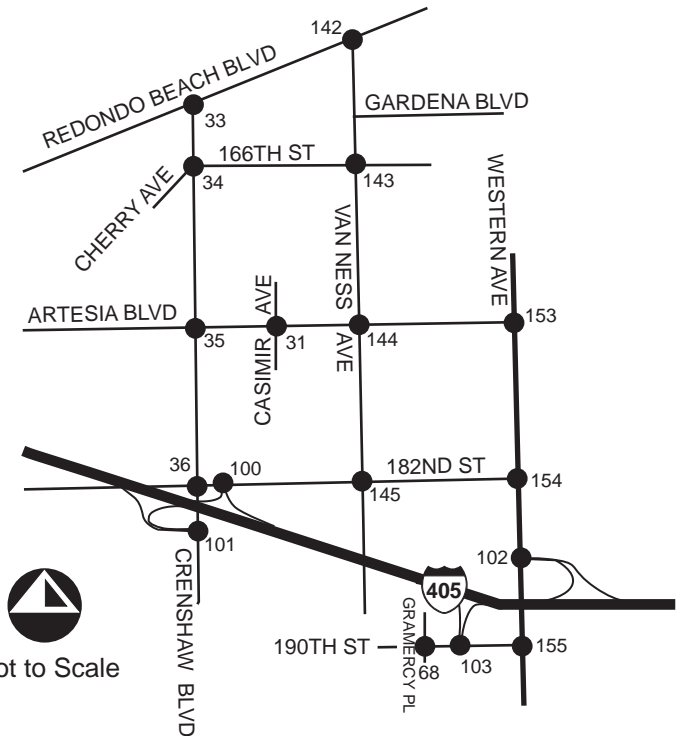
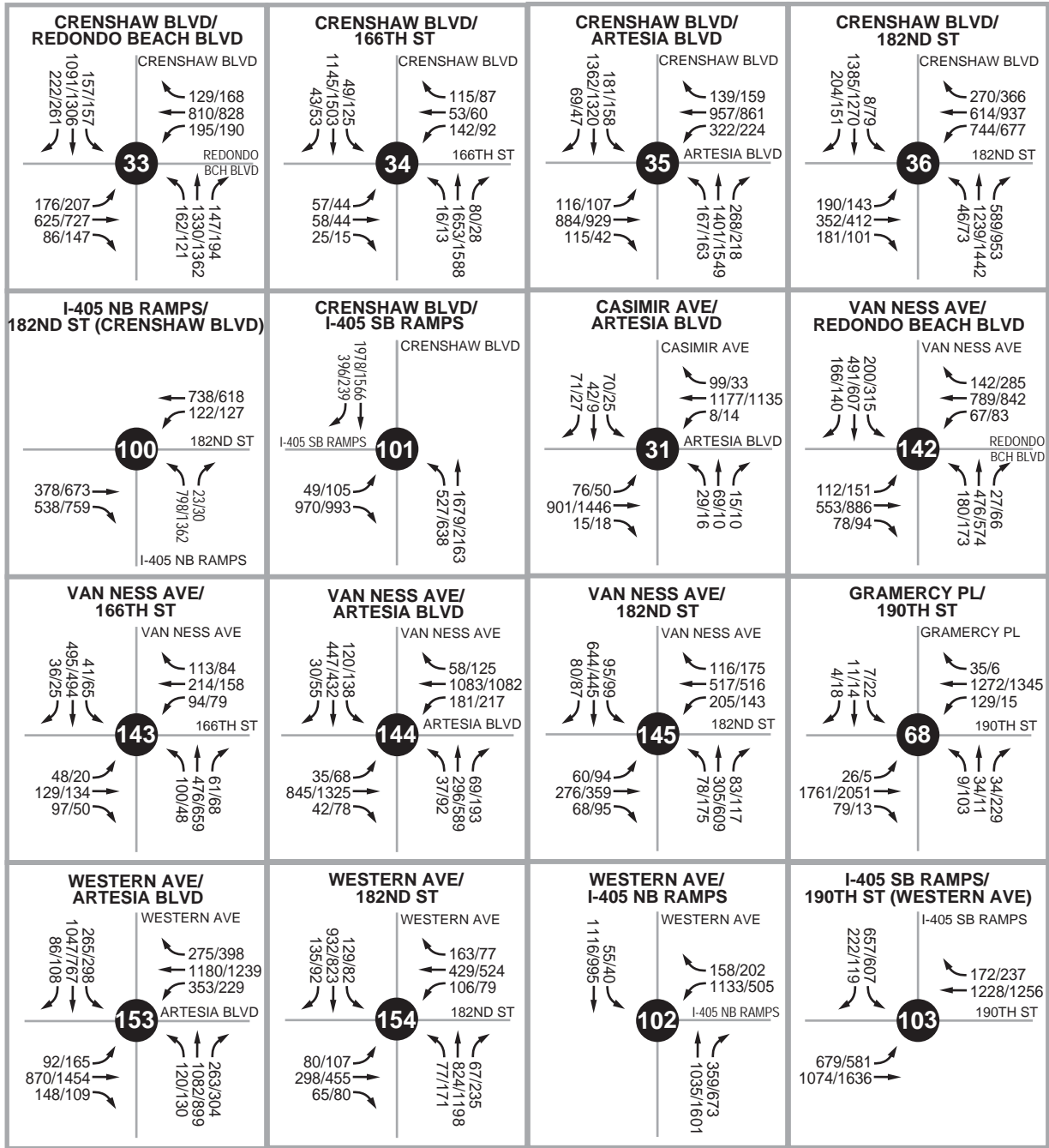
Area 2 - Forecast Weekday Mid-Day Peak Hour Trip Assignment of Approved Projects



Legend:
 XX Mid-Day Peak Hour Volumes



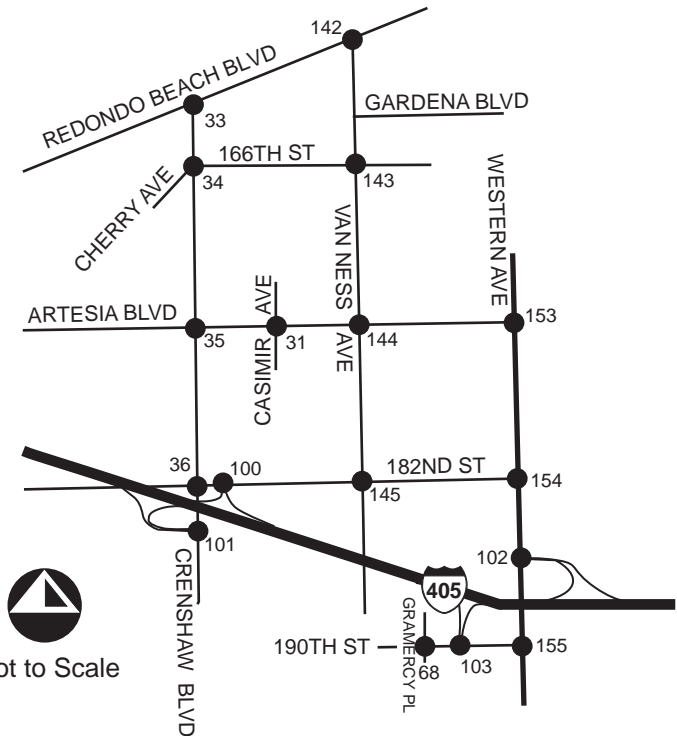
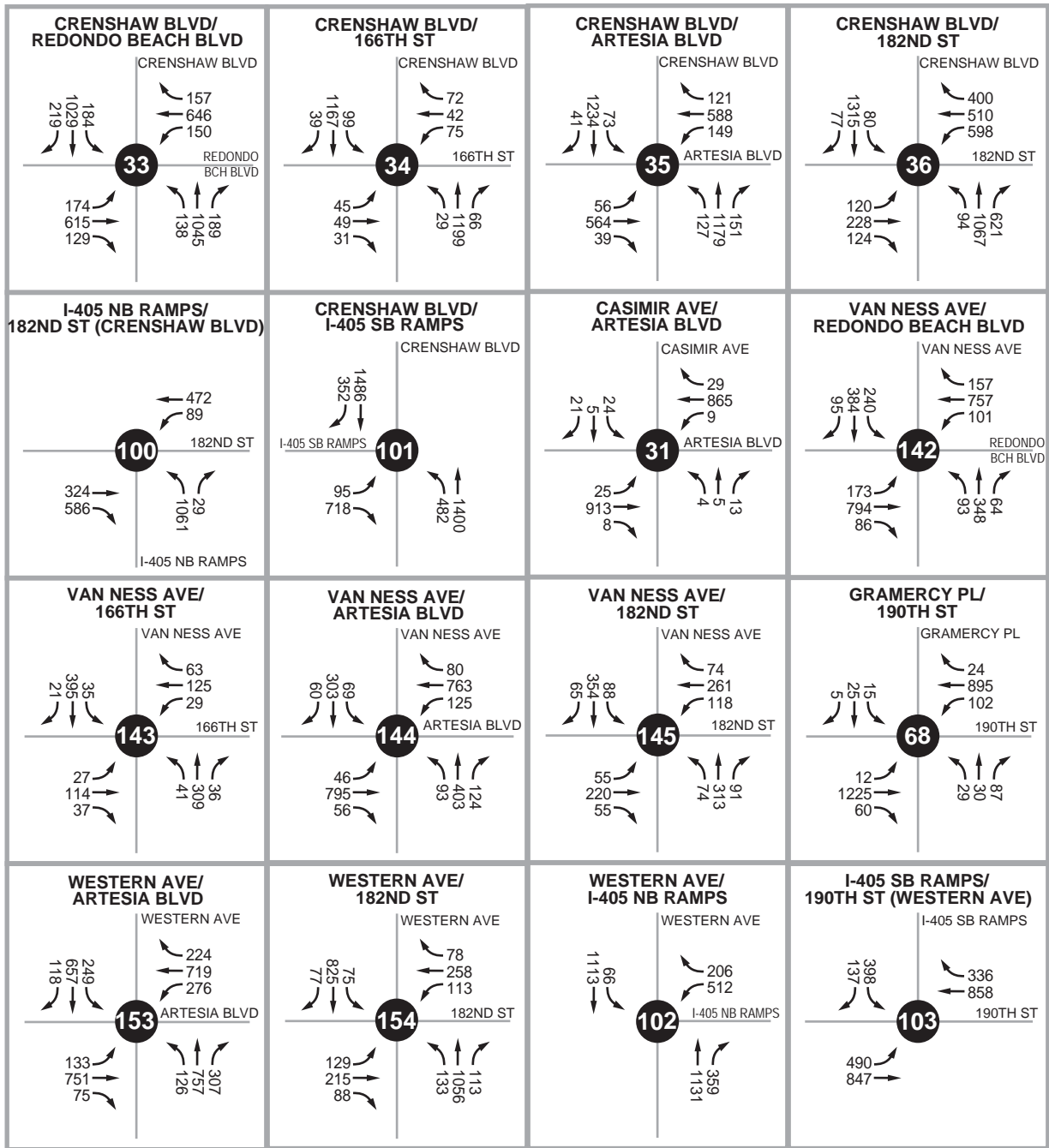
Area 2 - Forecast Weekend Mid-Day Peak Hour Trip Assignment of Approved Projects



Legend:
XX/XX AM/PM Peak Hour Volumes



Area 2 - Forecast Near-Term Conditions Weekday AM/PM Peak Hour Intersection Volumes

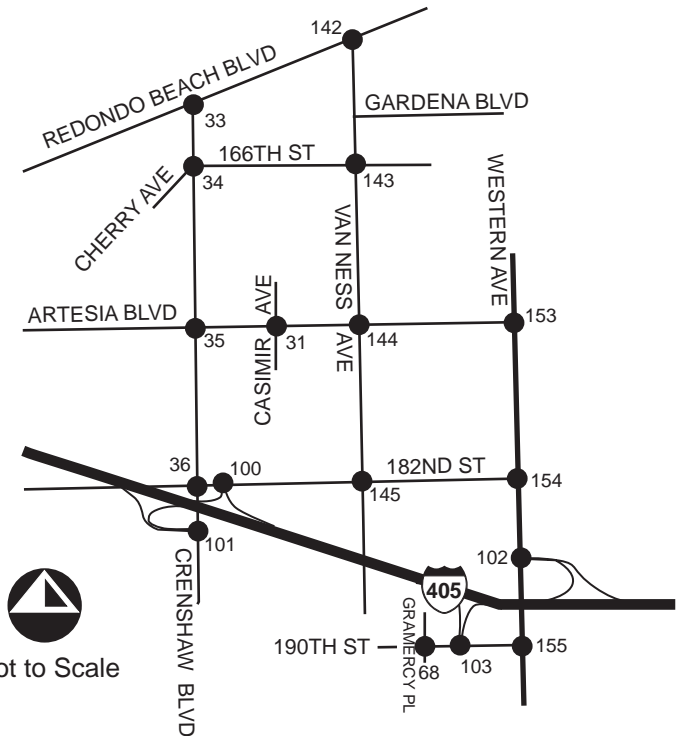
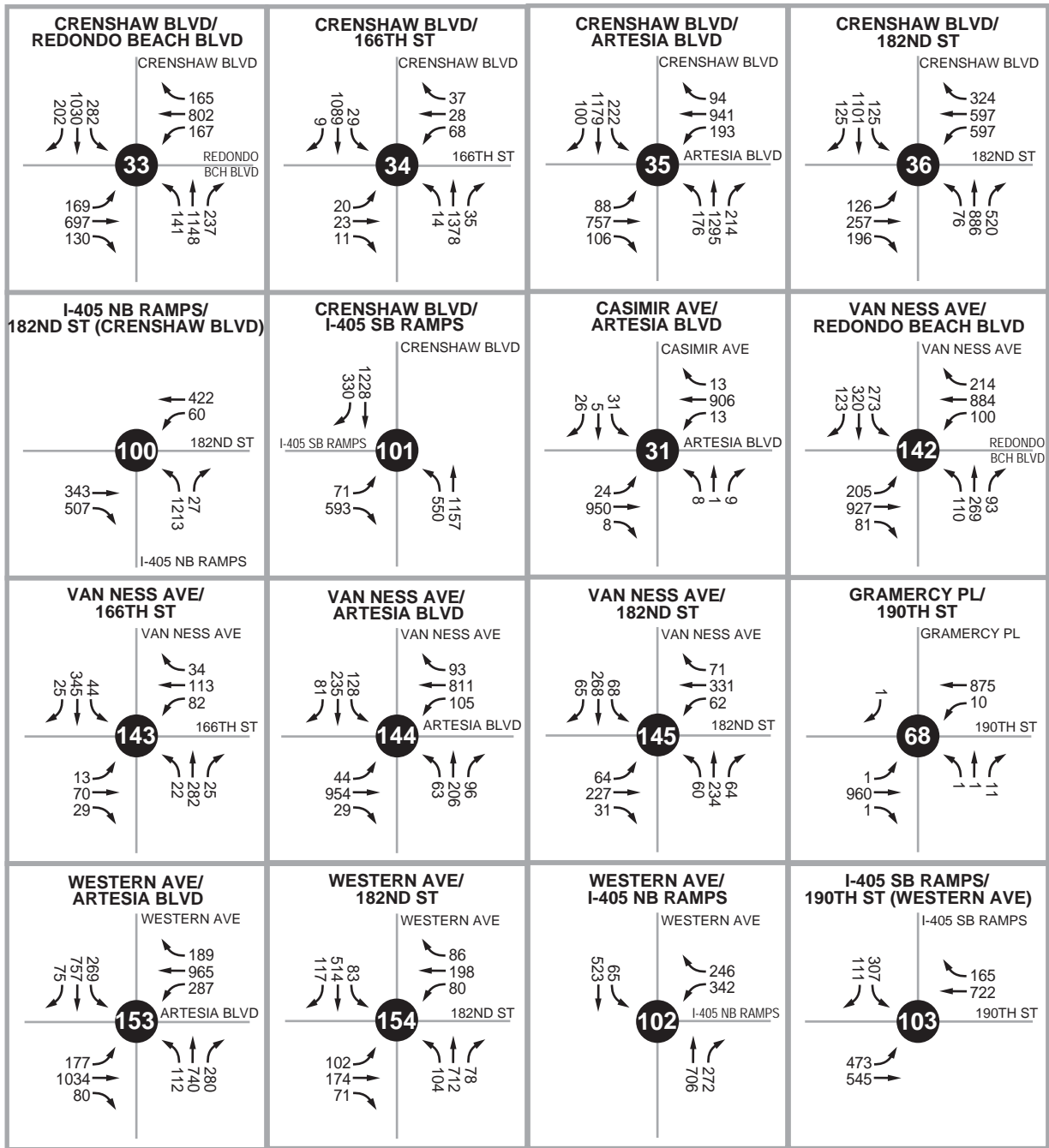


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Legend:
XX Mid-Day Peak Hour Volumes



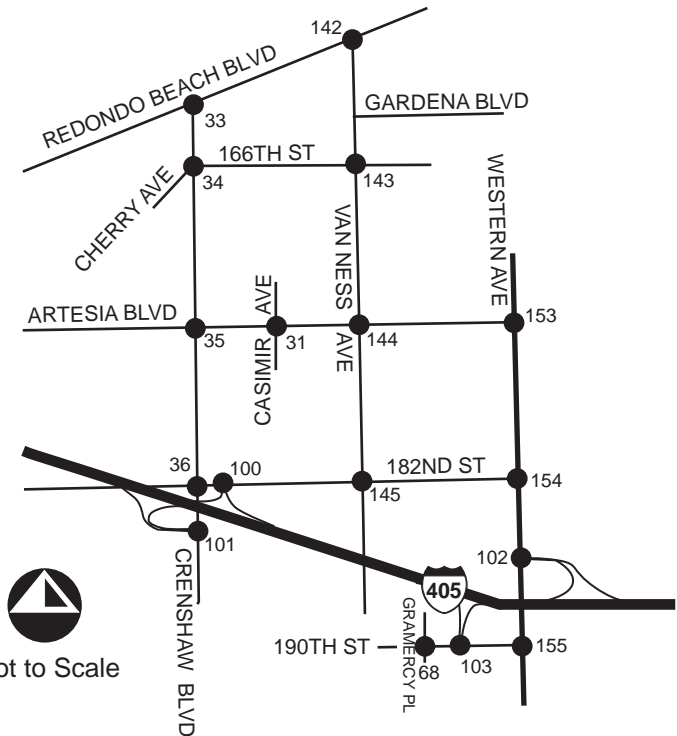
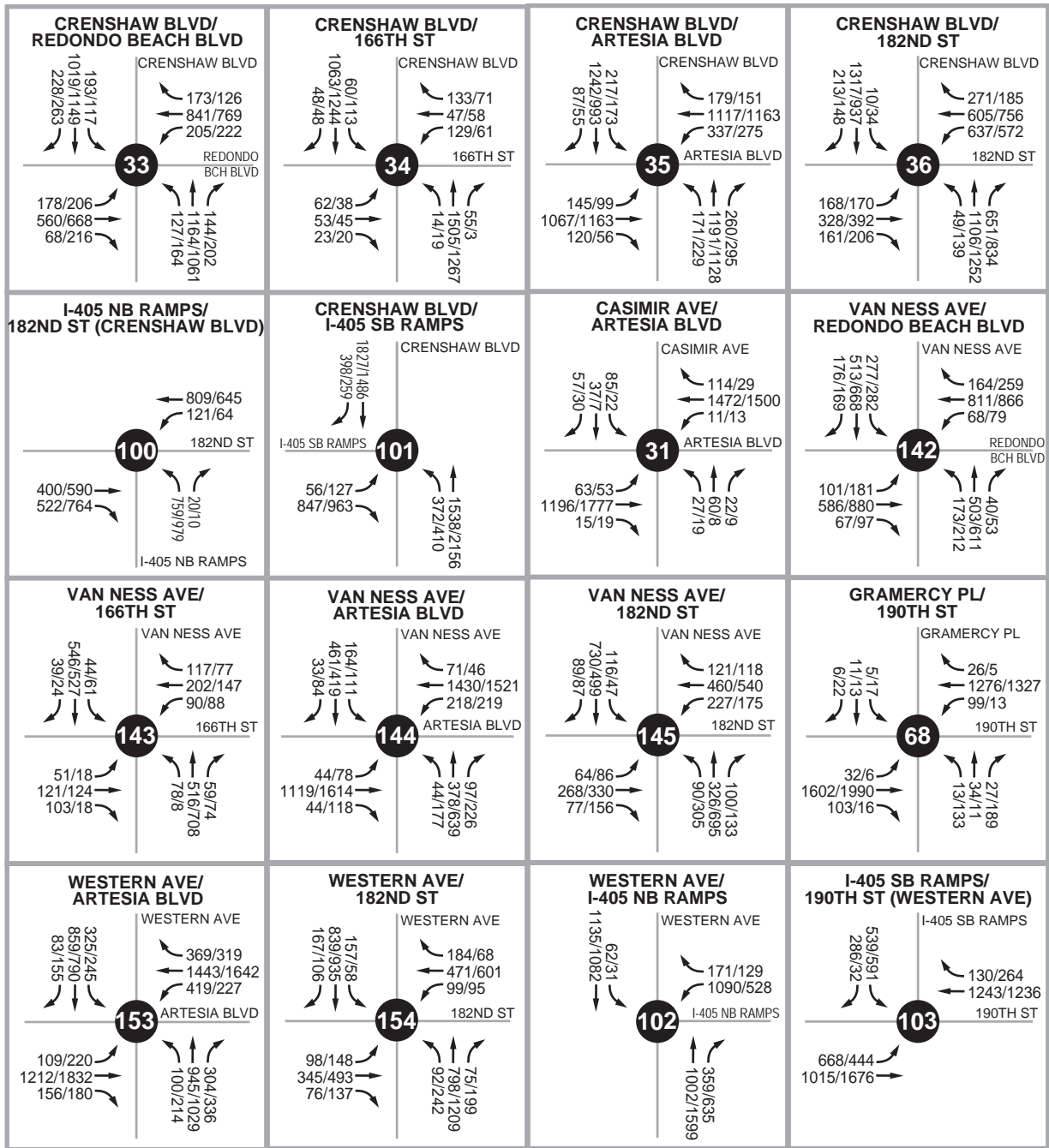
Area 2 - Forecast Near-Term Conditions Weekday Mid-Day Peak Hour Intersection Volumes



Legend:
 XX Mid-Day Peak Hour Volumes



Area 2 - Forecast Near-Term Conditions Weekend Mid-Day Peak Hour Intersection Volumes

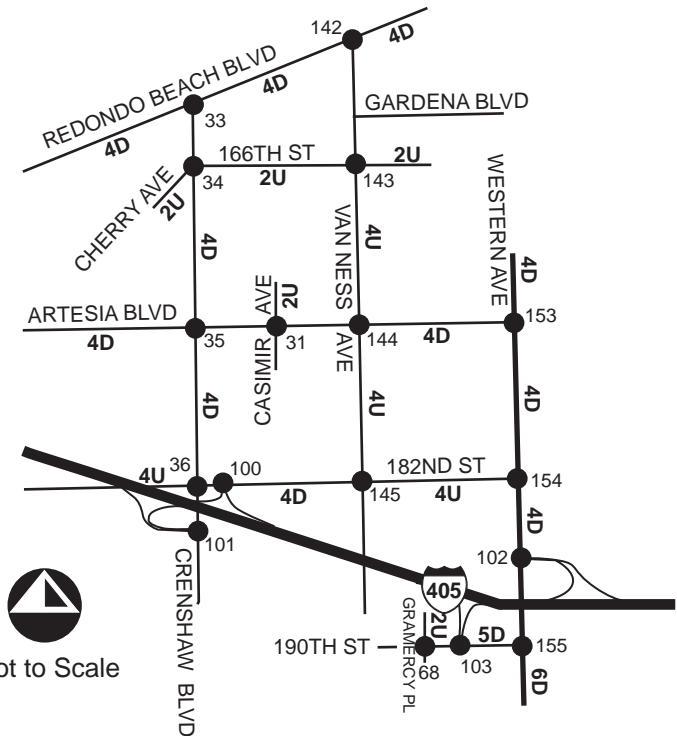
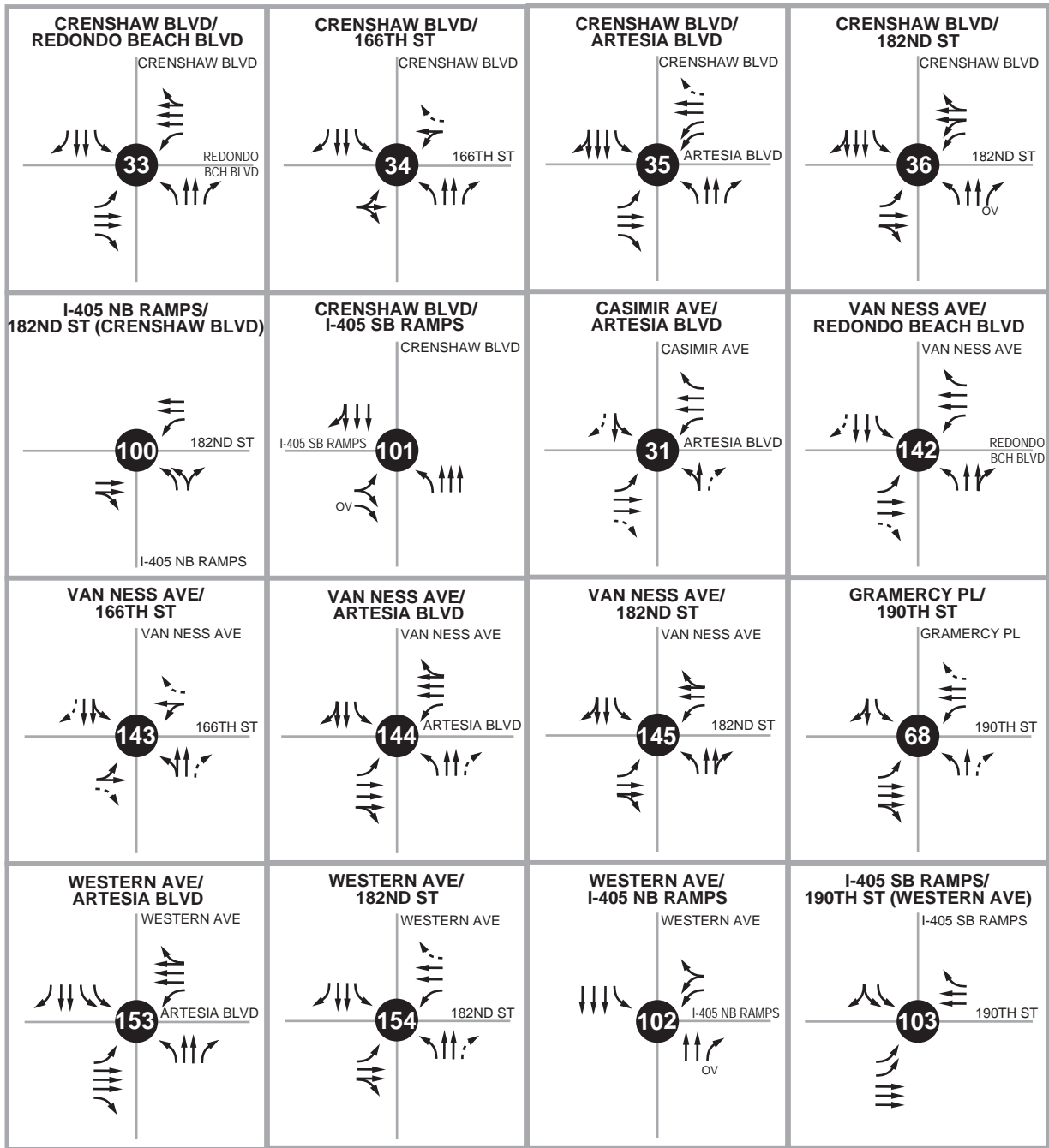


Not to Scale

Legend:
XX/XX AM/PM Peak Hour Volumes

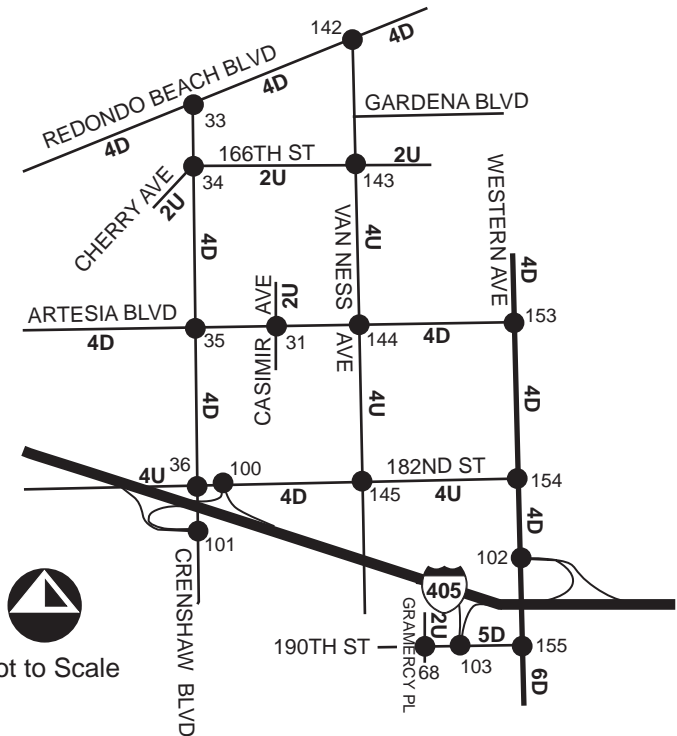
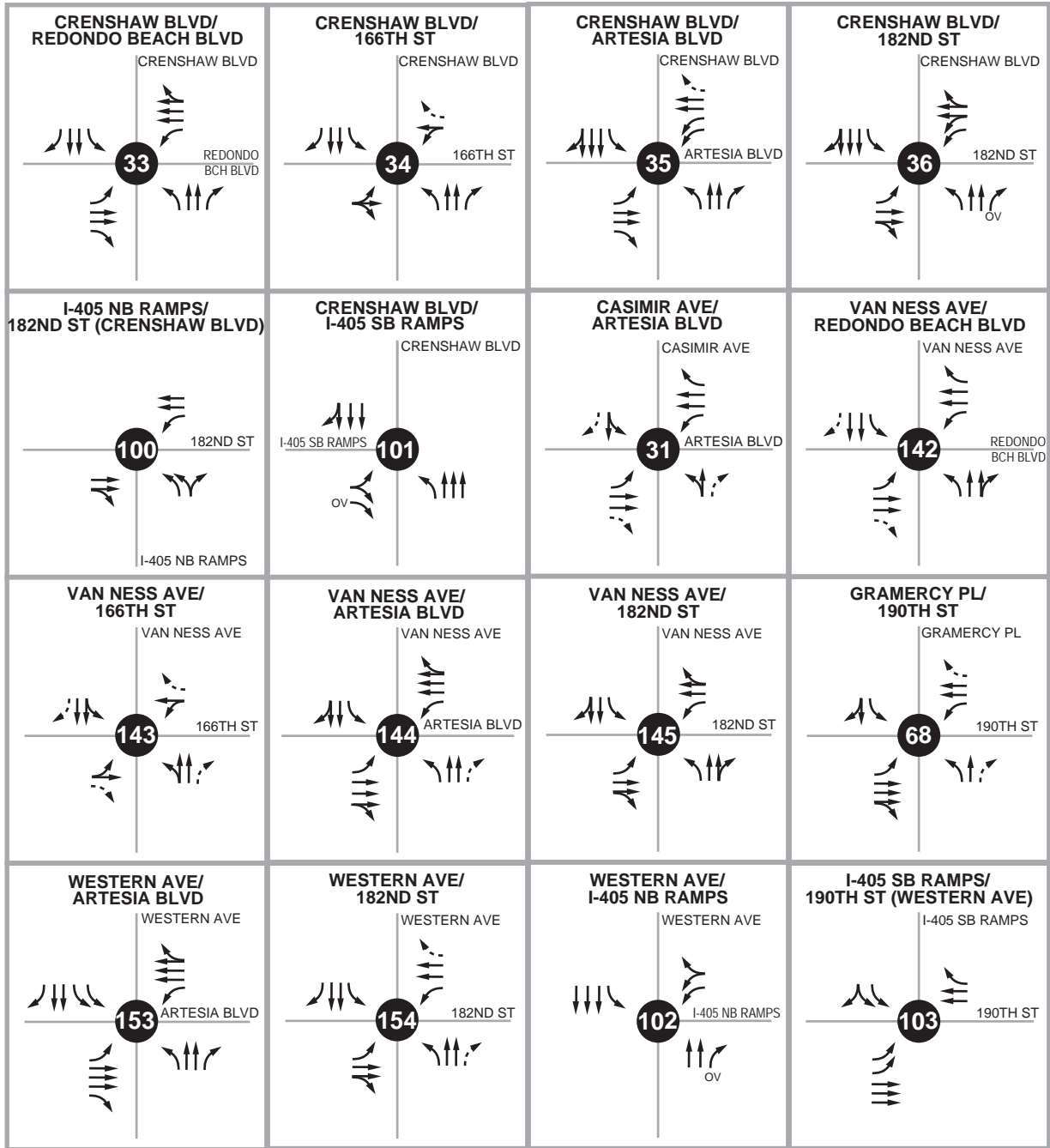


Area 2 - Forecast Long-Range Future Conditions Weekday AM/PM Peak Hour Intersection Volumes



- Legend:
- Existing Lane
 - Free Right-Turn Lane
 - Defacto Right-Turn Lane
 - Overlap Right-Turn Lane
 - 2U 2-lane Undivided roadway
 - 4U 4-lane Undivided roadway
 - 4D 4-lane Divided roadway
 - 5D 5-lane Divided roadway (3 east, 2 west)
 - 6D 6-lane Divided roadway



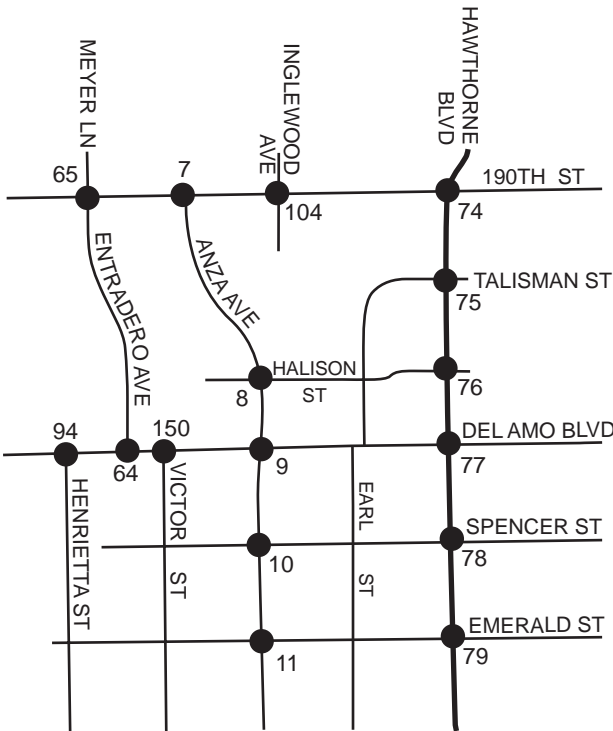
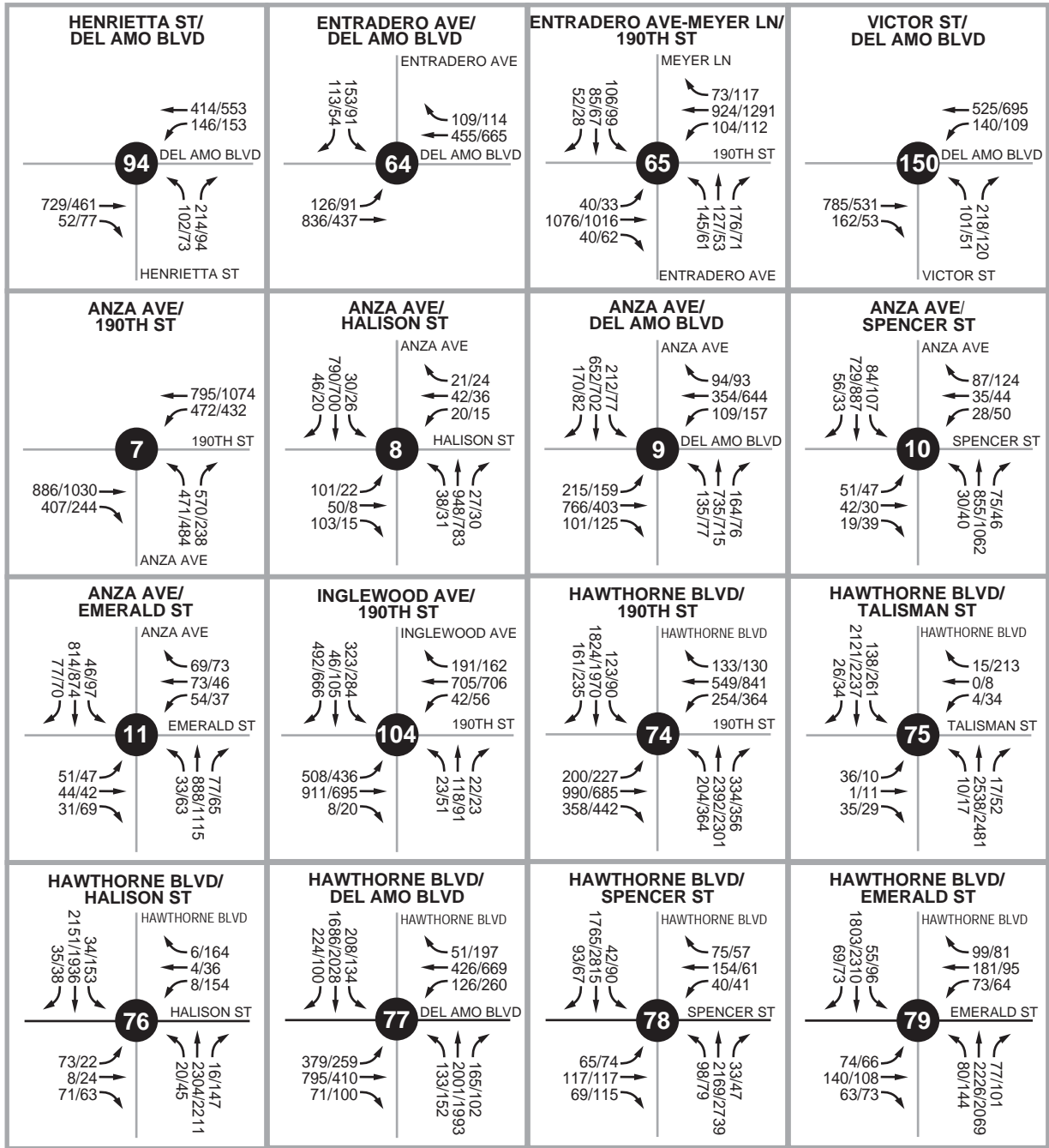


- Legend:
- Existing Lane
 - Free Right-Turn Lane
 - Defacto Right-Turn Lane
 - Overlap Right-Turn Lane
 - 2U 2-lane Undivided roadway
 - 4U 4-lane Undivided roadway
 - 4D 4-lane Divided roadway
 - 5D 5-lane Divided roadway (3 east, 2 west)
 - 6D 6-lane Divided roadway



Area 2 - Forecast Improved Long-Range Future Conditions Intersection/Roadway Geometry

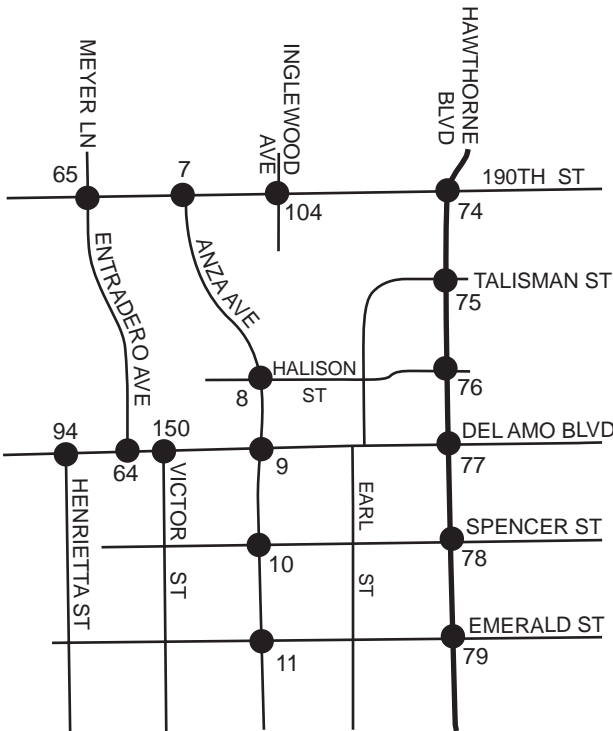
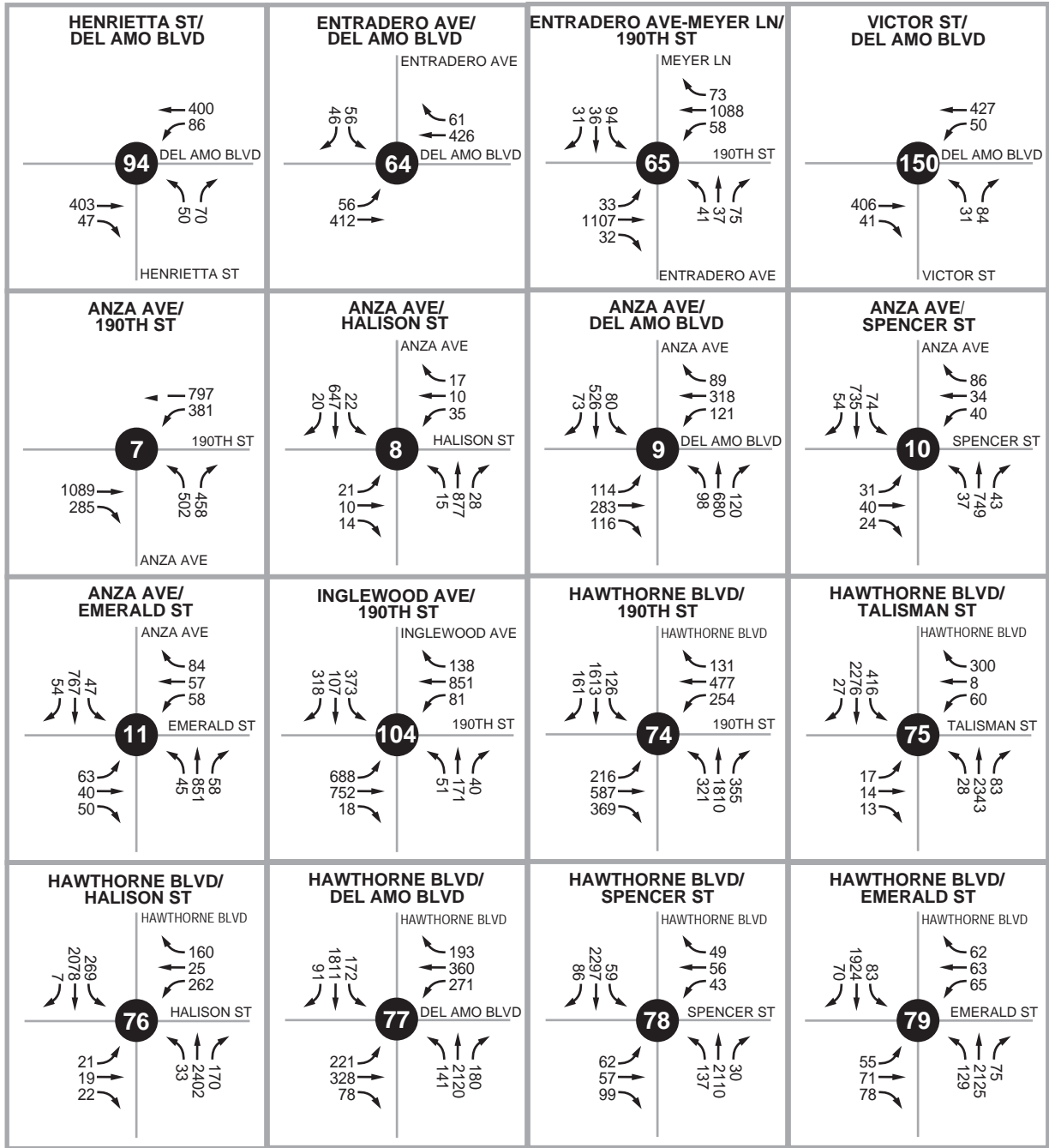
Study Area 3



Not to Scale

Legend:
XX/XX AM/PM Peak Hour Volumes





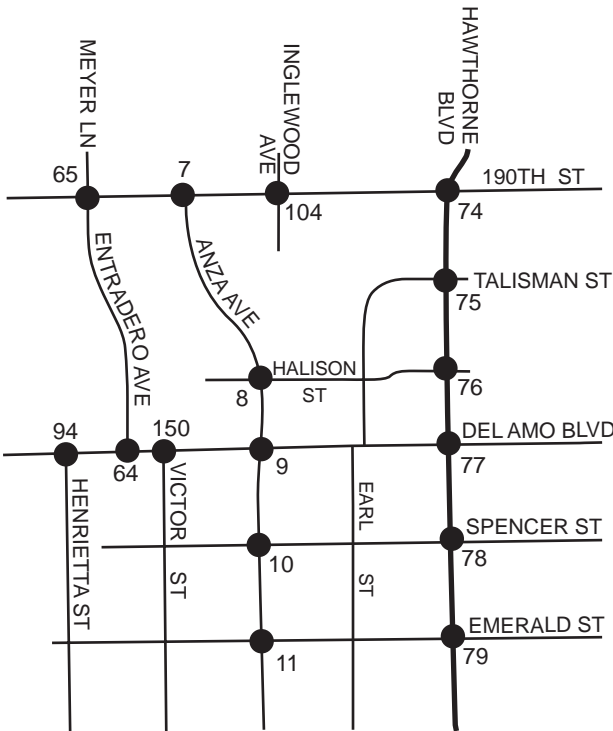
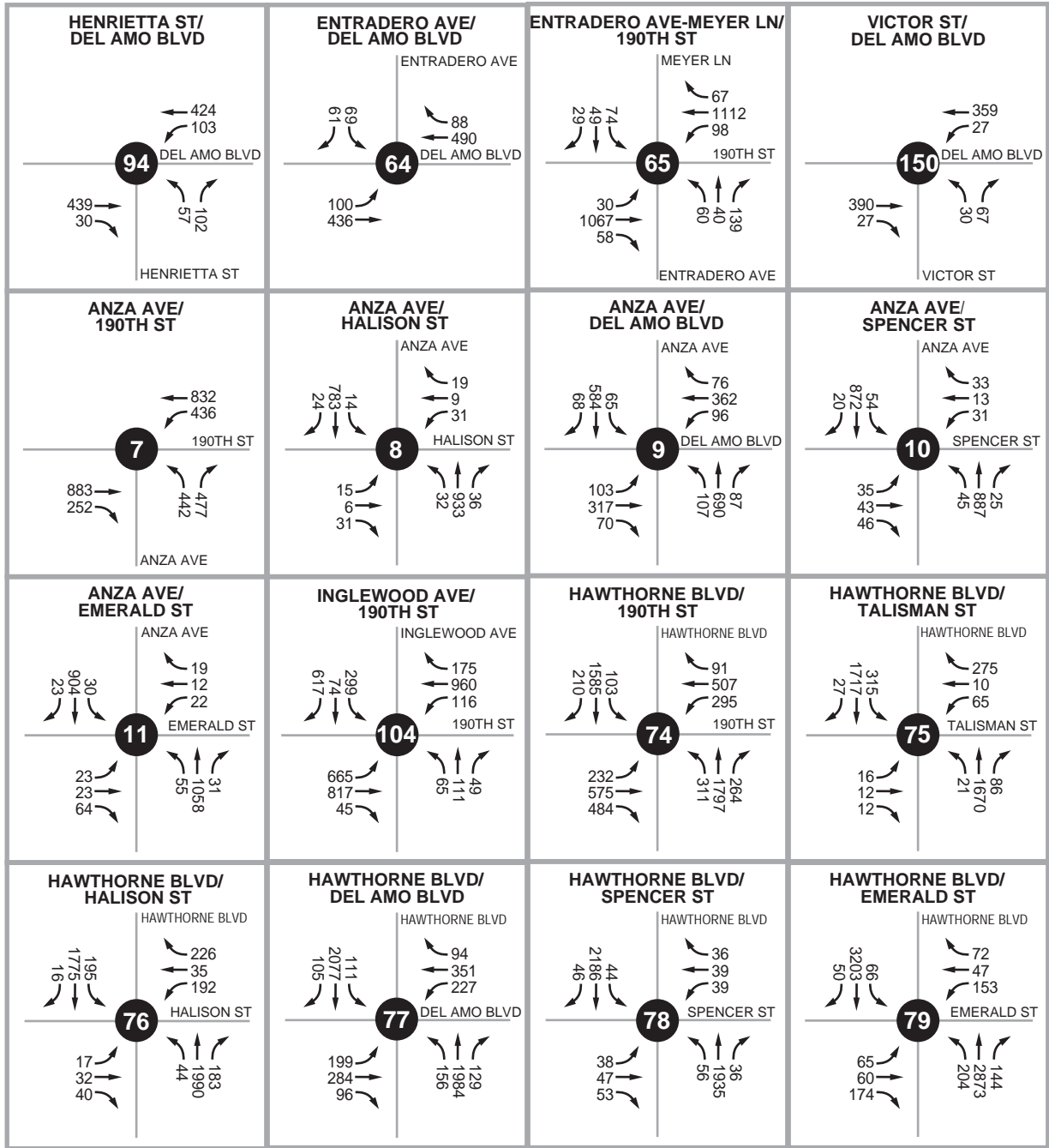
Not to Scale

Legend:

XX Mid-Day Peak Hour Volumes

Area 3 - Existing Weekday Mid-Day Peak Hour Intersection Volumes





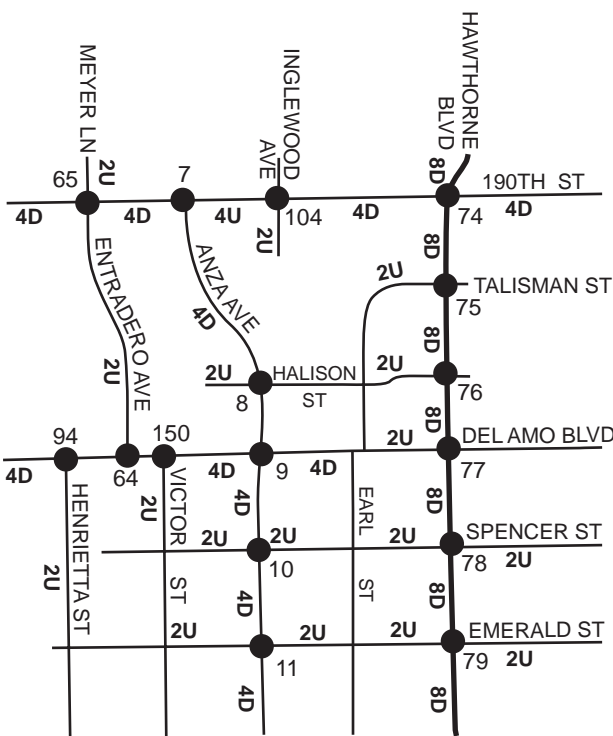
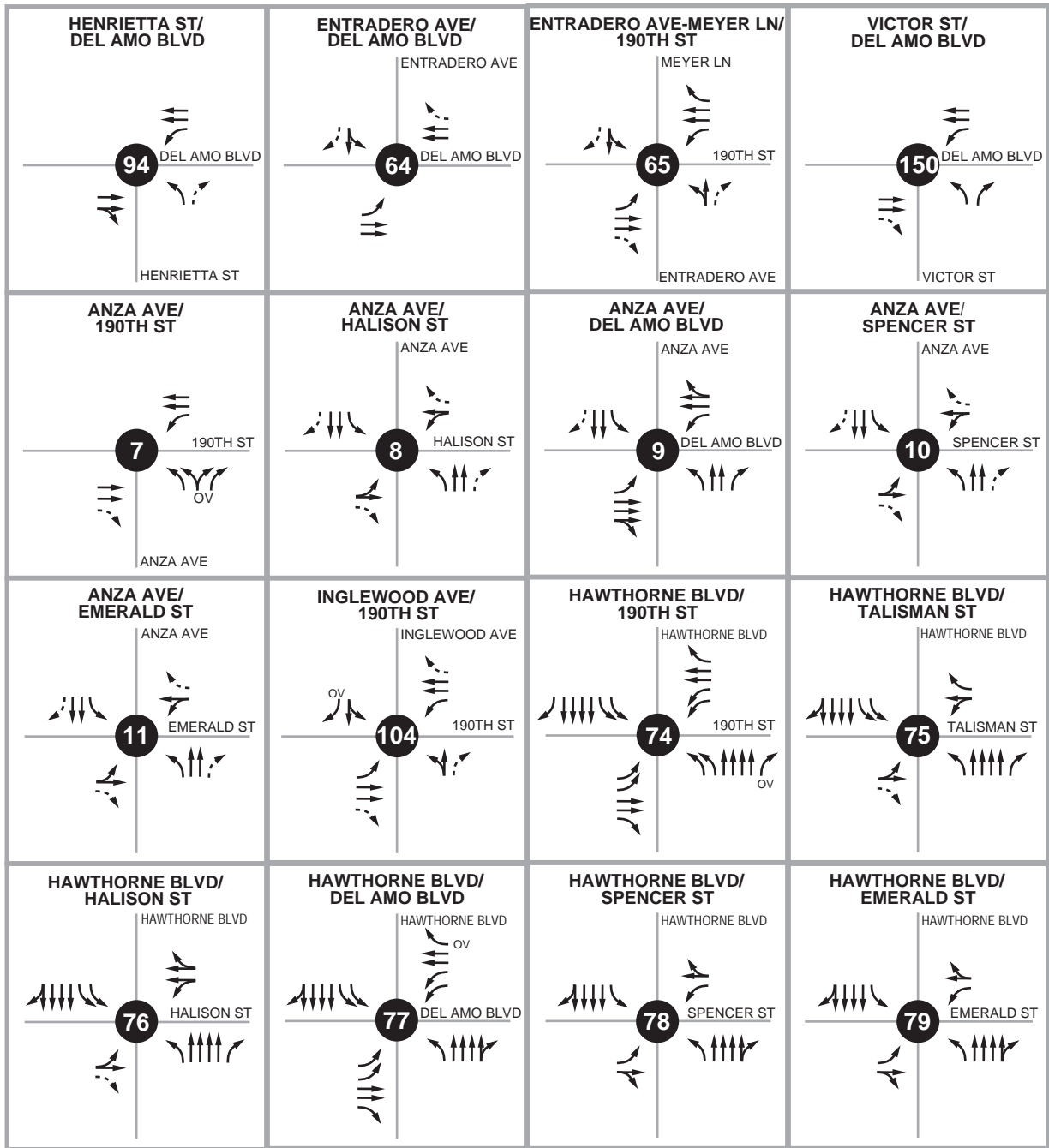
Not to Scale

Legend:

XX Mid-Day Peak Hour Volumes

Area 3 - Existing Weekend Mid-Day Peak Hour Intersection Volumes

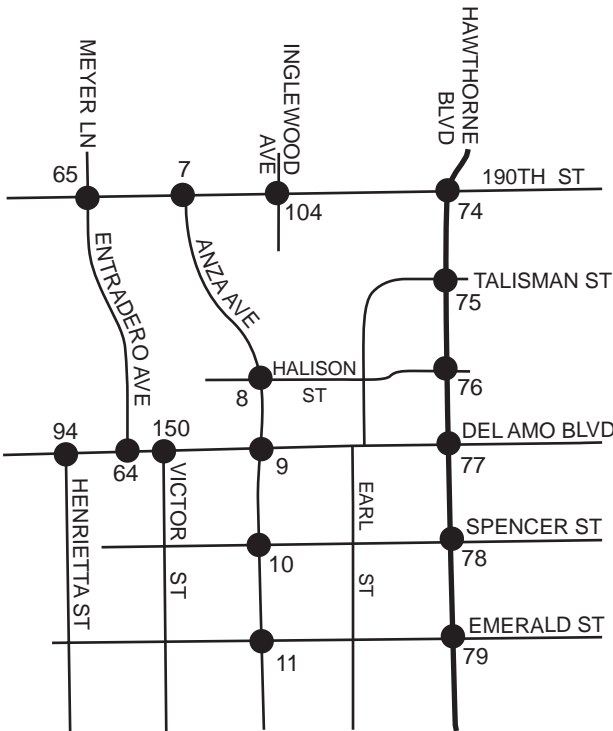
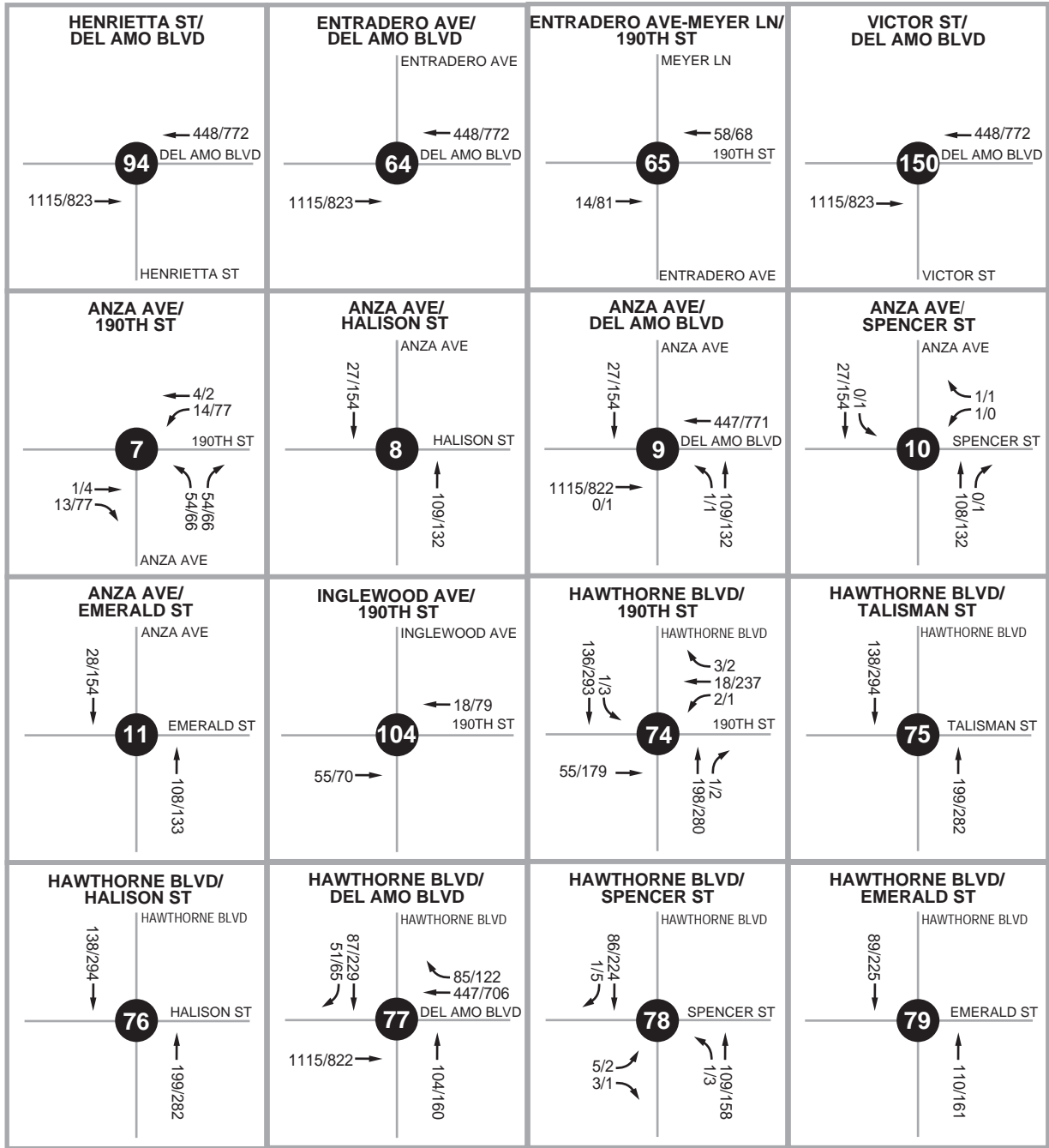




Not to Scale

- Legend:
- Existing Lane
 - Free Right-Turn Lane
 - Defacto Right-Turn Lane
 - Overlap Right-Turn Lane
 - 2U 2-lane Undivided roadway
 - 4U 4-lane Undivided roadway
 - 4D 4-lane Divided roadway
 - 8D 8-lane Divided roadway

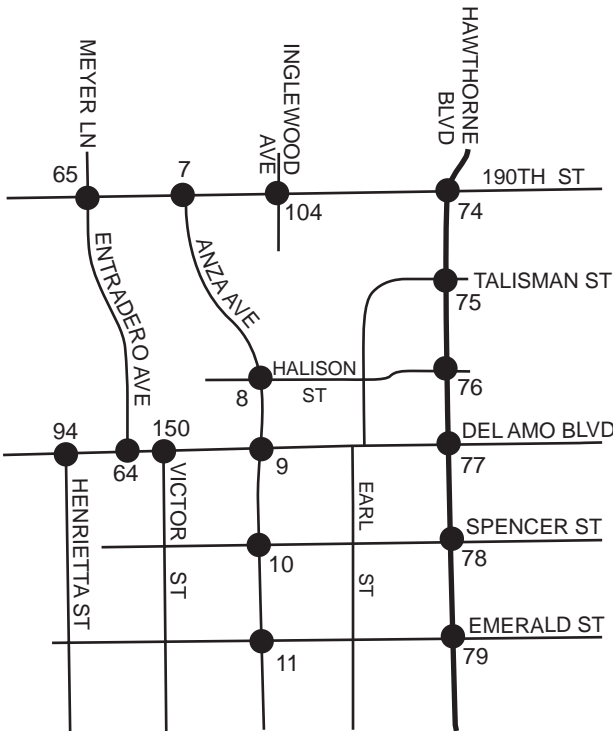
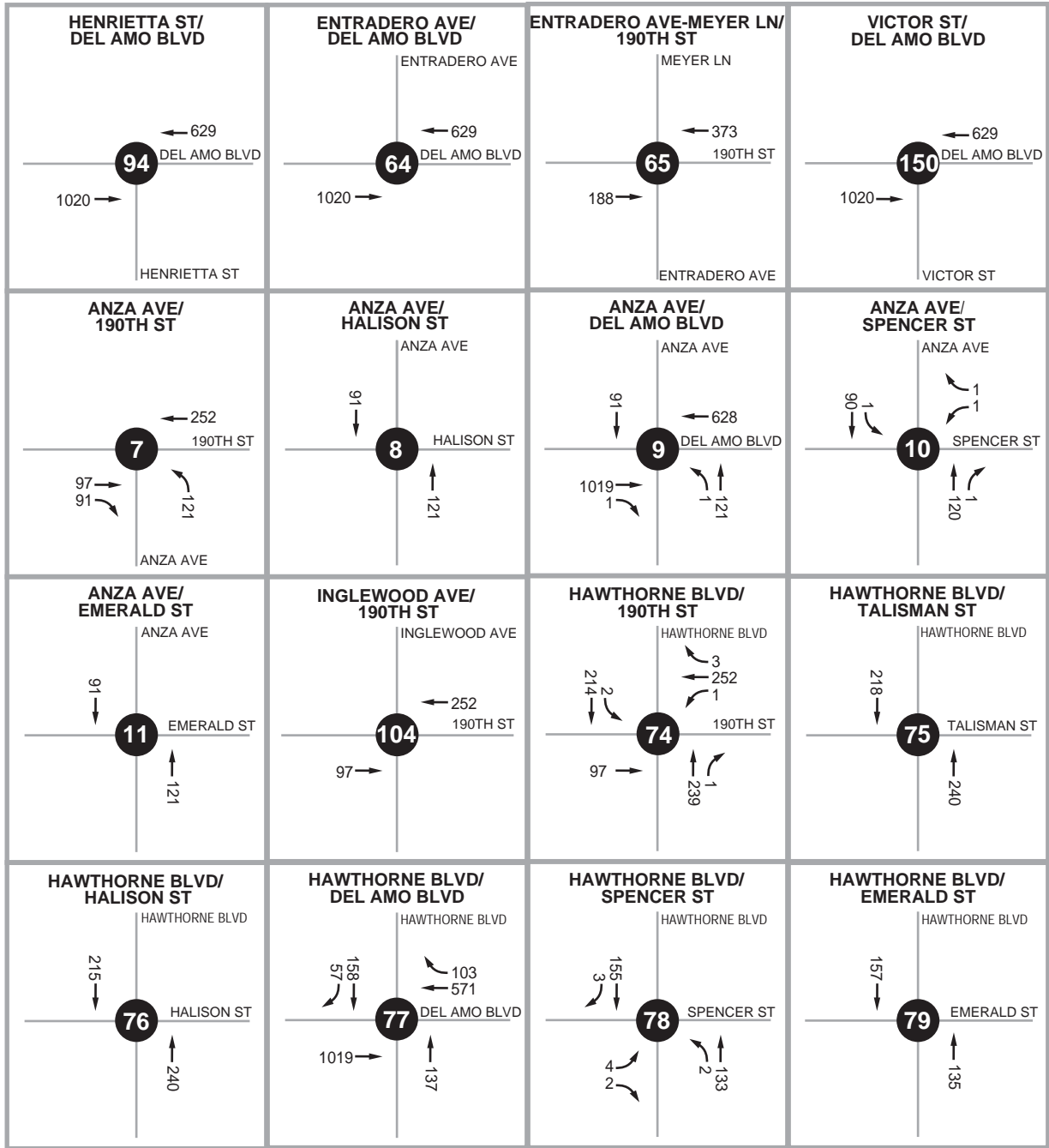




Not to Scale

Legend:
XX/XX AM/PM Peak Hour Volumes





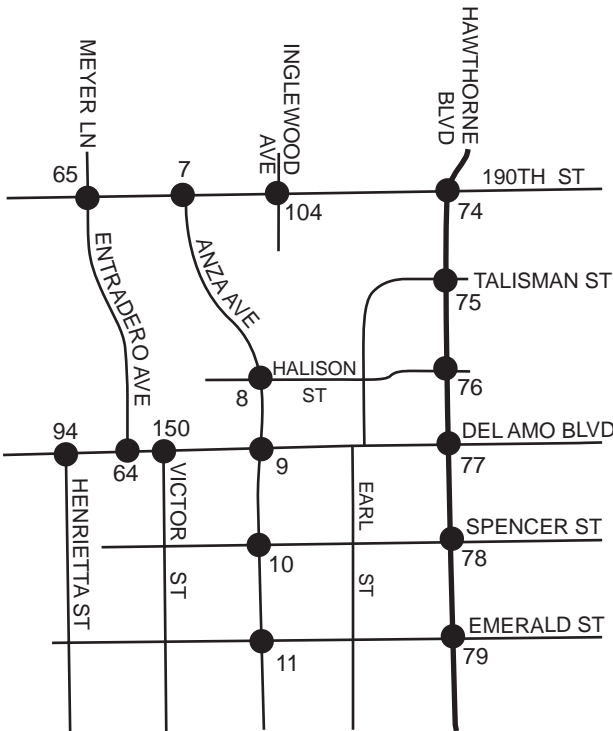
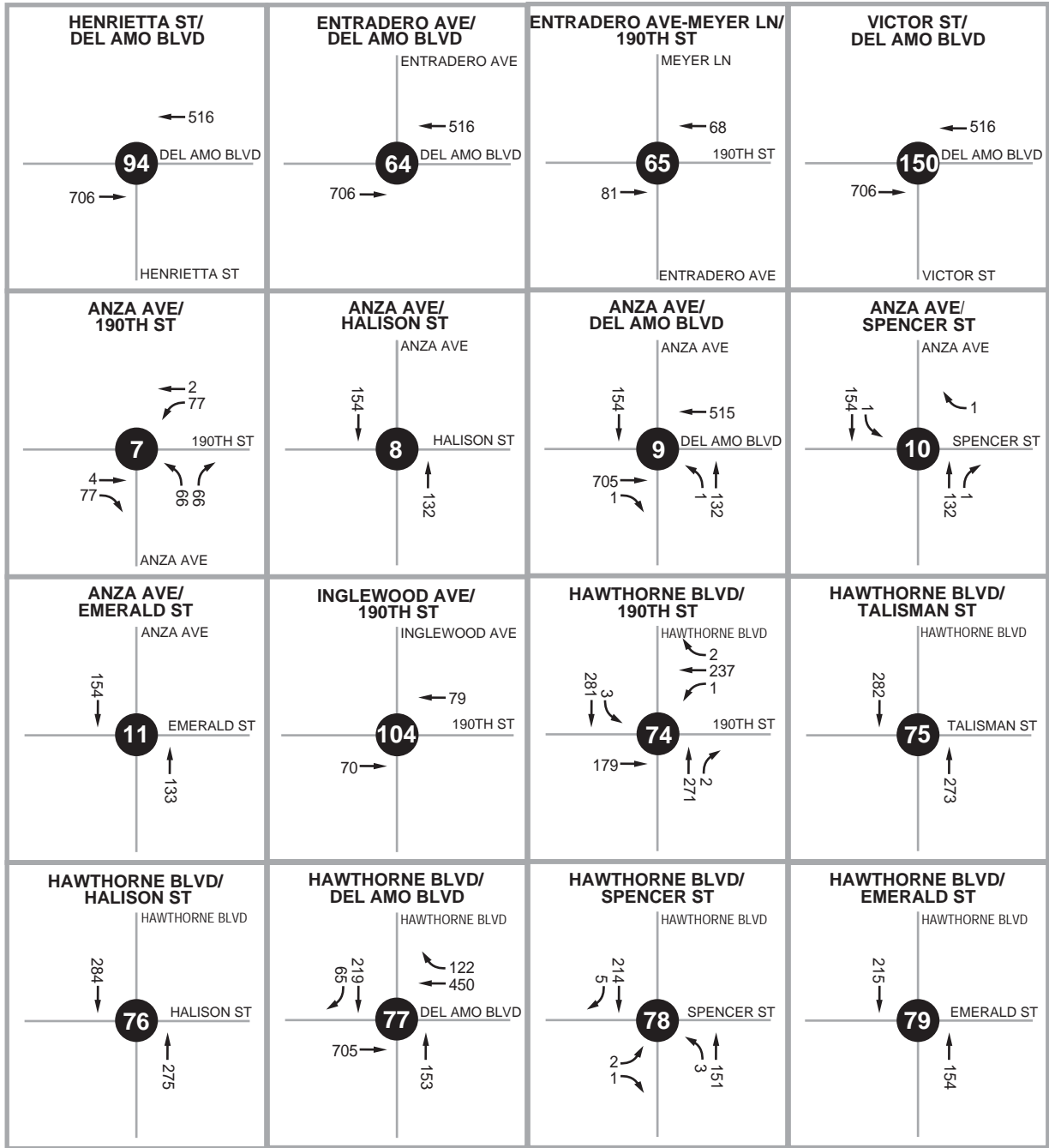
Not to Scale

Legend:

XX Mid-Day Peak Hour Volumes



Area 3 - Forecast Weekday Mid-Day Peak Hour Trip Assignment of Approved Projects



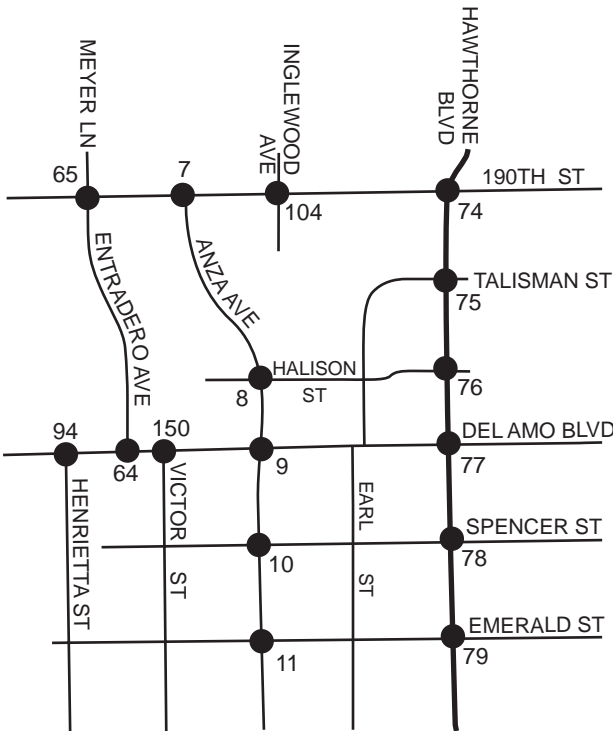
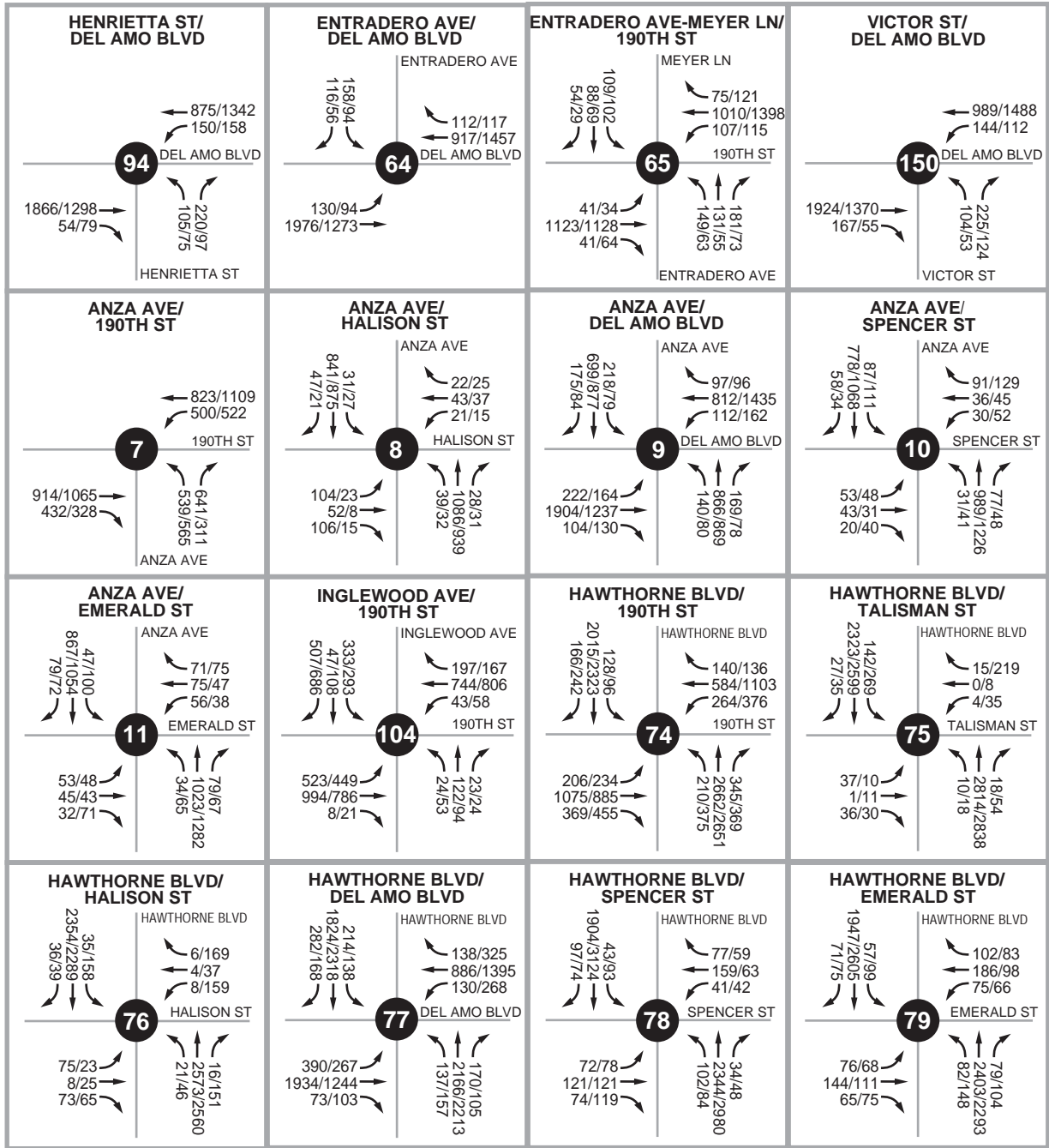
Not to Scale

Legend:

XX Mid-Day Peak Hour Volumes



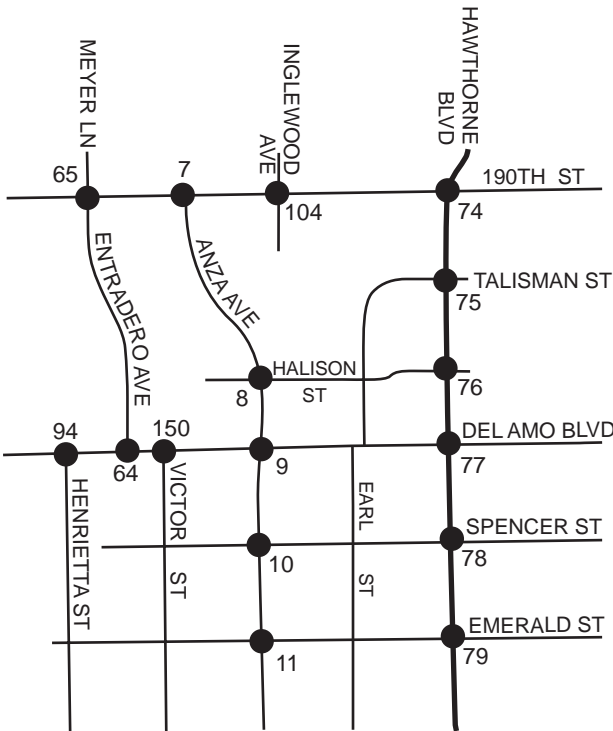
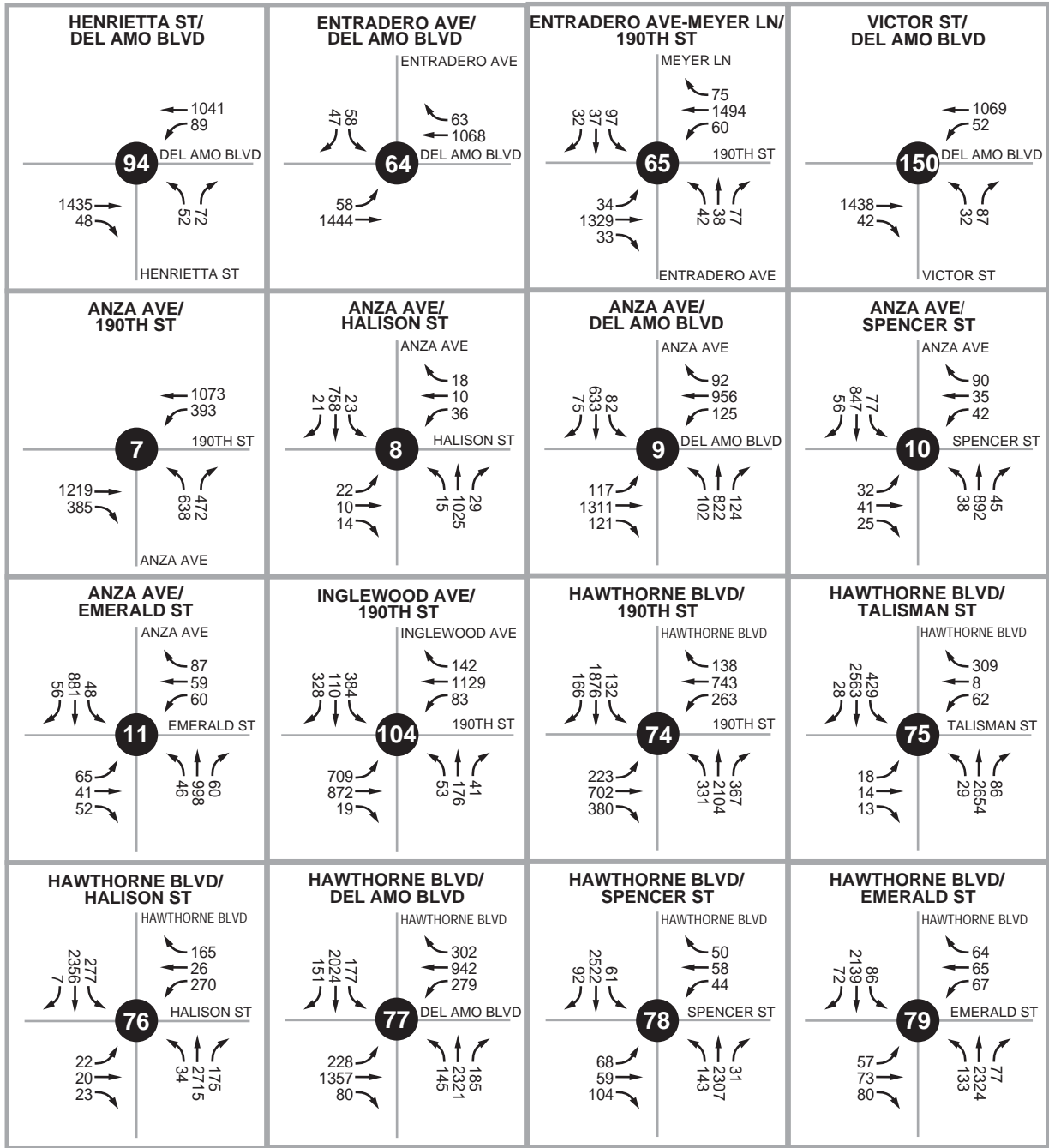
Area 3 - Forecast Weekend Mid-Day Peak Hour Trip Assignment of Approved Projects



Not to Scale

Legend:
XX/XX AM/PM Peak Hour Volumes





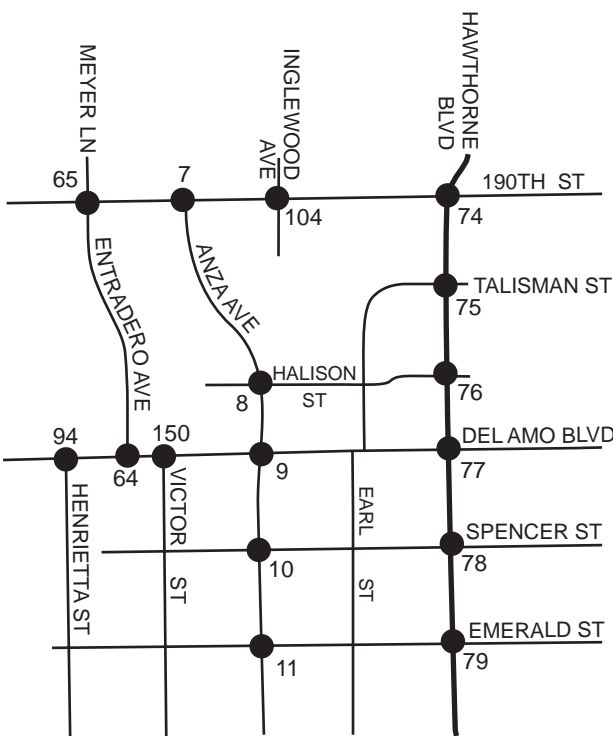
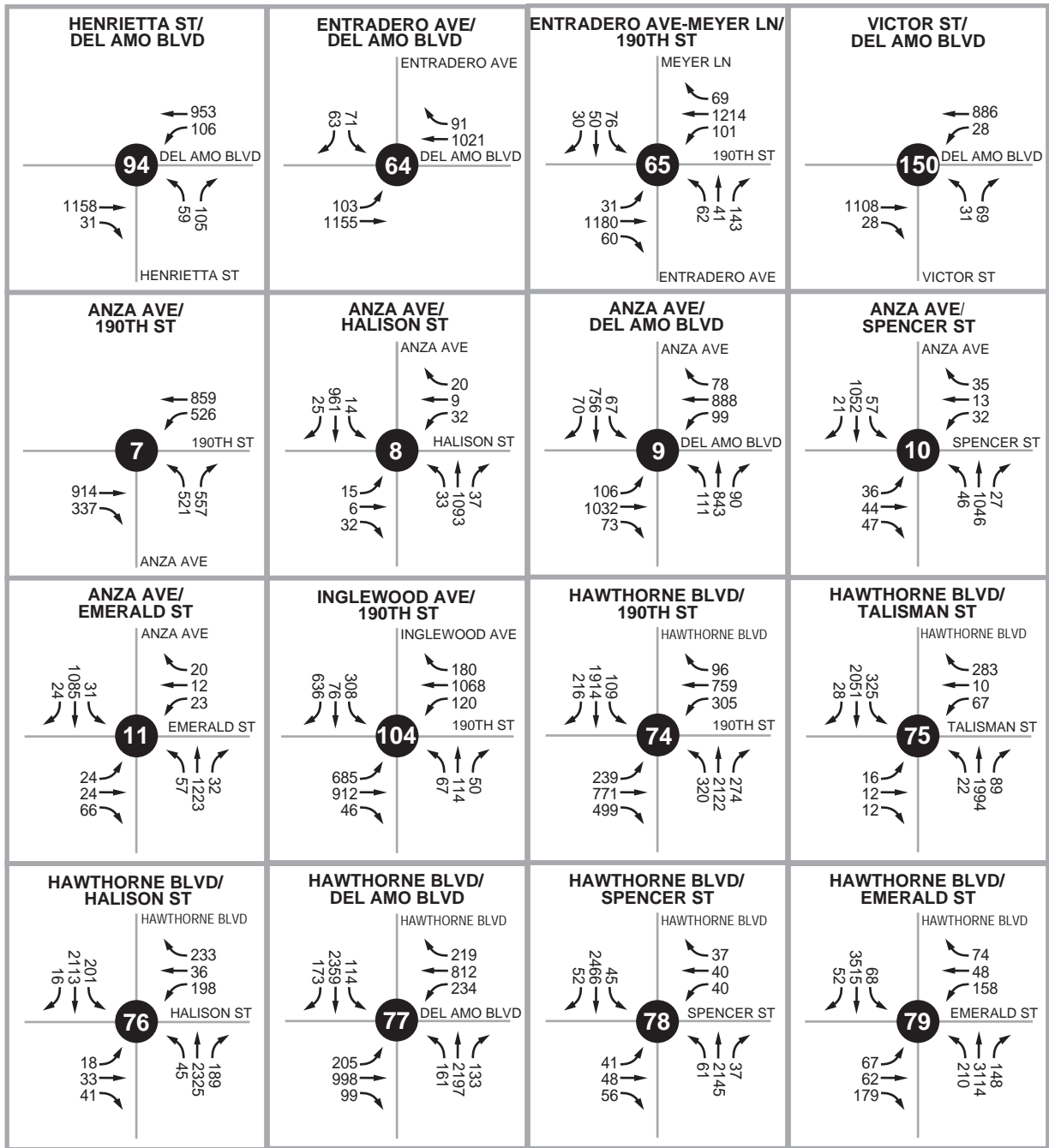
Not to Scale

Legend:

XX Mid-Day Peak Hour Volumes



Area 3 - Forecast Near-Term Conditions Weekday Mid-Day Peak Hour Intersection Volumes



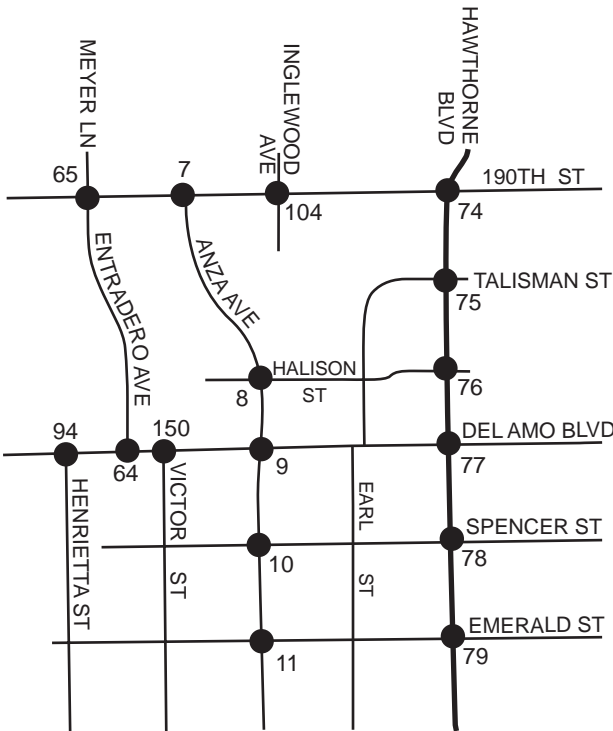
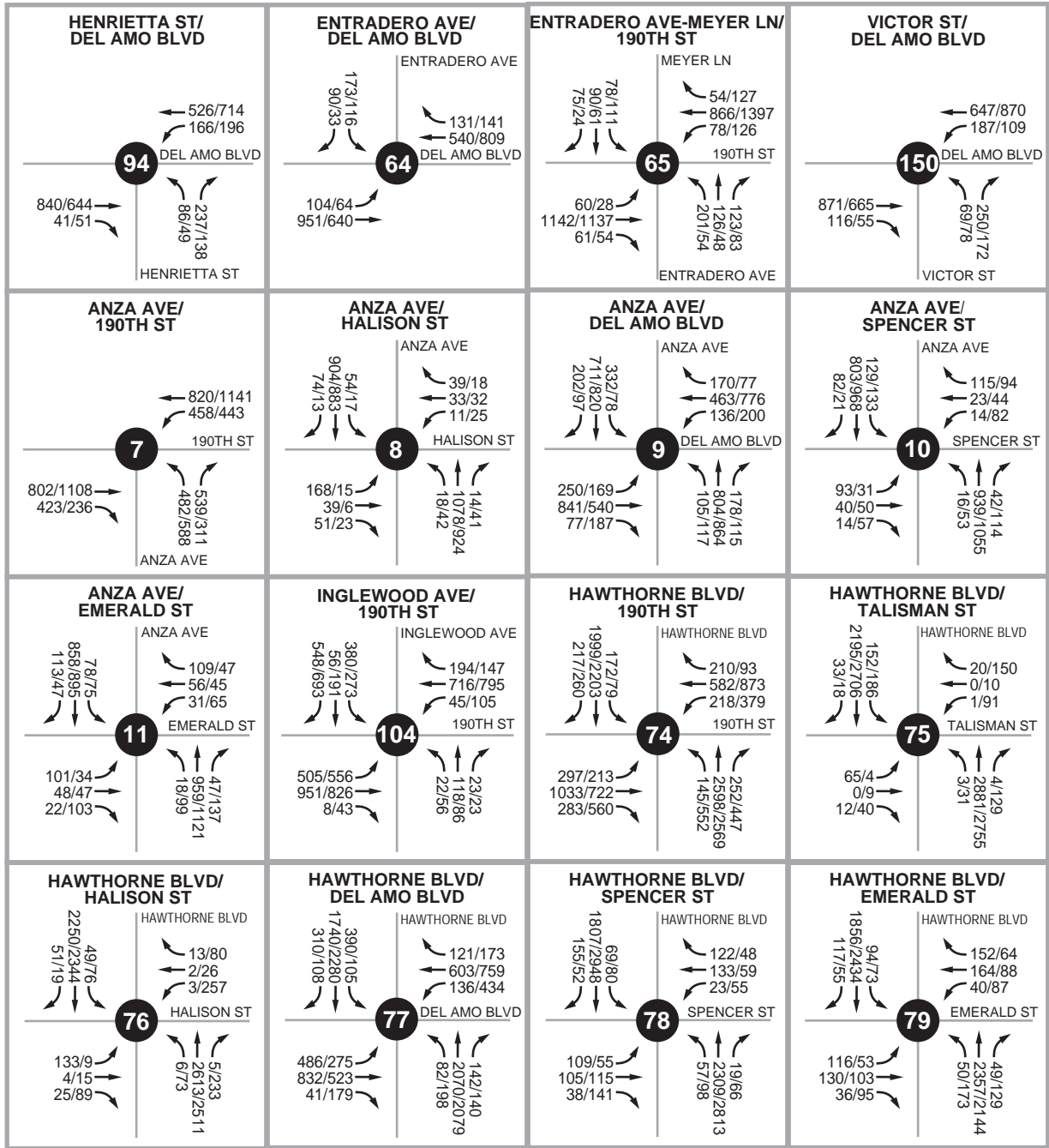
Not to Scale

Legend:

XX Mid-Day Peak Hour Volumes



Area 3 - Forecast Near-Term Conditions Weekend Mid-Day Peak Hour Intersection Volumes

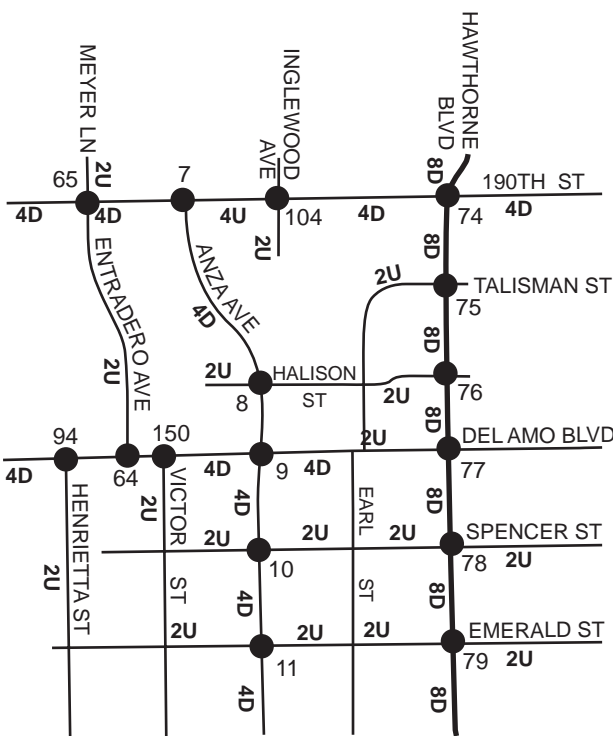
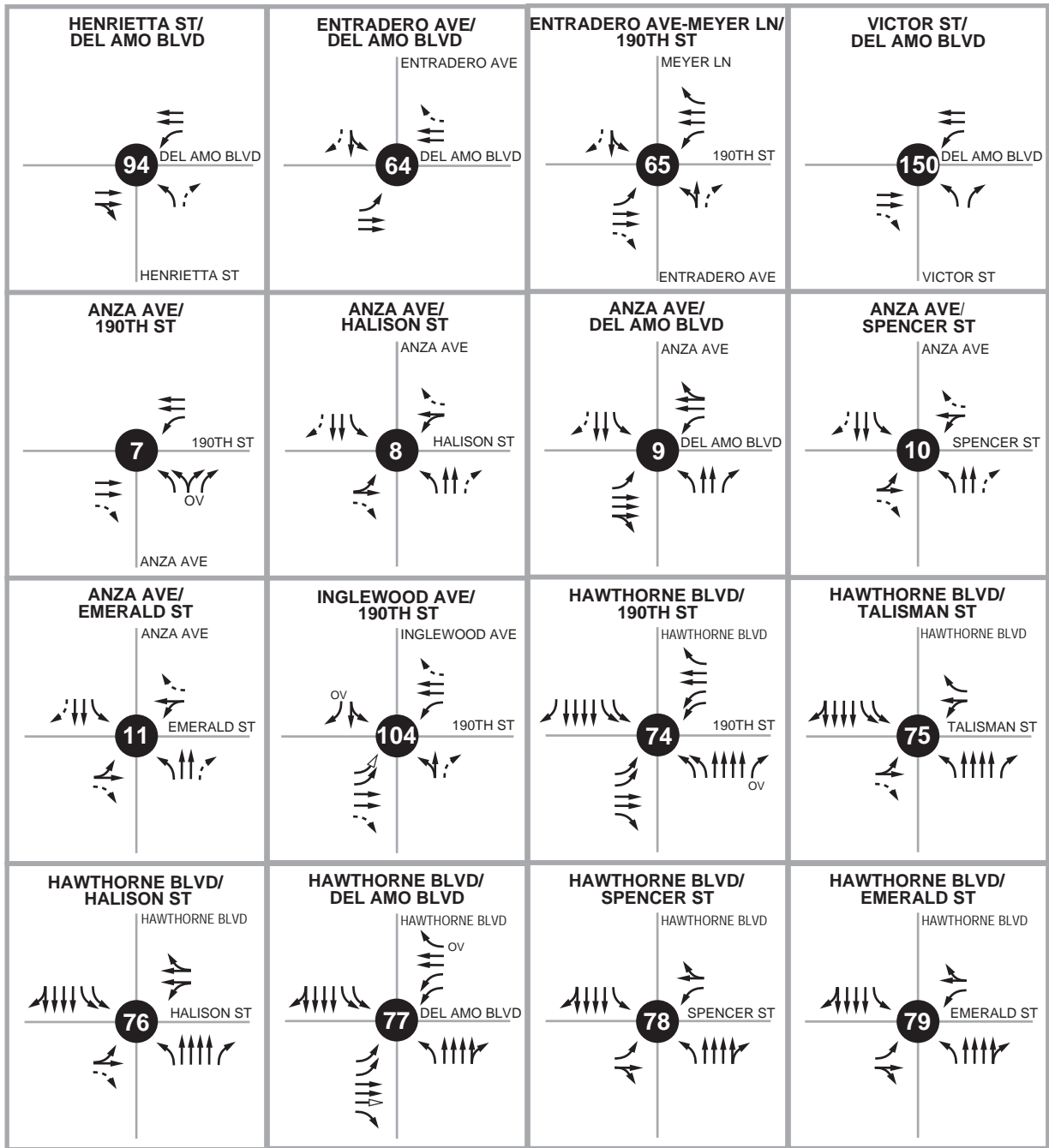


Not to Scale

Legend:
XX/XX AM/PM Peak Hour Volumes



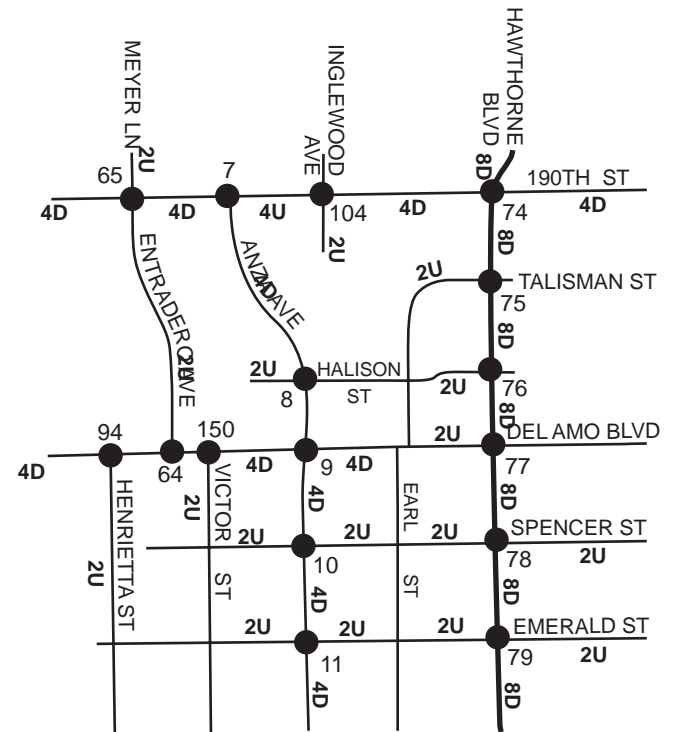
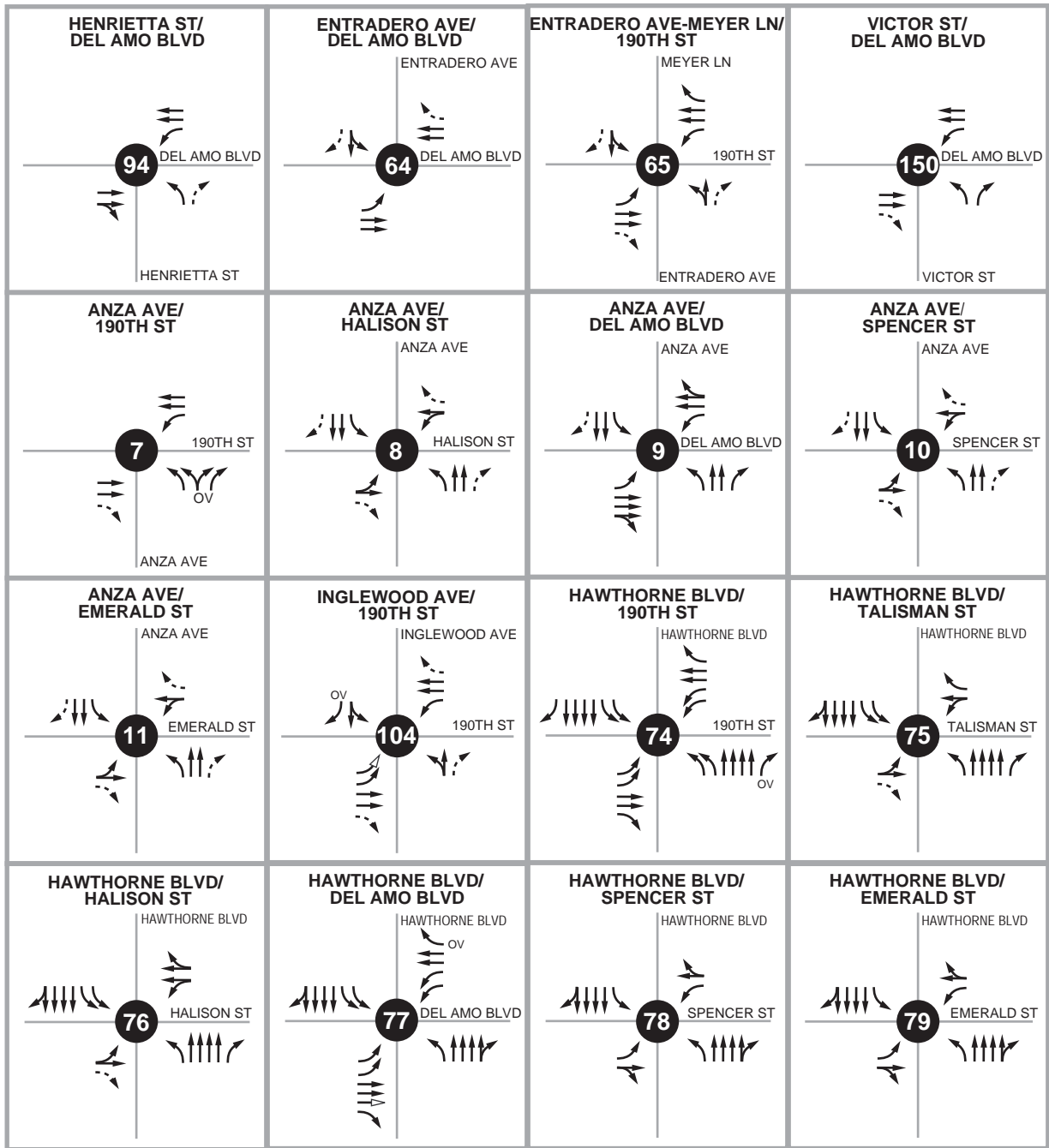
Area 3 - Forecast Long-Range Future Conditions Weekday AM/PM Peak Hour Intersection Volumes



Not to Scale

- Legend:
- Existing Lane
 - Modified Lane
 - Free Right-Turn Lane
 - Defacto Right-Turn Lane
 - Overlap Right-Turn Lane
 - 2U 2-lane Undivided roadway
 - 4U 4-lane Undivided roadway
 - 4D 4-lane Divided roadway
 - 8D 8-lane Divided roadway



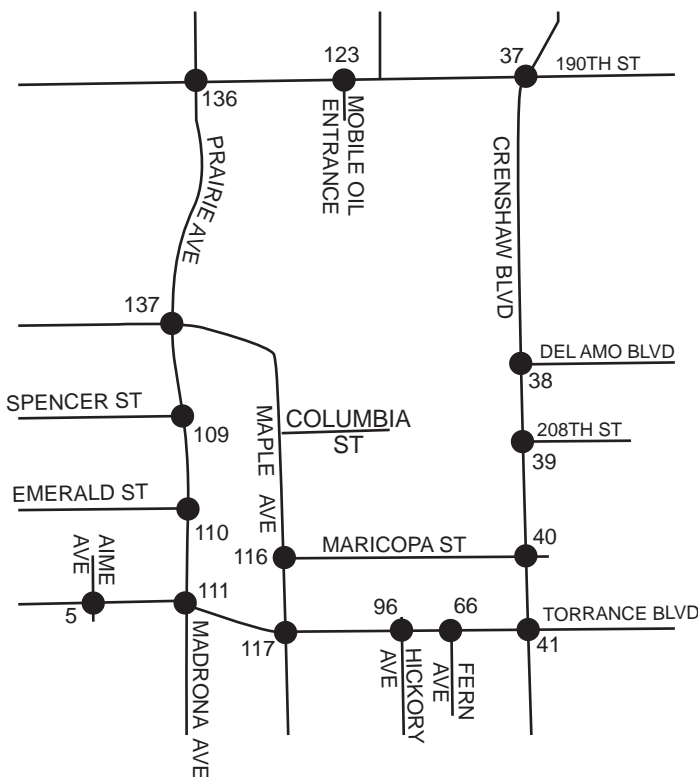
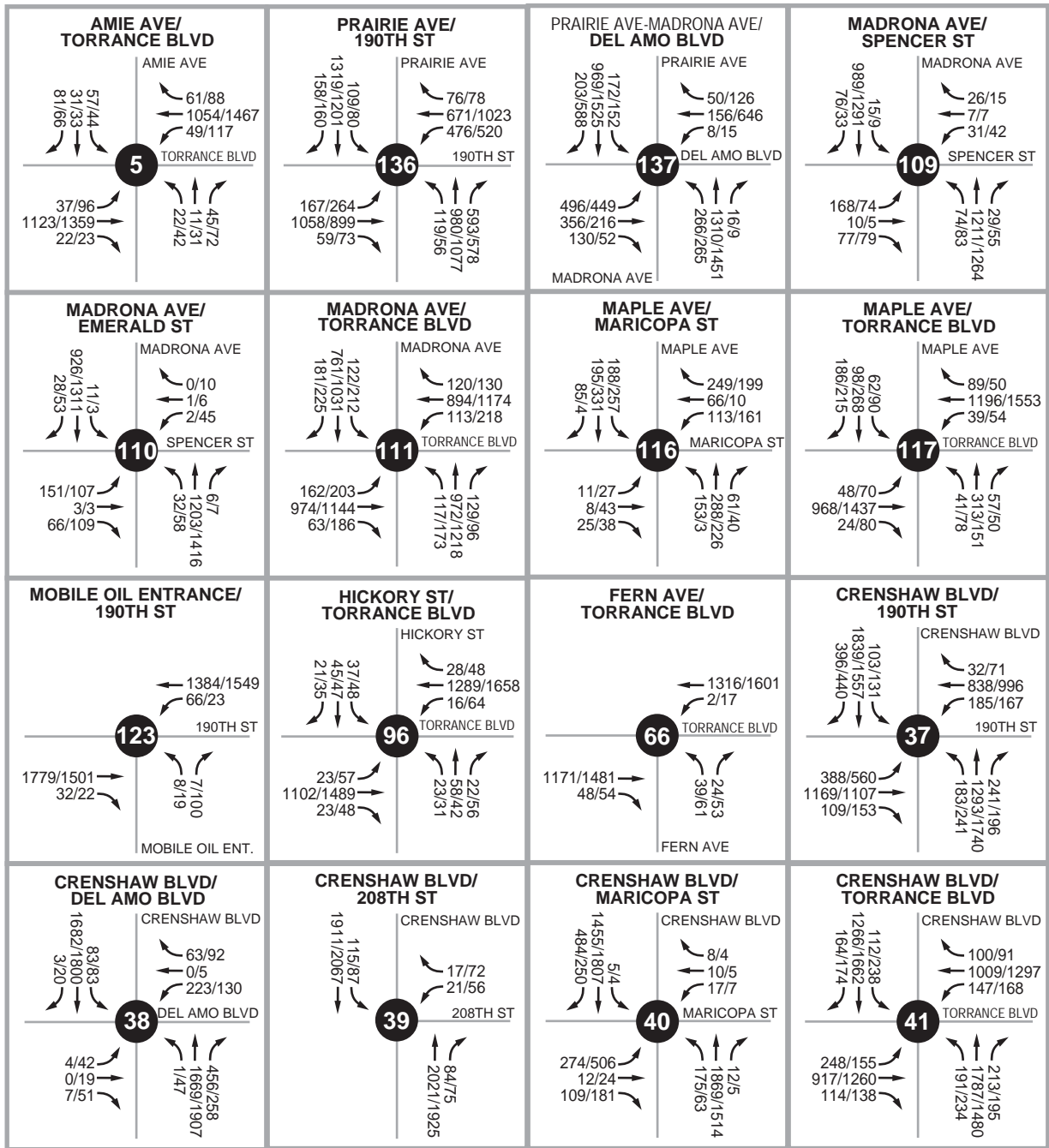


Not to Scale

Legend:

- | | |
|-------------------------|-----------------------------|
| Existing Lane | 2U 2-lane Undivided roadway |
| Modified Lane | 4U 4-lane Undivided roadway |
| Free Right-Turn Lane | 4D 4-lane Divided roadway |
| Defacto Right-Turn Lane | 8D 8-lane Divided roadway |
| Overlap Right-Turn Lane | |

Study Area 4

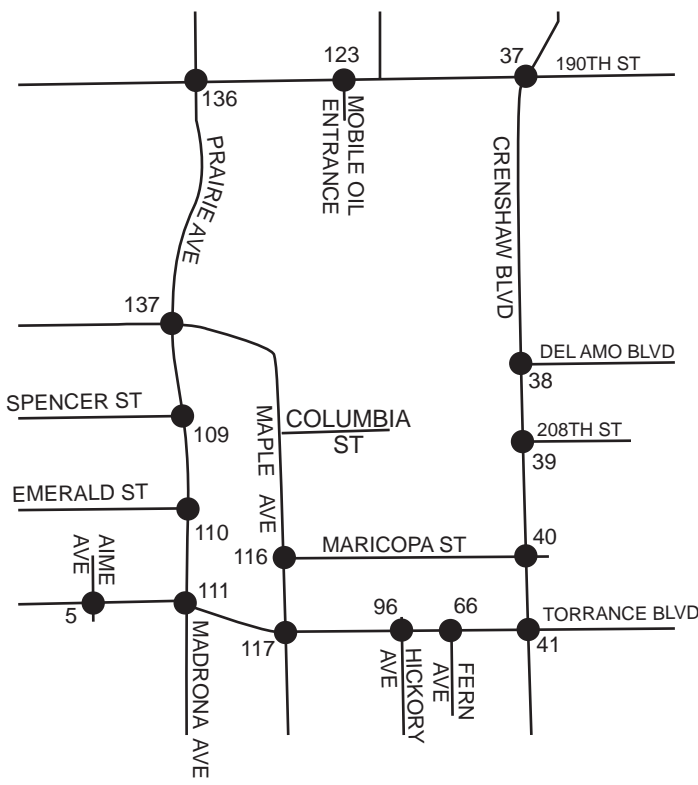
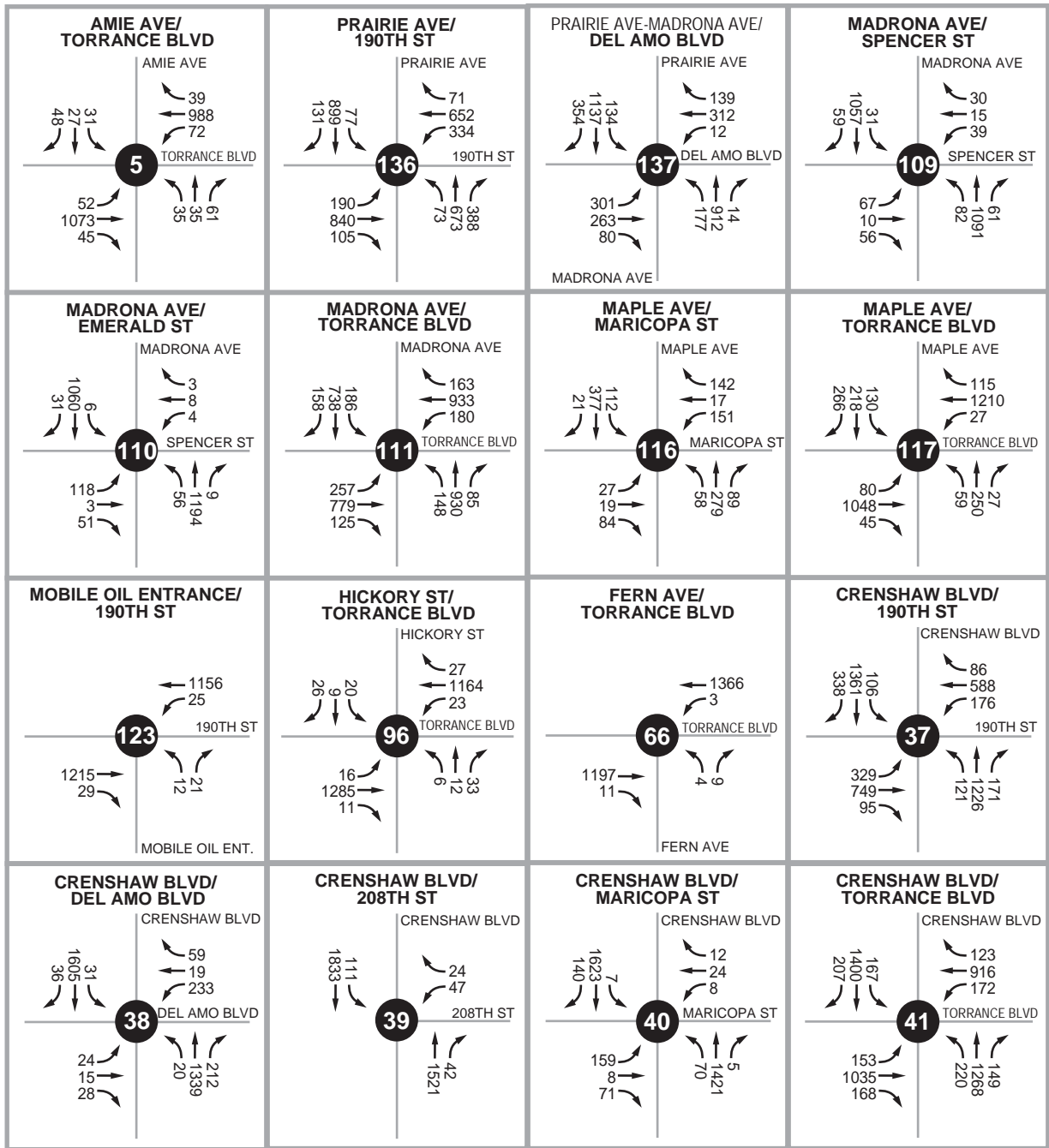


Not to Scale

Legend:
XX/XX AM/PM Peak Hour Volumes

Area 4 - Existing Weekday AM/PM Peak Hour Intersection Volumes



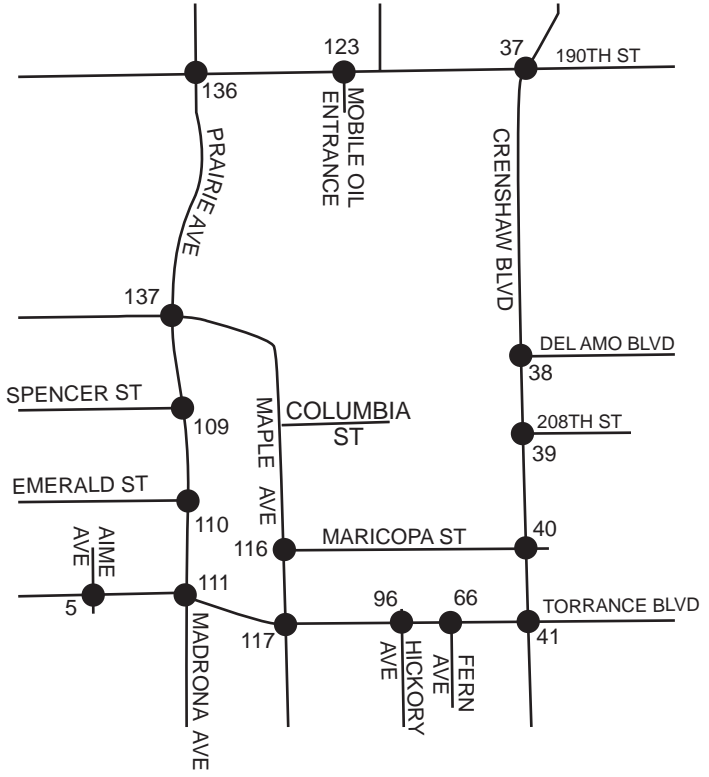
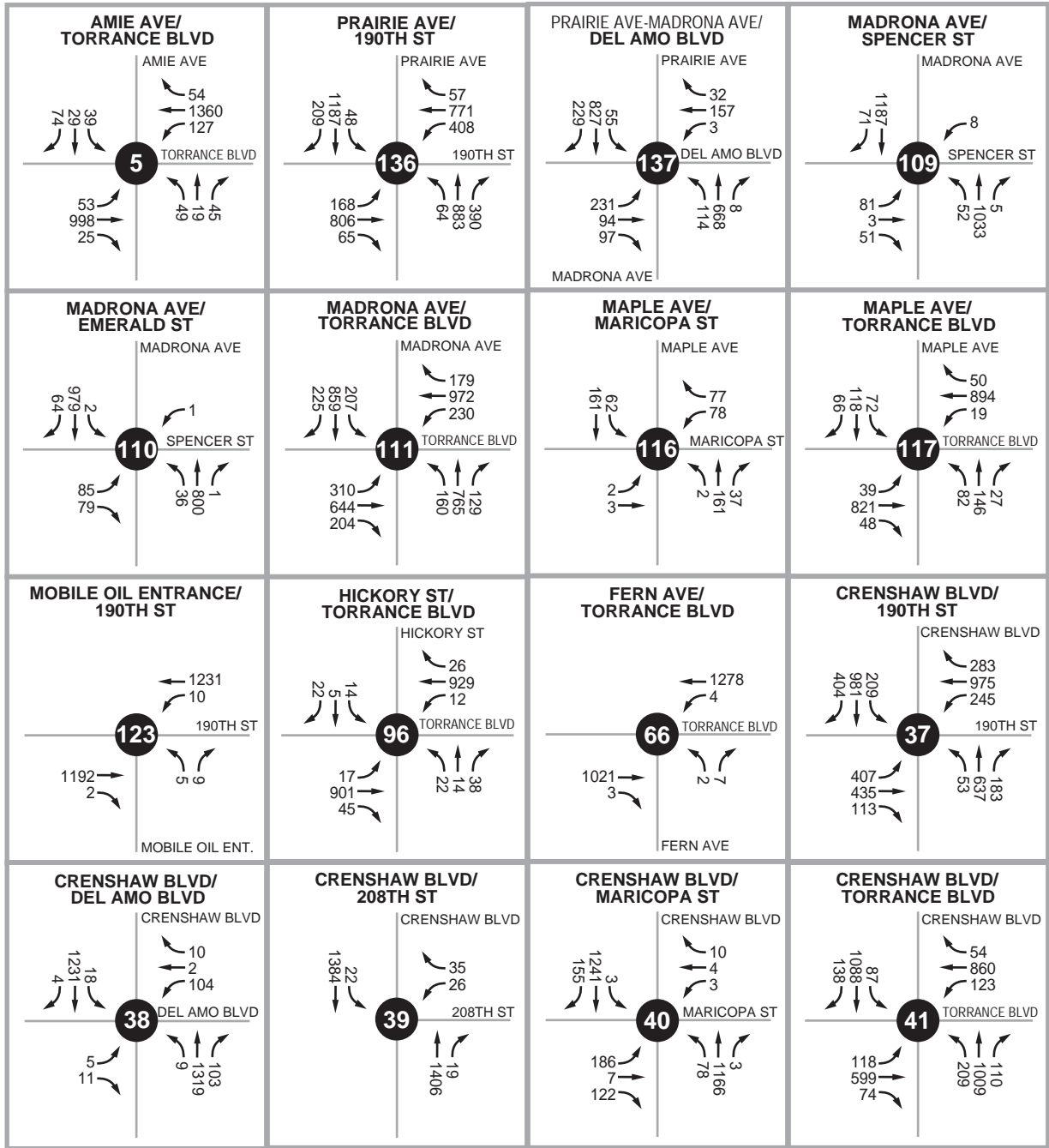


Not to Scale

Legend:
XX Mid-Day Peak Hour Volumes

Area 4 - Existing Weekday Mid-Day Peak Hour Intersection Volumes



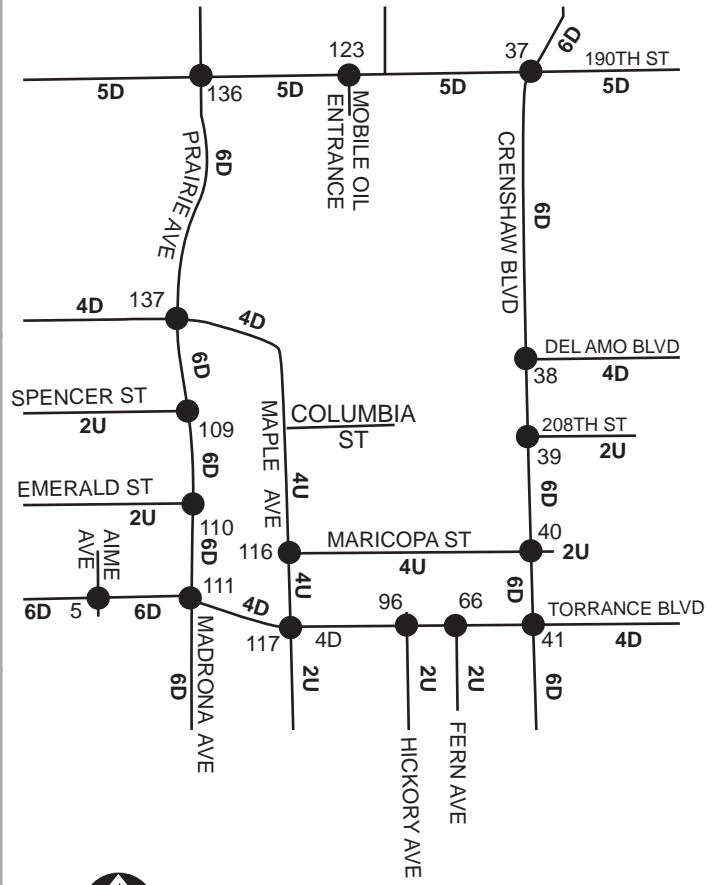
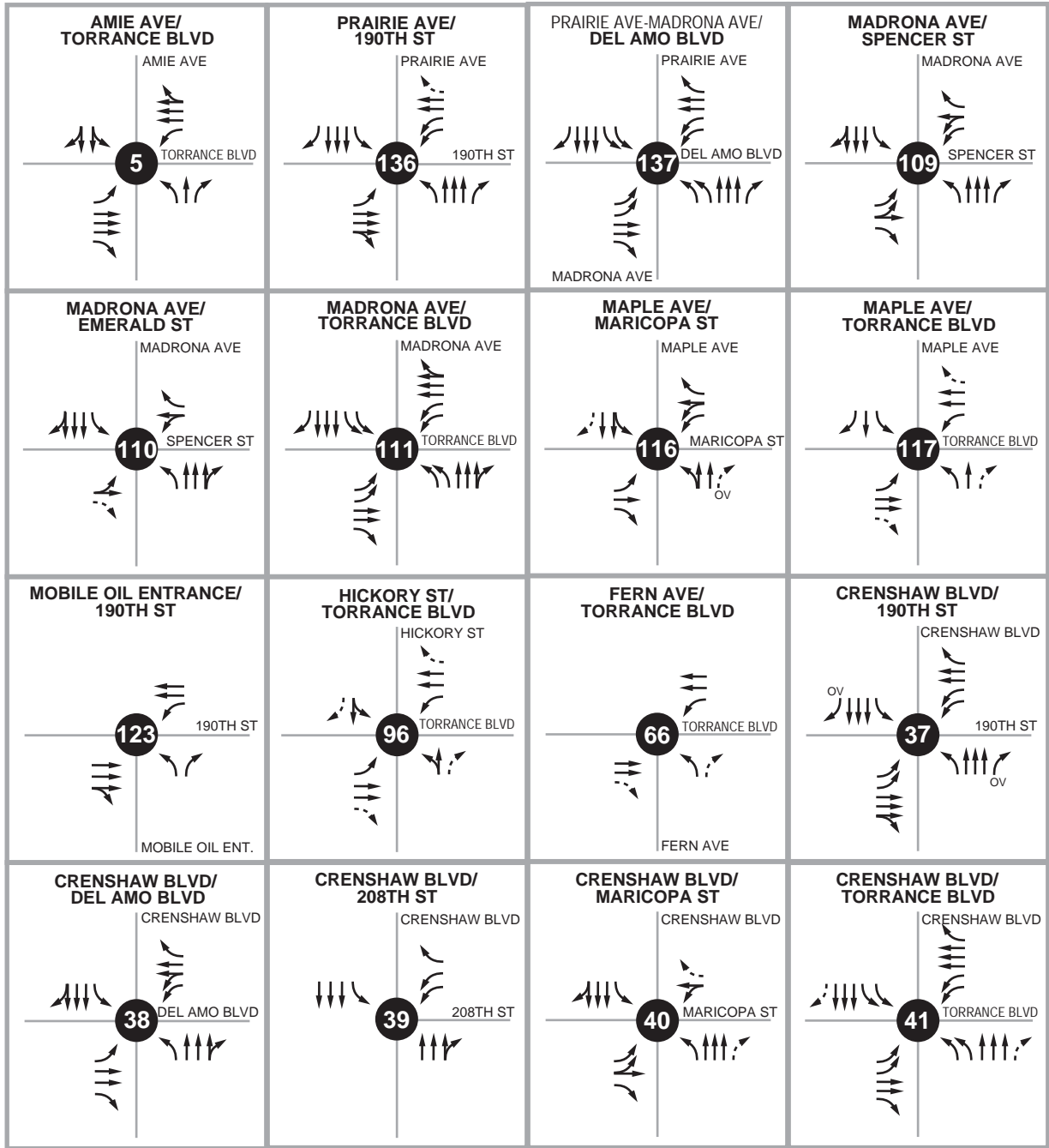


Not to Scale

Legend:
XX Mid-Day Peak Hour Volumes

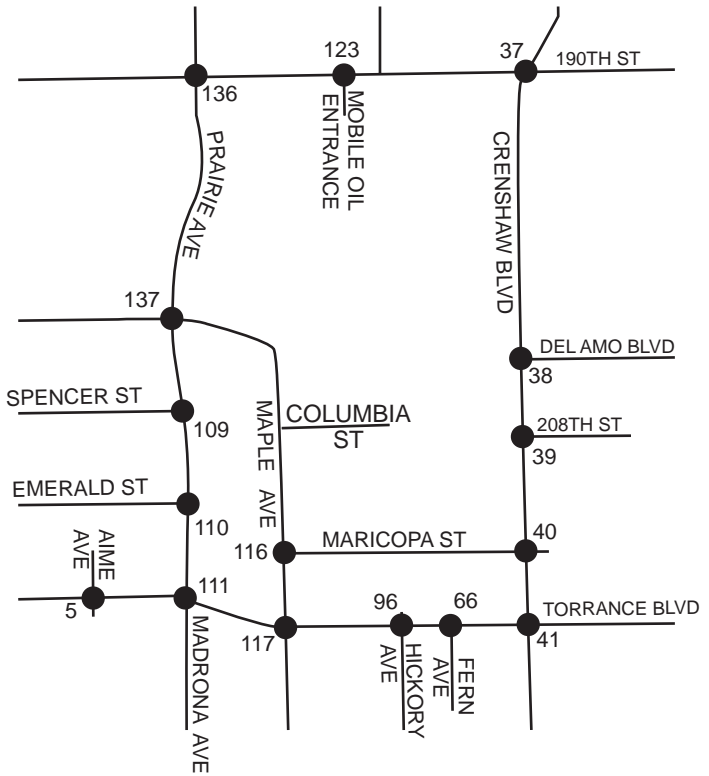
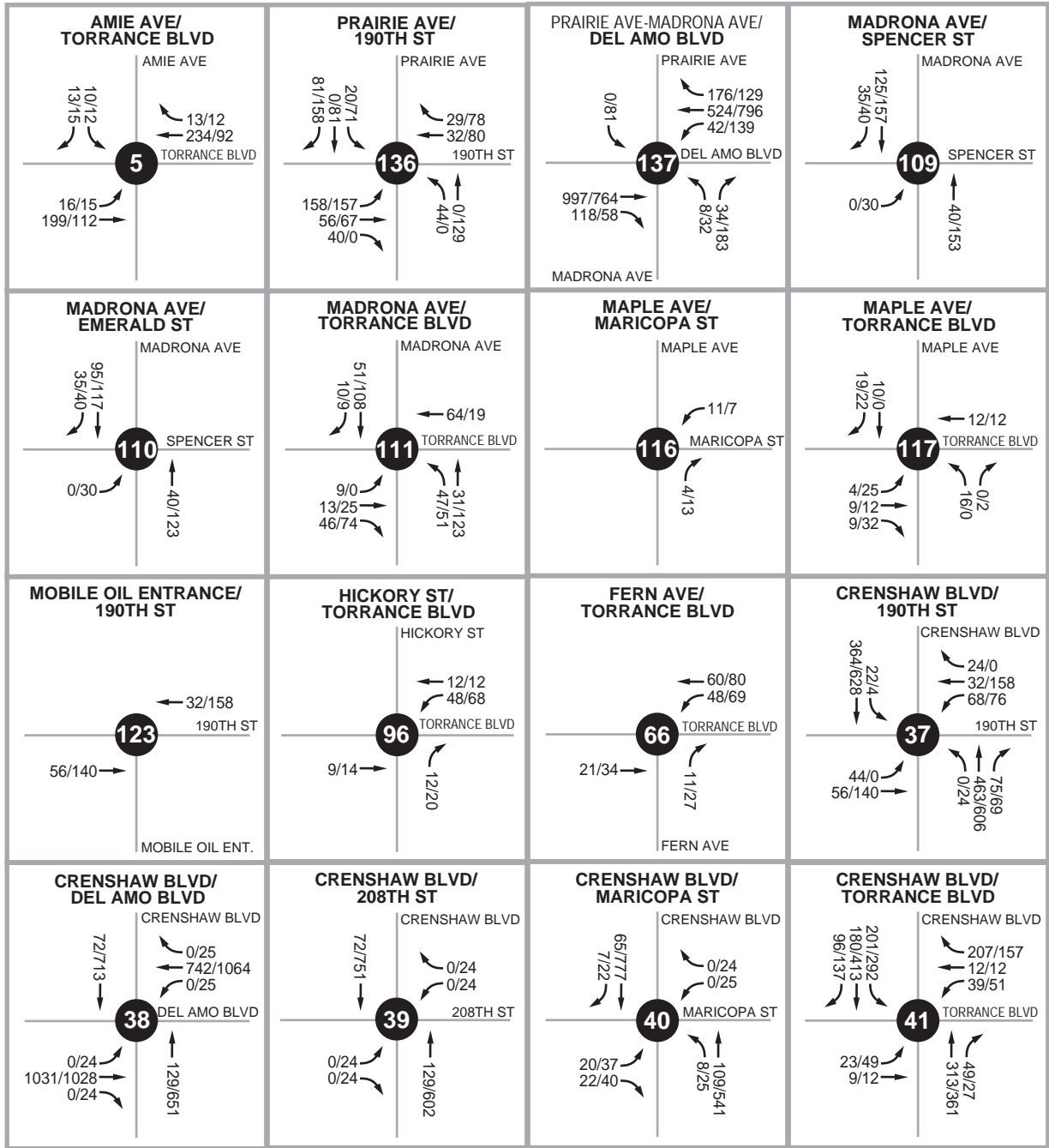
Area 4 - Existing Weekend Mid-Day Peak Hour Intersection Volumes





Not to Scale

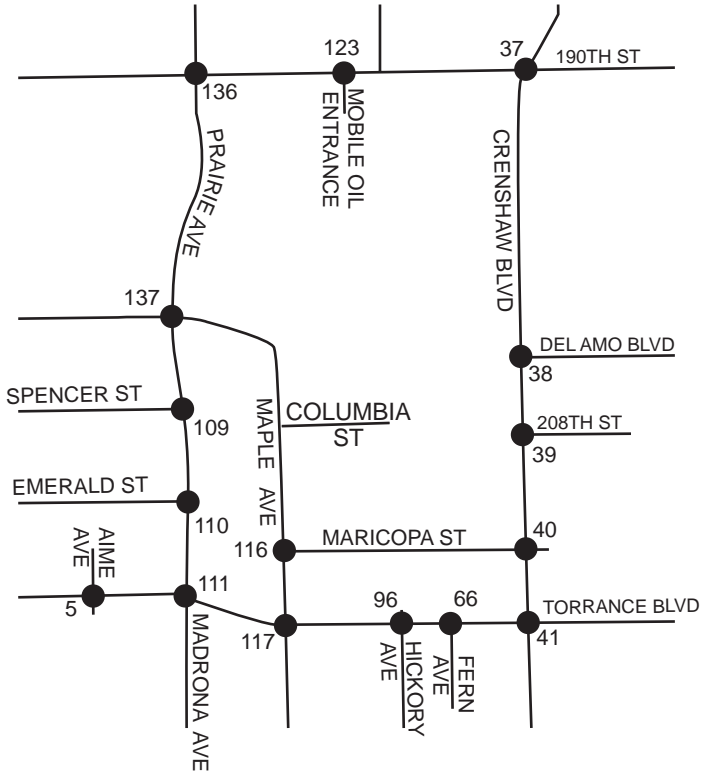
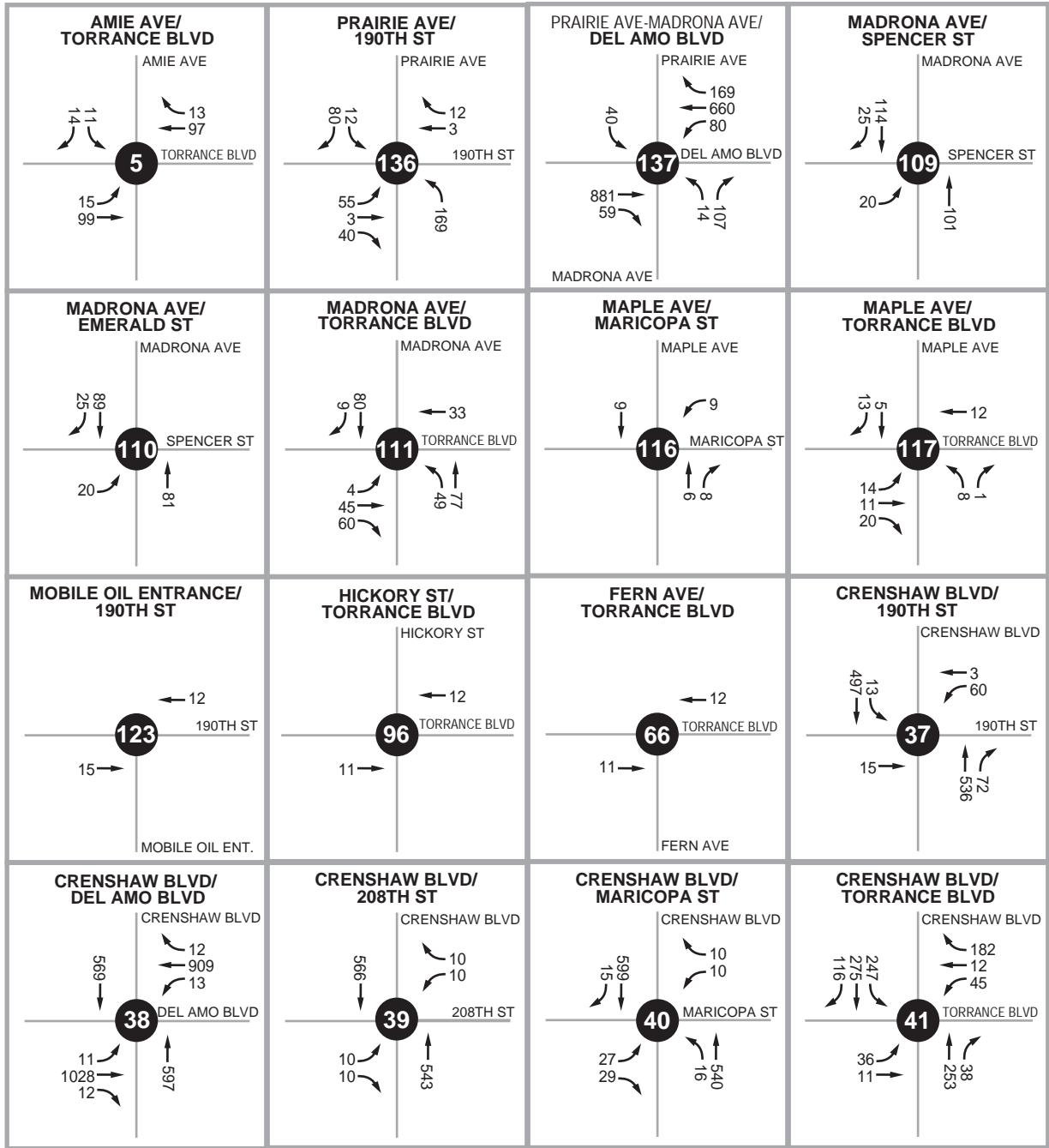
- Legend:
- Existing Lane
 - Free Right-Turn Lane
 - Defacto Right-Turn Lane
 - Overlap Right-Turn Lane
 - 2U 2-lane Undivided roadway
 - 4D 4-lane Divided roadway
 - 5D 5-lane Divided roadway (3 east, 2 west)
 - 6D 6-lane Divided roadway



Not to Scale

Legend:

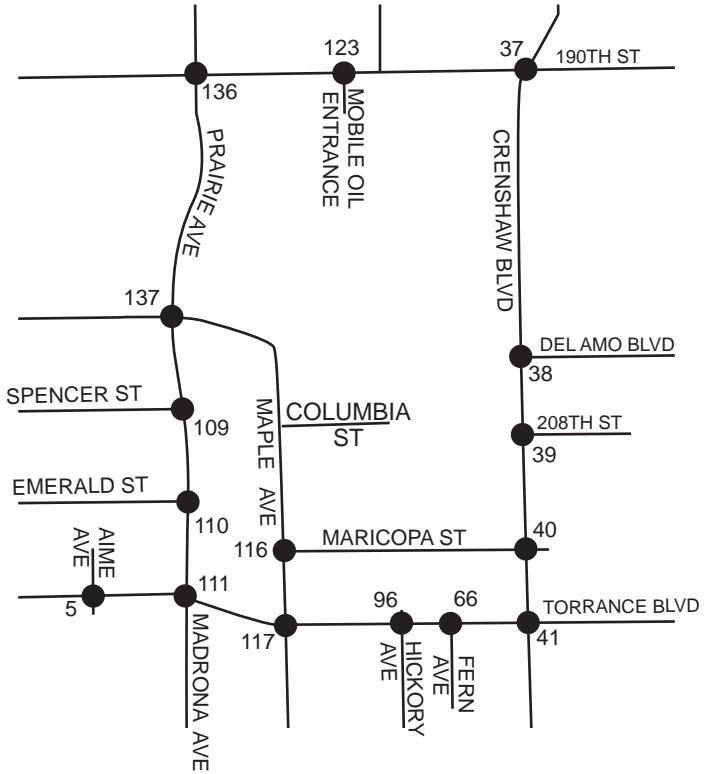
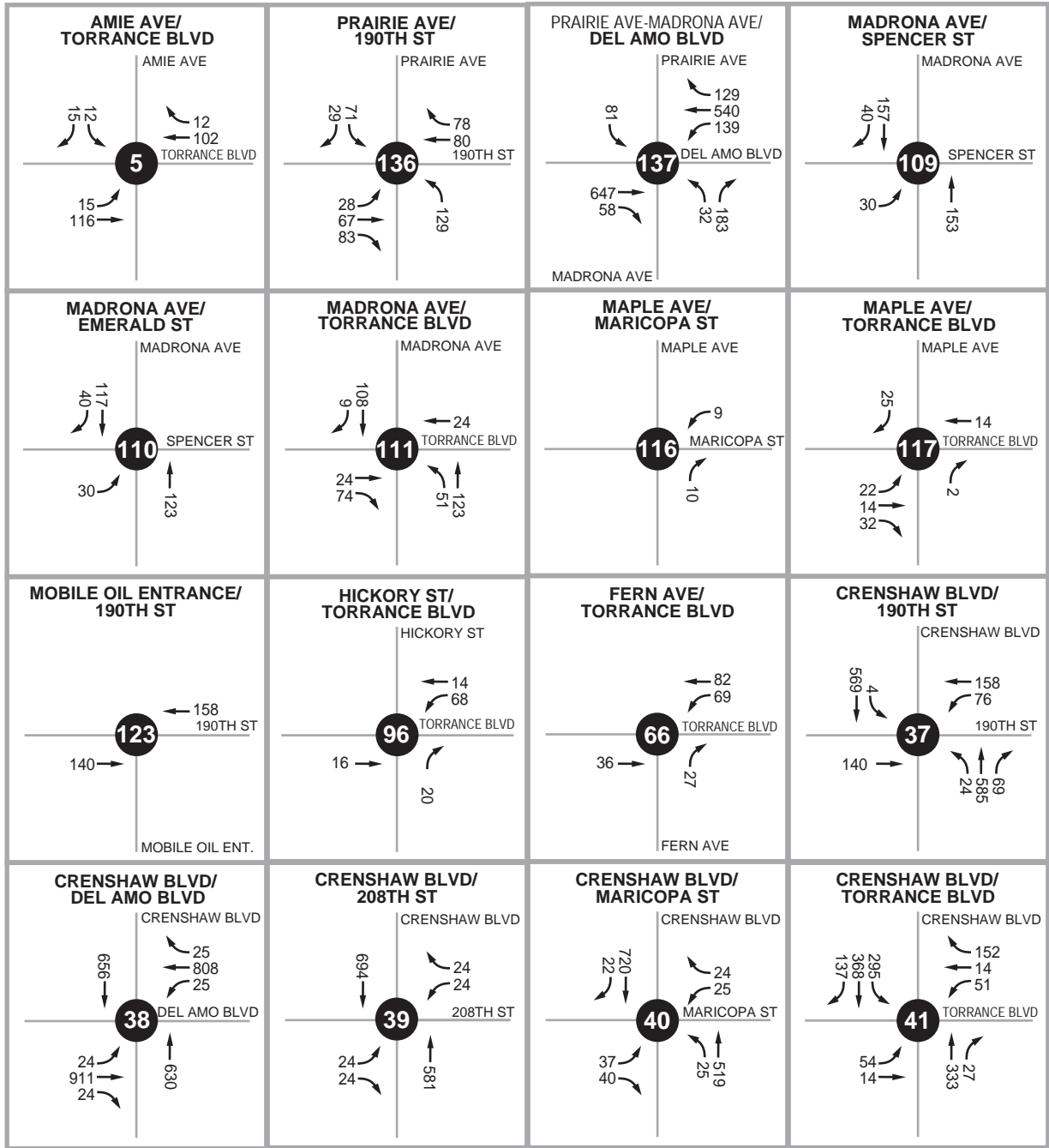
XX/XX AM/PM Peak Hour Volumes



Not to Scale

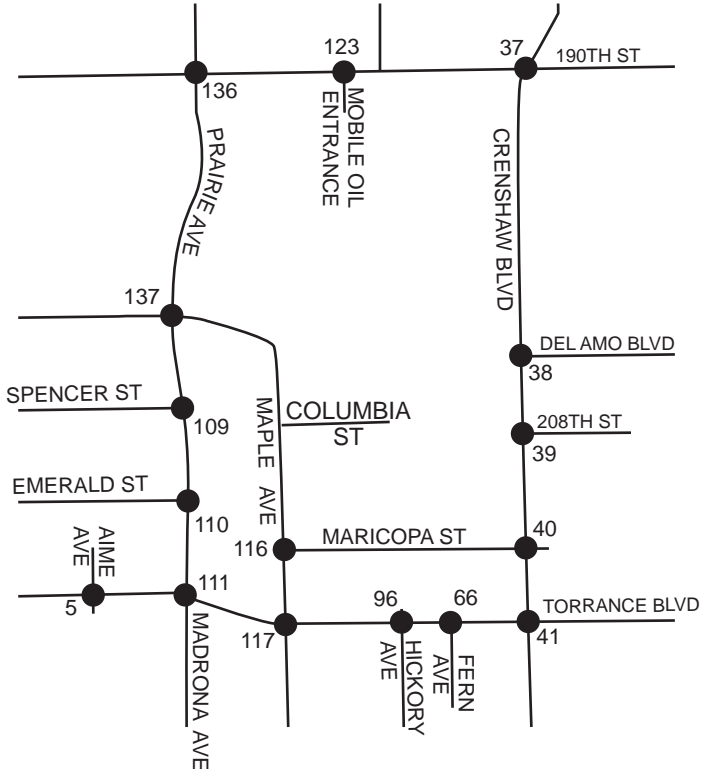
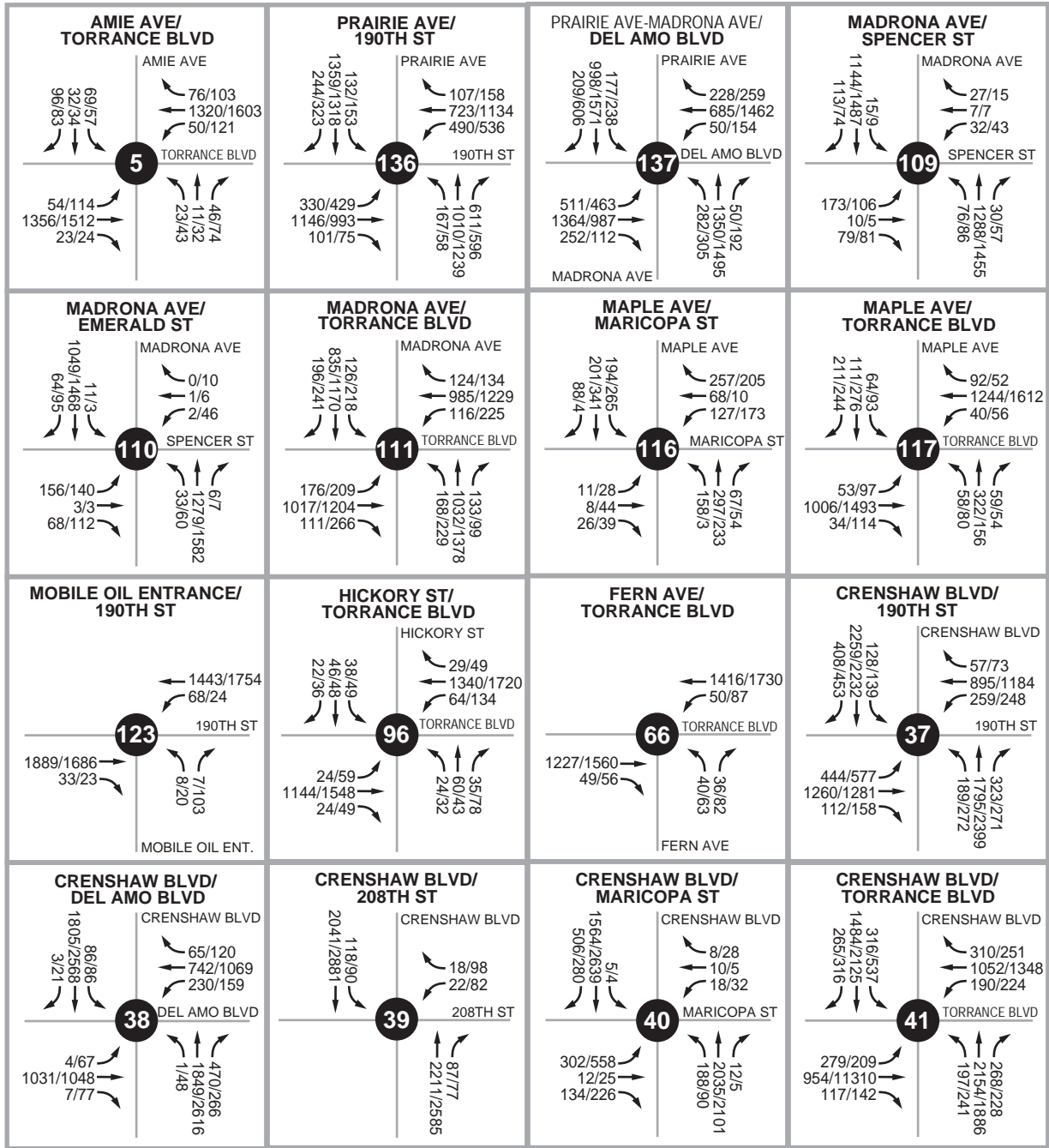
Legend:

XX Mid-Day Peak Hour Volumes



Not to Scale

Legend:
 XX Mid-Day Peak Hour Volumes

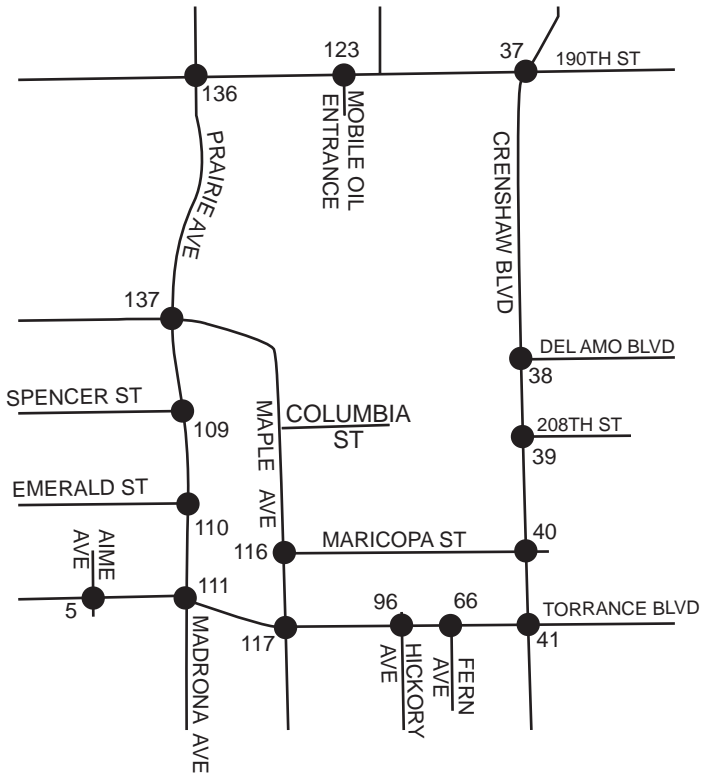
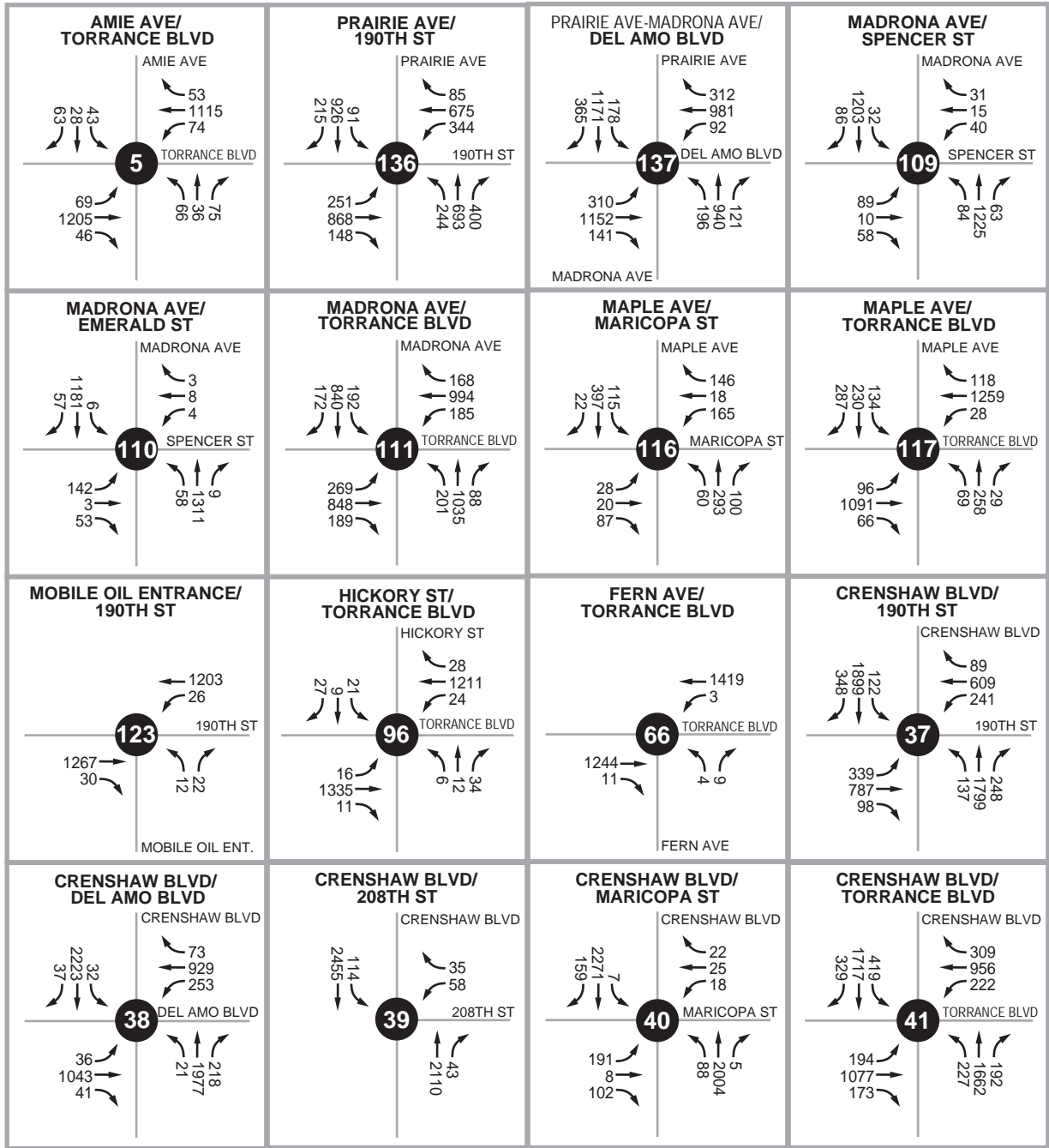


Not to Scale

Legend:
XX/XX AM/PM Peak Hour Volumes



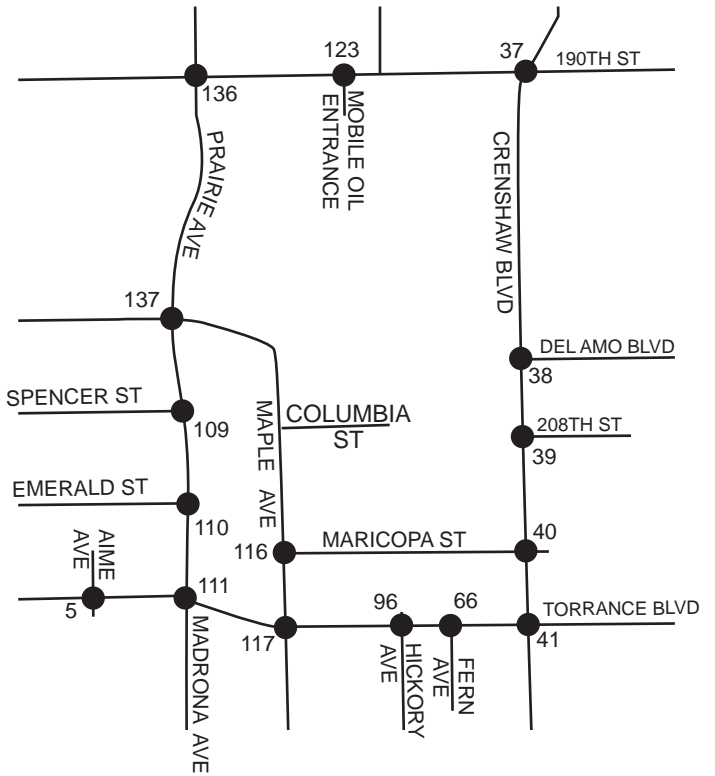
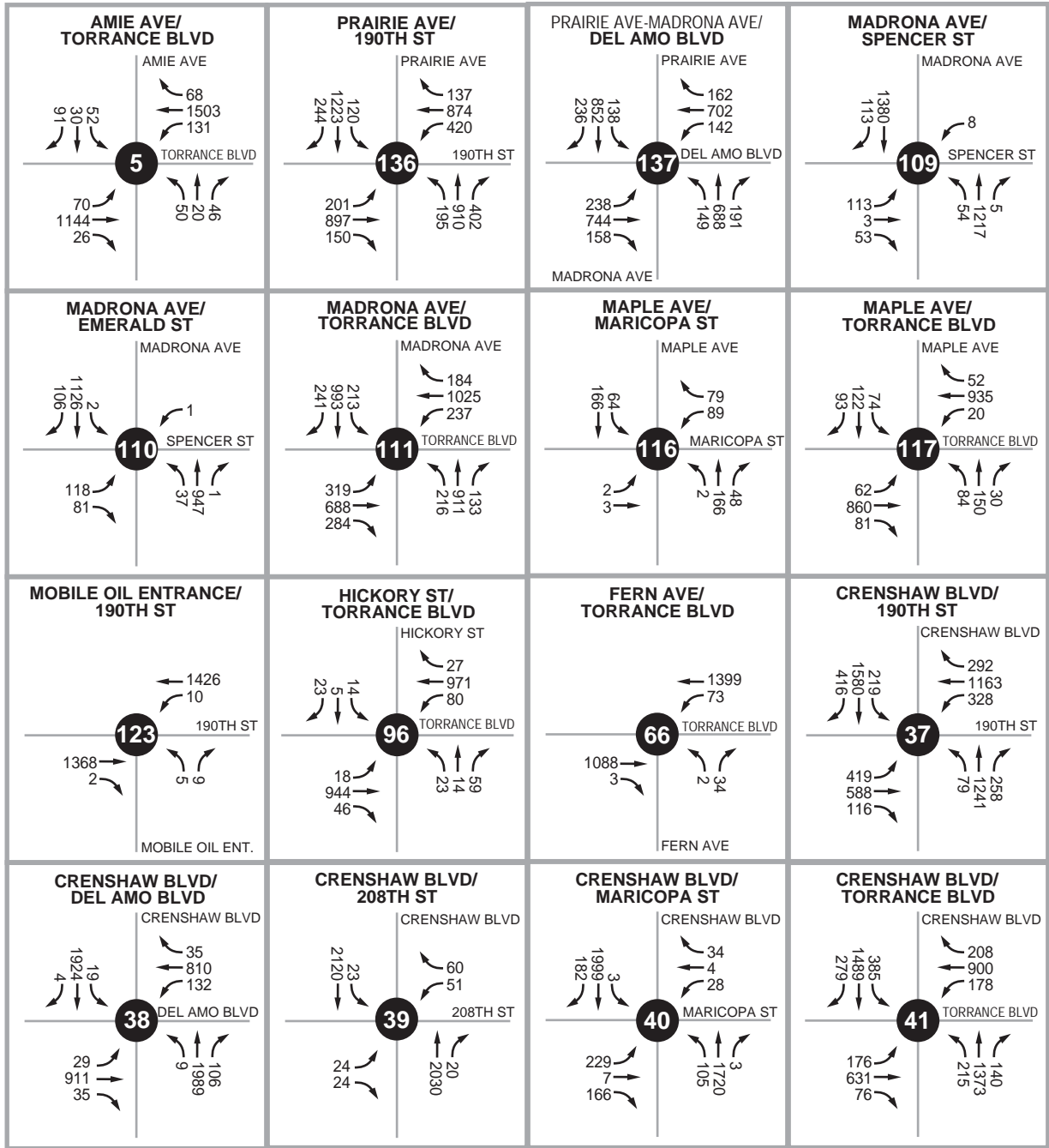
Area 4 - Forecast Near-Term Conditions Weekday AM/PM Peak Hour Intersection Volumes



Not to Scale

Legend:
XX Mid-Day Peak Hour Volumes

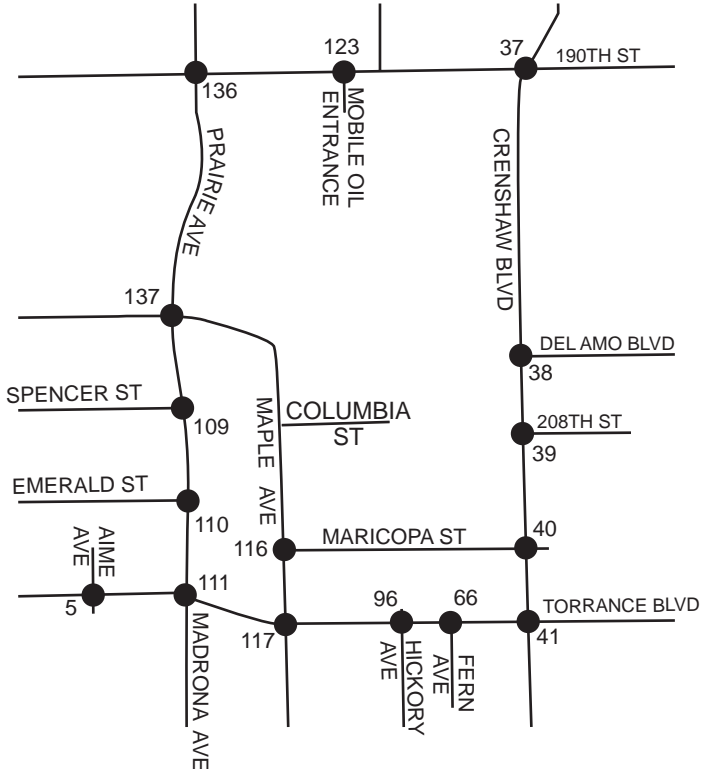
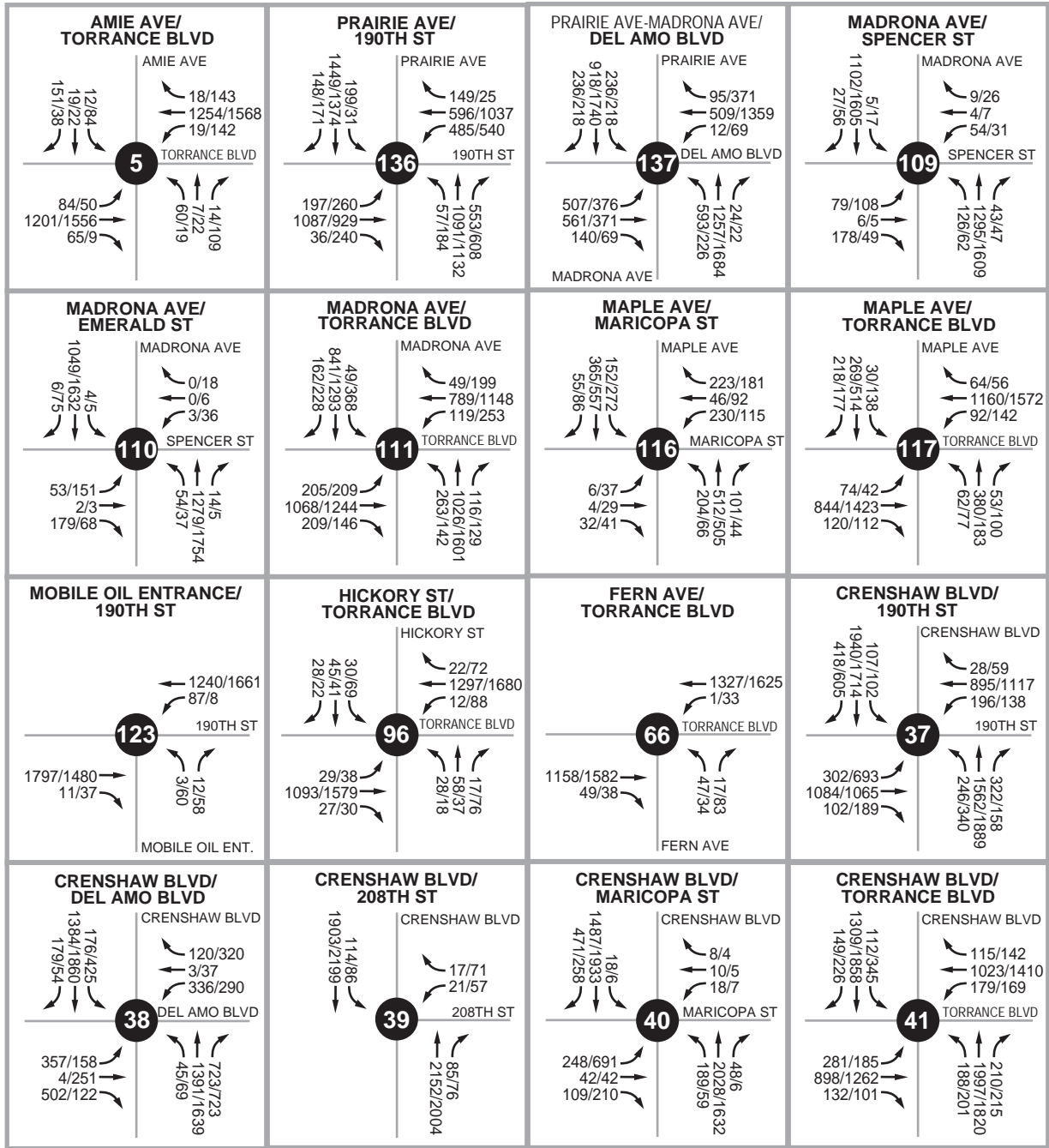
Area 4 - Forecast Near-Term Conditions Weekday Mid-Day Peak Hour Intersection Volumes



Not to Scale

Legend:

XX Mid-Day Peak Hour Volumes

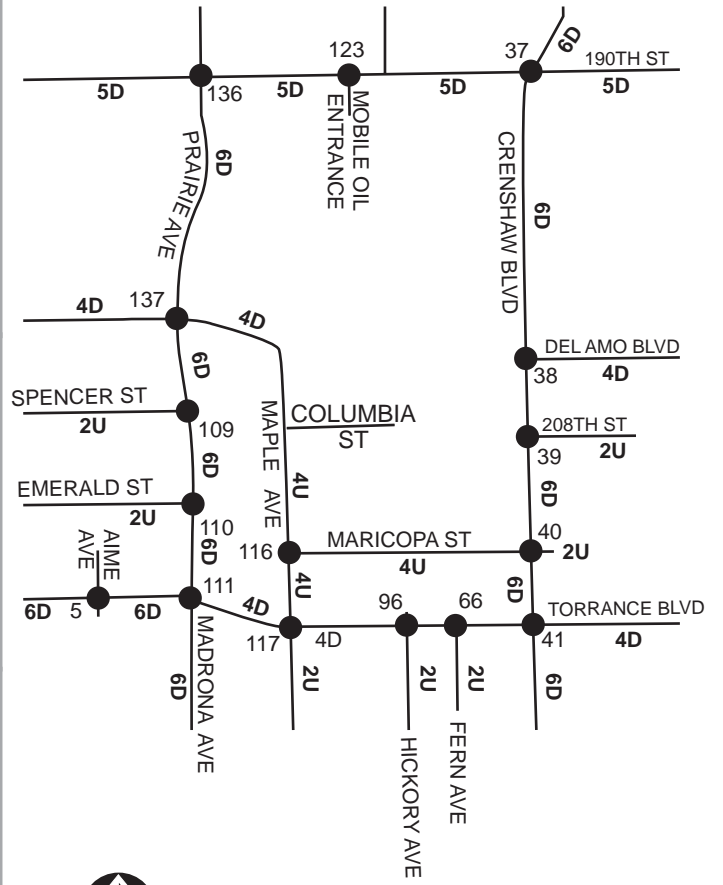
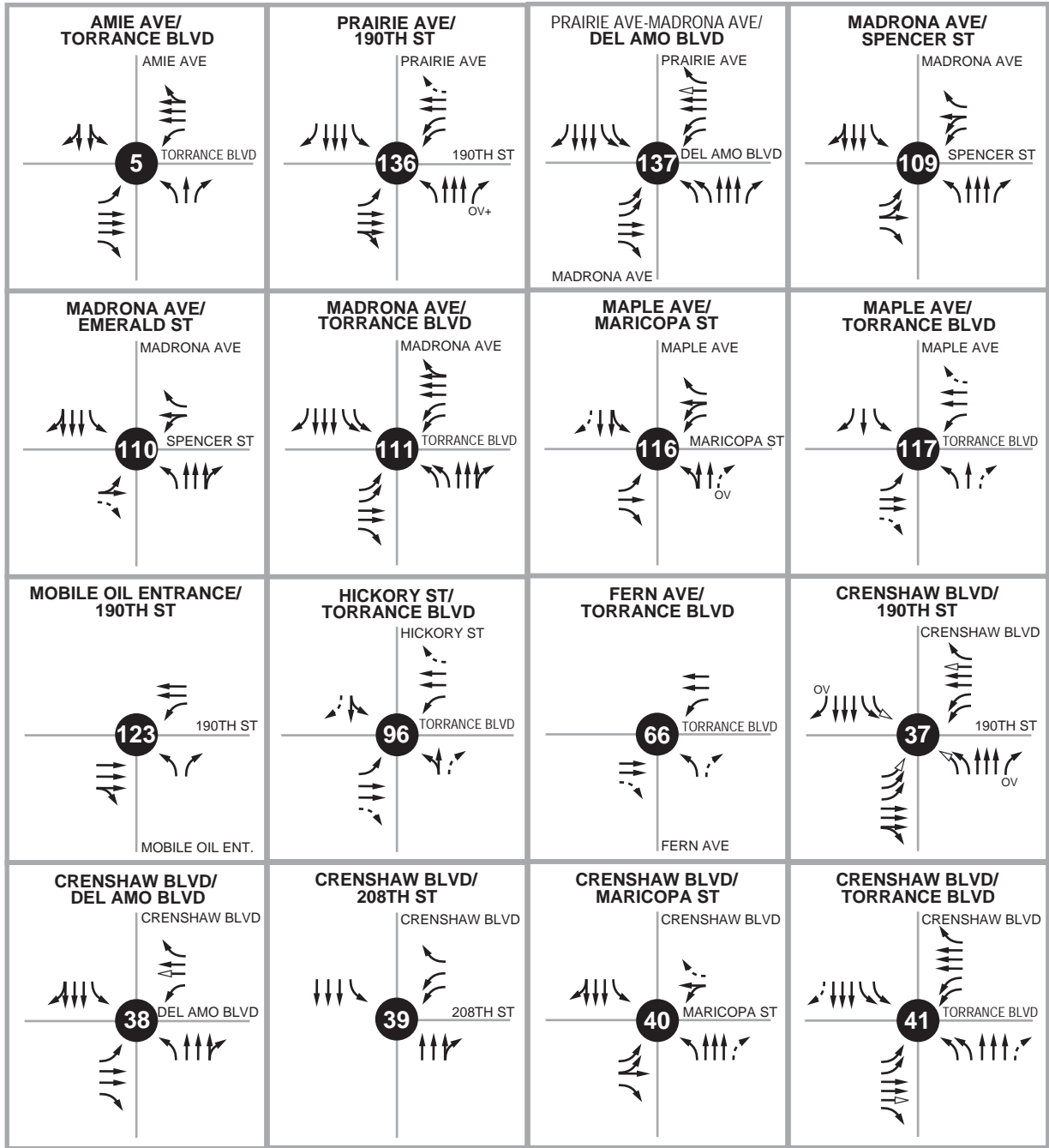



 Not to Scale

Legend:
 XX/XX AM/PM Peak Hour Volumes



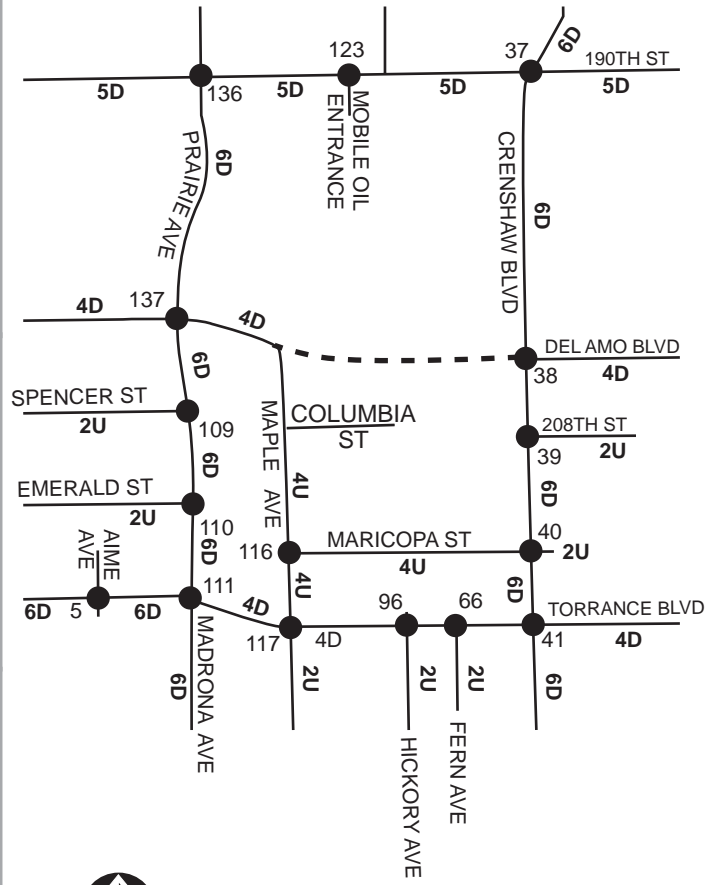
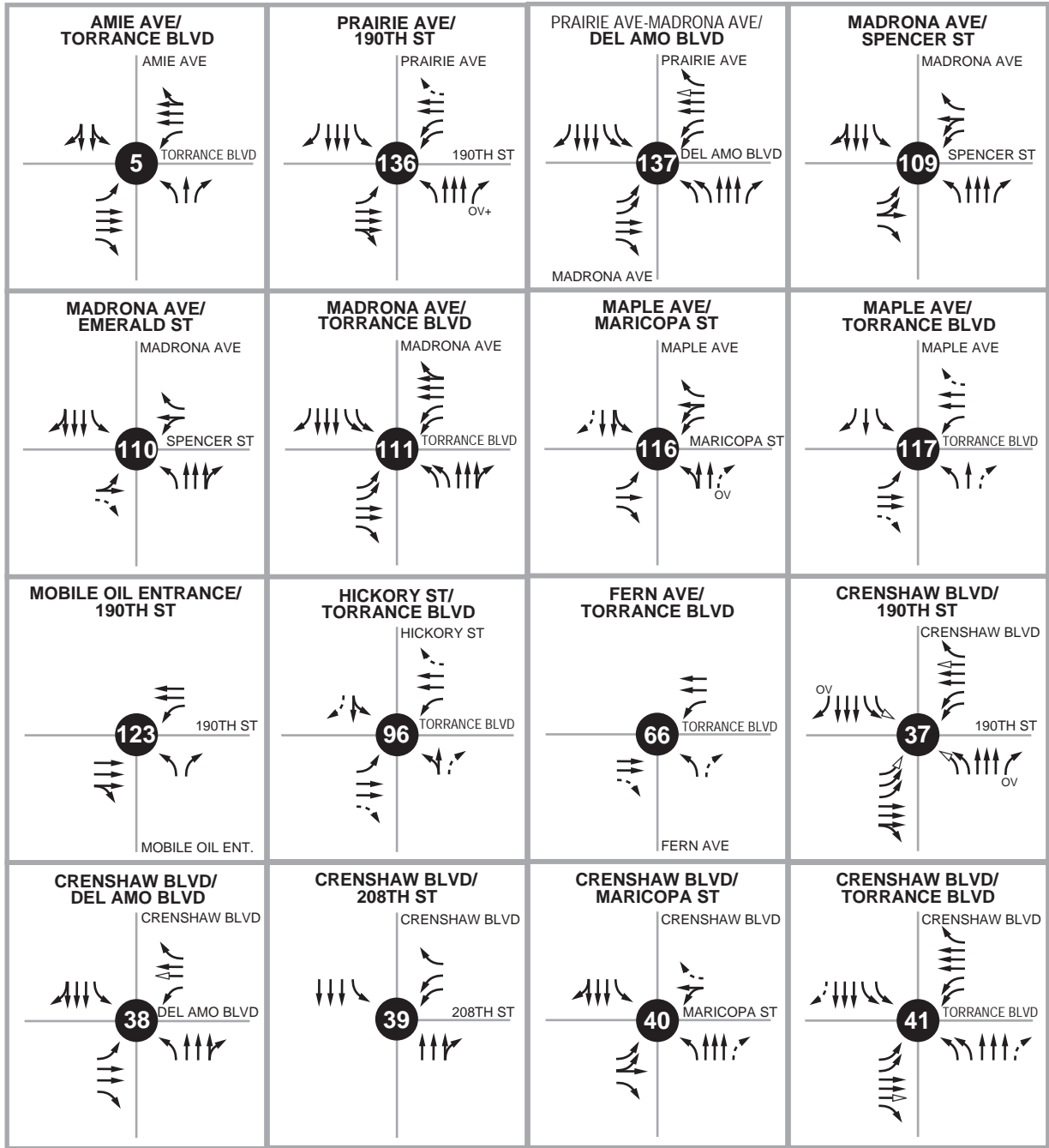
Area 4 - Forecast Long-Range Future Conditions Weekday AM/PM Peak Hour Intersection Volumes



Not to Scale

Legend:

- | | | | |
|--|-------------------------|----|---|
| | Existing Lane | 2U | 2-lane Undivided roadway |
| | Modified Lane | 4D | 4-lane Divided roadway |
| | Free Right-Turn Lane | 5D | 5-lane Divided roadway (3 east, 2 west) |
| | Defacto Right-Turn Lane | 6D | 6-lane Divided roadway |
| | Overlap Right-Turn Lane | | |
| | Add Right-Turn Overlap | | |

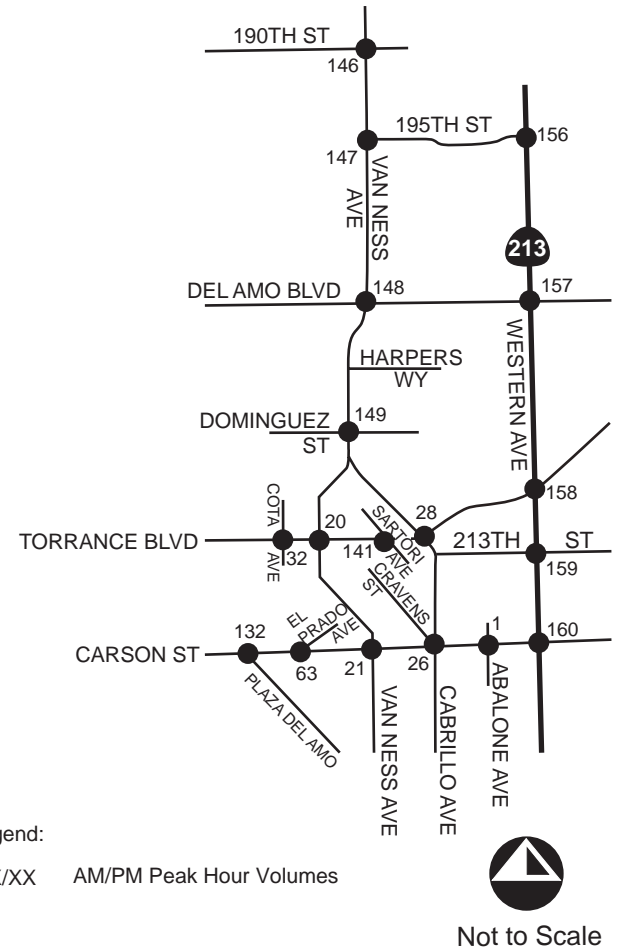
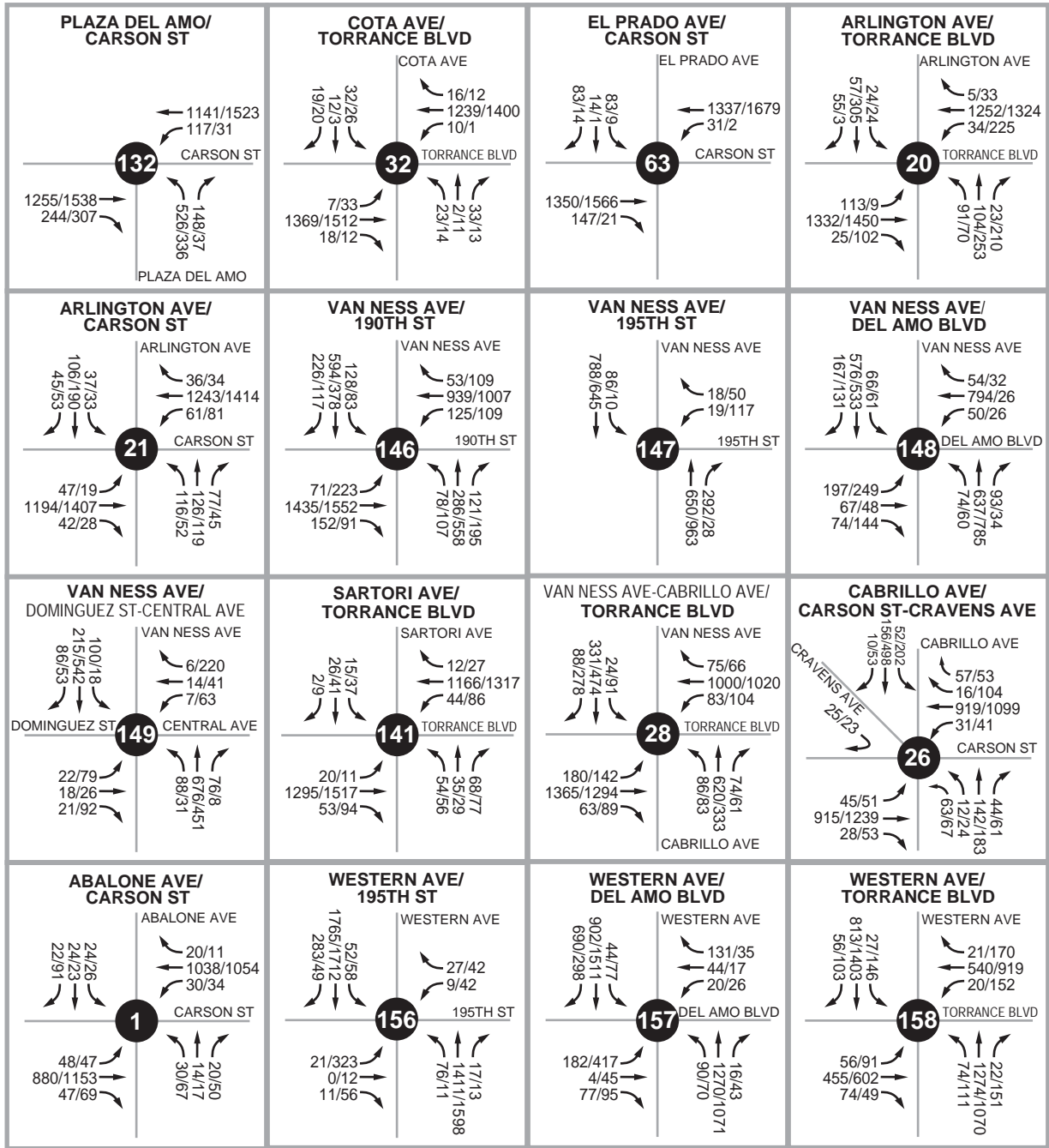


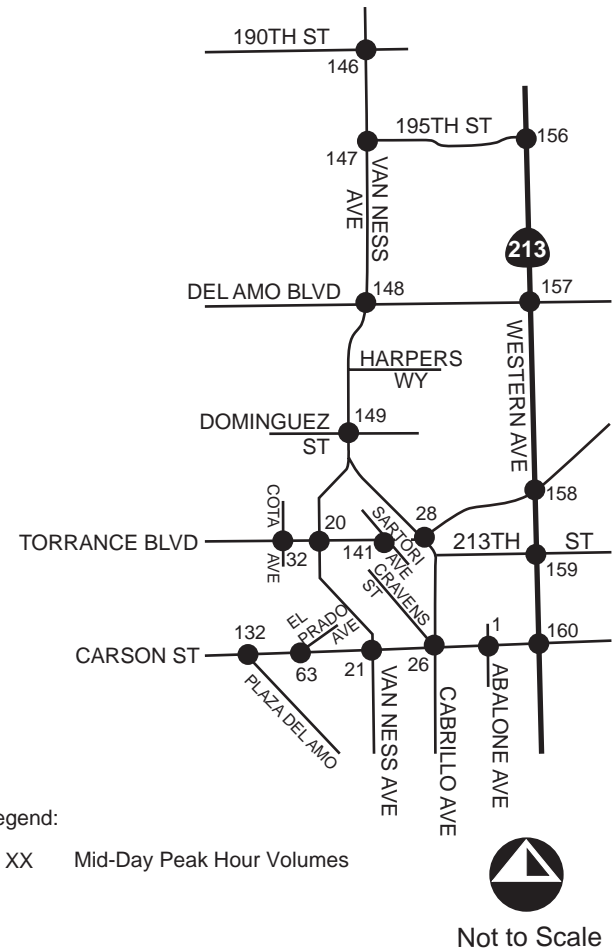
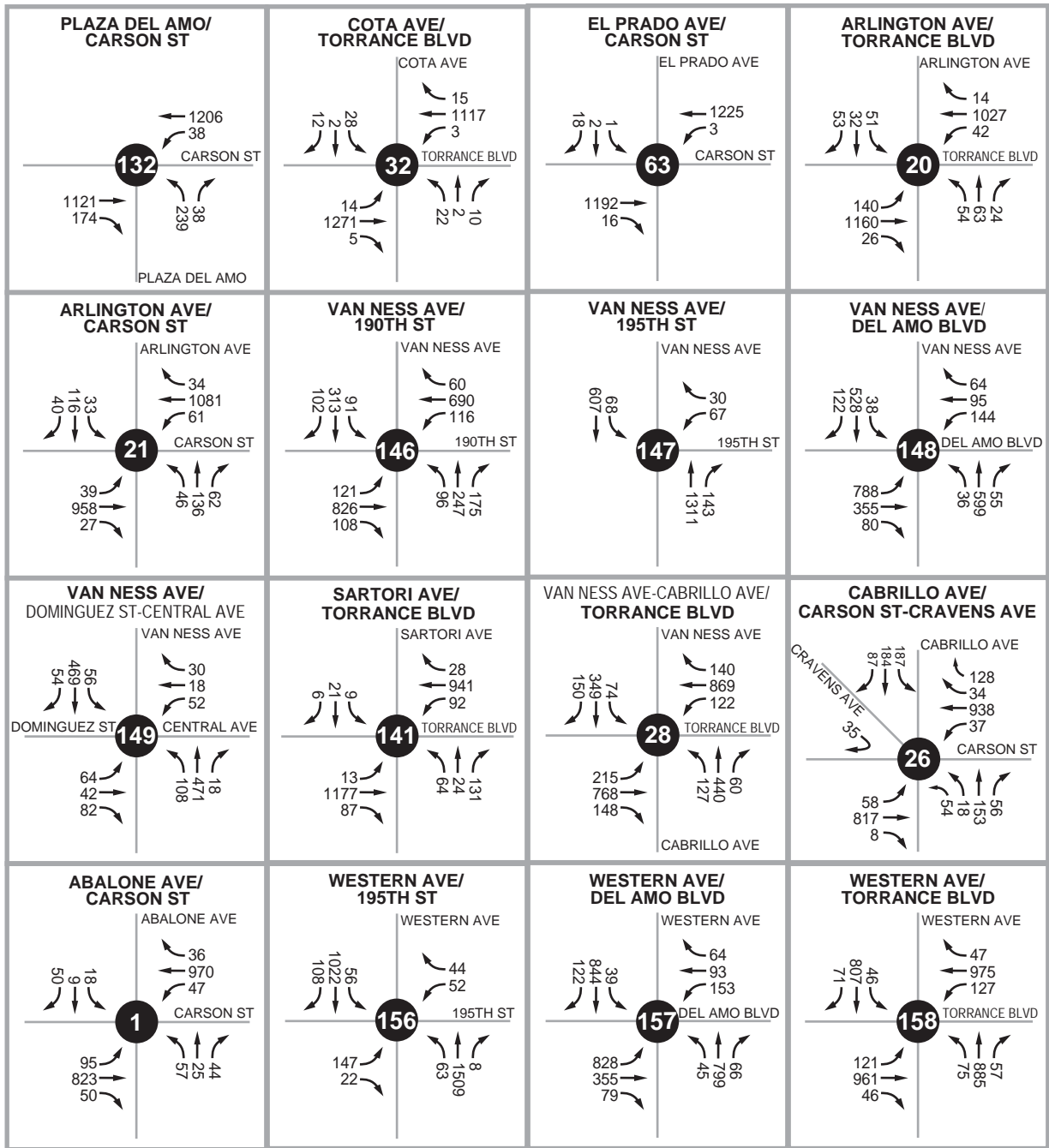
Not to Scale

Legend:

- Existing Lane
- Modified Lane
- Free Right-Turn Lane
- Defacto Right-Turn Lane
- Overlap Right-Turn Lane
- Add Right-Turn Overlap
- Proposed Future Roadway
- 2U 2-lane Undivided roadway
- 4D 4-lane Divided roadway
- 5D 5-lane Divided roadway (3 east, 2 west)
- 6D 6-lane Divided roadway

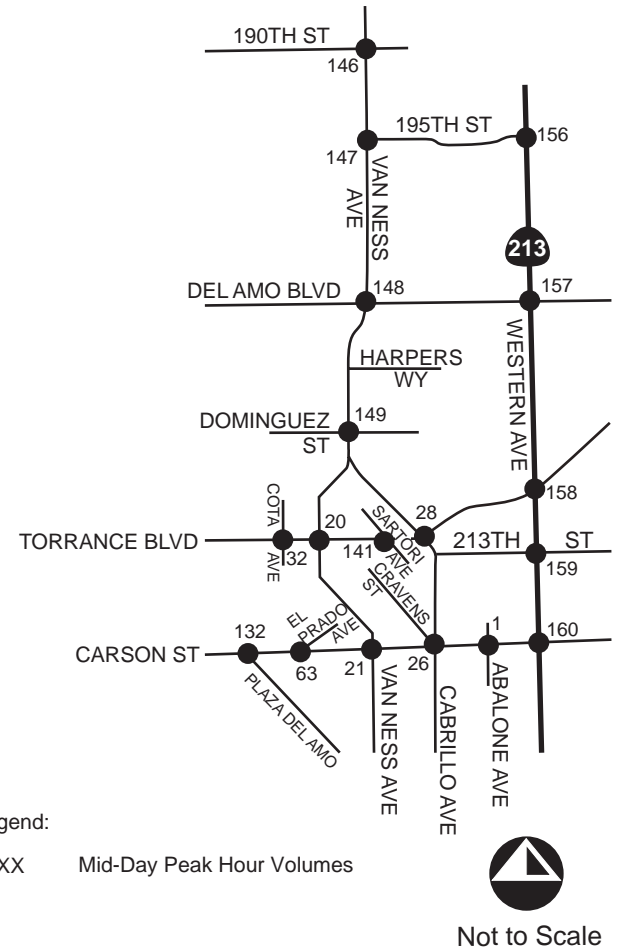
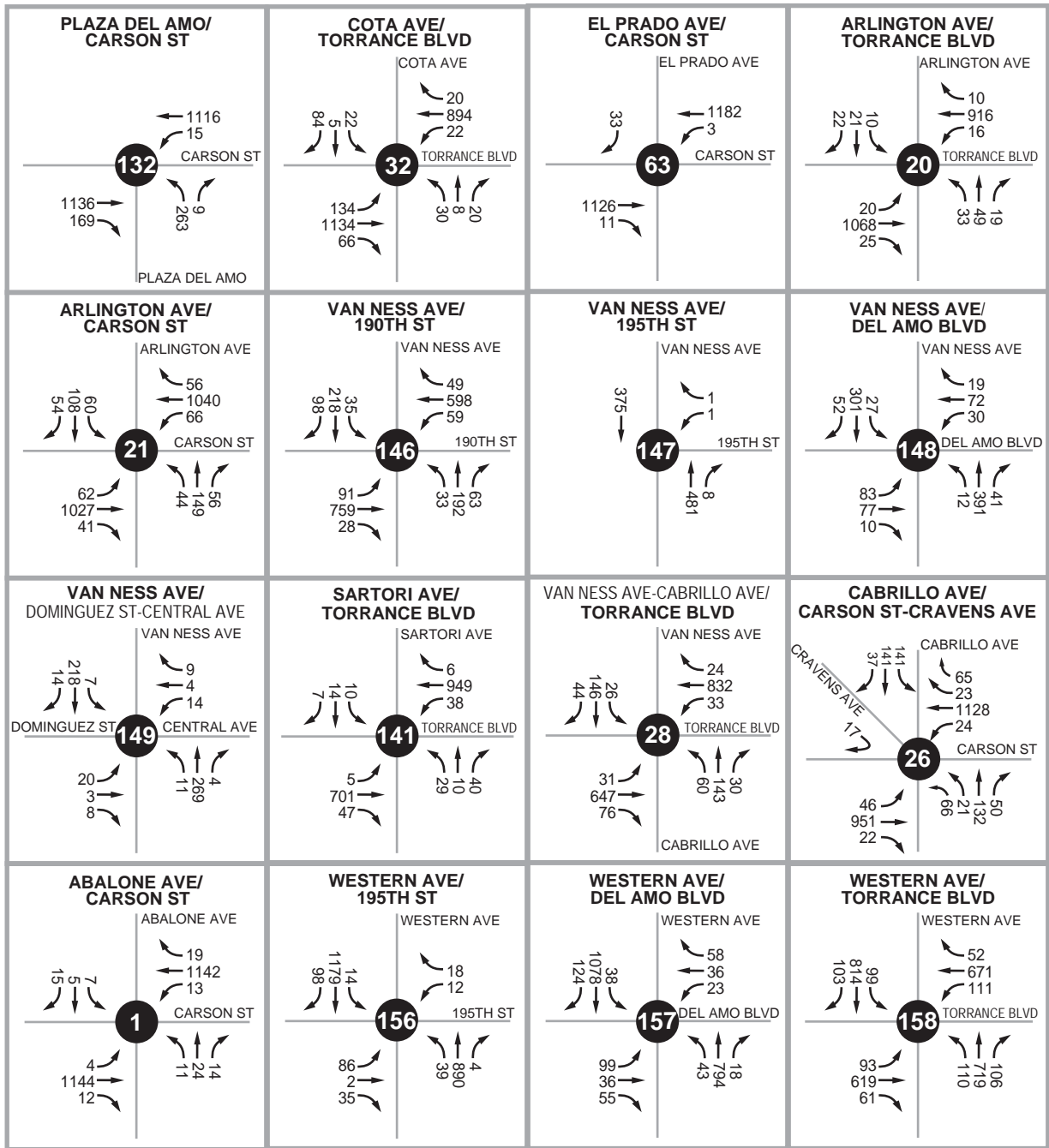
Study Area 5





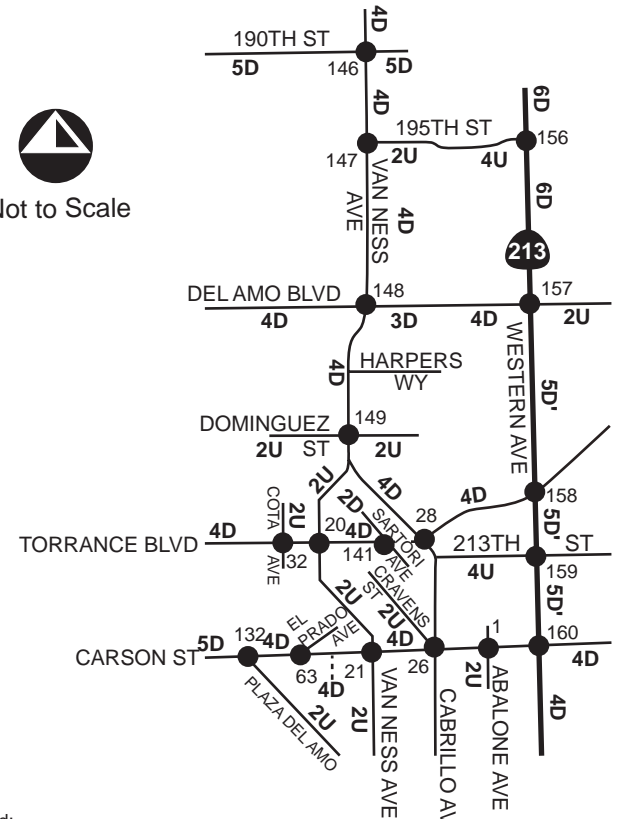
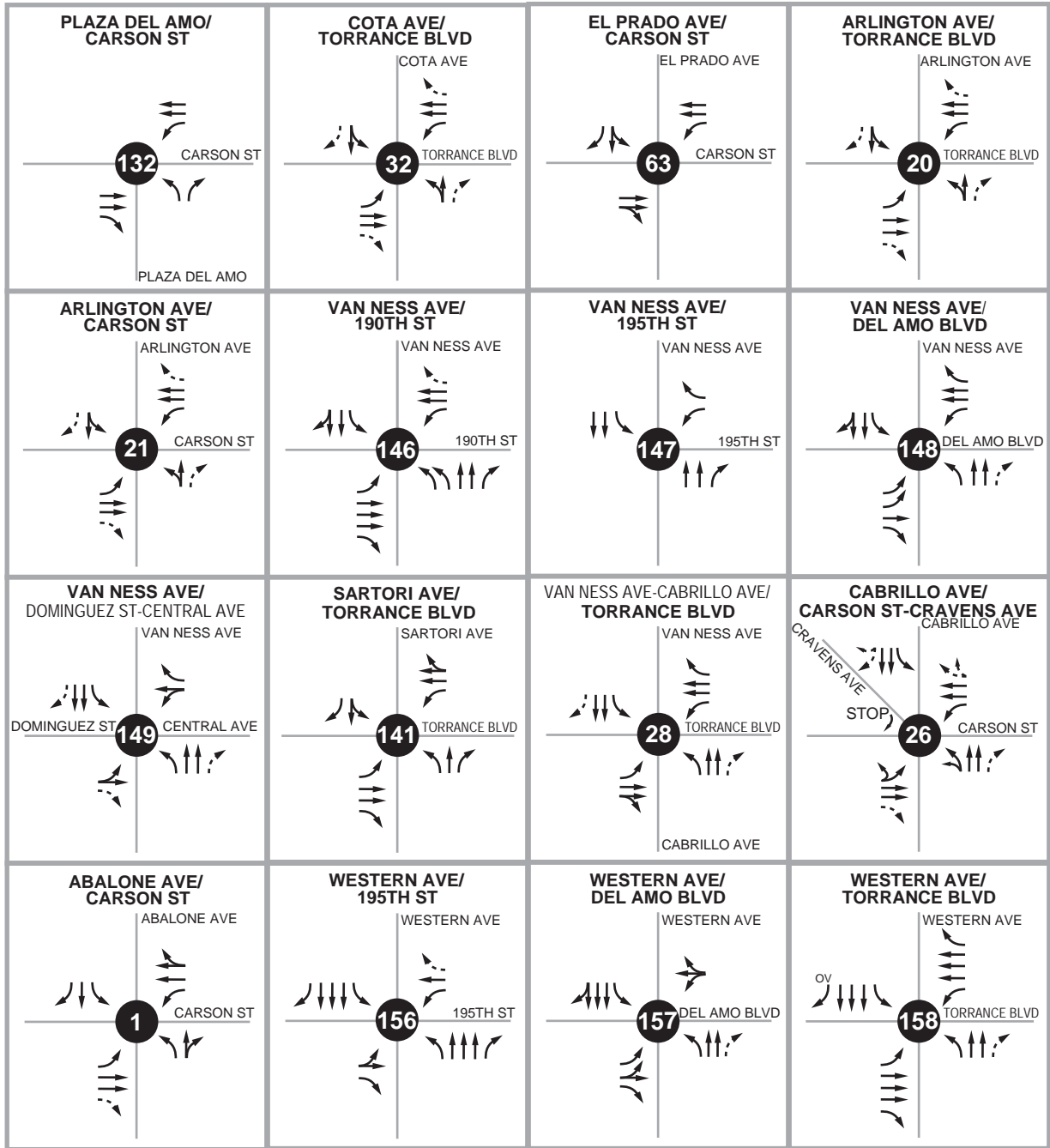
Area 5 - Existing Weekday Mid-Day Peak Hour Intersection Volumes





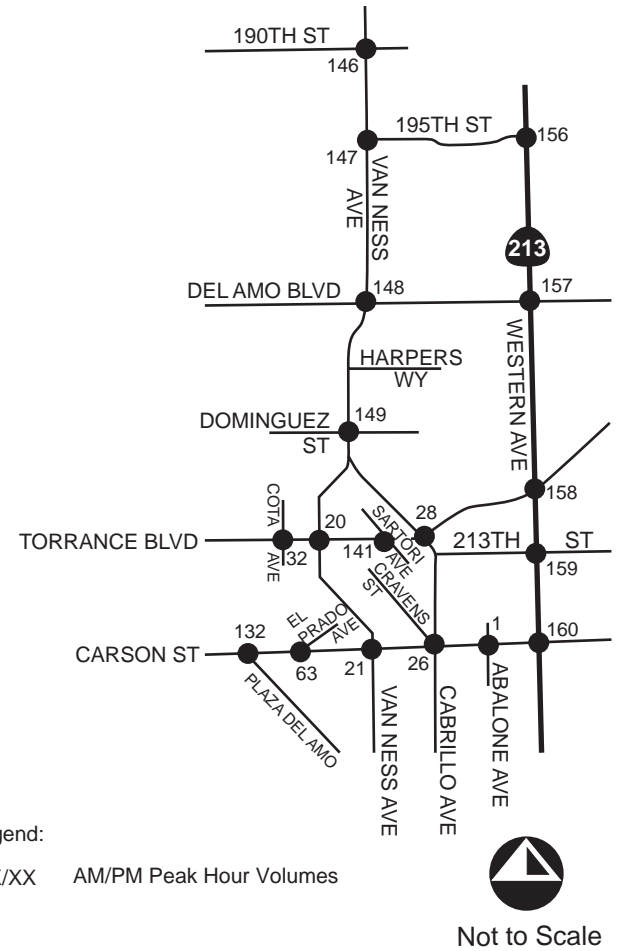
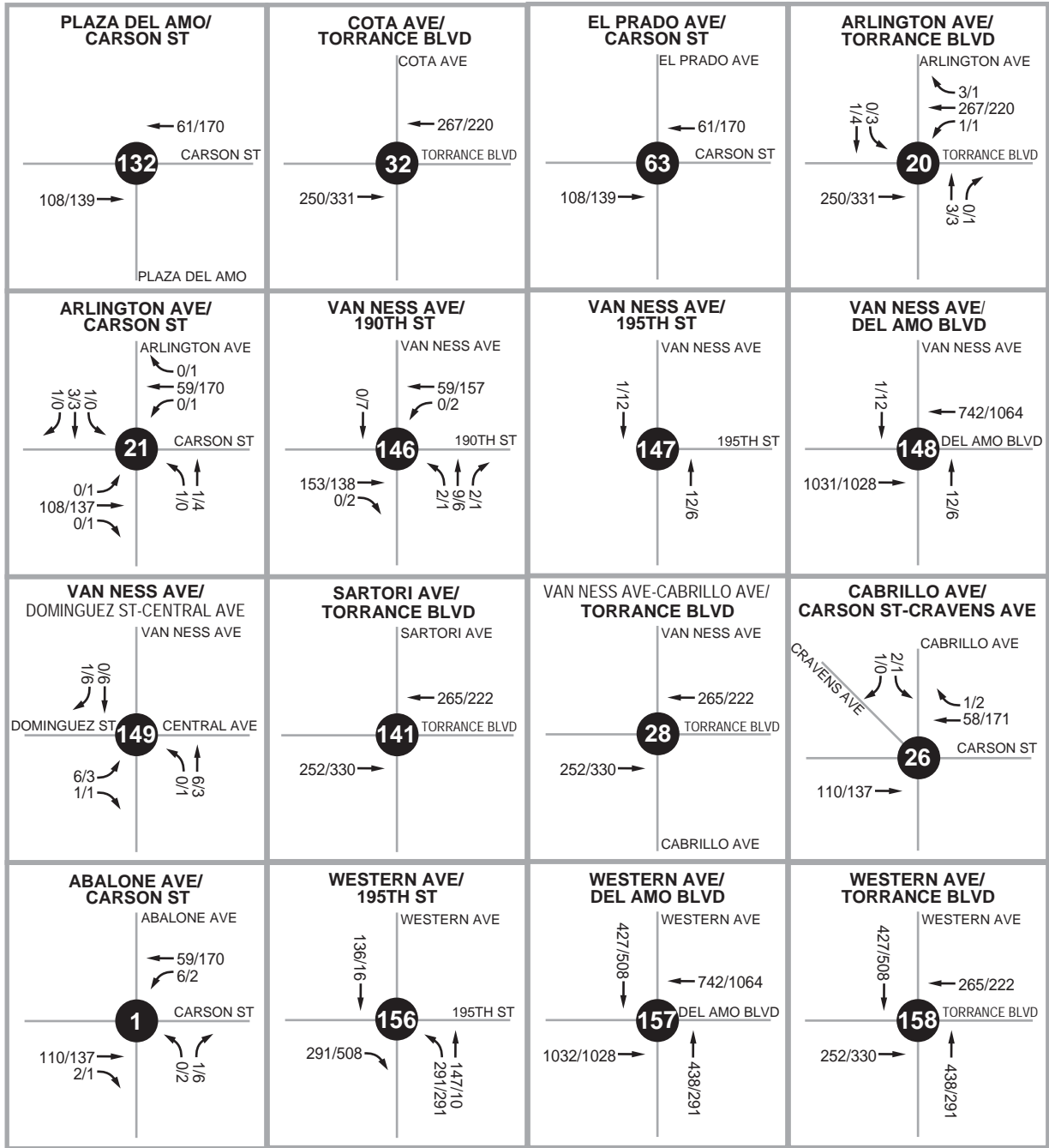
Area 5 - Existing Weekend Mid-Day Peak Hour Intersection Volumes

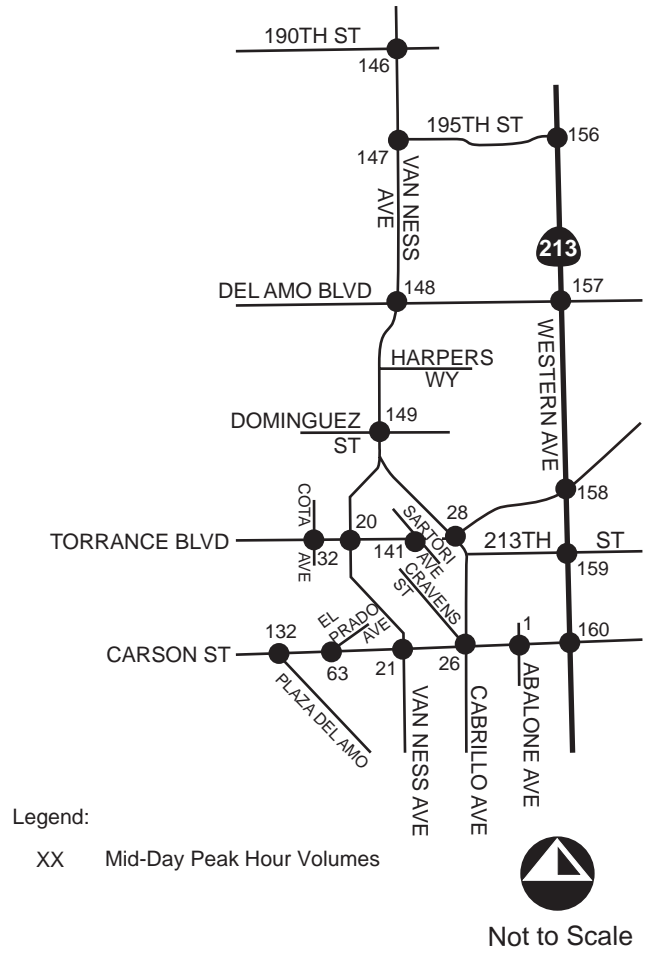
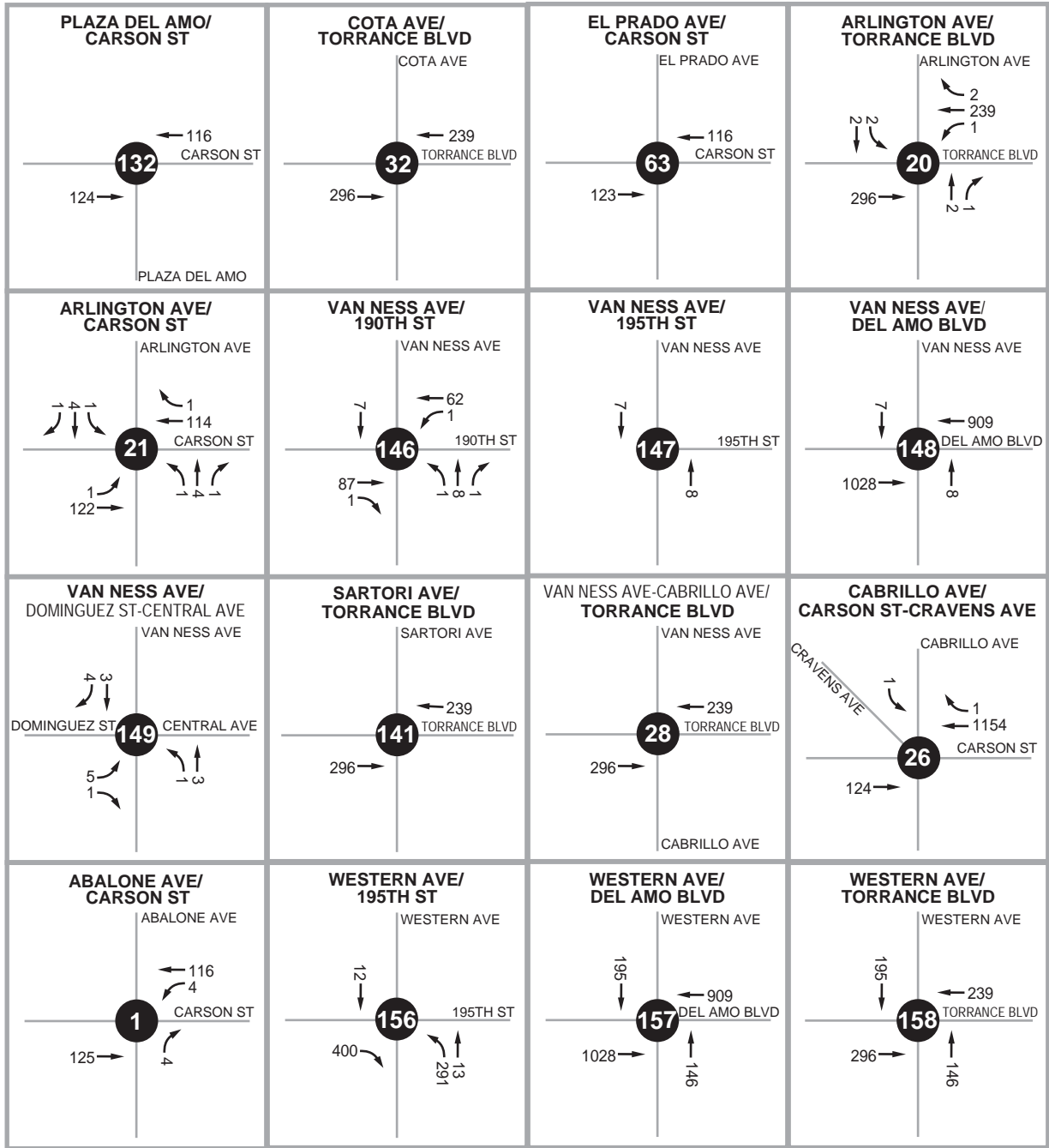


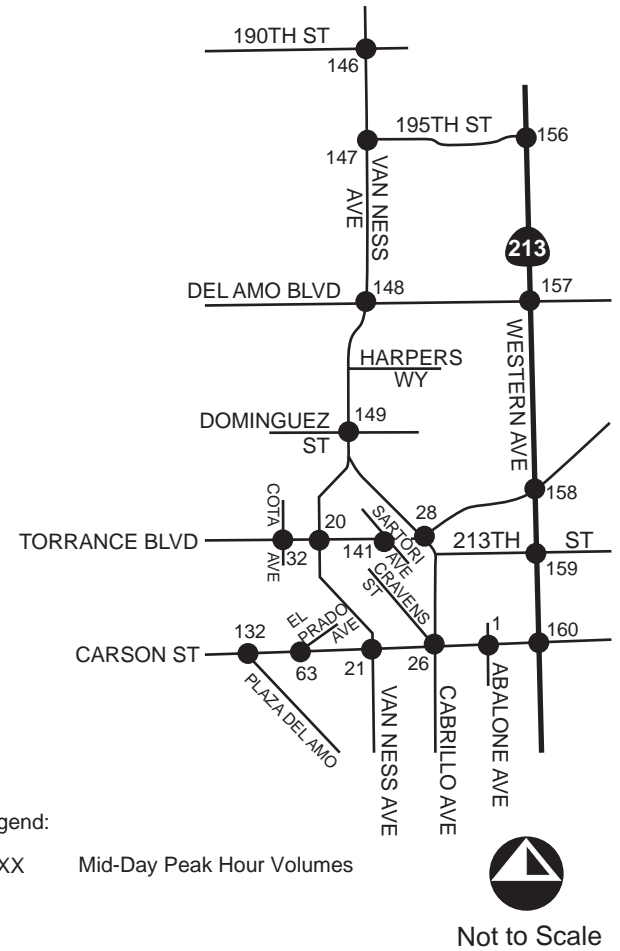
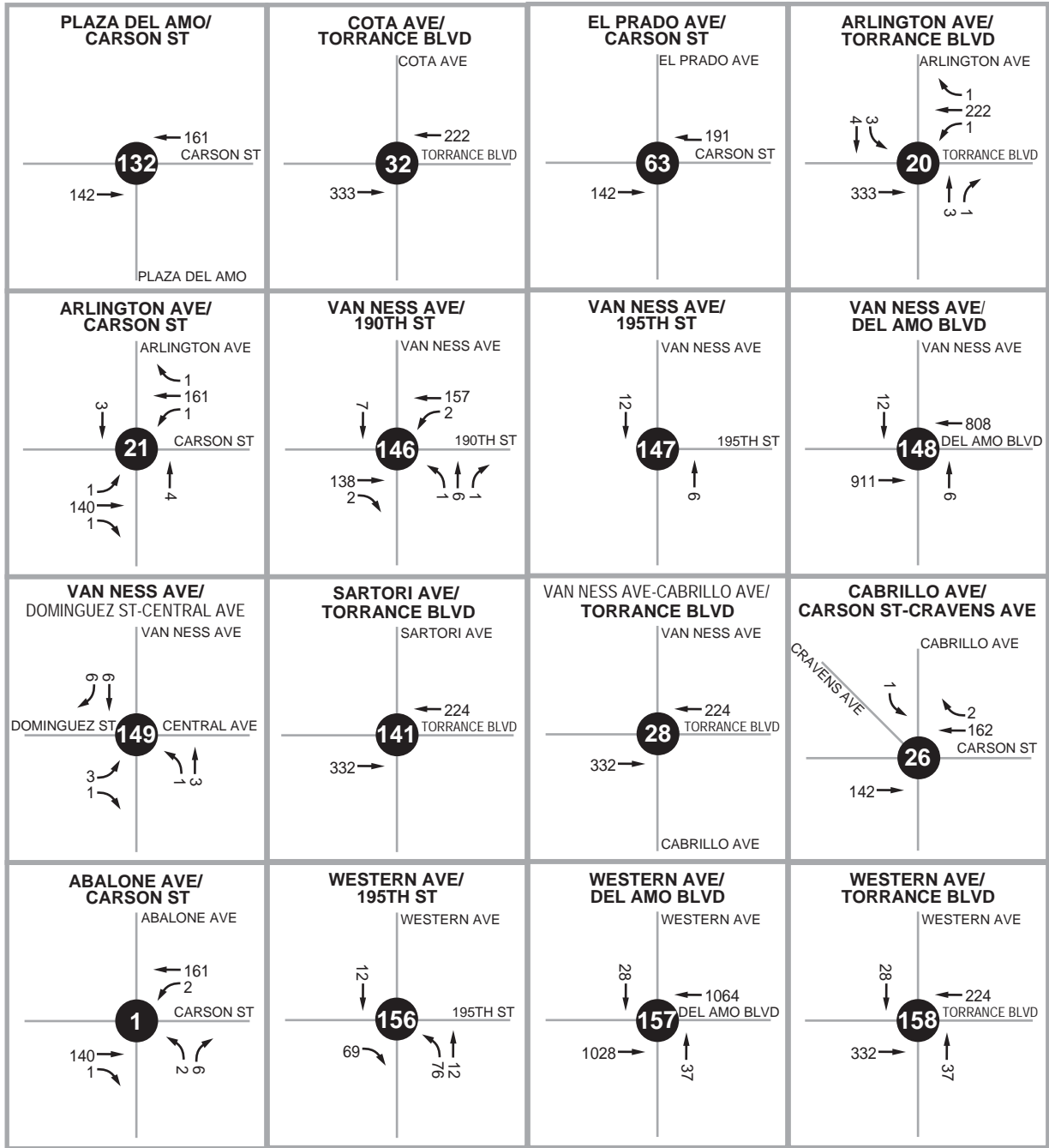


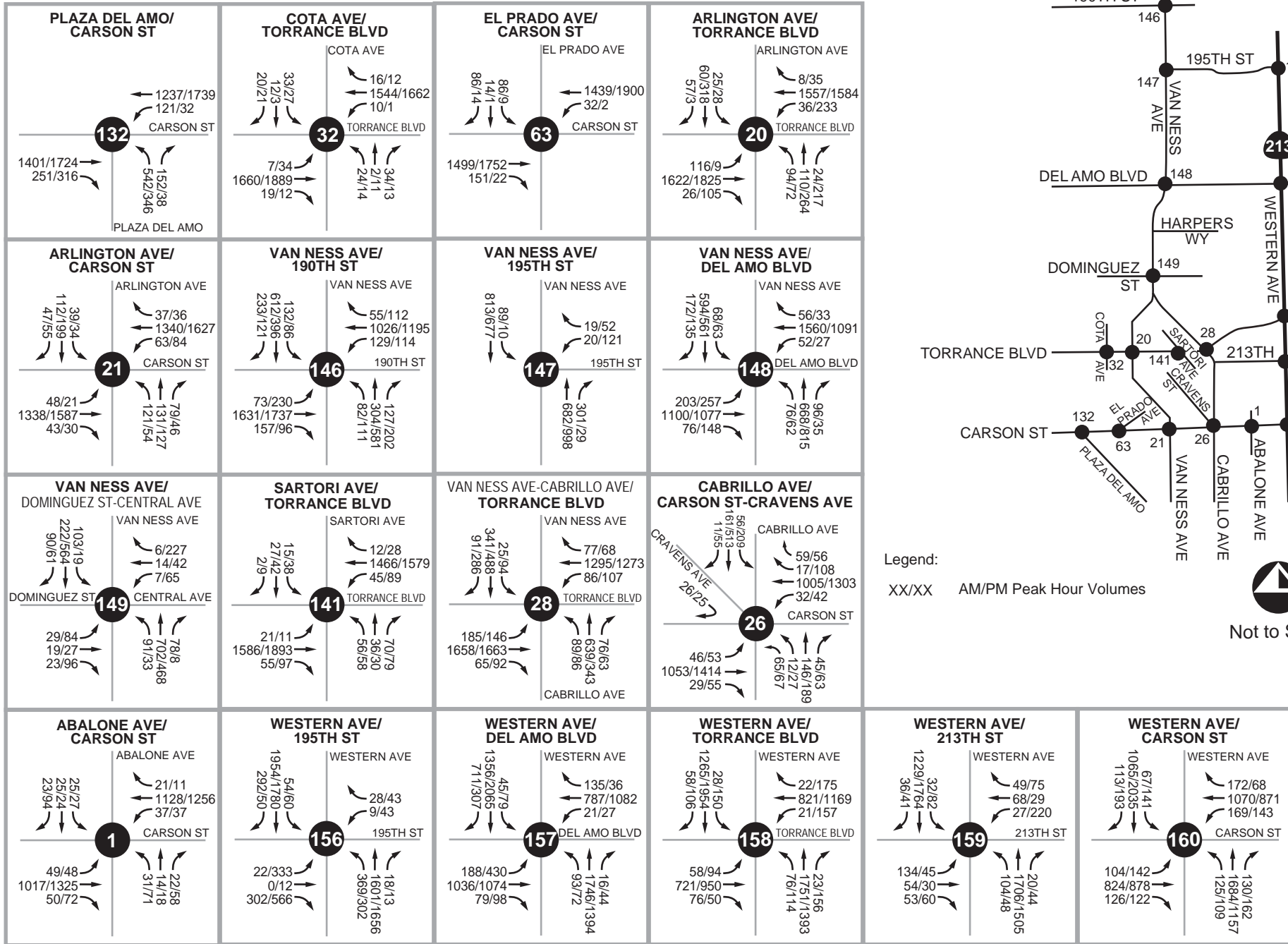
- Legend:
- Existing Lane
 - Free Right-Turn Lane
 - Defacto Right-Turn Lane
 - Overlap Right-Turn Lane
 - 2U 2-lane Undivided roadway
 - 2D 2-lane Divided roadway
 - 3D 3-lane Divided roadway (1 east, 2 west)
 - 4D 4-lane Divided roadway
 - 5D 5-lane Divided roadway (3 east, 2 west)
 - 5D' 5-lane Divided roadway (2 north, 3 south)





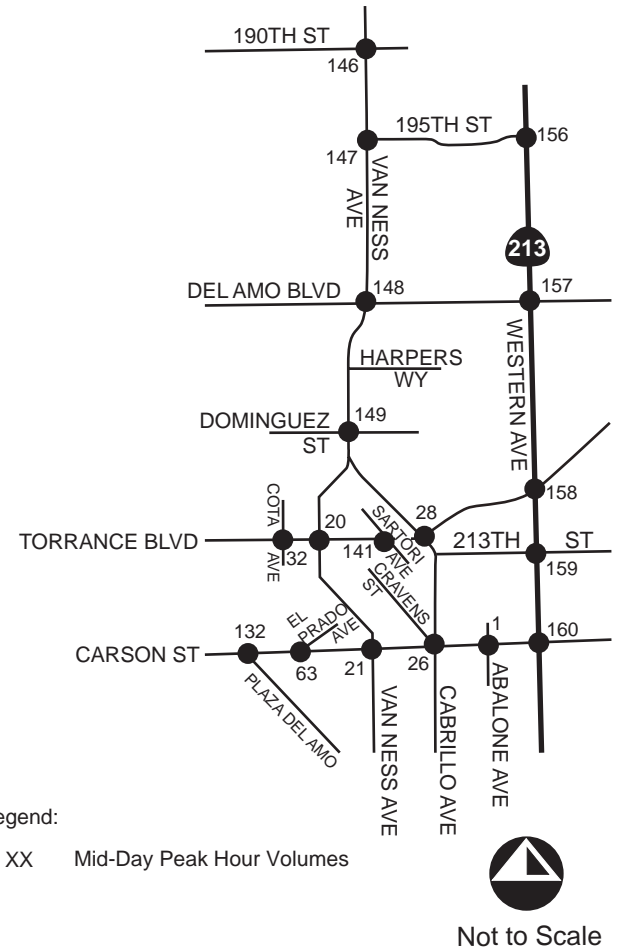
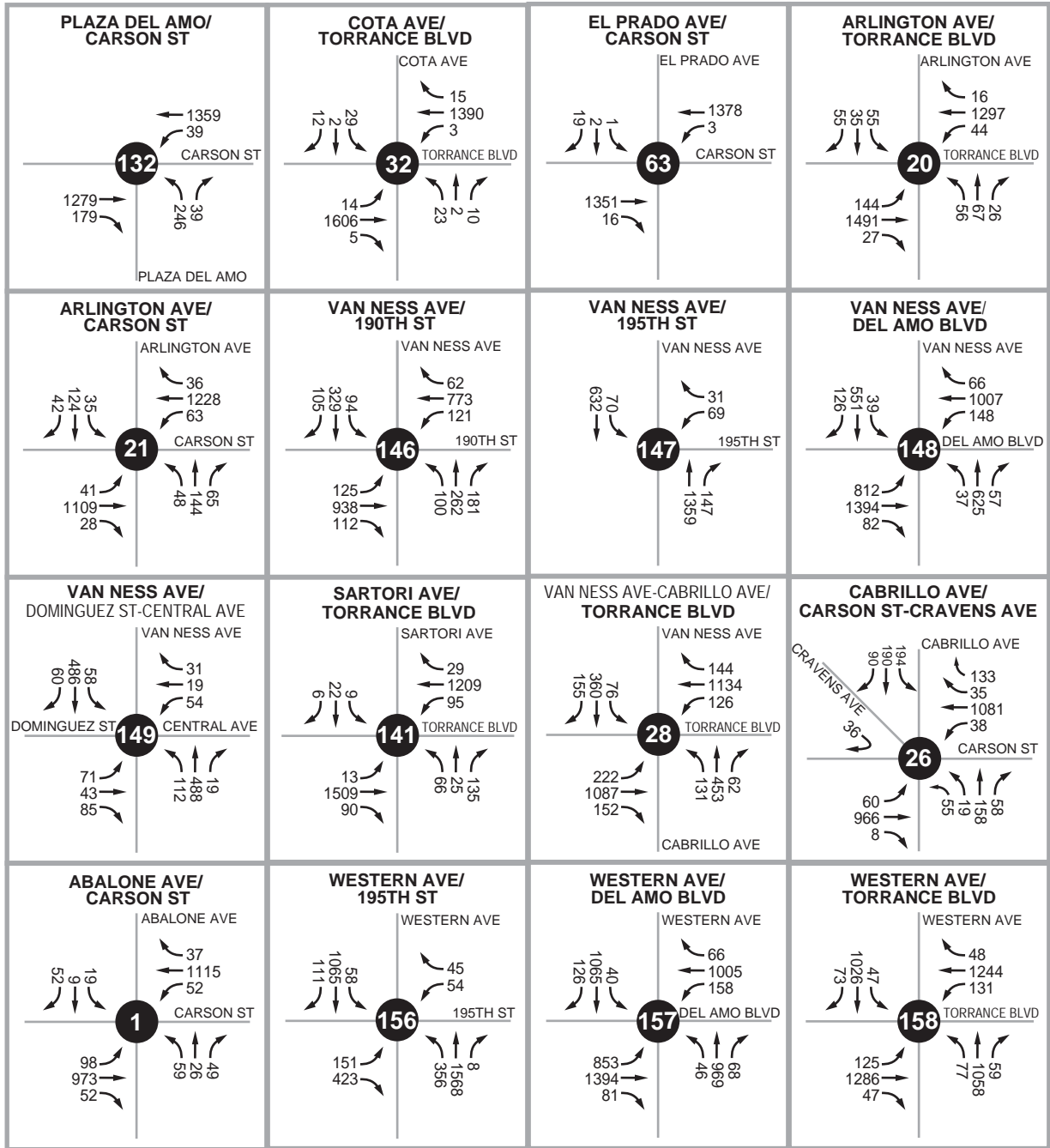


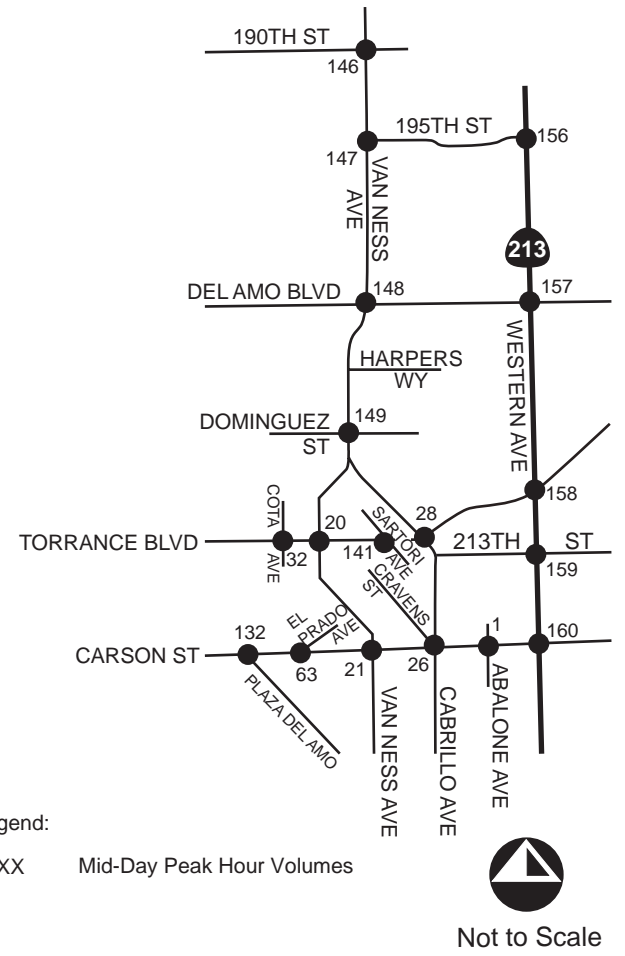
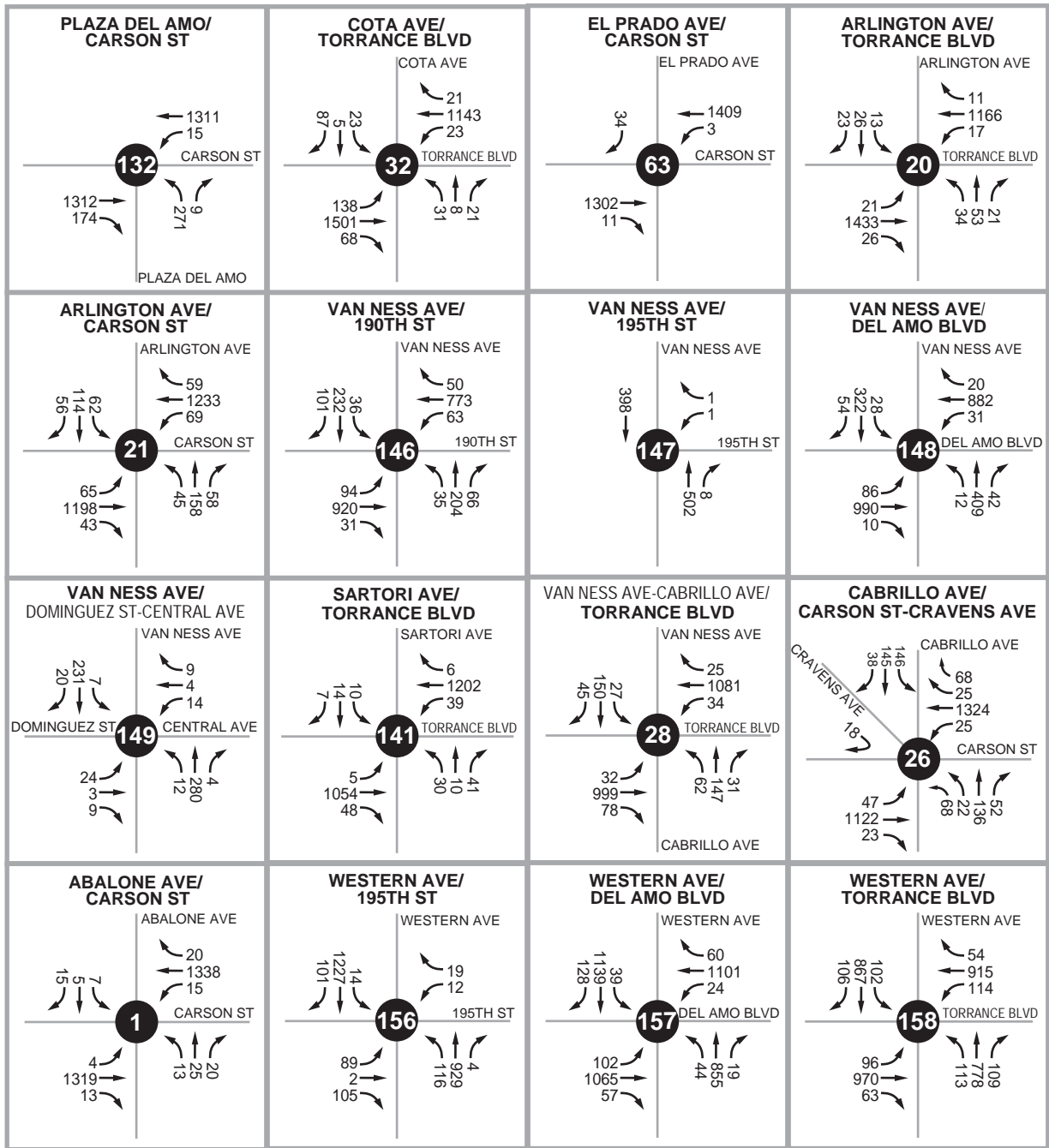


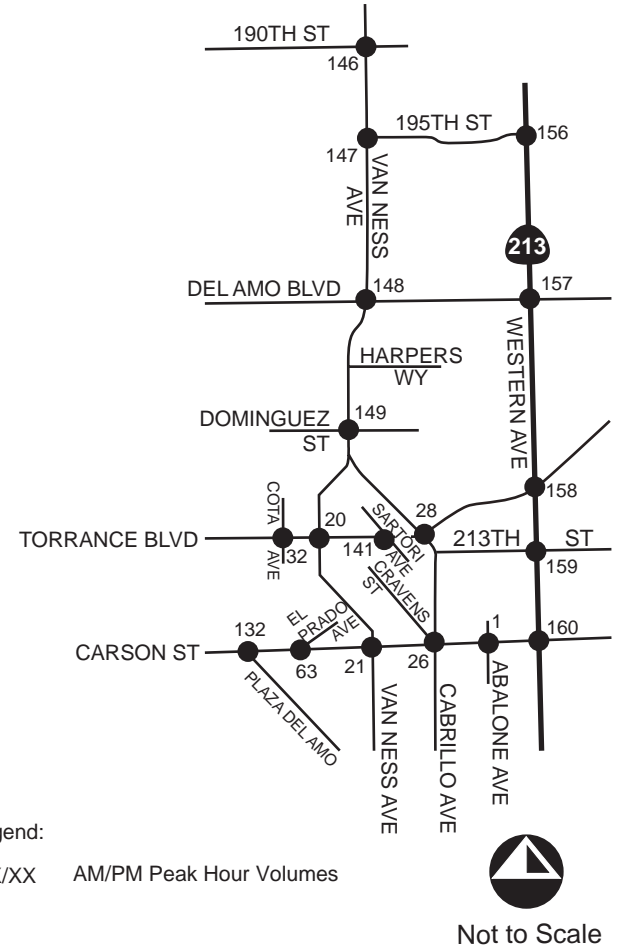
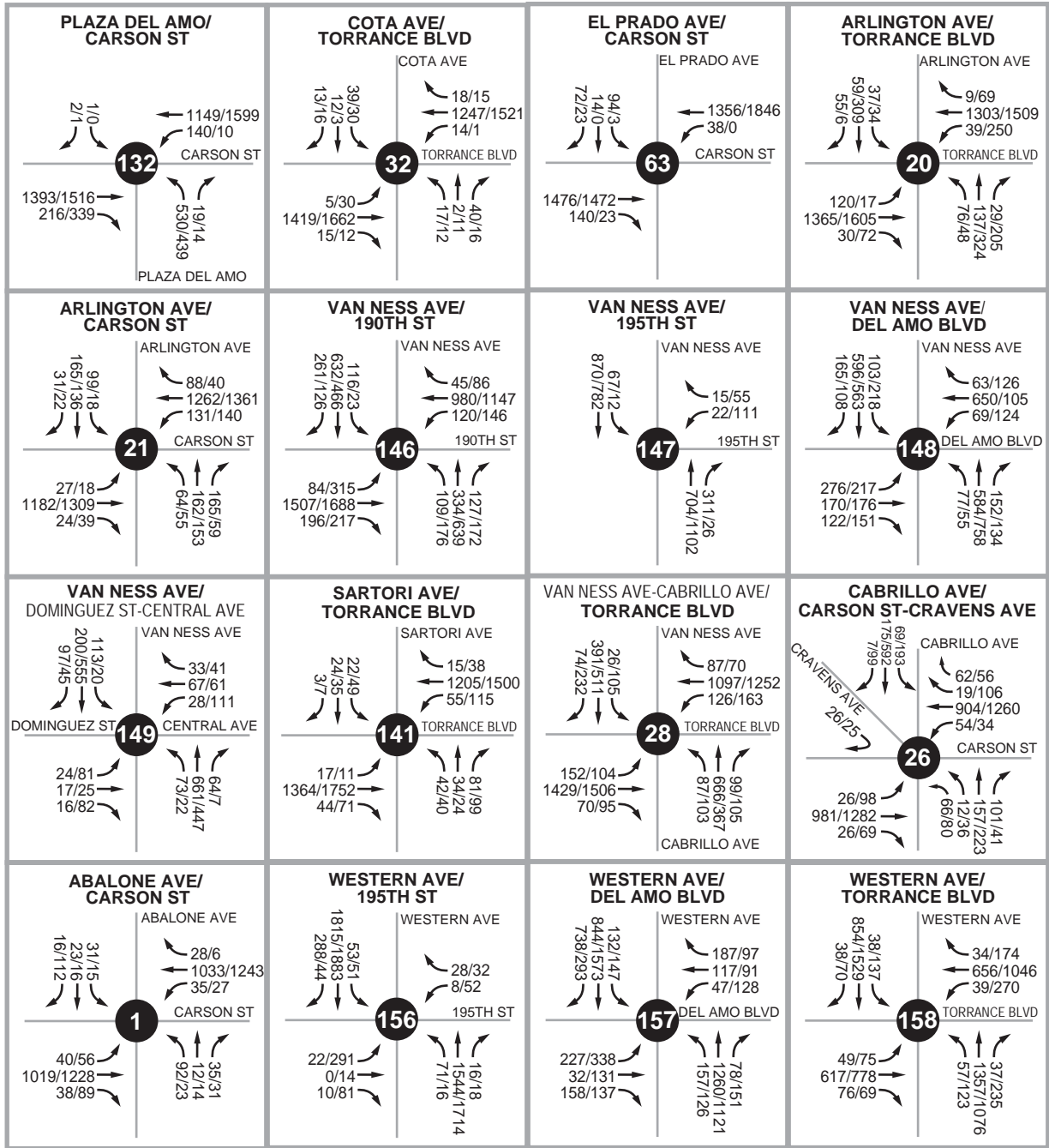


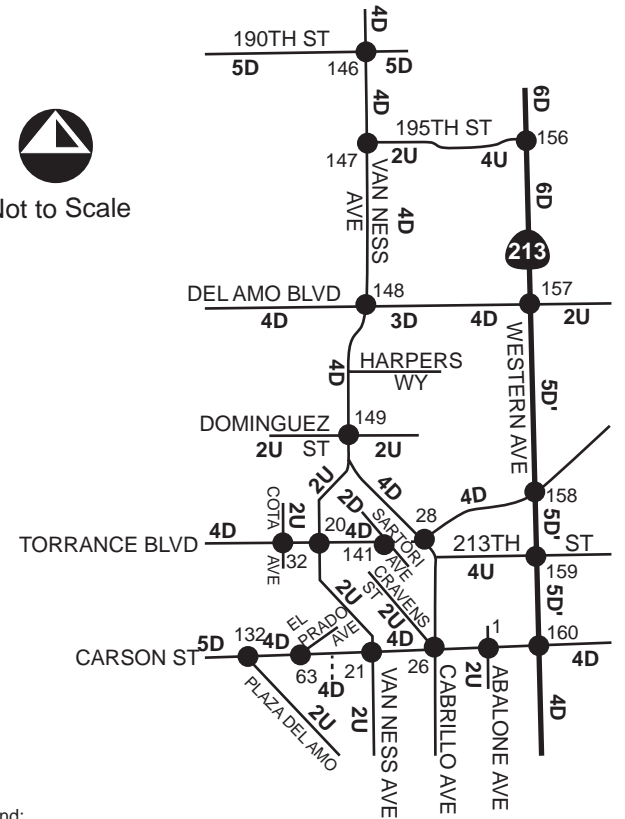
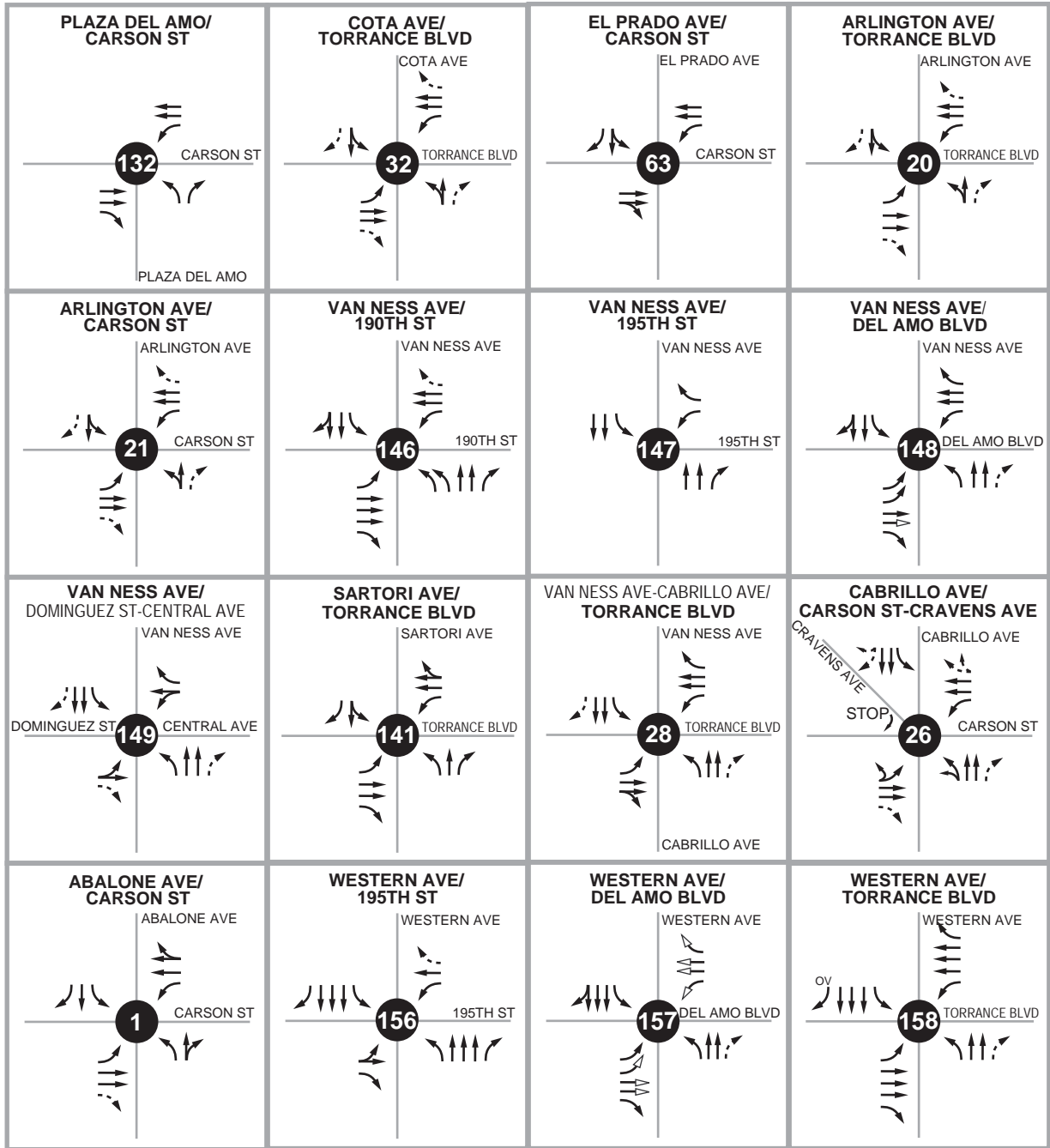
Area 5 - Forecast Near-Term Conditions Weekday AM/PM Peak Hour Intersection Volumes





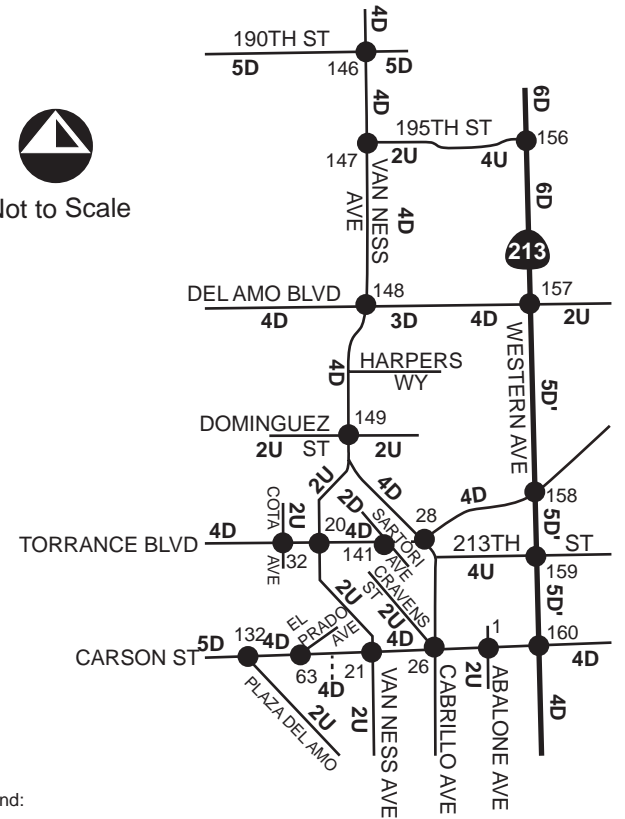
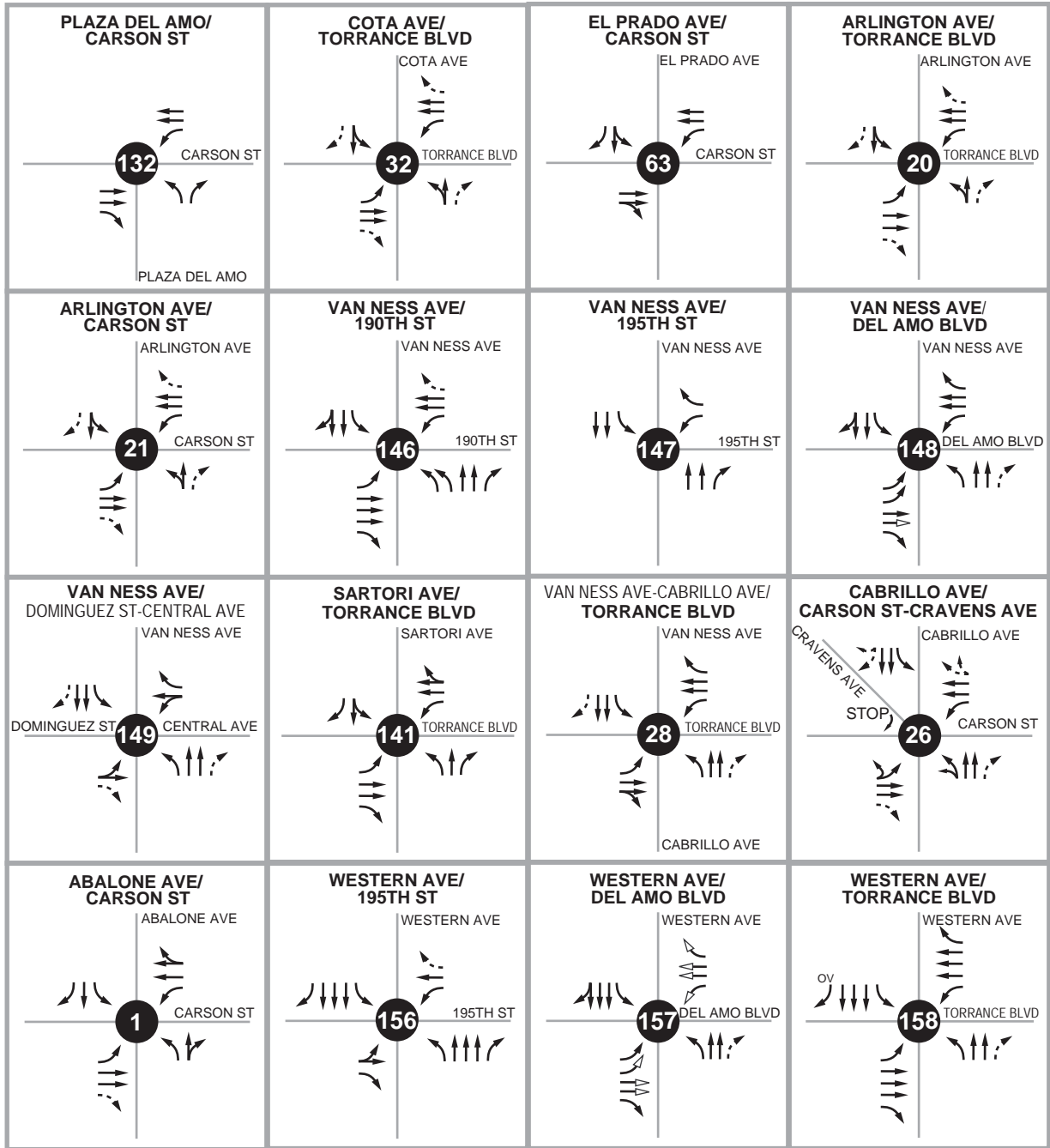






- Legend:
- Existing Lane
 - Modified Lane
 - Free Right-Turn Lane
 - Defacto Right-Turn Lane
 - Overlap Right-Turn Lane
 - Stop-Controlled Approach
 - 2U 2-lane Undivided roadway
 - 2D 2-lane Divided roadway
 - 3D 3-lane Divided roadway (1 east, 2 west)
 - 4D 4-lane Divided roadway
 - 5D 5-lane Divided roadway (3 east, 2 west)
 - 5D' 5-lane Divided roadway (2 north, 3 south)



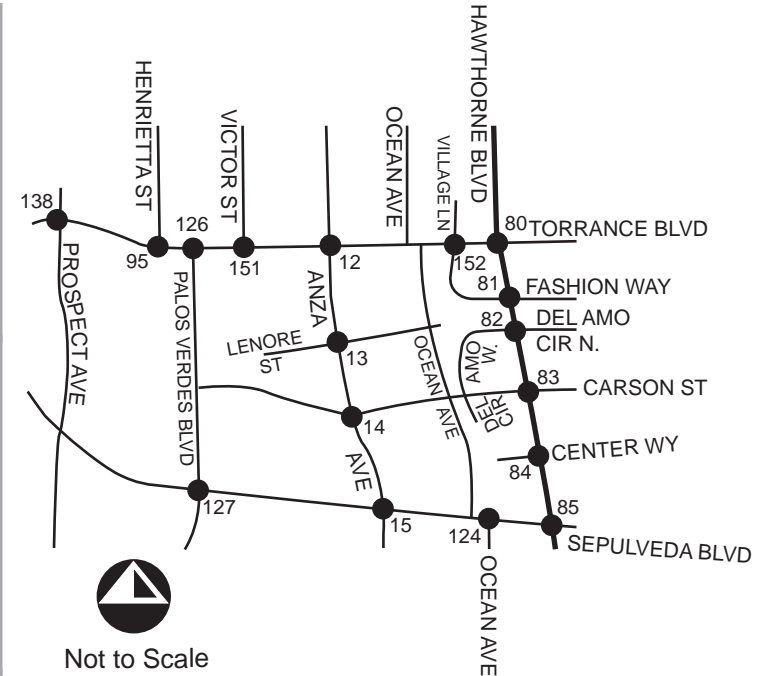
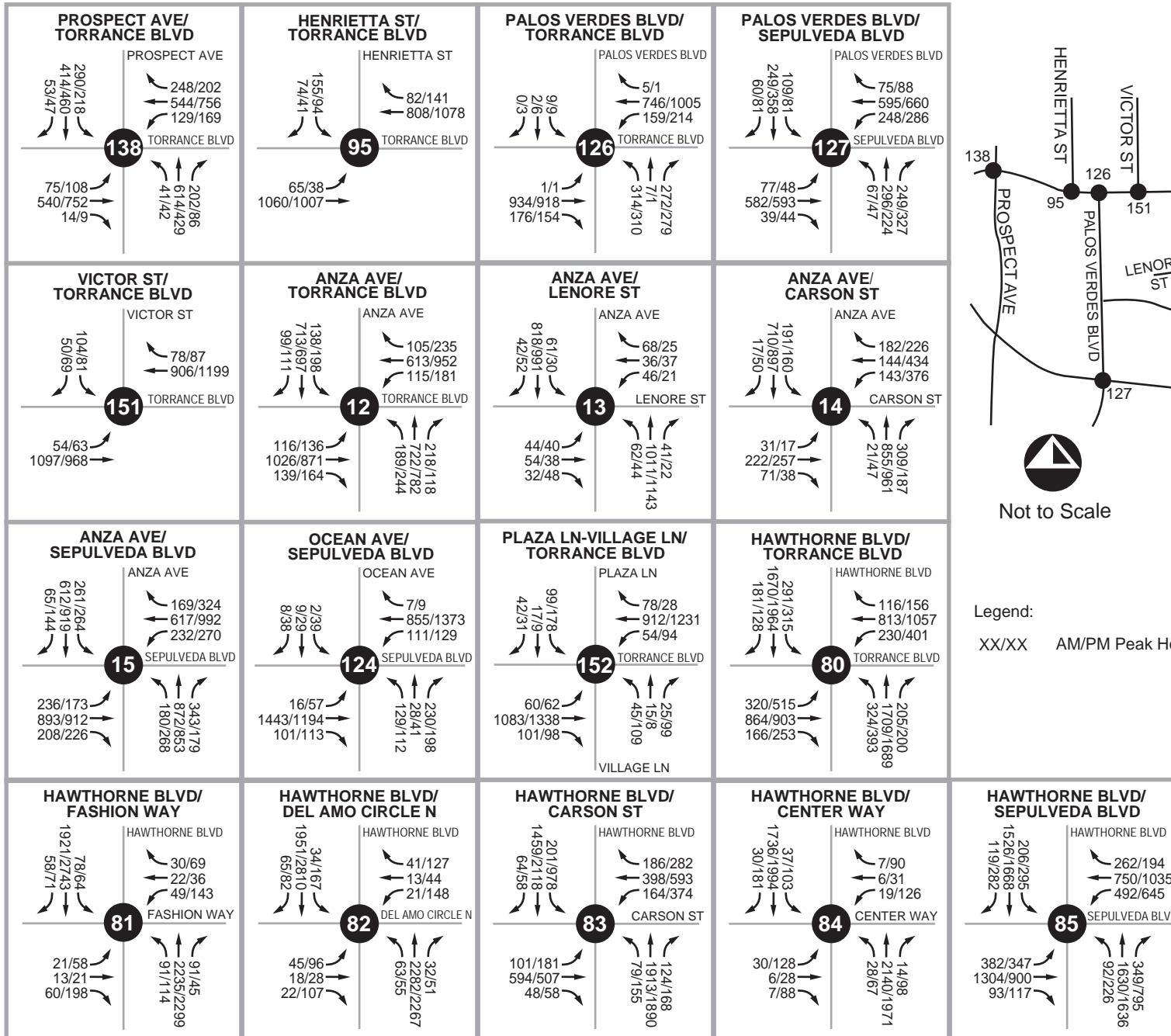


- Legend:
- ← Existing Lane
 - ↔ Modified Lane
 - F Free Right-Turn Lane
 - ↔ Defacto Right-Turn Lane
 - ↔_{ov} Overlap Right-Turn Lane
 - STOP Stop-Controlled Approach
 - 2U 2-lane Undivided roadway
 - 2D 2-lane Divided roadway
 - 3D 3-lane Divided roadway (1 east, 2 west)
 - 4D 4-lane Divided roadway
 - 5D 5-lane Divided roadway (3 east, 2 west)
 - 5D' 5-lane Divided roadway (2 north, 3 south)



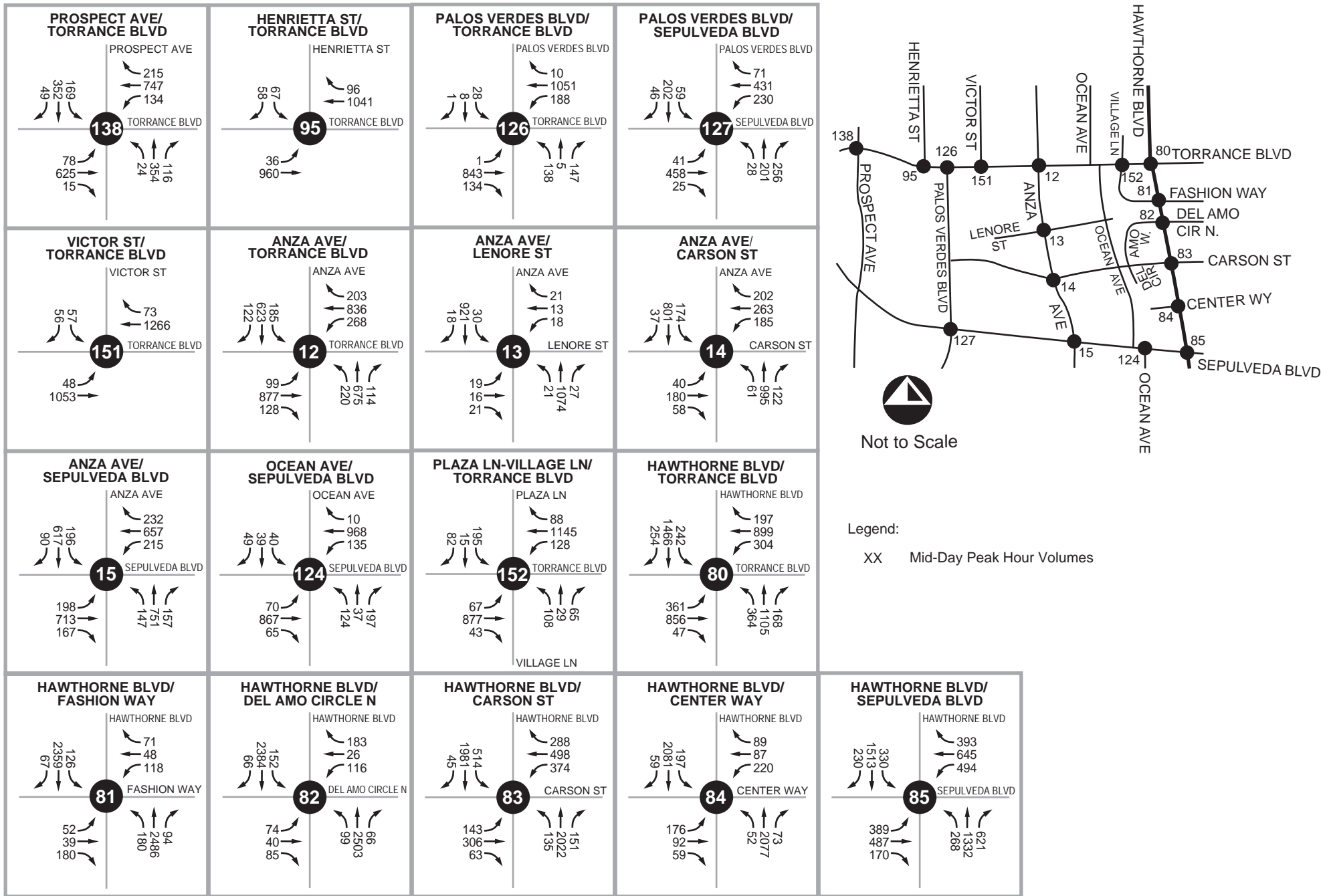
Area 5 - Forecast Improved Long-Range Future Conditions Intersection/Roadway Geometry

Study Area 6



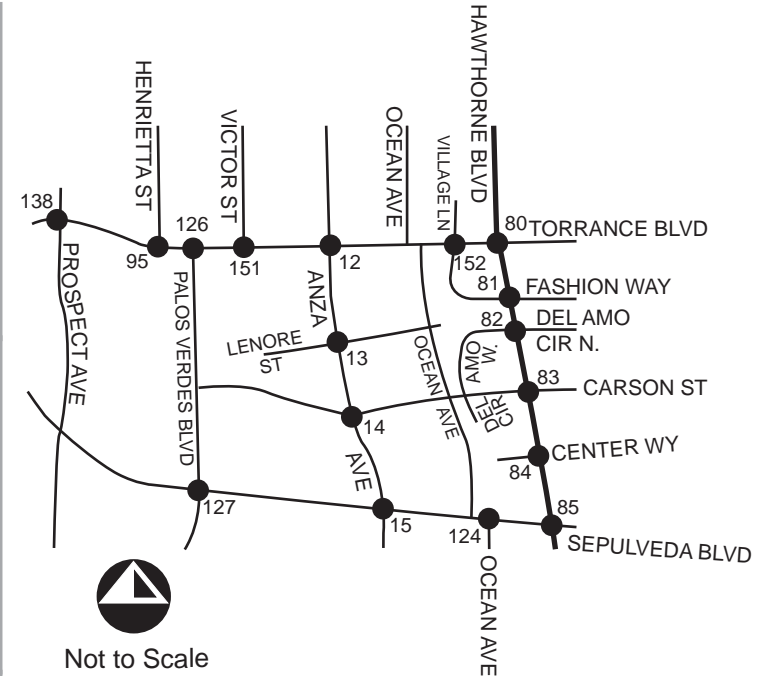
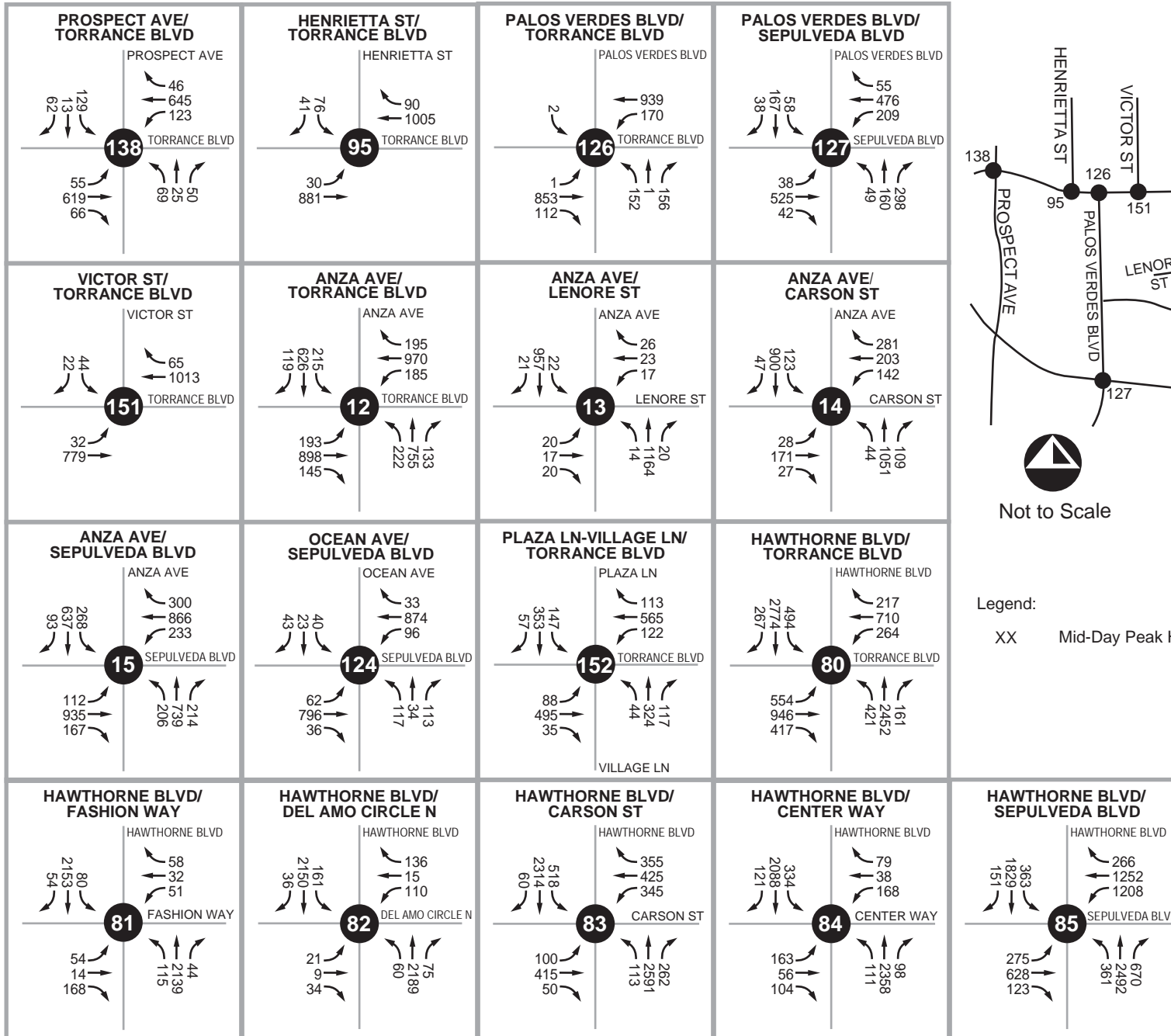
Legend:
 XX/XX AM/PM Peak Hour Volumes





Area 6 - Existing Weekday Mid-Day Peak Hour Intersection Volumes

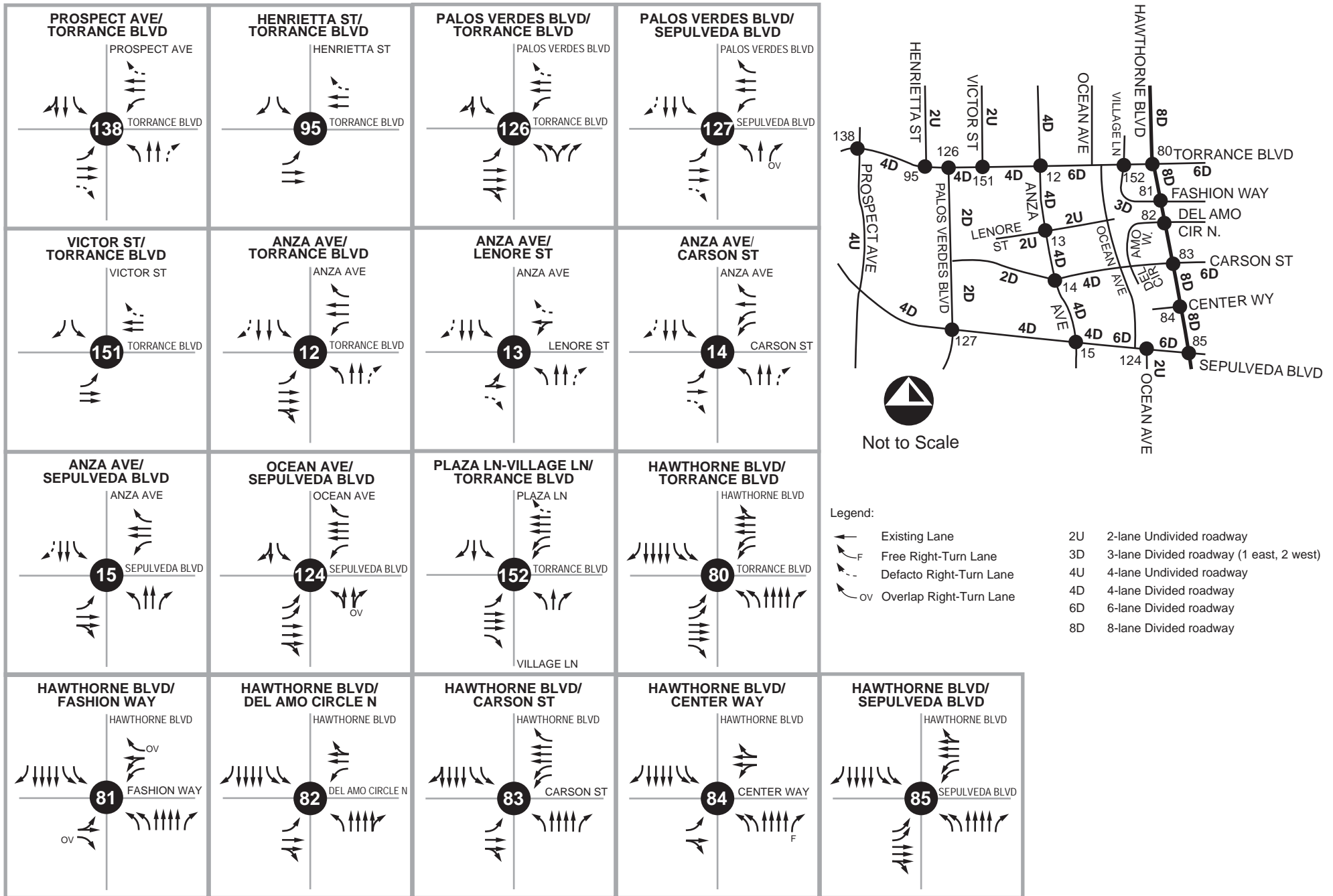


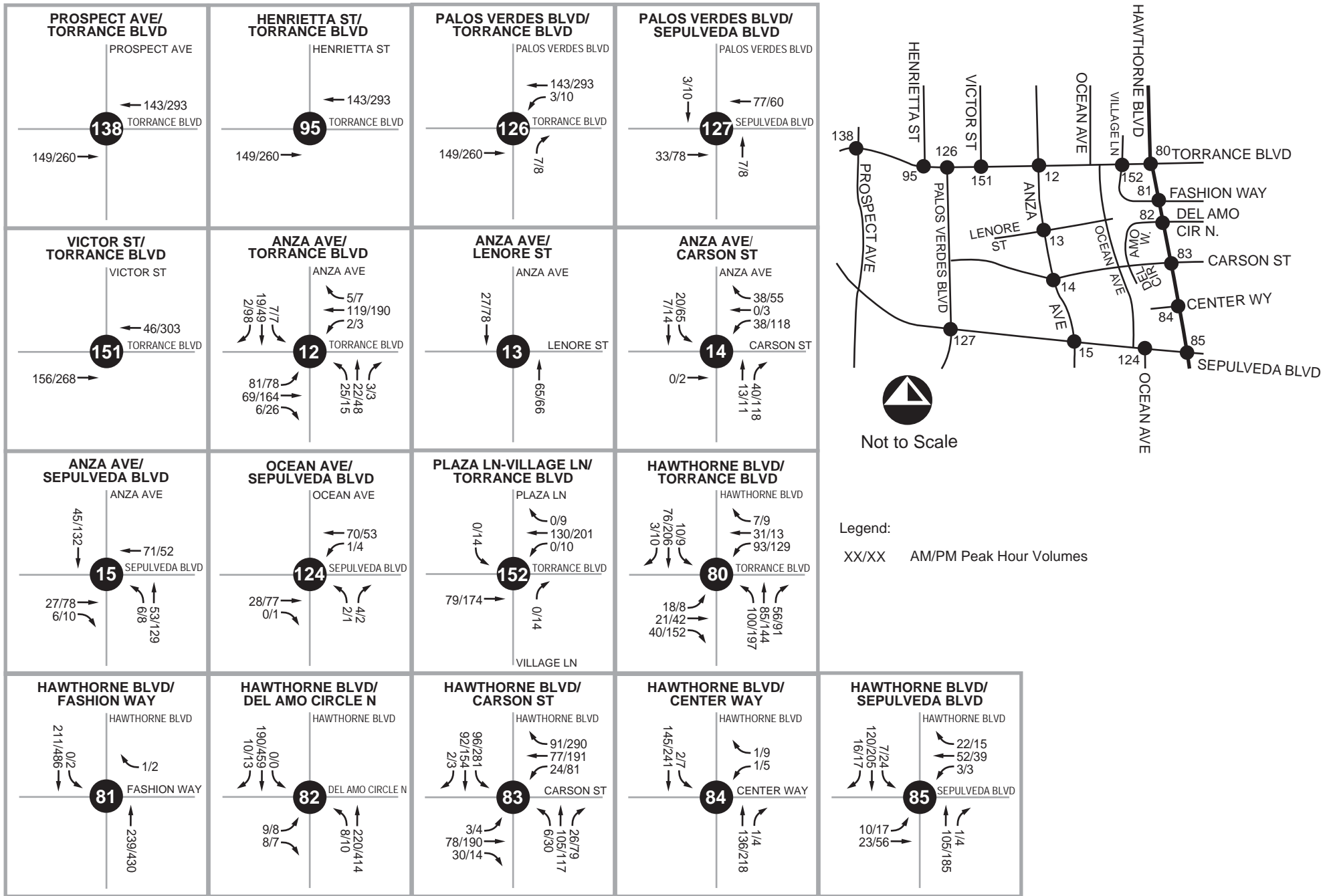


Legend:
 XX Mid-Day Peak Hour Volumes

Area 6 - Existing Weekend Mid-Day Peak Hour Intersection Volumes

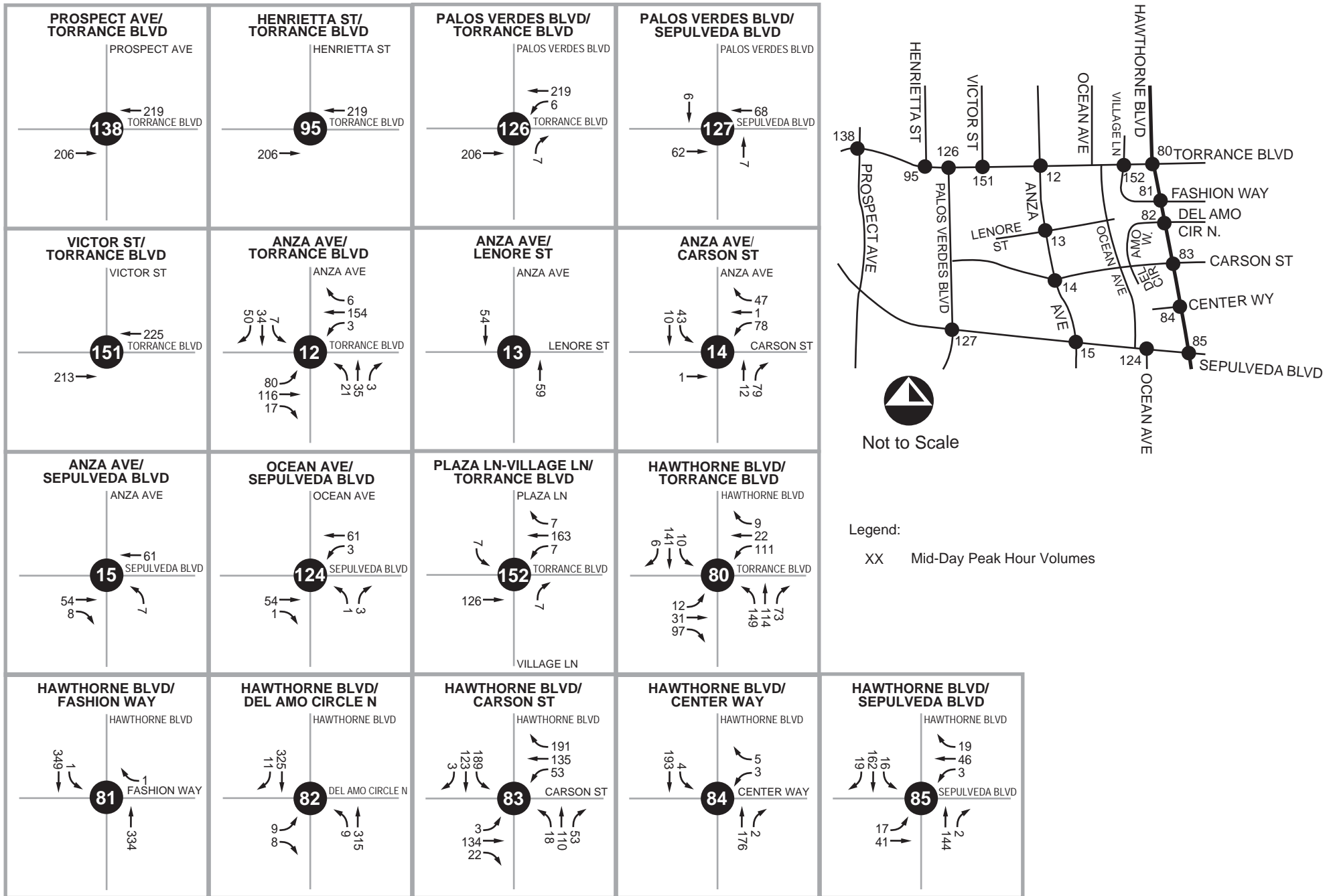


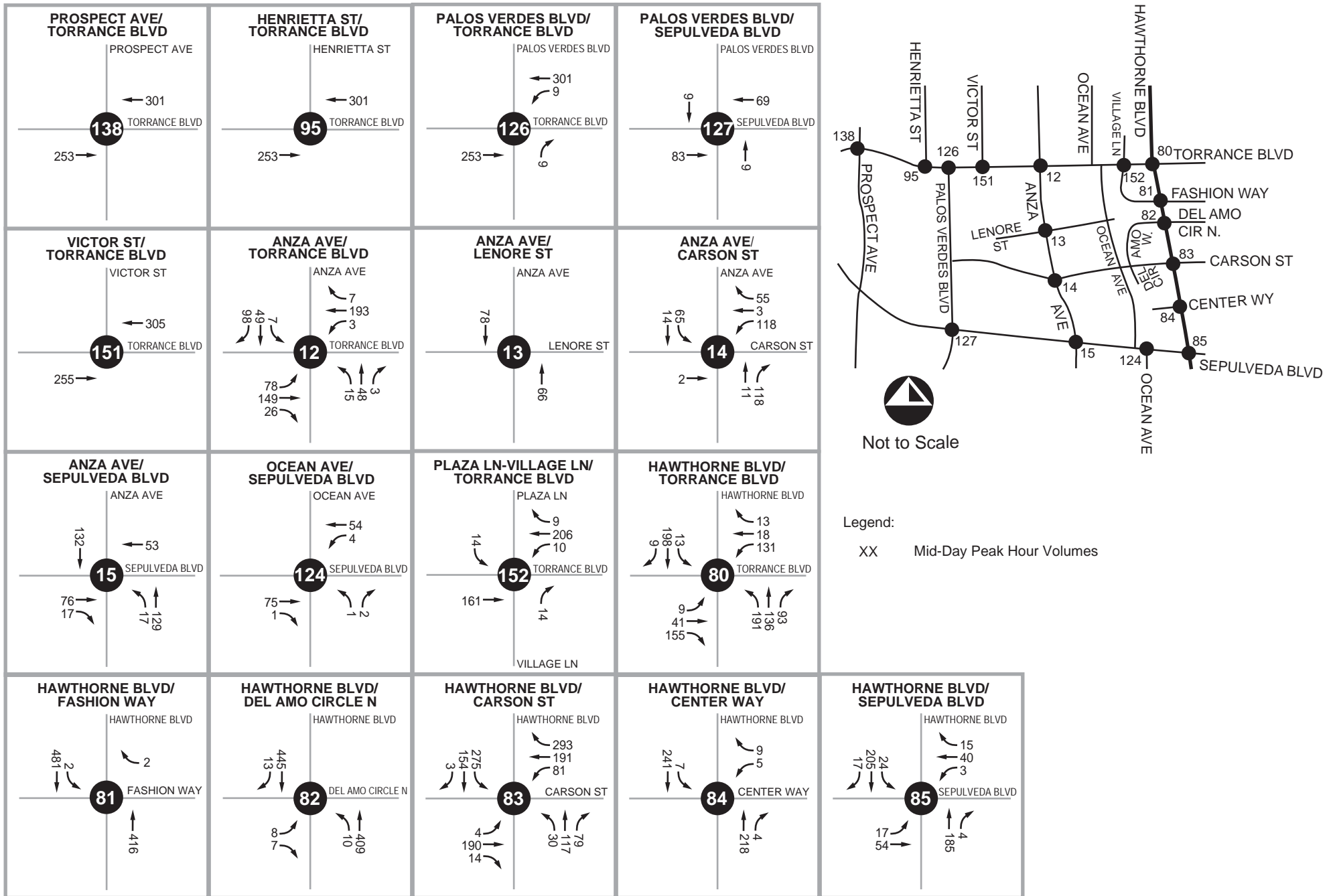




Area 6 - Forecast Weekday AM/PM Peak Hour Trip Assignment of Approved Projects

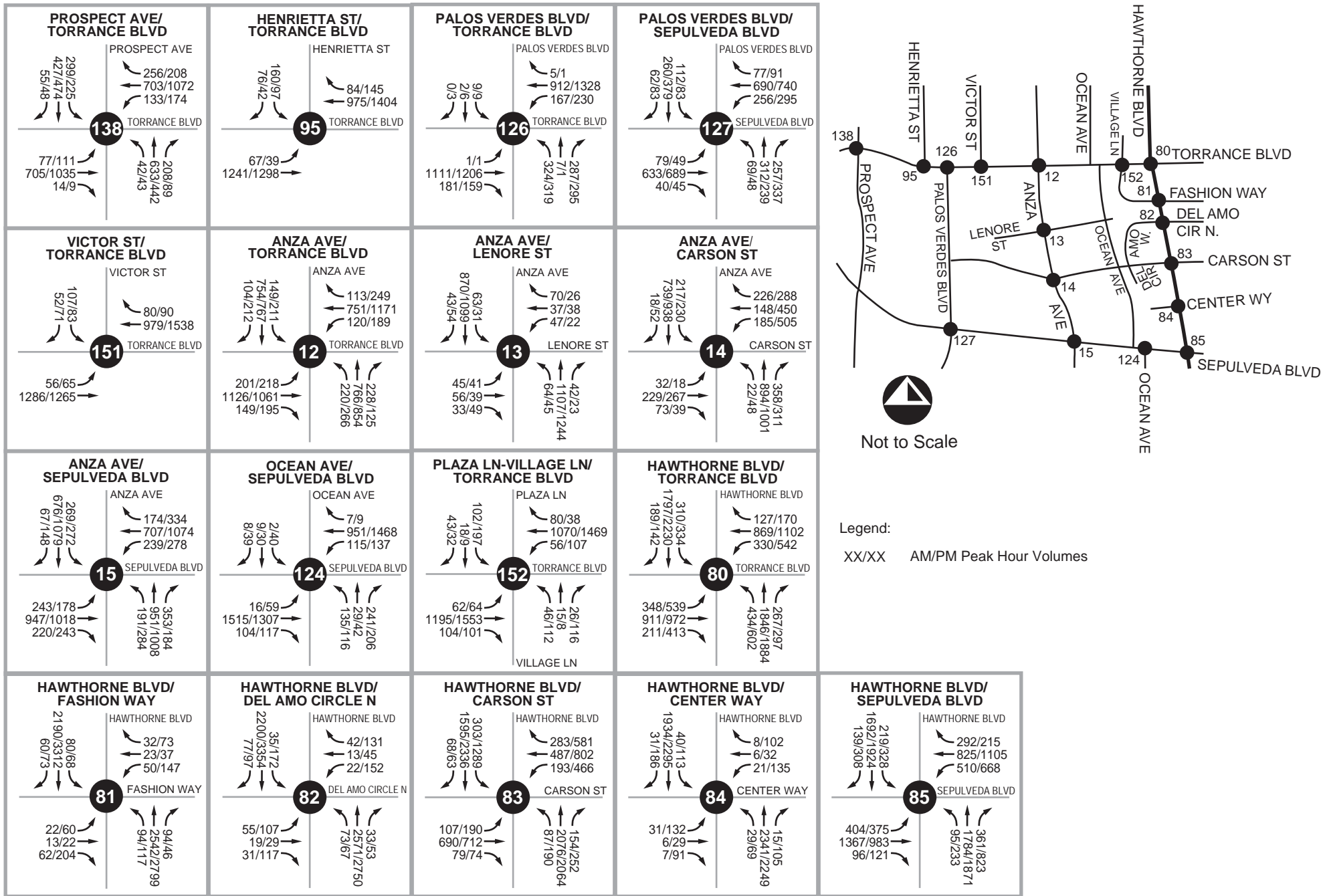






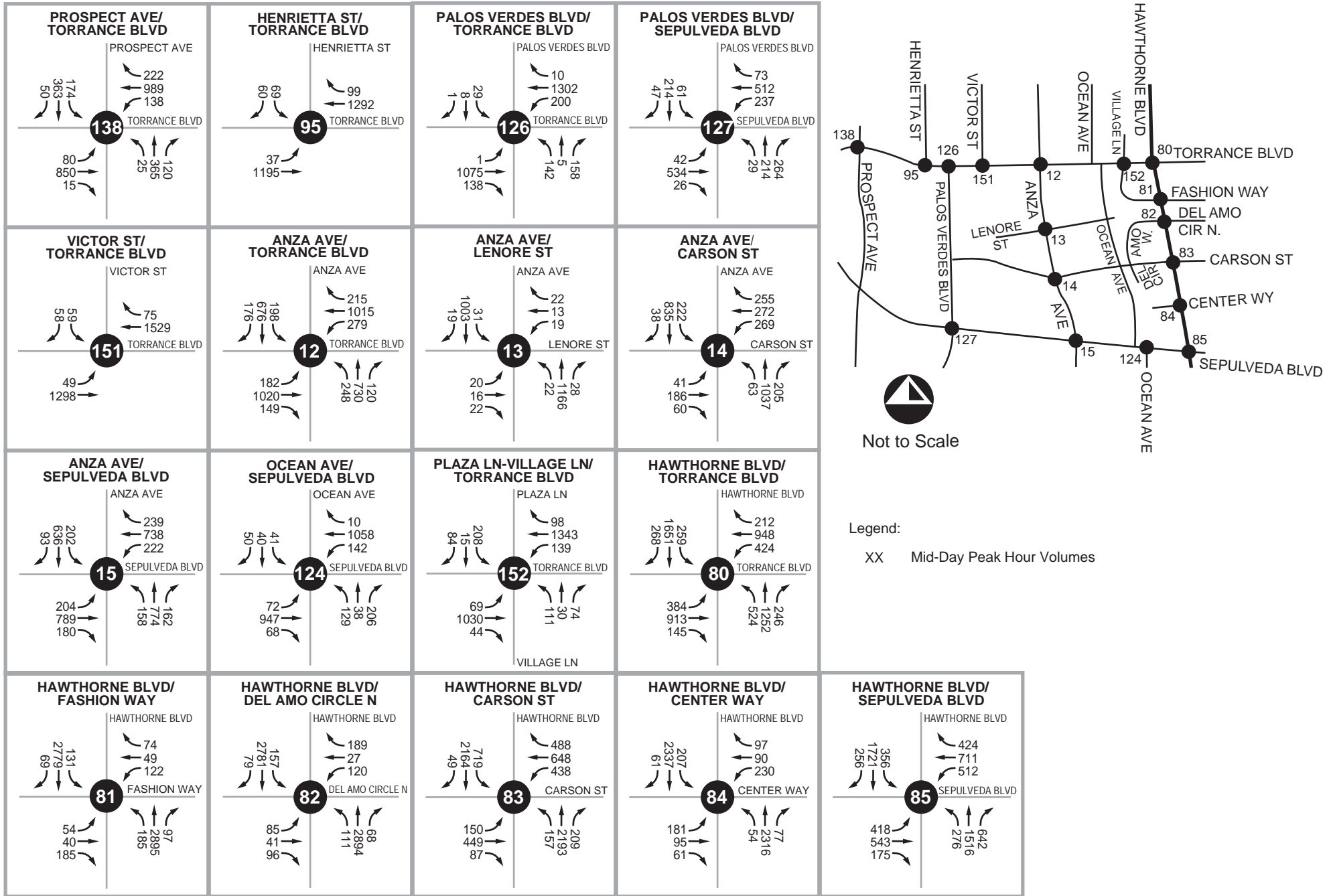
Area 6 - Forecast Weekend Mid-Day Peak Hour Trip Assignment of Approved Projects





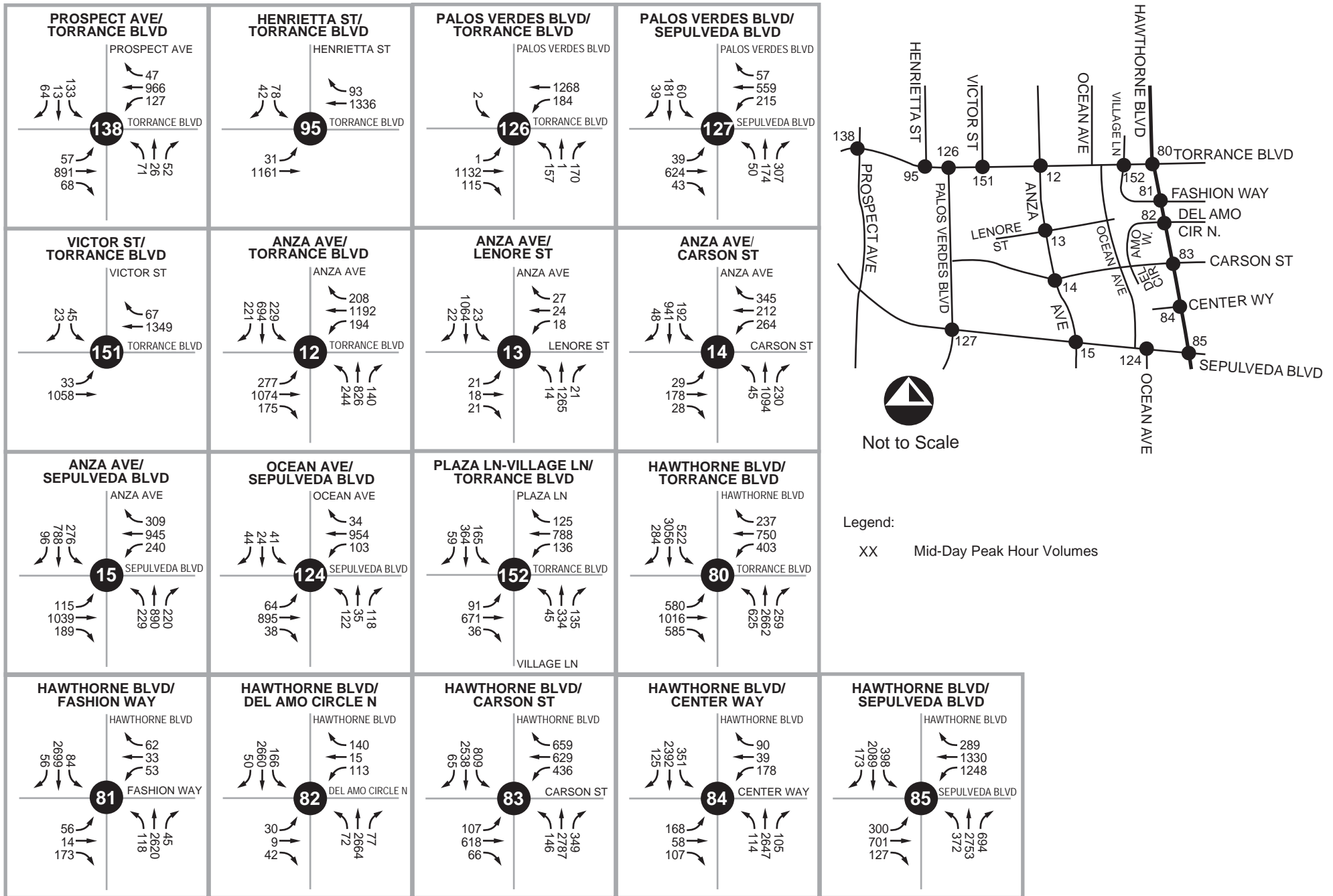
Area 6 - Forecast Near-Term Conditions Weekday AM/PM Peak Hour Intersection Volumes





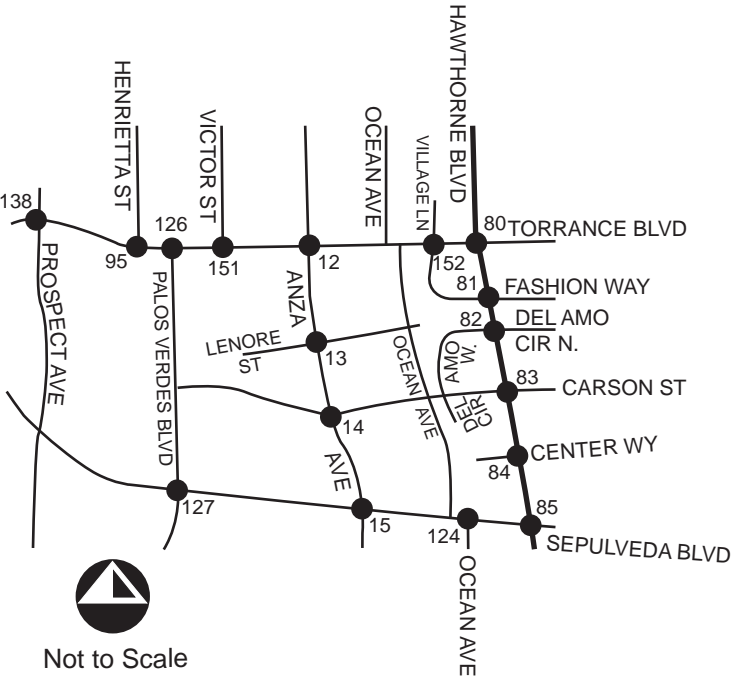
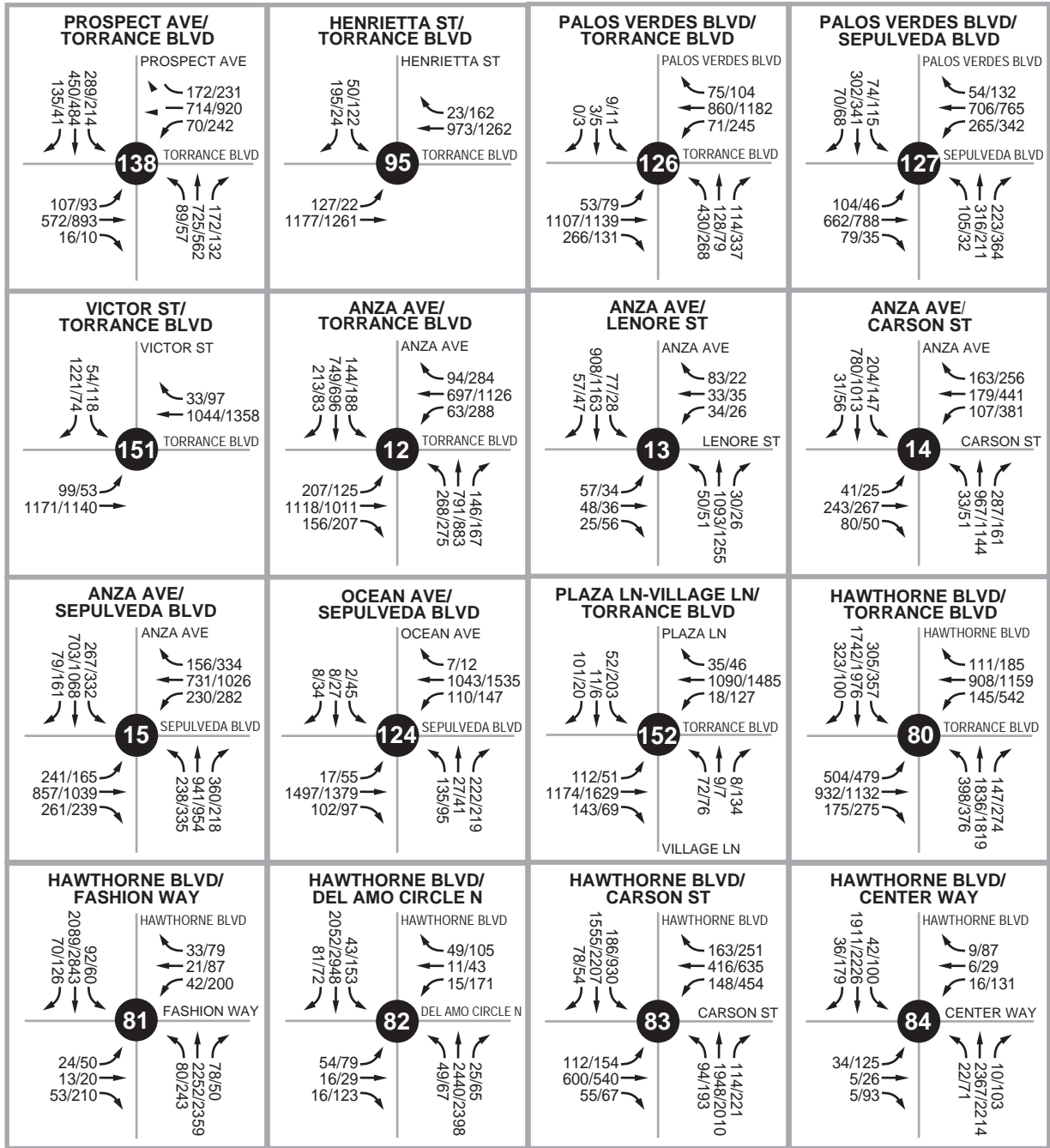
Area 6 - Forecast Near-Term Conditions Weekday Mid-Day Peak Hour Intersection Volumes





Area 6 - Forecast Near-Term Conditions Weekend Mid-Day Peak Hour Intersection Volumes

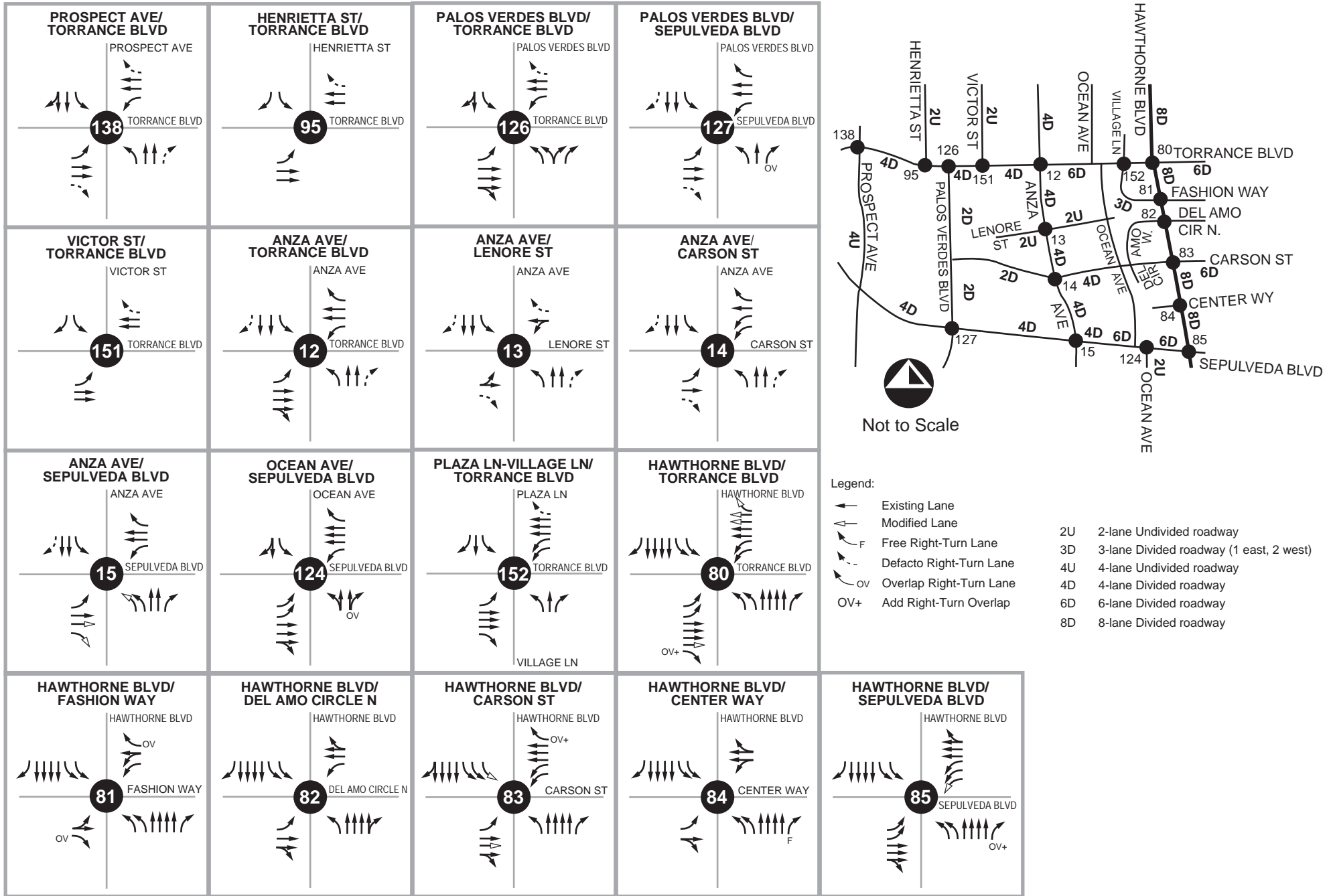




Legend:
XX/XX AM/PM Peak Hour Volumes

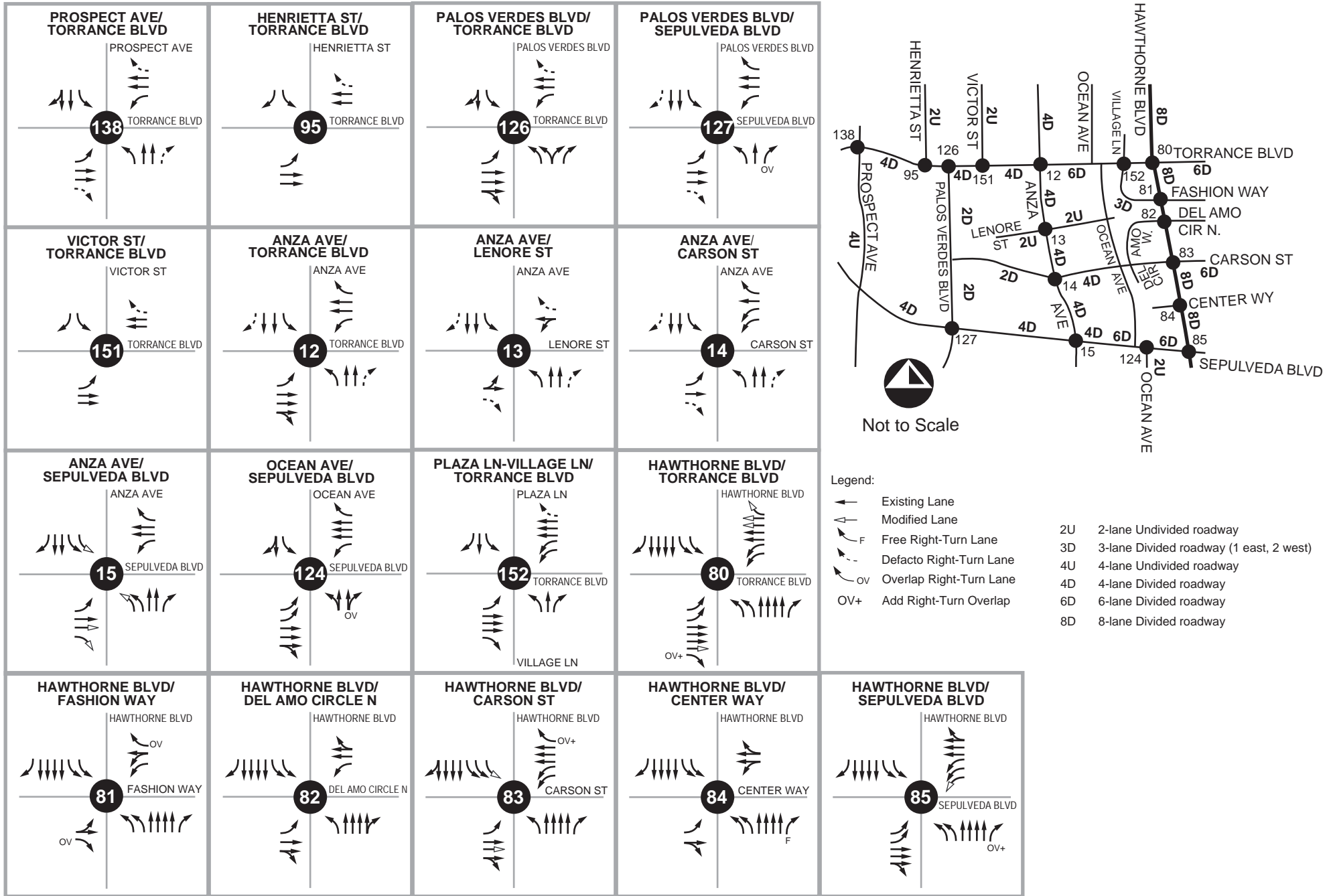


Area 6 - Forecast Long-Range Future Conditions Weekday AM/PM Peak Hour Intersection Volumes



Area 6 - Forecast Improved Near-Term Conditions Intersection/Roadway Geometry

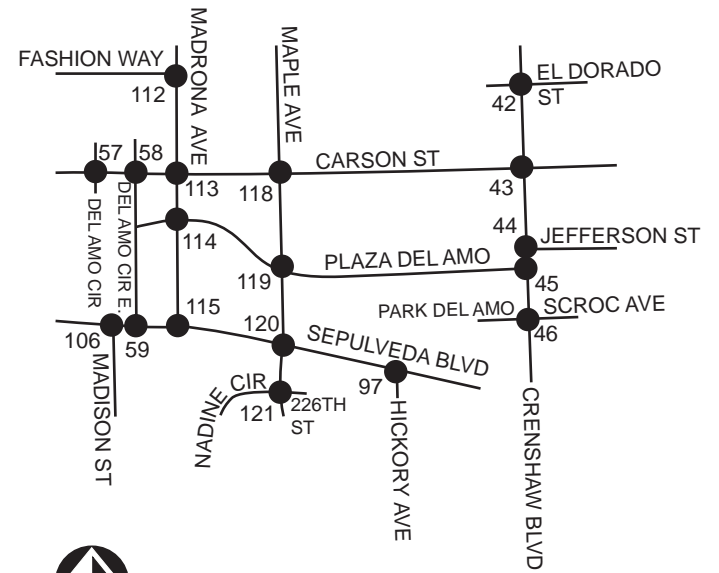
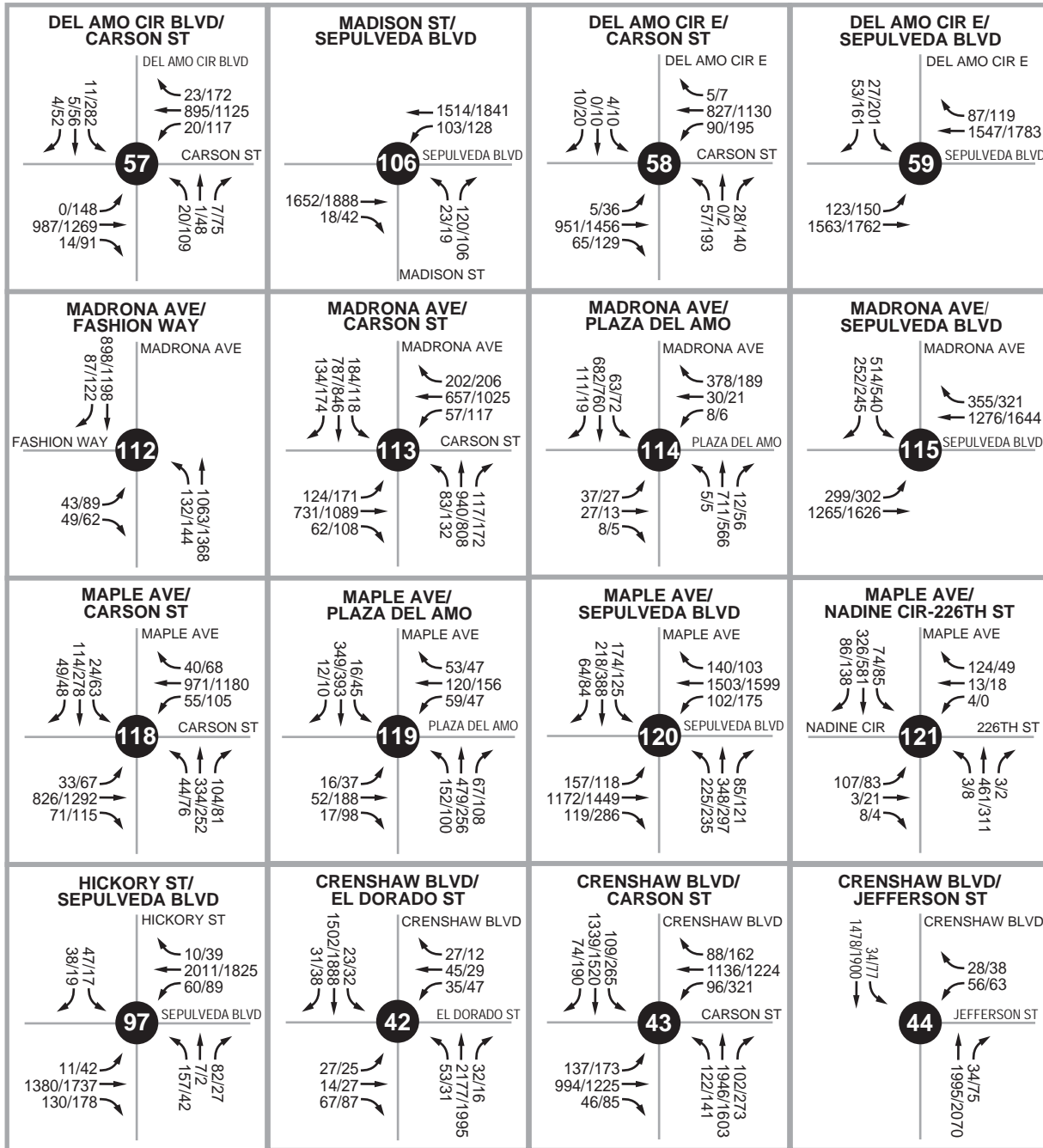




Area 6 - Forecast Improved Long-Range Future Conditions Intersection/Roadway Geometry



Study Area 7

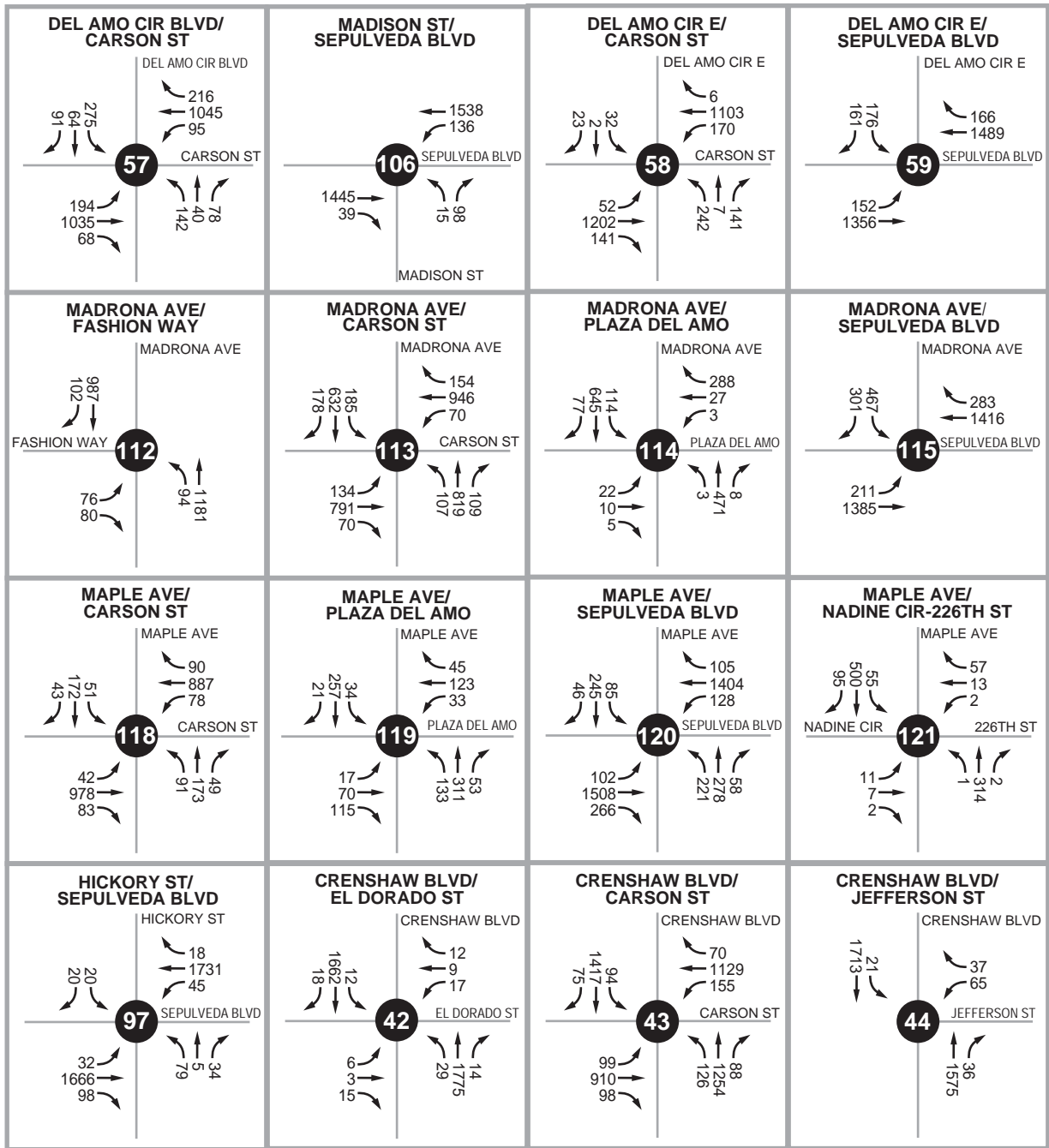


Not to Scale

Legend:

XX/XX AM/PM Peak Hour Volumes



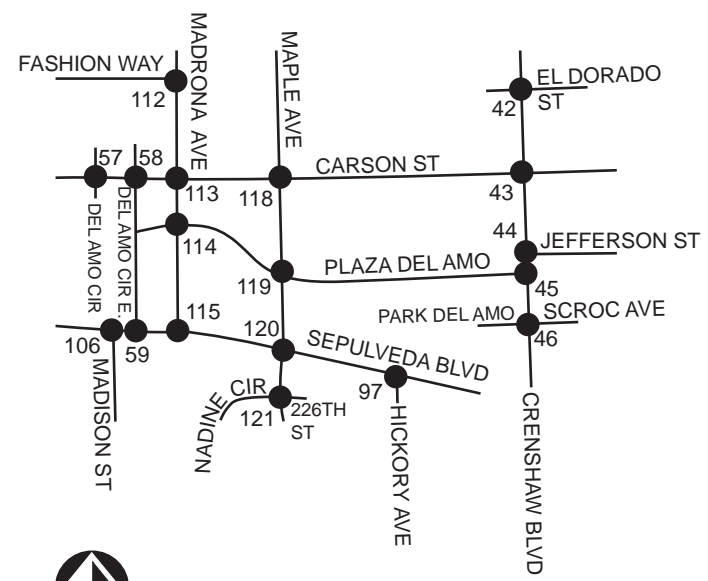
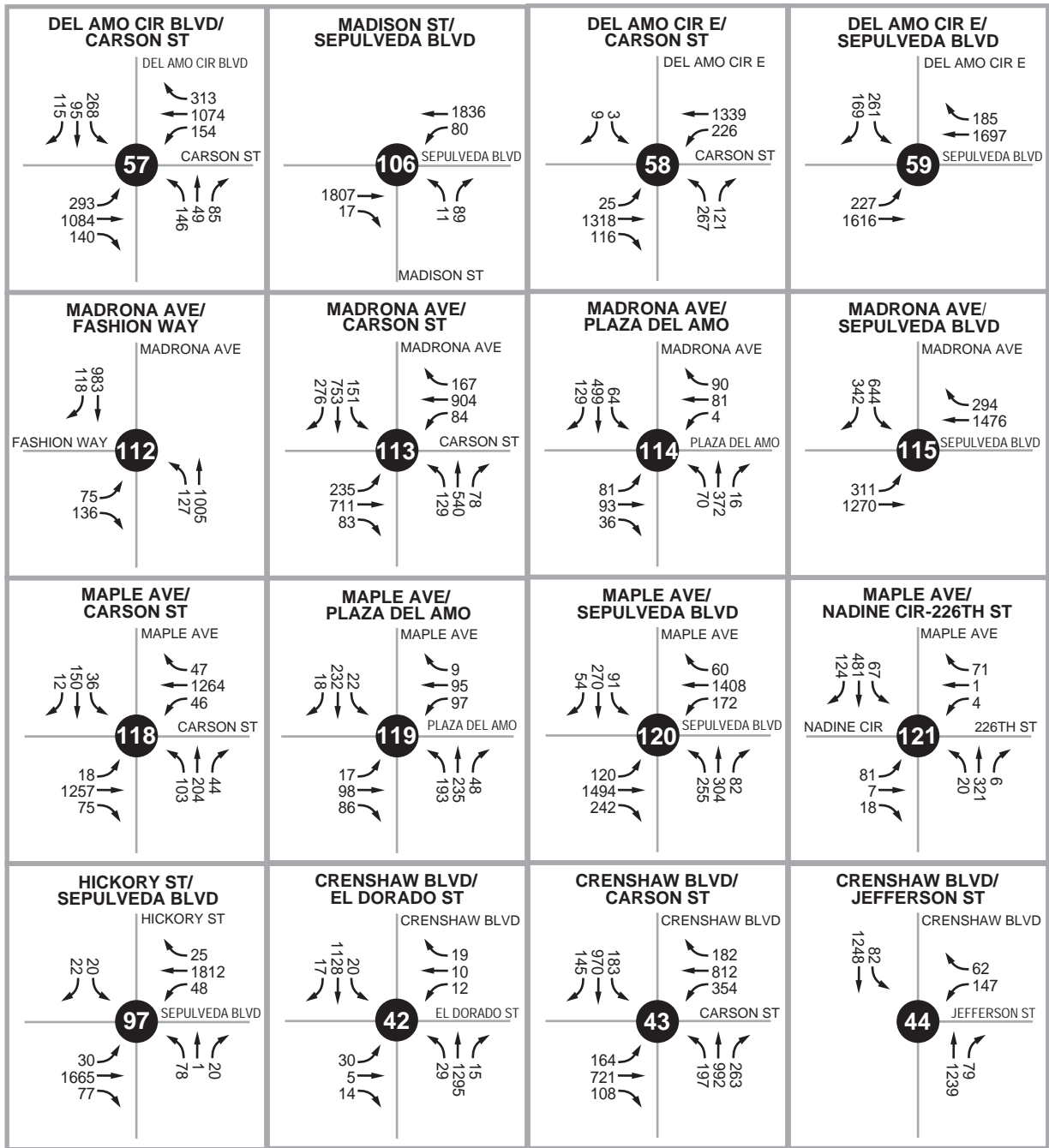



 Not to Scale

Legend:
 XX Mid-Day Peak Hour Volumes

Area 7 - Existing Weekday Mid-Day Peak Hour Intersection Volumes



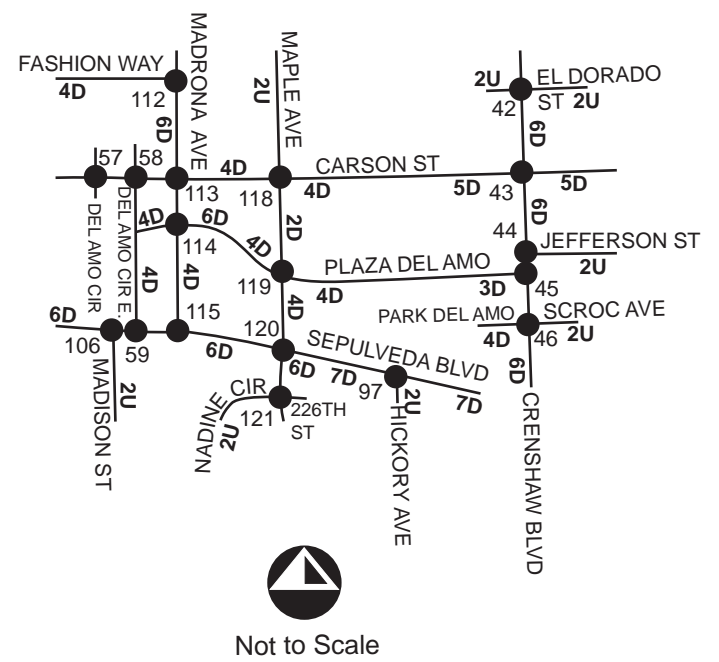
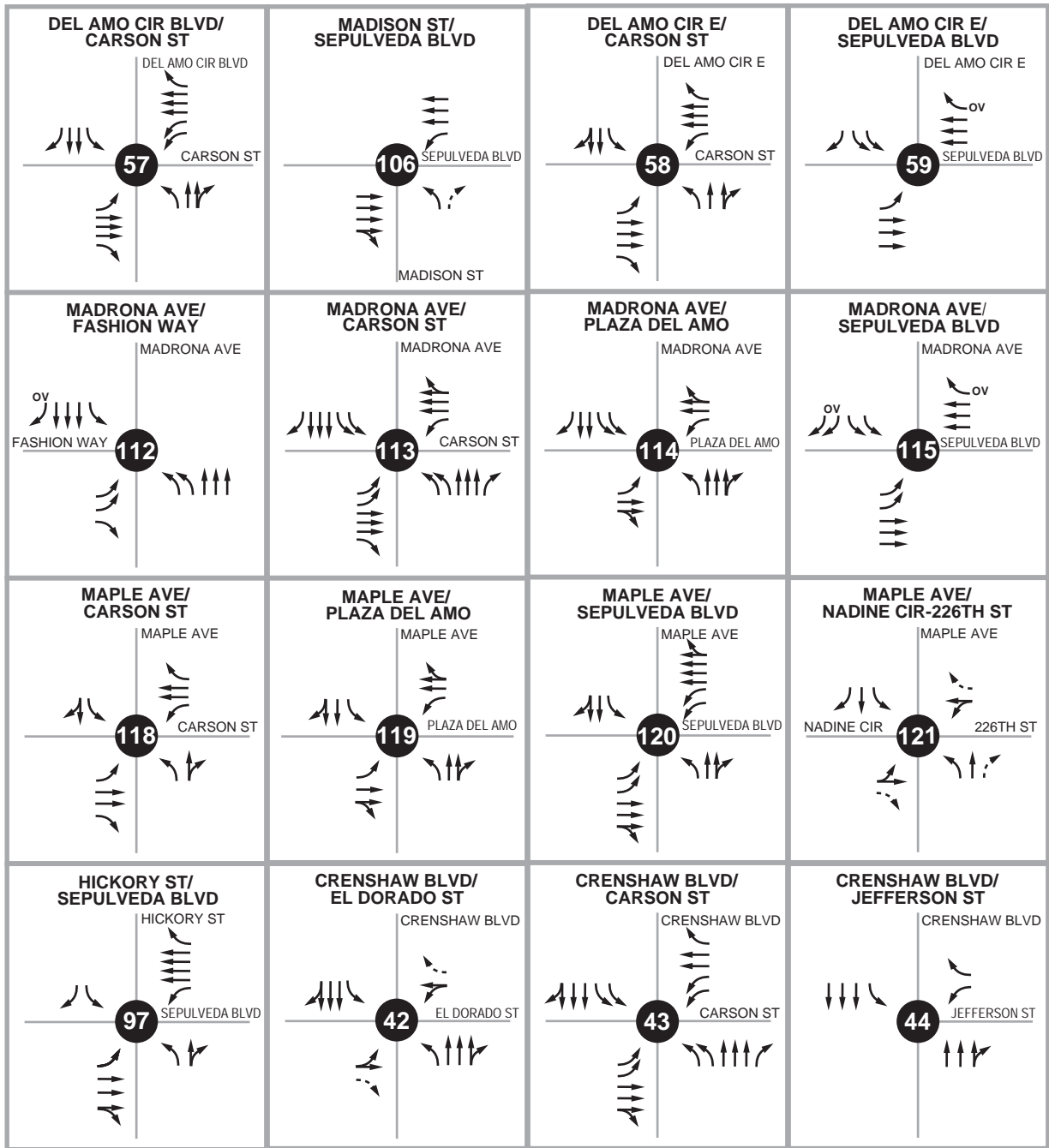


Not to Scale

Legend:
XX Mid-Day Peak Hour Volumes

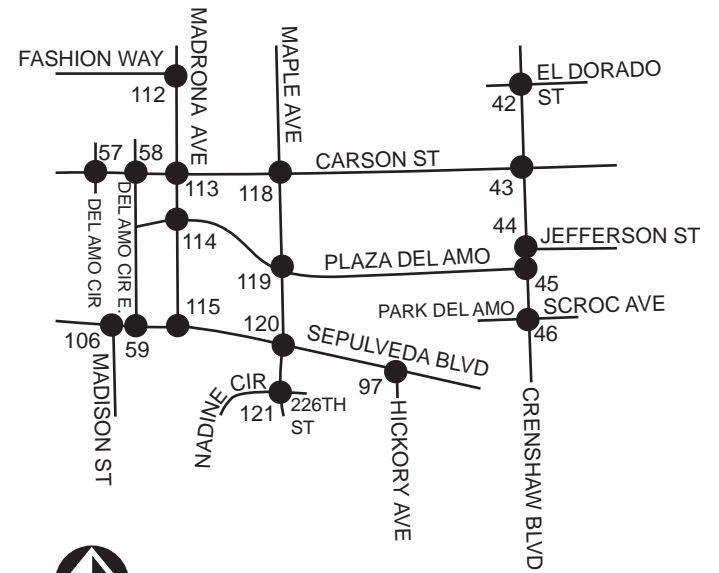
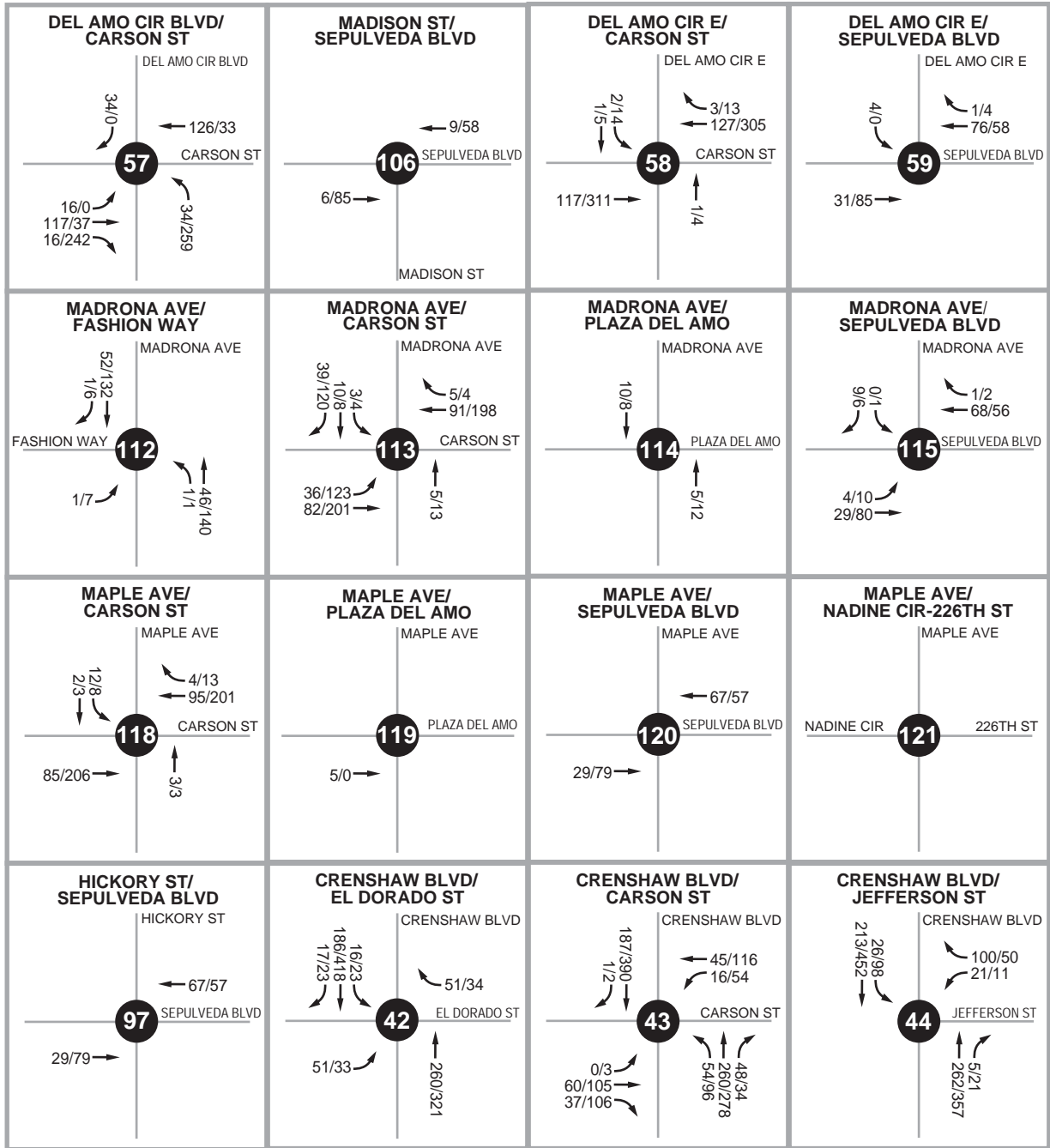
Area 7 - Existing Weekend Mid-Day Peak Hour Intersection Volumes





- Legend:
- Existing Lane
 - Free Right-Turn Lane
 - Defacto Right-Turn Lane
 - Overlap Right-Turn Lane
 - 2U 2-lane Undivided roadway
 - 2D 2-lane Divided roadway
 - 3D 3-lane Divided roadway (2 east, 1 west)
 - 4D 4-lane Divided roadway
 - 5D 5-lane Divided roadway (3 east, 2 west)
 - 6D 6-lane Divided roadway
 - 7D 7-lane Divided roadway (3 east, 4 west)

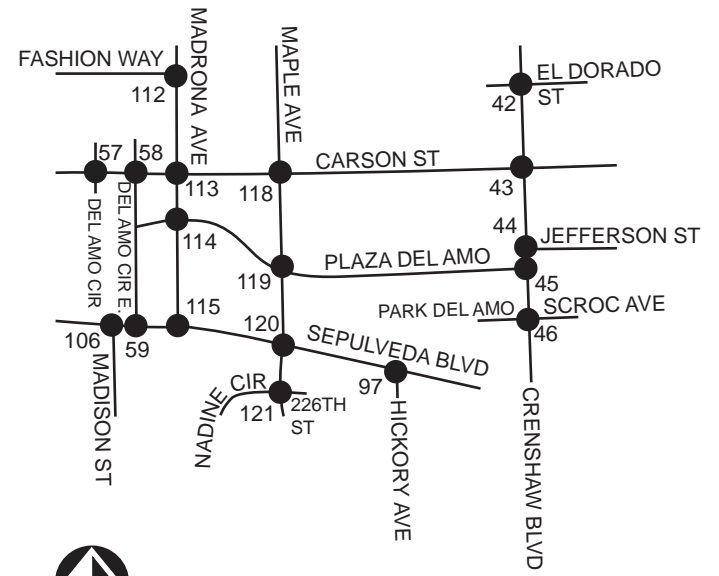
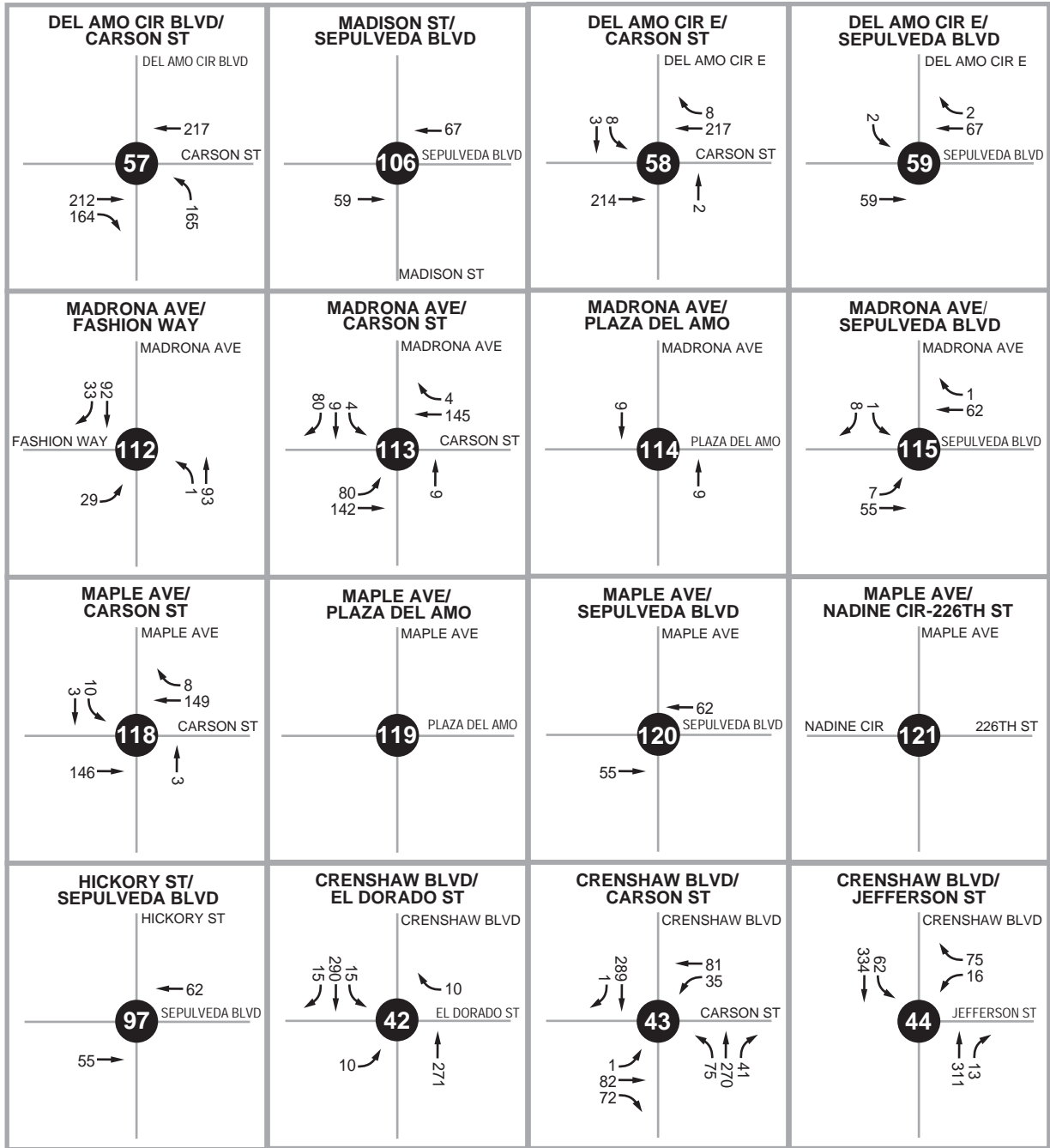




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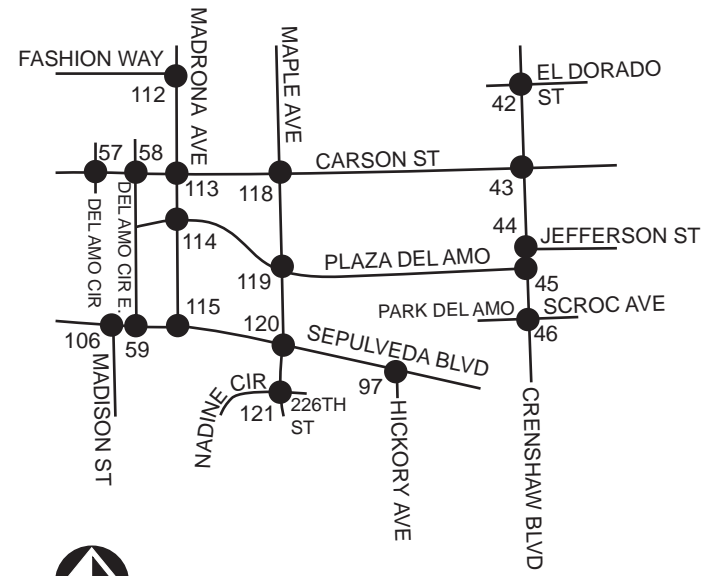
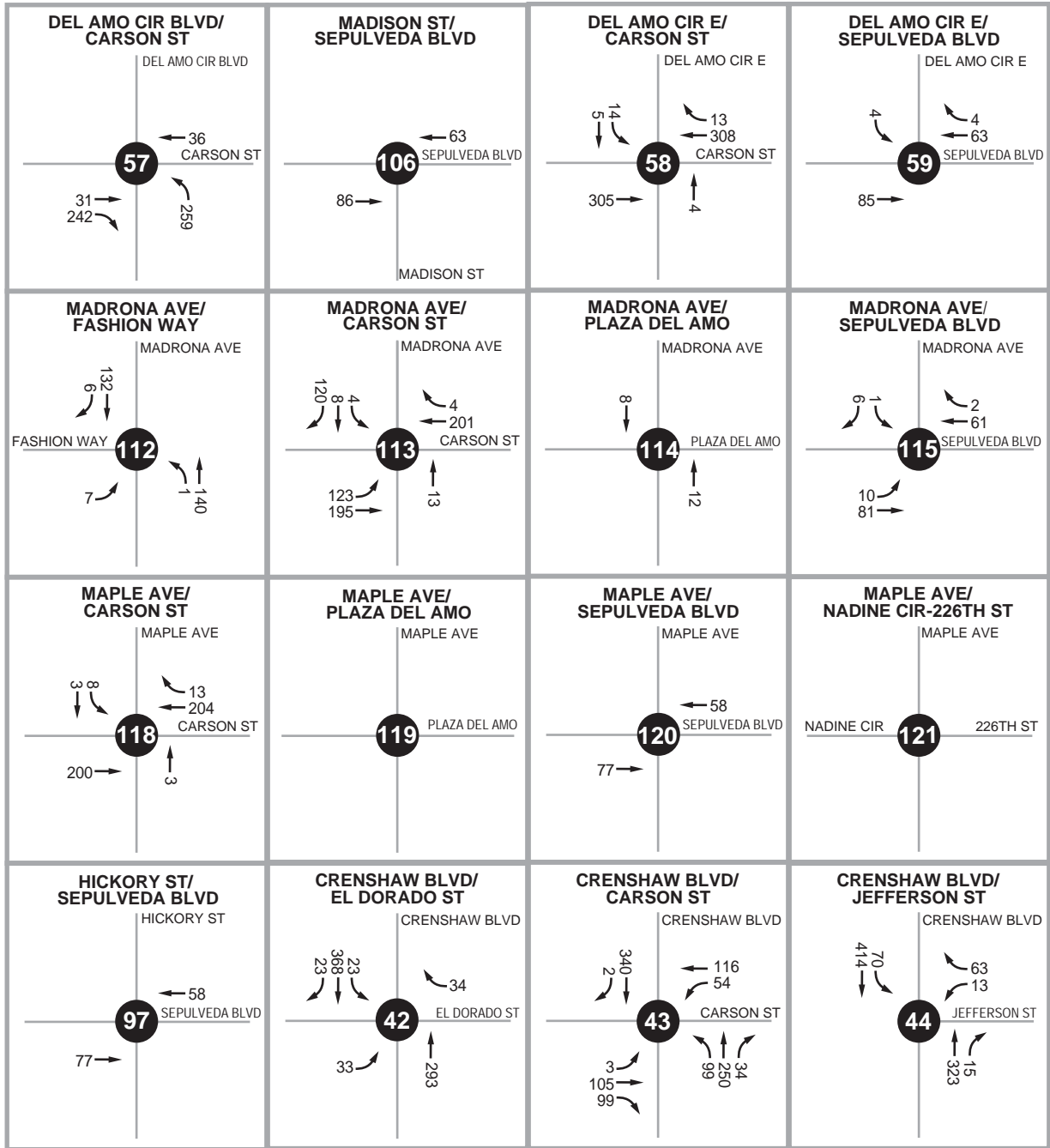
Legend:

XX/XX AM/PM Peak Hour Volumes



Not to Scale

Legend:
XX Mid-Day Peak Hour Volumes

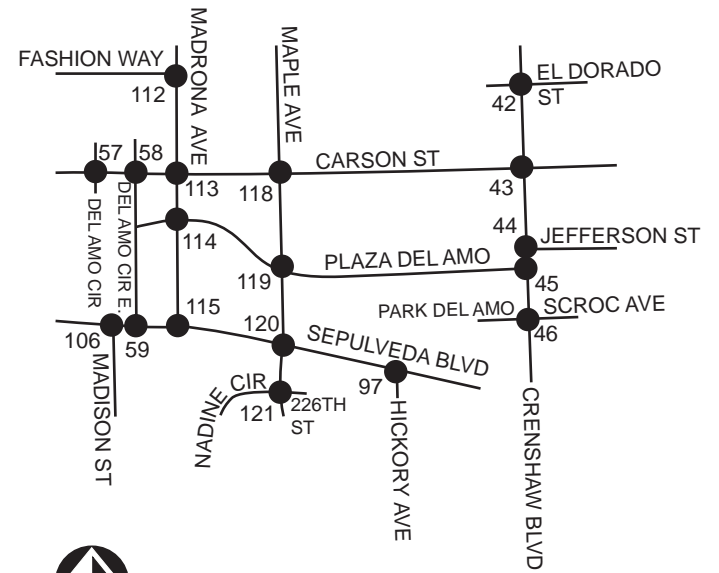
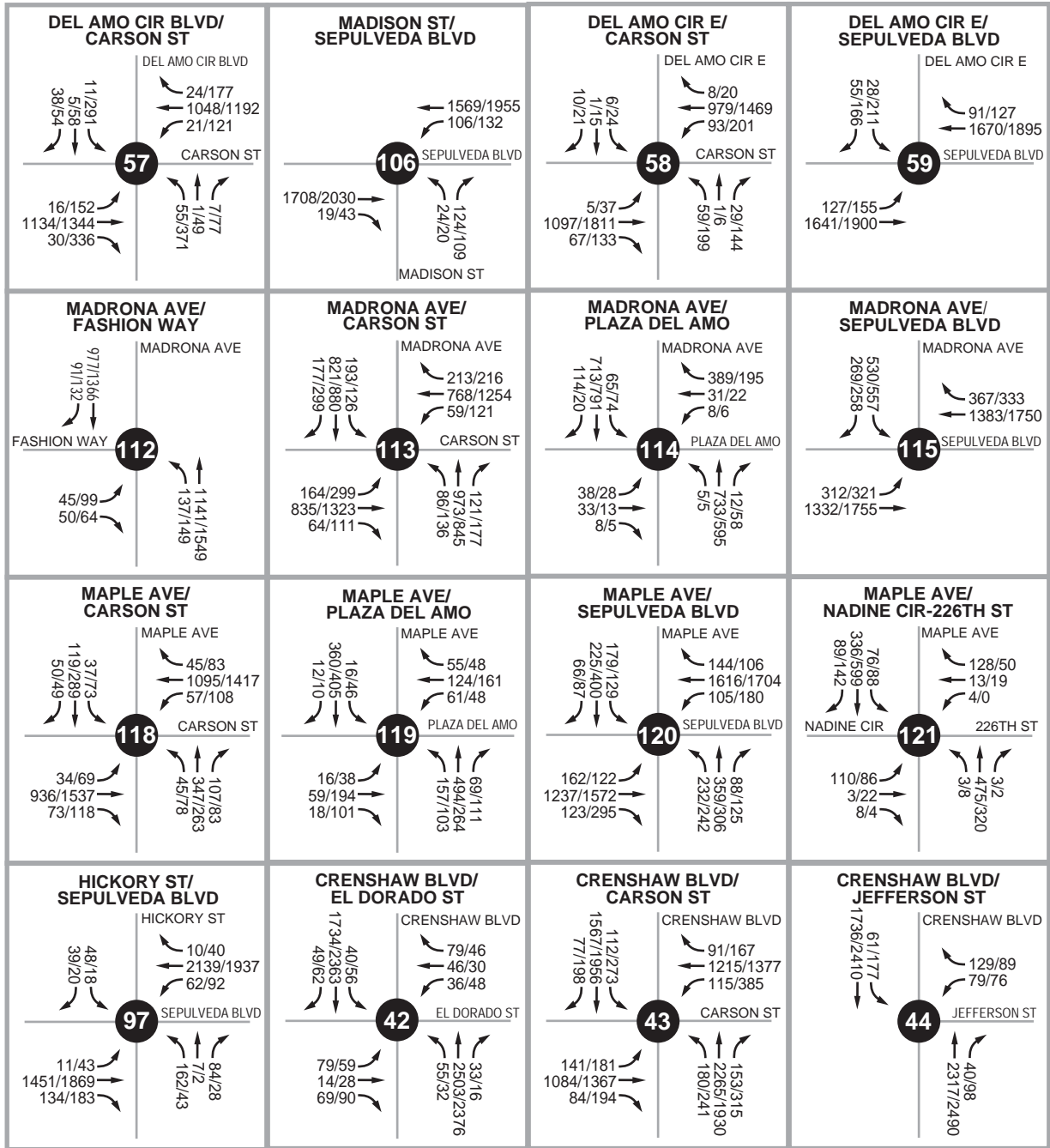



 Not to Scale

Legend:
 XX Mid-Day Peak Hour Volumes



Area 7 - Forecast Weekend Mid-Day Peak Hour Trip Assignment of Approved Projects



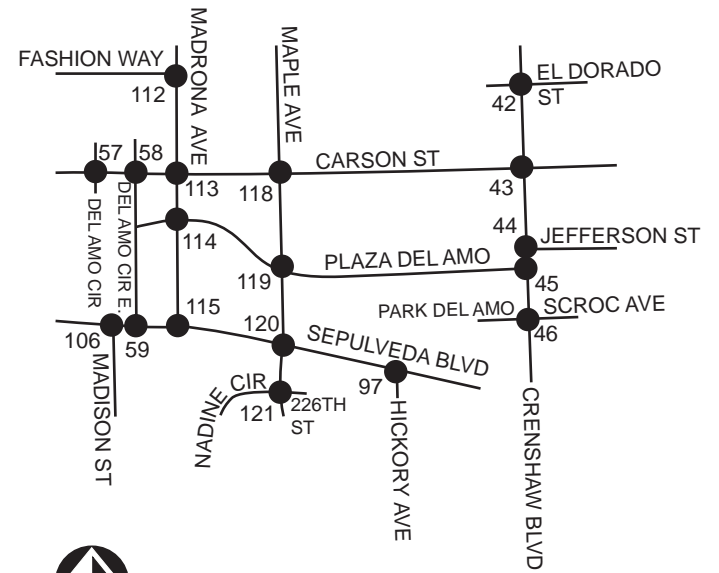
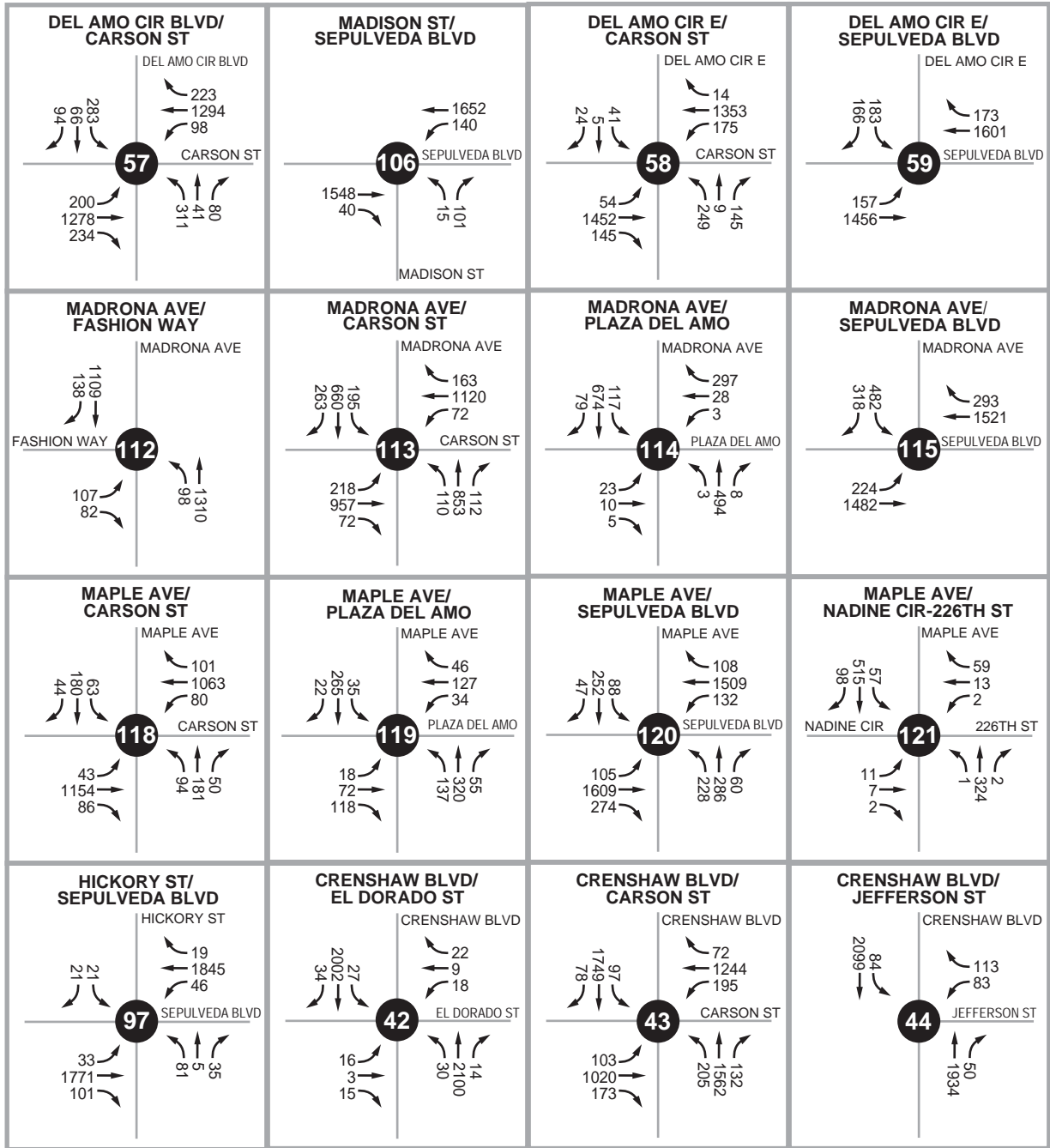
Not to Scale

Legend:

XX/XX AM/PM Peak Hour Volumes



Area 7 - Forecast Near-Term Conditions Weekday AM/PM Peak Hour Intersection Volumes

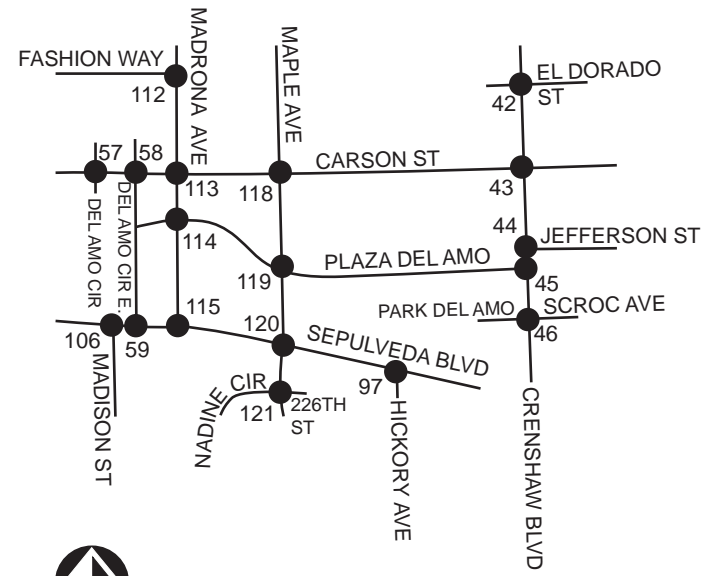
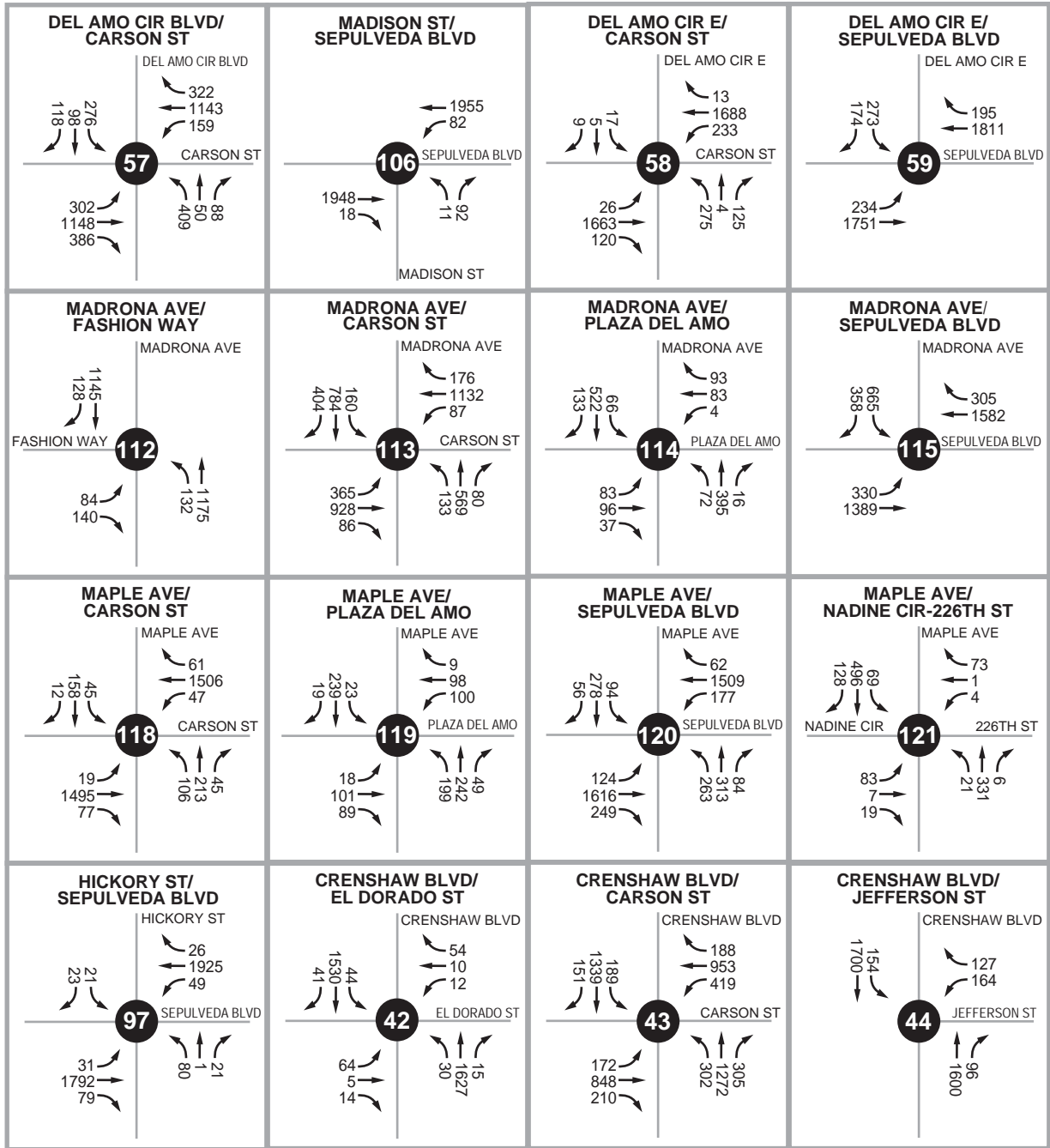



 Not to Scale

Legend:
 XX Mid-Day Peak Hour Volumes



Area 7 - Forecast Near-Term Conditions Weekday Mid-Day Peak Hour Intersection Volumes

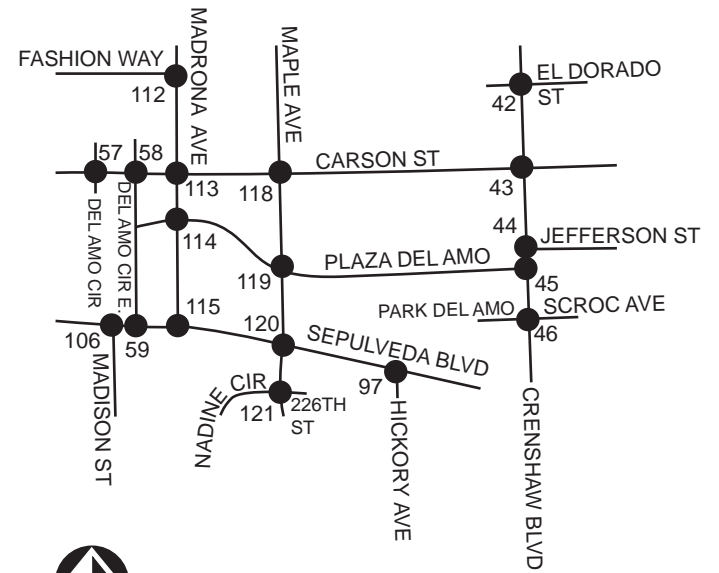
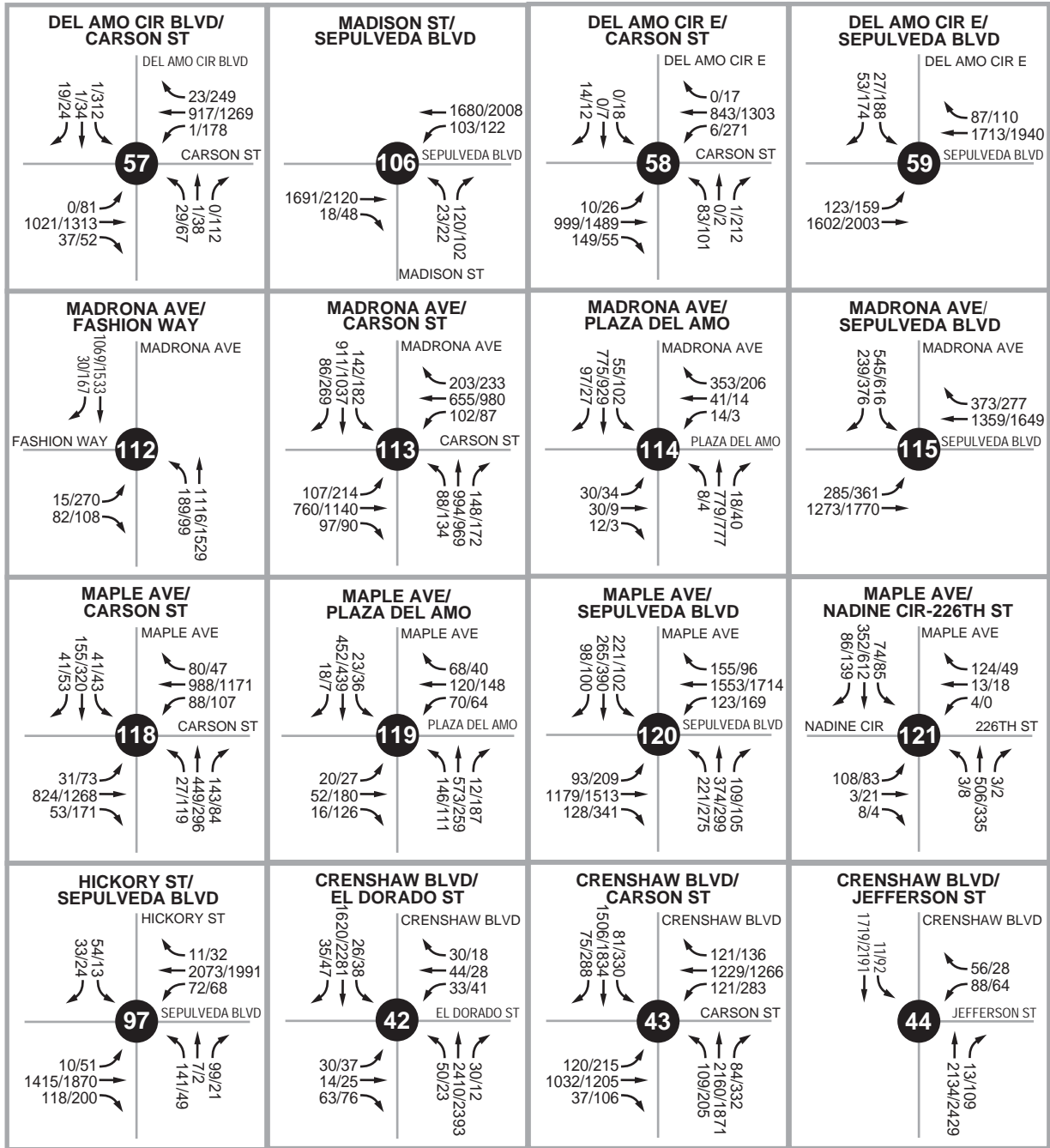


Not to Scale

Legend:
XX Mid-Day Peak Hour Volumes



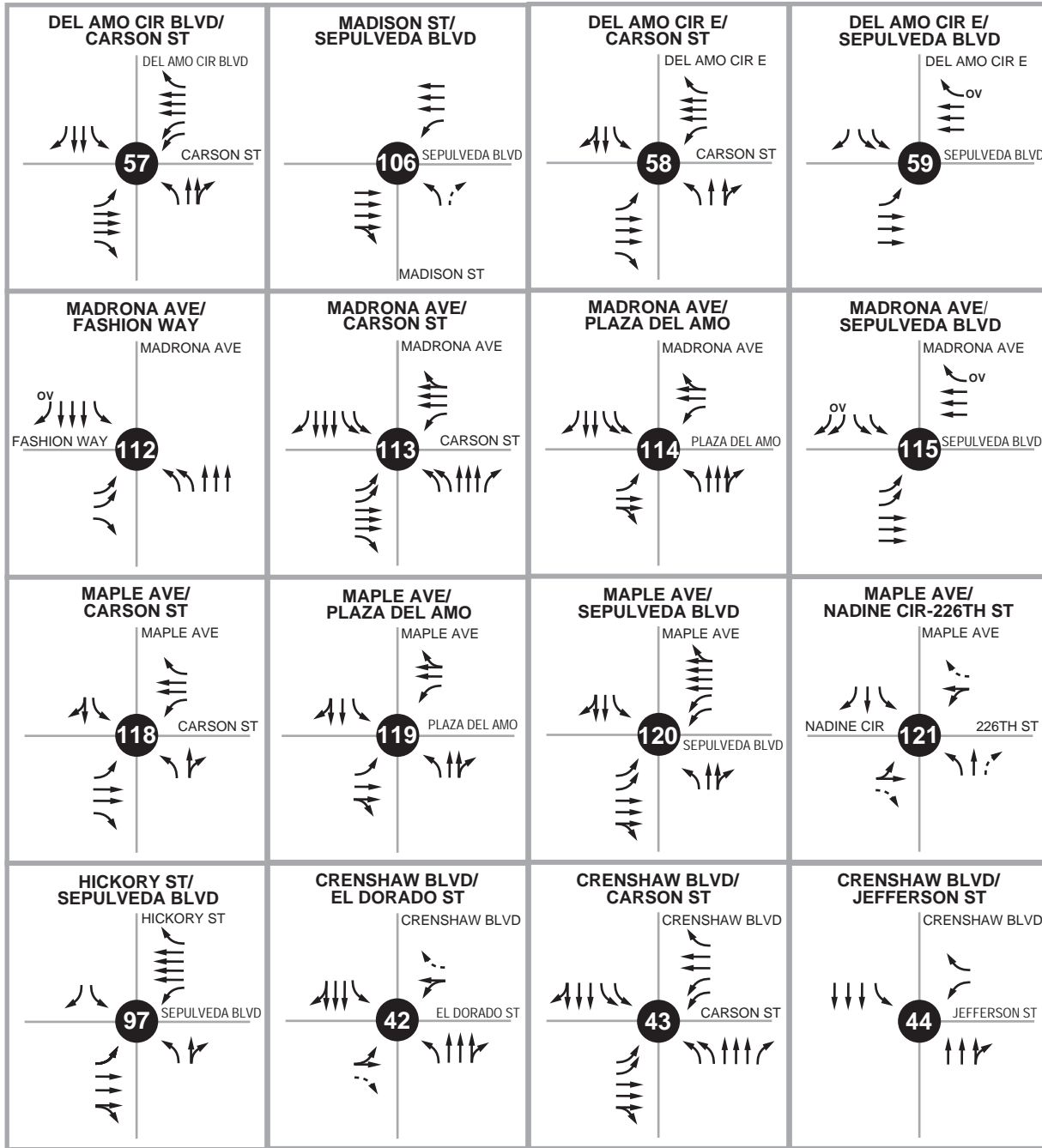
Area 7 - Forecast Near-Term Conditions Weekend Mid-Day Peak Hour Intersection Volumes



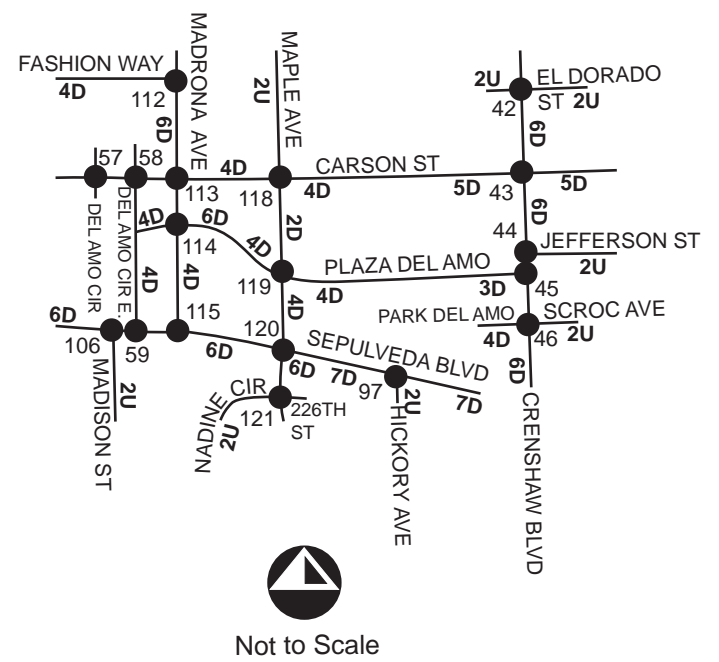
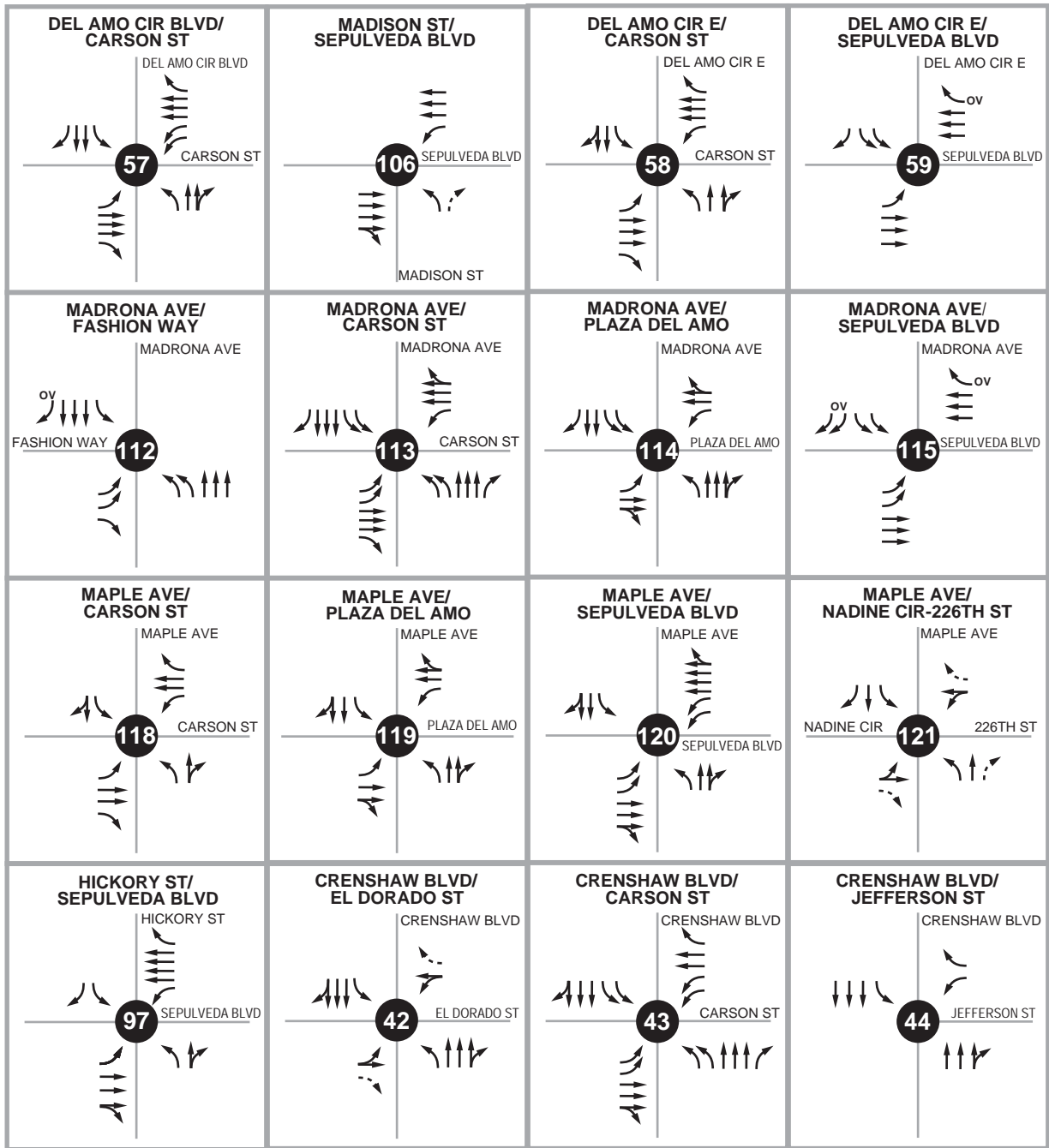
Not to Scale

Legend:

XX/XX AM/PM Peak Hour Volumes



- Legend:
- Existing Lane
 - Free Right-Turn Lane
 - Defacto Right-Turn Lane
 - Overlap Right-Turn Lane
 - 2U 2-lane Undivided roadway
 - 2D 2-lane Divided roadway
 - 3D 3-lane Divided roadway (2 east, 1 west)
 - 4D 4-lane Divided roadway
 - 5D 5-lane Divided roadway (3 east, 2 west)
 - 6D 6-lane Divided roadway
 - 7D 7-lane Divided roadway (3 east, 4 west)

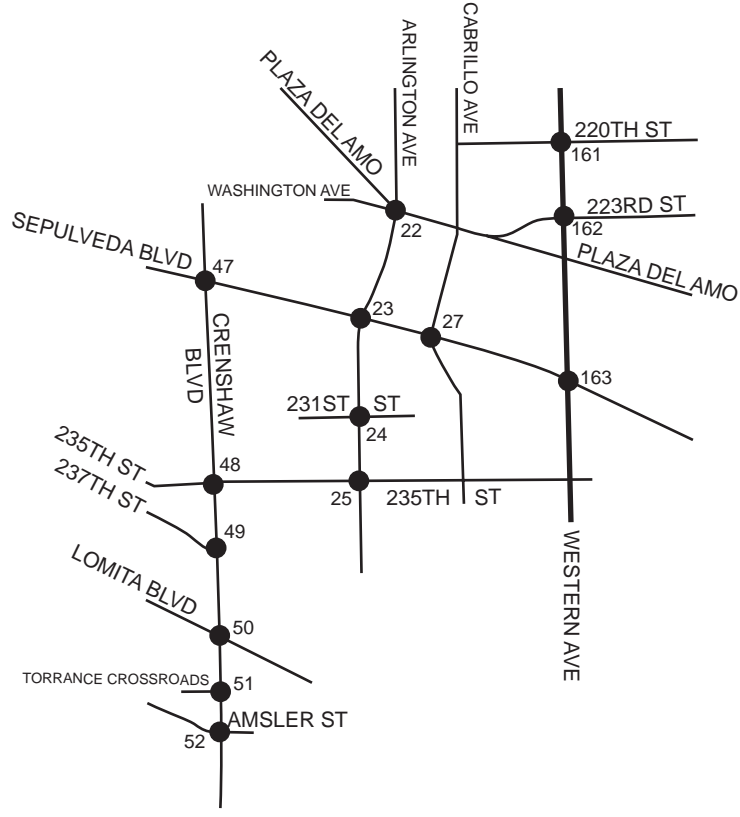
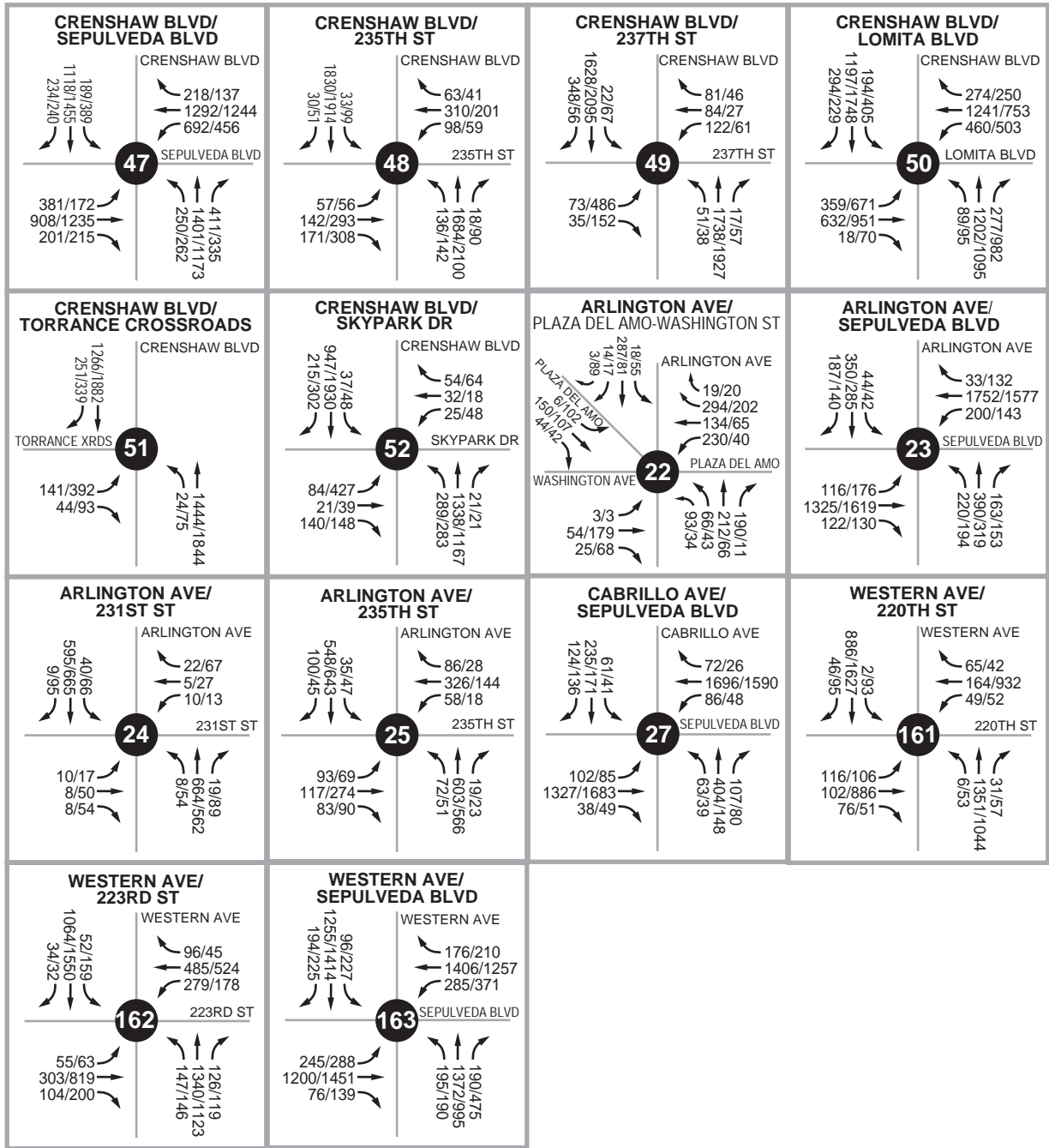


- Legend:
- Existing Lane
 - Free Right-Turn Lane
 - Defacto Right-Turn Lane
 - Overlap Right-Turn Lane
 - 2U 2-lane Undivided roadway
 - 2D 2-lane Divided roadway
 - 3D 3-lane Divided roadway (2 east, 1 west)
 - 4D 4-lane Divided roadway
 - 5D 5-lane Divided roadway (3 east, 2 west)
 - 6D 6-lane Divided roadway
 - 7D 7-lane Divided roadway (3 east, 4 west)



Area 7 - Forecast Improved Long-Range Future Conditions Intersection/Roadway Geometry

Study Area 8

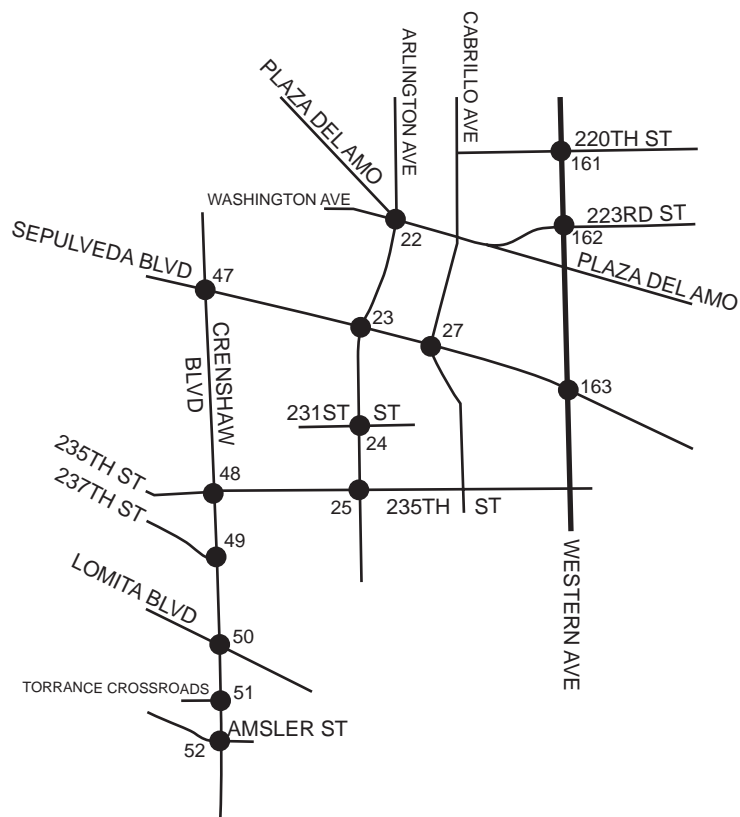
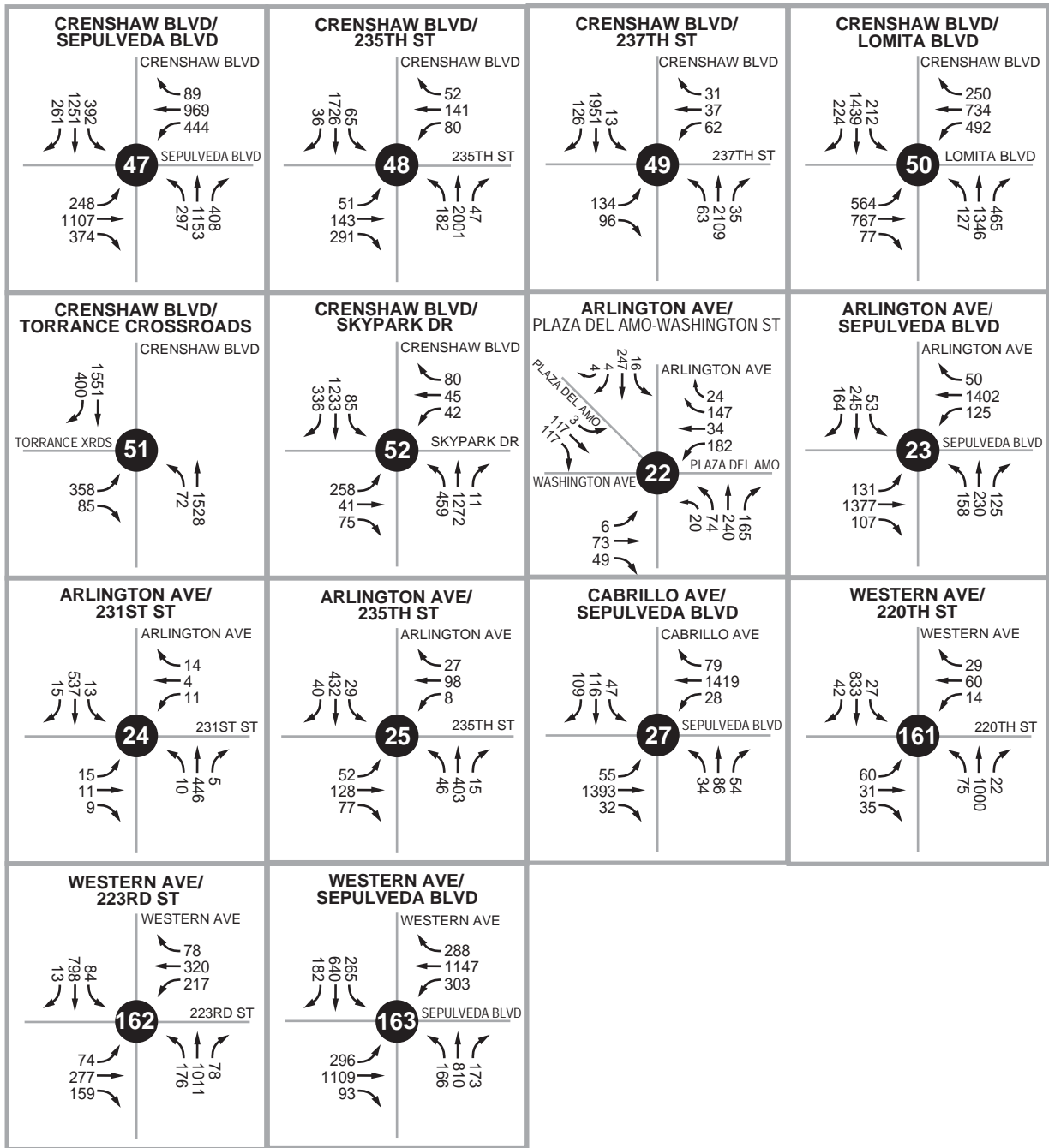


Not to Scale

Legend:
XX/XX AM/PM Peak Hour Volumes

Area 8 - Existing Weekday AM/PM Peak Hour Intersection Volumes



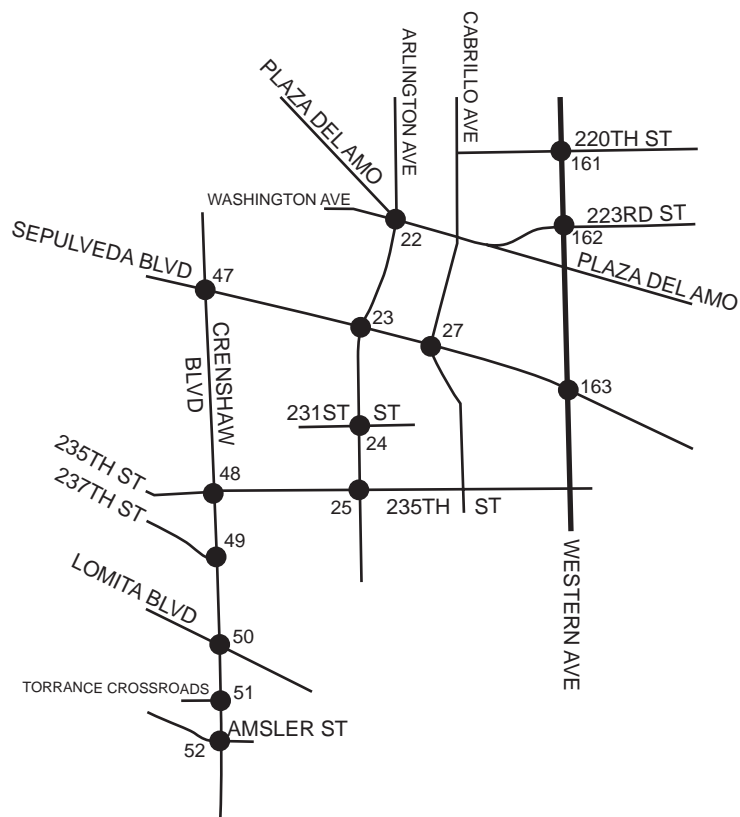
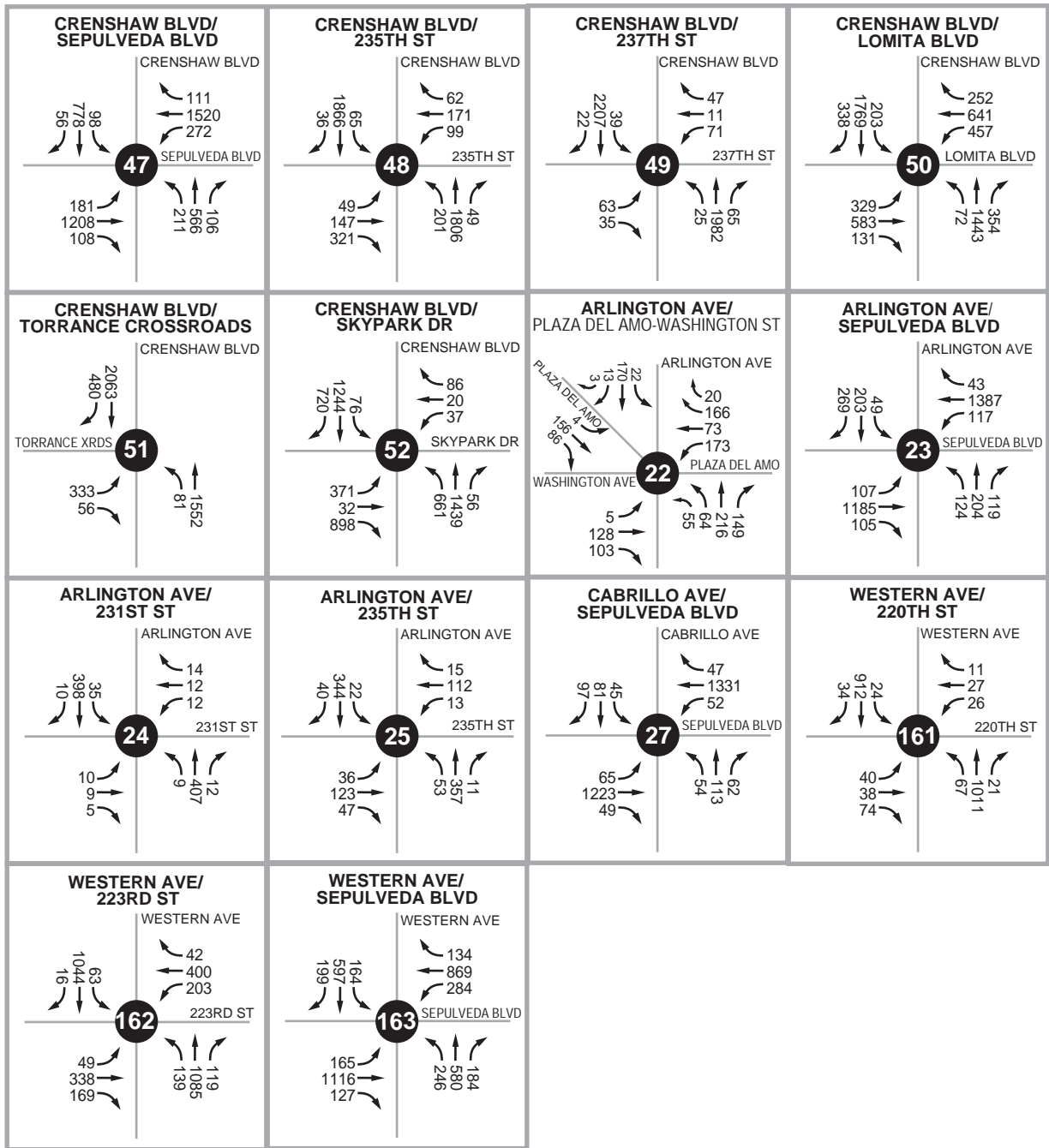


Not to Scale

Legend:
 XX Mid-Day Peak Hour Volumes

Area 8 - Existing Weekday Mid-Day Peak Hour Intersection Volumes



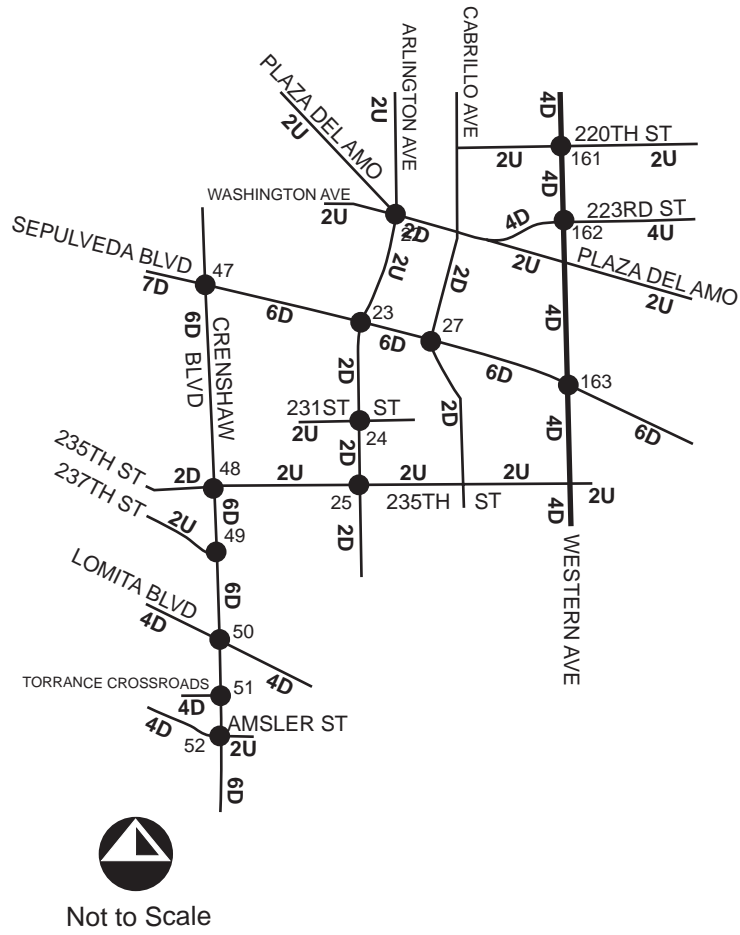
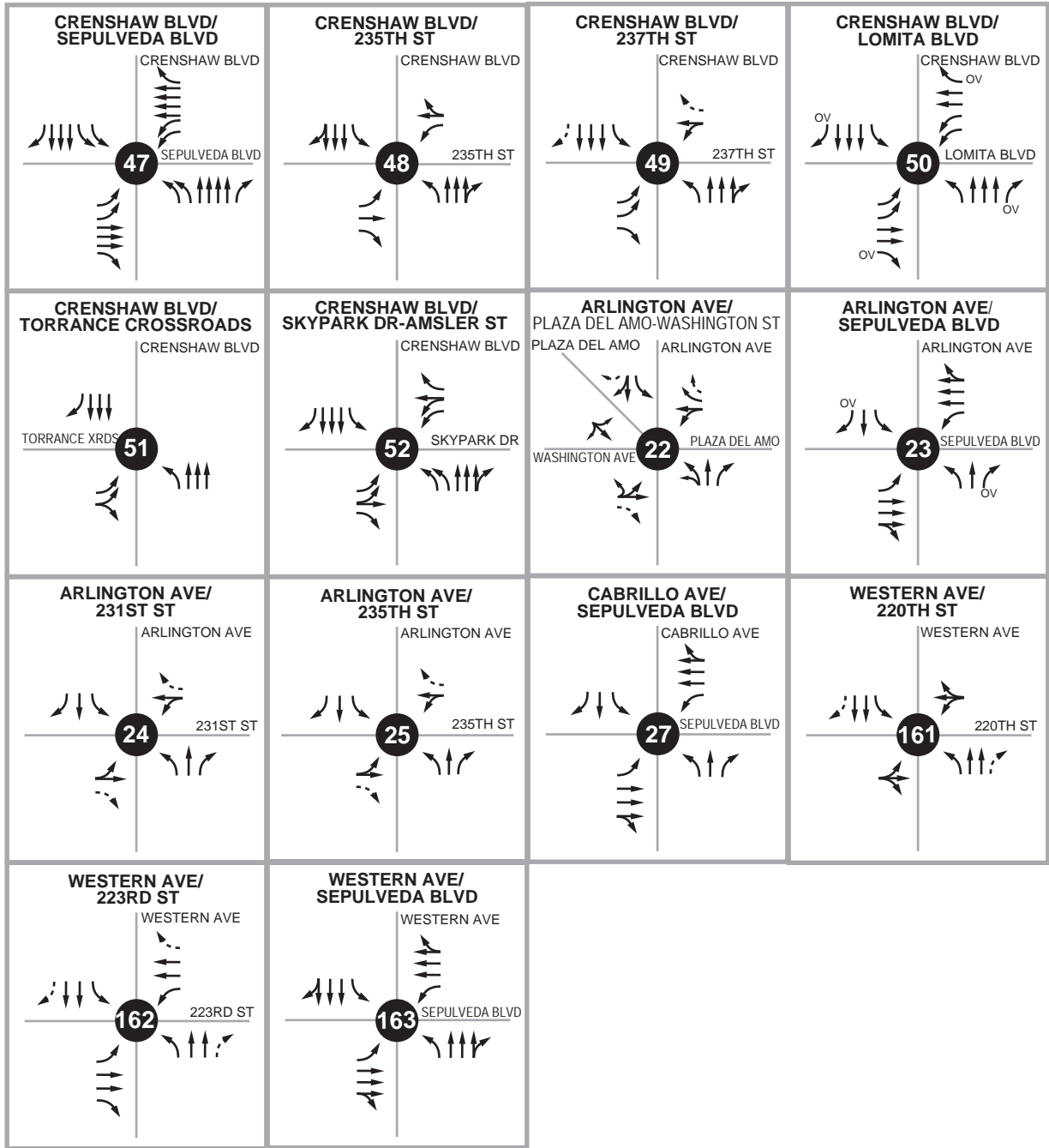


Not to Scale

Legend:
 XX Mid-Day Peak Hour Volumes

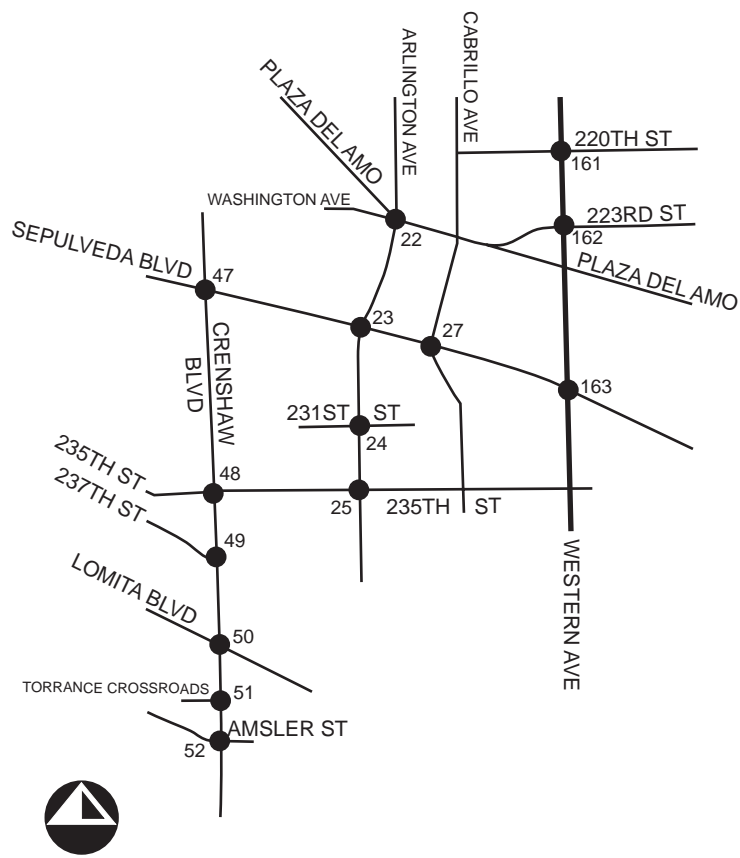
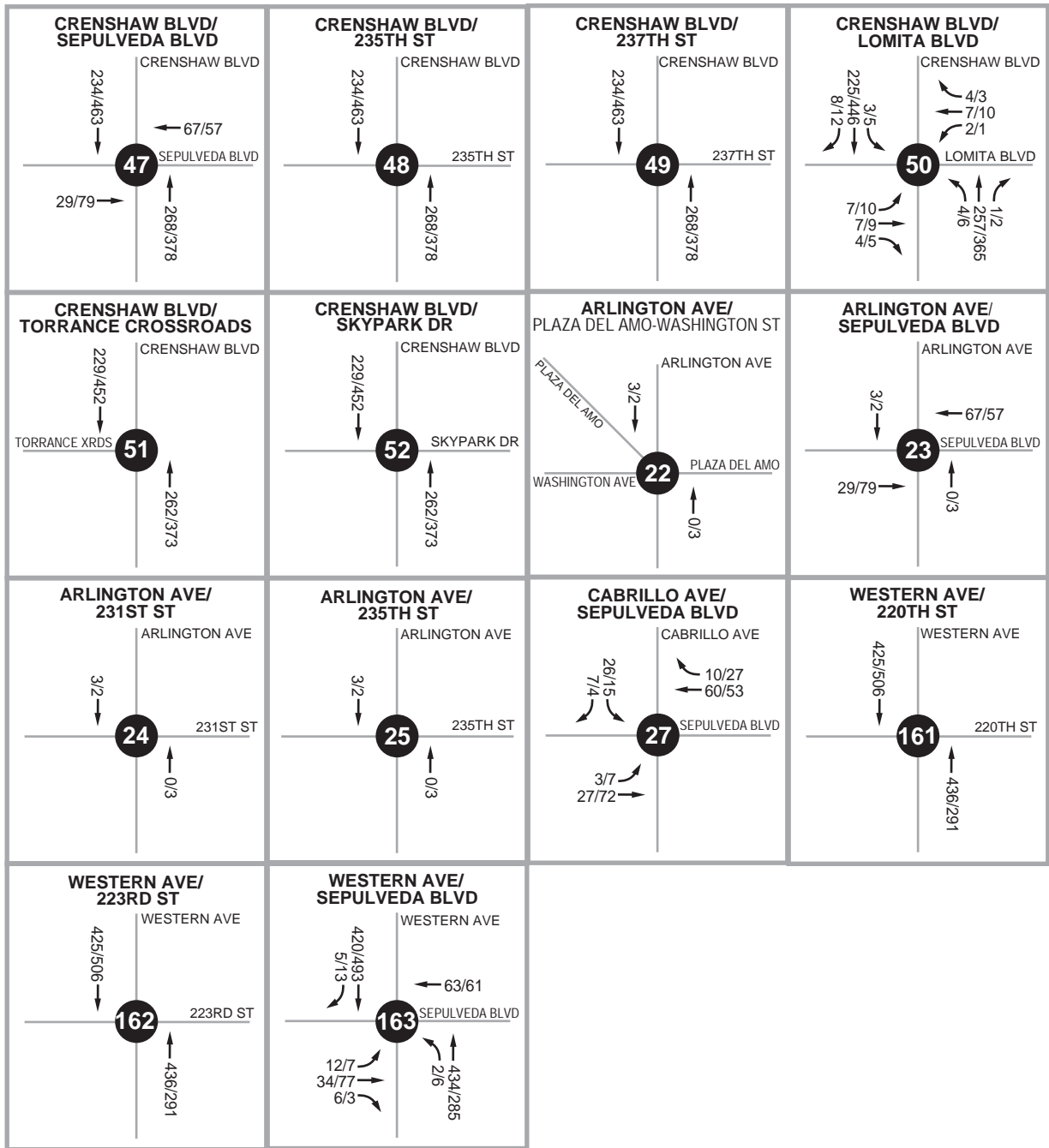
Area 8 - Existing Weekend Mid-Day Peak Hour Intersection Volumes





- Legend:
- Existing Lane
 - Free Right-Turn Lane
 - Defacto Right-Turn Lane
 - Overlap Right-Turn Lane
 - 2U 2-lane Undivided roadway
 - 2D 2-lane Divided roadway
 - 4U 4-lane Undivided roadway
 - 4D 4-lane Divided roadway
 - 6D 6-lane Divided roadway
 - 7D 7-lane Divided roadway (3 east, 4 west)

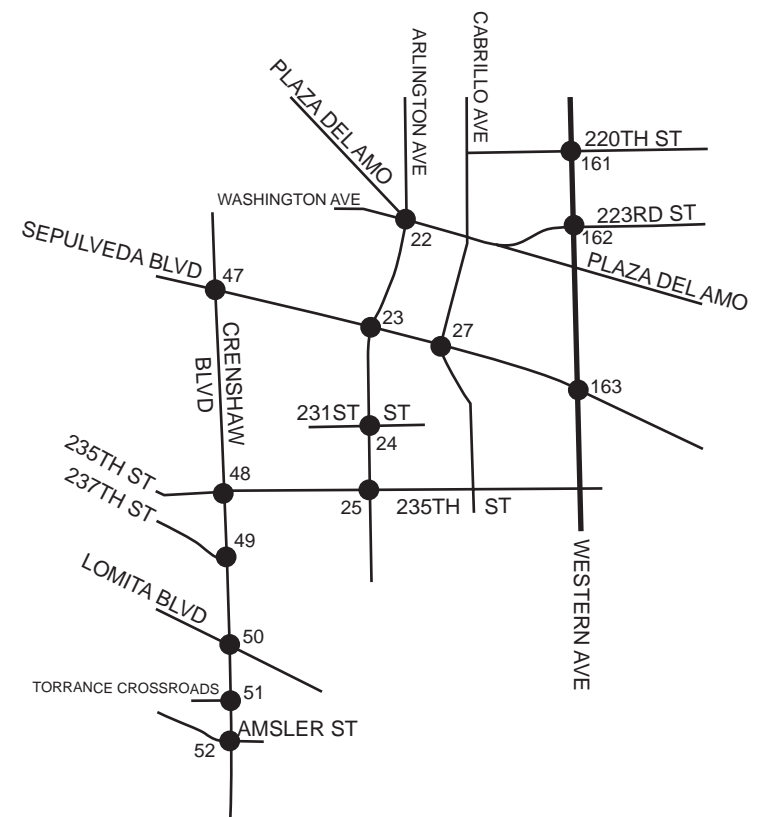
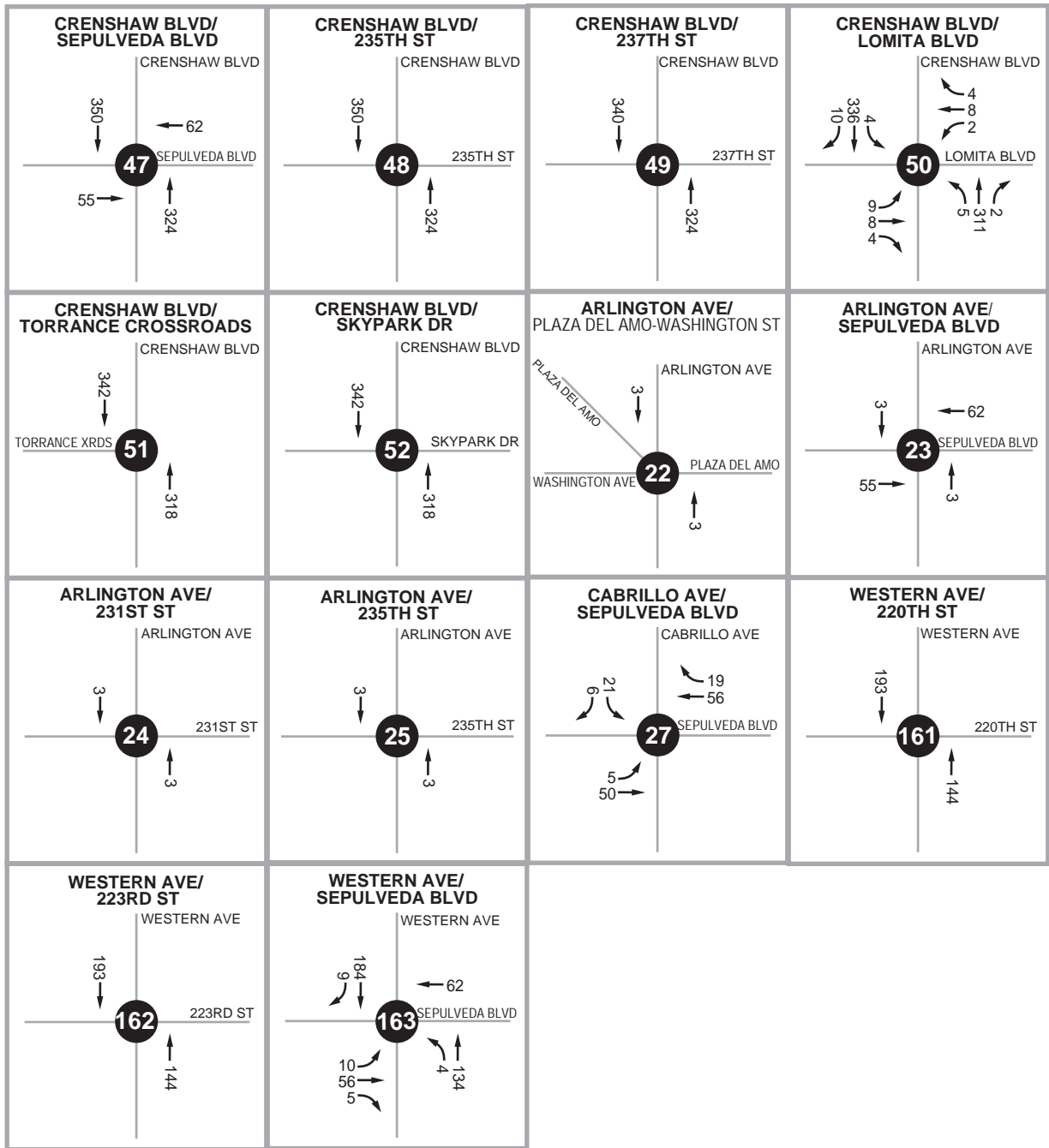




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Legend:
 XX/XX AM/PM Peak Hour Volumes

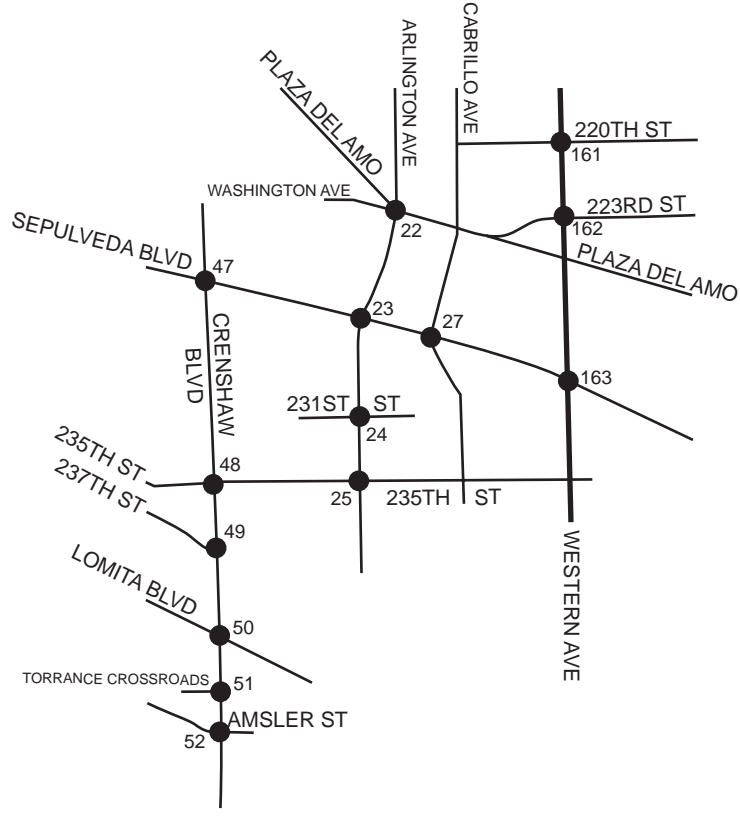
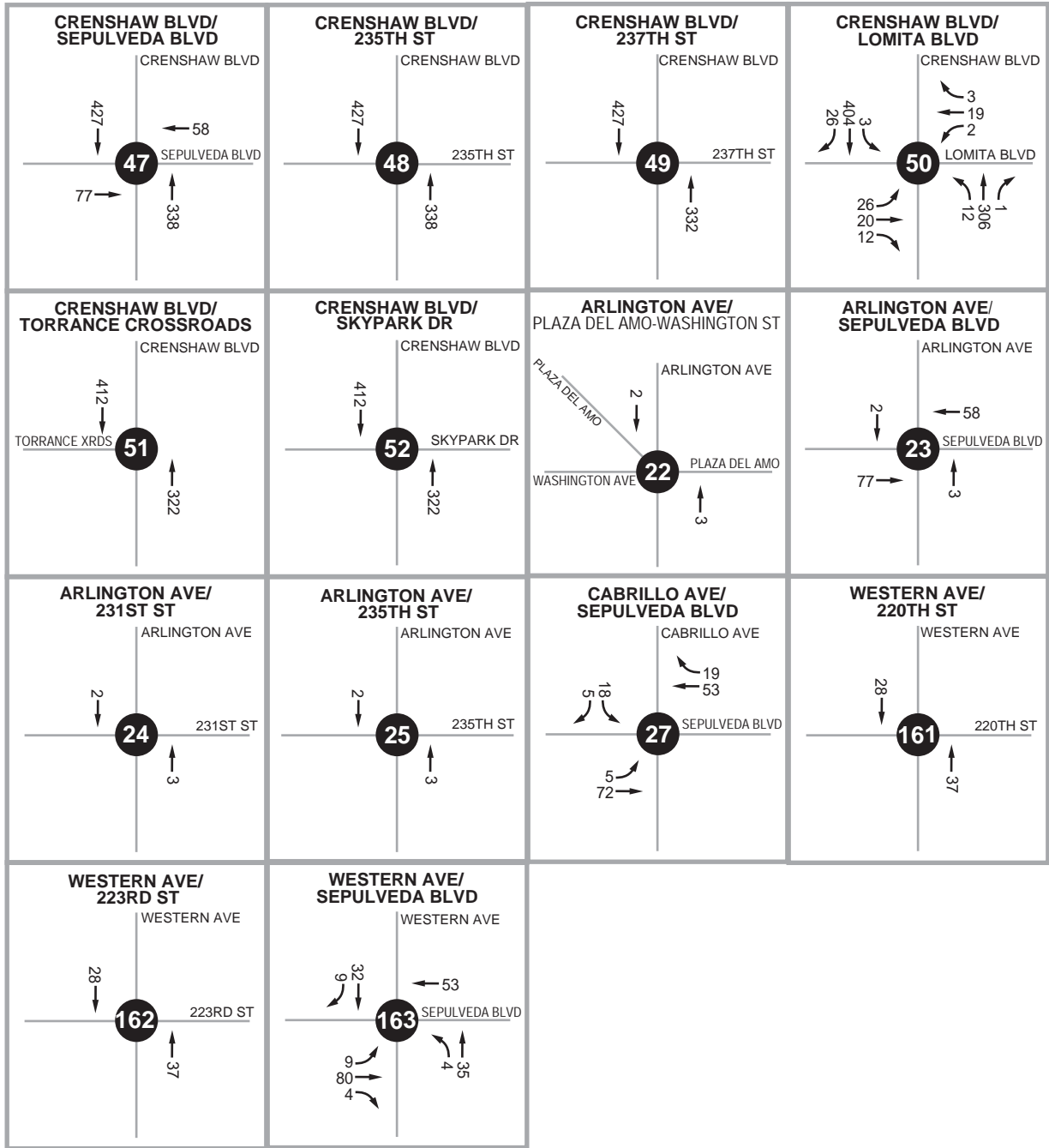




Not to Scale

Legend:

XX Mid-Day Peak Hour Volumes

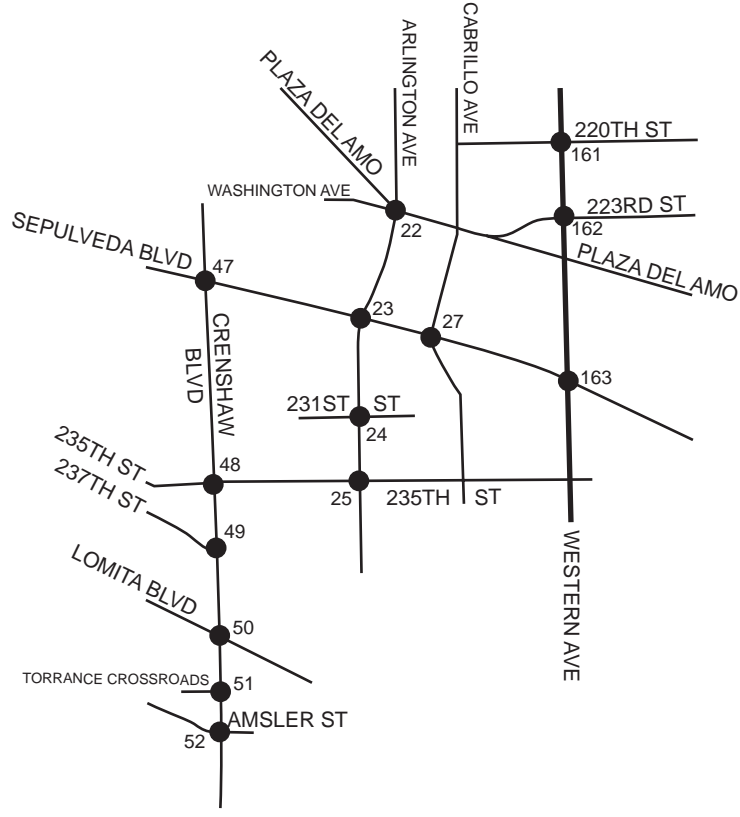
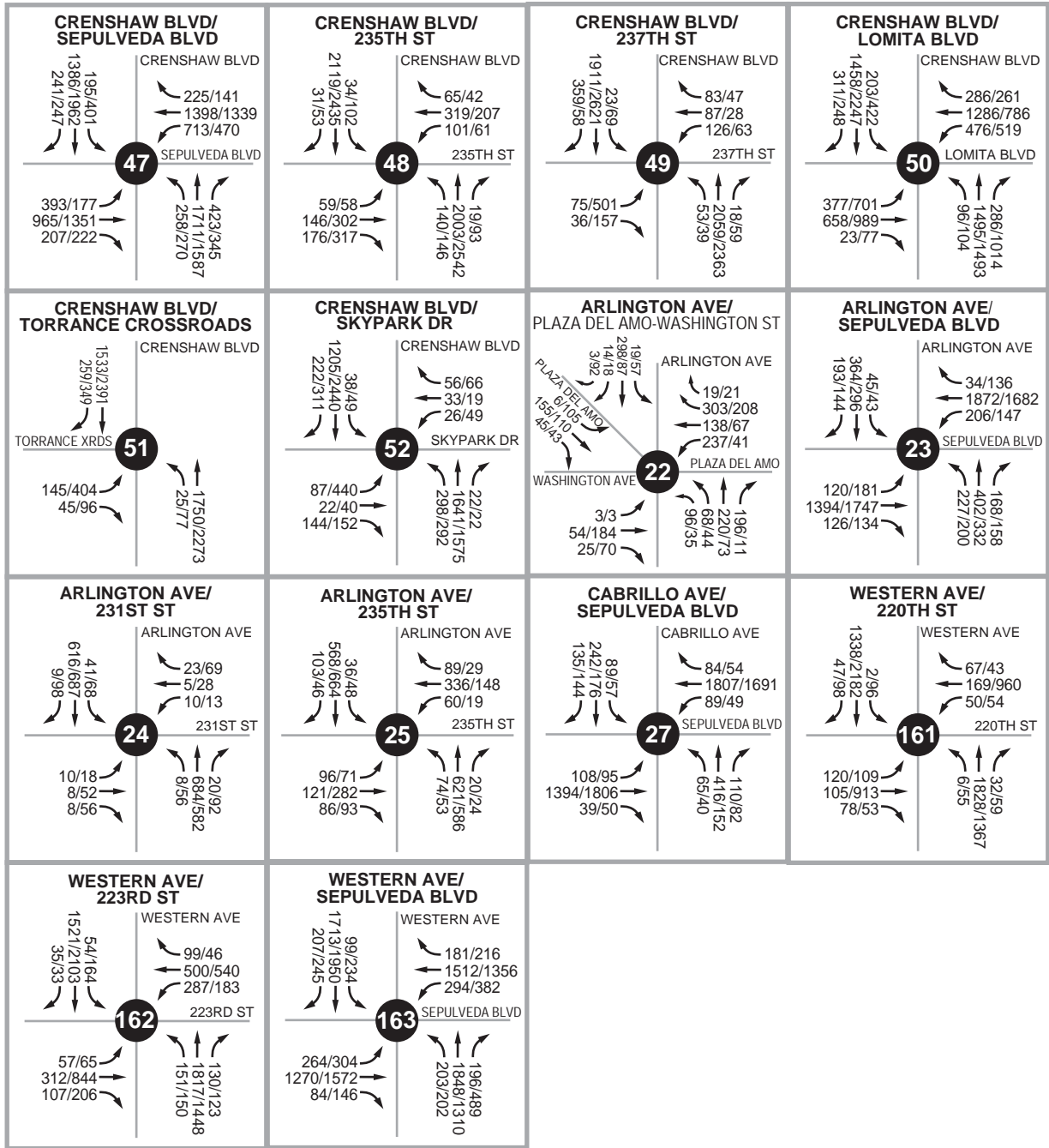


Not to Scale

Legend:
 XX Mid-Day Peak Hour Volumes



Area 8 - Forecast Weekend Mid-Day Peak Hour Trip Assignment of Approved Projects

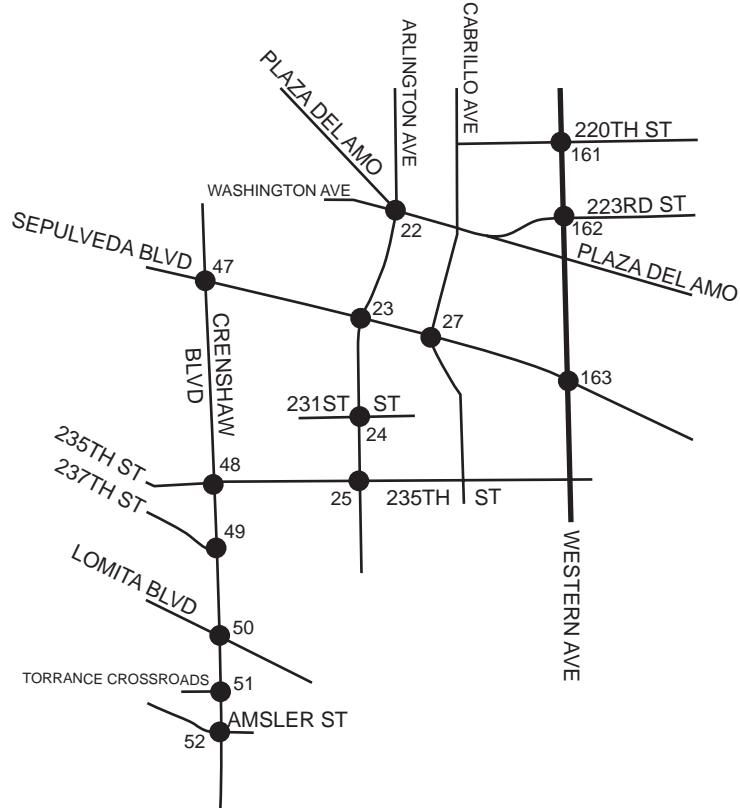
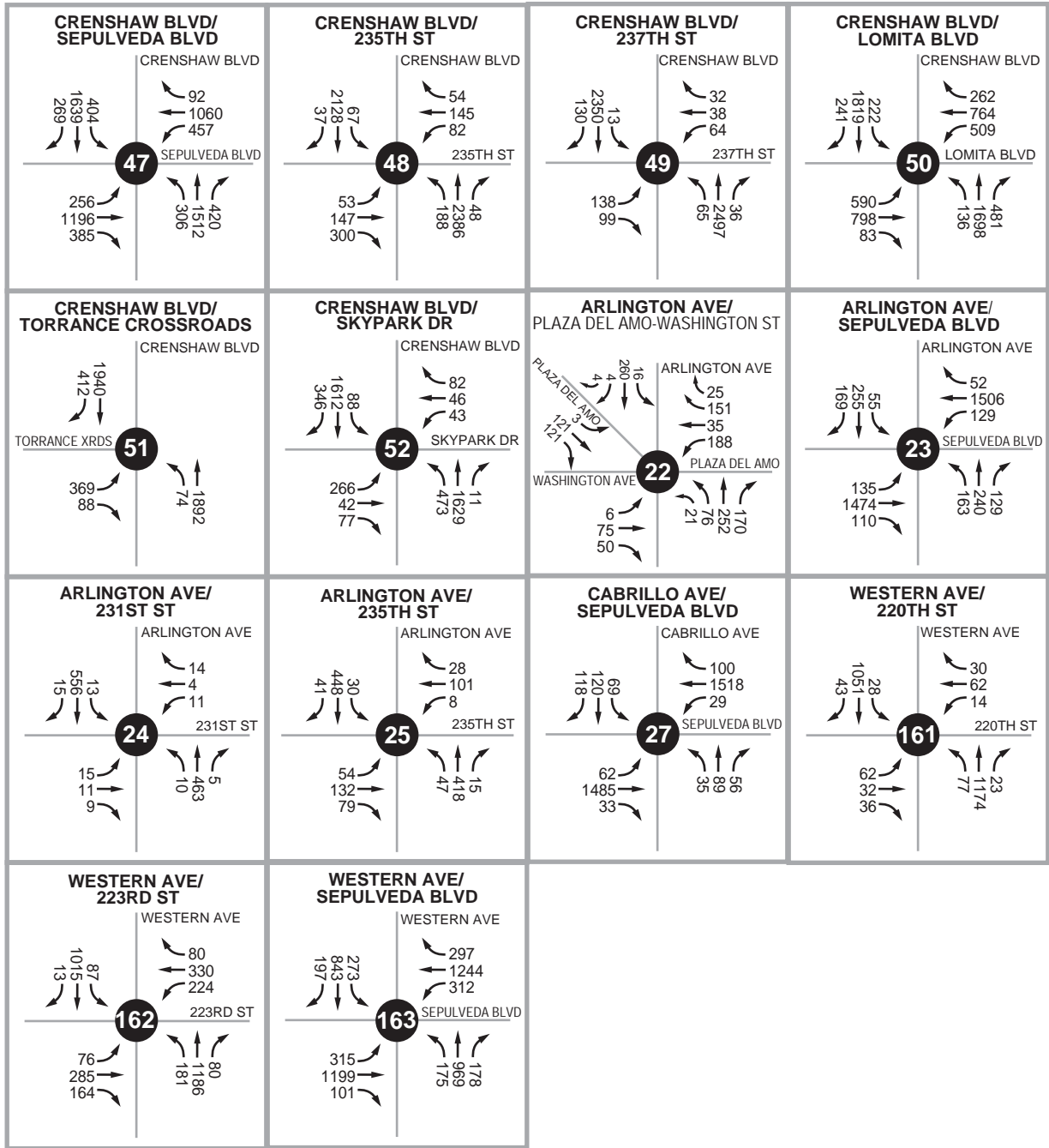


Not to Scale

Legend:
XX/XX AM/PM Peak Hour Volumes



Area 8 - Forecast Near-Term Conditions Weekday AM/PM Peak Hour Intersection Volumes

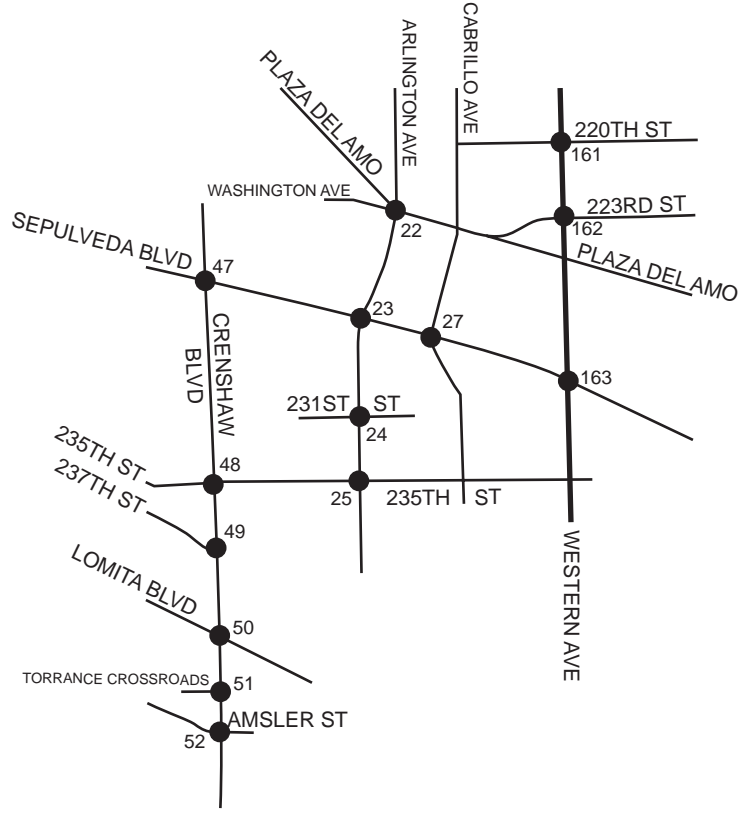
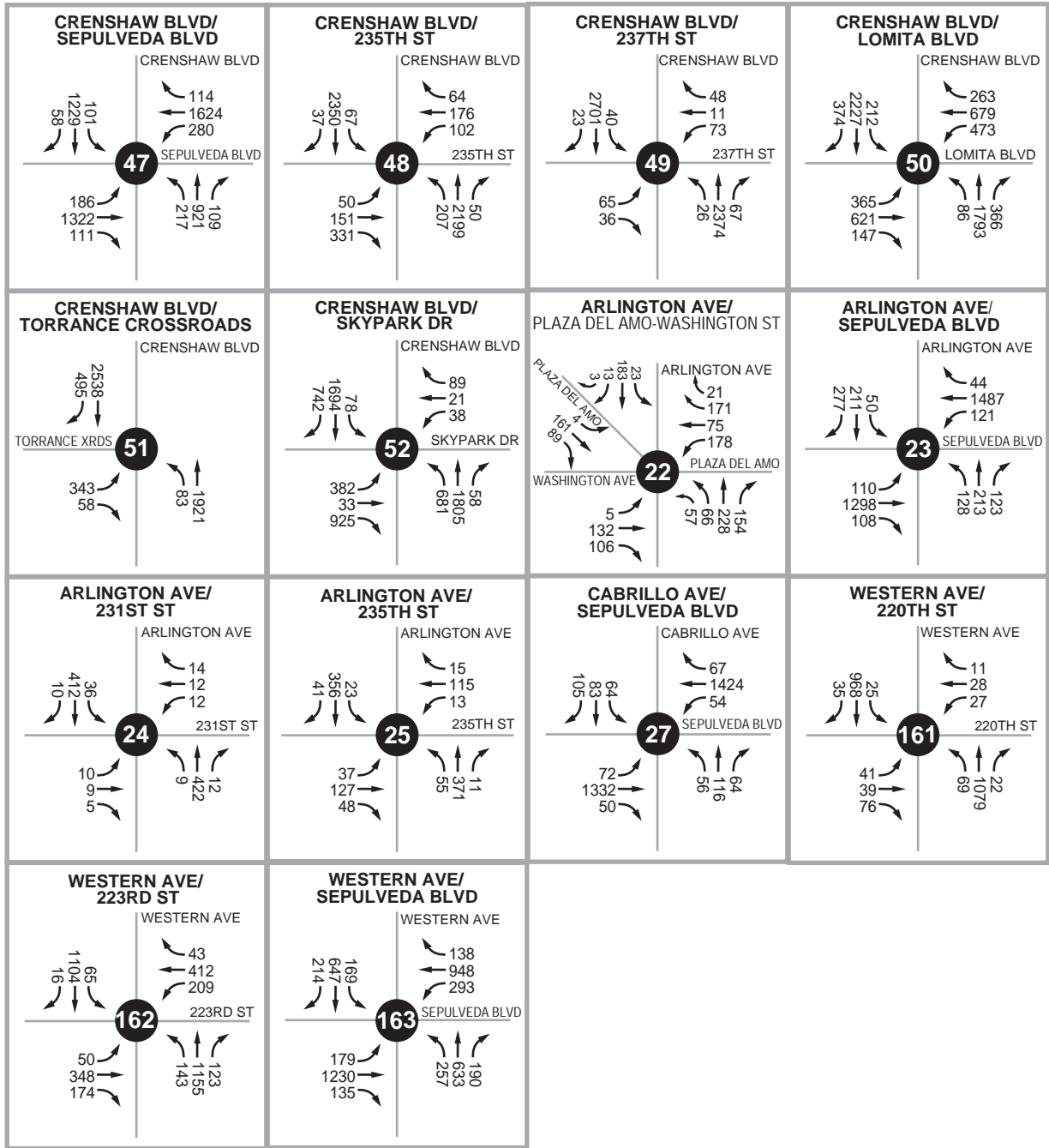


Not to Scale

Legend:
XX Mid-Day Peak Hour Volumes



Area 8 - Forecast Near-Term Conditions Weekday Mid-Day Peak Hour Intersection Volumes

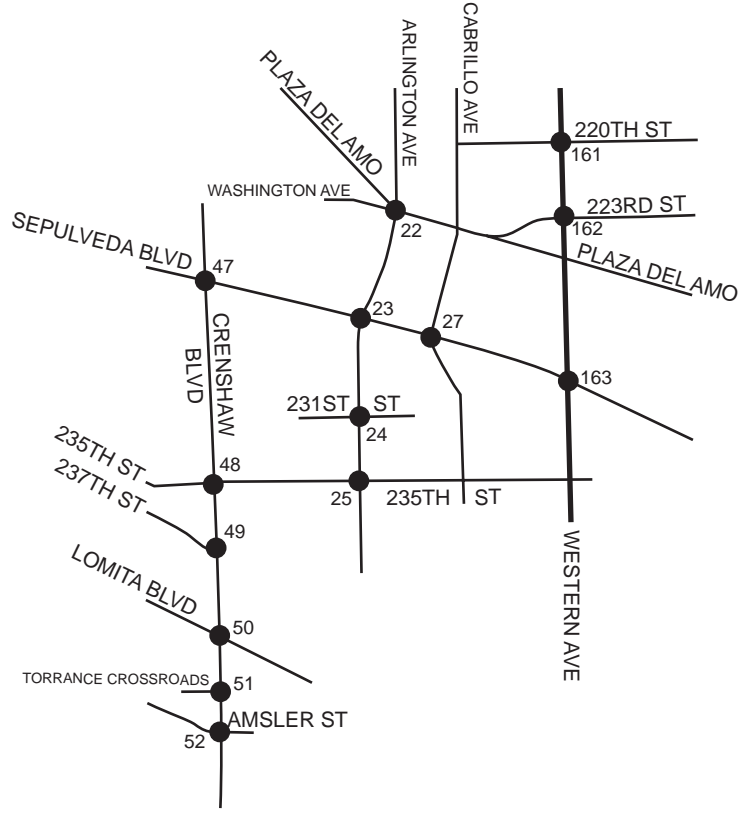
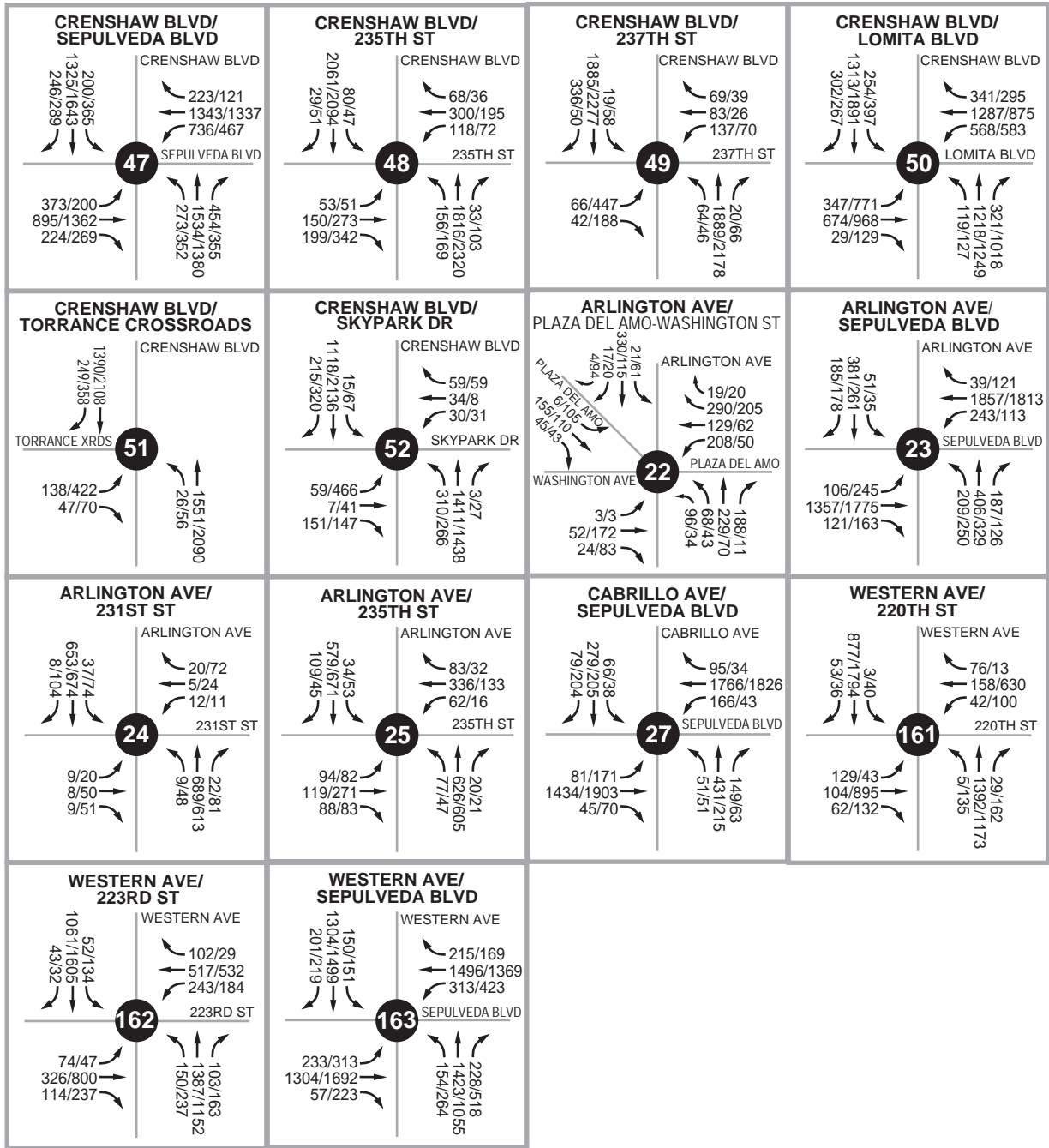


Not to Scale

Legend:
 XX Mid-Day Peak Hour Volumes



Area 8 - Forecast Near-Term Conditions Weekend Mid-Day Peak Hour Intersection Volumes

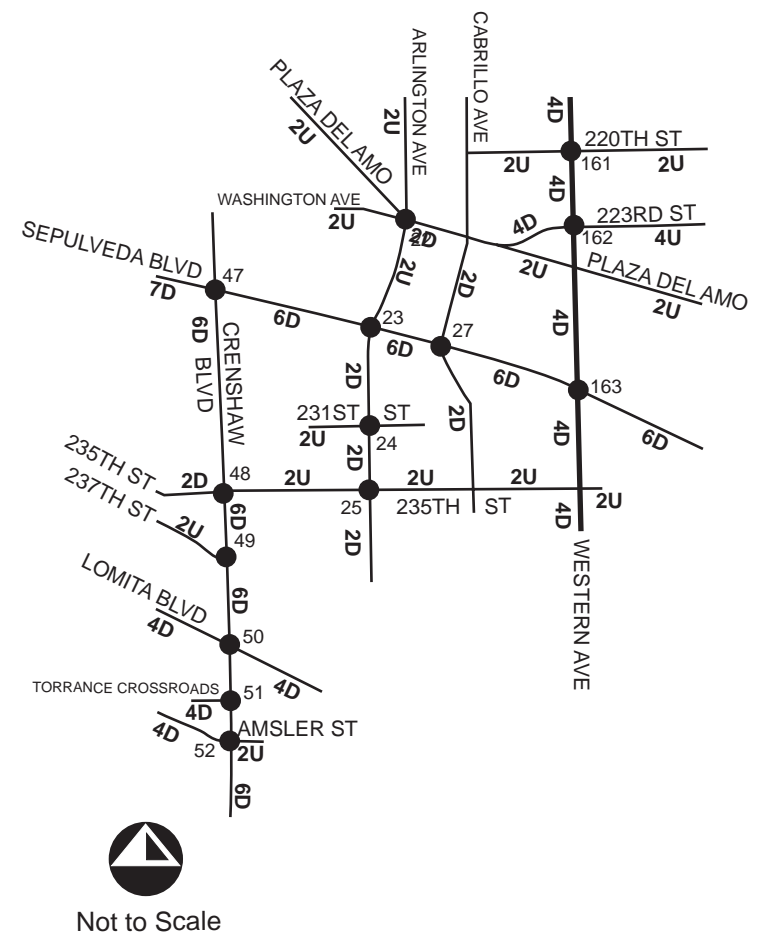
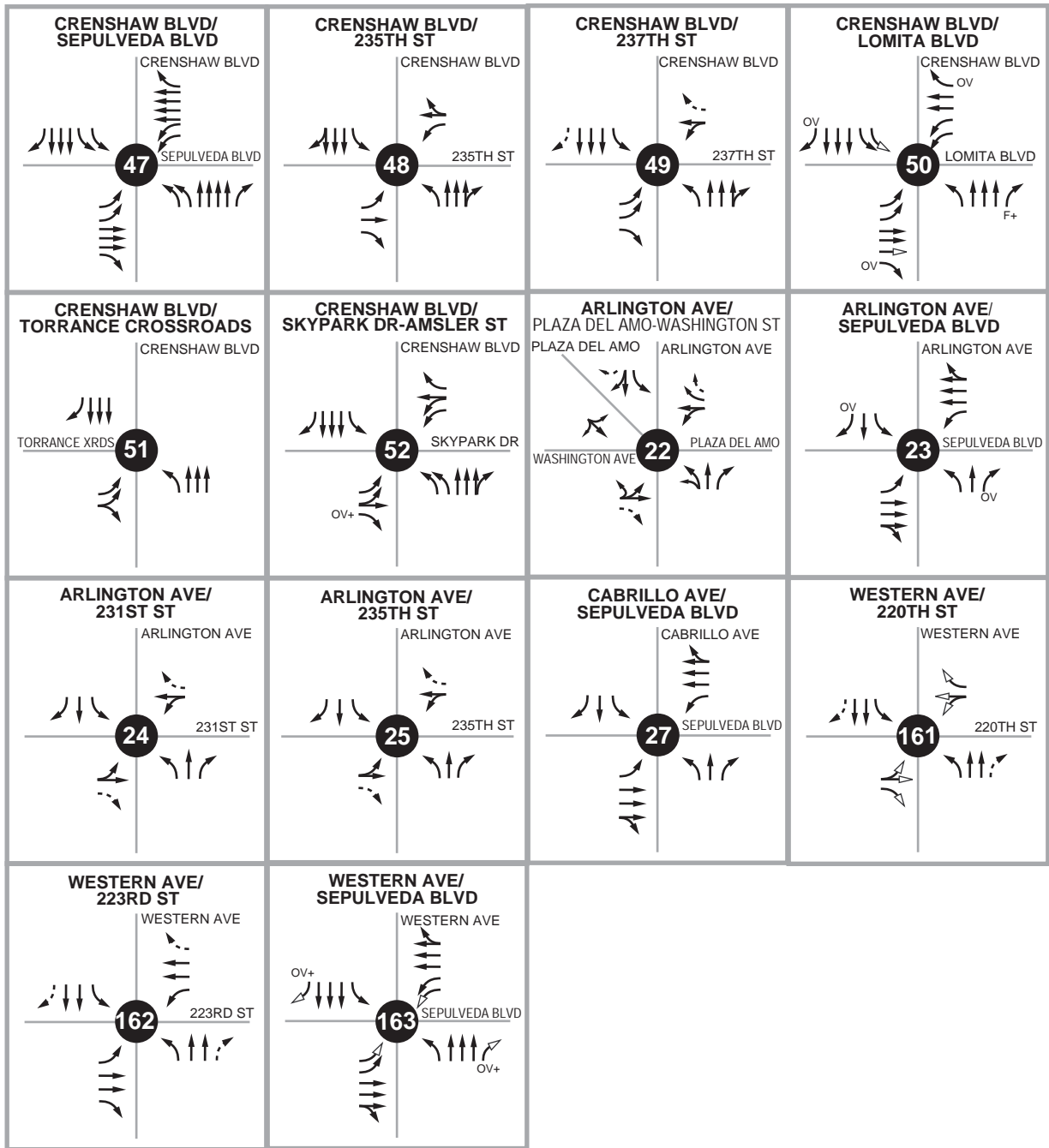


Not to Scale

Legend:
XX/XX AM/PM Peak Hour Volumes

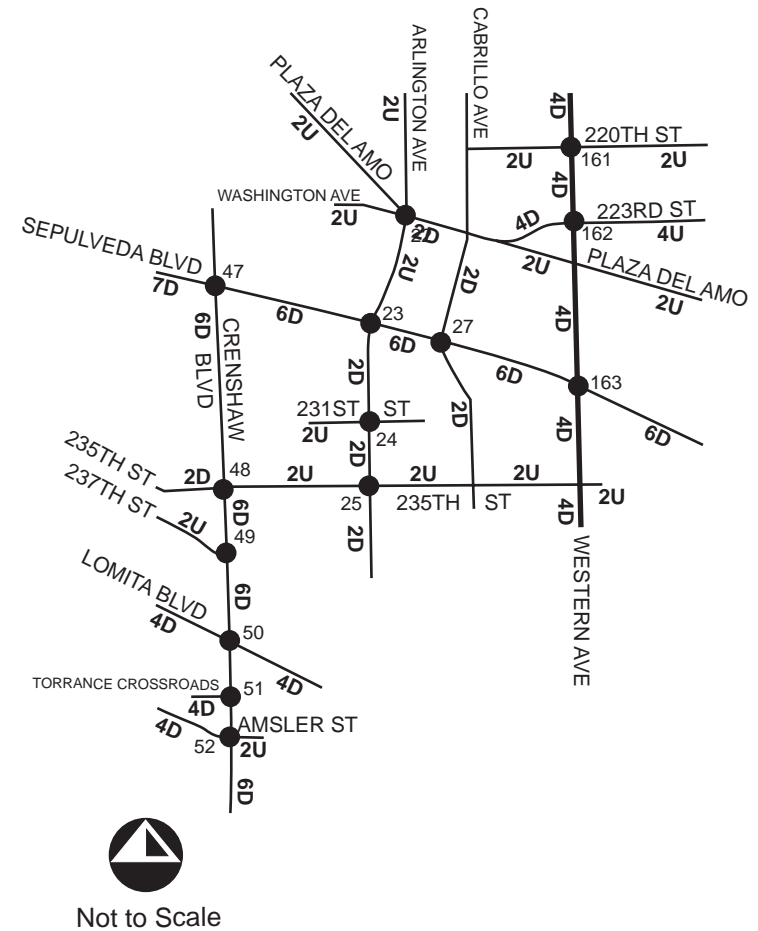
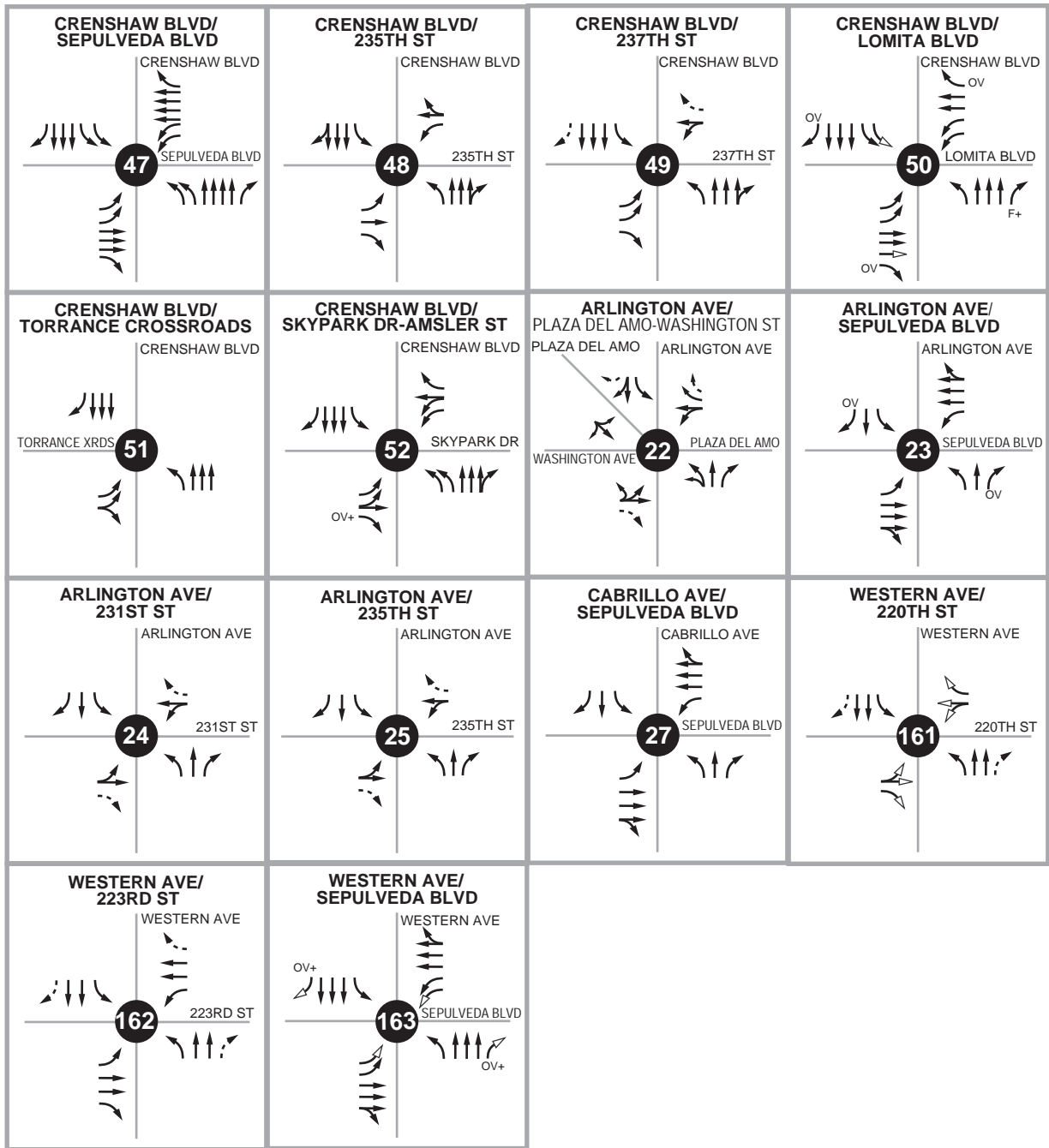


Area 8 - Forecast Long-Range Future Conditions Weekday AM/PM Peak Hour Intersection Volumes



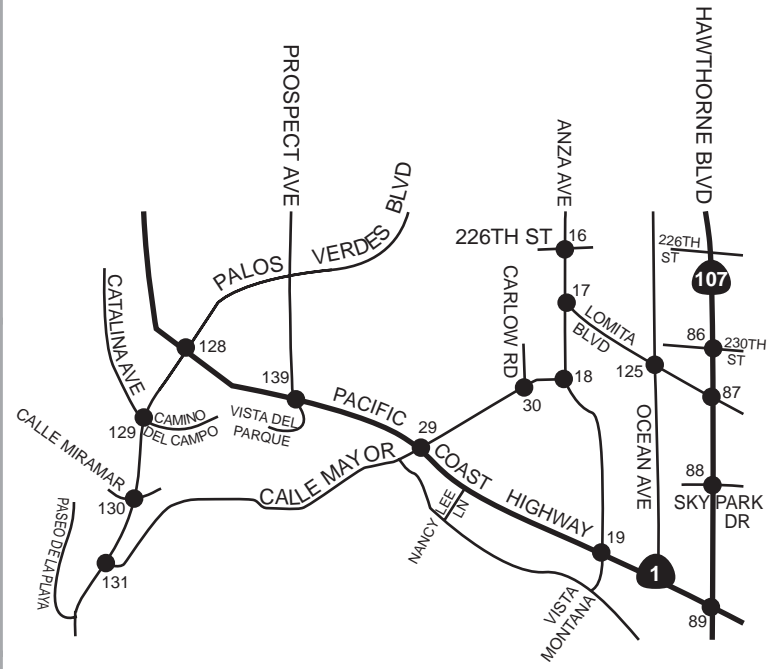
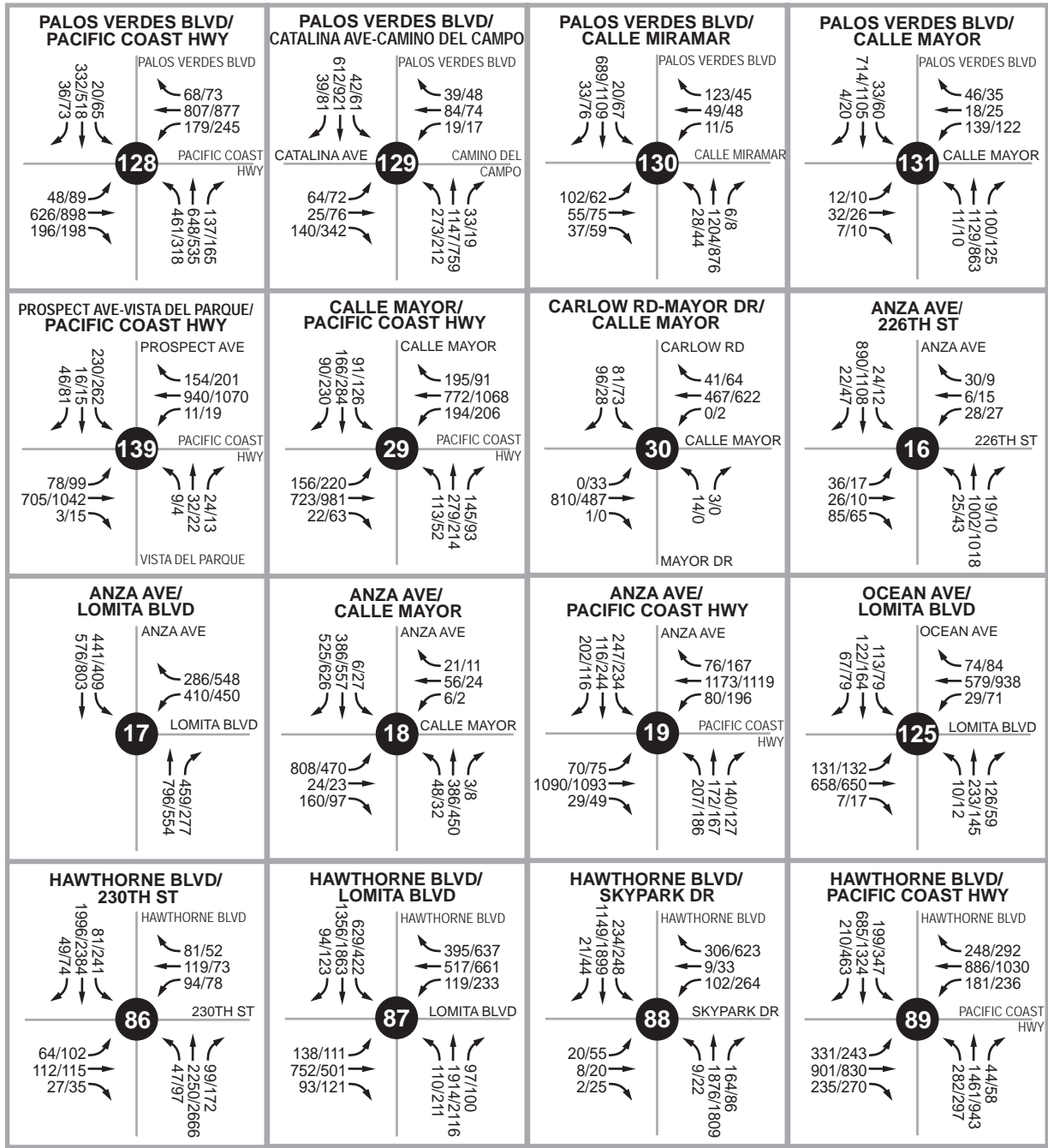
- Legend:
- Existing Lane
 - Modified Lane
 - Free Right-Turn Lane
 - Add Free Right-Turn Lane
 - Defacto Right-Turn Lane
 - Overlap Right-Turn Lane
 - Overlap Right-Turn Lane
 - 2U 2-lane Undivided roadway
 - 2D 2-lane Divided roadway
 - 4U 4-lane Undivided roadway
 - 4D 4-lane Divided roadway
 - 6D 6-lane Divided roadway
 - 7D 7-lane Divided roadway (3 east, 4 west)





- Legend:
- | | | | |
|--|--------------------------|----|---|
| | Existing Lane | 2U | 2-lane Undivided roadway |
| | Modified Lane | 2D | 2-lane Divided roadway |
| | Free Right-Turn Lane | 4U | 4-lane Undivided roadway |
| | Add Free Right-Turn Lane | 4D | 4-lane Divided roadway |
| | Defacto Right-Turn Lane | 6D | 6-lane Divided roadway |
| | Overlap Right-Turn Lane | 7D | 7-lane Divided roadway (3 east, 4 west) |
| | Overlap Right-Turn Lane | | |

Study Area 9

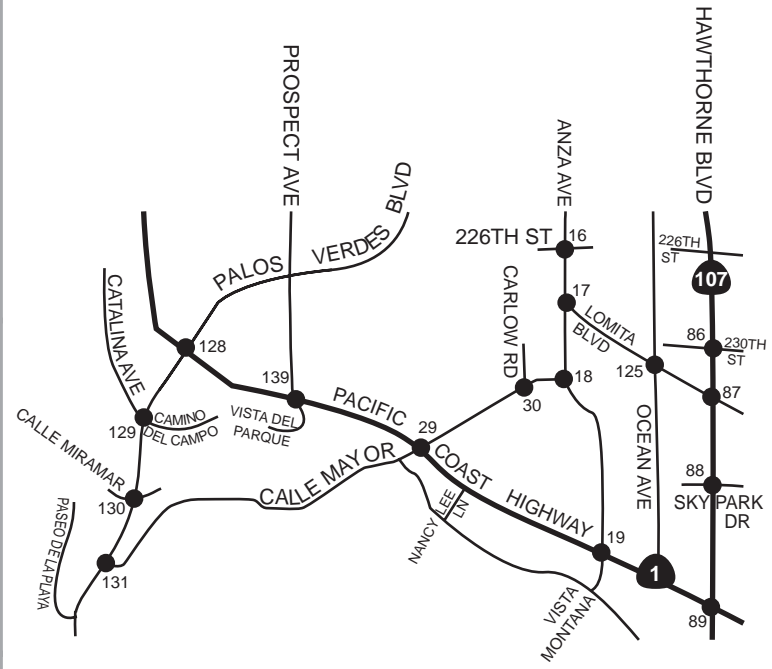
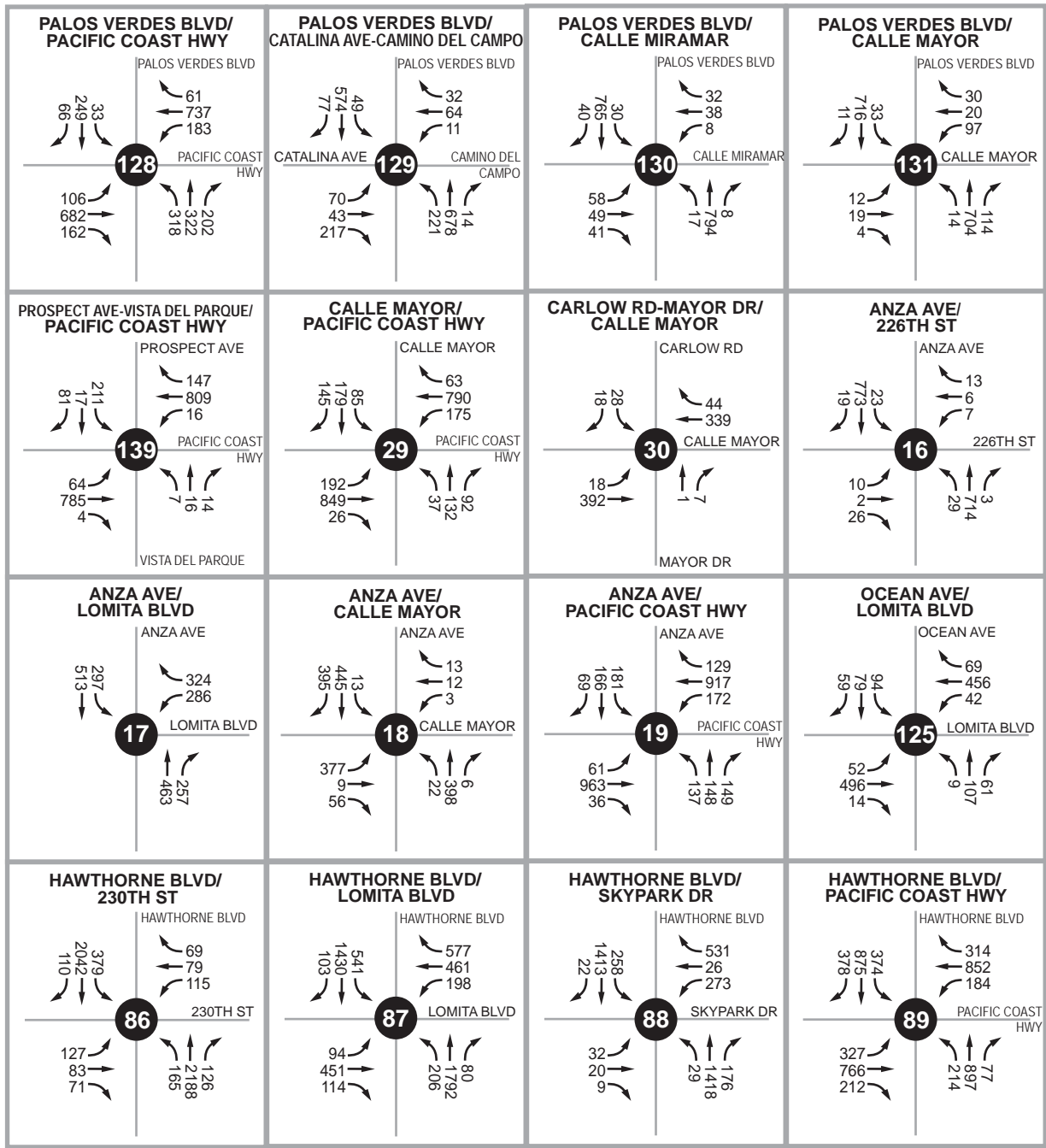


Not to Scale

Legend:
XX/XX AM/PM Peak Hour Volumes

Area 9 - Existing Weekday AM/PM Peak Hour Intersection Volumes



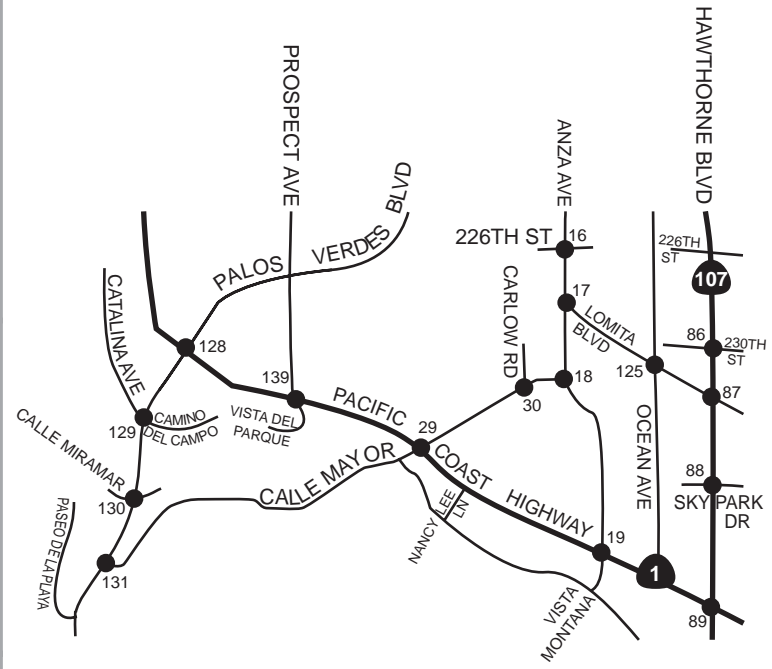
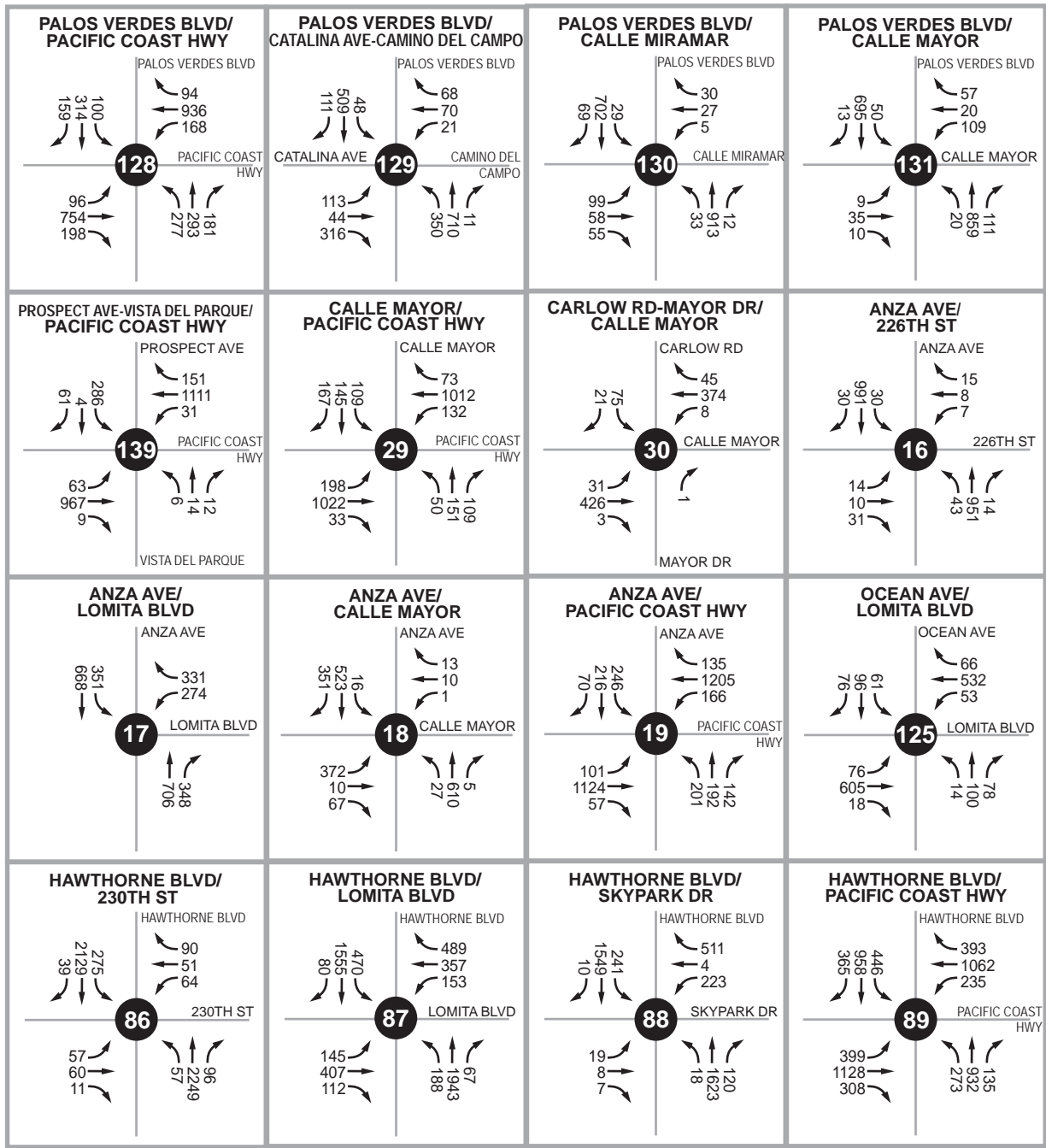


Not to Scale

Legend:
XX Mid-Day Peak Hour Volumes

Area 9 - Existing Weekday Mid-Day Peak Hour Intersection Volumes





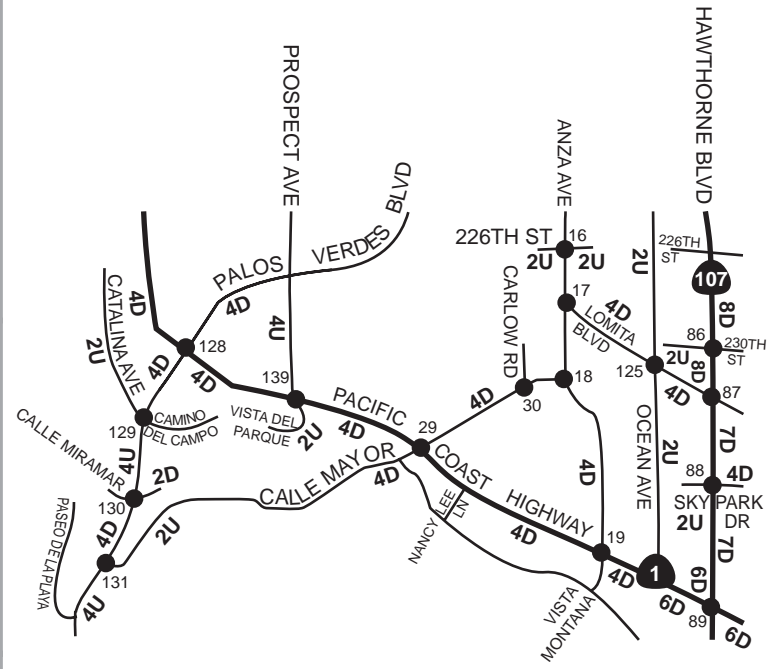
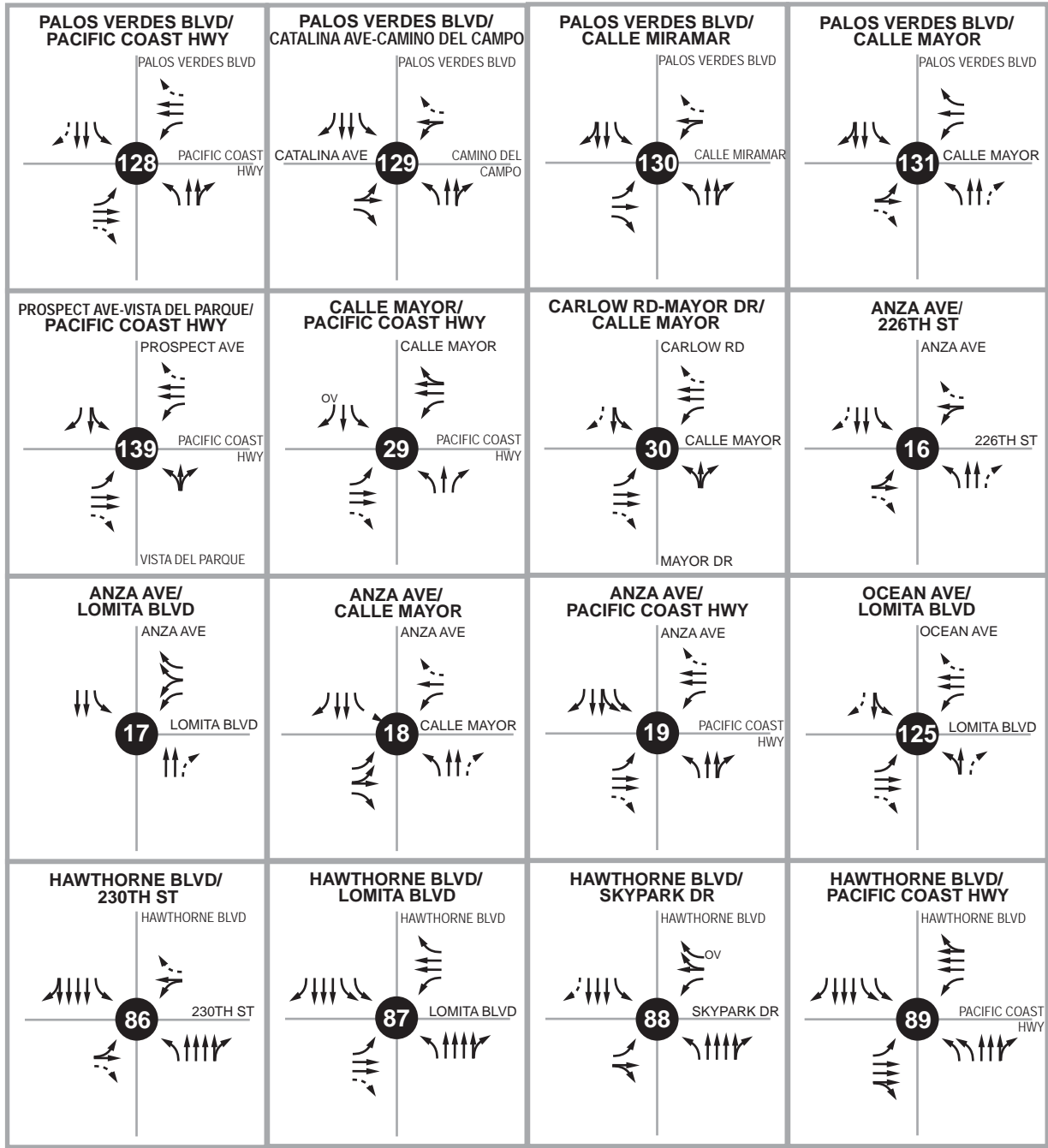
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Legend:





XX Mid-Day Peak Hour Volumes

Area 9 - Existing Weekend Mid-Day Peak Hour Intersection Volumes

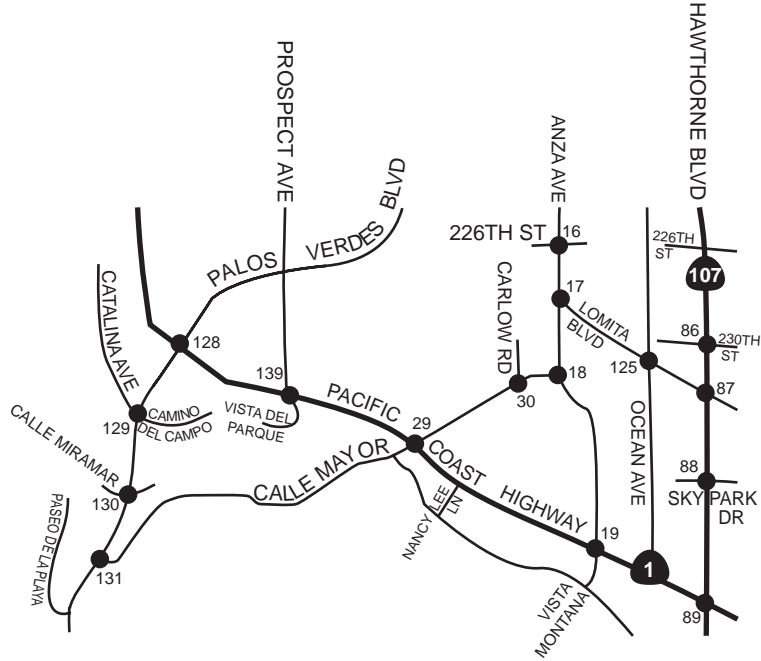
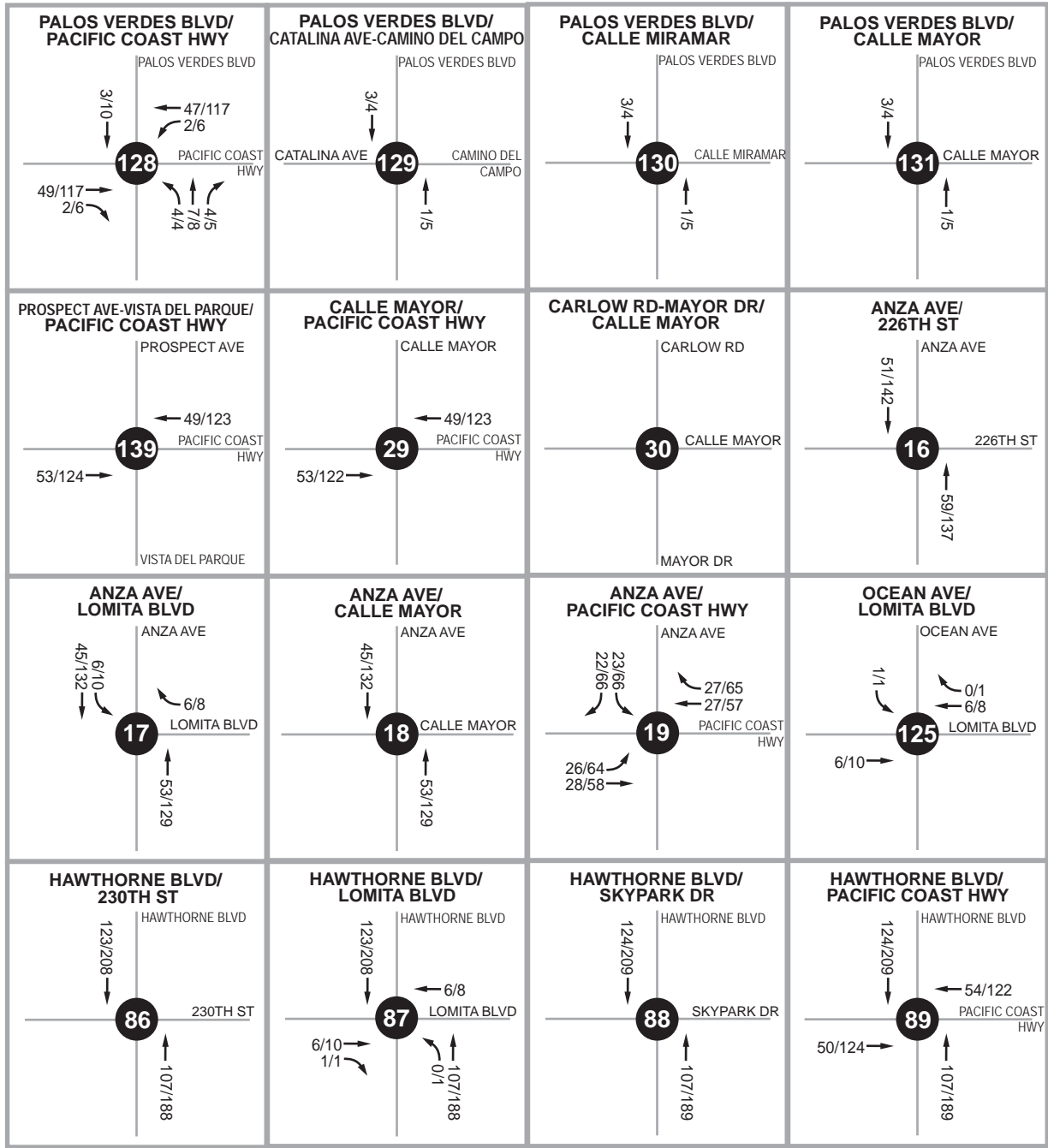





Not to Scale

- Legend:
-  Existing Lane
 -  Free Right-Turn Lane
 -  Defacto Right-Turn Lane
 -  Overlap Right-Turn Lane
 - 2U 2-lane Undivided roadway
 - 2D 2-lane Divided roadway
 - 4U 4-lane undivided roadway
 - 4D 4-lane Divided roadway
 - 7D 7-lane Divided roadway (4 north, 3 south)
 - 8D 8-lane Divided roadway



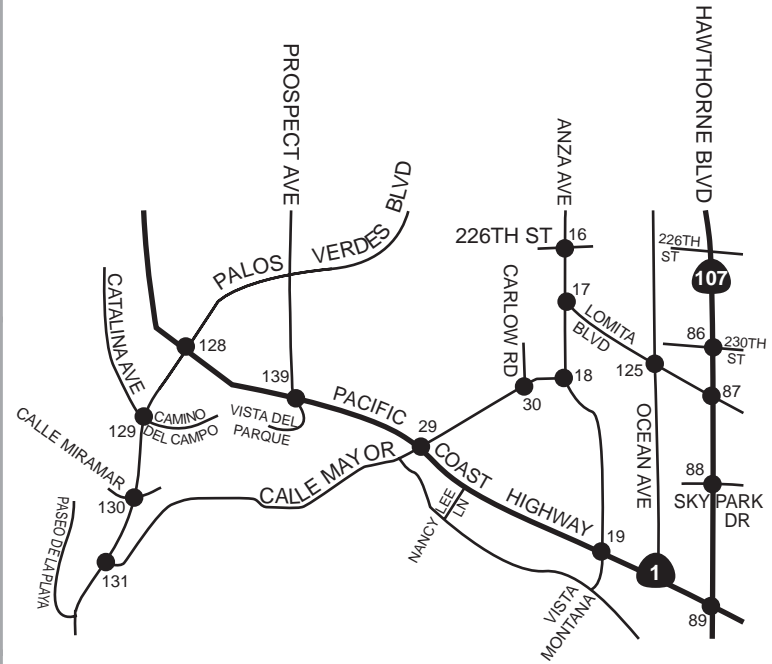
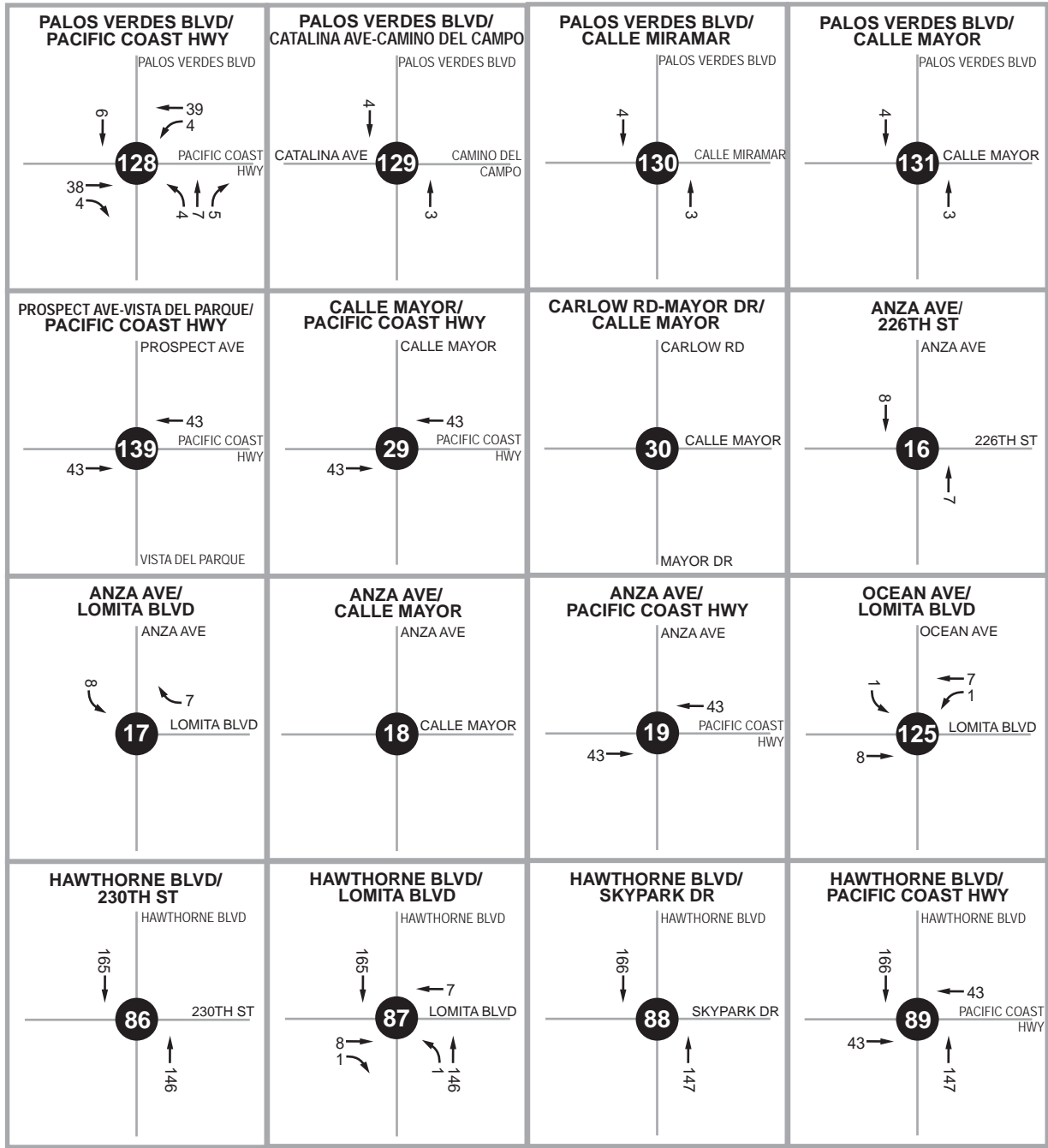


Not to Scale

Legend:
XX/XX AM/PM Peak Hour Volumes



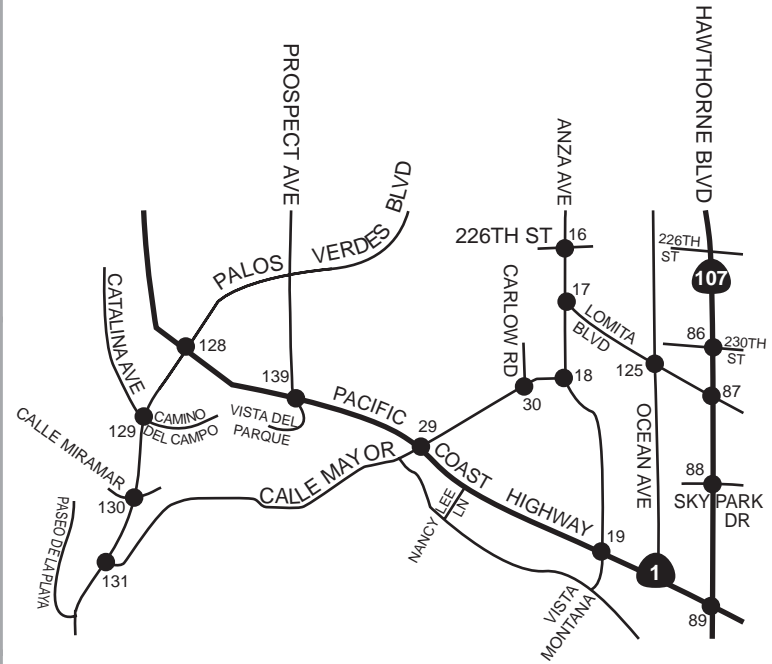
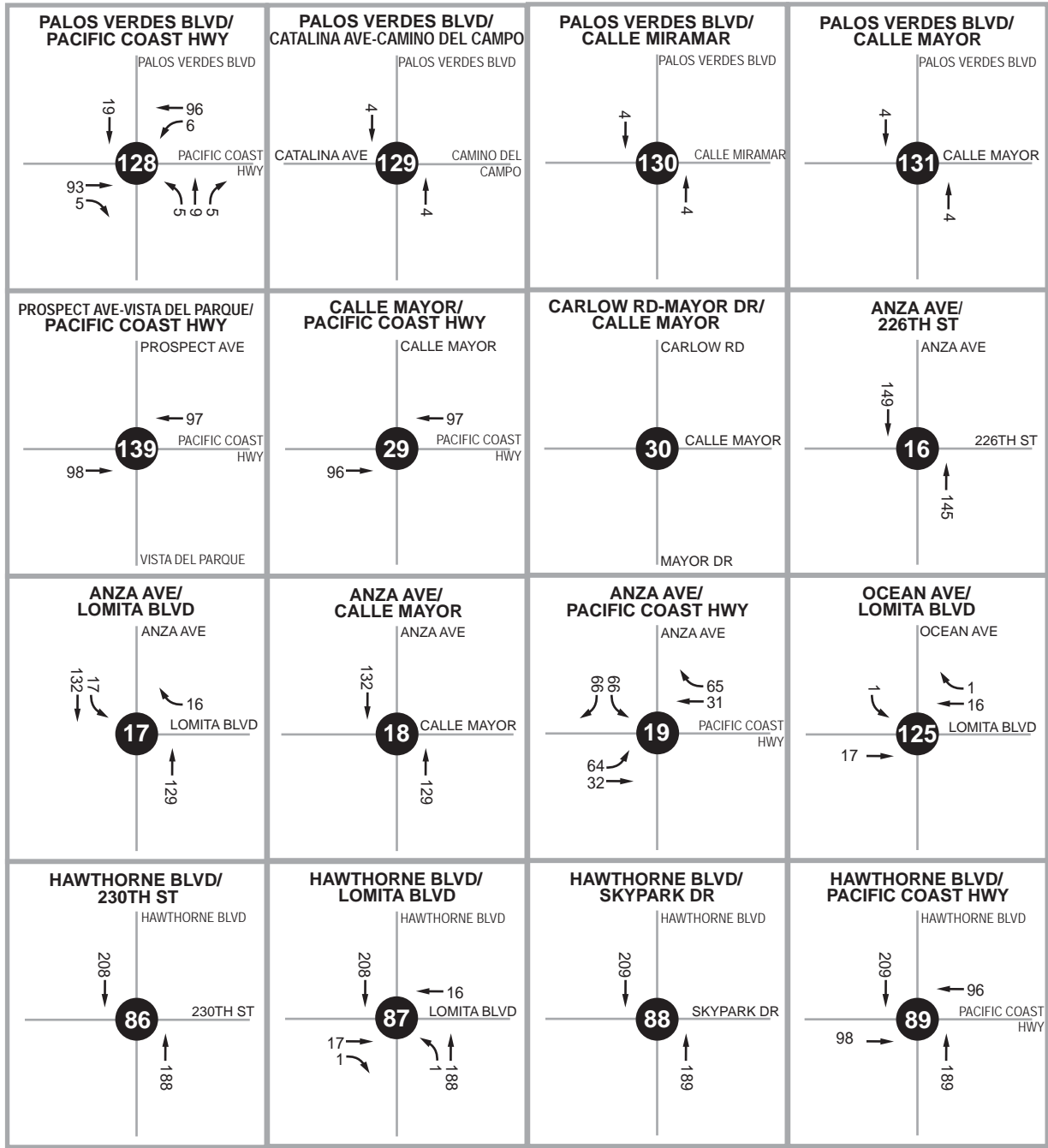
Area 9 - Forecast Weekday AM/PM Peak Hour Trip Assignment of Approved Projects



Not to Scale

Legend:

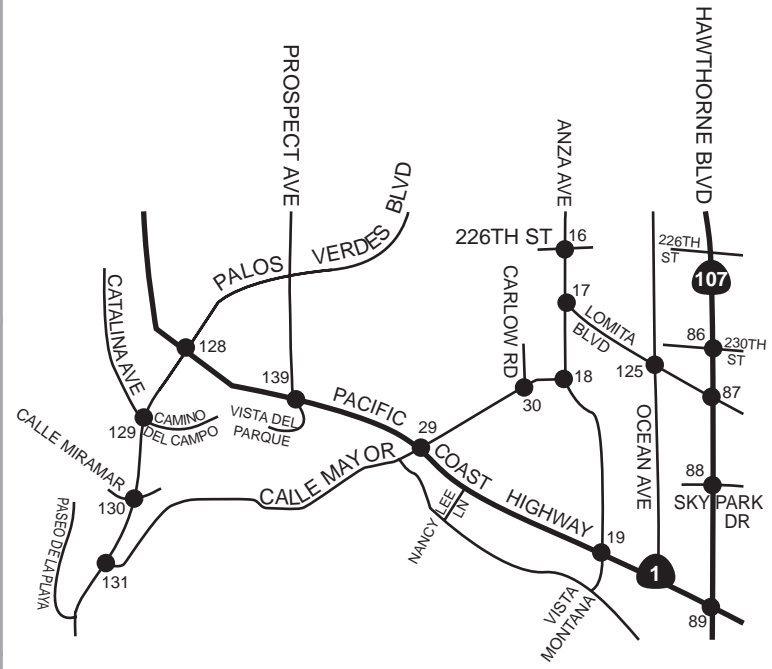
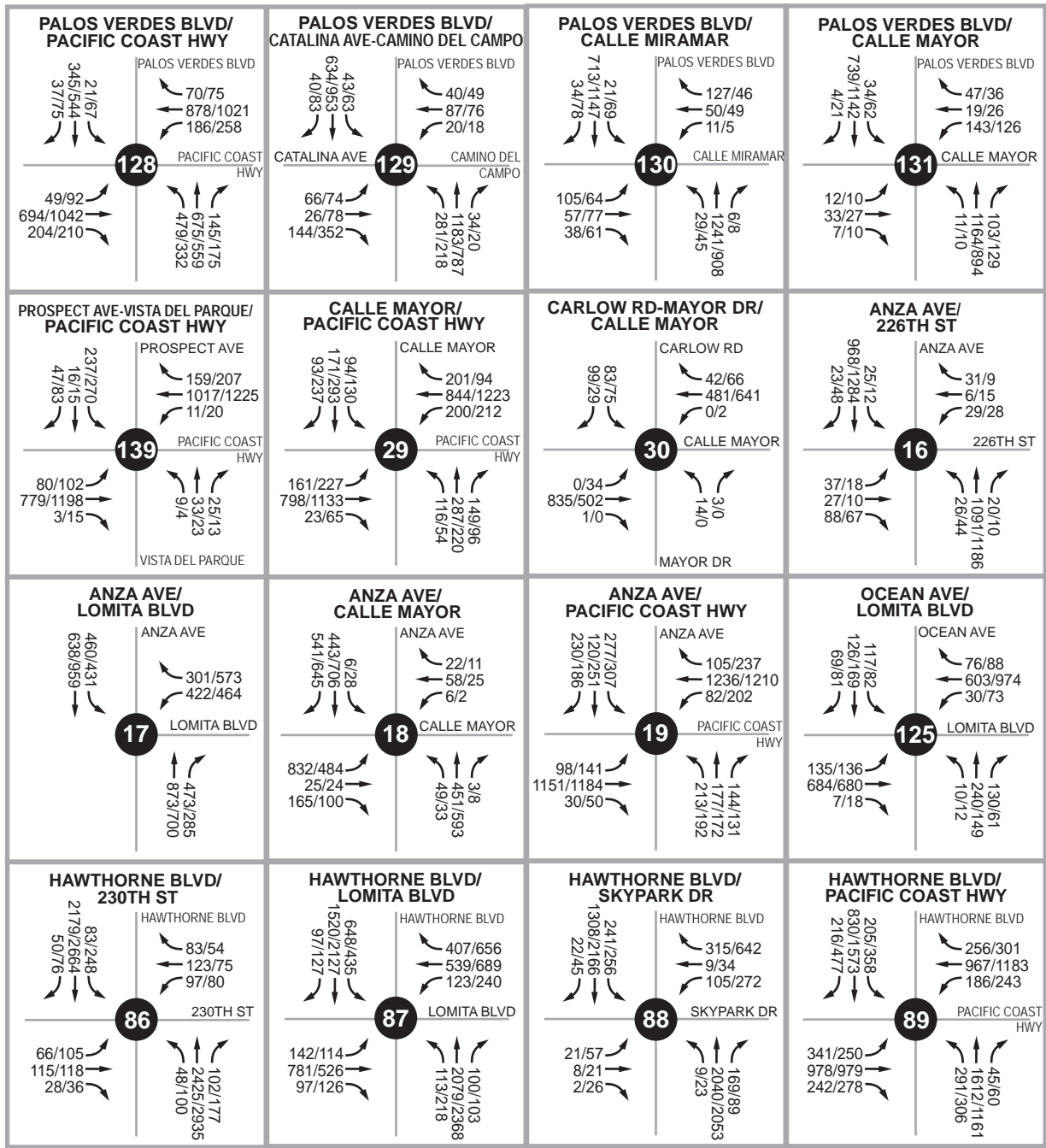
XX Mid-Day Peak Hour Volumes



Not to Scale

Legend:

XX Mid-Day Peak Hour Volumes

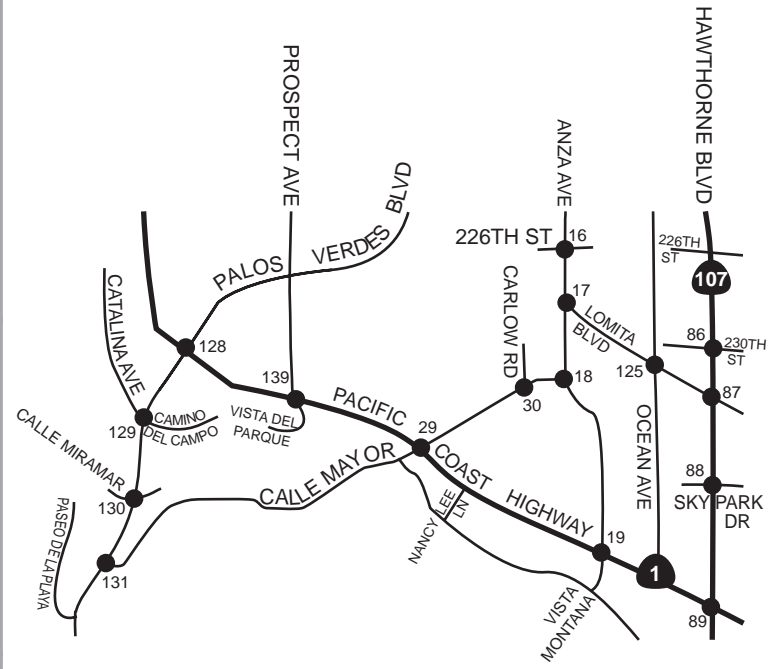
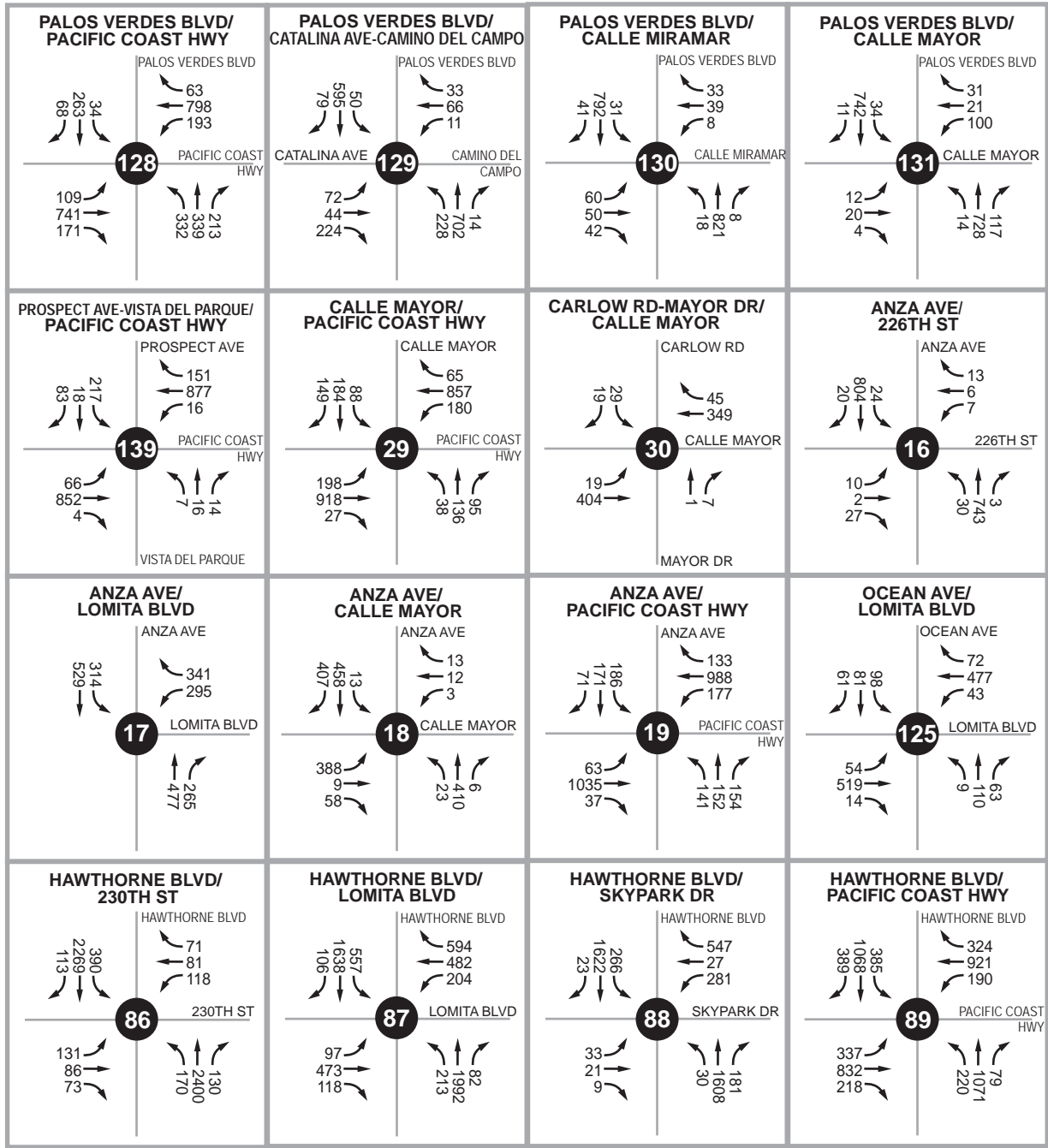


Not to Scale

Legend:
XX/XX AM/PM Peak Hour Volumes



Area 9 - Forecast Near-Term Conditions Weekday AM/PM Peak Hour Intersection Volumes

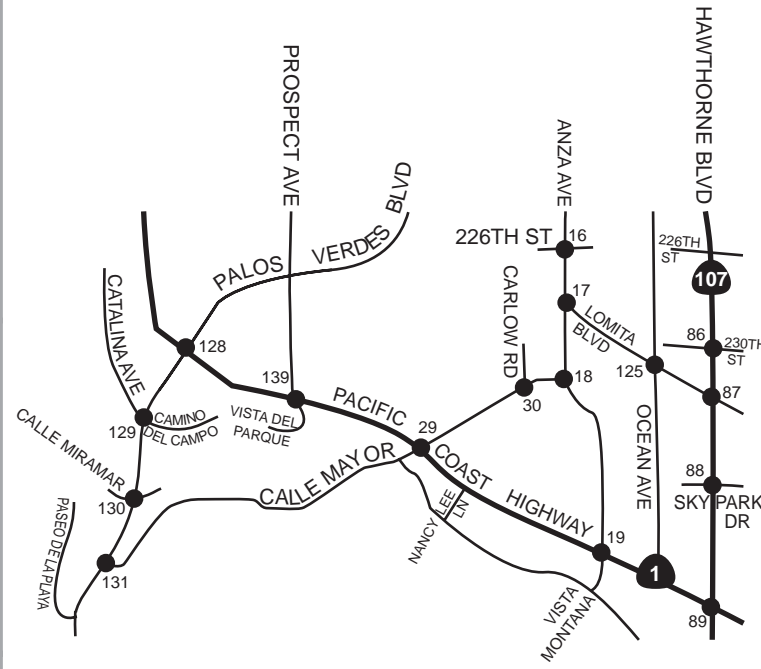
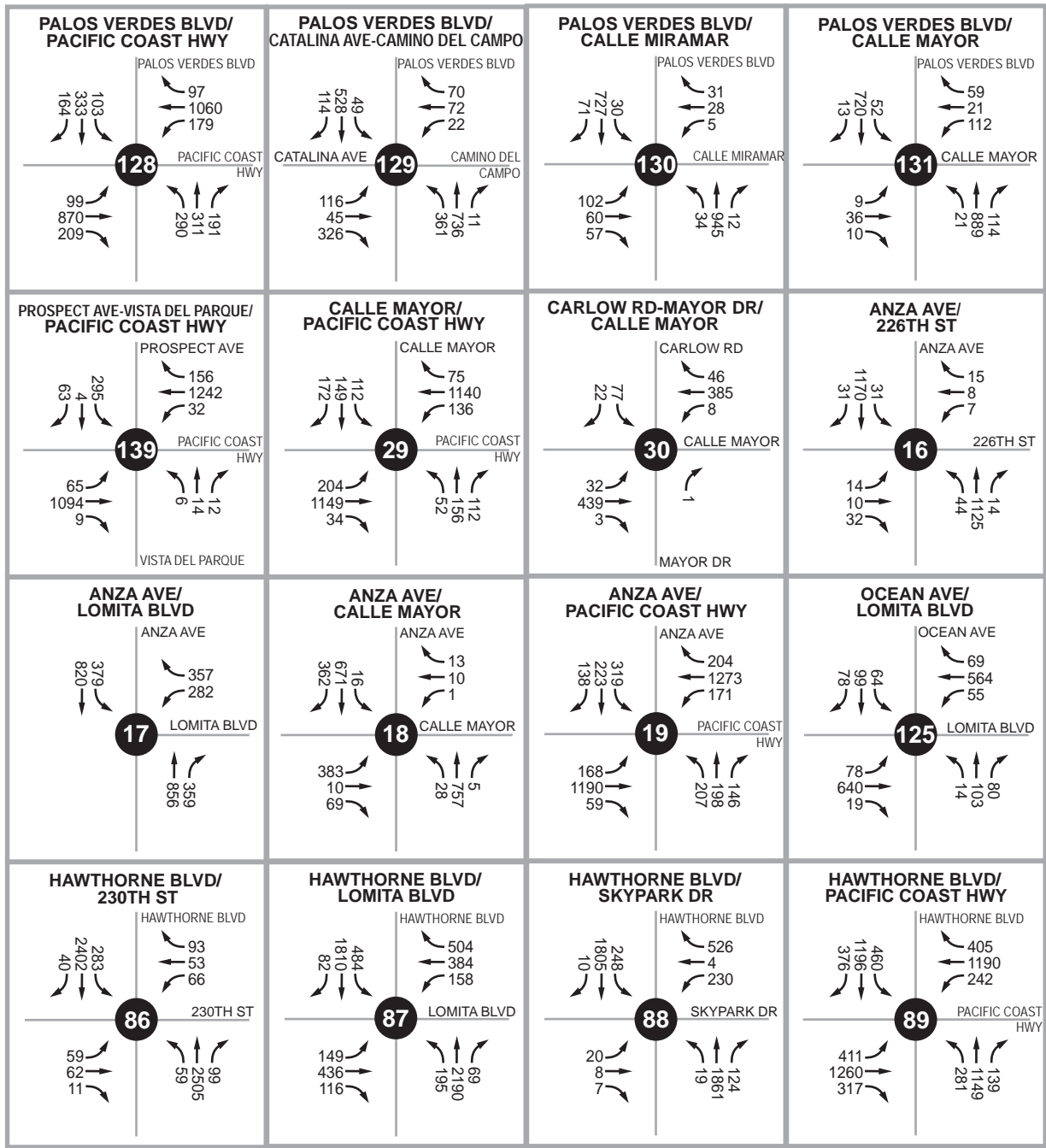


Not to Scale

Legend:
XX Mid-Day Peak Hour Volumes



Area 9 - Forecast Near-Term Conditions Weekday Mid-Day Peak Hour Intersection Volumes



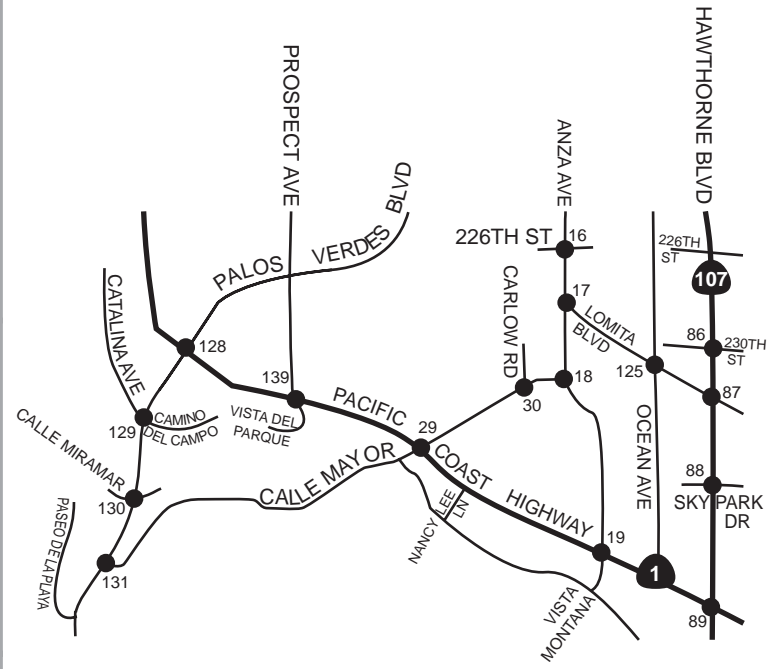
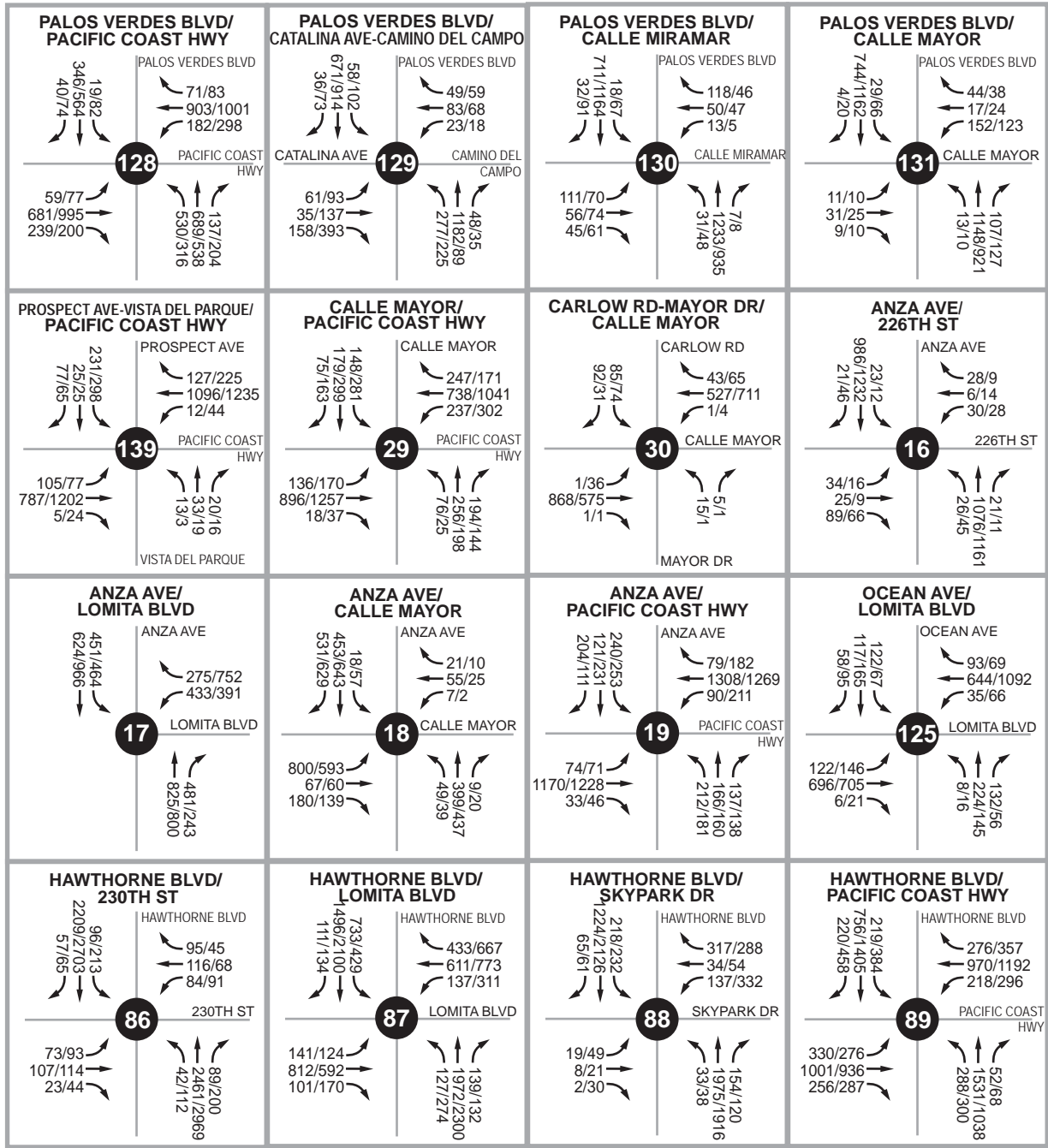
Not to Scale

Legend:

XX Mid-Day Peak Hour Volumes



Area 9 - Forecast Near-Term Conditions Weekend Mid-Day Peak Hour Intersection Volumes

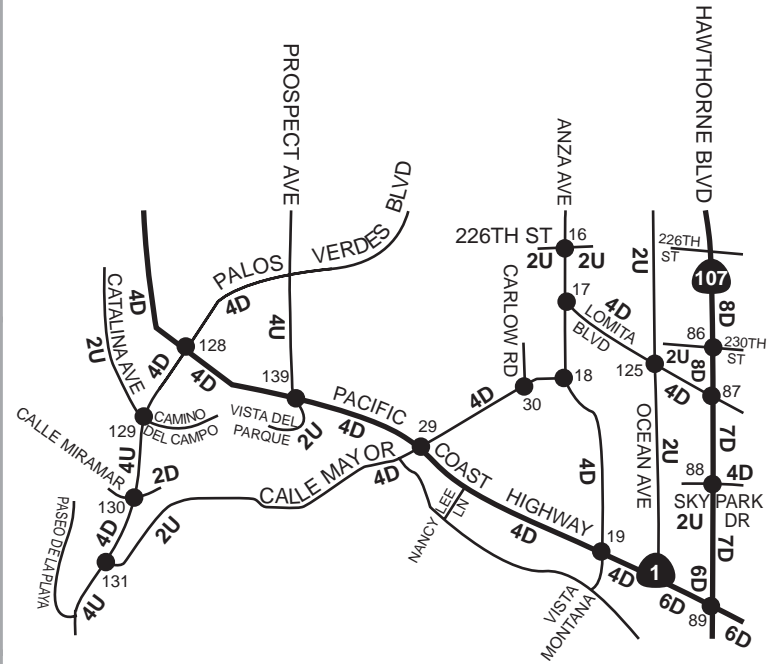
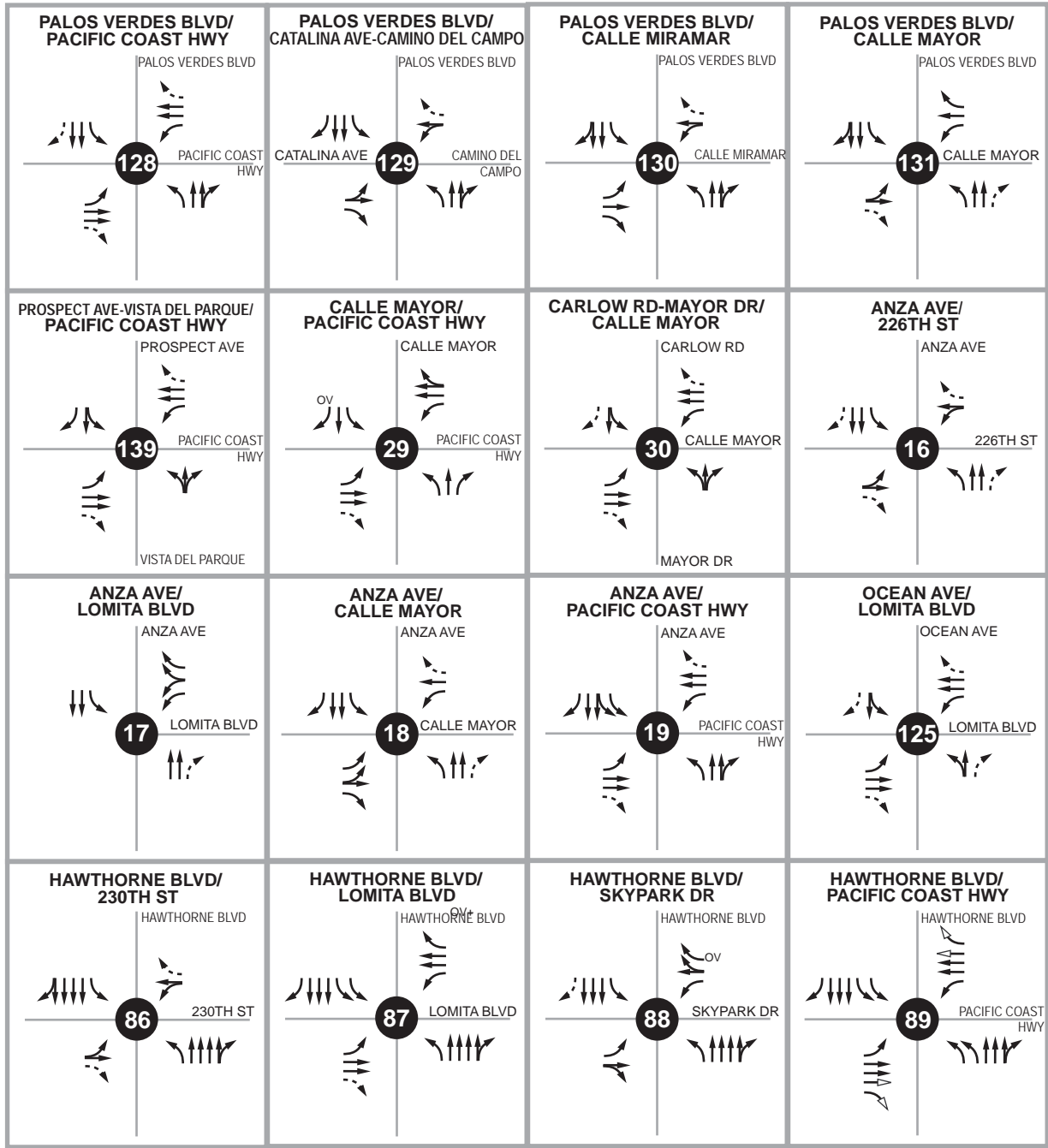


Not to Scale

Legend:
XX/XX AM/PM Peak Hour Volumes



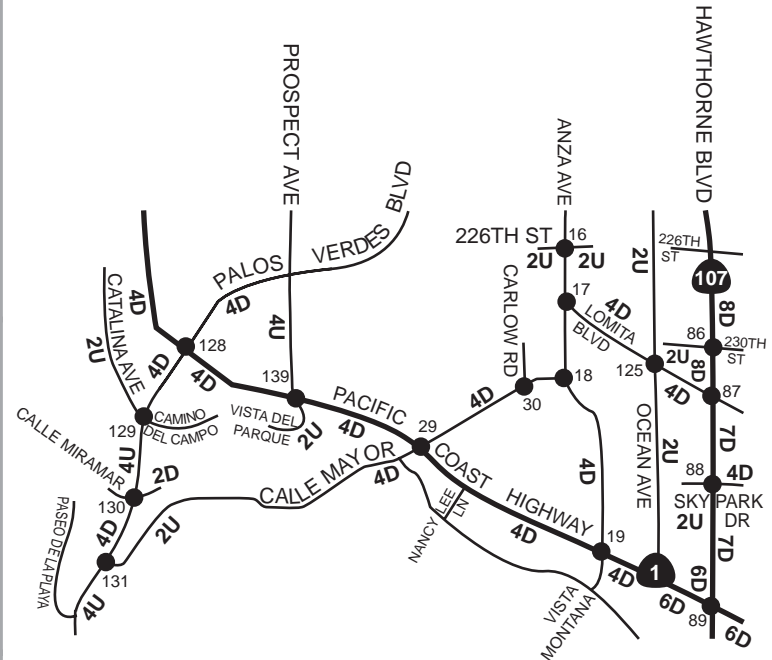
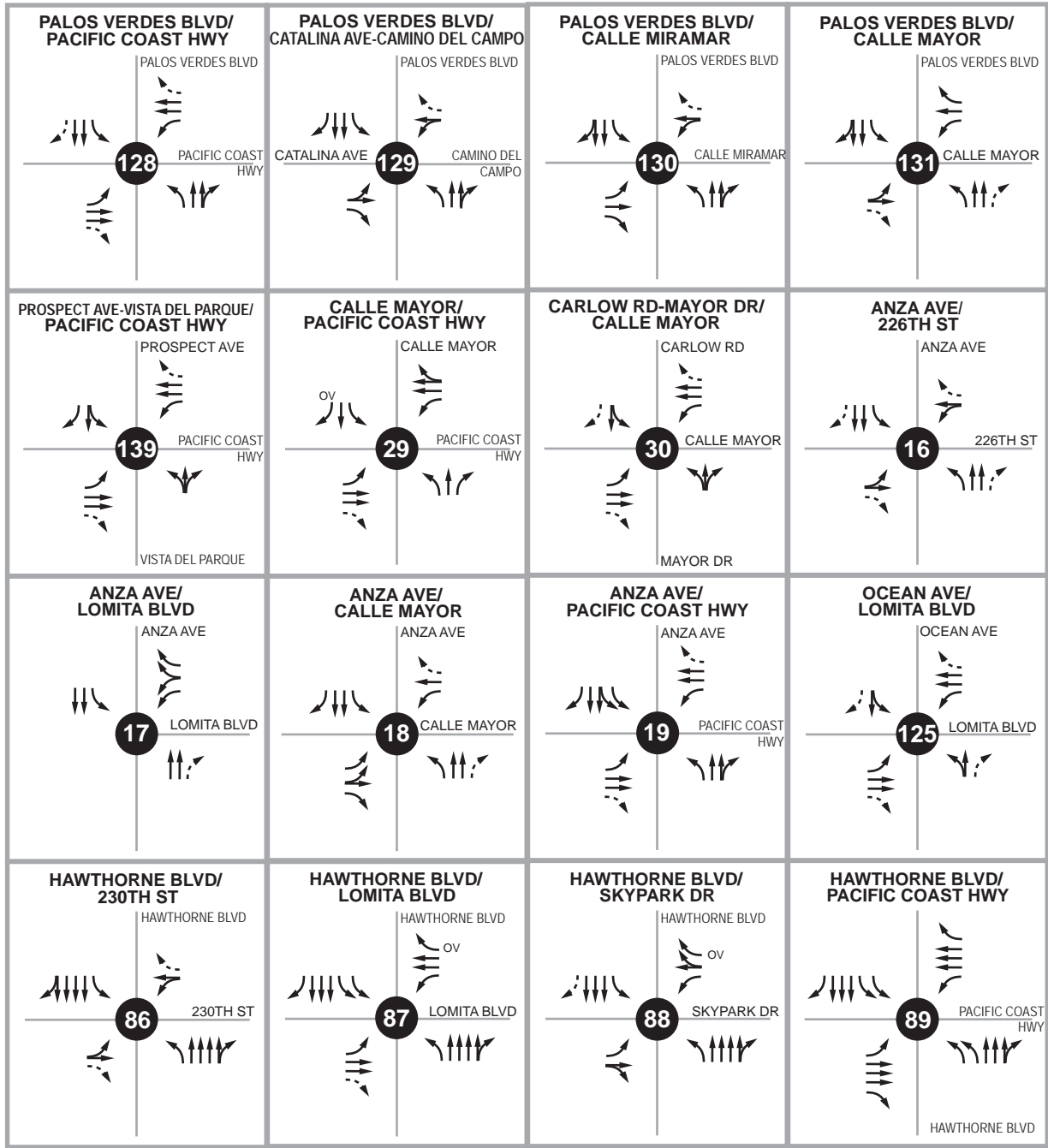
Area 9 - Forecast Long-Range Future Conditions Weekday AM/PM Peak Hour Intersection Volumes



Not to Scale

Legend:

- | | |
|-------------------------|--|
| Existing Lane | 2U 2-lane Undivided roadway |
| Modified Lane | 2D 2-lane Divided roadway |
| Free Right-Turn Lane | 4U 4-lane undivided roadway |
| Defacto Right-Turn Lane | 4D 4-lane Divided roadway |
| Overlap Right-Turn Lane | 7D 7-lane Divided roadway (4 north, 3 south) |
| Add Right-Turn Overlap | 8D 8-lane Divided roadway |



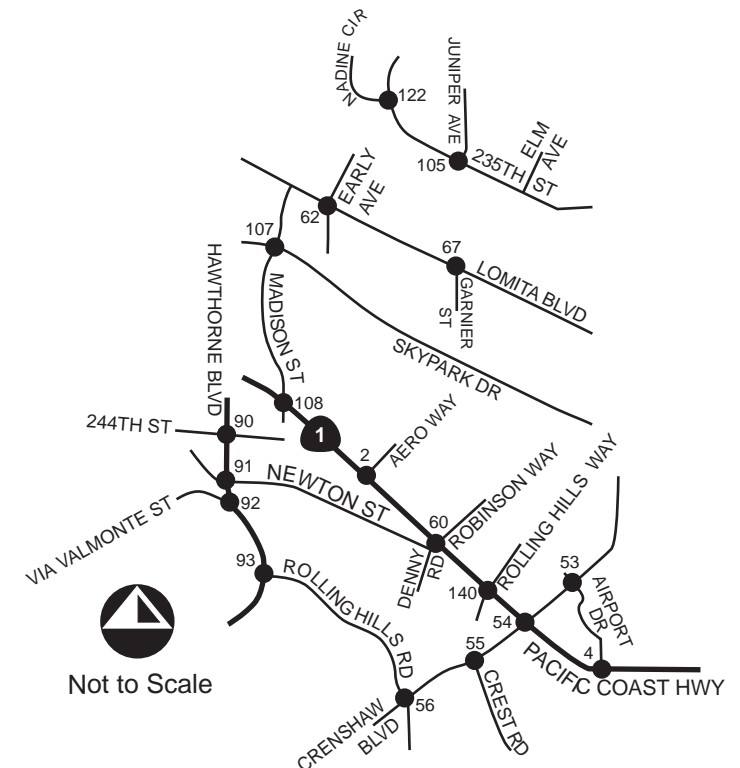
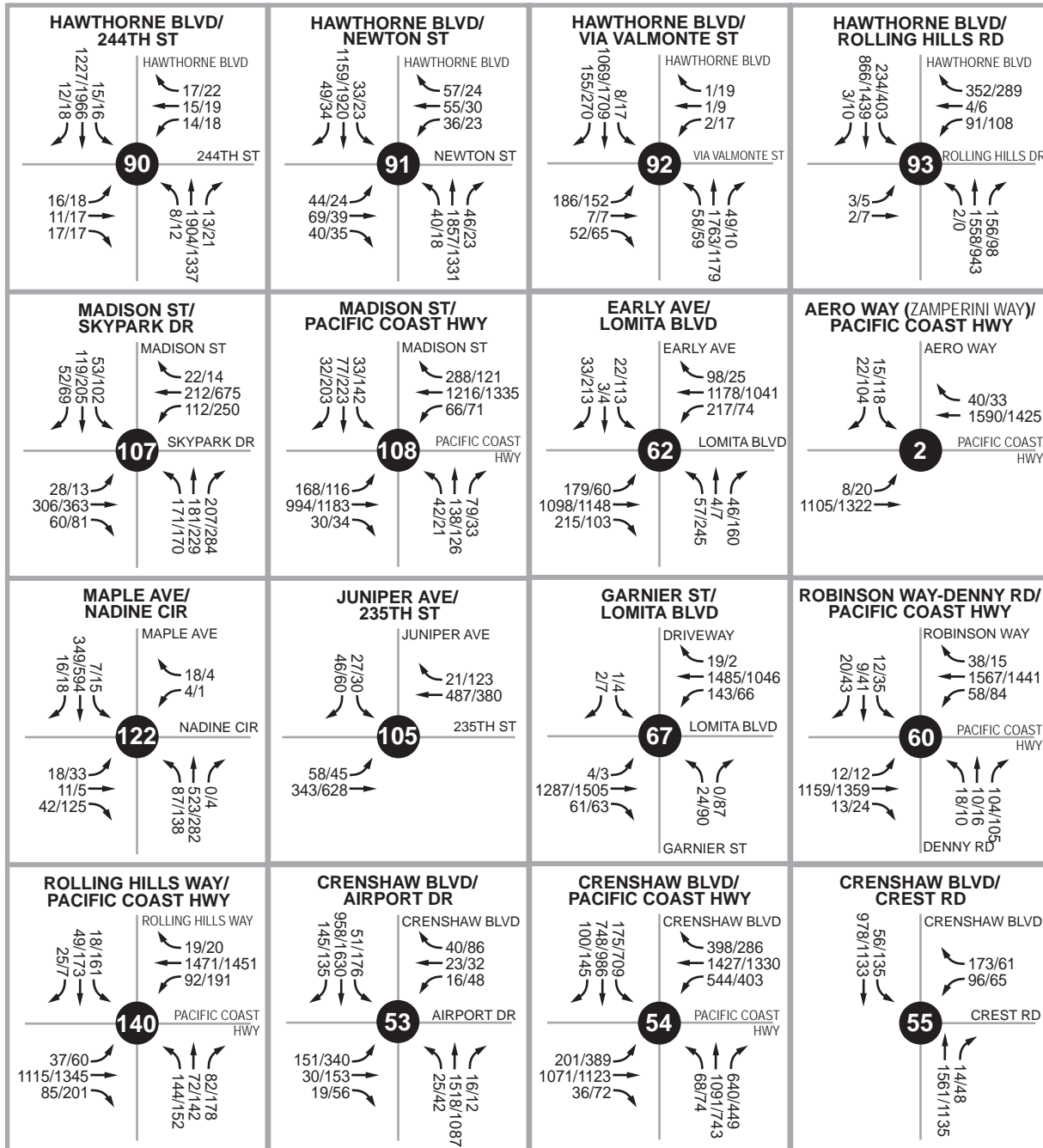
Not to Scale

- Legend:**
- Existing Lane
 - Modified Lane
 - Free Right-Turn Lane
 - Defacto Right-Turn Lane
 - Overlap Right-Turn Lane
 - Add Right-Turn Overlap
 - 2U 2-lane Undivided roadway
 - 2D 2-lane Divided roadway
 - 4U 4-lane undivided roadway
 - 4D 4-lane Divided roadway
 - 7D 7-lane Divided roadway (4 north, 3 south)
 - 8D 8-lane Divided roadway



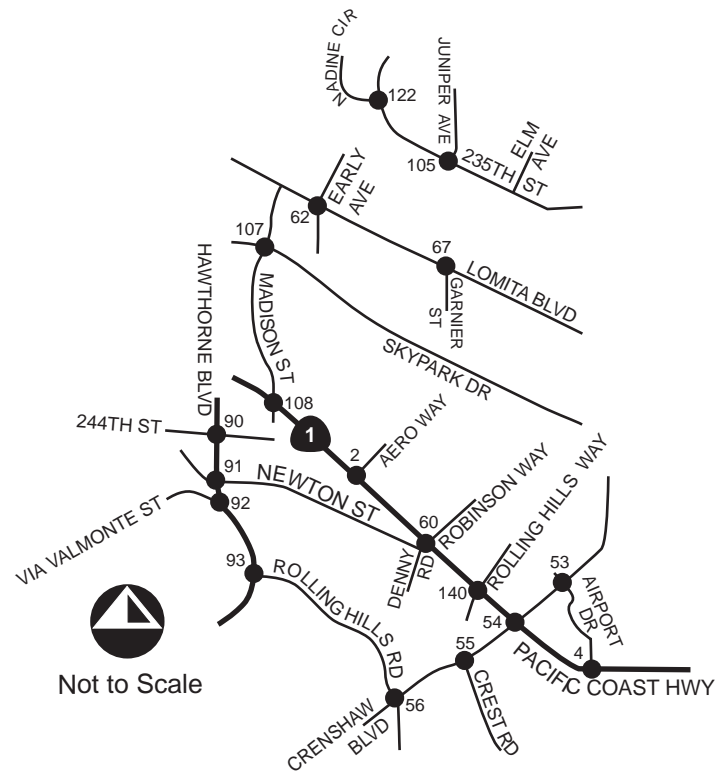
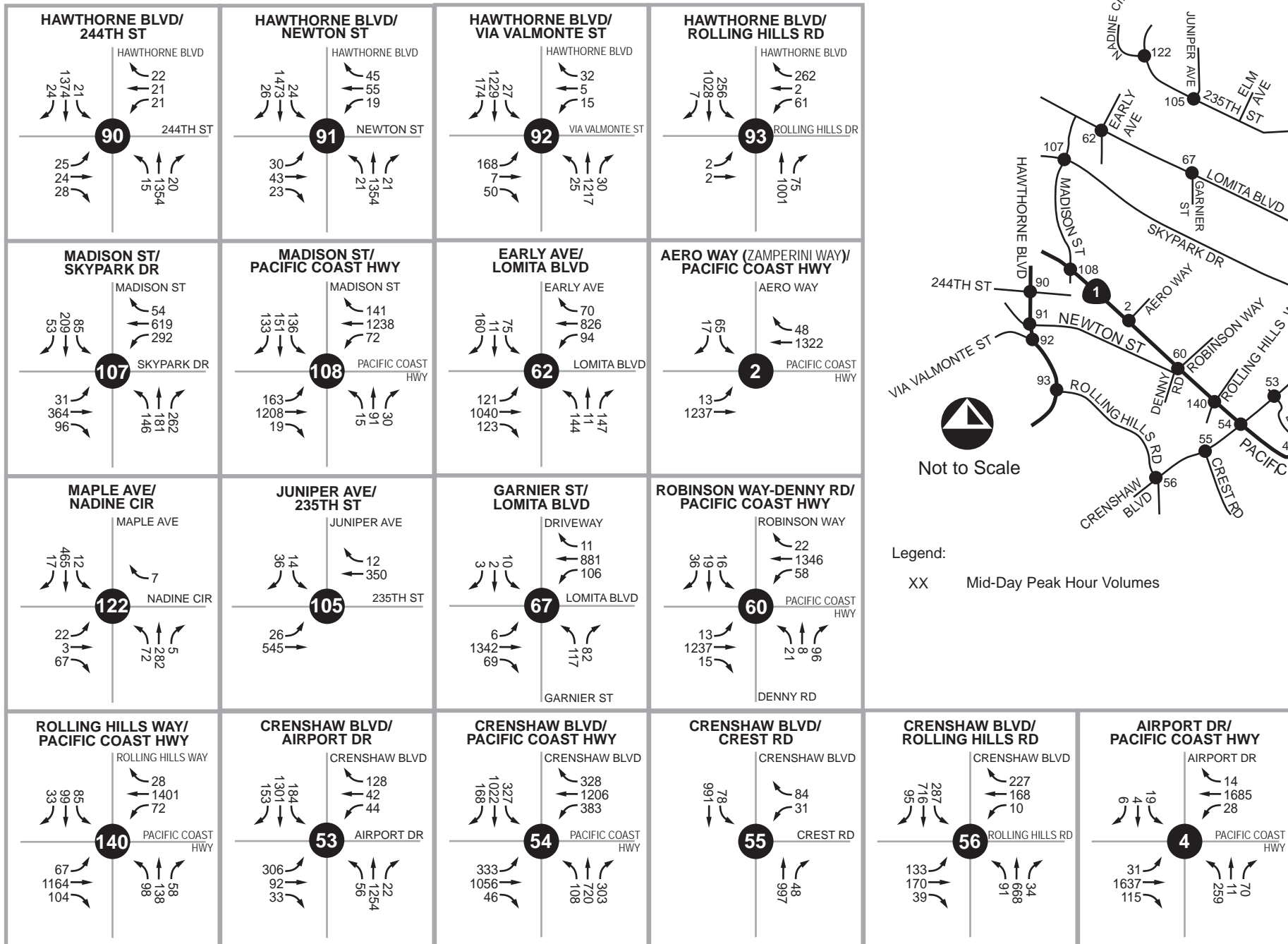
Area 9 - Forecast Improved Long-Range Future Conditions Intersection/Roadway Geometry

Study Area 10



Legend:
XX/XX AM/PM Peak Hour Volumes

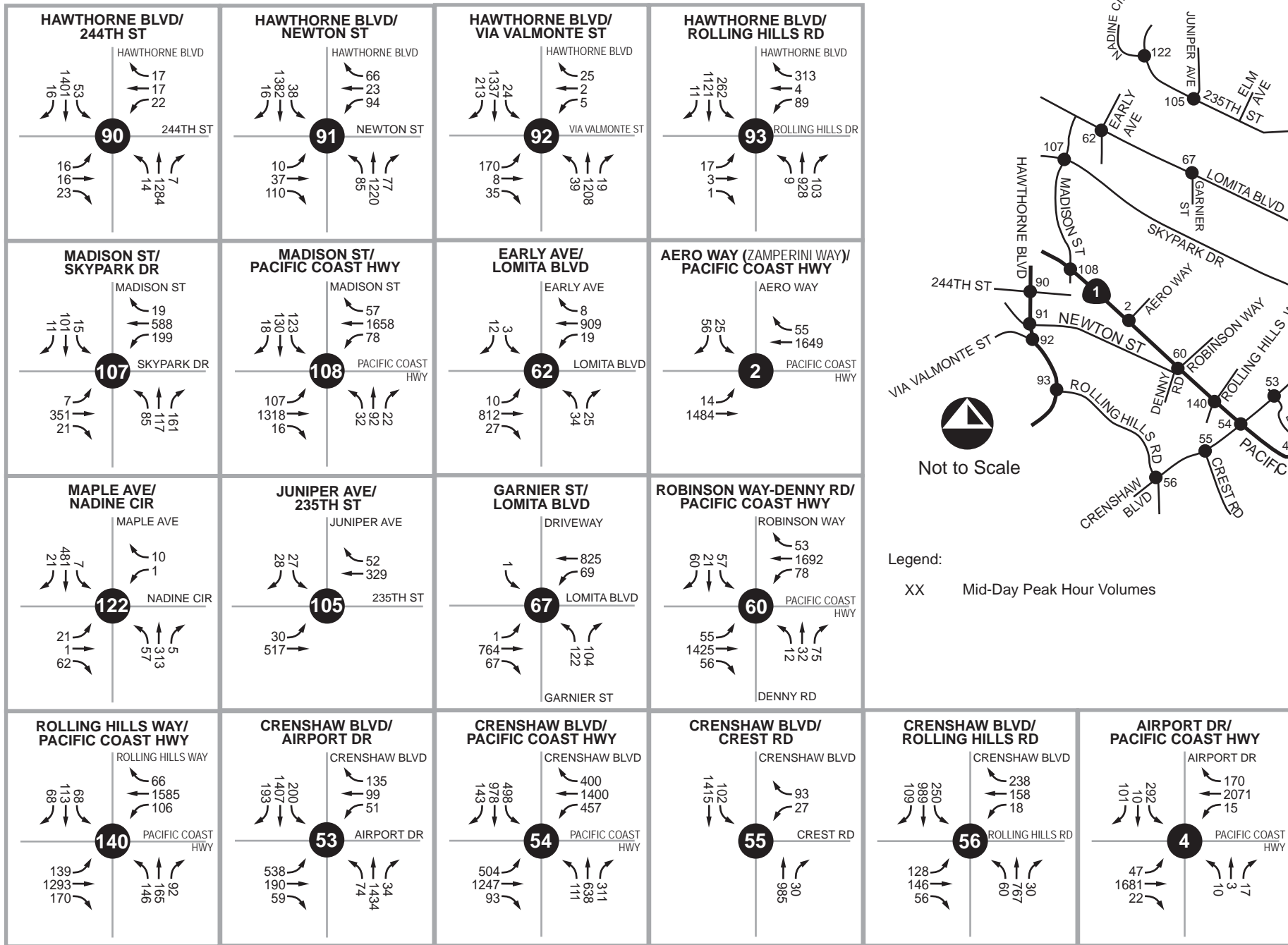




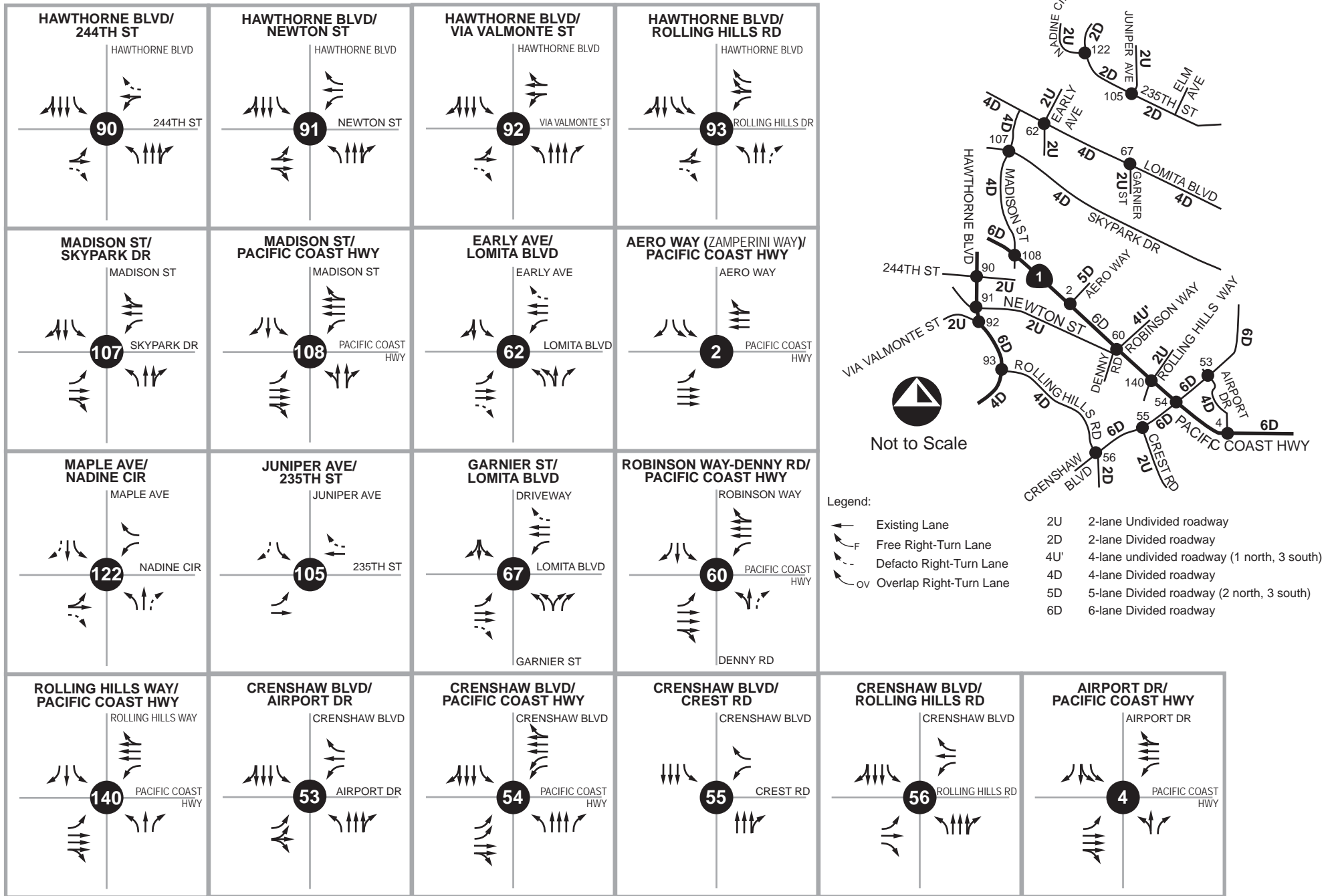
Legend:
 XX Mid-Day Peak Hour Volumes

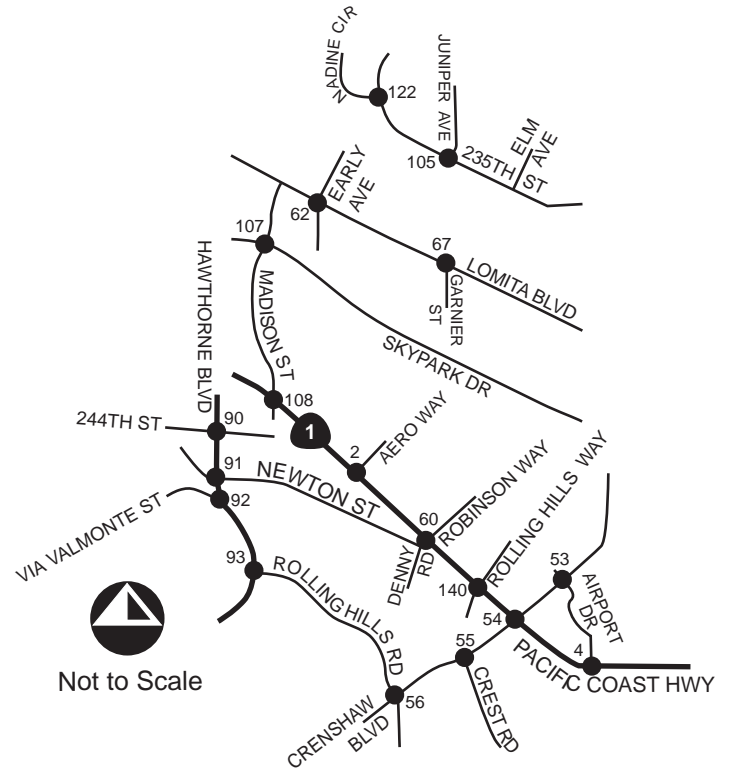
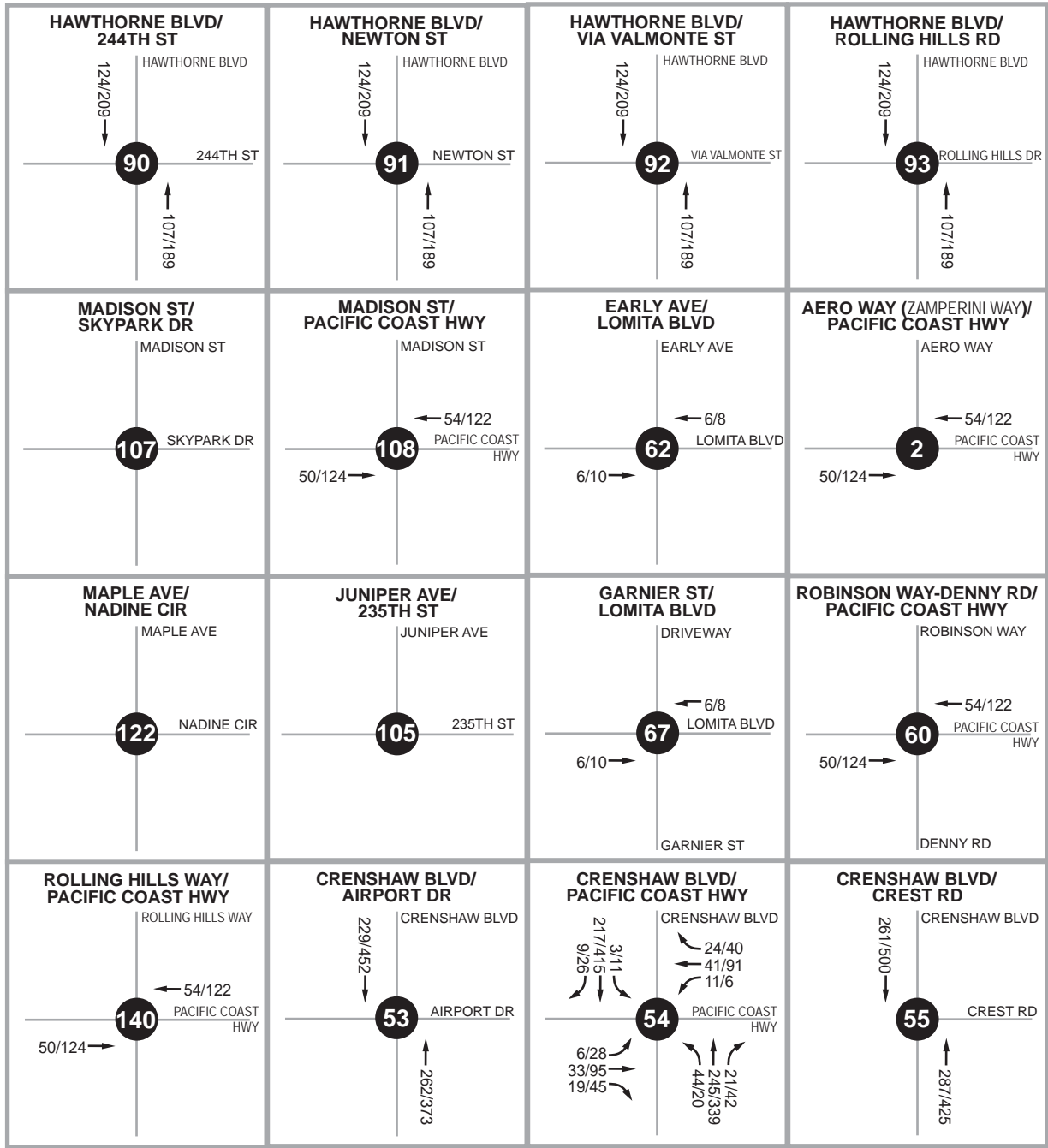
Area 10 - Existing Weekday Mid-Day Peak Hour Intersection Volumes



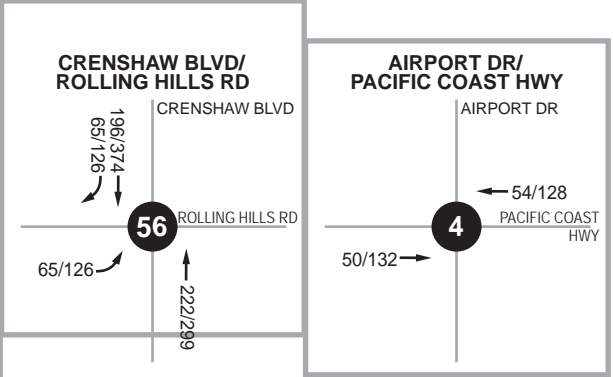


Area 10 - Existing Weekend Mid-Day Peak Hour Intersection Volumes

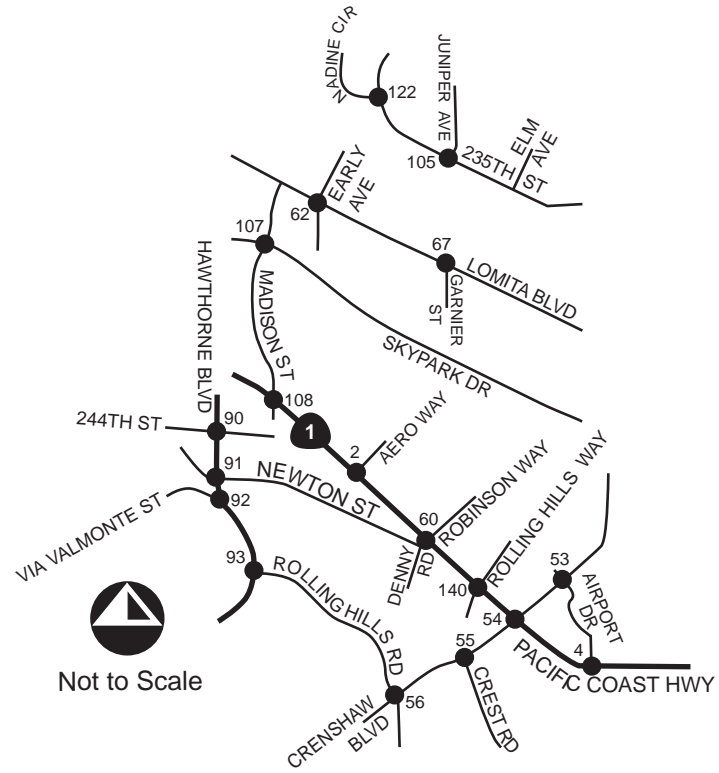
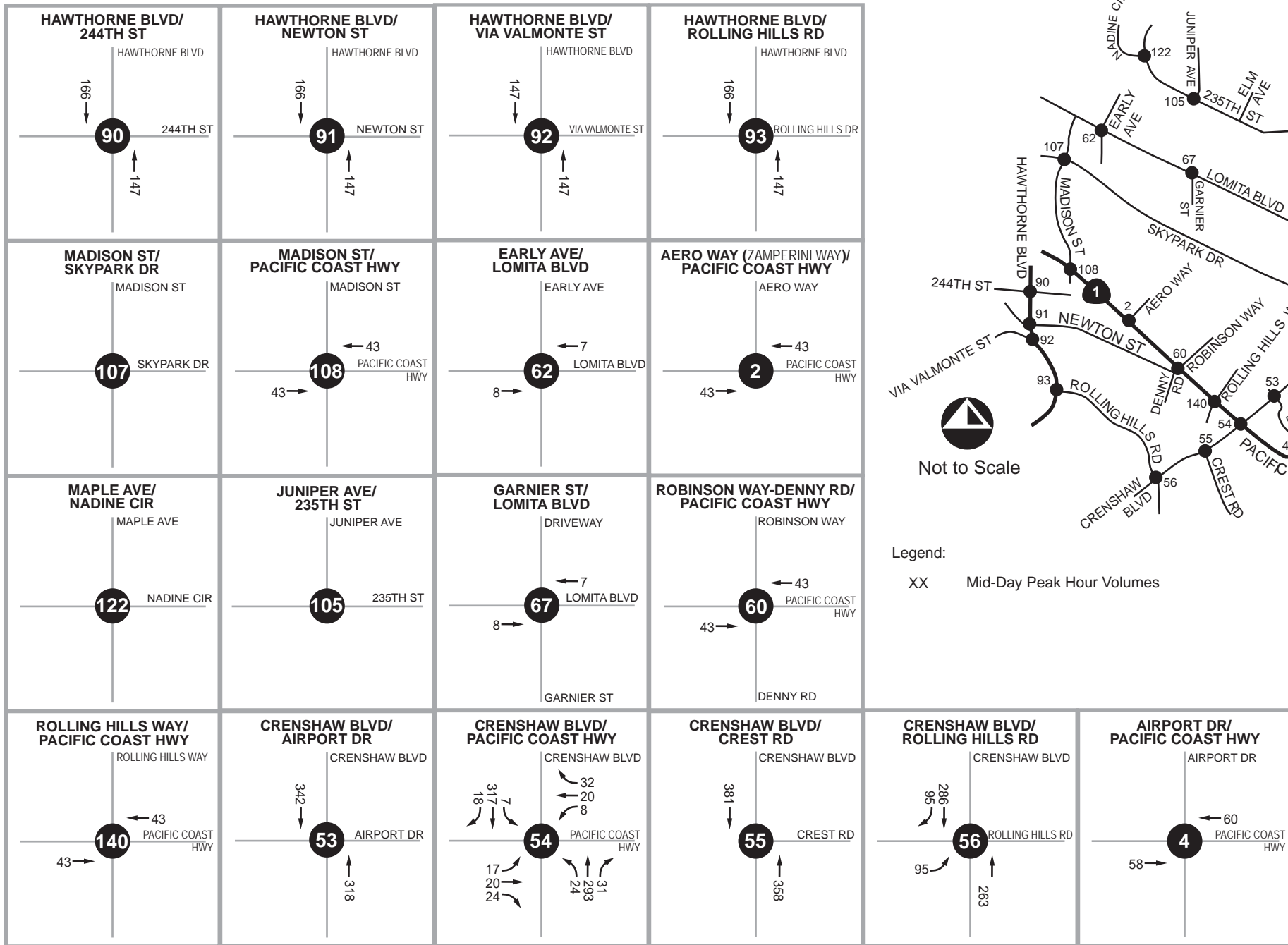




Legend:
 XX/XX AM/PM Peak Hour Volumes



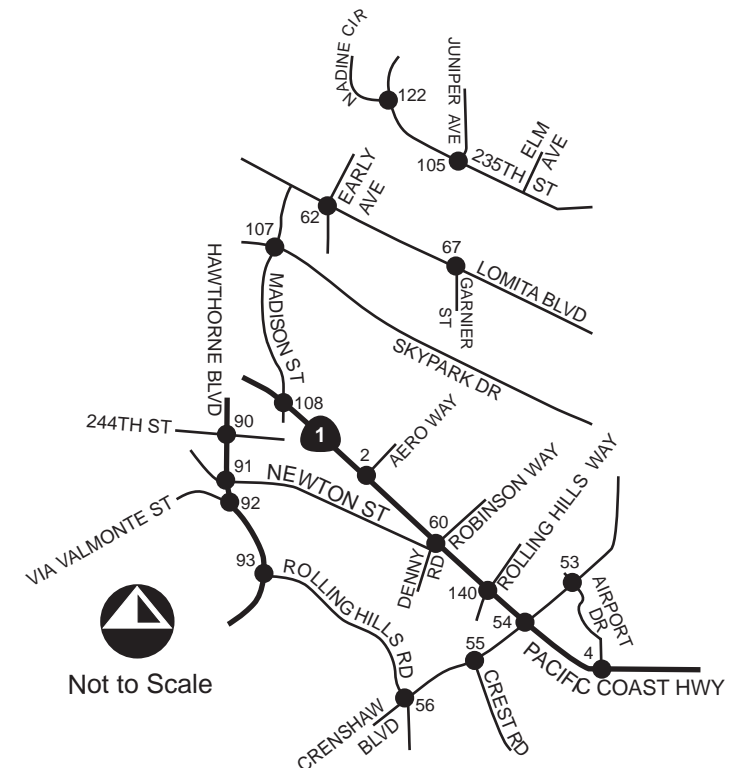
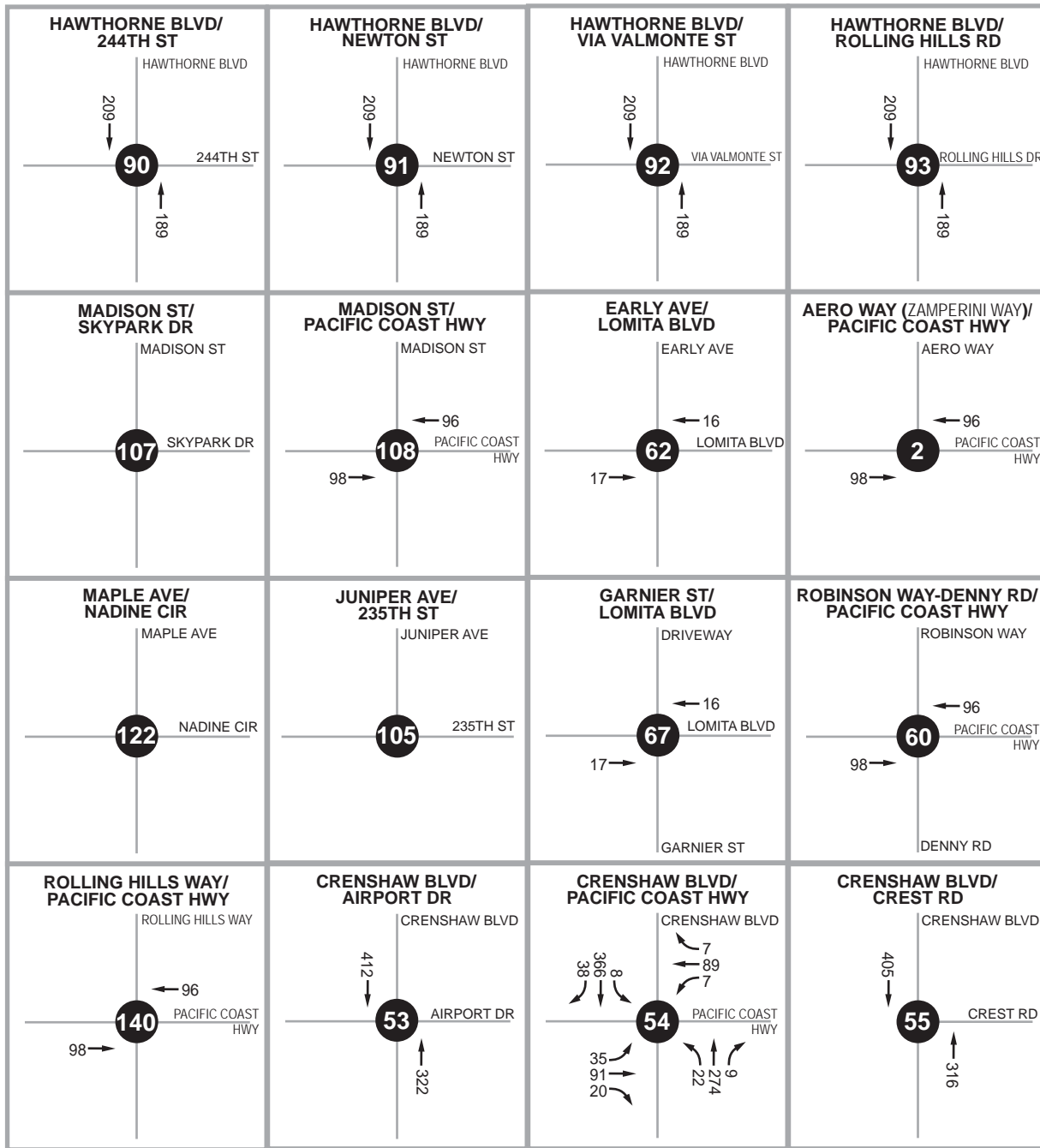
Area 10 - Forecast Weekday AM/PM Peak Hour Trip Assignment of Approved Projects



Legend:
 XX Mid-Day Peak Hour Volumes



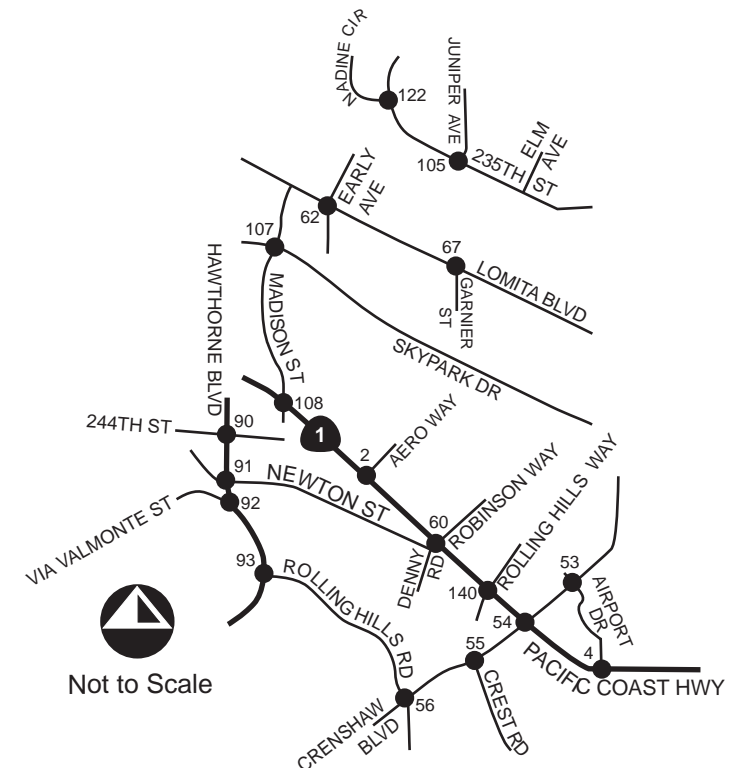
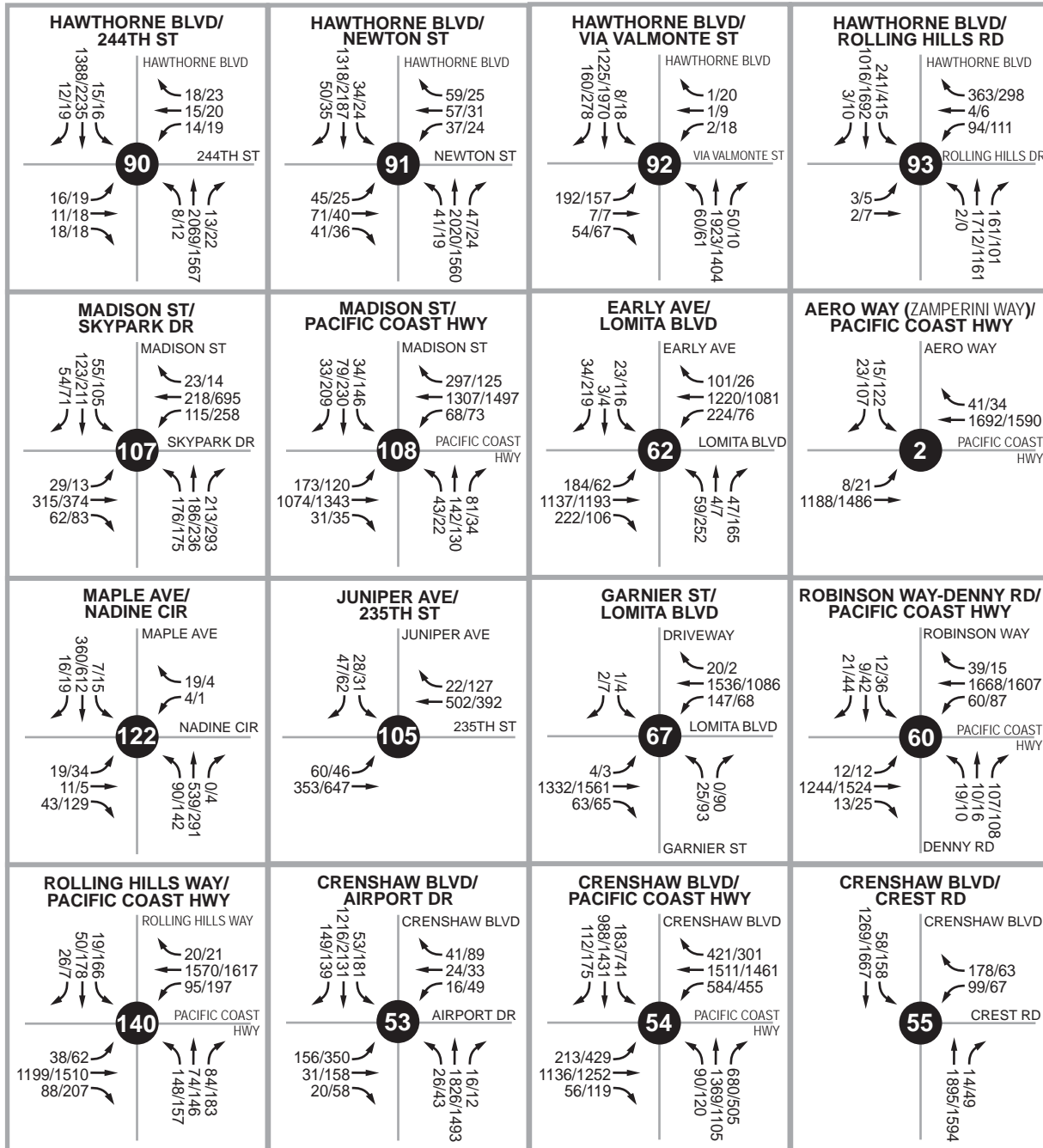
Area 10 - Forecast Weekday Mid-Day Peak Hour Trip Assignment of Approved Projects



Legend:
 XX Mid-Day Peak Hour Volumes



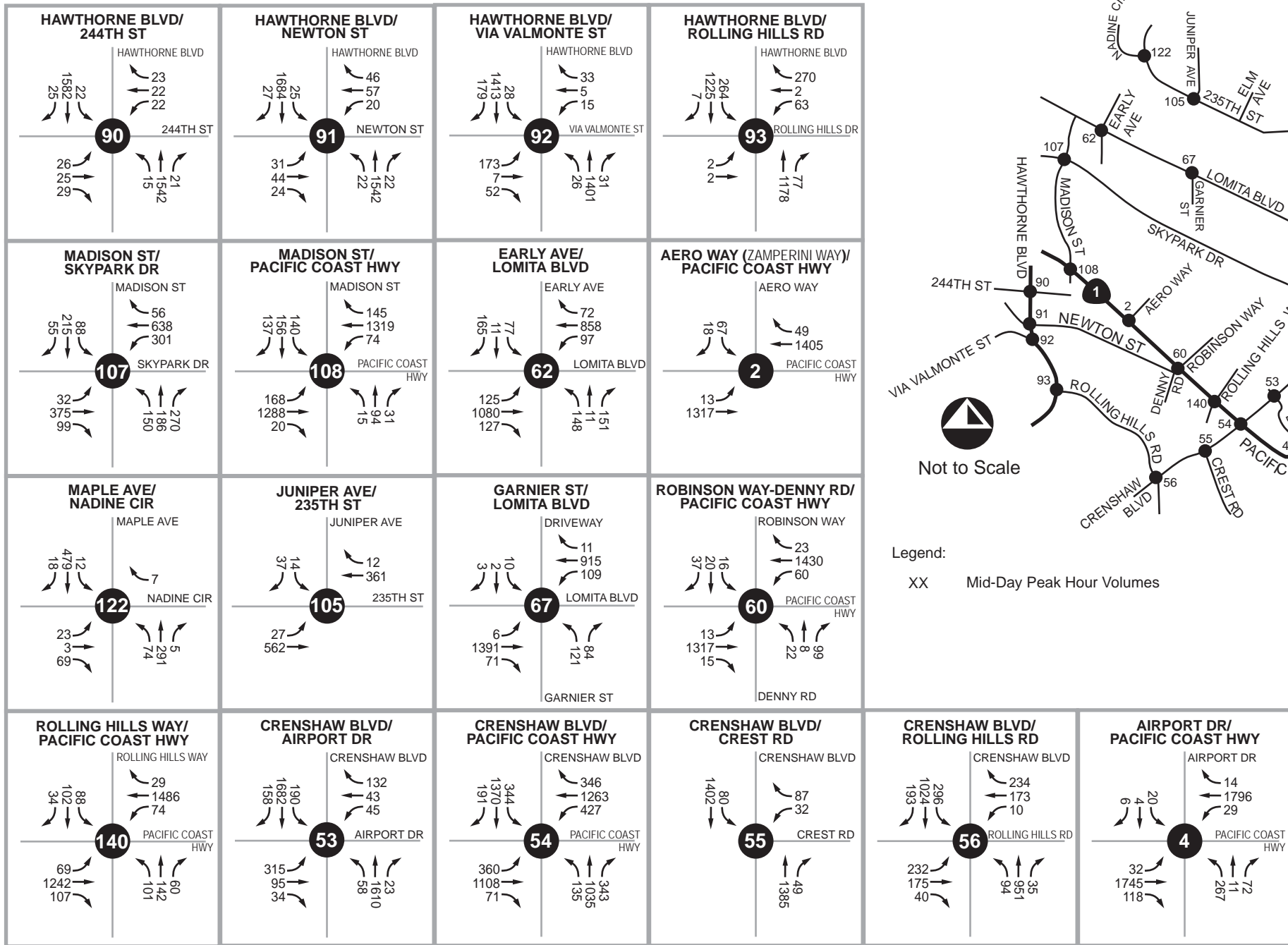
Area 10 - Forecast Weekend Mid-Day Peak Hour Trip Assignment of Approved Projects



Legend:
XX/XX AM/PM Peak Hour Volumes

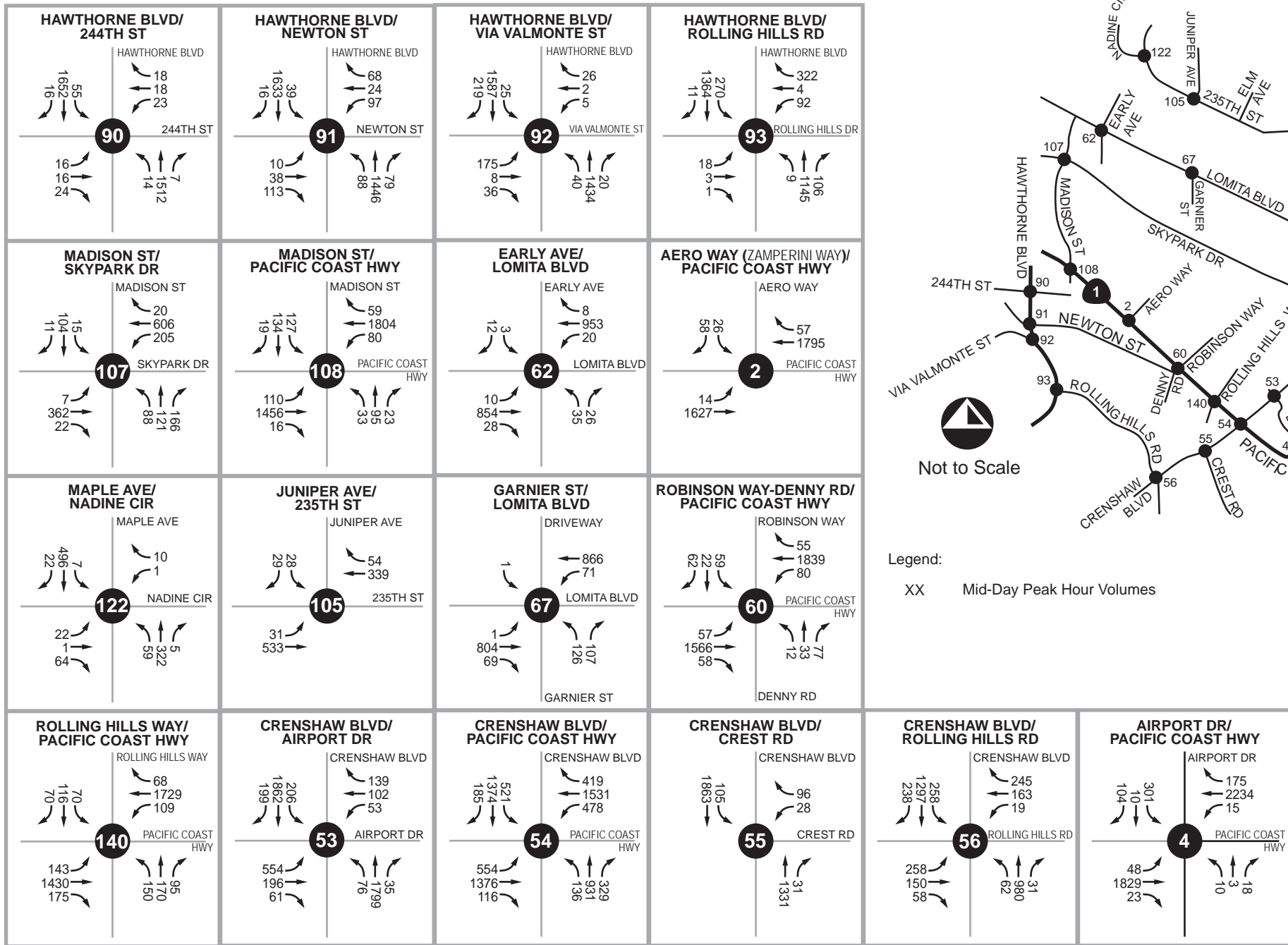


Area 10 - Forecast Near-Term Conditions Weekday AM/PM Peak Hour Intersection Volumes



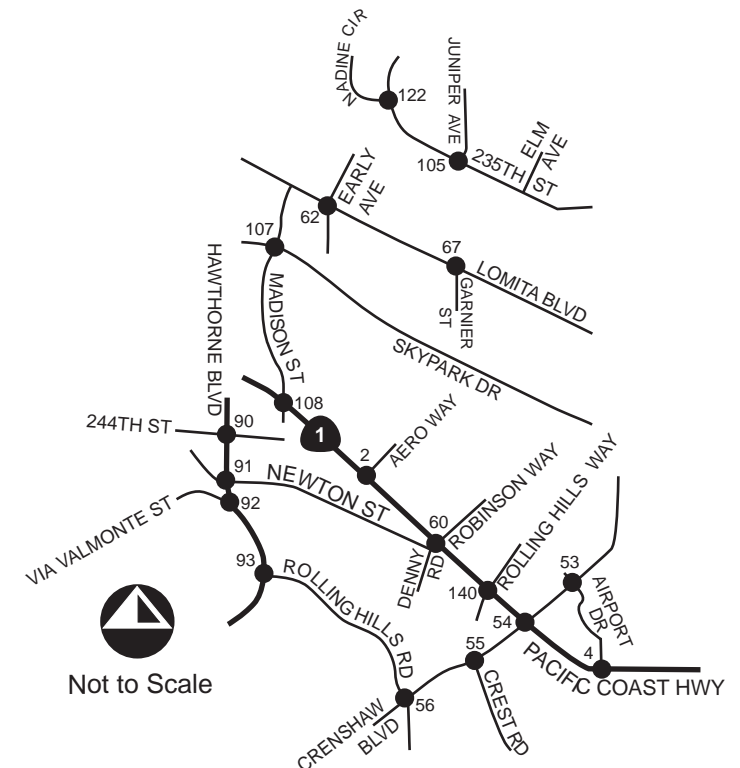
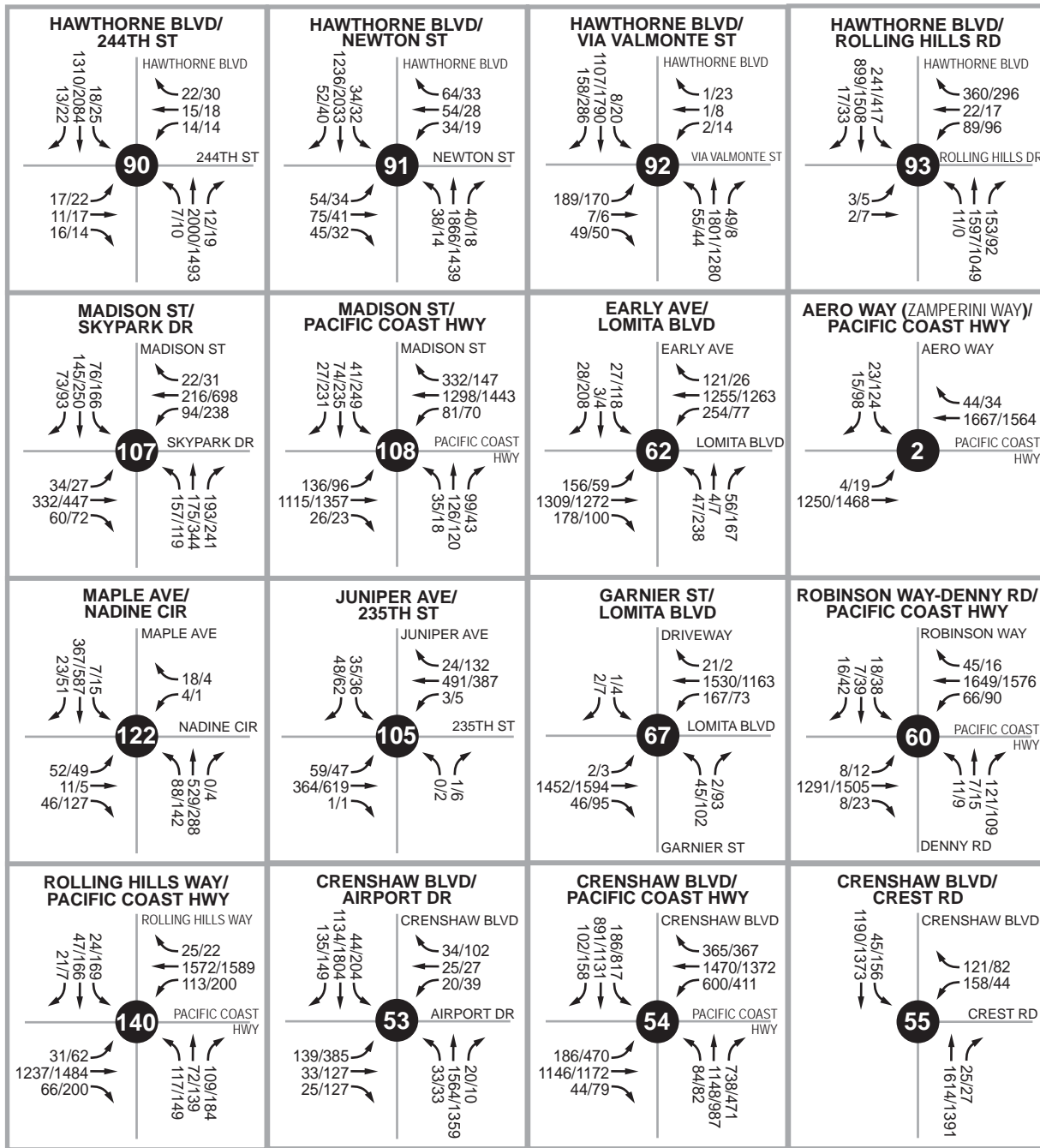
Area 10 - Forecast Near-Term Conditions Weekday Mid-Day Peak Hour Intersection Volumes



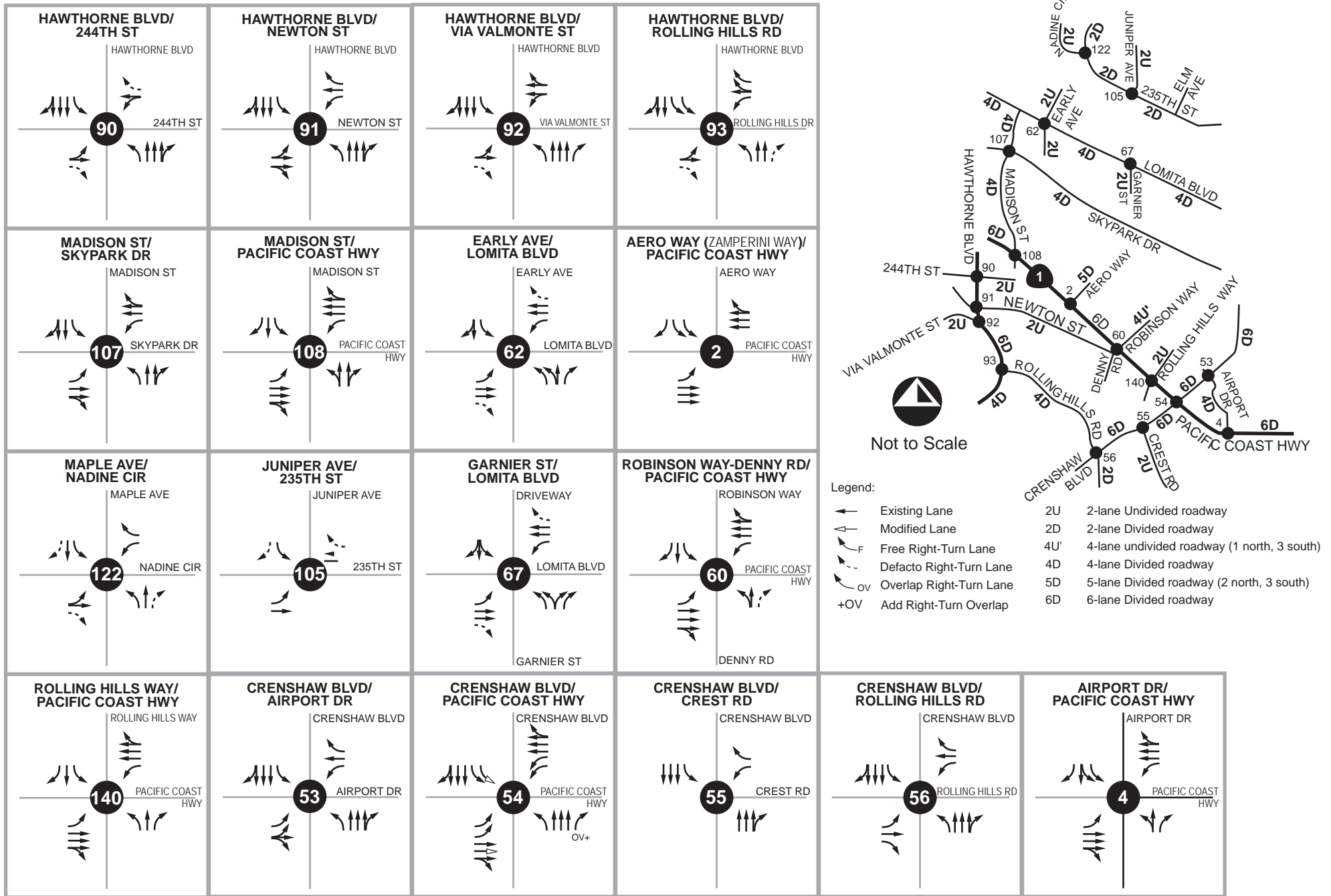


Area 10 - Forecast Near-Term Conditions Weekend Mid-Day Peak Hour Intersection Volumes



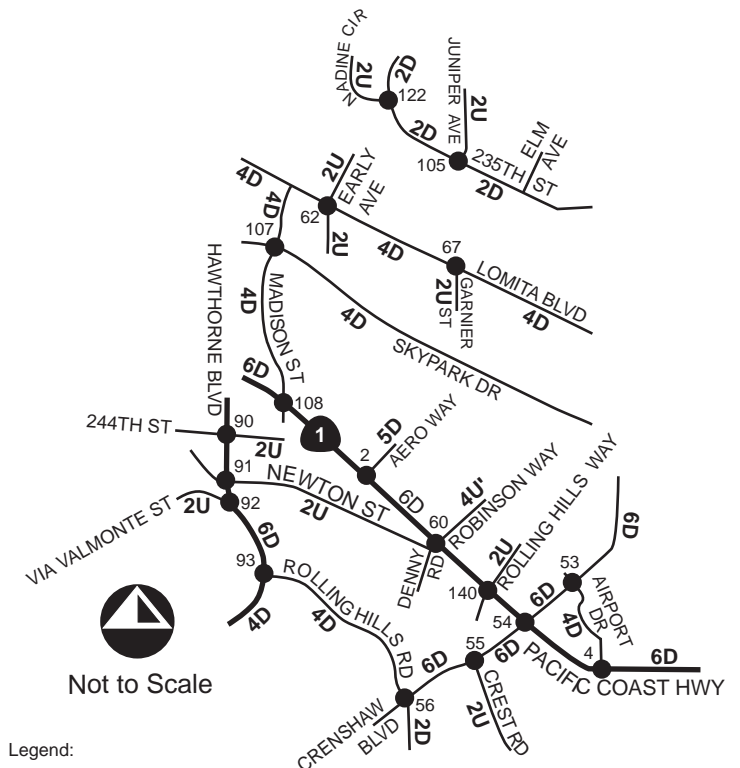
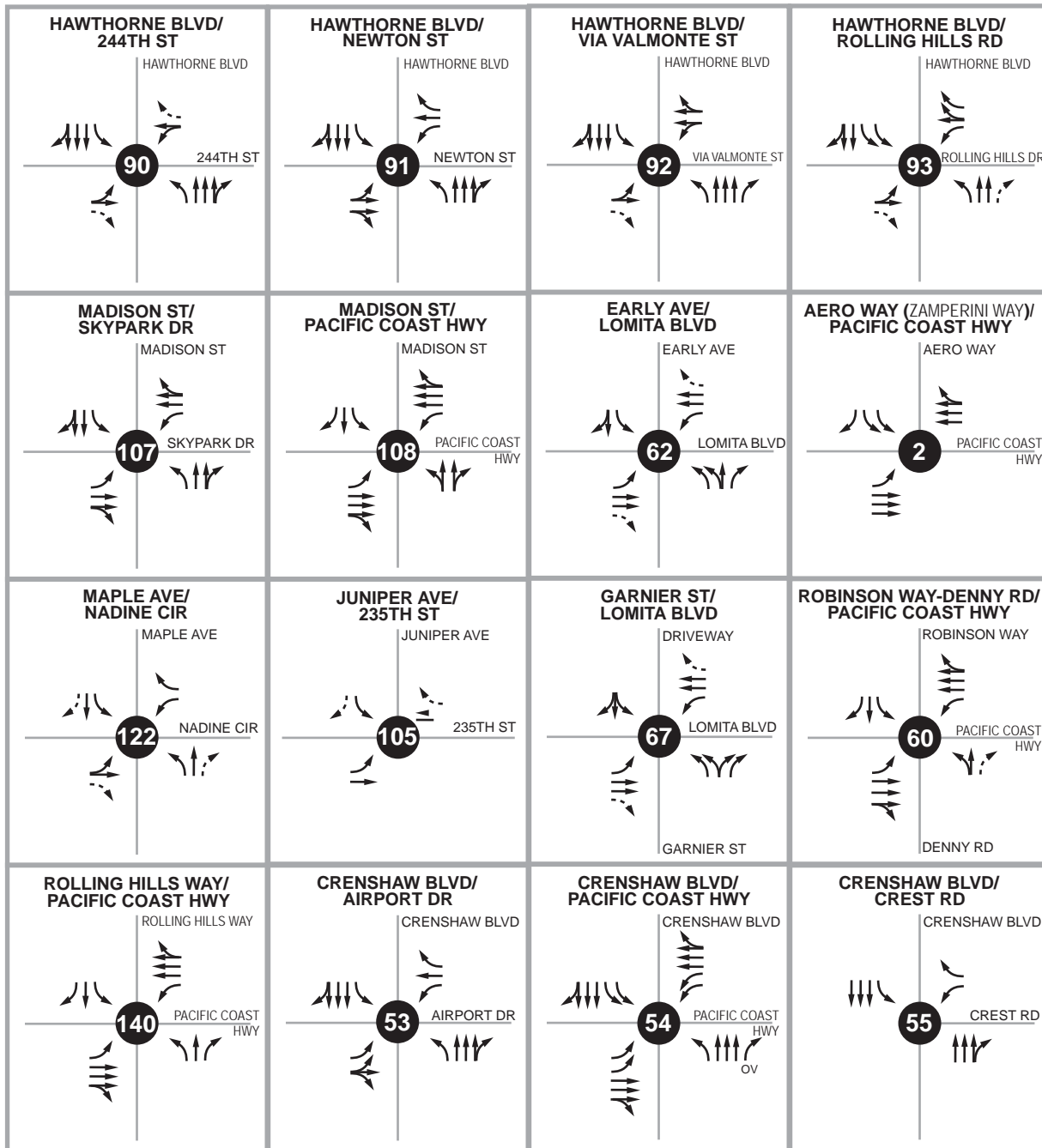


Legend:
 XX/XX AM/PM Peak Hour Volumes



Area 10 - Forecast Improved Near-Term Conditions Intersection/Roadway Geometry





- Legend:
- ← Existing Lane
 - ↔ Modified Lane
 - ↔^F Free Right-Turn Lane
 - ↔^D Defacto Right-Turn Lane
 - ↔^{ov} Overlap Right-Turn Lane
 - +OV Add Right-Turn Overlap
 - 2U 2-lane Undivided roadway
 - 2D 2-lane Divided roadway
 - 4U' 4-lane undivided roadway (1 north, 3 south)
 - 4D 4-lane Divided roadway
 - 5D 5-lane Divided roadway (2 north, 3 south)
 - 6D 6-lane Divided roadway