Appendix J. 2007 Traffic Impact Analysis

Appendix

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Appendix J:
Transportation and Traffic Impact Study

J.1 - Traffic Impact Analysis (Revised)
Prepared by Urban Crossroads - November 16, 2007

J.1 - Traffic Impact Analysis (Revised) Prepared by Urban Crossroads - November 16, 2007

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EDGEWATER COMMUNITIES PROJECT
TRAFFIC IMPACT ANALYSIS (REVISED)
CITY OF CHINO, CALIFORNIA

November 16, 2007 (Revised)
November 5, 2007 (Revised)
August 28, 2007

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EDGEWATER COMMUNITIES PROJECT
TRAFFIC IMPACT ANALYSIS (REVISED)
CITY OF CHINO, CALIFORNIA

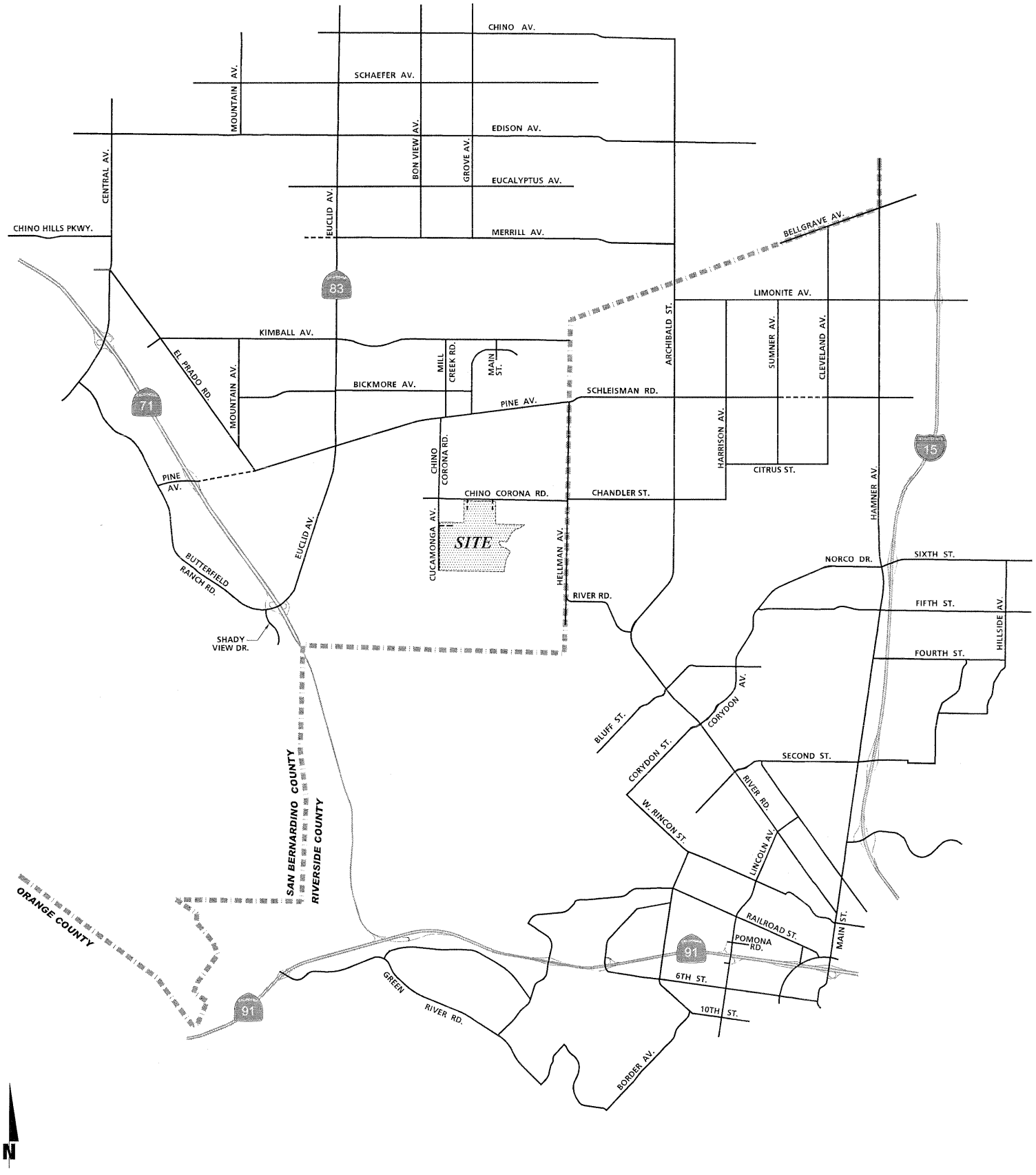
1.0 INTRODUCTION

This report summarizes the traffic impact analysis conducted to assess the potential impacts of the Edgewater Communities Proposed Project (a proposed amendment to The Preserve Specific Plan) residential development on the roadway system in the study area. The proposed Edgewater Communities project will entail the construction of a residential development on a 273±-acre parcel of land generally located southeast of the intersection of Cucamonga Avenue at Chino Corona Road in the City of Chino. The project site has frontage along Chino Corona Road and Cucamonga Avenue. The project site is currently occupied by an active dairy operation and vacant property. The project site is within the southerly portion of the Chino Agricultural Preserve Subarea 2 ("The Preserve") Specific Plan area, a 5,435-acre area annexed by the City of Chino in July 2003.

This traffic study analyzes the Edgewater Communities Proposed Project. There are also four project alternatives that are presented in this traffic study (Alternative 1 - No Project, Alternative 2 - Agricultural Preservation through Reduced Development Footprint, Alternative 3 - Biological Restoration, and Alternative 4 - Lake/View). However, only the Proposed Project is analyzed in detail in this traffic study. The other alternatives will be presented, but will only be evaluated and compared to the Proposed Project with respect to trip generation and impact on daily traffic volumes. The Edgewater Communities Proposed Project is proposed to include a maximum of 1,074 dwelling units of single-family housing and residential condominiums/townhouses, as well as five manmade lakes, open space, up to 15 acres of community parks and designated parcels for a museum/retail facility and a church. The general location of the project site is presented on Exhibit 1-A.

EXHIBIT 1-A

LOCATION MAP



The Edgewater Communities Proposed Project is not consistent with the City's General Plan and requires a Specific Plan amendment. Therefore, future year analysis required for the project includes future conditions at the time of anticipated full project occupancy (typically referred to as Interim Year conditions) and at General Plan Buildout (Post-2030) conditions. Both of these future conditions will be analyzed without and with the Proposed Project. The Edgewater Communities residential development is expected to be fully occupied by 2019. Therefore, Interim Year conditions will be analyzed for 2019 in this traffic impact analysis.

The introduction to this report presents an overview of the project and provides a brief description of the study area. The analysis methodologies used to evaluate the impacts of the project are described, and the definitions of roadway system deficiencies and significant project impacts are presented in the context of the City of Chino and California Environmental Quality Act (CEQA) requirements.

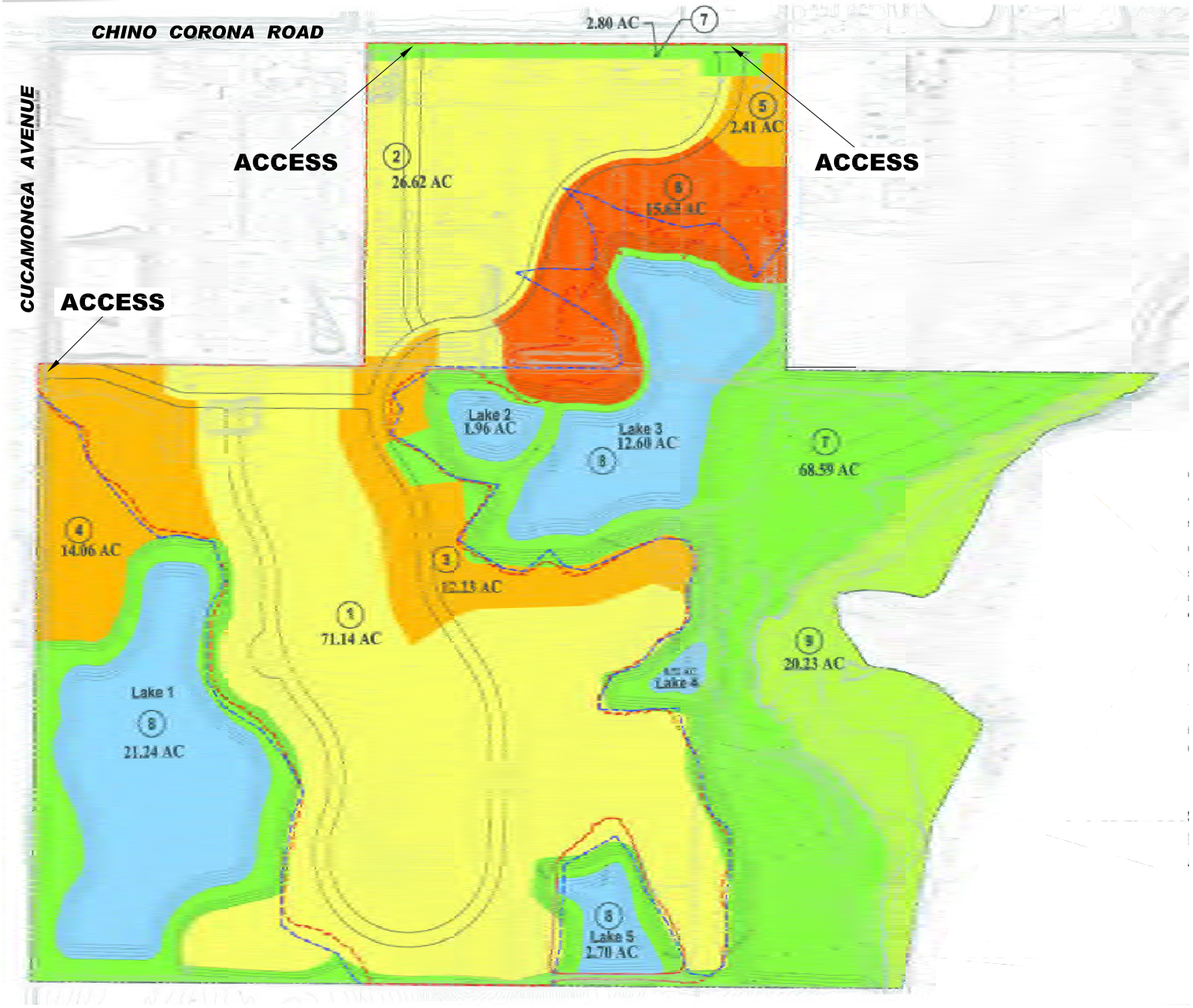
Subsequent sections of the report will describe the project in detail and provide a complete description of existing and projected traffic conditions within the study area.

1.1 Project Overview

The site plan for the proposed Edgewater Communities residential development is illustrated on Exhibit 1-B. The Edgewater Communities residential development is proposed to consist of 1,074 residential dwelling units, with a breakdown of 537 single-family detached homes and 537 residential condominium/townhouse dwelling units. The site may also include up to 15 acres of parks, a 15,200-square foot church, along with a 6,500-square foot museum/retail facility. The development is generally located southeast of the intersection of Cucamonga Avenue at Chino Corona Road. Access to the project site will be provided by way of two full-access project roadways which will intersect the east side of Cucamonga Avenue and the south side of Chino Corona Road, respectively. Chino Corona Road is designated as a Collector

EXHIBIT 1-B

SITE PLAN



Areas in Acres		Residential Land Use Avg du/ac	Units
97.76	Low Density - Area 1, 2	5.5	537
28.70	Medium Density - Areas 3, 4, 5	10	287
15.63	High Density - Areas 6	16	250
71.39	Open Space Recreation - Area 7		
39.22	Open Space Water - Area 8		
20.23	Open Space Natural - Area 9		
272.93	Total	Total	1,074

LEGEND:

556' Elevation Perimeter

Flood Inundation Easement

N

NOTE: MEDIUM TO HIGH DENSITY = CONDOS/TOWNHOMES

(40 feet of pavement in 66 feet of Right-of-Way). The project roadway accessing Chino Corona Road will be aligned opposite the future alignment of Main Street in The Preserve, which is planned to extend southerly to Chino Corona Road.

Additional detailed discussion of the roadway network features of the project and its traffic generation characteristics will be provided in subsequent sections of this report.

1.2 Study Area

Pursuant to discussion with City of Chino staff, the following study area intersections, located in the County of San Bernardino, County of Riverside, and along the border between the two counties, are analyzed within this report (see Exhibit 1-C):

County of San Bernardino:

Central Avenue (NS) at:

1. El Prado Road (EW)
2. State Route (SR-) 71 Freeway Northbound Ramps (EW)
3. SR-71 Freeway Southbound Ramps (EW)

SR-71 Freeway Southbound Ramps (NS) at:

4. Pine Avenue (EW)

SR-71 Freeway Northbound Ramps (NS) at:

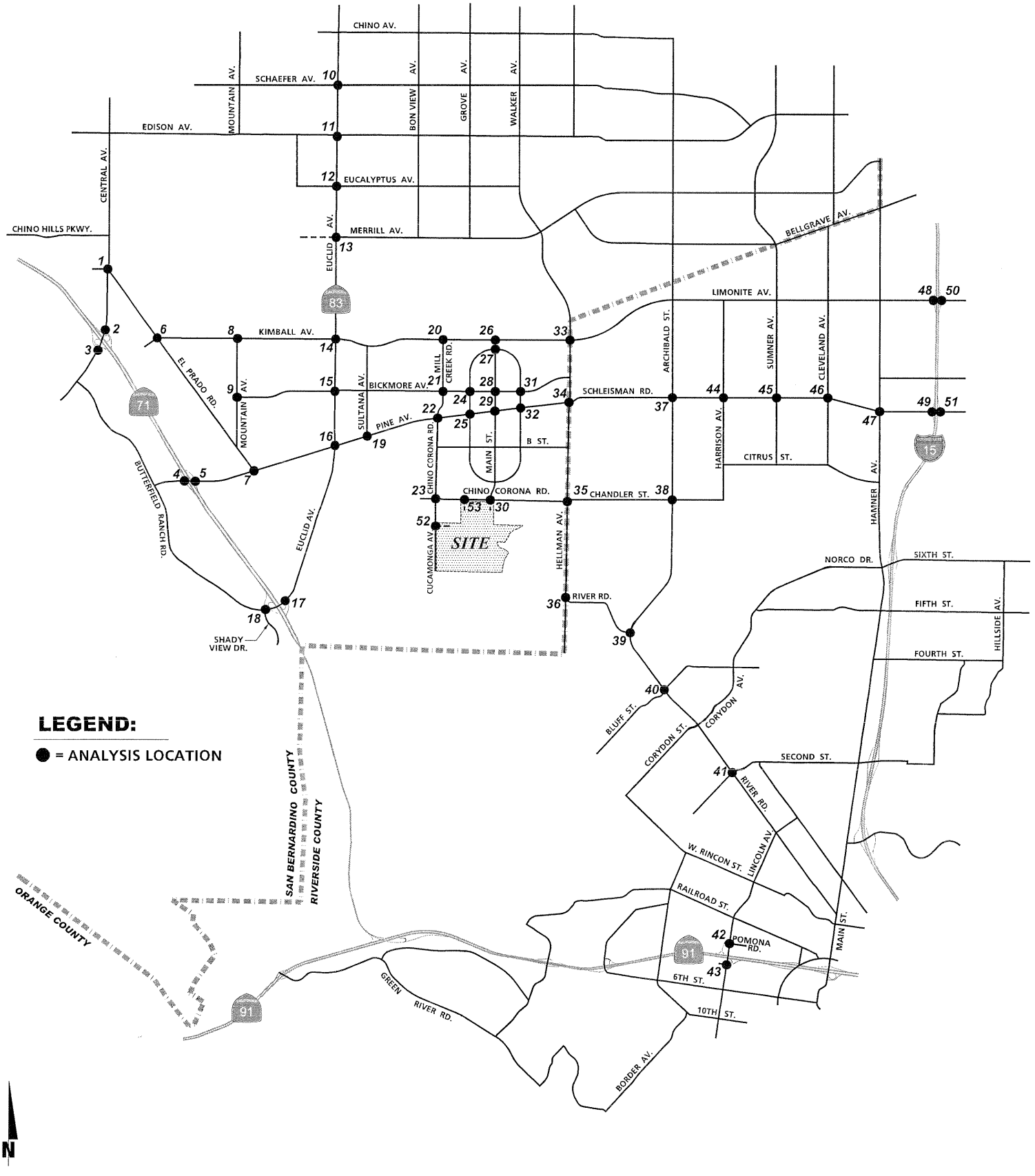
5. Pine Avenue (EW)

El Prado Road (NS) at:

6. Kimball Avenue (EW)
7. Pine Avenue (EW)

EXHIBIT 1-C

INTERSECTION ANALYSIS LOCATIONS



Mountain Avenue (NS) at:

8. Kimball Avenue (EW)
9. Bickmore Avenue (EW)

Euclid Avenue (SR-83) (NS) at:

10. Schaefer Avenue (EW)
11. Edison Avenue (EW)
12. Eucalyptus Avenue (EW)
13. Merrill Avenue (EW)
14. Kimball Avenue (EW)
15. Bickmore Avenue (EW)
16. Pine Avenue (EW)
17. SR-71 Freeway Northbound Ramps (EW)

Euclid Avenue (SR-83)/Butterfield Ranch Road (NS) at:

18. SR-71 Freeway Southbound Off-Ramp/Shady View Drive (EW)

Sultana Avenue (NS) at:

19. Pine Avenue (EW) [Future Intersection]

Mill Creek Road (NS) at:

20. Kimball Avenue (EW)
21. Bickmore Avenue (EW)

Chino Corona Road / Mill Creek Road (NS) at:

22. Pine Avenue (EW)

Cucamonga Avenue (NS) at:

23. Chino Corona Road (EW)
52. Project Site Access Road (EW) [Future Intersection]

West Preserve Loop (NS) at:

24. Bickmore Avenue (EW)
25. Pine Avenue (EW)

North West Project Site Access Road (NS) at:

53. Chino Corona Road (EW) [Future Intersection]

Main Street (NS) at:

26. Kimball Avenue (EW)
27. Preserve Loop (EW)
28. Bickmore Avenue (EW) [Future Intersection]
29. Pine Avenue (EW) [Future Intersection]

Main Street/North East Project Site Access Roadway (NS) at:

30. Chino Corona Road (EW) [Future Intersection]

East Preserve Loop (NS) at:

31. Bickmore Avenue (EW)
32. Pine Avenue (EW)

Counties of San Bernardino/Riverside:

Hellman Avenue (NS) at:

33. Kimball Avenue/Limonite Avenue (EW) [Future Intersection]
34. Pine Avenue/Schleisman Road (EW)
35. Chino Corona Road/Chandler Street (EW)
36. River Road (EW)

County of Riverside:

Archibald Street (NS) at:

37. Schleisman Road (EW)
38. Chandler Street (EW)
39. River Road (EW)

River Road (NS) at:

40. Bluff Street (EW)
41. Country Club Avenue/Second Street (EW)

Lincoln Avenue (NS) at:

42. Pomona Road / SR-91 Freeway Westbound Ramps (EW)
43. SR-91 Freeway Eastbound Ramps (EW)

Harrison Avenue (NS) at:

44. Schleisman Road (EW)

Sumner Avenue (NS) at:

45. Schleisman Road (EW)

Cleveland Avenue (NS) at:

46. Schleisman Road (EW)

Hamner Avenue (NS) at:

47. Schleisman Road (EW)

Interstate (I-) 15 Freeway Southbound Ramps (NS) at:

48. Limonite Avenue (EW)
49. Schleisman Road (EW)

I-15 Freeway Northbound Ramps (NS) at:

50. Limonite Avenue (EW)
51. Schleisman Road (EW)

1.3 Analysis Methodologies

This section of the report presents the methodologies used to perform the traffic analyses summarized in this report. The methodologies described are consistent

with the San Bernardino County Congestion Management Program traffic study guidelines. The following analysis timeframes are considered in this study:

- Existing Conditions
- 2019 Interim Year Conditions (Without and With the Proposed Project)
- General Plan Buildout (Post-2030) Conditions (Without and With the Proposed Project)

Both the overall methodologies used to develop future traffic volume forecasts, and the explicit traffic operations analysis methodologies are summarized herein. The primary section of interest to the non-technically oriented reviewer is Section 1.4.2 (Definition of Significant Impact).

1.3.1 Overall Analysis Methodology

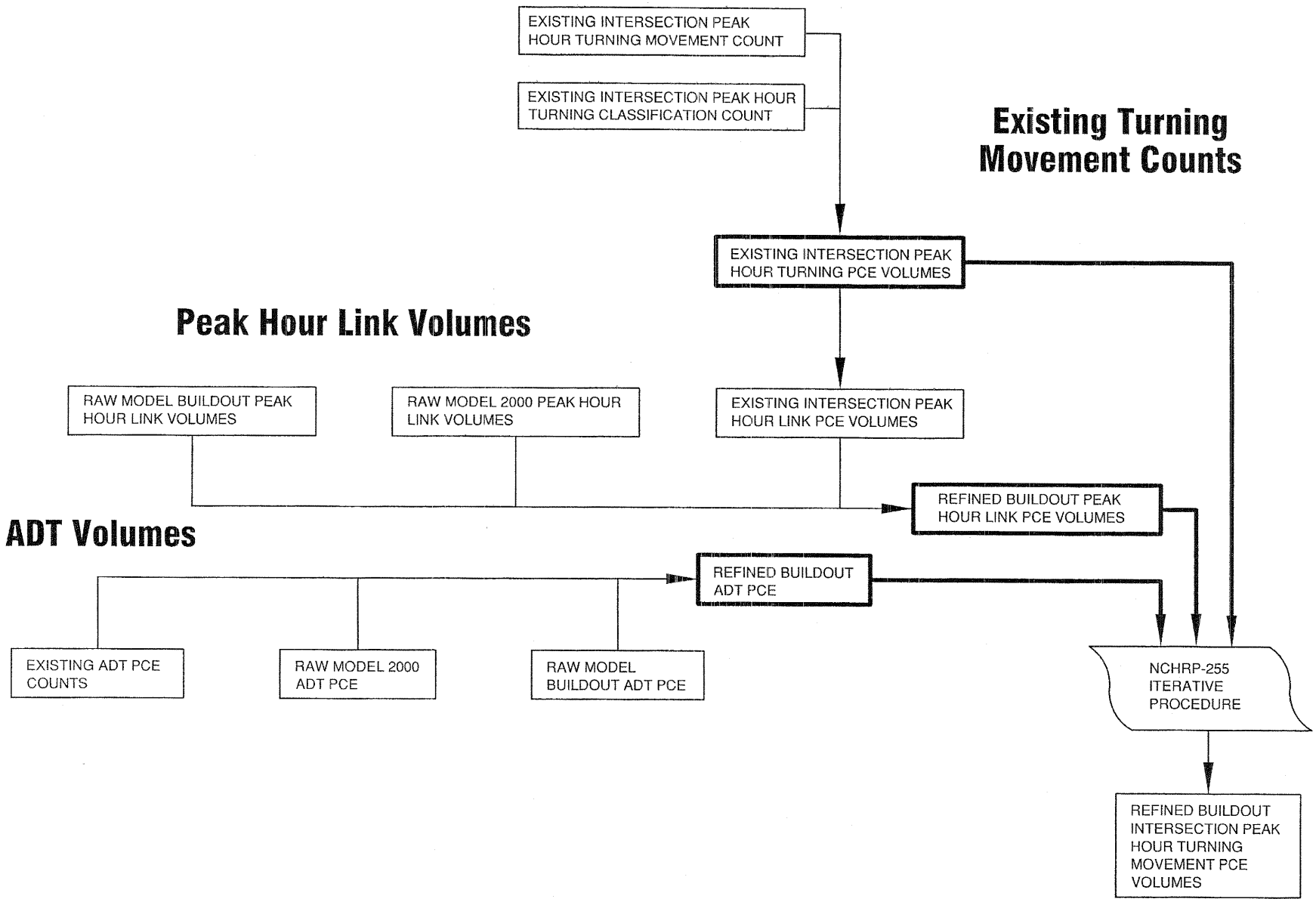
As described previously, traffic conditions are evaluated in this report for existing conditions and for two future horizon years. Urban Crossroads, Inc. conducted the actual traffic counts to quantify existing traffic conditions. The analysis considers the weekday AM and PM peak hours of traffic.

Exhibit 1-D illustrates the overall General Plan Buildout (Post-2030) peak hour turning movement volume refinement process. Per direction of City staff, the General Plan Buildout (Post-2030) With Project traffic volumes have been derived from the subregional travel demand model currently being developed for long range planning in the City of Chino.

This new City of Chino traffic model is being developed by Meyer, Mohaddes Associates ("MMA") as part of the City of Chino General Plan update. The City of Chino traffic model is based upon the Comprehensive Transportation Plan ("CTP") traffic model, which is maintained by the San Bernardino Associated Governments/Southern California Association of Governments ("SANBAG"/"SCAG"). The new City of Chino traffic model

EXHIBIT 1-D

GENERAL PLAN BUILDOUT (POST-2030) PEAK HOUR TURNING MOVEMENT PCE VOLUME REFINEMENT PROCESS



includes roadway network and socio-economic data ("SED") refinements for areas within the City of Chino, the New Model Colony (City of Ontario), and the Eastvale area (County of Riverside).

This procedure (presented on Exhibit 1-D) is applied for the City of Chino traffic model. The City of Chino traffic model uses an AM peak period-to-peak hour factor of 0.38 and a PM peak period-to-peak hour factor of 0.28 to determine the peak hour volumes. These factors represent the relationship of the highest single AM peak hour to the modeled 3 hour AM peak period (an even distribution would result in a factor of 0.33) and the highest single PM peak hour to the modeled 4 hour PM peak period (an even distribution would result in a factor of 0.25).

The City of Chino traffic model has a base (validation) year of 2000 and a horizon (future forecast) year of General Plan Buildout (Post-2030). The difference in model volumes (General Plan Buildout (Post-2030) – 2000) defines the growth in traffic between existing and General Plan Buildout (Post-2030) conditions, which in turn is used to determine the incremental growth that was added to the existing count data to determine the refined General Plan Buildout (Post-2030) roadway segment daily and peak hour approach and departure traffic volumes.

The refined future peak hour approach and departure volumes obtained from these calculations are then entered into a spreadsheet program consistent with the National Cooperative Highway Research Program (NCHRP Report 255), along with initial estimates of turning movement proportions. A linear programming algorithm is used to calculate individual turning movements which match the known directional roadway segment forecast volumes computed in the previous step. This program computes a likely set of intersection turning movements from intersection approach counts and the initial turning proportions from each approach leg. A final

refinement step completed for this analysis was to compare the resulting General Plan Buildout (Post-2030) volumes to previously published long range volumes within the study area and adjust the General Plan Buildout (Post-2030) volumes to reflect reasonable growth (if necessary).

As discussed with and agreed upon by City staff, the 2019 Interim Year without project traffic volumes are estimated by way of a socio-economic growth interpolation approach in order to avoid overstating other development traffic impacts and to develop 2019 Interim Year traffic volumes that are consistent with/reasonable compared to the growth expected between existing and General Plan Buildout (Post-2030) conditions. Land use ("LU") information for all of the identified other developments anticipated by 2019 have been compiled. The LU information is then converted into SED. The other development SED is then compared with the socio-economic growth expected between existing and General Plan Buildout (Post-2030) conditions, based on traffic model data, resulting in a 2019 Interim Year growth factor. The 2019 Interim Year without project traffic volumes are then derived by interpolating between existing and General Plan Buildout (Post-2030) without project traffic volumes, based on this growth factor.

Other development information for the 2019 Interim Year has been compiled for the subareas anticipated to experience substantial growth within and in the vicinity of the City of Chino. These subareas include the Chino Agricultural Preserve Subareas 1 and 2, the remainder of the City of Chino, the New Model Colony in the City of Ontario, and the Eastvale Community Plan area in the County of Riverside. The SED growth expected from the 2019 Interim Year other developments located in these subareas is used as the basis for interpolating.

By this method, the Interim Year traffic volumes will correspond well with both existing and General Plan Buildout (Post-2030) traffic volumes and be

representative of the level of development expected by 2019 Interim Year conditions. There are 79 other surrounding developments (see Exhibit 4-A) that will be included in the Interim Year volume development (projects are expected to be constructed and fully occupied by 2019). Another step was taken to specifically include the College Park development, as requested by the City of Chino. College Park only volumes from the Traffic Impact Analysis Specific Plan for the Development of State Surplus Property from the California Institution for Men (April 2003) were extracted and superimposed on the Interim Year traffic volumes (that were strictly based on Existing to General Plan Buildout interpolation). Final Interim Year volumes were reviewed and adjusted upwards to ensure a 1% and 3% ambient growth rate for 13 years (2006 to 2019), for the Central Avenue and Euclid Avenue corridors, respectively. Finally, the resulting 2019 Without Project volumes were compared to Buildout (Post-2030) Without Project volumes and the Buildout (Post-2030) Without Project volumes were adjusted upward to ensure that no negative growth occurs from Interim Year (2019) With Project to buildout (Post-2030) Without Project conditions.

Project traffic volumes for the future conditions projections were estimated using a manual approach described in the CMP traffic study guidelines. The project trip generation has been calculated in accordance with the Institute of Transportation Engineers ("ITE") publication Trip Generation (7th Edition, 2003), for Land Use Codes ("LUC") 210 – Single Family Detached Housing, LUC 230 – Residential Condominium/Townhouse, LUC 814 – Museum/ Retail, LUC 560 – Church, and LUC 411 – Park. The City of Chino traffic model has been used to evaluate the distribution and likely travel routes of project traffic under General Plan Buildout (Post-2030) conditions. A select zone (trip distribution) analysis for the Edgewater Communities project was performed using the model for the General Plan Buildout (Post-2030) horizon year. The 2019 Interim Year trip distribution was developed based

on the geographical location of the site, the location of surrounding uses, the proximity to the regional freeway system, local traffic patterns, and future development. The project trip distribution patterns have been reviewed and refined as necessary.

1.3.2 Traffic Operations Analysis

The current technical guide to the evaluation of traffic operations is the 2000 Highway Capacity Manual (HCM) (Transportation Research Board Special Report 209). The HCM defines level of service as a qualitative measure which describes operational conditions within a traffic stream, generally in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. The criteria used to evaluate LOS (Level of Service) conditions vary based on the type of roadway and whether the traffic flow is considered interrupted or uninterrupted.

The definitions of level of service for uninterrupted flow (flow unrestrained by the existence of traffic control devices) are:

- LOS "A" represents free flow. Individual users are virtually unaffected by the presence of others in the traffic stream.

- LOS "B" is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver.

- LOS "C" is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream.

- LOS "D" represents high-density but stable flow. Speed and freedom to maneuver are severely restricted, and the driver experiences a generally poor level of comfort and convenience.

- LOS "E" represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Small increases in flow will cause breakdowns in traffic movement.

- LOS "F" is used to define forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount which can traverse the point. Queues form behind such locations.

Uninterrupted flow is generally found only on limited access (freeway) facilities in urban areas.

The definitions of level of service for interrupted traffic flow (flow restrained by the existence of traffic signals and other traffic control devices) differ slightly depending on the type of traffic control. The level of service is typically dependent on the quality of traffic flow at the intersections along a roadway. The HCM methodology expresses the level of service at an intersection in terms of delay time for the various intersection approaches. The HCM uses different procedures depending on the type of intersection control. The levels of service determined in this study are determined using the HCM methodology.

For signalized intersections, average stopped delay per vehicle for the overall intersection is used to determine level of service. Levels of service at signalized study intersections have been evaluated using the HCM intersection analysis program.

For all way stop ("AWS") controlled intersections, the ability of vehicles to enter the intersection is not controlled by the occurrence of gaps in the traffic

flow along the major street. The AWS controlled intersection has been evaluated using the HCM methodology for this type of multi-way stop controlled intersection configuration. The level of service for this type of intersection analysis is also based on average stopped delay per vehicle for the overall intersection.

Study area intersections which are stop sign controlled with stop control on the minor street only (cross street stop ("CSS")) have been analyzed using the two-way stop controlled unsignalized intersection methodology of the HCM. For these intersections, the calculation of level of service is dependent on the occurrence of gaps occurring in the traffic flow along the major street.

The level of service has been calculated using data collected describing the intersection configuration and traffic volumes at signalized intersections to calculate average intersection delay. The level of service for unsignalized intersections with stop-control on the minor street only is based on stopped delay per vehicle for the worst minor street movement(s).

The levels of service are defined in terms of delay for each intersection analysis methodology as follows:

LEVEL OF SERVICE	AVERAGE TOTAL DELAY PER VEHICLE (SECONDS)	
	SIGNALIZED	UNSIGNALIZED
A	0 to 10.00	0 to 10.00
B	10.01 to 20.00	10.01 to 15.00
C	20.01 to 35.00	15.01 to 25.00
D	35.01 to 55.00	25.01 to 35.00
E	55.01 to 80.00	35.01 to 50.00
F	80.01 and up	50.01 and up

Per CMP guidelines, signalized intersections are considered deficient (LOS "F") if the overall intersection critical volume-to-capacity ("V/C") ratio equals or exceeds 1.0, even if the level of service defined by the delay value is below the defined LOS standard. The V/C ratio is defined as the critical volumes divided by the intersection capacity. A V/C ratio greater than 1.0 implies an infinite queue.

The LOS analysis for signalized intersections has been performed using optimized signal timing. This analysis has included an assumed lost time of two seconds per phase in accordance with San Bernardino CMP recommended default values. However, for the signalized intersections within Riverside County, a lost time of four seconds per phase was assumed in accordance with the Riverside County Transportation Department Traffic Impact Analysis guidelines. Signal timing optimization has considered pedestrian safety and signal coordination requirements. Appropriate time for pedestrian crossings has also been considered in the signalized intersection analysis.

The following formula has been used to calculate the pedestrian minimum times for all HCM runs, pursuant to the 2003 Manual of Uniform Traffic Control Devices ("MUTCD"):

[(Curb-to-Curb distance) / (4 feet/second)] + 5 seconds

Saturation flow rates of 1,800 vehicles per hour of green (vphg) for through and right-turn lanes and 1,700 vphg for single left-turn lanes, 1,600 vphg per lane for dual left-turn lanes, and 1,500 vphg per lane for triple left-turn lanes have been assumed for all capacity analysis in San Bernardino County under existing and 2019 Interim Year conditions. Under General Plan Buildout (Post-2030) conditions in San Bernardino County, saturation flow rates of 1,900 vphg for through and right-turn lanes and 1,800 vphg for

single left-turn lanes, 1,700 vphg per lane for dual left-turn lanes, and 1,600 vphg per lane for triple left-turn lanes have generally been assumed. In Riverside County, saturation flow rates of 1,900 vphg are standard for all lane configurations. These are the default values recommended by the San Bernardino CMP and Riverside County traffic study guidelines.

As required by the San Bernardino CMP, the peak hour traffic volumes have been adjusted to peak 15 minute volumes for analysis purposes using the existing observed peak 15 minute to peak hour factors for all scenarios analyzed. Where feasible improvements, in accordance with the local jurisdiction's General Plan, which result in acceptable operations cannot be identified, the General Plan Buildout (Post-2030) and 2019 Interim Year peak hour factor has been adjusted upwards to 0.95. This is specifically allowed in the San Bernardino CMP guidelines to account for the effects of congestion on peak spreading under future year conditions. Peak spreading refers to the tendency of traffic to spread more evenly across time as congestion increases. For intersections located in Riverside County, the guidelines dictate that a peak hour factor of 1.0 should be used under General Plan Buildout (Post-2030) conditions.

1.4 Definition of Deficiency

The following definitions of deficiencies have been developed in accordance with the City of Chino, County of San Bernardino CMP, and County of Riverside requirements.

1.4.1 Definition of Deficiency

The definition of an intersection deficiency has been obtained from the City of Chino General Plan. The City of Chino General Plan states that peak hour intersection operations of LOS "D" or better are generally acceptable.

Therefore, any City of Chino intersection operating at LOS "E" or LOS "F" will be considered deficient. Analysis per lane movement (not by average approach) for any movement that goes from LOS D to LOS E/F will also be considered as potential project responsibility for mitigation.

For the County of Riverside, LOS "C" must be maintained along all County maintained roadways and state highways. As an exception, LOS "D" may be permitted in Community Development areas, at the intersections of any combination of secondary highways, major highways, arterials, urban arterials, expressways, conventional state highways or freeway ramp intersections. All Riverside County analysis locations are located within Community Development areas. Per CMP direction, state controlled facilities (state highways, freeway ramp intersection, etc.) are subject to local jurisdiction traffic operations requirements, with no greater than a 45 second average stopped delay per vehicle during peak hour operations (middle of LOS "D").

2.0 PROJECT DESCRIPTION

This section describes the Edgewater Communities project land uses and traffic characteristics for each of the future horizon years analyzed. The final subsection discusses non-motorized transportation facilities (transit, bicycle and equestrian trails, and paseos and pedestrian trails).

2.1 Project Description

The Edgewater Communities residential development is proposed to consist of a maximum of 1,074 residential dwelling units, with a breakdown of 537 single-family detached homes and 537 residential condominium/townhouse dwelling units. The site may also include up to 15 acres of community (City) parks, a 15,200-square foot church, along with a 6,500-square foot museum facility (conservatively represented as specialty retail use in this study). The development is generally located southeast of the intersection of Cucamonga Avenue at Chino Corona Road. Access to the project site (per Alternative 1) will be provided by way of two full-access project roadways which will intersect the east side of Cucamonga Avenue and the south side of Chino Corona Road, respectively. The project roadway accessing Chino Corona Road will be aligned opposite the future alignment of Main Street in The Preserve, which is planned to extend southerly to Chino Corona Road. The site plan for the proposed Edgewater Communities residential development was previously presented on Exhibit 1-B.

2.2 Project Traffic

The traffic related to the project has been calculated in accordance with the following accepted procedural steps:

- Trip Generation
- Trip Distribution
- Trip Assignment

These steps are described in detail below.

2.2.1 Project Trip Generation

In order to develop the traffic characteristics of the proposed project alternatives, trip-generation statistics published in the Institute of Transportation Engineers (ITE) Trip Generation (7th Edition, 2003) manual for similar land uses as those proposed were used. The ITE Trip Generation Manual does not include data for museum uses. ITE Land Use Code ("LUC") 814-Specialty Retail, with the independent variable of gross floor area equal to 6.5 thousand square feet (TSF), has been used to conservatively represent this land use in the study. ITE LUC 210 – Single-Family Detached Housing, with the independent variable of number of dwelling units equal to 537, ITE LUC 230 – Residential Condominium/Townhouse, with the independent variable of number of dwelling units equal to 537, ITE LUC 814 – Specialty Retail, with the independent variable of 65 TSF (used to represent the potential Museum), ITE LUC 560 – Church, with the independent variable of gross floor area equal to 15.2 TSF, and ITE LUC 411 – City Parks, with the independent variable of acres equal to 15 acres, were also used to develop the traffic characteristics of the planned Edgewater Communities residential development. Table 2-1 presents the trip generation rates used to generate the peak hour and daily traffic volumes the project. Per the ITE Trip Generation manual, the weekday trip generation rates for churches include day care or extended care activities during the week.

Both the average rates and rates developed from the fitted curve equation in the Trip Generation manual have been calculated. The higher rates (average rates) were used to calculate the traffic characteristics in order to provide a more conservative analysis of project impacts. No trip generation estimates have been included for the open space portions of the Edgewater Communities residential development. The open space areas, which will potentially include equestrian and walking paths, are passive

TABLE 2-1

TRIP GENERATION RATES[1]

LAND USE	ITE CODE	UNITS[2]	PEAK HOUR						DAILY
			AM			PM			
			IN	OUT	TOTAL	IN	OUT	TOTAL	
Average Rate:									
Single-Family Detached Housing	210	DU	0.19	0.56	0.75	0.64	0.37	1.01	9.57
Residential Condominium/Townhouse	230	DU	0.07	0.37	0.44	0.35	0.17	0.52	5.86
Museum/Retail[3]	814	TSF	3.28	3.56	6.84	2.81	2.21	5.02	44.32
Church[4]	560	TSF	0.39	0.33	0.72	0.34	0.32	0.66	9.11
City Parks	411	AC	NOM[5]	NOM	NOM	NOM	NOM	NOM	1.59
Fitted Curve Equation (rates shown for Proposed Project Alternative):									
Single-Family Detached Housing	210	DU	0.18	0.54	0.72	0.57	0.34	0.91	9.09
Residential Condominium/Townhouse	230	DU	0.06	0.31	0.37	0.30	0.15	0.44	4.99

[1] Source: ITE Trip Generation (7th Edition, 2003), Land Use Codes 210, 230, and 560.

[2] DU = Dwelling Units; TSF = Thousand Square Feet; AC = Acre.

[3] Museum/Retail use represented using ITE Specialty Retail trip generation data.

[4] Church weekday trip generation reflects the presence of school (day care/extended care) uses.

[5] NOM = Nominal (negligible) trip generation.

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areas for use by residents and are not expected to generate vehicular traffic to/from the project site.

Table 2-2 summarizes the trip generation for the Proposed Project and Project Alternatives. The Edgewater Communities Proposed Project residential development is anticipated to generate a total of 8,736 trip-ends per day, with 694 vehicles per hour ("VPH") during the AM peak hour and 864 VPH during the PM peak hour. The higher total peak hour trips generated by the project occur in the PM peak hour.

Four additional project alternatives will also be considered for trip generation evaluation purposes only. Alternative 1 is the "No Project" alternative. Therefore, no trip generation evaluation is shown for Alternative 1. Alternative 2 (Agricultural Preservation through Reduced Development Footprint) is comprised of 26 single-family detached homes, 342 residential condominium/townhouse dwelling units, 6,500-square foot museum/retail, and a 15,200-square foot church. The resulting project trip generation for this alternative is presented on Table 2-2. As presented on Table 2-2, this project alternative is calculated to generate approximately 2,703 trip-ends per day, with 226 VPH during the AM peak hour and 247 VPH during the PM peak hour. Since active dairy farming already occurs on the project site, no additional traffic would be generated by the agricultural uses being preserved as part of this alternative.

Alternative 3 (Biological Restoration) is comprised of 334 single-family detached homes, 561 residential condominium/townhouse dwelling units, 6,500-square foot museum/retail, and a 15,200-square foot church. The resulting project trip generation for this alternative is also presented on Table 2-2. As presented on Table 2-2, this project alternative is calculated to generate approximately 6,933 trip-ends per day, with 553 VPH during the AM peak hour and 671 VPH during the PM peak hour.

TABLE 2-2

PROJECT TRIP GENERATION

Proposed Project

LAND USE	ITE CODE	QUANTITY	UNITS[1]	PEAK HOUR AM IN	AM OUT	AM TOTAL	PM IN	PM OUT	PM TOTAL	DAILY
Single-Family Detached Housing	210	537	DU	101	302	403	342	201	543	5,139
Residential Condo/Townhouse	230	537	DU	40	196	236	187	92	279	3,147
Museum/Retail	814	6.5	TSF	21	23	44	18	14	32	288
Church	560	15.2	TSF	6	5	11	5	5	10	138
Park	411	15.0	AC	--	--	--	--	--	--	24
Project Total				168	526	694	552	312	864	8,736

Alternative 2: Agricultural Preservation through Reduced Development Footprint

LAND USE	ITE CODE	QUANTITY	UNITS[1]	PEAK HOUR AM IN	AM OUT	AM TOTAL	PM IN	PM OUT	PM TOTAL	DAILY
Single-Family Detached Housing	210	26	DU	5	15	20	17	10	27	249
Residential Condo/Townhouse	230	342	DU	26	125	151	119	59	178	2,004
Museum/Retail	814	6.5	TSF	21	23	44	18	14	32	288
Church	560	15.2	TSF	6	5	11	5	5	10	138
Project Total				58	168	226	159	88	247	2,703
% of Preferred Alternative						33%			29%	31%

Alternative 3: Biological Restoration

LAND USE	ITE CODE	QUANTITY	UNITS[1]	PEAK HOUR AM IN	AM OUT	AM TOTAL	PM IN	PM OUT	PM TOTAL	DAILY
Single-Family Detached Housing	210	334	DU	63	188	251	213	125	338	3,196
Residential Condo/Townhouse	230	561	DU	42	205	247	195	96	291	3,287
Museum/Retail	814	6.5	TSF	21	23	44	18	14	32	288
Church	560	15.2	TSF	6	5	11	5	5	10	138
Project Total				132	421	553	431	240	671	6,933
% of Preferred Alternative						80%			78%	79%

Alternative 4: View/Lake

LAND USE	ITE CODE	QUANTITY	UNITS[1]	PEAK HOUR AM IN	AM OUT	AM TOTAL	PM IN	PM OUT	PM TOTAL	DAILY
Single-Family Detached Housing	210	342	DU	64	192	257	218	128	345	3,273
Residential Condo/Townhouse	230	445	DU	33	163	196	155	76	231	2,608
Museum/Retail	814	6.5	TSF	21	23	44	18	14	32	288
Church	560	15.2	TSF	6	5	11	5	5	10	138
Project Total				124	383	508	396	223	618	6,331
% of Preferred Alternative						73%			72%	72%

[1] DU = Dwelling Units; TSF = Thousand Square Feet.

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Alternative 4 (View/Lake) is comprised of 342 single-family detached homes, 445 residential condominium/townhouse dwelling units, 6,500-square foot museum/retail, and a 15,200 square foot church. The resulting project trip generation for this alternative is also presented on Table 2-2. As presented on Table 2-2, this project alternative is calculated to generate approximately 6,331 trip-ends per day, with 508 VPH during the AM peak hour and 618 VPH during the PM peak hour.

The trip generation for either of the project alternatives is less than the trip generation for the Proposed Project. Alternative 1 is the "no project" alternative and therefore, does not have any trip generation evaluations prepared. The Alternative 2 (Agricultural Preservation) total peak hour or daily trip generation is approximately 29% to 33% of the Proposed Project trip generation. The Alternative 3 (Biological Restoration) total peak hour or daily trip generation is approximately 78% to 80% of the Alternative 1 trip generation. The Alternative 4 (Lake/View) total peak hour or daily trip generation is approximately 72% to 73% of the Alternative 1 trip generation. Based on the trip generation comparisons, the project alternatives would still result in cumulative impacts, however the cumulative impact would be reduced in proportion to the reduction in project trip generation.

2.2.2 Project Trip Distribution and Assignment

The General Plan Buildout (Post-2030) project trip distribution and assignment process represents the directional orientation of traffic to and from the project site. Trip distribution is heavily influenced by the geographical location of the site, the location of surrounding uses, and the proximity to the regional highway/freeway system. The City of Chino traffic model has been used to evaluate the distribution and likely travel routes of the local traffic. A select zone (trip distribution) analysis for the Edgewater Communities residential development was performed using the

model for the Horizon Year (General Plan Buildout (Post-2030)). The General Plan Buildout trip distribution was then reviewed and refined to reflect anticipated future traffic patterns.

The General Plan Buildout (Post-2030) project traffic distribution patterns are shown on Exhibit 2-A and 2-B for AM peak hour and PM peak hour/daily conditions, respectively. As illustrated on Exhibit 2-A and 2-B, approximately 37 percent of the daily project-related traffic will be distributed to/from the west of the site via Pine Avenue, with 9 percent oriented to/from the north on Cucamonga Avenue (Mill Creek Road), 13-20 percent to/from the north on Main Street, 12 percent to/from the north on Hellman Avenue, 5 percent to/from the east on Chandler Street, 11 percent to/from the south on Hellman Avenue/River Road, and 4 percent to/from various areas within The Preserve that are not primarily served by Main Street.

The 2019 Interim Year project trip distribution pattern was heavily influenced by the geographical location of the site, the location of surrounding uses, the proximity to the regional freeway system, local traffic patterns, and known future development, and therefore differs from the General Plan Buildout (Post-2030) trip distribution pattern. Certain major roadway improvement projects are funded and expected to be completed to full occupancy, including the extension of Pine Avenue east of Euclid Avenue to the SR-71 Freeway, and the extension of Schleisman Road east of Sumner Road to a new interchange with the I-15 Freeway. The 2019 Interim Year project traffic distribution pattern is shown on Exhibit 2-C. As illustrated on Exhibit 2-C, approximately 46 percent of the project-related traffic will be distributed to/from the west of the site via Pine Avenue, with 21 percent oriented to/from the north on Cucamonga Avenue (Mill Creek Road), 4 percent to/from the north on Hellman Avenue, 14 percent to/from the east on Chandler Street, 10 percent to/from the south on Hellman Avenue/River Road, and 5 percent to/from various areas within The Preserve.

EXHIBIT 2-A

GENERAL PLAN BUILDOUT (POST-2030) AM PROJECT TRIP DISTRIBUTION

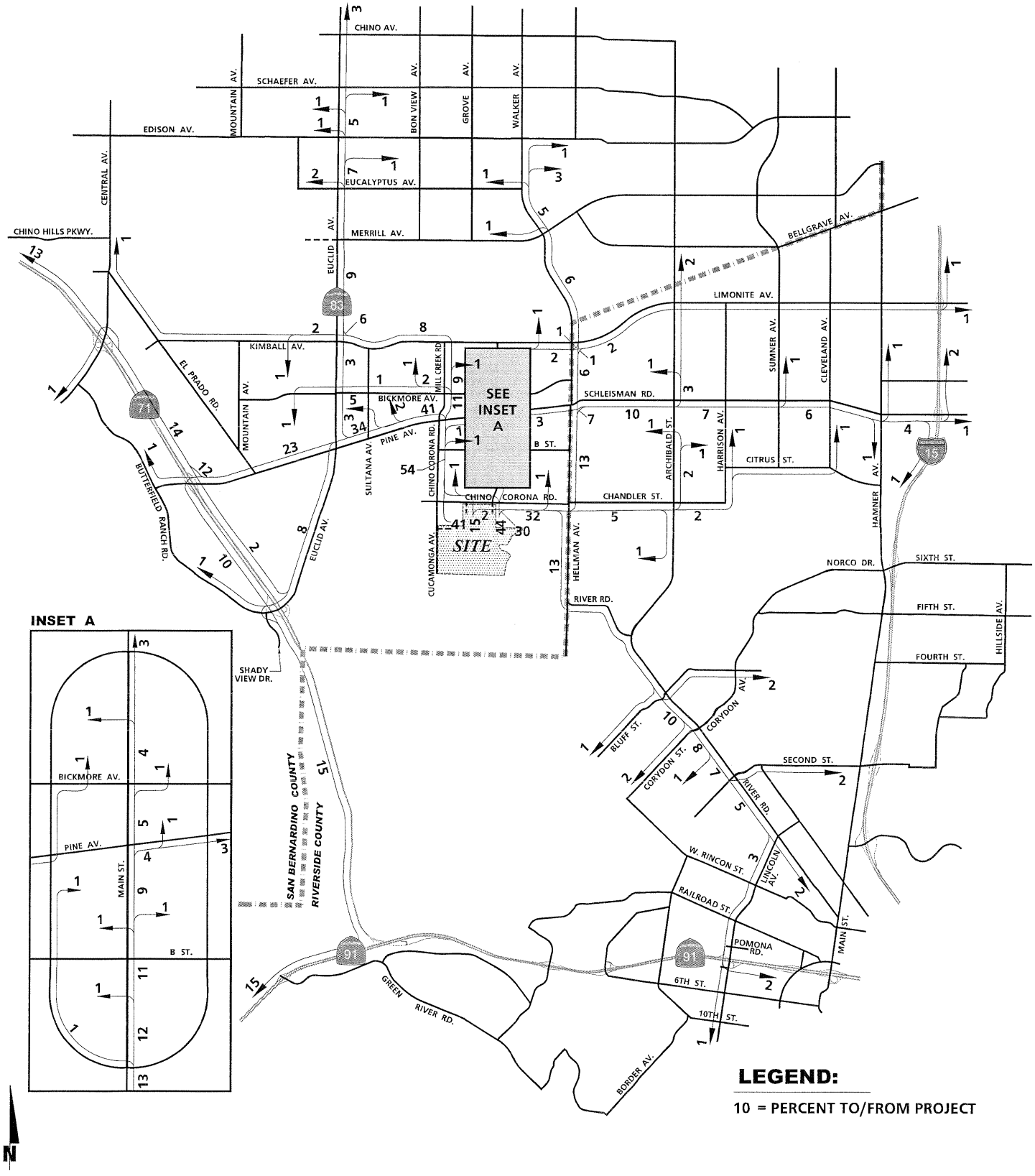
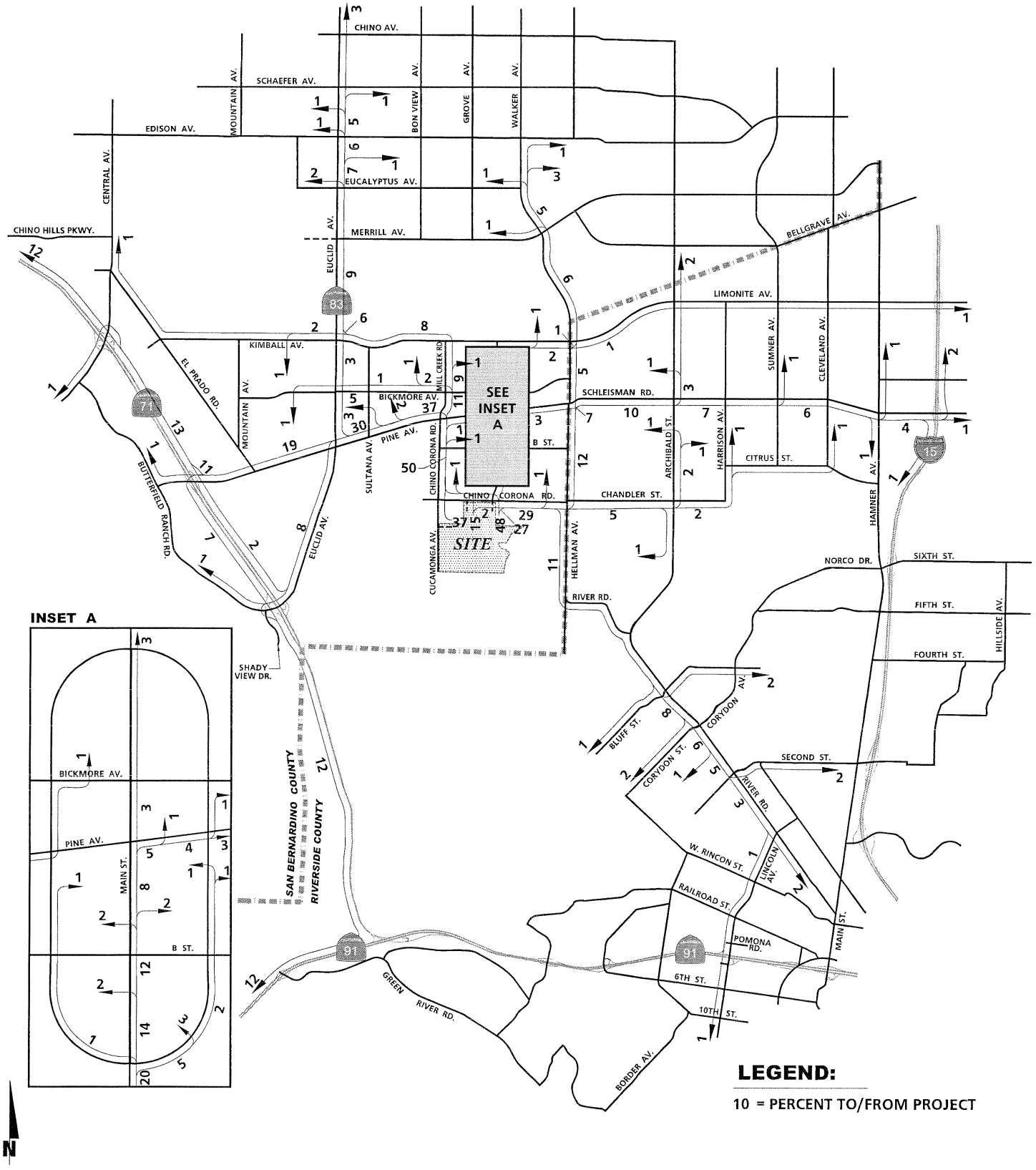


EXHIBIT 2-B

GENERAL PLAN BUILDOUT (POST-2030) PM/DAILY PROJECT TRIP DISTRIBUTION

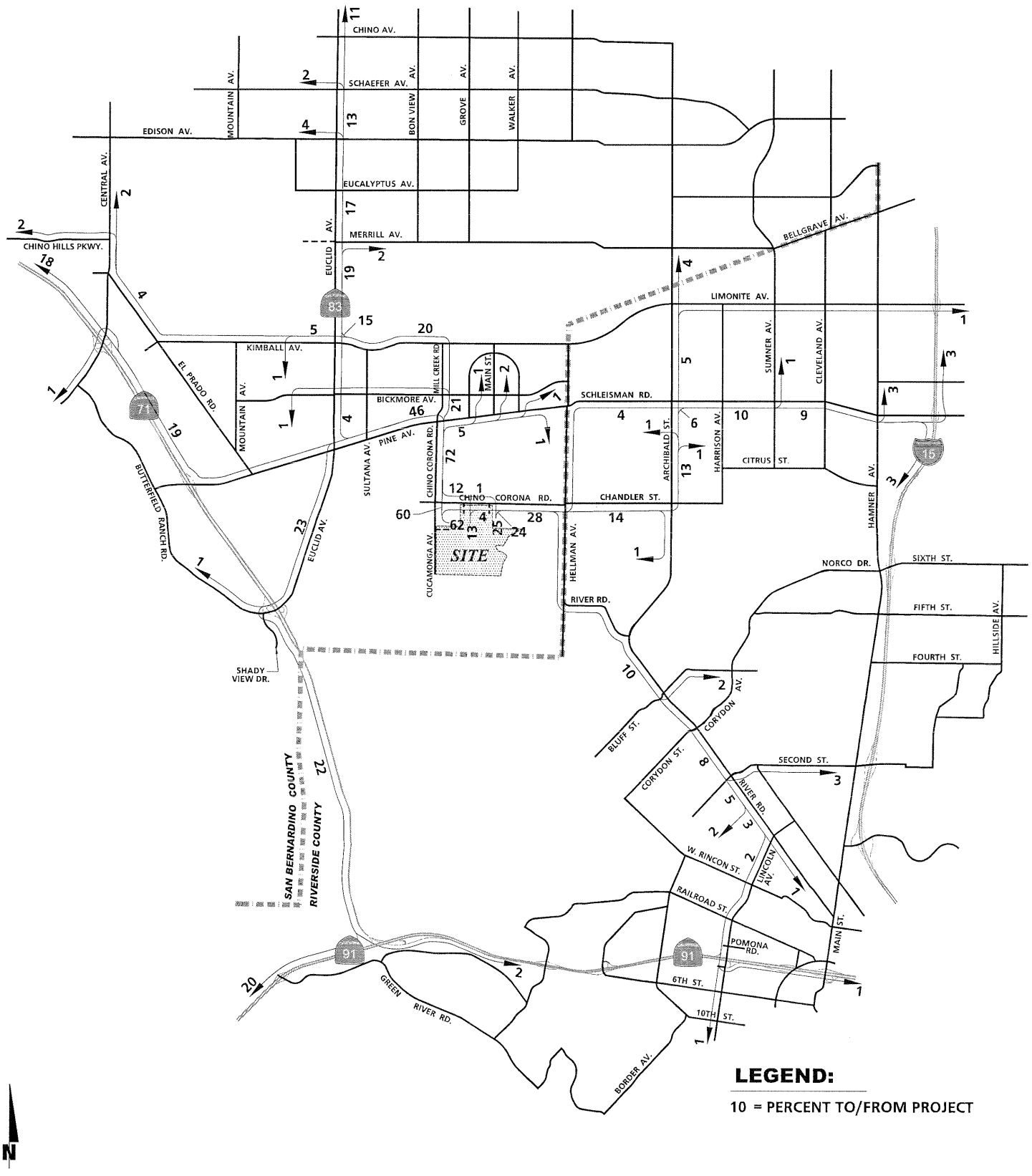


LEGEND:

10 = PERCENT TO/FROM PROJECT

EXHIBIT 2-C

2019 INTERIM YEAR PROJECT TRIP DISTRIBUTION



Comparing the Interim Year (2019) and Buildout (Post-2030) trip distribution patterns, the Interim Year project trip distribution reflects the need for project traffic to travel farther prior to completion of full development of The Preserve Specific Plan and other major developments in the study area. Higher trip distribution proportions are especially evident on the SR-71 Freeway corridor (both north and south) and along Euclid Avenue to the north.

It should be noted that the actual alignment configuration for Main Street, north of Chino Corona Road has not been finalized. A special queuing analysis will be required and prepared once an actual alignment is available.

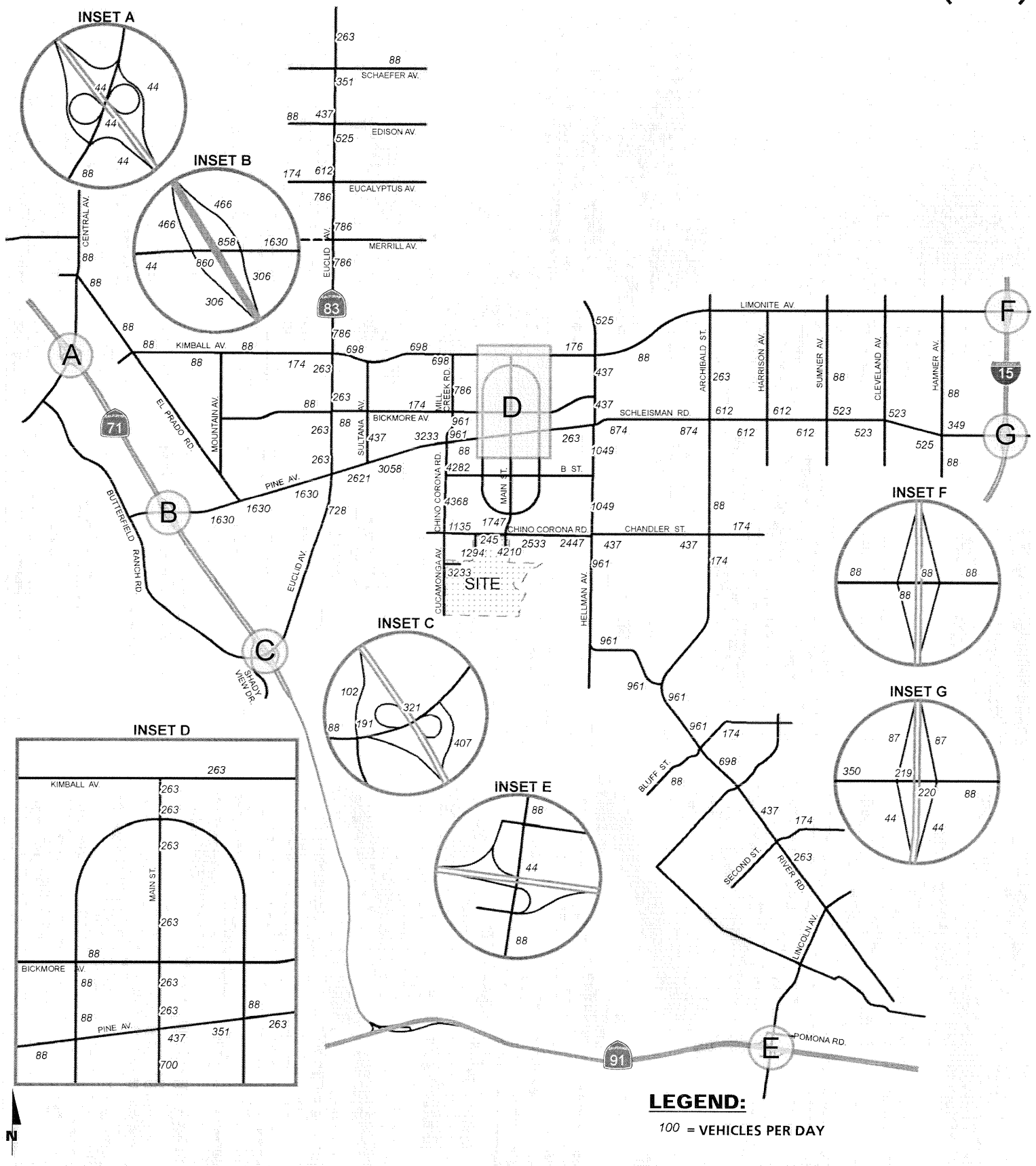
2.2.3 Project Only Traffic Volume Forecasts

The Edgewater Communities project only traffic forecasts have been generated by applying the trip generation, distribution and traffic assignment calculations.

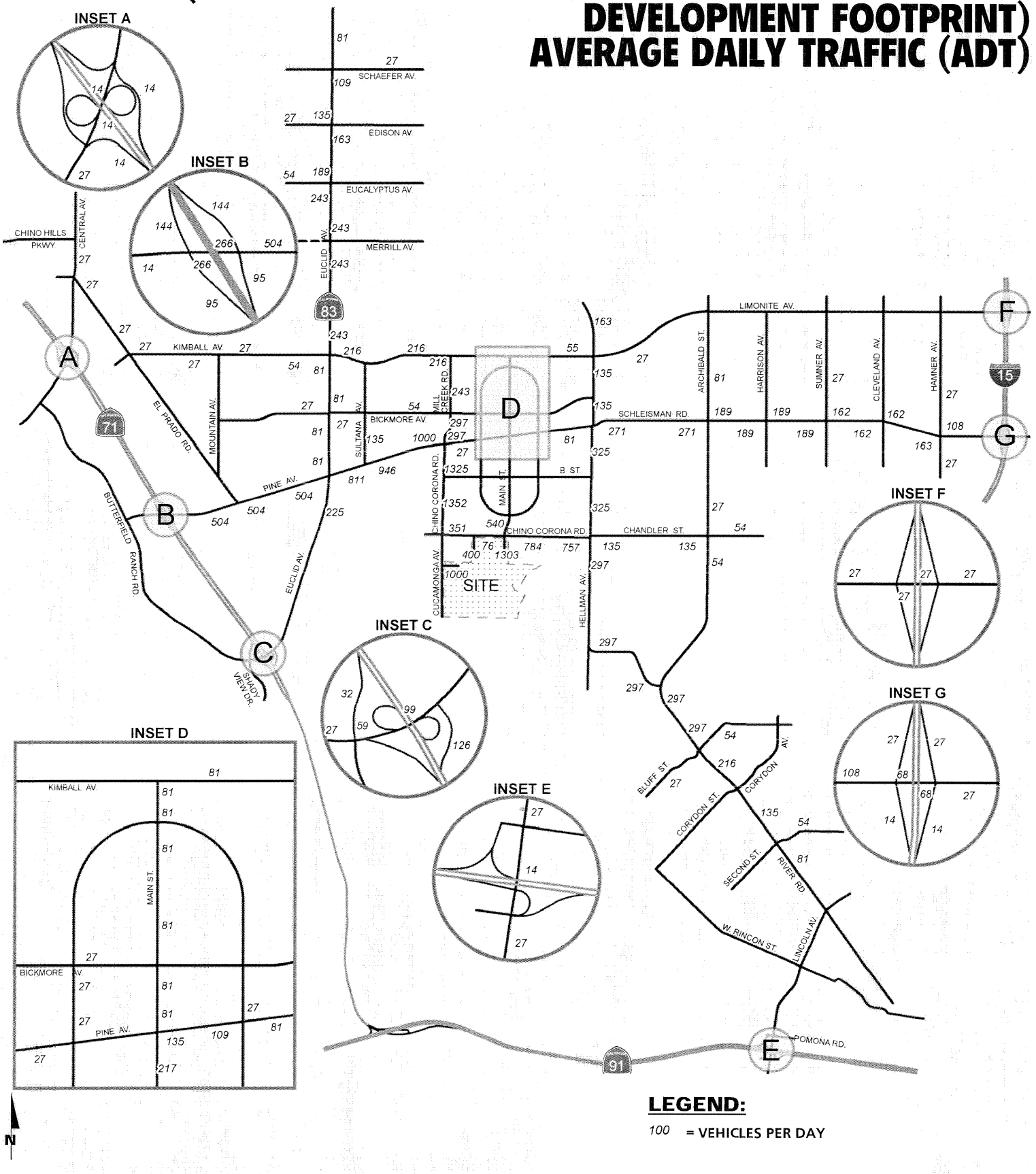
The General Plan Buildout (Post-2030) Proposed Project only ADT volumes are presented on Exhibit 2-D. Similarly, the General Plan Buildout (Post-2030) Alternative 2 (Agricultural Preservation through Reduced Development Footprint) and Alternative 3 (Biological Restoration), Alternative 4 (View/Lake) project only ADT volumes are shown on Exhibits 2-E, 2-F, and 2-G, respectively. Alternative 1 (No Project) is not expected to generate any new traffic. The highest project only daily traffic volumes occur along the primary access routes in the immediate vicinity of the project. Project only traffic volumes (trip assignment) are calculated by multiplying the number of project trips by the project's trip distribution at that location. For example, for daily conditions during General Plan Buildout (Post-2030), 37% of the project's daily traffic at General Plan

EXHIBIT 2-D

GENERAL PLAN BUILDOUT PROPOSED PROJECT ONLY AVERAGE DAILY TRAFFIC (ADT)



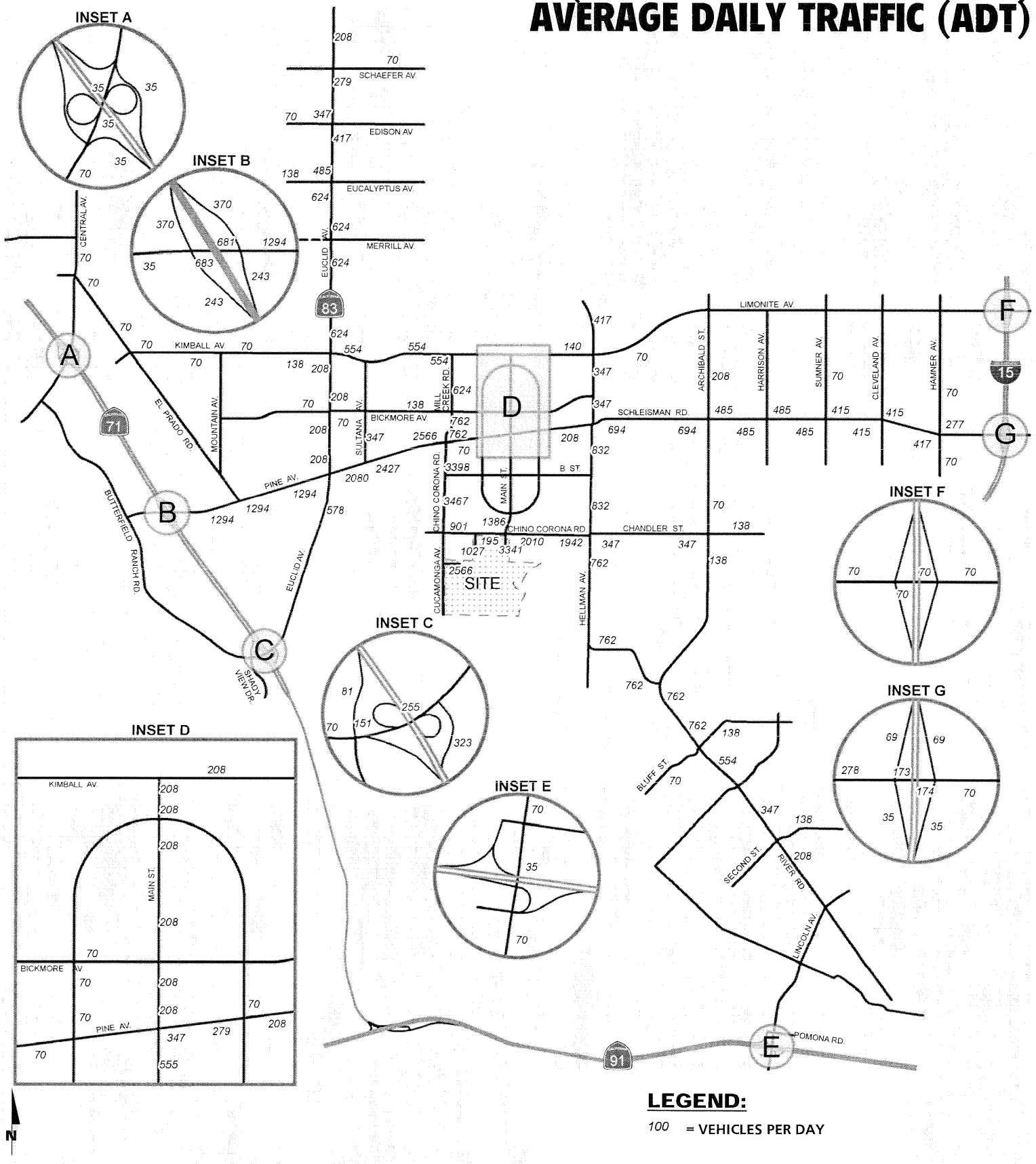
GENERAL PLAN BUILDOUT PROJECT ALTERNATIVE 2 ONLY (AGRICULTURAL PRESERVATION THROUGH REDUCED DEVELOPMENT FOOTPRINT) AVERAGE DAILY TRAFFIC (ADT)



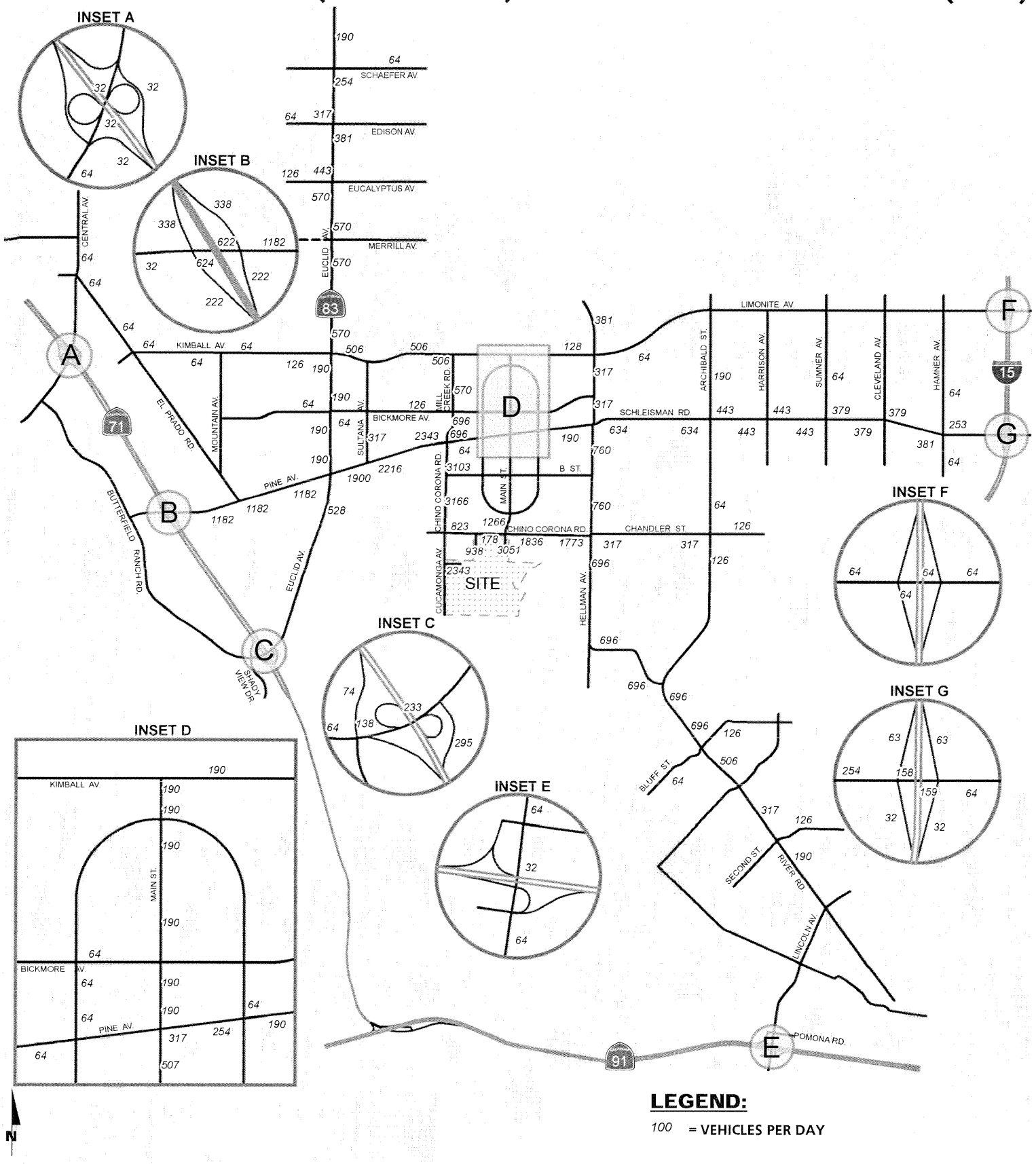
LEGEND:

100 = VEHICLES PER DAY

GENERAL PLAN BUILDOUT PROJECT ALTERNATIVE 3 ONLY (BIOLOGICAL RESTORATION) AVERAGE DAILY TRAFFIC (ADT)



GENERAL PLAN BUILDOUT PROJECT ALTERNATIVE 4 ONLY (LAKE/VIEW) AVERAGE DAILY TRAFFIC (ADT)



Buildout (Post-2030) will enter/exit the proposed development at Cucamonga Avenue. By taking 37% and multiplying that by the total number of daily trips (8,736 vehicles), the Cucamonga access road will serve approximately 3,233 vehicles on an average weekday. The project traffic disperses rapidly, with less than 1,000 VPD anticipated on major regional access routes such as Euclid Avenue and Schleisman Avenue. Similar traffic patterns, with proportionally lower traffic volumes, are anticipated for Alternative 2 (Agricultural Preservation Through Reduced Development Footprint), Alternative 3 (Biological Restoration) and Alternative 4 (View/Lake).

The General Plan Buildout (Post-2030) Proposed Project only AM and PM peak hour intersection turning movement volumes are depicted on Exhibits 2-H and 2-I, respectively. The General Plan Proposed Project only peak hour traffic volumes reflect the same characteristics as the daily traffic volumes discussed previously. The General Plan Proposed Project only peak hour traffic volumes at the far edges of the study area (locations such as the SR-71 Freeway / Central Avenue interchange, the I-15 Freeway / Limonite Avenue interchange, and the SR-91 Lincoln Avenue interchange) are much lower than the San Bernardino CMP traffic study guideline threshold of 50 peak hour trips, illustrating the emphasis in the study on ensuring that all potential project impacts have been adequately considered.

The 2019 Interim Year Proposed Project only ADT volumes are presented on Exhibit 2-J. The 2019 Interim Year project Alternative 1 only AM and PM peak hour intersection turning movement volumes are depicted on Exhibits 2-K and 2-L, respectively. As discussed previously, the relative lack of nearby development results in higher traffic volumes along Euclid Avenue and the SR-71 Freeway.

GENERAL PLAN BUILDOUT PROPOSED PROJECT ONLY AM PEAK HOUR INTERSECTION VOLUMES (PAGE 1 OF 2)

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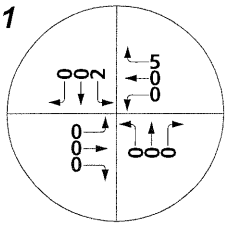
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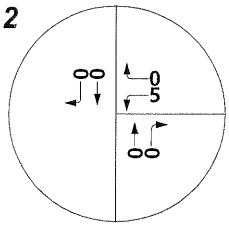
CENTRAL AV. & SR-71 FWY. NB RAMPS

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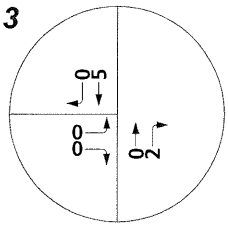
CENTRAL AV. & SR-71 FWY. SB RAMPS

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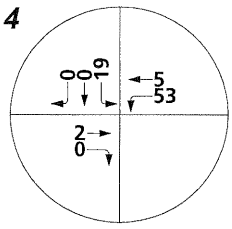
SR-71 FWY. SB RAMPS & PINE AV.

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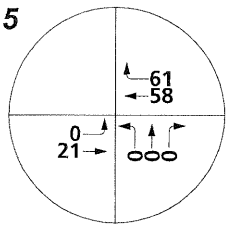
SR-71 FWY. NB RAMPS & PINE AV.

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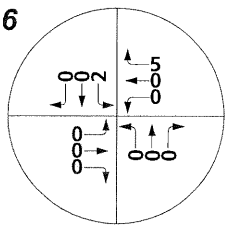
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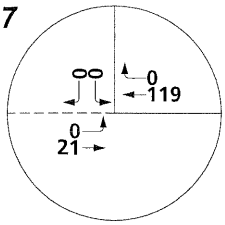
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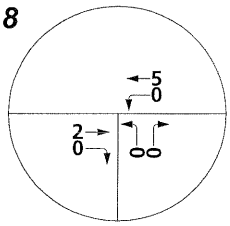
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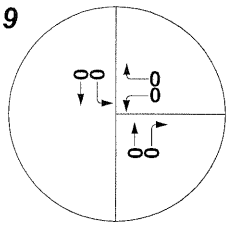
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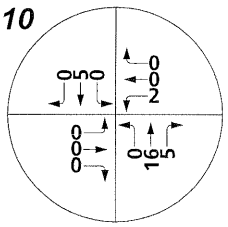
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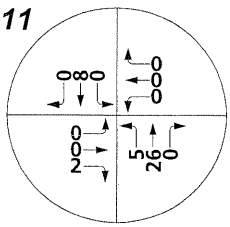
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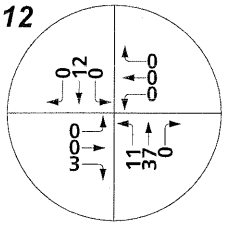
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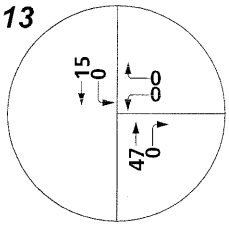
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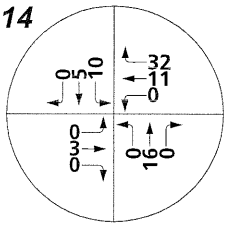
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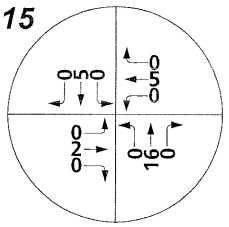
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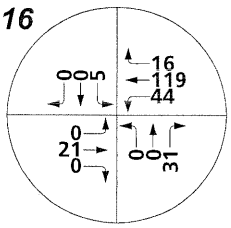
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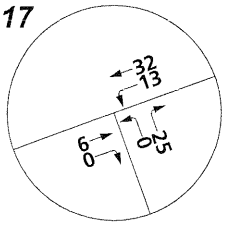
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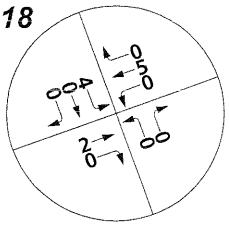
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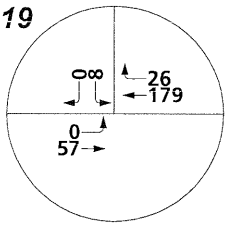
SULTANA AV. & PINE AV.

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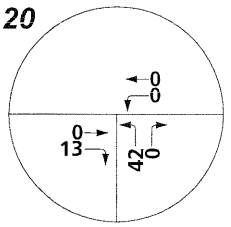
MILL CREEK RD. & KIMBALL AV.

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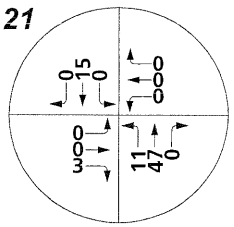
MILL CREEK RD. & BICKMORE AV.

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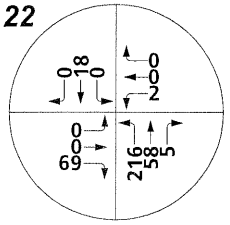
CHINO CORONA RD. & PINE AV.

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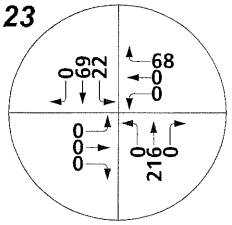
CUCAMONGA AV. & CHINO CORONA RD.

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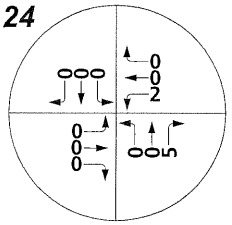
WEST PRESERVE LOOP & BICKMORE AV.

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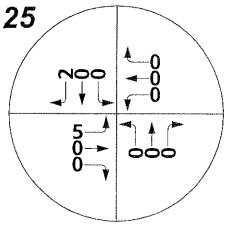
WEST PRESERVE LOOP & PINE AV.

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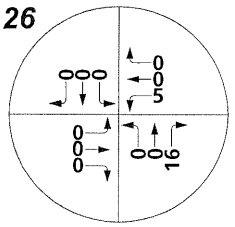

MAIN ST. & KIMBALL AV.

EXHIBIT 2-H

GENERAL PLAN BUILDOUT PROPOSED PROJECT ONLY AM PEAK HOUR INTERSECTION VOLUMES (PAGE 2 OF 2)

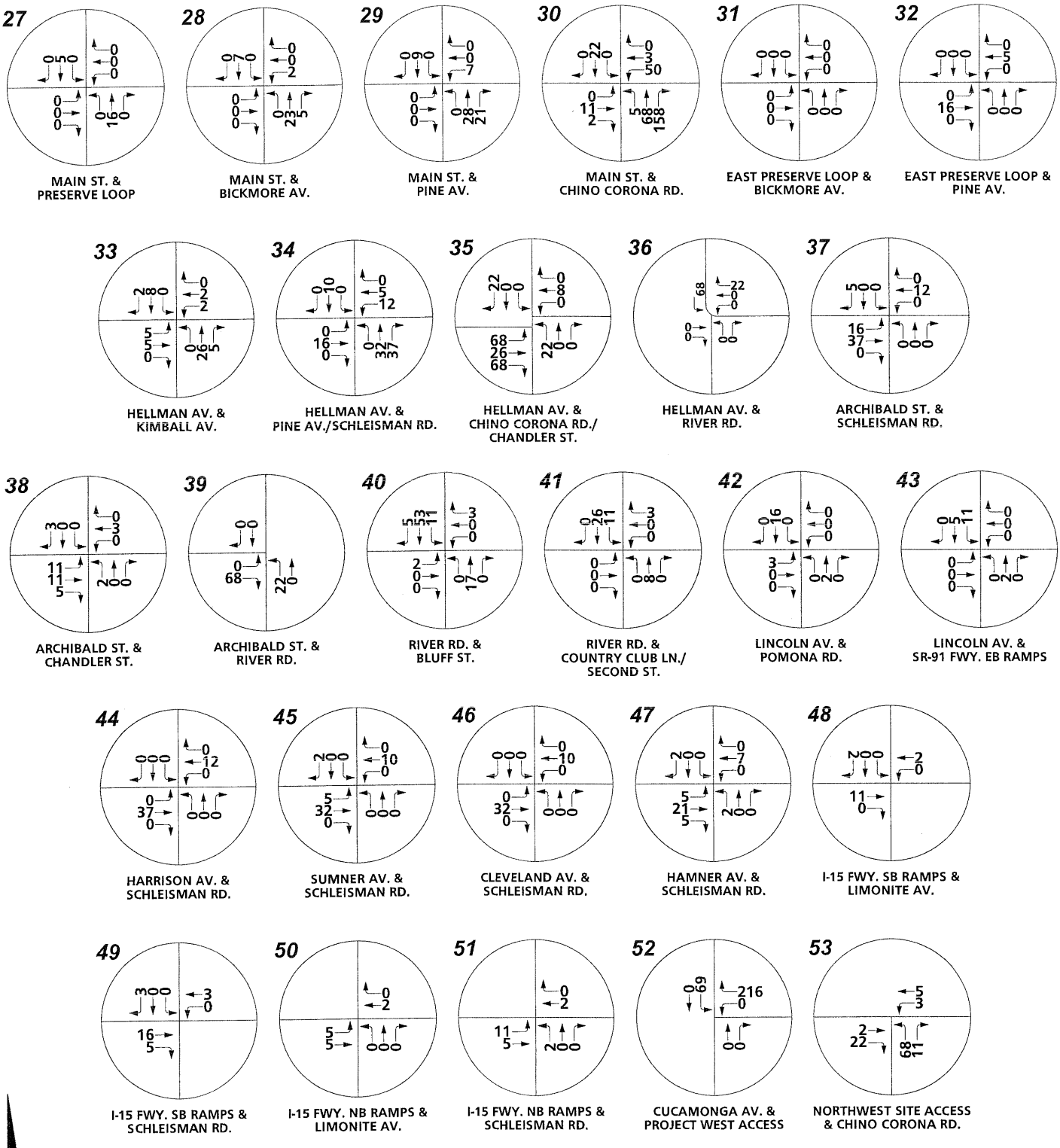
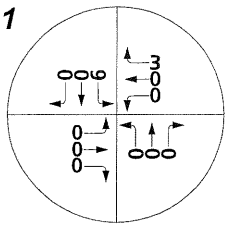


EXHIBIT 2-I

GENERAL PLAN BUILDOUT PROPOSED PROJECT ONLY PM PEAK HOUR INTERSECTION VOLUMES (PAGE 1 OF 2)

1

CENTRAL AV. & EL PRADO RD.

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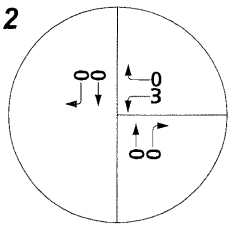
CENTRAL AV. & SR-71 FWY. NB RAMPS

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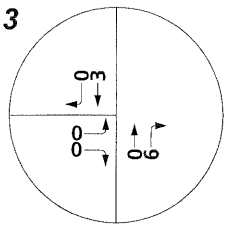
CENTRAL AV. & SR-71 FWY. SB RAMPS

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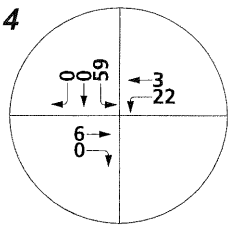
SR-71 FWY. SB RAMPS & PINE AV.

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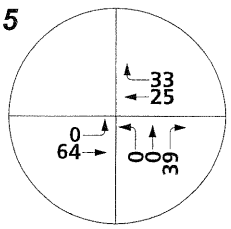
SR-71 FWY. NB RAMPS & PINE AV.

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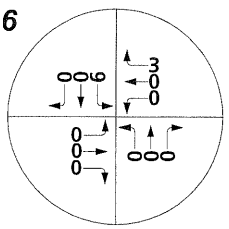
EL PRADO RD. & KIMBALL AV.

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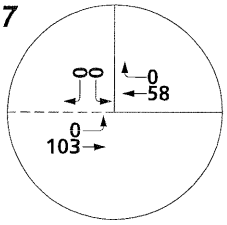
EL PRADO RD. & PINE AV.

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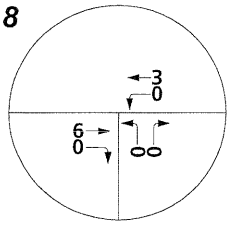
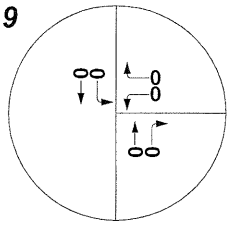

MOUNTAIN AV. & KIMBALL AV.

9

MOUNTAIN AV. & BICKMORE AV.

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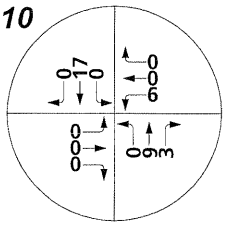
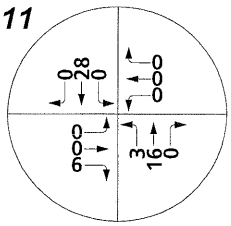

EUCLID AV. (SR-83) & SCHAEFER AV.

11

EUCLID AV. (SR-83) & EDISON AV.

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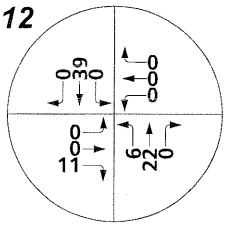
EUCLID AV. (SR-83) & EUCALYPTUS AV.

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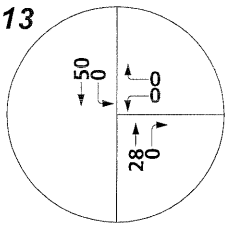
EUCLID AV. (SR-83) & MERRILL AV.

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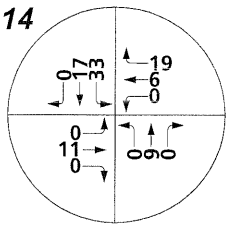
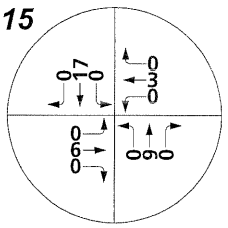
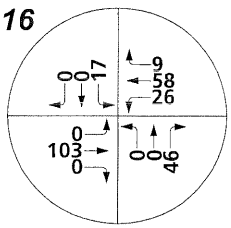
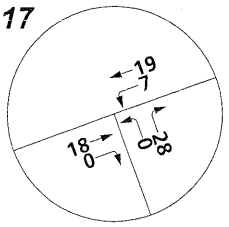
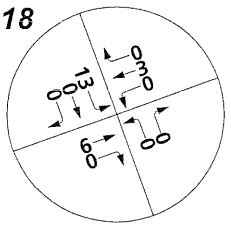
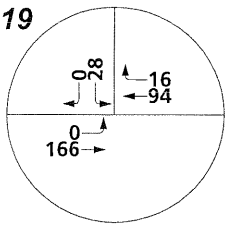

EUCLID AV. (SR-83) & KIMBALL AV.

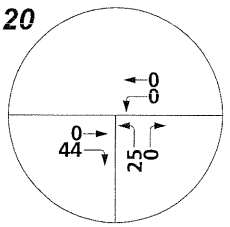
15

EUCLID AV. (SR-83) & BICKMORE AV.

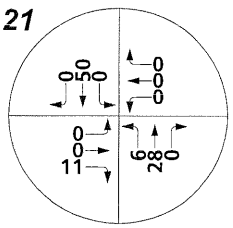
16

EUCLID AV. (SR-83) & PINE AV.

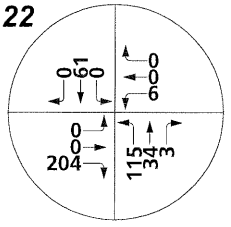
17

EUCLID AV. (SR-83) & SR-71 FWY. NB RAMPS

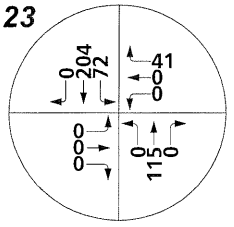
18

EUCLID AV. (SR-83)/ BUTTERFIELD RANCH RD. & SR-71 FWY. SB OFF-RAMP/SHADY VIEW DR.

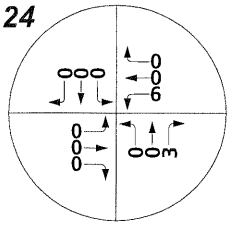
19

SULTANA AV. & PINE AV.

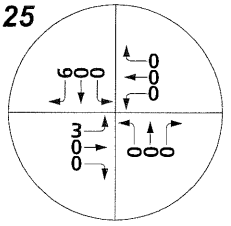
20

MILL CREEK RD. & KIMBALL AV.

21

MILL CREEK RD. & BICKMORE AV.

22

CHINO CORONA RD. & PINE AV.

23

CUCAMONGA AV. & CHINO CORONA RD.

24

WEST PRESERVE LOOP & BICKMORE AV.

25

WEST PRESERVE LOOP & PINE AV.

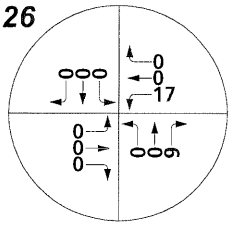
26

MAIN ST. & KIMBALL AV.

EXHIBIT 2-I

GENERAL PLAN BUILDOUT PROPOSED PROJECT ONLY PM PEAK HOUR INTERSECTION VOLUMES (PAGE 2 OF 2)

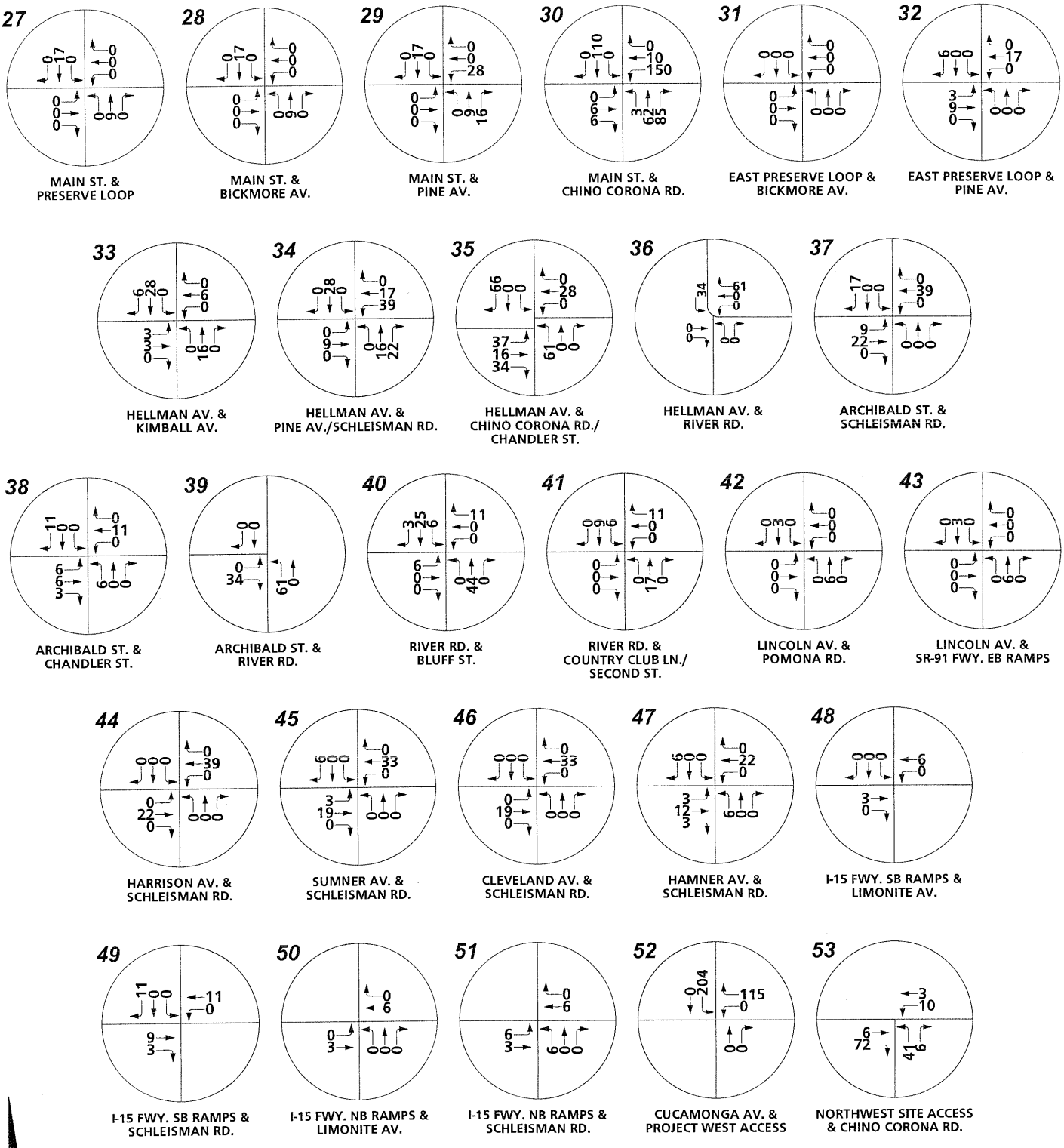


EXHIBIT 2-J

2019 INTERIM YEAR PROPOSED PROJECT ONLY AVERAGE DAILY TRAFFIC (ADT)

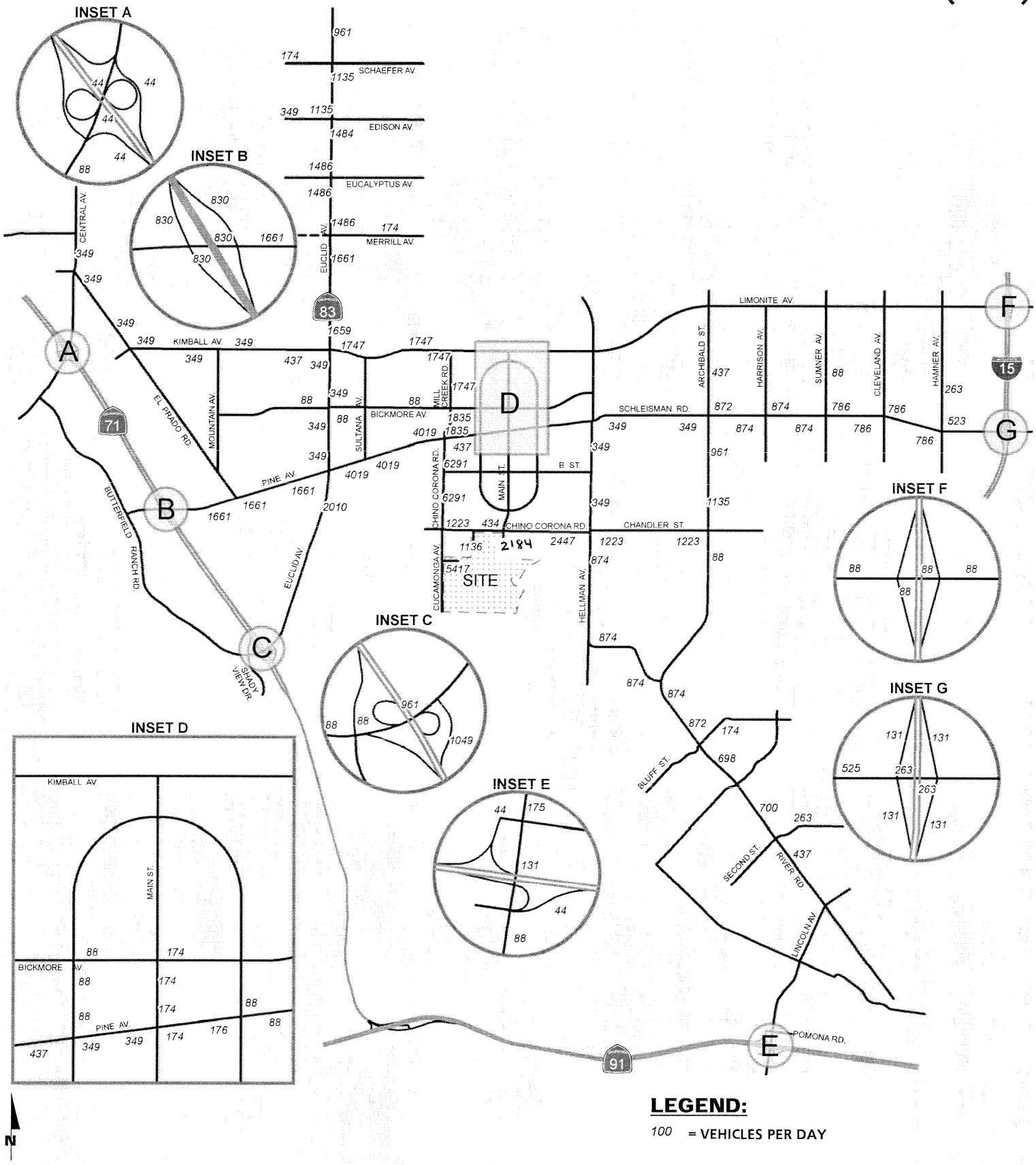


EXHIBIT 2-K

2019 INTERIM YEAR PROPOSED PROJECT ONLY AM PEAK HOUR INTERSECTION VOLUMES (PAGE 1 OF 2)

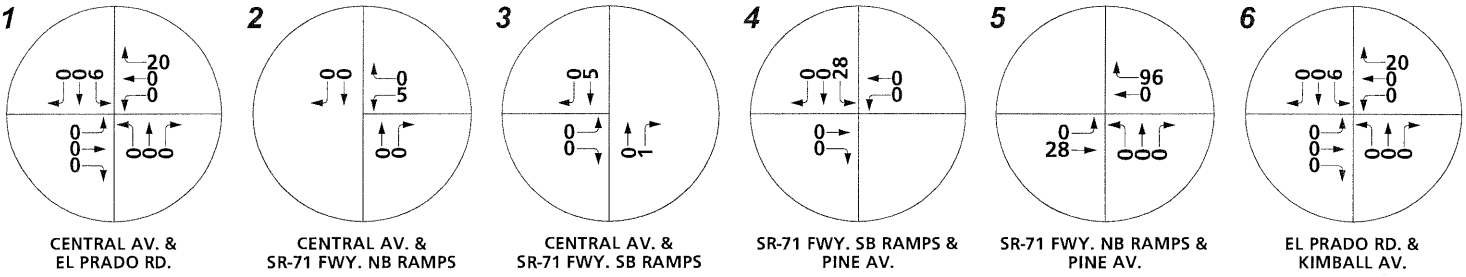
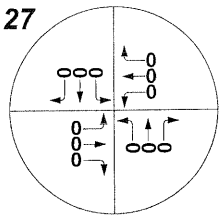


EXHIBIT 2-K

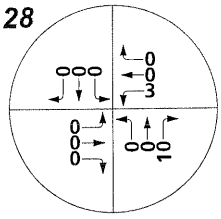
2019 INTERIM YEAR PROPOSED PROJECT ONLY AM PEAK HOUR INTERSECTION VOLUMES (PAGE 2 OF 2)

27



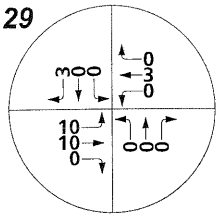
MAIN ST. & PRESERVE LOOP

28



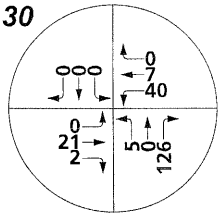
MAIN ST. & BICKMORE AV.

29



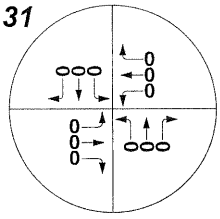
MAIN ST. & PINE AV.

30



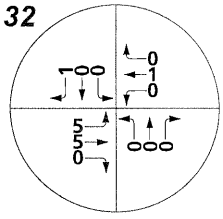
MAIN ST. & CHINO CORONA RD.

31



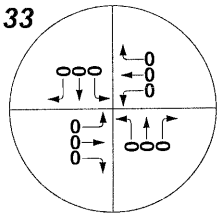
EAST PRESERVE LOOP & BICKMORE AV.

32



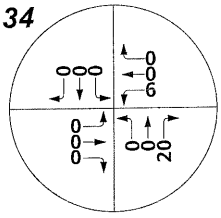
EAST PRESERVE LOOP & PINE AV.

33



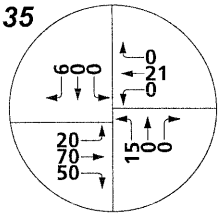
HELLMAN AV. & KIMBALL AV.

34



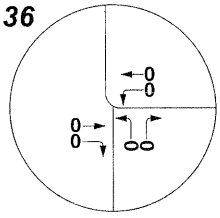
HELLMAN AV. & PINE AV./SCHLEISMAN RD.

35



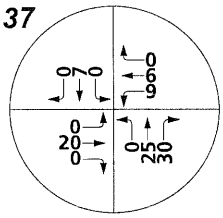
HELLMAN AV. & CHINO CORONA RD./ CHANDLER ST.

36



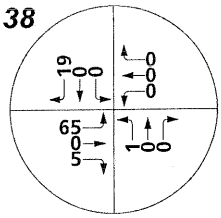
HELLMAN AV. & RIVER RD.

37



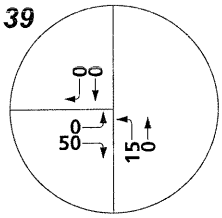
ARCHIBALD ST. & SCHLEISMAN RD.

38



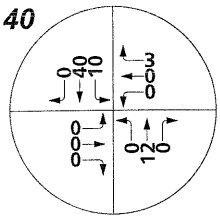
ARCHIBALD ST. & CHANDLER ST.

39



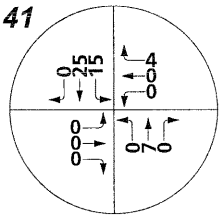
ARCHIBALD ST. & RIVER RD.

40



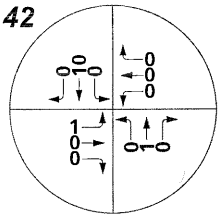
RIVER RD. & BLUFF ST.

41



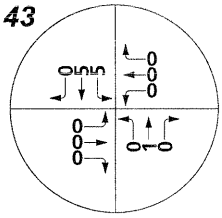
RIVER RD. & COUNTRY CLUB LN./ SECOND ST.

42



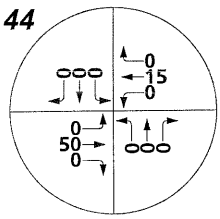
LINCOLN AV. & POMONA RD.

43



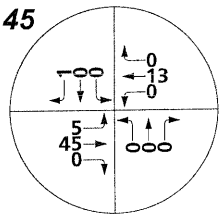
LINCOLN AV. & SR-91 FWY. EB RAMPS

44



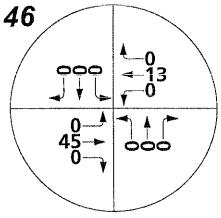
HARRISON AV. & SCHLEISMAN RD.

45



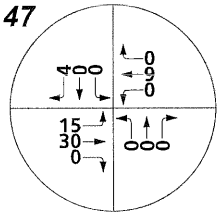
SUMNER AV. & SCHLEISMAN RD.

46



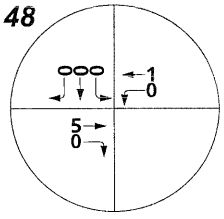
CLEVELAND AV. & SCHLEISMAN RD.

47



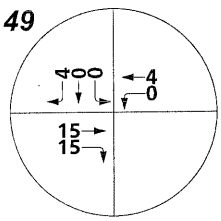
HAMNER AV. & SCHLEISMAN RD.

48



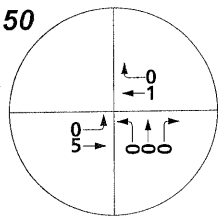
I-15 FWY. SB RAMPS & LIMONITE AV.

49



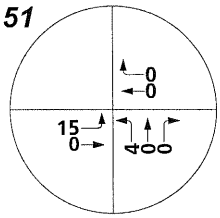
I-15 FWY. SB RAMPS & SCHLEISMAN RD.

50



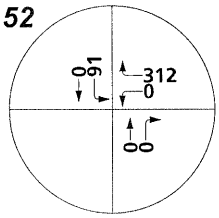
I-15 FWY. NB RAMPS & LIMONITE AV.

51



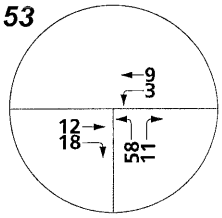
I-15 FWY. NB RAMPS & SCHLEISMAN RD.

52



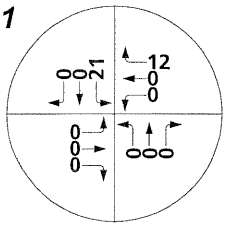
CUCAMONGA AV. & PROJECT WEST ACCESS

53



NORTHWEST SITE ACCESS & CHINO CORONA RD.

2019 INTERIM YEAR PROPOSED PROJECT ONLY PM PEAK HOUR INTERSECTION VOLUMES (PAGE 1 OF 2)

1

CENTRAL AV. & EL PRADO RD.

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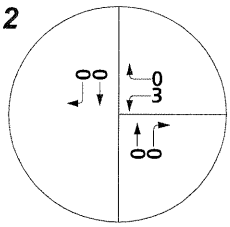
CENTRAL AV. & SR-71 FWY. NB RAMPS

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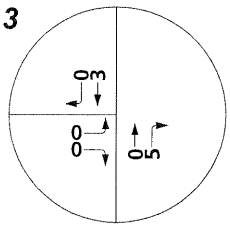
CENTRAL AV. & SR-71 FWY. SB RAMPS

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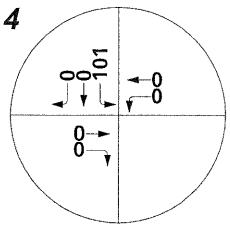
SR-71 FWY. SB RAMPS & PINE AV.

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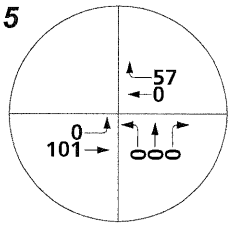
SR-71 FWY. NB RAMPS & PINE AV.

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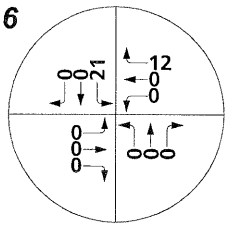
EL PRADO RD. & KIMBALL AV.

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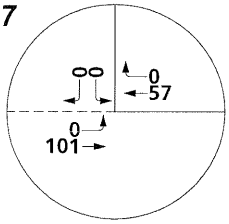
EL PRADO RD. & PINE AV.

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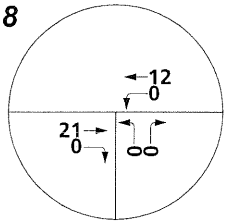
MOUNTAIN AV. & KIMBALL AV.

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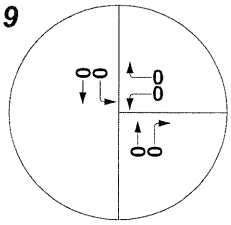
MOUNTAIN AV. & BICKMORE AV.

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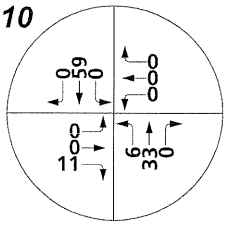
EUCLID AV. (SR-83) & SCHAEFER AV.

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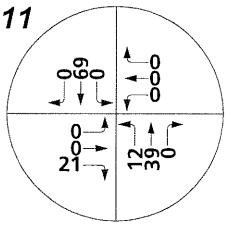
EUCLID AV. (SR-83) & EDISON AV.

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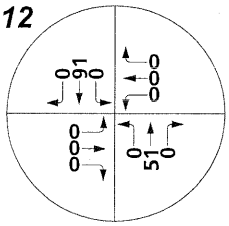
EUCLID AV. (SR-83) & EUCALYPTUS AV.

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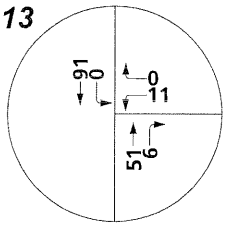
EUCLID AV. (SR-83) & MERRILL AV.

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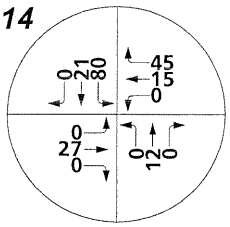
EUCLID AV. (SR-83) & KIMBALL AV.

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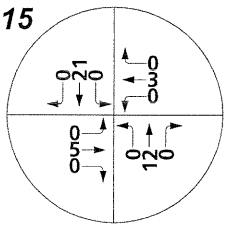
EUCLID AV. (SR-83) & BICKMORE AV.

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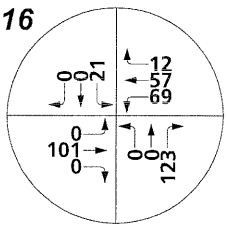
EUCLID AV. (SR-83) & PINE AV.

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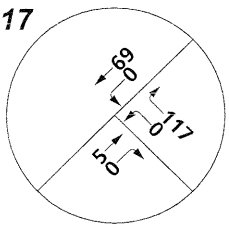
EUCLID AV. (SR-83) & SR-71 FWY. NB RAMPS

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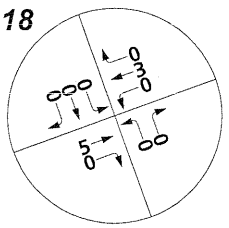
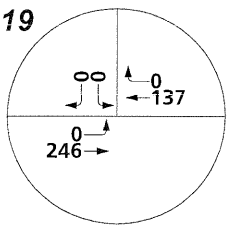

EUCLID AV. (SR-83)/ BUTTERFIELD RANCH RD. & SR-71 FWY. SB OFF-RAMP/SHADY VIEW DR.

19

SULTANA AV. & PINE AV.

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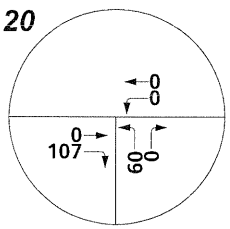
MILL CREEK RD. & KIMBALL AV.

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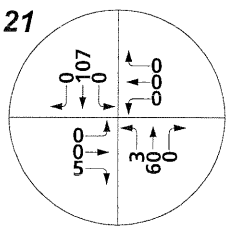
MILL CREEK RD. & BICKMORE AV.

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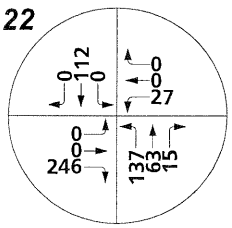
CHINO CORONA RD. & PINE AV.

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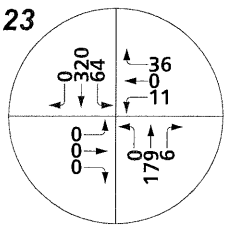
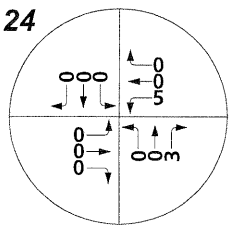
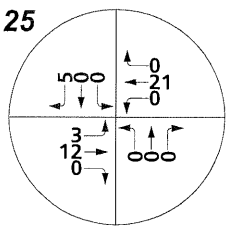

CUCAMONGA AV. & CHINO CORONA RD.

24

WEST PRESERVE LOOP & BICKMORE AV.

25

WEST PRESERVE LOOP & PINE AV.

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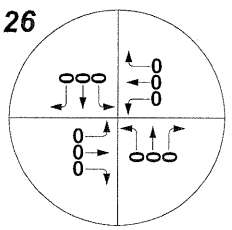
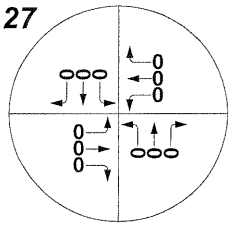

MAIN ST. & KIMBALL AV.

EXHIBIT 2-L

2019 INTERIM YEAR PROPOSED PROJECT ONLY PM PEAK HOUR INTERSECTION VOLUMES (PAGE 2 OF 2)

27

MAIN ST. & PRESERVE LOOP

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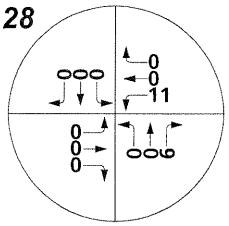
MAIN ST. & BICKMORE AV.

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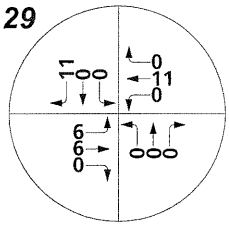
MAIN ST. & PINE AV.

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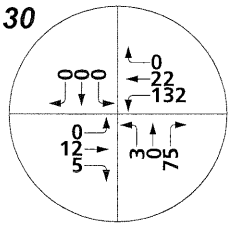
MAIN ST. & CHINO CORONA RD.

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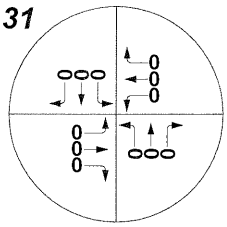
EAST PRESERVE LOOP & BICKMORE AV.

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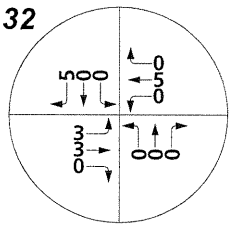
EAST PRESERVE LOOP & PINE AV.

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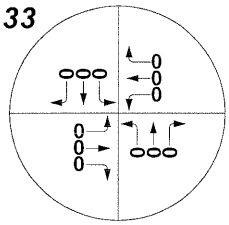
HELLMAN AV. & KIMBALL AV.

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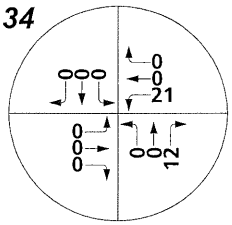
HELLMAN AV. & PINE AV./SCHLEISMAN RD.

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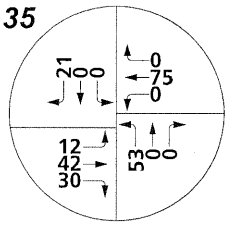
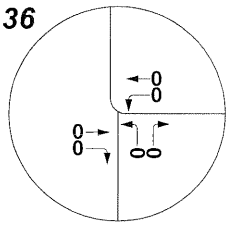

HELLMAN AV. & CHINO CORONA RD./ CHANDLER ST.

36

HELLMAN AV. & RIVER RD.

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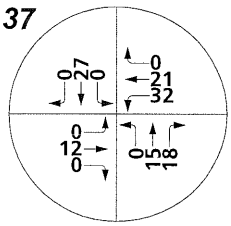
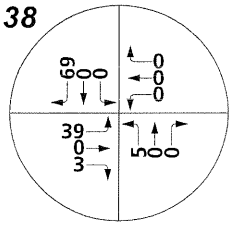

ARCHIBALD ST. & SCHLEISMAN RD.

38

ARCHIBALD ST. & CHANDLER ST.

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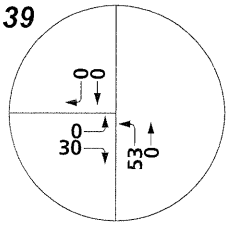
ARCHIBALD ST. & RIVER RD.

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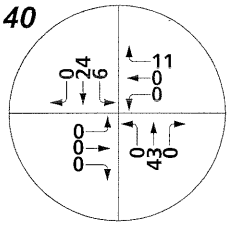
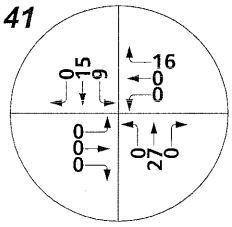

RIVER RD. & BLUFF ST.

41

RIVER RD. & COUNTRY CLUB LN./ SECOND ST.

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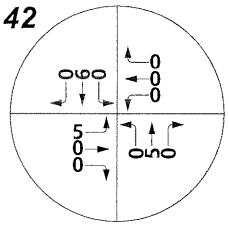
LINCOLN AV. & POMONA RD.

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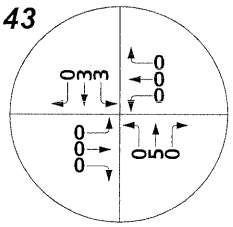
LINCOLN AV. & SR-91 FWY. EB RAMPS

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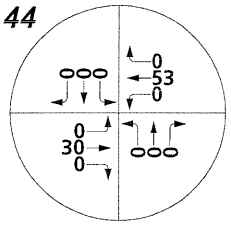
HARRISON AV. & SCHLEISMAN RD.

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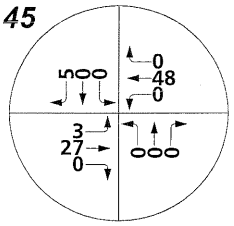
SUMNER AV. & SCHLEISMAN RD.

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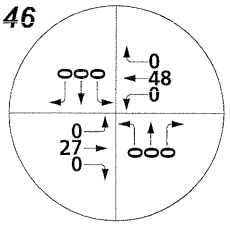
CLEVELAND AV. & SCHLEISMAN RD.

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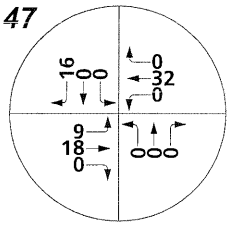
HAMNER AV. & SCHLEISMAN RD.

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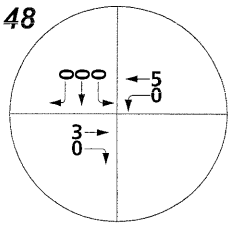
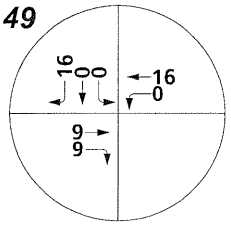

I-15 FWY. SB RAMPS & LIMONITE AV.

49

I-15 FWY. SB RAMPS & SCHLEISMAN RD.

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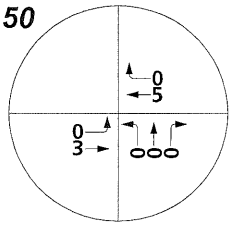
I-15 FWY. NB RAMPS & LIMONITE AV.

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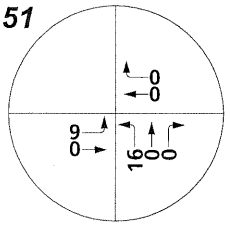
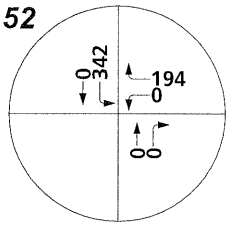
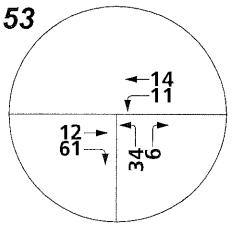

I-15 FWY. NB RAMPS & SCHLEISMAN RD.

52

CUCAMONGA AV. & PROJECT WEST ACCESS

53

NORTHWEST SITE ACCESS & CHINO CORONA RD.

2.2.4 Non-Motorized Transportation

The proposed project will accommodate pedestrian, bicycle, and equestrian movements on-site or along the project perimeter. Transit service is not expected on-site, although it may be desirable to accommodate a transit stop on Chino Corona Road in the vicinity of the primary project access.

Pedestrian activities will be accommodated through sidewalks along the various major streets within the project site, including the primary entry roads and the loop road providing access to the southerly portion of the site. Pedestrian trails will also be provided along the Urban Fringe Buffer zone that will be located along the western, southern, and eastern boundaries of the project. Pedestrian trails are also envisioned around the major lakes that will be created on-site.

Bicycle facilities of two types are anticipated. On-street bicycle facilities would be provided along the roads leading to and from the two main entries to the project site. Bicyclists could also utilize the various local streets, although dedicated /marked bicycle facilities are not provided. Bicycles would also be accommodated on a joint use trail with pedestrians within the Urban Fringe Buffer zone that will be located along the western, southern, and eastern boundaries of the project.

Equestrian trail facilities, separate from the proposed pedestrian / bicycle joint use trail, would also be provided within the Urban Fringe Buffer zone that will be located along the western, southern, and eastern boundaries of the project.

3.0 EXISTING CONDITIONS

This section of the report summarizes existing roadway and traffic conditions in the study area. All General Plan Buildout (Post-2030) analysis locations which exist today have been analyzed. The number of through travel lanes for existing roadways and intersection controls are presented, along with existing traffic count data collected for this study. This data was used to analyze existing traffic operations within the study area. Existing plans for roadway improvements are also described in this section.

3.1 Existing Roadway System and Daily Traffic Volumes

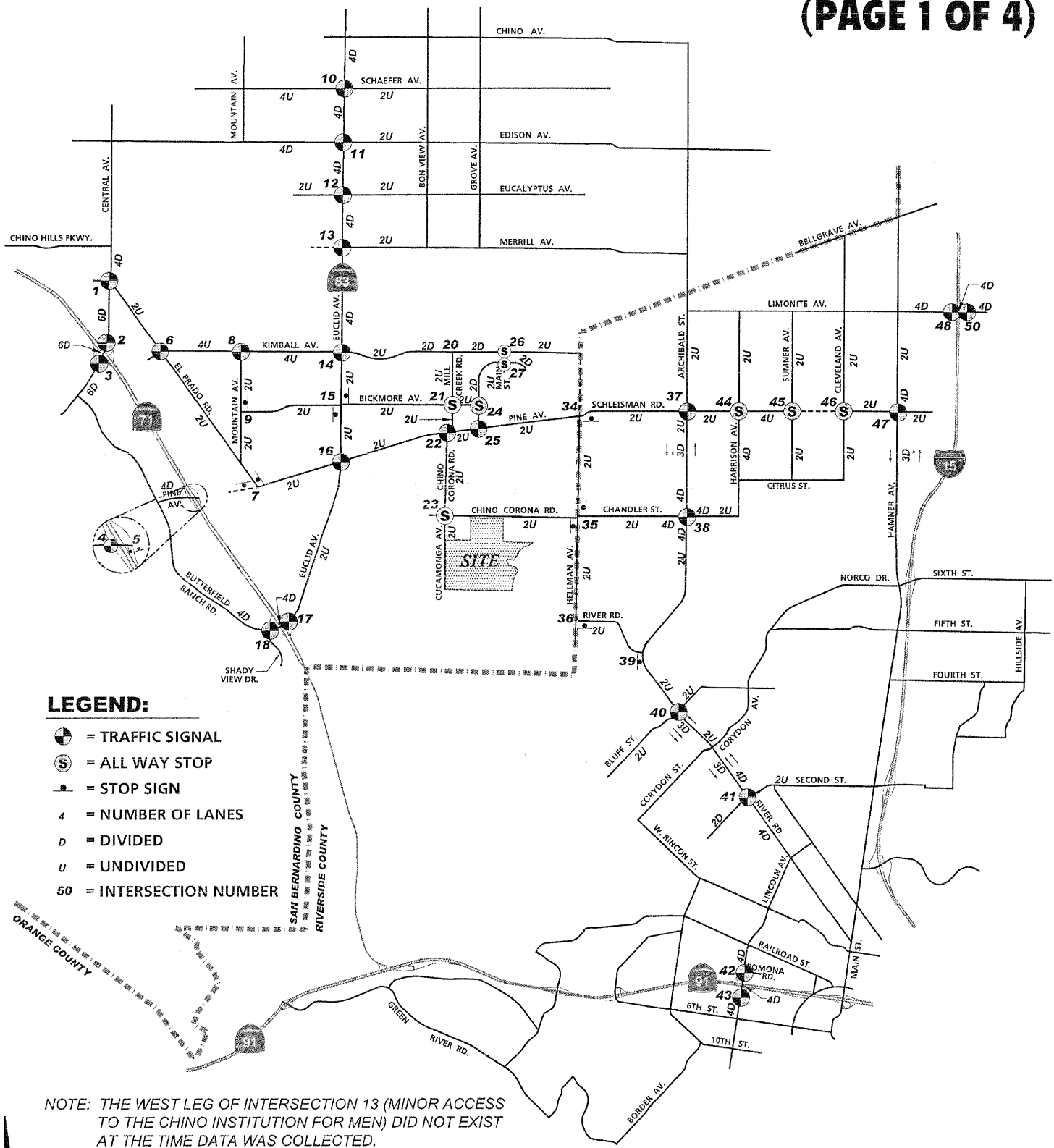
The number of through travel lanes for existing roadways and intersection controls within the study area are presented on Exhibit 3-A. Roadway median treatments are also depicted on Exhibit 3-A. A divided roadway has a median that is either painted or physically separated (raised concrete island or curbs). The study area roadways in the immediate vicinity of the project site are all two lane undivided roadways, consistent with the current agricultural setting. Major regional facilities within the study area include the SR-91 Freeway, the SR-71 Freeway, the I-15 Freeway, and Euclid Avenue (SR-83). Study area conditions continue to change in this rapidly developing area. A west leg has been constructed at the intersection of Euclid Avenue (NS) at Merrill Avenue (EW). The new west leg provides access only to the Chino Institution for Men (CIM). Also, Hellman Avenue has been constructed between Pine Avenue and Kimball Avenue.

Exhibit 3-B depicts the current average daily traffic (ADT) volumes in the study area. Existing ADT volumes have been obtained from the latest automatic traffic recorder counts (see Appendix "A") or have been estimated by factoring up peak hour counts conducted for Urban Crossroads, Inc. using the following formula for each intersection leg:

(AM Peak Hour + PM Peak Hour Intersection Leg Volumes) / (7.5% + 8.0%) = Daily Leg Volume

EXHIBIT 3-A

EXISTING NUMBER OF THROUGH LANES AND INTERSECTION CONTROLS (PAGE 1 OF 4)



LEGEND:

- = TRAFFIC SIGNAL
- (S) = ALL WAY STOP
- = STOP SIGN
- 4 = NUMBER OF LANES
- D = DIVIDED
- U = UNDIVIDED
- 50 = INTERSECTION NUMBER

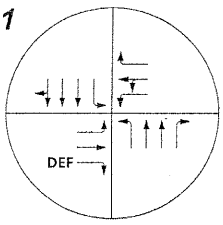
NOTE: THE WEST LEG OF INTERSECTION 13 (MINOR ACCESS TO THE CHINO INSTITUTION FOR MEN) DID NOT EXIST AT THE TIME DATA WAS COLLECTED.

NOTE: THE NORTH LEG OF INTERSECTION 34 DID NOT EXIST AT THE TIME DATA WAS COLLECTED. HOWEVER, THE NORTH LEG DOES EXIST FOR ALL FUTURE SCENARIOS ANALYZED.

EXHIBIT 3-A

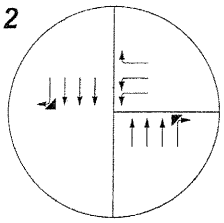
EXISTING NUMBER OF THROUGH LANES AND INTERSECTION CONTROLS (PAGE 2 OF 4)

1



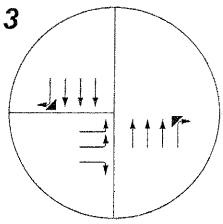
CENTRAL AV. &
EL PRADO RD.

2



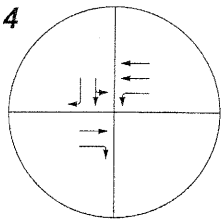
CENTRAL AV. &
SR-71 FWY. NB RAMPS

3



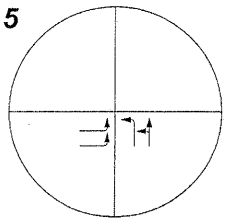
CENTRAL AV. &
SR-71 FWY. SB RAMPS

4



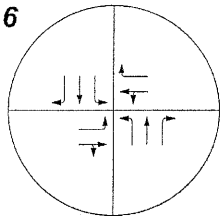
SR-71 FWY. SB RAMPS &
PINE AV.

5



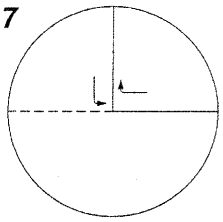
SR-71 FWY. NB RAMPS &
PINE AV.

6



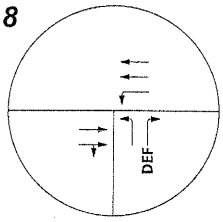
EL PRADO RD. &
KIMBALL AV.

7



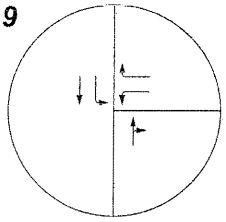
EL PRADO RD. &
PINE AV.

8



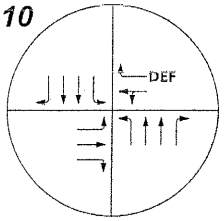
MOUNTAIN AV. &
KIMBALL AV.

9



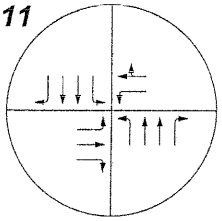
MOUNTAIN AV. &
BICKMORE AV.

10



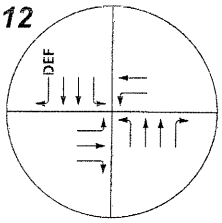
EUCLID AV. (SR-83) &
SCHAEFER AV.

11



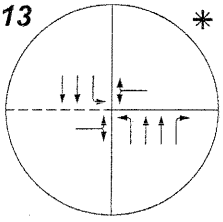
EUCLID AV. (SR-83) &
EDISON AV.

12



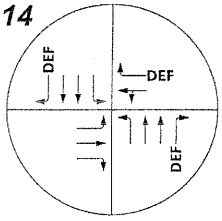
EUCLID AV. (SR-83) &
EUCALYPTUS AV.

13



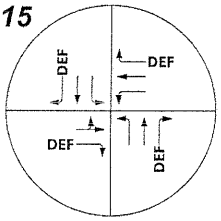
EUCLID AV. (SR-83) &
MERRILL AV.

14



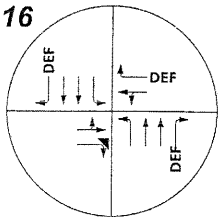
EUCLID AV. (SR-83) &
KIMBALL AV.

15



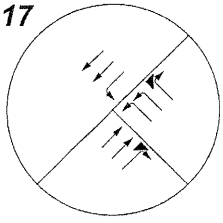
EUCLID AV. (SR-83) &
BICKMORE AV.

16



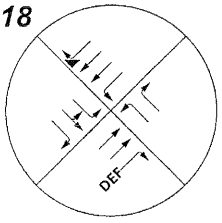
EUCLID AV. (SR-83) &
PINE AV.

17



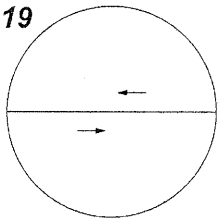
EUCLID AV. (SR-83) &
SR-71 FWY. NB RAMPS

18



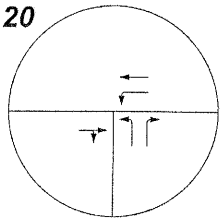
EUCLID AV. (SR-83)/
BUTTERFIELD RANCH RD.
& SR-71 FWY. SB
OFF-RAMP/SHADY VIEW DR.

19



SULTANA AV. &
PINE AV.

20



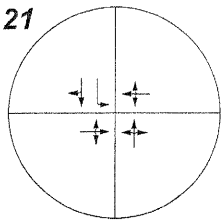
MILL CREEK RD. &
KIMBALL AV.

N

EXHIBIT 3-A

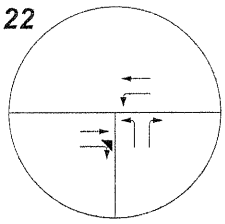
EXISTING NUMBER OF THROUGH LANES AND INTERSECTION CONTROLS (PAGE 3 OF 4)

21



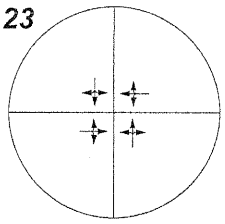
MILL CREEK RD. &
BICKMORE AV.

22



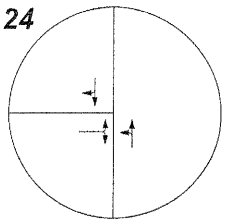
CHINO CORONA RD. &
PINE AV.

23



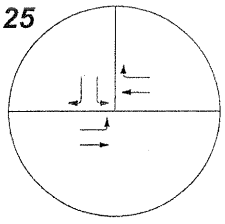
CUCAMONGA AV. &
CHINO CORONA RD.

24



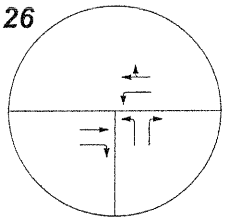
WEST PRESERVE LOOP &
BICKMORE AV.

25



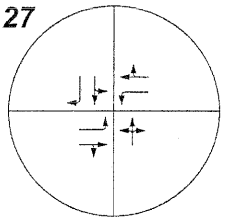
WEST PRESERVE LOOP &
PINE AV.

26



MAIN ST. &
KIMBALL AV.

27



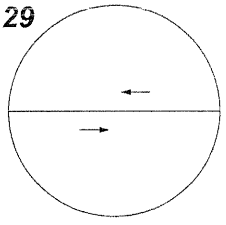
MAIN ST. &
PRESERVE LOOP

28

DOES
NOT
EXIST

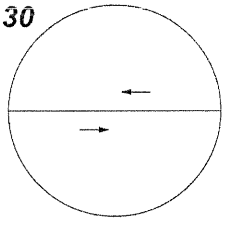
MAIN ST. &
BICKMORE AV.

29



MAIN ST. &
PINE AV.

30



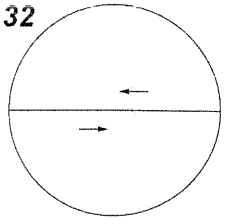
MAIN ST. &
CHINO CORONA RD.

31

DOES
NOT
EXIST

EAST PRESERVE LOOP &
BICKMORE AV.

32



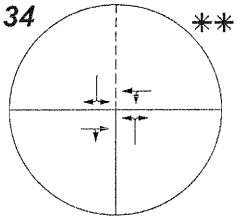
EAST PRESERVE LOOP &
PINE AV.

33

DOES
NOT
EXIST

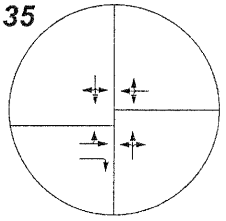
HELLMAN AV. &
KIMBALL AV.

34 **



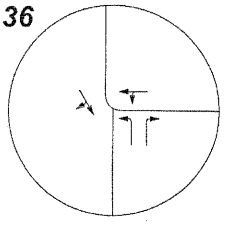
HELLMAN AV. &
PINE AV./SCHLEISMAN RD.

35



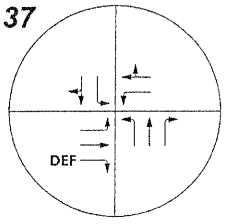
HELLMAN AV. &
CHINO CORONA RD./
CHANDLER ST.

36



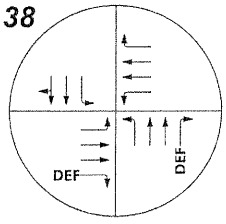
HELLMAN AV. &
RIVER RD.

37



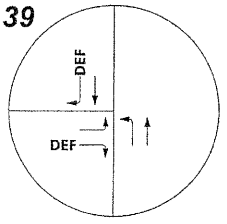
ARCHIBALD ST. &
SCHLEISMAN RD.

38



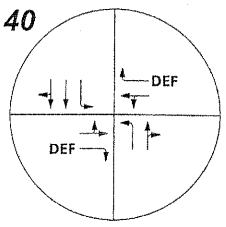
ARCHIBALD ST. &
CHANDLER ST.

39



ARCHIBALD ST. &
RIVER RD.

40

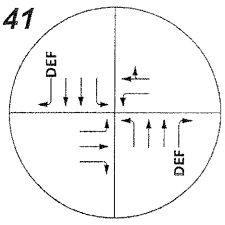


RIVER RD. &
BLUFF ST.

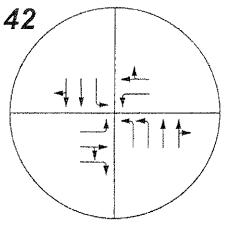
N

EXHIBIT 3-A

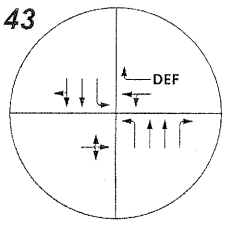
EXISTING NUMBER OF THROUGH LANES AND INTERSECTION CONTROLS (PAGE 4 OF 4)



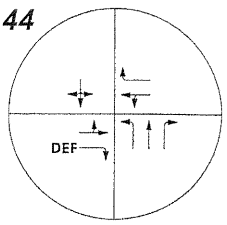
RIVER RD. &
COUNTRY CLUB LN./
SECOND ST.



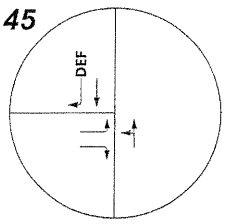
LINCOLN AV. &
POMONA RD./
SR-91 FWY. WB RAMPS



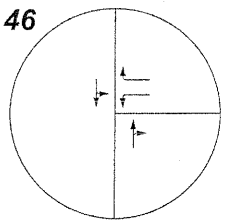
LINCOLN AV. &
SR-91 FWY. EB RAMPS



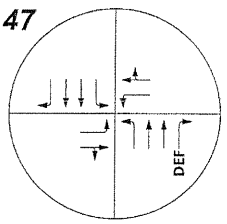
HARRISON AV. &
SCHLEISMAN RD.



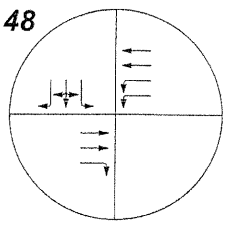
SUMNER AV. &
SCHLEISMAN RD.



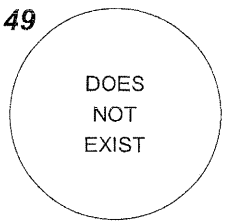
CLEVELAND AV. &
SCHLEISMAN RD.



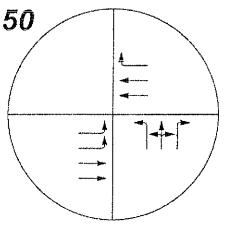
HAMNER AV. &
SCHLEISMAN RD.



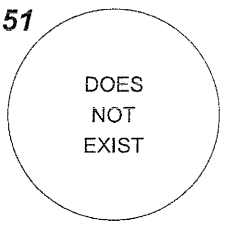
I-15 FWY. SB RAMPS &
LIMONITE AV.



I-15 FWY. SB RAMPS &
SCHLEISMAN RD.



I-15 FWY. NB RAMPS &
LIMONITE AV.



I-15 FWY. NB RAMPS &
SCHLEISMAN RD.

LEGEND:

51 = INTERSECTION NUMBER
RTO = RIGHT TURN OVERLAP
DEF = DEFACTO RIGHT TURN LANE
= FREE RIGHT TURN

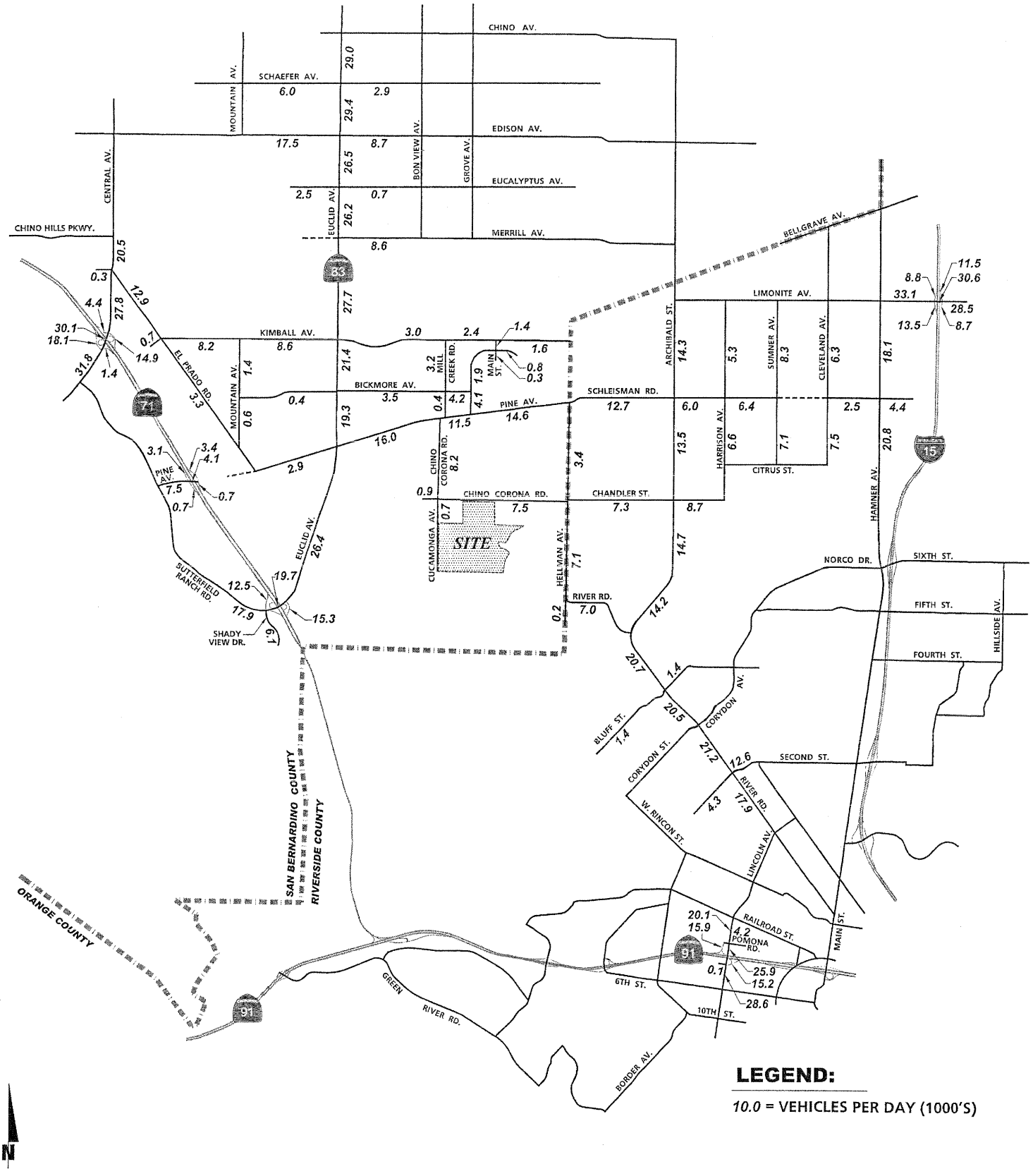
* *NOTE: THE WEST LEG OF INTERSECTION 13 (MINOR ACCESS TO THE CHINO INSTITUTION FOR MEN) DID NOT EXIST AT THE TIME DATA WAS COLLECTED.*

** *NOTE: THE NORTH LEG OF INTERSECTION 34 DID NOT EXIST AT THE TIME DATA WAS COLLECTED. HOWEVER, THE NORTH LEG DOES EXIST FOR ALL FUTURE SCENARIOS ANALYZED.*

N

EXHIBIT 3-B

EXISTING AVERAGE DAILY TRAFFIC (ADT)



In the above formula, the constants of 7.5% and 8.0% are calculated AM and PM Peak Hour-to-ADT ratios based on the actual count data collected and included in Appendix "A". Chino Corona Road adjacent to the project site carries 7,500 vehicles per day ("VPD") under existing conditions. Pine Avenue between Chino Corona Road and Euclid Avenue carries 16,000 VPD. The highest arterial roadway daily traffic volumes within the study area occur at locations relatively distant from the project, including Euclid Avenue, which carries 29,400 VPD north of Edison Avenue, Limonite Avenue, which carries 33,100 VPD east of Hamner Avenue, and Central Avenue, which carries 31,800 VPD south of the SR-71 Freeway.

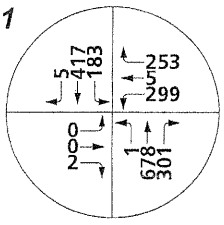
3.2 Existing Peak Hour Traffic Volumes

The existing AM and PM peak hour intersection turning movement volumes are presented on Exhibits 3-C and 3-D, respectively. Existing intersection level of service ("LOS") calculations are based upon manual AM and PM peak hour turning movement counts conducted specifically for Urban Crossroads, Inc. Traffic count worksheets are included in Appendix "A". The AM peak hour traffic volumes were determined by counting the two-hour period from 7:00 to 9:00 AM on a typical weekday. Similarly, the PM peak hour traffic volumes were identified by counting the two-hour period from 4:00 to 6:00 PM on a typical weekday. Per City direction, the counts include the vehicle classification as shown below per the requirements of SANBAG and the San Bernardino CMP.

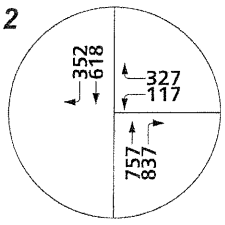
- Passenger cars
- Buses/recreational vehicles (2-axle)
- 3-axle heavy vehicles
- 4-axle heavy vehicles

EXHIBIT 3-C

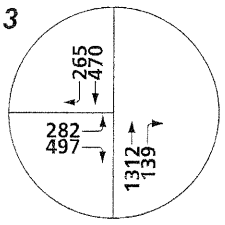
EXISTING AM PEAK HOUR INTERSECTION VOLUMES (PCE) (PAGE 1 OF 3)

1


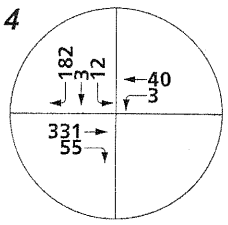
CENTRAL AV. &
EL PRADO RD.

2


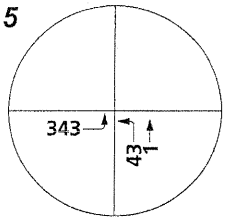
CENTRAL AV. &
SR-71 FWY. NB RAMPS

3


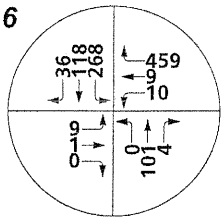
CENTRAL AV. &
SR-71 FWY. SB RAMPS

4


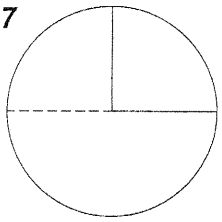
SR-71 FWY. SB RAMPS &
PINE AV.

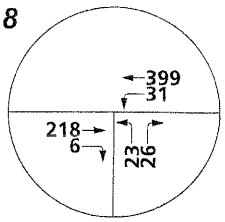
5


SR-71 FWY. NB RAMPS &
PINE AV.

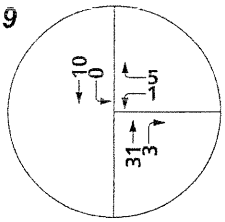
6


EL PRADO RD. &
KIMBALL AV.

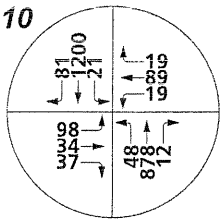
7

EL PRADO RD. &
PINE AV.

8


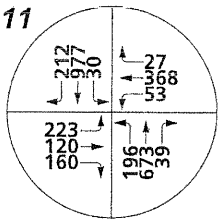
MOUNTAIN AV. &
KIMBALL AV.

9


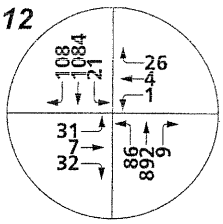
MOUNTAIN AV. &
BICKMORE AV.

10


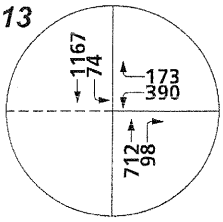
EUCLID AV. (SR-83) &
SCHAEFER AV.

11


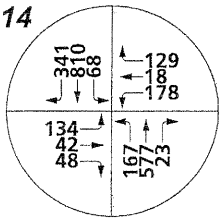
EUCLID AV. (SR-83) &
EDISON AV.

12


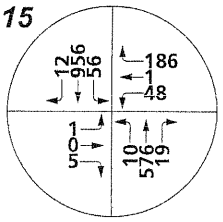
EUCLID AV. (SR-83) &
EUCALYPTUS AV.

13


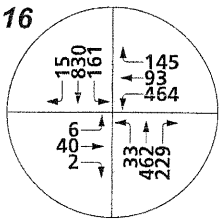
EUCLID AV. (SR-83) &
MERRILL AV.

14


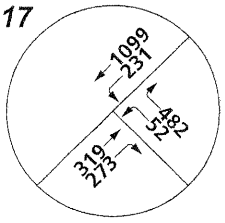
EUCLID AV. (SR-83) &
KIMBALL AV.

15


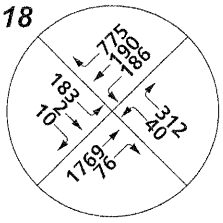
EUCLID AV. (SR-83) &
BICKMORE AV.

16


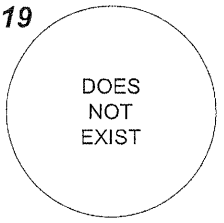
EUCLID AV. (SR-83) &
PINE AV.

17


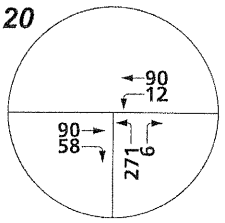
EUCLID AV. (SR-83) &
SR-71 FWY. NB RAMPS

18


EUCLID AV. (SR-83)/
BUTTERFIELD RANCH RD.
& SR-71 FWY. SB
OFF-RAMP/SHADY VIEW DR.

19


SULTANA AV. &
PINE AV.

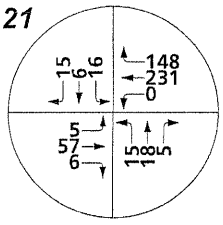
20


MILL CREEK RD. &
KIMBALL AV.

EXHIBIT 3-C

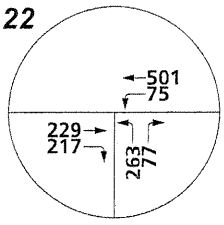
EXISTING AM PEAK HOUR INTERSECTION VOLUMES (PCE) (PAGE 2 OF 3)

21



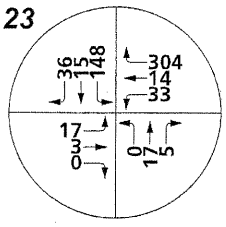
MILL CREEK RD. & BICKMORE AV.

22



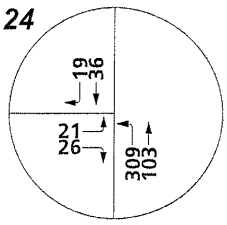
CHINO CORONA RD. & PINE AV.

23



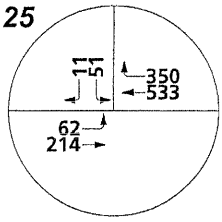
CUCAMONGA AV. & CHINO CORONA RD.

24



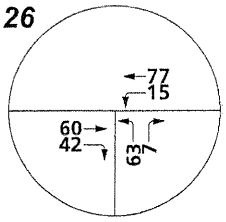
WEST PRESERVE LOOP & BICKMORE AV.

25



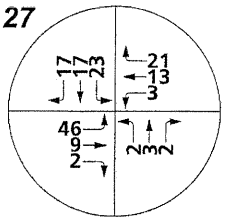
WEST PRESERVE LOOP & PINE AV.

26



MAIN ST. & KIMBALL AV.

27



MAIN ST. & PRESERVE LOOP

28

DOES NOT EXIST

MAIN ST. & BICKMORE AV.

29

DOES NOT EXIST

MAIN ST. & PINE AV.

30

DOES NOT EXIST

MAIN ST. & CHINO CORONA RD.

31

DOES NOT EXIST

EAST PRESERVE LOOP & BICKMORE AV.

32

DOES NOT EXIST

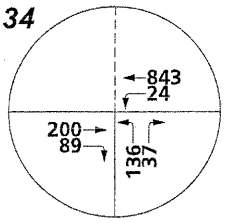
EAST PRESERVE LOOP & PINE AV.

33

DOES NOT EXIST

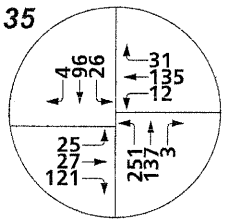
HELLMAN AV. & KIMBALL AV.

34



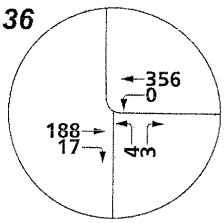
HELLMAN AV. & PINE AV./SCHLEISMAN RD.

35



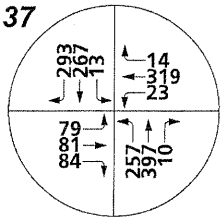
HELLMAN AV. & CHINO CORONA RD./ CHANDLER ST.

36



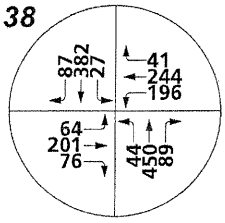
HELLMAN AV. & RIVER RD.

37



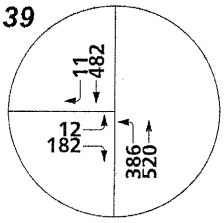
ARCHIBALD ST. & SCHLEISMAN RD.

38



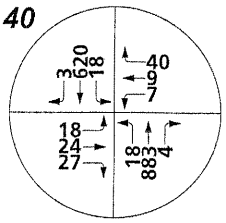
ARCHIBALD ST. & CHANDLER ST.

39



ARCHIBALD ST. & RIVER RD.

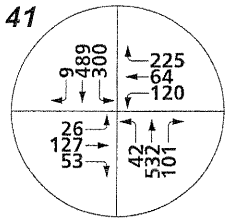
40



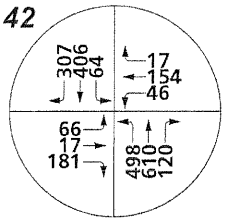
RIVER RD. & BLUFF ST.

N

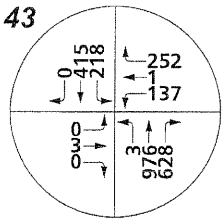
EXISTING AM PEAK HOUR INTERSECTION VOLUMES (PCE) (PAGE 3 OF 3)



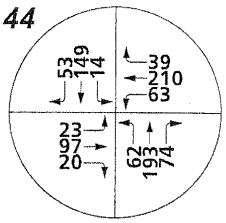
RIVER RD. &
COUNTRY CLUB LN./
SECOND ST.



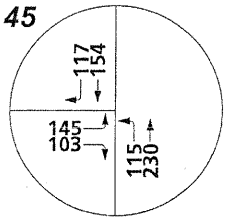
LINCOLN AV. &
POMONA RD.



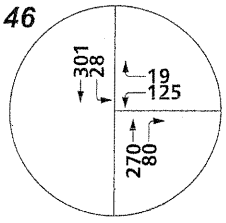
LINCOLN AV. &
SR-91 FWY. EB RAMPS



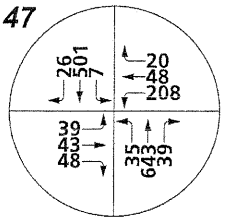
HARRISON AV. &
SCHLEISMAN RD.



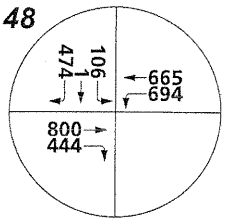
SUMNER AV. &
SCHLEISMAN RD.



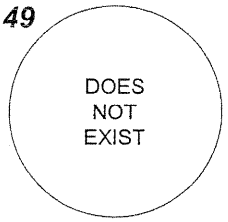
CLEVELAND AV. &
SCHLEISMAN RD.



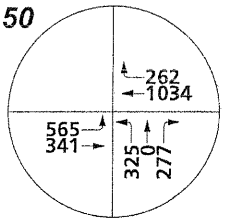
HAMNER AV. &
SCHLEISMAN RD.



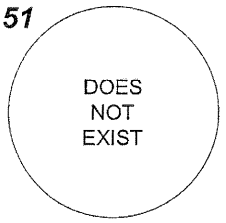
I-15 FWY. SB RAMPS &
LIMONITE AV.



I-15 FWY. SB RAMPS &
SCHLEISMAN RD.

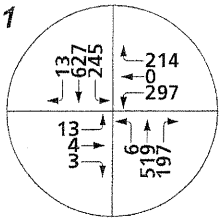


I-15 FWY. NB RAMPS &
LIMONITE AV.



I-15 FWY. NB RAMPS &
SCHLEISMAN RD.

EXISTING PM PEAK HOUR INTERSECTION VOLUMES (PCE) (PAGE 1 OF 3)

1


CENTRAL AV. & EL PRADO RD.

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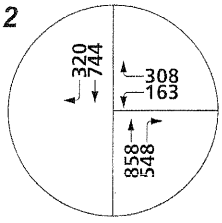

CENTRAL AV. & SR-71 FWY. NB RAMPS

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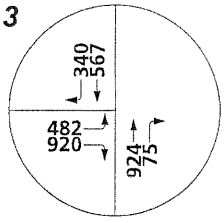

CENTRAL AV. & SR-71 FWY. SB RAMPS

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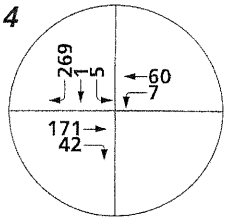

SR-71 FWY. SB RAMPS & PINE AV.

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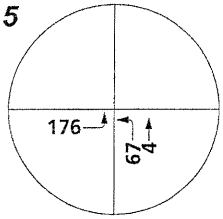

SR-71 FWY. NB RAMPS & PINE AV.

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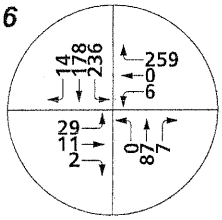

EL PRADO RD. & KIMBALL AV.

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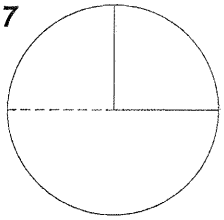
EL PRADO RD. & PINE AV.

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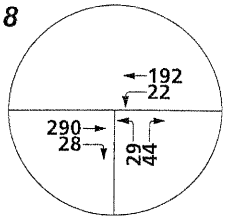

MOUNTAIN AV. & KIMBALL AV.

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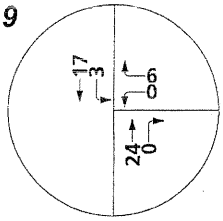

MOUNTAIN AV. & BICKMORE AV.

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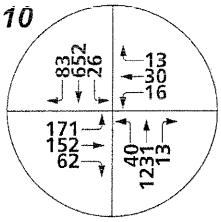

EUCLID AV. (SR-83) & SCHAEFER AV.

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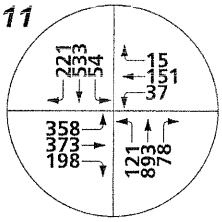

EUCLID AV. (SR-83) & EDISON AV.

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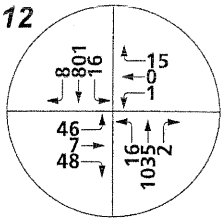

EUCLID AV. (SR-83) & EUCALYPTUS AV.

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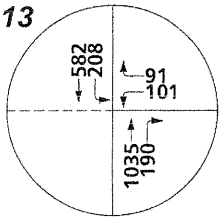

EUCLID AV. (SR-83) & MERRILL AV.

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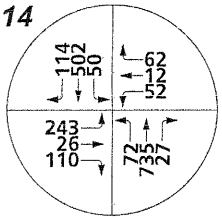

EUCLID AV. (SR-83) & KIMBALL AV.

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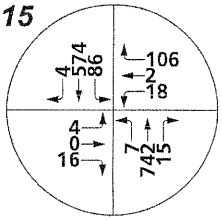

EUCLID AV. (SR-83) & BICKMORE AV.

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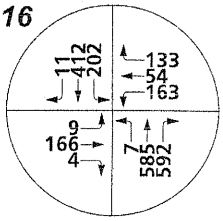

EUCLID AV. (SR-83) & PINE AV.

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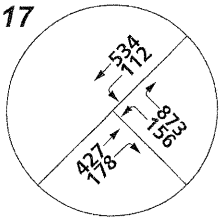

EUCLID AV. (SR-83) & SR-71 FWY. NB RAMPS

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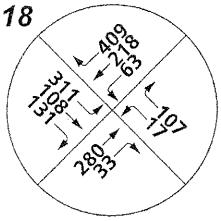
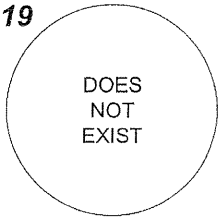
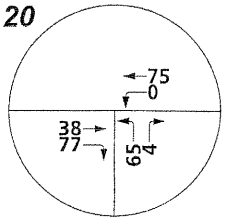


EUCLID AV. (SR-83)/ BUTTERFIELD RANCH RD. & SR-71 FWY. SB OFF-RAMP/SHADY VIEW DR.

19


SULTANA AV. & PINE AV.

20


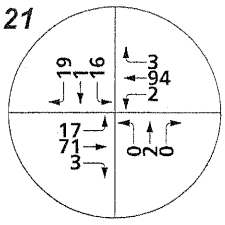
MILL CREEK RD. & KIMBALL AV.

N

EXHIBIT 3-D

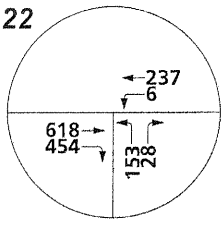
EXISTING PM PEAK HOUR INTERSECTION VOLUMES (PCE) (PAGE 2 OF 3)

21



MILL CREEK RD. & BICKMORE AV.

22



CHINO CORONA RD. & PINE AV.

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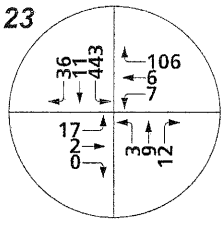
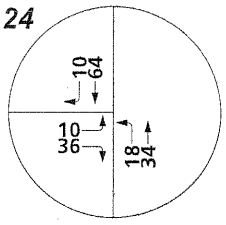


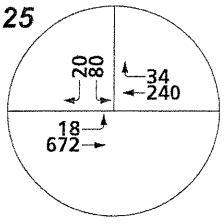
CUCAMONGA AV. & CHINO CORONA RD.

24



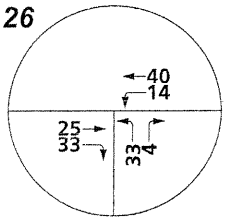
WEST PRESERVE LOOP & BICKMORE AV.

25



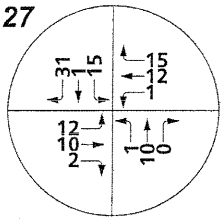
WEST PRESERVE LOOP & PINE AV.

26



MAIN ST. & KIMBALL AV.

27



MAIN ST. & PRESERVE LOOP

28

DOES NOT EXIST

MAIN ST. & BICKMORE AV.

29

DOES NOT EXIST

MAIN ST. & PINE AV.

30

DOES NOT EXIST

MAIN ST. & CHINO CORONA RD.

31

DOES NOT EXIST

EAST PRESERVE LOOP & BICKMORE AV.

32

DOES NOT EXIST

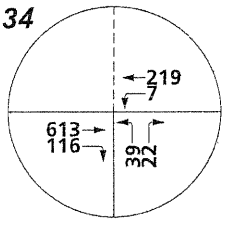
EAST PRESERVE LOOP & PINE AV.

33

DOES NOT EXIST

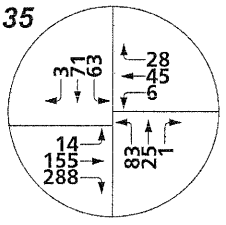
HELLMAN AV. & KIMBALL AV.

34



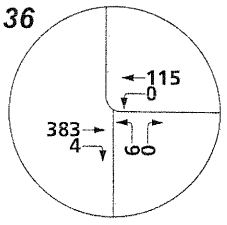
HELLMAN AV. & PINE AV./SCHLEISMAN RD.

35



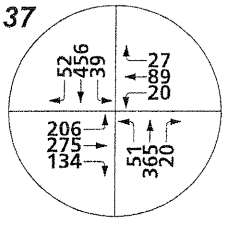
HELLMAN AV. & CHINO CORONA RD./ CHANDLER ST.

36



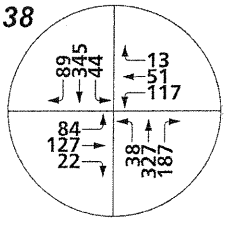
HELLMAN AV. & RIVER RD.

37



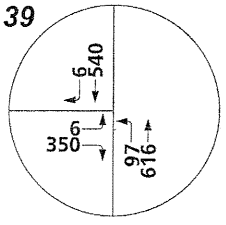
ARCHIBALD ST. & SCHLEISMAN RD.

38



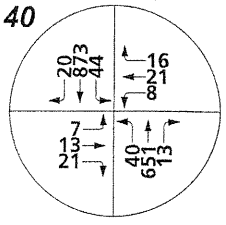
ARCHIBALD ST. & CHANDLER ST.

39



ARCHIBALD ST. & RIVER RD.

40

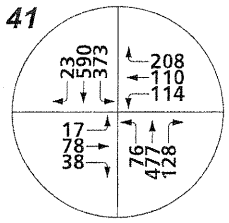


RIVER RD. & BLUFF ST.

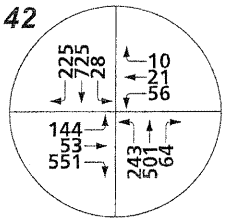
N

EXHIBIT 3-D

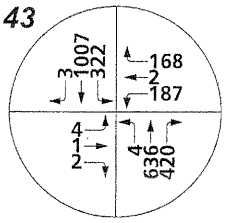
EXISTING PM PEAK HOUR INTERSECTION VOLUMES (PCE) (PAGE 3 OF 3)



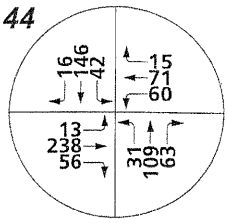
RIVER RD. &
COUNTRY CLUB LN./
SECOND ST.



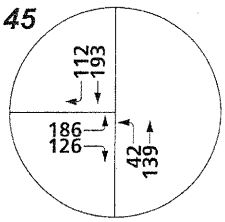
LINCOLN AV. &
POMONA RD.



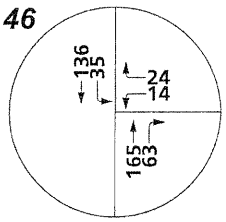
LINCOLN AV. &
SR-91 FWY. EB RAMPS



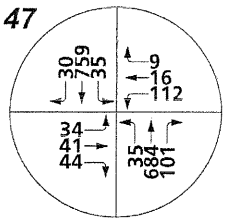
HARRISON AV. &
SCHLEISMAN RD.



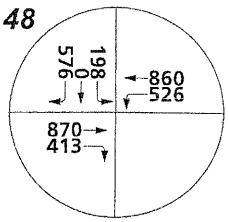
SUMNER AV. &
SCHLEISMAN RD.



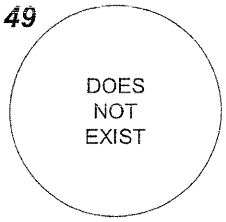
CLEVELAND AV. &
SCHLEISMAN RD.



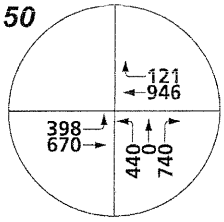
HAMNER AV. &
SCHLEISMAN RD.



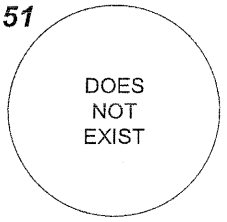
I-15 FWY. SB RAMPS &
LIMONITE AV.



I-15 FWY. SB RAMPS &
SCHLEISMAN RD.



I-15 FWY. NB RAMPS &
LIMONITE AV.



I-15 FWY. NB RAMPS &
SCHLEISMAN RD.

The overall existing count volumes illustrated on the exhibits and used for the analysis for the study are calculated passenger car equivalent (PCE) volumes. PCE factors of 1.5 for buses/recreational vehicles, 2.0 for 3-axle vehicles, and 3.0 for 4+-axle vehicles have been used in this analysis, consistent with the requirements of the San Bernardino CMP traffic study guidelines. Explicit peak hour factors have been calculated using the data collected for this effort, as well.

3.3 Existing Traffic Operations

Existing peak hour traffic operations have been evaluated for both the AM and PM peak hours of traffic at the study area intersections. The results of this analysis are summarized in Table 3-1, along with the existing intersection geometrics and traffic control devices at the analysis locations. As indicated in Table 3-1, all of the study area intersections currently operate at acceptable levels of service during the peak hours except for the following intersections:

Euclid Avenue (SR-83) (NS) at:

- Bickmore Avenue (EW)

Euclid Avenue (SR-83)/Butterfield Ranch Road (NS) at:

- SR-71 Freeway Southbound Off-Ramp/Shady View Drive (EW)

Hellman Avenue (NS) at:

- Pine Avenue/Schleisman Road (EW)
- Chino Corona Road/Chandler Street (EW)

Archibald Street (NS) at:

- River Road (EW)

The operations analysis worksheets for existing conditions are included in Appendix "B".

TABLE 3-1 (Page 1 of 2)

INTERSECTION ANALYSIS FOR EXISTING CONDITIONS

	INTERSECTION	TRAFFIC CONTROL[3]	INTERSECTION APPROACH LANES[1]												DELAY[2] (SECS.)		LEVEL OF SERVICE	
			NORTH-BOUND			SOUTH-BOUND			EAST-BOUND			WEST-BOUND						
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
	Central Av. (NS) at:																	
1	• El Prado Rd. (EW)	TS	1	2	1	1	3	0	1	1	1	1.5	0.5	1>	29.7	22.7	C	C
2	• SR-71 Fwy. NB Ramps (EW)	TS	0	3	1>>	0	3	1>>	0	0	0	2	0	1	12.2	11.3	B	B
3	• SR-71 Fwy. SB Ramps (EW)	TS	0	3	1>>	0	3	1>>	2	0	1	0	0	0	16.5	32.3	B	C
	SR-71 Fwy. SB Ramps (NS) at:																	
4	• Pine Av. (EW)	TS	0	0	0	0.5	0.5	1	0	1	1	1	2	0	14.6	13.3	B	B
	SR-71 Fwy. NB Ramps (NS) at:																	
5	• Pine Av. (EW)	AWS	1.5	0.5	0	0	0	0	2	0	0	0	0	0	9.7	8.7	A	A
	El Prado Rd. (NS) at:																	
6	• Kimball Av. (EW)	TS	1	1	1	1	1	1	1	1	0	0.5	0.5	1>	18.1	21.3	B	C
	Mountain Av. (NS) at:																	
8	• Kimball Av. (EW)	TS	1	0	1	0	0	0	0	2	0	1	2	0	8.0	9.6	A	A
9	• Bickmore Av. (EW)	CSS	0	1	0	1	1	0	0	0	0	1	0	1	8.9	8.5	A	A
	Euclid Av. (SR-83) (NS) at:																	
10	• Schaefer Av. (EW)	TS	1	2	1	1	2	1	1	1	1	0.5	0.5	1	21.9	23.5	C	C
11	• Edison Av. (EW)	TS	1	2	1	1	2	1	1	1	1	1	1	0	35.9	24.5	D	C
12	• Eucalyptus Av. (EW)	TS	1	2	1	1	2	1	1	1	1	1	1	0	22.3	23.9	C	C
13	• Merrill Av. (EW)	TS	1	2	1	1	2	0	0	0	0	0	1	0	27.7	16.9	C	B
14	• Kimball Av. (EW)	TS	1	2	1	1	2	1	1	1	1	0.5	0.5	1	26.6	22.6	C	C
15	• Bickmore Av. (EW)	CSS	1	1	1	1	1	1	0.5	0.5	1	1	1	1	--[4]	99.5	F	F
16	• Pine Av. (EW)	TS	1	2	1	1	2	1	0.5	0.5	1>>	0.5	0.5	1	35.1	28.8	D	C
17	• SR-71 Fwy. NB Ramps (EW)	TS	0	2	1>>	1	2	0	0	0	0	2	0	1>>	9.5	14.9	A	B
	Euclid Av. (SR-83)/ Butterfield Ranch Rd. (NS) at:																	
18	• SR-71 Fwy. SB Off-Ramp/ Shady View Dr. (EW)	TS	0	2	1	1	2	1>>	1.5	0.5	1	1	0	1>	--[4]	30.7	F	C
	Mill Creek Rd. (NS) at:																	
20	• Kimball Av. (EW)	CSS	1	0	1	0	0	0	0	1	0	1	1	0	13.2	10.0	B	A
21	• Bickmore Av. (EW)	AWS	0	1	0	1	1	0	0	1	0	0	1	0	10.0	7.7	B	A
	Chino Corona Rd./Mill Creek Rd. (NS) at:																	
22	• Pine Av. (EW)	TS	1	0	1	0	0	0	0	1	1>>	1	1	0	15.1	13.8	B	B
	Cucamonga Av. (NS) at:																	
23	• Chino Corona Rd. (EW)	AWS	0	1	0	0	1	0	0	1	0	0	1	0	10.6	14.2	B	B
	West Preserve Loop (NS) at:																	
24	• Bickmore Av. (EW)	AWS	0.5	0.5	0	0	1	0	0	1	0	0	0	0	11.4	7.4	B	A
25	• Pine Av. (EW)	TS	0	0	0	1	0	1	1	1	0	0	1	1	4.2	5.5	A	A
	Main St. (NS) at:																	
26	• Kimball Av. (EW)	AWS	1	0	1	0	0	0	0	1	1	1	1	0	8.4	7.7	A	A
27	• Preserve Loop (EW)	AWS	0	1	0	0.5	0.5	1	1	1	0	1	1	0	7.8	7.5	A	A
	Hellman Av. (NS) at:																	
34	• Pine Av./Schleisman Rd. (EW)	CSS	0	1	0	0	0	0	0	1	0	0.5	0.5	0	--[4]	21.5	F	C
35	• Chino Corona Rd./Chandler St. (EW)	CSS	0	1	0	0	1	0	0.5	0.5	1	0	1	0	--[4]	18.6	F	C
36	• River Rd. (EW)	CSS	1	0	1	0	0	0	0	1	0	0.5	0.5	0	12.9	12.6	B	B
	Archibald St. (NS) at:																	
37	• Schleisman Rd. (EW)	TS	1	1	1	1	1	0	1	1	1	1	1	0	51.2	35.0	D	D
38	• Chandler St. (EW)	TS	1	2	1	1	2	0	1	2	1	1	2	1	36.2	34.5	D	C
39	• River Rd. (EW)	CSS	1	1	0	0	1	1	1	0	1	0	0	0	--[4]	35.7	F	E
	River Rd. (NS) at:																	
40	• Bluff St. (EW)	TS	1	1	0	1	2	0	0.5	0.5	1	0.5	0.5	1	10.5	8.4	B	A
41	• Country Club Ln./Second St. (EW)	TS	1	2	1	1	2	1	1	1	1	1	1	0	26.5	27.4	C	C
	Lincoln Av. (NS) at:																	
42	• Pomona Rd. (EW)	TS	2	2	0	1	2	0	1	0.5	1.5	1	1	0	23.1	23.7	C	C
43	• SR-91 Fwy. EB Ramps (EW)	TS	1	2	1	1	2	0	0	1	0	0.5	0.5	1	25.5	21.0	C	C

TABLE 3-1 (Page 2 of 2)

INTERSECTION ANALYSIS FOR EXISTING CONDITIONS

	INTERSECTION	TRAFFIC CONTROL[3]	INTERSECTION APPROACH LANES[1]												DELAY[2] (SECS.)		LEVEL OF SERVICE	
			NORTH-BOUND			SOUTH-BOUND			EAST-BOUND			WEST-BOUND						
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
44	Harrison Av. (NS) at: • Schleisman Rd. (EW)	AWS	1	1	1	0	1	0	0.5	0.5	1	0.5	0.5	1	15.3	12.0	C	B
45	Sumner Av. (NS) at: • Schleisman Rd. (EW)	AWS	0.5	0.5	0	0	1	1	1	0	1	0	0	0	27.2	11.1	D	B
46	Cleveland Av. (NS) at: • Schleisman Rd. (EW)	AWS	0	1	0	0.5	0.5	0	0	0	0	1	0	1	18.8	8.6	C	A
47	Hamner Av. (NS) at: • Schleisman Rd. (EW)	TS	1	2	1	1	2	1	1	1	0	1	1	0	33.8	33.6	C	C
48	I-15 Fwy. SB Ramps (NS) at: • Limonite Av. (EW)	TS	0	0	0	1	1	1	0	2	1	2	2	0	19.6	18.3	B	B
50	I-15 Fwy. NB Ramps (NS) at: • Limonite Av. (EW)	TS	1	1	1	0	0	0	2	2	0	0	2	1	16.4	26.9	B	C

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; >> = Free Right Turn; > = Right Turn Overlap.

[2] Delay and level of service calculated using the following analysis software: Traffix, Version 7.9 R1 (2007). Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal; AWS = All Way Stop; CSS = Cross Street Stop.

[4] -- = Delay High or V/C Ratio exceeding 1.0, Intersection Unstable, Level of Service "F".

U:\UcJobs_04100-04500_04300\04369\Excel\[04369-20.xls]T 3-1

Traffic signal warrant analysis indicates that the following intersections appear to currently warrant a traffic signal (see Appendix "C"):

Euclid Avenue (SR-83) (NS) at:

- Bickmore Avenue (EW)

Hellman Avenue (NS) at:

- Pine Avenue/Schleisman Road (EW)

Archibald Street (NS) at:

- River Road (EW)

Harrison Avenue (NS) at:

- Schleisman Road (EW)

Sumner Avenue (NS) at:

- Schleisman Road (EW)

Additional signal warrant analysis (also included in Appendix "C") has been conducted for intersections potentially requiring traffic signal installation. The additional analysis indicates that no other traffic signals are currently warranted.

3.4 Planned Transportation Improvements and Relationships to General Plan

The long range transportation system within the study area is expected to undergo significant improvement as a result of work to be performed by the City of Chino, City of Ontario, and County of Riverside. The San Bernardino County General Plan Circulation Element in the vicinity of the project is shown on Exhibit 3-E. Exhibit 3-F shows the San Bernardino County General Plan roadway cross-sections. Central Avenue is designated as a Major Highway, north of the SR-71 Freeway, and as a Major Arterial Highway, south of the SR-71 Freeway.

EXHIBIT 3-E

SAN BERNARDINO COUNTY GENERAL PLAN CIRCULATION ELEMENT

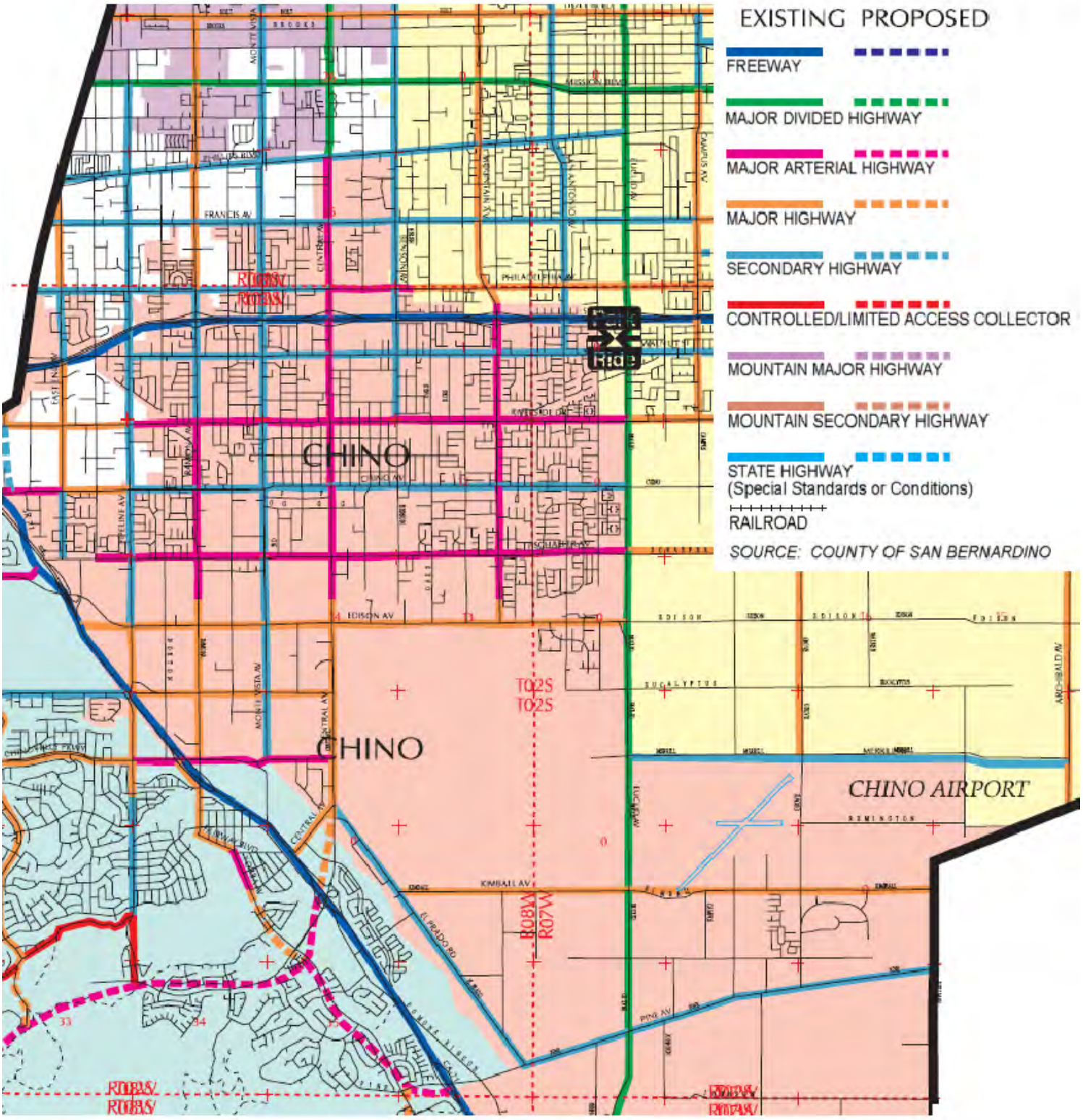
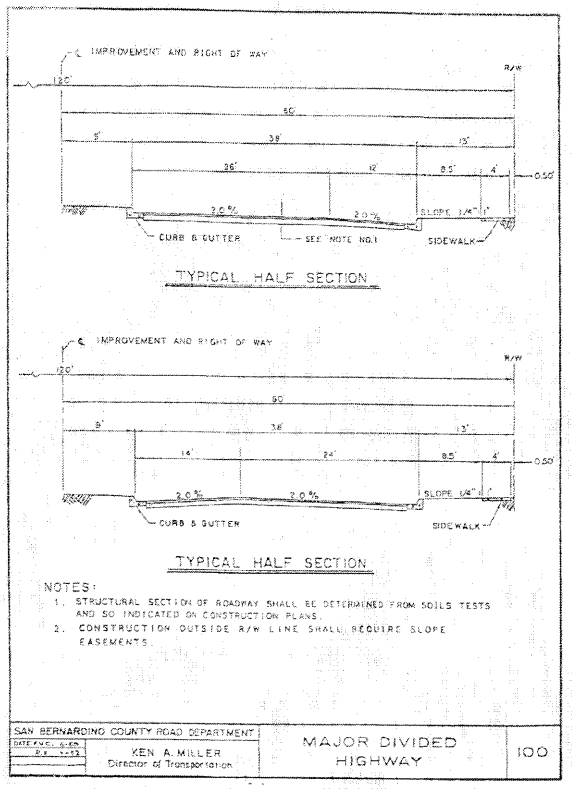


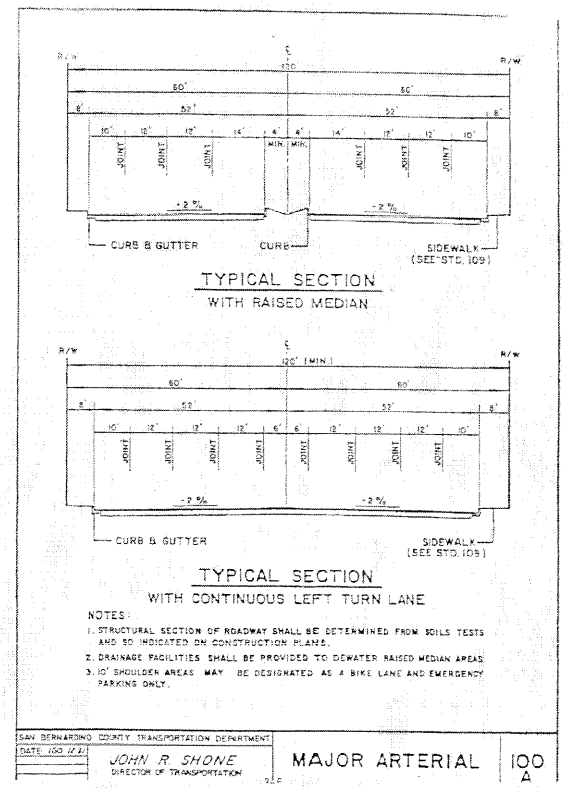
EXHIBIT 3-F

SAN BERNARDINO COUNTY GENERAL PLAN ROADWAY CROSS-SECTIONS (PAGE 1 OF 2)



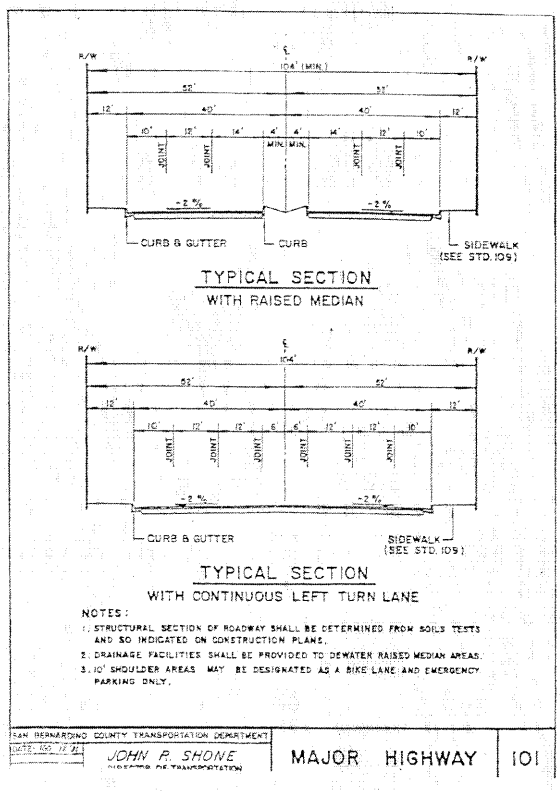
NOTES:
1. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOILS TESTS AND SO INDICATED ON CONSTRUCTION PLANS.
2. CONSTRUCTION OUTSIDE R/W LINE SHALL REQUIRE SLOPE EASEMENTS.

SAN BERNARDINO COUNTY ROAD DEPARTMENT
KEN A. MILLER
Director of Transportation
MAJOR DIVIDED HIGHWAY
100



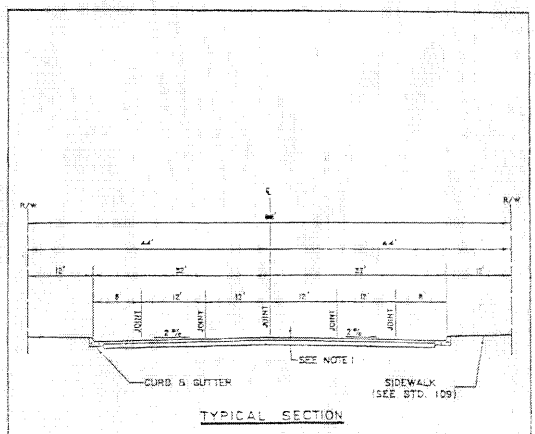
NOTES:
1. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOILS TESTS AND SO INDICATED ON CONSTRUCTION PLANS.
2. DRAINAGE FACILITIES SHALL BE PROVIDED TO DEWATER RAISED MEDIAN AREAS.
3. 10' SHOULDER AREAS MAY BE DESIGNATED AS A BIKE LANE AND EMERGENCY PARKING ONLY.

SAN BERNARDINO COUNTY TRANSPORTATION DEPARTMENT
JOHN R. SHONE
DIRECTOR OF TRANSPORTATION
MAJOR ARTERIAL
100 A



NOTES:
1. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOILS TESTS AND SO INDICATED ON CONSTRUCTION PLANS.
2. DRAINAGE FACILITIES SHALL BE PROVIDED TO DEWATER RAISED MEDIAN AREAS.
3. 10' SHOULDER AREAS MAY BE DESIGNATED AS A BIKE LANE AND EMERGENCY PARKING ONLY.

SAN BERNARDINO COUNTY TRANSPORTATION DEPARTMENT
JOHN R. SHONE
MAJOR HIGHWAY
101

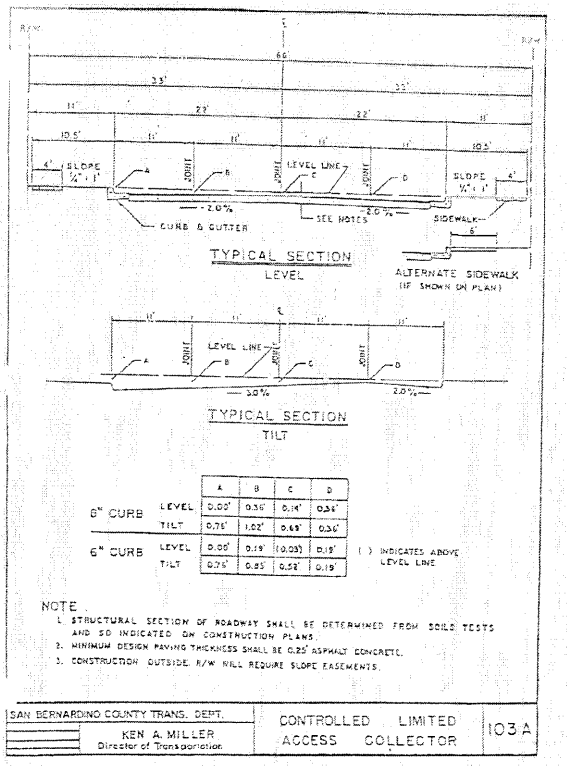


NOTES:
1. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOILS TESTS AND SO INDICATED ON CONSTRUCTION PLANS.
2. 8' SHOULDER AREAS MAY BE DESIGNATED AS A BIKE LANE AND EMERGENCY PARKING ONLY.

SAN BERNARDINO COUNTY TRANSPORTATION DEPARTMENT
JOHN R. SHONE
DIRECTOR OF TRANSPORTATION
SECONDARY HIGHWAY
102

EXHIBIT 3-F

SAN BERNARDINO COUNTY GENERAL PLAN ROADWAY CROSS-SECTIONS (PAGE 2 OF 2)



TYPICAL SECTION
LEVEL

ALTERNATE SIDEWALK
(IF SHOWN ON PLAN)

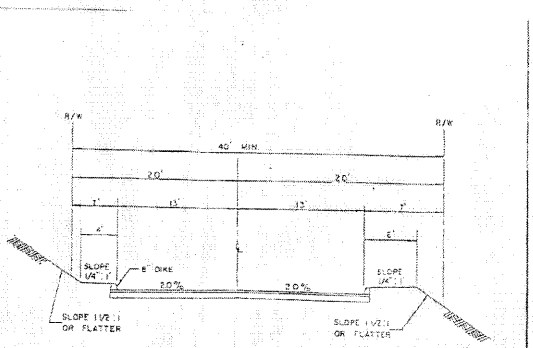
TYPICAL SECTION
TILT

		A	B	C	D
8" CURB	LEVEL	0.00'	0.36'	0.14'	0.36'
	TILT	0.76'	1.02'	0.69'	0.36'
6" CURB	LEVEL	0.00'	0.19'	(0.05')	0.19'
	TILT	0.76'	0.85'	0.52'	0.19'

( ) INDICATES ABOVE LEVEL LINE

NOTE
1. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOILS TESTS AND SO INDICATED ON CONSTRUCTION PLANS.
2. MINIMUM DESIGN PAVING THICKNESS SHALL BE 0.25' ASPHALT CONCRETE.
3. CONSTRUCTION OUTSIDE R/W WILL REQUIRE SLOPE EASEMENTS.

SAN BERNARDINO COUNTY TRANS. DEPT.		
KEN A. MILLER Director of Transportation	CONTROLLED LIMITED ACCESS COLLECTOR	103A

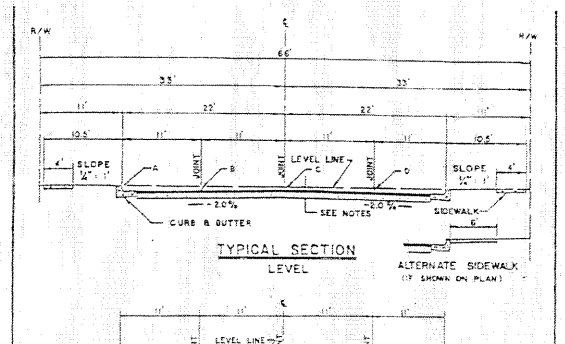


TYPICAL SECTION
MOUNTAIN AREAS

NOTES:
1. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOILS TESTS AND SO INDICATED ON CONSTRUCTION PLANS.
2. CONSTRUCTION OUTSIDE R/W LINE SHALL REQUIRE SLOPE EASEMENTS.
3. SLOPE REQUIREMENT MAY BE VARIED BY SUBMISSION OF SOILS REPORT.

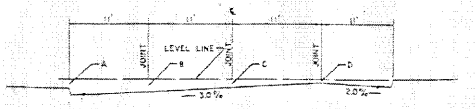
SAN BERNARDINO COUNTY ROAD DEPARTMENT		
DATE REV. 5-03 PP 6-80 AS 4-81	KEN A. MILLER Director of Transportation	MOUNTAIN LOCAL PAVED ROAD 114b

3-11



TYPICAL SECTION
LEVEL

ALTERNATE SIDEWALK
(IF SHOWN ON PLAN)



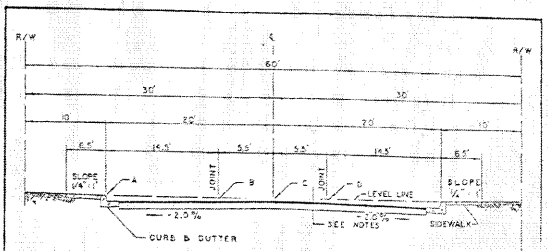
TYPICAL SECTION
TILT

		A	B	C	D
8" CURB	LEVEL	0.00'	0.36'	0.14'	0.36'
	TILT	0.76'	1.02'	0.69'	0.36'
6" CURB	LEVEL	0.00'	0.19'	(0.05')	0.19'
	TILT	0.76'	0.85'	0.52'	0.19'

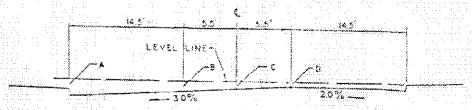
( ) INDICATES ABOVE LEVEL LINE

NOTE
1. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOILS TESTS AND SO INDICATED ON CONSTRUCTION PLANS.
2. MINIMUM DESIGN PAVING THICKNESS SHALL BE 0.25' ASPHALT CONCRETE.
3. CONSTRUCTION OUTSIDE R/W WILL REQUIRE SLOPE EASEMENTS.

SAN BERNARDINO COUNTY ROAD DEPARTMENT		
DATE REV. 5-03 Rev. 5-74	John R. Shone COUNTY HIGHWAY ENGINEER	COLLECTOR STREET 103



TYPICAL SECTION
LEVEL



TYPICAL SECTION
TILT

		A	B	C	D
8" CURB	LEVEL	0.00'	0.29'	0.18'	0.29'
	TILT	0.46'	0.62'	0.46'	0.29'
6" CURB	LEVEL	0.00'	0.12'	0.01'	0.12'
	TILT	0.46'	0.45'	0.25'	0.12'

NOTE
1. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOILS TESTS AND SO INDICATED ON CONSTRUCTION PLANS.
2. MINIMUM DESIGN PAVING THICKNESS SHALL BE 0.25' ASPHALT CONCRETE.
3. CONSTRUCTION OUTSIDE R/W WILL REQUIRE SLOPE EASEMENTS.
4. WHEN PREPARING SUBGRADE FOR PAVING, CENTERLINE CROWN ON THE "LEVEL SECTION" SHALL BE RELOCATED EITHER LEFT OR RIGHT 0.50' TO MATCH CROWN BREAK IN PAVING MACHINE.

SAN BERNARDINO COUNTY TRANS. DEPT.		
DATE REV. 3-03 Rev. 7-04 PP 12-81	KEN A. MILLER Director of Transportation	LOCAL STREET 104 A

The City of Chino General Plan Circulation Element within the study area is shown on Exhibit 3-G. Exhibit 3-H shows the City of Chino General Plan roadway cross-sections for the various classifications depicted on Exhibit 3-G. Euclid Avenue (SR-83), north of Kimball Avenue, is designated as an Expressway. Schaefer Avenue, in the vicinity of Euclid Avenue (SR-83), is designated as a Primary Arterial. Edison Avenue is designated as a Major Arterial. Eucalyptus Avenue is designated as a Secondary Arterial, west of Euclid Avenue (SR-83), and as a Major Arterial, east of Euclid Avenue (SR-83). Merrill Avenue is designated as a Secondary Arterial, east of Euclid Avenue (SR-83).

The Chino Agricultural Preserve Subarea 2 ("The Preserve") Circulation Plan and roadway cross-sections are shown on Exhibits 3-I and 3-J, respectively. Euclid Avenue (SR-83), north of Pine Avenue, is designated as an 8-lane Major Arterial (Expressway), north of Pine Avenue, and as a 6-lane Major Arterial (Expressway), south of Pine Avenue. Sultana Avenue is designated as a 2-lane Commercial Collector within The Preserve. Mill Creek Road/Cucamonga Avenue is designated as a 2-lane Local Collector, north of Pine Avenue, and as a 2-lane Local Collector with Paseo, south of Pine Avenue (to Chino Corona Road). The Preserve Loop is designated as a 2-lane Loop Local Collector with Paseo and includes a transit lane in the vicinity of Pine Avenue. Main Street is designated as a 2-lane Main Street Collector, within The Preserve Loop, and as a 2-lane Commercial Collector with Paseo, outside The Preserve Loop. Hellman Avenue is designated as a 4-lane Major Arterial with Paseo from north of Kimball Avenue to north of Chino Corona Road, at which point it transitions to a 4-lane Major Arterial without Paseo. Kimball Avenue is designated as a 4-lane Major Arterial with Paseo throughout The Preserve. Bickmore Avenue is designated as a 2-lane Local Collector with Paseo and Transit between Euclid Avenue (SR-83) and Bon View Avenue, as a 2-lane Local Collector with Transit between Bon View Avenue and the East Preserve Loop, and as Typical Local Collector from the East Preserve Loop to Hellman Avenue. Pine Avenue is designated as a 6-lane Major Arterial with Paseo throughout The Preserve. Finally, Chino Corona Road is designated as a Typical Local Collector between Cucamonga Avenue and Hellman Avenue.

EXHIBIT 3-G

CITY OF CHINO
GENERAL PLAN CIRCULATION ELEMENT

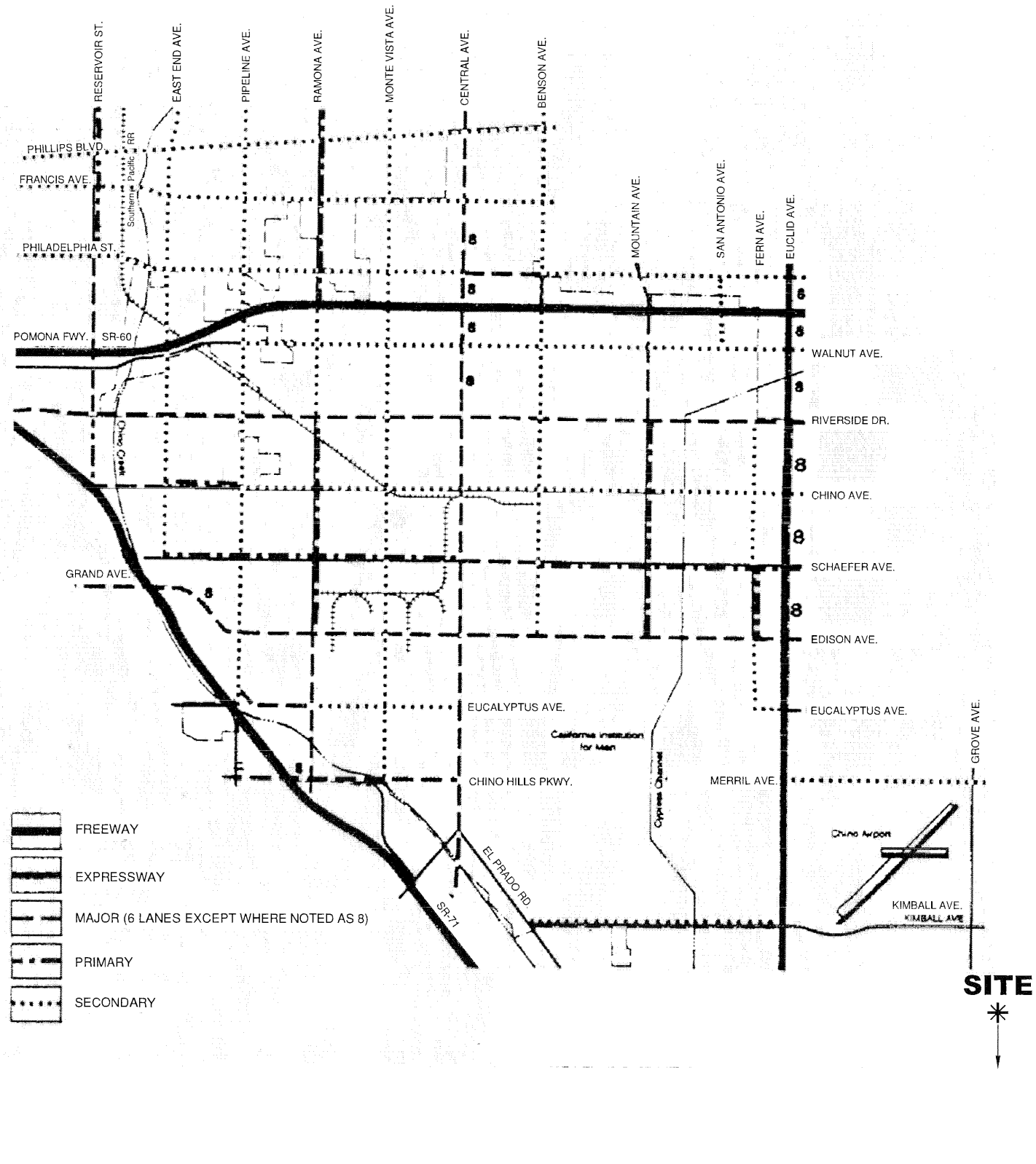
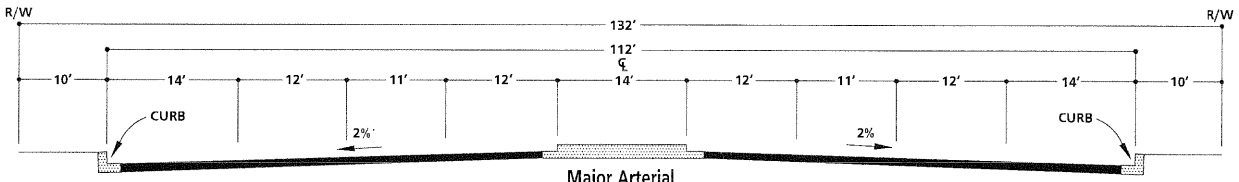
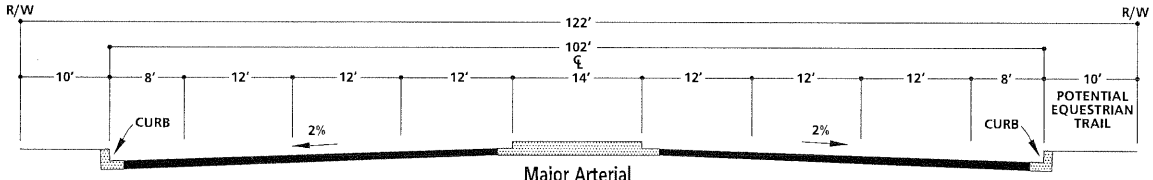


EXHIBIT 3-H

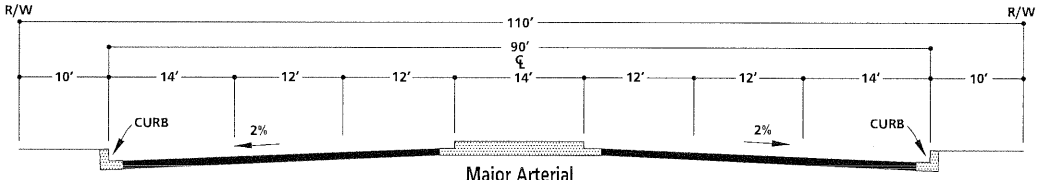
CITY OF CHINO
GENERAL PLAN ROADWAY CROSS-SECTIONS



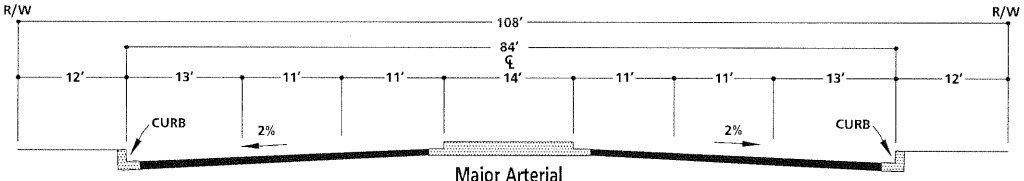
Major Arterial
Minimum 8 Lane
Provides 8 Traffic Lanes
Separated By a Median Without Parking



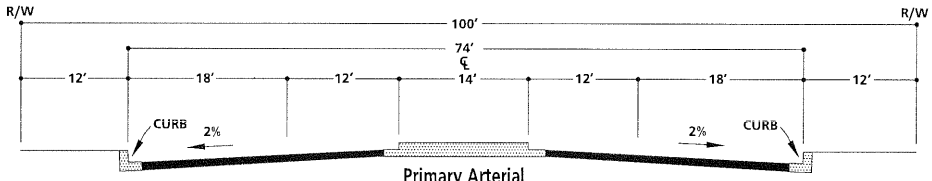
Major Arterial
Typical 6 Lane
Provides 6 Traffic Lanes With Bike Lane
Separated By a Median Without Parking



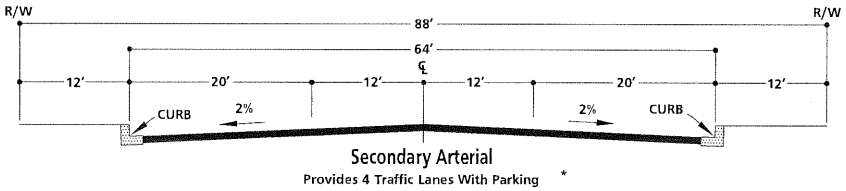
Major Arterial
Typical 6 Lane
No Bike Lanes



Major Arterial
Minimum 6 Lane
No Bike Lanes

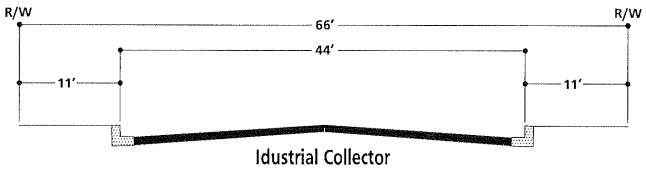


Primary Arterial
Typical 4 Lane
Provides 4 Traffic Lanes
Separated By a Median Without Parking



Secondary Arterial
Provides 4 Traffic Lanes With Parking *

* On approaches to intersections or where left turning movements are predominant between intersections, parking may be prohibited to provide for a painted median with left turn lanes

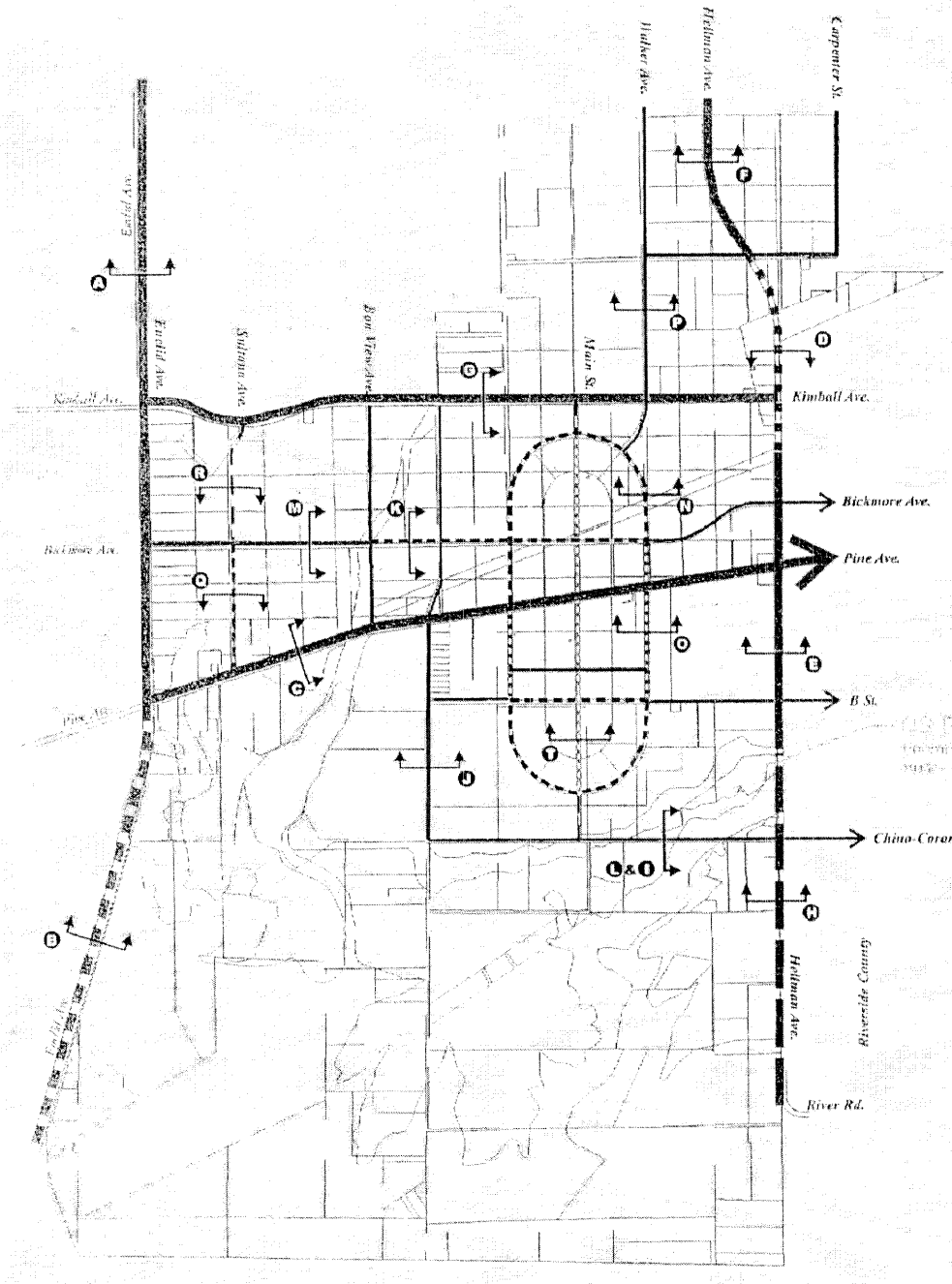


Idustrial Collector

SOURCE: CITY OF CHINO

EXHIBIT 3-I

CHINO AGRICULTURE PRESERVE SUBAREA 2 CIRCULATION PLAN



Roads

R	77' ROW	Commercial Collector, with Paseo (2 Lanes)
Q	82' ROW	Commercial Collector, with Paseo and Transit (2 Lanes)
P	74' ROW	Commercial Collector, Typical (2 Lanes)
J	83' ROW	Local Collector, with Paseo (2 Lanes)
M	94' ROW	Local Collector, with Paseo and Transit (2 Lanes)
N	89' ROW	Loop Local Collector, with Paseo (2 Lanes)
O	100' ROW	Loop Local Collector, with Paseo and Transit (2 Lanes)
I L	66' ROW	Local Collector, Typical (2 Lanes)
K	76' ROW	Local Collector, with Transit (2 Lanes)
T	90' ROW	Main Street Collector (2 Lanes)
C	130' ROW	Major Arterial, with Paseo (6 Lanes)
D	114' ROW	Major Arterial, with Paseo (4 Lanes)
E F G	104' ROW	Major Arterial, with Paseo (4 Lanes)
H	78' ROW	Major Arterial, without Paseo (4 Lanes)
A	200' ROW	Major Arterial (Expressway) North of Pine (8 Lanes)
B	200' ROW	Major Arterial (Expressway) South of Pine (6 Lanes)

Note: Alignments on the boundaries of the planning area are either outside or partially outside the Subarea 2 boundary, and are not included in acreage calculations.

B Cross Section (See figures 10A - 10J)

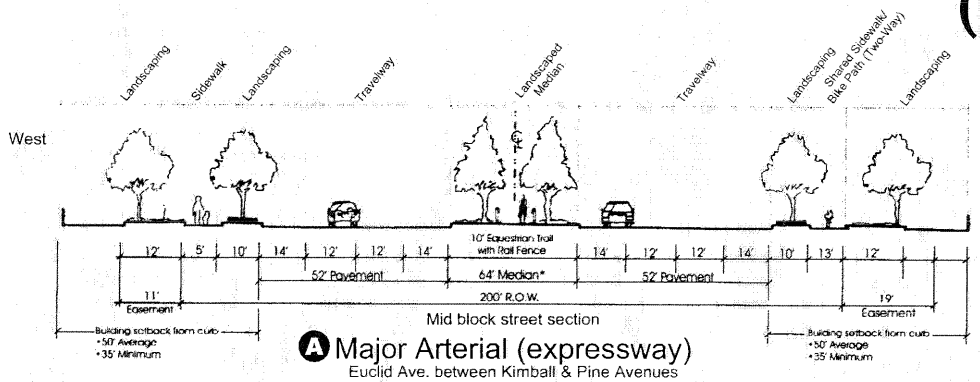
*To be realigned generally north of the 566-foot dam inundation elevation

N

URBAN CROSSROADS

EXHIBIT 3-J

CHINO AGRICULTURE PRESERVE SUBAREA 2 CIRCULATION PLAN ROADWAY CROSS-SECTIONS (PAGE 1 OF 5)

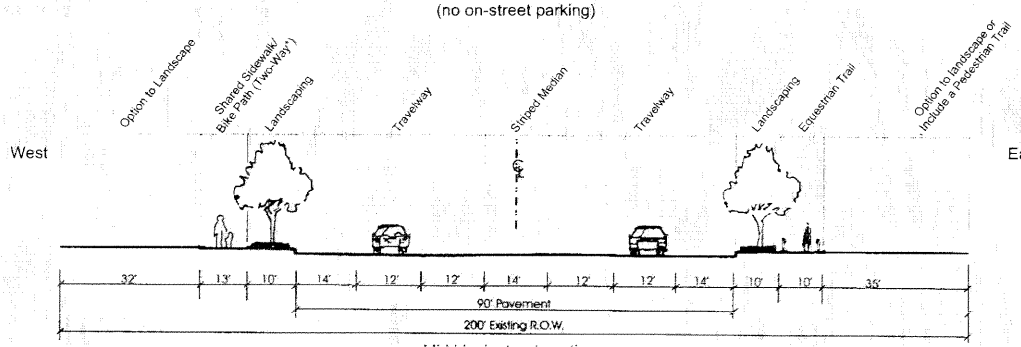


Mid block street section

A Major Arterial (expressway)

Euclid Ave. between Kimball & Pine Avenues
(no on-street parking)

*Turn lanes assumed as necessary in medians

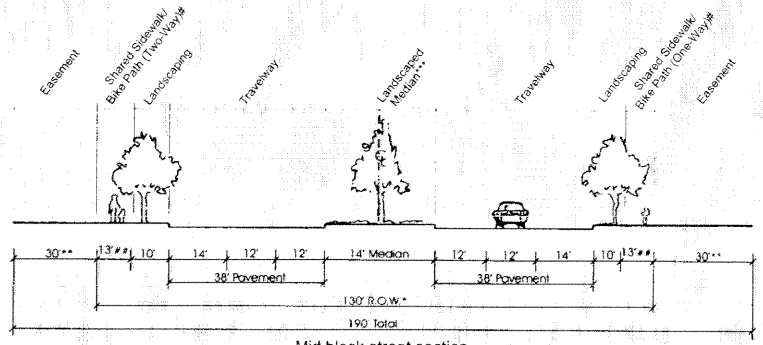


Mid block street section

B Major Arterial (expressway)

Euclid Avenue south of Pine Avenue
(no on-street parking)

*May ultimately be located on either the west or east side of the street depending on final design.



Mid block street section

C Major Arterial with Paseo

Pine Ave.
(no on-street parking)

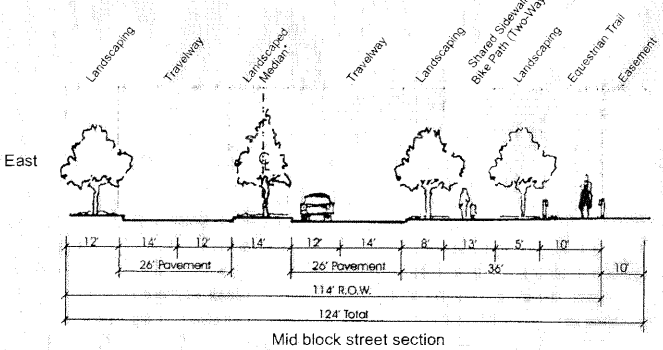
*Additional right-of-way will be required for the turn lanes at Euclid Avenue, Loop Road West and East, Main Street and Hellman Avenue.

**The easement may be narrowed between Loop Road West and Loop Road East if approved by the City Engineer and Director of Community Development.

***Turn lanes assumed as necessary in medians

Sidewalk may meander with a minimum of 10' of landscaping on either side.

##3' of shared sidewalk located within easement so total R.O.W. remains 130'.



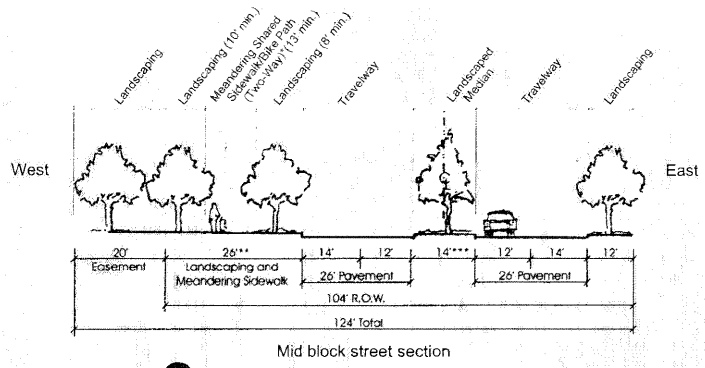
*Turn lanes assumed as necessary in medians

Mid block street section

D Major Arterial with Paseo

Hellman Ave. from SCE easement to Remington Ave.
(no on-street parking)

CHINO AGRICULTURE PRESERVE SUBAREA 2 CIRCULATION PLAN ROADWAY CROSS-SECTIONS (PAGE 2 OF 5)



Mid block street section

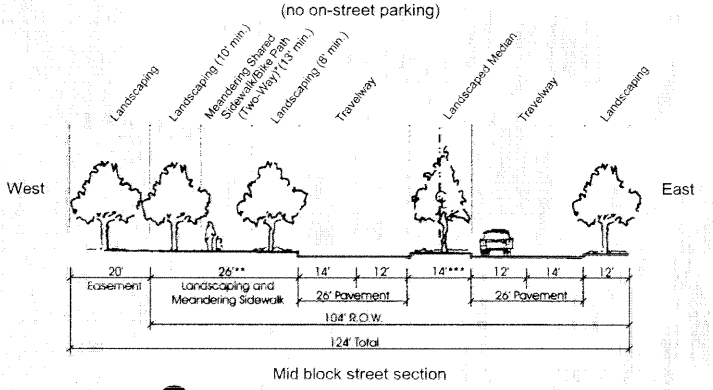
E Major Arterial with Paseo

Hellman from SCE easement to linear buffer
(no on-street parking)

*Bike path (8') and sidewalk (5') may be separated.

** Within the 26' landscaping and meandering sidewalk area, the sidewalk may meander; however, the minimums for each component (10', 13', and 8') must be maintained.

*** Turn lanes assumed as necessary in medians



Mid block street section

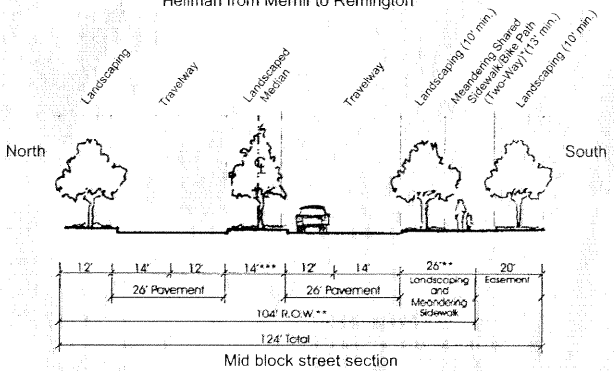
F Major Arterial with Paseo

Hellman from Merrill to Remington

*Bike path (8') and sidewalk (5') may be separated.

** Within the 26' landscaping and meandering sidewalk area, the sidewalk may meander; however, the minimums for each component (10', 13', and 8') must be maintained.

*** Turn lanes assumed as necessary in medians



Mid block street section

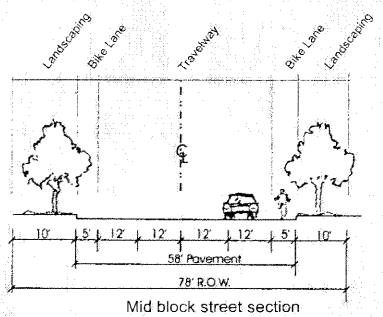
G Major Arterial with Paseo

Kimball Ave.
(no on-street parking)

*Bike path (8') and sidewalk (5') may be separated.

** Within the 26' landscaping and meandering sidewalk area, the sidewalk may meander; however, the minimums for each component (10', 13', and 10') must be maintained.

*** Turn lanes assumed as necessary in medians



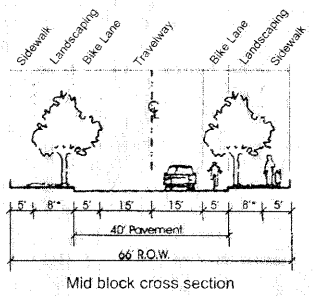
Mid block street section

H Major Arterial without Paseo

Hellman Ave. south of linear buffer
(no on-street parking)

EXHIBIT 3-J

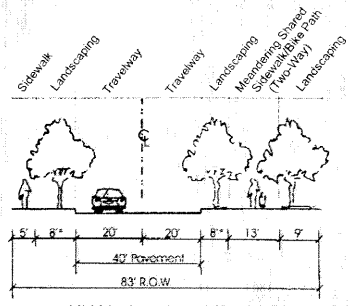
CHINO AGRICULTURE PRESERVE SUBAREA 2 CIRCULATION PLAN ROADWAY CROSS-SECTIONS (PAGE 3 OF 5)



Mid block cross section

I Local Collector, Typical
(with bike lane, no on-street parking)

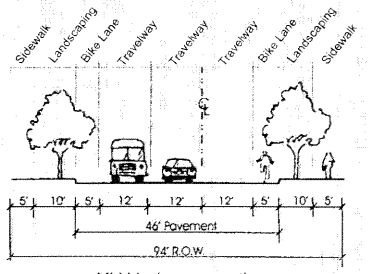
*On Bickmore, east of the Loop Road, an additional 2' is required in landscaping area within the right-of-way (10' total).



Mid block cross section

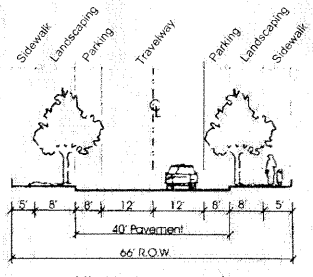
J Local Collector, with Paseo
(no on-street parking)

*On Bickmore, east of the Loop Road, an additional 2' is required in landscaping area within the right-of-way (10' total).



Mid block cross section

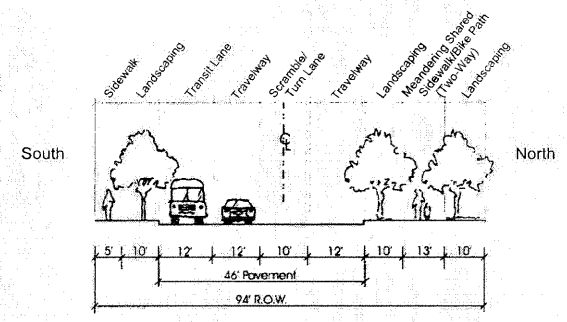
K Local Collector, with Transit
Bickmore, Bon View to Loop Road East
(no on-street parking)



Mid block cross section

L Local Collector, Typical
(with parking)

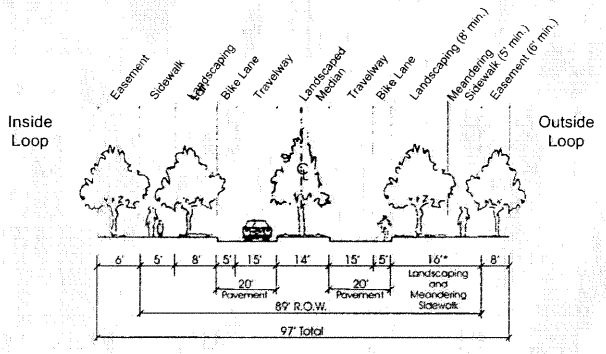
CHINO AGRICULTURE PRESERVE SUBAREA 2 CIRCULATION PLAN ROADWAY CROSS-SECTIONS (PAGE 4 OF 5)



Mid block street section

M Local Collector with Transit & Paseo

Bickmore, Euclid to Bon View &
"B" Street between East and west Loop Road
(no on-street parking)

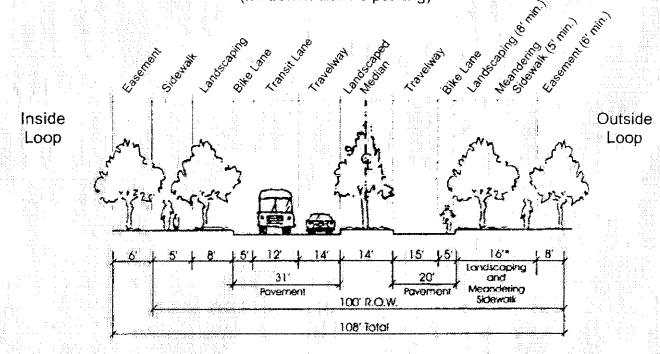


*Within the landscaping and meandering sidewalk area, the sidewalk may meander; however, the minimums for each component (8', 5') must be maintained.

Mid block street section

N Loop Local Collector with Paseo

(no transit and no parking)

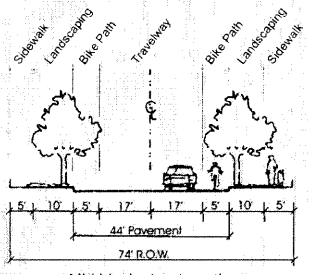


*Within the landscaping and meandering sidewalk area, the sidewalk may meander; however, the minimums for each component (8', 5') must be maintained.

Mid block street section

O Loop Local Collector with Paseo & Transit

(without on-street parking)



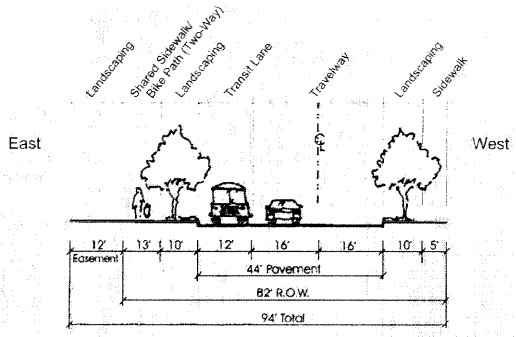
Mid block street section

P Commercial Collector, Typical

(no on-street parking)

EXHIBIT 3-J

CHINO AGRICULTURE PRESERVE SUBAREA 2 CIRCULATION PLAN ROADWAY CROSS-SECTIONS (PAGE 5 OF 5)

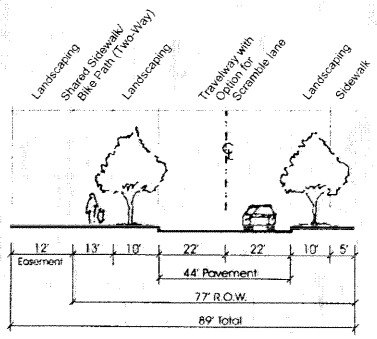


Mid block street section

Q Commercial Collector with Paseo & Transit

Sultana south of Bickmore

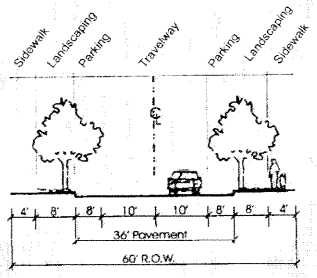
(no on-street parking)



Mid block street section

R Commercial Collector with Paseo

(no on-street parking)

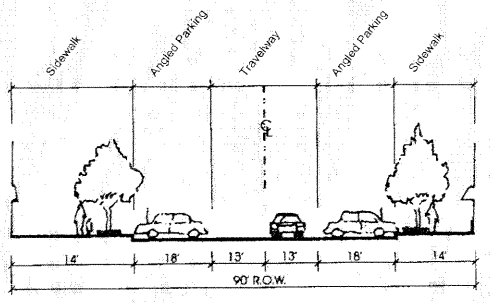


Mid block street section

S Typical Local Residential

General Access within a tract

(with on-street parking)



Mid block street section

T Main Street Collector

(angled parking)

The Chino Agricultural Preserve Subarea 1 ("Subarea 1") Circulation Plan is depicted on Exhibit 3-K. Kimball Avenue and El Prado Avenue are designated as Secondary Arterials within Subarea 1. Mountain Avenue and Bickmore Avenue are both designated as Industrial Collectors. Pine Avenue, between the SR-71 Freeway and Pine Avenue, is designated as a Primary Arterial. Various funded improvements are being constructed in conjunction with The Preserve Phase I and Phase II developments.

Improvements that will occur in conjunction with other cumulative projects have been identified while conducting the study. The proposed improvements entail the geometric redesign and installation of a traffic signal at the intersection of Euclid Avenue (SR-83) at Bickmore Avenue. The geometric design requirements for this intersection have been developed under the direction of City staff and through extensive discussions with the California Department of Transportation ("Caltrans"). Exhibit 3-L depicts the approved geometric design for the signalized intersection of Euclid Avenue (SR-83) at Bickmore Avenue.

The ultimate improvements at the intersection of Hellman Avenue (NS) at Pine Avenue / Schleisman Road (EW) have been the subject of extensive discussions between the City of Chino and the County of Riverside. The planned ultimate improvements are as follows:

- Northbound – Two Left Turn Lanes, Two Through Lanes, One Exclusive Right Turn Lane.

- Southbound – Two Left Turn Lanes, Two Through Lanes, and One Exclusive Right Turn Lane.

- Eastbound – Two Left Turn Lanes, Three Through Lanes, One Exclusive Right Turn Lane with Right Turn Overlap Phase.

- Westbound - Two Left Turn Lanes, Three Through Lanes, and One exclusive Right Turn Lane with Right Turn Overlap Phase.

EXHIBIT 3-K

CHINO AGRICULTURE PRESERVE SUBAREA 1 CIRCULATION PLAN

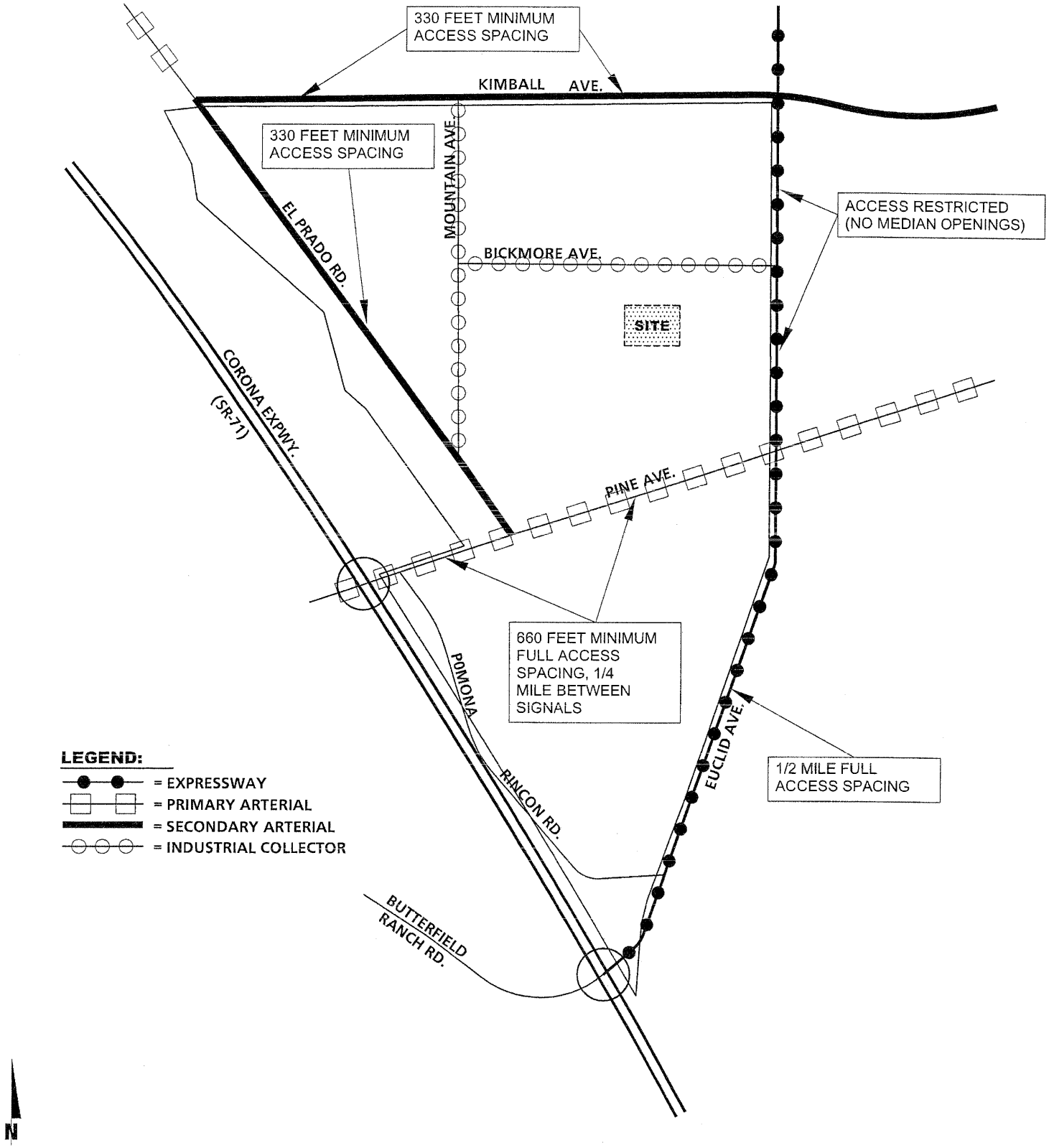
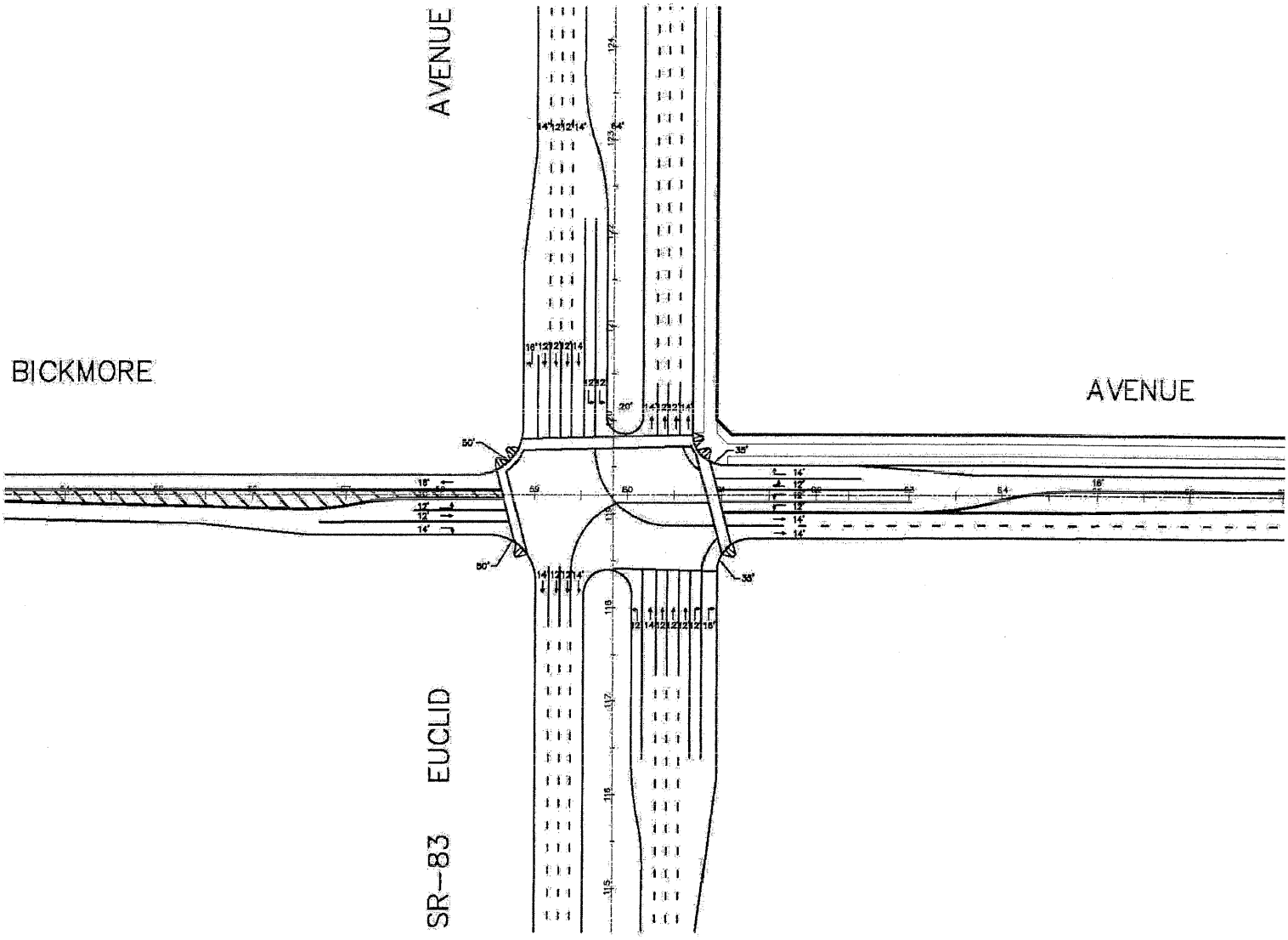


EXHIBIT 3-L

EUCLID AVENUE (SR-83) AT BICKMORE AVENUE
APPROVED GEOMETRIC DESIGN



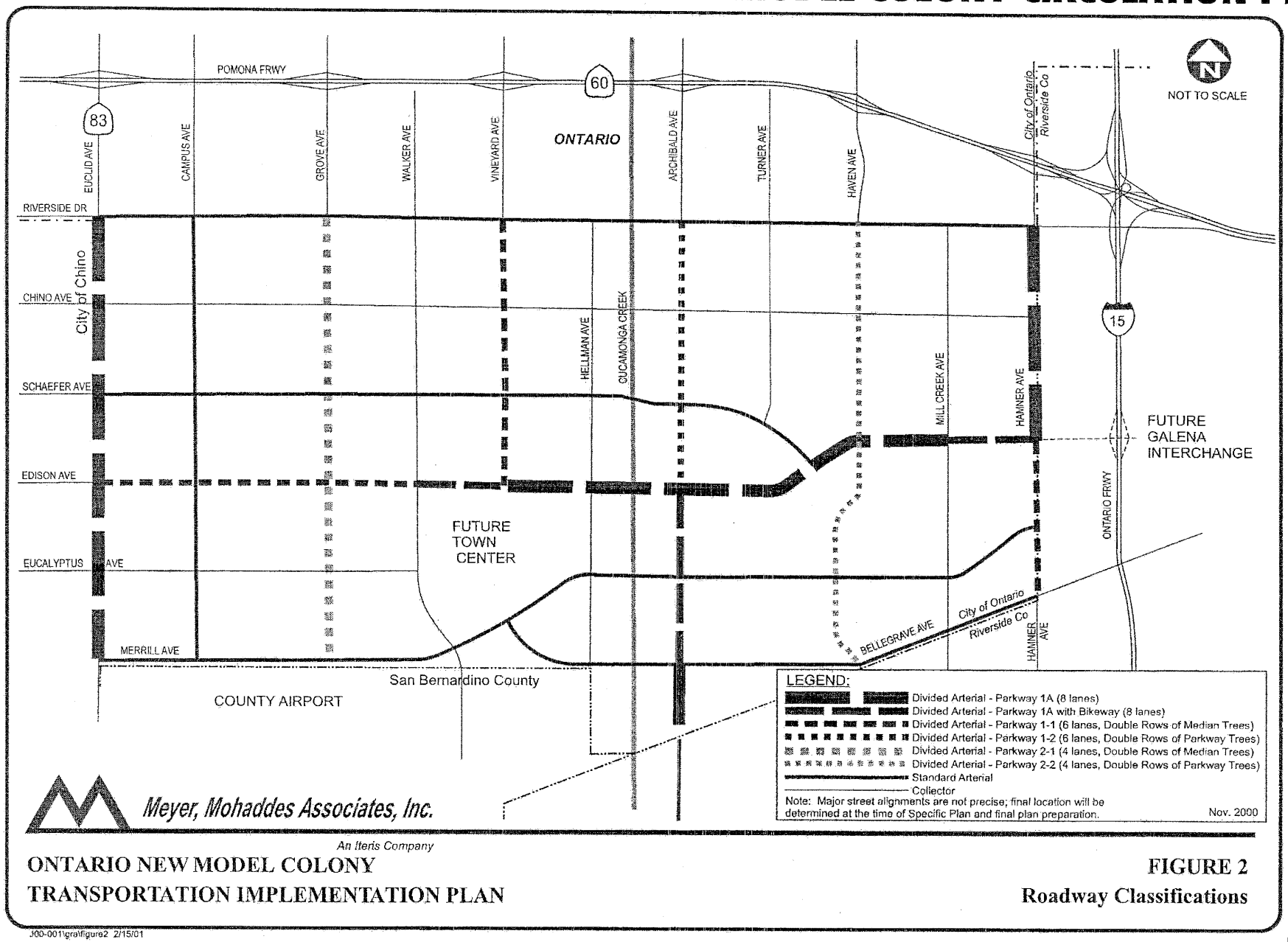
The New Model Colony Circulation Plan and roadway cross-sections are shown on Exhibits 3-M and 3-N, respectively. Schaefer Avenue, east of Euclid Avenue (SR-83), is designated as a Standard Arterial. Edison Avenue, east of Euclid Avenue (SR-83), is designated as a 6-lane Divided Arterial. Eucalyptus Avenue, east of Euclid Avenue (SR-83), is designated as a Collector. Merrill Avenue, east of Euclid Avenue (SR-83), is designated as a Standard Arterial.

The Riverside County General Plan Circulation Element and General Plan roadway cross-sections in the vicinity of the proposed project are depicted on Exhibits 3-O and 3-P, respectively. Limonite Avenue, Schleisman Road, and Archibald Street are designated as 6-lane Urban Arterial Highways throughout the study area. Hamner Avenue is designated as a 6-lane Urban Arterial Highway, north of Schleisman Road, and as a 4-lane Major Highway, south of Schleisman Road. Chandler Street is designated as a 4-lane Arterial Highway, between Hellman Avenue and Archibald Street, and as a 4-lane Secondary Highway to the east of Archibald Street. Sumner Avenue and River Road (south of Archibald Street) are designated as 4-lane Major Highways. Harrison Avenue, Cleveland Avenue, River Road (west of Archibald Street), Bluff Street (east of River Road), Second Street, (east of River Road), and Lincoln Avenue are all designated as 4-lane Secondary Highways.

Based upon research conducted in conjunction with this study effort, a number of roadway improvements are funded and will be constructed prior to project occupancy. The study area improvements expected prior to project occupancy include the connection of Pine Avenue to the SR-71 Freeway, the connection of Schleisman Road to the I-15 Freeway and construction of a new interchange at this location, and various improvements associated with The Preserve ongoing development. All of these roadway improvements are anticipated to be constructed prior to the project opening year of 2019.

EXHIBIT 3-M

NEW MODEL COLONY CIRCULATION PLAN



URBAN CROSSROADS

NEW MODEL COLONY ROADWAY CROSS-SECTIONS

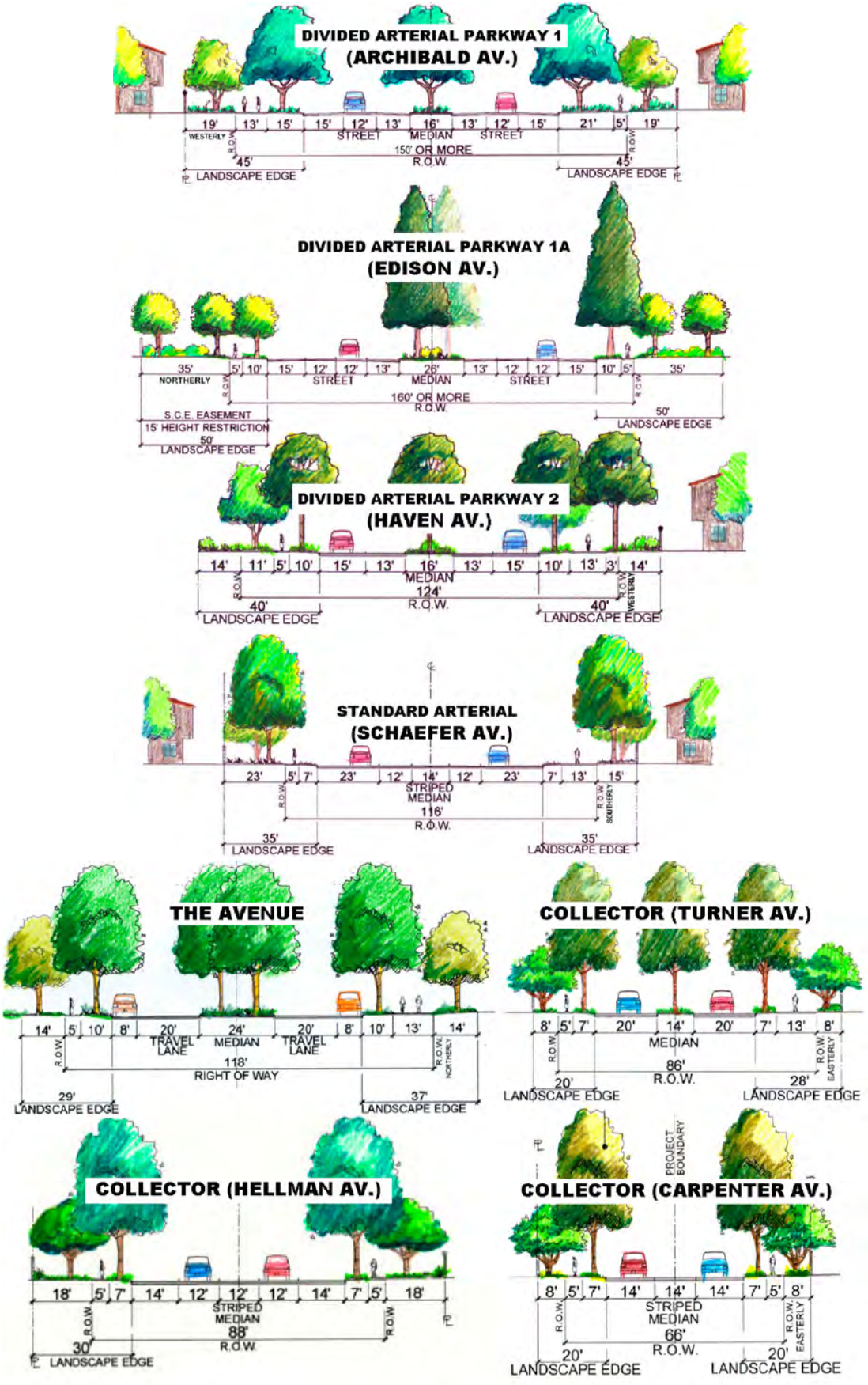
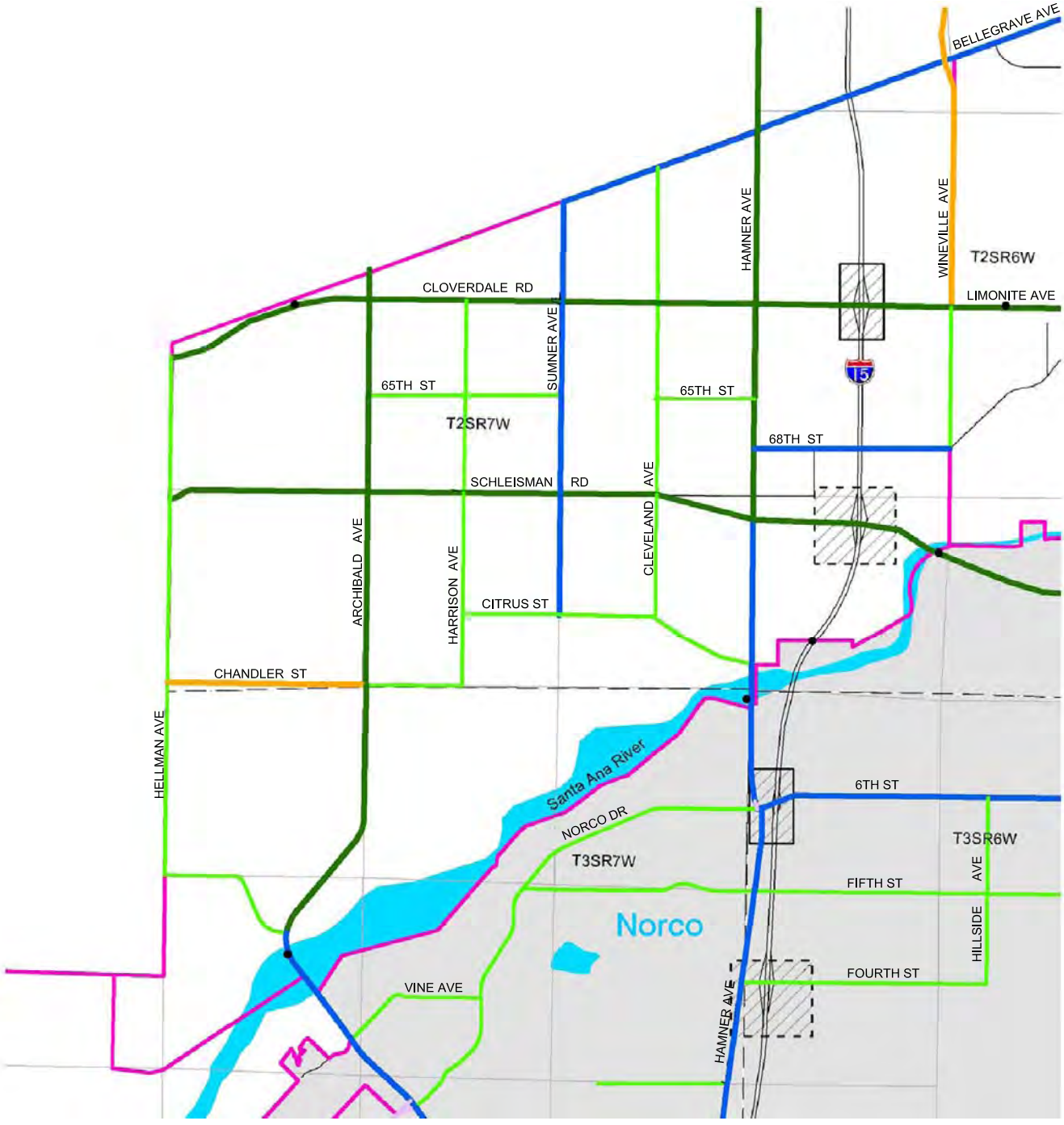


EXHIBIT 3-O

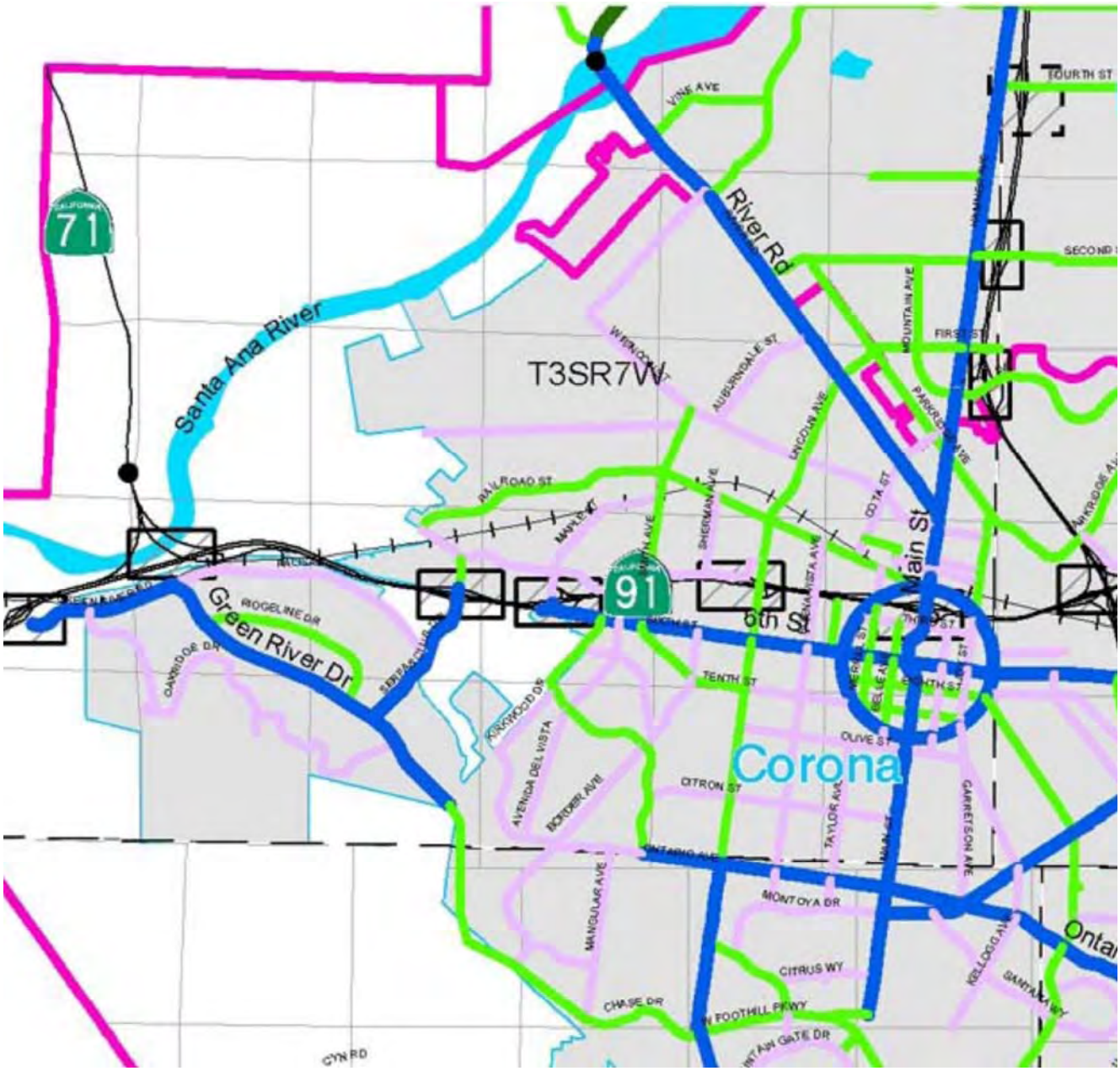
RIVERSIDE COUNTY GENERAL PLAN CIRCULATION ELEMENT (PAGE 1 OF 2)



SOURCE: RIVERSIDE COUNTY INTEGRATED PROJECT (RCIP)

EXHIBIT 3-O

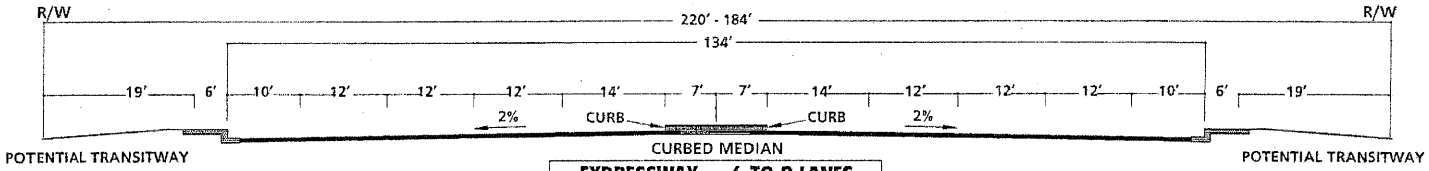
RIVERSIDE COUNTY GENERAL PLAN CIRCULATION ELEMENT (PAGE 2 OF 2)



SOURCE: RIVERSIDE COUNTY INTEGRATED PROJECT (RCIP)

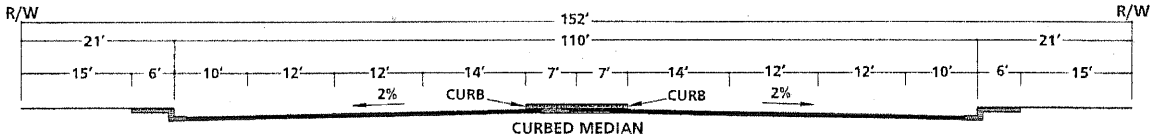
EXHIBIT 3-P

RIVERSIDE COUNTY GENERAL PLAN ROADWAY CROSS-SECTIONS

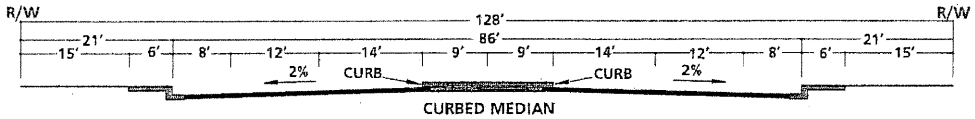


EXPRESSWAY - 6 TO 8 LANES

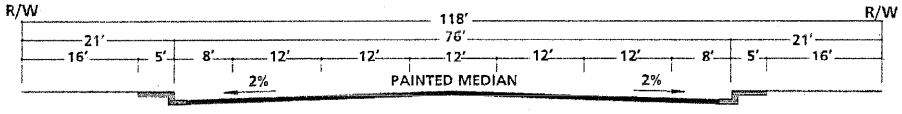
MEDIAN WIDTH MAY VARY FROM 14' TO 62'



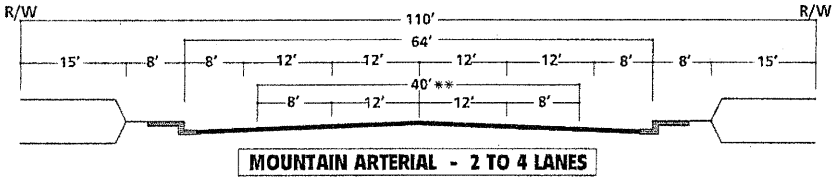
URBAN ARTERIAL HIGHWAY *



ARTERIAL HIGHWAY *

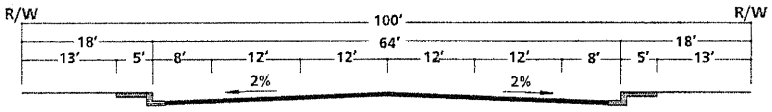


MAJOR HIGHWAY - 4 LANES

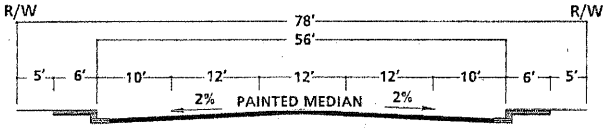


MOUNTAIN ARTERIAL - 2 TO 4 LANES

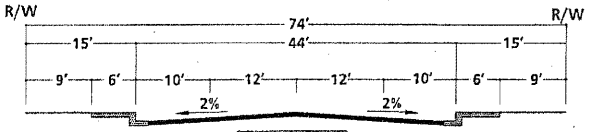
** 2 LANE SECTION



SECONDARY HIGHWAY



INDUSTRIAL COLLECTOR



COLLECTOR

* IMPROVEMENTS MAY BE RECONFIGURED TO ACCOMMODATE EXCLUSIVE TRANSIT LANES OR ALTERNATIVE LANE ARRANGEMENTS ADDITIONAL RIGHT OF WAY MAY BE REQUIRED AT INTERSECTIONS TO ACCOMMODATE ULTIMATE IMPROVEMENTS FOR STATE HIGHWAYS SHALL CONFORM TO CALTRANS DESIGN STANDARDS.

N

SOURCE: COUNTY OF RIVERSIDE

4.0 FUTURE TRAFFIC CONDITIONS

This section of the report describes the development of the future year traffic volume forecasts, and presents the resulting traffic volumes which will be used for traffic operations analysis. Future traffic conditions without the project are presented first, followed by the future with project traffic volumes. Traffic signal warrant analysis for future conditions is also presented in this section.

4.1 Future Without and With Project Traffic Conditions

As described within Section 1.3.1, the General Plan Buildout (Post-2030) ADT volume forecasts are developed using a growth increment process based on volumes predicted by the City of Chino traffic model. The growth increment for General Plan Buildout (Post-2030) conditions on each roadway segment is the increase in City of Chino traffic model volume from existing to General Plan Buildout (Post-2030) conditions. The roadway volume increase is taken by calculating the delta (growth) between the City of Chino Existing traffic model and the City of Chino General Plan Buildout (Post 2030) traffic model. The final General Plan Buildout (Post-2030) roadway segment volume used for analysis purposes is then determined by adding the growth increment volume to the existing counted volume. Appendix "D" includes all of the worksheets for ADT growth increment calculation, peak hour directional growth increment calculation, and future peak hour intersection turning movement calculations.

In addition to the procedure described above, the initial City of Chino traffic model data was further refined to generate the final output volumes used in this traffic analysis. The existing conditions model roadway network/volumes was/were modified to accurately represent the existing roadway network. Features including the Pine Avenue connection from El Prado Road to the Pine Avenue/SR-71 interchange and the extension of Main Street north of Kimball Avenue were removed. In addition, the level of TAZ and roadway network detail included in the

City of Chino traffic model for the Eastvale area was not suitable for study area intersection analysis. Therefore, manual changes to the roadway network and traffic volume distribution were performed to yield a more disaggregate loading in the Eastvale area. Appendix "E" includes all of the modifications made to the City of Chino initial traffic model results for purposes of this analysis.

In typical traffic impact analyses conducted for development projects in the City of Chino, the method for determining Interim Year volumes is the manual cumulative build-up approach. Interim Year traffic volumes are estimated by factoring existing traffic volumes to the Interim Year by way of an ambient traffic growth factor and then superimposing the traffic volumes associated with other developments which have been approved, built but not occupied, or are being processed concurrently. This procedure has not been applied because of the large study area and resulting number of cumulative projects.

As agreed upon by City staff, the 2019 Interim Year Without Project traffic volumes are estimated by way of a socio-economic growth interpolation approach in order to avoid overstating other development project traffic impacts and to develop 2019 Interim Year traffic volumes that are in proportion to the growth expected between Existing and General Plan Buildout (Post-2030) conditions.

The manual cumulative build-up approach is considered less suitable in this analysis for several reasons. Given the size of the study area, which includes analysis locations in the Cities of Chino, Chino Hills, Norco, Corona, and unincorporated Riverside County, there are a large number (79) of other developments to take into consideration. Table 4-1 provides a list of the other development projects and land uses identified in the subareas surrounding the Edgewater project which are expected to undergo significant near-term growth: the Chino Agricultural Preserve Subareas 1 and 2, the remainder of the City of Chino, the New Model Colony in the City of Ontario, and the Eastvale area in the County of Riverside. With the manual cumulative build-up approach, traffic is

TABLE 4-1 (Page 1 of 3)

2019 INTERIM YEAR OTHER DEVELOPMENT PROJECTS BY SUBAREA

#	PROJECT NAME	LAND USE DESCRIPTION	QUANTITY	UNIT
		Chino Agriculture Preserve Subarea 1		
1	Chino South Business Park Building "E"	Heavy Warehouse	548.775	TSF
2	Chino South Business Park Building "F"	Heavy Warehouse	182.5	TSF
3	Watson Commerce Center Building "816"	Heavy Warehouse	297.107	TSF
4	Watson Commerce Center Building "817"	Heavy Warehouse	423	TSF
5	Watson Commerce Center Building "818"	Heavy Warehouse	301.09	TSF
6	Watson Commerce Center Building "819"	Heavy Warehouse	273.07	TSF
7	Chino South Business Park Building "2" (Majestic)	Heavy Warehouse	430	TSF
8	Chino South Business Park Building "3" (Majestic)	Heavy Warehouse	390	TSF
9	Chino South Industrial Park Building "H"	Heavy Warehouse	226.094	TSF
10	Stahl Property	Heavy Warehouse	1482.914	TSF
11	Mountain Avenue Industrial Building	Heavy Warehouse	220	TSF
12	El Prado Road Industrial Building	Heavy Warehouse	393.54	TSF
		Chino Agriculture Preserve Subarea 2		
13	Apple Farm Residential Project	Townhomes/Condominiums	98	DU
		Single-Family Detached Residential	47	DU
14	Tentative Tract Map 16797	Single-Family Detached Residential	180	DU
15	Brehm Residential Development	Single-Family Detached Residential	95	DU
16	The Preserve (Phase I)	Apartment	137	DU
		Church	155.73	TSF
		Community Rec Center	11.5	TSF
		Condo/Townhouse	1121	DU
		Neighborhood/Pocket Parks	10.9	AC
		Single-Family Detached Residential	347	DU
		Elementary School	12	AC
17	The Preserve (Phase II)	Apartment	159	DU
		Church	54.45	TSF
		Community Rec Center	14.64	TSF
		Condo/Townhouse	685	DU
		Neighborhood Commercial	16.12	TSF
		Neighborhood/Pocket Parks	4.1	AC
		Single-Family Detached Residential	236	DU
18	McBride's Self Storage and RV Storage Project	Self-Storage	148.33	TSF
		Leasing Office	5.36	TSF
		Living Quarter	1	TSF
		Outdoor R.V. Storage	897	SPACES
		Enclosed R.V. Storage	33	SPACES
		Retail	17.4	TSF
18	Future Development by PGP Partners	Gas Station with Convenience Market	4.2	TSF
		Retail	12.25	TSF
		Office	28.8	TSF
		Light Industrial	39.565	TSF
19	Van Vliet Site	Apartment	250	DU
		Townhomes/Condominiums	461	DU
		Single-Family Detached Residential	231	DU
20	De Boer Site	Single-Family Detached Residential	305	DU
		Townhomes/Condominiums	76	DU
		Shopping Center	32.67	TSF
21	TAZ 32	Single-Family Detached Residential	162	DU
		Remainder of the City of Chino		
22	College Park (Phase I)	Community College	7500	STU
		Park	4.95	AC
		Single-Family Detached Residential	841	DU
23	Arnel Residential Development Tract 16953	Townhomes/Condominiums	50	DU
		Single-Family Detached Residential	144	DU
24	Single Family Detached Housing	Single-Family Detached Residential	245	DU
25	Pinnacle Homes	Single-Family Detached Residential	65	DU
26	Thayer - Calvary Reformed Church	Church/Day Care	122.288	TSF
27	Shopping Center (150,000 SF)	Shopping Center	150	TSF
28	Crystal Lane Residential Development	Townhomes/Condominiums	236	DU
		Single-Family Detached Residential	72	DU
29	Future Townhomes (4.63 acres)	Townhomes/Condominiums	93	DU
30	Shopping Center (15.01 acres)	Shopping Center	165	TSF
31	General Office (4.9 acres)	General Office	75	TSF

TABLE 4-1 (Page 2 of 3)

2019 INTERIM YEAR OTHER DEVELOPMENT PROJECTS BY SUBAREA

#	PROJECT NAME	LAND USE DESCRIPTION	QUANTITY	UNIT
New Model Colony (City of Ontario)				
32	Armstrong Ranch	Single-Family Detached Residential	1544	DU
		Commercial	87	TSF
33	Countryside	Single-Family Detached Residential	819	DU
34	Edenglen	Single-Family Detached Residential	277	DU
		Townhomes/Condominiums	307	DU
		Commercial	217.52	TSF
		Business Park	550	TSF
35	Esperanza	Townhomes/Condominiums	496	DU
		Single-Family Detached Residential	914	DU
36	Great Park	Townhomes/Condominiums	948	DU
		Single-Family Detached Residential	379	DU
37	Parkside	Townhomes/Condominiums	1510	DU
		Single-Family Detached Residential	437	DU
		Commercial	115	TSF
38	Rich Haven	Townhomes/Condominiums	1524	DU
		Single-Family Detached Residential	2732	DU
		Commercial	848.2	TSF
39	Subarea 29	Single-Family Detached Residential	2291	DU
		Commercial	87	TSF
40	The Avenue	Townhomes/Condominiums	120	DU
		Single-Family Detached Residential	2206	DU
		Commercial	200	TSF
41	The Lakes	Townhomes/Condominiums	1000	DU
		Single-Family Detached Residential	1051	DU
		Commercial	968.3	TSF
42	West Haven	Single-Family Detached Residential	753	DU
		Commercial	87	TSF
Eastvale Community Plan Area (County of Riverside) {continued on following page}				
43	TR 28742	Single-Family Detached Residential	136	DU
44	TR 29997	Single-Family Detached Residential	122	DU
45	TR 30480	Single-Family Detached Residential	306	DU
46	TR 30576	Single-Family Detached Residential	175	DU
47	TR 30762	Single-Family Detached Residential	181	DU
48	TR 30785	Single-Family Detached Residential	41	DU
49	TR 30817	Single-Family Detached Residential	271	DU
50	TR 30825	Single-Family Detached Residential	35	DU
51	TR 30893	Single-Family Detached Residential	138	DU
52	TR 30896	Single-Family Detached Residential	73	DU
53	TR 30913	Single-Family Detached Residential	266	DU
54	TR 30931	Single-Family Detached Residential	419	DU
55	TR 30933	Single-Family Detached Residential	65	DU
56	TR 30971	Single-Family Detached Residential	526	DU
57	TR 31252	Single-Family Detached Residential	206	DU
58	TR 31309	Single-Family Detached Residential	294	DU
59	TR 31476	Single-Family Detached Residential	153	DU
60	TR 31492	Single-Family Detached Residential	187	DU
61	TR 31580	Single-Family Detached Residential	132	DU
62	TR 31622	Single-Family Detached Residential	95	DU
63	TR 31643	Single-Family Detached Residential	139	DU
64	TR 31725	Single-Family Detached Residential	128	DU
65	TR 31726	Single-Family Detached Residential	188	DU
66	TR 31803	Single-Family Detached Residential	183	DU
67	TR 31826	Single-Family Detached Residential	349	DU
68	TR 31931	Single-Family Detached Residential	47	DU
69	TR 31961	Single-Family Detached Residential	170	DU
70	TR 32125	Single-Family Detached Residential	35	DU
71	TR 32491	Single-Family Detached Residential	153	DU
72	TR 32797	Single-Family Detached Residential	119	DU
73	TR 32821	Single-Family Detached Residential	147	DU
74	TR 32909	Single-Family Detached Residential	140	DU
75	TR 34014	Single-Family Detached Residential	152	DU
76	TR 35400	Townhomes/Condominiums	228	DU

TABLE 4-1 (Page 3 of 3)

2019 INTERIM YEAR OTHER DEVELOPMENT PROJECTS BY SUBAREA

#	PROJECT NAME	LAND USE DESCRIPTION	QUANTITY	UNIT
77	PP 19515	Retail & Fast Food Rest. w/Drive-Thru	8.162	TSF
		Bank with ATM	4	TSF
78	PP 19946	Shopping Center/Fast Food Rest. w/ Drive Thru/etc.	98.689	TSF
79	PP 22030	Park	421.415	TSF

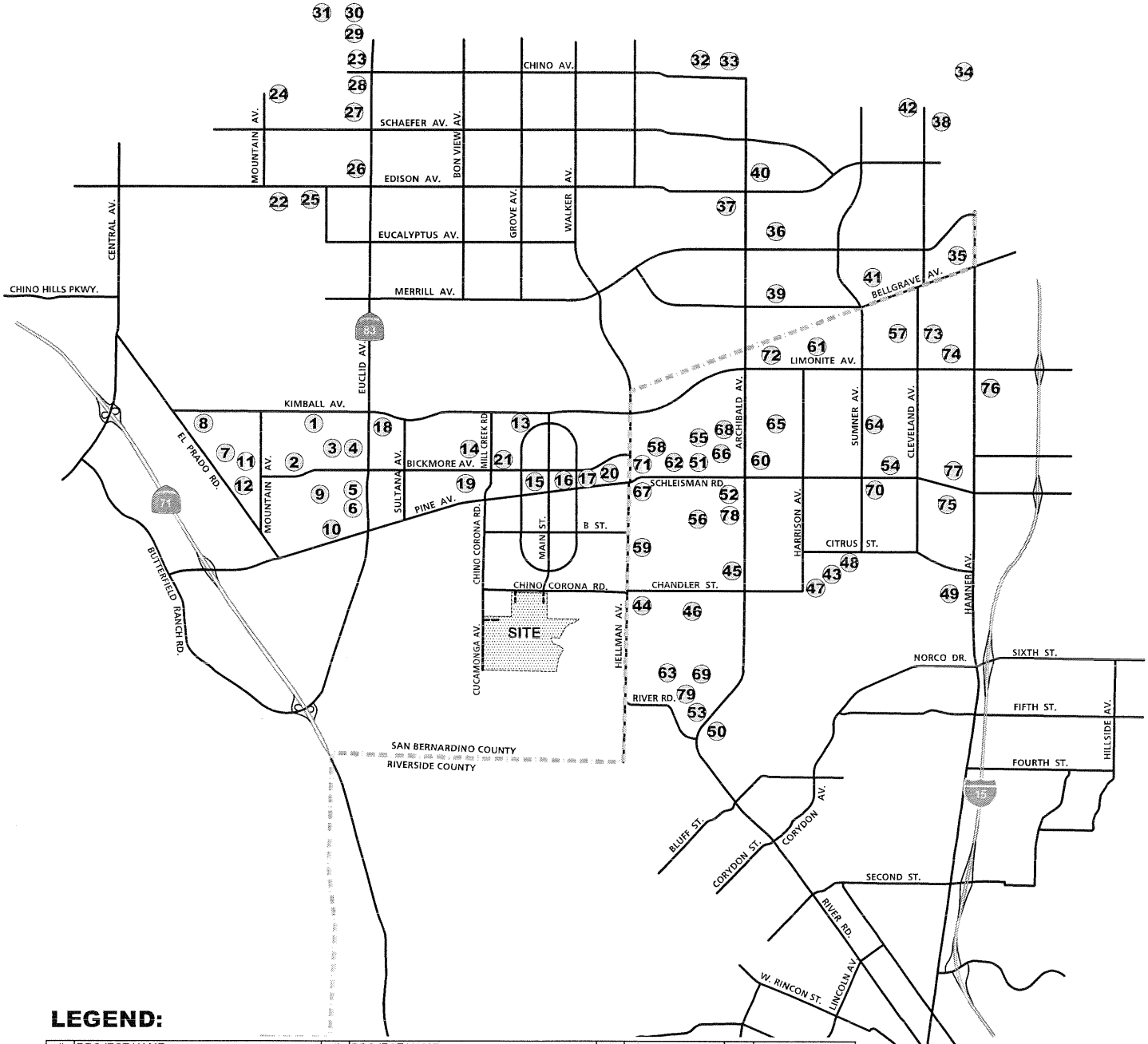
generated for each project and distributed throughout the study area based on a project trip distribution pattern. However, the interaction of trips between other developments (and, to a certain extent, with existing development) is not taken into account. For example, a planned residential subdivision dwelling unit may generate an outbound trip-end in the morning which, in turn, becomes an inbound trip-end for a planned commercial business. With the manual cumulative build-up approach, this single trip would be double-counted. Instead of building up trip-ends (e.g., leaving the home or arriving at work), this approach builds up whole trips. Therefore, the manual cumulative build-up approach tends to overstate the impact of other developments, especially in cases where there a large number of developments to consider and heavy levels of interaction between developments/existing uses are expected.

In addition, the manual cumulative build-up approach may overstate Interim Year traffic volumes in the context of the long range traffic volumes being developed via the City of Chino traffic model as part of the City's General Plan update. The City of Chino traffic model takes into account the interaction of trips and, therefore, does not double-count. It is highly likely that use of the manual cumulative build-up approach would, in some cases, yield traffic volumes that exceed the long range model volumes, creating an Interim Year condition that is both unrealistic and in conflict with the City's long range planning.

Thus, a socio-economic growth interpolation approach has been used to estimate the 2019 Interim Year traffic volumes. The City of Chino and surrounding jurisdictions were contacted in order to determine all of the projects planned within the study area that would have an impact on future traffic volumes at the study area intersections. Exhibit 4-A shows the location of the seventy-nine (79) identified other development projects. Twelve (12) other development projects are anticipated in Chino Agricultural Preserve Subarea 1, nine (9) projects are anticipated in Chino Agricultural Preserve Subarea 2, ten (10) projects are anticipated in the remainder of the City of Chino, eleven (11) projects are anticipated in the New Model Colony, and

EXHIBIT 4-A

OTHER DEVELOPMENT LOCATION MAP



LEGEND:

#	PROJECT NAME	#	PROJECT NAME	#	PROJECT NAME	#	PROJECT NAME
1	Chino South Business Park Bldg "E"	21	TAZ 32	41	The Lakes	61	TR 31580
2	Chino South Business Park Bldg "F"	22	College Park (Phase I)	42	West Haven	62	TR 31622
3	Watson Commerce Center Bldg "816"	23	Arnel Residential Development Tract 16953	43	TR 28742	63	TR 31643
4	Watson Commerce Center Bldg "817"	24	Single Family Detached Housing	44	TR 29997	64	TR 31725
5	Watson Commerce Center Bldg "818"	25	Pinnacle Homes	45	TR 30480	65	TR 31726
6	Watson Commerce Center Bldg "819"	26	Thayer - Calvary Reformed Church	46	TR 30576	66	TR 31803
7	Chino South Business Park Bldg "2" (Majestic)	27	Shopping Center (150,000 SF)	47	TR 30762	67	TR 31826
8	Chino South Business Park Bldg "3" (Majestic)	28	Crystal Lane Residential Development	48	TR 30785	68	TR 31931
9	Chino South Industrial Park Bldg "H"	29	Future Townhomes (4.63 acres)	49	TR 30817	69	TR 31961
10	Stahl Property	30	Shopping Center (15.01 acres)	50	TR 30825	70	TR 32125
11	Mountain Avenue Industrial Building	31	General Office (4.9 acres)	51	TR 30893	71	TR 32491
12	El Prado Road Industrial Building	32	Armstrong Ranch	52	TR 30896	72	TR 32797
13	Apple Farm Residential Project	33	Countryside	53	TR 30913	73	TR 32821
14	Tentative Tract Map 16797	34	Edenglen	54	TR 30931	74	TR 32909
15	Brehm Residential Development	35	Esperanza	55	TR 30933	75	TR 34014
16	The Preserve (Phase I)	36	Great Park	56	TR 30971	76	TR 35400
17	The Preserve (Phase II)	37	Parkside	57	TR 31252	77	PP 19515
18	McBride's Self Storage & RV Storage Project	38	Rich Haven	58	TR 31309	78	PP 19946
19	Van Vliet Site	39	Subarea 29	59	TR 31476	79	PP 22030
20	De Boer Site	40	The Avenue	60	TR 31492		

thirty-seven (37) projects are anticipated in the Eastvale area. The land use ("LU") information for all of the identified other developments anticipated by 2019 has also been compiled (see Table 4-1).

The LU information for these other development projects is then converted into socio-economic data ("SED"). This has been accomplished via the recommended LU-to-SED conversion factors included in Appendix "F". Table 4-2 provides a summary of the other development SED by subarea, with a more detailed summary by project provided in Appendix "F". A weighting factor has been applied to the separate SED variables, combining them into a single SED "mass" for the purposes of interpolating. As shown on Table 4-2, the New Model Colony is expected to see the greatest SED growth among the subareas by 2019 Interim Year conditions.

The existing and General Plan Buildout (Post-2030) SED for each of the subareas has been included in Table 4-3, with a more detailed summary provided in Appendix "F". The difference between the existing SED and General Plan Buildout (Post-2030) SED represents the SED growth expected between these two conditions. A weighting factor has again been applied to the SED growth, resulting in a single SED growth mass, in order to interpolate. As shown on Table 4-3, the New Model Colony is also expected to see the greatest SED growth among the subareas by General Plan Buildout (Post-2030) conditions.

In Table 4-4, the other development SED mass is compared with the existing-to General Plan Buildout (Post-2030) conditions SED growth mass, resulting in a growth interpolation factor for each subarea. This interpolation factor represents the portion of SED growth through General Plan Buildout (Post-2030) conditions expected by 2019 Interim Year conditions. The Chino Agricultural Preserve Subarea 1 interpolation factor of 0.79, for instance, indicates that 79 percent of the SED growth expected in this subarea by General Plan Buildout (Post-2030) conditions is planned to be in place by 2019.

TABLE 4-2

OTHER DEVELOPMENT SOCIO-ECONOMIC DATA (SED) SUMMARY BY SUBAREA

	SINGLE FAMILY DWELLING UNITS	MULTIPLE FAMILY DWELLING UNITS	RETAIL EMPLOYMENT	TOTAL EMPLOYMENT	TOTAL
Chino Agriculture Preserve Subarea 1					
Quantity	0	0	0	5,168	
Weighting Factor[1]	10	7	20	3	
Other Dev. SED Mass	0	0	0	15,504	15,504
Chino Agriculture Preserve Subarea 2					
Quantity	1,603	2,987	134	922	
Weighting Factor[1]	10	7	20	3	
Other Dev. SED Mass	16,030	20,909	2,679	2,766	42,384
Remainder of the City of Chino					
Quantity	1,367	379	473	1,836	
Weighting Factor[1]	10	7	20	3	
Other Dev. SED Mass	13,670	2,653	9,450	5,508	31,281
New Model Colony (City of Ontario)					
Quantity	13,403	5,905	4,026	8,708	
Weighting Factor[1]	10	7	20	3	
Other Dev. SED Mass	134,030	41,335	80,519	26,123	282,007
Eastvale Community Plan Area (County of Riverside)					
Quantity	5,771	228	166	572	
Weighting Factor[1]	10	7	20	3	
Other Dev. SED Mass	57,710	1,596	3,326	1,716	64,348
TOTAL OTHER DEVELOPMENT SED MASS					435,524

[1] Weighting factor combines the separate SED variables into a single Development "Mass" for the purposes of interpolating.

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TABLE 4-3

EXISTING-TO-GENERAL PLAN BUILDOUT (POST-2030) CONDITIONS
SOCIO-ECONOMIC DATA (SED) GROWTH BY SUBAREA

	SINGLE FAMILY DWELLING UNITS	MULTIPLE FAMILY DWELLING UNITS	RETAIL EMPLOYMENT	TOTAL EMPLOYMENT	TOTAL
Chino Agriculture Preserve Subarea 1					
Ex SED[1]	38	34	0	75	
GP BO SED[1]	349	2	0	5,636	
Ex-to-GP BO SED Growth	311	-32	0	5,561	
Weighting Factor[2]	10	7	20	3	
Ex-to-GP BO SED Growth Mass	3,110	-224	0	16,683	19,569
Chino Agriculture Preserve Subarea 2					
Ex SED	521	116	36	446	
GP BO SED	5,736	3,849	2,322	7,781	
Ex-to-GP BO SED Growth	5,215	3,733	2,286	7,335	
Weighting Factor	10	7	20	3	
Ex-to-GP BO SED Growth Mass	52,154	26,133	45,713	22,005	146,004
Remainder of the City of Chino					
Ex SED	16,097	4,932	7,122	38,531	
GP BO SED	18,744	8,138	12,562	63,255	
Ex-to-GP BO SED Growth	2,647	3,206	5,440	24,724	
Weighting Factor	10	7	20	3	
Ex-to-GP BO SED Growth Mass	26,474	22,439	108,799	74,171	231,883
New Model Colony (City of Ontario)					
Ex SED	1,176	1,098	158	3,350	
GP BO SED	20,151	9,814	6,791	36,706	
Ex-to-GP BO SED Growth	18,975	8,716	6,633	33,356	
Weighting Factor	10	7	20	3	
Ex-to-GP BO SED Growth Mass	189,750	61,012	132,659	100,069	483,490
Eastvale Community Plan Area (County of Riverside)					
Ex SED	2,504	141	87	1,346	
GP BO SED	19,034	2,499	3,311	17,149	
Ex-to-GP BO SED Growth	16,530	2,358	3,224	15,803	
Weighting Factor	10	7	20	3	
Ex-to-GP BO SED Growth Mass	165,300	16,506	64,480	47,409	293,695
TOTAL EXISTING-TO-GENERAL PLAN BUILDOUT CONDITIONS SED GROWTH MASS					1,174,641

[1] Ex = Existing; GP BO = General Plan Buildout.

[2] Weighting factor combines the separate SED variables into a single Development "Mass" for the purposes of interpolating.

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TABLE 4-4

INTERPOLATION FACTORS BY SUBAREA

	SINGLE FAMILY DWELLING UNITS	MULTIPLE FAMILY DWELLING UNITS	RETAIL EMPLOYMENT	TOTAL EMPLOYMENT	TOTAL
Chino Agriculture Preserve Subarea 1					
Other Development SED Mass	0	0	0	15,504	15,504
Ex-to-GP BO SED Growth Mass[1]	3,110	-224	0	16,683	19,569
Interpolation (Absorption) Factor					0.79
Chino Agriculture Preserve Subarea 2					
Other Development SED Mass	16,030	20,909	2,679	2,766	42,384
Ex-to-GP BO SED Growth Mass	52,154	26,133	45,713	22,005	146,004
Interpolation (Absorption) Factor					0.29
Remainder of the City of Chino					
Other Development SED Mass	13,670	2,653	9,450	5,508	31,281
Ex-to-GP BO SED Growth Mass	26,474	22,439	108,799	74,171	231,883
Interpolation (Absorption) Factor					0.13
New Model Colony (City of Ontario)					
Other Development SED Mass	134,030	41,335	80,519	26,123	282,007
Ex-to-GP BO SED Growth Mass	189,750	61,012	132,659	100,069	483,490
Interpolation (Absorption) Factor					0.58
Eastvale Community Plan Area (County of Riverside)					
Other Development SED Mass	57,710	1,596	3,326	1,716	64,348
Ex-to-GP BO SED Growth Mass	165,300	16,506	64,480	47,409	293,695
Interpolation Factor					0.22
OVERALL TOTAL AREA					
Other Development SED Mass	221,440	66,493	95,973	51,617	435,524
Ex-to-GP BO SED Growth Mass	436,788	125,866	351,651	260,337	1,174,641
Overall Interpolation (Absorption) Factor					0.37

[1] Ex = Existing; GP BO = General Plan Buildout.

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The interpolation factors in Table 4-4 are then used to interpolate between existing and General Plan Buildout (Post-2030) without project traffic volumes to yield 2019 Interim Year without project traffic volumes. In order to interpolate properly, existing traffic volumes in the study area had to be manually redistributed assuming the same roadway network as 2019 Interim Year/General Plan Buildout (Post-2030) conditions.

Project traffic volumes on study area roadway segments are determined by generating project trips and manually routing the traffic through the roadway network. The routing patterns follow the trip distributions which were previously presented in Section 2.2. Trips are assigned to each individual roadway link and intersection occurring along a specific route.

The accumulation of traffic assigned to each roadway link represents the project traffic volume for that link. Project only ADT volumes were previously presented in Section 2.2.

4.1.1 2019 Interim Year Without Project (Alternative 1) Daily Traffic Volumes

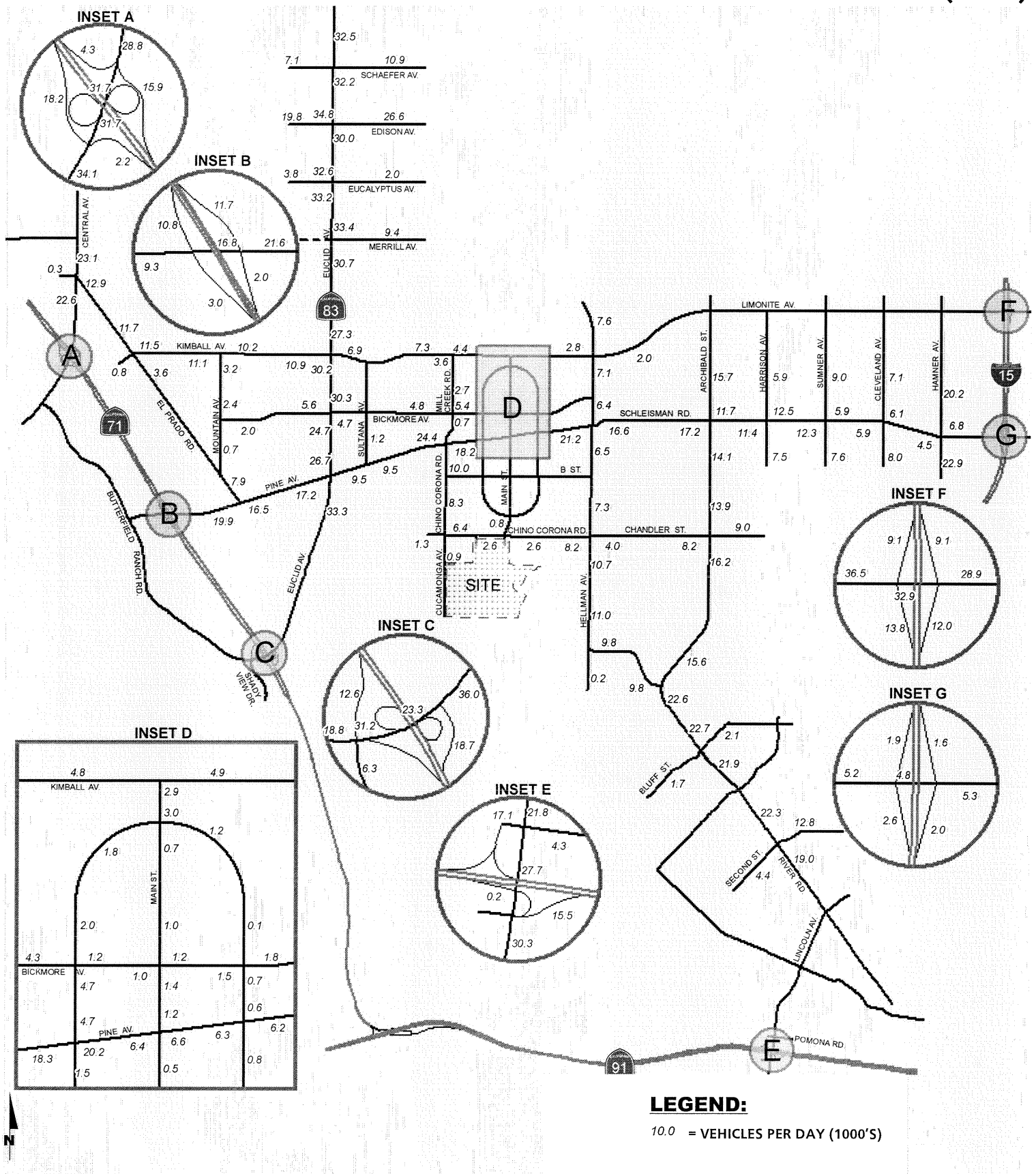
ADT volumes for 2019 Interim Year Without Project (Alternative 1) conditions have been determined as described above. Exhibit 4-B shows the ADT volumes which can be expected for 2019 Interim Year Without Project (Alternative 1) conditions.

For 2019 Interim Year without project (Alternative 1) traffic conditions, the following study area intersections are projected to warrant a traffic signal (in addition to the intersections that warranted a traffic signal under existing conditions):

SR-71 Freeway Northbound Ramps (NS) at:

- Pine Avenue (EW)

2019 INTERIM YEAR WITHOUT PROJECT (ALTERNATIVE 1) AVERAGE DAILY TRAFFIC (ADT)



El Prado Road (NS) at:

- Pine Avenue (EW)

Mill Creek Road (NS) at:

- Kimball Avenue (EW)

Hellman Avenue (NS) at:

- Kimball Avenue (EW)
- Chino Corona Road/Chandler Street (EW)

Harrison Avenue (NS) at:

- Schleisman Road (EW)

Cleveland Avenue (NS) at:

- Schleisman Road (EW)

Appendix "C" includes the traffic signal warrant analysis worksheets.

4.1.2 2019 Interim Year With Proposed Project Daily Traffic Volumes

ADT volumes for 2019 Interim Year with Proposed Project conditions have been determined by adding the Proposed Project only traffic volumes to the 2019 Interim Year without project traffic volumes. Exhibit 4-C shows the ADT volumes which can be expected for 2019 Interim Year With Proposed Project conditions.

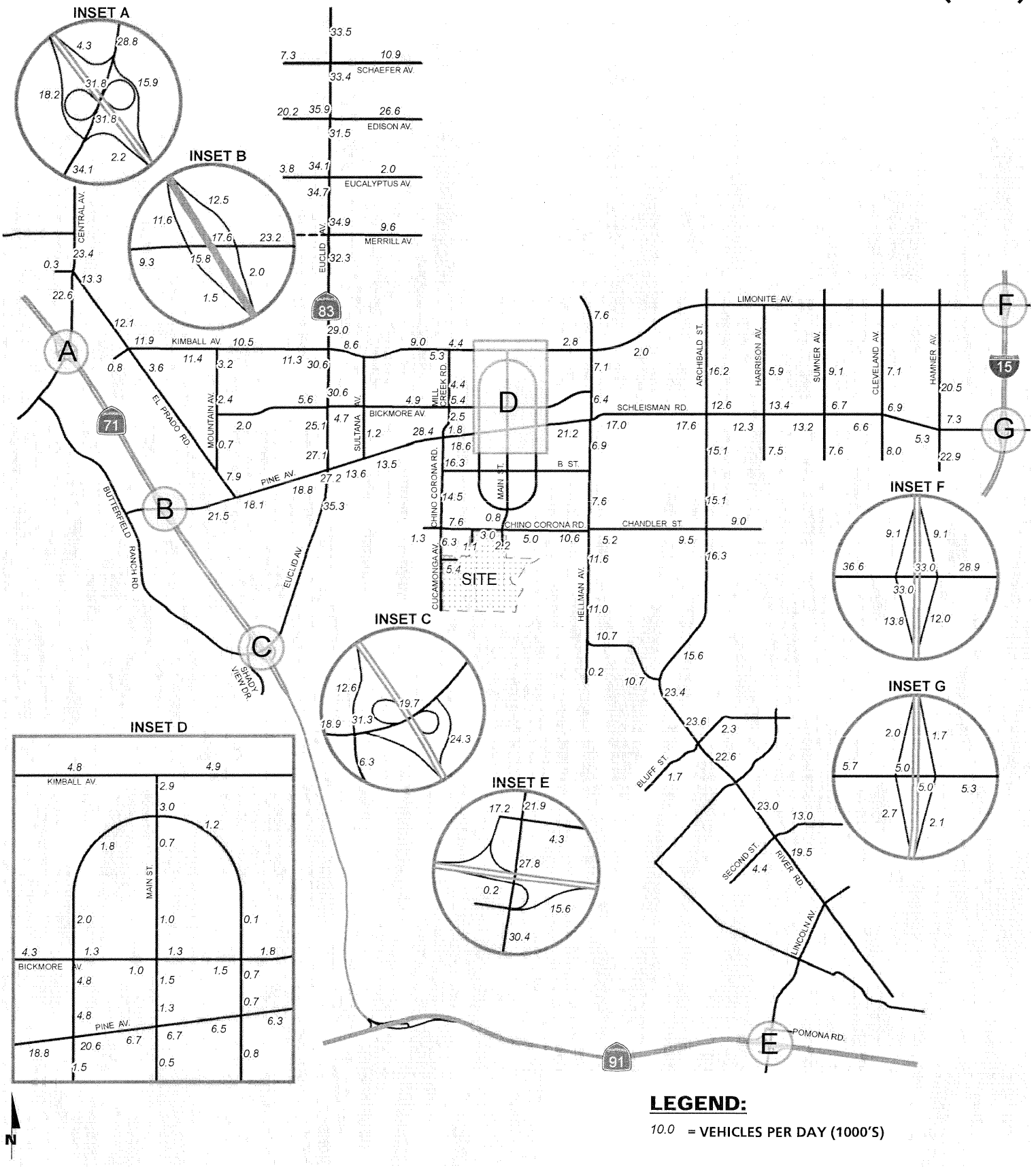
Traffic signals are anticipated to be warranted at the following intersections for 2019 Interim Year With Proposed Project traffic conditions (in addition to those intersections that warrant a traffic signal under existing and 2019 Interim Year Without Propose Project conditions):

Cucamonga Avenue/North Chino Corona Road(NS) at:

- West Chino Corona Road (EW)

EXHIBIT 4-C

2019 INTERIM YEAR WITH PROPOSED PROJECT AVERAGE DAILY TRAFFIC (ADT)



Appendix "C" includes the traffic signal warrant analysis worksheets.

4.1.3 General Plan Buildout (Post-2030) Without Project (Alternative 1) Daily Traffic Volumes

ADT volumes for General Plan Buildout (Post-2030) Without Project (Alternative 1) conditions have been determined as described above using the post-processing methodology (see Section 1.3.1). Exhibit 4-D shows the ADT volumes which can be expected for General Plan Buildout (Post-2030) Without Project (Alternative 1) conditions.

For General Plan Buildout (Post-2030) Without Project (Alternative 1) traffic conditions, the following additional study area intersections are projected to warrant a traffic signal (in addition to those intersections that warrant a traffic signal under existing, 2019 Interim Year Without Project (Alternative 1), or 2019 Interim Year With Project conditions):

Sultana Avenue (NS) at:

- Pine Avenue (EW)

Mill Creek Road (NS) at:

- Bickmore Avenue (EW)

West Preserve Loop (NS) at:

- Bickmore Avenue (EW)

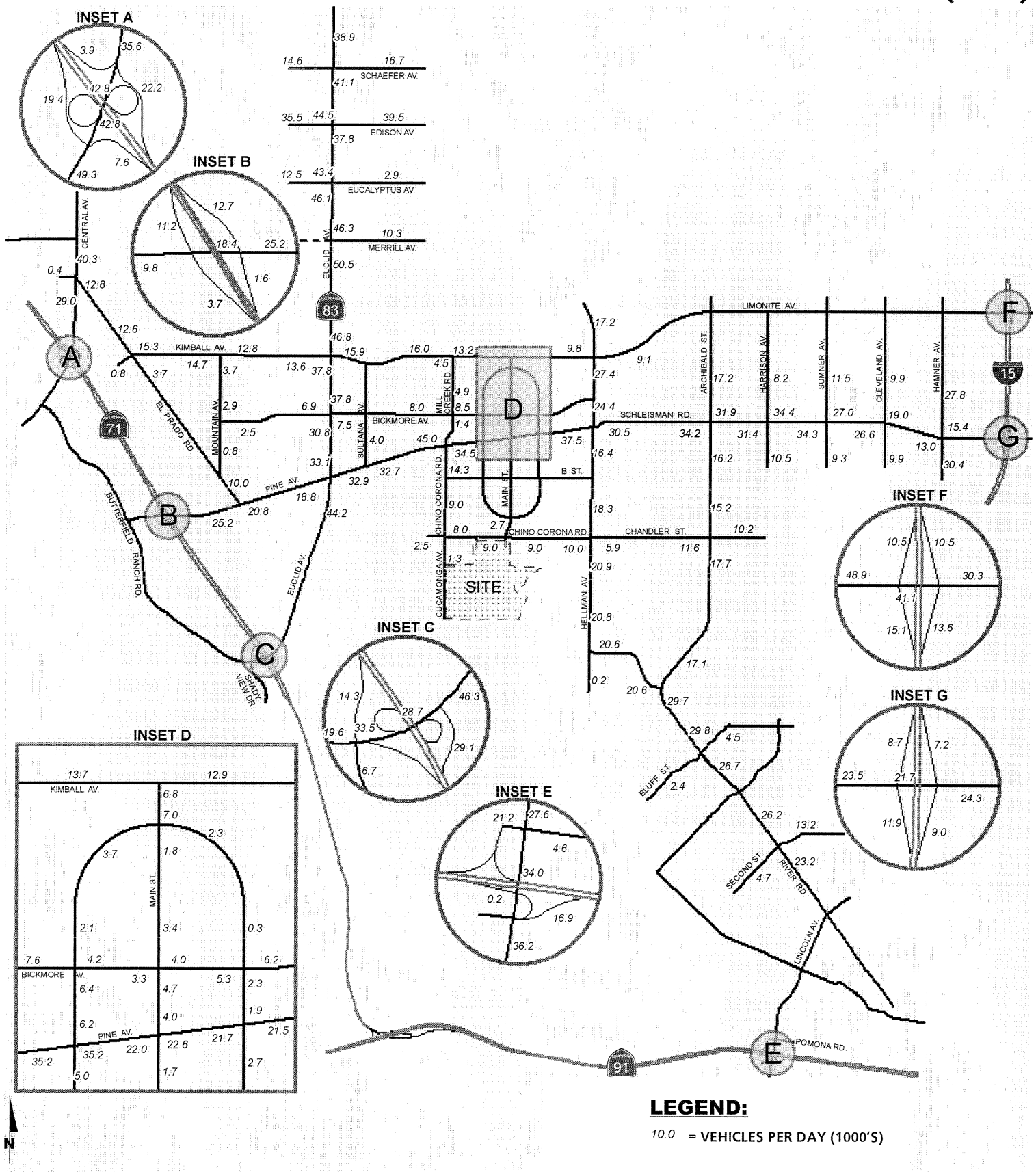
Main Street (NS) at:

- Kimball Avenue (EW)
- Pine Avenue (EW)
- Chino Corona Road (EW)

East Preserve Loop (NS) at:

- Pine Avenue (EW)

GENERAL PLAN BUILDOUT WITHOUT PROJECT (ALTERNATIVE 1)
AVERAGE DAILY TRAFFIC (ADT)



LEGEND:

10.0 = VEHICLES PER DAY (1000'S)

Appendix "C" includes the traffic signal warrant analysis worksheets.

4.1.4 General Plan Buildout (Post-2030) With Proposed Project Daily Traffic Volumes

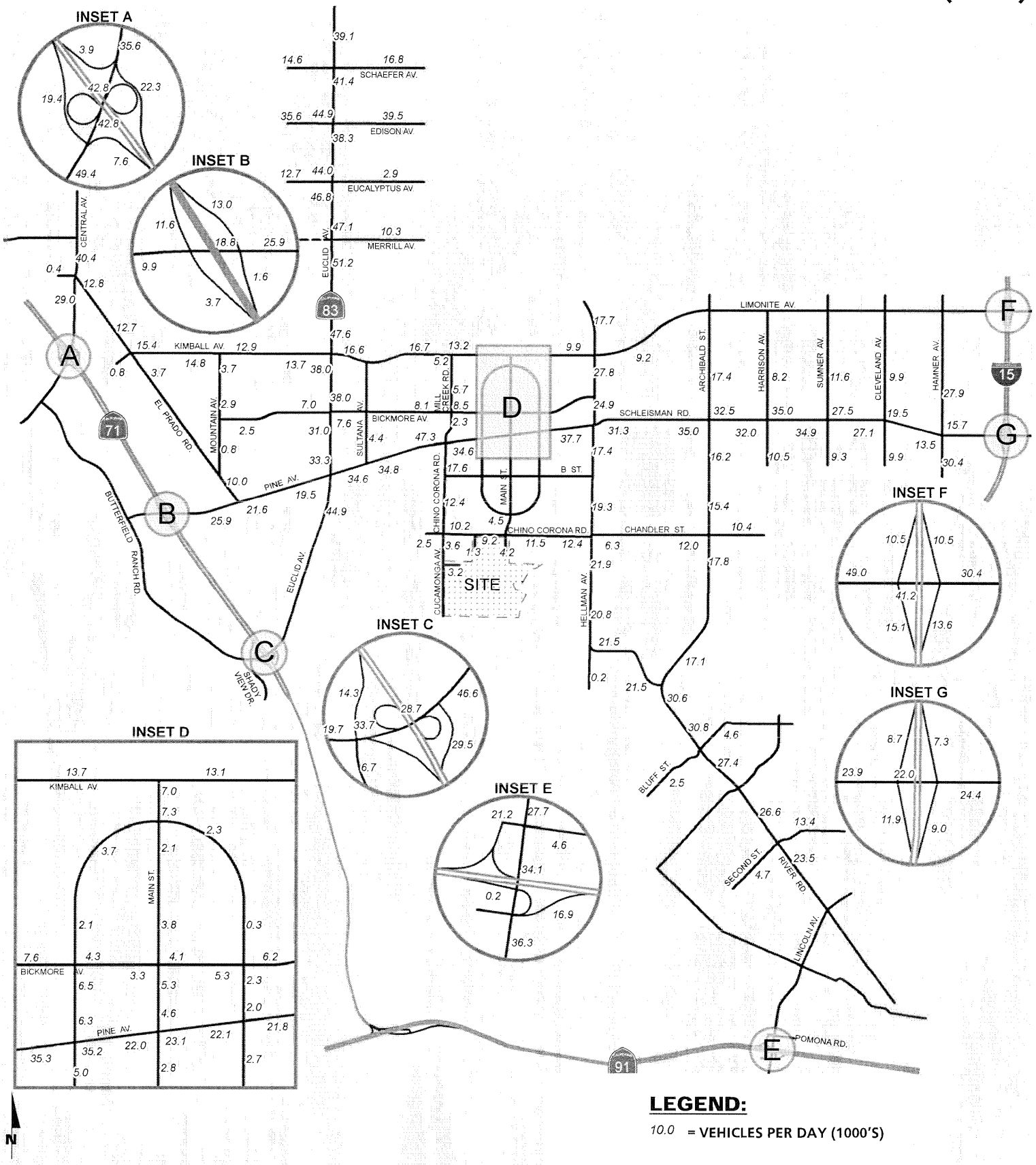
ADT volumes for General Plan Buildout (Post-2030) With Proposed Project conditions have been determined by adding the Proposed Project only traffic volumes to the General Plan Buildout (Post-2030) Without Project (Alternative 1) traffic volumes. Exhibit 4-E shows the ADT volumes which can be expected for General Plan Buildout (Post-2030) With Proposed Project conditions.

For General Plan Buildout (Post-2030) With Proposed Project traffic conditions, no additional study area intersections are projected to warrant a traffic signal (besides those intersections that warrant a traffic signal under existing, 2019 Interim Year Without Project(Alternative 1), 2019 Interim Year With Proposed Project, or General Plan Buildout (Post-2030) Without Project (Alternative 1) conditions).

Appendix "C" includes the traffic signal warrant analysis worksheets.

EXHIBIT 4-E

GENERAL PLAN BUILDOUT WITH PROPOSED PROJECT AVERAGE DAILY TRAFFIC (ADT)



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5.0 FUTURE TRAFFIC OPERATIONS ANALYSIS

This section of the report presents the operations analysis for the traffic volume forecasts for future traffic conditions without the project and for future traffic conditions with the project. The analysis procedures conform to the City of Chino, San Bernardino CMP, Riverside County and Caltrans requirements for traffic impact analyses. The operations analysis for each analysis year is presented in a separate subsection.

5.1 Future Interim Year Traffic Operations

Interim Year (2019) analysis has been conducted for both Without Project (Alternative 1) and With Proposed Project conditions.

5.1.1 2019 (Interim Year) Without Project (Alternative 1) Conditions

The intersection operations analysis for 2019 Without Project (Alternative 1) traffic conditions with existing geometrics are summarized in Table 5-1. 2019 Without Project (Alternative 1) AM and PM peak hour intersection turning movement volumes are shown on Exhibits 5-A and 5-B, respectively. As shown in Table 5-1, the following study area intersections are projected to experience unacceptable levels of service operations during the peak hours without improvements and are, therefore, deficient per City of Chino, County of San Bernardino, County of Riverside, or Caltrans criteria:

SR-71 Freeway NB Ramps (NS) at:

- Pine Avenue (EW)

El Prado Road (NS) at:

- Pine Avenue (EW)

Euclid Avenue (SR-83) (NS) at:

- Edison Avenue (EW)
- Eucalyptus Avenue (EW)

TABLE 5-1 (Page 1 of 2)

INTERIM YEAR WITHOUT PROJECT (ALTERNATIVE 1 - NO PROJECT) CONDITIONS
INTERSECTION ANALYSIS SUMMARY

	INTERSECTION	TRAFFIC CONTROL[3]	INTERSECTION APPROACH LANES[1] NORTH-BOUND L	T	R	SOUTH-BOUND L	T	R	EAST-BOUND L	T	R	WEST-BOUND L	T	R	DELAY[2] (SECS.) AM	PM	LEVEL OF SERVICE AM	PM
	Central Av. (NS) at:																	
1	• El Prado Rd. (EW)	TS	1	2	1	1	3	0	1	1	1	1.5	0.5	1>	30.5	22.9	C	C
2	• SR-71 Fwy. NB Ramps (EW)	TS	0	3	1>>	0	3	1>>	0	0	0	2	0	1	11.2	10.7	B	B
3	• SR-71 Fwy. SB Ramps (EW)	TS	0	3	1>>	0	3	1>>	2	0	1	0	0	0	18.4	23.2	B	C
	SR-71 Fwy. SB Ramps (NS) at:																	
4	• Pine Av. (EW)	TS	0	0	0	0.5	0.5	1	0	1	1	1	2	0	40.1	21.6	D	C
	SR-71 Fwy. NB Ramps (NS) at:																	
5	• Pine Av. (EW)[5]	AWS	1	0	1	0	0	0	**1**	**1**	0	0	**1**	1	--[4]	--[4]	F	F
	- with improvements	**TS**	1	0	1	0	0	0	1	1	0	0	1	1	33.3	10.7	C	B
	El Prado Rd. (NS) at:																	
6	• Kimball Av. (EW)	TS	1	1	1	1	1	1	1	1	0	0.5	0.5	1>	16.3	22.5	B	C
7	• Pine Av. (EW)	CSS	0	0	0	0	1	0	0	1	0	0	1	0	--[4]	67.4	F	F
	- with improvements	**TS**	0	0	0	0	1	0	**1**	1	0	0	1	**1**	27.5	23.9	C	C
	Mountain Av. (NS) at:																	
8	• Kimball Av. (EW)	TS	1	0	1	0	0	0	0	2	0	1	2	0	8.9	10.7	A	B
9	• Bickmore Av. (EW)	CSS	0	1	0	1	1	0	0	0	0	1	0	1	12.7	11.0	B	B
	Euclid Av. (SR-83) (NS) at:																	
10	• Schaefer Av. (EW)	TS	1	2	1	1	2	1	1	1	1	0.5	0.5	1	24.5	31.7	C	C
11	• Edison Av. (EW)	TS	1	2	1	1	2	1	1	1	1	1	1	0	--[4]	33.4	F	C
	- with improvements	TS	1	2	1	**2**	**3**	1	**2**	**2**	1	1	**2**	**1**	44.5	40.4	D	D
12	• Eucalyptus Av. (EW)	TS	1	2	1	1	2	1	1	1	1	1	1	0	--[4]	--[4]	F	F
	- with improvements	TS	2	**3**	1	1	**3**	1	1	1	**1>**	1	1	**1**	35.2	37.4	D	D
13	• Merrill Av. (EW)	TS	1	2	1	1	2	0	0	0	0	0	1	0	--[4]	9.2	F	A
	- with improvements	TS	1	2	1	1	**3**	0	0	0	0	**1**	0	**1**	14.0	4.4	B	A
14	• Kimball Av. (EW)	TS	1	2	1	1	2	1	1	1	1	0.5	0.5	1	--[4]	--[4]	F	F
	- with improvements[6]	TS	1	**3**	0	1	**3**	**1>**	**2**	1	1	**1**	**1**	**1**	40.7	32.1	D	C
15	• Bickmore Av. (EW)	CSS	1	1	1	1	1	1	0.5	0.5	1	1	1	1	--[4]	--[4]	F	F
	- with approved geometry	**TS**	1	**4**	**2**	**2**	**4**	1	**1**	**1**	1	**2**	0.5	**1.5**	21.6	27.8	C	C
16	• Pine Av. (EW)	TS	1	2	1	1	2	1	0.5	0.5	1>>	0.5	0.5	1	--[4]	--[4]	F	F
	- with improvements[6]	TS	1	2	**1>>**	**2**	2	0	**1**	**2**	1>>	**2**	**1**	1	39.7	34.1	D	C
17	• SR-71 Fwy. NB Ramps (EW)	TS	0	2	1>>	1	2	0	0	0	0	2	0	1>>	7.8	8.4	A	A
	Euclid Av. (SR-83)/ Butterfield Ranch Rd. (NS) at:																	
18	• SR-71 Fwy. SB Off-Ramp/ Shady View Dr. (EW)	TS	0	2	1	1	2	1>>	1.5	0.5	1	1	0	1>	--[4]	20.5	F	C
	- with improvements[6]	TS	0	**3**	1	**2**	2	1>>	1.5	0.5	1	1	0	**2>**	25.8	17.9	C	B
	Sultana Av. (NS) at:																	
19	• Pine Av. (EW)	CSS	0	0	0	0	1	0	1	1	0	0	1	0	13.7	21.8	B	C
	Mill Creek Rd. (NS) at:																	
20	• Kimball Av. (EW)	CSS	1	0	1	0	0	0	0	1	0	1	1	0	17.7	11.1	C	B
	- with improvements	**TS**	1	0	1	0	0	0	0	1	0	1	1	0	13.6	9.2	B	A
21	• Bickmore Av. (EW)	AWS	0	1	0	1	1	0	0	1	0	0	1	0	10.9	9.2	B	A
	Chino Corona Rd./Mill Creek Rd. (NS) at:																	
22	• Pine Av. (EW)	TS	1	**1**	0	1	**1**	0	**1**	1	1>>	1	1	0	41.6	--[4]	D	F
	- with improvements	TS	1	1	0	1	1	0	1	**2**	1	1	**1**	0	44.9	25.1	D	C
	Cucamonga Av. (NS) at:																	
23	• Chino Corona Rd. (EW)	AWS	0	1	0	0	1	0	0	1	0	0	1	0	11.7	17.8	B	C
	West Preserve Loop (NS) at:																	
24	• Bickmore Av. (EW)	AWS	0	1	0	0	1	0	0	1	0	0	1	0	12.8	8.9	B	A
25	• Pine Av. (EW)	TS	0	1	0	1	1	0	1	1	0	1	1	0	31.2	18.6	C	B
	Main St. (NS) at:																	
26	• Kimball Av. (EW)	AWS	1	0	1	0	0	0	0	1	1	1	1	0	9.0	8.6	A	A
27	• Preserve Loop (EW)	AWS	0	1	0	0.5	0.5	1	1	1	0	1	1	0	8.5	8.4	A	A
28	• Bickmore Av. (EW)	CSS	0	1	0	0	1	0	0	1	0	0	1	0	9.5	10.8	A	B
29	• Pine Av. (EW)	CSS	0	**1**	0	0	**1**	0	0	**1**	0	0	**1**	0	57.1	--[4]	F	F
	- with improvements	**TS**	**1**	1	0	**1**	1	0	**1**	1	0	**1**	**2**	0	14.8	38.4	B	D
30	• Chino Corona Rd. (EW)	CSS	0	0	0	0	**1**	0	0	**1**	0	0	**1**	0	13.6	12.6	B	B
	East Preserve Loop (NS) at:																	
31	• Bickmore Av. (EW)	CSS	0	1	0	0	1	0	0	1	0	0	1	0	8.8	10.2	A	B
32	• Pine Av. (EW)[7]	CSS	0	1	0	0	1	0	0	1	0	0	1	0	--[4]	--[4]	F	F

INTERIM YEAR WITHOUT PROJECT (ALTERNATIVE 1 - NO PROJECT) CONDITIONS
INTERSECTION ANALYSIS SUMMARY

	INTERSECTION	TRAFFIC CONTROL[3]	INTERSECTION APPROACH LANES[1] NORTH-BOUND L	T	R	SOUTH-BOUND L	T	R	EAST-BOUND L	T	R	WEST-BOUND L	T	R	DELAY[2] (SECS.) AM	PM	LEVEL OF SERVICE AM	PM
	Hellman Av. (NS) at:																	
33	• Kimball Av. (EW)	CSS	0	1	0	0	1	0	0	1	0	0	1	0	17.0	37.4	C	E
	- with improvements	**TS**	**1**	1	0	**1**	1	0	**1**	1	0	**1**	1	0	19.3	22.2	B	C
34	• Pine Av./Schleisman Rd. (EW)	CSS	0	1	0	0	1	0	0	1	0	0	1	0	--[4]	--[4]	F	F
	- with improvements	**TS**	**1**	1	0	**1**	1	0	**1**	**2**	0	**1**	**2**	0	29.0	28.7	C	C
35	• Chino Corona Rd./Chandler St. (EW)	CSS	0	1	0	0	1	0	0.5	0.5	1	0	1	0	--[4]	--[4]	F	F
	- with improvements	**TS**	**1**	1	0	**1**	1	0	**1**	**1**	0	**1**	1	0	24.5	31.8	C	C
36	• River Rd. (EW)	CSS	1	0	1	0	0	0	0	1	0	0.5	0.5	0	18.7	21.7	C	C
	Archibald St. (NS) at:																	
37	• Schleisman Rd. (EW)	TS	1	1	1	1	1	0	1	1	1	1	1	0	--[4]	--[4]	F	F
	- with improvements	TS	1	1	1	1	**2**	0	1	1	1	1	**2**	0	38.5	43.9	D	D
38	• Chandler St. (EW)	TS	1	2	1	1	2	0	1	2	1	1	2	1	36.4	33.2	D	C
39	• River Rd. (EW)	CSS	1	1	0	0	1	1	1	0	1	0	0	0	81.1	--[4]	F	F
	- with improvements	**TS**	**2**	1	0	0	1	1	1	0	1	0	0	0	25.4	37.8	C	D
	River Rd. (NS) at:																	
40	• Bluff St. (EW)	TS	1	1	0	1	2	0	0.5	0.5	1	0.5	0.5	1	13.4	9.9	B	A
41	• Country Club Ln./Second St. (EW)	TS	1	2	1	1	2	1	1	1	1>	1	1	0	27.8	28.4	C	C
	Lincoln Av. (NS) at:																	
42	• Pomona Rd. (EW)	TS	2	2	0	1	2	0	1	0.5	1.5>	1	1	0	26.6	26.2	C	C
43	• SR-91 Fwy. EB Ramps (EW)	TS	1	2	1	1	2	0	0	1	0	0.5	0.5	1	30.1	23.2	C	C
	Harrison Av. (NS) at:																	
44	• Schleisman Rd. (EW)	AWS	1	1	1	0	1	0	0.5	0.5	1	0.5	0.5	1	--[4]	--[4]	F	F
	- with improvements	**TS**	1	1	1	**1**	1	0	**1**	**1**	0	**1**	**1**	0	34.8	33.4	C	C
	Sumner Av. (NS) at:																	
45	• Schleisman Rd. (EW)	AWS	0	1	0	0	1	1	1	0	1	0	**1**	0	--[4]	29.4	F	D
	- with improvements	**TS**	**1**	1	0	**1**	1	0	1	**1**	0	**1**	1	0	36.8	38.3	D	D
	Cleveland Av. (NS) at:																	
46	• Schleisman Rd. (EW)	AWS	0	1	0	0.5	0.5	0	0	1	0	1	1	0	--[4]	20.3	F	C
	- with improvements	**TS**	**1**	1	0	**1**	**1**	0	**1**	1	0	1	1	0	33.3	28.0	C	C
	Hamner Av. (NS) at:																	
47	• Schleisman Rd. (EW)	TS	1	2	1	1	2	1	1	1	0	1	1	0	34.9	38.4	C	D
	I-15 Fwy. SB Ramps (NS) at:																	
48	• Limonite Av. (EW)	TS	0	0	0	1	1	1	0	2	1	2	2	0	21.9	20.3	C	C
	I-15 Fwy. SB Ramps (NS) at:																	
49	• Schleisman Rd. (EW)	**TS**	0	0	0	**1**	0	**1**	0	**1**	**1>>**	**2**	**1**	0	14.5	14.9	B	B
	I-15 Fwy. NB Ramps (NS) at:																	
50	• Limonite Av. (EW)	TS	1	1	1	0	0	0	2	2	0	0	2	1	18.2	25.5	B	C
	I-15 Fwy. NB Ramps (NS) at:																	
51	• Schleisman Rd. (EW)	**TS**	**1**	0	**1**	0	0	0	**1**	**2**	0	0	**1**	**1**	13.3	13.7	B	B

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; >> = Free Right Turn; > = Right Turn Overlap.

[2] Delay and level of service calculated using the following analysis software: Traffix, Version 7.9 R1 (2007). Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal; AWS = All Way Stop; CSS = Cross Street Stop.

[4] -- = Delay High or V/C Ratio exceeding 1.0, Intersection Unstable, Level of Service "F".

[5] Without improvements configuration reflects Pine Avenue extension to El Prado Road.

[6] Pedestrians are assumed not to occur on every cycle

[7] Intersection does not warrant a traffic signal. No other feasible improvements will provide acceptable LOS.

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EXHIBIT 5-A

INTERIM YEAR WITHOUT PROJECT (ALTERNATIVE 1) AM PEAK HOUR INTERSECTION VOLUMES (PAGE 1 OF 2)

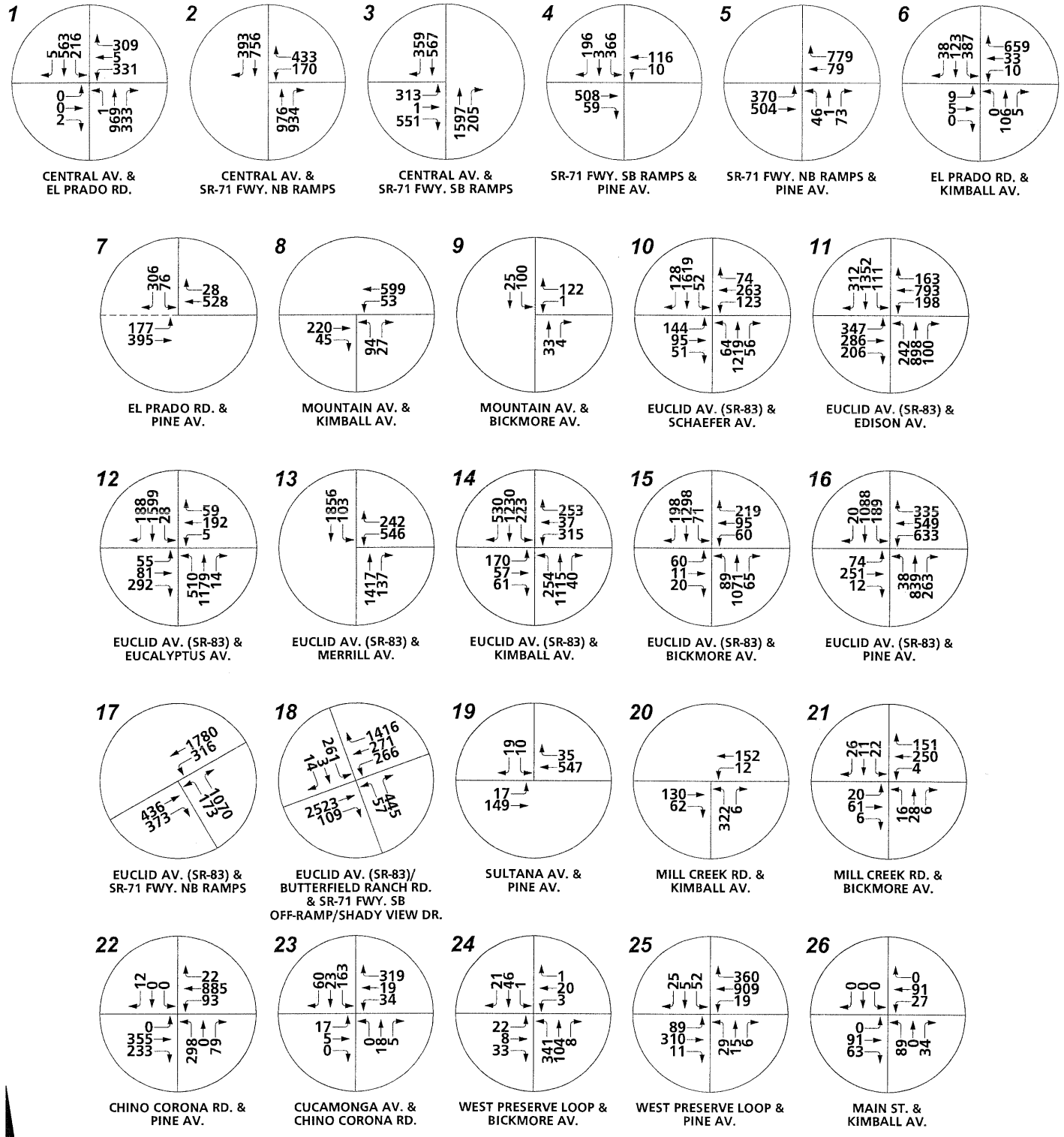


EXHIBIT 5-A

INTERIM YEAR WITHOUT PROJECT (ALTERNATIVE 1) AM PEAK HOUR INTERSECTION VOLUMES (PAGE 2 OF 2)

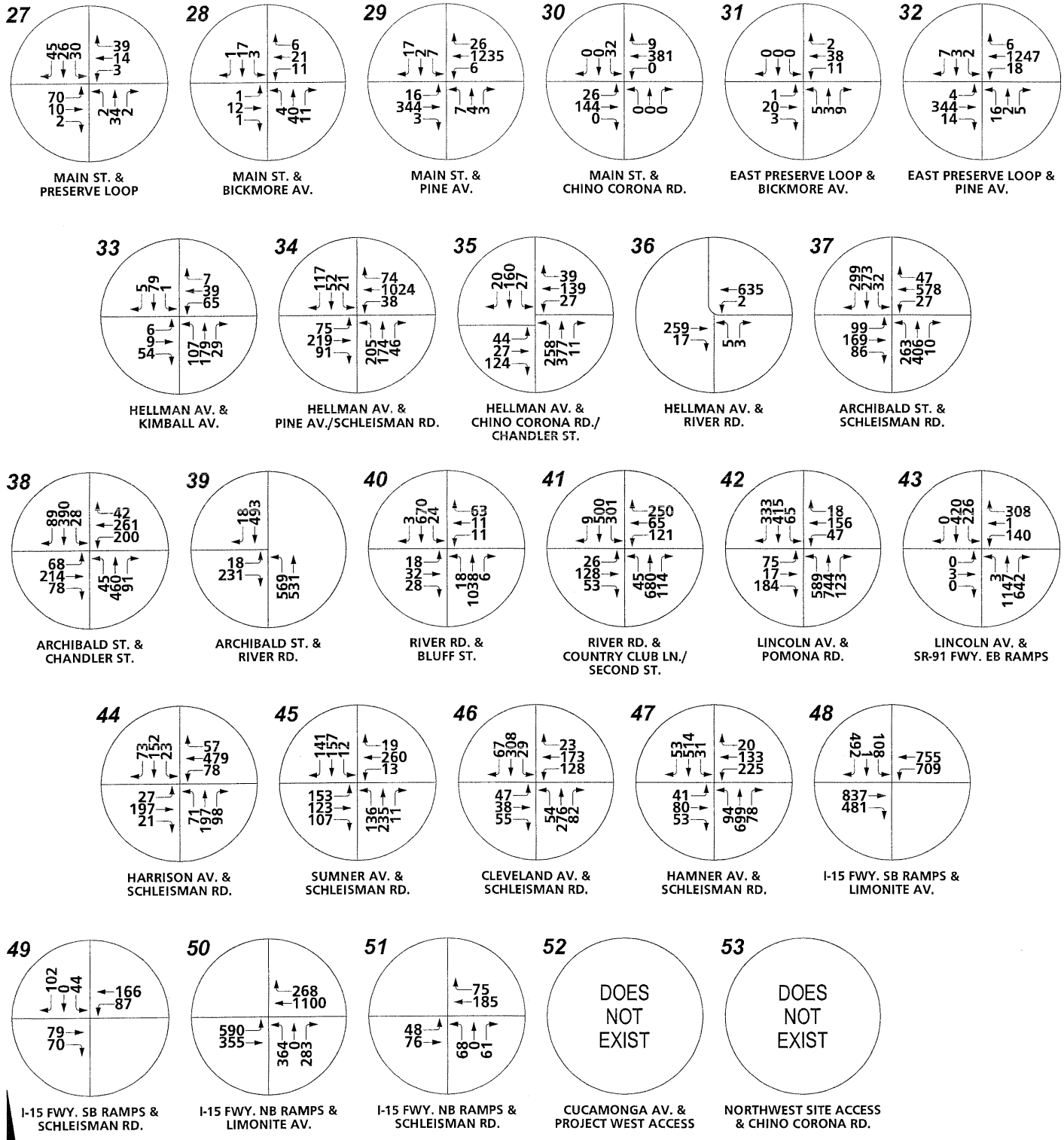


EXHIBIT 5-B

INTERIM YEAR WITHOUT PROJECT (ALTERNATIVE 1) PM PEAK HOUR INTERSECTION VOLUMES (PAGE 1 OF 2)

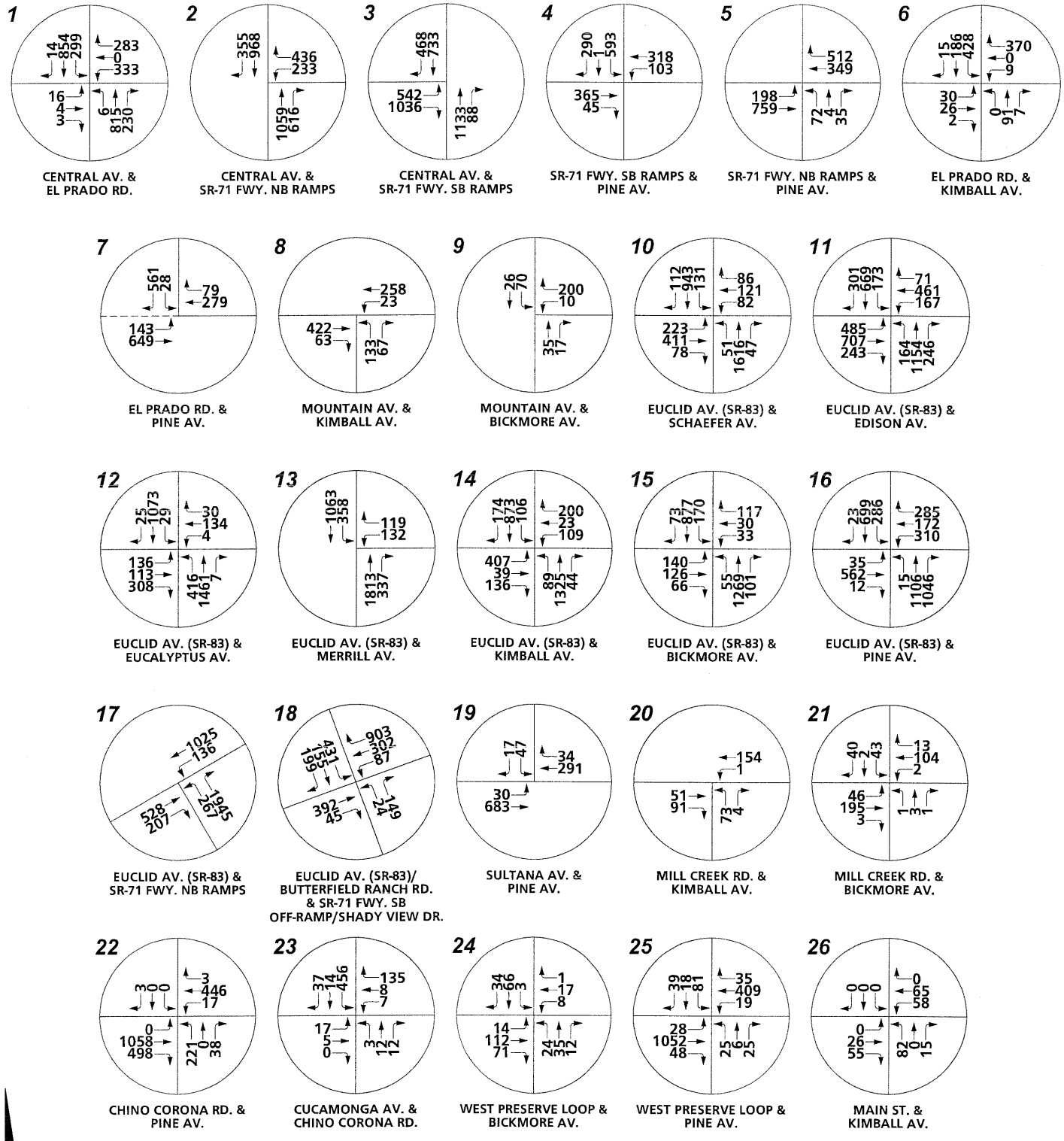
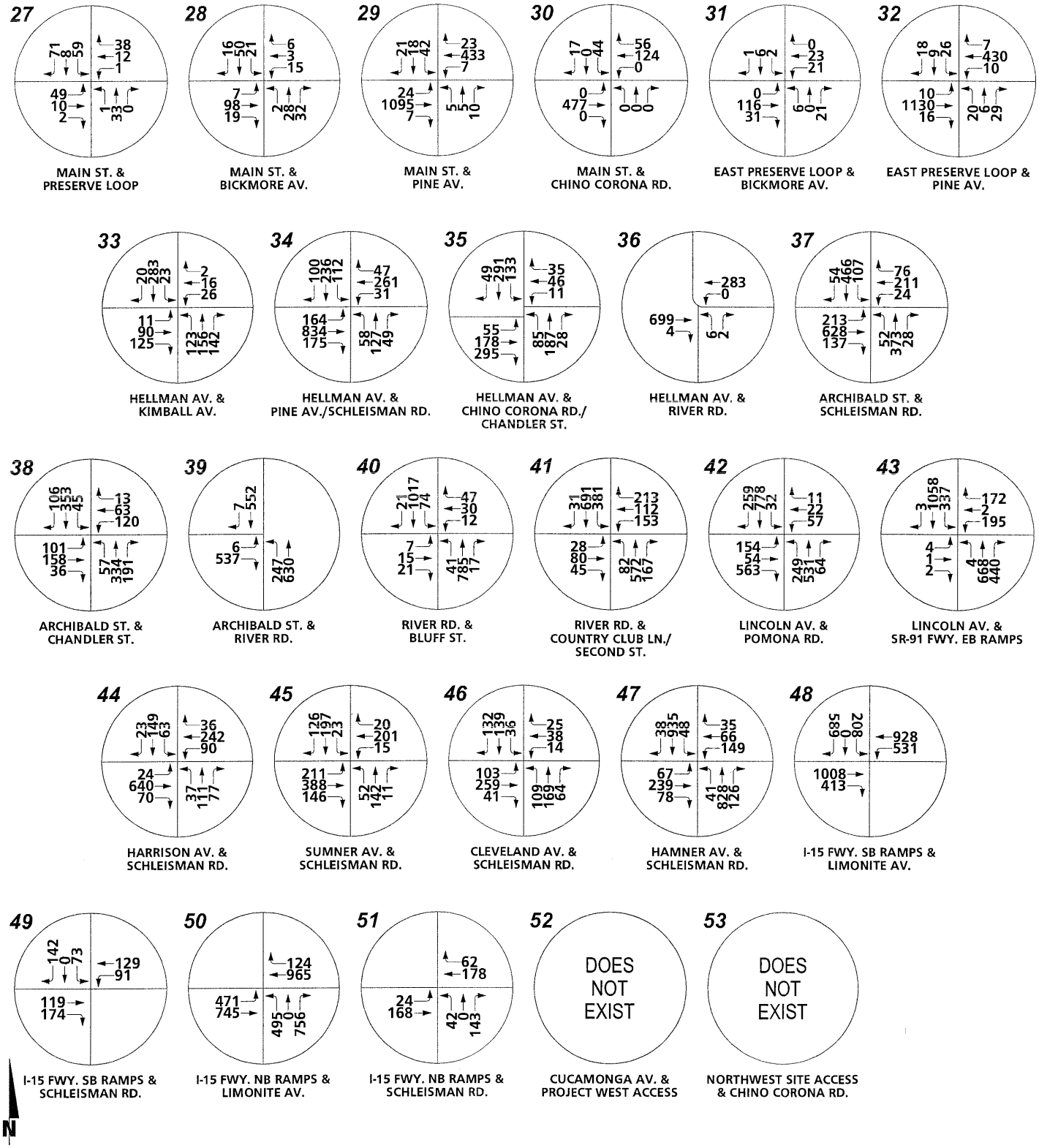


EXHIBIT 5-B

INTERIM YEAR WITHOUT PROJECT (ALTERNATIVE 1) PM PEAK HOUR INTERSECTION VOLUMES (PAGE 2 OF 2)



- Merrill Avenue (EW)
- Kimball Avenue (EW)
- Bickmore Avenue (EW)
- Pine Avenue (EW)

Euclid Avenue (SR-83) / Butterfield Ranch Road (NS) at:

- SR-71 Freeway SB Off-Ramp / Shady View Drive (EW)

Mill Creek Road (NS) at:

- Kimball Avenue (EW)

Chino Corona Road / Mill Creek Road (NS) at:

- Pine Avenue (EW)

Main Street (NS) at:

- Pine Avenue (EW)

Hellman Avenue (NS) at:

- Kimball Avenue (EW)
- Pine Avenue/Schleisman Road (EW)
- Chino Corona Road/Chandler Street (EW)

Archibald Street (NS) at:

- Schleisman Road (EW)
- River Road (EW)

Harrison Avenue (NS) at:

- Schleisman Road (EW)

Sumner Avenue (NS) at:

- Schleisman Road (EW)

Cleveland Avenue (NS) at:

- Schleisman Road (EW)

I-15 Freeway SB Ramps (NS) at:

- Schleisman Road (EW)

I-15 Freeway NB Ramps (NS) at:

- Schleisman Road (EW)

Improvements have been identified that will provide acceptable traffic operations at each of the deficient intersections under 2019 Without Project conditions. Based on the analysis, no street cross-sections need revision/upgrading. The operations analysis worksheets for 2019 Without Project with improvements conditions are included in Appendix "G".

5.1.2 2019 (Interim Year) With Proposed Project Conditions

The intersection operations analysis for 2019 With Proposed Project traffic conditions with existing geometrics are summarized in Table 5-2. 2019 With Proposed Project AM and PM peak hour intersection turning movement volumes are shown on Exhibits 5-C and 5-D, respectively. As shown in Table 5-2, the same study area intersections, as 2019 Without Project conditions, are projected to experience unacceptable levels of service operations during the peak hours and are, therefore, deficient per City of Chino, County of San Bernardino, County of Riverside, or Caltrans criteria:

SR-71 Freeway NB Ramps (NS) at:

- Pine Avenue (EW)

El Prado Road (NS) at:

- Pine Avenue (EW)

TABLE 5-2 (Page 1 of 2)

INTERIM YEAR WITH PROPOSED PROJECT CONDITIONS
INTERSECTION ANALYSIS SUMMARY

	INTERSECTION	TRAFFIC CONTROL[3]	INTERSECTION APPROACH LANES[1] NORTH-BOUND L	T	R	SOUTH-BOUND L	T	R	EAST-BOUND L	T	R	WEST-BOUND L	T	R	DELAY[2] (SECS.) AM	PM	LEVEL OF SERVICE AM	PM
	Central Av. (NS) at:																	
1	• El Prado Rd. (EW)	TS	1	2	1	1	3	0	1	1	1	1.5	0.5	1>	30.8	23.5	C	C
2	• SR-71 Fwy. NB Ramps (EW)	TS	0	3	1>>	0	3	1>>	0	0	0	2	0	1	11.2	10.7	B	B
3	• SR-71 Fwy. SB Ramps (EW)	TS	0	3	1>>	0	3	1>>	2	0	1	0	0	0	18.4	23.2	B	C
	SR-71 Fwy. SB Ramps (NS) at:																	
4	• Pine Av. (EW)	TS	0	0	0	0.5	0.5	1	0	1	1	1	2	0	42.1	23.2	D	C
	SR-71 Fwy. NB Ramps (NS) at:																	
5	• Pine Av. (EW)[5]	AWS	1	0	1	0	0	0	**1**	**1**	0	0	**1**	1	--[4]	--[4]	F	F
	- with improvements	**TS**	1	0	1	0	0	0	1	1	0	0	1	1	37.6	11.3	D	B
	El Prado Rd. (NS) at:																	
6	• Kimball Av. (EW)	TS	1	1	1	1	1	1	1	1	0	0.5	0.5	1>	16.3	22.9	B	C
7	• Pine Av. (EW)	CSS	0	0	0	0	1	0	0	1	0	0	1	0	--[4]	--[4]	F	F
	- with improvements	**TS**	0	0	0	0	1	0	**1**	1	0	0	1	**1**	28.6	25.5	C	C
	Mountain Av. (NS) at:																	
8	• Kimball Av. (EW)	TS	1	0	1	0	0	0	0	2	0	1	2	0	8.8	10.6	A	B
9	• Bickmore Av. (EW)	CSS	0	1	0	1	1	0	0	0	0	1	0	1	12.7	11.0	B	B
	Euclid Av. (SR-83) (NS) at:																	
10	• Schaefer Av. (EW)	TS	1	2	1	1	2	1	1	1	1	0.5	0.5	1	25.1	32.7	C	C
11	• Edison Av. (EW)	TS	1	2	1	1	2	1	1	1	1	1	1	0	--[4]	34.8	F	C
	- with improvements	TS	1	2	1	**2**	**3**	1	**2**	**2**	1	1	**2**	**1**	42.5	33.1	D	C
12	• Eucalyptus Av. (EW)	TS	1	2	1	1	2	1	1	1	1	1	1	0	--[4]	--[4]	F	F
	- with improvements	TS	2	**3**	1	1	**3**	1	1	1	**1>**	1	1	**1**	35.5	39.3	D	D
13	• Merrill Av. (EW)	TS	1	2	1	1	2	0	0	0	0	0	1	0	--[4]	10.4	F	B
	- with improvements	TS	1	2	1	1	**3**	0	0	0	0	**1**	0	**1**	16.4	9.4	B	A
14	• Kimball Av. (EW)	TS	1	2	1	1	2	1	1	1	1	0.5	0.5	1	--[4]	--[4]	F	F
	- with improvements[6]	TS	1	**3**	0	1	**3**	**1>**	**2**	1	1	**1**	**1**	**1>**	37.8	30.8	D	C
15	• Bickmore Av. (EW)	CSS	1	1	1	1	1	1	0.5	0.5	1	1	1	1	--[4]	--[4]	F	F
	- with improvements	**TS**	1	**4**	**2**	**2**	**4**	1	**1**	**1**	1	**2**	0.5	**1.5**	21.7	27.9	C	C
16	• Pine Av. (EW)	TS	1	2	1	1	2	1	0.5	0.5	1>>	0.5	0.5	1	--[4]	--[4]	F	F
	- with improvements[6]	TS	1	2	**1>>**	**2**	**3**	0	**1**	**2**	1>>	**2**	**1**	1	39.3	39.9	D	D
17	• SR-71 Fwy. NB Ramps (EW)	TS	0	2	1>>	1	2	0	0	0	0	2	0	1>>	8.2	8.3	A	A
	Euclid Av. (SR-83)/ Butterfield Ranch Rd. (NS) at:																	
18	• SR-71 Fwy. SB Off-Ramp/																	
	• Shady View Dr. (EW)	TS	0	2	1	1	2	1>>	1.5	0.5	1	1	0	1>	--[4]	20.6	F	C
	- with improvements[6]	TS	0	**3**	1	**2**	2	1>>	1.5	0.5	1	1	0	**2>**	25.9	17.9	C	B
	Sultana Av. (NS) at:																	
19	• Pine Av. (EW)[7]	CSS	0	0	0	0	1	0	1	1	0	0	1	0	18.0	41.0	C	E
	Mill Creek Rd. (NS) at:																	
20	• Kimball Av. (EW)	CSS	1	0	1	0	0	0	0	1	0	1	1	0	27.0	12.9	D	B
	- with improvements	**TS**	1	0	1	0	0	0	0	1	0	1	1	0	15.1	11.2	B	B
21	• Bickmore Av. (EW)	AWS	0	1	0	1	1	0	0	1	0	0	1	0	12.8	10.7	B	B
	Chino Corona Rd./Mill Creek Rd. (NS) at:																	
22	• Pine Av. (EW)	TS	1	**1**	0	1	**1**	0	**1**	1	1>>	1	1	0	--[4]	--[4]	F	F
	- with improvements (split phasing)	TS	**1.5**	0.5	0	1	1	0	1	**2**	1	1	**2**	0	40.2	26.6	D	D
	- with improvements (protected phasing)	TS	**2**	1	0	1	1	0	1	**2**	1	1	**2**	0	43.7	27.7	D	D
	Cucamonga Av. (NS) at:																	
23	• Chino Corona Rd. (EW)	AWS	0	1	0	0	1	0	0	1	0	0	1	0	45.2	--[4]	E	F
	- with improvements	**TS**	**1**	1	0	**1**	1	0	**1**	1	0	**1**	1	0	45.5	37.1	D	D
24	West Preserve Loop (NS) at:																	
25	• Bickmore Av. (EW)	AWS	0	1	0	0	1	0	0	1	0	0	1	0	13.0	9.0	B	A
	• Pine Av. (EW)	TS	0	1	0	1	1	0	1	1	0	1	1	0	31.8	19.5	C	B
	Main St. (NS) at:																	
26	• Kimball Av. (EW)	AWS	1	0	1	0	0	0	0	1	1	1	1	0	9.0	8.6	A	A
27	• Preserve Loop (EW)	AWS	0	1	0	0.5	0.5	1	1	1	0	1	1	0	8.5	8.4	A	A
28	• Bickmore Av. (EW)	CSS	0	1	0	0	1	0	0	1	0	0	1	0	9.5	10.8	A	B
29	• Pine Av. (EW)	CSS	0	1	0	0	1	0	0	1	0	0	1	0	62.8	--[4]	F	F
	- with improvements	**TS**	**1**	1	0	**1**	1	0	**1**	1	0	**1**	**2**	0	14.7	31.7	B	C
30	Main St. / North East Site Access (NS) at:																	
	• Chino Corona Rd. (EW)	**CSS**	0	**1**	0	0	**1**	0	0	**1**	0	**1**	**1**	0	13.8	28.4	B	D
31	East Preserve Loop (NS) at:																	
32	• Bickmore Av. (EW)	CSS	0	1	0	0	1	0	0	1	0	0	1	0	8.8	10.2	A	B
	• Pine Av. (EW)[7]	CSS	0	1	0	0	1	0	0	1	0	0	1	0	--[4]	--[4]	F	F

INTERIM YEAR WITH PROPOSED PROJECT CONDITIONS
INTERSECTION ANALYSIS SUMMARY

	INTERSECTION	TRAFFIC CONTROL[3]	INTERSECTION APPROACH LANES[1] NORTH-BOUND L	T	R	SOUTH-BOUND L	T	R	EAST-BOUND L	T	R	WEST-BOUND L	T	R	DELAY[2] (SECS.) AM	PM	LEVEL OF SERVICE AM	PM
33	Hellman Av. (NS) at:																	
	• Kimball Av. (EW)	CSS	0	1	0	0	1	0	0	1	0	0	1	0	17.0	37.4	C	E
34	- with improvements	**TS**	**1**	1	0	**1**	1	0	**1**	1	0	**1**	1	0	19.2	21.5	B	C
	• Pine Av./Schleisman Rd. (EW)	CSS	0	1	0	0	1	0	0	1	0	0	1	0	--[4]	--[4]	F	F
35	- with improvements	**TS**	**1**	1	0	**1**	1	0	**1**	**2**	0	**1**	**2**	0	29.7	29.1	C	C
	• Chino Corona Rd./Chandler St. (EW)	CSS	0	1	0	0	1	0	0.5	0.5	1	0	1	0	--[4]	--[4]	F	F
36	- with improvements	**TS**	**1**	1	0	**1**	1	0	**1**	**1**	0	**1**	1	0	29.9	39.5	C	D
	• River Rd. (EW)	CSS	1	0	1	0	0	0	0	1	0	0.5	0.5	0	20.2	21.4	C	C
37	Archibald St. (NS) at:																	
	• Schleisman Rd. (EW)	TS	1	1	1	1	1	0	1	1	1	1	1	0	--[4]	--[4]	F	F
38	- with improvements	TS	1	1	1	1	**2**	0	1	1	1	1	**2**	0	40.3	46.9	D	D
39	• Chandler St. (EW)	TS	1	2	1	1	2	0	1	2	1	1	2	1	36.7	33.7	D	C
	• River Rd. (EW)	CSS	1	1	0	0	1	1	1	0	1	0	0	0	83.3	--[4]	F	F
	- with improvements	**TS**	**2**	1	0	0	1	1	1	0	1	0	0	0	30.2	42.9	C	D
40	River Rd. (NS) at:																	
41	• Bluff St. (EW)	TS	1	1	0	1	2	0	0.5	0.5	1	0.5	0.5	1	13.6	10.5	B	B
	• Country Club Ln./Second St. (EW)	TS	1	2	1	1	2	1	1	1	1>	1	1	0	28.3	29.1	C	C
42	Lincoln Av. (NS) at:																	
43	• Pomona Rd. (EW)	TS	2	2	0	1	2	0	1	0.5	1.5>	1	1	0	26.7	26.2	C	C
	• SR-91 Fwy. EB Ramps (EW)	TS	1	2	1	1	2	0	0	1	0	0.5	0.5	1	30.4	23.3	C	C
44	Harrison Av. (NS) at:																	
	• Schleisman Rd. (EW)	AWS	1	1	1	0	1	0	0.5	0.5	1	0.5	0.5	1	--[4]	--[4]	F	F
	- with improvements	**TS**	1	1	1	**1**	1	0	**1**	**1**	0	**1**	**1**	0	35.3	33.6	D	C
45	Sumner Av. (NS) at:																	
	• Schleisman Rd. (EW)	AWS	0	1	0	0	1	1	1	0	1	0	**1**	0	--[4]	35.9	F	E
	- with improvements	**TS**	**1**	1	0	**1**	1	0	1	**1**	0	**1**	1	0	38.3	39.9	D	D
46	Cleveland Av. (NS) at:																	
	• Schleisman Rd. (EW)	AWS	0	1	0	0.5	0.5	0	0	1	0	1	1	0	--[4]	25.8	F	D
	- with improvements	**TS**	**1**	1	0	**1**	**1**	0	**1**	1	0	1	1	0	33.9	28.6	C	C
47	Hamner Av. (NS) at:																	
	• Schleisman Rd. (EW)	TS	1	2	1	1	2	1	1	1	0	1	1	0	35.6	39.0	D	D
48	I-15 Fwy. SB Ramps (NS) at:																	
	• Limonite Av. (EW)	TS	0	0	0	1	1	1	0	2	1	2	2	0	21.9	20.3	C	C
49	I-15 Fwy. SB Ramps (NS) at:																	
	• Schleisman Rd. (EW)	**TS**	0	0	0	**1**	0	**1**	0	**1**	**1>>**	**2**	**1**	0	14.4	14.9	B	B
50	I-15 Fwy. NB Ramps (NS) at:																	
	• Limonite Av. (EW)	TS	1	1	1	0	0	0	2	2	0	0	2	1	18.2	25.6	B	C
51	I-15 Fwy. NB Ramps (NS) at:																	
	• Schleisman Rd. (EW)	**TS**	**1**	0	**1**	0	0	0	**1**	**2**	0	0	**1**	**1**	13.8	13.9	B	B
	Cucamonga Av. (NS) at:																	
52	• West Site Access (EW)	**CSS**	0	**1**	0	0	**1**	0	0	0	0	0	**1**	0	10.0	9.2	B	A
	North West Site Access (NS) at:																	
53	• Chino Corona Rd. (EW)	CSS	0	**1**	0	0	0	0	0	1	0	**1**	1	0	14.9	13.7	B	B

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; >> = Free Right Turn; > = Right Turn Overlap.

[2] Delay and level of service calculated using the following analysis software: Traffix, Version 7.9 R1 (2007). Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal; AWS = All Way Stop; CSS = Cross Street Stop.

[4] -- = Delay High or V/C Ratio exceeding 1.0, Intersection Unstable, Level of Service "F".

[5] Without improvements configuration reflects Pine Avenue extension to El Prado Road.

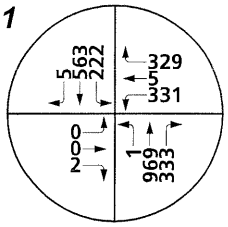
[6] Pedestrians are assumed not to occur on every cycle

[7] Intersection does not warrant a traffic signal. No other feasible improvements will provide acceptable LOS.

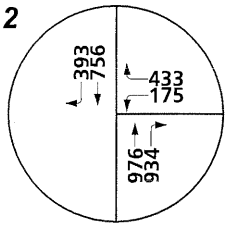
U:\UcJobs_04100-04500_04300\04369\Excel\[04369-20.xls]T 5-2

EXHIBIT 5-C

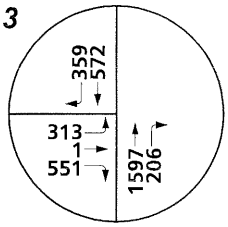
INTERIM YEAR WITH PROPOSED PROJECT AM PEAK HOUR INTERSECTION VOLUMES (PAGE 1 OF 2)

1


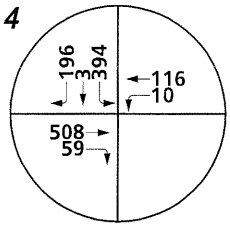
CENTRAL AV. & EL PRADO RD.

2


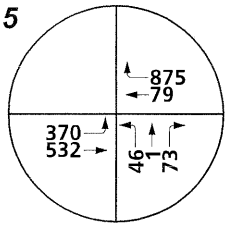
CENTRAL AV. & SR-71 FWY. NB RAMPS

3


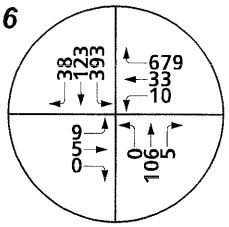
CENTRAL AV. & SR-71 FWY. SB RAMPS

4


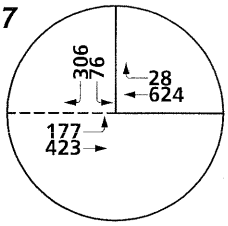
SR-71 FWY. SB RAMPS & PINE AV.

5


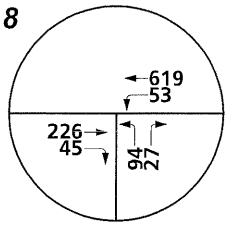
SR-71 FWY. NB RAMPS & PINE AV.

6


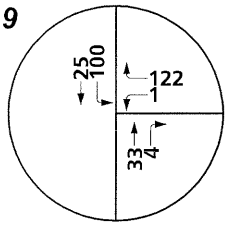
EL PRADO RD. & KIMBALL AV.

7


EL PRADO RD. & PINE AV.

8


MOUNTAIN AV. & KIMBALL AV.

9


MOUNTAIN AV. & BICKMORE AV.

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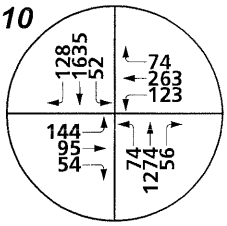
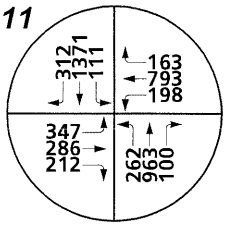
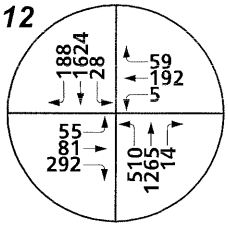


EUCLID AV. (SR-83) & SCHAEFER AV.

11


EUCLID AV. (SR-83) & EDISON AV.

12


EUCLID AV. (SR-83) & EUCALYPTUS AV.

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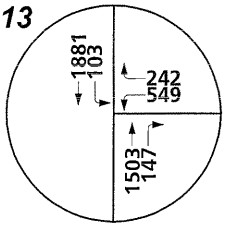

EUCLID AV. (SR-83) & MERRILL AV.

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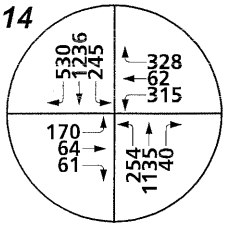

EUCLID AV. (SR-83) & KIMBALL AV.

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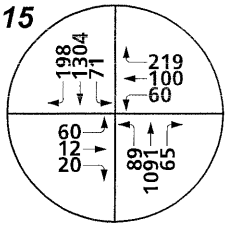
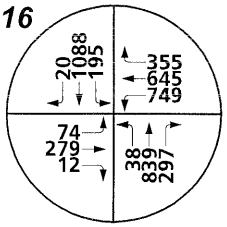
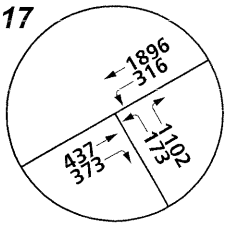


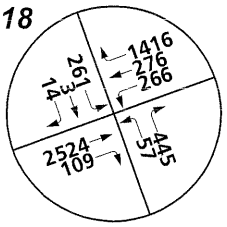
EUCLID AV. (SR-83) & BICKMORE AV.

16


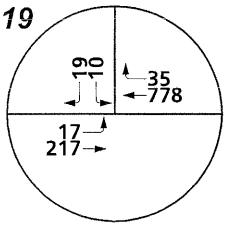
EUCLID AV. (SR-83) & PINE AV.

17


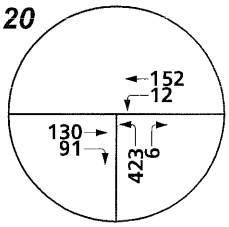
EUCLID AV. (SR-83) & SR-71 FWY. NB RAMPS

18


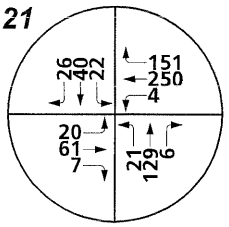
EUCLID AV. (SR-83)/ BUTTERFIELD RANCH RD. & SR-71 FWY. SB OFF-RAMP/SHADY VIEW DR.

19


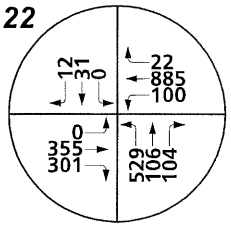
SULTANA AV. & PINE AV.

20


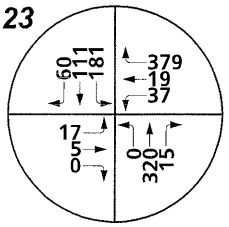
MILL CREEK RD. & KIMBALL AV.

21


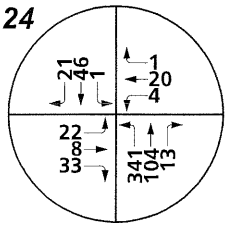
MILL CREEK RD. & BICKMORE AV.

22


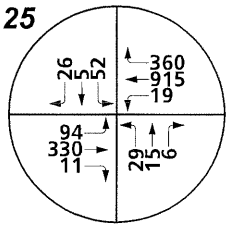
CHINO CORONA RD. & PINE AV.

23


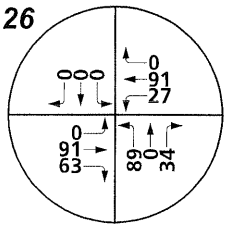
CUCAMONGA AV. & CHINO CORONA RD.

24


WEST PRESERVE LOOP & BICKMORE AV.

25


WEST PRESERVE LOOP & PINE AV.

26


MAIN ST. & KIMBALL AV.

N

EXHIBIT 5-C

INTERIM YEAR WITH PROPOSED PROJECT AM PEAK HOUR INTERSECTION VOLUMES (PAGE 2 OF 2)

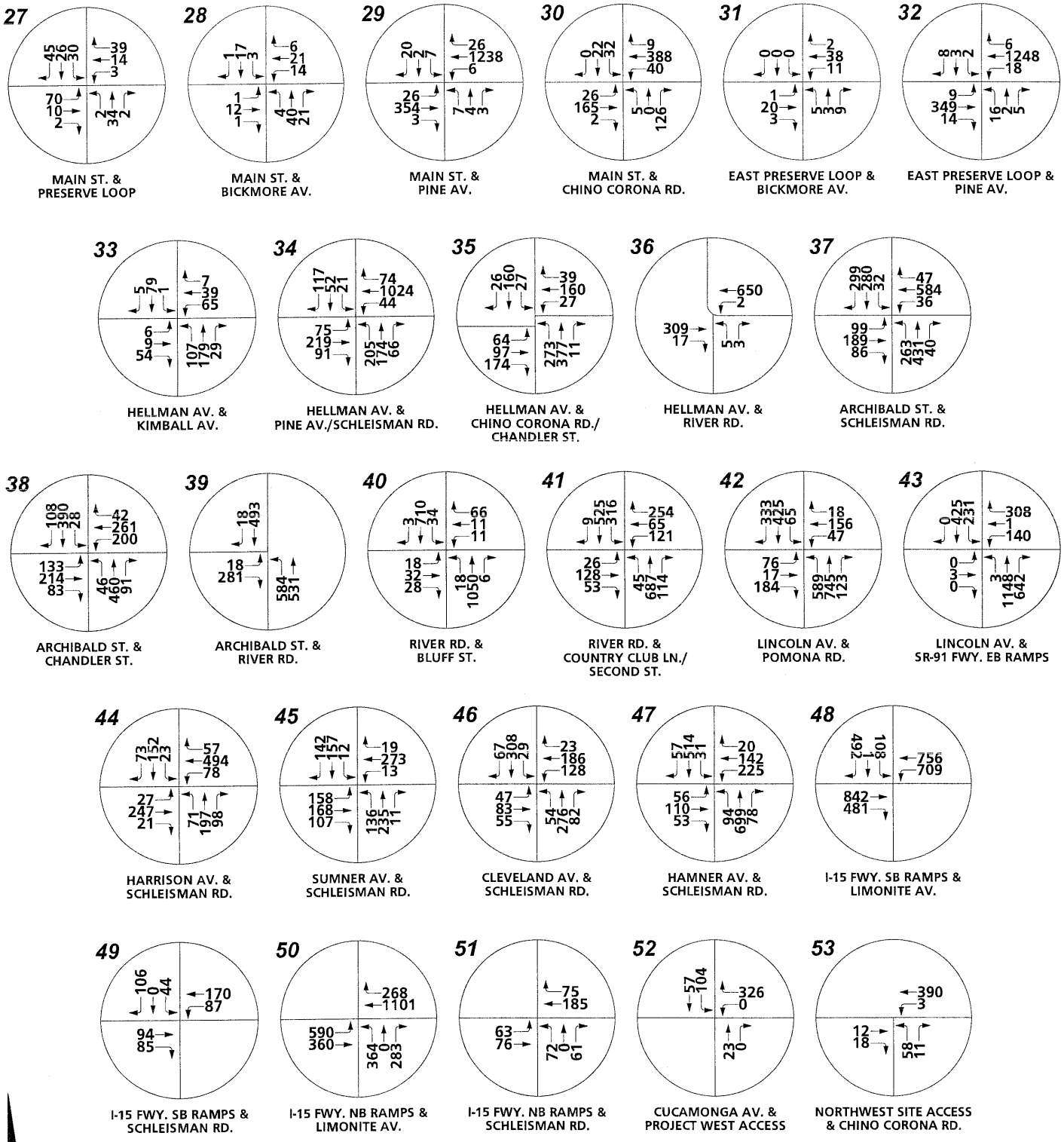


EXHIBIT 5-D

INTERIM YEAR WITH PROPOSED PROJECT PM PEAK HOUR INTERSECTION VOLUMES (PAGE 1 OF 2)

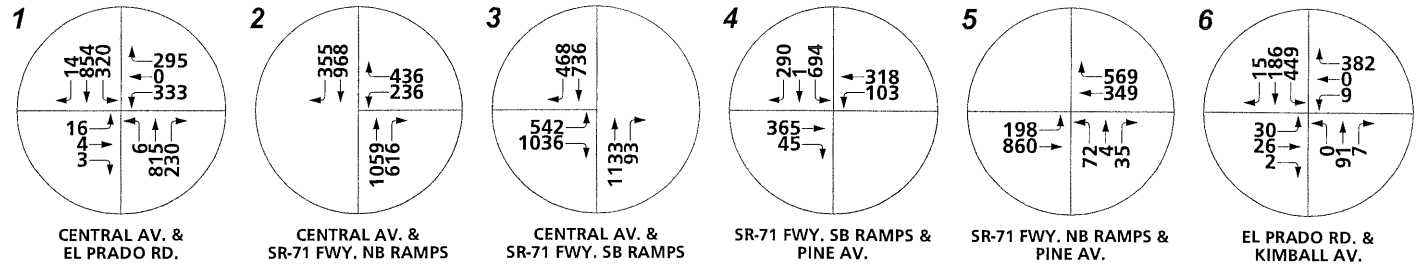
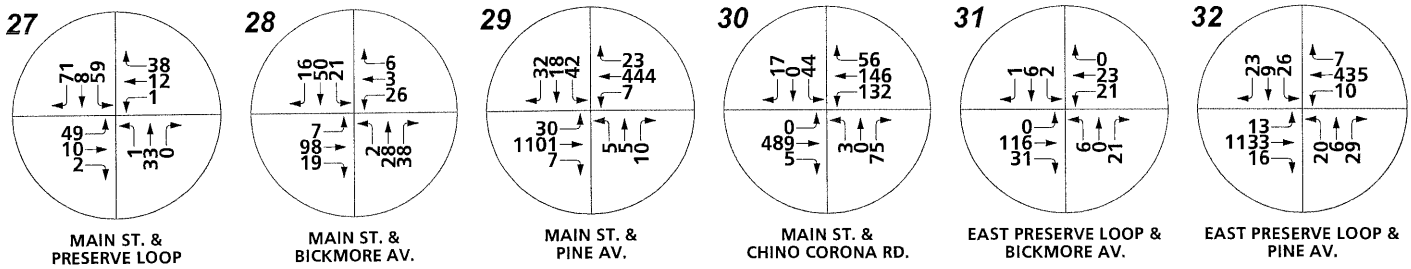


EXHIBIT 5-D

INTERIM YEAR WITH PROPOSED PROJECT PM PEAK HOUR INTERSECTION VOLUMES (PAGE 2 OF 2)



Euclid Avenue (SR-83) (NS) at:

- Edison Avenue (EW)
- Eucalyptus Avenue (EW)
- Merrill Avenue (EW)
- Kimball Avenue (EW)
- Bickmore Avenue (EW)
- Pine Avenue (EW)

Euclid Avenue (SR-83) / Butterfield Ranch Road (NS) at:

- SR-71 Freeway SB Off-Ramp / Shady View Drive (EW)

Mill Creek Road (NS) at:

- Kimball Avenue (EW)

Chino Corona Road / Mill Creek Road (NS) at:

- Pine Avenue (EW)

Cucamonga Avenue (NS) at

- Chino Corona Road (EW)

Main Street (NS) at:

- Pine Avenue (EW)

Hellman Avenue (NS) at:

- Kimball Avenue (EW)
- Pine Avenue/Schleisman Road (EW)
- Chino Corona Road/Chandler Street (EW)

Archibald Street (NS) at:

- Schleisman Road (EW)
- River Road (EW)

Harrison Avenue (NS) at:

- Schleisman Road (EW)

Sumner Avenue (NS) at:

- Schleisman Road (EW)

Cleveland Avenue (NS) at:

- Schleisman Road (EW)

I-15 Freeway SB Ramps (NS) at:

- Schleisman Road (EW)

I-15 Freeway NB Ramps (NS) at:

- Schleisman Road (EW)

Improvements have again been identified that will provide acceptable traffic operations at each of the deficient intersections under 2019 With Proposed Project conditions. Based on the analysis, no street cross-sections need revision/upgrading. The operations analysis worksheets for 2019 With Proposed Project with improvements conditions are included in Appendix "H".

The improvements for Interim Year With Proposed Project conditions are not identical to the improvements required for Interim Year Without Project (Alternative 1) conditions. For Interim Year With Proposed Project conditions, additional improvements are required at the following locations:

Euclid Avenue (NS) at

- Kimball Avenue (EW)
- Pine Avenue (EW)

Chino Corona Road / Mill Creek Road (NS) at:

- Pine Avenue (EW)

Cucamonga Avenue (NS) at:

- Chino Corona Road (EW)
- West Site Access (EW)

Main Street / North East Site Access (NS) at:

- Chino Corona Road (EW)

5.2 General Plan Buildout (Post-2030) Traffic Operations

5.2.1 General Plan Buildout (Post-2030) Without Project (Alternative 1) Conditions

The intersection operations analysis for General Plan Buildout (Post-2030) Without Project (Alternative 1) traffic conditions with existing geometrics are summarized in Table 5-3. General Plan Buildout (Post-2030) Without Project (Alternative 1) AM and PM peak hour intersection turning movement volumes are shown on Exhibits 5-E and 5-F, respectively. As shown in Table 5-3, the following study area intersections are projected to experience unacceptable traffic operations during the peak hours and are, therefore, deficient per City of Chino, County of San Bernardino, County of Riverside, or Caltrans criteria:

Central Avenue (NS) at:

- SR-71 Freeway SB Ramps (EW)

SR-71 Freeway SB Ramps (NS) at:

- Pine Avenue (EW)

SR-71 Freeway NB Ramps (NS) at:

- Pine Avenue (EW)

TABLE 5-3 (Page 1 of 3)

GENERAL PLAN BUILDOUT (POST-2030) WITHOUT PROJECT (ALTERNATIVE 1) CONDITIONS
INTERSECTION ANALYSIS SUMMARY

	INTERSECTION	TRAFFIC CONTROL[3]	INTERSECTION APPROACH LANES[1] NORTH-BOUND L	T	R	SOUTH-BOUND L	T	R	EAST-BOUND L	T	R	WEST-BOUND L	T	R	DELAY[2] (SECS.) AM	PM	LEVEL OF SERVICE AM	PM
	Central Av. (NS) at:																	
1	• El Prado Rd. (EW)[6]	TS	1	2	1	1	3	0	1	1	1	1.5	0.5	1>	35.4	30.3	D	C
2	• SR-71 Fwy. NB Ramps (EW)	TS	0	3	1>>	0	3	1>>	0	0	0	2	0	1	9.3	10.0	A	B
3	• SR-71 Fwy. SB Ramps (EW)	TS	0	3	1>>	0	3	1>>	2	0	1	0	0	0	11.1	--[4]	B	F
	-With Improvements	TS	0	3	1>>	0	3	1>>	2	0	**2**	0	0	0	7.5	12.6	A	B
	SR-71 Fwy. SB Ramps (NS) at:																	
4	• Pine Av. (EW)	TS	0	0	0	0.5	0.5	1	0	1	1	1	2	0	46.1	--[4]	D	F
	-With Improvements	TS	0	0	0	**1.5**	0.5	1	0	1	1	1	2	0	25.7	16.1	C	B
	SR-71 Fwy. NB Ramps (NS) at:																	
5	• Pine Av. (EW)[5]	AWS	1	0	1	0	0	0	**1**	**1**	0	0	**1**	0	--[4]	--[4]	F	F
	-With Improvements	**TS**	1	0	1	0	0	0	1	1	0	0	1	**1**	22.7	11.1	C	B
	El Prado Rd. (NS) at:																	
6	• Kimball Av. (EW)[6]	TS	1	1	1	1	1	1	1	1	0	0.5	0.5	1>	16.9	26.1	B	C
7	• Pine Av. (EW)	CSS	0	0	0	0	1	0	0	1	0	0	1	0	--[4]	--[4]	F	F
	-With Improvements	**TS**	0	0	0	0	1	0	**1**	1	0	0	**2**	0	20.5	32.4	C	C
	Mountain Av. (NS) at:																	
8	• Kimball Av. (EW)[6]	TS	1	0	1	0	0	0	0	2	0	1	2	0	10.6	11.6	B	B
9	• Bickmore Av. (EW)	CSS	0	1	0	1	1	0	0	0	0	1	0	1	10.8	10.3	B	B
	Euclid Av. (SR-83) (NS) at:																	
10	• Schaefer Av. (EW)	TS	1	2	1	1	2	1	1	1	1	0.5	0.5	1	40.1	--[4]	D	F
	-With Improvements	TS	1	2	1	1	2	1	1	**2**	1	0.5	0.5	1	40.0	39.3	D	D
11	• Edison Av. (EW)	TS	1	2	1	1	2	1	1	1	1	1	1	0	--[4]	--[4]	F	F
	-With Improvements	TS	1	**3**	1	**2**	**3**	1	**2**	**2**	1	**2**	**3**	**1**	35.4	46.5	D	D
12	• Eucalyptus Av. (EW)	TS	1	2	1	1	2	1	1	1	1	1	1	0	--[4]	--[4]	F	F
	-With Improvements[6]	TS	**2**	**3**	1	1	**3**	1	**2**	1	**1>>**	1	1	1	35.8	38.2	D	D
13	• Merrill Av. (EW)	TS	1	2	1	1	2	0	0	0	0	0	1	0	--[4]	10.2	F	B
	-With Improvements[6]	TS	1	2	1	1	**3**	0	0	0	0	**1**	0	**1**	21.8	17.6	C	B
14	• Kimball Av. (EW)	TS	1	2	1	1	2	1	1	1	1	0.5	0.5	1	--[4]	--[4]	F	F
	-With Improvements[6]	TS	1	**3**	0	1	**3**	**1>>**	**2**	1	1	**2**	**1**	**1>>**	38.5	42.8	D	D
15	• Bickmore Av. (EW)	CSS	1	1	1	1	1	1	0.5	0.5	1	1	1	1	--[4]	--[4]	F	F
	-With Approved Geometry[6]	**TS**	1	**4**	**2**	**2**	**4**	1	**1**	**1**	1	**2**	0.5	**1.5**	31.9	31.2	C	C
16	• Pine Av. (EW)	TS	1	2	1	1	2	1	0.5	0.5	1>>	0.5	0.5	1	--[4]	--[4]	F	F
	-With Improvements[6]	TS	1	**3**	**1>>**	**2**	**3**	1	**1**	**3**	1>>	**2**	**1**	1	40.5	39.6	D	D
17	• SR-71 Fwy. NB Ramps (EW)	TS	0	2	1>>	1	2	0	0	0	0	2	0	1>>	6.8	8.5	A	A
	Euclid Av. (SR-83)/ Butterfield Ranch Rd. (NS) at:																	
18	• SR-71 Fwy. SB Off-Ramp/ Shady View Dr. (EW)	TS	0	2	1	1	2	1>>	1.5	0.5	1	1	0	1>	--[4]	19.6	F	B
	-With Improvements[6]	TS	0	**3**	1	**2**	2	1>>	1.5	0.5	1	1	0	**2>**	25.8	18.0	C	B
	Sultana Av. (NS) at:																	
19	• Pine Av. (EW)	CSS	0	0	0	0	**1**	0	**1**	1	0	0	1	0	--[4]	--[4]	F	F
	-With Improvements	**TS**	0	0	0	0	1	0	1	**2**	0	0	**2**	0	7.9	9.4	A	A
	Mill Creek Rd. (NS) at:																	
20	• Kimball Av. (EW)	CSS	1	0	1	0	0	0	0	1	0	1	1	0	--[4]	16.2	F	C
	-With Improvements	**TS**	1	0	1	0	0	0	0	1	0	1	1	0	17.1	6.4	B	A
21	• Bickmore Av. (EW)	AWS	0	1	0	1	1	0	0	1	0	0	1	0	12.1	23.7	B	C

TABLE 5-3 (Page 2 of 3)

GENERAL PLAN BUILDOUT (POST-2030) WITHOUT PROJECT (ALTERNATIVE 1) CONDITIONS
INTERSECTION ANALYSIS SUMMARY

	INTERSECTION	TRAFFIC CONTROL[3]	INTERSECTION APPROACH LANES[1] NORTH-BOUND L	NORTH-BOUND T	NORTH-BOUND R	SOUTH-BOUND L	SOUTH-BOUND T	SOUTH-BOUND R	EAST-BOUND L	EAST-BOUND T	EAST-BOUND R	WEST-BOUND L	WEST-BOUND T	WEST-BOUND R	DELAY[2] (SECS.) AM	DELAY[2] (SECS.) PM	LEVEL OF SERVICE AM	LEVEL OF SERVICE PM
	Chino Corona Rd./Mill Creek Rd. (NS) at:																		
22	• Pine Av. (EW)	TS	1	1	0	1	1	0	1	1	1>>	1	1	0	--[4]	--[4]	F	F
	-With Improvements (Standard Phasing)	TS	1	1	0	1	1	0	1	2	1	1	2	0	26.9	52.8	C	D
	Cucamonga Av. (NS) at:																		
23	• Chino Corona Rd. (EW)	AWS	0	1	0	0	1	0	0	1	0	0	1	0	12.7	17.3	B	C
	West Preserve Loop (NS) at:																		
24	• Bickmore Av. (EW)	AWS	0	1	0	0	1	0	0	1	0	0	1	0	16.8	17.6	C	C
25	• Pine Av. (EW)	TS	0	1	0	1	1	0	1	1	0	1	1	0	--[4]	--[4]	F	F
	-With Improvements[6]	TS	1	1	0	1	1	0	1	2	0	1	2	0	23.4	19.0	C	B
	Main St. (NS) at:																		
26	• Kimball Av. (EW)	AWS	1	0	1	0	0	0	0	1	1	1	1	0	10.7	12.4	B	B
27	• Preserve Loop (EW)	AWS	0	1	0	0.5	0.5	1	1	1	0	1	1	0	9.2	10.1	A	B
28	• Bickmore Av. (EW)	CSS	0	1	0	0	1	0	0	1	0	0	1	0	12.1	51.5	B	F
	-With Improvements	AWS	0	1	0	0	1	0	0	1	0	0	1	0	8.4	15.5	A	C
29	• Pine Av. (EW)	CSS	0	1	0	0	1	0	0	1	0	0	1	0	--[4]	--[4]	F	F
	-With Improvements[6]	TS	1	1	0	1	1	0	1	2	0	1	2	0	19.4	19.5	B	B
30	• Chino Corona Rd. (EW)	CSS	0	0	0	0	1	0	0	1	0	0	1	0	22.9	23.7	C	C
	East Preserve Loop (NS) at:																		
31	• Bickmore Av. (EW)	CSS	0	1	0	0	1	0	0	1	0	0	1	0	10.0	17.9	A	C
32	• Pine Av. (EW)	CSS	0	1	0	0	1	0	0	1	0	0	1	0	--[4]	--[4]	F	F
	-With Improvements	TS	1	1	0	1	1	0	1	2	0	1	2	0	52.6	47.3	D	D
	Hellman Av. (NS) at:																		
33	• Kimball Av. (EW)	CSS	0	1	0	0	1	0	0	1	0	0	1	0	--[4]	--[4]	F	F
	-With Improvements	TS	1	2	0	1	2	0	1	1	1>	1	1	0	31.3	41.9	C	D
34	• Pine Av./Schleisman Rd. (EW)	CSS	0	1	0	0	1	0	0	1	0	0	1	0	--[4]	--[4]	F	F
	-With Planned Ultimate Improvements	TS	2	2	1	2	2	1	2	3	1	2	3	1	35.9	36.7	D	D
35	• Chino Corona Rd./Chandler St. (EW)	CSS	0	1	0	0	1	0	0.5	0.5	1	0	1	0	--[4]	--[4]	F	F
	-With Improvements	TS	1	2	0	1	2	0	1	1	0	1	1	0	25.4	43.8	C	D
36	• River Rd. (EW)	CSS	1	0	1	0	0	0	0	1	0	0.5	0.5	0	70.2	--[4]	F	F
	-With Improvements	TS	1	0	1	0	0	0	0	1	0	1	1	0	12.1	29.3	B	C
	Archibald St. (NS) at:																		
37	• Schleisman Rd. (EW)	TS	1	1	1	1	1	0	1	1	1	1	1	0	--[4]	--[4]	F	F
	-With Improvements	TS	1	1	1	2	2	0	1	3	0	1	3	0	51.7	47.6	D	D
38	• Chandler St. (EW)[6]	TS	1	2	1	1	2	0	1	2	1	1	2	1	35.8	33.7	D	C
39	• River Rd. (EW)	CSS	1	1	0	0	1	1	1	0	1	0	0	0	--[4]	--[4]	F	F
	-With Improvements	TS	2	1	0	0	1	1	1	0	1>>	0	0	0	29.1	23.7	C	C
	River Rd. (NS) at:																		
40	• Bluff St. (EW)	TS	1	1	0	1	2	0	0.5	0.5	1	0.5	0.5	1	--[4]	--[4]	F	F
	-With Improvements	TS	1	2	0	1	2	0	1	1	0	1	1	0	33.6	35.8	C	D
41	• Country Club Ln./Second St. (EW)	TS	1	2	1	1	2	1	1	1	1>	1	1	0	36.4	34.1	D	C
	Lincoln Av. (NS) at:																		
42	• Pomona Rd. (EW)	TS	2	2	0	1	2	0	1	0.5	1.5>	1	1	0	43.4	41.8	D	D
43	• SR-91 Fwy. EB Ramps (EW)	TS	1	2	1	1	2	0	0	1	0	0.5	0.5	1	--[4]	27.5	F	C
	-With Improvements	TS	1	2	1>	1	2	0	0	1	0	0.5	0.5	1>	37.7	26.5	D	C
	Harrison Av. (NS) at:																		
44	• Schleisman Rd. (EW)	AWS	1	1	1	0	1	0	0.5	0.5	1	0.5	0.5	1	--[4]	--[4]	F	F
	-With Improvements	TS	1	1	1	1	1	0	1	3	0	1	2	0	37.2	37.6	D	D

TABLE 5-3 (Page 3 of 3)

GENERAL PLAN BUILDOUT (POST-2030) WITHOUT PROJECT (ALTERNATIVE 1) CONDITIONS
INTERSECTION ANALYSIS SUMMARY

	INTERSECTION	TRAFFIC CONTROL[3]	INTERSECTION APPROACH LANES[1] NORTH-BOUND L	T	R	SOUTH-BOUND L	T	R	EAST-BOUND L	T	R	WEST-BOUND L	T	R	DELAY[2] (SECS.) AM	PM	LEVEL OF SERVICE AM	PM
	Sumner Av. (NS) at:																	
45	• Schleisman Rd. (EW)	AWS	0	1	0	0	1	1	1	0	1	0	1	0	--[4]	--[4]	F	F
	-With Improvements	**TS**	**1**	1	0	**1**	1	0	1	**3**	0	**1**	**2**	0	50.7	41.6	D	D
	Cleveland Av. (NS) at:																	
46	• Schleisman Rd. (EW)	AWS	0	1	0	0.5	0.5	0	0	**1**	0	1	**1**	0	--[4]	--[4]	F	F
	-With Improvements[6]	**TS**	**1**	1	0	**1**	**1**	**1>**	**1**	**3**	0	1	**2**	0	39.2	44.4	D	D
	Hamner Av. (NS) at:																	
47	• Schleisman Rd. (EW)	TS	1	2	1	1	2	1	1	1	0	1	1	0	43.4	--[4]	D	F
	-With Improvements	TS	1	**3**	1	1	**3**	1	1	**3**	0	1	1	0	41.7	47.9	D	D
	I-15 Fwy. SB Ramps (NS) at:																	
48	• Limonite Av. (EW)	TS	0	0	0	1	1	1	0	2	1	2	2	0	25.3	27.1	C	C
	I-15 Fwy. SB Ramps (NS) at:																	
49	• Schleisman Rd. (EW)	**TS**	0	0	0	**1**	0	**1**	0	**2**	**1>>**	**2**	**2**	0	16.9	20.0	B	C
	I-15 Fwy. NB Ramps (NS) at:																	
50	• Limonite Av. (EW)	TS	1	1	1	0	0	0	2	2	0	0	2	1	28.0	31.9	C	C
	I-15 Fwy. NB Ramps (NS) at:																	
51	• Schleisman Rd. (EW)	**TS**	**1**	0	**1**	0	0	0	**1**	**2**	0	0	1	**1**	25.3	38.1	C	D

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[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; >> = Free Right Turn; > = Right Turn Overlap.

[2] Delay and level of service calculated using the following analysis software: Traffix, Version 7.9 R1 (2007). Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal; AWS = All Way Stop; CSS = Cross Street Stop.

[4] -- = Delay High or V/C Ratio exceeding 1.0, Intersection Unstable, Level of Service "F".

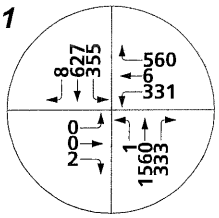
[5] Configuration reflects Pine Avenue extension to El Prado Road.

[6] Pedestrians are assumed not to occur on every cycle

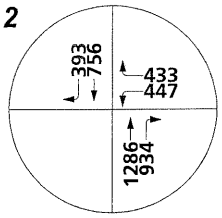
U:\UcJobs_04100-04500_04300\04369\Excel\[04369-20.xls]T 5-3

EXHIBIT 5-E

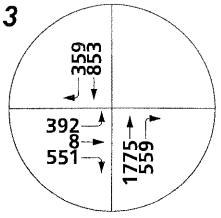
GENERAL PLAN BUILDOUT (POST-2030) WITHOUT PROJECT (ALTERNATIVE 1) AM PEAK HOUR INTERSECTION VOLUMES (PAGE 1 OF 2)

1


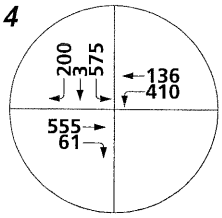
CENTRAL AV. & EL PRADO RD.

2


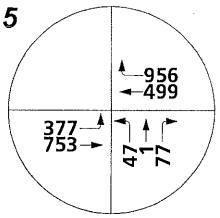
CENTRAL AV. & SR-71 FWY. NB RAMPS

3


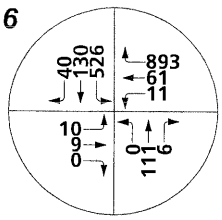
CENTRAL AV. & SR-71 FWY. SB RAMPS

4


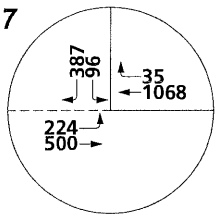
SR-71 FWY. SB RAMPS & PINE AV.

5


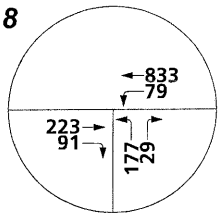
SR-71 FWY. NB RAMPS & PINE AV.

6


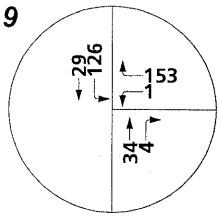
EL PRADO RD. & KIMBALL AV.

7


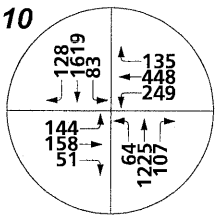
EL PRADO RD. & PINE AV.

8


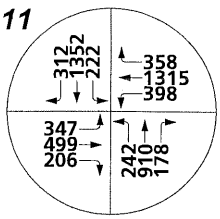
MOUNTAIN AV. & KIMBALL AV.

9


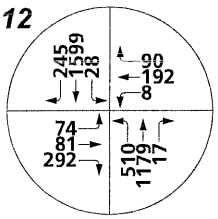
MOUNTAIN AV. & BICKMORE AV.

10


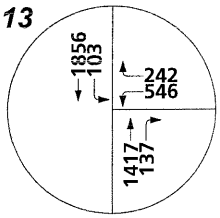
EUCLID AV. (SR-83) & SCHAEFER AV.

11


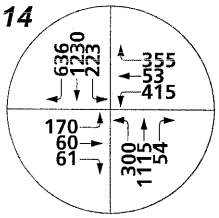
EUCLID AV. (SR-83) & EDISON AV.

12


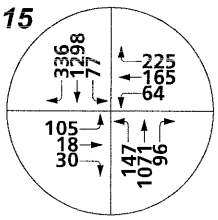
EUCLID AV. (SR-83) & EUCALYPTUS AV.

13


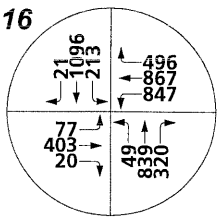
EUCLID AV. (SR-83) & MERRILL AV.

14


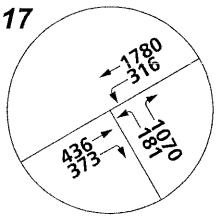
EUCLID AV. (SR-83) & KIMBALL AV.

15


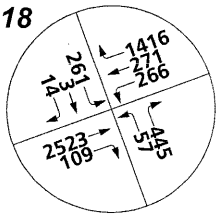
EUCLID AV. (SR-83) & BICKMORE AV.

16


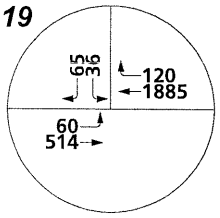
EUCLID AV. (SR-83) & PINE AV.

17


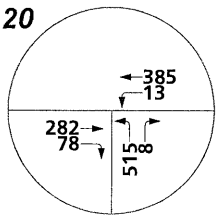
EUCLID AV. (SR-83) & SR-71 FWY. NB RAMPS

18


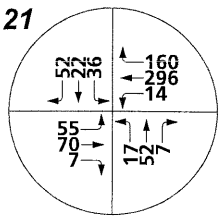
EUCLID AV. (SR-83)/ BUTTERFIELD RANCH RD. & SR-71 FWY. SB OFF-RAMP/SHADY VIEW DR.

19


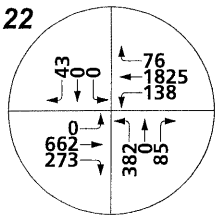
SULTANA AV. & PINE AV.

20


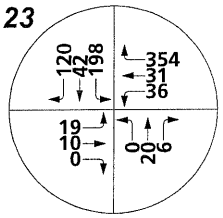
MILL CREEK RD. & KIMBALL AV.

21


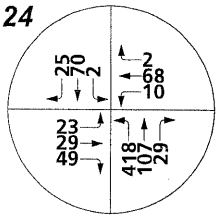
MILL CREEK RD. & BICKMORE AV.

22


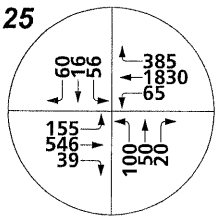
CHINO CORONA RD. & PINE AV.

23


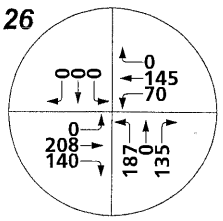
CUCAMONGA AV. & CHINO CORONA RD.

24


WEST PRESERVE LOOP & BICKMORE AV.

25


WEST PRESERVE LOOP & PINE AV.

26


MAIN ST. & KIMBALL AV.

N

EXHIBIT 5-E

GENERAL PLAN BUILDOUT (POST-2030) WITHOUT PROJECT (ALTERNATIVE 1) AM PEAK HOUR INTERSECTION VOLUMES (PAGE 2 OF 2)

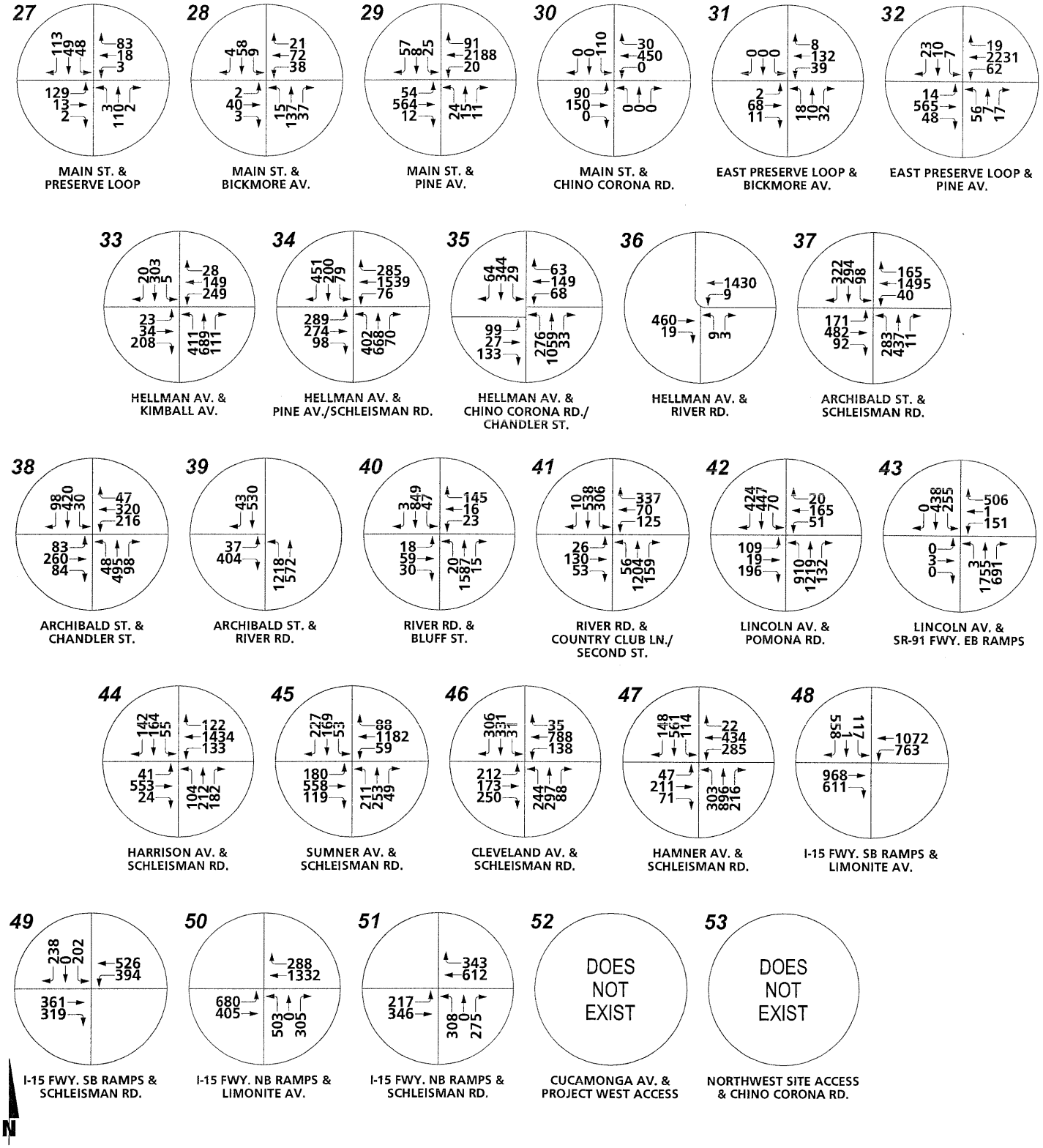


EXHIBIT 5-F

GENERAL PLAN BUILDOUT (POST-2030) WITHOUT PROJECT (ALTERNATIVE 1) PM PEAK HOUR INTERSECTION VOLUMES (PAGE 1 OF 2)

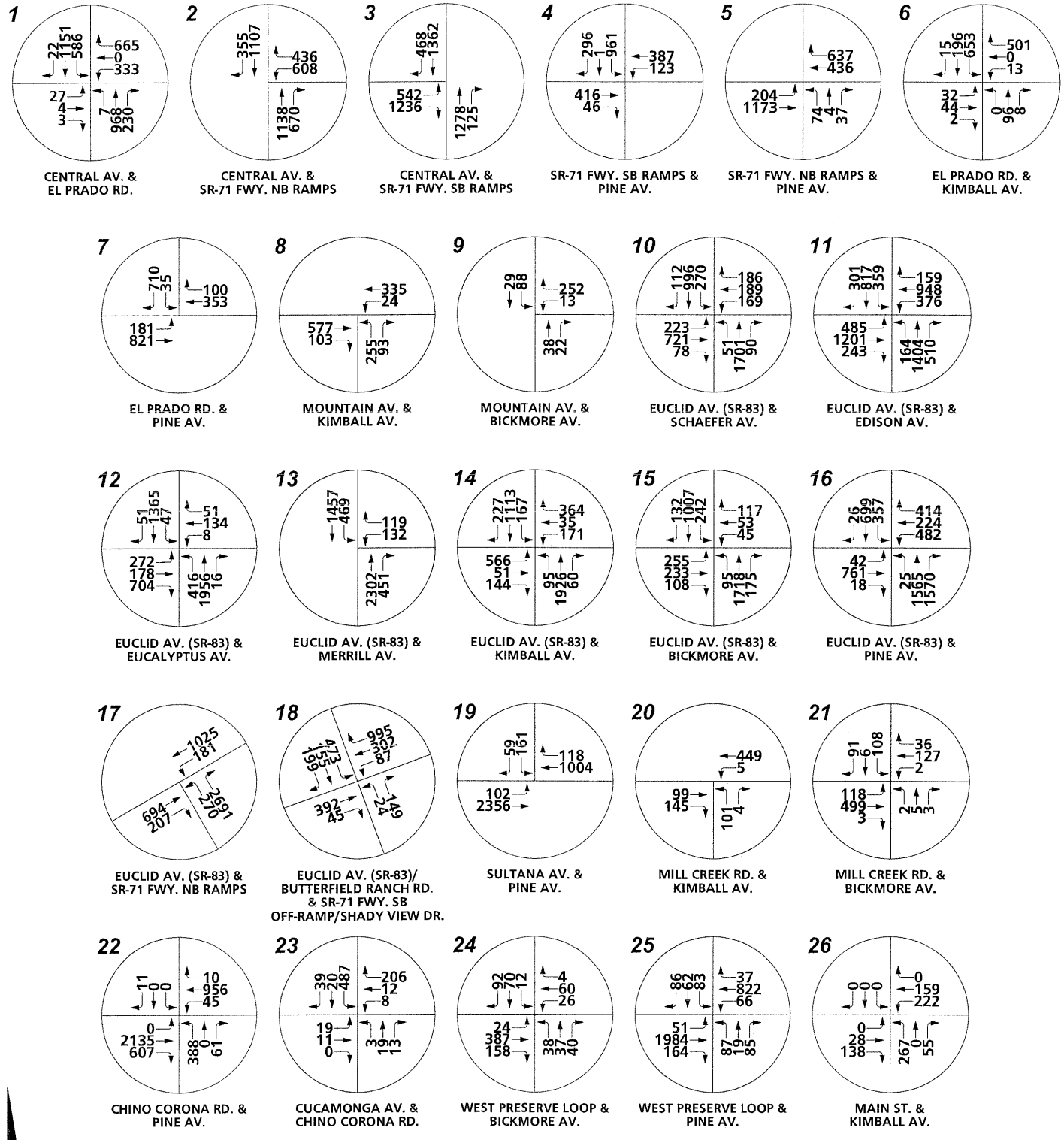
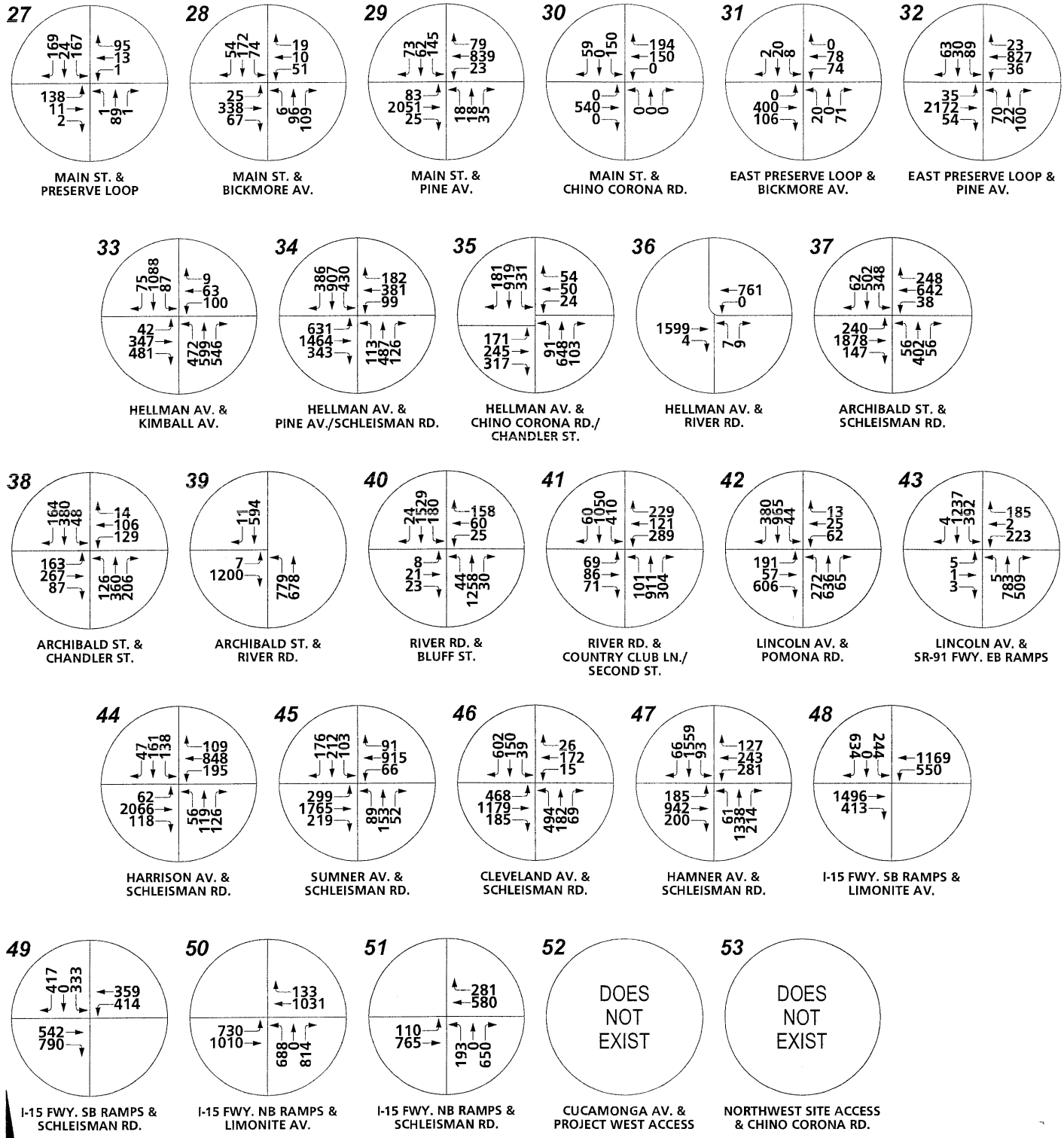


EXHIBIT 5-F

GENERAL PLAN BUILDOUT (POST-2030) WITHOUT PROJECT (ALTERNATIVE 1) PM PEAK HOUR INTERSECTION VOLUMES (PAGE 2 OF 2)



El Prado Road (NS) at:

- Pine Avenue (EW)

Euclid Avenue (SR-83) (NS) at:

- Schaefer Avenue (EW)
- Edison Avenue (EW)
- Eucalyptus Avenue (EW)
- Merrill Avenue (EW)
- Kimball Avenue (EW)
- Bickmore Avenue (EW)
- Pine Avenue (EW)

Euclid Avenue (SR-83) / Butterfield Ranch Road (NS) at:

- SR-71 Freeway SB Off-Ramp / Shady View Drive (EW)

Sultana Avenue (NS) at:

- Pine Avenue (EW)

Mill Creek Road (NS) at:

- Kimball Avenue (EW)

Chino Corona Road / Mill Creek Road (NS) at:

- Pine Avenue (EW)

West Preserve Loop (NS) at:

- Pine Avenue (EW)

Main Street (NS) at:

- Bickmore Avenue (EW)
- Pine Avenue (EW)

East Preserve Loop (NS) at:

- Pine Avenue (EW)

Hellman Avenue (NS) at:

- Kimball Avenue (EW)
- Pine Avenue/Schleisman Road (EW)
- Chino Corona Road/Chandler Street (EW)
- River Road (EW)

Archibald Street (NS) at:

- Schleisman Road (EW)
- River Road (EW)

River Road (NS) at:

- Bluff Street (EW)

Lincoln Avenue (NS) at:

- SR-91 Freeway EB Ramps (EW)

Harrison Avenue (NS) at:

- Schleisman Road (EW)

Sumner Avenue (NS) at:

- Schleisman Road (EW)

Cleveland Avenue (NS) at:

- Schleisman Road (EW)

Hamner Avenue (NS) at:

- Schleisman Road (EW)

I-15 Freeway SB Ramps (NS) at:

- Schleisman Road (EW)

I-15 Freeway NB Ramps (NS) at:

- Schleisman Road (EW)

Improvements have been identified that will provide acceptable traffic operations at each of the deficient intersections for General Plan Buildout (Post-2030) Without Project (Alternative 1) conditions. Based on the analysis, no street cross-sections need revision/upgrading. The operations analysis worksheets for General Plan Buildout (Post-2030) Without Project (Alternative 1) without and with improvements conditions are included in Appendix "I".

5.2.2 General Plan Buildout (Post-2030) With Proposed Project Conditions

The intersection operations analysis for General Plan Buildout (Post-2030) With Proposed Project traffic conditions with existing geometrics are summarized in Table 5-4. General Plan Buildout (Post-2030) With Proposed Project AM and PM peak hour intersection turning movement volumes are shown on Exhibits 5-G and 5-H, respectively. As shown in Table 5-4, the following intersections for General Plan Buildout (Post-2030) With Proposed Project conditions are projected to experience unacceptable levels of service operations during the peak hours and are, therefore, deficient per City of Chino, County of San Bernardino, County of Riverside, or Caltrans criteria:

Central Avenue (NS) at:

- SR-71 Freeway SB Ramps (EW)

SR-71 Freeway SB Ramps (NS) at:

- Pine Avenue (EW)

TABLE 5-4 (Page 1 of 3)

GENERAL PLAN BUILDOUT (POST-2030) WITH PROPOSED PROJECT CONDITIONS
INTERSECTION ANALYSIS SUMMARY

	INTERSECTION	TRAFFIC CONTROL[3]	INTERSECTION APPROACH LANES[1] NORTH-BOUND L	T	R	SOUTH-BOUND L	T	R	EAST-BOUND L	T	R	WEST-BOUND L	T	R	DELAY[2] (SECS.) AM	PM	LEVEL OF SERVICE AM	PM
	Central Av. (NS) at:																	
1	• El Prado Rd. (EW)[6]	TS	1	2	1	1	3	0	1	1	1	1.5	0.5	1>	36.5	30.6	D	C
2	• SR-71 Fwy. NB Ramps (EW)	TS	0	3	1>>	0	3	1>>	0	0	0	2	0	1	9.3	10.0	A	B
3	• SR-71 Fwy. SB Ramps (EW)	TS	0	3	1>>	0	3	1>>	2	0	1	0	0	0	11.7	--[4]	B	F
	-With Improvements	TS	0	3	1>>	0	3	1>>	2	0	**2**	0	0	0	7.5	12.6	A	B
	SR-71 Fwy. SB Ramps (NS) at:																	
4	• Pine Av. (EW)	TS	0	0	0	0.5	0.5	1	0	1	1	1	2	0	58.1	--[4]	E	F
	-With Improvements	TS	0	0	0	**1.5**	0.5	1	0	1	1	1	2	0	28.3	16.7	C	B
	SR-71 Fwy. NB Ramps (NS) at:																	
5	• Pine Av. (EW)[5]	AWS	1	0	1	0	0	0	**1**	**1**	0	0	**1**	0	--[4]	--[4]	F	F
	-With Improvements	**TS**	1	0	1	0	0	0	1	1	0	0	1	**1**	24.8	12.2	C	B
	El Prado Rd. (NS) at:																	
6	• Kimball Av. (EW)[6]	TS	1	1	1	1	1	1	1	1	0	0.5	0.5	1>	16.9	26.3	B	C
7	• Pine Av. (EW)	CSS	0	0	0	0	**1**	0	0	1	0	0	**1**	0	--[4]	--[4]	F	F
	-With Improvements	**TS**	0	0	0	0	1	0	**1**	**1**	0	0	**2**	0	21.6	45.2	C	D
	Mountain Av. (NS) at:																	
8	• Kimball Av. (EW)[6]	TS	1	0	1	0	0	0	0	2	0	1	2	0	10.6	11.6	B	B
9	• Bickmore Av. (EW)	CSS	0	1	0	1	1	0	0	0	0	1	0	1	10.8	10.3	B	B
	Euclid Av. (SR-83) (NS) at:																	
10	• Schaefer Av. (EW)	TS	1	2	1	1	2	1	1	1	1	0.5	0.5	1	41.4	--[4]	D	F
	-With Improvements	TS	1	2	1	1	2	1	1	**2**	1	0.5	0.5	1	40.4	39.6	D	D
11	• Edison Av. (EW)	TS	1	2	1	1	2	1	1	1	1	1	1	0	--[4]	--[4]	F	F
	-With Improvements	TS	1	**3**	1	**2**	**3**	1	**2**	**2**	1	**2**	**3**	**1**	35.8	43.6	D	D
12	• Eucalyptus Av. (EW)	TS	1	2	1	1	2	1	1	1	1	1	1	0	--[4]	--[4]	F	F
	-With Improvements[6]	TS	2	**3**	1	1	**3**	1	**2**	1	**1>>**	1	1	0	36.3	38.7	D	D
13	• Merrill Av. (EW)	TS	1	2	1	1	2	0	0	0	0	0	1	0	--[4]	11.0	F	B
	-With Improvements	TS	1	2	1	1	**3**	0	0	0	0	**1**	0	**1**	21.7	19.6	C	B
14	• Kimball Av. (EW)	TS	1	2	1	1	2	1	1	1	1	0.5	0.5	1	--[4]	--[4]	F	F
	-With Improvements[6]	TS	1	**3**	1	1	**3**	**1>>**	**2**	1	1	**2**	**1**	**1>>**	39.7	44.7	D	D
15	• Bickmore Av. (EW)	CSS	1	1	1	1	1	1	0.5	0.5	1	1	1	1	--[4]	--[4]	F	F
	-With Approved Geometry[6]	**TS**	1	**4**	**2**	**2**	**4**	1	**1**	**1**	1	**2**	0.5	**1.5**	31.8	31.2	C	C
16	• Pine Av. (EW)	TS	1	2	1	1	2	1	0.5	0.5	1>>	0.5	0.5	1	--[4]	--[4]	F	F
	-With Improvements	TS	1	**3**	**1>>**	**2**	**3**	1	**1**	**3**	1>>	**2**	**2**	1	40.9	40.7	D	D
17	• SR-71 Fwy. NB Ramps (EW)	TS	0	2	1>>	1	2	0	0	0	0	2	0	1>>	7.0	8.5	A	A
	Euclid Av. (SR-83)/ Butterfield Ranch Rd. (NS) at:																	
18	• SR-71 Fwy. SB Off-Ramp/ Shady View Dr. (EW)	TS	0	2	1	1	2	1>>	1.5	0.5	1	1	0	1>	--[4]	19.7	F	B
	-With Improvements	TS	0	**3**	1	**2**	2	1>>	1.5	0.5	1	1	0	**2>**	26.2	28.1	C	C
	Sultana Av. (NS) at:																	
19	• Pine Av. (EW)	CSS	0	0	0	0	**1**	0	1	1	0	0	**1**	0	--[4]	--[4]	F	F
	-With Improvements	**TS**	0	0	0	0	1	0	**1**	**2**	0	0	**2**	0	10.7	12.0	B	B
	Mill Creek Rd. (NS) at:																	
20	• Kimball Av. (EW)	CSS	1	0	1	0	0	0	0	1	0	1	1	0	--[4]	17.7	F	C
	-With Improvements	**TS**	1	0	1	0	0	0	0	1	0	1	1	0	18.3	7.1	B	A
21	• Bickmore Av. (EW)	AWS	0	1	0	1	1	0	0	1	0	0	1	0	13.0	30.1	B	D

TABLE 5-4 (Page 2 of 3)

GENERAL PLAN BUILDOUT (POST-2030) WITH PROPOSED PROJECT CONDITIONS
INTERSECTION ANALYSIS SUMMARY

	INTERSECTION	TRAFFIC CONTROL[3]	INTERSECTION APPROACH LANES[1] NORTH-BOUND L	T	R	SOUTH-BOUND L	T	R	EAST-BOUND L	T	R	WEST-BOUND L	T	R	DELAY[2] (SECS.) AM	PM	LEVEL OF SERVICE AM	PM
	Chino Corona Rd./Mill Creek Rd. (NS) at:																	
22	• Pine Av. (EW)	TS	1	1	0	1	1	0	1	1	1>>	1	1	0	--[4]	--[4]	F	F
	-With Improvements (Split Phasing)	TS	1.5	0.5	0	1	1	0	1	2	1	1	2	0	32.6	44.0	C	D
	-With Improvements (Standard Phasing)	TS	2	1	0	1	1	0	1	2	1	1	2	0	25.1	32.4	C	C
	Cucamonga Av. (NS) at:																	
23	• Chino Corona Rd. (EW)	AWS	0	1	0	0	1	0	0	1	0	0	1	0	22.9	--[4]	C	F
	-With Improvements	TS	1	1	0	1	1	0	1	1	0	1	1	0	27.0	30.0	C	C
	West Preserve Loop (NS) at:																	
24	• Bickmore Av. (EW)	AWS	0	1	0	0	1	0	0	1	0	0	1	0	17.1	17.8	C	C
25	• Pine Av. (EW)	TS	0	1	0	1	1	0	1	1	0	1	1	0	--[4]	--[4]	F	F
	-With Improvements[6]	TS	1	1	0	1	1	0	1	2	0	1	2	0	25.5	19.4	C	B
	Main St. (NS) at:																	
26	• Kimball Av. (EW)	AWS	1	0	1	0	0	0	0	1	1	1	1	0	10.8	12.6	B	B
27	• Preserve Loop (EW)	AWS	0	1	0	0.5	0.5	1	1	1	0	1	1	0	9.4	10.3	A	B
28	• Bickmore Av. (EW)	CSS	0	1	0	0	1	0	0	1	0	0	1	0	12.5	--[4]	B	F
	-With Improvements	AWS	0	1	0	0	1	0	0	1	0	0	1	0	8.6	16.1	A	C
29	• Pine Av. (EW)	CSS	0	1	0	0	1	0	0	1	0	0	1	0	--[4]	--[4]	F	F
	-With Improvements[6]	TS	1	1	0	1	1	0	1	2	0	1	2	0	20.3	21.4	C	C
	Main St. / North East Site Access (NS) at:																	
30	• Chino Corona Rd. (EW)	CSS	0	1	0	0	1	0	0	1	0	1	1	0	--[4]	--[4]	F	F
	-With Improvements	TS	1	1	0	1	1	0	1	1	0	1	1	0	24.0	20.2	C	C
	East Preserve Loop (NS) at:																	
31	• Bickmore Av. (EW)	CSS	0	1	0	0	1	0	0	1	0	0	1	0	10.0	17.9	A	C
32	• Pine Av. (EW)	CSS	0	1	0	0	1	0	0	1	0	0	1	0	--[4]	--[4]	F	F
	-With Improvements	TS	1	1	0	1	1	0	1	2	0	1	2	0	53.1	48.2	D	D
	Hellman Av. (NS) at:																	
33	• Kimball Av. (EW)	CSS	0	1	0	0	1	0	0	1	0	0	1	0	--[4]	--[4]	F	F
	-With Improvements	TS	1	2	0	1	2	0	1	1	1>	1	1	0	31.4	52.1	C	D
34	• Pine Av./Schleisman Rd. (EW)	CSS	0	1	0	0	1	0	0	1	0	0	1	0	--[4]	--[4]	F	F
	-With Planned Ultimate Improvements	TS	2	2	1	2	2	1	2	3	1	2	3	1	36.7	40.4	D	D
35	• Chino Corona Rd./Chandler St. (EW)	CSS	0	1	0	0	1	0	0.5	0.5	1	0	1	0	--[4]	--[4]	F	F
	-With Improvements	TS	1	2	0	1	2	0	1	1	0	1	1	0	28.6	54.1	C	D
36	• River Rd. (EW)	CSS	1	0	1	0	0	0	0	1	0	0.5	0.5	0	81.6	--[4]	F	F
	-With Improvements	TS	1	0	1	0	0	0	0	1	0	1	1	0	13.3	34.3	B	C
	Archibald St. (NS) at:																	
37	• Schleisman Rd. (EW)	TS	1	1	1	1	1	0	1	1	1	1	1	0	--[4]	--[4]	F	F
	-With Improvements	TS	1	1	1	2	2	0	1	3	0	1	3	0	53.8	48.3	D	D
38	• Chandler St. (EW)[6]	TS	1	2	1	1	2	0	1	2	1	1	2	1	35.8	35.2	D	D
39	• River Rd. (EW)	CSS	1	1	0	0	1	1	1	0	1	0	0	0	--[4]	--[4]	F	F
	-With Improvements	TS	2	1	0	0	1	1	1	0	1>>	0	0	0	29.6	24.6	C	C
	River Rd. (NS) at:																	
40	• Bluff St. (EW)	TS	1	1	0	1	2	0	0.5	0.5	1	0.5	0.5	1	--[4]	--[4]	F	F
	-With Improvements	TS	1	2	0	1	2	0	1	1	0	1	1	0	34.3	37.5	C	D
41	• Country Club Ln./Second St. (EW)	TS	1	2	1	1	2	1	1	1	1>	1	1	0	37.5	34.7	D	C

GENERAL PLAN BUILDOUT (POST-2030) WITH PROPOSED PROJECT CONDITIONS
INTERSECTION ANALYSIS SUMMARY

	INTERSECTION	TRAFFIC CONTROL[3]	INTERSECTION APPROACH LANES[1] NORTH-BOUND L	T	R	SOUTH-BOUND L	T	R	EAST-BOUND L	T	R	WEST-BOUND L	T	R	DELAY[2] (SECS.) AM	PM	LEVEL OF SERVICE AM	PM
	Lincoln Av. (NS) at:																	
42	• Pomona Rd. (EW)	TS	2	2	0	1	2	0	1	0.5	1.5>	1	1	0	44.1	42.0	D	D
43	• SR-91 Fwy. EB Ramps (EW)	TS	1	2	1	1	2	0	0	1	0	0.5	0.5	1	--[4]	32.3	F	C
	-With Improvements	TS	1	2	1>	1	2	0	0	1	0	0.5	0.5	1>	37.9	26.5	D	C
	Harrison Av. (NS) at:																	
44	• Schleisman Rd. (EW)	AWS	1	1	1	0	1	0	0.5	0.5	1	0.5	0.5	1	--[4]	--[4]	F	F
	-With Improvements	TS	1	1	1	1	1	0	1	3	0	1	2	0	37.3	37.9	D	D
	Sumner Av. (NS) at:																	
45	• Schleisman Rd. (EW)	AWS	0	1	0	0	1	1	1	0	1	0	1	0	--[4]	--[4]	F	F
	-With Improvements	TS	1	1	0	1	1	0	1	3	0	1	2	0	52.5	42.7	D	D
	Cleveland Av. (NS) at:																	
46	• Schleisman Rd. (EW)	AWS	0	1	0	0.5	0.5	0	0	1	0	1	1	0	--[4]	--[4]	F	F
	-With Improvements[5]	TS	1	1	0	1	1	1>	1	3	0	1	2	0	44.7	44.5	D	D
	Hamner Av. (NS) at:																	
47	• Schleisman Rd. (EW)	TS	1	2	1	1	2	1	1	1	0	1	1	0	44.1	--[4]	D	F
	-With Improvements	TS	1	3	1	1	3	1	1	3	0	1	1	0	43.1	48.5	D	D
	I-15 Fwy. SB Ramps (NS) at:																	
48	• Limonite Av. (EW)	TS	0	0	0	1	1	1	0	2	1	2	2	0	25.5	27.2	C	C
	I-15 Fwy. SB Ramps (NS) at:																	
49	• Schleisman Rd. (EW)	TS	0	0	0	1	0	1	0	2	1>>	2	2	0	16.3	20.2	B	C
	I-15 Fwy. NB Ramps (NS) at:																	
50	• Limonite Av. (EW)	TS	1	1	1	0	0	0	2	2	0	0	2	1	28.7	33.7	C	C
	I-15 Fwy. NB Ramps (NS) at:																	
51	• Schleisman Rd. (EW)	TS	1	0	1	0	0	0	1	2	0	0	1	1	26.3	50.7	C	D
	Cucamonga Av. (NS) at:																	
52	• West Site Access (EW)	CSS	0	1	0	0	1	0	0	0	0	0	1	0	9.4	8.9	A	A
	North West Site Access (NS) at:																	
53	• Chino Corona Rd. (EW)	CSS	0	1	0	0	0	0	0	1	0	1	1	0	16.4	17.3	C	C

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; >> = Free Right Turn; > = Right Turn Overlap.

[2] Delay and level of service calculated using the following analysis software: Traffix, Version 7.9 R1 (2007). Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal; AWS = All Way Stop; CSS = Cross Street Stop.

[4] -- = Delay High or V/C Ratio exceeding 1.0, Intersection Unstable, Level of Service "F".

[5] Configuration reflects Pine Avenue extension to El Prado Road.

[6] Pedestrians are assumed not to occur on every cycle

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GENERAL PLAN BUILDOUT (POST-2030) WITH PROPOSED PROJECT AM PEAK HOUR INTERSECTION VOLUMES (PAGE 1 OF 2)

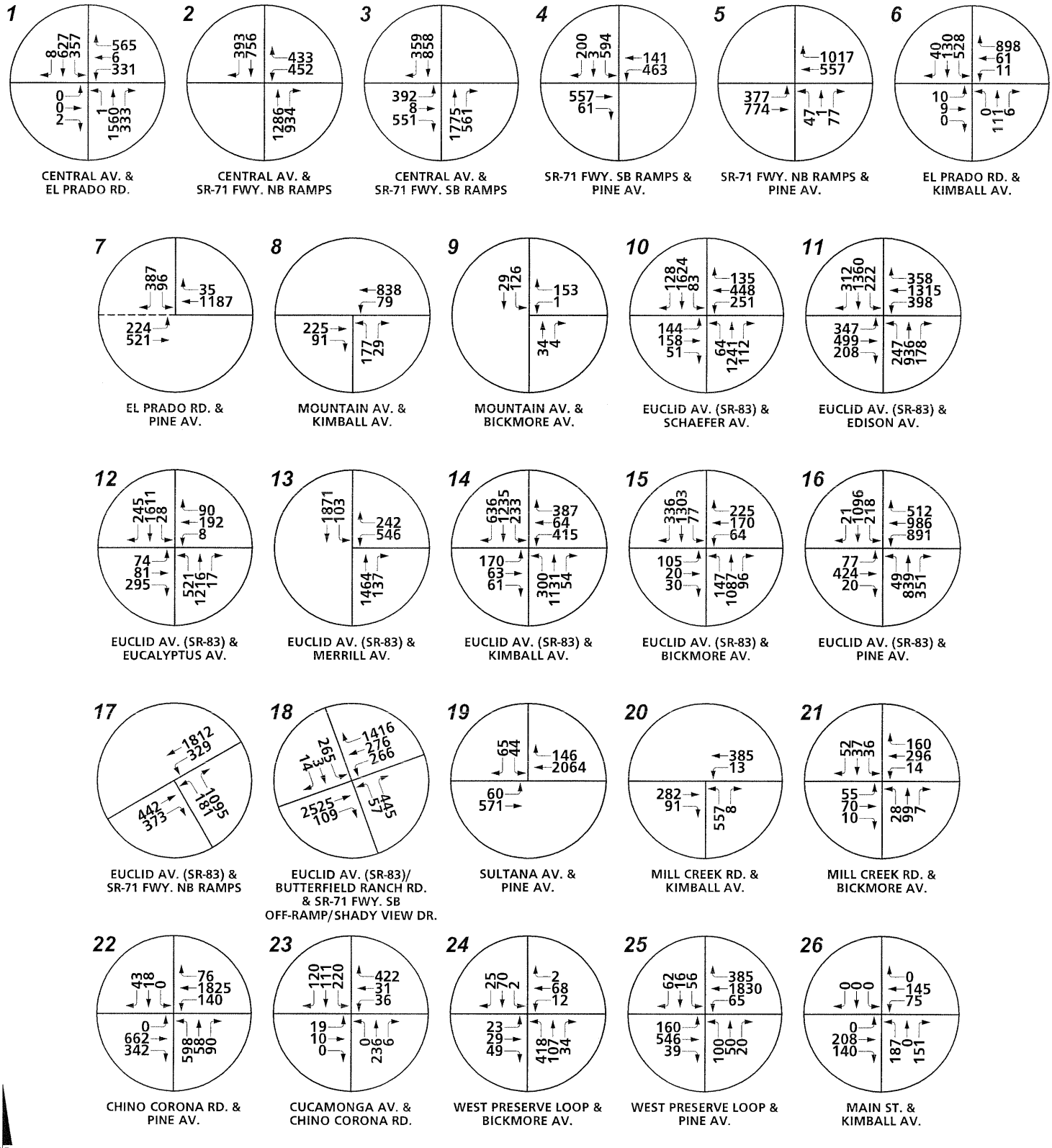
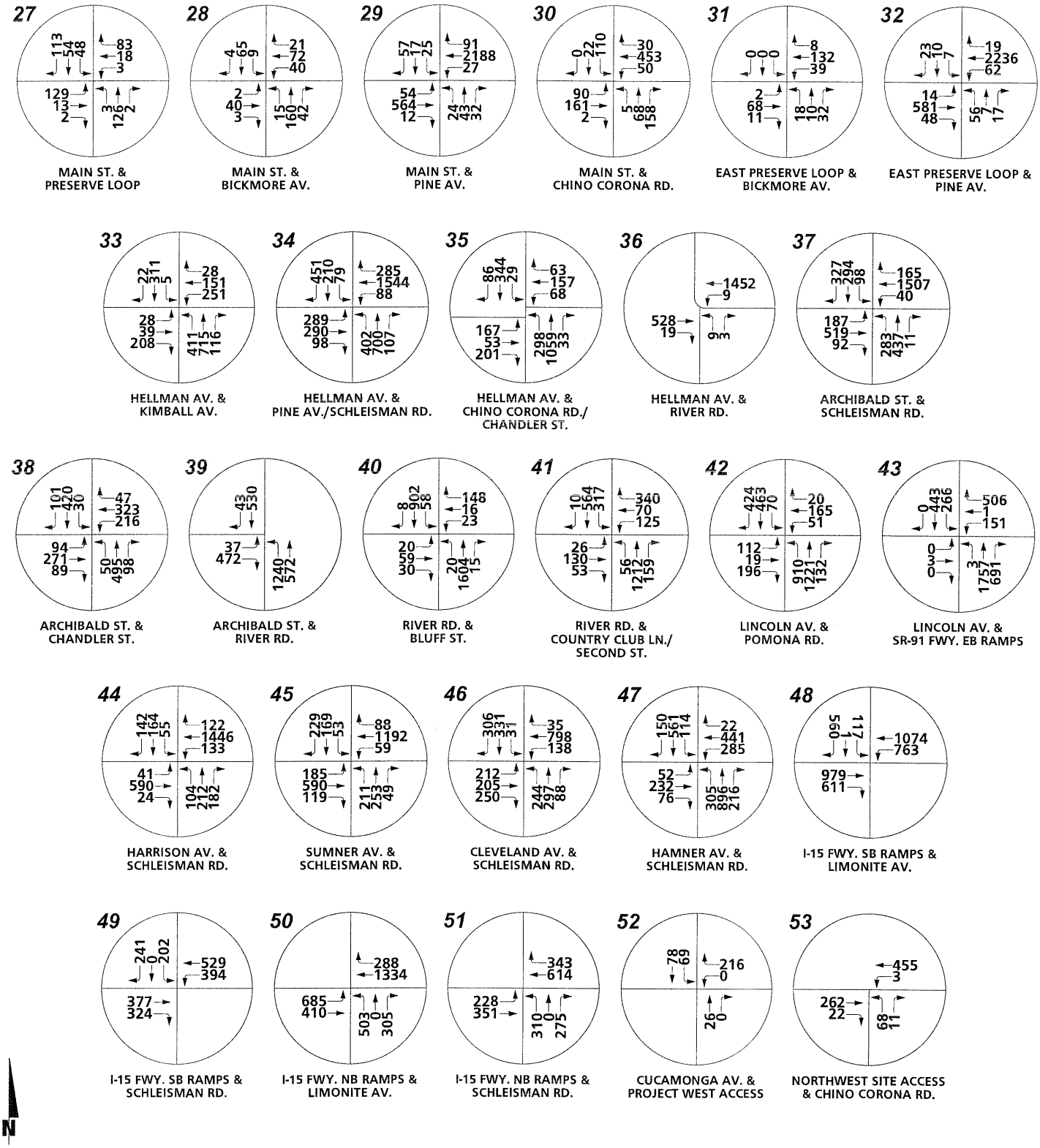
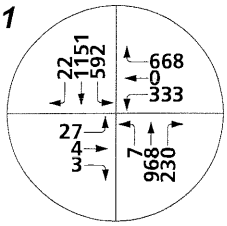


EXHIBIT 5-G

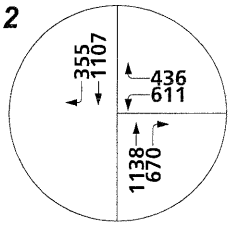
GENERAL PLAN BUILDOUT (POST-2030) WITH PROPOSED PROJECT AM PEAK HOUR INTERSECTION VOLUMES (PAGE 2 OF 2)



GENERAL PLAN BUILDOUT (POST-2030) WITH PROPOSED PROJECT PM PEAK HOUR INTERSECTION VOLUMES (PAGE 1 OF 2)

1


CENTRAL AV. & EL PRADO RD.

2


CENTRAL AV. & SR-71 FWY. NB RAMPS

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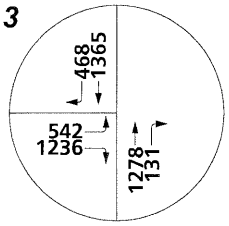

CENTRAL AV. & SR-71 FWY. SB RAMPS

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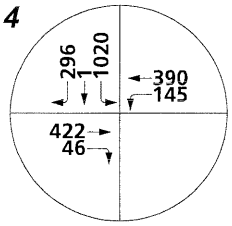
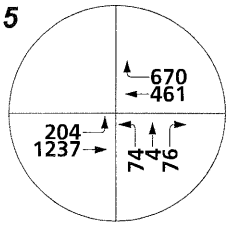


SR-71 FWY. SB RAMPS & PINE AV.

5


SR-71 FWY. NB RAMPS & PINE AV.

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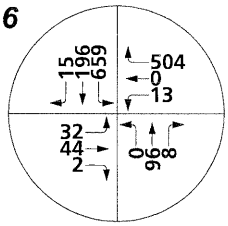
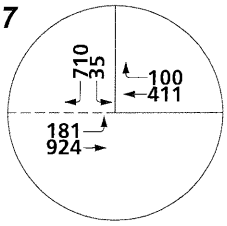
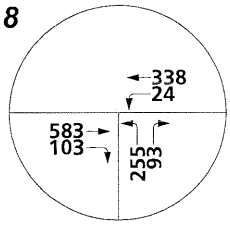


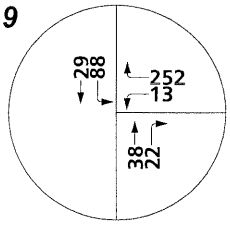
EL PRADO RD. & KIMBALL AV.

7


EL PRADO RD. & PINE AV.

8


MOUNTAIN AV. & KIMBALL AV.

9


MOUNTAIN AV. & BICKMORE AV.

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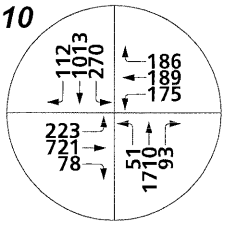
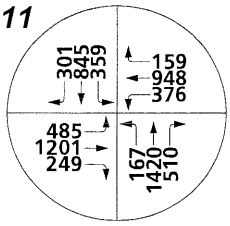


EUCLID AV. (SR-83) & SCHAEFER AV.

11


EUCLID AV. (SR-83) & EDISON AV.

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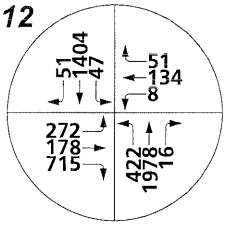

EUCLID AV. (SR-83) & EUCALYPTUS AV.

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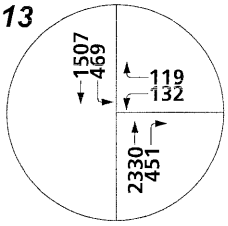
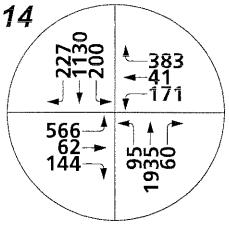
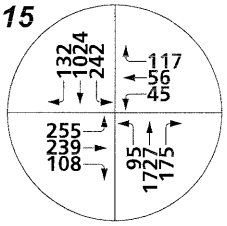


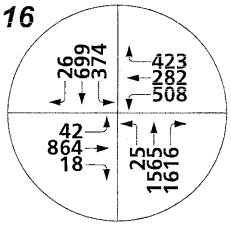
EUCLID AV. (SR-83) & MERRILL AV.

14


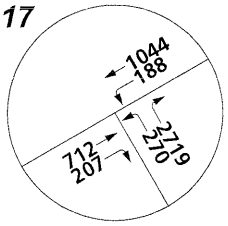
EUCLID AV. (SR-83) & KIMBALL AV.

15


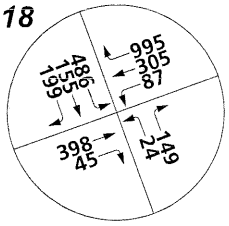
EUCLID AV. (SR-83) & BICKMORE AV.

16


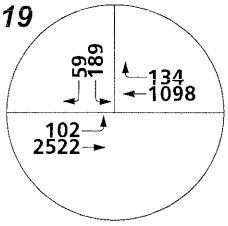
EUCLID AV. (SR-83) & PINE AV.

17


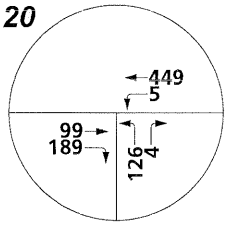
EUCLID AV. (SR-83) & SR-71 FWY. NB RAMPS

18


EUCLID AV. (SR-83)/ BUTTERFIELD RANCH RD. & SR-71 FWY. SB OFF-RAMP/SHADY VIEW DR.

19


SULTANA AV. & PINE AV.

20


MILL CREEK RD. & KIMBALL AV.

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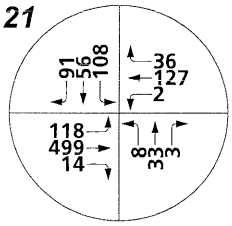
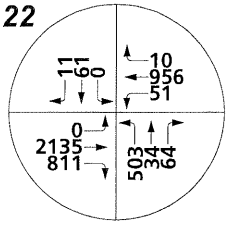
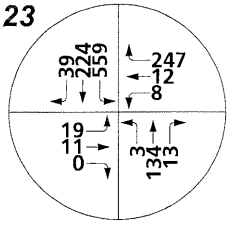


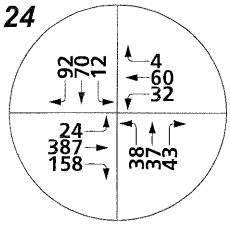
MILL CREEK RD. & BICKMORE AV.

22


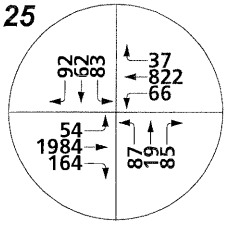
CHINO CORONA RD. & PINE AV.

23


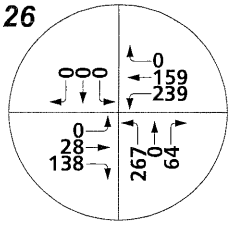
CUCAMONGA AV. & CHINO CORONA RD.

24


WEST PRESERVE LOOP & BICKMORE AV.

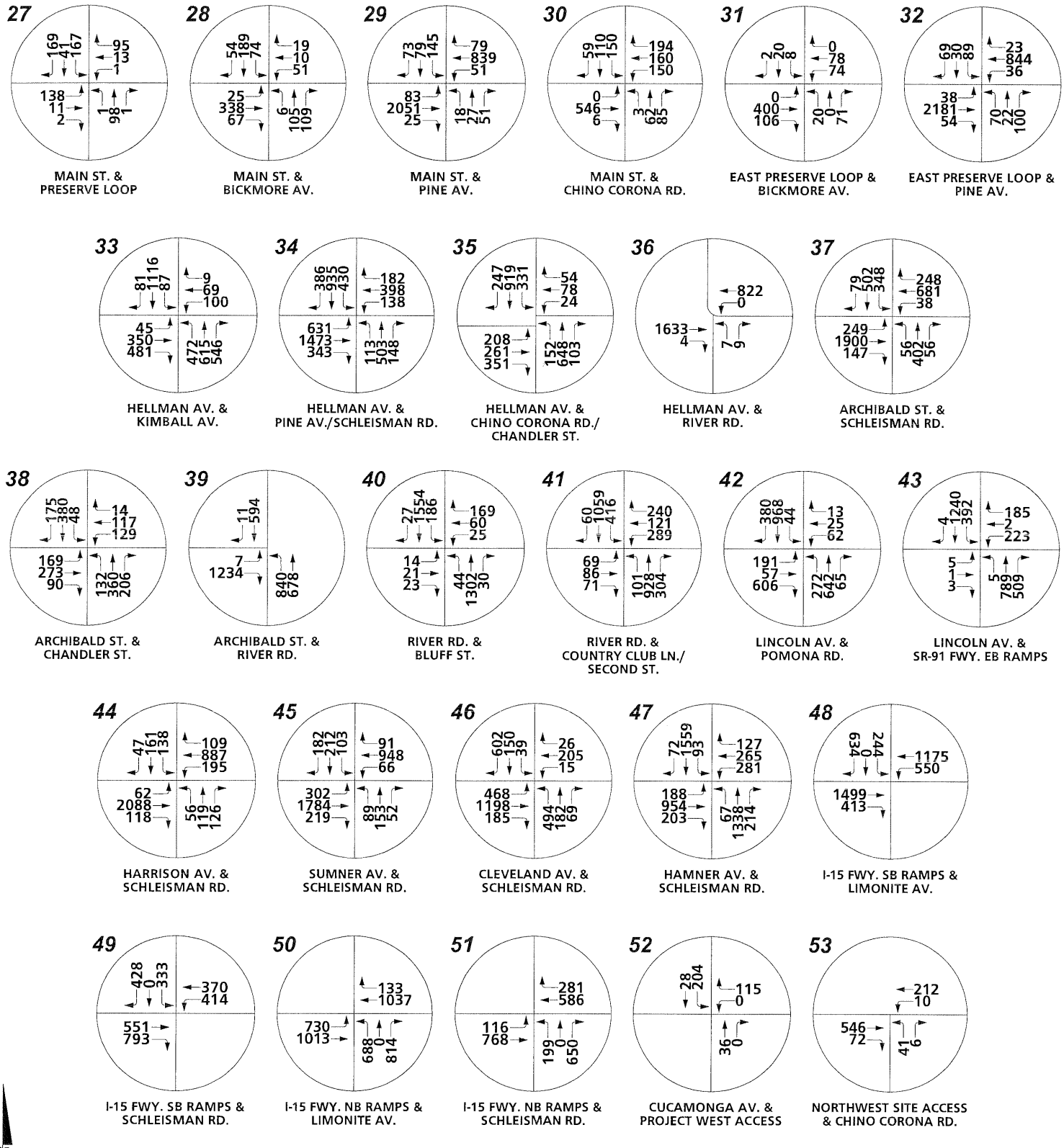
25


WEST PRESERVE LOOP & PINE AV.

26


MAIN ST. & KIMBALL AV.

GENERAL PLAN BUILDOUT (POST-2030) WITH PROPOSED PROJECT PM PEAK HOUR INTERSECTION VOLUMES (PAGE 2 OF 2)



SR-71 Freeway NB Ramps (NS) at:

- Pine Avenue (EW)

El Prado Road (NS) at:

- Pine Avenue (EW)

Euclid Avenue (SR-83) (NS) at:

- Schaefer Avenue (EW)
- Edison Avenue (EW)
- Eucalyptus Avenue (EW)
- Merrill Avenue (EW)
- Kimball Avenue (EW)
- Bickmore Avenue (EW)
- Pine Avenue (EW)

Euclid Avenue (SR-83) / Butterfield Ranch Road (NS) at:

- SR-71 Freeway SB Off-Ramp / Shady View Drive (EW)

Sultana Avenue (NS) at:

- Pine Avenue (EW)

Mill Creek Road (NS) at:

- Kimball Avenue (EW)

Chino Corona Road / Mill Creek Road (NS) at:

- Pine Avenue (EW)

Cucamonga Avenue (NS) at

- Chino Corona Road (EW)

West Preserve Loop (NS) at:

- Pine Avenue (EW)

Main Street (NS) at:

- Bickmore Avenue (EW)
- Pine Avenue (EW)

Main Street / North East Site Access (EW)

- Chino Corona Road (EW)

East Preserve Loop (NS) at:

- Pine Avenue (EW)

Hellman Avenue (NS) at:

- Kimball Avenue (EW)
- Pine Avenue/Schleisman Road (EW)
- Chino Corona Road/Chandler Street (EW)
- River Road (EW)

Archibald Street (NS) at:

- Schleisman Road (EW)
- River Road (EW)

River Road (NS) at:

- Bluff Street (EW)

Lincoln Avenue (NS) at:

- SR-91 Freeway EB Ramps (EW)

Harrison Avenue (NS) at:

- Schleisman Road (EW)

Sumner Avenue (NS) at:

- Schleisman Road (EW)

Cleveland Avenue (NS) at:

- Schleisman Road (EW)

Hamner Avenue (NS) at:

- Schleisman Road (EW)

I-15 Freeway SB Ramps (NS) at:

- Schleisman Road (EW)

I-15 Freeway NB Ramps (NS) at:

- Schleisman Road (EW)

Improvements have been identified that will provide acceptable traffic operations at each of the deficient intersections for General Plan Buildout (Post-2030) With Proposed Project conditions. Based on the analysis, no street cross-sections need revision/upgrading. The operations analysis worksheets for General Plan Buildout (Post-2030) Without Project (Alternative 1) without and with improvements conditions are included in Appendix "J".

The improvements for General Plan Buildout (Post-2030) With Proposed Project conditions are not identical to the improvements required for General Plan Buildout (Post-2030) Without Project (Alternative 1) conditions. For General Plan Buildout (Post-2030) With Proposed Project conditions, additional improvements are required at the following locations:

Euclid Avenue (SR-83) (NS) at

- Kimball Avenue (EW)
- Pine Avenue (EW)

Chino Corona Road (NS) at

- Pine Avenue (EW)

Cucamonga Avenue (NS) at

- Chino Corona Road (EW)
- West Site Access (EW)

Main Street / North East Site Access (NS) at:

- Chino Corona Road (EW)

5.3 Hellman Avenue at Chino Corona Road/Chandler Street Reconfiguration

Additional analysis has been performed to evaluate the reconfiguration of Hellman Avenue at Chino Corona Road/Chandler Street as two separate intersections (see Exhibit 5-I). As shown on Exhibit 5-I, the proposed configuration shows Hellman Avenue at Chino Corona Road as a 'T' intersection north of the intersection of the Hellman Avenue at the Chandler Street 'T' intersection. Future traffic operations have been evaluated for these 2 locations under 2030 With Proposed Project conditions by manually rerouting the originally forecasted 2030 With Proposed Project volumes (see Exhibit 5-G and 5-H). Manual rerouting calculations and final volumes for this sensitivity analysis can be found in Appendix "K" of this report.

Table 5-5 presents the LOS and delay for the two intersections of Hellman Avenue at Chino Corona Road and Hellman Avenue at Chandler Street. As indicated on Table 5-5, these intersections will operate acceptably with the installation of warranted traffic signals. Signal warrants for this sensitivity analysis may be found in Appendix "C".

5.4 Main Street at Chino Corona Road Reconfiguration

Additional analysis has also been performed to evaluate the elimination of Main Street as a public road between the Preserve Loop Road and Chino Corona Road (see Exhibit 5-J). As shown on Exhibit 5-J, the proposed configuration will

EXHIBIT 5-I

HELLMAN AVENUE @ CHINO CORONA ROAD/ CHANDLER STREET RECONFIGURATION

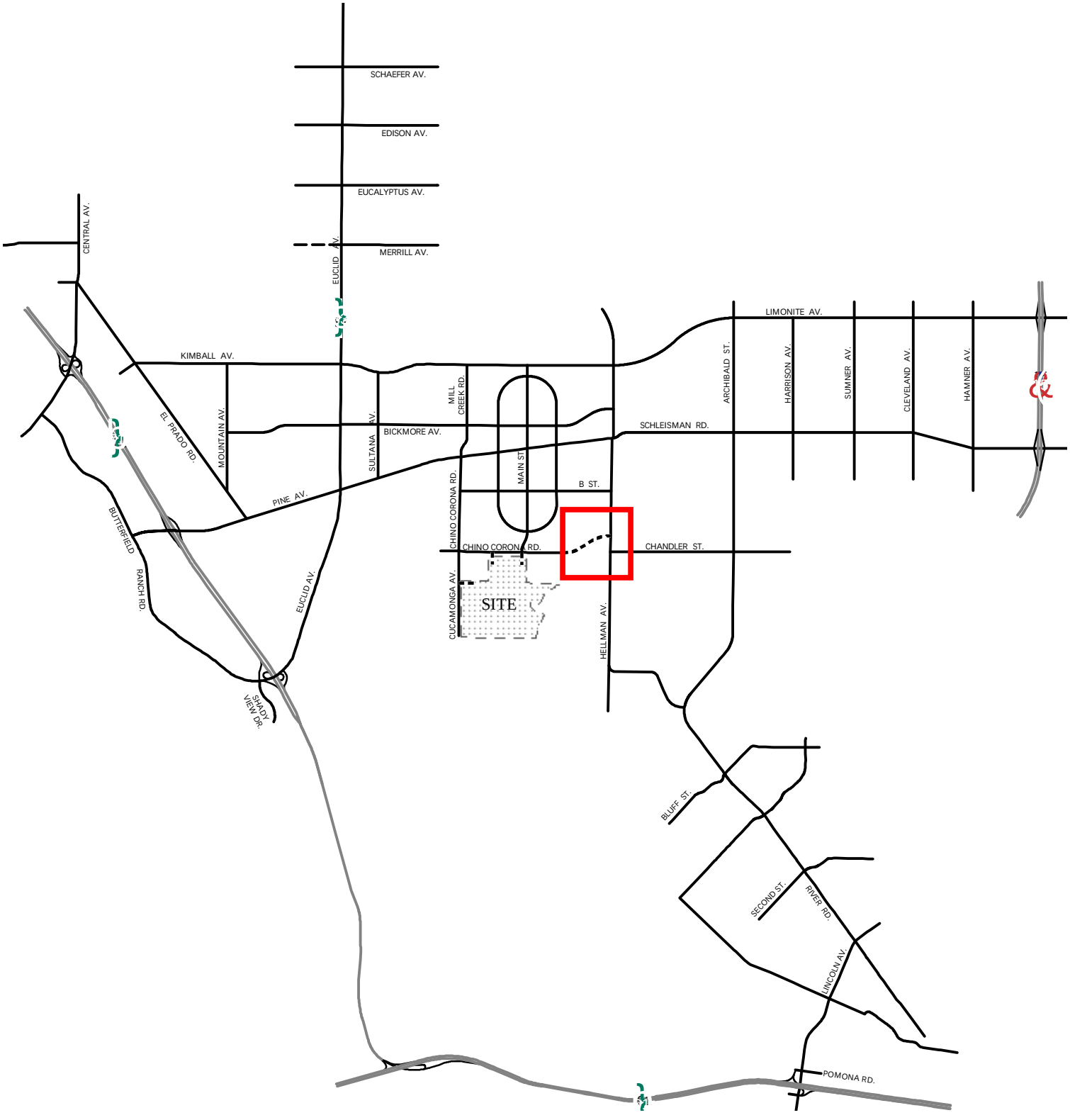


TABLE 5-5

GENERAL PLAN BUILDOUT (POST-2030) WITH PROJECT (ALTERNATIVE 1) CONDITIONS
CHINO CORONA ROAD/CHANDLER STREET RECONFIGURATION
INTERSECTION SENSITIVITY ANALYSIS SUMMARY

INTERSECTION	TRAFFIC CONTROL[3]	INTERSECTION APPROACH LANES[1]												DELAY[2] (SECS.)		LEVEL OF SERVICE	
		NORTH-BOUND			SOUTH-BOUND			EAST-BOUND			WEST-BOUND						
		L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
Hellman Av. (NS) at:																	
• West Chino Corona Road (EW)[4]	TS	1	2	0	0	2	0	1	0	1	0	0	0	14.5	35.1	B	D
• East Chandler Street (EW)[4]	TS	0	2	0	1	2	0	0	0	0	0	1	0	12.4	20.2	B	C

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; 1 = improvement

[2] Delay and level of service calculated using the following analysis software: Traffix, Version 7.9 R1 (2007). Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal;

[4] Configuration reflects installation of a warranted traffic signal

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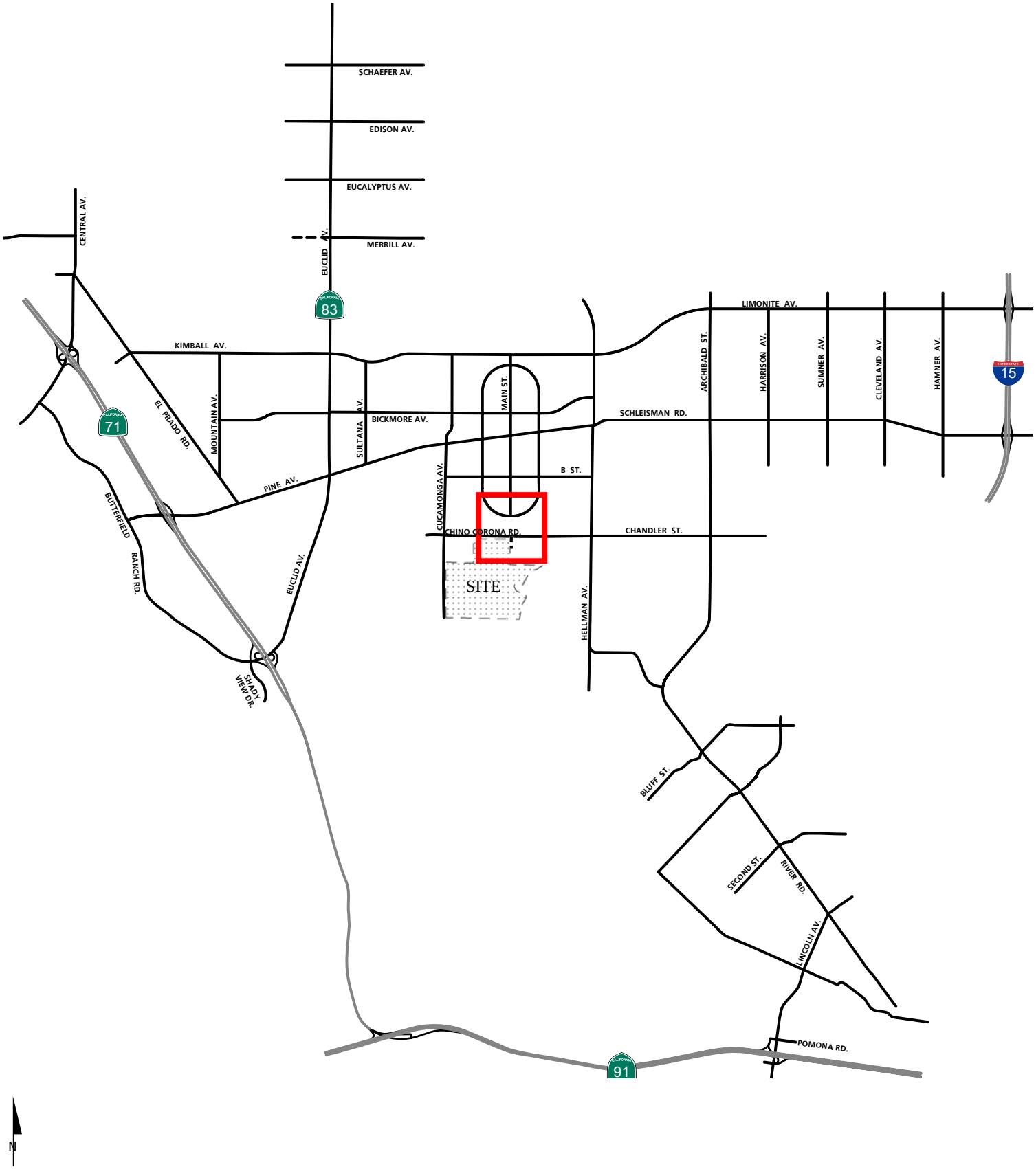
EXHIBIT 5-J

MAIN STREET @ CHINO CORONA ROAD RECONFIGURATION



eliminate the north leg of Main Street at Chino Corona Road. Traffic formerly using Main Street would be diverted to B Street via Hellman Avenue or Cucamonga Avenue. Future traffic operations have been evaluated to analyze the effects of this reconfiguration for the following 4 affected intersections under 2030 With Project conditions:

- Cucamonga Avenue (NS) at Chino Corona Road (EW)
- North West Access (NS) at Chino Corona Road (EW)
- Main Street / North East Site Access (NS) at Chino Corona Road (EW)
- Hellman Avenue (NS) at Chino Corona Road/Chandler Street (EW)

Volumes for this sensitivity analysis have been obtained by manually rerouting the originally forecasted 2030 With Proposed Project volumes (see Exhibit 5-G and 5-H) to reflect the elimination of Main Street between the Preserve Loop Road and Chino Corona Road. Manual rerouting calculations and final volumes for this sensitivity analysis can be found in Appendix "L" of this report.

Table 5-6 presents the LOS and delay for the four intersections evaluated for this sensitivity analysis. As indicated on Table 5-6, all four intersections evaluated in this sensitivity analysis will operate acceptably with almost identical improvements presented in Section 5.2.2 of this report. The only difference (with regards to improvements) in comparison to those presented in Section 5.2.2 consists of the improvements related to the north leg of Main Street at Chino Corona Road.

5.5 Main Street at Chino Corona Road Relocation

Additional analysis has also been performed to evaluate the relocation of Main Street west of the Edgewater project's access roads. Exhibit 5-K and Exhibit 5-L present the revised long range (General Plan Buildout) trip distributions for the Edgewater project if this relocation is implemented. Project traffic is not expected

TABLE 5-6

GENERAL PLAN BUILDOUT (POST-2030) WITH PROJECT CONDITIONS
MAIN STREET AT CHINO CORONA RECONFIGURATION
INTERSECTION SENSITIVITY ANALYSIS SUMMARY

	INTERSECTION	TRAFFIC CONTROL[3]	INTERSECTION APPROACH LANES[1] NORTH-BOUND L	T	R	SOUTH-BOUND L	T	R	EAST-BOUND L	T	R	WEST-BOUND L	T	R	DELAY[2] (SECS.) AM	PM	LEVEL OF SERVICE AM	PM
23	Cucamonga Av. (NS) at: • Chino Corona Road (EW)	**TS**	**1**	1	0	**1**	1	0	**1**	1	0	**1**	1	0	25.2	34.1	C	C
53	North West Site Access (NS) at: • Chino Corona Road (EW)	CSS	0	**1**	0	0	0	0	0	**1**	0	**1**	**1**	0	17.0	20.5	C	C
30	North East Site Access (NS) at: • Chino Corona Road (EW)	**TS**	0	**1**	0	0	0	0	0	**1**	0	**1**	**1**	0	12.4	14.6	B	B
35	Hellman Av. (NS) at: • Chino Corona Rd / Chandler St. (EW)	**TS**	**1**	**2**	0	**1**	**2**	0	**1**	**1**	0	**1**	1	0	30.1	43.5	C	D

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; **1** = improvement

[2] Delay and level of service calculated using the following analysis software: Traffix, Version 7.9 R1 (2007). Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal; CSS = Cross Street Stop

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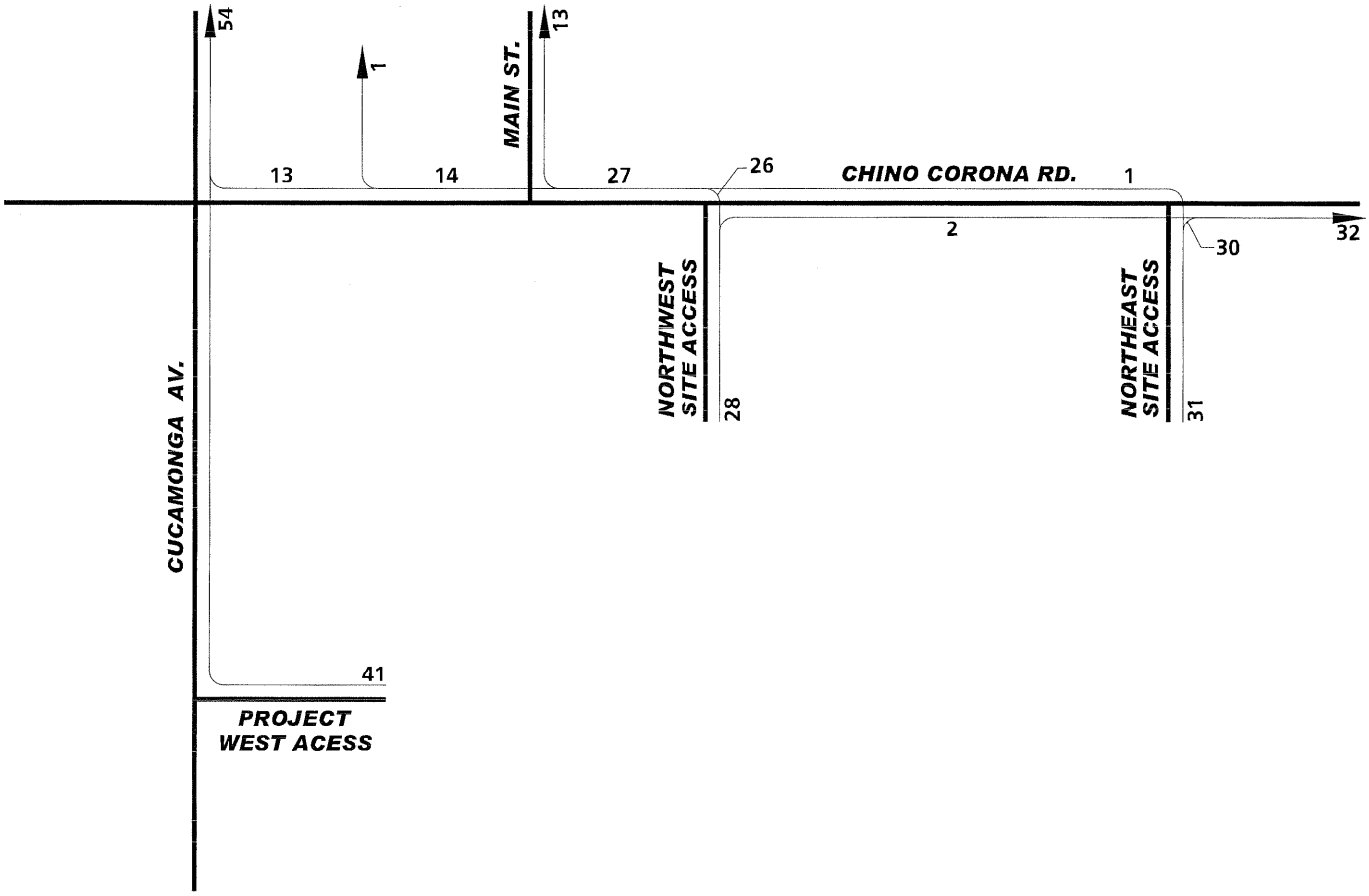
EXHIBIT 5-K

GENERAL PLAN
MAIN ST. RELOCATED WEST OF SITE ACCESS
PROJECT AM TRIP DISTRIBUTION



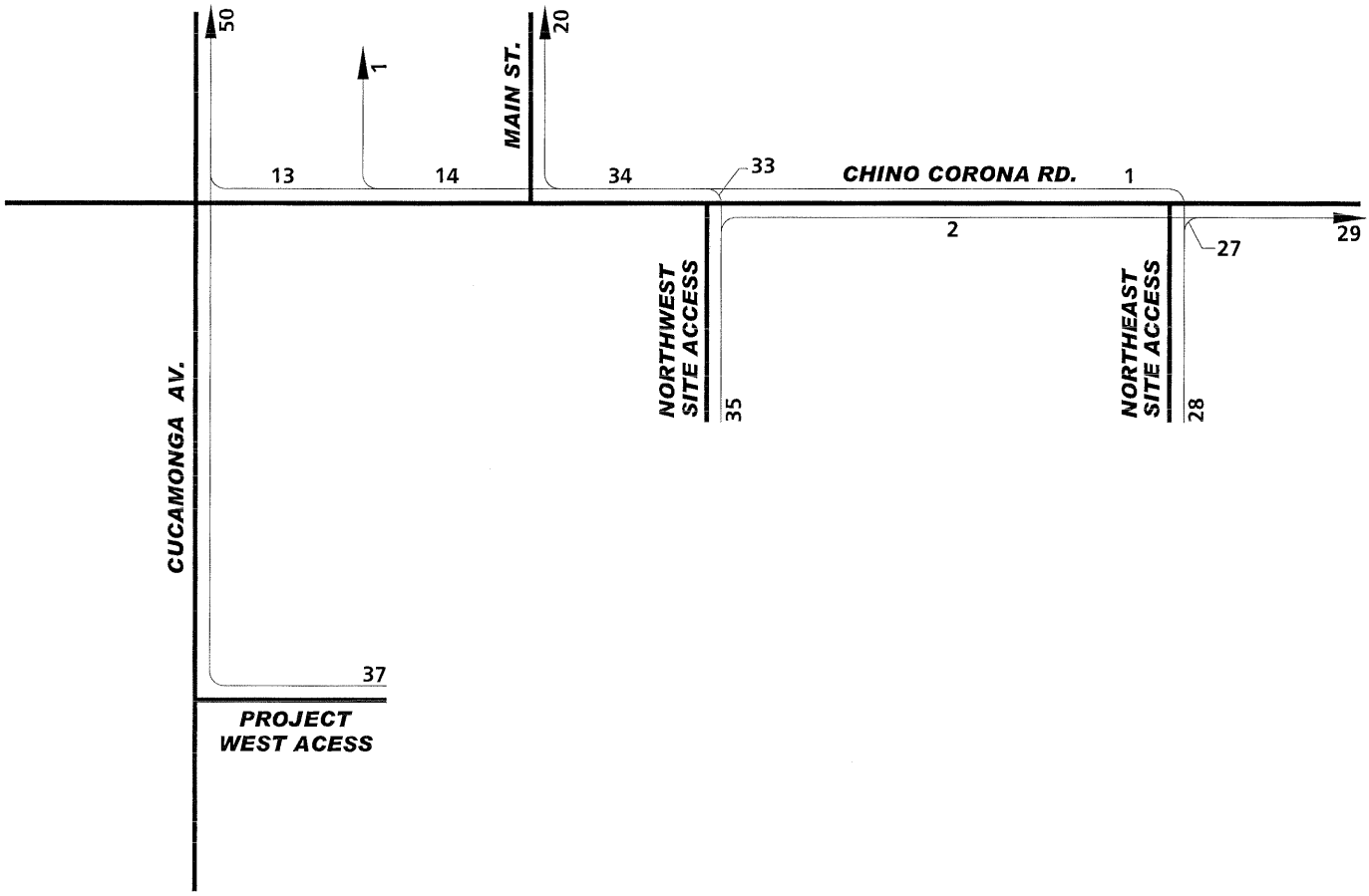
LEGEND:

10 = PERCENT TO/FROM PROJECT

N

EXHIBIT 5-L

GENERAL PLAN
MAIN ST. RELOCATED WEST OF SITE ACCESS
PROJECT PM TRIP DISTRIBUTION



LEGEND:

10 = PERCENT TO/FROM PROJECT

N

to use Main Street under Interim Year conditions. As shown on these exhibits, traffic formerly using the north easterly project access (formerly Main Street at Chino Corona Road) to travel north on Main Street will tend to utilize the north westerly access in order to travel north on Main Street to the Preserve Loop and areas to the north east of the project. Future traffic operations have been evaluated to analyze the effects of this reconfiguration for the following 4 affected intersections under 2030 With Project conditions:

- Main Street [relocated] (NS) at Chino Corona Road (EW)
- North West Access (NS) at Chino Corona Road (EW)
- North East Access (NS) at Chino Corona Road (EW)
- Hellman Avenue (NS) at Chino Corona Road/Chandler Street (EW)

Volumes for this sensitivity analysis have been obtained by manually rerouting the originally forecasted 2030 With Proposed Project volumes (see Exhibit 5-G and 5-H) to reflect the elimination of Main Street between the Preserve Loop Road and Chino Corona Road. Manual rerouting calculations and final volumes for this sensitivity analysis can be found in Appendix "M" of this report.

Table 5-7 presents the LOS and delay for the three intersections evaluated for this sensitivity analysis. As indicated on Table 5-7, all four intersections evaluated in this sensitivity analysis will operate acceptably with the identified improvements. Compared to the improvements presented in Section 5.2.2, the improvements required consist of a traffic signal at the northwesterly access instead of a traffic signal at the northeasterly access.

Vehicle queuing at closely spaced intersections should be evaluated in greater detail in conjunction with the proposed Main Street relocation application (once an actual alignment is available). However, the relocation does not create a conflict for "back to back" left turns and there should not be queuing issues.

TABLE 5-7

GENERAL PLAN BUILDOUT (POST-2030) WITH PROJECT CONDITIONS
MAIN STREET RELOCATION (WEST OF CHINO CORONA ROAD ACCESS)
INTERSECTION SENSITIVITY ANALYSIS SUMMARY

	INTERSECTION	TRAFFIC CONTROL[3]	INTERSECTION APPROACH LANES[1]												DELAY[2] (SECS.)		LEVEL OF SERVICE	
			NORTH-BOUND			SOUTH-BOUND			EAST-BOUND			WEST-BOUND						
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
	Main Street (NS) at:																	
30	• Chino Corona Road (EW)	**CSS**	0	0	0	0	**1**	0	0	**1**	0	0	**1**	0	34.1	--[4]	D	F
	-With Improvements	**TS**	0	0	0	0	1	0	0	1	0	0	1	0	15.6	9.8	A	A
	North West Site Access (NS) at:																	
53	• Chino Corona Road (EW)	CSS	0	**1**	0	0	0	0	0	**1**	0	**1**	**1**	0	22.2	42.7	C	E
	-With Improvements	**TS**	0	1	0	0	0	0	0	1	0	1	1	0	7.9	7.1	A	A
	North East Site Access (NS) at:																	
54	• Chino Corona Road (EW)	CSS	0	**1**	0	0	0	0	0	**1**	0	**1**	**1**	0	11.5	17.0	B	C

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; **1** = improvement

[2] Delay and level of service calculated using the following analysis software: Traffix, Version 7.9 R1 (2007). Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal;

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6.0 IMPROVEMENT COSTS AND PROJECT CONTRIBUTION

This section of the report summarizes the improvements and associated costs required to meet level of service requirements at each analysis location. The project fair share contribution is then calculated based on its proportion of new traffic.

Improvements which will eliminate all anticipated roadway operational deficiencies throughout the study area have been identified for Interim Year (2019) and General Plan Buildout (Post-2030) traffic conditions. The improvements were determined through the operations analysis of Section 5.

The approximate costs for long range General Plan Buildout (Post-2030) improvements have been estimated using cost data provided by the 2003 CMP preliminary construction cost estimates for the Congestion Management Plan (see Appendix "N"). These costs are expressed in today's dollars, and additional right-of-way required to construct the mitigation is not included in the estimate. The acquisition of right-of-way not already or expected to be dedicated may increase costs and also may not allow for construction of improvements prior to project occupancy. These costs have also been further modified (increased) per the direction of County staff.

6.1 2030 Required Improvements

Table 6-1 indicates all the needed General Plan Buildout (Post-2030) improvements for the study area intersections. As indicated in Table 6-1, the total cost of needed intersection improvements (including $439,720 for on-site improvements) is approximately $46,081,300.

6.2 General Plan Buildout (Post-2030) Project Fair Share Calculations

The project fair share contribution towards the required General Plan Buildout (Post-2030) improvements has also been calculated. Table 6-2 includes the project's cost contribution based on the project's percent of new traffic.

TABLE 6-1 (Page 1 of 4)

GENERAL PLAN BUILDOUT (POST-2030) ROADWAY IMPROVEMENT COSTS

INTERSECTIONS	IMPROVEMENT	TOTAL COST
Central Av. (NS) at:		
• SR-71 Fwy. SB Ramps (EW)	Construct 2nd EB Right Turn Lane	$50,000
		$50,000
SR-71 Fwy. SB Ramps (NS) at:		
• Pine Av. (EW)	Construct 1st Exclusive (serving as 2nd) SB Left Turn Lane (Cost does not include bridge widening or restriping to include 2 EB receiving lanes)	$50,000
		$50,000
SR-71 Fwy. NB Ramps (NS) at:		
• Pine Av. (EW)	Install a traffic signal	$400,000
	Reconstruct 2nd EB Left Turn Lane as 1st EB Through Lane	$154,860
	Construct 1st WB Through Lane (Receiving Lane Already Exists)	$144,860
	Construct 1st WB Right Turn Lane	$50,000
		$749,720
El Prado Rd. (NS) at:		
Pine Av. (EW)	Install a traffic signal	$400,000
	Construct 1st EB Left Turn Lane	$50,000
	Construct 2nd WB Through Lane	$289,720
		$739,720
Euclid Av. (SR-83) (NS) at:		
• Schaefer Av. (EW)	Construct 2nd EB Through Lane	$289,720
		$289,720
• Edison Av. (EW)	Construct 3rd NB Through Lane	$289,720
	Construct 2nd SB Left Turn Lane	$50,000
	Construct 3rd SB Through Lane	$289,720
	Construct 2nd EB Left Turn Lane	$50,000
	Construct 2nd EB Through Lane	$289,720
	Construct 2nd WB Left Turn Lane	$50,000
	Construct 2nd and 3rd WB Through Lane	$579,440
	Construct 1st WB Right Turn Lane	$50,000
		$1,648,600
• Eucalyptus Av. (EW)		
	Construct 3rd NB Through Lane	$289,720
	Construct 3rd SB Through Lane	$289,720
	Construct 2nd EB Left Turn Lane	$50,000
	Reconstruct Existing EB Right Turn Lane as Free Right Turn Lane	$50,000
		$679,440
• Merrill Av. (EW)		
	Construct 3rd SB Through Lane	$289,720
	Reconstruct WB Shared Left/Through Lane as 1st Exclusive Left Turn Lane	$25,000
	Construct 1st WB Right Turn Lane	$50,000
		$364,720
• Kimball Av. (EW)	Construct 3rd NB Through Lane	$289,720
	Construct 3rd SB Through Lane	$289,720
	Reconstruct Existing SB Right Turn Lane as Free Right Turn Lane	$50,000
	Construct 2nd EB Left Turn Lane	$50,000
	Construct 1st WB Exclusive Left Turn Lane	$50,000
	Restripe WB Shared Left/Through Lane as 1st Exclusive Through Lane	$10,000
	Reconstruct WB Defacto Right Turn Lane as Free Right Turn Lane	$75,000
		$814,440
• Bickmore Av. (EW)	Install a traffic signal	$400,000
	Construct 2nd, 3rd, and 4th NB Through Lanes	$869,160
	Reconstruct NB Defacto Right Turn Lane as 1st Exclusive Right Turn Lane	$50,000
	Construct 2nd NB Right Turn Lane	$50,000
	Construct 2nd SB Left Turn Lane	$50,000
	Construct 2nd, 3rd, and 4th SB Through Lane	$869,160
	Reconstruct SB Defacto Right Turn Lane as Right Turn Lane	$50,000
	Construct 1st EB Exclusive Left Turn Lane	$50,000
	Restripe EB Shared Left/Through Lane as 1st Exclusive Through Lane	$10,000
	Construct 2nd WB Left Turn Lane	$50,000
	Restripe Existing WB Through Lane as Shared Through Right Turn Lane	$10,000
	Reconstruct WB Defacto Right Turn Lane as Right Turn Lane	$50,000
		$2,508,320
• Pine Av. (EW)	Construct 3rd NB Through Lane	$289,720
	Reconstruct Existing NB Right Turn Lane as Free Right Turn Lane	$50,000
	Construct 2nd SB Left Turn Lane	$50,000
	Construct 3rd SB Through Lane	$289,720
	Construct 1st Exclusive WB Left Turn Lane	$50,000
	Restripe Existing EB Shared Left Through Turn Lane as 1st Exclusive EB Through Lane	$10,000
	Construct 2nd and 3rd EB Through Lanes	$579,440
	Reconstruct WB Shared Left/Through Lane as 1st Exclusive Left Turn Lane	$25,000
	Construct 2nd WB Left Turn Lane	$50,000
	Construct 1st WB and 2nd Through Lanes	$579,440
		$1,973,320

TABLE 6-1 (Page 2 of 4)

GENERAL PLAN BUILDOUT (POST-2030) ROADWAY IMPROVEMENT COSTS

INTERSECTIONS	IMPROVEMENT	TOTAL COST
• SR-71 Fwy. SB Off-Ramp/Shady View Dr. (EW)	Construct 3rd NB Through Lane	$289,720
	Construct 2nd SB Left Turn Lane	$50,000
	Construct 2nd WB Right Turn Lane	$50,000
		$389,720
Sultana Av. (NS) at:		
• Pine Av. (EW)	Install a traffic signal	$400,000
	Construct 1st SB Shared Left Right Turn Lane	$50,000
	Construct 1st EB Left Turn Lane	$50,000
	Construct 2nd EB Through Lane	$289,720
	Construct 2nd WB Through Lane	$289,720
		$1,079,440
Mill Creek Rd. (NS) at:		
• Kimball Av. (EW)	Install a traffic signal	$400,000
		$400,000
Chino Corona Rd./Mill Creek Rd. (NS) at:		
• Pine Av. (EW)	Reconstruct NB Right Turn Lane as 2nd NB Left Turn Lane	$25,000
	Construct 1st NB Through Lane	$289,720
	Construct 1st SB Shared Left Right Turn Lane	$289,720
	Construct 1st EB Left Turn Lane	$50,000
	Construct 2nd EB Through Lane	$289,720
	Construct 2nd WB Through Lane	$289,720
		$1,233,880
Cucamonga Av. (NS) at		
Chino Corona Rd. (EW)	Install a traffic signal	$400,000
	Construct 1st NB Exclusive Left Turn Lane	$50,000
	Restripe NB Shared Left Right Turn Lane as Through Lane	$10,000
	Construct 1st SB Exclusive Left Turn Lane	$50,000
	Restripe SB Shared Left Right Turn Lane as Through Lane	$10,000
	Construct 1st EB Exclusive Left Turn Lane	$50,000
	Restripe EB Shared Left Right Turn Lane as Through Lane	$10,000
	Construct 1st WB Exclusive Left Turn Lane	$50,000
	Restripe WB Shared Left Right Turn Lane as Through Lane	$10,000
		$640,000
West Site Access (NS)	Construct 1st NB Through Lane	$289,720
	Construct 1st SB Through Lane	$289,720
	Construct 1st WB Shared Left Right Turn Lane[1]	$50,000
		$629,440
West Preserve Loop (NS) at:		
• Pine Av. (EW)	Construct 1st NB Left Turn Lane	$50,000
	Construct 1st NB Through Lane	$289,720
	Reconstruct SB Right Turn Lane as Through Lane	$144,860
	Construct 2nd EB Through Lane	$289,720
	Construct 1st WB Left Turn Lane	$50,000
	Construct 2nd WB Through Lane	$289,720
		$1,114,020
North West Site Access (NS) at:		
• Chino Corona Rd. (EW)	Construct 1st NB Shared Left Right Turn Lane	$50,000
	Construct 1st EB Through Lane	$289,720
	Construct 1st WB Left Turn Lane	$50,000
	Construct 1st WB Through Lane	$289,720
		$679,440
Main St. (NS) at:		
Bickmore Av. (EW)	Construct 1st NB Shared Left Through Right Turn Lane	$289,720
	Construct 1st SB Shared Left Through Right Turn Lane	$289,720
	Construct 1st EB Shared Left Through Right Turn Lane	$289,720
	Construct 1st WB Shared Left Through Right Turn Lane	$289,720
		$1,158,880
• Pine Av. (EW)	Install a traffic signal	$400,000
	Construct 1st NB Left Turn Lane	$50,000
	Construct 1st NB Through Lane	$289,720
	Construct 1st SB Left Turn Lane	$50,000
	Construct 1st SB Through Lane	$289,720
	Construct 1st EB Left Turn Lane	$50,000
	Construct 1st and 2nd EB Through Lane	$579,440
	Construct 1st WB Left Turn Lane	$50,000
	Construct 1st and 2nd WB Through Lane	$579,440
		$2,338,320
Main St. / North East Site Access (NS) at:		
Chino Corona Rd. (EW)	Install a traffic signal	$400,000
	Construct 1st NB Left Turn Lane[1]	$50,000
	Construct 1st NB Through Lane[1]	$289,720
	Construct 1st SB Left Turn Lane	$50,000
	Construct 1st SB Through Lane	$289,720
	Construct 1st EB Left Turn Lane	$50,000
	Construct 1st EB Through Lane	$289,720
	Construct 1st WB Left Turn Lane	$50,000
	Construct 1st WB Through Lane	$289,720
		$1,758,880

TABLE 6-1 (Page 3 of 4)

GENERAL PLAN BUILDOUT (POST-2030) ROADWAY IMPROVEMENT COSTS

INTERSECTIONS	IMPROVEMENT	TOTAL COST
East Preserve Loop (NS) at:		
Pine Av. (EW)	Install a traffic signal	$400,000
	Construct 1st NB Left Turn Lane	$50,000
	Construct 1st NB Through Lane	$289,720
	Construct 1st SB Left Turn Lane	$50,000
	Construct 1st SB Through Lane	$289,720
	Construct 1st EB Left Turn Lane	$50,000
	Construct 2nd EB Through Lane	$289,720
	Construct 1st WB Left Turn Lane	$50,000
	Construct 2nd WB Through Lane	$289,720
		$1,758,880
Hellman Av. (NS) at:		
• Kimball Av. (EW)	Install a traffic signal	$400,000
	Construct 1st NB Left Turn Lane	$50,000
	Construct 1st and 2nd NB Through Lane	$579,440
	Construct 1st SB Left Turn Lane	$50,000
	Construct 1st and 2nd SB Through Lane	$579,440
	Construct 1st EB Left Turn Lane	$50,000
	Construct 1st EB Through Lane	$289,720
	Construct 1st EB Right Turn Lane with Overlap Phase	$75,000
	Construct 1st WB Left Turn Lane	$50,000
	Construct 1st WB Through Lane	$50,000
		$2,173,600
• Pine Av./Schleisman Rd. (EW)	Install a traffic signal	$400,000
	Restripe Existing NB Shared Left Right Turn Lane as 1st Exclusive Left Turn Lane	$10,000
	Construct 2nd NB Left Turn Lane	$50,000
	Construct 1st and 2nd NB Through Lane	$579,440
	Construct 1st NB Right Turn Lane	$50,000
	Construct 1st and 2nd SB Left Turn Lane	$100,000
	Construct 1st and 2nd SB Through Lane	$579,440
	Construct 1st SB Right Turn Lane	$50,000
	Construct 1st and 2nd EB Left Turn Lanes	$100,000
	Construct 2nd and 3rd EB Through Lane	$579,440
	Construct 1st EB Right Turn Lane with Overlap Phase	$75,000
	Construct 1st and 2nd WB Left Turn Lanes	$100,000
	Construct 2nd and 3rd WB Through Lanes	$579,440
	Construct 1st WB Right Turn Lane with Overlap Phase	$75,000
		$3,327,760
• Chino Corona Rd./Chandler St. (EW)	Install a traffic signal	$400,000
	Restripe Existing NB Shared Left Through Right Turn Lane as 1st Exclusive Left Turn Lane	$10,000
	Construct 1st and 2nd NB Through Lane	$434,580
	Restripe Existing SB Shared Left Through Right Turn Lane as 1st Exclusive Left Turn Lane	$10,000
	Construct 1st and 2nd SB Through Lane	$434,580
	Construct 1st EB Left Turn Lane	$50,000
	Reconstruct Existing EB Right Turn Lane as 1st EB Through Lane	$144,860
	Construct 1st Exclusive WB Left Turn Lane	$50,000
	Construct 1st WB Through Lane	$289,720
		$1,823,740
• River Rd. (EW)	Install a traffic signal	$400,000
	Construct 1st Exclusive WB Left Turn Lane	$50,000
	Reconstruct Shared WB Left Through Lane as 1st Exclusive Through Lane	$144,860
		$594,860
Archibald St. (NS) at:		
• Schleisman Rd. (EW)	Construct 2nd SB Left Turn Lane	$50,000
	Construct 2nd SB Through Lane	$289,720
	Reconstruct EB Right Turn Lane as 2nd EB Through Lane	$289,720
	Construct 3rd EB Through Lane	$289,720
	Construct 2nd and 3rd WB Through Lane	$579,440
		$1,498,600
• River Rd. (EW)	Install a traffic signal	$400,000
	Construct 2nd NB Left Turn Lane	$50,000
	Reconstruct Existing EB Defacto Right Turn Lane as Free Right Turn Lane	$75,000
		$525,000

TABLE 6-1 (Page 4 of 4)

GENERAL PLAN BUILDOUT (POST-2030) ROADWAY IMPROVEMENT COSTS

INTERSECTIONS	IMPROVEMENT	TOTAL COST
River Rd. (NS) at:		
• Bluff St. (EW)	Construct 2nd NB Through Lane	$289,720
	Restripe Existing EB Shared Left Through Lane as 1st Exclusive Left Turn Lane	$10,000
	Reconstruct EB Defacto Right Turn Lane as 1st EB Through Lane	$289,720
	Restripe Existing WB Shared Left Through Lane as 1st Exclusive Left Turn Lane	$10,000
	Reconstruct WB Defacto Right Turn Lane as 1st EB Through Lane	$289,720
		$889,160
Lincoln Av. (NS) at:		
• SR-91 Fwy. EB Ramps (EW)	Add NB Right Turn Overlap Phase	$25,000
	Add WB Right Turn Overlap Phase	$25,000
		$50,000
Harrison Av. (NS) at:		
• Schleisman Rd. (EW)	Install a traffic signal	$400,000
	Construct 1st SB Left Turn Lane	$50,000
	Restripe EB Shared Left Through Lane as 1st Exclusive Left Turn Lane	$10,000
	Reconstruct EB Defacto Right Turn Lane as 1st Through Lane	$289,720
	Construct 2nd and 3rd EB Through Lane	$579,440
	Restripe WB Shared Left Through Lane as 1st Exclusive Left Turn Lane	$50,000
	Reconstruct WB Right Turn Lane as 1st Through Lane	$144,860
	Construct 2nd WB Through Lane	$289,720
		$1,813,740
Sumner Av. (NS) at:		
• Schleisman Rd. (EW)	Install a traffic signal	$400,000
	Construct 1st Exclusive NB Left Turn Lane	$50,000
	Reconstruct Existing NB Shared Left Through Lane as 1st Through Lane	$144,860
	Construct 1st SB Left Turn Lane	$50,000
	Reconstruct Existing EB Right Turn Lane as 1st Through Lane	$144,860
	Construct 2nd and 3rd EB Through Lane	$579,440
	Construct 1st WB Left Turn Lane	$50,000
	Construct 1st and 2nd WB Through Lane	$579,440
		$1,998,600
Cleveland Av. (NS) at:		
• Schleisman Rd. (EW)	Install a traffic signal	$400,000
	Construct 1st NB Left Turn Lane	$50,000
	Restripe SB Shared Left Through Turn Lane as 1st Exclusive Left Turn Lane	$10,000
	Reconstruct 1st SB Through Lane	$289,720
	Construct 1st SB Right Turn Lane with Overlap Phase	$75,000
	Construct 1st EB Left Turn Lane	$50,000
	Construct 1st, 2nd, and 3rd EB Through Lane	$869,160
	Reconstruct Existing WB Right Turn Lane as 1st Through Lane	$144,860
	Construct 2nd WB Through Lane	$289,720
		$2,178,460
Hamner Av. (NS) at:		
• Schleisman Rd. (EW)	Construct 3rd NB Through Lane	$289,720
	Construct 3rd SB Through Lane	$289,720
	Construct 2nd and 3rd EB Through Lane	$579,440
		$1,158,880
I-15 Fwy. NB Ramps (NS) at:		
• Schleisman Rd. (EW)	New Interchange	$2,500,000
		$2,500,000
I-15 Fwy. NB Ramps (NS) at:		
• Schleisman Rd. (EW)	New Interchange	$2,500,000
		$2,500,000
TOTAL ON SITE IMPROVEMENTS (AT 100% COST)		**$389,720**
TOTAL OFF-SITE AND ON-SITE IMPROVEMENT COSTS		**$46,081,300**

[1] On Site Improvement

[2] Total Off-Site Improvement Cost ([Total Cost] - [On-Site Cost]) = $45,641,580

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TABLE 6-2 (Page 1 of 2)

GENERAL PLAN BUILDOUT (POST-2030) PROJECT FAIR SHARE FOR IMPROVEMENTS

	INTERSECTION	TOTAL COST	PEAK HOUR	EXISTING TRAFFIC	BUILDOUT WITH PROJECT TRAFFIC	BUILDOUT PROJECT TRAFFIC	TOTAL NEW TRAFFIC	PROJECT % OF NEW TRAFFIC	(A) AM PROJECT COST SHARE	(B) PM PROJECT COST SHARE	HIGHER OF (A) OR (B)
3	Central Av. (NS) at:										
	• SR-71 Fwy. SB Ramps (EW)	$50,000									
			AM	2,965	4,504	7	1,539	0.45%	$227	$263	$263
			PM	3,308	5,020	9	1,712	0.53%			
4	SR-71 Fwy. SB Ramps (NS) at:										
	• Pine Av. (EW)	$50,000									
			AM	626	2,019	79	1,393	5.67%	$2,836	$2,549	$2,836
			PM	555	2,320	90	1,765	5.10%			
5	SR-71 Fwy. NB Ramps (NS) at:										
	• Pine Av. (EW)	$749,720									
			AM	387	2,851	140	2,464	5.68%	$42,605	$48,697	$48,697
			PM	247	2,726	161	2,479	6.50%			
7	El Prado Rd. (NS) at:										
	• Pine Av. (EW)	$739,720									
			AM	0	2,450	140	2,450	5.71%	$42,270	$50,443	$50,443
			PM	0	2,361	161	2,361	6.82%			
10	Euclid Av. (SR-83) (NS) at:										
	• Schaefer Av. (EW)	$289,720									
			AM	2,536	4,439	28	1,903	1.47%	$4,263	$4,348	$4,348
			PM	2,489	4,821	35	2,332	1.50%			
11	• Edison Av. (EW)	$1,648,600									
			AM	3,078	6,380	41	3,302	1.24%	$20,470	$21,910	$21,910
			PM	3,032	7,020	53	3,988	1.33%			
12	• Eucalyptus Av. (EW)	$679,440									
			AM	2,301	4,378	63	2,077	3.03%	$20,609	$16,152	$20,609
			PM	1,995	5,276	78	3,281	2.38%			
13	• Merrill Av. (EW)	$364,720									
			AM	2,614	4,363	62	1,749	3.54%	$12,929	$10,156	$12,929
			PM	2,207	5,008	78	2,801	2.78%			
14	• Kimball Av. (EW)	$814,440									
			AM	2,535	4,749	77	2,214	3.48%	$28,325	$25,713	$28,325
			PM	2,005	5,014	95	3,009	3.16%			
15	• Bickmore Av. (EW)	$2,508,320									
			AM	1,870	3,660	28	1,790	1.56%	$39,236	$33,242	$39,236
			PM	1,574	4,215	35	2,641	1.33%			
16	• Pine Av. (EW)	$1,973,320									
			AM	2,480	5,484	236	3,004	7.86%	$155,028	$124,535	$155,028
			PM	2,338	6,442	259	4,104	6.31%			
18	Euclid Av. (SR-83)/Butterfield Ranch Rd. (NS) at:										
	• SR-71 Fwy. SB Off-Ramp/Shady View Dr. (EW)	$389,720									
			AM	3,543	5,376	11	1,833	0.60%	$2,339	$7,353	$7,353
			PM	1,677	2,843	22	1,166	1.89%			
19	Sultana Av. (NS) at:										
	• Pine Av. (EW)	$1,079,440									
			AM	0	2,950	270	2,950	9.15%	$98,796	$79,959	$98,796
			PM	0	4,104	304	4,104	7.41%			
20	Mill Creek Rd. (NS) at:										
	• Kimball Av. (EW)	$400,000									
			AM	527	1,336	55	809	6.80%	$27,194	$45,024	$45,024
			PM	259	872	69	613	11.26%			
22	Chino Corona Rd./Mill Creek Rd. (NS) at:										
	• Pine Av. (EW)	$1,233,880									
			AM	1,362	3,852	368	2,490	14.78%	$182,379	$166,220	$182,379
			PM	1,496	4,636	423	3,140	13.47%			
23	Cucamonga Av. (NS) at										
	• Chino Corona Rd. (EW)	$640,000									
			AM	592	1,211	375	619	60.63%	$388,036	$447,959	$447,959
			PM	652	1,269	432	617	69.99%			
52	• West Site Access (NS)[1]	$579,440									
			AM	0	389	285	389	73.26%	$424,525	$482,615	$482,615
			PM	0	383	319	383	83.29%			
25	West Preserve Loop (NS) at:										
	• Pine Av. (EW)	$1,114,020									
			AM	1,221	3,329	7	2,108	0.33%	$3,699	$4,024	$4,024
			PM	1,064	3,555	9	2,491	0.36%			
53	North West Site Access (NS) at:										
	• Chino Corona Rd. (EW)[1]	$629,440									
			AM	0	821	111	821	13.52%	$85,101	$97,929	$97,929
			PM	0	887	138	887	15.56%			
28	Main St. (NS) at:										
	• Bickmore Av. (EW)	$1,158,880									
			AM	0	473	37	473	7.82%	$90,652	$28,778	$90,652
			PM	0	1,047	26	1,047	2.48%			
29	• Pine Av. (EW)	$2,338,320									
			AM	0	3,134	65	3,134	2.07%	$48,497	$46,487	$48,497
			PM	0	3,521	70	3,521	1.99%			
30	Main St. / North East Site Access (NS) at:										
	• Chino Corona Rd. (EW)[1]	$1,419,160									
			AM	0	1,242	324	1,242	26.09%	$370,216	$374,742	$374,742
			PM	0	1,636	432	1,636	26.41%			
32	East Preserve Loop (NS) at:										
	• Pine Av. (EW)	$1,758,880									
			AM	0	3,080	21	3,080	0.68%	$11,992	$17,312	$17,312
			PM	0	3,556	35	3,556	0.98%			

TABLE 6-2 (Page 2 of 2)

GENERAL PLAN BUILDOUT (POST-2030) PROJECT FAIR SHARE FOR IMPROVEMENTS

	INTERSECTION	TOTAL COST	PEAK HOUR	EXISTING TRAFFIC	BUILDOUT WITH PROJECT TRAFFIC	BUILDOUT PROJECT TRAFFIC	TOTAL NEW TRAFFIC	PROJECT % OF NEW TRAFFIC	(A) AM PROJECT COST SHARE	(B) PM PROJECT COST SHARE	HIGHER OF (A) OR (B)
	Hellman Av. (NS) at:										
33	• Kimball Av. (EW)	$2,173,600									
			AM	0	2,285	55	2,285	2.41%	$52,319	$33,937	$52,319
			PM	0	3,971	62	3,971	1.56%			
34	• Pine Av./Schleisman Rd (EW)	$3,327,760									
			AM	1,329	4,543	112	3,214	3.48%	$115,968	$93,468	$115,968
			PM	1,016	5,680	131	4,664	2.81%			
35	• Chino Corona Rd./Chandler St. (EW)	$1,823,740									
			AM	868	2,557	214	1,689	12.67%	$231,031	$170,167	$231,031
			PM	782	3,376	242	2,594	9.33%			
36	• River Rd. (EW)	$594,860									
			AM	568	2,020	90	1,452	6.20%	$36,879	$28,730	$36,879
			PM	508	2,475	95	1,967	4.83%			
	Archibald St. (NS) at:										
37	• Schleisman Rd. (EW)	$1,498,600									
			AM	1,837	3,960	70	2,123	3.30%	$49,424	$43,875	$49,424
			PM	1,734	4,706	87	2,972	2.93%			
39	• River Rd. (EW)	$525,000									
			AM	1,593	2,894	90	1,301	6.92%	$36,313	$28,529	$36,313
			PM	1,615	3,363	95	1,748	5.43%			
	River Rd. (NS) at:										
40	• Bluff St. (EW)	$889,160									
			AM	1,671	2,903	91	1,232	7.39%	$65,687	$48,880	$65,687
			PM	1,727	3,455	95	1,728	5.50%			
	Lincoln Av. (NS) at:										
43	• SR-91 Fwy. EB Ramps (EW)	$50,000									
			AM	2,633	3,821	18	1,188	1.51%	$757	$748	$757
			PM	2,756	3,358	9	602	1.50%			
	Harrison Av. (NS) at:										
44	• Schleisman Rd. (EW)	$1,813,740									
			AM	997	3,215	49	2,218	2.21%	$40,065	$34,089	$40,065
			PM	860	4,106	61	3,246	1.88%			
	Sumner Av. (NS) at:										
45	• Schleisman Rd. (EW)	$1,998,600									
			AM	864	3,197	49	2,333	2.10%	$41,969	$35,824	$41,969
			PM	798	4,201	61	3,403	1.79%			
	Cleveland Av. (NS) at:										
46	• Schleisman Rd. (EW)	$2,178,460									
			AM	823	2,935	42	2,112	1.99%	$43,322	$35,448	$43,322
			PM	437	3,633	52	3,196	1.63%			
	Hamner Av. (NS) at:										
47	• Schleisman Rd. (EW)	$1,158,880									
			AM	1,657	3,350	42	1,693	2.48%	$28,750	$17,412	$28,750
			PM	1,900	5,361	52	3,461	1.50%			
	I-15 Fwy. NB Ramps (NS) at:										
49	• Schleisman Rd. (EW)	$2,500,000									
			AM	0	2,067	27	2,067	1.31%	$32,656	$29,422	$32,656
			PM	0	2,889	34	2,889	1.18%			
	I-15 Fwy. NB Ramps (NS) at:										
51	• Schleisman Rd. (EW)	$2,500,000									
			AM	0	2,121	20	2,121	0.94%	$23,574	$20,192	$23,574
			PM	0	2,600	21	2,600	0.81%			
	OFF-SITE PROJECT FAIR CONTRIBUTION TOTAL								**$2,900,938**	**$2,757,130**	**$3,080,618**

[1] Cost does not include On-Site Improvements

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As indicated in Table 6-2, the highest AM or PM local fair share cost is approximately $3,080,618. The improvements that serve to provide access to the project have been assigned 100% to the project ($439,720).

6.3 Chino Creek Bridge Project Fair Share Calculations

The project fair share contribution towards the future Chino Creek bridge has been calculated. Table 6-3 includes the project's cost contribution based on the project's percent of new daily traffic. As indicated in Table 6-3, the project percentage of cost is 49% of the cost of construction.

TABLE 6-3

CHINO CREEK BRIDGE STRUCTURE CONSTRUCTION COSTS

EXISTING DAILY VOLUME	2030 WITH PROJECT TRAFFIC	PROJECT TRAFFIC	TOTAL NEW TRAFFIC	PROJECT % OF NEW TRAFFIC
7,457	12,483	2,440	5,026	**49%**

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7.0 SUMMARY AND RECOMMENDATIONS

This section summarizes the findings the traffic impact analysis for the Edgewater Communities project, and provides a series of recommendations related to project implementation.

7.1 Summary

The traffic issues related to the proposed land use and development have been evaluated in the context of the City of Chino, San Bernardino CMP, Riverside County and Caltrans requirements. Both Interim Year (2019) and General Plan Buildout (Post-2030) conditions, each without and with the Proposed Project, are included in this report.

Trip generation has been estimated based on trip generation rates and equations from the Institute of Transportation Engineers (ITE) Trip Generation (7th Edition, 2003) manual for similar land uses as those proposed were used. Table 2-1, previously presented, presents the trip generation rates used to generate the peak hour and daily traffic volumes for the project.

7.1.1 The Project

The Edgewater Communities residential development is proposed to consist of 1,074 residential dwelling units, with a breakdown of 537 single-family detached homes and 537 residential condominium/townhouse dwelling units. The site may also include a 15,200-square foot church/school facility, along with a 6,500-square foot museum facility. The development is generally located southeast of the intersection of Cucamonga Avenue at Chino Corona Road. Access to the project site will be provided by way of two full-access project roadways which will intersect the east side of Cucamonga Avenue and the south side of Chino Corona

Road, respectively. The project roadway accessing Chino Corona Road will be aligned opposite the future alignment of Main Street in The Preserve, which is planned to extend southerly to Chino Corona Road. The site plan for the proposed Edgewater Communities residential development was previously presented on Exhibit 1-B.

The traffic related to the project has been calculated in accordance with the following accepted procedural steps:

- Trip Generation
- Trip Distribution
- Trip Assignment

The Proposed Project is projected to generate 8,736 trip-ends per day, with 694 vehicles per our generated during the AM peak hour and 864 vehicles per hour generated during the PM peak hour.

The General Plan Buildout (Post-2030) project trip distribution and assignment process represents the directional orientation of traffic to and from the project site. Trip distribution is heavily influenced by the geographical location of the site, the location of surrounding uses, and the proximity to the regional highway/freeway system. The City of Chino traffic model has been used to evaluate the distribution and likely travel routes of the local traffic. A select zone (trip distribution) analysis for the Edgewater Communities residential community was performed using the model for the Horizon Year (General Plan Buildout (Post-2030)).

The 2019 Interim Year project trip distribution pattern was heavily influenced by the geographical location of the site, the location of surrounding uses, the proximity to the regional freeway system, local traffic patterns, and known future development, and therefore differs from the General Plan Buildout (Post-2030) trip distribution pattern.

Comparing the Interim Year (2019) and Long Range Buildout (Post-2030) trip distribution patterns, the Interim Year project trip distribution reflects the need for project traffic to travel farther prior to completion of full development of The Preserve Specific Plan and other major developments in the study area. Higher trip distribution proportions are especially evident on the SR-71 Freeway corridor (both north and south) and along Euclid Avenue to the north.

7.1.2 Existing Conditions

Existing peak hour traffic operations have been evaluated for both the AM and PM peak hours of traffic at the study area intersections. The results of this analysis are summarized in Table 3-1, previously presented, along with the existing intersection geometrics and traffic control devices at the analysis locations. As indicated in Table 3-1, all of the study area intersections currently operate at acceptable levels of service during the peak hours except for the following intersections:

Euclid Avenue (SR-83) (NS) at:

- Bickmore Avenue (EW)

Euclid Avenue (SR-83)/Butterfield Ranch Road (NS) at:

- SR-71 Freeway Southbound Off-Ramp/Shady View Drive (EW)

Hellman Avenue (NS) at:

- Pine Avenue/Schleisman Road (EW)
- Chino Corona Road/Chandler Street (EW)

Archibald Street (NS) at:

- River Road (EW)

7.1.3 Interim Year 2019 Conditions

The Interim 2019 Year Without Project (Alternative 1) traffic volumes are estimated by way of a socio-economic growth interpolation approach in order to avoid overstating other development project traffic impacts and to develop 2019 Interim Year traffic volumes that are in proportion to the growth expected between Existing and General Plan Buildout (Post-2030) conditions.

7.1.4 Interim Year 2019 Traffic Operations

The study area intersections are projected to operate at acceptable levels of service during the peak hours for Interim Year 2019 without and with the Proposed Project conditions with the improvements presented in Section 5 of this report. A total of 24 intersections will require improvements under 2019 conditions.

7.1.5 General Plan Buildout (Post-2030) Conditions

As described within Section 1.3.1, the General Plan Buildout (Post-2030) ADT volume forecasts are developed using a growth increment process based on volumes predicted by the City of Chino traffic model. The growth increment for General Plan Buildout (Post-2030) conditions on each roadway segment is the increase in City of Chino traffic model volume from existing to General Plan Buildout (Post-2030) conditions. The final General Plan Buildout (Post-2030) roadway segment volume used for analysis purposes is then determined by adding the growth increment volume to the existing counted volume.

7.1.6 General Plan Buildout (Post-2030) Traffic Operations

The study area intersections are projected to operate at acceptable levels of service during the peak hours for General Plan Buildout (Post-2030) without and with the Proposed project conditions, with the improvements presented

in Section 5 of this report. A total of 36 intersections will require improvements under General Plan Buildout (Post-2030) conditions.

7.2 Recommendations

The recommendations in this section address necessary on-site improvements and off-site improvements for the Edgewater Communities residential development.

On-site and off-site improvements adjacent to the project site will be required in conjunction with the proposed Edgewater Communities residential development to ensure adequate circulation within the project itself. Exhibit 7-A illustrates the recommended improvement measures to address the on-site and off-site circulation requirements of the proposed site, which include the following:

On-Site Improvements

- Adequate on-site parking should be provided to meet City of Chino parking requirements.

- Sight distance at the project site access points should be reviewed with respect to City of Chino standards in conjunction with the preparation of precise grading and landscape plans.

- Internal traffic signing/striping should be implemented in conjunction with detailed construction plans for the project.

- Provide stop sign control for the project site access driveways.

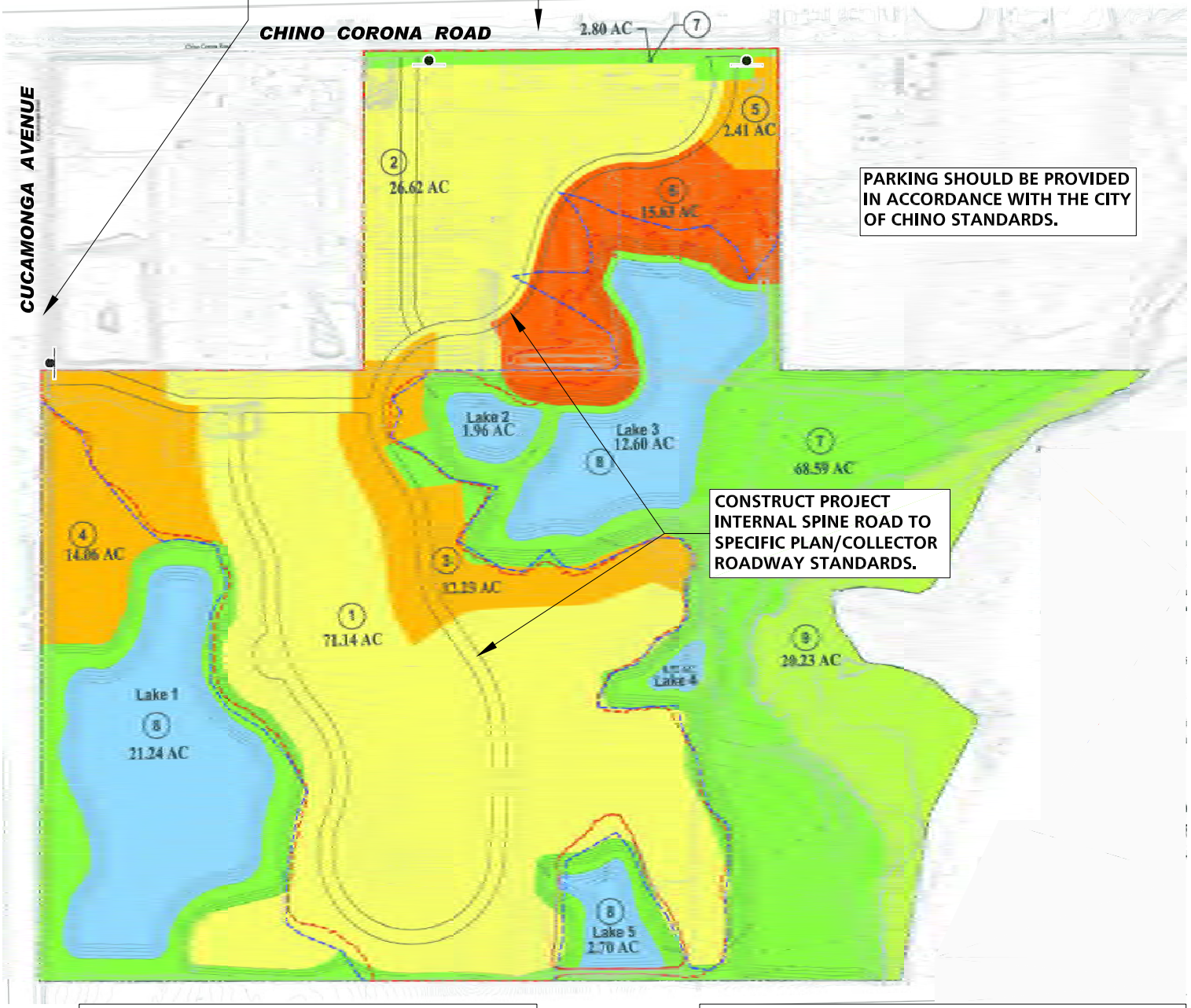
- Construct project internal spine road to specific plan/collector roadway standards.

EXHIBIT 7-A

CIRCULATION RECOMMENDATIONS

CONSTRUCT CUCAMONGA AVENUE FROM PROJECT ENTRY TO CHINO CORONA ROAD TO MATCH STREET SECTION NORTH OF CHINO CORONA ROAD, IN AN 83' RIGHT-OF-WAY, LOCAL COLLECTOR WITH PASEO.

CONSTRUCT CHINO CORONA ROAD ADJACENT TO THE SITE AT ITS HALF-SECTION WIDTH AS A LOCAL COLLECTOR (66' R.O.W.) IN CONJUNCTION WITH DEVELOPMENT.



PARKING SHOULD BE PROVIDED IN ACCORDANCE WITH THE CITY OF CHINO STANDARDS.

CONSTRUCT PROJECT INTERNAL SPINE ROAD TO SPECIFIC PLAN/COLLECTOR ROADWAY STANDARDS.

ADEQUATE ON-SITE PARKING SHOULD BE PROVIDED TO MEET CITY OF CHINO PARKING REQUIREMENTS.

INTERNAL TRAFFIC SIGNING/STRIPING SHOULD BE IMPLEMENTED IN CONJUNCTION WITH DETAILED CONSTRUCTION PLANS FOR THE PROJECT.

PROVIDE STOP SIGN CONTROL FOR THE PROJECT SITE ACCESS DRIVEWAYS.

SIGHT DISTANCE AT THE PROJECT SITE ACCESS POINTS SHOULD BE REVIEWED WITH RESPECT TO CITY OF CHINO STANDARDS IN CONJUNCTION WITH THE PREPARATION OF PRECISE GRADING AND LANDSCAPE PLANS.

LEGEND:

STOP SIGN

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- Construct Cucamonga Avenue from project entry to Chino Corona Road to match the planned street section north of Chino Corona Road, which is a Local Collector with Paseo (40 feet of paved roadway in an 83' right-of-way).

- Construct Chino Corona Road adjacent to the site at its half section width as a local collector (66' R.O.W.) in conjunction with development.

- Parking should be provided in accordance with City of Chino standards.

Off-Site Improvements

The project should contribute to the installation of off-site traffic signals (when warranted). The project should contribute towards the cost of necessary study area improvements on a fair share, or "pro-rata", basis.

The fair share contribution towards the required improvements at the study area intersections has been based on the project's percent of new traffic that is anticipated to occur at these locations during the peak hours. Table 6-2, previously presented, summarizes the Edgewater Communities residential development project fair share for General Plan Buildout (Post-2030) conditions.

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Traffic Impact Study
Technical Appendices are available at
City of Chino
Community Development Department
13220 Central Avenue
Chino, CA 91710
909.591.9800