



# FINAL TRANSPORTATION ANALYSIS REPORT: BURBANK 2035 GENERAL PLAN

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CITY OF BURBANK

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## Executive Summary

*Burbank2035* pursues the community's goal of a vibrant and livable City that is not heavily dependent on the personal automobile for mobility through thoughtful allocation of new development. The objective of this Transportation Analysis Report is to document the future transportation conditions that result from a set of five land use alternatives developed by the City. The five future land use alternatives evaluated in this document are:

- *Burbank2035* Preferred Project
- Alternative 1: No Project / Existing (1988) Land Use Element
- Alternative 2: Distributed Land Use
- Alternative 3: Golden State Area – Increased Density
- Alternative 4: Centers & Corridors – 2006 Draft Land Use Element

These five alternatives are analyzed using various performance measures. Citywide metrics are obtained from the Burbank travel demand model, and a Level of Service (LOS) analysis is performed on key citywide intersections using the traffic volumes forecast produced by the travel demand model.

The table below presents the vehicle trips (VT) and vehicle miles travelled (VMT) results for each alternative analyzed. As shown, the City of Burbank produces, on an average day, 776,232 vehicle trips. The estimates below include internal-internal, external-internal, and internal-external trips. Through trips are not included in the estimates since they are not attributable to the City's development plans. The results indicate that *Burbank2035* (Preferred Project) produces on average 916,629 daily vehicle trips, which is considerably less than all other scenarios with the exception Alternative 4.

Alternative	Citywide VT [a]	Citywide VMT [a]
2010 Base	776,232	4,399,628
Preferred Project	916,629	5,311,261
Alternative 1	973,527	5,624,567
Alternative 2	930,943	5,416,750
Alternative 3	977,445	5,622,898
Alternative 4	905,853	5,228,944

[a] These metrics account only for vehicle trips attributable to the City of Burbank

A transportation analysis was conducted for 35 key intersections selected by the City. Base traffic volumes were collected during the morning and afternoon peak hours, from 7:00 to 9:00 AM and from 4:00 to 6:00 PM, respectively. A future base network scenario was developed, where five intersection upgrades were assumed. Next, the City travel forecasting model was used to predict increases in traffic caused by the Preferred Project and the four land use alternatives. Using this information, a traffic analysis was conducted for the Preferred Project and each of the alternatives that measured LOS at key intersections using the intersection critical movement analysis methodology.

Under the methodology described above, the Preferred Project was analyzed, and it was found that 16 intersections operate below the LOS D standard under future conditions. For each of these 16 intersections, mitigation measures were identified to improve their operation. First, a conservative

capacity credit was applied to each intersection representing the operational improvement made by implementing traffic signal infrastructure, timing, and coordination upgrades via the Citywide Signal Control System. After applying this credit, three intersections were improved without the need for physical widening. Second, a mitigation analysis was conducted for the remaining 13 intersections operating below standards. For these intersections, physical improvements were identified to improve intersection operations, and were screened against a set of policy-based exceptions to the LOS D standard. This policy-based screening was conducted to identify where physical mitigations conflicted with the goals and policies identified in *Burbank2035*. The policy-based screening analysis is documented in this report. The screening analysis relied on four overarching city policies: a) any transportation improvement should be achievable with the existing right-of-way, b) should be in conformity with the existing scale and design of the location they serve, c) allow for complete streets, and d) maintain pedestrian opportunities.

Using this screening analysis, it was found that of the 13 intersections that operate below the City's standards under the Preferred Project, six can be brought into compliance with physical widening that can be accommodated without conflicting with the goals and policies of *Burbank2035*. The seven remaining intersections received exceptions to the LOS D standard, because the mitigations needed to bring them into operational compliance would conflict with the community values identified in the goals and policies of *Burbank2035*.

In addition to the intersection operation analysis, a Highway CMP analysis was conducted. The CMP analysis is a state-mandated program administered by the Los Angeles County Metropolitan Transportation Authority (*2010 Congestion Management Program for Los Angeles County*, Metro, 2010) that provides a mechanism for coordinating land use and development decisions. The analysis conducted for this study is presented here, and it shows that no significant impacts to the regional roadway network are caused by the future development of the City of Burbank.

This Transportation Analysis Report documents the future transportation conditions that would result from the implementation of the development plans for the five alternatives analyzed. It also identifies the traffic intersection deficiencies that would be generated by these alternatives. The report documents the traffic analysis for all intersections under the Preferred Project Alternative, and it identifies the actions needed to bring all intersections into compliance with the goals and policies of the Draft General Plan.

## 1. Introduction

The objective of this transportation analysis is to document the analysis conducted for *Burbank2035* land use alternatives identified by the City of Burbank. The land use alternatives were analyzed using the citywide model, and the traffic impacts resulting from the future land use alternatives are presented in this document. A detailed level of service (LOS) analysis was performed on key citywide intersections using the traffic volumes forecast produced by the Burbank travel demand model. The transportation analysis informed the needs for transportation improvements in the City.

In 2011, the City of Burbank updated its travel demand model to better quantify and understand the implications of various land use alternatives on travel. The City model, developed in the TransCAD 5.0 (R4) Transportation Geographic Information System (GIS) software, was successfully calibrated and validated to existing traffic conditions. The land use data and roadway network reflect 2010 conditions. The resulting model represents daily, peak period, and peak hour travel in Burbank, these analysis periods seek to model Burbank's travel activity of typical, day-to-day, activities.

The Burbank travel demand model contains a number of innovative features that allow it to capture the effects of land use and policy initiatives on transportation and traffic congestion. These include the effects of potential development patterns, urban design factors, a special traffic generator module, and transportation demand management (TDM) programs. A detailed analysis of how development patterns affect trip making and travel is presented in this report. The travel demand model was used to provide metrics (traffic volumes, vehicle trips [VT], vehicle miles travelled [VMT], vehicle hours of travel [VHT], etc.) that document the plan's ability to meet various transportation-related goals, objectives, and policies. In many cases, these goals aim to decrease automobile use while promoting a thriving land use development strategy. In addition, indicators and results from the model are used to support *Burbank2035's* environmental documentation.

This technical report presents a comparison between *Burbank2035* (Preferred Project) and four land use plan alternatives: Alternative 1, No Project / Existing (1988) Land Use Element; Alternative 2, Distributed Land Use; Alternative 3, Golden State Area – Increased Density; Alternative 4, Centers & Corridors – 2006 Draft Land Use Element. These alternatives are explained in further detail in Chapter 2. The LOS results for these alternatives are also presented in this document. The volume forecasts were obtained from the Citywide Travel Demand Forecasting model, and the LOS calculations were performed using the Critical Movement Analysis (CMA) (*Transportation Research Circular No. 212, Interim Materials on Highway Capacity*, Transportation Research Board, 1980) method in the Traffix software.

## ORGANIZATION OF REPORT

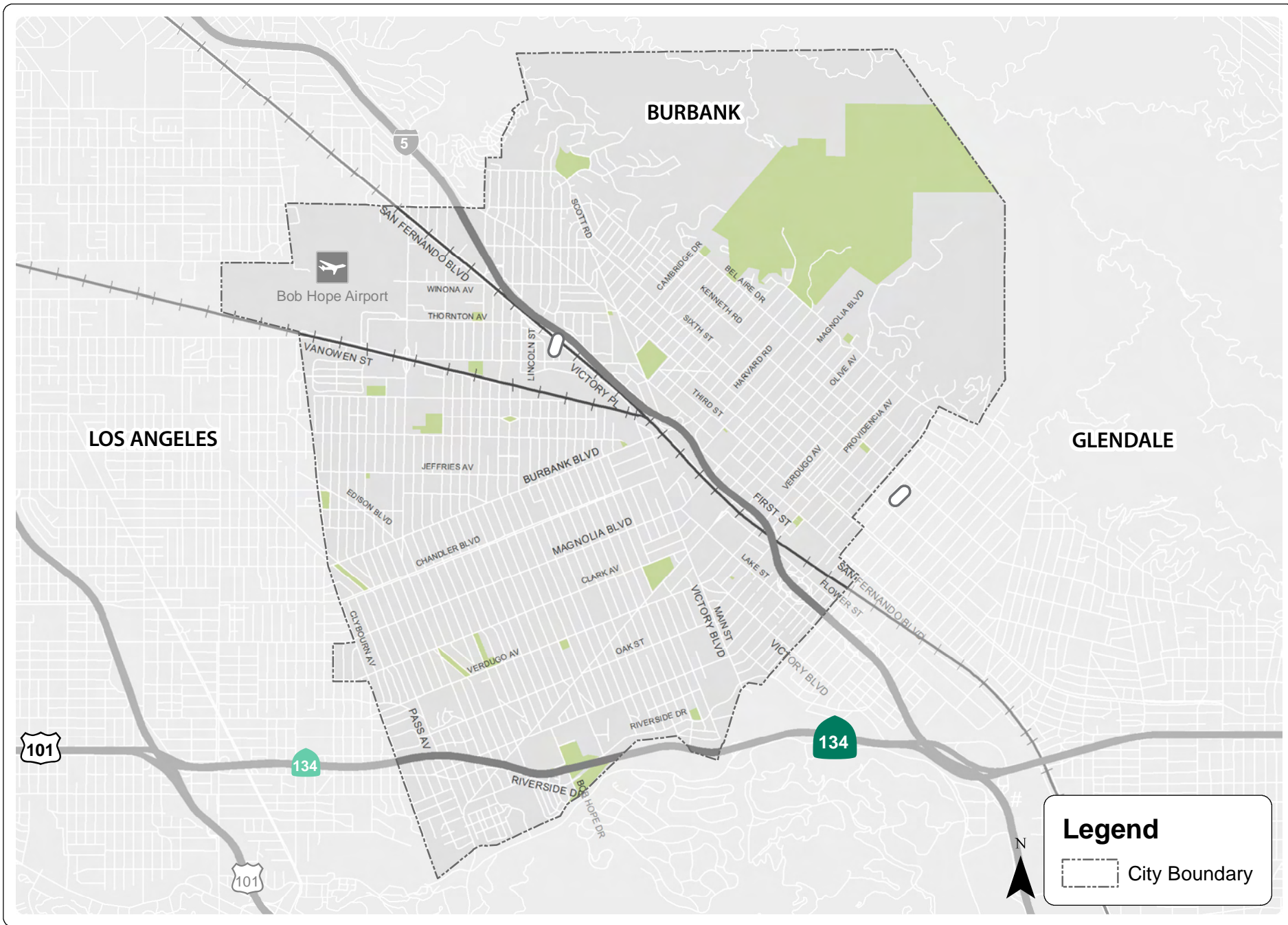
- Chapter 1: Introduction to the transportation analysis report
- Chapter 2: Descriptions of the Preferred Project and alternative land use scenarios
- Chapter 3: An overview of the Citywide Travel Demand Model, and an explanation on how the forecast data was prepared using the Travel Demand Model, in this chapter a comparison of key transportation performance measures, VMT, VHT, and VT are presented
- Chapter 4: Level of service evaluations for intersection impact analysis.
- Chapter 5: A description of the Preferred Project proposed mitigation measures, and the policy based screening analysis used to identify exceptions to the LOS D standard.
- Chapter 6: Conclusions

Appendix A presents the 2035 Forecast Turning Movement Volumes; Appendix B depicts the 2035 Future Base Intersection Geometry Configurations; Appendix C depicts the 2035 Future Intersection Improvements Geometry Configurations; Appendix D presents the 2035 CMA level of service calculations for the Preferred Project and the Mitigated Preferred Project; Appendix E provides information used to develop the mitigation plan; and Appendix F provides the CMA calculations for all the alternatives.

## STUDY AREA

Burbank is located at the eastern end of the San Fernando Valley, approximately 12 miles northwest of downtown Los Angeles. Figure 1 depicts the City's boundary, which comprises the study area. Geographically, the City is bounded by the Verdugo Mountains to the north, the City of Los Angeles to the south and west, and the City of Glendale to the east. The City is fully developed, with a population of 103,340 people according to the U.S. Census (2010), and contains a wide array of existing residential, commercial, and industrial land uses. Due to location and developed transportation infrastructure, the city is accessible to Los Angeles and several communities throughout the valley. The City includes two major freeways, the Golden State (Interstate 5) Freeway and Ventura (California State Route 134) Freeway; various local and regional transit systems; over 20 miles of existing bicycle facilities, and a multitude of developed pedestrian facilities that support a fully functional multimodal transportation network connecting multiple neighborhoods in the City to neighboring communities. Bob Hope Airport, which provides domestic air travel between the City of Burbank and various locations throughout California and the United States, is located in the northwest quadrant of the City.

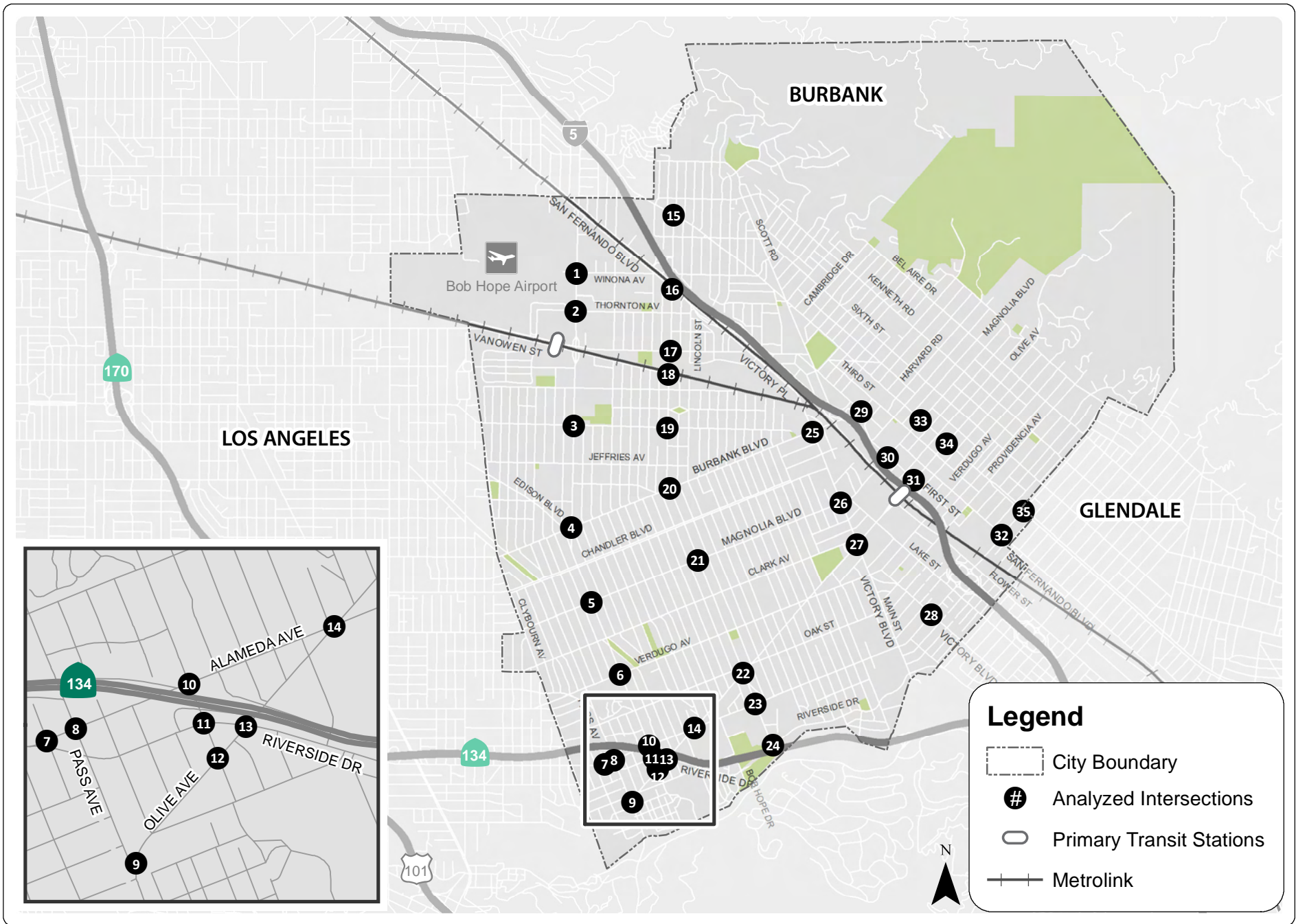




### **Analyzed Intersections**

The purpose of *Burbank2035* Transportation Analysis Report is to document the Preferred Project and alternatives, and evaluate their future operational conditions. Figure 2 depicts the intersection locations. A total of 35 signalized intersections in the City of Burbank (identified by staff as representing the most prominent intersections in the City) were analyzed for future conditions, during the weekday morning peak hour (between 7:00 and 9:00 AM) and evening peak hour (between 4:00 and 6:00 PM):

1. Hollywood Way & Winona Avenue
2. Hollywood Way & Thornton Avenue
3. Hollywood Way & Victory Boulevard
4. Hollywood Way & Burbank Boulevard
5. Hollywood Way & Magnolia Boulevard
6. Hollywood Way & Verdugo Avenue
7. Riverside Drive & Alameda Avenue
8. Pass Avenue & Alameda Avenue
9. Pass Avenue & Olive Avenue
10. Hollywood Way & Alameda Avenue
11. Hollywood Way & Riverside Drive
12. Hollywood Way & Olive Avenue
13. Olive Avenue & Riverside Drive
14. Olive Avenue & Alameda Avenue
15. Buena Vista Street & Glenoaks Boulevard
16. Buena Vista Street & San Fernando Boulevard
17. Buena Vista Street & Empire Avenue
18. Buena Vista Street & Vanowen Street
19. Buena Vista Street & Victory Boulevard
20. Buena Vista Street & Burbank Boulevard
21. Buena Vista Street & Magnolia Boulevard
22. Buena Vista Street & Olive Avenue
23. Buena Vista Street & Alameda Avenue
24. Buena Vista Street/State Route 134 & Riverside Drive
25. Victory Boulevard/Victory Place & Burbank Boulevard
26. Victory Boulevard & Magnolia Boulevard
27. Victory Boulevard & Olive Avenue
28. Victory Boulevard & Alameda Avenue
29. San Fernando Boulevard & Burbank Boulevard
30. First Street & Magnolia Boulevard
31. First Street & Olive Avenue
32. San Fernando Boulevard & Alameda Avenue
33. Glenoaks Boulevard & Magnolia Boulevard
34. Glenoaks Boulevard & Olive Avenue
35. Glenoaks Boulevard & Alameda Avenue



## **ANALYSIS COMPONENTS**

As noted, the traffic forecasts for this report were prepared using the Burbank Travel Demand Model developed by Fehr & Peers on the TransCAD platform. The volumes forecast are based around four core components, 1) the travel model, 2) the land use assumptions, 3) the highway network assumptions, and 4) the calibrated trip generation rates.

### ***Citywide Travel Demand Model***

The model was validated and calibrated to Caltrans and Federal Highway Administration (FHWA) standards. To be deemed accurate for projecting traffic volumes in the future, the model was first calibrated to existing conditions. The Burbank model has been calibrated to 2010 base year conditions using actual traffic counts, census data, and land use data compiled by staff. A separate document, *City of Burbank Model Development Report* (Fehr & Peers), presents detailed information about the model.

### ***Land Use Database***

Land use data is one of the primary inputs to the Burbank model, and this data is instrumental in estimating trip generation. The model's primary source of land use data is the City's land use database (maintained in GIS format and spreadsheets). This land use database is based on survey data, assessor data, and building permit data, and provides information on how much development currently exists within each traffic analysis zone (TAZ). The future land use data was also developed by the City to represent future growth under the *Burbank2035* Preferred Project and Alternatives, and is formatted for use as input to the travel forecasting model. The City's land use data is supplemented by Southern California Association of Governments (SCAG) TAZ-based data for areas bordering the City of Burbank. The land use data in the model is divided into a variety of residential and non-residential categories. The City of Burbank model employs 12 land use data categories to describe land use in the City, and uses a special traffic generator module to analyze projected growth for large developments. These special generators have their own TAZs, which were created to be consistent with development boundaries. Some of the large developments within Burbank that were included are the Warner Brothers Lot, Warner Brothers Ranch, Disney Studios, Burbank Studios (former NBC Studios) and the Bob Hope Airport. Table 1 presents the land use categories used in the model.

### ***Highway Network Database***

Base year and future highway network databases were developed using data provided by the City, and using the SCAG model network. The model roadway network includes all State Routes, arterials, collectors, and a selection of local roads in the study area (see Figure 3). In addition, currently fully funded roadway improvements were added to the future highway network database. The Golden State (Interstate 5) Freeway increases in capacity by year 2035, where two interchanges within the City will be realigned (Burbank Boulevard and Empire Avenue/Scott Road). In addition, northbound and southbound High Occupancy Vehicle (HOV) lanes will be added along the Golden State Freeway by year 2035. Other regional improvements, including those identified in the Constrained Plans of both the Metropolitan Transportation Authority Long Range Transportation Plan and the SCAG Regional Transportation Plan are also assumed.

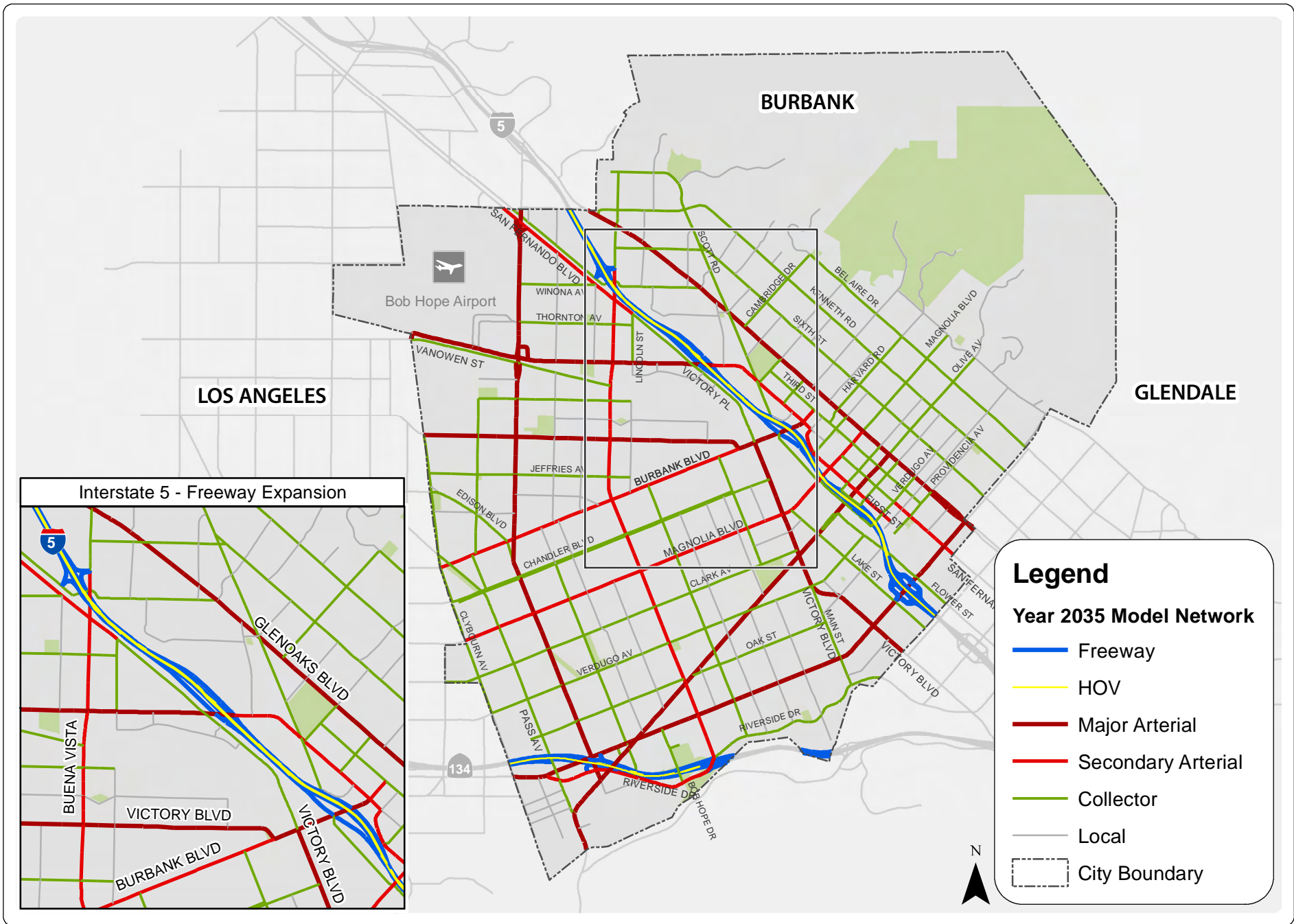
**TABLE 1 – MODEL LAND USE CATEGORIES**

<b>ID</b>	<b>Category</b>	<b>Units</b>
1	Single Family D.U.	Dwelling Units
2	Multi Family DU	Dwelling Units
3	Commercial Shopping	Square Feet (S.F.)
4	Commercial Service	Square Feet
5	Office	Square Feet
6	Industrial	Square Feet
7	Hospital	Square Feet
8	School	Square Feet
9	Church	Square Feet
10	Lodging	Rooms
11	Parks	Acres
12	Parking	Spaces
13	Special Traffic Generators	Office-Equivalent S.F. (OE-GSF) or Million Annual Passengers (MAP)

The roads shown in Figure 3 are classified in six major categories and form the primary road network represented in the model structure. As is typical for urban-area models, the model network focuses on facilities in the higher functional classes and does not attempt to replicate travel patterns on local residential streets, but does include some of them to distribute traffic. The travel model includes around forty external stations to represent travel to and from areas outside the City.

***Trip Generation Rates***

Trip generation rates were researched from various sources including the SCAG travel demand model, the census National Household Travel Survey (NHTS), the San Diego Association of Governments (SANDAG) travel demand model, and the Institute of Transportation Engineers' (ITE) *Trip Generation, 8<sup>th</sup> Edition* (2008). Trip generation rates were then stratified for five area types in the City, and were subsequently calibrated to match the existing trip making characteristics unique to the City of Burbank based on traffic counts and data provided by the City.



## 2. Future Alternatives

*Burbank2035* explores a Preferred Project and four land use alternatives. Table 2 presents a land use totals comparison table. *Burbank2035* and the four alternatives are described below.

### DESCRIPTION OF ALTERNATIVES

#### ***Preferred Project***

Under *Burbank2035*, the proposed Land Use Element would guide future development intensities and patterns throughout the City. The maximum amount of development would be limited to 52.0 million square feet of commercial and industrial development and 50,219 residential dwelling units by 2035. New commercial developments would be limited to areas in the City where the transportation network is best able to accommodate growth. In addition, this scenario would include land use controls to ensure that development does not exceed the limits proposed under *Burbank2035*.

*Burbank2035* would implement all the mobility improvements and circulation network prescribed under the Mobility Element. The proposed Mobility Element of *Burbank2035* plans for improvements to overburdened intersections throughout the city and promotes reductions in vehicle trips and an increase in biking, walking, and use of mass public transit. The City would update its transportation improvements blueprint and Capital Improvement Program (CIP) based on the policies and improvements identified in the Mobility Element.

*Burbank2035* assumes that the Greenhouse Gas Reduction Plan (GGRP) would be adopted and implemented.

#### ***Alternative 1 – No Project/Existing (1988) Land Use Element***

This alternative assumes that *Burbank2035* would not be adopted and implemented. Instead, the City of Burbank would continue to grow and develop consistent with currently allowable land uses according to the existing 1988 Land Use Element; however, redevelopment patterns would be expected to be similar to *Burbank2035* because the same infill properties would be vacant or available for redevelopment, resulting in increased intensity of development within an identical development footprint as *Burbank2035*. Alternative 1 would allow for 55,707 dwelling units, and 58.2 million square feet of nonresidential development. Future development under Alternative 1 would result in approximately 5,488 more dwelling units and approximately 6.2 million more square feet of nonresidential development than would be allowed under *Burbank2035*.

This alternative would implement the same mobility improvements prescribed under *Burbank2035* and would have the same overall circulation network as *Burbank2035*. The proposed Mobility Element of *Burbank2035* plans for improvements to overburdened intersections throughout the City and promotes reductions in vehicle trips and an increase in biking, walking, and use of mass public transit. As in the past, the City would still update its transportation improvements blueprint and CIP based on current available information without adopting a new Mobility Element. The City would pursue the same physical improvements with or without an updated Mobility Element.

Alternative 1 assumes that none of the other proposed *Burbank2035* elements would be adopted and implemented, and that the City would not adopt the GGRP.

### **Alternative 2 – Distributed Land Use**

This alternative would spread the anticipated increases in non-residential square footage anticipated under *Burbank2035* evenly across the City as a whole, rather than concentrating new growth in Downtown Burbank, the Media District, and the Golden State area. The land use diagram and development footprint for Alternative 2 would be identical to that proposed for, but non-residential development capacity limits would be placed on the Downtown Burbank, Media District, and Golden State areas to ensure that non-residential growth is spread evenly throughout the City. It should be noted that a proportional growth increase in all parts of the City may not be feasible, as some neighborhoods do not have the ability to grow at the same rates as others.

Alternative 2 would allow for 50,219 dwelling units and 52.7 million square feet of nonresidential development. The same number of dwelling units and population are anticipated under Alternative 2 as are anticipated under *Burbank2035*. However, future development under Alternative 2 would result in approximately 700,000 more square feet of nonresidential development.

For the circulation network and improvements, the proposed Mobility Element would be implemented under this alternative. The proposed Mobility Element plans for improvements to overburdened intersections throughout the city and promotes reductions in vehicle trips and an increase in biking, walking, and use of public transit.

Alternative 2 assumes all other proposed *Burbank2035* elements and the GGRP would be adopted and implemented.

### **Alternative 3 – Golden State Area – Increased Density**

This alternative would result in a change from the *Burbank2035* land use diagram by changing uses in the Golden State area from Airport and Manufacturing designations to Regional Commercial and Corridor Commercial designations. Alternative 3 would allow for 50,219 dwelling units and 55.6 million square feet of nonresidential development. The same number of dwelling units is anticipated under Alternative 3 as are anticipated under *Burbank2035*. However, future development under Alternative 3 would result in approximately 3.6 million more square feet of nonresidential development than would be allowed under *Burbank2035*.

For the circulation network and improvements, the proposed Mobility Element would be implemented under this alternative. The proposed Mobility Element plans for improvements to overburdened intersections throughout the City and promotes reductions in vehicle trips and an increase in biking, walking, and use of mass public transit.

Alternative 3 assumes all other proposed *Burbank2035* elements and the GGRP would be adopted and implemented.



**Alternative 4 – Centers & Corridors – 2006 Draft Land Use Element**

Alternative 4 corresponds to the Draft Land Use Element prepared by city staff in 2006. Under this alternative, commercial development would be concentrated in downtown Burbank and in designated neighborhood centers located throughout the City, with more limited growth occurring in the Golden State area and Media District relative to *Burbank2035*. In addition, this alternative assumes greater redevelopment of commercial uses to residential uses along key transportation corridors throughout the City.

Alternative 4 would allow for 53,846 dwelling units and 49.0 million square feet of nonresidential development. Future development under Alternative 4 would result in approximately 3,627 more dwelling units and 3.0 million less square feet of nonresidential development than would be allowed under *Burbank2035*.

For the circulation network and improvements, the proposed Mobility Element would be implemented under this alternative. The proposed Mobility Element plans for improvements to overburdened intersections throughout the City and promotes reductions in vehicle trips and an increase in biking, walking, and use of public transit.

Alternative 4 assumes all other proposed *Burbank2035* elements and the GGRP would be adopted and implemented.

**TABLE 2 – LAND USE DATA COMPARISON ACROSS ALTERNATIVES**

Land Use	Units	2010 Base	Preferred Project	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Single Family	D.U. [a]	19,026	19,026	19,026	19,026	19,026	19,011
Multi Family	D.U. [a]	25,863	31,193	31,193	31,193	31,193	34,835
Total D.U.	D.U. [a]	44,889	50,219	50,219	50,219	50,219	53,846
Comm. Shop	K.S.F. [b]	6,255	8,054	9,794	9,072	10,214	6,622
Comm. Service	K.S.F. [b]	3,529	3,576	3,576	3,576	3,576	4,057
Office	K.S.F. [b]	10,219	14,780	18,974	13,360	16,220	12,267
Industrial	K.S.F. [b]	9,098	9,303	9,484	10,452	9,303	9,622
Hospital	K.S.F. [b]	1,636	1,636	1,636	1,636	1,636	1,828
School	K.S.F. [b]	2,020	2,028	2,035	2,020	2,028	2,020
Church	K.S.F. [b]	757	775	792	757	775	757
Lodging	Rooms	2,075	2,075	2,075	2,075	2,075	2,075
Parks	Acre	308	308	308	308	308	308
Parking	Spaces	200	200	200	200	200	200

Notes: [a] D.U. – Dwelling Units, [b] K.S.F. – Thousand Square Feet

## TRAFFIC ANALYSIS LAND USE CONSTANTS

### *Special Traffic Generators*

This General Plan analysis assumes the same level of growth for all special traffic generators across the Preferred Project and four alternatives. These special generators grow as specified by their current entitlements; furthermore, the model assumes TDM credits consistent with each development's land use entitlement (if applicable) which are incorporated into the City's travel demand model. The five developments incorporated as special generators in the travel model that fall within the City of Burbank boundaries are: Warner Bros (Main Site), Warner Bros (Ranch), Disney Studios, Burbank Studios (former NBC studios), and the Bob Hope Airport. Table 3 presents the land use assumptions for these special sites.

**TABLE 3 – SPECIAL TRAFFIC GENERATOR ASSUMPTIONS**

<b>Special Generator</b>	<b>Units</b>	<b>Existing 2010 Base</b>	<b>All 2035 Alternatives</b>
Warner Bros. Main Site	OE-GSF	1,519,962	3,362,398
Warner Bros. Ranch	OE-GSF	103,556	833,322
Disney Studios	OE-GSF	1,298,588	1,403,000
Burbank Studios (Former NBC)	OE-GSF	496,857	1,825,865
Bob Hope Airport	MAP[a]	5.92	8.00

Note: [a] Million Annual Passengers

### 3. Travel Demand Forecasting

The Burbank travel demand model was used to obtain measures of effectiveness (MOEs) that are often analyzed when considering the effects of different general plan development scenarios. The measurements presented in this chapter include:

- VT – The total number of vehicle trips made in the study area (including into, out of and through the study area).
- VMT – A measure of total vehicle travel activity for the entire study area for a given scenario.
- VHT – A measure of total time spent traveling in vehicles in the study area affected by factors including length of trip making, amount of trip making and congestion levels.

#### BURBANK CITYWIDE VEHICLE TRIPS

The metrics presented in Table 4 were obtained from the Burbank citywide model. Figure 4 shows citywide vehicle trips. As shown, the City of Burbank produces, on an average day, about 776,232 daily vehicle trips. This estimate includes internal-internal (II), external-internal (XI), and internal-external (IX) trips. Through trips (XX) are also presented in the table, but these trips cannot be attributed to the development proposed by the City. The Preferred Project Alternative produces on average 916,629 daily vehicle trips.

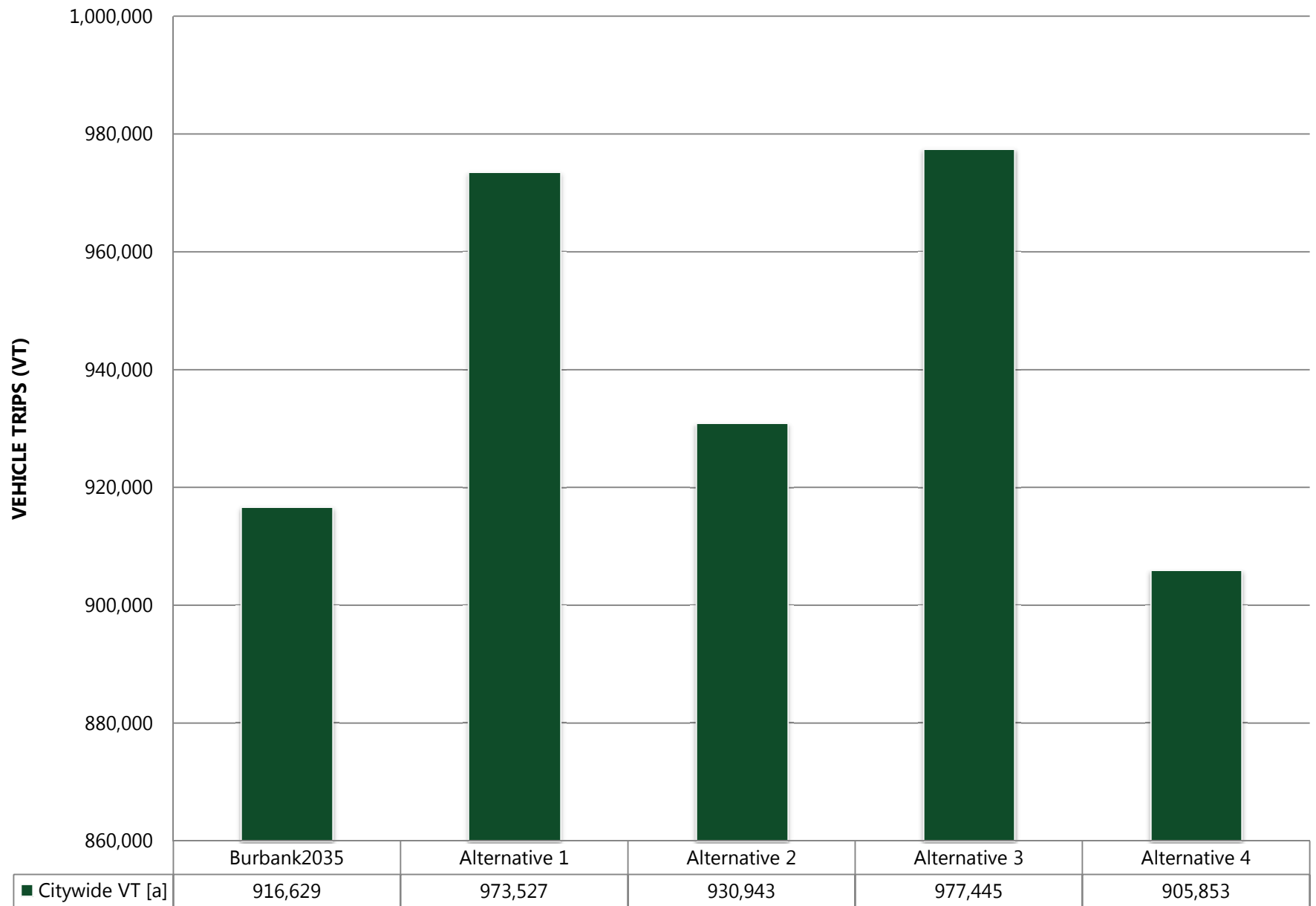
**TABLE 4 – BURBANK CITYWIDE VEHICLE TRIPS**

<b>Alternative</b>	<b>Citywide VT [a]</b>	<b>VT (I-I)</b>	<b>VT (IX-XI)</b>	<b>VT (X-X) [b]</b>
2010 Base	776,232	177,485	598,748	381,249
Preferred Project	916,629	209,247	707,382	425,691
Alternative 1	973,527	228,278	745,248	425,691
Alternative 2	930,943	213,117	717,826	425,691
Alternative 3	977,445	228,418	749,027	425,691
Alternative 4	905,853	208,248	697,605	425,691

[a] Trips generated by the City, internal and external:  $VT = VT (I-I) + VT (IX-XI)$ .

[b] Through trips (X-X), these trips are not attributable to City of Burbank development.

**FIGURE 4 - CITYWIDE VEHICLE TRIPS**



## BURBANK VEHICLE MILES TRAVELED

This section summarizes the methodology for estimating the citywide daily VMT and presents the results for all alternatives including VMT stratified by speed categories.

### Methodology for Estimating VMT

To estimate VMT, the locally validated citywide travel demand model was used. VMT estimates were developed by isolating only those trips that start or end within the City boundaries, also known as the Origin-Destination (OD) Method. The speed and length of these trips (including the portion of the trip on roadways outside the City of Burbank) were used to develop the VMT estimates. Since this VMT estimate will be used for a greenhouse gas analysis, the data is stratified by five-mile speed bins.

The OD method used to compute VMT tracks all vehicle trips generated by City of Burbank across the entire regional network. This method allows for the isolation of different types of VMT, as follows:

- II VMT – Includes all trips that begin and end entirely within the City of Burbank.
- One-half of IX VMT – Includes one-half of trips with an origin within the City of Burbank and a destination outside of this area. This assumes that the City shares half the responsibility for trips traveling to other areas.
- One-half of XI VMT – Includes one-half of trips with an origin outside of the area and a destination within the City of Burbank. Similar to the IX trips, the City shares the responsibility of trips traveling from other areas.
- XX VMT – Trips through the City of Burbank are not included. This approach is consistent with the concept used for the IX and XI trips. Therefore, the XX VMT is not attributed to the City.

A summary of the VMT for all alternatives is presented in Table 5. The VMT by speed bin results for the Preferred Project and four alternatives are presented on Tables 6 to 10, respectively. Figure 5 presents a comparison chart.

**TABLE 5 – BURBANK CITYWIDE VEHICLE MILES TRAVELLED**

Alternative	Citywide VMT [a]	VMT (I-I)	VMT (IX-XI)	VMT (X-X)
2010 Base	4,399,628	1,421,321	2,978,308	883,232
Preferred Project	5,311,261	1,619,791	3,691,470	997,000
Alternative 1	5,624,567	1,700,296	3,924,271	997,525
Alternative 2	5,416,750	1,654,333	3,762,417	997,840
Alternative 3	5,622,898	1,704,564	3,918,334	997,358
Alternative 4	5,228,944	1,608,839	3,620,105	997,622

[a] VMT generated by the City, internal and external: VMT = VMT (I-I) + VMT (IX-XI).

**TABLE 6 – PREFERRED PROJECT: DAILY VMT BY 5 MPH SPEED BIN**

Speed (mph)	Class	Burbank I-I VMT [a]	IX-XI VMT [b]	Total VMT [c]	% per Speed Bin
0	1	452	16,910	17,362	0.30%
5	2	2,242	105,171	107,412	2.00%
10	3	8,673	331,479	340,153	6.40%
15	4	89,127	539,364	628,491	11.80%
20	5	400,919	564,153	965,073	18.20%
25	6	544,902	534,585	1,079,487	20.30%
30	7	272,556	395,565	668,121	12.60%
35	8	59,919	239,208	299,126	5.60%
40	9	44,431	190,071	234,503	4.40%
45	10	31,681	242,236	273,917	5.20%
50	11	18,245	119,913	138,158	2.60%
55	12	29,333	296,629	325,962	6.10%
60	13	117,122	116,107	233,230	4.40%
65	14	188	79	268	0.00%
<b>Total</b>		<b>1,619,791</b>	<b>3,691,470</b>	<b>5,311,261</b>	<b>100%</b>

[a] Burbank Internal VMT

[b] Fifty percent (50%) of External-Internal and Internal-External VMT

[c] Through trips (XX) are not included, since they are not attributable to City of Burbank

**TABLE 7 – ALTERNATIVE 1: DAILY VMT BY 5 MPH SPEED BIN**

Speed (mph)	Class	Burbank I-I VMT [a]	IX-XI VMT [b]	Total VMT [c]	% per Speed Bin
0	1	477	20,378	20,855	0.40%
5	2	2,551	115,526	118,078	2.10%
10	3	15,485	359,366	374,852	6.70%
15	4	111,747	584,101	695,847	12.40%
20	5	424,101	597,839	1,021,939	18.20%
25	6	555,953	557,410	1,113,363	19.80%
30	7	273,307	415,046	688,353	12.20%
35	8	63,469	255,598	319,067	5.70%
40	9	56,240	207,369	263,609	4.70%
45	10	23,817	252,489	276,305	4.90%
50	11	22,639	123,384	146,024	2.60%
55	12	28,212	316,064	344,276	6.10%
60	13	122,119	119,600	241,719	4.30%
65	14	179	102	281	0.00%
<b>Total</b>		<b>1,700,296</b>	<b>3,924,271</b>	<b>5,624,567</b>	<b>100%</b>

[a] Burbank Internal VMT

[b] Fifty percent (50%) of External-Internal and Internal-External VMT

[c] Through trips (XX) are not included, since they are not attributable to City of Burbank

**TABLE 8 – ALTERNATIVE 2: DAILY VMT BY 5 MPH SPEED BIN**

Speed (mph)	Class	Burbank I-I VMT [a]	IX-XI VMT [b]	Total VMT [c]	% per Speed Bin
0	1	456	17,904	18,360	0.30%
5	2	2,992	109,185	112,176	2.10%
10	3	12,057	335,992	348,048	6.40%
15	4	90,761	552,655	643,416	11.90%
20	5	419,678	574,804	994,482	18.40%
25	6	547,441	543,702	1,091,143	20.10%
30	7	274,476	400,547	675,024	12.50%
35	8	63,624	242,671	306,295	5.70%
40	9	53,939	200,435	254,373	4.70%
45	10	20,765	241,128	261,893	4.80%
50	11	23,490	121,821	145,310	2.70%
55	12	27,675	303,021	330,695	6.10%
60	13	116,805	118,431	235,236	4.30%
65	14	176	122	298	0.00%
<b>Total</b>		<b>1,654,333</b>	<b>3,762,417</b>	<b>5,416,750</b>	<b>100%</b>

[a] Burbank Internal VMT

[b] Fifty percent (50%) of External-Internal and Internal-External VMT

[c] Through trips (XX) are not included, since they are not attributable to City of Burbank

**TABLE 9 – ALTERNATIVE 3: DAILY VMT BY 5 MPH SPEED BIN**

Speed (mph)	Class	Burbank I-I VMT [a]	IX-XI VMT [b]	Total VMT [c]	% per Speed Bin
0	1	476	20,253	20,729	0.40%
5	2	2,274	114,127	116,401	2.10%
10	3	14,524	352,789	367,313	6.50%
15	4	107,547	586,083	693,630	12.30%
20	5	427,658	603,326	1,030,983	18.30%
25	6	562,737	557,141	1,119,879	19.90%
30	7	274,565	414,084	688,649	12.20%
35	8	65,509	255,696	321,205	5.70%
40	9	49,806	202,942	252,748	4.50%
45	10	21,410	252,489	273,898	4.90%
50	11	23,535	126,058	149,593	2.70%
55	12	29,913	315,342	345,255	6.10%
60	13	124,421	117,906	242,327	4.30%
65	14	189	99	288	0.00%
<b>Total</b>		<b>1,704,564</b>	<b>3,918,334</b>	<b>5,622,898</b>	<b>100%</b>

[a] Burbank Internal VMT

[b] Fifty percent (50%) of External-Internal and Internal-External VMT

[c] Through trips (XX) are not included, since they are not attributable to City of Burbank

**TABLE 10 – ALTERNATIVE 4: DAILY VMT BY 5 MPH SPEED BIN**

Speed (mph)	Class	Burbank I-I VMT [a]	IX-XI VMT [b]	Total VMT [c]	% per Speed Bin
0	1	450	16,610	17,060	0.30%
5	2	2,240	102,598	104,838	2.00%
10	3	7,880	325,464	333,344	6.40%
15	4	79,673	527,026	606,699	11.60%
20	5	410,802	554,579	965,380	18.50%
25	6	544,024	521,313	1,065,337	20.40%
30	7	267,446	392,103	659,549	12.60%
35	8	61,511	233,108	294,619	5.60%
40	9	39,457	185,974	225,431	4.30%
45	10	33,462	238,511	271,973	5.20%
50	11	18,489	115,583	134,072	2.60%
55	12	25,906	292,478	318,384	6.10%
60	13	117,340	114,665	232,006	4.40%
65	14	160	94	253	0.00%
<b>Total</b>		<b>1,608,839</b>	<b>3,620,105</b>	<b>5,228,944</b>	<b>100%</b>

[a] Burbank Internal VMT

[b] Fifty percent (50%) of External-Internal and Internal-External VMT

[c] Through trips (XX) are not included, since they are not attributable to City of Burbank

## BURBANK VEHICLE HOURS TRAVELED

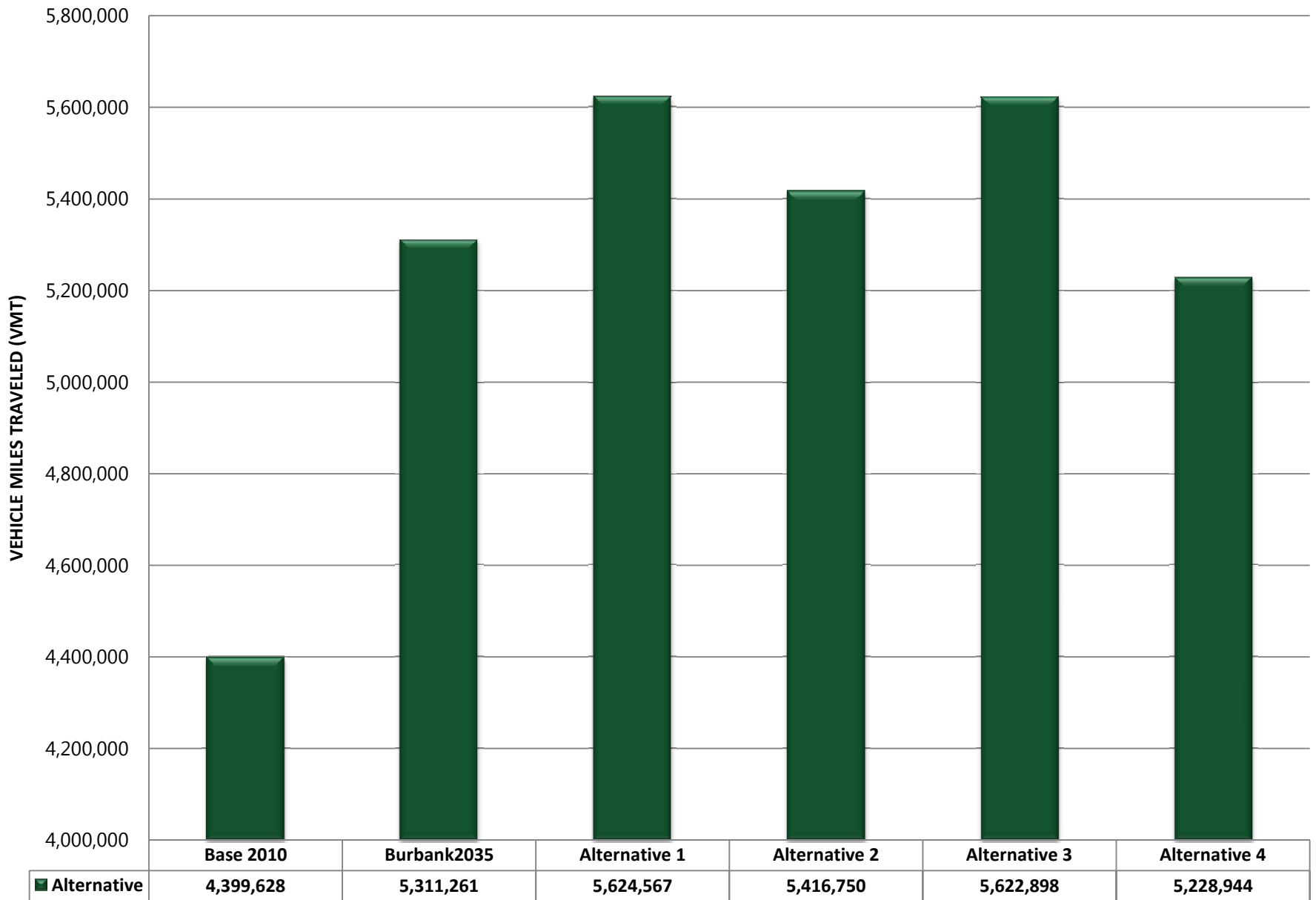
The travel demand model for the City of Burbank was used to estimate VHT. This metric is useful when estimating systemwide impacts on congestion. The daily VHT metrics presented here can be understood as the total vehicle hours expended traveling on the roadway network within the City of Burbank. Table 11 presents the VHT information per alternative, and Figure 6 depicts it.

**TABLE 11 – BURBANK CITYWIDE VEHICLE HOURS TRAVELED**

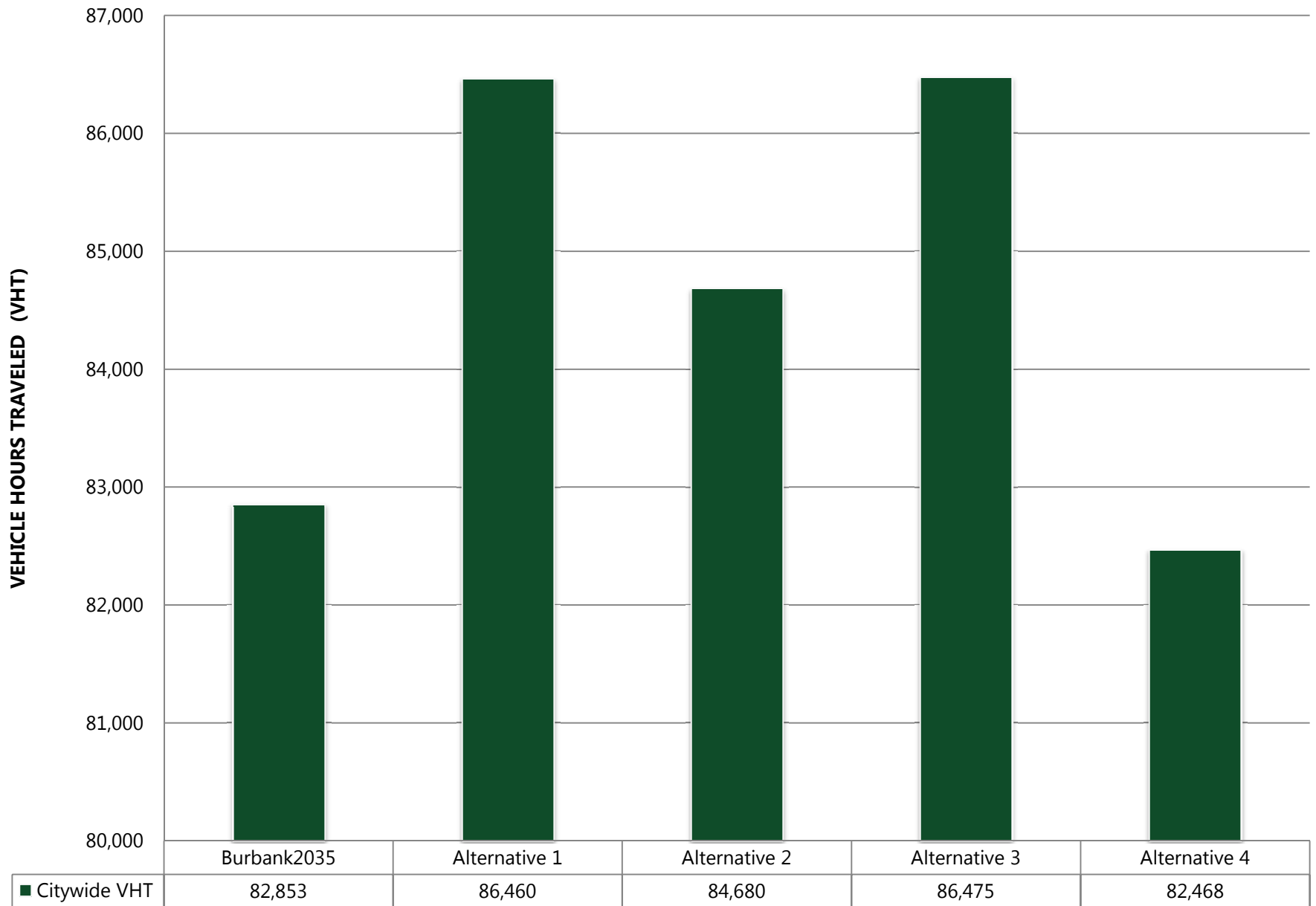
Alternative		Citywide VHT
<b>Existing</b>	<b>2010</b>	72,105
<b>Preferred</b>	<b>Project</b>	82,853
<b>Alternative 1</b>	No Project/Existing (1988) LU Element	86,460
<b>Alternative 2</b>	Distributed Land Use	84,680
<b>Alternative 3</b>	Golden State Area - Increased Density	86,475
<b>Alternative 4</b>	Centers & Corridors - 2006 Draft LU Element	82,468



**FIGURE 5 - CITYWIDE VEHICLE MILES TRAVELED**



**FIGURE 6 - CITYWIDE VEHICLE HOURS TRAVELED**



## TURNING MOVEMENT VOLUMES FORECAST

The development of the forecast volumes for this analysis followed the approach presented in the National Cooperative Highway Research Program (NCHRP) Report 255 (Transportation Research Board, 1982). This method is the accepted professional standard for preparing traffic forecasts for urbanized area planning applications.

### ***Forecasting Methodology***

The NCHRP Report 255 approach involves post-processing model data and applying the growth to existing counts collected in the field. The first step in the process is to run the validated base year model and collect data for the desired segments and intersection turning movements.

The model is then updated with future year land use changes and highway network improvements and run again. The data for the same study segments and turning movements is again collected from the future year model run.

The data from both model runs is then compared and applied to the existing counts using one of three methods:

- The Difference Method – directly applies the difference between the future and base year model runs to the existing count.
- The Ratio Method – factors the existing counts by the ratio of the future year data to the base year data.
- The Combined Method – takes the average of the output from both the difference method and the ratio method.

While the NCHRP 255 method is the accepted professional standard, and post-processing model volumes is the typical approach to preparing traffic forecasts for sub-regional models, it is by no means required. In certain situations, it may be appropriate to use raw model output as opposed to post-processed count volumes. Therefore, in addition to the NCHRP process described above, more refined trip adjustments were implemented within the Burbank modeling framework,

The forecast volumes for the Preferred Project and each of the four alternatives in the study can be found in Appendix A.

## 4. Level of Service Evaluation

Traffic volumes at the 35 study intersections selected were collected during the morning and afternoon peak hours, from 7:00 to 9:00 AM and from 4:00 to 6:00 PM, respectively. The peak one-hour time period for the morning and afternoon is found by identifying the four consecutive 15-minute periods with the highest traffic volumes.

The traffic counts used for this analysis were collected in 2010 and 2011, and were provided by the City of Burbank staff. No roadway construction or incidents occurred in the immediate areas of the count locations during the count periods. Local schools were in session on the days of the counts. The weekday traffic volumes, illustrated in Appendix A, represent for the purposes of this analysis the existing 2010 conditions.

### TRAFFIC ANALYSIS METHODOLOGY

#### ***LOS Definition***

LOS is a qualitative measure used to describe the condition of traffic flow, ranging from excellent conditions at LOS A to overloaded conditions at LOS F. LOS D is typically recognized as the minimum acceptable level of service in urban areas, however more recent studies around California have lowered LOS D standards in order to promote other community goals, such as pedestrian, bicycle, and transit levels of service. Alternative LOS metrics are gaining approval across the nations, among them multi-modal LOS (Highway Capacity Manual [HCM] 2010 Streets) and Complete Streets LOS. For this analysis, The CMA analysis was used, and its appropriate LOS definitions for signalized intersections can be found in Table 12.

#### ***CMA or Circular 212***

The City of Burbank requires the use of CMA methodology to evaluate the operations of intersections. The CMA method of intersection capacity analysis determines the intersection volume-to-capacity (V/C) ratio and corresponding LOS for turning movements and intersection characteristics at signalized intersections. The CMA is one of the traditional methods used to quantify vehicular level of service; as such it may or may not be an applicable measure of the actual effectiveness of the transportation system. The City recognizes that the current LOS performance measure accounts for vehicle mobility only, and that it does not necessarily measure the performance of the transportation system or accounts for the number of people using other transportation modes. In the future, the City will evaluate the use of other methodologies, and would revise it to reflect a more comprehensive transportation analysis that includes all transportation users and provides a better picture of the operational effects at adjoining intersections.

Traffic for Windows (Version 8.0) was selected as the software to calculate the intersection LOS for this study. Traffic for Windows is an interactive computer software program that evaluates and forecasts traffic operating conditions at typical four-legged intersections.

## THRESHOLDS OF SIGNIFICANCE

The City of Burbank's current policy is to maintain LOS D at all intersections during peak hours, so as to provide acceptable levels of mobility throughout the City. Thus, implementation of any of the alternatives may result in a potentially significant impact if the resulting LOS during one or both peak hours were E or worse. However, the City provides some exceptions to the LOS D standard where LOS E or F would be allowed.

Exceptions to the LOS D standard are allowed where mitigation is infeasible or would conflict with the goals and policies identified in the Mobility Element or Land Use Element in the Draft 2035 Burbank General Plan, such as:

- The right-of-way needs for a transportation improvements impacts surrounding private or public properties.
- The transportation improvements are not compatible with the scale and design of the existing infrastructure.
- The transportation improvements negate the possibility to develop "Complete Streets", when it fails to meet the needs of pedestrians, bicyclists, wheelchair users, equestrian, or motorists.
- The transportation improvements fail to provide minimum sidewalk widths within the right-of-way.

**TABLE 12 – LEVEL OF SERVICE DEFINITIONS FOR SIGNALIZED INTERSECTIONS**

Level of Service	Volume-to-Capacity Ratio	Definition
A	0.000 - 0.600	EXCELLENT. No vehicle waits longer than one red light and no approach phase is fully used.
B	0.601 - 0.700	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	0.701 - 0.800	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	0.801 - 0.900	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	0.901 - 1.000	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	>1.000	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays with continuously increasing queue lengths.

Source: *Transportation Research Circular No. 212, Interim Materials on Highway Capacity*. Transportation Research Board, 1980.

## FUTURE 2035 BASE CONDITIONS IMPROVEMENTS

The Future 2035 Base condition represents all street improvements that the City has committed to pursue and implement by horizon year 2035, with two exceptions described below. The 2035 Future Base intersection configurations are described in this section of the report. These configurations represent the traffic restriping, widening, and signal-phasing improvements proposed by the City. These future base intersection configurations apply to the preferred project and four land use alternatives being evaluated as part of *Burbank2035*.

Future base improvements do not include improvements identified as traffic mitigations for entitled development projects where these developments have not yet constructed the entitled square footage needed to trigger the improvements. These improvements, for which square footage triggers have not been met and for which development impact fees have not yet been paid, are not considered committed or funded improvements because there is no guarantee that these entitlements will be built and fees paid. Developments that include these square-footage triggers generally include the three large studio campuses. Instead of assuming these improvements as part of the future base improvements, the necessity of these improvements is evaluated as possible mitigations measures to *Burbank2035* transportation impacts in Chapter 5 of this report.

In addition, Future base improvements do not include mitigation measures imposed upon the City in connection with the Burbank Empire Center Environmental Impact Report. Under that Environmental Impact Report and the related Development Agreement, the City is obligated to make certain improvements to the intersections of Buena Vista Street & Empire Avenue (Intersection #17) and Buena Vista Street & Victory Boulevard (Intersection #19) if the operation of those intersections drop below LOS D. As documented in the City of Burbank Existing Conditions Report, Intersection #17 is operating at LOS B in the AM and PM peak hours, and Intersection #19 is operating at LOS C in the AM peak hour and LOS D in the PM peak hour. In order to be conservative, the improvements required by the Empire Center Environmental Impact Report for Intersections #17 and #19 were not assumed to be in existence under *Burbank2035*. However, the requirements imposed on the City by the Empire Center Environmental Impact Report are not being eliminated as part of the 2035 General Plan adoption.

The future base condition contains new geometries at five of the 35 study intersections. Appendix B presents the lane configuration geometries assumed for the Future 2035 Base conditions, these geometry modifications are described below.

The completion of the Citywide Signal Control System (CSCS) is assumed for all study intersections in the Future 2035 Base condition.

### Hollywood Way & Alameda Avenue (#10)

The Future 2035 Base condition assumes the reconfiguration of the northbound approach to two exclusive left-turn lanes, two through lanes, and one exclusive right-turn lane. Additional changes are proposed on the eastbound approach with one exclusive left-turn lane, two through lanes, and one shared through/right-turn lane. The existing lane configuration consists of a northbound approach with two exclusive left-turn lanes, one through lane, and one shared through/right-turn lane; a southbound approach with two exclusive left-turn lanes, two through lanes, and one exclusive right-turn lane; an eastbound approach with one exclusive left-turn lane, two through lanes, and one exclusive right-turn

lane; and a westbound approach with one exclusive left-turn lane, three through lanes, and one exclusive right-turn lane.

#### Buena Vista Street & Empire Avenue (#17)

The Future 2035 Base condition assumes that the northbound approach would provide for a right-turn overlap phase. The existing lane configuration consists of a northbound approach with two exclusive left-turn lanes, two through lanes, and one exclusive right-turn lane; a southbound approach with two exclusive left-turn lanes, one through lane, and a shared through/right-turn lane; an eastbound approach with two exclusive left-turn lanes, two through lanes, and one exclusive right-turn lane; and a westbound approach with two exclusive left-turn lanes, one through lane, and one shared through/right-turn lane.

#### Buena Vista Street & Vanowen Street (#18)

The Future 2035 Base condition assumes the reconfiguration of the southbound approach to two through lanes, and one exclusive right-turn lane. Additional changes are proposed in the eastbound approach to allow for two exclusive left-turn lanes and one exclusive right-turn lane. The existing lane configuration consists of a northbound approach with one exclusive left-turn lane and two through lanes; a southbound approach with one through lane and one shared through/right-turn lane; and an eastbound approach with one exclusive left-turn lane and one exclusive right-turn lane.

#### Victory Place & Burbank Boulevard (#25)

The Future 2035 Base condition assumes the reconfiguration of the westbound approach with two exclusive left-turn lanes, three through lanes, and one exclusive right-turn lane. The existing lane configuration consisted of a northbound approach with two exclusive left-turn lanes, two through lanes, and one exclusive right-turn lane; a southbound approach with two exclusive left-turn lanes, two through lanes, and one exclusive right-turn lane; an eastbound approach with two exclusive left-turn lanes, three through lanes, and one exclusive right-turn lane; and a westbound approach with two exclusive left-turn lanes, three through lanes, and one shared through/right-turn lane.

#### San Fernando Boulevard & Burbank Boulevard (#29)

The Future 2035 Base condition assumes the reconfiguration of the southbound approach to provide one exclusive left-turn lane, one through lane, and two exclusive right-turn lanes. The existing lane configuration consisted of a northbound approach with two exclusive left-turn lanes, one through lane, and one shared through/right-turn lane; a southbound approach with one exclusive left-turn lane, one through lane, and one exclusive right-turn lane; an eastbound approach with two exclusive left-turn lanes, two through lanes, and one exclusive right-turn lane; and a westbound approach with one exclusive left-turn lane, two through lanes, and one exclusive right-turn lane.

## **EVALUATION OF PROPOSED ALTERNATIVES**

The section below provides a level of service evaluation for the Preferred Project and four alternatives. Figures 7 and 8 chart the frequency distribution of LOS during the AM and PM peak hours, respectively, for the existing year (2010) and all horizon year (2035) alternatives. These figures depict the level of vehicular congestion in the City under each scenario. Intersections towards the LOS A through C side of the chart indicate less congestion, while intersections operating towards the LOS F side of the chart indicate greater vehicular congestion. In addition to these charts, tables and figures are provided for each alternative that document the level of service results.

### ***Preferred Project Future LOS***

Table 13 presents the LOS and impact analysis results for the 2035 Preferred Alternative. As shown, the Preferred Alternative produces a total of 16 impacted intersections. Impacts occurred during both the AM and PM peak hour, resulting in five impacted intersections during the AM peak hour and 16 impacted intersections during the PM peak hour. A total of five intersections operate at LOS F in one or both peaks. Figure 9 shows a graphical depiction of the LOS. The CMA calculations for the preferred alternative can be found in Appendix D.

### ***Alternative 1: No Project/Existing (1988) Land Use Element Future LOS***

Table 14 presents the LOS and impact analysis results for the 2035 No Project Alternative. As shown, the No Project Alternative produces a total of 19 impacted intersections. Impacts occurred during both the AM and PM peak hour, resulting in seven impacted intersections during the AM peak hour and 18 impacted intersections during the PM peak hour. A total of nine intersections operate at LOS F in one or both peaks. Figure 10 shows a graphical depiction of the LOS.

### ***Alternative 2: Distributed Land Use – Future LOS***

Table 15 presents the LOS and impact analysis results for the 2035 Distributed Land Use Alternative. As shown, this alternative produces a total of 18 impacted intersections. Impacts occurred during both the AM and PM peak hours, resulting in five impacted intersections during the AM peak hour and 18 impacted intersections during the PM peak hour. A total of six intersections operate at LOS F in one or both peaks. Figure 12 shows a graphical depiction of the LOS.

### ***Alternative 3: Golden State Area (Increased Density) – Future LOS***

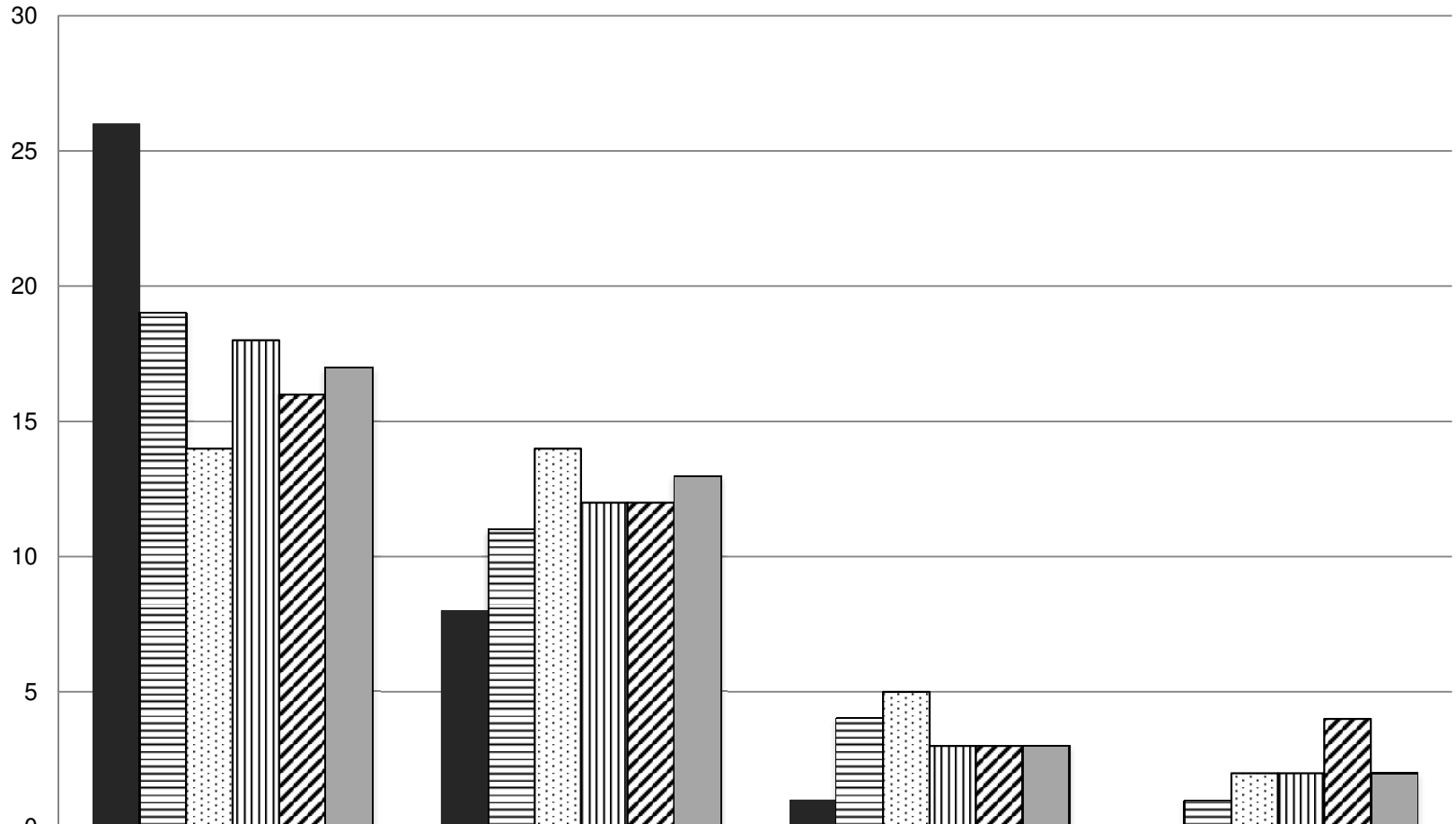
Table 16 presents the LOS and impact analysis results for the 2035 Golden State Area – Increased Density Alternative. As shown, this alternative produces a total of 17 impacted intersections. Impacts occurred during both the AM and PM peak hours, resulting in seven impacted intersections during the AM peak hour and 17 impacted intersections during the PM peak hour. A total of eight intersections operate at LOS F in one or both peaks. Figure 11 shows a graphical depiction of the LOS.

### ***Alternative 4: Centers & Corridors (2006 Draft Land Use Element) – Future LOS***

Table 17 presents the LOS and impact analysis results for the Centers & Corridors 2006 Draft Land Use Element Alternative. As shown, this alternative produces a total of 18 impacted intersections. Impacts occurred during both the AM and PM peak hours, resulting in five impacted intersections during the AM peak hour and 17 impacted intersections during the PM peak hour. A total of three intersections operate at LOS F in one or both peaks. Figure 13 shows a graphical depiction of the LOS.

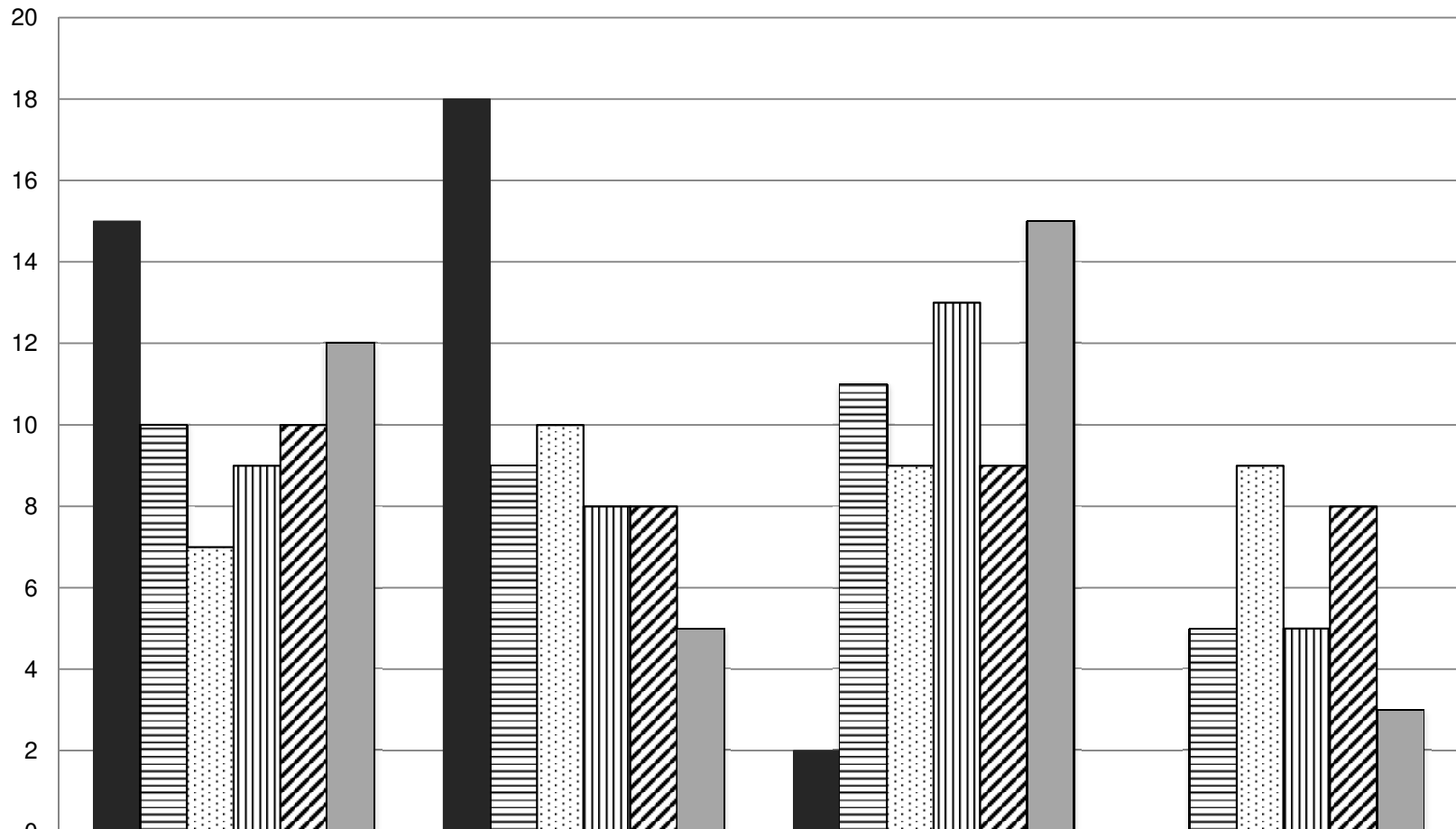


**FIGURE 7. LEVEL OF SERVICE COMPARISON BY ALTERNATIVE (AM PEAK HOUR)**



	LOS A-C	LOS D	LOS E	LOS F
■ Existing 2010	26	8	1	0
▨ Burbank2035	19	11	4	1
▤ Alternative 1	14	14	5	2
▥ Alternative 2	18	12	3	2
▧ Alternative 3	16	12	3	4
▩ Alternative 4	17	13	3	2

**FIGURE 8. LEVEL OF SERVICE COMPARISON BY ALTERNATIVE (PM PEAK HOUR)**



	LOS A-C	LOS D	LOS E	LOS F
■ Existing 2010	15	18	2	0
▨ Burbank2035	10	9	11	5
▤ Alternative 1	7	10	9	9
▥ Alternative 2	9	8	13	5
▧ Alternative 3	10	8	9	8
▩ Alternative 4	12	5	15	3

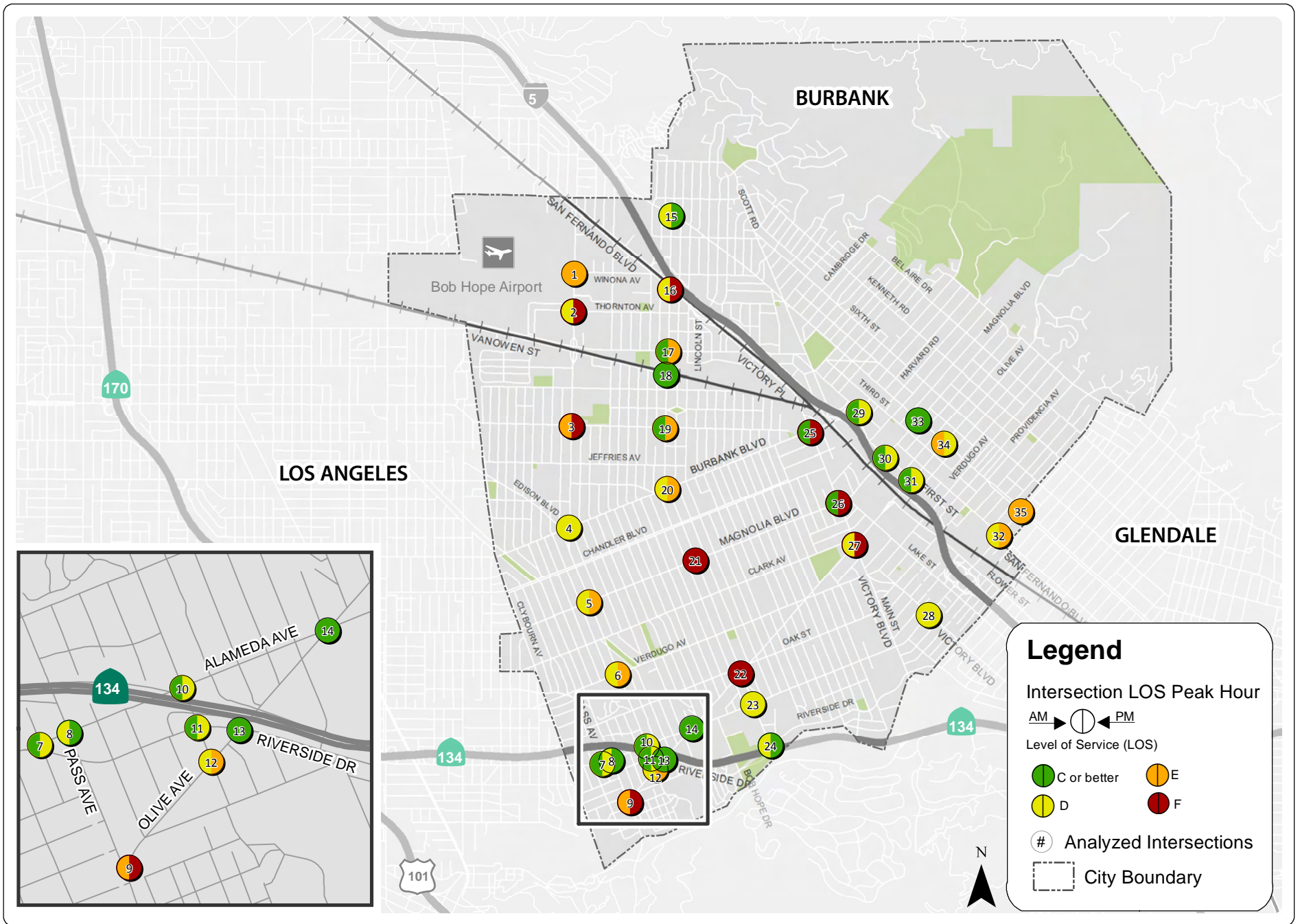
**TABLE 13. BURBANK2035 - PREFERRED PROJECT FUTURE LEVEL OF SERVICE**

Intersection			Existing				Burbank2035				Below LOS D Standard	
			AM		PM		AM		PM		AM	PM
#	N/S Street	E/W Street	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS		
1	N Hollywood Way	Winona Ave	0.426	A	0.583	A	0.693	B	0.834	D	NO	NO
2	N Hollywood Way	Thornton Ave	0.731	C	0.813	D	0.756	C	1.019	F	NO	YES
3	N Hollywood Way	W Victory Blvd	0.873	D	0.953	E	0.925	E	0.983	E	YES	YES
4	N Hollywood Way	W Burbank Blvd	0.721	C	0.850	D	0.841	D	0.885	D	NO	NO
5	N Hollywood Way	Magnolia Blvd	0.766	C	0.894	D	0.830	D	0.954	E	NO	YES
6	N Hollywood Way	W Verdugo Ave	0.805	D	0.893	D	0.860	D	0.955	E	NO	YES
7	Riverside Dr	W Alameda Ave	0.507	A	0.754	C	0.624	B	0.836	D	NO	NO
8	N Pass Ave	W Alameda Ave	0.672	B	0.559	A	0.848	D	0.683	B	NO	NO
9	N Pass Ave	W Olive Ave	0.761	C	0.815	D	0.941	E	1.037	F	YES	YES
10	N Hollywood Way	W Alameda Ave	0.697	B	0.779	C	0.770	C	0.880	D	NO	NO
11	N Hollywood Way	Riverside Dr	0.512	A	0.621	B	0.637	B	0.810	D	NO	NO
12	N Hollywood Way	W Olive Ave	0.685	B	0.714	C	0.830	D	0.926	E	NO	YES
13	Riverside Dr	W Olive Ave	0.546	A	0.536	A	0.599	A	0.615	B	NO	NO
14	W Olive Ave	W Alameda Ave	0.581	A	0.674	B	0.742	C	0.733	C	NO	NO
15	N Buena Vista St	N Glenoaks Blvd	0.820	D	0.730	C	0.806	D	0.781	C	NO	NO
16	N Buena Vista St	N San Fernando Blvd	0.697	B	0.859	D	0.775	C	1.060	F	NO	YES
17	N Buena Vista St	W Empire Ave	0.616	B	0.663	B	0.776	C	0.911	E	NO	YES
18	N Buena Vista St	Vanowen St	0.620	B	0.827	D	0.562	A	0.615	B	NO	NO
19	N Buena Vista St	W Victory Blvd	0.761	C	0.848	D	0.774	C	0.924	E	NO	YES
20	N Buena Vista St	W Burbank Blvd	0.826	D	0.839	D	0.853	D	0.885	D	NO	NO
21	N Buena Vista St	W Magnolia Blvd	0.954	E	0.984	E	1.005	F	1.066	F	YES	YES
22	N Buena Vista St	W Olive Ave	0.873	D	0.896	D	0.997	E	0.980	E	YES	YES
23	S Buena Vista St	W Alameda Ave	0.743	C	0.859	D	0.863	D	0.877	D	NO	NO
24	S Buena Vista St	W Riverside Dr	0.758	C	0.720	C	0.840	D	0.778	C	NO	NO
25	N Victory Blvd	W Burbank Blvd	0.693	B	0.831	D	0.781	C	0.999	E	NO	YES
26	N Victory Blvd	Magnolia Blvd	0.551	A	0.875	D	0.619	B	1.006	F	NO	YES
27	N Victory Blvd	W Olive Ave	0.742	C	0.883	D	0.760	C	0.998	E	NO	YES
28	N Victory Blvd	W Alameda Ave	0.674	B	0.839	D	0.782	C	0.832	D	NO	NO
29	N San Fernando Blvd	Burbank Blvd	0.888	D	0.873	D	0.676	B	0.845	D	NO	NO
30	N 1st St	E Magnolia Blvd	0.399	A	0.662	B	0.433	A	0.777	C	NO	NO
31	N 1st St	E Olive Ave	0.537	A	0.744	C	0.652	B	0.788	C	NO	NO
32	S San Fernando Blvd	E Alameda Ave	0.839	D	0.843	D	0.857	D	0.940	E	NO	YES
33	N Glenoaks Blvd	Magnolia Blvd	0.650	B	0.681	B	0.690	B	0.739	C	NO	NO
34	Glenoaks Blvd	E Olive Ave	0.749	C	0.757	C	0.887	D	0.795	C	NO	NO
35	S Glenoaks Blvd	E Alameda Ave	0.845	D	0.870	D	0.920	E	0.943	E	YES	YES



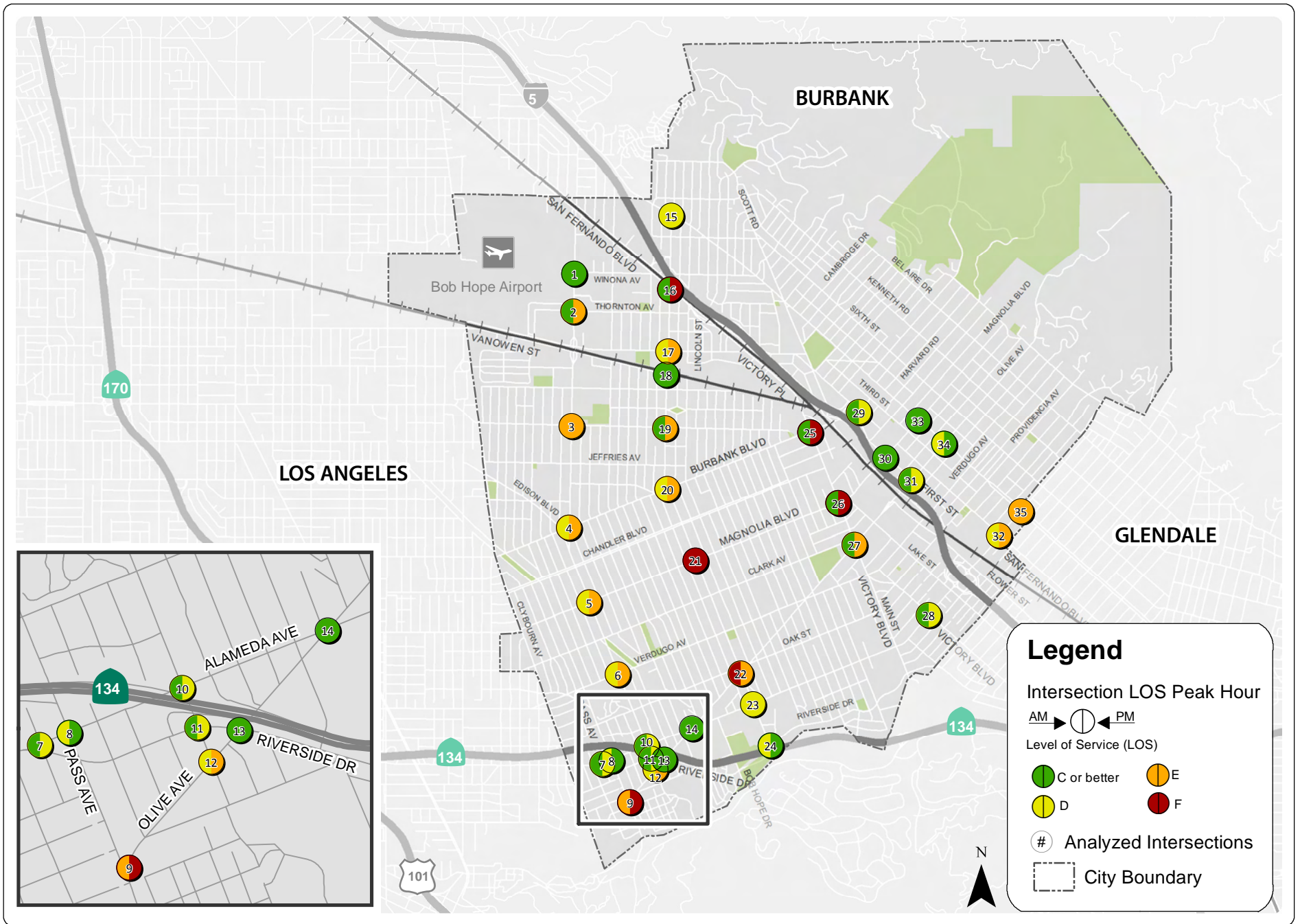
**TABLE 14. ALTERNATIVE 1 FUTURE LEVEL OF SERVICE**

Intersection			Existing				Alternative 1				Below LOS D Standard	
			AM		PM		AM		PM		AM	PM
#	N/S Street	E/W Street	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	AM	PM
1	N Hollywood Way	Winona Ave	0.426	A	0.583	A	0.918	E	0.935	E	YES	YES
2	N Hollywood Way	Thornton Ave	0.731	C	0.813	D	0.842	D	1.078	F	NO	YES
3	N Hollywood Way	W Victory Blvd	0.873	D	0.953	E	0.949	E	1.006	F	YES	YES
4	N Hollywood Way	W Burbank Blvd	0.721	C	0.850	D	0.833	D	0.878	D	NO	NO
5	N Hollywood Way	Magnolia Blvd	0.766	C	0.894	D	0.834	D	0.970	E	NO	YES
6	N Hollywood Way	W Verdugo Ave	0.805	D	0.893	D	0.856	D	0.962	E	NO	YES
7	Riverside Dr	W Alameda Ave	0.507	A	0.754	C	0.667	B	0.804	D	NO	NO
8	N Pass Ave	W Alameda Ave	0.672	B	0.559	A	0.819	D	0.728	C	NO	NO
9	N Pass Ave	W Olive Ave	0.761	C	0.815	D	0.914	E	1.014	F	YES	YES
10	N Hollywood Way	W Alameda Ave	0.697	B	0.779	C	0.799	C	0.893	D	NO	NO
11	N Hollywood Way	Riverside Dr	0.512	A	0.621	B	0.667	B	0.854	D	NO	NO
12	N Hollywood Way	W Olive Ave	0.685	B	0.714	C	0.808	D	0.952	E	NO	YES
13	Riverside Dr	W Olive Ave	0.546	A	0.536	A	0.607	B	0.655	B	NO	NO
14	W Olive Ave	W Alameda Ave	0.581	A	0.674	B	0.737	C	0.748	C	NO	NO
15	N Buena Vista St	N Glenoaks Blvd	0.820	D	0.730	C	0.888	D	0.795	C	NO	NO
16	N Buena Vista St	N San Fernando Blvd	0.697	B	0.859	D	0.852	D	1.139	F	NO	YES
17	N Buena Vista St	W Empire Ave	0.616	B	0.663	B	0.731	C	0.962	E	NO	YES
18	N Buena Vista St	Vanowen St	0.620	B	0.827	D	0.555	A	0.604	B	NO	NO
19	N Buena Vista St	W Victory Blvd	0.761	C	0.848	D	0.755	C	0.931	E	NO	YES
20	N Buena Vista St	W Burbank Blvd	0.826	D	0.839	D	0.861	D	0.904	E	NO	YES
21	N Buena Vista St	W Magnolia Blvd	0.954	E	0.984	E	1.022	F	1.062	F	YES	YES
22	N Buena Vista St	W Olive Ave	0.873	D	0.896	D	1.024	F	1.023	F	YES	YES
23	S Buena Vista St	W Alameda Ave	0.743	C	0.859	D	0.817	D	0.861	D	NO	NO
24	S Buena Vista St	W Riverside Dr	0.758	C	0.720	C	0.892	D	0.770	C	NO	NO
25	N Victory Blvd	W Burbank Blvd	0.693	B	0.831	D	0.791	C	1.055	F	NO	YES
26	N Victory Blvd	Magnolia Blvd	0.551	A	0.875	D	0.637	B	1.047	F	NO	YES
27	N Victory Blvd	W Olive Ave	0.742	C	0.883	D	0.811	D	1.018	F	NO	YES
28	N Victory Blvd	W Alameda Ave	0.674	B	0.839	D	0.844	D	0.855	D	NO	NO
29	N San Fernando Blvd	Burbank Blvd	0.888	D	0.873	D	0.741	C	0.851	D	NO	NO
30	N 1st St	E Magnolia Blvd	0.399	A	0.662	B	0.470	A	0.838	D	NO	NO
31	N 1st St	E Olive Ave	0.537	A	0.744	C	0.714	C	0.840	D	NO	NO
32	S San Fernando Blvd	E Alameda Ave	0.839	D	0.843	D	0.892	D	0.921	E	NO	YES
33	N Glenoaks Blvd	Magnolia Blvd	0.650	B	0.681	B	0.694	B	0.742	C	NO	NO
34	Glenoaks Blvd	E Olive Ave	0.749	C	0.757	C	0.934	E	0.814	D	YES	NO
35	S Glenoaks Blvd	E Alameda Ave	0.845	D	0.870	D	0.956	E	0.941	E	YES	YES



**TABLE 15. ALTERNATIVE 2 FUTURE LEVEL OF SERVICE**

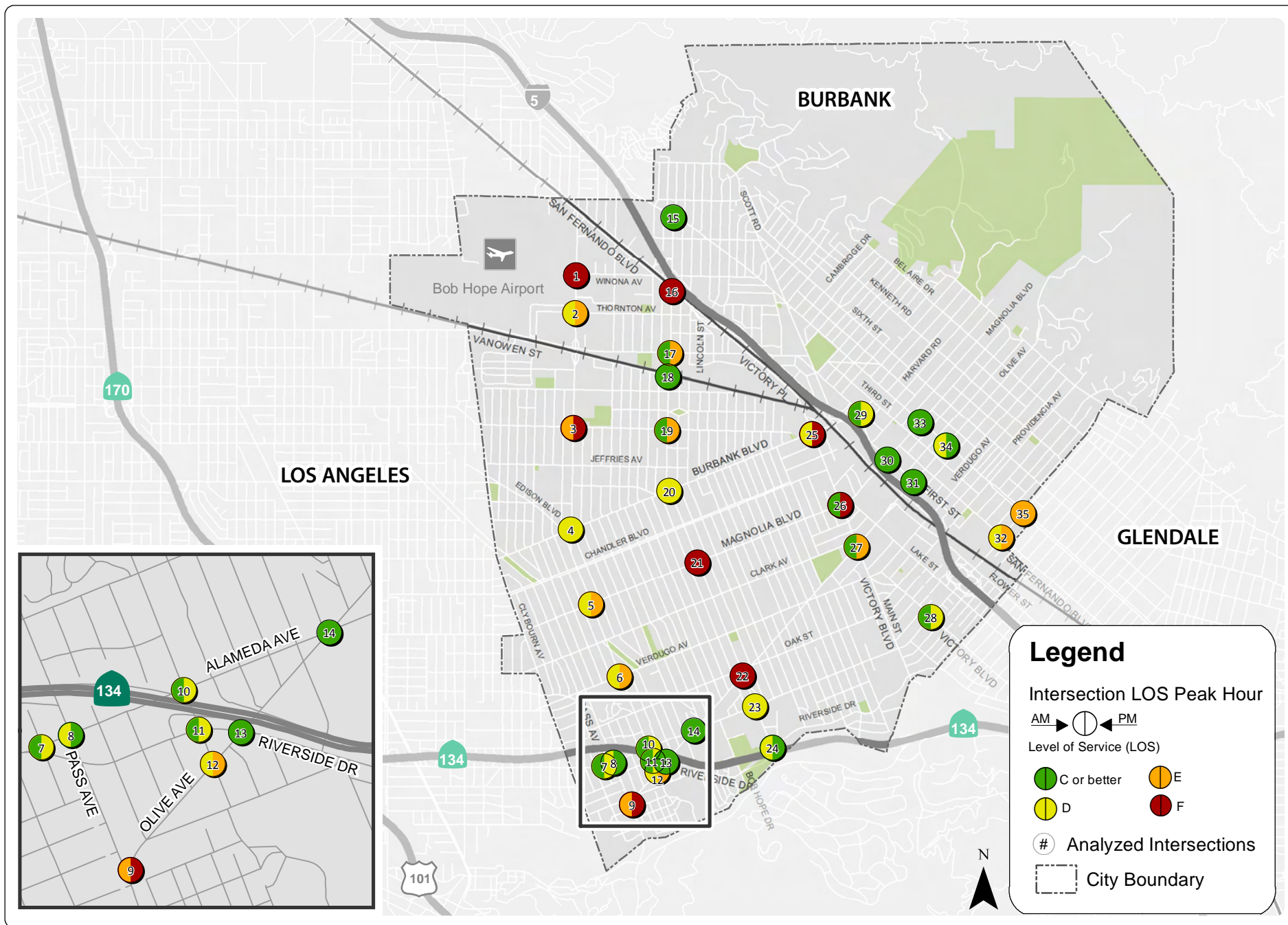
Intersection			Existing				Alternative 2				Below LOS D Standard	
			AM		PM		AM		PM		AM	PM
#	N/S Street	E/W Street	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	AM	PM
1	N Hollywood Way	Winona Ave	0.426	A	0.583	A	0.523	A	0.766	C	NO	NO
2	N Hollywood Way	Thornton Ave	0.731	C	0.813	D	0.779	C	0.988	E	NO	YES
3	N Hollywood Way	W Victory Blvd	0.873	D	0.953	E	0.929	E	0.979	E	YES	YES
4	N Hollywood Way	W Burbank Blvd	0.721	C	0.850	D	0.821	D	0.907	E	NO	YES
5	N Hollywood Way	Magnolia Blvd	0.766	C	0.894	D	0.830	D	0.966	E	NO	YES
6	N Hollywood Way	W Verdugo Ave	0.805	D	0.893	D	0.852	D	0.939	E	NO	YES
7	Riverside Dr	W Alameda Ave	0.507	A	0.754	C	0.616	B	0.832	D	NO	NO
8	N Pass Ave	W Alameda Ave	0.672	B	0.559	A	0.855	D	0.655	B	NO	NO
9	N Pass Ave	W Olive Ave	0.761	C	0.815	D	0.929	E	1.050	F	YES	YES
10	N Hollywood Way	W Alameda Ave	0.697	B	0.779	C	0.795	C	0.881	D	NO	NO
11	N Hollywood Way	Riverside Dr	0.512	A	0.621	B	0.650	B	0.822	D	NO	NO
12	N Hollywood Way	W Olive Ave	0.685	B	0.714	C	0.825	D	0.945	E	NO	YES
13	Riverside Dr	W Olive Ave	0.546	A	0.536	A	0.611	B	0.628	B	NO	NO
14	W Olive Ave	W Alameda Ave	0.581	A	0.674	B	0.733	C	0.741	C	NO	NO
15	N Buena Vista St	N Glenoaks Blvd	0.820	D	0.730	C	0.821	D	0.806	D	NO	NO
16	N Buena Vista St	N San Fernando Blvd	0.697	B	0.859	D	0.759	C	1.115	F	NO	YES
17	N Buena Vista St	W Empire Ave	0.616	B	0.663	B	0.808	D	0.903	E	NO	YES
18	N Buena Vista St	Vanowen St	0.620	B	0.827	D	0.602	B	0.655	B	NO	NO
19	N Buena Vista St	W Victory Blvd	0.761	C	0.848	D	0.785	C	0.924	E	NO	YES
20	N Buena Vista St	W Burbank Blvd	0.826	D	0.839	D	0.872	D	0.922	E	NO	YES
21	N Buena Vista St	W Magnolia Blvd	0.954	E	0.984	E	1.005	F	1.055	F	YES	YES
22	N Buena Vista St	W Olive Ave	0.873	D	0.896	D	1.016	F	0.998	E	YES	YES
23	S Buena Vista St	W Alameda Ave	0.743	C	0.859	D	0.852	D	0.877	D	NO	NO
24	S Buena Vista St	W Riverside Dr	0.758	C	0.720	C	0.843	D	0.789	C	NO	NO
25	N Victory Blvd	W Burbank Blvd	0.693	B	0.831	D	0.740	C	1.010	F	NO	YES
26	N Victory Blvd	Magnolia Blvd	0.551	A	0.875	D	0.637	B	1.013	F	NO	YES
27	N Victory Blvd	W Olive Ave	0.742	C	0.883	D	0.780	C	0.994	E	NO	YES
28	N Victory Blvd	W Alameda Ave	0.674	B	0.839	D	0.800	C	0.834	D	NO	NO
29	N San Fernando Blvd	Burbank Blvd	0.888	D	0.873	D	0.690	B	0.891	D	NO	NO
30	N 1st St	E Magnolia Blvd	0.399	A	0.662	B	0.440	A	0.750	C	NO	NO
31	N 1st St	E Olive Ave	0.537	A	0.744	C	0.634	B	0.817	D	NO	NO
32	S San Fernando Blvd	E Alameda Ave	0.839	D	0.843	D	0.854	D	0.974	E	NO	YES
33	N Glenoaks Blvd	Magnolia Blvd	0.650	B	0.681	B	0.701	C	0.796	C	NO	NO
34	Glenoaks Blvd	E Olive Ave	0.749	C	0.757	C	0.840	D	0.784	C	NO	NO
35	S Glenoaks Blvd	E Alameda Ave	0.845	D	0.870	D	0.900	E	0.973	E	YES	YES





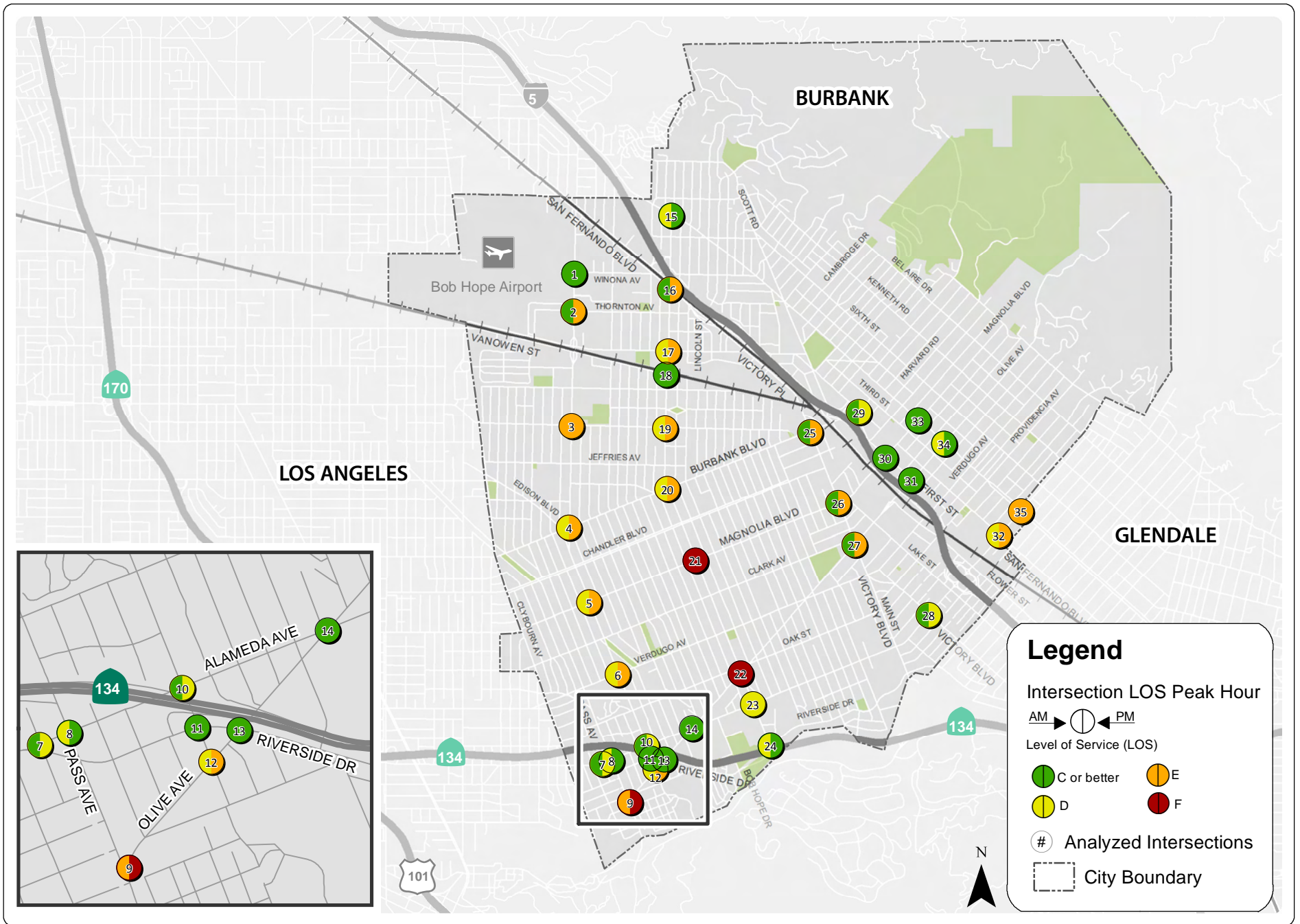
**TABLE 16. ALTERNATIVE 3 FUTURE LEVEL OF SERVICE**

Intersection			Existing				Alternative 3				Below LOS D Standard	
			AM		PM		AM		PM		AM	PM
#	N/S Street	E/W Street	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS		
1	N Hollywood Way	Winona Ave	0.426	A	0.583	A	1.035	F	1.305	F	YES	YES
2	N Hollywood Way	Thornton Ave	0.731	C	0.813	D	0.859	D	0.986	E	NO	YES
3	N Hollywood Way	W Victory Blvd	0.873	D	0.953	E	0.957	E	1.014	F	YES	YES
4	N Hollywood Way	W Burbank Blvd	0.721	C	0.850	D	0.841	D	0.900	D	NO	NO
5	N Hollywood Way	Magnolia Blvd	0.766	C	0.894	D	0.818	D	0.962	E	NO	YES
6	N Hollywood Way	W Verdugo Ave	0.805	D	0.893	D	0.853	D	0.947	E	NO	YES
7	Riverside Dr	W Alameda Ave	0.507	A	0.754	C	0.650	B	0.839	D	NO	NO
8	N Pass Ave	W Alameda Ave	0.672	B	0.559	A	0.821	D	0.672	B	NO	NO
9	N Pass Ave	W Olive Ave	0.761	C	0.815	D	0.907	E	1.018	F	YES	YES
10	N Hollywood Way	W Alameda Ave	0.697	B	0.779	C	0.774	C	0.866	D	NO	NO
11	N Hollywood Way	Riverside Dr	0.512	A	0.621	B	0.656	B	0.858	D	NO	NO
12	N Hollywood Way	W Olive Ave	0.685	B	0.714	C	0.827	D	0.961	E	NO	YES
13	Riverside Dr	W Olive Ave	0.546	A	0.536	A	0.706	C	0.625	B	NO	NO
14	W Olive Ave	W Alameda Ave	0.581	A	0.674	B	0.749	C	0.751	C	NO	NO
15	N Buena Vista St	N Glenoaks Blvd	0.820	D	0.730	C	0.787	C	0.749	C	NO	NO
16	N Buena Vista St	N San Fernando Blvd	0.697	B	0.859	D	1.139	F	1.151	F	YES	YES
17	N Buena Vista St	W Empire Ave	0.616	B	0.663	B	0.720	C	0.970	E	NO	YES
18	N Buena Vista St	Vanowen St	0.620	B	0.827	D	0.576	A	0.648	B	NO	NO
19	N Buena Vista St	W Victory Blvd	0.761	C	0.848	D	0.739	C	0.957	E	NO	YES
20	N Buena Vista St	W Burbank Blvd	0.826	D	0.839	D	0.845	D	0.893	D	NO	NO
21	N Buena Vista St	W Magnolia Blvd	0.954	E	0.984	E	1.001	F	1.001	F	YES	YES
22	N Buena Vista St	W Olive Ave	0.873	D	0.896	D	1.024	F	1.005	F	YES	YES
23	S Buena Vista St	W Alameda Ave	0.743	C	0.859	D	0.833	D	0.857	D	NO	NO
24	S Buena Vista St	W Riverside Dr	0.758	C	0.720	C	0.881	D	0.785	C	NO	NO
25	N Victory Blvd	W Burbank Blvd	0.693	B	0.831	D	0.804	D	1.009	F	NO	YES
26	N Victory Blvd	Magnolia Blvd	0.551	A	0.875	D	0.670	B	1.002	F	NO	YES
27	N Victory Blvd	W Olive Ave	0.742	C	0.883	D	0.788	C	0.986	E	NO	YES
28	N Victory Blvd	W Alameda Ave	0.674	B	0.839	D	0.800	C	0.855	D	NO	NO
29	N San Fernando Blvd	Burbank Blvd	0.888	D	0.873	D	0.672	B	0.894	D	NO	NO
30	N 1st St	E Magnolia Blvd	0.399	A	0.662	B	0.429	A	0.773	C	NO	NO
31	N 1st St	E Olive Ave	0.537	A	0.744	C	0.645	B	0.780	C	NO	NO
32	S San Fernando Blvd	E Alameda Ave	0.839	D	0.843	D	0.865	D	0.929	E	NO	YES
33	N Glenoaks Blvd	Magnolia Blvd	0.650	B	0.681	B	0.645	B	0.789	C	NO	NO
34	Glenoaks Blvd	E Olive Ave	0.749	C	0.757	C	0.875	D	0.781	C	NO	NO
35	S Glenoaks Blvd	E Alameda Ave	0.845	D	0.870	D	0.917	E	0.973	E	YES	YES



**TABLE 17. ALTERNATIVE 4 FUTURE LEVEL OF SERVICE**

Intersection			Existing				Alternative 4				Below LOS D Standard	
			AM		PM		AM		PM		AM	PM
#	N/S Street	E/W Street	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	AM	PM
1	N Hollywood Way	Winona Ave	0.426	A	0.583	A	0.499	A	0.748	C	NO	NO
2	N Hollywood Way	Thornton Ave	0.731	C	0.813	D	0.758	C	0.988	E	NO	YES
3	N Hollywood Way	W Victory Blvd	0.873	D	0.953	E	0.925	E	0.949	E	YES	NO
4	N Hollywood Way	W Burbank Blvd	0.721	C	0.850	D	0.825	D	0.903	E	NO	YES
5	N Hollywood Way	Magnolia Blvd	0.766	C	0.894	D	0.818	D	0.958	E	NO	YES
6	N Hollywood Way	W Verdugo Ave	0.805	D	0.893	D	0.882	D	0.933	E	NO	YES
7	Riverside Dr	W Alameda Ave	0.507	A	0.754	C	0.624	B	0.843	D	NO	NO
8	N Pass Ave	W Alameda Ave	0.672	B	0.559	A	0.871	D	0.660	B	NO	NO
9	N Pass Ave	W Olive Ave	0.761	C	0.815	D	0.960	E	1.059	F	YES	YES
10	N Hollywood Way	W Alameda Ave	0.697	B	0.779	C	0.782	C	0.892	D	NO	NO
11	N Hollywood Way	Riverside Dr	0.512	A	0.621	B	0.644	B	0.791	C	NO	NO
12	N Hollywood Way	W Olive Ave	0.685	B	0.714	C	0.827	D	0.940	E	NO	YES
13	Riverside Dr	W Olive Ave	0.546	A	0.536	A	0.604	B	0.610	B	NO	NO
14	W Olive Ave	W Alameda Ave	0.581	A	0.674	B	0.737	C	0.741	C	NO	NO
15	N Buena Vista St	N Glenoaks Blvd	0.820	D	0.730	C	0.806	D	0.778	C	NO	NO
16	N Buena Vista St	N San Fernando Blvd	0.697	B	0.859	D	0.678	B	0.997	E	NO	YES
17	N Buena Vista St	W Empire Ave	0.616	B	0.663	B	0.830	D	0.909	E	NO	YES
18	N Buena Vista St	Vanowen St	0.620	B	0.827	D	0.620	B	0.610	B	NO	NO
19	N Buena Vista St	W Victory Blvd	0.761	C	0.848	D	0.832	D	0.950	E	NO	YES
20	N Buena Vista St	W Burbank Blvd	0.826	D	0.839	D	0.880	D	0.926	E	NO	YES
21	N Buena Vista St	W Magnolia Blvd	0.954	E	0.984	E	1.030	F	1.062	F	YES	YES
22	N Buena Vista St	W Olive Ave	0.873	D	0.896	D	1.032	F	1.005	F	YES	YES
23	S Buena Vista St	W Alameda Ave	0.743	C	0.859	D	0.885	D	0.885	D	NO	NO
24	S Buena Vista St	W Riverside Dr	0.758	C	0.720	C	0.809	D	0.778	C	NO	NO
25	N Victory Blvd	W Burbank Blvd	0.693	B	0.831	D	0.754	C	0.991	E	NO	YES
26	N Victory Blvd	Magnolia Blvd	0.551	A	0.875	D	0.629	B	0.994	E	NO	YES
27	N Victory Blvd	W Olive Ave	0.742	C	0.883	D	0.745	C	0.994	E	NO	YES
28	N Victory Blvd	W Alameda Ave	0.674	B	0.839	D	0.764	C	0.867	D	NO	NO
29	N San Fernando Blvd	Burbank Blvd	0.888	D	0.873	D	0.658	B	0.859	D	NO	NO
30	N 1st St	E Magnolia Blvd	0.399	A	0.662	B	0.429	A	0.746	C	NO	NO
31	N 1st St	E Olive Ave	0.537	A	0.744	C	0.652	B	0.791	C	NO	NO
32	S San Fernando Blvd	E Alameda Ave	0.839	D	0.843	D	0.849	D	0.954	E	NO	YES
33	N Glenoaks Blvd	Magnolia Blvd	0.650	B	0.681	B	0.680	B	0.760	C	NO	NO
34	Glenoaks Blvd	E Olive Ave	0.749	C	0.757	C	0.864	D	0.784	C	NO	NO
35	S Glenoaks Blvd	E Alameda Ave	0.845	D	0.870	D	0.908	E	0.949	E	YES	YES



## CONGESTION MANAGEMENT PROGRAM (CMP) ANALYSIS

The following sections include a summary of the data collection process, the methodology used in determining freeway LOS, and the freeway performance criteria.

### **CMP Methodology**

Data from the Performance Measurement System (PeMS) 2010 data was used for evaluating freeway mainline segments at the CMP location in Burbank. Morning and evening peak hour information and traffic volumes per direction were collected from the PeMS database and represent the 85th percentile values.

The CMP is a state-mandated program administered by the Los Angeles County Metropolitan Transportation Authority (Metro) (*2010 Congestion Management Program for Los Angeles County*, Metro, 2010) that provides a mechanism for coordinating land use and development decisions. CMP statute requires establishment of LOS standards to measure congestion on the system. LOS ranges from LOS A to F, with LOS A representing free-flow conditions and LOS F representing a high level of congestion.

In accordance with the CMP guidelines, freeway (mainline) operating conditions during peak periods were evaluated using the general procedures established by the CMP. Freeway mainline LOS is estimated with calculation of the demand-to-capacity (D/C). Calculation of LOS based on D/C ratios is a surrogate for the speed-based LOS used by Caltrans for traffic operational analysis. The LOS criteria for freeway segments using D/C ratios as the performance measure are shown in Table 18. Capacity was determined based on the existing number of lanes and a single-lane capacity of 2,000 vehicles per hour per lane. Highways and roadways designated in the CMP network are required to operate at LOS E, except where base year LOS is worse than LOS E. In such cases, the base year LOS is the standard.

**TABLE 18 – LEVEL OF SERVICE THRESHOLDS FOR CMP FREEWAY MAINLINE SEGMENTS**

Level of Service	Demand-to-Capacity Ratio (D/C)
A	0.00-0.35
B	>0.35-0.54
C	>0.54-0.77
D	>0.77-0.93
E	>0.93-1.00
F(0)	>1.00-1.25
F(1)	>1.25-1.35
F(2)	>1.35-1.45
F(3)	>1.45

Source: *Congestion Management Program*, Metro, 2010

**Freeway Segment Analysis per Alternative**

Freeway segment volumes based on PeMS data were used to establish the LOS conditions during the AM and PM peak hours for the Preferred Alternative 2035, No Project Alternative 2035, Alternative 1, Alternative 2, and Alternative 3. Table 19 presents the freeway segment LOS for each of these scenarios. This analysis concluded that the CMP freeway segment in the City of Burbank operates at acceptable LOS (LOS E or better) during the AM and PM peak hours in all analyzed alternatives. As planned, the Golden State Freeway (Interstate 5) will undergo expansion in the heart of Burbank, where improvements to interchanges at Burbank Boulevard and Empire Avenue will be constructed, as well as the construction of one HOV lane and one auxiliary lane in each direction.

**TABLE 19 – CMP FREEWAY ANALYSIS RESULTS**

CMP Freeway Station for Interstate 5 at Burbank Blvd [a]										
CMP Freeway Station	Dir	Lanes	Capacity [b]	Daily Volume	AM Peak Hour			PM Peak Hour		
					Volume	D/C	LOS	Volume	D/C	LOS
Preferred Project	NB	6	10,600	246,685	8,157	0.770	C	8,586	0.810	D
	SB	6	10,600		8,651	0.816	D	6,713	0.633	C
Alternative 1	NB	6	10,600	249,233	8,369	0.790	D	8,627	0.814	D
	SB	6	10,600		8,808	0.831	D	6,845	0.646	C
Alternative 2	NB	6	10,600	247,702	8,234	0.777	D	8,624	0.814	D
	SB	6	10,600		8,707	0.821	D	6,767	0.638	C
Alternative 3	NB	6	10,600	251,853	8,504	0.802	D	8,622	0.813	D
	SB	6	10,600		8,574	0.809	D	6,935	0.654	C
Alternative 4	NB	6	10,600	245,070	7,998	0.755	C	8,558	0.807	D
	SB	6	10,600		8,625	0.814	D	6,611	0.624	C

[a] The freeway segment analyzed includes 4 general purpose lanes, one auxiliary lane, and one HOV lane per direction.

[b] Capacities assumed are: general purpose lanes (2000 vphl); HOV lanes (1,600 vphl); auxiliary lanes (1,000 vphl).

## 5. Proposed Mitigation Measures

This section of the report presents the mitigation measures needed to improve the intersection LOS resulting from the 2035 Preferred Project Alternative. As stated, the objective of these measures is to mitigate impacted intersections to acceptable levels of mobility as determined by city policy. Therefore, an intersection would be mitigated by reaching LOS D. The City provides some exceptions to the LOS D standard where LOS E or F would be allowed, and no physical mitigation would be required. Exceptions to the LOS D standard are allowed where mitigation is infeasible or would conflict with the Goals, Policies, and community values identified in the Mobility or Land Use Elements of *Burbank2035*. This section of the report provides a comprehensive analysis where exceptions to the LOS standard are identified.

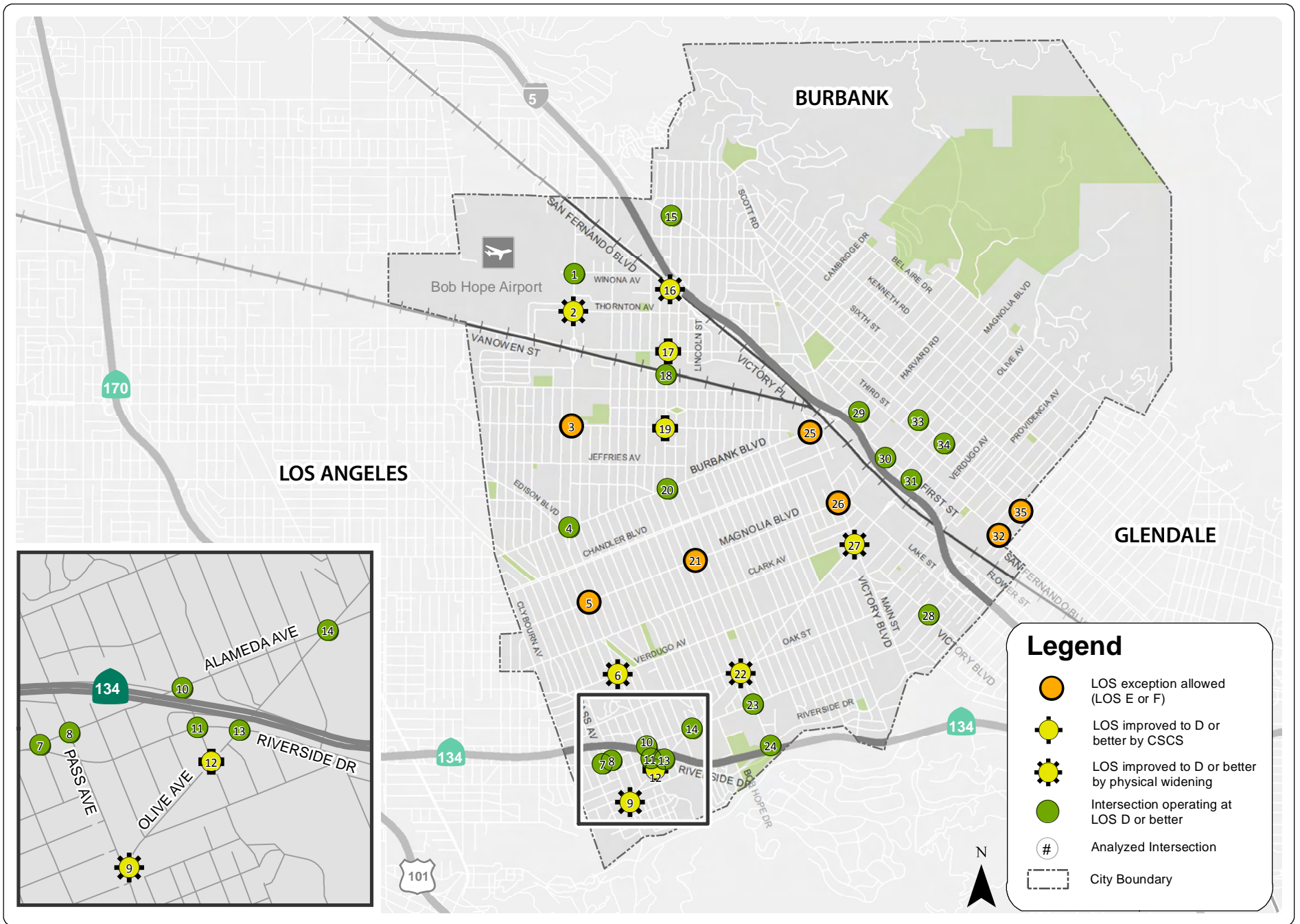
The mitigation measures developed for this study rely on intersection improvements that provide additional street capacity while also remaining generally compatible with the Goals and Policies outlined in *Burbank2035*. These mitigation strategies are entitled Maximum Acceptable Mitigations (MAMs). The MAMs represent minimal intersection street flaring to accommodate additional turn lanes at intersections while preserving sidewalk widths and minimizing right-of-way acquisition and on-street parking removal.

The following section includes an evaluation of the *Burbank2035* Preferred Project, and a description of the proposed mitigation measures.

### **EVALUATION OF BURBANK2035 – THE PREFERRED PROJECT**

The *Burbank2035* Preferred Project results in 16 intersections operating at LOS E or worse. Five intersections are underperforming in the AM peak hour and 16 intersections are underperforming in the PM peak hour. A total of five of these intersections operate at LOS F. Figure 14 presents a graphical depiction of the intersections performing at LOS E or F.

The analysis shows that five of the nine intersections analyzed along Hollywood Way do not meet the LOS D standard and five of the 10 intersections analyzed along Buena Vista Street are also below standards. In addition, the three intersections analyzed along Victory Boulevard are operating at LOS E or worse, and two of the eight intersections analyzed along Alameda Avenue are below LOS standards. The five intersections that operate at LOS F are concentrated along the western side of the City; two intersections in close proximity to the Bob Hope airport (Hollywood Way & Thornton Avenue [#2] and Buena Vista Street & San Fernando Boulevard [#16]) operate at LOS F during the PM peak hour. In addition, two intersections along Magnolia Boulevard (#21 and #26) operate at LOS F during the PM peak hour. Based on the analysis, the forecasted growth in Burbank's City Center and the Golden State area increases travel demand during the peak hours around these areas. In addition, growth in the Media District is expected to drive demand along the arterials providing access to studio employment centers, mainly along Olive Avenue and Hollywood Way.





## PROPOSED MITIGATION MEASURES

The Preferred Project evaluation consisted in applying acceptable mitigation measures to each of the 16 impacted intersections. A set of mitigation measures was developed for each of the intersections operating below the LOS D standard in order to bring them to compliance. A three-step approach was followed to identify and analyze possible mitigation measures.

### **Step 1 – Citywide Signal Control System Credit**

First, all underperforming intersection received an additional 0.03 V/C credit due account for the expected completion and optimization of Burbank’s CSCS. This credit accounts for optimized traffic signal timing, coordination, time-of-day coordination plans, and adaptive control that will be implemented by 2035. After applying the credit, three intersections were brought to acceptable levels of service, and the remaining 13 impacted intersections required additional physical mitigation measures.

### **Step 2 – Maximum Acceptable Mitigations**

The 13 remaining intersections not improved in Step 1 were mitigated by implementing widening improvements consistent with MAMs measures. MAMs is an intersection improvement “template” that defines a general set of widening parameters that provide increased intersection capacity while acknowledging that Burbank is predominantly a built-out city and that drastic changes to the streets right-of-way are infeasible and undesirable. This generalized intersection design template constrains improvements along arterials to 100-foot right-of-way and curb-to-curb widths of traveled ways to 80 feet, while still providing a cross section wide enough to accommodate two left-turn lanes, two through lanes, and one exclusive right-turn lane and a minimum parkway/sidewalk dimension of 10 feet. These intersections will be designed, at a minimum, to include a 2-foot lane offset across the intersection, 10-foot left-turn and through lanes, and implementation of 11-foot exclusive right-turn lanes where accommodations for a wider corner radius can be made. In addition, commercial land use areas identified in the Draft Burbank 2035 General Plan that call for wider sidewalks will include provisions for increasing sidewalk width up to 15 feet. This may be accomplished by reserving up to an additional five feet of right-of-way to expand sidewalks when redevelopment occurs. Appendix E2 presents the typical MAMs geometry configuration.

The detailed MAMs lane configurations proposed for each impacted intersection in the Preferred Project are described below and all mitigation measures carried forward are depicted in Appendix C. Of the remaining 13 intersections not optimized by signal improvements, six intersections are improved by implementing MAMs improvements.

### **Step 3 – LOS Exceptions: Policy-Based Screening Analysis**

The objective of the MAMs physical widening is to mitigate impacted intersections to acceptable levels of mobility as determined by city policy. Therefore, an intersection would be mitigated by reaching LOS D. In addition, the City provides some exceptions to the LOS standard where LOS E or F would be accepted if the mitigation resulted in conflicts with the community values identified in the Draft General Plan. At some intersections, the specific implementation of the generalized MAMs improvements still conflicted with important goals and policies of *Burbank2035*. In other instances, further improvements – beyond the implementation of MAMs – were needed to mitigate impacts and were thus also in conflict with the goals and policies of *Burbank2035*. To assess when the implementation of physical improvements conflicted

with important land use or mobility goals and policies, a comprehensive analysis was undertaken to identify these policy conflicts.

The exemptions to the LOS D standard are as follows:

- Right-of-Way – *The right-of-way needs for a transportation improvement required impacts surrounding private or public properties.* A policy conflict is triggered if any right-of-way acquisition is needed to implement the proposed mitigation, assuming lane width minimums and a minimum of 6-foot sidewalks. Note that this exception does not include right-of-way needed for mitigations identified by the Empire Center Environmental Impact Report or other previously imposed project mitigation measures.
- Scale and Design – *The transportation improvement is not compatible with the scale and design of the existing infrastructure.* A policy conflict is triggered if the scale and design goes beyond the MAMs template, or if the mitigation needed increases the existing travel-way width (measured from curb-to-curb) along a residential or mixed use area.
- Complete Streets – *The transportation improvement negates the possibility to develop “Complete Streets”, if it fails to meet the needs of pedestrians, bicyclists, wheelchair users, equestrian, or motorists.* A conflict is triggered if the mitigation increases the travel-way width along the intersection so as to narrow existing sidewalks, decrease bike lanes widths, or greatly disturb transit/bus stop locations.
- Pedestrian Opportunities – *The transportation improvement fails to provide minimum sidewalk widths within the right-of-way.* A conflict is triggered if the proposed mitigation requires sidewalks to go below the minimum sidewalk width standards specified in Table M-2 of the Mobility Element.

An exception to the LOS D standard is allowed when the mitigation required to bring the intersection to LOS D would result in a conflict with right-of-way polices, or if it conflicts with two or more of the three policies indentified above as scale and design, complete streets, or pedestrian opportunities. Table 20 identifies and documents the seven remaining intersections that resulted in exceptions to the LOS D standard, and Appendix E presents a comprehensive table.

## **FUTURE INTERSECTION IMPROVEMENTS**

Table 21 presents the level of service analysis that documents the steps taken to arrive at the proposed future intersection configurations as described above. In summary, analysis of the Preferred Project revealed that 16 intersections were expected to operate below the City’s LOS D standard in 2035. These intersections were mitigated in a variety of ways to minimize transportation impacts of the Preferred Project:

Mitigated by CSCS measures:	3 intersections
Mitigated by MAMs widening improvements:	6 intersections
Mitigated through policy-based LOS D exception:	7 intersections
<b>TOTAL:</b>	<b>16 intersections</b>

**TABLE 20 - LOS EXCEPTIONS: POLICY-BASED SCREENING ANALYSIS**

Intersection			2035 Preferred Alt.				Preferred Alt. with CSCS				Physical Mitigation Conflicts with General Plan Policies **				Conflicts with ROW or 2 Policies
			AM		PM		AM		PM		Right-of-Way [a] (6 ft min. sidewalk)	Scale & Design [b]	Complete Streets [c]	Pedestrian Opportunities [d]	
No.	N/S Street	E/W Street	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS					
2	N Hollywood Way	Thornton Ave	0.756	C	1.019	F	0.735	C	0.990	E	NO	NO	NO	NO	
3	N Hollywood Way	W Victory Blvd	0.925	E	0.983	E	0.899	D	0.955	E	NO	YES	YES	NO	YES
5	N Hollywood Way	Magnolia Blvd	0.830	D	0.954	E	0.806	D	0.927	E	NO	YES	YES	YES	YES
6	N Hollywood Way	W Verdugo Ave	0.860	D	0.955	E	0.835	D	0.927	E	NO	YES	NO	NO	
9	N Pass Ave	W Olive Ave	0.941	E	1.037	F	0.914	E	1.008	F	NO	NO	NO	YES	
16	N Buena Vista St	N San Fernando Blvd	0.775	C	1.060	F	0.753	C	1.030	F	NO	YES	NO	NO	
21	N Buena Vista St	W Magnolia Blvd	1.005	F	1.066	F	0.976	E	1.036	F	NO	YES	NO	YES	YES
22	N Buena Vista St	W Olive Ave	0.997	E	0.980	E	0.969	E	0.949	E	NO	NO	NO	NO	
25	N Victory Blvd	W Burbank Blvd	0.781	C	0.999	E	0.758	C	0.971	E	YES	NO	YES	YES	YES
26	N Victory Blvd	Magnolia Blvd	0.619	B	1.006	F	0.601	B	0.977	E	NO	YES	YES	NO	YES
27	N Victory Blvd	W Olive Ave	0.760	C	0.998	E	0.739	C	0.969	E	NO	NO	YES	NO	
32	S San Fernando Blvd	E Alameda Ave	0.857	D	0.940	E	0.833	D	0.913	E	NO	NO	YES	YES	YES
35	S Glenoaks Blvd	E Alameda Ave	0.920	E	0.943	E	0.894	D	0.916	E	NO	YES	NO	YES	YES

Notes:

\*\* The Draft General Plan provides the City with the flexibility to allow exceptions to the "LOS D" standard where mitigations are infeasible due to right-of-way constraints or conflict with community values.

[a] **Right-of-Way needs:** A policy conflict is triggered if any r-o-w acquisition is needed to implement the proposed mitigation, assuming lane width minimums and 6 foot sidewalks.  
*Supporting Policies:* Mobility Element (Policy 1.2): Recognize that Burbank is a built-out city and wholesale changes to street rights-of-way (ROW) are infeasible; and Mobility Element (Policy 3.4): All street improvements should be implemented within the existing right-of-way. Consider street widening and right-of-way acquisition as a method of last resort.

[b] **Scale & Design:** A policy conflict is triggered if the scale and design goes beyond the MAMs template, or if the mitigation needed increases the existing travel-way width (measured from curb-to-curb) along a "residential/mixed use" area.  
*Supporting Policies:* Mobility Element (Policy 1.5): Design transportation improvements to be compatible with the scale and design of existing infrastructure.

[c] **Complete Streets:** A conflict is triggered if the mitigation increases the travel-way width along the intersection so as to narrow existing sidewalks, decrease bike lanes widths, or greatly disturb transit/bus stop locations.  
*Supporting Policies:* Mobility Element (Policy 3.2): Complete city street by providing facilities for all transportation modes; and Land Use Element (Policy 4.1): Maintain complete streets that create functional place meeting the needs of pedestrians, bicyclists, wheelchair users, equestrian, and motorists.

[d] **Pedestrian Opportunities:** A conflict is triggered if the proposed mitigation requires sidewalks to go below the minimum sidewalk width standards specified in Table M-2 of the Mobility Element.  
*Supporting Policies:* Mobility Element (Policy 3.3): Provide attractive, safe street designs that improve transit, bicycle, pedestrian, and equestrian connections between homes and other destinations; and Mobility Element (Policy 5.5): Require new development to provide land necessary to accommodate pedestrian infrastructure, including sidewalks at the standard widths specified in Table M-2; and Land Use Element (Policy 4.5): Require pedestrian-oriented areas include amenities such as sidewalks of adequate width, benches, street trees and landscaping, decorative paving, art, kiosks, and restrooms.

**TABLE 21. FUTURE INTERSECTION IMPROVEMENTS PLAN**

Intersection			Burbank2035 (Preferred Alternative)				Burbank2035 with CSCS Upgrades				Burbank2035 with Improvements			
			AM		PM		AM		PM		AM		PM	
#	N/S Street	E/W Street	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
1	N Hollywood Way	Winona Ave	0.693	B	0.834	D	0.693	B	0.834	D	0.693	B	0.834	D
2	N Hollywood Way	Thornton Ave	0.756	C	1.019	F	0.735	C	0.990	E	0.655	B	0.873	D
3	N Hollywood Way	W Victory Blvd	0.925	E	0.983	E	0.899	D	0.955	E	0.899	D	0.955	E
4	N Hollywood Way	W Burbank Blvd	0.841	D	0.885	D	0.841	D	0.885	D	0.841	D	0.885	D
5	N Hollywood Way	Magnolia Blvd	0.830	D	0.954	E	0.806	D	0.927	E	0.806	D	0.927	E
6	N Hollywood Way	W Verdugo Ave	0.860	D	0.955	E	0.835	D	0.927	E	0.773	C	0.894	D
7	Riverside Dr	W Alameda Ave	0.624	B	0.836	D	0.624	B	0.836	D	0.624	B	0.836	D
8	N Pass Ave	W Alameda Ave	0.848	D	0.683	B	0.848	D	0.683	B	0.848	D	0.683	B
9	N Pass Ave	W Olive Ave	0.941	E	1.037	F	0.914	E	1.008	F	0.829	D	0.776	C
10	N Hollywood Way	W Alameda Ave	0.770	C	0.880	D	0.770	C	0.880	D	0.744	C	0.880	D
11	N Hollywood Way	Riverside Dr	0.637	B	0.810	D	0.637	B	0.810	D	0.637	B	0.810	D
12	N Hollywood Way	W Olive Ave	0.830	D	0.926	E	0.806	D	0.899	D	0.806	D	0.899	D
13	Riverside Dr	W Olive Ave	0.599	A	0.615	B	0.599	A	0.615	B	0.599	A	0.615	B
14	W Olive Ave	W Alameda Ave	0.742	C	0.733	C	0.742	C	0.733	C	0.742	C	0.733	C
15	N Buena Vista St	N Glenoaks Blvd	0.806	D	0.781	C	0.806	D	0.781	C	0.806	D	0.781	C
16	N Buena Vista St	N San Fernando Blvd	0.775	C	1.060	F	0.753	C	1.030	F	0.772	C	0.878	D
17	N Buena Vista St	W Empire Ave	0.776	C	0.911	E	0.754	C	0.885	D	0.754	C	0.885	D
18	N Buena Vista St	Vanowen St	0.562	A	0.615	B	0.562	A	0.615	B	0.562	A	0.615	B
19	N Buena Vista St	W Victory Blvd	0.774	C	0.924	E	0.752	C	0.898	D	0.752	C	0.898	D
20	N Buena Vista St	W Burbank Blvd	0.853	D	0.885	D	0.853	D	0.885	D	0.853	D	0.885	D
21	N Buena Vista St	W Magnolia Blvd	1.005	F	1.066	F	0.976	E	1.036	F	0.976	E	1.036	F
22	N Buena Vista St	W Olive Ave	0.997	E	0.980	E	0.969	E	0.949	E	0.866	D	0.886	D
23	S Buena Vista St	W Alameda Ave	0.863	D	0.877	D	0.863	D	0.877	D	0.863	D	0.877	D
24	S Buena Vista St	W Riverside Dr	0.840	D	0.778	C	0.840	D	0.778	C	0.840	D	0.778	C
25	N Victory Blvd	W Burbank Blvd	0.781	C	0.999	E	0.758	C	0.971	E	0.758	C	0.938	E
26	N Victory Blvd	Magnolia Blvd	0.619	B	1.006	F	0.601	B	0.977	E	0.601	B	0.977	E
27	N Victory Blvd	W Olive Ave	0.760	C	0.998	E	0.739	C	0.969	E	0.683	B	0.804	D
28	N Victory Blvd	W Alameda Ave	0.782	C	0.832	D	0.782	C	0.832	D	0.782	C	0.832	D
29	N San Fernando Blvd	Burbank Blvd	0.676	B	0.845	D	0.676	B	0.845	D	0.676	B	0.845	D
30	N 1st St	E Magnolia Blvd	0.433	A	0.777	C	0.433	A	0.777	C	0.433	A	0.777	C
31	N 1st St	E Olive Ave	0.652	B	0.788	C	0.652	B	0.788	C	0.652	B	0.788	C
32	S San Fernando Blvd	E Alameda Ave	0.857	D	0.940	E	0.833	D	0.913	E	0.833	D	0.913	E
33	N Glenoaks Blvd	Magnolia Blvd	0.690	B	0.739	C	0.690	B	0.739	C	0.690	B	0.739	C
34	Glenoaks Blvd	E Olive Ave	0.887	D	0.795	C	0.887	D	0.795	C	0.887	D	0.795	C
35	S Glenoaks Blvd	E Alameda Ave	0.920	E	0.943	E	0.894	D	0.916	E	0.894	D	0.916	E
<b>Total LOS E or F:</b>				<b>5</b>		<b>16</b>		<b>3</b>		<b>13</b>		<b>1</b>		<b>7</b>

In the future under the Preferred Project, seven intersections (#3, 5, 21, 25, 26, 32, and 35) would operate at LOS E during the PM peak hour, and one intersection (#21) would operate at LOS F during the PM peak hour and LOS E during the AM peak hour.

The future mitigation measures and lane configurations proposed as future improvements by 2035 for each of the 16 intersections identified as operating below the City's LOS D standard are depicted in Appendix C and are described below. All intersections are improved with CSCS improvements. In addition, six intersections are improved with MAMs widenings that do not conflict with the goals and policies of *Burbank2035*. Finally, seven intersections are not improved with physical improvements and are mitigated using an exception to the LOS D standard. For these seven intersections, the required physical improvements are described, and the reasons why they conflict with the *Burbank2035* goals and policies (and therefore are not implemented) are documented.

Hollywood Way & Thornton Avenue (#2) – Optimize the CSCS. By year 2035, the City shall provide one exclusive left-turn lane, two through lanes, and one shared through/right-turn lane on both the northbound and southbound approaches. The existing right-of-way on Hollywood Way is 100 feet. No additional right-of-way is needed. The physical mitigations described here do not conflict with the goals and policies identified in *Burbank2035*; therefore, the proposed physical widening at this intersection is feasible.

Hollywood Way & Verdugo Avenue (#6) – Optimize the CSCS. Prior to the year 2035, the City shall add a second exclusive left-turn lane and an exclusive right-turn lane in the southbound approach to provide two exclusive left-turn lanes, two through lanes, and one exclusive right-turn lane. Modify the signal phasing on the southbound approach from permitted to protected. The existing right-of-way on Hollywood Way is 100 feet. No additional right-of-way is needed. The physical mitigations described here do not conflict with the goals and policies identified in *Burbank2035*; therefore, the proposed physical widening at this intersection is feasible.

Pass Avenue & Olive Avenue (#9) – Optimize the CSCS. Widen the eastbound approach to provide two exclusive left-turn lanes and three through lanes. The existing right-of-way on Olive Avenue is 100 feet. No additional right-of-way is needed. Improvement has been previously identified as a mitigation measure in the Warner Brothers Studio Master Plan. The physical mitigations described here do not conflict with the goals and policies identified in *Burbank2035*; therefore, physical widening at this intersection is feasible.

Hollywood Way & Olive Avenue (#12) – Optimize the CSCS.

Buena Vista Street & San Fernando Boulevard (#16) – Optimize the CSCS. The City shall restripe the eastbound approach to provide two exclusive left-turn lanes, one through lane, and one shared through/right-turn lane. The existing right-of-way on San Fernando Boulevard is 70 feet, and the future configuration assumes no sidewalks on the north side of the intersection adjacent to the train tracks. No additional right-of-way is needed. The physical mitigations described here do not conflict with the goals and policies identified in *Burbank2035*; therefore, physical widening at this intersection is feasible. The mitigations at this intersection should be completed concurrently with the railroad grade separation at Buena Vista Street.

Buena Vista Street & Empire Avenue (#17) – Optimize the CSCS.

Buena Vista Street & Victory Boulevard (#19) – Optimize the CSCS.

Buena Vista Street & Olive Avenue (#22) – Optimize the CSCS. The City shall reconfigure the eastbound approaches to provide two exclusive left-turn lanes, one through lane, and one shared through/right-turn lane on both approaches. In addition, the City shall restripe the westbound approach to provide two exclusive left-turn lanes, two through lanes, and one exclusive right-turn lane. Modify the signal phasing on the eastbound and westbound approaches from protected/permitted to protected. Parking would have to be restricted along the westbound approach for 100 feet. The existing right-of-way on Olive Avenue is 100 feet. No additional right-of-way is needed. The physical mitigations described here do not conflict with the goals and policies identified in *Burbank2035*; therefore, the proposed physical widening at this intersection is feasible.

Victory Boulevard & Olive Avenue (#27) – Optimize the CSCS. By the year 2035, the City shall restripe the southbound, westbound and eastbound approaches to provide two exclusive left-turn lanes, two through lanes, and one exclusive right-turn lane. Modify the signal phasing on the southbound, eastbound and westbound approaches from protected/permitted to protected. The existing right-of-way on all approaches is 100 feet. No additional right-of-way is needed. The physical mitigations described here do not conflict with the goals and policies identified in *Burbank2035*; therefore, physical widening at this intersection is feasible.

### ***LOS Exceptions to Intersections Requiring Physical Widening***

The seven intersections below are exempt from physical mitigation because undertaking the widening would result in conflicts with the goals and policies of *Burbank2035*. However, the analysis presented in this report assumes the optimization of the CSCS at all intersections operating at LOS E or F under the Preferred Project Alternative.

Hollywood Way & Victory Boulevard (#3) – In order to bring this intersection to LOS D or better, the City would need to restripe all four approaches to provide two exclusive left-turn lanes, two through lanes, and one exclusive right-turn lane, as well as modifying the signal phasing on all approaches from protected/permitted to protected. To accommodate the required widening within the 100-foot right-of-way, narrowing the sidewalks to 10 feet on all approaches would be necessary. The mitigation can be achieved within the right-of-way, but an exception to the LOS D standard is allowed because the *scale and design* of this intersection is compromised. This intersection is located around residential development. In addition, the mitigation would narrow sidewalks at transit transfer points. The required physical mitigation would conflict with the *scale and design* and *complete streets* policies set forth in the 2035 Draft General Plan.

Hollywood Way & Magnolia Boulevard (#5) – In order to bring this intersection to LOS D or better, the City would need to add a second exclusive left-turn lane to all approaches. The widening would provide two exclusive left-turn lanes, two through lanes, and one exclusive right-turn lane on all approaches. The mitigation can be achieved within the right-of-way, however exceptions to the LOS D standard are allowed because the widening would not be able to sustain the minimum 10-foot sidewalk widths as identified in the Draft General Plan. In addition, the mitigation would narrow sidewalks at transit transfer points, and would conflict with the current *scale and design* of the intersection. The required physical

mitigation would conflict with the *scale and design*, *complete streets*, and *pedestrian opportunities* policies set forth in the 2035 Draft General Plan.

Buena Vista Street & Magnolia Boulevard (#21) – In order to bring this intersection to LOS D or better, the City would need to add a second exclusive left-turn lane to all approaches. This intersection experiences heavy southbound and northbound through traffic volumes in the AM and PM peaks; however, adding through lane capacity would require that the receiving end of the south and north leg be expanded to receive three through lanes at both legs. The current right-of-way along Buena Vista is only 80 feet. The mitigations required to bring this intersection into compliance would narrow sidewalks to less than the 10-foot minimum, and would hamper *pedestrian opportunities*. The widening also triggers conflicts with the *scale and design* policies set forth in the 2035 Draft General Plan.

Victory Boulevard & Burbank Boulevard (#25) – In order to bring this intersection to LOS D or better, the City would need to restripe the northbound approach to provide two exclusive right-turn lanes, two through lanes, and two exclusive right-turn lanes. There is 100 feet of right-of-way on this approach. The required physical widening calls for 95 feet of travel-way width, under this configuration the City would be unable to maintain minimum 6-foot sidewalks within the right-of-way. The widening may also result in unsafe lane offsets. The required mitigation conflicts with the *right-of-way* policies, in addition to conflicting with the *complete streets* and *pedestrian opportunities* policies set forth in the 2035 Draft General Plan.

Victory Boulevard & Magnolia Boulevard (#26) – In order to bring this intersection to LOS D or better, the City would need to restripe the northbound and southbound approaches to provide two exclusive left-turn lanes, two through lanes, and one exclusive right-turn lane. Adequate right-of-way is available to accommodate the required widening on both approaches assuming the sidewalk widths are 10 feet. However, conflicts are found under the *scale and design* and *complete streets* policies set forth in the 2035 Draft General Plan. This is because the mitigation does not address the bicycle route connecting the Chandler bikeway.

San Fernando Boulevard & Alameda Avenue (#32) – In order to bring this intersection to LOS D or better, the City would need to provide two exclusive left-turn lanes, one through lane, and one shared through/right-turn lane. In addition, the eastbound approach would need to provide one exclusive right-turn lane, two through lanes, and one exclusive right-turn lane would be required. The bus stop on the receiving end of the western leg would have to be relocated to properly accommodate this configuration. The mitigations required to bring this intersection into compliance would narrow sidewalks to less than the 10-foot minimum, and would hinder pedestrian opportunities. The required mitigation would conflict with the *complete streets* and *pedestrian opportunities* policies set forth in the 2035 Draft General Plan.

Glenoaks Boulevard & Alameda Avenue (#35) – In order to bring this intersection to LOS D or better, the City would need to provide two exclusive left-turn lanes, one through lane, and one exclusive right-turn lane on the eastbound approach. The restriping would require a sub-standard lane offset or, as an alternative, widening of the eastbound approach, which is located in the City of Glendale. The mitigations required to bring this intersection into compliance would narrow sidewalks to less than the 10-foot minimum, and would hinder pedestrian opportunities. The required mitigation would conflict with the *scale and design* and *pedestrian opportunities* policies set forth in the 2035 Draft General Plan.

## 6. Conclusion

This Transportation Analysis Report documents the future vehicular traffic conditions that would result from the implementation of *Burbank2035*. The *Burbank2035* Preferred Project, along with each of the four land use alternatives, was analyzed using the City's travel demand model, and the transportation intersection deficiencies that would be generated by these alternatives were identified. The report documents the traffic analysis conducted for the 35 analyzed intersections under the Preferred Project, and it presents the actions needed to bring all intersections into compliance with the goals and policies of *Burbank2035*.

The Preferred Project traffic analysis showed that 16 intersections operate below the LOS D standard. After applying conservative signal optimization credits via the CSCS, three intersections were improved without the need for physical widening. Should *Burbank2035* be adopted, the City of Burbank would allow for exceptions to their LOS D standard where mitigation is infeasible due to conflicts with the community values expressed in *Burbank2035*. A policy-based screening analysis was conducted to identify where physical widening are infeasible because they would generate conflicts with *Burbank2035* goals and policies. A total of six intersections would require additional physical widening compatible with the goals and policies of *Burbank2035* to bring them to compliance with the LOS D standard. Seven intersections qualify for exceptions to the LOS D standard because required widening improvements are not compatible with the goals and policies of *Burbank2035*. Therefore, in the future the Preferred Project would result in six intersections operating at LOS E during one or both peaks, and one intersection operating at LOS F during the PM peak hour.



## REFERENCES

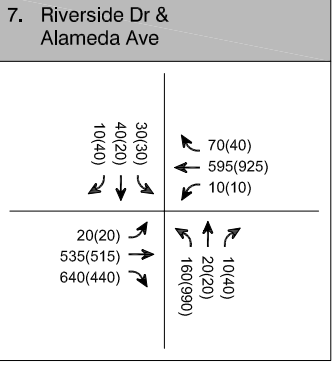
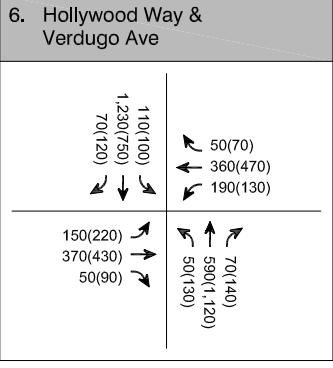
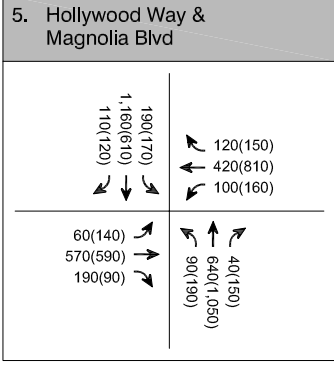
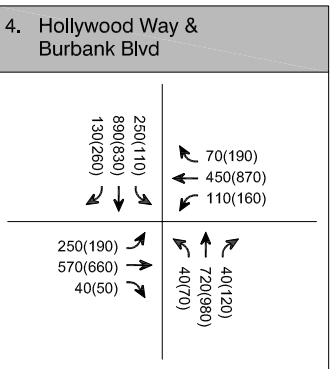
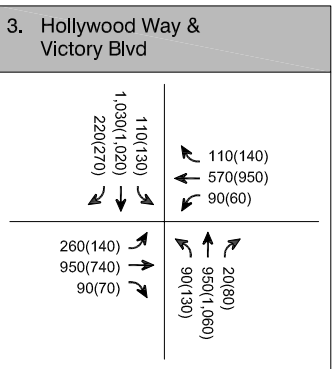
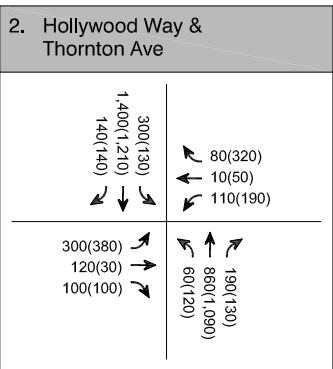
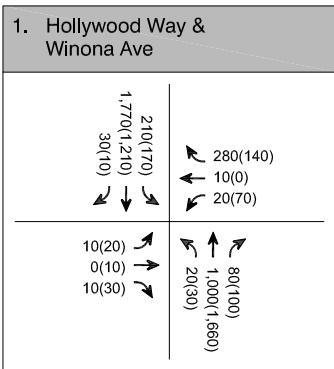
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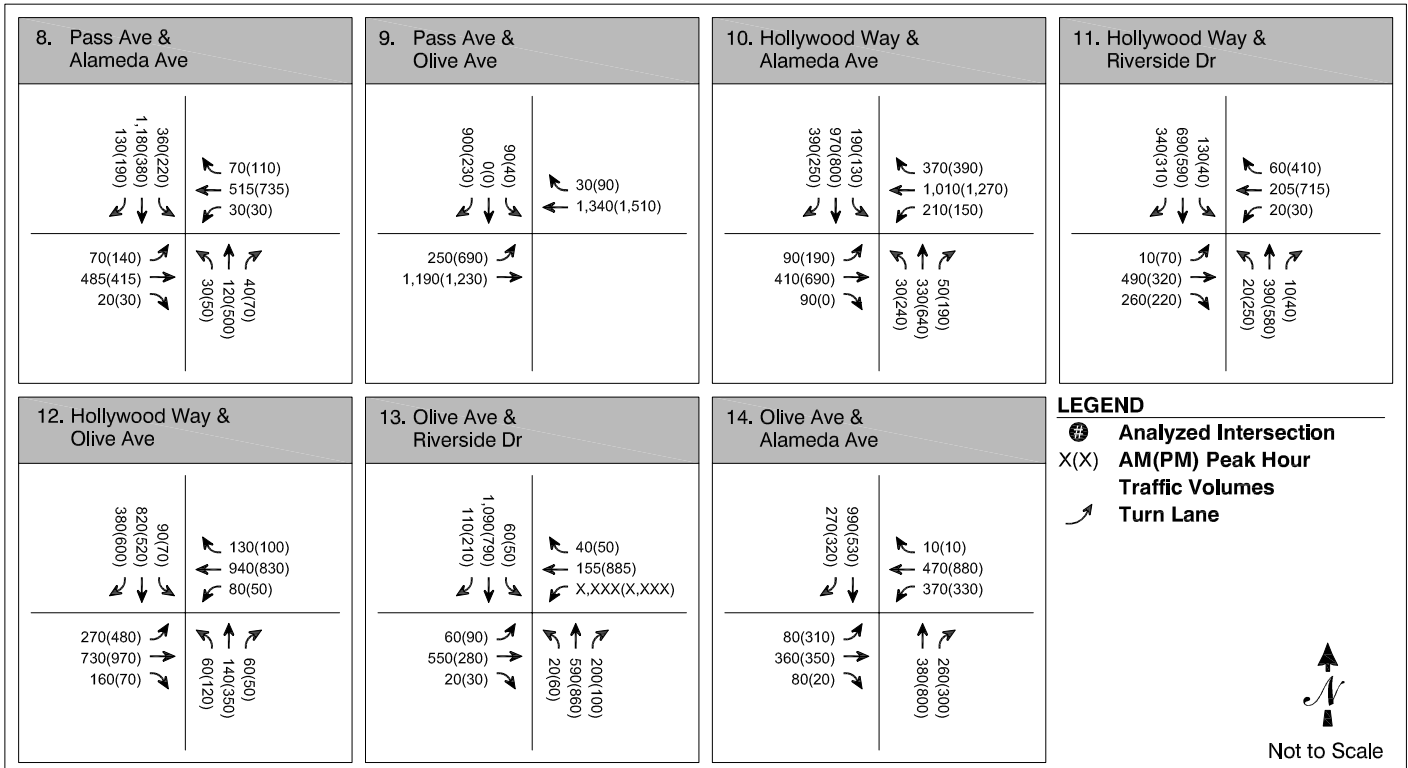
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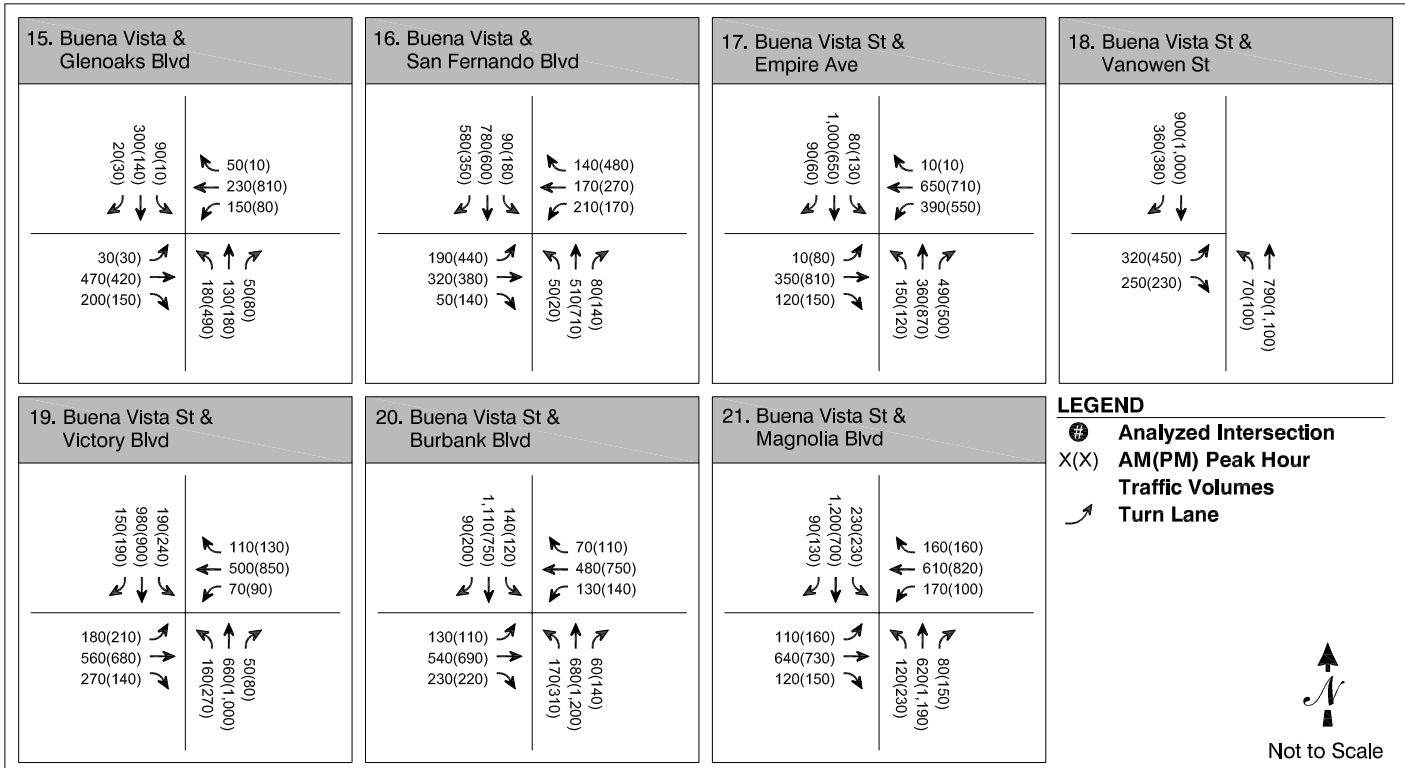


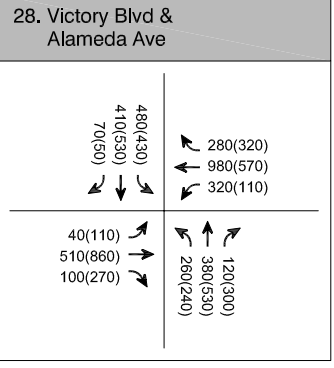
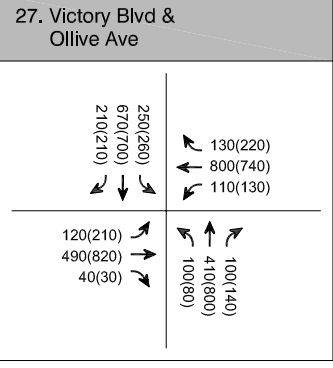
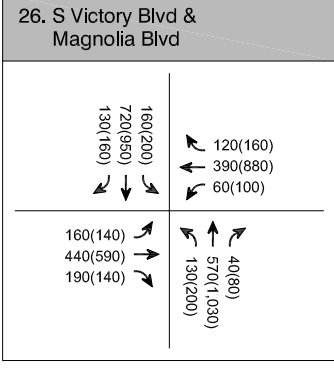
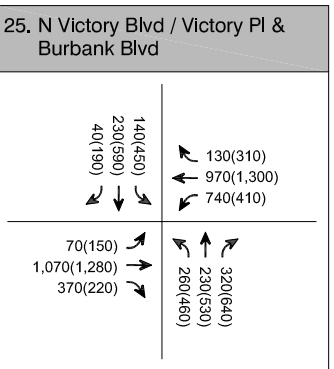
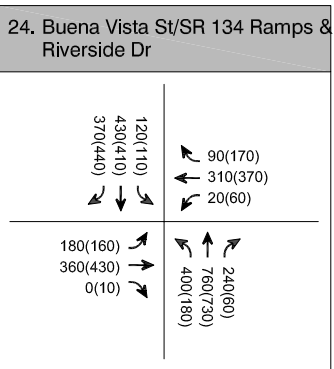
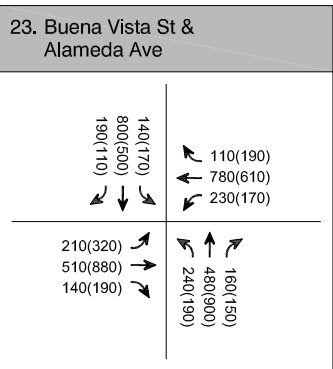
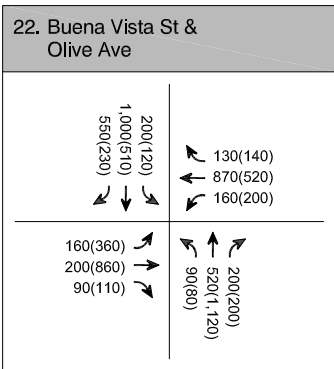
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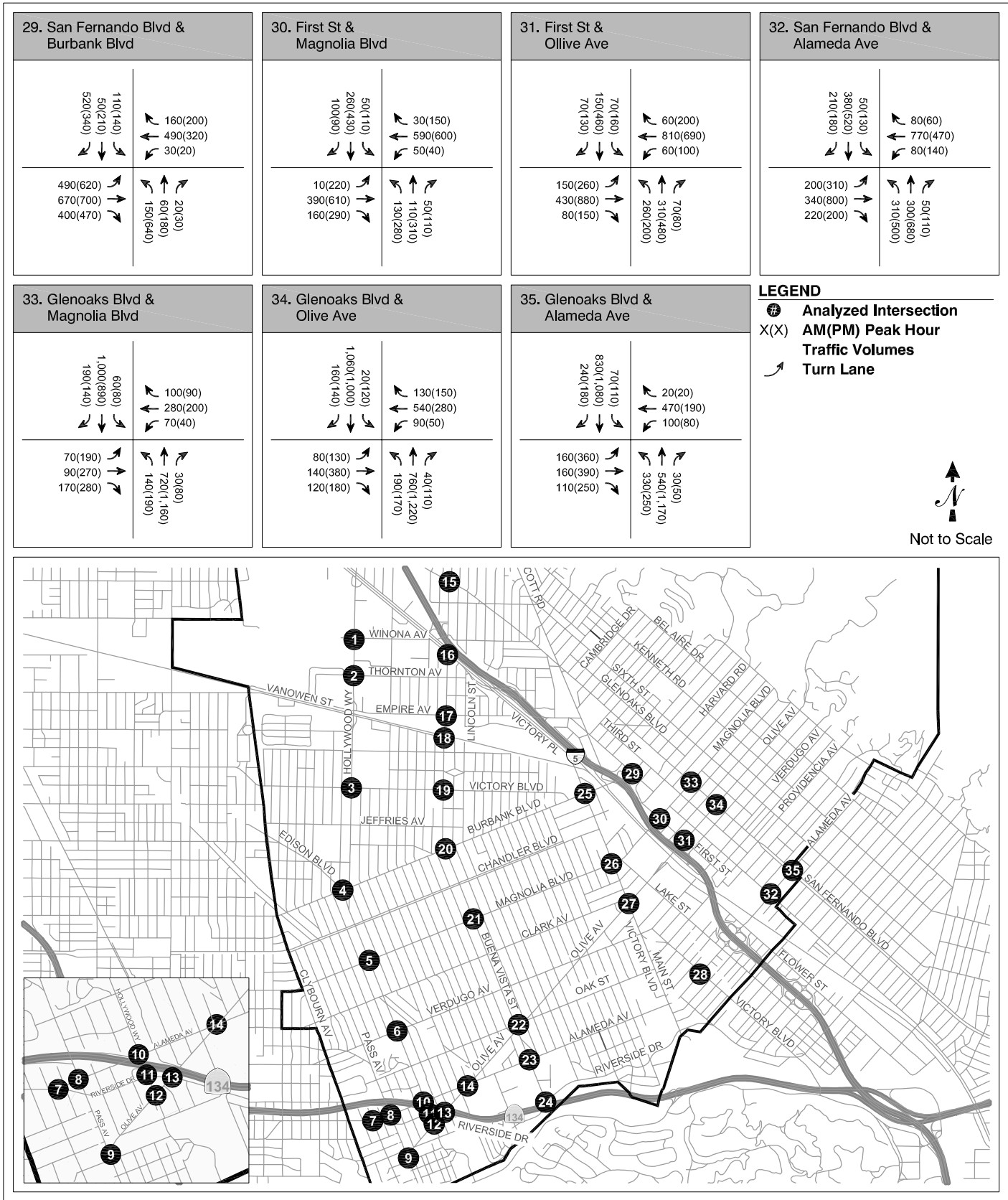
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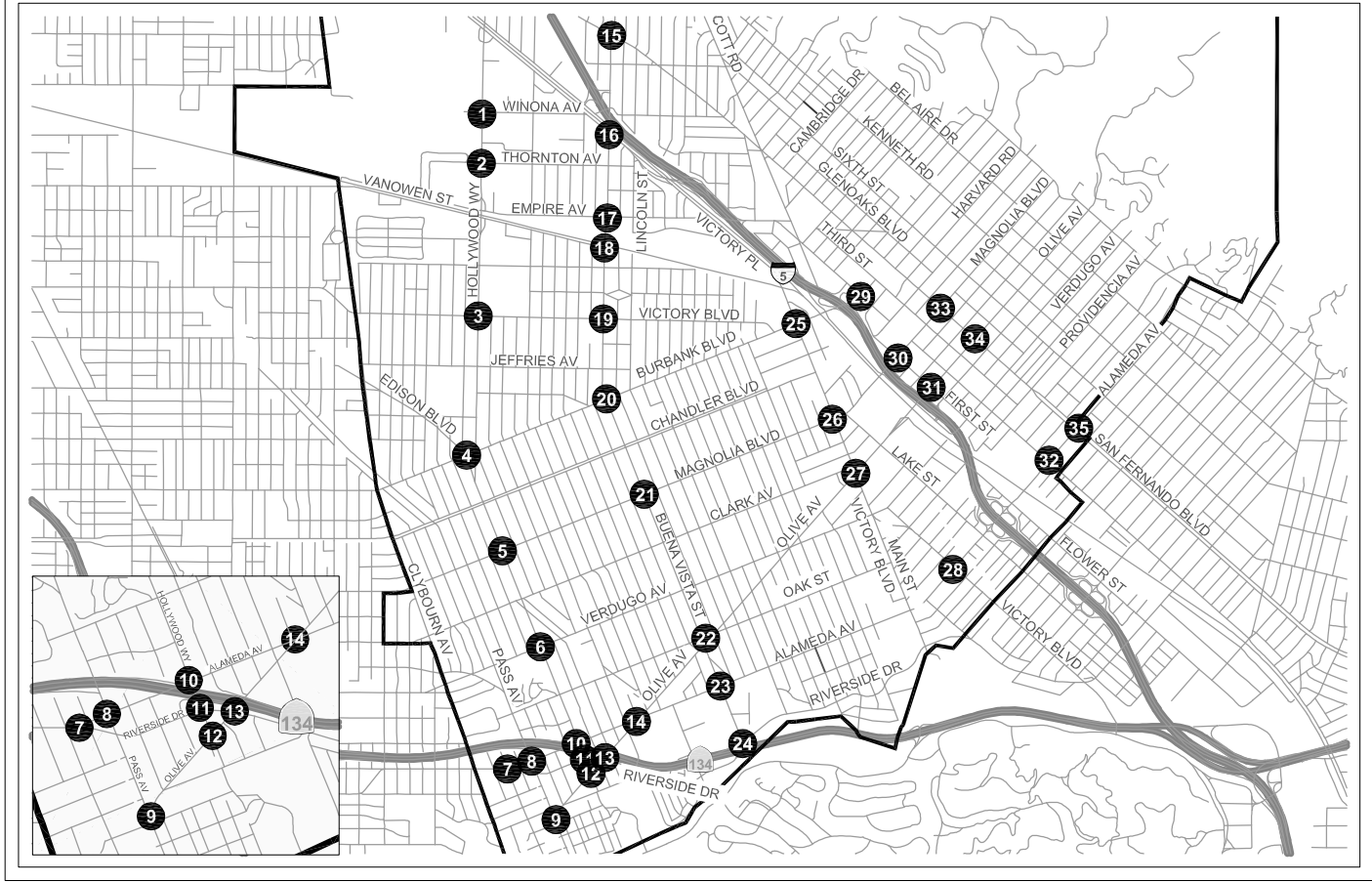
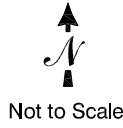
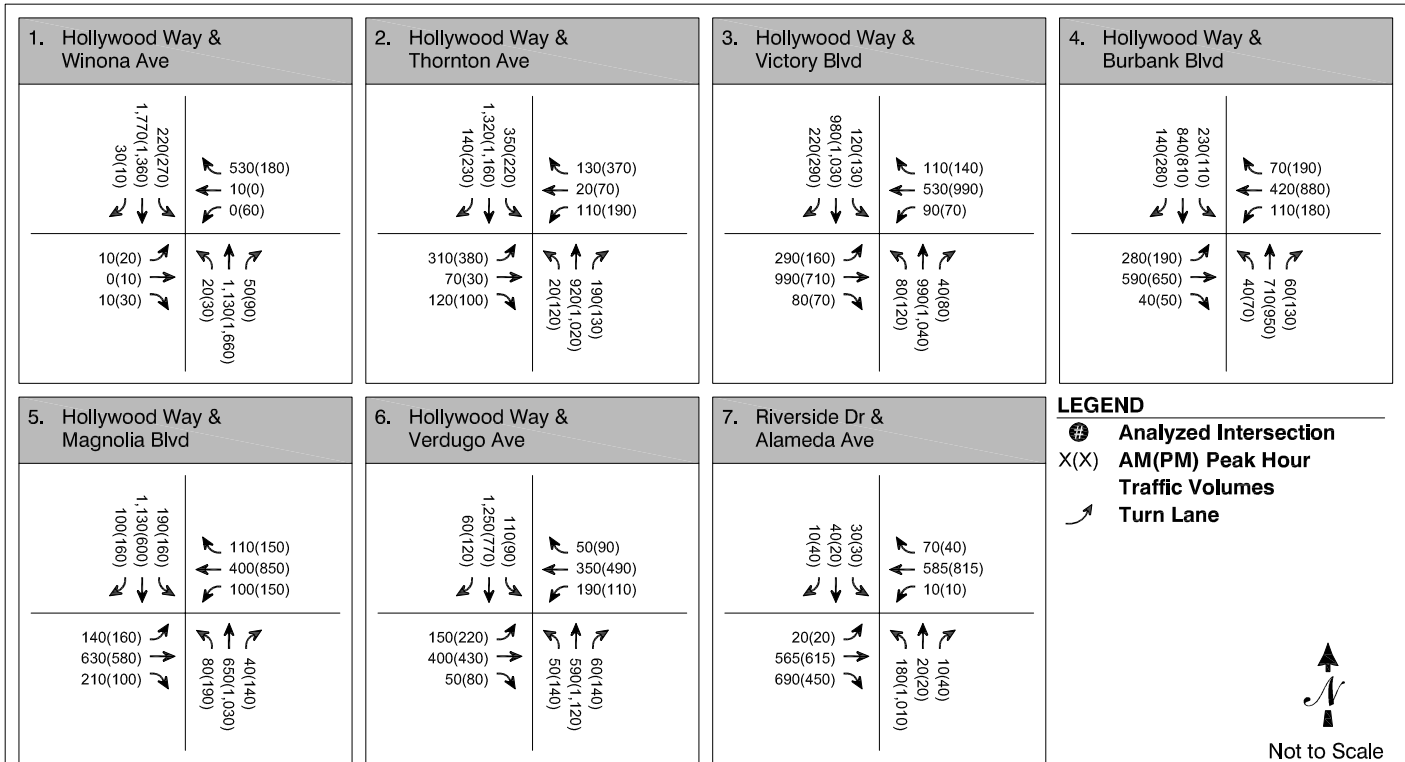
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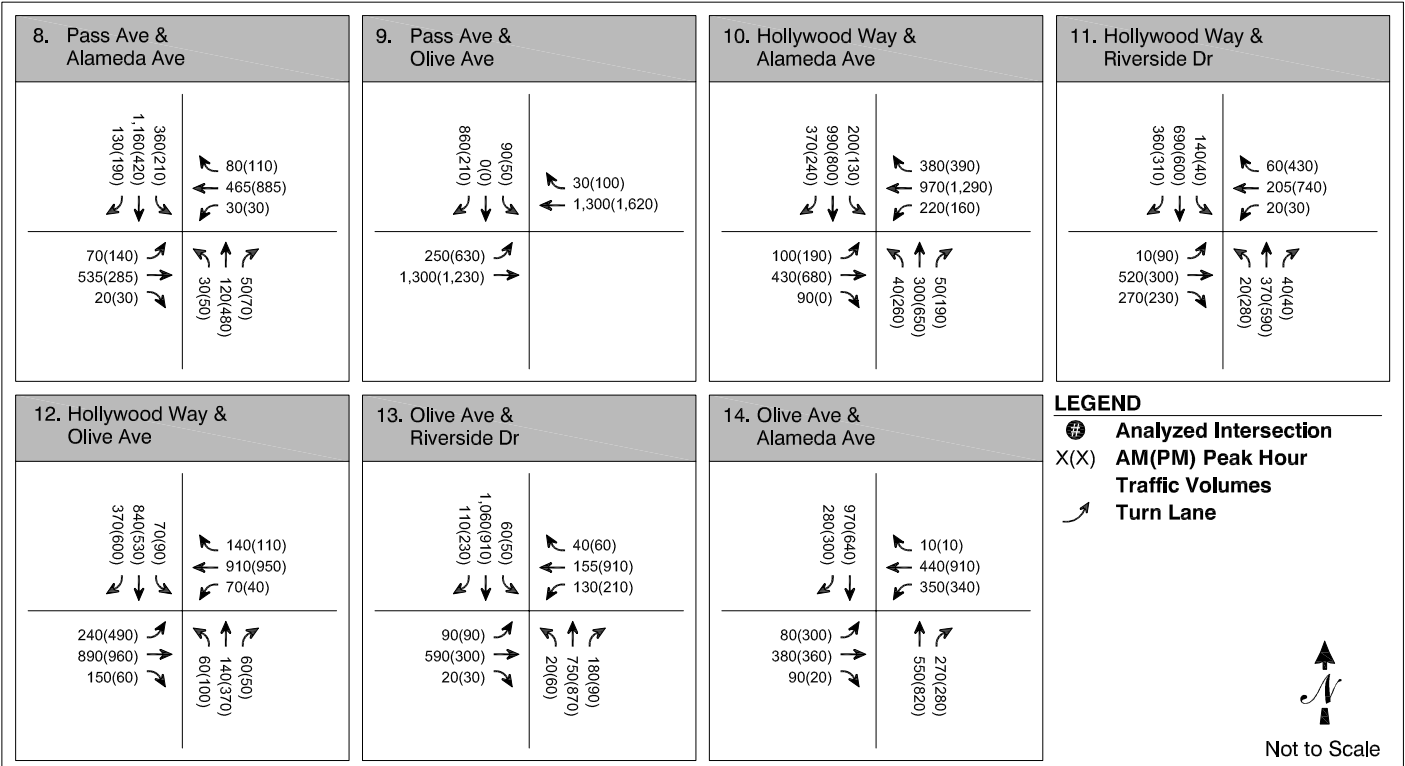
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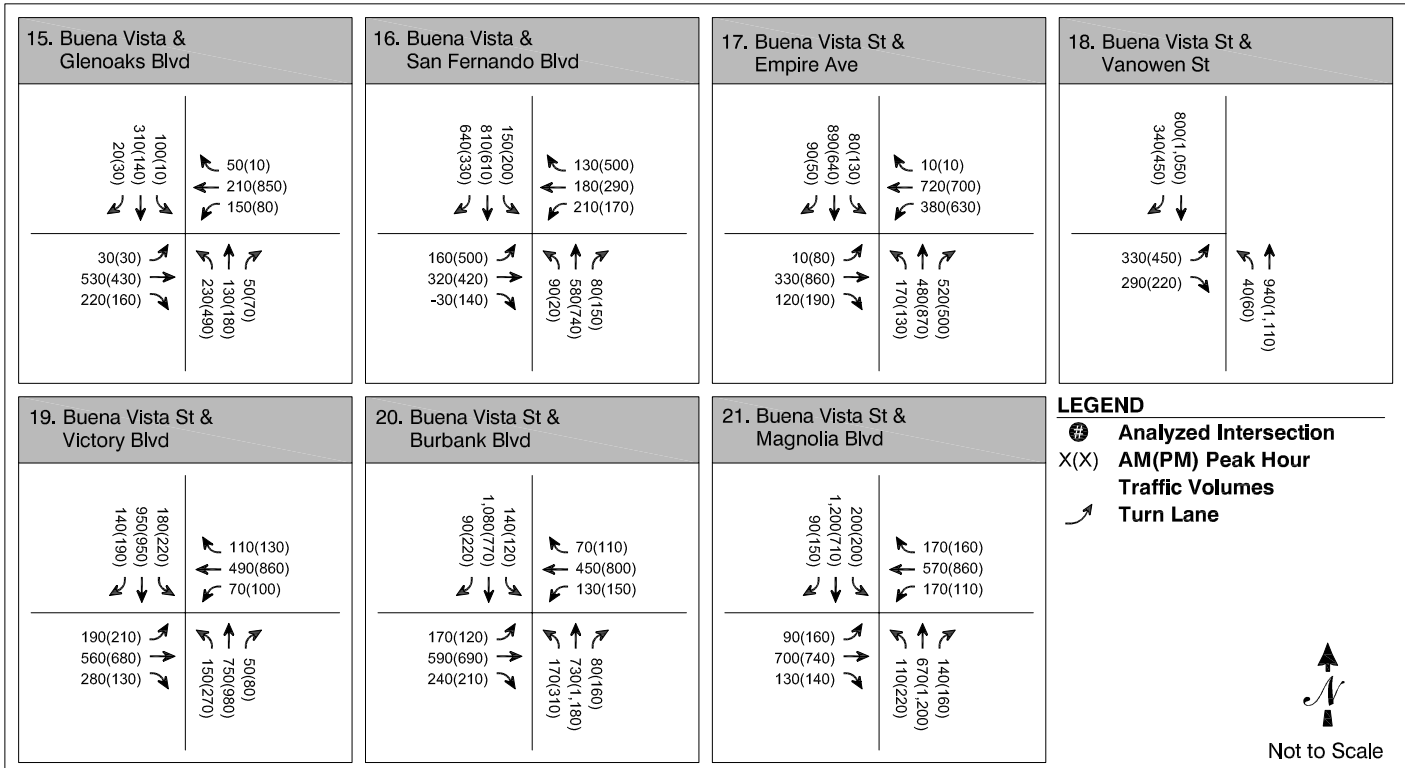


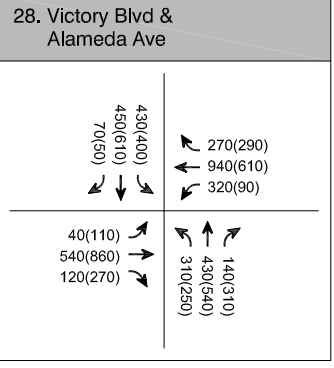
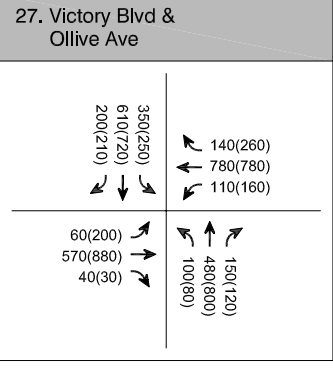
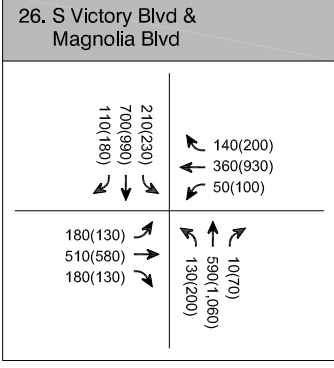
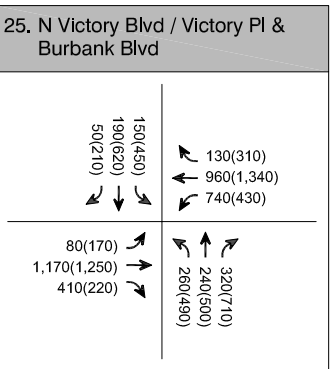
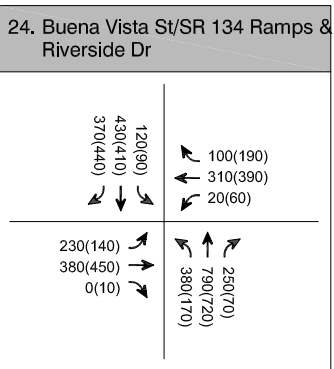
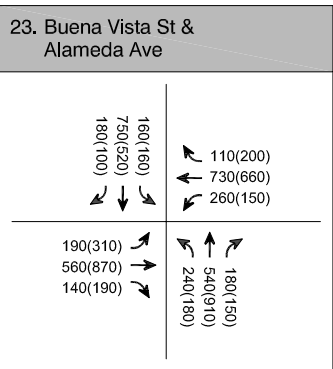
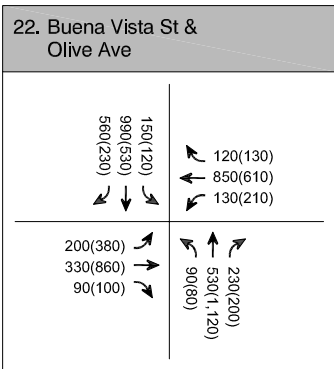













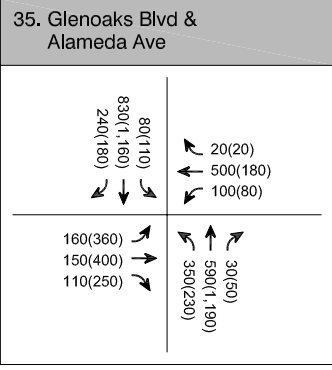
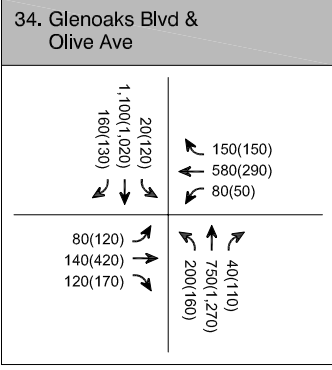
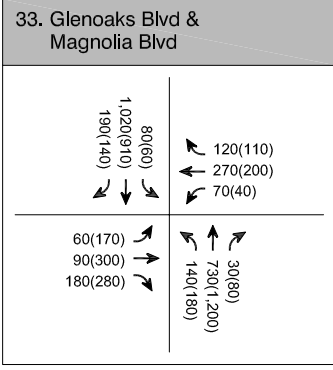
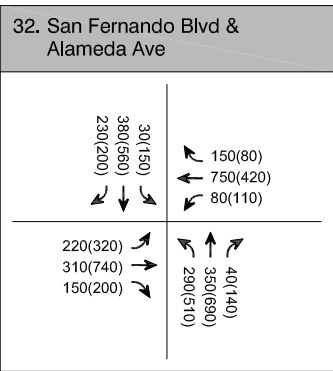
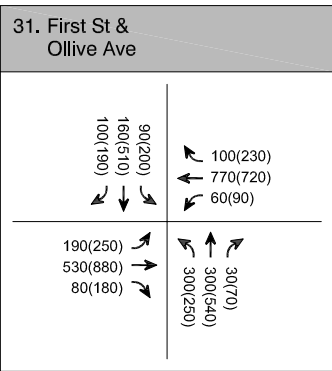
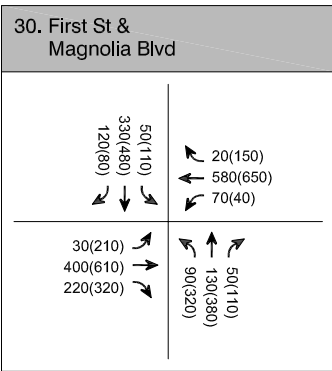
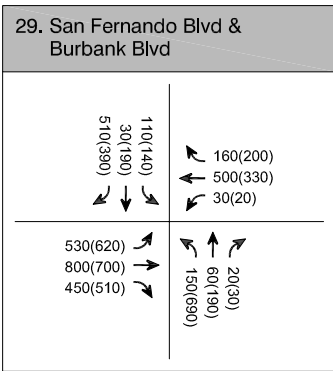
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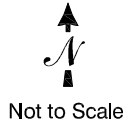
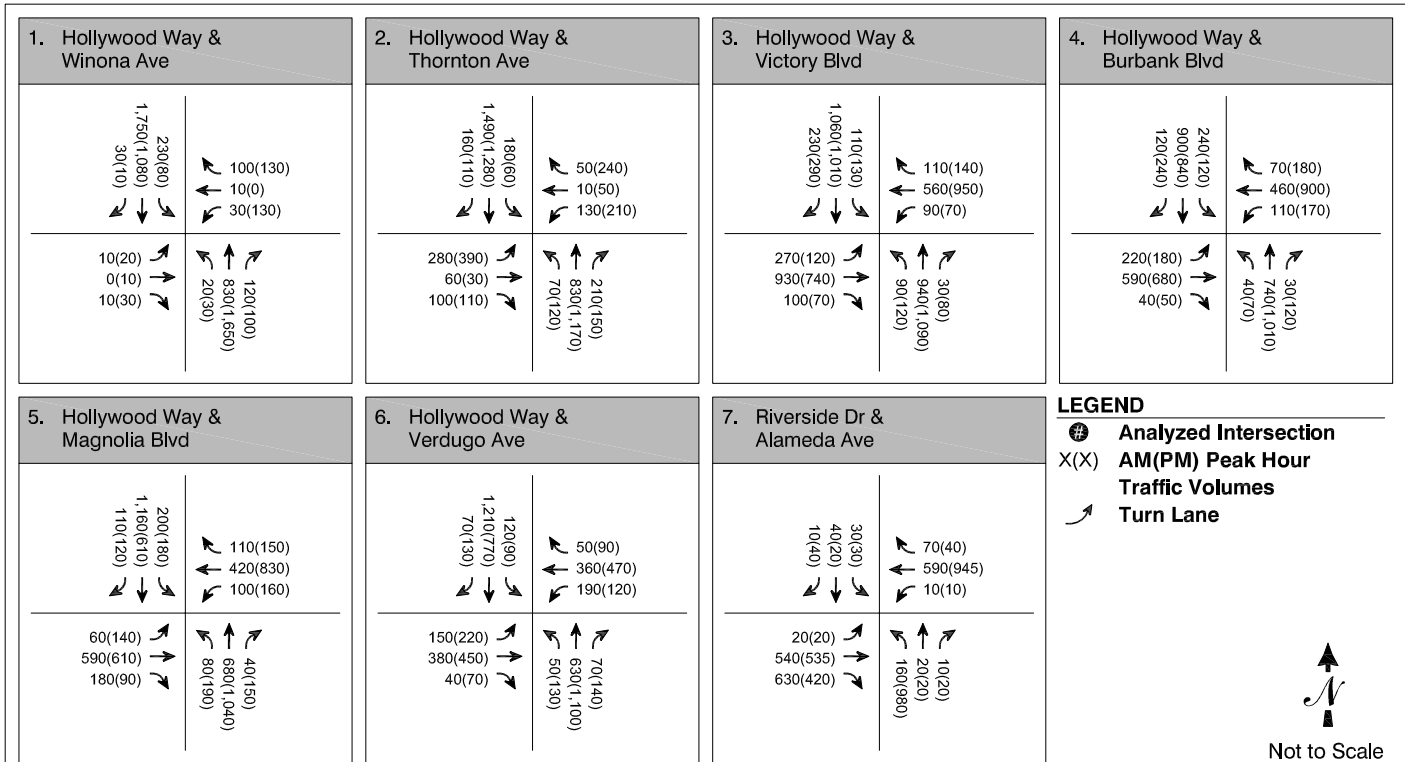
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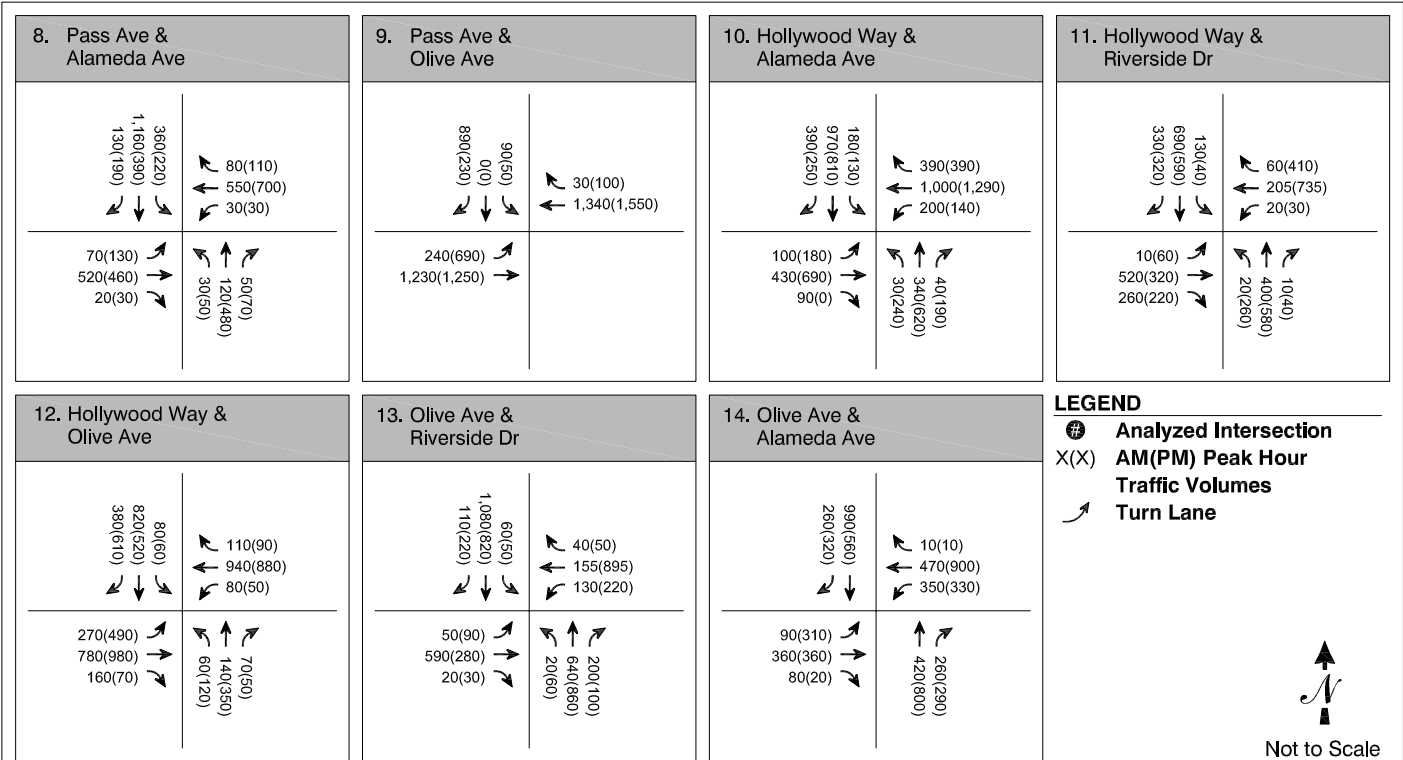
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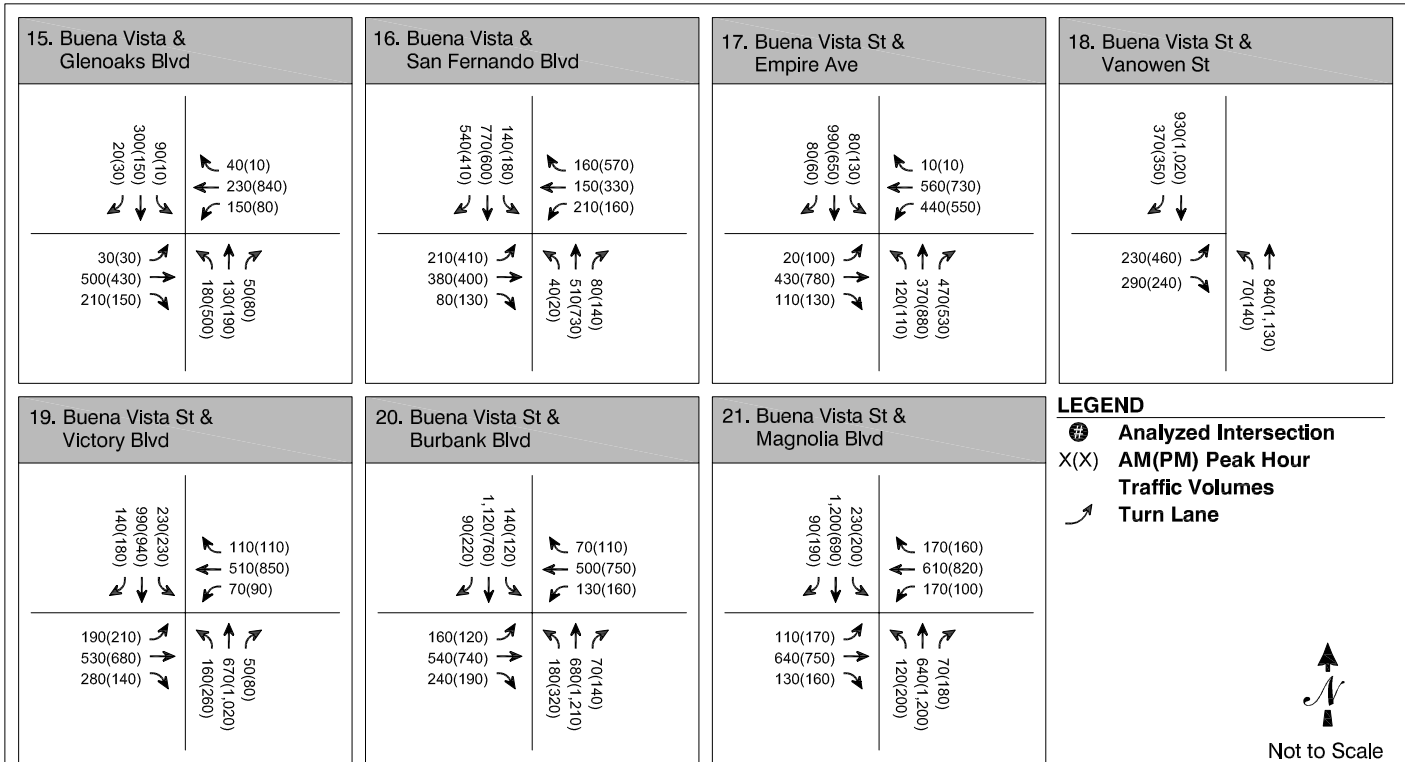


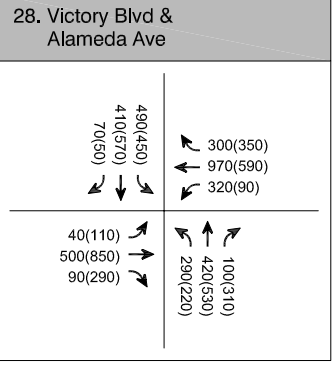
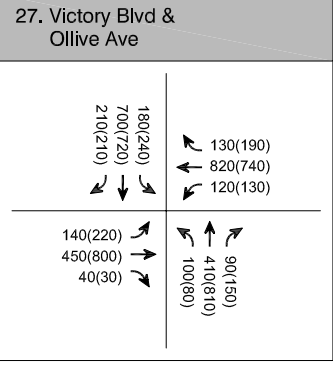
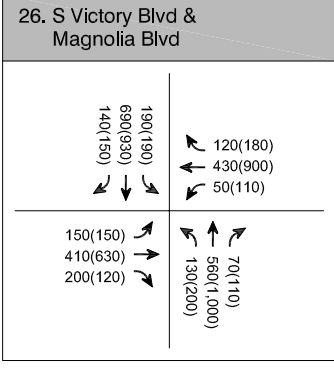
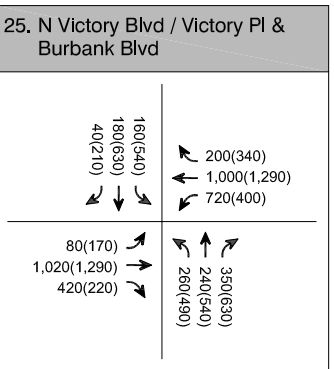
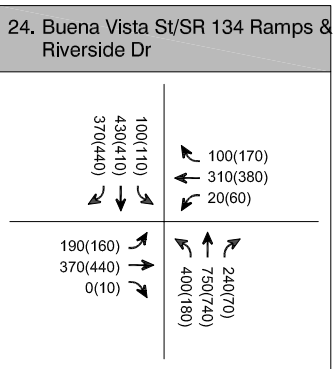
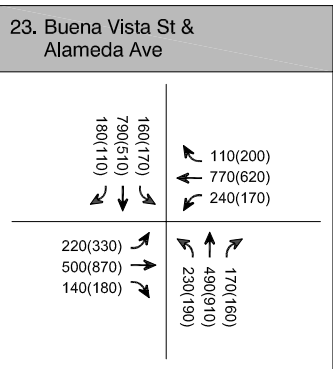
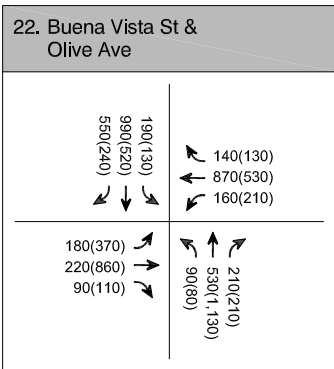
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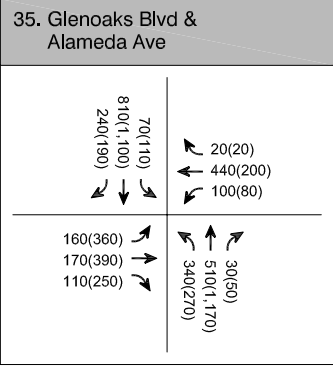
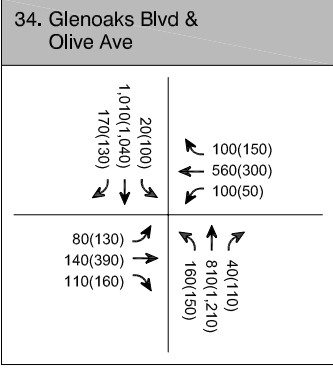
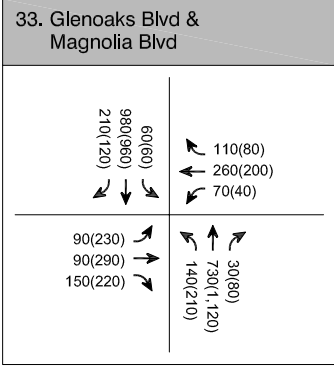
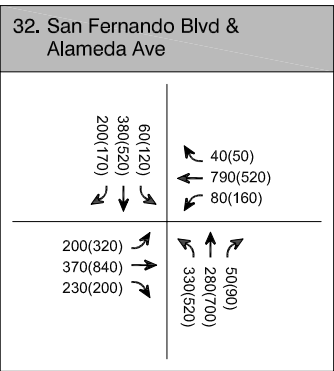
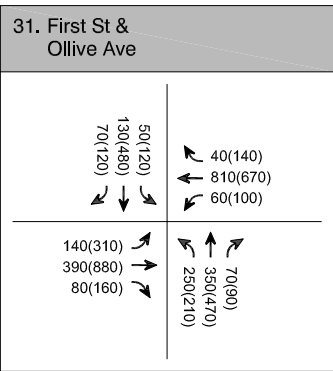
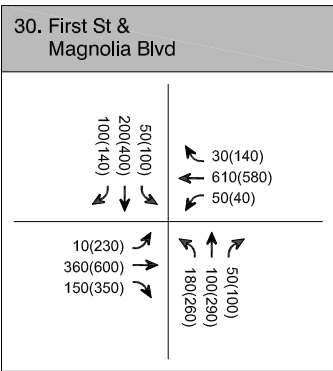
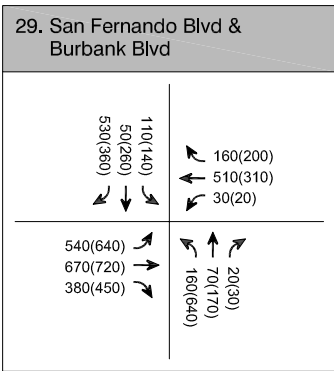
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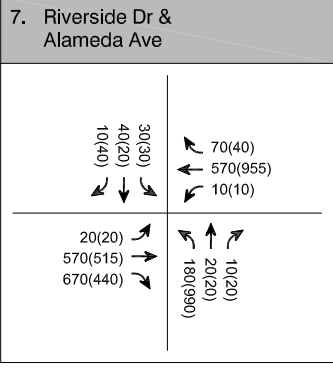
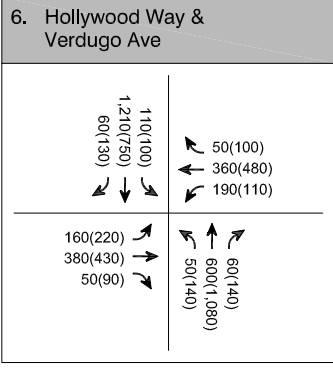
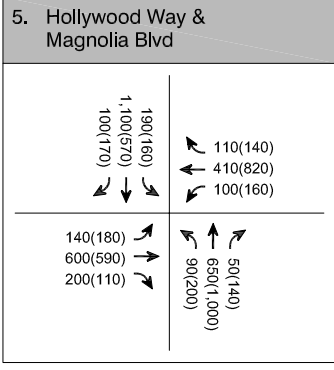
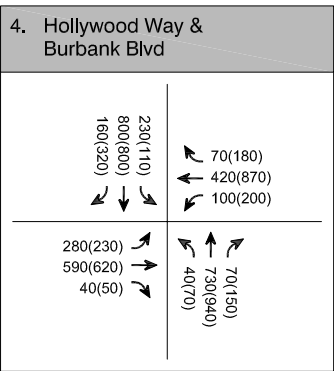
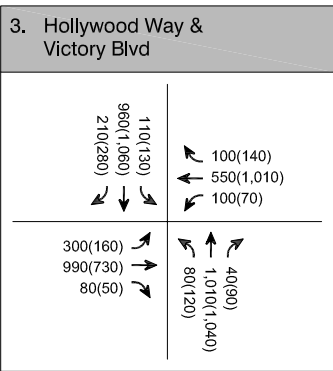
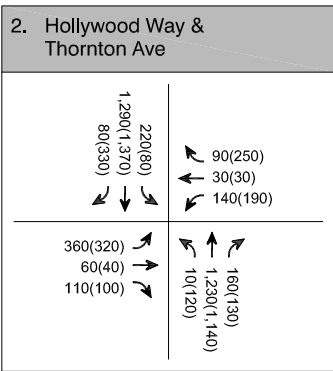
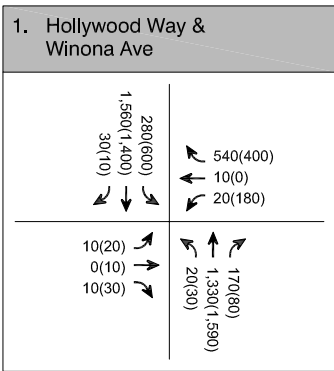
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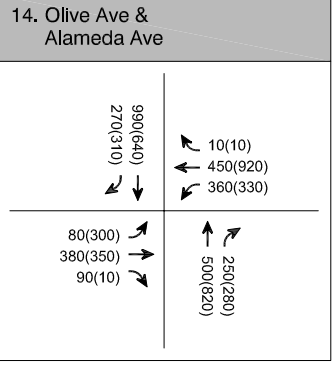
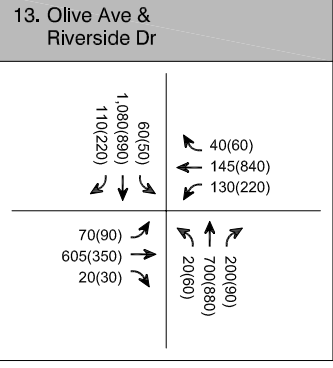
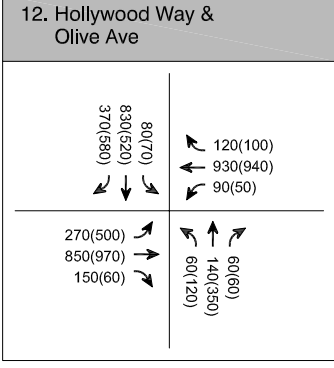
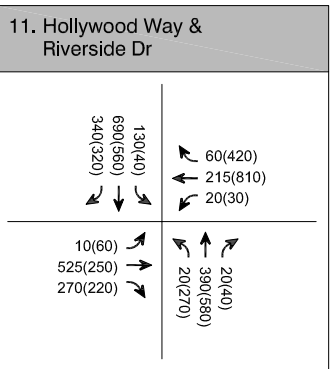
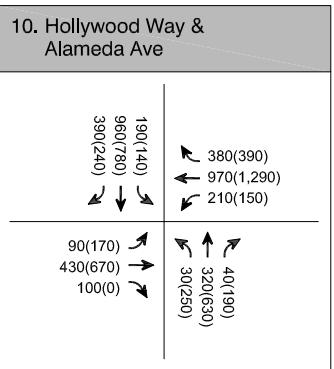
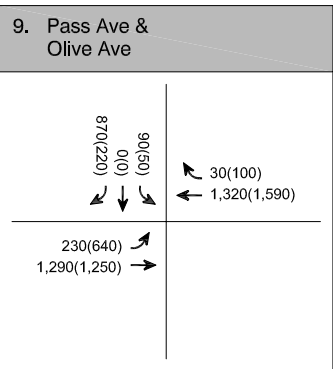
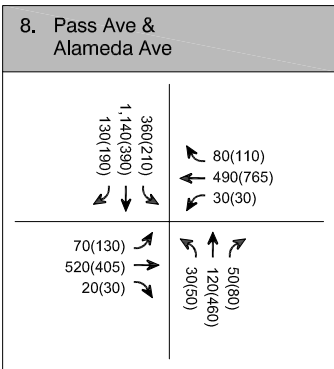
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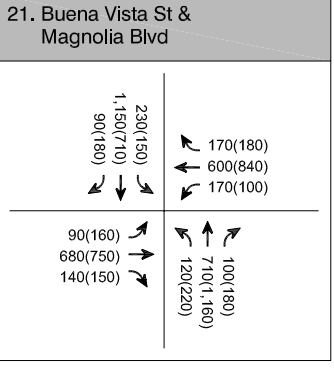
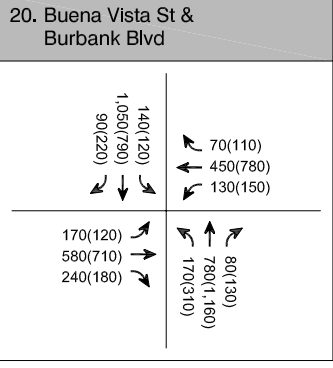
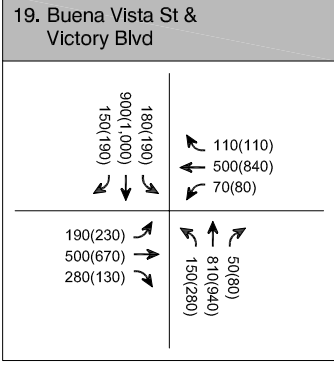
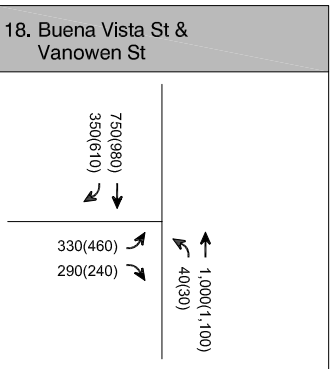
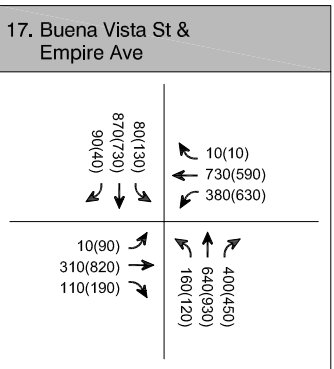
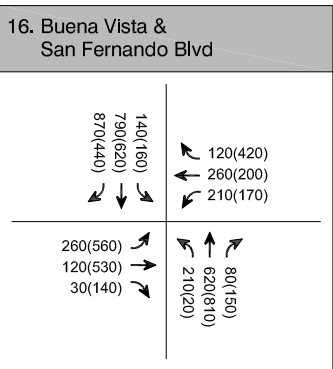
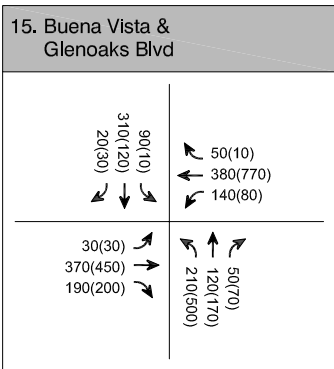
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- ↔ Traffic Volumes
- ↷ Turn Lane




Not to Scale





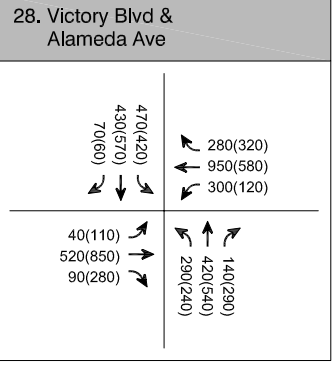
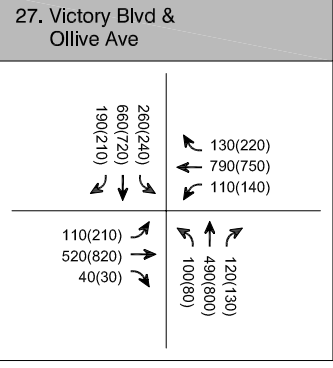
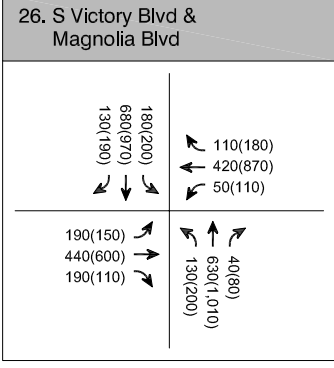
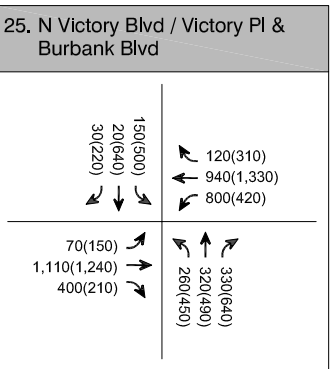
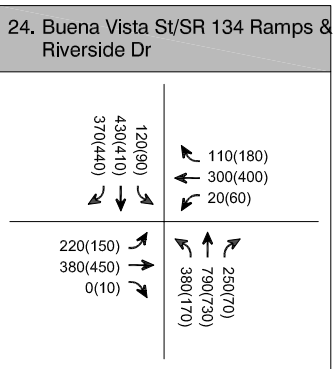
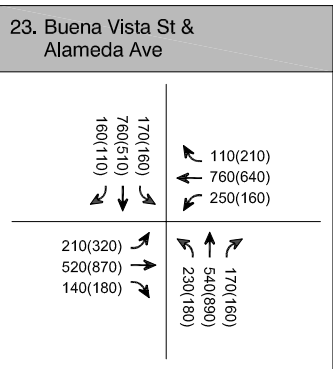
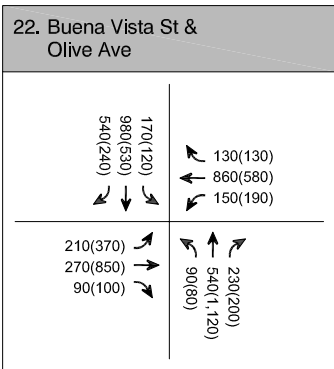
**LEGEND**

- ⊕ Analyzed Intersection
- X(X) AM(PM) Peak Hour
- ↖ ↗ ↘ ↙ Traffic Volumes
- ↖ ↗ ↘ ↙ Turn Lane




Not to Scale





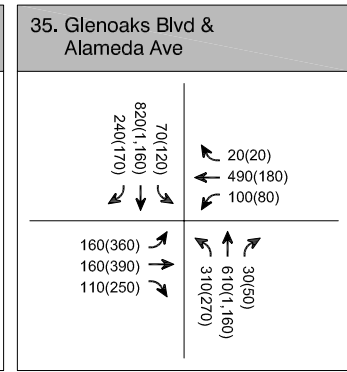
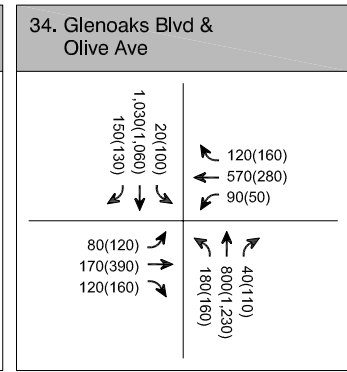
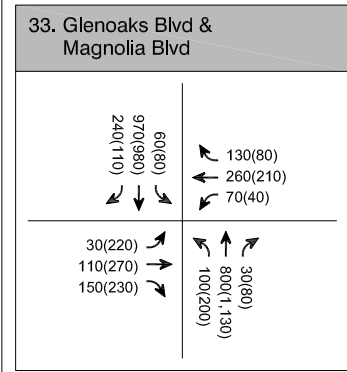
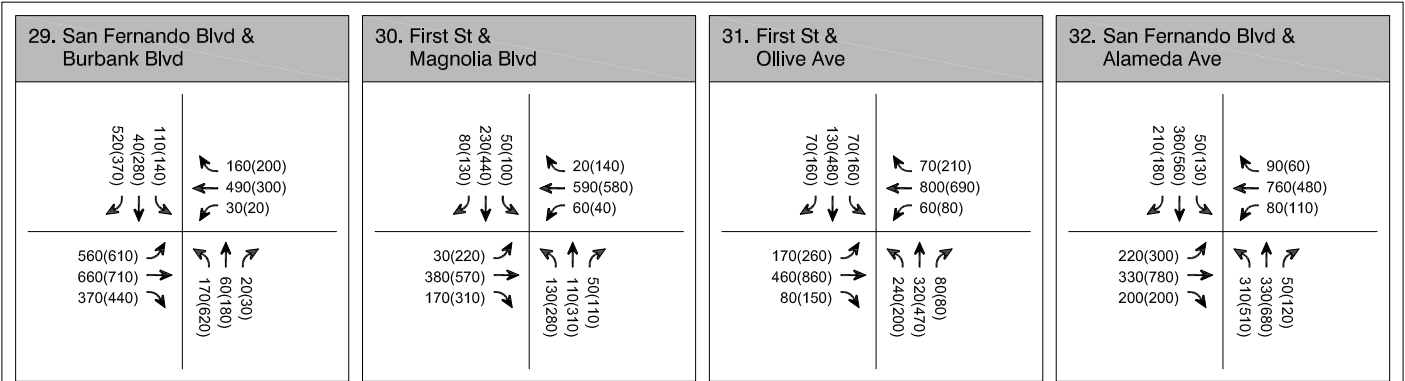
**LEGEND**

- ⊕ Analyzed Intersection
- X(X) AM(PM) Peak Hour
- ↔ Traffic Volumes
- ↷ Turn Lane



Not to Scale

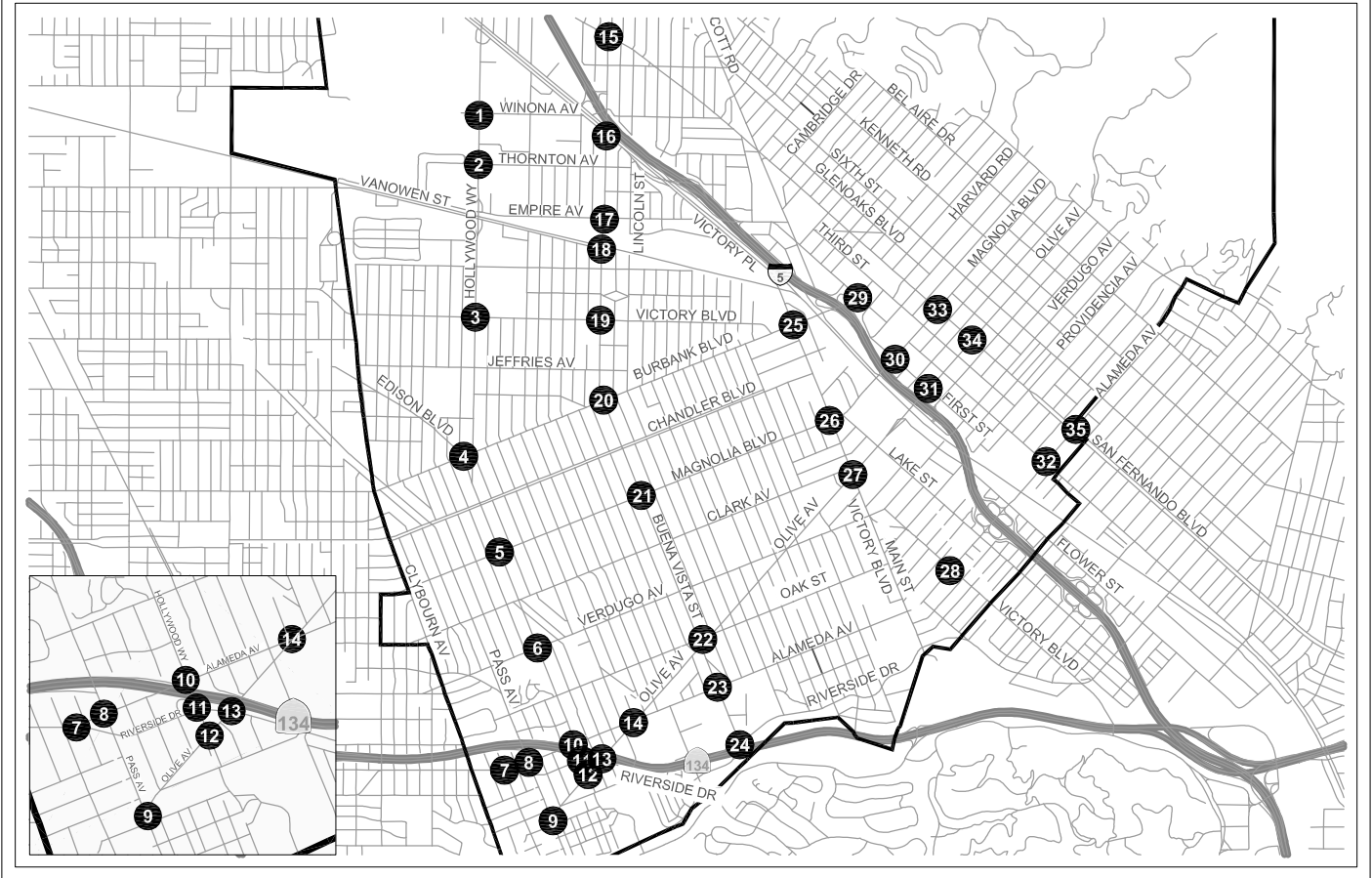


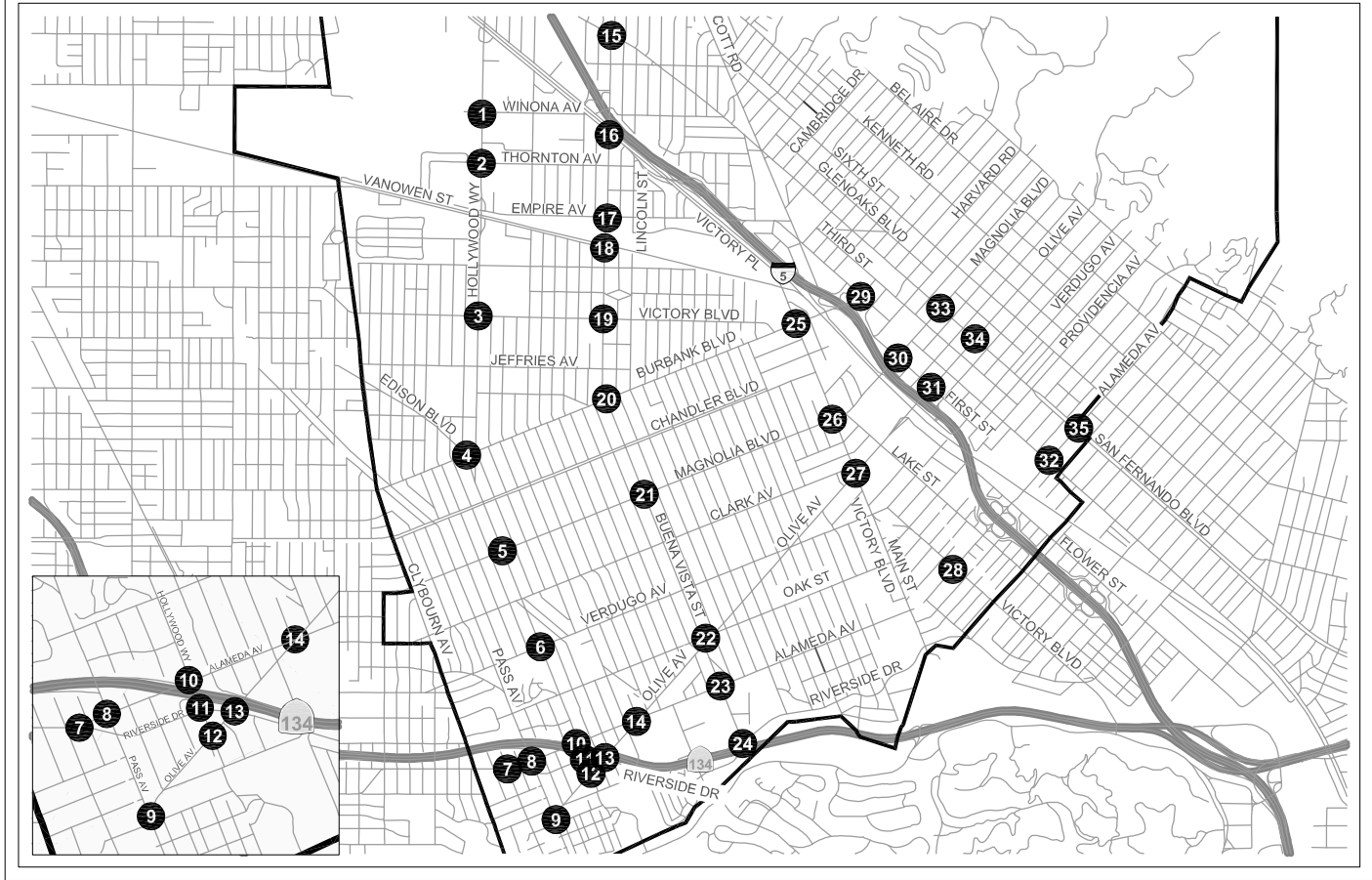
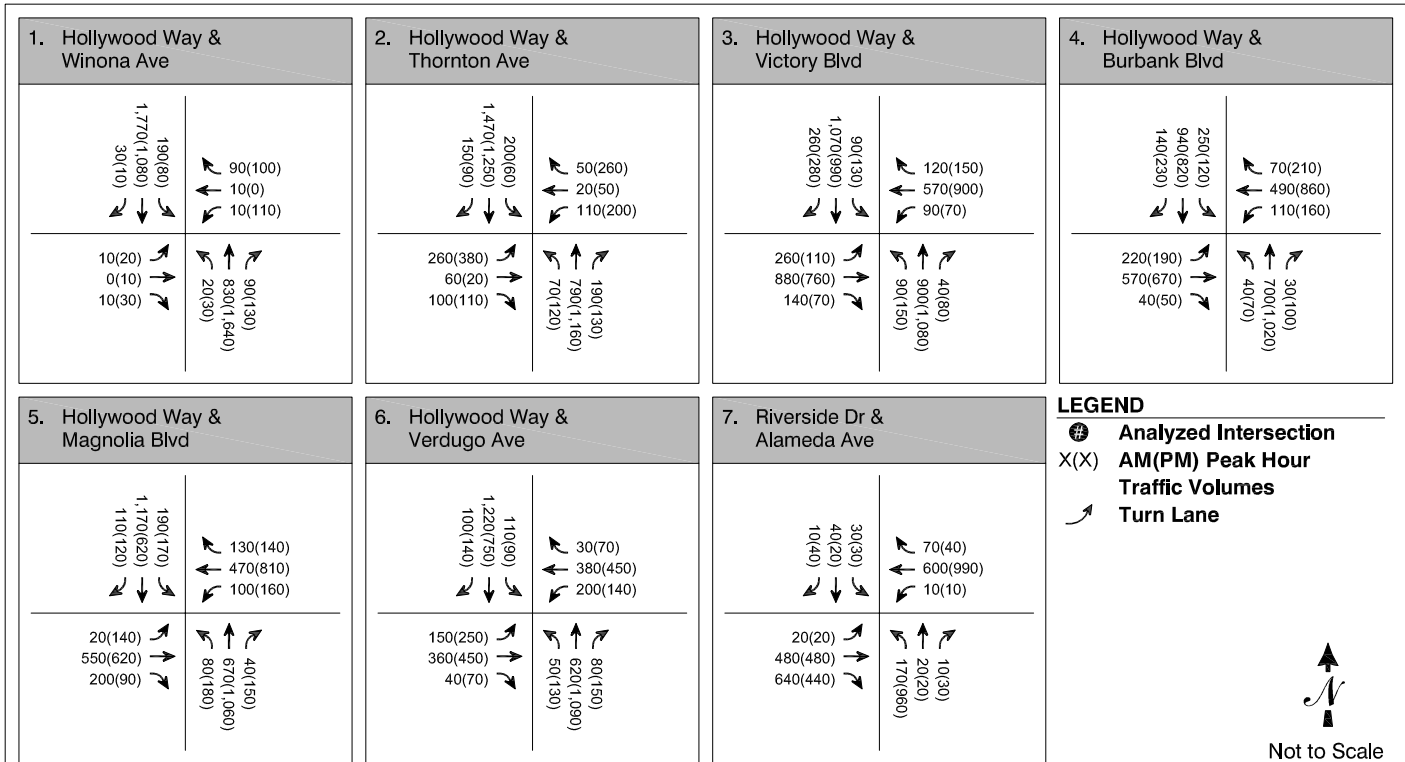


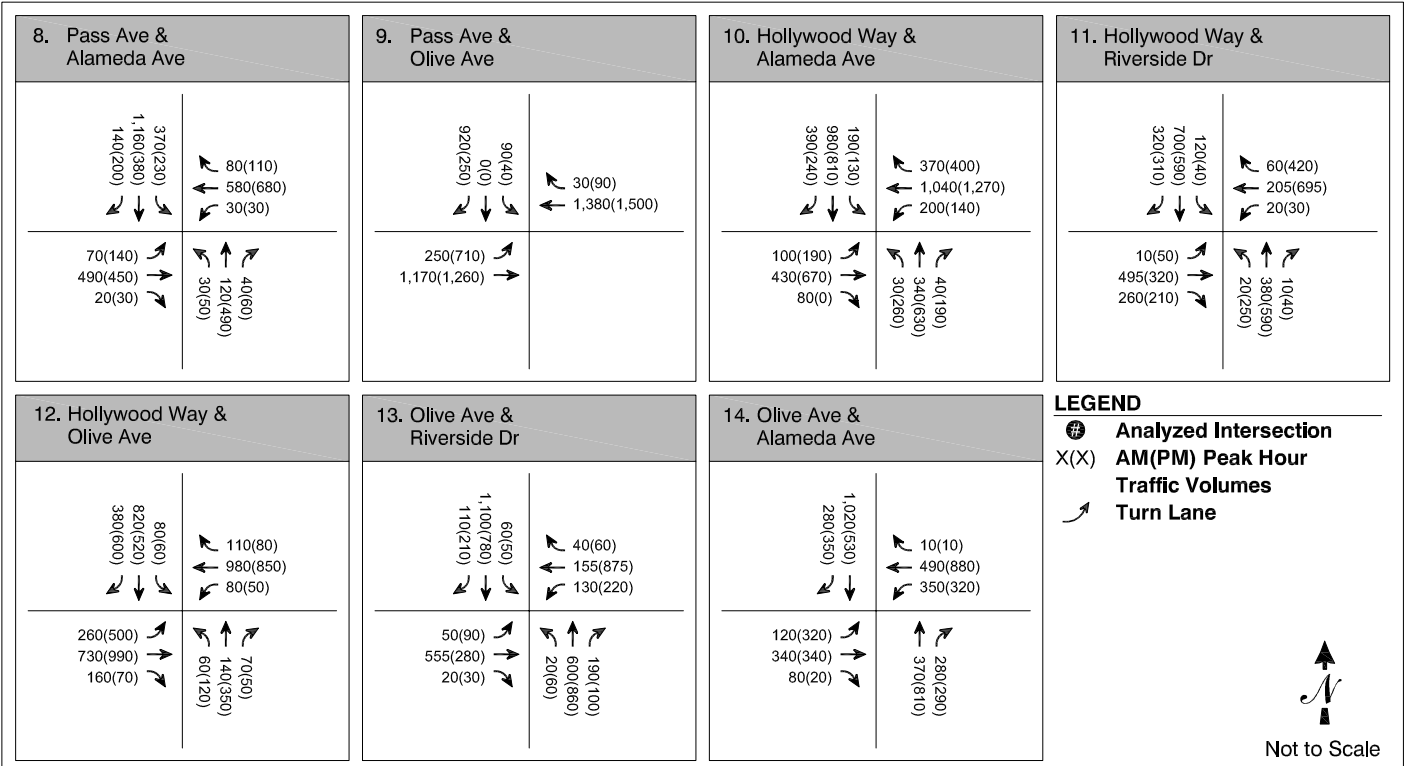
**LEGEND**

- Analyzed Intersection
- AM(PM) Peak Hour
- Traffic Volumes
- Turn Lane

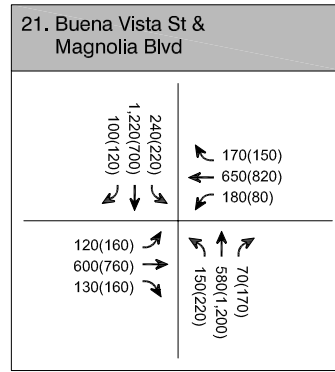
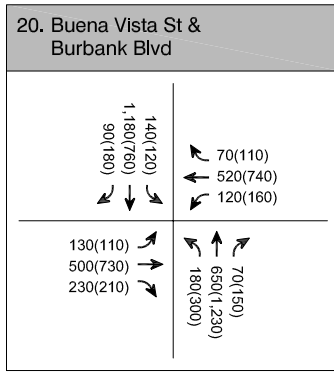
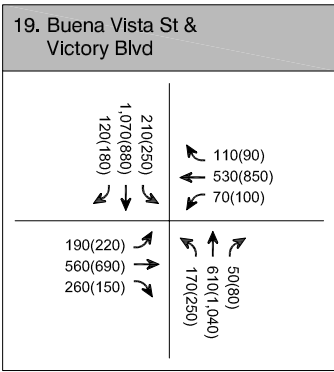
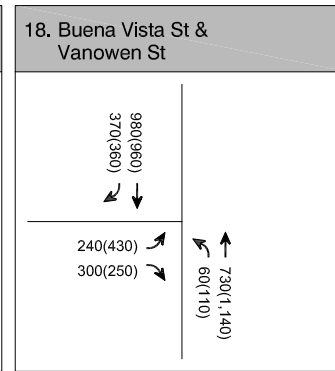
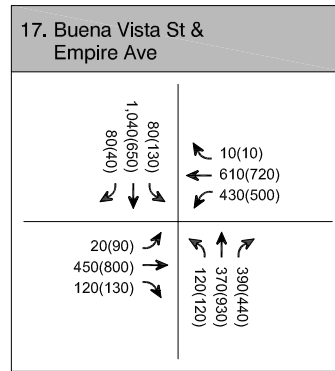
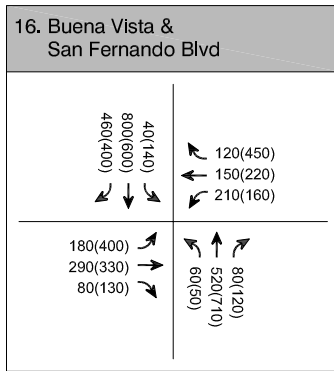
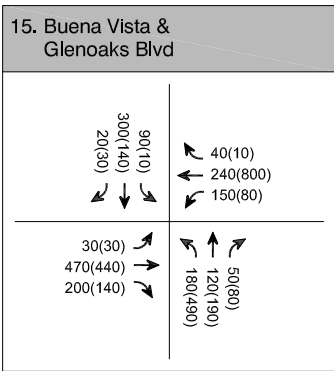
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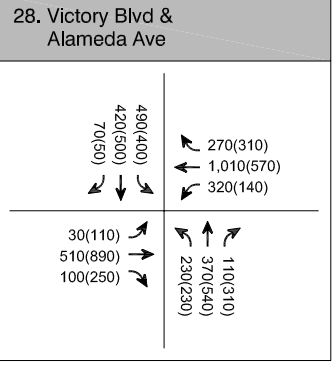
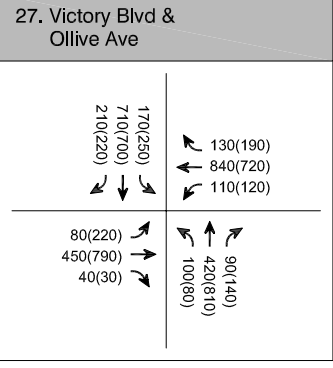
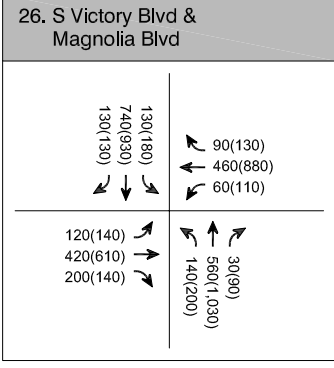
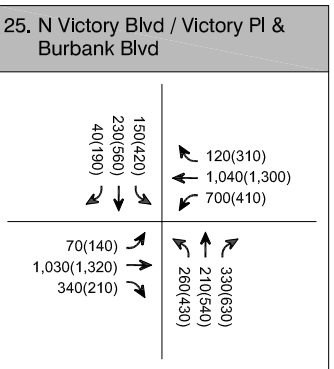
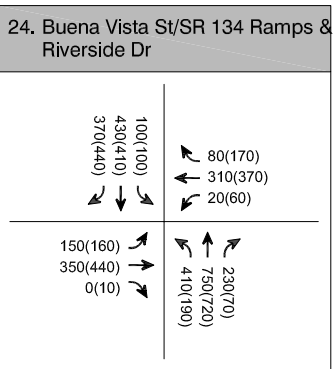
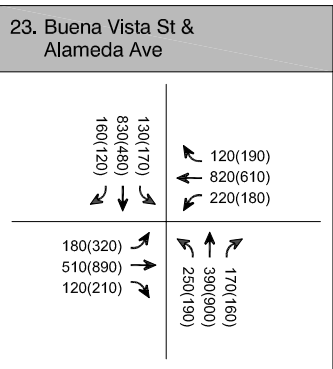
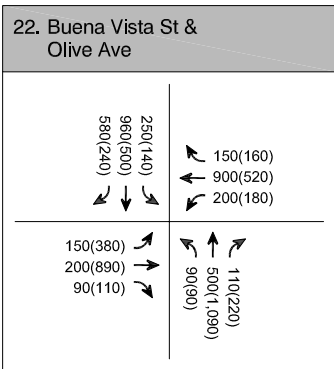




**LEGEND**


- # Analyzed Intersection
- X(X) AM(PM) Peak Hour
- Traffic Volumes
- Turn Lane





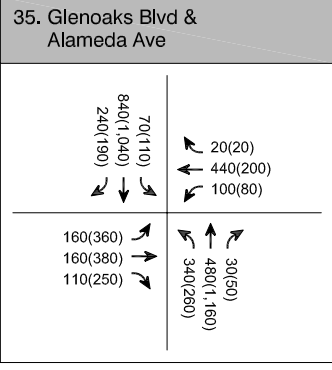
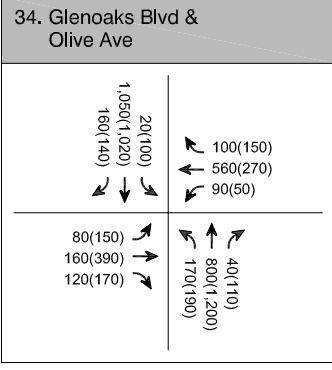
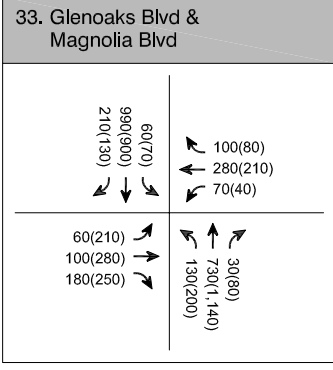
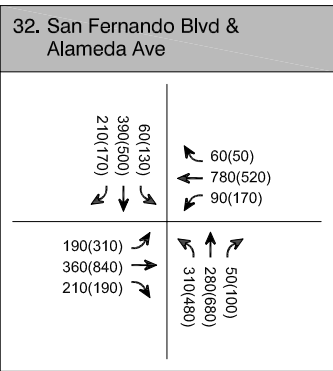
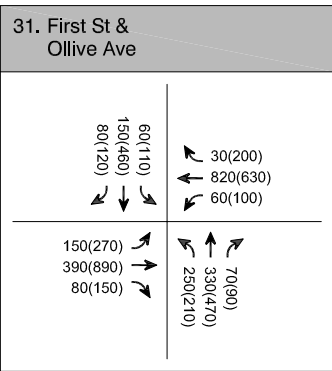
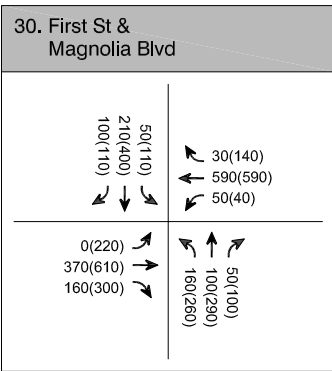
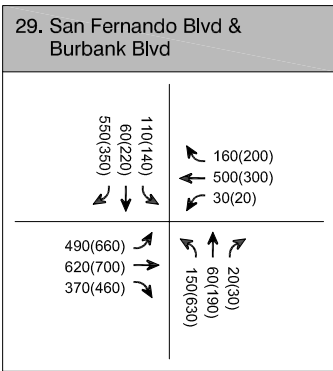
**LEGEND**

- ⊕ Analyzed Intersection
- X(X) AM(PM) Peak Hour
- ↔ Traffic Volumes
- ↷ Turn Lane




Not to Scale





**LEGEND**

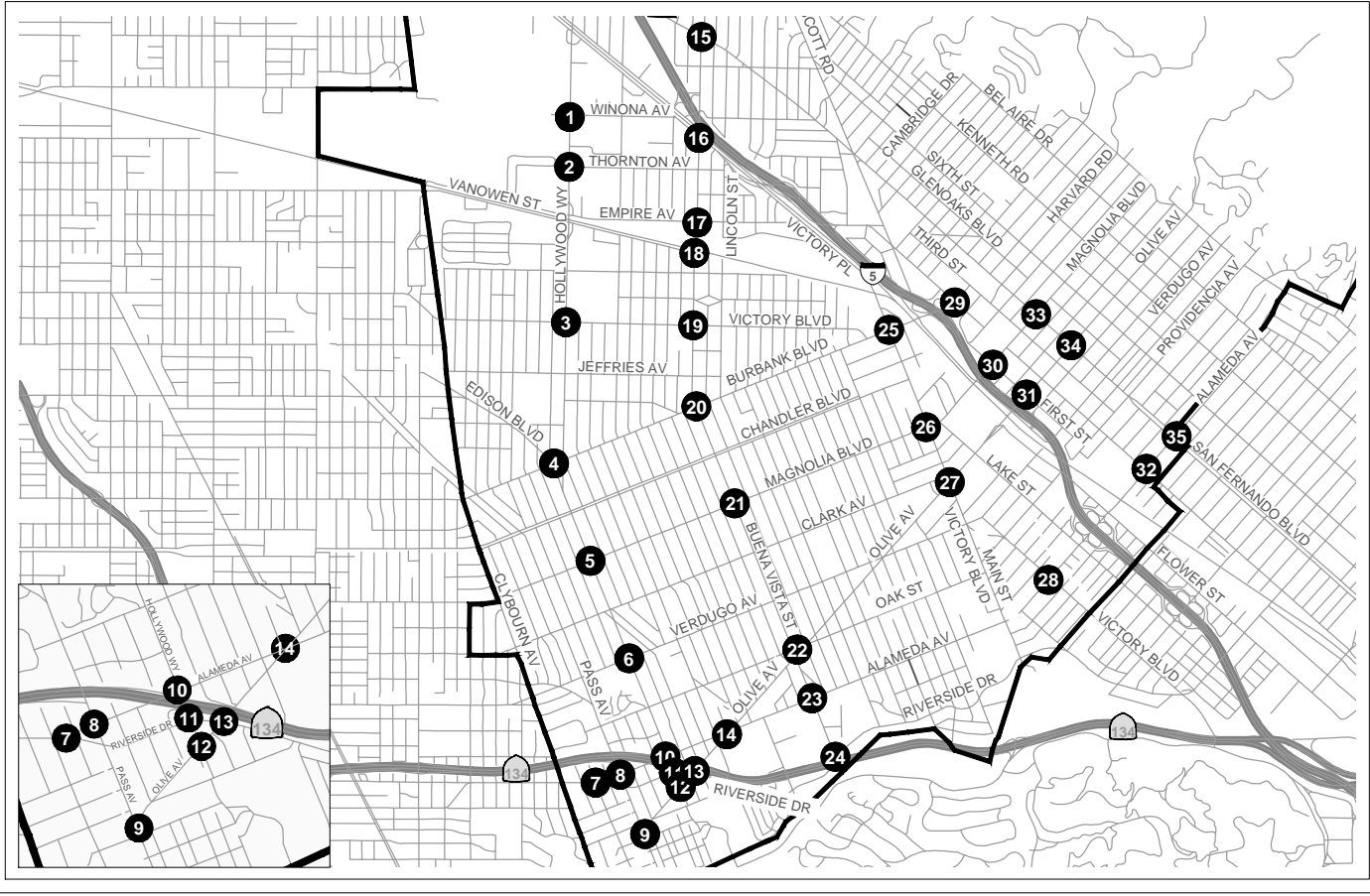
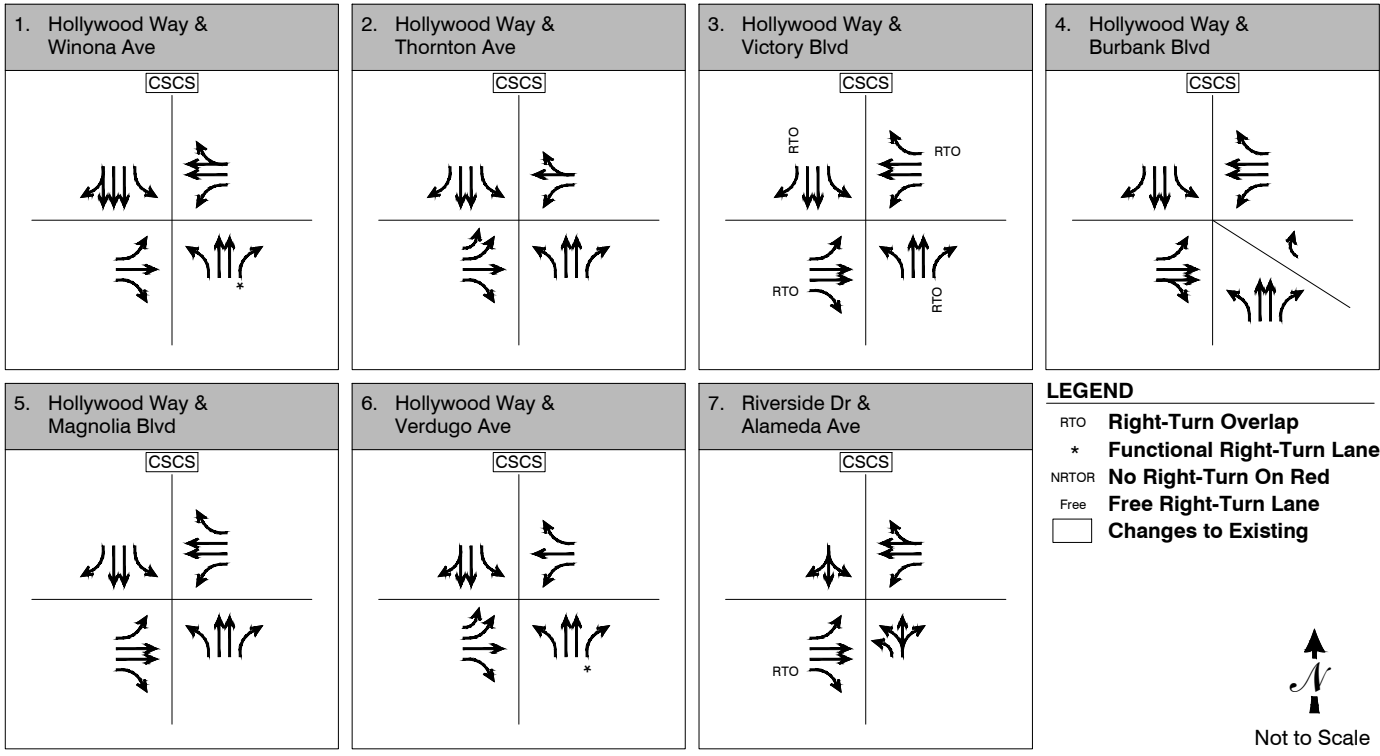
- # Analyzed Intersection
- X(X) AM(PM) Peak Hour
- Traffic Volumes
- Turn Lane

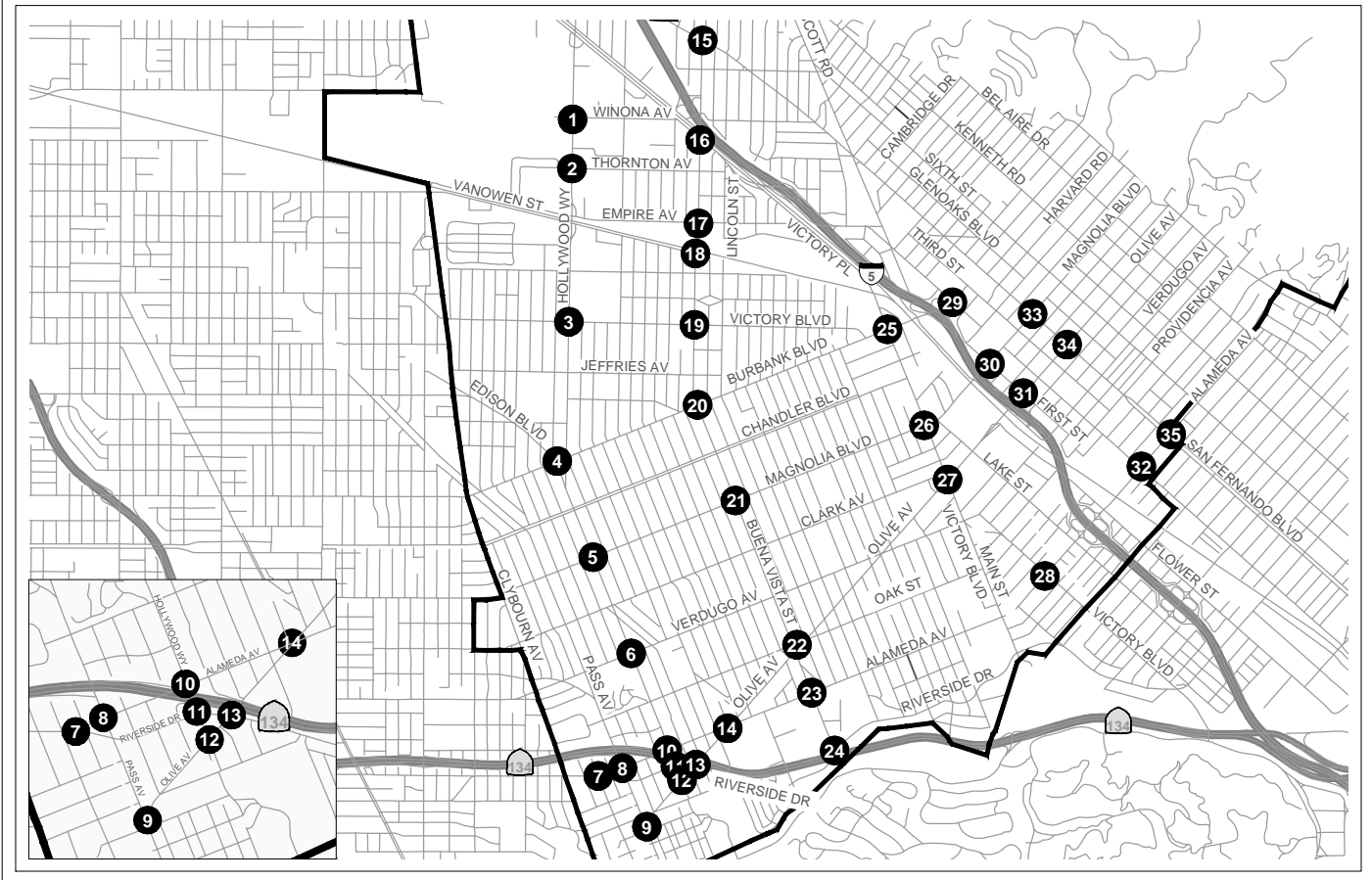
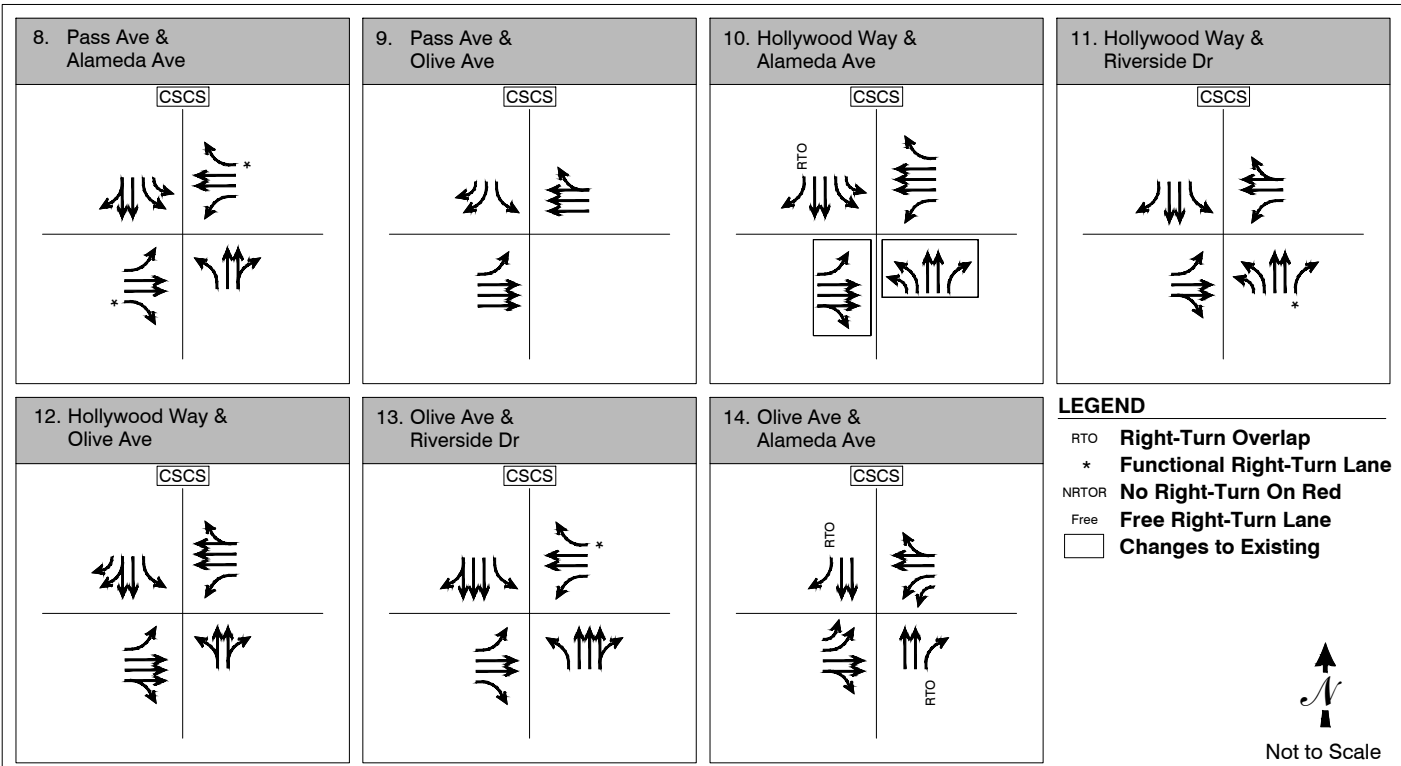


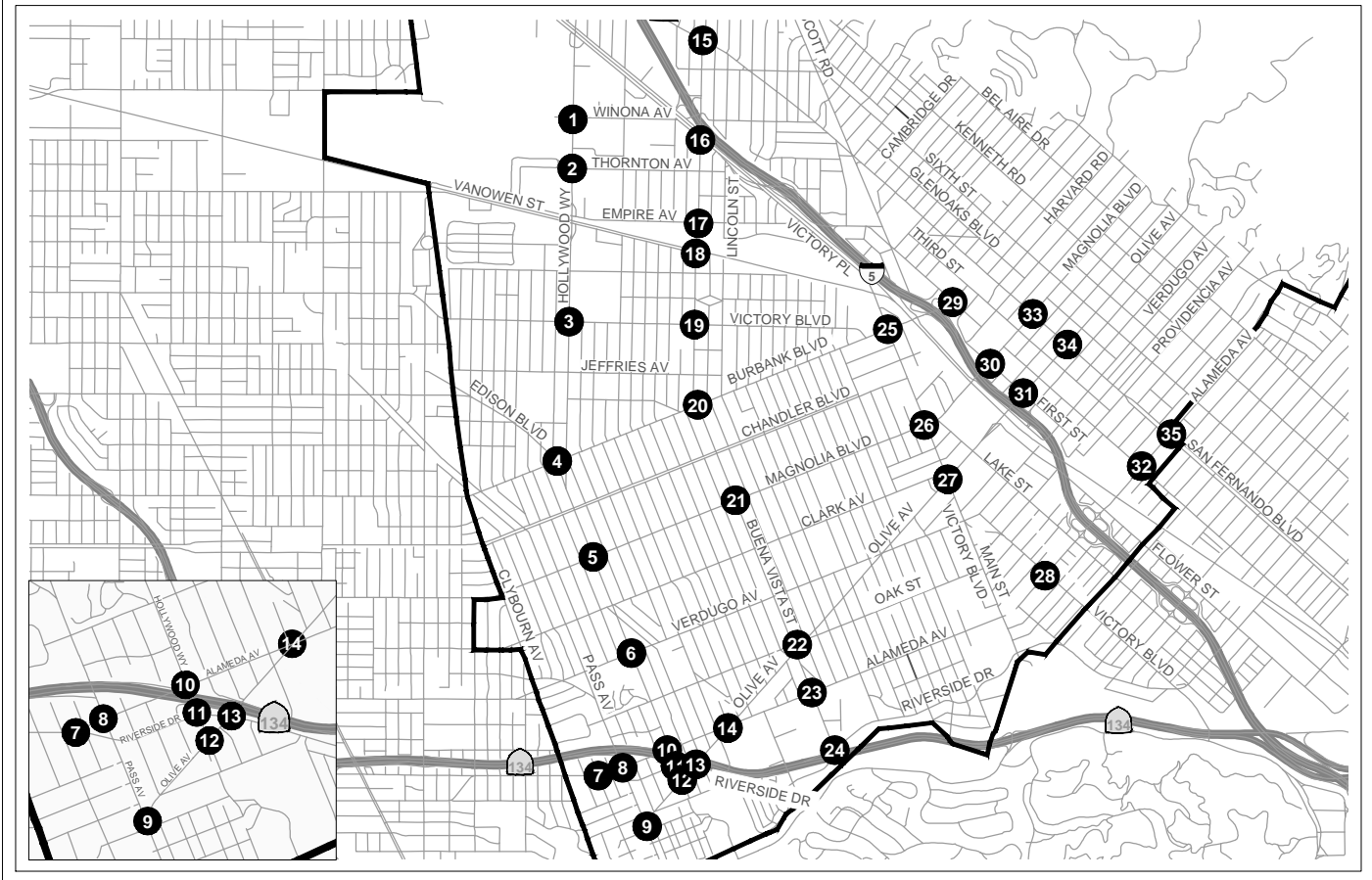
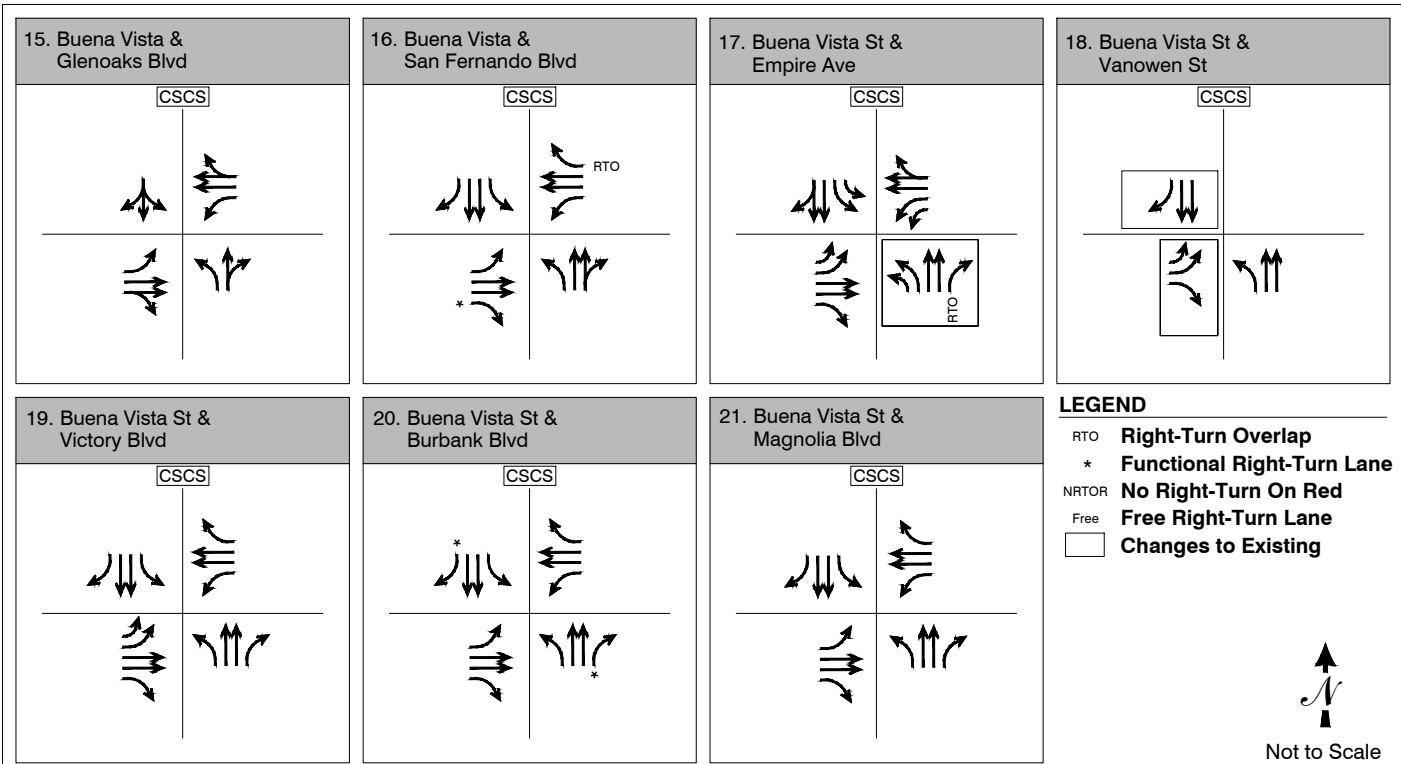
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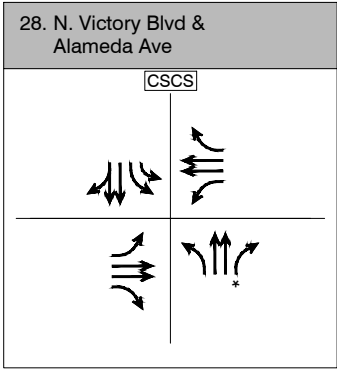
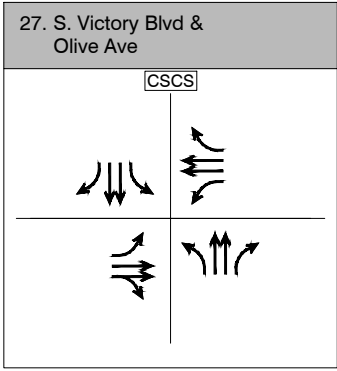
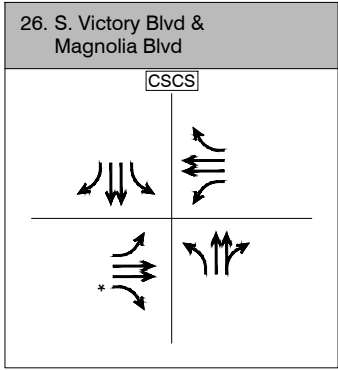
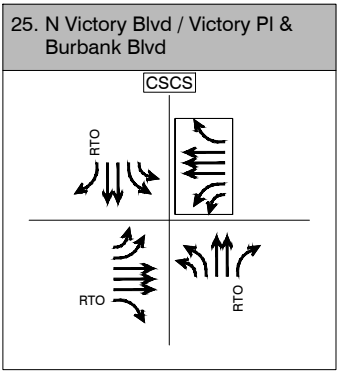
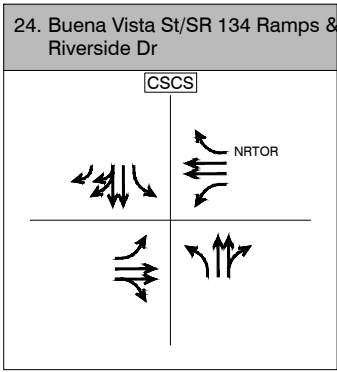
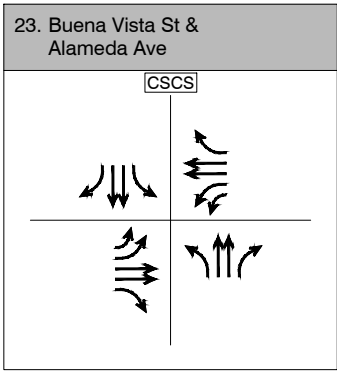
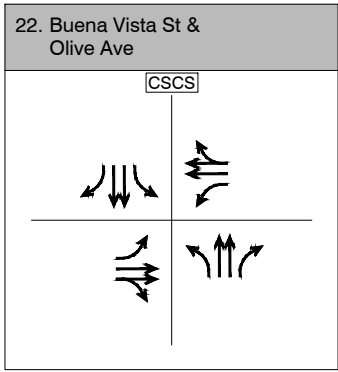


**APPENDIX B:  
2035 FUTURE BASE INTERSECTION GEOMETRY CONFIGURATIONS**



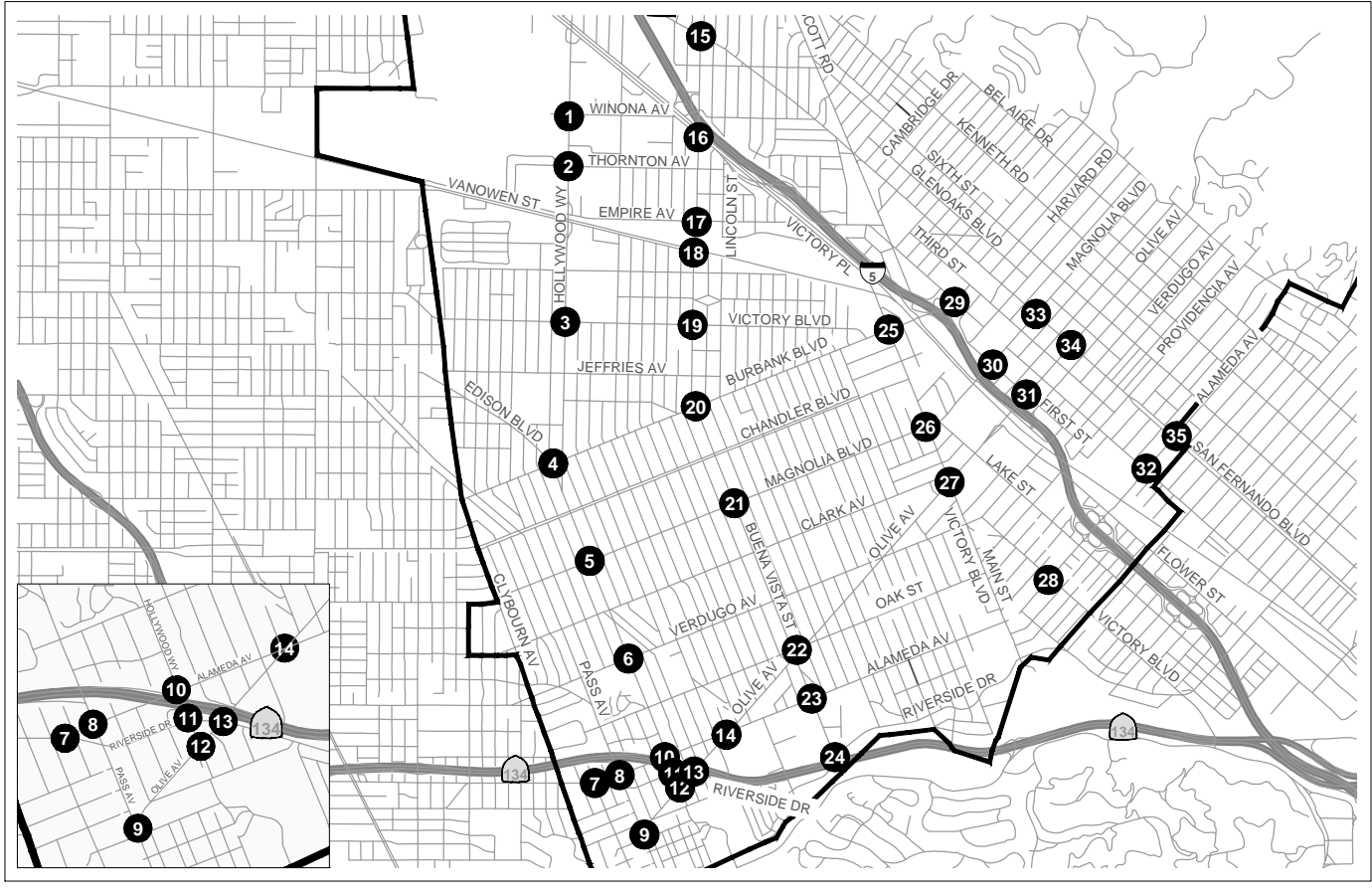




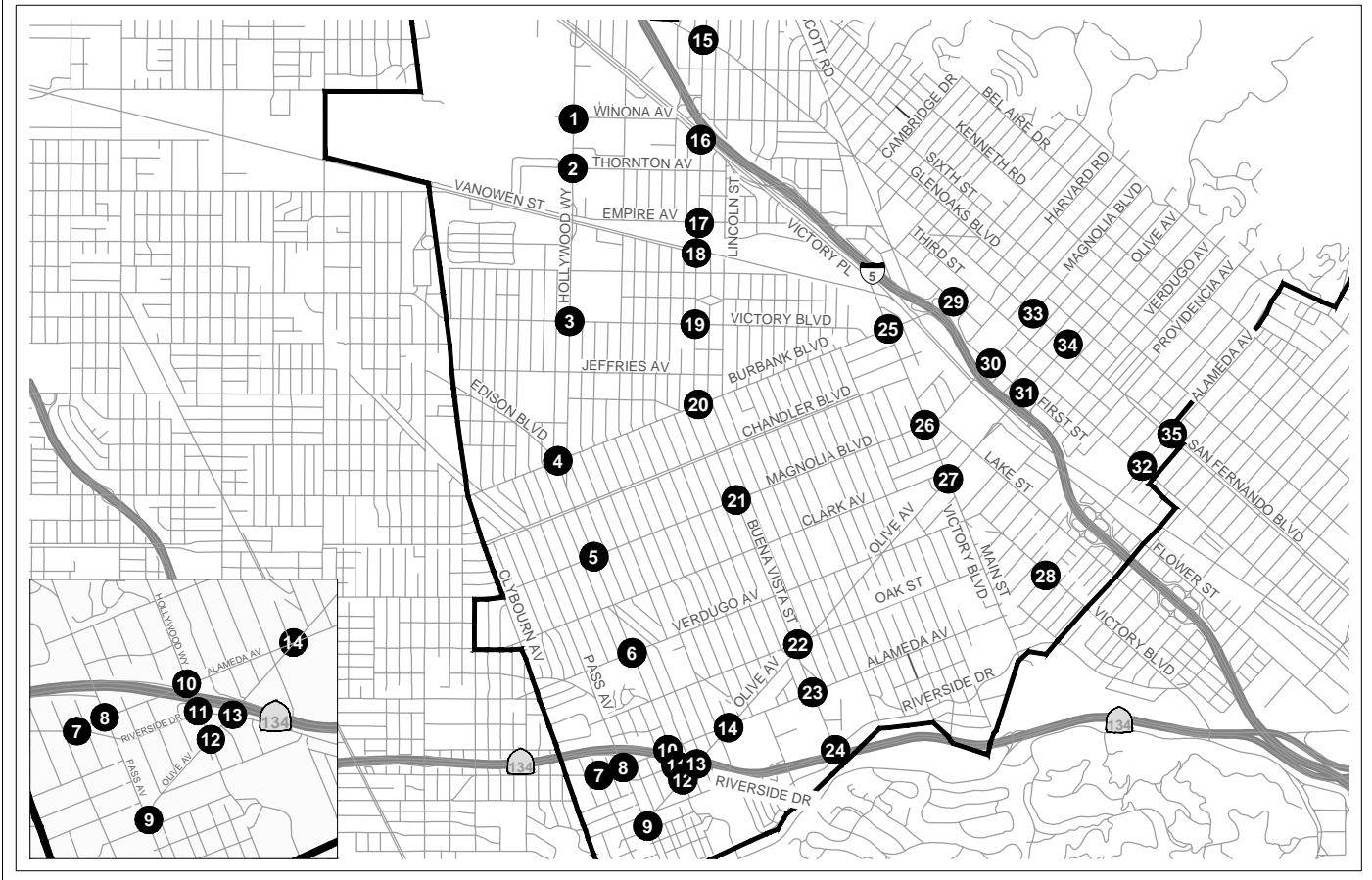
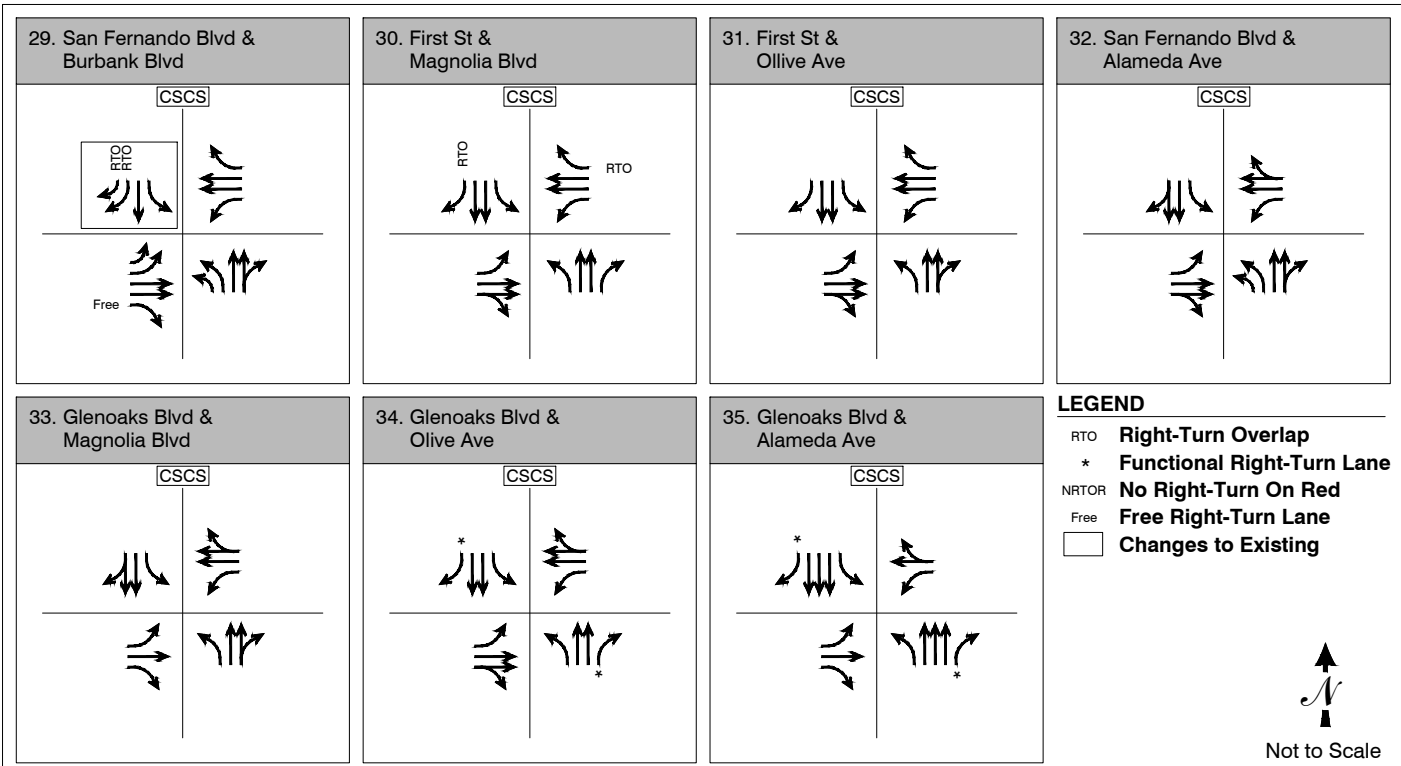


**LEGEND**

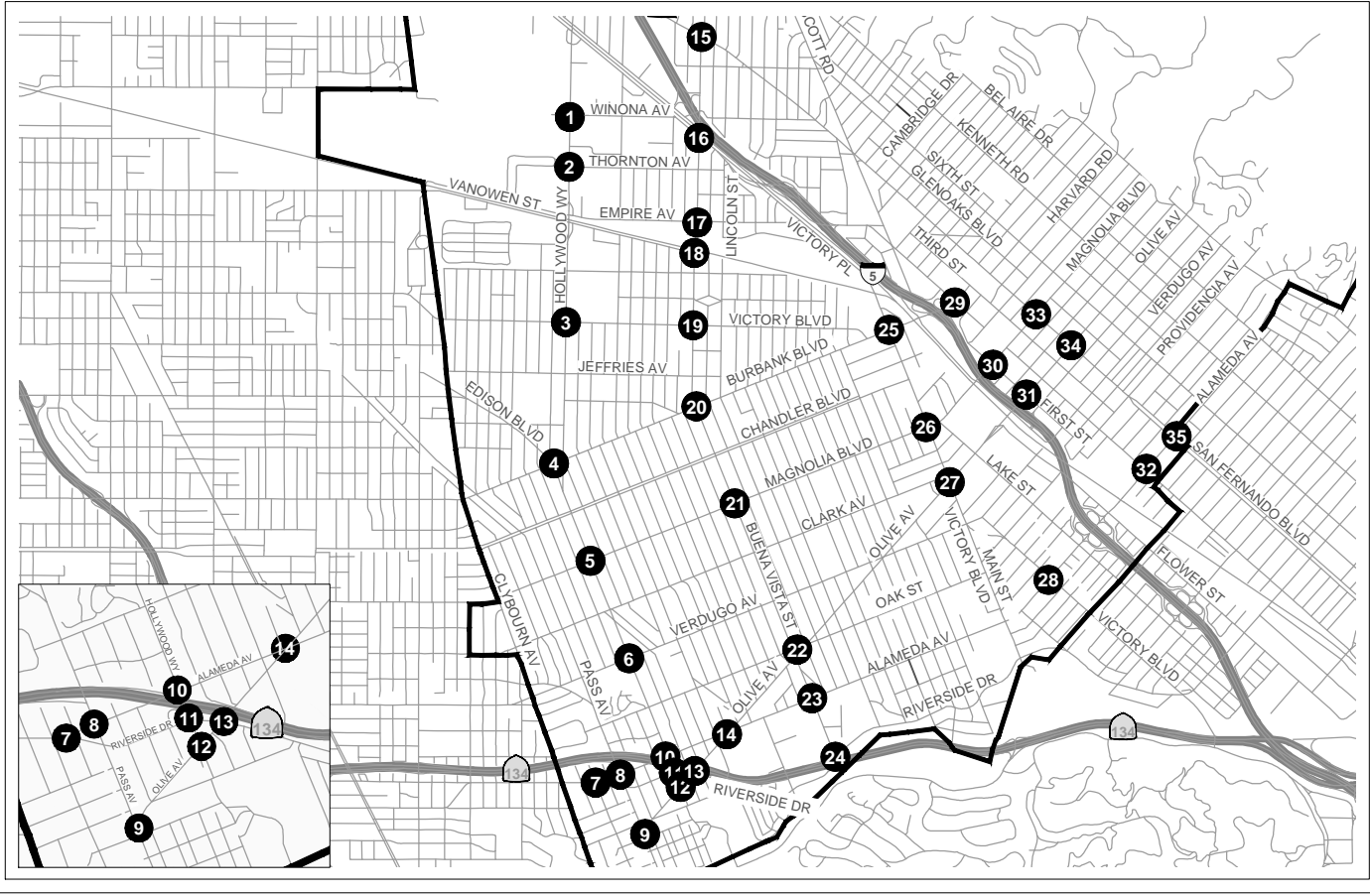
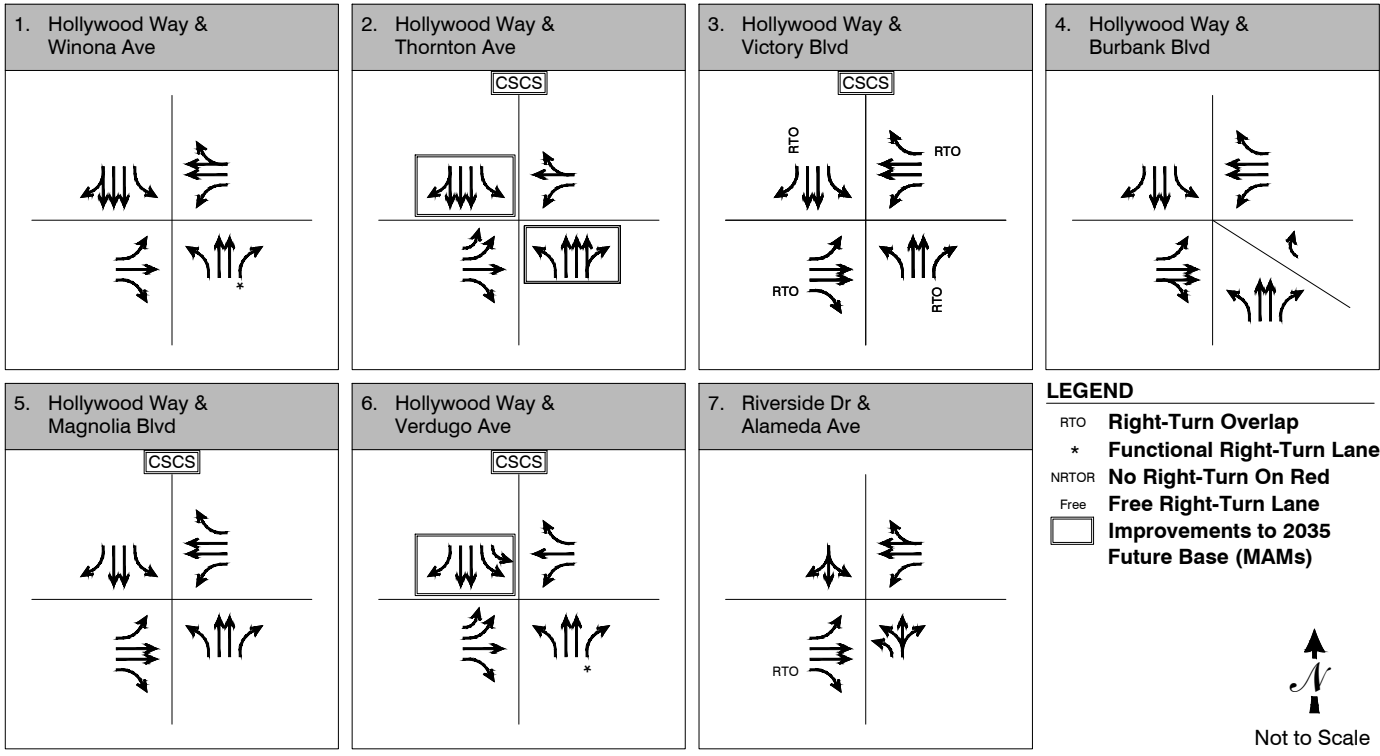
- RTO Right-Turn Overlap
- \* Functional Right-Turn Lane
- NRTOR No Right-Turn On Red
- Free Free Right-Turn Lane
- Changes to Existing

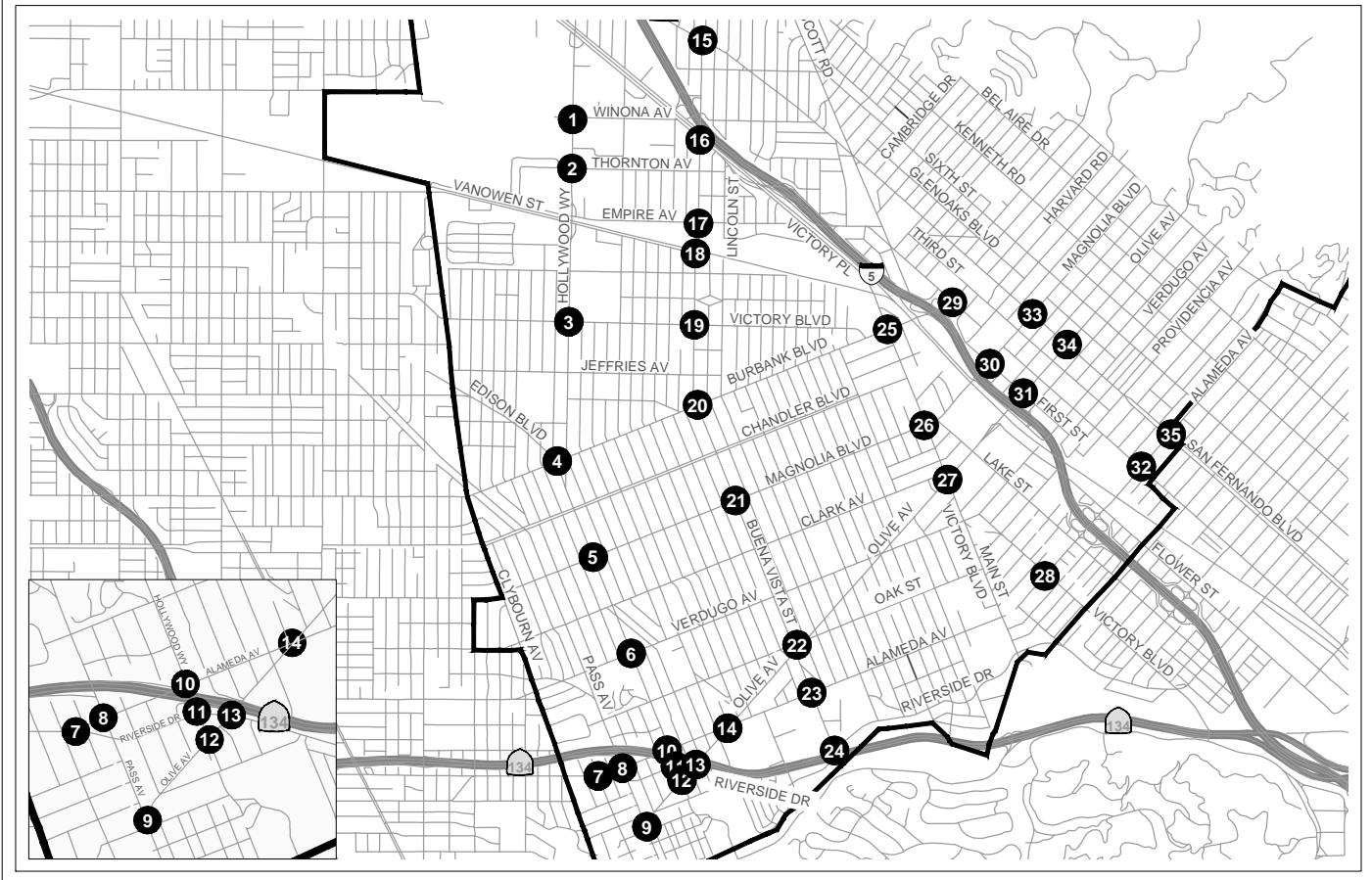
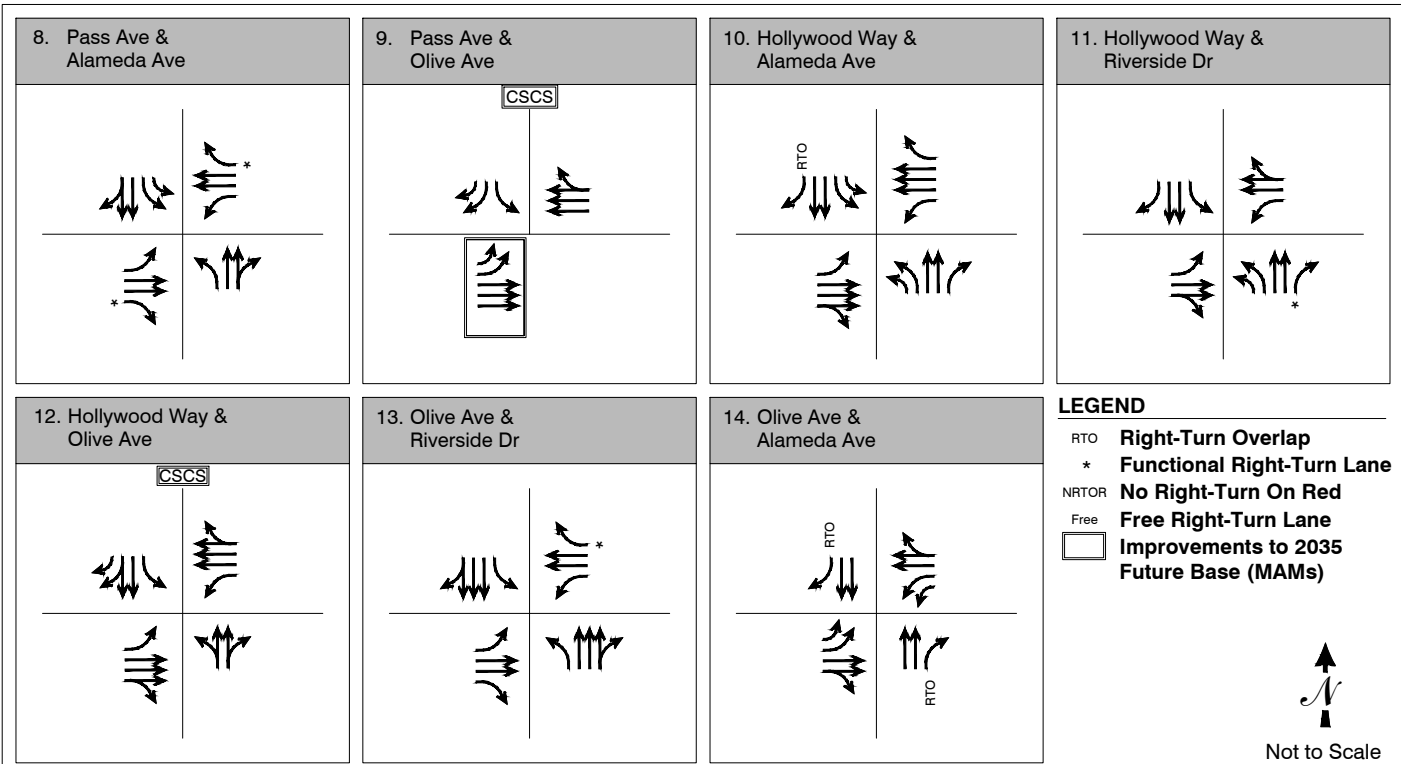




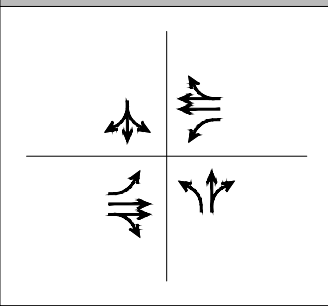


**APPENDIX C:  
2035 FUTURE IMPROVEMENTS INTERSECTION GEOMETRY  
CONFIGURATIONS**

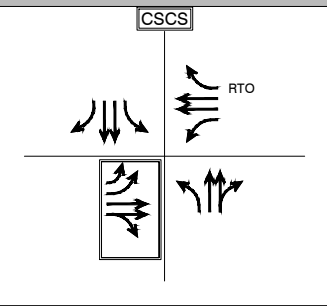




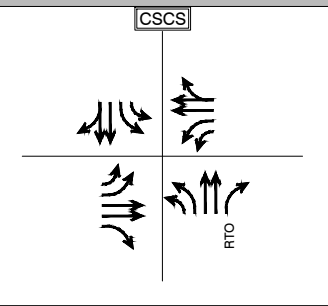
15. Buena Vista & Glenoaks Blvd



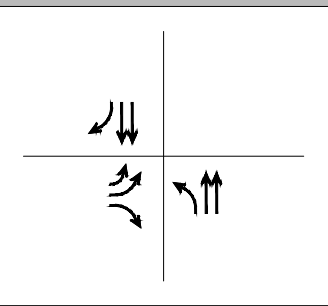
16. Buena Vista & San Fernando Blvd



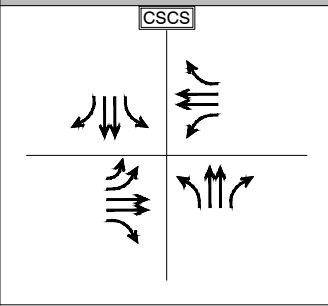
17. Buena Vista St & Empire Ave



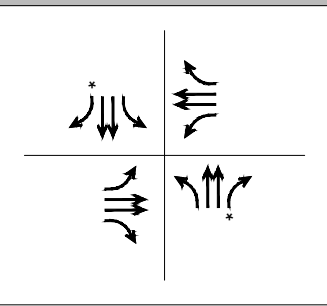
18. Buena Vista St & Vanowen St



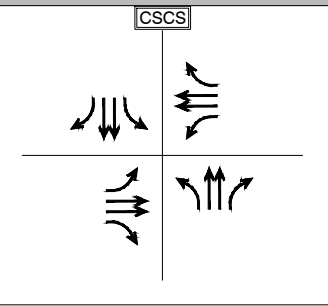
19. Buena Vista St & Victory Blvd



20. Buena Vista St & Burbank Blvd



21. Buena Vista St & Magnolia Blvd



**LEGEND**

- RTO **Right-Turn Overlap**
- \* **Functional Right-Turn Lane**
- NRTOR **No Right-Turn On Red**
- Free **Free Right-Turn Lane**
- Improvements to 2035 Future Base (MAMs)**

Not to Scale

