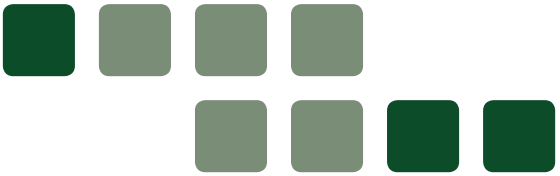
FINAL EIR APPENDIX G
TRAFFIC STUDY

Los Angeles State Historic Park
Draft Transportation Impact Analysis



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EXECUTIVE SUMMARY

This study addresses the potential transportation impacts associated with development of The Los Angeles State Historic Park (LASHP) Project, which provides infrastructure and features to enlighten and engage the public about the history and culture of Los Angeles, its region and its people. The existing Interim Public Use (IPU) park built over a portion of the site will be modified to accept and expand the development over the entire 32 acres. The project will also close the existing park driveway and remove the existing parking lot located just east of the existing park driveway. Two new park driveways will be provided along North Spring Street at Sotello Street and Mesnagers Street. The proposed project is northeast of downtown Los Angeles, immediately east of the Metro Gold Line Chinatown station. The project is generally bound by North Broadway to the North, North Spring Street to the South, Avenue 18 to the East, and W College Street to the West.

Off-site traffic impacts on intersections in the study area are analyzed under existing (2010) conditions, provided in Appendix E, and cumulative (2035) conditions, discussed in Chapter 4. The project is also evaluated relative to the Congestion Management Program (CMP) for Los Angeles County and a framework for special event traffic management is provided.

EXISTING (2010) CONDITIONS

Four intersections were analyzed for this report. All four study intersections are currently operating at acceptable levels of service (LOS D or better) during both the weekday PM and Saturday midday peak hours.

CUMULATIVE (2035) CONDITIONS

The traffic forecasting process that provides the basis for addressing operational traffic impacts associated with the LASHP Project under cumulative (2035) conditions was performed using the travel demand forecasting model developed for the Draft Cornfield Arroyo Seco Specific Plan (CASP). This was due to the inclusion of the park within the specific plan boundary and the proposed changes in the land use and transportation system provided as part of the specific plan. The travel demand model was developed from the Southern California Association of Governments (SCAG) 2008 Regional Transportation Plan (RTP) travel demand forecasting (TDF) model.

Significant Impacts

The project would not result in significant transportation impacts based on the criteria established by LADOT in *Traffic Study Policies and Procedures.*

Mitigation Measures

No mitigation measures are required because the project would not result in significant impacts based on the criteria established by LADOT in *Traffic Study Policies and Procedures.*

CONGESTION MANAGEMENT PROGRAM ANALYSIS

The LASHP Project would not result in a significant impact on any CMP mainline freeway or arterial monitoring station location.

CHAPTER 1. INTRODUCTION

This study addresses the potential transportation impacts associated with development of the Los Angeles State Historic Park (LASHP) Project. Off-site traffic impacts on intersections in the study area are analyzed under existing (2010) conditions, provided in Appendix E, and cumulative (2035) conditions, discussed in Chapter 4. The project is also evaluated relative to the Congestion Management Program (CMP) for Los Angeles County and a framework for special event traffic management is provided.

REPORT ORGANIZATION

The report consists of six chapters:

- Chapter 1 – Introduction
- Chapter 2 – Existing (2010) Conditions
- Chapter 3 – Cumulative (2035) Conditions
- Chapter 4 – Traffic Impact Analysis
- Chapter 5 – Congestion Management Program Analysis
- Chapter 6 – Traffic Management Plan Framework

STUDY AREA

The proposed project is located northeast of downtown Los Angeles, immediately east of the Metro Gold Line Chinatown station. The project study area is generally bound by North Broadway to the north, North Spring Street to the south, Avenue 18 to the east, and West College Street to the west. Figure 1 illustrates the location of the Los Angeles State Historic Park project site and the surrounding roadways. The project study area along with study intersections were approved by the City of Los Angeles Department of Transportation (LADOT) staff.

Primary regional access to the project is provided by the Pasadena Freeway (I-110), which runs north-south, the Golden State Freeway (I-5), which runs north-south, and the Santa Ana Freeway (I-101), which runs east-west. The main arterial streets serving the project area are North Broadway, North Spring Street, and North Main Street.

Study Area Roadways

The key roadways providing access to the LASHP area include these facilities:

- **Pasadena Freeway (I-110)** runs north-south west of the study area and extends from its southern terminus in San Pedro to its northern terminus in South Pasadena. The Pasadena freeway generally provides three lanes in each direction through the study area. Ramps located in the study area provide access to/from Hill Street and Bishop Road/Stadium Way.

  Golden State Freeway (I-5) runs north-south east of the study area and extends from Mexico in the south to Canada in the north. The Golden State Freeway generally provides four lanes in each direction through the study area. Ramps located in the study area provide access to/from Daly Street, North Broadway, and Pasadena Avenue.

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PROJECT SITE AND ANALYZED LOCATIONS

FIGURE 1

- **Santa Ana Freeway (I-101)** runs in a east-west direction south of the study area and extends from its' southern terminus at I-5 in East Los Angeles northwest along the California Coast. The Santa Ana Freeway generally provides three lanes in each direction through the study area. Ramps located in the study area provide access to/from Pleasant Avenue, Vignes Street, Commercial Street, Alameda Street, Grand Avenue, and Temple Street.

- **North Broadway** is classified as a Class II Major Highway that runs east-west with two lanes in each direction plus left-turn channelization at most intersections through the study area. Parking is generally allowed along most of North Broadway and the posted speed limit is 35 mph.

- **North Spring Street** is classified as a Class II Major Highway that runs east-west with two lanes in each direction through the study area. Parking is generally not allowed along most of North Spring Street and the posted speed limit is 35 mph.

- **North Main Street** is classified as a Secondary Highway that runs east-west with two lanes in each direction through the study area. Parking is generally not allowed along most of North Spring Street and the posted speed limit ranges from 30 to 35 mph.

Study Intersections

The analyzed study intersections were selected in conjunction with LADOT. Four intersections were selected for analysis; two signalized intersections were selected for operational analysis, while two unsignalized intersections were selected for signal warrant analysis. These locations are shown on Figure 1:

1. North Spring Street & West College Street (signalized)
2. North Spring Street & Sotello Street (unsignalized)
3. North Spring Street & Mesnagers Street (unsignalized)
4. North Spring Street/North Broadway & South Avenue 18 (signalized)

ANALYSIS METHODOLOGY

Level of service (LOS) is a qualitative measure describing the operating condition of intersections and roadways. LOS ranges from A through F, which represents driving conditions from best to worst, respectively. In general, LOS A represents free-flow conditions with no congestion, and LOS F represents severe congestion and delay under stop-and-go conditions.

Intersection level of service was calculated using the Critical Movement Analysis (CMA) methodology or the *Highway Capacity Manual* (HCM) (Transportation Research Board, 2000) unsignalized methodology to assess the estimated operating conditions in the weekday PM and Saturday midday peak hours. Both analysis methodologies use intersection geometries, traffic control, and traffic volumes to determine level of service.

LADOT requires that the CMA methodology of intersection capacity analysis be used to determine the intersection volume-to-capacity (V/C) ratio and corresponding level of service at signalized intersections within the City of Los Angeles. The signalized intersection analysis was performed using the City's CalcaDB intersection analysis software. This software, developed by LADOT, is used to determine the ratio of critical turning movements at the intersection to its capacity.

In accordance with LADOT analysis procedures, the V/C ratio calculated using the CMA methodology is further reduced by 0.07 for those intersections included in the Automated Traffic Surveillance and Control

(ATSAC) system and an additional 0.03 for intersections with Adaptive Traffic Control System (ATSC), to account for the improved operation and increased efficiency from the ATSAC/ATCS system that is not captured in the CMA methodology. Intersection V/C reductions were applied outside the CalcaDB intersection analysis software.

Table 1 defines the ranges of V/C ratios and their corresponding levels of service using the CMA methodology.

Unsignalized intersections were analyzed using the HCM unsignalized methodology. The LOS for side-street stop-controlled intersections was based on delay for the traffic movement with the greatest delay.

Table 2 defines the ranges of control delay and their corresponding levels of service using the HCM methodology.

TABLE 1
LEVEL OF SERVICE DEFINITIONS FOR SIGNALIZED INTERSECTIONS

Level of Service	Volume/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	>0.600 - 0.700	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat what restricted within groups of vehicles.
C	>0.700 - 0.800	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	>0.800 - 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	>0.900 - 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.

TABLE 2
LEVEL OF SERVICE DEFINITIONS FOR UNSIGNALIZED INTERSECTIONS

Level of Service	Average Vehicle Delay (seconds)
A	0 to 10
B	>10 to 15
C	>15 to 25
D	>25 to 35
E	>35 to 50
F	> 50

Source: *Highway Capacity Manual,* Transportation Research Board, 2000.

CHAPTER 2. EXISTING (2010) CONDITIONS

This chapter contains details of the comprehensive data collection effort undertaken to develop a detailed description of existing conditions in the study area. The assessment of conditions relevant to this study includes traffic control and geometry at study intersections, traffic volumes at these facilities, the public transit service and bicycle/pedestrian facilities in the study area, and operating conditions at study intersections.

DATA COLLECTION AND DATA SOURCES

Intersection Traffic Control and Geometry

Information concerning traffic control was determined during field observations. LADOT provided information on whether the signalized study intersections were under the control of ATSAC/ATCS. The ATSAC system provides for monitoring of intersection traffic conditions and the flexibility to adjust traffic signal timing in response to current conditions. The ATCS system continuously detects vehicular traffic volumes and computes "optimal" signal timings based on the detected volumes that can be implemented in the field. The following intersections are included in the ATSAC and ATCS systems:

2. North Spring Street & West College Street (ATCS assumed only under 2035 conditions)

4. North Spring Street/North Broadway & South Avenue 18

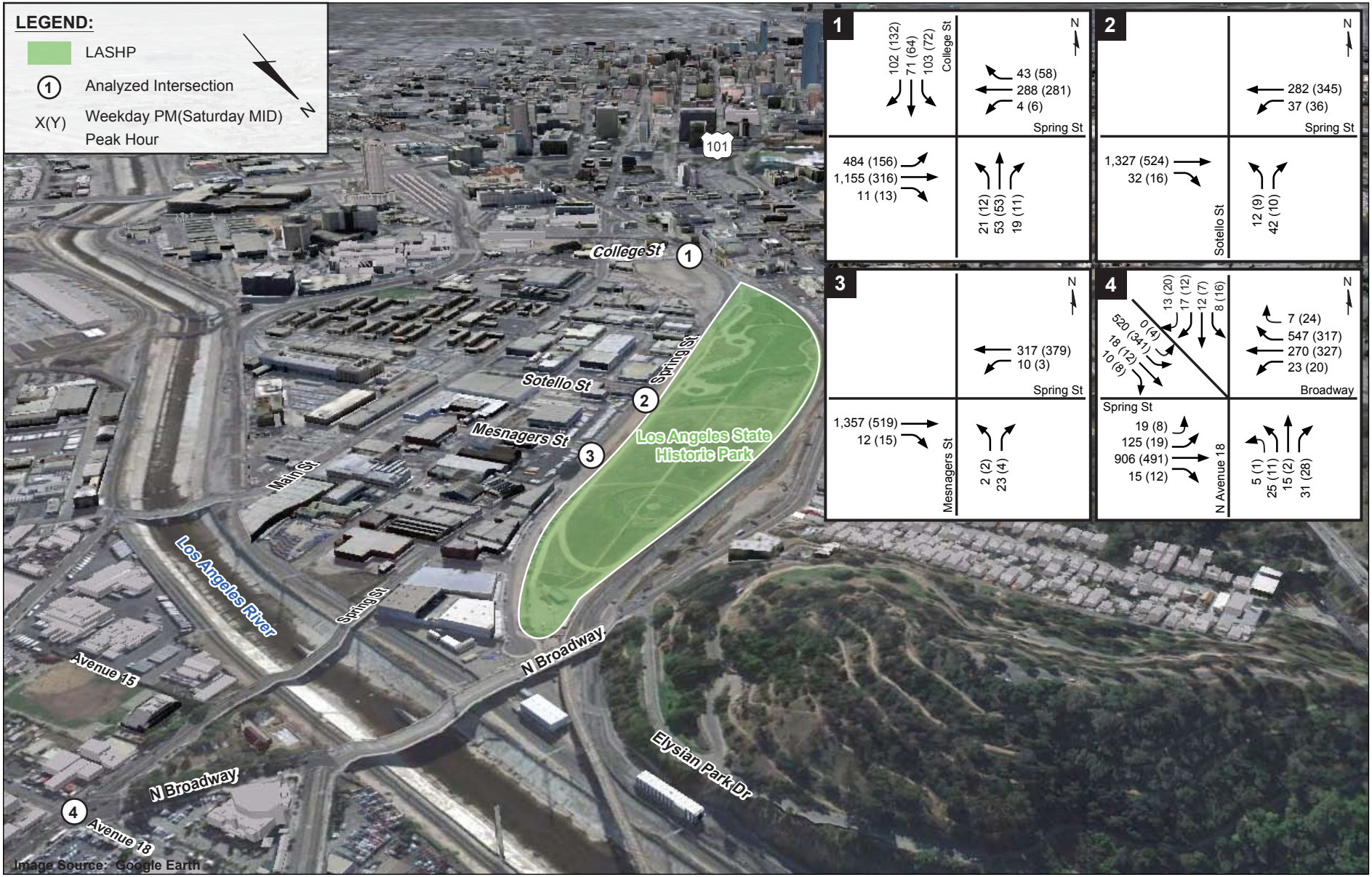
In addition to the information regarding intersection traffic control, detailed information was collected concerning the lane configurations on all approaches to the study intersections and can be found in Appendix A. Signal phasing information was also collected to determine the presence of protected, permitted, split, and right-turn overlap phasing.

Traffic Count Data

Traffic counts were collected at the study intersections listed in Chapter 1. The study intersections were counted during the weekday PM (4:00 to 6:00 PM) and Saturday midday (11:00 AM to 4:00 PM) peak periods and the peak hour traffic volumes were determined at each study intersection and used as the basis for the existing traffic operations analysis. Typically the weekday AM and PM peak periods are selected for the traffic operations analysis. However, limited vehicle activity was observed at the project site during weekday AM peak period field visits. A Saturday midday peak period analysis was supplemented for the weekday AM peak period analysis due to higher vehicle activity levels observed at the project site.

Traffic counts were collected in September 2010 at the four study intersections. Traffic count data sheets are provided in Appendix B, and the existing traffic volumes are illustrated on Figure 2.

Traffic counts were also collected at the existing park driveway, which will be closed as part of the proposed project, to determine existing park trip generation rates. During field observations at the existing park, it was determined that park patrons also utilized the on-street parking along North Spring Street and the parking lot outside the existing project driveway. Therefore, a parking survey was conducted on the parking lot just east of the existing park driveway and along North Spring Street. Particular attention was paid to whether vehicles parking either in the lot or along North Spring Street utilized the park since it was observed that the parking facilities were also used for other uses in the area.



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EXISTING (2010)
PEAK HOUR TRAFFIC VOLUMES

FIGURE 2

Existing Public Transit Service

The project study area is currently being served by eight different transit lines. These transit lines are listed below and consist of Los Angeles County Transportation Authority (Metro) lines and Santa Clarita Transit lines. Given the proximity of the projects to existing transit lines, it is likely patrons will use transit service to access the project. However, no park patron was observed using the transit system during the collection of traffic count data.

Metro

- Metro Gold Line (Light Rail)
- Metro Local and Limited Lines: 45, 76, 83, and 84 (Bus)
- Metro DASH Line B (Bus)
- Metro DASH Lincoln Heights/Chinatown Line (Bus)

San Clarita Transit

- Santa Clarita Transit Line 799 (Bus)

Existing Bicycle and Pedestrian Facilities

Bicycle and pedestrian facilities exist near the project throughout the study area. Crosswalks are generally provided at signalized intersections, and sidewalks exist along the frontage of most developed properties. However, Class II (on-street with signing and striping) bike lanes are generally not provided through the study area, and bicyclists must "share the road" with vehicles.

EXISTING (2010) TRAFFIC CONDITIONS

Traffic operations were analyzed at each study intersection using the procedures described in Chapter 1. Table 3 summarizes the weekday PM and Saturday midday peak hour V/C or delay and corresponding LOS at each of the study intersections. Refer to Appendix B for technical calculations (including traffic control, signal phasing, and lane geometries).

As shown in Table 3, the four study intersections currently operate at acceptable levels of service (LOS D or better) during both the weekday PM and Saturday midday peak hours.

TABLE 3
INTERSECTION TRAFFIC OPERATIONS
EXISTING (2010) CONDITIONS

Intersections	Control	Peak Hour	Existing	
			V/C	LOS
1. North Spring Street & W College Street	Signalized	Weekday PM Saturday MD	0.443 0.205	A A
2. North Spring Street & Sotello Street [b]	Side-Street Stop	Weekday PM Saturday MD	24 13	C B
3. North Spring Street & Mesnagers Street [b]	Side-Street Stop	Weekday PM Saturday MD	17 12	C B
4. North Spring Street/North Broadway Street & S Avenue 18	Signalized	Weekday PM Saturday MD	0.372 0.124	A A

Note:
[a] Based on counts conducted September 2010.
[b] For side-street stop controlled intersections, delay in seconds for the worst movement is reported.

CHAPTER 3. CUMULATIVE (2035) CONDITIONS

This chapter analyses cumulative (2035) transportation conditions in the study area without and with the proposed project. In order to evaluate the potential impacts of the proposed project on the local street system, it was necessary to develop estimates of future conditions both without and with the proposed project. The cumulative (2035) no project traffic scenario represents future traffic conditions without the addition of the proposed project. The cumulative (2035) plus project scenario represents future traffic conditions with the development of the proposed project.

PROJECT DESCRIPTION

The LASHP project represents significant open space within the City of Los Angeles - Cornfield Arroyo Seco Area Specific Plan which is classified as a community redevelopment area (CRA). It will provide infrastructure and features to enlighten and engage the public about the history and culture of Los Angeles, its region and its people – a theme that is not adequately covered in other units of the State Park System. The project scope includes a multi-use plaza, flexible outdoor spaces to accommodate a variety and size of public events, a "great lawn" featuring an amphitheater/stage space for special events/performances for up to 25,000 people and for unstructured activities, interpretive paths and portals for engaging historic themes and content using traditional and new technologies, permanent restrooms, operations yard with access road, a "Welcome Station" structure, an interpretive and administration center, pedestrian and vehicle circulation systems, an interactive fountain/water feature(s), a children's play area and cultural gardens. The existing Interim Public Use (IPU) park built over a portion of the site will be modified to accept and expand the development over the entire 32 acres. The project will also close the existing park driveway and remove the existing parking lot located just east of the existing park driveway. Two new park driveways will be provided along North Spring Street at Sotello Street and Mesnagers Street.

CUMULATIVE (2035) TRAFFIC PROJECTIONS

The traffic forecasting process that provides the basis for addressing operational traffic impacts associated with the LASHP Project under cumulative (2035) conditions was performed using the travel demand forecasting model developed for the Draft Cornfield Arroyo Seco Specific Plan (CASP) Transportation Impact Analysis. This was due to the inclusion of the park within the specific plan boundary and the proposed changes in the land use and transportation system provided as part of the specific plan. The travel demand model was developed from the Southern California Association of Governments (SCAG) 2008 Regional Transportation Plan (RTP) travel demand forecasting (TDF) model. The SCAG 2008 RTP model focuses on estimating regional travel for the entire southern California region. Since the CASP is a local, rather than a regional, planning document, it was necessary to supplement the SCAG 2008 RTP model with a more detailed sub-area model.

The Draft CASP 2035 traffic forecasts were developed by modifying the SCAG 2008 RTP model roadway network to match the roadway network of the CASP Preferred Alternative. Land use in the project study area was also modified based on the Preferred Alternative land use plan. Vehicle trips generated by the Preferred Alternative were distributed and assigned to the regional roadway network by the model. This method was chosen over manually assigning trips to the model roadway network due to the size of the CASP project study area as well as to account for the redistribution that would likely occur from the project's proximity to downtown Los Angeles and other neighboring communities.

Since the Draft CASP 2035 traffic forecasts were based on the SCAG 2008 RTP model, they account for the forecasted growth in population, employment, households, and housing units in the SCAG region by 2035, as forecasted by the SCAG 2008 "Integrated Growth Forecasting" process. This process provided the basis for developing the land use assumptions at the regional as well as small area levels of the

model. Additionally, the model was checked to ensure infrastructure projects such as high-occupancy vehicle lanes on I-5 and the North Spring Street Bridge Widening project were included as well as development projects such as the Ritz Carlton/Marriott Convention Center Hotel, New Genesis Apartments, and China Town Gateway, which were not completed when traffic counts were collected in September 2010.

The projected traffic volumes representing cumulative (2035) no project conditions are shown on Figure 3.

TRANSPORTATION SYSTEM IMPROVEMENTS

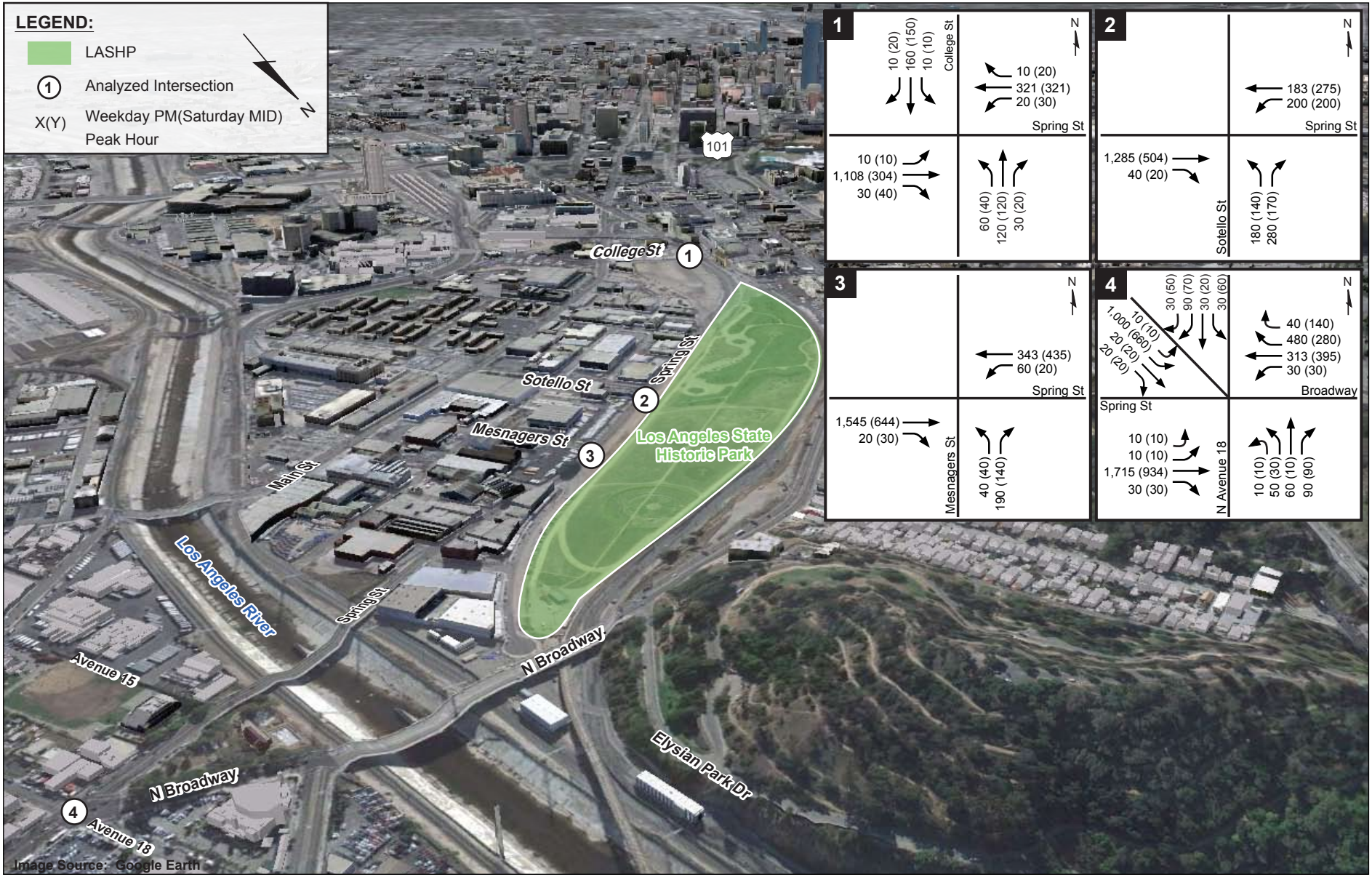
Physical street system improvements included as part of the Draft CASP were included in the analysis of cumulative (2035) conditions. Physical street system improvements in the vicinity of the study area include the reduction in travel lanes along Pasadena Avenue between N Broadway and Avenue 26 from two to one lane in each direction, the reduction in travel lanes along Avenue 26 between Lacy Street and Spring Street from two to one lane in each direction, and the reclassification of Spring Street between College Street and N Broadway from a modified secondary to a modified collector.

PROJECT TRAFFIC VOLUMES

Projection of project traffic volumes involved a three-step process including trip generation, trip distribution, and trip assignment.

Project Trip Generation

Vehicle trip generation rates for the proposed park expansion were derived from traffic counts collected at the existing park driveway and a parking survey conducted at the parking lot located just east of the existing project driveway and on-street parking along North Spring Street. The observed park trip generation rates were then compared against data from the Institute of Transportation Engineers (ITE) and the San Diego Association of Governments (SANDAG). The observed vehicle trip generation rates exceeded ITE's PM peak hour regional park rate of 1.1 and Saturday midday peak hour rate of 1.68, as well as SANDAG's PM peak hour regional developed park rate of 1.8. The observed trip generation rates and resulting trip generation estimates for the LASHP project are summarized in Table 4.



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CUMULATIVE (2035) NO PROJECT PEAK HOUR TRAFFIC VOLUMES

FIGURE 3

TABLE 4
TRIP GENERATION RATES AND ESTIMATES - LASHP PROJECT

TRIP GENERATION RATES [a]							
Land Use	**Rate**	**Weekday PM Peak Hour**			**Weekend MD Peak Hour**		
		In %	**Out %**	**Total**	**In %**	**Out %**	**Total**
Los Angeles State Historic Park	per Acre	74%	26%	3.81	43%	57%	1.88
TRIP GENERATION ESTIMATES							
Land Use	**Rate**	**Weekday PM Peak Hour**			**Weekend MD Peak Hour**		
		In	**Out**	**Total**	**In**	**Out**	**Total**
Existing Park							
Los Angeles State Historic Park	16 Acres	45	16	61	13	17	30
Total Existing Park Trips		45	16	61	13	17	30
Proposed Project							
Los Angeles State Historic Park	32 Acres	90	32	122	26	34	60
Total Proposed Project Trips		90	32	122	26	34	60
Net New Project Trips		**45**	**16**	**61**	**13**	**17**	**30**

[a] Trip Generation rates derived from a driveway count and parking survey performed September 2010. The trip generation rates do not assume alternative modes of transportation (e.g., biking, transit, etc.).

As shown in Table 4, the proposed project is expected to generate approximately 61 net new trips during the weekday PM peak hour and 30 net new trips during the Saturday midday peak hour. These trips formed the basis of the traffic impact analysis. Based on data from SANDAG the IPU generates approximately 20 daily trips per acre and the proposed project is expected to generate approximately 640 daily trips (320 net new daily project trips).

Project Trip Distribution

The geographic distribution of traffic generated by the proposed project depends on several factors, including the nature of the proposed land uses, the location of site access points in relation to the surrounding street system, the geographic distribution of existing and future population centers, existing travel patterns and topographic constraints.

The estimated distribution of trips generated by the proposed project was developed with the aid of traffic counts performed at the park driveway and the parking survey conducted at the parking lot located just east of the existing park driveway and on the on-street parking along North Spring Street. Following approval from City staff, the trip distribution pattern illustrated in Figure 4 and described below was used in this analysis:

- 10% to/from the north
- 45% to/from the east
- 45% to/from the west

Project Trip Assignment

The trip generation estimates summarized in Table 4 and the trip distribution pattern illustrated on Figure 4 were used to assign the project-related traffic to the local and regional roadway system. Existing traffic, which currently uses the existing park driveway and adjacent parking lot, both of which will be closed as part of the proposed project, was rerouted to the two new project driveways proposed by the project under cumulative (2035) plus project conditions.

CUMULATIVE (2035) PLUS PROJECT TRAFFIC PROJECTIONS

The proposed project traffic volumes were then added to the cumulative (2035) no project traffic projections to develop the cumulative (2035) plus project traffic projections. Figure 5 illustrates the resulting projected cumulative (2035) plus project traffic volumes for a typical weekday PM and Saturday midday peak hour, representing future traffic conditions following completion of the proposed project.

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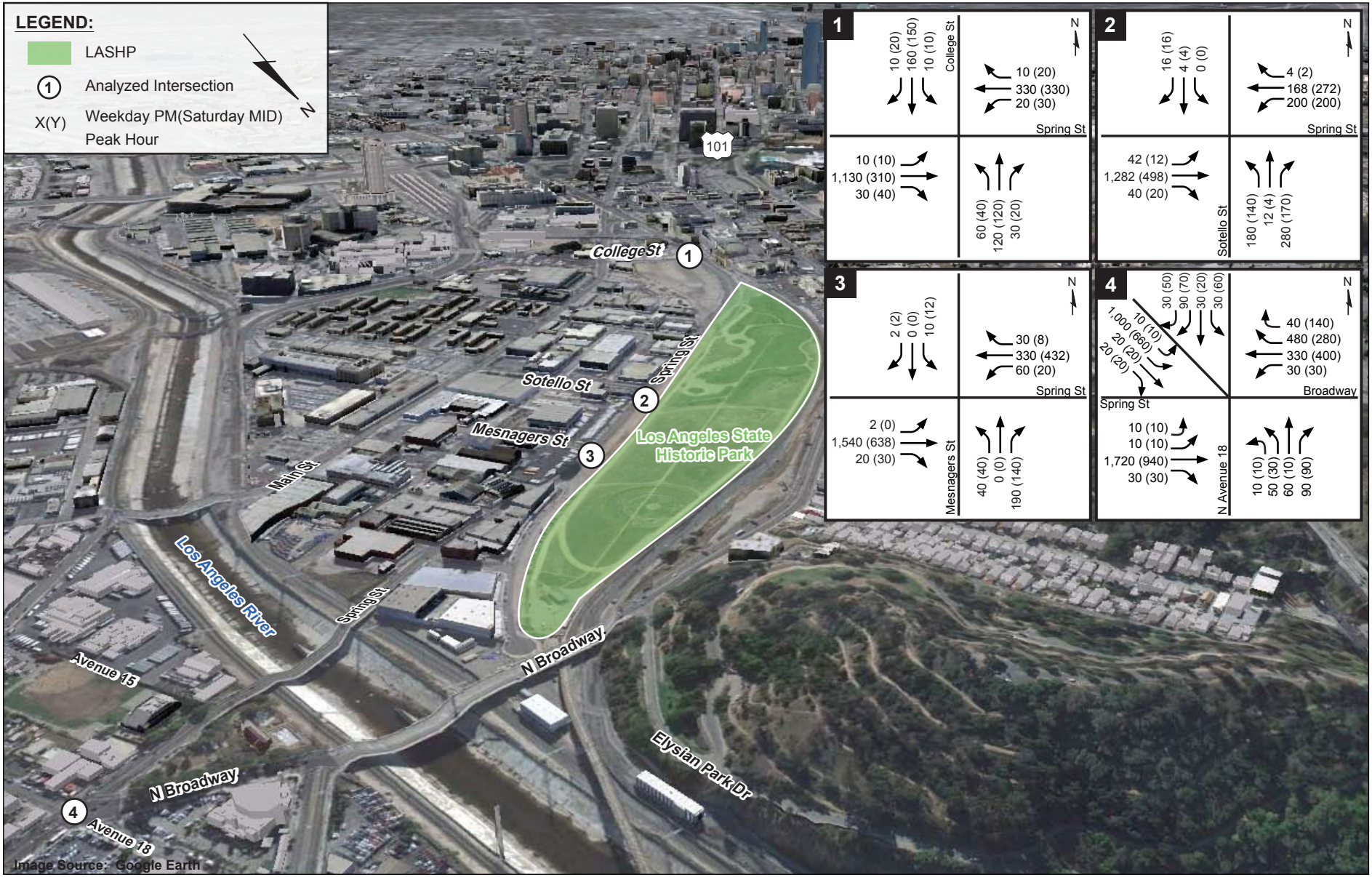
PROJECT TRIP DISTRIBUTION

FIGURE 4



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CUMULATIVE (2035) PLUS PROJECT PEAK HOUR TRAFFIC VOLUMES

FIGURE 5

CHAPTER 4. TRAFFIC IMPACT ANALYSIS

This section presents an analysis of the projected future volumes to determine the potential impacts of the proposed project on the operating conditions of the surrounding street system.

SIGNIFICANT IMPACT CRITERIA

The transportation analysis used the following thresholds to determine the significance of project impacts:

Signalized Intersections

In accordance with LADOT criteria defined in their *Traffic Study Policy and Procedures*, an impact is considered significant if one of the thresholds, shown below in Table 5, is exceeded.

TABLE 5
CITY OF LOS ANGELES
SIGNIFICANT TRANSPORTATION IMPACT CRITERIA

Level of Service	Final V/C Ratio	Project-Related Increase in V/C
C	> 0.701 - 0.800	equal to or greater than 0.040
D	> 0.801 - 0.900	equal to or greater than 0.020
E	> 0.901 - 1.000	equal to or greater than 0.010
F	Greater than 1.000	equal to or greater than 0.010

Unsignalized Intersections

LADOT does not require the analysis of unsignalized intersections and no impact criteria is defined for unsignalized intersections in *Traffic Study Policy and Procedures*.

Transit System

An impact is considered significant if implementation of the project will disrupt or interfere with existing or planned transit operations or transit facilities.

Bicycle/Pedestrian System

An impact is considered significant if implementation of the projects will disrupt or interfere with existing or planned bicycle or pedestrian facilities.

CUMULATIVE (2035) NO PROJECT OPERATING CONDITIONS

The cumulative (2035) no project traffic volumes shown on Figure 3 were analyzed using the LOS methodologies described in Chapter 2 to evaluate future levels of service at the study intersections for the weekday PM and Saturday midday peak hours. This analysis assumed regional traffic growth as estimated by the SCAG regional travel demand model consistent with land use and transportation system changes associated with the Draft CASP. The results of the intersection analysis are summarized in Table 6. Detailed LOS calculation worksheets are presented in Appendix C.

The two signalized study intersections are projected to operate at LOS C or better during both weekday PM and Saturday midday peak hours under cumulative (2035) no project conditions. The two unsignalized intersections are projected to operate at LOS C or worse during one of both peak hours:

2. North Spring Street & Sotello Street (LOS F weekday PM and Saturday midday)
3. North Spring Street & Mesnagers Street (LOS F weekday PM)

CUMULATIVE (2035) PLUS PROJECT OPERATING CONDITIONS

The cumulative (2035) plus project traffic volumes shown on Figure 5 were analyzed using the LOS methodologies described in Chapter 2 to evaluate future levels of service at the study intersections for the weekday PM and Saturday midday peak hours. This analysis assumed the addition of estimated project trips on cumulative (2035) no project conditions. The results of the intersection analysis are summarized in Table 6. Detailed LOS calculation worksheets are presented in Appendix C.

The two signalized study intersections are projected to operate at LOS C or better during both weekday PM and Saturday midday peak hours under cumulative (2035) plus project conditions. The two unsignalized intersections are projected to operate at LOS C or worse during one of both peak hours:

2. North Spring Street & Sotello Street (LOS F weekday PM and Saturday midday)
3. North Spring Street & Mesnagers Street (LOS F weekday PM)

As stated by LADOT in *Traffic Study Policies and Procedures,* analysis at unsignalized intersections is not required; therefore, no significant impact criteria is defined. Thus, the project would not result in any significant impacts. Nonetheless, per LADOT requirements, a signal warrant analysis was performed.

A signal warrant analysis was performed at both unsignalized intersections for the weekday PM peak hour and both satisfied the peak hour signal warrant. Please note the installation of a traffic signal is subject to review and approval by LADOT. This analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on field-measured, rather than forecast, traffic data and a thorough study of traffic and roadway conditions by an experienced engineer. Furthermore, the decision to install a signal should not be based solely upon the warrants, since the installation of signals can lead to certain types of collisions. The responsible state or local agency should undertake regular monitoring of actual traffic conditions and accident data, and timely re-evaluation of the full set of warrants in order to prioritize and program intersections for signalization. The warrant analysis worksheets can be found in Appendix D.

MITIGATION MEASURES

No mitigation measures are required because the project would not result in significant impacts based on the criteria established by LADOT in *Traffic Study Policies and Procedures.*

TABLE 6
INTERSECTION TRAFFIC OPERATIONS
FUTURE (2035) CONDITIONS

Intersections	Control	Peak Hour	Existing (2010)		Cumulative Base (2035)		Cumulative (2035) Plus Project			
			V/C	LOS	V/C	LOS	V/C	LOS	Change	Impact?
1. North Spring Street & W College Street	Signalized	Weekday PM Saturday MD	0.443 0.205	A A	0.429 0.148	A A	0.437 0.150	A A	0.008 0.002	NO NO
2. North Spring Street & Sotello Street [b]	Side-Street Stop	Weekday PM Saturday MD	24 13	C B	>200 81	F F	>200 177	F F	-- 96	NO NO
3. North Spring Street & Mesnagers Street [b]	Side-Street Stop	Weekday PM Saturday MD	17 12	C B	188 16	F C	>200 21	F C	-- 5	NO NO
4. North Spring Street/North Broadway Street & S Avenue 18	Signalized	Weekday PM Saturday MD	0.372 0.124	A A	0.789 0.438	C A	0.790 0.439	C A	0.001 0.001	NO NO

Note:
[a] Based on counts conducted September 2010.
[b] For side-street stop controlled intersections, delay in seconds for the worst movement is reported.

CHAPTER 5. CONGESTION MANAGEMENT PROGRAM ANALYSIS

Analyses were conducted to comply with the Los Angeles County CMP requirements. This analysis was conducted in accordance with the procedures outlined in *2004 Congestion Management Program for Los Angeles County*. The CMP requires that when a traffic impact analysis is prepared for a project, traffic impacts analysis be conducted for select regional facilities based on the quantity of project traffic expected to use those facilities.

CMP THRESHOLD OF SIGNIFICANCE

The guidelines set forth in the CMP indicate that if a proposed project would add 150 or more trips in either direction during either the morning or evening peak hour to the mainline freeway monitoring location, then a CMP freeway analysis must be conducted. If a proposed project would add 50 or more peak hour trips in either the AM or PM peak hour (of adjacent street traffic) to a CMP arterial intersection, then a CMP arterial intersection analysis must be conducted.

For the purpose of a CMP traffic impact analysis, a project impact is considered to be significant if the proposed project increases traffic demand, as determined by comparing cumulative plus project (2035) to cumulative base (2035), on a CMP facility by 2% of capacity (V/C ≥ 0.02), causing or worsening LOS F (V/C ≥ 1.00). Under these criteria, a project would not be considered to have a regionally significant impact if the analyzed facility is operating at LOS E or better after the addition of project traffic regardless of the increase in V/C ratio caused by the project. If the facility is operating at LOS F with project traffic, and the incremental change in the V/C ratio caused by the project is 0.02 or greater, the project would be considered to have a significant impact.

CMP ANALYSIS

Five freeway mainline locations and no arterial monitoring locations were identified within the sphere of influence of the project. These mainline locations are located on three major freeways, namely I-5, I-10, and I-110. The following five mainline locations are identified as CMP freeway monitoring stations in *2004 Congestion Management Program for Los Angeles County:*

- Route 5, at postmile 21.80, at Stadium Way
- Route 10, at postmile 19.67, at East LA City Limit
- Route 110, at postmile 23.50, south of Route 101
- Route 110, at postmile 23.96, at Alpine Street
- Route 110, at postmile 26.50, at Pasadena Avenue

A regional analysis was not required because the project would add fewer than 150 trips in each direction during both analyzed peak hours to all mainline freeway monitoring locations. Therefore, the LASHP would not result in a significant impact on any CMP mainline freeway.

CHAPTER 6. TRAFFIC MANAGEMENT PLAN

The LASHP intends to hold a small number of special events during each year. These may include events such as an outdoor concert that has the potential to attract visitors in the thousands. This chapter presents a framework to be used to develop a traffic management plan for such events.

The occasional increase in congestion that may result from a special event at the LASHP may require the implementation of improved traffic management. Los Angeles Police Department (LAPD) personnel and traffic control officers may be required, in the future, to provide sufficient level of traffic management needed by such an event. In addition, collaboration with LADOT, California Department of Transportation (Caltrans), and the California Highway Patrol may also be required.

The traffic management plan would consist of numerous strategies designed to help manage traffic and minimize the effect in areas surrounding the LASHP. The roadways that provide access to the LASHP on which most of the traffic congestion would likely occur are listed below:

- North Spring Street/North Alameda Street
- North Main Street
- North Broadway
- West College Street
- East Cesar E. Chavez Avenue
- Mission Road
- Daly Street/Avenue 26

During one of the special events, the majority of these streets may be very heavily congested. A series of strategies can be put into effect to counteract the increased congestion. LAPD Officers and LADOT Traffic Officers may need to be on hand to help implement a traffic management plan. The following steps describe the framework of procedures for such a plan:

- To facilitate movement of vehicles, LAPD and LADOT staff must have the authority to implement turn restrictions, parking prohibitions, lane closures, barriers/cones, and flexible signage. A temporary command post can also be made available on site to control and monitor traffic conditions. The area may be split up into zones, with an engineer assigned to each zone. These engineers would have the authority to react to situations and change restrictions if necessary.

- Real time radio alerts and broadcasts via Highway Advisory Radio (HAR) may be used. These are portable units and could be located wherever LADOT deems appropriate. These units are particularly useful for incident management and special events such as outdoor concerts. The units also require very little set-up by trained officers. They can be programmed remotely via cellular phones, and traditionally have a range of three to five miles on an AM frequency. LASHP or event employees could be trained and authorized to staff the HAR.

- In conjunction with the aforementioned measures, Changeable Message Signs (CMS) can be used to direct vehicles from the freeways and surface streets to the designated parking lots. The signs/messages could consist of advance warning for motorists telling them where they can and cannot park/turn.

- As part of special events signage, the CMS could be augmented with the addition of designated routes that direct traffic along travel paths that are not immediately obvious. These routes could be designed and linked by colored arrows that direct drivers to specific locations. Temporary signage would indicate these routes. The routes could provide alternate locations such as the lesser-utilized parking lots and any designated overspill parking facilities.

- Coordination with Dodger Stadium, Staples Center, the Los Angeles Convention Center, and other organizations to ensure that large, publicly attended events are not overlapping, thus minimizing possible traffic conflicts and congestion.

- There is also a need to encourage the use of carpools, transit, and bicycles for special events. These measures can be incentivized either by reducing the cost of parking for carpools or by special ticket pricing. This can have the effect of reducing overall vehicle trips.

- Encourage the use of alternate parking sites.

- The California Department of Parks and Recreation shall be responsible for creating a traffic management plan for special events, and for approving any and all modifications to the plan by the individual event organizer.

- The traffic management plan shall be approved by LAPD, LADOT, Caltrans, and the CHP.

- All special event permit fees shall be required to implement the traffic management plan.

- CDPR staff shall ensure that the traffic management plan is implemented and enforced during the special events.

These are a series of strategies that can form the framework of a Traffic Management Plan. These measures must be used together to combat the traffic generated by the special events at the LASHP. They are designed to work together to have a maximum effect on reducing the effects of a planned event. Specifics relating to select strategies that seem most appropriate for events that would likely occur at the LASHP are described in detail below.

POTENTIAL OFF SITE PARKING LOCATIONS & ROUTES

Due to the limited on-site parking at the LASHP, off-site parking should be explored in order to accommodate the demand during these special events. Three candidate off-site parking locations are identified for accommodating the demand associated with a special event:

- Dodger Stadium

- Union Station/Metro Building

- Staples Center/LA Convention Center

Due to the proximity and ease of access to the LASHP, Dodger Stadium is the recommended off-site parking location. Dodger Stadium has over 16,000 parking spaces, supplying more than the necessary amount required for a special event at the LASHP.

If the LASHP were to reach an agreement with the Dodgers, a shuttle service to the park would be required. The shuttle would have to travel just over 1 mile from the stadium to reach the LASHP.

CARPOOLING INCENTIVES

Providing incentives for carpooling would likely reduce the number of vehicles in and around the LASHP during a special event. However, due to the difficulty in enforcing carpooling policies and the lack of city owned parking in the vicinity of the park that could offer free or reduced parking costs for carpool vehicles, carpooling should instead be encouraged through the public information program associated with the event.

REFERENCES

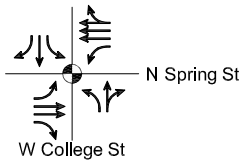
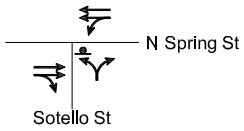
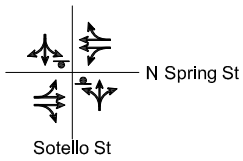
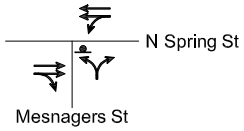
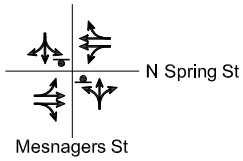
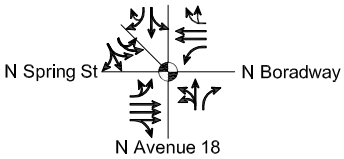
2004 Congestion Management Program for Los Angeles, Los Angeles County Transportation Authority, July 2004.

Highway Capacity Manual, Transportation Research Board, 2000.

Traffic Study Policies and Procedures, Los Angeles Department of Transportation, August 2003.

Los Angeles City Planning Department. Draft Cornfield Arroyo Seco Specific Plan. November 1, 2010.

APPENDIX A:
LANE CONFIGURATIONS

	EXISTING (2010) CONDITIONS	CUMULATIVE BASE (2035) CONDITIONS	CUMULATIVE (2035) PLUS PROJECT CONDITIONS
1. N Spring Street & W College Street		Same As Existing Conditions	Same As Existing Conditions
2. N Spring Street & Sotello Street		Same As Existing Conditions	
3. N Spring Street & Mesnagers Street		Same As Existing Conditions	
4. N Spring Street/ N Broadway Avenue & S Avenue 18		Same As Existing Conditions	Same As Existing Conditions

Legend

- Signalized
- Stop Control

FEHR & PEERS
TRANSPORTATION CONSULTANTS

Oct 29, 2010
N:\Jobs\Active\2400s\2415 – LA State Historic Park TIA\Graphics\ACAD\2415_Lane_Configs.dwg

LANE CONFIGURATIONS

APPENDIX A

APPENDIX B:
TRAFFIC COUNT SHEETS

WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

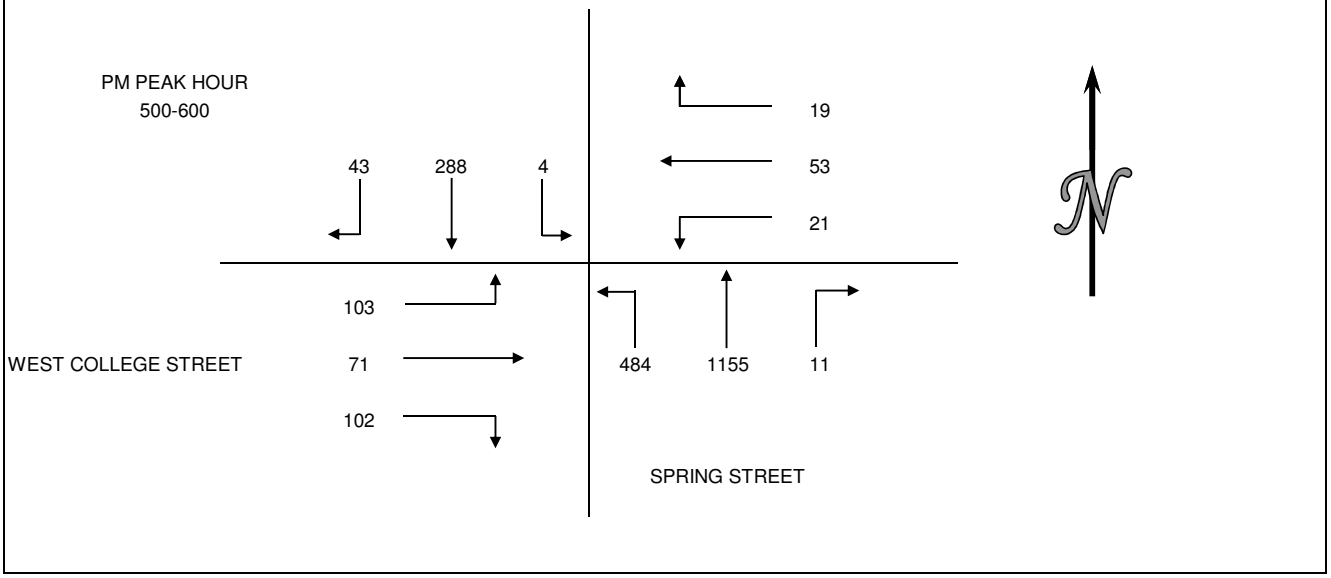
CLIENT: FEHR AND PEERS
PROJECT: CHINATOWN TRAFFIC COUNTS
DATE: TUESDAY, SEPTEMBER 21, 2010
PERIOD: 4:00 PM TO 6:00 PM
INTERSECTION: N/S SPRING STREET
E/W WEST COLLEGE STREET

15 MIN COUNTS

PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-415	16	86	1	2	16	6	6	208	83	30	22	19	495
415-430	5	78	1	2	5	9	4	204	82	36	18	19	463
430-445	9	70	1	6	17	5	2	233	112	31	31	18	535
445-500	13	54	0	1	12	7	2	275	94	37	26	23	544
500-515	13	73	4	7	10	2	6	247	116	30	14	17	539
515-530	10	67	0	4	15	6	3	266	97	23	16	29	536
530-545	10	90	0	4	9	5	2	313	158	19	21	30	661
545-600	10	58	0	4	19	8	0	329	113	30	20	27	618

HOUR TOTALS

PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-500	43	288	3	11	50	27	14	920	371	134	97	79	2037
415-515	40	275	6	16	44	23	14	959	404	134	89	77	2081
430-530	45	264	5	18	54	20	13	1021	419	121	87	87	2154
445-545	46	284	4	16	46	20	13	1101	465	109	77	99	2280
500-600	43	288	4	19	53	21	11	1155	484	102	71	103	2354



WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

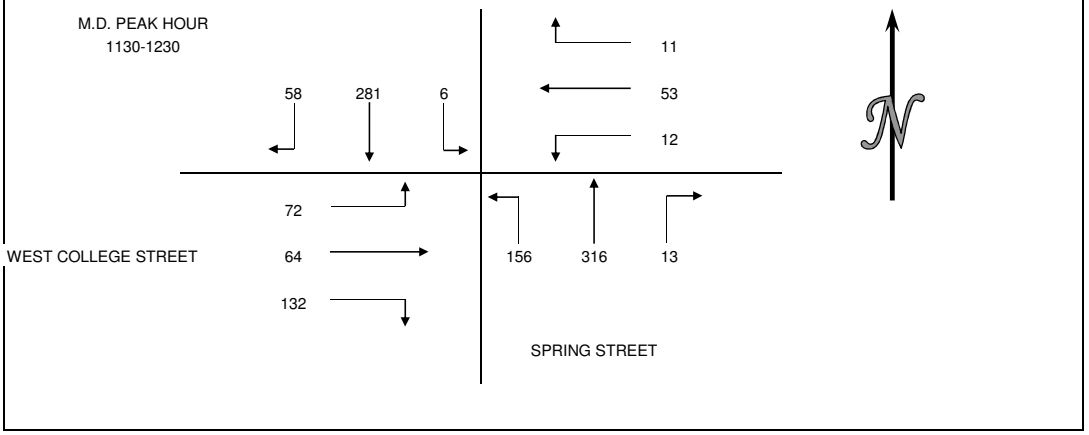
CLIENT: FEHR AND PEERS
PROJECT: CHINATOWN TRAFFIC COUNTS
DATE: SATURDAY, SEPTEMBER 25, 2010
PERIOD: 11:00 AM TO 4:00 PM
INTERSECTION: N/S SPRING STREET
E/W WEST COLLEGE STREET

15 MIN COUNTS

PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
1100-1115	15	60	0	1	11	5	4	55	22	31	22	14	240
1115-1130	19	52	1	4	8	7	3	79	32	28	23	19	275
1130-1145	14	75	3	7	20	2	2	69	39	33	13	15	292
1145-1200	10	95	2	0	10	4	6	76	40	26	22	26	317
1200-1215	20	38	0	0	9	3	3	85	40	40	14	18	270
1215-1230	14	73	1	4	14	3	2	86	37	33	15	13	295
1230-1245	6	49	2	1	7	4	3	91	29	16	19	18	245
1245-100	8	51	1	1	9	6	6	97	24	21	19	14	257
100-115	9	86	0	3	9	4	4	90	38	24	14	22	303
115-130	8	67	2	1	7	5	1	98	30	28	13	17	277
130-145	17	50	1	1	10	3	2	91	35	30	17	19	276
145-200	15	78	2	1	7	3	4	109	34	27	10	12	302
200-215	15	50	1	6	7	4	0	101	28	23	11	12	258
215-230	11	46	2	2	9	3	5	91	35	37	12	16	269
230-245	15	59	2	1	10	2	1	102	35	44	16	23	310
245-300	6	42	1	0	7	4	0	104	35	24	15	23	261
300-315	11	39	1	1	7	2	3	106	29	31	11	19	260
315-330	12	43	0	1	6	4	3	100	36	29	12	20	266
330-345	11	54	1	2	12	3	3	96	32	25	6	14	259
345-400	8	41	4	3	3	3	5	107	38	26	10	9	257

HOUR TOTALS

TIME	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
1100-1200	58	282	6	12	49	18	15	279	133	118	80	74	1124
1115-1215	63	260	6	11	47	16	14	309	151	127	72	78	1154
1130-1230	58	281	6	11	53	12	13	316	156	132	64	72	1174
1145-1245	50	255	5	5	40	14	14	338	146	115	70	75	1127
1200-100	48	211	4	6	39	16	14	359	130	110	67	63	1067
1215-115	37	259	4	9	39	17	15	364	128	94	67	67	1100
1230-130	31	253	5	6	32	19	14	376	121	89	65	71	1082
1245-145	42	254	4	6	35	18	13	376	127	103	63	72	1113
100-200	49	281	5	6	33	15	11	388	137	109	54	70	1158
115-215	55	245	6	9	31	15	7	399	127	108	51	60	1113
130-230	58	224	6	10	33	13	11	392	132	117	50	59	1105
145-245	56	233	7	10	33	12	10	403	132	131	49	63	1139
200-300	47	197	6	9	33	13	6	398	133	128	54	74	1098
215-315	43	186	6	4	33	11	9	403	134	136	54	81	1100
230-330	44	183	4	3	30	12	7	412	135	128	54	85	1097
245-345	40	178	3	4	32	13	9	406	132	109	44	76	1046
300-400	42	177	6	7	28	12	14	409	135	111	39	62	1042



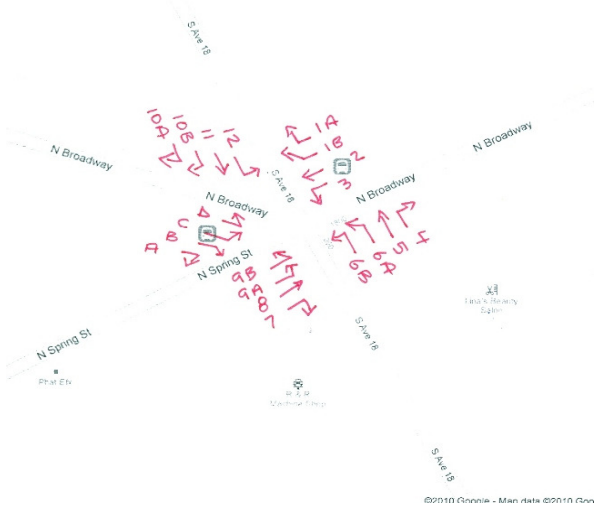
WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

5-LEG INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: FEHR AND PEERS
PROJECT: CHINATOWN TRAFFIC COUNTS
DATE: TUESDAY, SEPTEMBER 21, 2010
PERIOD: 4:00 PM TO 6:00 PM
INTERSECTION: N/S SPRING STREET
E/W BROADWAY/AVENUE18

PM PEAK HOUR
500-600



15 MIN COUNTS

	WB SPRING				NB AVENUE 18				EB SPRING				SB BROADWAY				SB AVENUE 18				
PERIOD	1A	1B	2	3	4	5	6A	6B	7	8	9A	9B	A	B	C	D	10A	10B	11	12	TOTALS
400-415	2	97	86	7	17	1	5	0	2	246	16	2	5	8	100	0	0	9	1	0	604
415-430	2	99	60	7	7	3	4	0	5	209	30	3	1	10	100	0	4	5	4	2	555
430-445	1	79	60	2	11	0	6	5	5	235	30	4	1	8	125	0	1	6	2	2	583
445-500	2	93	64	5	5	1	4	0	7	251	32	2	3	8	116	0	1	2	2	0	598
500-515	2	118	61	9	4	1	8	1	3	224	27	6	0	1	115	0	5	6	4	2	597
515-530	3	124	71	7	8	5	7	0	4	206	35	6	2	7	142	0	4	8	4	1	644
530-545	1	153	75	4	10	2	6	0	5	240	29	4	5	6	130	0	2	2	1	1	676
545-600	1	152	63	3	9	7	4	4	3	236	34	3	3	4	133	0	2	1	3	4	669

HOUR TOTALS

	WB SPRING				NB AVENUE 18				EB SPRING				SB BROADWAY				SB AVENUE 18				
PERIOD	1A	1B	2	3	4	5	6A	6B	7	8	9A	9B	A	B	C	D	10A	10B	11	12	TOTALS
400-500	7	368	270	21	40	5	19	5	19	941	108	11	10	34	441	0	6	22	9	4	2340
415-500	7	389	245	23	27	5	22	6	20	919	119	15	5	27	456	0	11	19	12	6	2333
430-530	8	414	256	23	28	7	25	6	19	916	124	18	6	24	498	0	11	22	12	5	2422
445-545	8	488	271	25	27	9	25	1	19	921	123	18	10	22	503	0	12	18	11	4	2515
500-600	7	547	270	23	31	15	25	5	15	906	125	19	10	18	520	0	13	17	12	8	2586

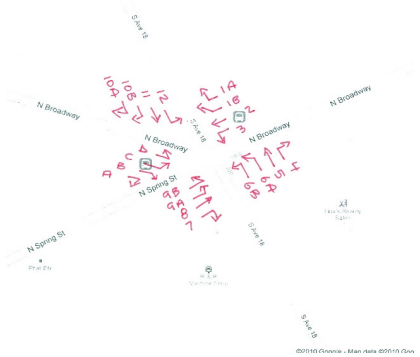
WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

5-LEG INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: FEHR AND PEERS
PROJECT: CHINATOWN TRAFFIC COUNTS
DATE: SATURDAY, SEPTEMBER 25, 2010
PERIOD: 11:00 AM TO 4:00 PM
INTERSECTION: N/S BROADWAY/AVENUE18
E/W SPRING STREET

M.D. PEAK HOUR
145-245



15 MIN COUNTS																					
	WB SPRING				NB AVENUE 18				EB SPRING				SB BROADWAY				SB AVENUE 18				
PERIOD	1A	1B	2	3	4	5	6A	6B	7	8	9A	9B	A	B	C	D	10A	10B	11	12	TOTALS
1100-1115	6	80	84	3	5	0	0	1	6	78	3	4	4	3	75	0	3	4	0	7	366
1115-1130	3	72	69	4	15	3	2	2	3	80	5	3	4	3	73	0	5	4	3	3	356
1130-1145	1	79	68	8	6	0	1	1	3	79	1	2	1	4	61	0	0	3	1	0	319
1145-1200	3	82	74	6	12	2	0	1	0	78	6	0	1	3	71	0	2	2	0	1	344
1200-1215	2	84	82	6	11	1	1	1	4	95	2	1	3	4	81	0	2	5	1	8	394
1215-1230	1	71	64	5	13	2	1	1	0	97	5	0	0	4	77	0	0	2	0	2	345
1230-1245	4	89	59	7	9	2	2	4	5	132	5	1	4	2	79	0	0	1	2	1	408
1245-100	7	79	59	11	7	2	3	4	0	66	4	3	2	2	91	0	3	1	3	6	353
100-115	6	64	74	8	5	1	0	5	3	106	4	3	4	2	82	0	6	5	1	9	388
115-130	7	73	80	5	11	4	2	3	5	122	9	3	2	3	83	0	3	0	0	9	424
130-145	14	67	82	9	11	0	2	0	1	98	7	1	3	2	93	0	9	5	2	1	407
145-200	14	84	78	8	10	1	3	1	2	123	6	2	0	3	86	1	12	9	0	10	453
200-215	1	62	78	2	7	0	3	0	0	91	2	1	2	3	88	1	3	2	2	2	350
215-230	4	86	88	6	4	0	2	0	5	129	6	0	2	1	79	1	3	0	1	2	419
230-245	5	85	83	4	7	1	3	0	5	148	5	5	4	5	88	1	2	1	4	2	458
245-300	6	61	40	5	8	0	0	1	0	110	10	0	4	4	82	0	4	4	0	2	341
300-315	2	68	56	3	6	0	3	0	1	111	4	2	4	2	85	0	0	2	0	3	352
315-330	2	58	40	8	8	1	3	1	3	142	8	0	0	3	82	0	1	7	3	3	373
330-345	6	80	48	4	10	2	3	2	2	108	4	0	1	1	74	0	1	3	0	2	351
345-400	4	77	39	7	5	0	3	0	1	100	7	0	2	4	81	0	2	2	1	0	335
HOUR TOTALS																					
	WB SPRING				NB AVENUE 18				EB SPRING				SB BROADWAY				SB AVENUE 18				
PERIOD	1A	1B	2	3	4	5	6A	6B	7	8	9A	9B	A	B	C	D	10A	10B	11	12	TOTALS
1100-1200	13	313	295	21	38	5	3	5	12	315	15	9	10	13	280	0	10	13	4	11	1385
1115-1215	9	317	293	24	44	6	4	5	10	332	14	6	9	14	286	0	9	14	5	12	1413
1130-1230	7	316	288	25	42	5	3	4	7	349	14	3	5	15	290	0	4	12	2	11	1402
1145-1245	10	326	279	24	45	7	4	7	9	402	18	2	8	13	308	0	4	10	3	12	1491
1200-100	14	323	264	29	40	7	7	10	9	390	16	5	9	12	328	0	5	9	6	17	1500
1215-115	18	303	256	31	34	7	6	14	8	401	18	7	10	10	329	0	9	9	6	18	1494
1230-130	24	305	272	31	32	9	7	16	13	426	22	10	12	9	335	0	12	7	6	25	1573
1245-145	34	283	295	33	34	7	7	12	9	392	24	10	11	9	349	0	21	11	6	25	1572
100-200	41	288	314	30	37	6	7	9	11	449	26	9	9	10	344	1	30	19	3	29	1672
115-215	36	286	318	24	39	5	10	4	8	434	24	7	7	11	350	2	27	16	4	22	1634
130-230	33	299	326	25	32	1	10	1	8	441	21	4	7	9	346	3	27	16	5	15	1629
145-245	24	317	327	20	28	2	11	1	12	491	19	8	8	12	341	4	20	12	7	16	1680
200-300	16	294	289	17	26	1	8	1	10	478	23	6	12	13	337	3	12	7	7	8	1568
215-315	17	300	267	18	25	1	8	1	11	498	25	7	14	12	334	2	9	7	5	9	1570
230-330	15	272	219	20	29	2	9	2	9	511	27	7	12	14	337	1	7	14	7	10	1524
245-345	16	267	184	20	32	3	9	4	6	471	26	2	9	10	323	0	6	16	3	10	1417

WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

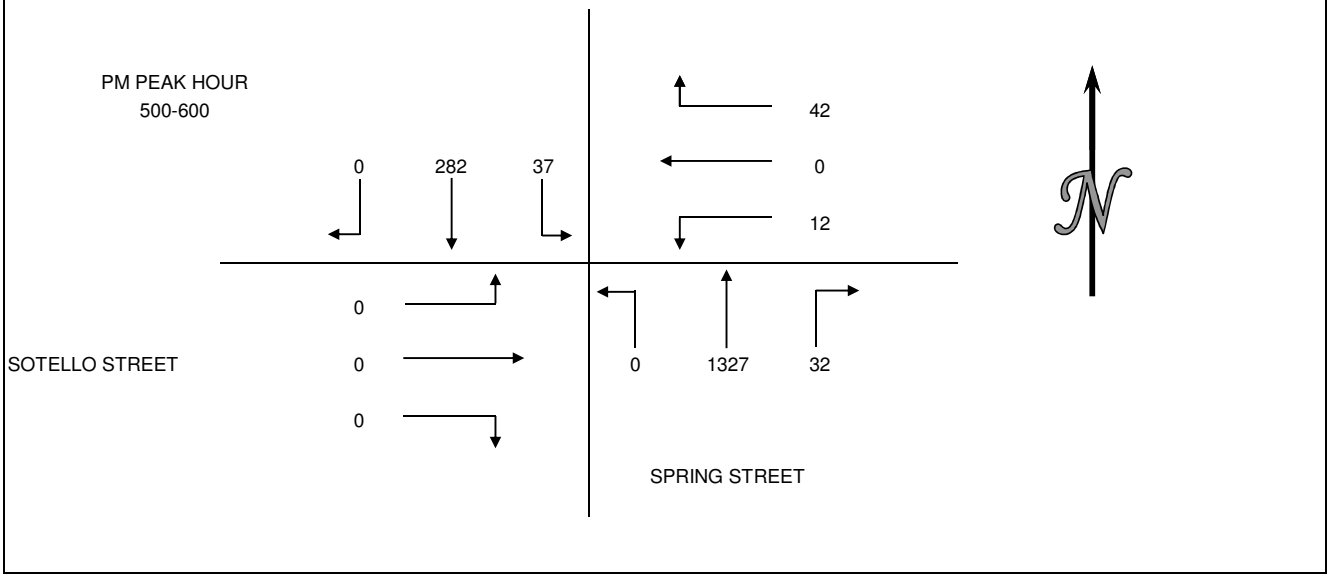
CLIENT: FEHR AND PEERS
PROJECT: CHINATOWN TRAFFIC COUNTS
DATE: TUESDAY, SEPTEMBER 21, 2010
PERIOD: 4:00 PM TO 6:00 PM
INTERSECTION: N/S SPRING STREET
E/W SOTELLO STREET

15 MIN COUNTS

PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-415	0	84	11	12	0	5	10	217	0	0	0	0	339
415-430	0	63	10	15	0	5	15	216	0	0	0	0	324
430-445	0	67	11	15	0	7	8	272	0	0	0	0	380
445-500	0	53	4	6	0	4	4	209	0	0	0	0	280
500-515	0	62	14	7	0	3	9	298	0	0	0	0	393
515-530	0	77	8	11	0	1	9	327	0	0	0	0	433
530-545	0	89	11	17	0	5	5	353	0	0	0	0	480
545-600	0	54	4	7	0	3	9	349	0	0	0	0	426

HOUR TOTALS

PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-500	0	267	36	48	0	21	37	914	0	0	0	0	1323
415-515	0	245	39	43	0	19	36	995	0	0	0	0	1377
430-530	0	259	37	39	0	15	30	1106	0	0	0	0	1486
445-545	0	281	37	41	0	13	27	1187	0	0	0	0	1586
500-600	0	282	37	42	0	12	32	1327	0	0	0	0	1732



WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

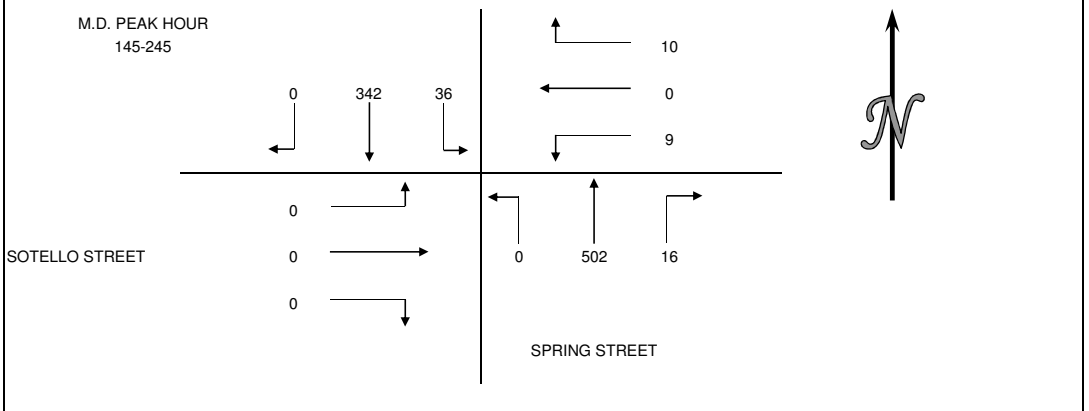
CLIENT: FEHR AND PEERS
PROJECT: CHINATOWN TRAFFIC COUNTS
DATE: SATURDAY, SEPTEMBER 25, 2010
PERIOD: 11:00 AM TO 4:00 PM
INTERSECTION: N/S SPRING STREET
E/W SOTELLO STREET

15 MIN COUNTS

PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
1100-1115	0	88	6	0	0	0	7	98	0	0	0	0	199
1115-1130	0	77	5	7	0	4	3	85	0	0	0	0	181
1130-1145	0	70	5	3	0	2	4	70	0	0	0	0	154
1145-1200	0	57	10	5	0	3	9	73	0	0	0	0	157
1200-1215	0	84	5	4	0	8	2	97	0	0	0	0	200
1215-1230	0	68	7	5	0	1	6	96	0	0	0	0	183
1230-1245	0	64	6	3	0	1	2	104	0	0	0	0	180
1245-100	0	67	6	2	0	2	3	102	0	0	0	0	182
100-115	0	93	7	2	0	1	1	119	0	0	0	0	223
115-130	0	60	5	3	0	6	2	116	0	0	0	0	192
130-145	0	73	7	2	0	5	0	107	0	0	0	0	194
145-200	0	95	7	2	0	5	6	128	0	0	0	0	243
200-215	0	80	7	1	0	1	5	116	0	0	0	0	210
215-230	0	85	15	1	0	0	2	136	0	0	0	0	239
230-245	0	82	7	6	0	3	3	122	0	0	0	0	223
245-300	0	42	6	3	0	2	4	117	0	0	0	0	174
300-315	0	54	10	6	0	1	2	133	0	0	0	0	206
315-330	0	50	5	2	0	3	5	114	0	0	0	0	179
330-345	0	55	4	1	0	0	0	123	0	0	0	0	183
345-400	0	46	2	4	0	4	4	117	0	0	0	0	0

HOUR TOTALS

TIME	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
1100-1200	0	292	26	15	0	9	23	326	0	0	0	0	691
1115-1215	0	288	25	19	0	17	18	325	0	0	0	0	692
1130-1230	0	279	27	17	0	14	21	336	0	0	0	0	694
1145-1245	0	273	28	17	0	13	19	370	0	0	0	0	720
1200-100	0	283	24	14	0	12	13	399	0	0	0	0	745
1215-115	0	292	26	12	0	5	12	421	0	0	0	0	768
1230-130	0	284	24	10	0	10	8	441	0	0	0	0	777
1245-145	0	293	25	9	0	14	6	444	0	0	0	0	791
100-200	0	321	26	9	0	17	9	470	0	0	0	0	852
115-215	0	308	26	8	0	17	13	467	0	0	0	0	839
130-230	0	333	36	6	0	11	13	487	0	0	0	0	886
145-245	0	342	36	10	0	9	16	502	0	0	0	0	915
200-300	0	289	35	11	0	6	14	491	0	0	0	0	846
215-315	0	263	38	16	0	6	11	508	0	0	0	0	842
230-330	0	228	28	17	0	9	14	486	0	0	0	0	782
245-345	0	201	25	12	0	6	11	487	0	0	0	0	742
300-400	0	205	21	13	0	8	11	487	0	0	0	0	745



WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

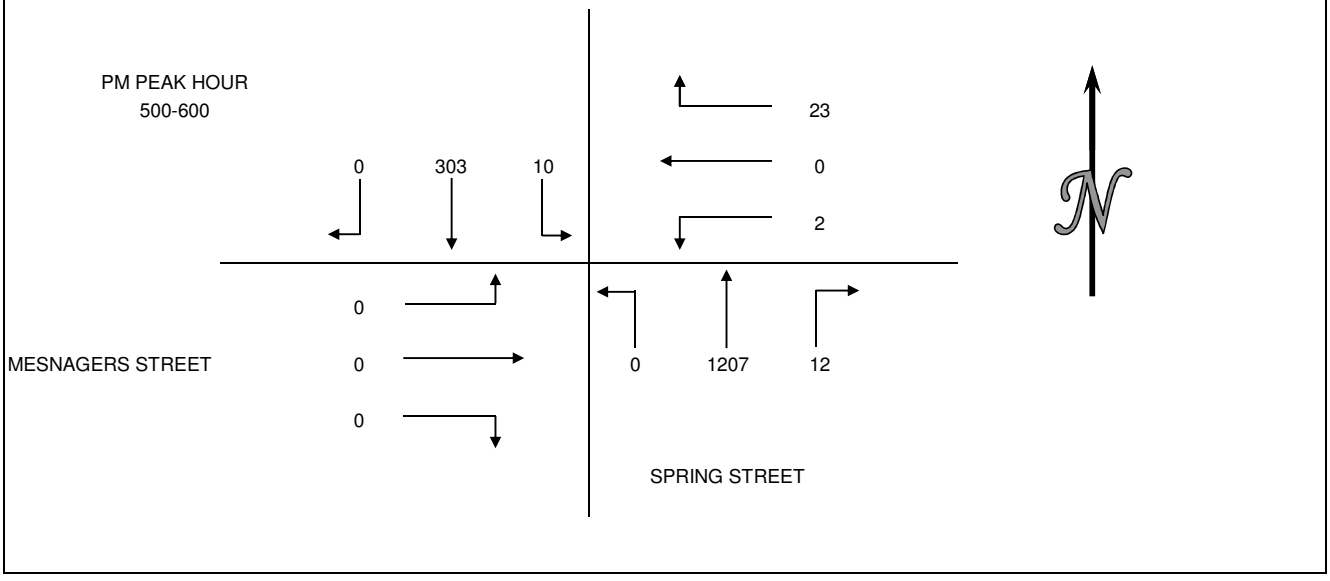
CLIENT: FEHR AND PEERS
PROJECT: CHINATOWN TRAFFIC COUNTS
DATE: TUESDAY, SEPTEMBER 21, 2010
PERIOD: 4:00 PM TO 6:00 PM
INTERSECTION: N/S SPRING STREET
E/W MESNAGERS STREET

15 MIN COUNTS

PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-415	0	112	0	11	0	2	3	245	0	0	0	0	373
415-430	0	71	3	7	0	2	3	213	0	0	0	0	299
430-445	0	78	3	7	0	1	3	272	0	0	0	0	364
445-500	0	56	1	5	0	1	0	255	0	0	0	0	318
500-515	0	72	4	12	0	2	4	315	0	0	0	0	409
515-530	0	71	2	3	0	0	2	275	0	0	0	0	353
530-545	0	86	3	4	0	0	3	292	0	0	0	0	388
545-600	0	74	1	4	0	0	3	325	0	0	0	0	407

HOUR TOTALS

PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-500	0	317	7	30	0	6	9	985	0	0	0	0	1354
415-515	0	277	11	31	0	6	10	1055	0	0	0	0	1390
430-530	0	277	10	27	0	4	9	1117	0	0	0	0	1444
445-545	0	285	10	24	0	3	9	1137	0	0	0	0	1468
500-600	0	303	10	23	0	2	12	1207	0	0	0	0	1557



WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

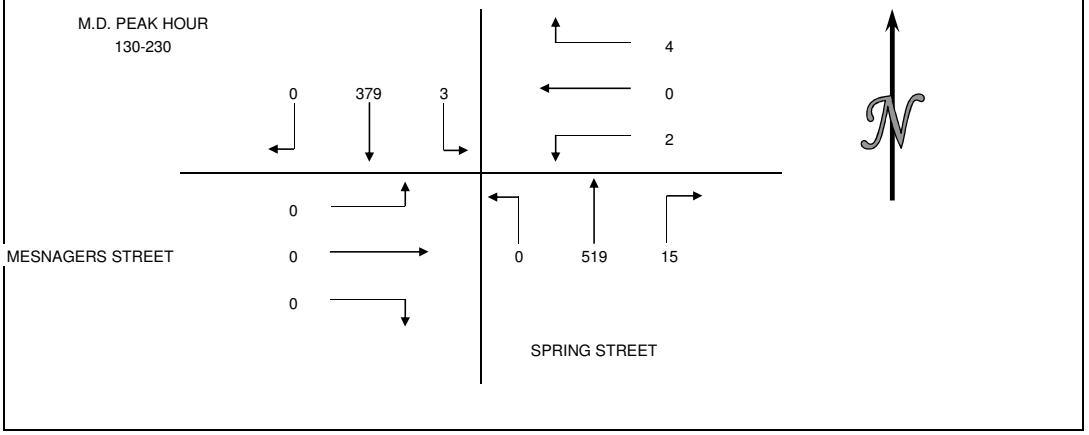
CLIENT: FEHR AND PEERS
PROJECT: CHINATOWN TRAFFIC COUNTS
DATE: SATURDAY, SEPTEMBER 25, 2010
PERIOD: 11:00 AM TO 4:00 PM
INTERSECTION: N/S SPRING STREET
E/W MESNAGERS STREET

15 MIN COUNTS

PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
1100-1115	0	82	4	3	0	2	3	85	0	0	0	0	179
1115-1130	0	77	1	1	0	0	5	92	0	0	0	0	176
1130-1145	0	75	1	0	0	1	1	65	0	0	0	0	143
1145-1200	0	68	3	0	0	1	0	94	0	0	0	0	166
1200-1215	0	78	2	1	0	0	1	123	0	0	0	0	205
1215-1230	0	58	1	0	0	1	6	108	0	0	0	0	174
1230-1245	0	87	2	1	0	1	4	98	0	0	0	0	193
1245-100	0	77	1	0	0	0	3	78	0	0	0	0	159
100-115	0	95	1	5	0	1	3	123	0	0	0	0	228
115-130	0	81	1	1	0	0	2	91	0	0	0	0	176
130-145	0	119	2	3	0	1	5	152	0	0	0	0	282
145-200	0	70	0	0	0	0	1	114	0	0	0	0	185
200-215	0	92	0	0	0	0	3	112	0	0	0	0	207
215-230	0	98	1	1	0	1	6	141	0	0	0	0	248
230-245	0	67	3	1	0	0	0	127	0	0	0	0	198
245-300	0	44	0	0	0	0	1	118	0	0	0	0	163
300-315	0	52	0	2	0	0	4	130	0	0	0	0	188
315-330	0	38	1	2	0	0	1	136	0	0	0	0	178
330-345	0	49	0	2	0	0	1	119	0	0	0	0	171
345-400	0	87	3	0	0	0	2	104	0	0	0	0	0

HOUR TOTALS

TIME	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
1100-1200	0	302	9	4	0	4	9	336	0	0	0	0	664
1115-1215	0	298	7	2	0	2	7	374	0	0	0	0	690
1130-1230	0	279	7	1	0	3	8	390	0	0	0	0	688
1145-1245	0	291	8	2	0	3	11	423	0	0	0	0	738
1200-100	0	300	6	2	0	2	14	407	0	0	0	0	731
1215-115	0	317	5	6	0	3	16	407	0	0	0	0	754
1230-130	0	340	5	7	0	2	12	390	0	0	0	0	756
1245-145	0	372	5	9	0	2	13	444	0	0	0	0	845
100-200	0	365	4	9	0	2	11	480	0	0	0	0	871
115-215	0	362	3	4	0	1	11	469	0	0	0	0	850
130-230	0	379	3	4	0	2	15	519	0	0	0	0	922
145-245	0	327	4	2	0	1	10	494	0	0	0	0	838
200-300	0	301	4	2	0	1	10	498	0	0	0	0	816
215-315	0	261	4	4	0	1	11	516	0	0	0	0	797
230-330	0	201	4	5	0	0	6	511	0	0	0	0	727
245-345	0	183	1	6	0	0	7	503	0	0	0	0	700
300-400	0	226	4	6	0	0	8	489	0	0	0	0	733



WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

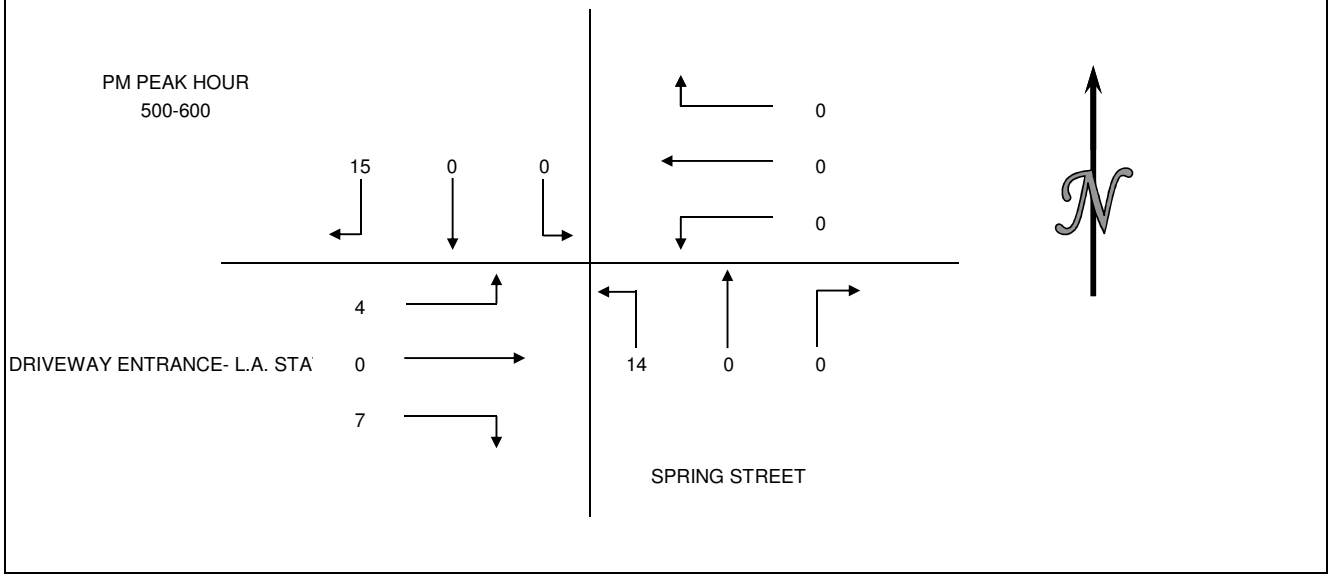
CLIENT: FEHR AND PEERS
PROJECT: CHINATOWN TRAFFIC COUNTS
DATE: TUESDAY, SEPTEMBER 21, 2010
PERIOD: 4:00 PM TO 6:00 PM
INTERSECTION: N/S SPRING STREET
E/W DRIVEWAY ENTRANCE- L.A. STATE HISTORIC PARK

15 MIN COUNTS

PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-415	1	0	0	0	0	0	0	0	1	1	0	1	4
415-430	0	0	0	0	0	0	0	0	2	3	0	3	8
430-445	0	0	0	0	0	0	0	0	2	1	0	2	5
445-500	1	0	0	0	0	0	0	0	2	2	0	0	5
500-515	4	0	0	0	0	0	0	0	3	0	0	1	8
515-530	4	0	0	0	0	0	0	0	3	2	0	1	10
530-545	2	0	0	0	0	0	0	0	5	1	0	0	8
545-600	5	0	0	0	0	0	0	0	3	4	0	2	14

HOUR TOTALS

PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-500	2	0	0	0	0	0	0	0	7	7	0	6	22
415-515	5	0	0	0	0	0	0	0	9	6	0	6	26
430-530	9	0	0	0	0	0	0	0	10	5	0	4	28
445-545	11	0	0	0	0	0	0	0	13	5	0	2	31
500-600	15	0	0	0	0	0	0	0	14	7	0	4	40



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Phone: (626) 564-1944 Fax: (626) 564-0969

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

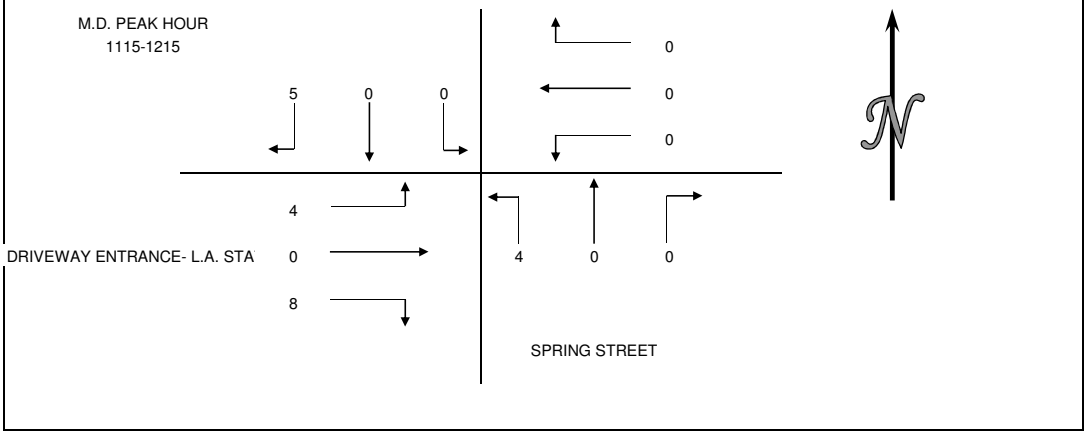
CLIENT: FEHR AND PEERS
PROJECT: CHINATOWN TRAFFIC COUNTS
DATE: SATURDAY, SEPTEMBER 25, 2010
PERIOD: 11:00 AM TO 4:00 PM
INTERSECTION: N/S SPRING STREET
E/W DRIVEWAY ENTRANCE- L.A. STATE HISTORIC PARK

15 MIN COUNTS

PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
1100-1115	0	0	0	0	0	0	0	0	0	1	0	0	1
1115-1130	2	0	0	0	0	0	0	0	0	2	0	1	5
1130-1145	1	0	0	0	0	0	0	0	3	4	0	1	9
1145-1200	0	0	0	0	0	0	0	0	0	0	0	1	1
1200-1215	2	0	0	0	0	0	0	0	1	2	0	1	6
1215-1230	1	0	0	0	0	0	0	0	0	0	0	1	2
1230-1245	2	0	0	0	0	0	0	0	0	1	0	0	3
1245-100	0	0	0	0	0	0	0	0	0	0	0	0	0
100-115	6	0	0	0	0	0	0	0	3	1	0	0	10
115-130	0	0	0	0	0	0	0	0	0	1	0	1	2
130-145	1	0	0	0	0	0	0	0	1	2	0	0	4
145-200	1	0	0	0	0	0	0	0	0	1	0	0	2
200-215	0	0	0	0	0	0	0	0	0	2	0	0	2
215-230	1	0	0	0	0	0	0	0	0	2	0	0	3
230-245	0	0	0	0	0	0	0	0	0	3	0	0	3
245-300	0	0	0	0	0	0	0	0	1	0	0	0	1
300-315	0	0	0	0	0	0	0	0	0	1	0	0	1
315-330	2	0	0	0	0	0	0	0	1	2	0	0	5
330-345	0	0	0	0	0	0	0	0	1	0	0	1	2
345-400	0	0	0	0	0	0	0	0	0	1	0	0	0

HOUR TOTALS

TIME	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
1100-1200	3	0	0	0	0	0	0	0	3	7	0	3	16
1115-1215	5	0	0	0	0	0	0	0	4	8	0	4	21
1130-1230	4	0	0	0	0	0	0	0	4	6	0	4	18
1145-1245	5	0	0	0	0	0	0	0	1	3	0	3	12
1200-100	5	0	0	0	0	0	0	0	1	3	0	2	11
1215-115	9	0	0	0	0	0	0	0	3	2	0	1	15
1230-130	8	0	0	0	0	0	0	0	3	3	0	1	15
1245-145	7	0	0	0	0	0	0	0	4	4	0	1	16
100-200	8	0	0	0	0	0	0	0	4	5	0	1	18
115-215	2	0	0	0	0	0	0	0	1	6	0	1	10
130-230	3	0	0	0	0	0	0	0	1	7	0	0	11
145-245	2	0	0	0	0	0	0	0	0	8	0	0	10
200-300	1	0	0	0	0	0	0	0	1	7	0	0	9
215-315	1	0	0	0	0	0	0	0	1	6	0	0	8
230-330	2	0	0	0	0	0	0	0	2	6	0	0	10
245-345	2	0	0	0	0	0	0	0	3	3	0	1	9
300-400	2	0	0	0	0	0	0	0	2	4	0	1	9



APPENDIX C:
LEVEL OF SERVICE WORKSHEETS

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: W College Street W/E: N Spring Street I/S No: 1

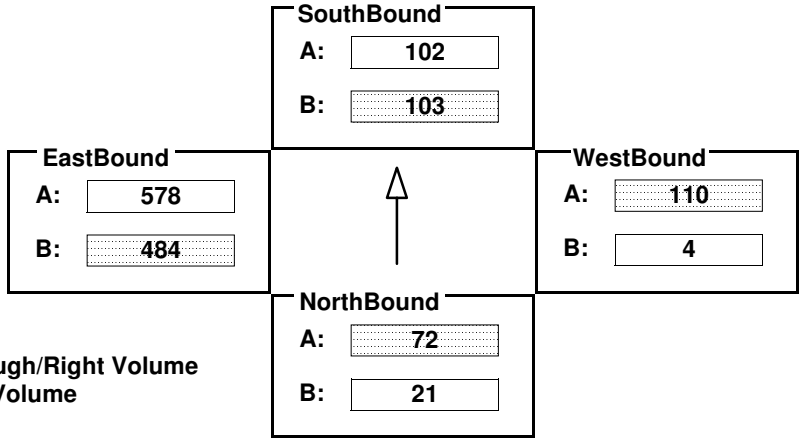
AM/PM: PM Comments: Existing Conditions Weekday PM

COUNT DATE: STUDY DATE: GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND			SOUTHBOUND			WESTBOUND			EASTBOUND		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
EXISTING	21	53	19	103	71	102	4	288	43	484	1155	11
AMBIENT												
RELATED												
PROJECT												
TOTAL	21	53	19	103	71	102	4	288	43	484	1155	11
LANE	1				1			1		1				1			1			1				2			1			1				2			1		
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram



A = Adjusted Through/Right Volume
B = Adjusted Left Volume
* = ATSAC Benefit

V/C RATIO	LOS
0.00 - 0.60	A
0.61 - 0.70	B
0.71 - 0.80	C
0.81 - 0.90	D
0.91 - 1.00	E

Results

North/South Critical Movements = A(N/B) + B(S/B)

West/East Critical Movements = A(W/B) + B(E/B)

$$V/C = \frac{72 + 103 + 110 + 484}{1500} = 0.513$$

LOS = A

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: W College Street W/E: N Spring Street I/S No: 1

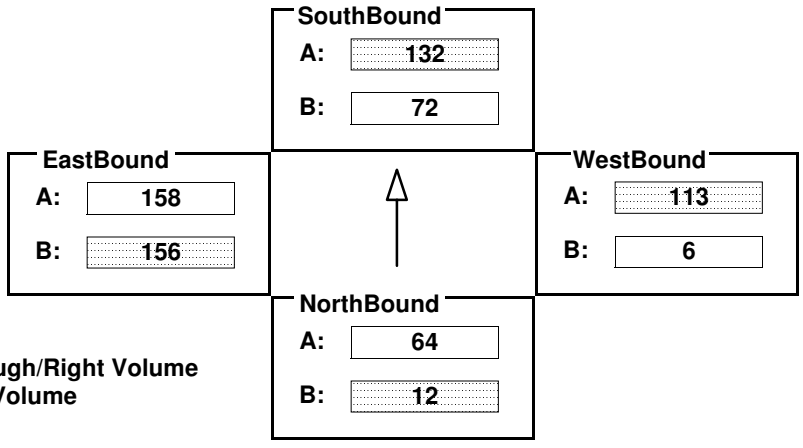
AM/PM: MD Comments: Existing Conditions Saturday MD

COUNT DATE: STUDY DATE: GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND			SOUTHBOUND			WESTBOUND			EASTBOUND		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
EXISTING	12	53	11	72	64	132	6	281	58	156	316	13
AMBIENT												
RELATED												
PROJECT												
TOTAL	12	53	11	72	64	132	6	281	58	156	316	13
LANE	1				1			1		1			1			1			1			2			1	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram



A = Adjusted Through/Right Volume
B = Adjusted Left Volume
* = ATSAC Benefit

V/C RATIO	LOS
0.00 - 0.60	A
0.61 - 0.70	B
0.71 - 0.80	C
0.81 - 0.90	D
0.91 - 1.00	E

Results

North/South Critical Movements = B(N/B) + A(S/B)

West/East Critical Movements = A(W/B) + B(E/B)

$$V/C = \frac{12 + 132 + 113 + 156}{1500} = 0.275$$

LOS = A

Los Angeles State Park Traffic Impact Study
Existing (2009) Conditions
Weekday PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

****

Intersection #2 N Spring St & Sotello St

****

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: C[24.4]

****

Street Name:	Sotello St						N Spring St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 0 0 0			0 0 1 1 0			0 1 1 0 0		
Volume Module:												
Base Vol:	12	0	42	0	0	0	0	1327	32	37	282	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	12	0	42	0	0	0	0	1327	32	37	282	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	12	0	42	0	0	0	0	1327	32	37	282	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	12	0	42	0	0	0	0	1327	32	37	282	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1558	1699	680	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1359	xxxx	xxxxx
Potent Cap.:	105	93	399	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	512	xxxx	xxxxx
Move Cap.:	99	86	399	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	512	xxxx	xxxxx
Volume/Cap:	0.12	0.00	0.11	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.07	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	12.6	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	239	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.8	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.2	xxxx	xxxxx
Shrd ConDel:	xxxxx	24.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	12.6	xxxx	xxxxx
Shared LOS:	*	C	*	*	*	*	*	*	*	B	*	*
ApproachDel:	24.4			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	C			*			*			*		

****

Note: Queue reported is the number of cars per lane.

****

Los Angeles State Park Traffic Impact Study
Existing (2009) Conditions
Saturday MD Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 N Spring St & Sotello St

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: B[13.1]

Street Name:	Sotello St						N Spring St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 0 0 0			0 0 1 1 0			0 1 1 0 0		
Volume Module:												
Base Vol:	9	0	10	0	0	0	0	524	16	36	345	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	0	10	0	0	0	0	524	16	36	345	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	9	0	10	0	0	0	0	524	16	36	345	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	9	0	10	0	0	0	0	524	16	36	345	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	777	949	270	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	540	xxxx	xxxxx
Potent Cap.:	338	262	734	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1039	xxxx	xxxxx
Move Cap.:	329	253	734	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1039	xxxx	xxxxx
Volume/Cap:	0.03	0.00	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.03	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.6	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	464	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx
Shrd ConDel:	xxxxx	13.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.6	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	A	*	*
ApproachDel:		13.1			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		B			*			*			*	

Note: Queue reported is the number of cars per lane.

Los Angeles State Park Traffic Impact Study
Existing (2009) Conditions
Weekday PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 N Spring St & Mesnager St

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: C[17.0]

Street Name:	Mesnager St						N Spring St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 0 0 0			0 0 1 1 0			0 1 1 0 0		
Volume Module:												
Base Vol:	2	0	23	0	0	0	0	1357	12	10	317	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	0	23	0	0	0	0	1357	12	10	317	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	2	0	23	0	0	0	0	1357	12	10	317	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	2	0	23	0	0	0	0	1357	12	10	317	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1542	1700	685	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1369	xxxx	xxxxx
Potent Cap.:	108	93	396	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	508	xxxx	xxxxx
Move Cap.:	106	91	396	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	508	xxxx	xxxxx
Volume/Cap:	0.02	0.00	0.06	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.02	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	12.2	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	325	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx
Shrd ConDel:	xxxxx	17.0	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	12.2	xxxx	xxxxx
Shared LOS:	*	C	*	*	*	*	*	*	*	B	*	*
ApproachDel:	17.0			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	C			*			*			*		

Note: Queue reported is the number of cars per lane.

Los Angeles State Park Traffic Impact Study
Existing (2009) Conditions
Saturday MD Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 N Spring St & Mesnager St

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: B[11.6]

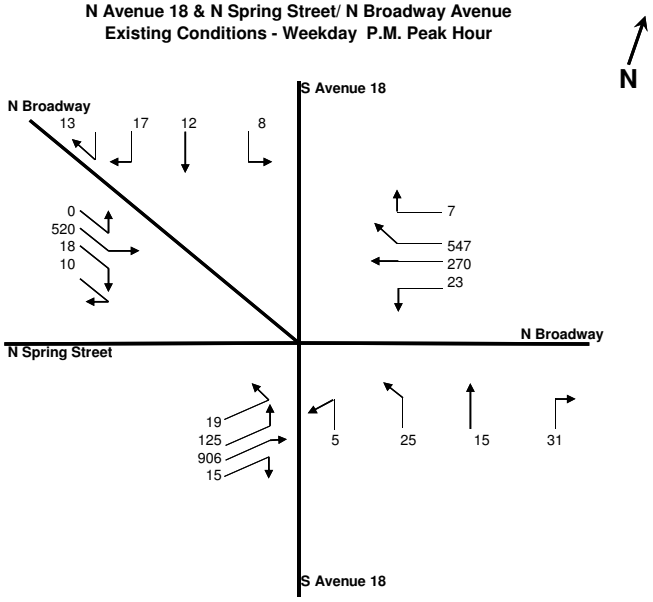
Street Name:	Mesnager St									N Spring St								
Approach:	North Bound			South Bound			East Bound			West Bound								
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled								
Rights:	Include			Include			Include			Include								
Lanes:	0	0	1! 0	0		0	0	0	0	0	0	0	1	1	0	0	1	1	0	0
Volume Module:																				
Base Vol:	2	0	4	0		0	0	0	0	0	0	0	519	15		3	379		0	
Growth Adj:	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	
Initial Bse:	2	0	4	0		0	0	0	0	0	0	0	519	15		3	379		0	
User Adj:	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	
PHF Adj:	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	
PHF Volume:	2	0	4	0		0	0	0	0	0	0	0	519	15		3	379		0	
Reduct Vol:	0	0	0	0		0	0	0	0	0	0	0	0	0		0	0		0	
FinalVolume:	2	0	4	0		0	0	0	0	0	0	0	519	15		3	379		0	
Critical Gap Module:																				
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx							
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx							
Capacity Module:																				
Cnflict Vol:	722	912	267	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		534	xxxx	xxxxx							
Potent Cap.:	366	276	737	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1044	xxxx	xxxxx							
Move Cap.:	365	275	737	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1044	xxxx	xxxxx							
Volume/Cap:	0.01	0.00	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx		0.00	xxxx	xxxx							
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		0.0	xxxx	xxxxx							
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		8.5	xxxx	xxxxx							
LOS by Move:	*	*	*	*	*	*	*	*	*		A	*	*							
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx		550	xxxxx		xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx		0.0	xxxxx		xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			0.0	xxxx	xxxxx		
Shrd ConDel:	xxxxx		11.6	xxxxx		xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			8.5	xxxx	xxxxx		
Shared LOS:	*		B	*		*	*	*			*	*	*			A	*	*		
ApproachDel:			11.6			xxxxxx					xxxxxx					xxxxxx				
ApproachLOS:			B			*					*					*				

Note: Queue reported is the number of cars per lane.

Intersection 4

N Avenue 18 & N Spring Street/ N Broadway Avenue

Existing Conditions - Weekday P.M. Peak Hour



NB 18	LLT	5
	LT	25
	RT	15
	RRT	31
SB 18	LLT	8
	LT	12
	RT	17
	RRT	13
EB Spring	LLT	19
	LT	125
	RT	906
	RRT	15
EB Broadway	LLT	0
	LT	520
	RT	18
	RRT	10
WB Broadway	LLT	23
	LT	270
	RT	547
	RRT	7

Check OK

Phase 1) 45 / 1 = 45 + 30 / 1 = 30 or 54

= **75**

Phase 2) 548 / 2

= **274**

Phase 3) 270 / 2 = 135 + 144 or 325 or 424

= **424**

Critical Volumes = 75 + 274 + 424

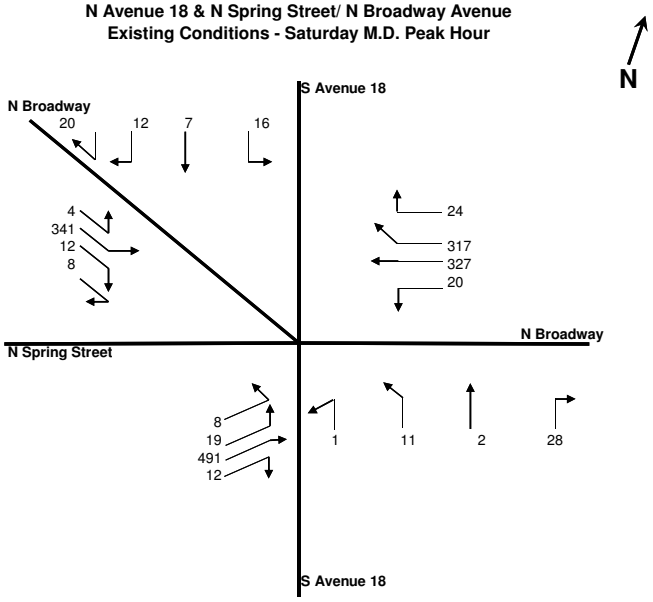
= 773

V/C = 773 / 1425 - 0.07 = 0.472 LOS A

Intersection 4

N Avenue 18 & N Spring Street/ N Broadway Avenue

Existing Conditions - Saturday M.D. Peak Hour



NB 18	LLT	1
	LT	11
	RT	2
	RRT	28
SB 18	LLT	16
	LT	7
	RT	12
	RRT	20
EB Spring	LLT	8
	LT	19
	RT	491
	RRT	12
EB Broadway	LLT	4
	LT	341
	RT	12
	RRT	8
WB Broadway	LLT	20
	LT	327
	RT	317
	RRT	24

Check OK

Phase 1) 14 / 1 = 14 = **46** + 32 / 1 = 32 or 46

Phase 2) 365 / 2 = **182.5**

Phase 3) 327 / 2 = 164 = **191** + 27 or 183.6667 or 185.5

Critical Volumes = 46 + 182.5 + 191

= 419.5

V/C = 419.5 / 1425 - 0.07 = 0.224 LOS A

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: W College Street W/E: N Spring Street I/S No: 1

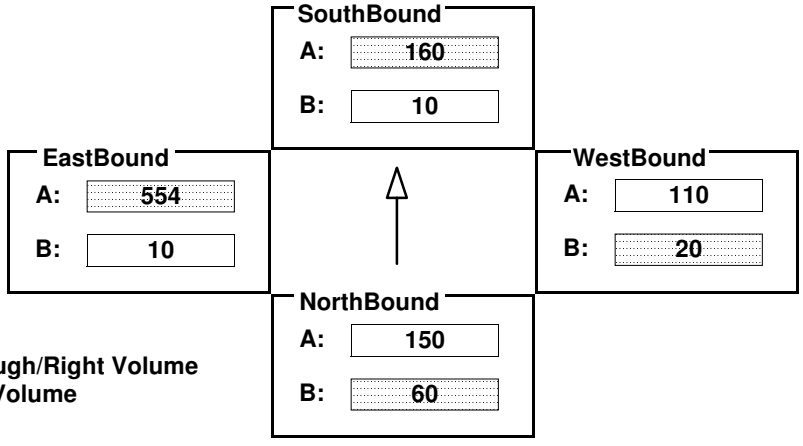
AM/PM: PM Comments: 2035 Cumulative Base Weekday PM

COUNT DATE: STUDY DATE: GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND			SOUTHBOUND			WESTBOUND			EASTBOUND		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
EXISTING	60	120	30	10	160	10	20	321	10	10	1108	30
AMBIENT												
RELATED												
PROJECT												
TOTAL	60	120	30	10	160	10	20	321	10	10	1108	30
LANE	1				1			1		1			1			1			1			1			1		
	Phasing		RTOR	Phasing		RTOR	Phasing		RTOR	Phasing		RTOR
SIGNAL	Perm		Auto	Perm		Auto	Perm		Auto	Perm		Auto

Critical Movements Diagram



A = Adjusted Through/Right Volume
B = Adjusted Left Volume
* = ATSAC Benefit

V/C RATIO	LOS
0.00 - 0.60	A
0.61 - 0.70	B
0.71 - 0.80	C
0.81 - 0.90	D
0.91 - 1.00	E

Results

North/South Critical Movements = B(N/B) + A(S/B)

West/East Critical Movements = B(W/B) + A(E/B)

$$V/C = \frac{60 + 160 + 20 + 554}{1500} = 0.529$$

LOS = A

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: W College Street | W/E: N Spring Street | I/S No: 1

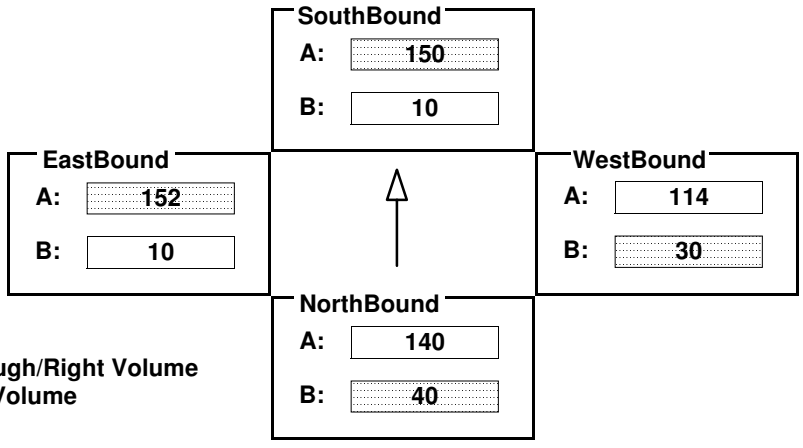
AM/PM: MD | Comments: Cumulative Plus Project Satuday MD

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND			SOUTHBOUND			WESTBOUND			EASTBOUND		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
EXISTING	40	120	20	10	150	20	30	321	20	10	304	40
AMBIENT												
RELATED												
PROJECT												
TOTAL	40	120	20	10	150	20	30	321	20	10	304	40
LANE	1				1			1		1			1			1			1			1			2			1	
	Phasing		RTOR		Phasing		RTOR		Phasing		RTOR		Phasing		RTOR	
SIGNAL	Perm		Auto		Perm		Auto		Perm		Auto		Perm		Auto	

Critical Movements Diagram



A = Adjusted Through/Right Volume
B = Adjusted Left Volume
* = ATSAC Benefit

V/C RATIO	LOS
0.00 - 0.60	A
0.61 - 0.70	B
0.71 - 0.80	C
0.81 - 0.90	D
0.91 - 1.00	E

Results

North/South Critical Movements = B(N/B) + A(S/B)

West/East Critical Movements = B(W/B) + A(E/B)

$$V/C = \frac{40 + 150 + 30 + 152}{1500} = 0.248$$

LOS = A

Los Angeles State Park Traffic Impact Study
Cumulative Base (2035) Conditions
Weekday PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 N Spring St & Sotello St

Average Delay (sec/veh): 341.4 Worst Case Level Of Service: F[1602.2]

Street Name:	Sotello St						N Spring St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 0 0 0			0 0 1 1 0			0 1 1 0 0		
Volume Module:												
Base Vol:	180	0	280	0	0	0	0	1285	40	200	183	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	180	0	280	0	0	0	0	1285	40	200	183	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	180	0	280	0	0	0	0	1285	40	200	183	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	180	0	280	0	0	0	0	1285	40	200	183	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1797	1888	663	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1325	xxxx	xxxxx
Potent Cap.:	73	71	409	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	528	xxxx	xxxxx
Move Cap.:	49	41	409	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	528	xxxx	xxxxx
Volume/Cap:	3.69	0.00	0.68	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.38	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1.8	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	15.9	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	C	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	105	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	48.0	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	1.8	xxxx	xxxxx
Shrd ConDel:	xxxxx	1602	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	15.9	xxxx	xxxxx
Shared LOS:	*	F	*	*	*	*	*	*	*	C	*	*
ApproachDel:	1602.2			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	F			*			*			*		

Note: Queue reported is the number of cars per lane.

Los Angeles State Park Traffic Impact Study
Cumulative Base (2035) Conditions
Saturday MD Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 N Spring St & Sotello St

Average Delay (sec/veh): 20.5 Worst Case Level Of Service: F[80.7]

Street Name:	Sotello St						N Spring St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1!	0	0	0 0 0	0	0	0 0 1	1	0	0 1	1	0 0
Volume Module:												
Base Vol:	140	0	170	0	0	0	0	504	20	200	275	0
Growth Adj:	1.00 1.00	1.00	1.00	1.00 1.00	1.00	1.00	1.00 1.00	1.00	1.00	1.00 1.00	1.00	1.00
Initial Bse:	140	0	170	0	0	0	0	504	20	200	275	0
User Adj:	1.00 1.00	1.00	1.00	1.00 1.00	1.00	1.00	1.00 1.00	1.00	1.00	1.00 1.00	1.00	1.00
PHF Adj:	1.00 1.00	1.00	1.00	1.00 1.00	1.00	1.00	1.00 1.00	1.00	1.00	1.00 1.00	1.00	1.00
PHF Volume:	140	0	170	0	0	0	0	504	20	200	275	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	140	0	170	0	0	0	0	504	20	200	275	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	xxxxx xxxx		xxxxx	xxxxx xxxx		xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx xxxx		xxxxx	xxxxx xxxx		xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1052	1189	262	xxxx xxxx		xxxxx	xxxx xxxx		xxxxx	524	xxxx	xxxxx
Potent Cap.:	225	190	743	xxxx xxxx		xxxxx	xxxx xxxx		xxxxx	1053	xxxx	xxxxx
Move Cap.:	188	149	743	xxxx xxxx		xxxxx	xxxx xxxx		xxxxx	1053	xxxx	xxxxx
Volume/Cap:	0.74	0.00	0.23	xxxx xxxx		xxxx	xxxx xxxx		xxxx	0.19	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx xxxx		xxxxx	xxxx xxxx		xxxxx	0.7	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx xxxx		xxxxx	xxxxx xxxx		xxxxx	9.2	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	319	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	10.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.7	xxxx	xxxxx
Shrd ConDel:	xxxxx	80.7	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.2	xxxx	xxxxx
Shared LOS:	*	F	*	*	*	*	*	*	*	A	*	*
ApproachDel:		80.7		xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:		F		*			*			*		

Note: Queue reported is the number of cars per lane.

Los Angeles State Park Traffic Impact Study
Cumulative Base (2035) Conditions
Weekday PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 N Spring St & Mesnager St

Average Delay (sec/veh): 20.1 Worst Case Level Of Service: F[188.2]

Street Name:	Mesnager St						N Spring St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 0 0 0			0 0 1 1 0			0 1 1 0 0		
Volume Module:												
Base Vol:	40	0	190	0	0	0	0	1545	20	60	343	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	40	0	190	0	0	0	0	1545	20	60	343	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	40	0	190	0	0	0	0	1545	20	60	343	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	40	0	190	0	0	0	0	1545	20	60	343	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1847	2018	783	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1565	xxxx	xxxxx
Potent Cap.:	68	59	341	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	428	xxxx	xxxxx
Move Cap.:	60	50	341	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	428	xxxx	xxxxx
Volume/Cap:	0.67	0.00	0.56	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.14	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.5	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	14.8	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	188	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	12.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.5	xxxx	xxxxx
Shrd ConDel:	xxxxx	188	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	14.8	xxxx	xxxxx
Shared LOS:	*	F	*	*	*	*	*	*	*	B	*	*
ApproachDel:	188.2			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	F			*			*			*		

Note: Queue reported is the number of cars per lane.

Los Angeles State Park Traffic Impact Study
Cumulative Base (2035) Conditions
Saturday MD Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 N Spring St & Mesnager St

Average Delay (sec/veh): 2.4 Worst Case Level Of Service: C[16.1]

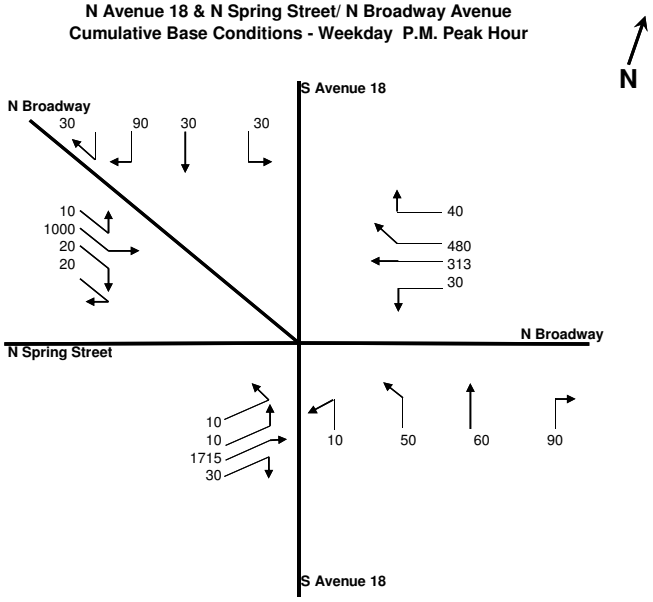
Street Name:	Mesnager St						N Spring St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1!	0	0	0 0 0	0	0	0 0 1	1	0	0 1	1	0 0
Volume Module:												
Base Vol:	40	0	140	0	0	0	0	644	30	20	435	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	40	0	140	0	0	0	0	644	30	20	435	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	40	0	140	0	0	0	0	644	30	20	435	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	40	0	140	0	0	0	0	644	30	20	435	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	917	1134	337	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	674	xxxx	xxxxx
Potent Cap.:	275	204	665	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	927	xxxx	xxxxx
Move Cap.:	271	200	665	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	927	xxxx	xxxxx
Volume/Cap:	0.15	0.00	0.21	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.02	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.0	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	502	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	1.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx
Shrd ConDel:	xxxxx	16.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.0	xxxx	xxxxx
Shared LOS:	*	C	*	*	*	*	*	*	*	A	*	*
ApproachDel:	16.1			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	C			*			*			*		

Note: Queue reported is the number of cars per lane.

Intersection 4

N Avenue 18 & N Spring Street/ N Broadway Avenue

Cumulative Base Conditions - Weekday P.M. Peak Hour



NB 18	LLT	10
	LT	50
	RT	60
	RRT	90
SB 18	LLT	30
	LT	30
	RT	90
	RRT	30
EB Spring	LLT	10
	LT	10
	RT	1715
	RRT	30
EB Broadway	LLT	10
	LT	1000
	RT	20
	RRT	20
WB Broadway	LLT	30
	LT	313
	RT	480
	RRT	40

Check OK

Phase 1) $\frac{120}{1} + \frac{120}{1}$ or 180

$\frac{120}{120}$

= **240**

Phase 2) $\frac{1050}{2}$

= **525**

Phase 3) $\frac{313}{2} + 20$ or 601.6667 or 15

$\frac{157}{}$

= **601.6667**

Critical Volumes = 240 + 525 + 601.6667

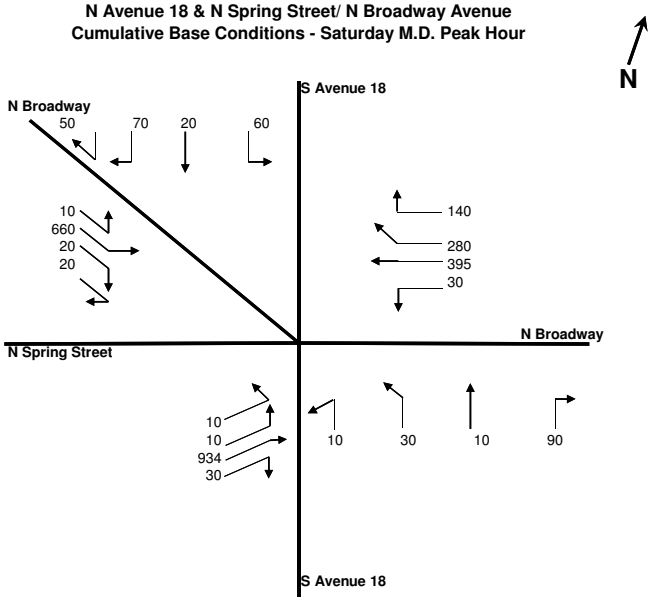
= 1366.667

V/C = $\frac{1366.667}{1425}$ - 0.07 = 0.889 LOS D

Intersection 4

N Avenue 18 & N Spring Street/ N Broadway Avenue

Cumulative Base Conditions - Saturday M.D. Peak Hour



NB 18	LLT	10
	LT	30
	RT	10
	RRT	90
SB 18	LLT	60
	LT	20
	RT	70
	RRT	50
EB Spring	LLT	10
	LT	10
	RT	934
	RRT	30
EB Broadway	LLT	10
	LT	660
	RT	20
	RRT	20
WB Broadway	LLT	30
	LT	395
	RT	280
	RRT	140

Check OK

Phase 1) $\frac{50}{1} + \frac{120}{1}$ or 160

$\frac{50}{120}$

= **170**

Phase 2) $\frac{710}{2}$

= **355**

Phase 3) $\frac{395}{2} + 20$ or 341.3333 or 85

198

= **341.3333**

Critical Volumes = 170 + 355 + 341.3333

= 866.3333

V/C = $\frac{866.3333}{1425}$ - 0.07 = 0.538 LOS A

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: W College Street W/E: N Spring Street I/S No: 1

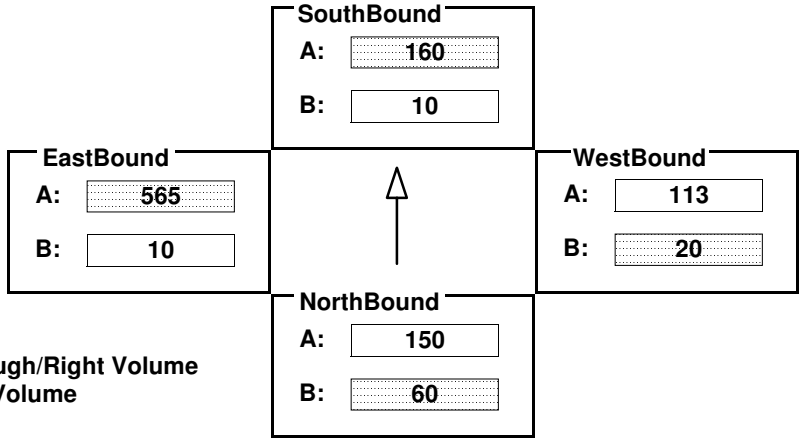
AM/PM: PM Comments: 2035 Plus Project Conditions Weekday PM

COUNT DATE: STUDY DATE: GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND			SOUTHBOUND			WESTBOUND			EASTBOUND		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
EXISTING	60	120	30	10	160	10	20	330	10	10	1130	30
AMBIENT												
RELATED												
PROJECT												
TOTAL	60	120	30	10	160	10	20	330	10	10	1130	30
LANE	1				1			1			1			1			1			2			1			2			1	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram



A = Adjusted Through/Right Volume
B = Adjusted Left Volume
* = ATSAC Benefit

V/C RATIO	LOS
0.00 - 0.60	A
0.61 - 0.70	B
0.71 - 0.80	C
0.81 - 0.90	D
0.91 - 1.00	E

Results

North/South Critical Movements = B(N/B) + A(S/B)

West/East Critical Movements = B(W/B) + A(E/B)

$$V/C = \frac{60 + 160 + 20 + 565}{1500} = 0.537$$

LOS = A

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: W College Street W/E: N Spring Street I/S No: 1

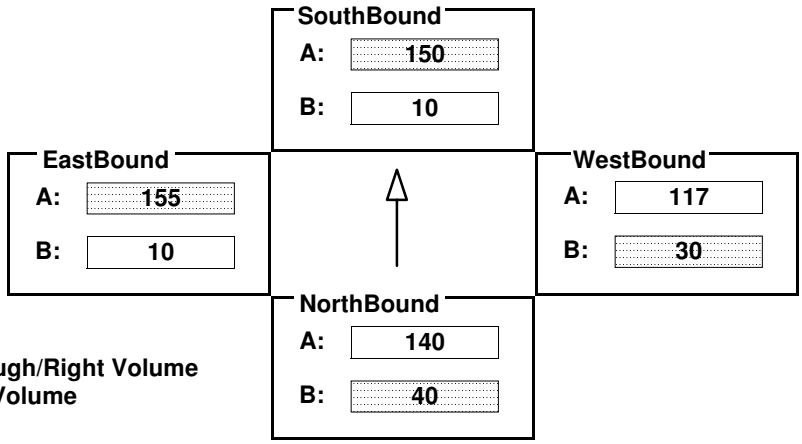
AM/PM: MD Comments: Cumulative Plus Project Satuday MD

COUNT DATE: STUDY DATE: GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND			SOUTHBOUND			WESTBOUND			EASTBOUND		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
EXISTING	40	120	20	10	150	20	30	330	20	10	310	40
AMBIENT												
RELATED												
PROJECT												
TOTAL	40	120	20	10	150	20	30	330	20	10	310	40
LANE	1				1			1		1			1			1			1			1			2			1	
	Phasing		RTOR		Phasing		RTOR		Phasing		RTOR		Phasing		RTOR	
SIGNAL	Perm		Auto		Perm		Auto		Perm		Auto		Perm		Auto	

Critical Movements Diagram



A = Adjusted Through/Right Volume
B = Adjusted Left Volume
* = ATSAC Benefit

V/C RATIO	LOS
0.00 - 0.60	A
0.61 - 0.70	B
0.71 - 0.80	C
0.81 - 0.90	D
0.91 - 1.00	E

Results

North/South Critical Movements = B(N/B) + A(S/B)

West/East Critical Movements = B(W/B) + A(E/B)

$$V/C = \frac{40 + 150 + 30 + 155}{1500} = 0.250$$

LOS = A

Los Angeles State Park Traffic Impact Study
Cumulative Plus Project (2035) Conditions
Weekday PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 N Spring St & Sotello St

Average Delay (sec/veh): 674.5 Worst Case Level Of Service: F[3175.1]

Street Name:	Sotello St						N Spring St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 0 1 0			0 1 0 1 0			0 1 0 1 0		
Volume Module:												
Base Vol:	180	12	280	0	4	16	42	1282	40	200	168	4
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	180	12	280	0	4	16	42	1282	40	200	168	4
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	180	12	280	0	4	16	42	1282	40	200	168	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	180	12	280	0	4	16	42	1282	40	200	168	4
Critical Gap Module:												
Critical Gp:	7.5	6.5	6.9	xxxxx	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1872	1958	661	xxxx	1976	86	172	xxxx	xxxxx	1322	xxxx	xxxxx
Potent Cap.:	45	64	410	xxxx	63	962	1417	xxxx	xxxxx	529	xxxx	xxxxx
Move Cap.:	27	36	410	xxxx	35	962	1417	xxxx	xxxxx	529	xxxx	xxxxx
Volume/Cap:	6.75	0.34	0.68	xxxx	0.11	0.02	0.03	xxxx	xxxx	0.38	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	1.7	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx	15.9	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	C	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	61	xxxxx	xxxx	xxxx	152	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	54.6	xxxxx	xxxxx	xxxx	0.4	0.1	xxxx	xxxxx	1.7	xxxx	xxxxx
Shrd ConDel:	xxxxx	3175	xxxxx	xxxxx	xxxx	32.2	7.6	xxxx	xxxxx	15.9	xxxx	xxxxx
Shared LOS:	*	F	*	*	*	D	A	*	*	C	*	*
ApproachDel:	3175.1			32.2			xxxxxx			xxxxxx		
ApproachLOS:	F			D			*			*		

Note: Queue reported is the number of cars per lane.

Los Angeles State Park Traffic Impact Study
Cumulative Plus Project (2035) Conditions
Saturday MD Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 N Spring St & Sotello St

Average Delay (sec/veh): 43.3 Worst Case Level Of Service: F[177.3]

Street Name:	Sotello St						N Spring St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 0 1 0			0 1 0 1 0			0 1 0 1 0		
Volume Module:												
Base Vol:	140	4	170	0	4	16	12	498	20	200	272	2
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	140	4	170	0	4	16	12	498	20	200	272	2
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	140	4	170	0	4	16	12	498	20	200	272	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	140	4	170	0	4	16	12	498	20	200	272	2
Critical Gap Module:												
Critical Gp:	7.5	6.5	6.9	xxxxx	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1070	1206	259	xxxx	1215	137	274	xxxx	xxxxx	518	xxxx	xxxxx
Potent Cap.:	178	185	746	xxxx	183	893	1301	xxxx	xxxxx	1058	xxxx	xxxxx
Move Cap.:	142	144	746	xxxx	143	893	1301	xxxx	xxxxx	1058	xxxx	xxxxx
Volume/Cap:	0.98	0.03	0.23	xxxx	0.03	0.02	0.01	xxxx	xxxx	0.19	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.7	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.8	xxxx	xxxxx	9.2	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	253	xxxxx	xxxx	xxxx	435	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	15.3	xxxxx	xxxxx	xxxx	0.1	0.0	xxxx	xxxxx	0.7	xxxx	xxxxx
Shrd ConDel:	xxxxx	177	xxxxx	xxxxx	xxxx	13.7	7.8	xxxx	xxxxx	9.2	xxxx	xxxxx
Shared LOS:	*	F	*	*	*	B	A	*	*	A	*	*
ApproachDel:	177.3			13.7			xxxxxx			xxxxxx		
ApproachLOS:	F			B			*			*		

Note: Queue reported is the number of cars per lane.

Los Angeles State Park Traffic Impact Study
Cumulative Plus Project (2035) Conditions
Weekday PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 N Spring St & Mesnager St

Average Delay (sec/veh): 32.8 Worst Case Level Of Service: F[309.7]

Street Name:	Mesnager St						N Spring St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 1! 0 0			0 1 0 1 0			0 1 0 1 0		
Volume Module:												
Base Vol:	40	0	190	10	0	2	2	1540	20	60	330	30
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	40	0	190	10	0	2	2	1540	20	60	330	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	40	0	190	10	0	2	2	1540	20	60	330	30
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	40	0	190	10	0	2	2	1540	20	60	330	30
Critical Gap Module:												
Critical Gp:	7.5	6.5	6.9	7.5	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1839	2034	780	1239	2029	180	360	xxxx	xxxxx	1560	xxxx	xxxxx
Potent Cap.:	48	58	342	134	58	838	1210	xxxx	xxxxx	430	xxxx	xxxxx
Move Cap.:	42	49	342	53	49	838	1210	xxxx	xxxxx	430	xxxx	xxxxx
Volume/Cap:	0.94	0.00	0.55	0.19	0.00	0.00	0.00	xxxx	xxxx	0.14	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.5	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.0	xxxx	xxxxx	14.7	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	B	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	153	xxxxx	xxxx	63	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	15.2	xxxxx	xxxxx	0.6	xxxxx	0.0	xxxx	xxxxx	0.5	xxxx	xxxxx
Shrd ConDel:	xxxxx	310	xxxxx	xxxxx	75.7	xxxxx	8.0	xxxx	xxxxx	14.7	xxxx	xxxxx
Shared LOS:	*	F	*	*	F	*	A	*	*	B	*	*
ApproachDel:	309.7			75.7			xxxxxx			xxxxxx		
ApproachLOS:	F			F			*			*		

Note: Queue reported is the number of cars per lane.

Los Angeles State Park Traffic Impact Study
Cumulative Plus Project (2035) Conditions
Saturday MD Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 N Spring St & Mesnager St

Average Delay (sec/veh): 2.7 Worst Case Level Of Service: C[20.6]

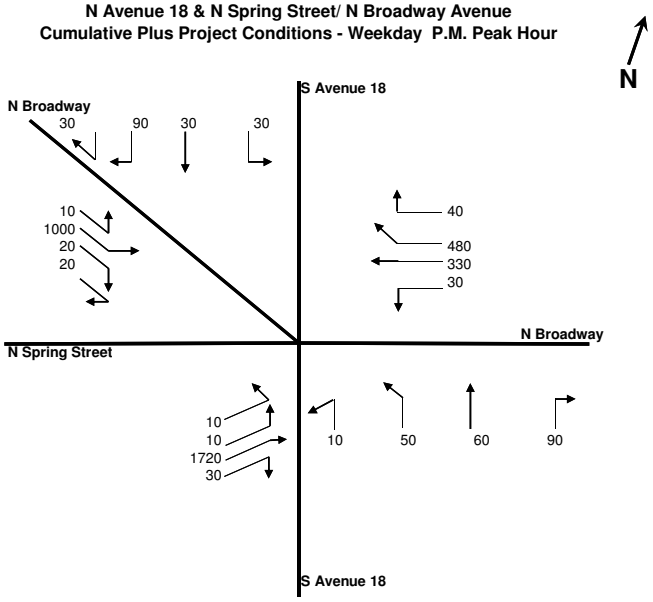
Street Name:	Mesnager St						N Spring St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 1! 0 0			0 0 1 1 0			0 1 0 1 0		
Volume Module:												
Base Vol:	40	0	140	12	0	2	0	638	30	20	432	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	40	0	140	12	0	2	0	638	30	20	432	8
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	40	0	140	12	0	2	0	638	30	20	432	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	40	0	140	12	0	2	0	638	30	20	432	8
Critical Gap Module:												
Critical Gp:	7.5	6.5	6.9	7.5	6.5	6.9	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	909	1133	334	795	1144	220	xxxx	xxxx	xxxxx	668	xxxx	xxxxx
Potent Cap.:	233	205	668	282	202	790	xxxx	xxxx	xxxxx	931	xxxx	xxxxx
Move Cap.:	229	200	668	219	197	790	xxxx	xxxx	xxxxx	931	xxxx	xxxxx
Volume/Cap:	0.17	0.00	0.21	0.05	0.00	0.00	xxxx	xxxx	xxxx	0.02	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.0	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	468	xxxxx	xxxx	244	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	1.8	xxxxx	xxxxx	0.2	xxxxx	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx
Shrd ConDel:	xxxxx	17.4	xxxxx	xxxxx	20.6	xxxxx	xxxxx	xxxx	xxxxx	9.0	xxxx	xxxxx
Shared LOS:	*	C	*	*	C	*	*	*	*	A	*	*
ApproachDel:		17.4			20.6		xxxxxx			xxxxxx		
ApproachLOS:		C			C		*			*		

Note: Queue reported is the number of cars per lane.

Intersection 4

N Avenue 18 & N Spring Street/ N Broadway Avenue

Cumulative Plus Project Conditions - Weekday P.M. Peak Hour



NB 18	LLT	10
	LT	50
	RT	60
	RRT	90
SB 18	LLT	30
	LT	30
	RT	90
	RRT	30
EB Spring	LLT	10
	LT	10
	RT	1720
	RRT	30
EB Broadway	LLT	10
	LT	1000
	RT	20
	RRT	20
WB Broadway	LLT	30
	LT	330
	RT	480
	RRT	40

Check OK

Phase 1) $\frac{120}{1} + \frac{120}{1}$ or 180

$\frac{120}{120}$

= **240**

Phase 2) $\frac{1050}{2}$

= **525**

Phase 3) $\frac{330}{2} + 20$ or 603.3333 or 15

$\frac{165}{}$

= **603.3333**

Critical Volumes = 240 + 525 + 603.3333

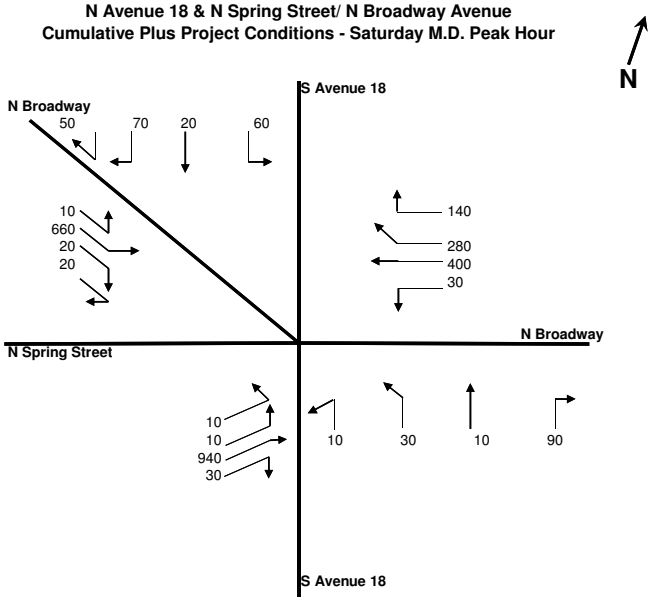
= 1368.333

V/C = $\frac{1368.333}{1425}$ - 0.07 = 0.890 LOS D

Intersection 4

N Avenue 18 & N Spring Street/ N Broadway Avenue

Cumulative Plus Project Conditions - Saturday M.D. Peak Hour



NB 18	LLT	10
	LT	30
	RT	10
	RRT	90
SB 18	LLT	60
	LT	20
	RT	70
	RRT	50
EB Spring	LLT	10
	LT	10
	RT	940
	RRT	30
EB Broadway	LLT	10
	LT	660
	RT	20
	RRT	20
WB Broadway	LLT	30
	LT	400
	RT	280
	RRT	140

Check OK

Phase 1) $\frac{50}{1} + \frac{120}{1}$ or 160

$\frac{50}{120}$

= **170**

Phase 2) $\frac{710}{2}$

= **355**

Phase 3) $\frac{400}{2} + 20$ or 343.3333 or 85

$\frac{200}{}$

= **343.3333**

Critical Volumes = 170 + 355 + 343.3333

= 868.3333

V/C = $\frac{868.3333}{1425}$ - 0.07 = 0.539 LOS A

APPENDIX D:
SIGNAL WARRANTS WORKSHEETS

TRAFFIC SIGNAL WARRANTS
PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)

Major Street: N Spring Street
Minor Street: Sotello St
Scenario: 2035 Cumulative Plus Project Weekday PM
Urban/Rural: u (U=urban, R=rural [a])

PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)

Number of Lanes on Each Approach

Major Street:	2
Minor Street:	1

Vehicles Per Hour (Peak Hour)

Major Street (Approach 1):	1,369	Major Street Left Turn (see note [b]):	200
Major Street (Approach 2):	379	Minor Street (Higher Volume App.):	472
Major Street Total (Both Approaches):	1,748	Minor Street Total:	672
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	110

PEAK HOUR VOLUME WARRANT SATISFIED? **YES**

Notes:

a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.

b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.

c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.

d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

TRAFFIC SIGNAL WARRANTS
PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)

Major Street:	N Spring Street
Minor Street:	Mesnagers St
Scenario:	2035 Cumulative Plus Project Weekday PM
Urban/Rural:	u (U=urban, R=rural [a])

PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)

Number of Lanes on Each Approach

Major Street:	2
Minor Street:	1

Vehicles Per Hour (Peak Hour)

Major Street (Approach 1):	1,567	Major Street Left Turn (see note [b]):	60
Major Street (Approach 2):	427	Minor Street (Higher Volume App.):	230
Major Street Total (Both Approaches):	1,994	Minor Street Total:	290
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	100

PEAK HOUR VOLUME WARRANT SATISFIED? **YES**

Notes:

a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.

b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.

c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.

d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

APPENDIX E:
EXISTING (2010) PLUS PROJECT CONDITIONS

CHAPTER 1. EXISTING (2010) PLUS PROJECT CONDITIONS

This chapter analyses existing (2010) transportation conditions in the study area with the proposed project. In order to evaluate the potential impacts of the proposed project on the local street system, it was necessary to develop estimates of existing conditions with the proposed project. The existing (2010) plus project scenario represents existing traffic conditions with the development of the proposed project.

PROJECT DESCRIPTION

The LASHP project represents significant open space within the City of Los Angeles - Cornfield Arroyo Seco Area Specific Plan which is classified as a community redevelopment area (CRA). It will provide infrastructure and features to enlighten and engage the public about the history and culture of Los Angeles, its region and its people – a theme that is not adequately covered in other units of the State Park System. The project scope includes a multi-use plaza, flexible outdoor spaces to accommodate a variety and size of public events, a "great lawn" featuring an amphitheater/stage space for special events/performances for up to 25,000 people and for unstructured activities, interpretive paths and portals for engaging historic themes and content using traditional and new technologies, permanent restrooms, operations yard with access road, a "Welcome Station" structure, an interpretive and administration center, pedestrian and vehicle circulation systems, an interactive fountain/water feature(s), a children's play area and cultural gardens. The existing Interim Public Use (IPU) park built over a portion of the site will be modified to accept and expand the development over the entire 32 acres. The project will also close the existing park driveway and remove the existing parking lot located just east of the existing park driveway. Two new park driveways will be provided along North Spring Street at Sotello Street and Mesnagers Street.

PROJECT TRAFFIC VOLUMES

Projection of project traffic volumes involved a three-step process including trip generation, trip distribution, and trip assignment.

Project Trip Generation

Vehicle trip generation rates for the proposed park expansion were derived from traffic counts collected at the existing park driveway and a parking survey conducted at the parking lot located just east of the existing project driveway and on-street parking along North Spring Street. The observed park trip generation rates were then compared against data from the Institute of Transportation Engineers (ITE) and the San Diego Association of Governments (SANDAG). The observed vehicle trip generation rates exceeded ITE's PM peak hour regional park rate of 1.1 and Saturday midday peak hour rate of 1.68, as well as SANDAG's PM peak hour regional developed park rate of 1.8. The observed trip generation rates and resulting trip generation estimates for the LASHP project are summarized in Table 1.

TABLE 1
TRIP GENERATION RATES AND ESTIMATES - LASHP PROJECT

TRIP GENERATION RATES [a]							
Land Use	**Rate**	**Weekday PM Peak Hour**			**Weekend MD Peak Hour**		
		In %	**Out %**	**Total**	**In %**	**Out %**	**Total**
Los Angeles State Historic Park	per Acre	74%	26%	3.81	43%	57%	1.88
TRIP GENERATION ESTIMATES							
Land Use	**Rate**	**Weekday PM Peak Hour**			**Weekend MD Peak Hour**		
		In	**Out**	**Total**	**In**	**Out**	**Total**
Existing Park							
Los Angeles State Historic Park	16 Acres	45	16	61	13	17	30
Total Existing Park Trips		45	16	61	13	17	30
Proposed Project							
Los Angeles State Historic Park	32 Acres	90	32	122	26	34	60
Total Proposed Project Trips		90	32	122	26	34	60
Net New Project Trips		**45**	**16**	**61**	**13**	**17**	**30**

[a] Trip Generation rates derived from a driveway count and parking survey performed September 2010. The trip generation rates do not assume alternative modes of transportation (e.g., biking, transit, etc.).

As shown in Table 1, the proposed project is expected to generate approximately 61 net new trips during the weekday PM peak hour and 30 net new trips during the Saturday midday peak hour. These trips formed the basis of the traffic impact analysis. Based on data from SANDAG the IPU generates approximately 20 daily trips per acre and the proposed project is expected to generate approximately 640 daily trips (320 net new daily project trips).

Project Trip Distribution

The geographic distribution of traffic generated by the proposed project depends on several factors, including the nature of the proposed land uses, the location of site access points in relation to the surrounding street system, the geographic distribution of existing and future population centers, existing travel patterns and topographic constraints.

The estimated distribution of trips generated by the proposed project was developed with the aid of traffic counts performed at the park driveway and the parking survey conducted at the parking lot located just east of the existing park driveway and on the on-street parking along North Spring Street. Following approval from City staff, the trip distribution pattern described below was used in this analysis:

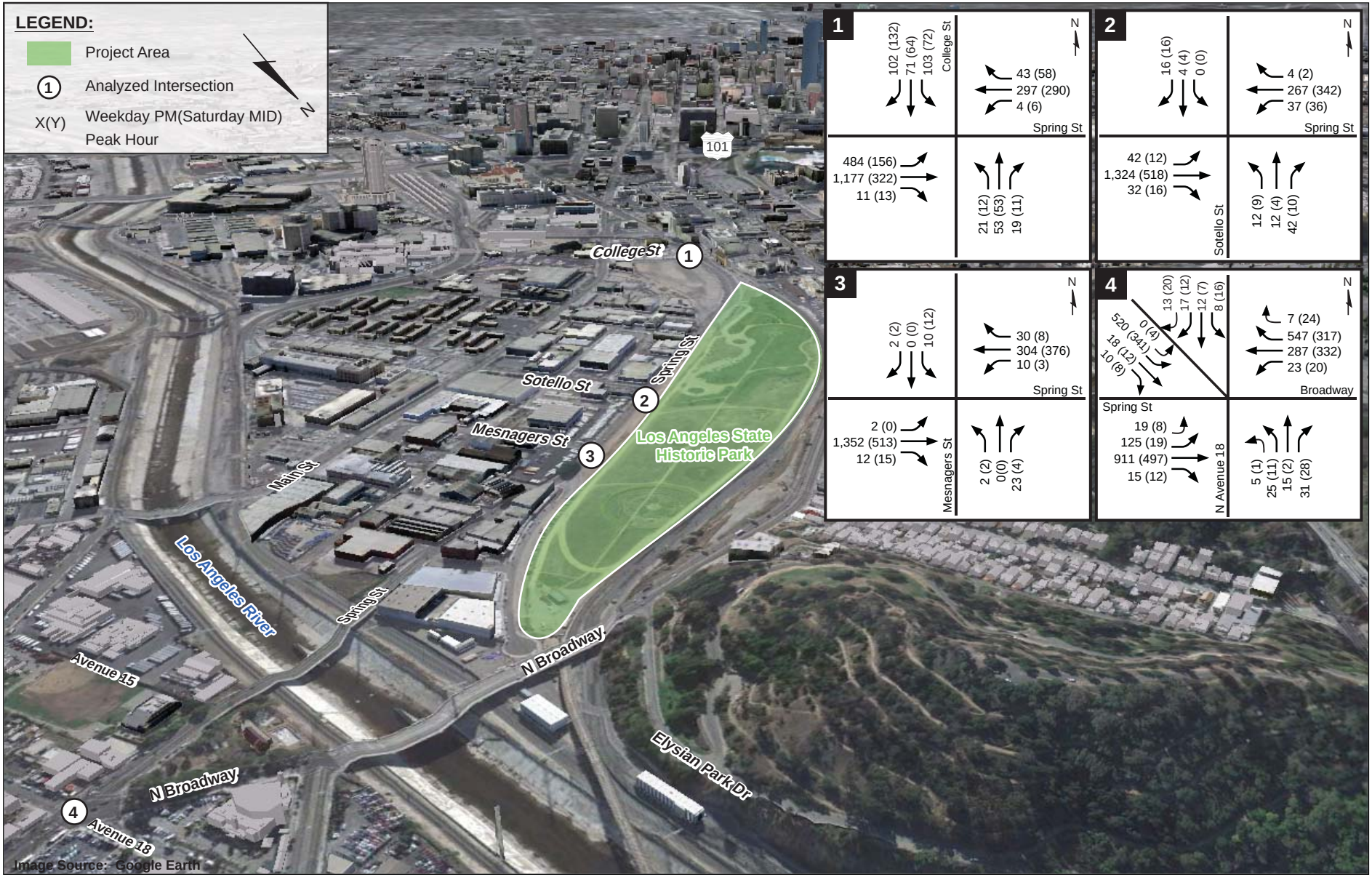
- 10% to/from the north
- 45% to/from the east
- 45% to/from the west

Project Trip Assignment

The trip generation estimates summarized in Table 1 and the trip distribution pattern described above were used to assign the project-related traffic to the local and regional roadway system. Existing traffic, which currently uses the existing park driveway and adjacent parking lot, both of which will be closed as part of the proposed project, was rerouted to the two new project driveways proposed by the project under existing (2010) plus project conditions.

EXISTING (2010) PLUS PROJECT TRAFFIC PROJECTIONS

The proposed project traffic volumes were then added to the existing (2010) no project traffic counts to develop the existing (2010) plus project traffic projections. Figure 1 illustrates the resulting projected existing (2010) plus project traffic volumes for a typical weekday PM and Saturday midday peak hour, representing existing traffic conditions following completion of the proposed project.



FEHR & PEERS
TRANSPORTATION CONSULTANTS

Novermber 10, 2010 JS
N:\Jobs\Active\2400s\2415 - LA State Historic Park TIA\Graphics\AI\Figure 3_4_6 Vols.ai

EXISTING (2010) PLUS PROJECT PEAK HOUR TRAFFIC VOLUMES

FIGURE 1

CHAPTER 2. TRAFFIC IMPACT ANALYSIS

This section presents an analysis of the projected future volumes to determine the potential impacts of the proposed project on the operating conditions of the surrounding street system.

SIGNIFICANT IMPACT CRITERIA

The transportation analysis used the following thresholds to determine the significance of project impacts:

Signalized Intersections

In accordance with LADOT criteria defined in their *Traffic Study Policy and Procedures*, an impact is considered significant if one of the thresholds, shown below in Table 2, is exceeded.

TABLE 2
CITY OF LOS ANGELES
SIGNIFICANT TRANSPORTATION IMPACT CRITERIA

Level of Service	Final V/C Ratio	Project-Related Increase in V/C
C	> 0.701 - 0.800	equal to or greater than 0.040
D	> 0.801 - 0.900	equal to or greater than 0.020
E	> 0.901 - 1.000	equal to or greater than 0.010
F	Greater than 1.000	equal to or greater than 0.010

Unsignalized Intersections

LADOT does not require the analysis of unsignalized intersections and no impact criteria is defined for unsignalized intersections in *Traffic Study Policy and Procedures*.

Transit System

An impact is considered significant if implementation of the project will disrupt or interfere with existing or planned transit operations or transit facilities.

Bicycle/Pedestrian System

An impact is considered significant if implementation of the projects will disrupt or interfere with existing or planned bicycle or pedestrian facilities.

EXISTING (2010) PLUS PROJECT OPERATING CONDITIONS

The existing (2010) plus project traffic volumes shown on Figure 1 were analyzed using the LOS methodologies described in Chapter 1 to evaluate future levels of service at the study intersections for the weekday PM and Saturday midday peak hours. This analysis assumed the addition of estimated project trips on existing (2010) no project conditions. The results of the intersection analysis are summarized in Table 3. Detailed LOS calculation worksheets are presented in Appendix A.

The two signalized study intersections are projected to operate at LOS A during both weekday PM and Saturday midday peak hours under existing (2010) plus project conditions. The two unsignalized intersections are projected to operate at LOS C or worse during one of both peak hours:

2. North Spring Street & Sotello Street (LOS F weekday PM and Saturday midday)

3. North Spring Street & Mesnagers Street (LOS F weekday PM)

As stated by LADOT in *Traffic Study Policies and Procedures,* analysis at unsignalized intersections is not required; therefore, no significant impact criteria is defined. Thus, the project would not result in any significant impacts.

MITIGATION MEASURES

No mitigation measures are required because the project would not result in significant impacts based on the criteria established by LADOT in *Traffic Study Policies and Procedures.*

TABLE 3
INTERSECTION TRAFFIC OPERATIONS
EXISTING (2010) CONDITIONS

Intersections	Control	Peak Hour	Existing (2010)		Existing (2010) Plus Project		
			V/C	LOS	V/C	LOS	Impact?
1. North Spring Street & W College Street	Signalized	Weekday PM Saturday MD	0.443 0.205	A A	0.445 0.207	A A	NO NO
2. North Spring Street & Sotello Street [b]	Side-Street Stop	Weekday PM Saturday MD	24 13	C B	51 16	F C	NO NO
3. North Spring Street & Mesnagers Street [b]	Side-Street Stop	Weekday PM Saturday MD	17 12	C B	24 15	C B	NO NO
4. North Spring Street/North Broadway Street & S Avenue 18	Signalized	Weekday PM Saturday MD	0.372 0.124	A A	0.472 0.226	A A	NO NO

Note:
[a] Based on counts conducted September 2010.
[b] For side-street stop controlled intersections, delay in seconds for the worst movement is reported.

EXISTING (2010) PLUS PROJECT APPENDIX:
LEVEL OF SERVICE WORKSHEETS

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: W College Street W/E: N Spring Street I/S No: 1

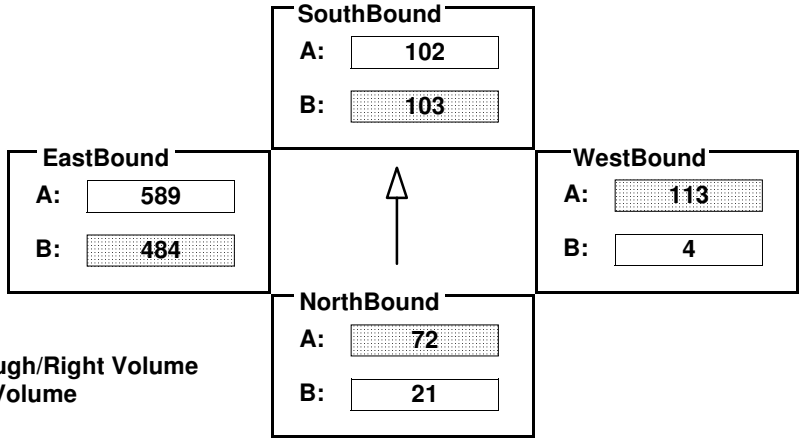
AM/PM: PM Comments: Existing Plus Project Weekday PM

COUNT DATE: STUDY DATE: GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND			SOUTHBOUND			WESTBOUND			EASTBOUND		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
EXISTING	21	53	19	103	71	102	4	297	43	484	1177	11
AMBIENT												
RELATED												
PROJECT												
TOTAL	21	53	19	103	71	102	4	297	43	484	1177	11
LANE	1			1		1	1			1		
							2		1	2		1
SIGNAL	Phasing: Perm	RTOR: Auto		Phasing: Perm	RTOR: Auto		Phasing: Perm	RTOR: Auto		Phasing: Perm	RTOR: Auto	

Critical Movements Diagram



A = Adjusted Through/Right Volume
B = Adjusted Left Volume
* = ATSAC Benefit

V/C RATIO	LOS
0.00 - 0.60	A
0.61 - 0.70	B
0.71 - 0.80	C
0.81 - 0.90	D
0.91 - 1.00	E

Results

North/South Critical Movements = A(N/B) + B(S/B)

West/East Critical Movements = A(W/B) + B(E/B)

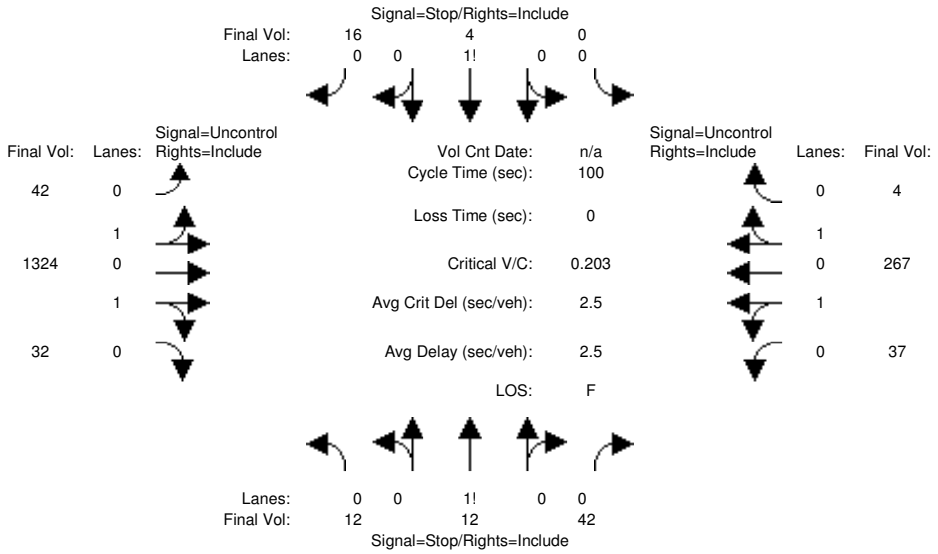
$$V/C = \frac{72 + 103 + 113 + 484}{1500} = 0.515$$

LOS = A

Los Angeles State Park Traffic Impact Study
Existing (2009) Conditions
Weekday PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
Existing Plus Project Weekday PM

Intersection #2: N Spring St & Sotello St



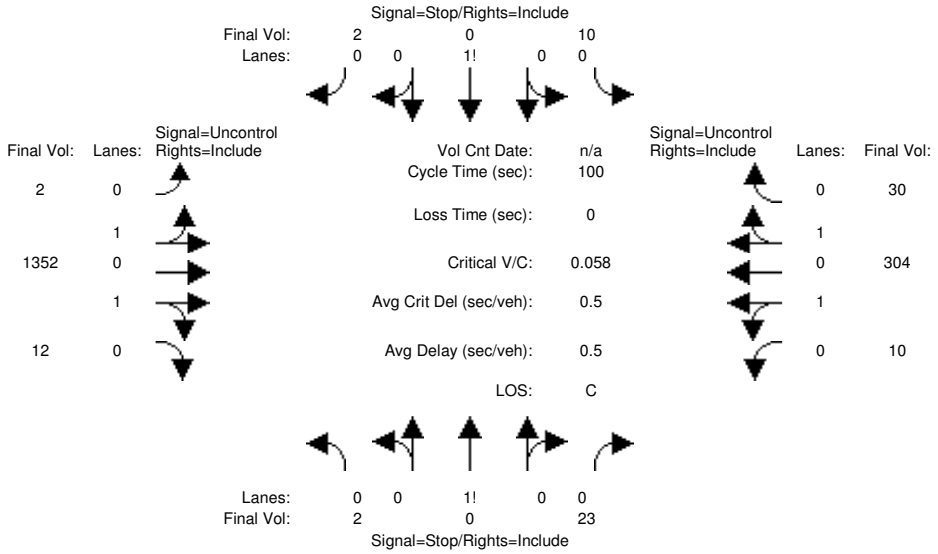
Street Name:	Sotello St						N Spring St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	12	12	42	0	4	16	42	1324	32	37	267	4
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	12	12	42	0	4	16	42	1324	32	37	267	4
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	12	12	42	0	4	16	42	1324	32	37	267	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	12	12	42	0	4	16	42	1324	32	37	267	4
Critical Gap Module:												
Critical Gp:	7.5	6.5	6.9	xxxxx	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1634	1769	678	xxxx	1783	136	271	xxxx	xxxxx	1356	xxxx	xxxxx
Potent Cap.:	68	84	399	xxxx	83	895	1304	xxxx	xxxxx	514	xxxx	xxxxx
Move Cap.:	59	76	399	xxxx	74	895	1304	xxxx	xxxxx	514	xxxx	xxxxx
Volume/Cap:	0.20	0.16	0.11	xxxx	0.05	0.02	0.03	xxxx	xxxx	0.07	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	0.2	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.9	xxxx	xxxxx	12.6	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	B	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	141	xxxxx	xxxx	xxxx	278	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	2.1	xxxxx	xxxxx	xxxx	0.2	0.1	xxxx	xxxxx	0.2	xxxx	xxxxx
Shrd ConDel:	xxxxx	51.0	xxxxx	xxxxx	xxxx	18.9	7.9	xxxx	xxxxx	12.6	xxxx	xxxxx
Shared LOS:	*	F	*	*	*	C	A	*	*	B	*	*
ApproachDel:		51.0			18.9			xxxxx			xxxxx	
ApproachLOS:		F			C			*			*	

Note: Queue reported is the number of cars per lane.

Los Angeles State Park Traffic Impact Study
Existing (2009) Conditions
Weekday PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
Existing Plus Project Weekday PM

Intersection #3: N Spring St & Mesnager St



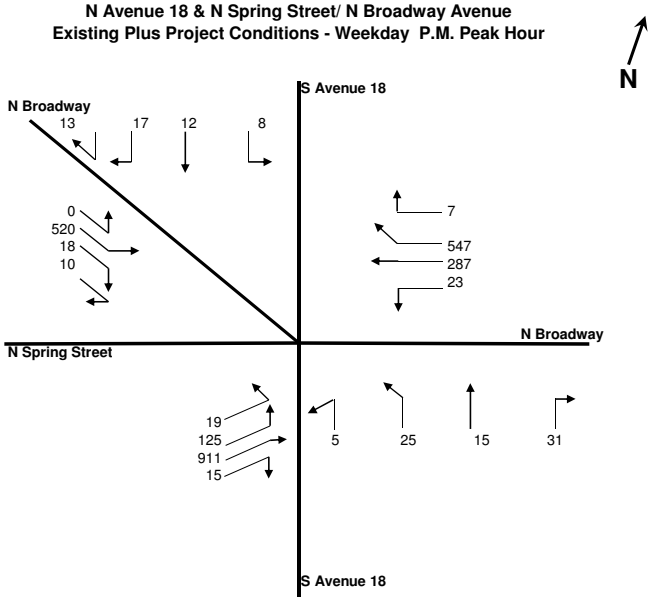
Street Name:	Mesnager St						N Spring St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	2	0	23	10	0	2	2	1352	12	10	304	30
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	0	23	10	0	2	2	1352	12	10	304	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	2	0	23	10	0	2	2	1352	12	10	304	30
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	2	0	23	10	0	2	2	1352	12	10	304	30
Critical Gap Module:												
Critical Gp:	7.5	6.5	6.9	7.5	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1534	1716	682	1019	1707	167	334	xxxx	xxxxx	1364	xxxx	xxxxx
Potent Cap.:	81	91	397	194	92	854	1237	xxxx	xxxxx	510	xxxx	xxxxx
Move Cap.:	80	89	397	180	90	854	1237	xxxx	xxxxx	510	xxxx	xxxxx
Volume/Cap:	0.03	0.00	0.06	0.06	0.00	0.00	0.00	xxxx	xxxx	0.02	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.1	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.9	xxxx	xxxxx	12.2	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	B	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	301	xxxxx	xxxx	207	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.3	xxxxx	xxxxx	0.2	xxxxx	0.0	xxxx	xxxxx	0.1	xxxx	xxxxx
Shrd ConDel:	xxxxx	18.0	xxxxx	xxxxx	23.5	xxxxx	7.9	xxxx	xxxxx	12.2	xxxx	xxxxx
Shared LOS:	*	C	*	*	C	*	A	*	*	B	*	*
ApproachDel:		18.0			23.5		xxxxxx			xxxxxx		
ApproachLOS:		C			C		*			*		

Note: Queue reported is the number of cars per lane.

Intersection 4

N Avenue 18 & N Spring Street/ N Broadway Avenue

Existing Plus Project Conditions - Weekday P.M. Peak Hour



NB 18	LLT	5
	LT	25
	RT	15
	RRT	31
SB 18	LLT	8
	LT	12
	RT	17
	RRT	13
EB Spring	LLT	19
	LT	125
	RT	911
	RRT	15
EB Broadway	LLT	0
	LT	520
	RT	18
	RRT	10
WB Broadway	LLT	23
	LT	287
	RT	547
	RRT	7

Check OK

Phase 1) 45 / 1 + 30 / 1 or 54

45 + 30

= **75**

Phase 2) 548 / 2

= **274**

Phase 3) 287 / 2 + 144 or 326.6667 or 424

144

= **424**

Critical Volumes = 75 + 274 + 424

= 773

V/C = 773 / 1425 - 0.07 = 0.472 LOS A

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: W College Street W/E: N Spring Street I/S No: 1

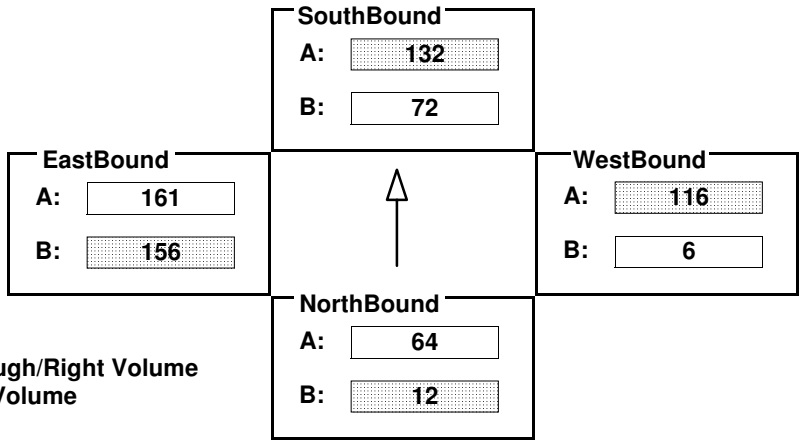
AM/PM: MD Comments: Existing Plus Project Saturday MD

COUNT DATE: STUDY DATE: GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND			SOUTHBOUND			WESTBOUND			EASTBOUND		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
EXISTING	12	53	11	72	64	132	6	290	58	156	322	13
AMBIENT												
RELATED												
PROJECT												
TOTAL	12	53	11	72	64	132	6	290	58	156	322	13
LANE	1				1			1		1	1			1			1			1	2			1	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram



A = Adjusted Through/Right Volume
B = Adjusted Left Volume
* = ATSAC Benefit

V/C RATIO	LOS
0.00 - 0.60	A
0.61 - 0.70	B
0.71 - 0.80	C
0.81 - 0.90	D
0.91 - 1.00	E

Results

North/South Critical Movements = B(N/B) + A(S/B)

West/East Critical Movements = A(W/B) + B(E/B)

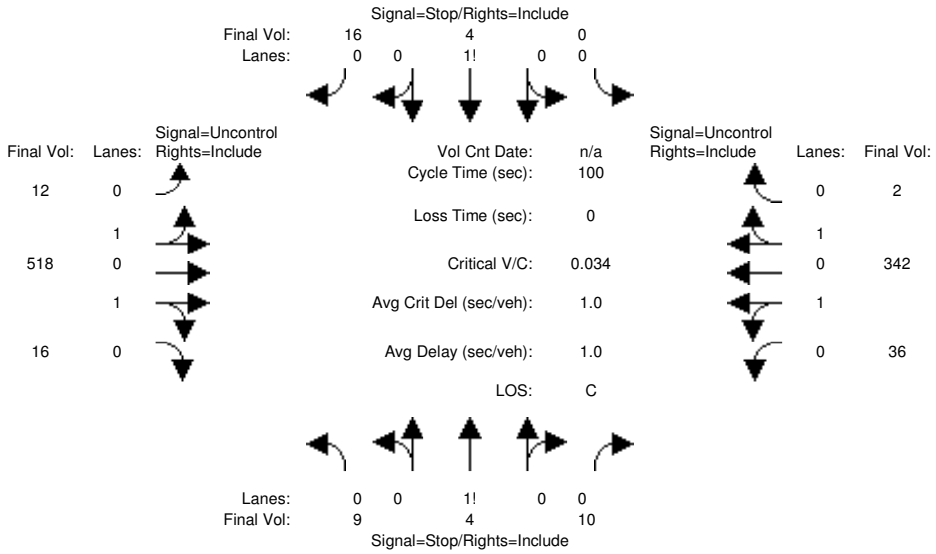
$$V/C = \frac{12 + 132 + 116 + 156}{1500} = 0.277$$

LOS = A

Los Angeles State Park Traffic Impact Study
Existing (2009) Conditions
Saturday MD Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
Existing Plus Project Saturday MD

Intersection #2: N Spring St & Sotello St



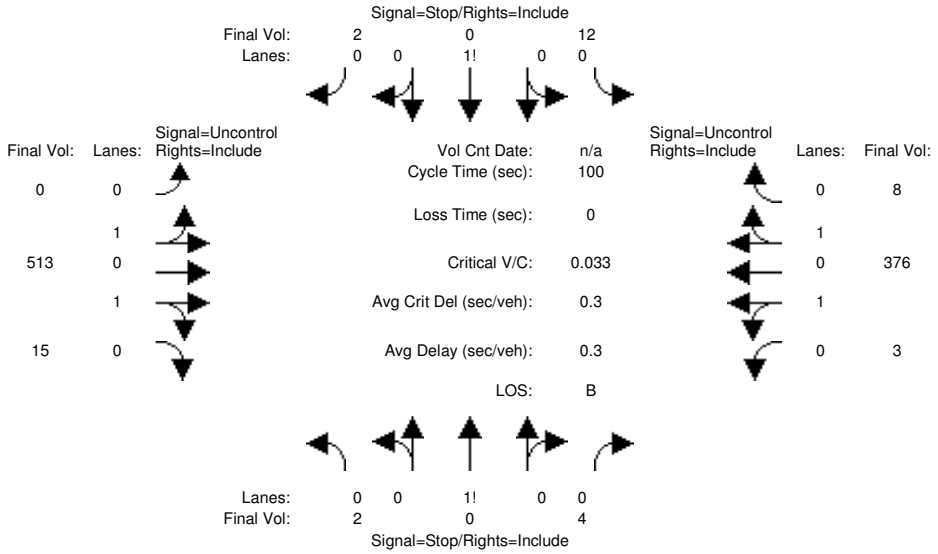
Street Name:	Sotello St						N Spring St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	9	4	10	0	4	16	12	518	16	36	342	2
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	4	10	0	4	16	12	518	16	36	342	2
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	9	4	10	0	4	16	12	518	16	36	342	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	9	4	10	0	4	16	12	518	16	36	342	2
Critical Gap Module:												
Critical Gp:	7.5	6.5	6.9	xxxxx	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	795	966	267	xxxx	973	172	344	xxxx	xxxxx	534	xxxx	xxxxx
Potent Cap.:	282	257	737	xxxx	254	848	1226	xxxx	xxxxx	1044	xxxx	xxxxx
Move Cap.:	264	245	737	xxxx	243	848	1226	xxxx	xxxxx	1044	xxxx	xxxxx
Volume/Cap:	0.03	0.02	0.01	xxxx	0.02	0.02	0.01	xxxx	xxxx	0.03	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.1	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.0	xxxx	xxxxx	8.6	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	359	xxxxx	xxxx	xxxx	566	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.2	xxxxx	xxxxx	xxxx	0.1	0.0	xxxx	xxxxx	0.1	xxxx	xxxxx
Shrd ConDel:	xxxxx	15.7	xxxxx	xxxxx	xxxx	11.6	8.0	xxxx	xxxxx	8.6	xxxx	xxxxx
Shared LOS:	*	C	*	*	*	B	A	*	*	A	*	*
ApproachDel:		15.7			11.6			xxxxx			xxxxx	
ApproachLOS:		C			B			*			*	

Note: Queue reported is the number of cars per lane.

Los Angeles State Park Traffic Impact Study
Existing (2009) Conditions
Saturday MD Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
Existing Plus Project Saturday MD

Intersection #3: N Spring St & Mesnager St



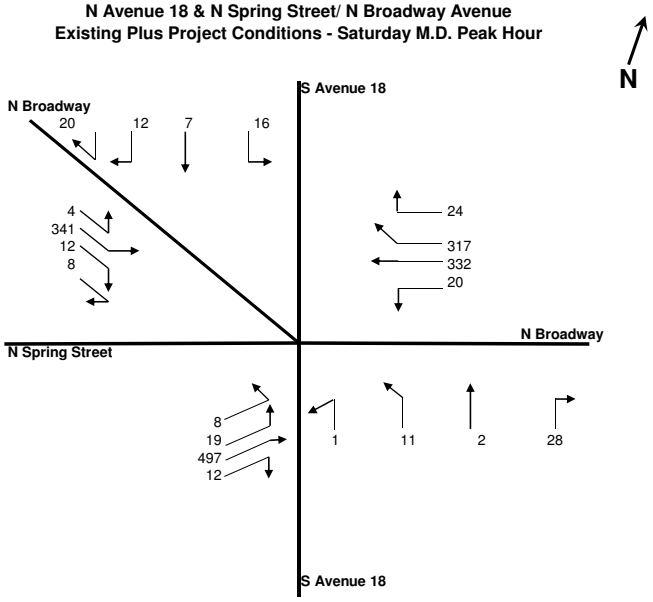
Street Name:	Mesnager St						N Spring St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	2	0	4	12	0	2	0	513	15	3	376	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	0	4	12	0	2	0	513	15	3	376	8
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	2	0	4	12	0	2	0	513	15	3	376	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	2	0	4	12	0	2	0	513	15	3	376	8
Critical Gap Module:												
Critical Gp:	7.5	6.5	6.9	7.5	6.5	6.9	xxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	715	911	264	643	914	192	xxxx	xxxx	xxxxx	528	xxxx	xxxxx
Potent Cap.:	322	276	741	363	275	823	xxxx	xxxx	xxxxx	1049	xxxx	xxxxx
Move Cap.:	321	276	741	360	274	823	xxxx	xxxx	xxxxx	1049	xxxx	xxxxx
Volume/Cap:	0.01	0.00	0.01	0.03	0.00	0.00	xxxx	xxxx	xxxx	0.00	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.4	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	515	xxxxx	xxxx	391	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.0	xxxxx	xxxxx	0.1	xxxxx	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx
Shrd ConDel:	xxxxx	12.1	xxxxx	xxxxx	14.5	xxxxx	7.2	xxxx	xxxxx	8.4	xxxx	xxxxx
Shared LOS:	*	B	*	*	B	*	A	*	*	A	*	*
ApproachDel:		12.1			14.5		xxxxxx			xxxxxx		
ApproachLOS:		B			B		*			*		

Note: Queue reported is the number of cars per lane.

Intersection 4

N Avenue 18 & N Spring Street/ N Broadway Avenue

Existing Plus Project Conditions - Saturday M.D. Peak Hour



NB 18	LLT	1
	LT	11
	RT	2
	RRT	28
SB 18	LLT	16
	LT	7
	RT	12
	RRT	20
EB Spring	LLT	8
	LT	19
	RT	497
	RRT	12
EB Broadway	LLT	4
	LT	341
	RT	12
	RRT	8
WB Broadway	LLT	20
	LT	332
	RT	317
	RRT	24

Check OK

Phase 1) 14 / 1 / 14 + 32 / 1 / 32 or 46

= **46**

Phase 2) 365 / 2

= **182.5**

Phase 3) 332 / 2 / 166 + 27 or 185.6667 or 185.5

= **193**

Critical Volumes = 46 + 182.5 + 193

= 421.5

V/C = 421.5 / 1425 - 0.07 = 0.226 LOS A