Department of City Planning

City Hall • 200 N. Spring Street, Room 601 • Los Angeles, CA 90012

APPENDICES TO THE ADDITIONAL RESPONSES TO COMMENTS

CENTRAL CITY COMMUNITY PLAN AREA

Wilshire Grand Redevelopment Project

Case No. ENV-2009-1577-EIR-GB

Council District No. 9

THIS DOCUMENT INCLUDES ADDITIONAL RESPONSES TO COMMENTS ON THE EIR PREPARED UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY ACT

Project Address: 930 Wilshire Boulevard, Los Angeles, California 90017

Project Description: The Wilshire Grand Redevelopment Project includes development on a 3.2-acre site located in the Central City (Downtown) area of the City of Los Angeles. The Project includes demolition of the existing Wilshire Grand Hotel and Centre, and the development of a maximum of 560 hotel rooms and/or condo-hotel units, 100 residential units, 1,500,000 square feet of office, 275,000 square feet of amenity areas including, but not limited to, project-serving retail and restaurant uses, conference and meeting rooms, ballrooms, spa, fitness center, and ancillary other hotel, residential, and office areas. The Project includes a landscaped pedestrian plaza at the corner of Figueroa Street and 7th Street, as well as a rooftop helistop. Approximately 1,900 parking spaces will be provided in eight levels of subterranean parking. The Project includes one approximately 65-story structure, no more than 1,250 feet in height, one approximately 45-story structure, no more than 750 feet in height, and an approximately six-story podium structure, no more than 168 feet in height.

APPLICANT:
Hanjin International Corporation
c/o Thomas Properties Group, L.P.

PREPARED BY:
EcoTierra Consulting

February 2011

APPENDIX A

Memorandum, Response to Comments for the Wilshire Grand Redevelopment Project, Gibson Transportation Consulting, Inc., to Thomas Properties Group
February 11, 2011

Gibson transportation consulting, inc.

MEMORANDUM

TO: Ayahlushim Hammond
Thomas Properties Group

FROM: Patrick A. Gibson, P.E., PTOE
Geetika Maheshwari, P.E., LEED AP

DATE: February 11, 2011

RE: Response to Comments for the
Wilshire Grand Redevelopment Project **Ref: J1001**

This memorandum provides the responses to comments related to traffic submitted to the Environmental Impact Report (EIR) for the Wilshire Grand Redevelopment Project ("Project"). The comment letters responded to in this memorandum include:

- Jeffer Mangels Butler & Mitchell LLP letter dated November 12, 2010
- Crain & Associates letter dated December 14, 2010
- Brookfield Properties Management LLC letter dated December 15, 2010
- DLA Piper appeal dated January 14, 2011

JEFFER MANGELS BUTLER & MITCHELL LLP LETTER (NOVEMBER 12, 2010)

COMMENT 1: FRANCISCO STREET OPERATIONS

Response: It is assumed that the commenter is referring to the 3,624 net new daily trip generation shown in Table IV.B-14 on Page IV.B-104 of the Draft EIR (DEIR) and Table 10 on Page 88 of the *Transportation Study for the Wilshire Grand Redevelopment Project*, Gibson Transportation Consulting, Inc, April 2010 ("Transportation Study"). This is expected to be the net increase in traffic across a 24-hour period for the full Project before accounting for trip reductions from the Transportation Demand Management (TDM) program described in Mitigation Measure MM-1 identified in Section IV.B.8 on Page IV.B-59 of the DEIR.

After the implementation of the TDM program, which is a Project requirement by the Los Angeles Department of Transportation (LADOT), the Project is expected to result in a net increase of 1,454 daily trips, including 522 morning and 552 afternoon peak hour trips, as shown in Table IV.B-25 on Page IV.B-119 of the DEIR and Table 13 on Page 133 of the Transportation Study.

As noted in Section IV.B.5.b.vi(1) on Page IV.B-49 of the DEIR, the Project would provide valet service off of 7th Street for the hotel land uses. Therefore, with the hotel traffic utilizing the 7th Street access, the remaining project trips using Francisco Street would have to be even lower than the 1,454 daily trips, 522 new morning peak hour trips, and 552 new afternoon peak hour trips.

Additionally, as noted in Section IV.B.5.b.vi(1) on Page IV.B-49 of the DEIR and Page 185, Chapter 8 of the Transportation Study, Francisco Street would be restriped to a three-lane cross-section with one lane in each direction and a two-way left-turn lane, therefore providing more capacity than the existing two-lane configuration. A detailed analysis has been conducted for Francisco Street and is provided in Appendix L of the Transportation Study. This analysis shows that Francisco Street would operate at acceptable operating levels per LADOT standards with the Project traffic under the new configuration.

In particular, Appendix L includes an analysis of queuing for the turning movements providing access to the 1000 Wilshire building from Francisco Street. Table L-2 shows that the queues for inbound and outbound movements for the Project and the 1000 Wilshire building range from 0 to 3 vehicles. This level of queuing is considered well within acceptable operating levels per LADOT standards. The Project access analysis in Appendix L concluded that this level of queuing is considered well within acceptable operating standards. This level of queuing would not impede through traffic on Francisco Street or negatively affect circulation entering or leaving the 1000 Wilshire building.

As noted in LADOT's traffic assessment letter (*Traffic Assessment of the Proposed Wilshire-Grand Redevelopment Project*, April 20, 2010), LADOT has determined that the proposed configuration of Francisco Street:

> "is not expected to result in adverse impacts to the access and circulation of other existing uses served by Francisco Street."

COMMENT 2: REDESIGN OF FRANCISCO STREET

Response: As shown in Appendix L of the Transportation Study, the EIR does consider an additional design option for Francisco Street which assumed a four-lane cross-section for Francisco Street with two lanes in each direction. As shown in Table L-2, this design option worked satisfactorily as well. In order to ensure that this design would not result in any issues for cars turning into the 1000 Wilshire building, a driveway template has been prepared. As shown in Figure 8, this design option would work satisfactorily with the 1000 Wilshire building driveway with a 2-foot widening of the driveway at the sidewalk curb.

COMMENT 3: 7th STREET ACCESS

Response: As mentioned in the comment, Project access is already anticipated from 7th Street. The hotel entrance/exit movements will be served on the 7th Street driveway. Similar to other Class A office buildings in downtown Los Angeles, office tenants and visitors would also be given the option of using the valet service at the 7th Street driveway.

The DEIR and the Transportation Study, however, present a conservative analysis in that they assume that all of the office traffic would access the Francisco Street driveway.

CRAIN & ASSOCIATES LETTER (DECEMBER 14, 2010)

COMMENT 1: IMPACT ON 601 S FIGUEROA STREET BUILDING ACCESS

The office building at 601 S. Figueroa Street is served by only one driveway, which is located approximately 200 feet west of the west curb of Figueroa Street. This driveway operates with left- and right-turn movements for both ingress and egress. Eastbound motorists on Wilshire Boulevard use the two-way left-turn lane to make left turns into the driveway. Left-turning motorists exiting the driveway also use the two-way left-turn lane to merge into the eastbound dual left-turn lanes on Wilshire Boulevard or as a refuge area before merging with eastbound through traffic on Wilshire Boulevard.

The current LADOT striping plan shows that the eastbound dual left-turn lanes on Wilshire Boulevard have approximate lengths of 107 feet and 149 feet west of Figueroa Street, for a total of 256 feet of storage length. Immediately west of the dual left-turn lanes is the two-way left-turn lane referenced above.

The traffic study shows the existing left-turn volume using the dual left-turn lanes to be 510 vehicles during the PM peak hour. This left-turn volume sometimes extends out of the dual left-turn lanes and into the two-way left-turn lane or the number one eastbound through lane on Wilshire Boulevard. Based on level of service calculation worksheets appended to the traffic study, the Project will add 237 vehicles, after TDM mitigation, to the dual left-turn lanes during the PM peak hour. This addition of Project trips is expected to result in a queue of vehicles regularly extending well beyond the 601 Figueroa Street driveway. This queuing would block and significantly impede and delay the left-turning traffic exiting this driveway during the PM peak hour.

Response: This comment deals with the need for additional turn capacity at the intersection of Figueroa Street & Wilshire Boulevard. Because the eastbound-to-northbound left turn demand often exceeds the capacity of the existing dual left-turn lanes, the exit to the Commenter's office building is often blocked.

The triple left-turn lanes at Figueroa Street & Wilshire Boulevard were rejected by LADOT because they resulted in a misalignment of the through lanes in the east-west direction and they required that the signal phasing be modified to provide split phasing for the east-west traffic.

COMMENT 2: PROJECT TRIP DISTRIBUTION

The traffic study assumed one general trip distribution pattern for the Project, even though the Project is comprised of several uses. This is contrary to recent traffic studies for large mixed-use projects approved by LADOT that have used discrete trip distribution patterns and percentages for individual uses in order to more accurately assign trips to study intersections and routes. For example, office, residential, hotel and retail uses generally have different trip distributions, as their origins and destinations are different. Utilizing one generic trip distribution for dissimilar proposed and existing uses can result in project trips and impacts being underestimated at study locations, as well as some locations not being considered for analysis because they have been assigned a low number of trips. In our opinion, a more accurate and inclusive traffic *analysis would have included discrete trip distributions for the proposed Project uses and the existing uses being removed.*

Response: The Project trip distribution was based on the Southern California Association of Governments' (SCAG) regional transportation model distribution of trips from the downtown Los Angeles traffic analysis zone (TAZ) where the Project is located. While the zone is predominantly office use, there are other land uses in the TAZ and therefore the trip distribution pattern used in the DEIR reflects the mixture of uses proposed for the Project.

In terms of using a separate distribution for the existing trips to be removed from the street system and the new trips to be added to the street system, the land uses being demolished are the same as the land uses being added to the site (i.e., predominantly office and hotel) and therefore the separate existing vs. future distribution by land use is not necessary.

COMMENT 3: USE OF PROJECT PASS-BY TRIPS

Per LADOT traffic study policies and procedures, pass-by trip credits are "not applicable to review of impacts at project driveways and the intersection(s) immediately adjacent to the project site." Therefore, project traffic impacts at site-adjacent intersections should be determined without the application of pass-by trip credit.

In the Project trip generation analysis, adjustments were made to the proposed and existing use trips in order to account for transit/HOV, walk, Central Business District (CBD) and internal capture factors. The CBD adjustment factor was applied to the fitness facility and retail/restaurant use trips, and was described as accounting for walk-in trips, pass-by trips, and trips captured from neighboring developments. The CBD adjustment factor, which includes pass-by trip credit, was applied to all Project trip, including those assigned to site-adjacent intersections. This procedure was contrary to LADOT policy, resulting in an underestimation of levels of service, Project trips and impacts at site-adjacent intersections.

Response: As shown in Tables 10 and 13 in the Transportation Study, the trip generation estimates for the Project do not account for any pass-by automobile trips. The Central Business District (CBD) adjustment accounts for only pass-by pedestrian trips and trips captured from neighboring developments. Therefore, no additional automobile pass-by trips were added to the intersections adjacent to the Project Site.

COMMENT 4: ADEQUACY OF PROJECT PARKING

The Project parking analysis determined that the on-site parking supply of 1,900 spaces would be insufficient to satisfy the shared parking demand of 1,992 spaces, with a resultant deficiency of 92 spaces. With the implementation of TDM mitigation for the Project, the analysis concluded that the shared peak parking demand would be reduced to 1,868 spaces, leaving the parking supply with a surplus of 32 spaces. However, in terms of practicality and good parking structure planning, the 32-space surplus would be inadequate. As a parking structure nears it capacity, it becomes increasingly difficult and frustrating for motorists to find the few remaining spaces. To *alleviate this situation, it is common practice to design parking structures with 5 to 10 percent or more capacity above the anticipated peak demand, to the extent feasible. If the minimum 5 percentage "overage" factor were applied to the shared parking demand amount of 1,868 spaces, the practical parking supply for the Project should be at least 1,961 spaces; i.e., 61 spaces more than proposed. If the parking supply remains at 1,900 spaces or less, it is anticipated that there would a "spillover" effect due to some Project users choosing to seek less constrained parking elsewhere, such as in the nearby parking structure serving the 7+Fig shopping center and the office buildings at 725 and 777 S. Figueroa Street. This spillover could then impact the supply and operation of that facility.*

Response: The comment recommends that an "oversupply" of 5% spaces be added to the project parking supply to ease the search for the last few spaces in the garage. The comment fails to point out that the Shared Parking analysis included in Chapter 7 of the Transportation Study estimates the parking demand for the busiest hour of the year. Figure 46 on page 179 of the Transportation Study shows that the 1,868 occupied spaces occur only on weekdays during the busiest two months of the year and that every other month of the year will indeed have the 5% vacancy rate that the comment suggests. And Figure 48 on page 181 of the Transportation Study shows that the peak activity lasts for only a few hours in the middle of the day. Figure 47 on page 180 of the Transportation Study shows that there will be over 1,000 empty spaces on virtually every weekend day of the year.

Adding a 5% oversupply to the proposed 1,900 parking space supply would add almost 100 parking spaces that would never be occupied. The proposed parking supply is sufficient to eliminate spillover parking into neighboring project's parking supply.

COMMENT 5: RELATED PROJECTS ANALYSIS

Among the related projects listed in the traffic study was Citicorp Phase III (no. 92), a 792,000 square-foot office building at 755 S. Figueroa Street. The site for this related project is immediately west of the 7+Fig shopping center and the 725 and 777 Figueroa office buildings. The traffic study showed the Citicorp Phase III related project generating 4,677 trips per day, including 699 AM and 688 PM peak-hour trips. It is expected that a portion of these trips would use the existing driveway on the south side of 7th Street and opposite Francisco Street. This intersection, including the driveway, is signalized and used to access parking for 7+Fig and the two office buildings. As this intersection is at the southwest corner of the Project site, it was included as a study intersection. However, other than for minor ambient traffic growth, the traffic study had no increase in traffic volume entering or exiting this driveway. The Citicorp Phase III trips should have been appropriately analyzed in order to accurately show level of service conditions and impacts, particularly at this key intersection affecting both Project access and access for 7+Fig and 725 and 777 Figueroa.

Response: An alternate traffic impact analysis has been conducted for the Project that includes trips from the adjacent 755 S Figueroa Street related project. In summary, the results of this analysis show the addition of 755 S Figueroa Street related project's trips in the background traffic volumes do not alter the results of the significant impact analysis presented in the EIR and the Transportation Study, i.e. the Project would not result in any additional residual impacts beyond those already identified in the EIR.

Traffic Projections

As shown in Table 8 on page 55 of the Transportation Study, this related project (#92) is expected to generate approximately 699 morning peak hour trips and 688 afternoon peak hour trips. Traffic from the 755 S Figueroa Street office building was assigned to the street system using the trip distribution and assignment procedures described in Chapter 3 for the other related projects. These trips were then added to the Future without Project conditions traffic volumes illustrated in Figure 11 on page 48 of the Transportation Study to develop the Alternate Future without Project conditions traffic volumes. These volumes have been illustrated in Figure 3.

Similarly, the Alternate Future with Project conditions and Alternate Future with Project with TDM Program conditions traffic volumes were developed by adding trips from the 755 S Figueroa Street office building to the traffic volumes illustrated in Figure 17 and 22 on pages 80 and 119, respectively, of the Transportation Study. The Alternate Future with Project conditions and Alternate Future with Project with TDM Program conditions traffic volumes have been illustrated in Figure 4 and 5, respectively.

Traffic Operations

The traffic volumes presented in Figures 3 through 5 were analyzed using the "Critical Movement Analysis (CMA) – Planning" (Transportation Research Board, 1980) methodology described in Chapter 2 of the Transportation Study. Detailed level of service (LOS) worksheets are provided in Attachment A.

Alternate Future without Project Conditions. The "Alternate Future without Project" intersection operating conditions for typical weekday morning and afternoon peak hours are shown in Table 1.

As shown in Table 1, under the "Alternate Future without Project" conditions approximately 93% and 69% of the intersections are projected to operate at LOS D or better, and 7% and 31% are projected to operate at LOS E or F during the morning and afternoon peak hours, respectively.

Alternate Future with Project Conditions. The "Alternate Future with Project" intersection operating conditions for typical weekday morning and afternoon peak hours are shown in Table 2.

As shown in Table 2, under the "Alternate Future with Project" conditions, approximately 90% and 69% of the intersections are projected to operate at LOS D or better, and 10% and 31% are projected to operate at LOS E or F during the morning and afternoon peak hours, respectively.

Table 2 also provides a summary of the significant impact analysis, before TDM trip reduction and before any Project-funded transportation improvements, conducted for the 42 study intersections based on the criteria established by LADOT at different levels of service.

During the morning peak hour in 2020, the Project is expected to result in a significant impact at three intersections operating at LOS C or LOS D and two intersections operating at LOS E. During the afternoon peak hour in 2020, the Project is expected to result in a significant impact at five intersections operating at LOS C or LOS D, two intersections operating at LOS E, and seven intersections operating at LOS F. Intersections impacted in the morning peak hour are not necessarily the same intersections impacted in the afternoon peak hour and vice-versa. A total of 16 of the 42 study intersections are expected to be impacted during the morning and/or afternoon peak hour, before TDM program and mitigation, under the Alternate Traffic Impact analysis. The Project is not expected to result in a significant traffic impact at 26 of the 42 study intersections during either peak hour. The following table summarizes a comparison of the analysis presented in this section and that presented in Chapter 4 of the Transportation Study:

INTERSECTION IMPACT SUMMARY BEFORE MITIGATION				
	LADOT Procedures – Chapter 4		**Alternate Analysis**	
	A.M. Peak	P.M. Peak	A.M. Peak	P.M. Peak
LOS C or LOS D	3	3	3	5
LOS E	2	3	2	2
LOS F	0	6	0	7
Total Intersections	5	12	5	14
Total Individual Impacted Intersections	14		16	

As shown in the table above, under the “Alternate Future with Project” scenario, the Project is expected to result in two additional significant intersection impacts, before TDM program and mitigation, under the Alternate Traffic Impact analysis presented in this section.

<u>Alternate Future with Project with TDM Program Conditions</u>. The “Alternate Future with Project with TDM Program” scenario includes the TDM program presented in Chapter 5. The “Alternate Future with Project with TDM Program” intersection operating conditions for typical weekday morning and afternoon peak hours are shown in Table 3.

As shown in Table 3, under the “Alternate Future with Project with TDM Program” conditions approximately 90% and 69% of the intersections are projected to operate at LOS D or better, and 10% and 31% are projected to operate at LOS E or F during the morning and afternoon peak hours, respectively.

Table 3 also provides a summary of the significant impact analysis, after TDM trip reduction and before any Project-funded transportation improvements, conducted for the 42 study intersections based on the criteria established by LADOT at different levels of service.

During the morning peak hour in 2020, the Project is expected to result in a significant impact at two intersections operating at LOS C and two intersections operating at LOS E. During the afternoon peak hour in 2020, the Project is expected to result in a significant impact at one intersection operating at LOS D, two intersections operating at LOS E, and five intersections operating at LOS F. Intersections impacted in the morning peak hour are not necessarily the same intersections impacted in the afternoon peak hour and vice-versa. A total of 10 of the 42 study intersections are expected to be impacted during the morning and/or afternoon peak hour under the Alternate Traffic Impact analysis. The Project is not expected to result in a significant traffic impact at 32 of the 42 study intersections during either peak hour. The following table summarizes a comparison of the analysis presented in this section and that presented in Chapter 5:

INTERSECTION IMPACT SUMMARY BEFORE PROJECT-FUNDED TRANSPORTATION IMPROVEMENTS				
	LADOT Procedures – Chapter 5		**Alternate Analysis**	
	A.M. Peak	P.M. Peak	A.M. Peak	P.M. Peak
LOS C or LOS D	1	1	2	1
LOS E	2	2	2	2
LOS F	0	5	0	5
Total Intersections	3	8	4	8
Total Individual Impacted Intersections	9		10	

As shown in the table above, under the “Alternate Future with Project with TDM Program” scenario, the Project is expected to result in a significant impact at one additional intersection under the Alternate Traffic Impact analysis presented in this section: Francisco Street & Wilshire Boulevard.

Alternate Future with Project with Mitigation Conditions. The “Alternate Future with Project with Mitigation” scenario includes all of the transportation improvement and mitigation measures presented in Chapter 5 of the Transportation Study. The “Alternate Future with Project with Mitigation” intersection operating conditions for typical weekday morning and afternoon peak hours are shown in Table 4.

As shown in Table 4, under the “Alternate Future with Project with Mitigation” conditions approximately 90% and 69% of the intersections are projected to operate at LOS D or better, and 10% and 31% are projected to operate at LOS E or F during the morning and afternoon peak hours, respectively.

Table 4 also provides a summary of the significant impact analysis, after mitigation, conducted for the 42 study intersections based on the criteria established by LADOT at different levels of service.

INTERSECTION IMPACT SUMMARY ALTERNATE FUTURE WITH PROJECT WITH MITIGATION SCENARIO			
	Before Mitigation (TDM and TSM)	**After TDM and Before TSM**	**After Mitigation (TDM and TSM)**
A.M. Peak Hour	5	4	3
P.M. Peak Hour	14	8	6
Total Individual Impacted Intersections	16	10	7

The analysis summarized above shows that the TDM program and the TSM improvements included in the Project’s transportation mitigation program would mitigate two of the five morning peak hour and eight of the 14 afternoon peak hour impacted intersections. The following table summarizes a comparison of the analysis presented in this section and that presented in Chapter 5 of the Transportation Study:

INTERSECTION IMPACT SUMMARY FUTURE WITH PROJECT WITH MITIGATION SCENARIO				
	LADOT Procedures – Chapter 5		**Alternate Analysis**	
	A.M. Peak	P.M. Peak	A.M. Peak	P.M. Peak
LOS C or LOS D	1	0	1	0
LOS E	2	1	2	1
LOS F	0	5	0	5
Total Intersections	3	6	3	6
Total Individual Impacted Intersections	7		7	

As shown in the table above, the Project is not expected to result in any new and/or different residual significant and unavoidable impacts under the Alternate Traffic Impact analysis as compared to the analysis presented in the EIR and Chapter 5 of the Transportation Study.

COMMENT 6: PROJECT TDM TRIP REDUCTIONS

Table 12 of the traffic study, Appendix IV.B of the Draft EIR, listed the proposed TDM strategies and their expected reductions in vehicle trips during the PM peak hour for the residential, hotel/retail/restaurant and office uses. A live-work/land-use/mixed-use densification strategy was included in Table 12, but no explanation for this strategy was provided in the body of the report. A trip reduction credit of 7.5 percent was assumed for the residential, hotel/retail/restaurant and office uses based on implementation of the live-work/land-use/mixed-use densification strategy. This individual TDM strategy accounted for over one-half of the total trips reduced for the residential and hotel/retail/restaurant uses and approximately one-third of the total trips reduced for the office use. Because the mechanism behind this strategy is not clear, the associated trip-reducing benefits are difficult to confirm. If this strategy is intended to capture the trip-reducing effects of the overall "mixed-use" nature of the project, it would appear that these effects have already been accounted for in the initial project trip generation estimates via the transit/HOV, walk, CBD, and internal capture trip adjustment factors.

Additionally, the information in Table 12 refers to expected reductions in vehicle trips during the PM peak hour. These reductions were applied to all time periods (i.e., daily, AM peak hour and PM peak hour) in the Project trip generation estimates with TDM mitigation. It is not clear why the same trip-reduction rates were used for all time periods. As shown in Table 13 of the traffic study, the trip-reducing effect of flexible work schedules appears to have been applied equally to all time periods, including daily, for the office use. While flexible work schedules tend to shift travel out of the morning and afternoon peak periods, they would not be expected to change the number of daily trips.

The trip reduction estimates assumed in Table 12 were based on various TDM programs implemented for projects throughout the country. Appendix H of the traffic study provides a review of studies examining the:

- *Travel behavior of residents and employees of transit-oriented developments (TODs) in the State of California; and*
- *Effectiveness of TDM strategies employed for various developments throughout the country.*

In Appendix H, a summary of the two TOD studies showed that approximately 22 percent of residents and employees of TODs travel via transit or bicycle/walk modes. The traffic study reasoned that the 19 percent total Project trip reduction expected from the TDM strategies was conservative in light of the 22 percent alternative mode split found for the TODs. However, these two percentages describe different phenomena. The 22 percent alternative mode split describes the number of trips expected to be made via transit or bicycle/walk modes for residents and employees of TODs. The 19 percent trip reduction is the additional trip discount being applied to the Project's trip generation, following trip adjustments for transit/HOV, walk, CBD, and internal capture factors, in order to estimate the benefit of implementing the Project's TDM program. The TOD alternative mode split is not a metric for TDM program effectiveness and, therefore, should not have been used to justify the 19 percent trip reduction applied in the traffic study.

Table H-1 in Appendix H of the traffic study provided a summary of various TDM strategies for developments throughout the country and their resulting effectiveness (e.g., percent reduction in vehicle trips, percent increase in transit ridership, etc.). While the percent change in trips for a particular mode due to TDM implementation is useful, the actual trip levels and mode splits may be more informative. For example, the Rehoboth Beach, DE project in Table H-1 experienced a 13 percent increase in transit ridership following the implementation of a "better transit information" TDM strategy. It would be useful to know the baseline transit ridership level for the Rehoboth Beach, DE project (e.g., from 2 percent to 15 percent, from 20 percent to 33 percent, etc.), as it is reasonable to assume that it is harder to achieve transit ridership gains through TDM implementation if a larger percentage of the project population is already using transit. For the initial Project trip generation calculations, a 25 percent trip reduction for transit/HOV and a 5 percent trip reduction for walk were applied to the residential, hotel and office use trips. Given that the TDM trip reductions are being added to these large initial trip reductions, a survey of the effectiveness of TDM strategies for projects that exhibited a diverse mode split prior to TDM implementation would be more helpful. With the limited amount of information provided in the traffic study regarding TDM measure effectiveness, it is difficult to confirm whether the 19 percent total Project trip reduction due to TDM is justified.

Response: The Project's trip generation estimates were prepared in consultation with and approved by LADOT. Additionally, as noted in LADOT's traffic assessment letter, the Project would be required to comply with the trip estimates noted in the EIR as the Project's TDM Program would be required to include:

> "an annual trip monitoring and reporting program that sets trip-reduction milestones and a monitoring program to ensure effective participation and compliance with the TDM goals; non-compliance to the trip-reduction goals would lead to financial penalties or may require the implementation of physical transportation improvements."

BROOKFIELD PROPERTIES MANAGEMENT LLC LETTER (DECEMBER 15, 2010)

COMMENT 1-1

Francisco Street is a vital corridor to access our properties at 7th+Fig, 725 S. Figueroa, and 615 S. Figueroa. In addition, it provides the only access to 1000 Wilshire where we possess an easement for parking spaces. Nearly all Project parking will occur via Francisco and this will unduly burden 1000 Wilshire and our three properties. There is simply too much proposed traffic to the street itself that will make access next to impossible. With the underestimation of Project traffic due to the omission of trips allocated to the outdoor dining, bars and pool bar; the amenity areas that will also generate additional trips; and the overstated credit for the underutilized on-site uses being demolished, once the Project becomes operational, Francisco will be completely overloaded. A feasible mitigation measure would be to turn this into a roadway with two lanes in each direction with a center turn lane. As there are significant impacts in the immediate vicinity of Francisco, CEQA requires more mitigation which would result in a direct and immediate improvement, such as the measure we propose.

Response: Response to Comment 7-6 of the Final EIR (FEIR) addressed impacts on Francisco Street stating, as noted in Section IV.B on Page IV.B-49 of the DEIR and Page 185, Chapter 8 of the Transportation Study, Francisco Street would be restriped to a three-lane cross-section with one lane in each direction and a two-way left-turn lane, therefore providing more capacity than the existing two-lane configuration. A detailed analysis has been conducted for Francisco Street and is provided in Appendix L of the Transportation Study. This analysis shows that Francisco Street would operate at acceptable operating levels per LADOT standards with the Project traffic under the new configuration. This analysis included traffic counts, along with an ambient growth rate of 0.75% per year, which therefore included the trips noted by the commenter as using Francisco Street to access the commenter's Figueroa properties. With regards to the five-lane cross-section on Francisco Street proposed by the commenter, the right-of-way on Francisco Street does not allow for it nor does the analysis suggest that it is needed.

As noted in LADOT's traffic assessment letter, LADOT has determined that the proposed configuration of Francisco Street:

> "is not expected to result in adverse impacts to the access and circulation of other existing uses served by Francisco Street."

With regards to omitting trips, the FEIR addressed this issue in Response to Comment 7-3; traffic volumes and trip generation rates and adjustments were reviewed and approved by LADOT as noted in their memorandum dated April 20, 2010, and included in Appendix IV.B of the DEIR. As noted in Section IV.B, on page IV.B-39 of the DEIR and Page 67, Chapter 4 of the Transportation Study provided in Appendix IV.B of the Draft EIR:

> "Various sources were reviewed as part of the transportation impact analysis, including recent studies conducted for the Downtown Los Angeles Cordon Count (City of Los Angeles, May 2002), the Los Angeles Sports and Entertainment District (LASED) Specific Plan (City of Los Angeles, October 2001), the L.A. Entertainment District EIR Traffic Study (The Mobility Group, December 2000), the Alameda District Specific Plan

(City of Los Angeles, June 1996), NCHRP Travel Characteristics at Large-Scale Suburban Activity Centers (Transportation Research Board, October 1989), and Trip Generation Rates for Los Angeles Central Business District (Barton-Aschman Associates, 1989).

Existing public transit ridership in the downtown core is higher than the rest of the Los Angeles metropolitan area and is much higher than what is inherently reflected in the ITE trip generation rates, which are based on free-standing, suburban sites. In consideration of the proximity of the Project to over 85 existing bus lines and three rail lines, the high level of transit usage that is expected to and from the Project Site would result in fewer vehicular trips on the roadway system than would typically be the case elsewhere in the Los Angeles metropolitan area. Data from the Downtown Los Angeles Cordon Count indicates that approximately 28% of all person trips to/from downtown over the 16-hour cordon count (6:00 a.m. to 10:00 p.m.) occur via a public transit mode, with peak hour transit mode splits as high as 34% during the morning peak hour and 32% during the afternoon peak hour. Trip generation rates in the LASED traffic study and the LASED specific plan reflect transit credits of approximately 10% for retail and residential uses and 15% to 20% for hotel and office uses (including shuttle and tour buses). These sources also indicate that ITE trip generation rates for the retail uses could be reduced by 20% to 30% to reflect pass-by trips.

In addition, "Captive Market" trips were estimated for residential-office, residential-retail, and office-retail intersections based on surveys conducted for downtown Los Angeles (Downtown Los Angeles Demographic Survey, Downtown Center Business Improvement District, 2008). For example, considering the proximity of the downtown residents and patrons to the shopping and employment opportunities in the Central Business District area, it is expected that most or all of the residents/patrons would walk or take transit. Similarly, a significant number of patrons to the office, retail, and hotel uses would use high capacity shuttles, carpools, and vanpools."

Gibson Transportation Consulting, Inc., prepared the attached Table 5 for the Final EIR, reproduced below, to provide a comparison of the trip credits taken by LASED and *Bunker Hill Design for Development Program EIR* (Kaku Associates, Inc., August 2005) with the trip credits assumed for the Project. As shown in the table, the trip generation credits assumed for the Project are typical of those allowed in downtown Los Angeles, and in some cases, such as the hotel, significantly lower (29 percent compared to the 50 percent for Bunker Hill and 61 percent for LASED). It should also be noted that while the LASED and Bunker Hill projects have good transit linkage, the Project has a much higher transit connectivity with three rail lines located directly across the street at the 7th Street/Metro Center station. Therefore, the Project would be expected to have a higher transit mode-split than both the Bunker Hill and LASED projects.

Table 5 clearly shows that the trip generation credits assumed for the Project are consistent with other approved downtown projects and, considering the Project's immediate proximity to rail and bus transit service, could have been justified at even higher levels of credit.

COMMENT 1-2

Current access in and out of 615 S. Figueroa is difficult, especially for the left-in/left-out movements which are fully permitted and necessary for reasonable access to the freeway, and the addition of the Project's 2.5 million square feet ("msf") makes intersections already with failing levels of service ("LOS") significantly worse. Substantial amounts of traffic will be added by the Project without sufficient mitigation proposed. Please see the attached Crain Letter dated December 14, 2010 to Mr. Mark Phillips, incorporated by reference, for more information on this and other traffic impacts. One potential mitigation measure would be to add a traffic signal between Francisco and Figueroa on Wilshire so that easier access can be facilitated. This traffic signal could allow access to the Project site on Wilshire Boulevard and alleviate pressure off Francisco Street. Other access into the Project is essential, such as providing a self-parking entrance/exit on 7th Street and a possible entrance/exit on Figueroa Street.

Response:

Wilshire Boulevard Access

Response to Comment 7-7 of the FEIR addressed issues concerning access on Wilshire Boulevard. As mentioned in Appendix L of the Transportation Study, a driveway on Wilshire Boulevard would:

> "result in a direct access onto a Major Secondary Highway (Wilshire Boulevard) therefore violating standards set forth in *Driveway Design Guidelines* (LADOT, February 2003). This driveway would also be in violation of the recently-adopted City of Los Angeles' *Downtown Design Guide* (Los Angeles City Council, April 2009) and *Downtown Street Standards* (Los Angeles City Council, April 2009), and therefore would likely not be approved by LADOT."

Additionally, any ingress provided on Wilshire Boulevard would be restricted to permit only eastbound right-turns to enter the Project Site. Westbound traffic attempting to enter the Project Site from Wilshire Boulevard mid-block between Francisco Street and Figueroa Street would have to turn across the two eastbound left-turn lanes and two westbound through lanes. Therefore, as shown in Figure 21 on Page 115 of the Transportation Study, the ingress on Wilshire Boulevard would provide relief for only 74 net new trips traveling eastbound during the morning peak hour.

If additional inbound access from Wilshire Boulevard were provided as suggested in the comment, eastbound trips would travel through the intersection instead of turning right at the intersection of Francisco Street & Wilshire Boulevard. Since these trips would still be traversing the intersection, a new ingress on Wilshire Boulevard would not relieve traffic at the intersection of Francisco Street & Wilshire Boulevard. The driveway suggested in the comment would reduce the southbound left turn volumes entering the Project driveway on Francisco Street, but as mentioned above, the Francisco Street driveway is expected to have 3 or fewer vehicles queued in the left-turn lane and thus would not impede traffic flow on Francisco Street.

With regards to a new traffic signal on Wilshire Boulevard between Francisco Street and Figueroa Street, this would result in closely-spaced signalized intersections that would not be permitted by LADOT. In additional, any such signal would decrease the storage spaces for eastbound vehicles on Wilshire Boulevard.

7th Street Access

Response to Comment 7-8 of the FEIR addressed issues concerning access on 7th Street. As mentioned in the response, Project access is already anticipated from 7th Street. The hotel entrance/exit movements will be served on the 7th Street driveway. Similar to other Class A office buildings in downtown Los Angeles, office tenants and visitors would also be given the option of using the valet service at the 7th Street driveway.

The DEIR and the Transportation Study, however, present a conservative analysis in that they assume that all of the office traffic would access the Francisco Street driveway.

With hotel check-in and out, hotel valet activity, and residential and office valet activity taking place in the porte-cochere area in the middle of the block and valet parking ramps to/from the lower parking level at each end of the block, there is very little room to place another driveway along the 7th Street frontage of the Project. Alternate locations for another driveway were investigated and no feasible locations were found. The only places where another driveway may be physically located are at the far east and west ends of the block. However, these locations would not comply with City of Los Angeles design standards for driveway locations (*Driveway Design, Manual of Policies and Procedures*, City of Los Angeles Department of Transportation, February 2003) relative to the intersections and the possible location at the east end of the block would interfere with the heavy pedestrian areas of the 7th Street sidewalk near Figueroa Street.

Figueroa Street Access

Appendix L of the Transportation Study addressed issues concerning access on Figueroa Street. As mentioned in Appendix L:

> "The provision of an exit driveway for vehicles from the Project Site onto Figueroa Street between Wilshire Boulevard and 7th Street would violate several adopted design standards. The driveway would cause a break in the sidewalk on Figueroa Street along the Project frontage, resulting in a pedestrian-automobile conflict and potential safety hazards. Additionally, the driveway would also cut across the pedestrian plaza, a key transit-oriented development design feature, proposed on the Project Site. Similar to the driveway on Wilshire Boulevard, the driveway would also result in a direct access onto a Major Secondary Highway (Figueroa Street) therefore violating standards set forth in *Driveway Design Guidelines*. This driveway would also be in violation of the recently-adopted City of Los Angeles' *Downtown Design Guide* (Los Angeles City Council, April 2009) and *Downtown Street Standards* (Los Angeles City Council, April 2009), and therefore would likely not be approved by LADOT."

COMMENT 1-3

Traffic impacts relating to the Citicorp Phase III project at 755 S. Figueroa Street have not been adequately modeled into the Traffic Study. This related project will utilize the existing driveway on the south side of 7th Street opposite Francisco Street. Other than for minor ambient traffic growth, the Traffic Study had no increase in traffic volume entering or exiting this driveway. The Citicorp Phase III trips should have been appropriately analyzed in order to accurately show level of service conditions and impacts, particularly at this key intersection.

Response: Refer to the response to Comment 5: Related Projects Analysis in Crain & Associates letter dated December 14, 2010.

COMMENT 1-4

The traffic analysis also does not allocate any trips to ancillary hotel, residential, retail and restaurant space. If this area includes any floor area for the retail, office, meeting room, restaurant space, or bars, it must be counted as space with independent trip generating characteristics. Because of the oversizing of the ancillary uses in relation to the hotel and residential components, it is likely that there are components of the Project with trip generating characteristics that have not been analyzed. Without an accurate accounting of the proposed space within the Project, there could be a sizable underestimation of the already significant traffic impacts, and there may be countless additionally impacted intersections.

Response: Ancillary areas support the other land uses within the proposed development, and all such active areas of the development are included in the trip generation table (retail, restaurant, fitness center, etc.). Additional ancillary uses are inherent uses and serve as back-of-house areas associated with and included in hotel, residential, and/or office uses.

COMMENT 1-5

The EIR did not adequately analyze the displacement impacts that the partial construction closure of Francisco Street will have on operations of Brookfield. There is no substantial evidence to support the EIR's conclusion that construction traffic mitigation measure MM-4 mitigates impacts to less-than-significant. In fact, the Traffic Study states that "[a]s shown in the tables, the construction lane closures will result in a temporary, significant impact at the intersection of Figueroa Street and 7th Street based on the significant impact criteria identified in Chapters 1 and 4." See Traffic Study, p. 195. There is no substantial evidence to support how this mitigation measure would reduce the impact to less-than-significant. Instead, this is a significant impact requiring more mitigation.

Response: This impact is a temporary significant impact that has been as identified by the EIR. As noted in the Transportation Study, there is no feasible physical and/or operational mitigation measure to further reduce this temporary construction impact.

COMMENT 1-6

Based on our experience with the 34 thousand square feet ("ksf") Gold's Gym located at 7th+Fig, the Traffic Study also underestimates the traffic impacts of the 20 to 50 ksf proposed fitness center. Because Gold's Gym validates parking in our garage, we know that Gold's Gym generates approximately 2,000 average daily trips ("ADT") for customers who park in our parking garage on a weekday, with the bulk of the fitness center trips occurring during the 6-8 AM and 5-7 PM peak hours on the adjacent roadways. The 2,000 ADTs translate into an ADT rate of approximately 58.8 ADTs per 1 ksf of fitness center. For the Project's up to 50 ksf fitness center, the Traffic Study, after taking all of its trip credits and reductions, applies a very low trip rate of 13.46 ADTs per 1 ksf of fitness center, a trip generation rate more than 75 percent below the actual measured ADT for our fitness center. Based on our own experience in Downtown, the Traffic Study grossly underestimates the trips expected to be generated by the fitness center.

Response: The fitness center proposed as part of the Project is different from the cited Gold's Gym in that it is intended to support on-site residential and hotel patrons rather than drawing all of its patrons from outside of the site. The rate used for the fitness center is appropriate for a fitness center within a mixed-use development in the downtown area, including trips by patrons already located in the building (office tenants, and particularly hotel patrons and residents).

COMMENT 1-7

There are a substantial number of significantly impacted intersections at the periphery of the traffic study that require analysis (i.e., the Traffic Study does not extend far enough to capture all significant Project impacts). Further, there are several heavily traveled intersections in between significantly impacted intersections that need to be examined, because there may be new significant impacts (1) beyond the periphery or (2) between the significantly impacted intersections analyzed, especially once (3) the true size of the Project is analyzed in a revised and recirculated Traffic Study.

Response: The EIR analyzed 42 intersections under the direction of LADOT, and found significant unavoidable impacts at seven of those intersections. This comment does not identify specific intersections that may be impacted, nor evidence that any intersections beyond the 42 analyzed would be affected. As noted in Figure 20 of the Transportation Study, there are only two impacted intersections that may be considered on the periphery of the study area, prior to mitigation. These intersections (#2, Hope Street/US 101 southbound ramps & Temple Street and #33, Grand Avenue & 18th Street) are either freeway ramp locations or provide access from freeway ramps. Sufficient Project traffic does not travel past these two intersections to create a significant impact at other intersections. Therefore, these intersections essentially represent the boundary intersections that the Project traffic would travel through before accessing the freeway. The study area is indeed large enough to capture all of the impacts of Project traffic.

COMMENT 1-8

Traffic mitigation measure MM-3 requires a fair-share contribution to Caltrans for the improvement of the northbound Hollywood Freeway at Grand Avenue. There is no assurance that Caltrans will actually use the money for the proposed improvement. Nor is there any indication as to when, if ever, the improvements will be made. Contributing fees without any commitment that the funds will be used and without any timing proposed does not mitigate the impact to less-than-significant. Thus, this results in a new significant impact.

Response: The EIR includes an analysis of transportation impacts conducted in accordance LADOT-approved methodology and the *L.A. CEQA Thresholds Guide: Your Resource for Preparing CEQA Analyses in Los Angeles* (City of Los Angeles, 2006). The analysis presented in Appendix K of the Transportation Study is a voluntary assessment conducted in consultation with the California Department of Transportation (Caltrans) with respect to Caltrans facilities. As noted on page 144 in Chapter 6 of the Transportation Study, this analysis was conducted for long range planning and informational purposes based on criteria agreed upon with Caltrans. The Caltrans assessment was included in the EIR for informational purposes. As such, the Caltrans assessment exceeds the requirements of the City of Los Angeles for transportation impact analysis. The assessment analyzed eight freeway segments, five off-ramps, and five on-ramps. The analysis concluded that the US 101 northbound off-ramp at Grand Avenue is expected to exceed the Caltrans standards even under Future without Project conditions, i.e. without the addition of Project traffic. As noted in Caltrans IGR/CEQA branch's assessment letter dated August 18, 2010:

> "most freeway facilities (mainline & ramps) in the project vicinity which are currently running congested (LOS E thru F) during AM & PM peaks will continued to do so and worsen by the Wilshire Grand build-out in 2020. This is due to the increased traffic from the ambient growth and other 90 plus related projects."

The identified northbound off-ramp at Grand Avenue is therefore projected to exceed the Caltrans standards on a cumulative basis. Failing regional transportation facilities such as freeways and ramps are the result of contributions of traffic from many sources to such facilities that are operating under undesirably congested conditions. The Caltrans assessment letter identified two "feasible physical improvements (one being I-110 freeway segment in the immediate vicinity of the proposed project and the other a Grand Avenue Off-ramp at NB US 101) that would help relieve some of the congestion." It is neither feasible nor practical for any single project to bear the burden of implementing improvements designed to improve these conditions. As such, fair-share contributions represent the only equitable and feasible improvement measure for addressing such conditions. Caltrans has identified a feasible improvement project that will alleviate the congestion due to future traffic at this off-ramp. The Project's fair-share contribution to the cost of this improvement was determined by Caltrans based on the proportion of project-related traffic at this location. Based on the best information available to Caltrans, this improvement is expected to be constructed prior to the horizon year utilized in the Project's Transportation Study (2020).

COMMENT 1-9

The Traffic Study does not take into account the lower occupancy of 7th+Fig. When counts were done, the shopping center occupancy was very low. By the buildout year, the shopping center should be leased in excess of 90 percent. Therefore, the Traffic Study and the Alternative Analysis included as Appendix G to the Traffic Study underestimate existing and proposed conditions and there may be worse impacts to area roadways than examined in the EIR.

Response: As discussed in the EIR, existing traffic is expected to increase as a result of regional growth and development. Based on historical trends and standard LADOT procedures, an ambient growth factor of 0.75% per year, above and beyond the traffic expected from the 90 identified related projects, was used to adjust the existing traffic volumes to reflect the effects of regional growth and development by the year 2020. The total adjustment applied over the 11-year period for full buildout of the Project (year 2020) was therefore 8.25% and over the 26-year period for the year 2035 was 19.5%. This growth rate accounts for anticipated changes such as that referenced in the comment, particularly because ambient growth in the downtown area has been negative in many recent years, and this ambient growth rate of 0.75% per year more than accounts for any potential development. Analyzing specific traffic growth scenarios for related projects would be speculative and not based on evidence.

COMMENT 1-10

A substantial number of trips will be coming on foot and crossing Figueroa, Wilshire, 7th and Francisco. The impact of the increased pedestrian flow as a result of the Project has not been analyzed. There may be increased traffic delay as a result of heavy pedestrian traffic in the area, and this will likely slow down vehicular movements. The EIR needs to analyze this issue.

Response: Pedestrian impacts were considered in the analysis of the Project. There was substantial analysis of the pedestrian flows at the intersections of Figueroa Street & 7th Street and Figueroa Street & Wilshire Boulevard including even the consideration of a pedestrian grade separation at Figueroa Street & 7th Street. Sidewalk widths and pedestrian plaza areas were studied and reviewed with staff from the City of Los Angeles' Planning Department.

The City's requirement for pedestrian counts as part of the traffic count was instituted on June 7, 2010 after the Project's Notice of Preparations (July 9, 2009 and November 5, 2009) had been issued and the Project's data collection and the Memorandum of Understanding with LADOT had already been completed and LADOT determined that re-counting the intersections to get pedestrian information was not necessary. Pedestrian counts were conducted at the intersections of Figueroa Street & 7th Street as part of the pedestrian grade separation study and at Figueroa Street & Wilshire Boulevard as part of the analysis of the triple left-turn lanes. Pedestrian observations were conducted at the intersections of Francisco Street & 7th Street and Francisco Street & Wilshire Boulevard as part of the evaluation of Francisco Street corridor alternatives.

Bicycle counts were not conducted, but observations were made on the four streets surrounding the project site. Bicycle activity in the vicinity of the Project is light today. Bicycle parking will be provided in the Project's parking garage and bicycle rental will be part of the Mobility Hub included in the Project.

COMMENT 1-11

Mitigation measures are necessary to facilitate and ensure safe pedestrian and vehicular traffic flow. The Project design feature of designing and constructing "… all sidewalks and pedestrian access ways to allow for easy pedestrian flow," is extremely vague and does not take any meaningful steps to ensure the safety of pedestrians.

Response: As stated above in response to Comment 1-10, the Project provides improved sidewalks on all sides of the Project Site as well as a large pedestrian plaza. These features and improvements will provide more than adequate space to accommodate pedestrians who are walking to and from the site. All features will be provided according to LADOT standards and guidelines.

COMMENT 2-1

Only 1,900 parking spaces are proposed for more than 2.5 msf of floor area. The required parking is underestimated since it does not take into account any of the parking demand generated by any of the 25 ksf outdoor dining spaces above the ground floor requested in the outdoor dining zone variance, including the rooftop bars and pool bar.

Response: The 25,000 square feet (sf) of outdoor dining space is part of the 50,000 sf of retail/restaurant analyzed throughout the EIR and therefore included in the parking demand analysis presented in the EIR. The variance requested 25,000 sf of outdoor dining because a specific amount of space needed to be provided in the application. This space is included in the total 50,000 sf of retail and restaurant space and is not an additional, overlooked number.

The comment suggests that the proposed 1,900 parking spaces do not represent an adequate parking supply for the project. The 1,900-space parking supply was determined through a Shared Parking analysis that was based on the nationally accepted Urban Land Institute model and methodology. The Shared Parking study was reviewed and approved by the City of Los Angeles. It has always been the intent of the Project to provide the correct amount of parking that meets the Project needs but still supports and utilizes the transit system serving the Project and the Project's TDM program.

COMMENT 2-2

Because of the vast amount of unallocated ancillary space, we suspect that there will be a greater parking demand. The impacts of inadequate parking will lead to other environmental impacts. Motorists, including busses and limousines, who cannot find parking in the parking garage will search for parking outside the Project site, leading to increased traffic congestion on area roadways. This is an environmental impact that has not been analyzed or mitigated.

<u>Response</u>: Ancillary areas support the other land uses within the proposed development, and all such active areas of the development (retail, restaurant, fitness center, etc.) are included in the parking analysis presented in Chapter 7 of the Transportation Study. Additional ancillary uses are inherent uses which serve as back-of-house areas associated with and included in hotel, residential, and/or office uses.

COMMENT 2-3

7th+Fig will be adversely affected by the Project since we are required to provide low-cost retail parking. Project patrons will park in our parking garage, displacing spaces for shoppers and restaurant patrons. This will also cause new significant impacts to parking, traffic and access as motorists will circle around Downtown streets in order to find cheaper parking. The Project proposes, at a minimum, 50 ksf of retail and restaurants and 20 ksf of fitness center, and with the Land Use Equivalency Program up to 200 ksf of retail, 50 ksf of restaurant and 50 ksf of fitness center. The Project must be conditioned to provide parking at a ratio no less than we are required to provide at 7th+Fig, with the cost not to exceed market rate for retail uses in the Figueroa Street Corridor. The up to 50 ksf fitness center will be a destination gym drawing in customers from many neighborhoods that may not have state-of-the-art fitness facilities. Our experience is that most customers of Gold's Gym park in our garage and do not use the available mass transit alternatives. Adequate parking must be provided for all of these anticipated customers, otherwise the effects of inadequate parking will spill over onto the surrounding streets and roadways. The EIR does not analyze these impacts or mitigate them.

<u>Response</u>: The EIR analyzes the impacts of the Project on parking supply and demand (see page IV.B-50 of the Draft EIR). Additionally, as noted above, the fitness center proposed as part of the Project is intended to support on-site patrons rather than drawing patrons from outside of the site. The rate used for the fitness center is appropriate for a fitness center within a mixed-use development in the downtown area, including trips by patrons already located in the building (office tenants, hotel patrons, residents).

COMMENT 2-4

The parking study is also deficient because it does not take into account any parking contingency to find a parking space with reasonable ease. It is appropriate to provide a circulation contingency of at least five percent for employees who will be routinely present on-site and would be quite familiar with where to find parking. For hotel guests and visitors, it is appropriate to provide a larger parking contingency, as these users are not present on-site every day and may not be as familiar with the facilities as employees. Because there is a shortage based on standard contingency rates, there will be a parking shortage at the Project site.

<u>Response</u>: The parking analysis presented in the EIR is based on LADOT-approved and nationally recognized Urban Land Institute's shared parking model. The Shared Parking analysis shows that only 2-3 hours per day during the 2-3 busiest months of the year will reach the occupancy levels described in the comment. Since the garage will be fully staffed and include extensive valet operations, the projected occupancy levels are appropriate for this project. Excess parking would undermine the transit service and the TDM program proposed by the Project.

COMMENT 2-5

The shared parking analysis also does not provide sufficient parking because it assumes that the residential and commercial uses will share the same parking spaces, even though there will likely be segregation of these spaces, and therefore, no shared use of these spaces.

Response: Parking for residential uses will be reserved and designated for such uses at a rate of one spaces per residential unit. The only spaces shared between residential and commercial spaces would be guest spaces for the residential uses and parking demand greater than one space per unit. This type of residential sharing has been successful in residential developments in downtown Long Beach and Pasadena. The sharing of residential guest parking has been in effect successfully in Bunker Hill residential projects for decades.

COMMENT 5-8

The Land Use Equivalency Program allows uses to be exchanged on-site depending on PM traffic and VOC emissions, but it may result in new significant impacts that have not been disclosed. AM peak hour traffic impacts must also be examined in the Land Use Equivalency program since AM peak hour traffic patterns and demands are different from PM peak hour traffic and changing the proposed uses may have new significant environmental impacts that have not been analyzed or mitigated. Converting square footage to office uses for example, or to fitness center uses, may create very different impacts on the surrounding roadways during the AM peak hour compared to, for instance, residential and hotel uses. Consequently, the Equivalency Program may under- or over-estimate traffic impacts because the uses being exchanged may have very different impacts in the AM peak hour compared to the evening peak hour.

Response: The predominant impact of Project traffic is on the transportation impact in the afternoon peak hour. Table 14 on page 134 of the Transportation Study shows that the Project (with TDM trip credits) has significant impacts on a total of nine intersections – five in the afternoon peak hour and three in the morning and afternoon peak hour, and only one intersection in the morning peak hour only. Thus, eight of the nine intersections impacted would be covered by the afternoon peak hour trip generation equivalency test.

DLA PIPER APPEAL (JANUARY 14, 2011)

COMMENT II. A. 1.

Protect and preserve 601 S. Figueroa's eastbound egress access to Wilshire Boulevard by the following measures:

a. Create a third shared through/left turn lane on eastbound Wilshire to northbound Figueroa Street;

b. Construct an egress ramp to Figueroa Street directly from the parking garage crossing underneath the Figueroa Street sidewalk;

c. Restrict cars from turning right on northbound Francisco during the evening peak hour at Wilshire Boulevard; and/or

d. Preserve primary southbound access to 725 S. Figueroa and 1000 Wilshire by constructing two southbound lanes and one northbound lane on Francisco Street adjacent to the Project site.

Response: During the analysis of the Project alternate access, improvements a. and b. were tested and evaluated. The triple left-turn lanes at Figueroa Street & Wilshire Boulevard were rejected by LADOT because they resulted in a misalignment of the through lanes in the east-west direction and they required that the signal phasing be modified to provide split phasing for the east-west traffic. The Figueroa Street direct exit from the Project was rejected by City of Los Angeles' Planning Department because of the effects it had on the sidewalk along Figueroa Street because it would be in conflict with the City of Los Angeles' *Downtown Design Guide* and *Downtown Street Standards*.

The Commenter has requested that these two improvements be revisited with slight modifications. In the triple left-turn lane improvement, the third lane would be a shared through/left lane which could help resolve the alignment of the east-west through lanes. The issue of split phasing in the east-west direction would remain.

The direct exit to Figueroa Street even if configured so that it comes onto Figueroa Street parallel to the west curb rather than perpendicular to it would also be in conflict with the City of Los Angeles' *Downtown Design Guide* and *Downtown Street Standards*.

Items c. and d. restrict the capacity of the Francisco Street corridor and create capacity impacts on the 7th Street corridor.

COMMENT II. A. 2.

Add a condition requiring a mezzanine level in the parking garage to accommodate busses, taxis, limos, vanpools, valet, and self-parkers so that there will not be an impact on the surrounding roadways.

Response: Figure 1 illustrates the proposed valet drop-off area on the Project's 7th Street driveway. As shown in the figure, the driveway can accommodate 13 taxis/cars and one bus or 15 taxis/cars without resulting in a spillover queue onto 7th Street or other adjacent roadways. This level of storage available within the Project Site would be more than sufficient to accommodate the Project's valet trips. However, in the event that the valet trips are higher than what can be accommodated in the driveway, the patrons would be directed to queue on the valet ramps within the parking garage to avoid any queues on 7th Street.

COMMENT II. A. 3.

Add a condition requiring the dedication of a bus drop off on Wilshire Boulevard with no other loading/unloading or parking allowed in this area.

Response: As noted on page 185, Chapter 8 of the Transportation Study, the proposed driveway on Wilshire Boulevard would be used as a drop-off area for shuttles and tour buses. This driveway would not be used for valet operation which would occur on the 7th Street driveway.

As shown in the attached Figure 2, the bus drop-off area on Wilshire Boulevard can accommodate approximately two 40-foot buses or one 40-foot bus and two shuttle vans at once.

COMMENT II. A. 4.

Require a revised Site Plan with a reconfigured hotel loading dock so as to preclude any backing of trucks onto Francisco Street. The proposed hotel loading dock configuration requires trucks to back out onto Francisco Street.

Response: The EIR commits to design the hotel loading dock so as to preclude any backing onto Francisco Street. Additionally, as noted in the LADOT's traffic assessment letter, LADOT has conditioned the Project to ensure that the final site plan takes this into account:

> "All delivery truck loading and unloading will take place on site with no vehicles backing into or out of the project site from any adjacent street."

Final implementation of this condition will be to the satisfaction of LADOT.

COMMENT II. A. 5.

Provide a more detailed Site Plan for the 7th Street entrance/exit to show access for busses, multiple lanes for valet, a self-parking lane for the hotel, and adequate space for passenger loading and unloading.

Response: Refer to response to Comment II. A. 2 under the DLA Piper appeal.

COMMENT II. A. 6.

The Project developer and its representatives have stated several times that the Project's gym is intended to support on-site patrons rather than drawing patrons from outside the Project site, but there is no condition or mitigation measure to ensure this. If the gym is truly to support on-site patrons to the exclusion of others, then the Project must be conditioned as such with a corresponding condition/MM. If such a condition/MM is not imposed, the EIR traffic analysis is inadequate.

<u>Response</u>: It is the intent of the Project that the proposed fitness facility/health spa primarily serve the patrons and residents of the Project. Additionally, the rate used for the fitness center is appropriate for a fitness center within a mixed-use development in the downtown area, including trips by patrons already located in the building (office tenants, and particularly hotel patrons and residents).

COMMENT II. B. 1.

Require parking validation for retail/restaurant/fitness center uses at a cost/rate equivalent to 7th and Figueroa so as to preclude Project patrons from parking in Brookfield's retail parking structure at 7th and Figueroa. The rates are as follows: $1,00 for the first hour or portion thereof, $1,50 for the second hour or portion thereof and $1,50 for the third hour or a portion thereof. Prevailing market parking rates for similar Central Business District urban shopping centers served by a parking structure shall be charged for any period that the vehicle is parked beyond such three (3) hour period. See attached Retail Rate Survey. These parking rates shall be required for the first twenty years of operation of the retail/restaurant/fitness center uses.

<u>Response</u>: The visitor parking for the Project will conform to short-term parking rates as dictated by the market. It is very common that visitor parking in the Project area is governed by parking validations that offer parking at a reduced rate for customers of the Project. Since specific retail/restaurant/fitness center tenants are not known at this time, it is impossible for the Applicant to commit to a specific parking fee schedule.

COMMENT II. B. 2.

Provide adequate valet staffing for large conference room events/multiple events so as to mitigate queuing and back up on surrounding roadways that will adversely impact the level of service in the Project area. Require the submission and Department of Planning and Department of Transportation ("DOT") approval of a valet operations parking plan that provides valet services 24 hours per day, seven days per week with adequate staffing during anticipated peak periods.

<u>Response</u>: The hotel operator will provide adequate valet staff and implement a valet operations plan that satisfactorily accommodates large events and simultaneous events. Like most downtown hotel events, the valet parking plan would charge for valet parking on the way out of the event when "pay on foot" and validations can most easily be implemented, thus speeding up the inbound and outbound traffic flows.

The hotel will provide valet parking service seven days per week, 24 hours per day as requested by the Commenter and it is clearly in the best interest of guest relations that the staffing for that valet service be adequate to accommodate the peak parking demand. The hotel will use industry standard best practices to manage valet services.

COMMENT II. B. 3.

Require the installation of "Park Assist" in the Project's parking garage prior to the issuance of the Certificate of Occupancy for Phase 2. This is necessary to prevent spillover impacts on surrounding roadways and parking lot.

Response: The implementation of a "Park Assist" parking program is most appropriate for a visitor garage where the patrons of the garage are infrequent users of the garage and therefore are not familiar with the operations of the garage or the likely locations of available spaces.

In the case of the project garage, however, the breakdown of the parking users (during the busiest hour of the year) will be:

Visitors	198 spaces
Hotel Guests	141 spaces
Banquet Guests	413 spaces
Project Employees	1,016 spaces
Project Residents	100 spaces
	1,868 spaces

Since most of the hotel and banquet guests will use the valet service, and the residents would have reserved spaces, there are relatively few spaces that would be part of a visitor search patterns. This garage's operating plan would likely have the first parking level dedicated to visitor parking so the need for visitors to search through the entire garage would not be the case and the "Park Assist" system would not be beneficial to them. Repeat customers, like office employees, would quickly learn the garage and would know where the available spaces were located based on the time they enter the garage every day.

In short, the "Park Assist" system is not appropriate for a predominantly employee garage.

COMMENT II. E. 2.

Provide a construction staging plan for Phase 2 that prohibits encroachment into the Wilshire Boulevard right-of-way and other surrounding roadways. The EIR does not analyze any Phase 2 construction staging area and it should be located on-site.

Response: As noted on page 195, Chapter 9 of the Transportation Study, a construction impact analysis that accounts for partial lane closures on Francisco Street has been conducted for the Project. The results of this analysis that have been noted in the EIR and the Transportation Study indicated that the Project would result in a temporary, significant impact at the intersection of Figueroa Street & 7th Street (intersection 19) resulting from the partial lane closures on Francisco Street. The lane closures during construction would not result in a significant impact at any of the other analyzed intersections.

Lane closures during Phase II of the Project would be the same as those noted in Chapter 9 of the Transportation Study. Phase II construction could also potentially result in a temporary, significant impact at the intersection of Figueroa Street & 7th Street. As noted above, this impact has been identified in both the EIR and the Transportation Study.

As noted on page 194, Chapter 9 of the Transportation Study, lane closures on Wilshire Boulevard and Figueroa Street would be limited to:

- The parking lane on the west side of Figueroa Street, along the Project Site, from Wilshire Boulevard to 7th Street during the entire construction period to allow for construction and protected pedestrian access. This would result in a loss of on-street parking on the west side of this section of Figueroa Street. The remaining four travel lanes would remain operational.

- The parking lane on the south side of Wilshire Boulevard, between Figueroa Street and Francisco Street, during the entire construction period. The four travel lanes would remain operational.

While the Transportation Study does include the statement that a lane closure of the parking lane on the south side of Wilshire Boulevard would occur, this should be corrected to state that the existing drop-off area on the south side of Wilshire Boulevard would be utilized for construction staging. The four existing travel lanes on Wilshire Boulevard will remain operational. Therefore, the construction activities would result in the loss of on-street parking but would not result in any traffic lane closures on both Figueroa Street and Wilshire Boulevard.

COMMENT II. E. 7.

Add a mitigation measure requiring that haul trucks avoid Figueroa Street between 7th Street and Wilshire Boulevard and Wilshire Boulevard east of Francisco Street in order to reduce construction related noise at the offices located at 601 and 725 S. Figueroa Street.

Response: As noted on page 192, Chapter 9 of the Transportation Study, haul trucks exiting the Project Site would head northeast on Figueroa Street and take the northbound on-ramp at 5th Street to the SR 110 North, take the I-10 exit toward I-5/Santa Ana/San Bernardino, continue on to US 101 South to SR 60 East, and exit the freeway at Crossroads Parkway (South) to Puente Hills Landfill in Whittier, California. On the return route to the Project Site, the trucks would head toward Crossroads Parkway (South), turn right at Crossroads Parkway (North), take the ramp onto SR 60 West, continue on I-10 West, take the exit for SR 110 North, and exit the freeway at 9th Street/James M. Wood Boulevard. The trucks would then turn left at Figueroa Street followed by another left at 7th Street and then a right at Francisco Street.

While the trucks are not expected to travel along Wilshire Boulevard, east of Francisco Street, it would not be possible to restrict travel along Figueroa Street between 7th Street and Wilshire Boulevard as Figueroa Street provides access to the freeway ramps. It should be noted that the Applicant would be required to submit a construction management plan to LADOT for approval.

COMMENT II. F. 2.

The City must require the traffic signal contributions prior to the completion of Phase 1 and not defer them to the completion of Phase 2.

Response: Similar to the other elements of the transportation improvement and mitigation program, the phasing of the traffic signal improvements has been approved by LADOT. As noted in LADOT's traffic assessment letter:

> "The phasing plan attempts to maintain an appropriate balance between development and corresponding transportation improvements. This phasing plan may be modified in the future to adjust the mitigation sequencing. Any changes to the mitigation phasing plan shall be subject to further review and approval by DOT. All proposed transportation improvements must be funded/completed prior to the issuance of any certificate of occupancy in accordance with the project's phasing plan."

As shown in Table 36 in Chapter 12, page 225 of the Transportation Study, the financial contributions towards the signal improvements would be phased based on the proportionate trip generation of each phase.

COMMENT III. A.

There are potentially significantly impacted intersections in between significantly impacted intersections both within and outside the Traffic Study area that have not been examined and will be exacerbated by double counting of the TDM credit.

Response: The EIR analyzed 42 intersections under the direction of LADOT, and found significant unavoidable impacts at seven of those. This comment does not identify specific intersections that may be impacted, nor evidence that any intersections beyond the 42 analyzed would be affected. As noted in Figure 20 of the Transportation Study, there are only two impacted intersections that may be considered on the periphery of the Study Area, prior to mitigation. These intersections (#2, Hope Street/US 101 southbound ramps & Temple Street and #33, Grand Avenue & 18th Street) are either freeway ramp locations or provide access from freeway ramps. Sufficient Project traffic does not travel past these two intersections to create a significant impact at other intersections. Therefore, these intersections essentially represent the boundary intersections that the Project traffic would travel through before accessing the freeway. The Study Area is large enough to capture all of the impact of Project traffic.

COMMENT III. J.

There is missing analysis of an important Related Project (755 S. Figueroa Street).

Response: Refer to the response to Comment 5: Related Projects Analysis under the Crain & Associates letter.

COMMENT III. K.

There is inadequate parking provided (i.e., gym parking insufficiency, poaching of nearby spaces, and spillover onto surrounding streets).

Response: The Commenter presents no evidence that the Project's parking supply of 1,900 spaces is inadequate. The City of Los Angeles' staff have reviewed and approved the Shared Parking analysis presented in Chapter 7 of the Transportation Study which demonstrates that the proposed 1,900 spaces would indeed be adequate to meet the Project's parking demand. The size of the health club has been reduced in response to the Commenter's concern and there is no evidence presented that the project would result in "poaching" of adjacent parking supplies or spillover onto adjacent streets.

Evenings and weekends will have over 1,000 empty spaces in the Project garage to accommodate banquets, meetings, retail, health club, and restaurant parking demand.

COMMENT III. M.

There are fundamental flaws with the Land Use Equivalency Program (failure to take into account AM peak hour traffic and parking).

Response: The predominant impact of Project traffic is on the transportation impact in the afternoon peak hour. Both background traffic and peak hour traffic generation are higher during the afternoon peak hour than during the morning peak hour. Therefore a land use exchange that would not result in additional traffic impacts during the afternoon peak hour would not result in additional traffic impacts during the morning peak hour.

COMMENT III. P.

There are flaws with the Shared Parking Study.

Response: No specific flaws in the Shared Parking analysis are cited; however, please refer to the responses to comments III. K under the DLA Piper appeal, 4 under the Crain & Associates letter, and 2-1 and 2-4 under the Brookfield Properties Management LLC letter regarding the Project's Shared Parking analysis. Again, the Shared Parking analysis presented in Chapter 7 of the Transportation Study has been reviewed and approved by City of Los Angeles' staff.

COMMENT IV. A. 3.

There was no analysis of the parking, traffic, or public safety impacts associated with the construction (and deconstruction) of a park/plaza, or potential three-story hole in the ground, that would be located in the area of Phase 2.

Response: The construction of the park/plaza was included in the traffic and parking analysis of the project. The park/plaza would be constructed as part of the Phase I Project development and is therefore included in the construction analysis of Phase I. If the construction of Phase II is delayed, the Phase II construction analysis covers that possibility.

COMMENT IV. A. 5.

The Project build-out year is inaccurate. According to the proposed entitlements, the build out year may not occur until after 2030 and this means that 0.75 percent annual growth in regional traffic has not been taken into account in the traffic impacts analysis for the years between 2020 (the year analyzed in the EIR) and the potential full build out year. Further, there has been no interim analysis of impacts with only the completion of Phase 1. It is unclear when MMs would be timed and completed since the MMRP did not contemplate phasing of the Project. If Phase 2 is never built, and mitigation of impacts would occur only upon occupancy of Phase 2, then mitigation of impacts for Phase 1 and many asserted Project benefits would not occur.

Response: As required by LADOT, the Project's traffic impact analysis assumes a buildout year that coincides with the full buildout of the Project, year 2020.

As part of the Project alternatives analysis conducted to comply with CEQA requirements, the EIR does include a Phased Construction Alternative (Alternative 3). The analysis for this alternative essentially presents the interim impact analysis requested by the Commenter. As noted on Page 208, Chapter 12 of the Transportation Study, under this alternative, Phase I of the Project would include the hotel building, followed by the office building in Phase II. As shown in Tables 33 and 34 on pages 222 and 223 of the Transportation Study, Phase I would generate fewer trips than the existing land uses both without and with the TDM credits. Hence, Phase I of the Project would generate no net new trips and therefore, would not result in any significant impacts on both intersections and freeway segments. The mitigation phasing plan presented in Table 36 on page 225 of the Transportation Study, accounts for the potential phasing of the Project.

In the event that Phase II of the Project is never built, no significant unmitigated impacts would occur since Phase I of the Project generates fewer trips than the existing, entitled land uses.

COMMENT IV. B. 1.

Response: Refer to the response to Comment III. J under the DLA Piper appeal.

COMMENT IV. C. 3.

<u>Response</u>: Condition 75 is not a mitigation measure and hence would not result in any new significant impacts. Additionally, condition 75 is duplicative of Mitigation Measure-23.

COMMENT IV. F. 3.

<u>Response</u>: The analysis presented in this section is in response to the recent case *Sunnyvale West Neighborhood Associate v. City of Sunnyvale City Council* (6^{th} App. Dist., December 16, 2010). This analysis measures the Project's traffic impacts on the existing environment. In summary, the results of this analysis show that measuring the Project's traffic impacts on the existing environment does not alter the results of the significant impact analysis presented in the EIR and the Transportation Study, i.e. the Project would not result in any additional residual impacts beyond those already identified in the EIR.

<u>Traffic Projections</u>

The Project-only traffic volumes, without and with the TDM program, illustrated in Figures 16 and 21 on pages 75 and 114 of the Transportation Study, were added to the Existing conditions traffic volumes illustrated in Figure 4 on page 23 of the Transportation Study. The Existing plus Project and Existing plus Project with TDM Program traffic volumes have been illustrated in Figures 6 and 7, respectively.

<u>Traffic Operations</u>

The traffic volumes presented in Figures 6 and 7 were analyzed using the CMA – Planning methodology described in Chapter 2 of the Transportation Study. Detailed LOS worksheets are provided in Attachment A. Since this analysis presents the traffic impacts on the existing environment, none of the future base improvements noted in Chapter 3 of the Transportation Study were taken into account in the analysis.

<u>Existing plus Project Conditions</u>. The Existing plus Project intersection operating conditions for typical weekday morning and afternoon peak hours are shown in Table 6.

As shown in Table 6, under the Existing plus Project conditions approximately 98% and 88% of the intersections are projected to operate at LOS D or better, and 2% and 12% are projected to operate at LOS E or F during the morning and afternoon peak hours, respectively.

Table 6 also provides a summary of the significant impact analysis, before TDM trip reduction and before any Project-funded transportation improvements, conducted for the 42 study intersections based on the criteria established by LADOT at different levels of service.
During the morning peak hour, the Project is expected to result in a significant impact at two intersections operating at LOS C or LOS D. During the afternoon peak hour, the Project is expected to result in a significant impact at two intersections operating at LOS D, three intersections operating at LOS E, and one intersection operating at LOS F. A total of six of the 42 study intersections are expected to be impacted during the morning and/or afternoon peak

hour, before TDM program and mitigation, under the Existing plus Project conditions. The Project is not expected to result in a significant traffic impact at 36 of the 42 study intersections during either peak hour. The following table summarizes a comparison of the analysis presented in this section and that presented in Chapter 4 for the Future with Project conditions:

INTERSECTION IMPACT SUMMARY BEFORE MITIGATION				
	Future with Project – Chapter 4		**Existing plus Project**	
	A.M. Peak	P.M. Peak	A.M. Peak	P.M. Peak
LOS C or LOS D	3	3	2	2
LOS E	2	3	0	3
LOS F	0	6	0	1
Total Intersections	5	12	2	6
Total Individual Impacted Intersections	14		6	

As shown in the table above, under the Existing plus Project scenario, the Project is not expected to result in any additional and/or different significant intersection impacts, before TDM program and mitigation.

Existing plus Project with TDM Program Conditions. The Existing plus Project with TDM Program scenario includes the TDM program presented in Chapter 5. The Existing plus Project with TDM Program intersection operating conditions for typical weekday morning and afternoon peak hours are shown in Table 7.

As shown in Table 7, under the Existing plus Project with TDM Program conditions approximately 98% and 88% of the intersections are projected to operate at LOS D or better, and 2% and 12% are projected to operate at LOS E or F during the morning and afternoon peak hours, respectively.

Table 7 also provides a summary of the significant impact analysis, after TDM trip reduction and before any Project-funded transportation improvements, conducted for the 42 study intersections based on the criteria established by LADOT at different levels of service.

During the morning peak hour, the Project is expected to result in a significant impact at one intersection operating at LOS C. During the afternoon peak hour, the Project is expected to result in a significant impact at one intersection operating at LOS D, three intersections operating at LOS E, and one intersection operating at LOS F. A total of 5 of the 42 study intersections are expected to be impacted during the morning and/or afternoon peak hour under the Existing plus Project with TDM Program analysis. The Project is not expected to result in a significant traffic impact at 37 of the 42 study intersections during either peak hour. The following table summarizes a comparison of the analysis presented in this section and that presented in Chapter 5:

INTERSECTION IMPACT SUMMARY BEFORE PROJECT-FUNDED TRANSPORTATION IMPROVEMENTS				
	Future with Project with TDM Program – Chapter 5		**Existing plus Project with TDM Program**	
	A.M. Peak	P.M. Peak	A.M. Peak	P.M. Peak
LOS C or LOS D	1	1	1	1
LOS E	2	2	0	3
LOS F	0	5	0	1
Total Intersections	3	8	1	5
Total Individual Impacted Intersections	9		5	

As shown in the table above, under the Existing plus Project with TDM Program scenario, the Project is not expected to result in any additional and/or different significant intersection impacts, before mitigation.

Existing plus Project with Mitigation Conditions. The Existing plus Project with Mitigation scenario includes all of the transportation improvement and mitigation measures presented in Chapter 5. The Existing plus Project with Mitigation intersection operating conditions for typical weekday morning and afternoon peak hours are shown in Table 8.

As shown in Table 8, under the Existing plus Project with Mitigation conditions approximately 98% and 90% of the intersections are projected to operate at LOS D or better, and 2% and 10% are projected to operate at LOS E or F during the morning and afternoon peak hours, respectively.

Table 8 also provides a summary of the significant impact analysis, after mitigation, conducted for the 42 study intersections based on the criteria established by LADOT at different levels of service.

INTERSECTION IMPACT SUMMARY EXISTING PLUS PROJECT WITH MITIGATION SCENARIO			
	Before Mitigation (TDM and TSM)	**After TDM and Before TSM**	**After Mitigation (TDM and TSM)**
A.M. Peak Hour	2	1	1
P.M. Peak Hour	6	5	5
Total Individual Impacted Intersections	6	5	5

The analysis summarized above shows that the TDM program and the TSM improvements included in the Project's transportation mitigation program would mitigate one of the two morning peak hour and one of the six afternoon peak hour impacted intersections. The following table summarizes a comparison of the analysis presented in this section and that presented in Chapter 5:

INTERSECTION IMPACT SUMMARY FUTURE WITH PROJECT WITH MITIGATION SCENARIO				
	Future with Project with Mitigation – Chapter 5		**Existing plus Project with Mitigation**	
	A.M. Peak	P.M. Peak	A.M. Peak	P.M. Peak
LOS C or LOS D	1	0	1	2
LOS E	2	1	0	2
LOS F	0	5	0	1
Total Intersections	3	6	1	5
Total Individual Impacted Intersections	7		5	

As shown in the table above, the Project is not expected to result in any new and/or different residual significant and unavoidable impacts at the analyzed intersections under the Sunnyvale analysis.

COMMENT IV. G.

Response: Refer to the response to Comment III. M under the DLA Piper appeal.

COMMENT IV. K. 1. (a)

Response: Refer to the response to Comment II. A. 1 under the DLA Piper appeal.

COMMENT IV. K. 1. (b)

Response: Refer to the response to Comment II. A. 2 under the DLA Piper appeal.

COMMENT IV. K. 1. (c)

Response: Refer to the response to Comment II. A. 3 under the DLA Piper appeal.

COMMENT IV. K. 1. (d)

Response: Refer to the response to Comment II. A. 4 under the DLA Piper appeal.

COMMENT IV. K. 1. (e)

Response: Refer to the response to Comment II. A. 2 under the DLA Piper appeal.

COMMENT IV. K. 1. (f)

Response: Refer to the response to Comment II. B. 1 under the DLA Piper appeal.

COMMENT IV. K. 1. (g)

Response: Refer to the response to Comment II. B. 2 under the DLA Piper appeal.

COMMENT IV. K. 1. (h)

Response: Refer to the response to Comment II. B. 3 under the DLA Piper appeal.

COMMENT IV. K. 2.

Response: Ancillary areas support the other active land uses within the proposed development, and all such active areas of the development (retail, restaurant, fitness center, etc.) are included in the trip generation analysis presented in Tables 10 and 13 on pages 88 and 133, respectively, of the Transportation Study. Additional ancillary uses are inherent uses and serve as back-of-house areas associated with and included in hotel, residential, and/or office uses. It should be noted that the ancillary areas do not include the meeting room and ballroom areas.

The trip generation estimates for the Project were developed using the trip generation rates identified in the *Trip Generation, 8th Edition* (Institute of Transportation Engineers [ITE], 2008), a national standard. The trip generation rates identified for hotel land uses in the *Trip Generation* handbook include trips generated by meeting and banquet rooms or convention facilities. Therefore, no separate trip estimates were included for the meeting room and ballroom areas within the Project as these trips were already accounted for in the trip generation estimates for the hotel.

The parking demand analysis conducted for the Project is based on typical weekday and weekend rates identified in the *Shared Parking* (Urban Land Institute, 1993). Since the *Shared Parking*, unlike the *Trip Generation* handbook, identifies separate rates for meeting rooms and convention facilities, the parking demand for the meeting room and ballroom areas within the Project were calculated separate from those for the hotel.

COMMENT IV. K. 3.

Response: As noted on page 195, Chapter 9 of the Transportation Study, a construction impact analysis that accounts for partial lane closures on Francisco Street has been conducted for the Project. The results of this analysis that have been noted in the EIR and the Transportation Study indicated that the Project would result in a temporary, significant impact at the intersection of Figueroa Street & 7th Street (intersection 19) resulting from the partial lane closures on Francisco Street. The lane closures during construction would not result in a significant impact at any of the other analyzed intersections.

Lane closures during Phase II of the Project would be the same as those noted in Chapter 9 of the Transportation Study. Phase II construction could also potentially result in a temporary, significant impact at the intersection of Figueroa Street & 7^{th} Street. As noted above, this impact has been identified in both the EIR and the Transportation Study.

As noted on page 194, Chapter 9 of the Transportation Study, lane closures on Wilshire Boulevard and Figueroa Street would be limited to:

- The parking lane on the west side of Figueroa Street, along the Project Site, from Wilshire Boulevard to 7^{th} Street during the entire construction period to allow for construction and protected pedestrian access. This would result in a loss of on-street parking on the west side of this section of Figueroa Street. The remaining four travel lanes would remain operational.

- The parking lane on the south side of Wilshire Boulevard, between Figueroa Street and Francisco Street, during the entire construction period. The four travel lanes would remain operational.

While the Transportation Study does include the statement that a lane closure of the parking lane on the south side of Wilshire Boulevard would occur, this should be corrected to state that the existing drop-off area on the south side of Wilshire Boulevard would be utilized for construction staging. The four existing travel lanes on Wilshire Boulevard will remain operational. Therefore, the construction activities would result in the loss of on-street parking but would not result in any traffic lane closures on both Figueroa Street and Wilshire Boulevard.

COMMENT IV. K. 4.

Response:

Union Avenue & 7^{th} Street – As shown in Figure 15 on page 74 of the Transportation Study, the Project's trip distribution does not assign any traffic on Union Avenue. Therefore, the Project-only trips assigned through the intersection of Union Avenue & 7^{th} Street can be estimated based on the Project-only trips assigned through the intersection of Alvarado Street & 7^{th} Street (#16). As shown in Figure 21 on page 114 of the Transportation Study, a maximum of 24 Project-only trips (through and right-turn movements) are added to one approach in the east-west direction at Alvarado Street & 7^{th} Street during either peak hour. The Project does not add any trips to the north-south direction.

7^{th} Street has two through lanes at its intersection with Union Avenue. Additionally, since this intersection has permitted phasing in all directions, it has a capacity of 1,500 vehicles per hour per lane (vphpl) per CMA methodology. The Project's incremental impact at this intersection would therefore translate into a maximum increase of 0.008 in volume-to-capacity (V/C) ratio. Per LADOT's significant impact criteria, this level of increase would not result in a significant impact even if the intersection was operating at LOS F.

James M. Wood Boulevard west of Downtown – The Project-only trips assigned through the James M. Wood Boulevard corridor west of Downtown can be estimated based on the Project-only trips assigned through the intersection of Francisco Street & James M. Wood

Boulevard/SR 110 northbound off-ramp (#27). As shown in Figure 21 on page 114 of the Transportation Study, the Project does not add any trips to James M. Wood Boulevard. Therefore, the Project would not result in a significant impact at any intersections along the James M. Wood Boulevard corridor west of Downtown.

Union Avenue & Wilshire Boulevard – Recent traffic counts (year 2006) for the intersection of Union Avenue & Wilshire Boulevard were obtained from LADOT. The Future without Project (year 2020) traffic volumes were developed by growing the year 2006 traffic counts at this intersection by an ambient growth rate of 0.75% per year followed by the addition of Related Projects' traffic. The Future with Project with TDM Program (year 2020) traffic volumes were next generated by adding the Project-only traffic volumes, after the TDM Program, to the Future without Project traffic volumes. These traffic volumes were then analyzed using the CMA methodology. Table 9 summarizes the LOS and the significant impact analysis for the intersection for the weekday morning and afternoon peak hours. As shown in the table, the Project does not result in a significant impact at this intersection during either peak hour. Detailed traffic counts and LOS worksheets are provided in Attachment B.

Olympic Boulevard west of Figueroa Street – The Project-only trips assigned through the Olympic Boulevard corridor west of Figueroa Street can be estimated based on the Project-only trips assigned through the intersection of Figueroa Street & Olympic Boulevard (#37). As shown in Figure 21 on page 114 of the Transportation Study, the Project does not add any trips to Olympic Boulevard. Therefore, the Project would not result in a significant impact at any intersections along the Olympic Boulevard corridor west of Figueroa Street.

Olympic Boulevard east of Figueroa Street –
Recent traffic counts (year 2008) were obtained from LADOT for the intersections of:

- Grand Avenue & Olympic Boulevard
- Olive Street & Olympic Boulevard
- Flower Street & Olympic Boulevard

The Future without Project (year 2020) traffic volumes were developed by growing the year 2008 traffic counts at these intersections by an ambient growth rate of 0.75% per year followed by the addition of Related Projects' traffic. The Future with Project with TDM Program (year 2020) traffic volumes were next generated by adding the Project-only traffic volumes, after the TDM Program, to the Future without Project traffic volumes. These traffic volumes were then analyzed using the CMA methodology. Table 9 summarizes the LOS and the significant impact analysis for the above-noted intersections for the weekday morning and afternoon peak hours. As shown in the table, the Project does not result in a significant impact at these intersections during either peak hour. Detailed traffic counts and LOS worksheets are provided in Attachment B.

Hope Street & 1st Street – Recent traffic counts (year 2005) for the intersection of Hope Street & 1st Street were obtained from LADOT. The Future without Project (year 2020) traffic volumes were developed by growing the year 2005 traffic counts at this intersection by an ambient growth rate of 0.75% per year followed by the addition of Related Projects' traffic. The Future with Project with TDM Program (year 2020) traffic volumes were next generated by adding the Project-only traffic volumes, after the TDM Program, to the Future without Project traffic volumes. These traffic volumes were then analyzed using the CMA methodology. In order to alleviate any potential impact at this intersection, the Applicant or its successor shall install or pay LADOT to provide for design and installation of system loops at this intersection. Therefore, a 1% (a 0.01 improvement in V/C ratio) increase in intersection capacity has been accounted for at this intersection. Table 9 summarizes the LOS and the significant impact analysis for the intersection for the weekday morning and afternoon peak hours. As shown in the table, with the proposed system loops in place, the Project is not expected to result in a significant impact at this intersection during either peak hour. Detailed traffic counts and LOS worksheets are provided in Attachment B.

Hope Street & 2nd Street – The intersection of Hope Street & 2nd Street is a T-intersection with only northbound and westbound movements. Northbound Project-only traffic travels either on Figueroa Street or on Grand Avenue and no Project trips are expected to use northbound Hope Street. Similarly, Project-only trips from the east travel on other major corridors such as 1st Street, Temple Street, and/or 3rd Street instead of traveling on 2nd Street. Therefore, no Project traffic has been assigned to the intersection of Hope Street & 2nd Street and therefore the Project is not expected to result in a significant impact at this intersection during either peak hour.

Figueroa Street & 11th Street – The Project-only trips assigned through the intersection of Figueroa Street & 11th Street can be estimated based on the Project-only trips assigned through the intersection of Figueroa Street & Olympic Boulevard (#37). As shown in Figure 21 on page 114 of the Transportation Study, a maximum of 39 Project-only trips (through and right-turn movements) are added to the northbound approach at Figueroa Street & Olympic Boulevard during either peak hour.

Figueroa Street has three northbound through lanes at its intersection with 11th Street. Additionally, since this intersection has protected phasing in three directions, it has a capacity of 1,375 vphpl per CMA methodology. The Project's incremental impact at this intersection would therefore translate into a maximum increase of 0.009 in V/C ratio. Per LADOT's significant impact criteria, this level of increase would not result in a significant impact even if the intersection was operating at LOS F.

COMMENT IV. K. 5.

Response: The Project's trip generation estimates were prepared in consultation with and approved by LADOT. Additionally, as noted in LADOT's traffic assessment letter, the Project would be required to comply with the trip estimates noted in the EIR as the Project's TDM Program would be required to include:

> "an annual trip monitoring and reporting program that sets trip-reduction milestones and a monitoring program to ensure effective participation and compliance with the TDM goals; non-compliance to the trip-reduction goals would lead to financial penalties or may require the implementation of physical transportation improvements."

COMMENT IV. K. 6.

<u>Response</u>: As shown in Tables 10 and 13 in the Transportation Study, the trip generation estimates for the hotel do not include any trip credits due to internal capture with the office land uses. In addition, the internal capture credits assumed for the retail, restaurant, and fitness facility uses are the same as those assumed for the existing land uses and do not account for a higher internal trip capture as a result of the office land use.

As noted in the response to Comment IV. A. 5, an interim traffic impact analysis for Phase I of the Project has been provided as part of the Project alternatives analysis conducted to comply with CEQA requirements, the EIR does include a Phased Construction Alternative (Alternative 3). The analysis for this alternative presents the interim impact analysis requested by the Commenter. As noted on Page 208, Chapter 12 of the Transportation Study, under this alternative, Phase I of the Project would include the hotel building, followed by the office building in Phase II. As shown in Tables 33 and 34 on pages 222 and 223 of the Transportation Study, Phase I would generate fewer trips than the existing land uses both without and with the Transportation Demand Management (TDM) credits. Hence, Phase I of the Project would generate no net new trips and therefore, would not result in any significant impacts on both intersections and freeway segments. The mitigation phasing plan presented in Table 36 on page 225 of the Transportation Study, accounts for the potential phasing of the Project.

COMMENT IV. K. 7.

<u>Response</u>: Pedestrian impacts were considered in the analysis of the Project. There was substantial analysis of the pedestrian flows at the intersections of Figueroa Street & 7th Street and Figueroa Street & Wilshire Boulevard including even the consideration of a pedestrian grade separation at Figueroa Street & 7th Street. Sidewalk widths and pedestrian plaza areas were studied and reviewed with staff from the City of Los Angeles' Planning Department.

The City's requirement for pedestrian counts as part of the traffic count was instituted on June 7, 2010 after the Project's Notice of Preparations (July 9, 2009 and November 5, 2009) had been issued and the Project's data collection and the Memorandum of Understanding with LADOT had already been completed. Therefore, LADOT determined that re-counting the intersections to get pedestrian information was not necessary. Pedestrian counts were conducted at the intersections of Figueroa Street & 7th Street as part of the pedestrian grade separation study and at Figueroa Street & Wilshire Boulevard as part of the analysis of the triple left-turn lanes. Pedestrian observations were conducted at the intersections of Francisco Street & 7th Street and Francisco Street & Wilshire Boulevard as part of the evaluation of Francisco Street corridor alternatives.

Bicycle counts were not conducted, but observations were made on the four streets surrounding the project site. Bicycle activity in the vicinity of the Project is light today. Bicycle parking will be provided in the Project's parking garage and bicycle rental will be part of the Mobility Hub included in the Project.

COMMENT IV. K. 8.

<u>Response</u>: The trip generation and parking demand for the proposed fitness center are appropriate for a downtown project in a mixed-use development setting and therefore the traffic and parking impacts of the land uses within this Project have been adequately addressed.

<u>Code Requirements</u>

As noted on page 171, Chapter 7 of the Transportation Study, the Project's code requirements analysis has been conducted using *Los Angeles Municipal Code* (LAMC) (City of Los Angeles, July 2000 edition, revised February 4, 2010) and *Residential Parking Policy for Division of Land – AA 2000-1* (Advisory Agency Policy 2000-1) (Advisory Agency, Los Angeles Planning Department, May 2000). The code requirements used in the analysis are those permitted by Section 12.21A.4(i) of the LAMC which provides parking ratios for land uses within the Downtown Business District:

> "For business, commercial or industrial buildings, having a gross floor area of 7,500 square feet or more, at least one parking space for each 1,000 square feet of floor area in said building, exclusive of floor areas used for automobile parking space, for basement storage, or for rooms housing mechanical equipment incidental to the operation of buildings"

The Downtown Business District as identified by Section 12.21A.4(i) of the LAMC includes:

> "property located within the area bounded by Pico Boulevard from the Harbor Freeway to Figueroa Street; Figueroa Street from Pico Boulevard to Venice Boulevard; Venice Boulevard from Figueroa Street to Main Street; Sixteenth Street from Main Street to Maple Avenue; Maple Avenue from Sixteenth Street to Olympic Boulevard; Olympic Boulevard from Maple Avenue to San Julian Street; San Julian Street from Olympic Boulevard to Ninth Street; Ninth Street from San Julian Street to Gladys Avenue; Olympic Boulevard from Gladys Avenue to Central Avenue; Central Avenue from Olympic Boulevard to Third Street; Third Street from Central Avenue to Alameda Street; Alameda Street from Third Street to Sunset Boulevard; Sunset Boulevard from Alameda Street to North Broadway; North Broadway from Sunset Boulevard to Temple Street; Temple Street from North Broadway to Hill Street; Hill Street from Temple Street to First Street; First Street from Hill Street to the Harbor Freeway; the Harbor Freeway from First Street to Pico Boulevard."

<u>Demand Requirements</u>

As noted on page 172, Chapter 7 of the Transportation Study, the Project's demand analysis has been conducted using:

> "the parking requirements and the adjustment ratios set forth in *Shared Parking*, *Second Edition*."

As shown in Table 27 and 28, on pages 183 and 184, respectively, of the Transportation Study, for the fitness center, the parking demand analysis assumes parking demand ratios of 2.15 spaces per 1,000 sf and 1.25 spaces per 1,000 sf for the weekday and weekend peak times, respectively. Therefore, the demand analysis assumed an even higher ratio than that required by the LAMC.

In summary, the parking analysis conducted for the fitness facility land uses are based on adopted City of Los Angeles and national standards for projects within the downtown area.

COMMENT IV. K. 9.

Response: The EIR includes an analysis of transportation impacts conducted in accordance LADOT-approved methodology and the *L.A. CEQA Thresholds Guide: Your Resource for Preparing CEQA Analyses in Los Angeles*. The analysis presented in Appendix K of the Transportation Study is a voluntary assessment conducted in consultation with Caltrans with respect to Caltrans facilities. As noted on page 144 in Chapter 6 of the Transportation Study, this analysis was conducted for long range planning and informational purposes based on criteria agreed upon with Caltrans. The Caltrans assessment was included in the EIR for informational purposes. As such, the Caltrans assessment exceeds the requirements of the City of Los Angeles for transportation impact analysis. The assessment analyzed eight freeway segments, five off-ramps, and five on-ramps. The analysis concluded that the US 101 northbound off-ramp at Grand Avenue is expected to exceed the Caltrans standards even under Future without Project conditions, i.e. without the addition of Project traffic. As noted in Caltrans IGR/CEQA branch's assessment letter dated August 18, 2010:

> "most freeway facilities (mainline & ramps) in the project vicinity which are currently running congested (LOS E thru F) during AM & PM peaks will continued to do so and worsen by the Wilshire Grand build-out in 2020. This is due to the increased traffic from the ambient growth and other 90 plus related projects."

The identified northbound off-ramp at Grand Avenue is therefore projected to exceed the Caltrans standards on a cumulative basis. Failing regional transportation facilities such as freeways and ramps are the result of contributions of traffic from many sources to such facilities that are operating under undesirably congested conditions. The Caltrans assessment letter identified two "feasible physical improvements (one being I-110 freeway segment in the immediate vicinity of the proposed project and the other a Grand Avenue Off-ramp at NB US 101) that would help relieve some of the congestion." It is neither feasible nor practical for any single project to bear the burden of implementing improvements designed to improve these conditions. As such, fair-share contributions represent the only equitable and feasible improvement measure for addressing such conditions. Caltrans has identified a feasible improvement project that will alleviate the congestion due to future traffic at this off-ramp. The Project's fair-share contribution to the cost of this improvement was determined by Caltrans based on the proportion of project-related traffic at this location. Based on the best information available to Caltrans, this improvement is expected to be constructed prior to the horizon year utilized in the Project's Transportation Study (2020).

As noted in Appendix K of the Transportation Study, even though the Project does not result in any impacts on the freeway system, the Project is contributing $1,950,100 towards Caltrans'

Harbor Freeway improvement project. This contribution includes the Project's fair-share contribution towards improvements to the Grand Avenue & US 101 northbound off-ramp.

COMMENT V. B. 3.

Response: The Parking Analysis chapter, Chapter 7 of the Transportation Study contains a discussion of the peripheral parking requirements for the project, citing the reasons why peripheral parking does not apply to the project.

COMMENT V. E. 1.

Response: The Shared Parking analysis included in Chapter 7 of the Transportation Study clearly shows that the 100 spaces for the residential uses are reserved for residents and are not included in the "pool" of shared spaces. The Urban Land Institute's Shared Parking methodology allows consideration of reserved spaces in a shared parking analysis and the evaluation of the Project's parking demand was completed consistent with the Urban Land Institute methodology. The remaining 1,800 spaces however are unreserved.

COMMENT V. E. 2.

Response: Refer to the response to Comment II. B. 3 under the DLA Piper appeal.

COMMENT V. E. 3.

Response: The provision of parking supply to meet the Project's shared parking demand, either under the Project or under a land use exchange permitted under the Land Use Equivalency Program, would be addressed by City approvals related to shared parking, which are based on a shared parking analysis approved by the City. Condition of Approval 12 included in the City Planning Commission's Determination Letter clarifies that this requirement would also be applicable to any changes to the Project of 5% or more. The Condition includes in part:

> "In the event the Applicant proposes a build-out project that is at least 5% less floor area than that permitted (5% less than 2,397,304 square feet), then the actual amount of shared parking spaces required shall be proportionately reduced based on square footage and building uses as outlined in Section 12.24 X 20 of the Zoning Code."

This condition would ensure that the Project's parking demand would be accommodated under any potential scenario and impacts would be less than significant. To provide further clarity, an additional condition is recommended as follows:

> In the event the Applicant proposes changes to the Project under the Land Use Equivalency Program, a shared parking calculation utilizing the shared parking factors proportionally for each use included in the Project's Transportation Study must be prepared and provided to the Director for approval.

COMMENT V. E. 4.

Response: The requested analysis of parking “poaching” is not a typical element of the DEIR considerations. The Commenter is concerned that his parking supply will be used by Project visitors and tenants because the parking fees at the 7th Street Marketplace will be less than the fees charged at the Project’s parking garage.

The EIR analyzes the impacts of the Project on parking supply and demand. In terms of spillover parking, the parking analysis clearly shows that the Project has enough parking to meet its peak parking demand, and therefore there is no reason to believe that spillover parking will be an issue. Visitor parking for the Project will conform to short-term parking rates as dictated by the market. It is very common that visitor parking in the Project area is governed by parking validations that offer parking at a reduced rate for the specific site visited.

TABLE 1
ALTERNATE FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2020)
INTERSECTION PEAK HOUR LEVELS OF SERVICE

No.		Intersection	Peak Hour	V/C	LOS
1.	[a]	Grand Avenue & US 101 NB Ramps	A.M. P.M.	0.844 1.025	D F
2.	[a]	Hope Street/US 101 SB Ramps & Temple Street	A.M. P.M.	0.746 0.985	C E
3.	[b]	Figueroa Street & 3rd Street/SR 110 Ramps	A.M. P.M.	0.642 0.978	B E
4.	[a]	Flower Street & 3rd Street	A.M. P.M.	0.595 0.571	A A
5.	[a]	Grand Avenue & 3rd Street	A.M. P.M.	0.387 0.369	A A
6.	[a]	Figueroa Street & 5th Street/SR 110 On-Ramps	A.M. P.M.	0.793 1.084	C F
7.	[a]	Flower Street & 5th Street	A.M. P.M.	0.296 0.369	A A
8.	[a]	Figueroa Street & 6th Street/SR 110 Off-Ramps	A.M. P.M.	0.713 0.940	C E
9.	[a]	Flower Street & 6th Street	A.M. P.M.	0.381 0.403	A A
10.	[a]	Alvarado Street & Wilshire Boulevard	A.M. P.M.	0.645 0.693	B B
11.	[a]	Beaudry Avenue & Wilshire Boulevard	A.M. P.M.	0.660 0.530	B A
12.	[a]	Francisco Street & Wilshire Boulevard	A.M. P.M.	0.597 0.509	A A
13.	[a]	Figueroa Street & Wilshire Boulevard	A.M. P.M.	0.909 1.191	E F
14.	[a]	Flower Street & Wilshire Boulevard	A.M. P.M.	0.693 0.729	B C
15.	[a]	Grand Avenue & Wilshire Boulevard	A.M. P.M.	0.260 0.376	A A
16.	[a]	Alvarado Street & 7th Street	A.M. P.M.	0.383 0.459	A A
17.	[a]	Bixel Street & 7th Street	A.M. P.M.	0.751 1.043	C F
18.	[a]	Francisco Street & 7th Street	A.M. P.M.	0.488 0.550	A A
19.	[a]	Figueroa Street & 7th Street	A.M. P.M.	0.847 1.096	D F
20.	[a]	Flower Street & 7th Street	A.M. P.M.	0.373 0.759	A C
21.	[a]	Olive Street & 7th Street	A.M. P.M.	0.335 0.506	A A

Note:

[a] Intersection is operating under the LADOT Adaptive Traffic Control System (ATCS). A credit of 0.10 in V/C ratio was included in the analysis.

TABLE 1 (continued)
ALTERNATE FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2020)
INTERSECTION PEAK HOUR LEVELS OF SERVICE

No.		Intersection	Peak Hour	V/C	LOS
22.	[a]	Alameda Street & 7th Street	A.M. P.M.	0.746 0.784	C C
23.	[a]	Soto Street & 7th Street	A.M. P.M.	0.722 0.736	C C
24.	[a]	Bixel Street/SR 110 SB On-Ramp & 8th Street	A.M. P.M.	0.864 1.084	D F
25.	[a]	Figueroa Street & 8th Street	A.M. P.M.	0.956 0.930	E E
26.	[a]	Flower Street & 8th Street	A.M. P.M.	0.390 0.579	A A
27.	[a]	Francisco Street & James M. Wood Boulevard/SR 110 NB Off-Ramp	A.M. P.M.	0.593 0.559	A A
28.	[a]	Figueroa Street & James M. Wood Boulevard/9th Street	A.M. P.M.	0.643 0.537	B A
29.	[a]	Cherry Street & Pico Boulevard	A.M. P.M.	0.584 0.716	A C
30.	[a]	Figueroa Street & Pico Boulevard	A.M. P.M.	0.598 0.673	A B
31.	[a]	Hoover Street & Alvarado Street/Alvarado Terrace	A.M. P.M.	0.439 0.575	A A
32.	[a]	Flower Street & Venice Boulevard	A.M. P.M.	0.216 0.452	A A
33.	[a]	Grand Avenue & 18th Street	A.M. P.M.	0.476 0.678	A B
34.	[a]	Olive Street & 6th Street	A.M. P.M.	0.259 0.399	A A
35.	[a]	Hope Street & 7th Street	A.M. P.M.	0.359 0.478	A A
36.	[a]	Grand Avenue & 7th Street	A.M. P.M.	0.390 0.475	A A
37.	[a]	Figueroa Street & Olympic Boulevard	A.M. P.M.	0.825 0.984	D E
38.	[a]	Glendale Boulevard & Temple Street	A.M. P.M.	1.063 1.283	F F
39.	[a]	Glendale Boulevard/Lucas Avenue & Beverly Boulevard/1st Street/2nd Street	A.M. P.M.	0.667 0.766	B C
40.	[a]	Lucas Avenue & 3rd Street	A.M. P.M.	0.701 0.573	C A
41.	[a]	Lucas Avenue & 6th Street	A.M. P.M.	0.841 0.711	D C
42.	[a]	Lucas Avenue & Wilshire Boulevard	A.M. P.M.	0.707 0.944	C E

Note:
[a] Intersection is operating under the LADOT Adaptive Traffic Control System (ATCS). A credit of 0.10 in V/C ratio was included in the analysis.

TABLE 1 (continued)
ALTERNATE FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2020)
INTERSECTION PEAK HOUR LEVELS OF SERVICE SUMMARY

Level of Service	Intersections	
	A.M. Peak Hour	P.M. Peak Hour
A	20	19
B	6	3
C	8	7
D	5	0
E	2	6
F	1	7
Total	**42**	**42**

TABLE 2
ALTERNATE FUTURE WITH PROJECT CONDITIONS - BEFORE MITIGATION (YEAR 2020)
INTERSECTION PEAK HOUR LEVELS OF SERVICE

No.		Intersection	Peak Hour	Future without Project		Future with Project, Before Mitigation			
				V/C	LOS	V/C	LOS	Change in V/C	Significant Impact?
1.	[a]	Grand Avenue & US 101 NB Ramps	A.M. P.M.	0.844 1.025	D F	0.854 1.026	D F	0.010 0.001	NO NO
2.	[a]	Hope Street/US 101 SB Ramps & Temple Street	A.M. P.M.	0.746 0.985	C E	0.746 1.009	C F	0.000 0.024	NO YES
3.	[a]	Figueroa Street & 3rd Street/SR 110 Ramps	A.M. P.M.	0.642 0.978	B E	0.643 0.990	B E	0.001 0.012	NO YES
4.	[a]	Flower Street & 3rd Street	A.M. P.M.	0.595 0.571	A A	0.636 0.571	B A	0.041 0.000	NO NO
5.	[a]	Grand Avenue & 3rd Street	A.M. P.M.	0.387 0.369	A A	0.409 0.372	A A	0.022 0.003	NO NO
6.	[a]	Figueroa Street & 5th Street/SR 110 On-Ramps	A.M. P.M.	0.793 1.084	C F	0.799 1.134	C F	0.006 0.050	NO YES
7.	[a]	Flower Street & 5th Street	A.M. P.M.	0.296 0.369	A A	0.318 0.371	A A	0.022 0.002	NO NO
8.	[a]	Figueroa Street & 6th Street/SR 110 Off-Ramps	A.M. P.M.	0.713 0.940	C E	0.723 1.005	C F	0.010 0.065	NO YES
9.	[a]	Flower Street & 6th Street	A.M. P.M.	0.381 0.403	A A	0.405 0.412	A A	0.024 0.009	NO NO
10.	[a]	Alvarado Street & Wilshire Boulevard	A.M. P.M.	0.645 0.693	B B	0.655 0.711	B C	0.010 0.018	NO NO
11.	[a]	Beaudry Avenue & Wilshire Boulevard	A.M. P.M.	0.660 0.530	B A	0.696 0.532	B A	0.036 0.002	NO NO
12.	[a]	Francisco Street & Wilshire Boulevard	A.M. P.M.	0.597 0.509	A A	0.774 0.728	C C	0.177 0.219	YES YES
13.	[a]	Figueroa Street & Wilshire Boulevard	A.M. P.M.	0.909 1.191	E F	0.975 1.372	E F	0.066 0.181	YES YES
14.	[a]	Flower Street & Wilshire Boulevard	A.M. P.M.	0.693 0.729	B C	0.807 0.729	D C	0.114 0.000	YES NO
15.	[a]	Grand Avenue & Wilshire Boulevard	A.M. P.M.	0.260 0.376	A A	0.275 0.395	A A	0.015 0.019	NO NO
16.	[a]	Alvarado Street & 7th Street	A.M. P.M.	0.383 0.459	A A	0.393 0.470	A A	0.010 0.011	NO NO
17.	[a]	Bixel Street & 7th Street	A.M. P.M.	0.751 1.043	C F	0.775 1.105	C F	0.024 0.062	NO YES
18.	[a]	Francisco Street & 7th Street	A.M. P.M.	0.488 0.550	A A	0.561 0.712	A C	0.073 0.162	NO YES
19.	[a]	Figueroa Street & 7th Street	A.M. P.M.	0.847 1.096	D F	0.993 1.152	E F	0.146 0.056	YES YES
20.	[a]	Flower Street & 7th Street	A.M. P.M.	0.373 0.759	A C	0.387 0.830	A D	0.014 0.071	NO YES
21.	[a]	Olive Street & 7th Street	A.M. P.M.	0.335 0.506	A A	0.378 0.534	A A	0.043 0.028	NO NO

Note:
[a] Intersection is operating under the LADOT Adaptive Traffic Control System (ATCS). A credit of 0.10 in V/C ratio was included in the analysis.

TABLE 2 (continued)
ALTERNATE FUTURE WITH PROJECT CONDITIONS - BEFORE MITIGATION (YEAR 2020)
INTERSECTION PEAK HOUR LEVELS OF SERVICE

No.		Intersection	Peak Hour	Future without Project		Future with Project, Before Mitigation			
				V/C	LOS	V/C	LOS	Change in V/C	Significant Impact?
22.	[a]	Alameda Street & 7th Street	A.M. P.M.	0.746 0.784	C C	0.776 0.805	C D	0.030 0.021	NO YES
23.	[a]	Soto Street & 7th Street	A.M. P.M.	0.722 0.736	C C	0.733 0.738	C C	0.011 0.002	NO NO
24.	[a]	Bixel Street/SR 110 SB On-Ramp & 8th Street	A.M. P.M.	0.864 1.084	D F	0.867 1.119	D F	0.003 0.035	NO YES
25.	[a]	Figueroa Street & 8th Street	A.M. P.M.	0.956 0.930	E E	0.956 0.934	E E	0.000 0.004	NO NO
26.	[a]	Flower Street & 8th Street	A.M. P.M.	0.390 0.579	A A	0.390 0.579	A A	0.000 0.000	NO NO
27.	[a]	Francisco Street & James M. Wood Boulevard/SR 110 NB Off-Ramp	A.M. P.M.	0.593 0.559	A A	0.630 0.563	B A	0.037 0.004	NO NO
28.	[a]	Figueroa Street & James M. Wood Boulevard/9th Street	A.M. P.M.	0.643 0.537	B A	0.670 0.541	B A	0.027 0.004	NO NO
29.	[a]	Cherry Street & Pico Boulevard	A.M. P.M.	0.584 0.716	A C	0.584 0.716	A C	0.000 0.000	NO NO
30.	[a]	Figueroa Street & Pico Boulevard	A.M. P.M.	0.598 0.673	A B	0.605 0.677	B B	0.007 0.004	NO NO
31.	[a]	Hoover Street & Alvarado Street/Alvarado Terrace	A.M. P.M.	0.439 0.575	A A	0.439 0.575	A A	0.000 0.000	NO NO
32.	[a]	Flower Street & Venice Boulevard	A.M. P.M.	0.216 0.452	A A	0.217 0.466	A A	0.001 0.014	NO NO
33.	[a]	Grand Avenue & 18th Street	A.M. P.M.	0.476 0.678	A B	0.486 0.722	A C	0.010 0.044	NO YES
34.	[a]	Olive Street & 6th Street	A.M. P.M.	0.259 0.399	A A	0.259 0.439	A A	0.000 0.040	NO NO
35.	[a]	Hope Street & 7th Street	A.M. P.M.	0.359 0.478	A A	0.425 0.490	A A	0.066 0.012	NO NO
36.	[a]	Grand Avenue & 7th Street	A.M. P.M.	0.390 0.475	A A	0.455 0.491	A A	0.065 0.016	NO NO
37.	[a]	Figueroa Street & Olympic Boulevard	A.M. P.M.	0.825 0.984	D E	0.847 0.987	D E	0.022 0.003	YES NO
38.	[a]	Glendale Boulevard & Temple Street	A.M. P.M.	1.063 1.283	F F	1.063 1.288	F F	0.000 0.005	NO NO
39.	[a]	Glendale Boulevard/Lucas Avenue & Beverly Boulevard/1st Street/2nd Street	A.M. P.M.	0.667 0.766	B C	0.667 0.771	B C	0.000 0.005	NO NO
40.	[a]	Lucas Avenue & 3rd Street	A.M. P.M.	0.701 0.573	C A	0.737 0.578	C A	0.036 0.005	NO NO
41.	[a]	Lucas Avenue & 6th Street	A.M. P.M.	0.841 0.711	D C	0.785 0.742	C C	-0.056 0.031	NO NO
42.	[a]	Lucas Avenue & Wilshire Boulevard	A.M. P.M.	0.707 0.944	C E	0.732 0.960	C E	0.025 0.016	NO YES

Note:
[a] Intersection is operating under the LADOT Adaptive Traffic Control System (ATCS). A credit of 0.10 in V/C ratio was included in the analysis.

TABLE 2 (continued)
ALTERNATE FUTURE WITH PROJECT CONDITIONS - BEFORE MITIGATION (YEAR 2020)

INTERSECTION IMPACT SUMMARY		
Level of Service	**A.M. Peak Hour**	**P.M. Peak Hour**
C	1	3
D	2	2
E	2	2
F	0	7
Total Peak Hour Impacts	**5**	**14**
Total Individual Intersections Impacted	**16**	

TABLE 3
ALTERNATE FUTURE WITH PROJECT WITH TDM PROGRAM CONDITIONS (YEAR 2020)
INTERSECTION PEAK HOUR LEVELS OF SERVICE

No.		Intersection	Peak Hour	Future without Project		Future with Project, Before Mitigation				Future with Project with TDM Program			
				V/C	LOS	V/C	LOS	Change in V/C	Significant Impact?	V/C	LOS	Change in V/C	Significant Impact?
1.	[a]	Grand Avenue & US 101 NB Ramps	A.M. P.M.	0.844 1.025	D F	0.854 1.026	D F	0.010 0.001	NO NO	0.851 1.025	D F	0.007 0.000	NO NO
2.	[a]	Hope Street/US 101 SB Ramps & Temple Street	A.M. P.M.	0.746 0.985	C E	0.746 1.009	C F	0.000 0.024	NO YES	0.746 1.000	C E	0.000 0.015	NO YES
3.	[a]	Figueroa Street & 3rd Street/SR 110 Ramps	A.M. P.M.	0.642 0.978	B E	0.643 0.990	B E	0.001 0.012	NO YES	0.642 0.986	B E	0.000 0.008	NO NO
4.	[a]	Flower Street & 3rd Street	A.M. P.M.	0.595 0.571	A A	0.636 0.571	B A	0.041 0.000	NO NO	0.623 0.571	B A	0.028 0.000	NO NO
5.	[a]	Grand Avenue & 3rd Street	A.M. P.M.	0.387 0.369	A A	0.409 0.372	A A	0.022 0.003	NO NO	0.402 0.370	A A	0.015 0.001	NO NO
6.	[a]	Figueroa Street & 5th Street/SR 110 On-Ramps	A.M. P.M.	0.793 1.084	C F	0.799 1.134	C F	0.006 0.050	NO YES	0.796 1.119	C F	0.003 0.035	NO YES
7.	[a]	Flower Street & 5th Street	A.M. P.M.	0.296 0.369	A A	0.318 0.371	A A	0.022 0.002	NO NO	0.311 0.369	A A	0.015 0.000	NO NO
8.	[a]	Figueroa Street & 6th Street/SR 110 Off-Ramps	A.M. P.M.	0.713 0.940	C E	0.723 1.005	C F	0.010 0.065	NO YES	0.719 0.985	C E	0.006 0.045	NO YES
9.	[a]	Flower Street & 6th Street	A.M. P.M.	0.381 0.403	A A	0.405 0.412	A A	0.024 0.009	NO NO	0.397 0.408	A A	0.016 0.005	NO NO
10.	[a]	Alvarado Street & Wilshire Boulevard	A.M. P.M.	0.645 0.693	B B	0.655 0.711	B C	0.010 0.018	NO NO	0.651 0.705	B C	0.006 0.012	NO NO
11.	[a]	Beaudry Avenue & Wilshire Boulevard	A.M. P.M.	0.660 0.530	B A	0.696 0.532	B A	0.036 0.002	NO NO	0.683 0.529	B A	0.023 -0.001	NO NO
12.	[a]	Francisco Street & Wilshire Boulevard	A.M. P.M.	0.597 0.509	A A	0.774 0.728	C C	0.177 0.219	YES YES	0.709 0.639	C B	0.112 0.130	YES NO
13.	[a]	Figueroa Street & Wilshire Boulevard	A.M. P.M.	0.909 1.191	E F	0.975 1.372	E F	0.066 0.181	YES YES	0.946 1.312	E F	0.037 0.121	YES YES
14.	[a]	Flower Street & Wilshire Boulevard	A.M. P.M.	0.693 0.729	B C	0.807 0.729	D C	0.114 0.000	YES NO	0.768 0.713	C C	0.075 -0.016	YES NO
15.	[a]	Grand Avenue & Wilshire Boulevard	A.M. P.M.	0.260 0.376	A A	0.275 0.395	A A	0.015 0.019	NO NO	0.271 0.389	A A	0.011 0.013	NO NO
16.	[a]	Alvarado Street & 7th Street	A.M. P.M.	0.383 0.459	A A	0.393 0.470	A A	0.010 0.011	NO NO	0.389 0.467	A A	0.006 0.008	NO NO
17.	[a]	Bixel Street & 7th Street	A.M. P.M.	0.751 1.043	C F	0.775 1.105	C F	0.024 0.062	NO YES	0.766 1.085	C F	0.015 0.042	NO YES
18.	[a]	Francisco Street & 7th Street	A.M. P.M.	0.488 0.550	A A	0.561 0.712	A C	0.073 0.162	NO YES	0.513 0.653	A B	0.025 0.103	NO NO
19.	[a]	Figueroa Street & 7th Street	A.M. P.M.	0.847 1.096	D F	0.993 1.152	E F	0.146 0.056	YES YES	0.950 1.132	E F	0.103 0.036	YES YES
20.	[a]	Flower Street & 7th Street	A.M. P.M.	0.373 0.759	A C	0.387 0.830	A D	0.014 0.071	NO YES	0.381 0.807	A D	0.008 0.048	NO YES
21.	[a]	Olive Street & 7th Street	A.M. P.M.	0.335 0.506	A A	0.378 0.534	A A	0.043 0.028	NO NO	0.364 0.524	A A	0.029 0.018	NO NO

Note:
[a] Intersection is operating under the LADOT Adaptive Traffic Control System (ATCS). A credit of 0.10 in V/C ratio was included in the analysis.

TABLE 3 (continued)
ALTERNATE FUTURE WITH PROJECT WITH TDM PROGRAM CONDITIONS (YEAR 2020)
INTERSECTION PEAK HOUR LEVELS OF SERVICE

No.		Intersection	Peak Hour	Future without Project		Future with Project, Before Mitigation				Future with Project with TDM Program			
				V/C	LOS	V/C	LOS	Change in V/C	Significant Impact?	V/C	LOS	Change in V/C	Significant Impact?
22.	[a]	Alameda Street & 7th Street	A.M. P.M.	0.746 0.784	C C	0.776 0.805	C D	0.030 0.021	NO YES	0.767 0.797	C C	0.021 0.013	NO NO
23.	[a]	Soto Street & 7th Street	A.M. P.M.	0.722 0.736	C C	0.733 0.738	C C	0.011 0.002	NO NO	0.729 0.737	C C	0.007 0.001	NO NO
24.	[a]	Bixel Street/SR 110 SB On-Ramp & 8th Street	A.M. P.M.	0.864 1.084	D F	0.867 1.119	D F	0.003 0.035	NO YES	0.865 1.108	D F	0.001 0.024	NO YES
25.	[a]	Figueroa Street & 8th Street	A.M. P.M.	0.956 0.930	E E	0.956 0.934	E E	0.000 0.004	NO NO	0.956 0.931	E E	0.000 0.001	NO NO
26.	[a]	Flower Street & 8th Street	A.M. P.M.	0.390 0.579	A A	0.390 0.579	A A	0.000 0.000	NO NO	0.390 0.579	A A	0.000 0.000	NO NO
27.	[a]	Francisco Street & James M. Wood Boulevard/SR 110 NB Off-Ramp	A.M. P.M.	0.593 0.559	A A	0.630 0.563	B A	0.037 0.004	NO NO	0.618 0.560	B A	0.025 0.001	NO NO
28.	[a]	Figueroa Street & James M. Wood Boulevard/9th Street	A.M. P.M.	0.643 0.537	B A	0.670 0.541	B A	0.027 0.004	NO NO	0.661 0.539	B A	0.018 0.002	NO NO
29.	[a]	Cherry Street & Pico Boulevard	A.M. P.M.	0.584 0.716	A C	0.584 0.716	A C	0.000 0.000	NO NO	0.584 0.716	A C	0.000 0.000	NO NO
30.	[a]	Figueroa Street & Pico Boulevard	A.M. P.M.	0.598 0.673	A B	0.605 0.677	B B	0.007 0.004	NO NO	0.603 0.675	B B	0.005 0.002	NO NO
31.	[a]	Hoover Street & Alvarado Street/Alvarado Terrace	A.M. P.M.	0.439 0.575	A A	0.439 0.575	A A	0.000 0.000	NO NO	0.439 0.575	A A	0.000 0.000	NO NO
32.	[a]	Flower Street & Venice Boulevard	A.M. P.M.	0.216 0.452	A A	0.217 0.466	A A	0.001 0.014	NO NO	0.217 0.461	A A	0.001 0.009	NO NO
33.	[a]	Grand Avenue & 18th Street	A.M. P.M.	0.476 0.678	A B	0.486 0.722	A C	0.010 0.044	NO YES	0.482 0.708	A C	0.006 0.030	NO NO
34.	[a]	Olive Street & 6th Street	A.M. P.M.	0.259 0.399	A A	0.259 0.439	A A	0.000 0.040	NO NO	0.259 0.435	A A	0.000 0.036	NO NO
35.	[a]	Hope Street & 7th Street	A.M. P.M.	0.359 0.478	A A	0.425 0.490	A A	0.066 0.012	NO NO	0.405 0.483	A A	0.046 0.005	NO NO
36.	[a]	Grand Avenue & 7th Street	A.M. P.M.	0.390 0.475	A A	0.455 0.491	A A	0.065 0.016	NO NO	0.434 0.483	A A	0.044 0.008	NO NO
37.	[a]	Figueroa Street & Olympic Boulevard	A.M. P.M.	0.825 0.984	D E	0.847 0.987	D E	0.022 0.003	YES NO	0.840 0.985	D E	0.015 0.001	NO NO
38.	[a]	Glendale Boulevard & Temple Street	A.M. P.M.	1.063 1.283	F F	1.063 1.288	F F	0.000 0.005	NO NO	1.063 1.287	F F	0.000 0.004	NO NO
39.	[a]	Glendale Boulevard/Lucas Avenue & Beverly Boulevard/1st Street/2nd Street	A.M. P.M.	0.667 0.766	B C	0.667 0.771	B C	0.000 0.005	NO NO	0.667 0.770	B C	0.000 0.004	NO NO
40.	[a]	Lucas Avenue & 3rd Street	A.M. P.M.	0.701 0.573	C A	0.737 0.578	C A	0.036 0.005	NO NO	0.701 0.577	C A	0.000 0.004	NO NO
41.	[a]	Lucas Avenue & 6th Street	A.M. P.M.	0.841 0.711	D C	0.785 0.742	C C	-0.056 0.031	NO NO	0.848 0.733	D C	0.007 0.022	NO NO
42.	[a]	Lucas Avenue & Wilshire Boulevard	A.M. P.M.	0.707 0.944	C E	0.732 0.960	C E	0.025 0.016	NO YES	0.723 0.953	C E	0.016 0.009	NO NO

Note:
[a] Intersection is operating under the LADOT Adaptive Traffic Control System (ATCS). A credit of 0.10 in V/C ratio was included in the analysis.

TABLE 3 (continued)
ALTERNATE FUTURE WITH PROJECT WITH TDM PROGRAM CONDITIONS (YEAR 2020)

INTERSECTION IMPACT SUMMARY				
Level of Service	**Before Mitigation**		**With TDM**	
	A.M. Peak Hour	**P.M. Peak Hour**	**A.M. Peak Hour**	**P.M. Peak Hour**
C	1	3	2	0
D	2	2	0	1
E	2	2	2	2
F	0	7	0	5
Total Peak Hour Impacts	**5**	**14**	**4**	**8**
Total Individual Intersections Impacted	**16**		**10**	

TABLE 4
ALTERNATE FUTURE WITH PROJECT WITH MITIGATION CONDITIONS (YEAR 2020)
INTERSECTION PEAK HOUR LEVELS OF SERVICE

No.		Intersection	Peak Hour	Future without Project		Future with Project with TDM Program, Before Mitigation				Future with Project with Mitigation			
				V/C	LOS	V/C	LOS	Change in V/C	Significant Impact?	V/C	LOS	Change in V/C	Significant Impact?
1.	[a]	Grand Avenue &	A.M.	0.844	D	0.851	D	0.007	NO	0.851	D	0.007	NO
		US 101 NB Ramps	P.M.	1.025	F	1.025	F	0.000	NO	1.025	F	0.000	NO
2.	[a]	Hope Street/US 101 SB Ramps &	A.M.	0.746	C	0.746	C	0.000	NO	0.736	C	-0.010	NO
		Temple Street	P.M.	0.985	E	1.000	E	0.015	YES	0.990	E	0.005	NO
3.	[a]	Figueroa Street &	A.M.	0.642	B	0.642	B	0.000	NO	0.642	B	0.000	NO
		3rd Street/SR 110 Ramps	P.M.	0.978	E	0.986	E	0.008	NO	0.986	E	0.008	NO
4.	[a]	Flower Street &	A.M.	0.595	A	0.623	B	0.028	NO	0.613	B	0.018	NO
		3rd Street	P.M.	0.571	A	0.571	A	0.000	NO	0.561	A	-0.010	NO
5.	[a]	Grand Avenue &	A.M.	0.387	A	0.402	A	0.015	NO	0.402	A	0.015	NO
		3rd Street	P.M.	0.369	A	0.370	A	0.001	NO	0.370	A	0.001	NO
6.	[a]	Figueroa Street &	A.M.	0.793	C	0.796	C	0.003	NO	0.786	C	-0.007	NO
		5th Street/SR 110 On-Ramps	P.M.	1.084	F	1.119	F	0.035	YES	1.109	F	0.025	YES
7.	[a]	Flower Street &	A.M.	0.296	A	0.311	A	0.015	NO	0.301	A	0.005	NO
		5th Street	P.M.	0.369	A	0.369	A	0.000	NO	0.359	A	-0.010	NO
8.	[a]	Figueroa Street &	A.M.	0.713	C	0.719	C	0.006	NO	0.709	C	-0.004	NO
		6th Street/SR 110 Off-Ramps	P.M.	0.940	E	0.985	E	0.045	YES	0.975	E	0.035	YES
9.	[a]	Flower Street &	A.M.	0.381	A	0.397	A	0.016	NO	0.387	A	0.006	NO
		6th Street	P.M.	0.403	A	0.408	A	0.005	NO	0.398	A	-0.005	NO
10.	[a]	Alvarado Street &	A.M.	0.645	B	0.651	B	0.006	NO	0.651	B	0.006	NO
		Wilshire Boulevard	P.M.	0.693	B	0.705	C	0.012	NO	0.705	C	0.012	NO
11.	[a]	Beaudry Avenue &	A.M.	0.660	B	0.683	B	0.023	NO	0.673	B	0.013	NO
		Wilshire Boulevard	P.M.	0.530	A	0.529	A	-0.001	NO	0.519	A	-0.011	NO
12.	[a]	Francisco Street &	A.M.	0.597	A	0.709	C	0.112	YES	0.699	B	0.102	NO
		Wilshire Boulevard	P.M.	0.509	A	0.639	B	0.130	NO	0.629	B	0.120	NO
13.	[a]	Figueroa Street &	A.M.	0.909	E	0.946	E	0.037	YES	0.936	E	0.027	YES
		Wilshire Boulevard	P.M.	1.191	F	1.312	F	0.121	YES	1.302	F	0.111	YES
14.	[a]	Flower Street &	A.M.	0.693	B	0.768	C	0.075	YES	0.758	C	0.065	YES
		Wilshire Boulevard	P.M.	0.729	C	0.713	C	-0.016	NO	0.703	C	-0.026	NO
15.	[a]	Grand Avenue &	A.M.	0.260	A	0.271	A	0.011	NO	0.261	A	0.001	NO
		Wilshire Boulevard	P.M.	0.376	A	0.389	A	0.013	NO	0.379	A	0.003	NO
16.	[a]	Alvarado Street &	A.M.	0.383	A	0.389	A	0.006	NO	0.389	A	0.006	NO
		7th Street	P.M.	0.459	A	0.467	A	0.008	NO	0.467	A	0.008	NO
17.	[a]	Bixel Street &	A.M.	0.751	C	0.766	C	0.015	NO	0.756	C	0.005	NO
		7th Street	P.M.	1.043	F	1.085	F	0.042	YES	1.075	F	0.032	YES
18.	[a]	Francisco Street &	A.M.	0.488	A	0.513	A	0.025	NO	0.503	A	0.015	NO
		7th Street	P.M.	0.550	A	0.653	B	0.103	NO	0.643	B	0.093	NO
19.	[a]	Figueroa Street &	A.M.	0.847	D	0.950	E	0.103	YES	0.940	E	0.093	YES
		7th Street	P.M.	1.096	F	1.132	F	0.036	YES	1.122	F	0.026	YES
20.	[a]	Flower Street &	A.M.	0.373	A	0.381	A	0.008	NO	0.371	A	-0.002	NO
		7th Street	P.M.	0.759	C	0.807	D	0.048	YES	0.797	C	0.038	NO
21.	[a]	Olive Street &	A.M.	0.335	A	0.364	A	0.029	NO	0.354	A	0.019	NO
		7th Street	P.M.	0.506	A	0.524	A	0.018	NO	0.514	A	0.008	NO

Note:
[a] Intersection is operating under the LADOT Adaptive Traffic Control System (ATCS). A credit of 0.10 in V/C ratio was included in the analysis.

TABLE 4 (continued)
ALTERNATE FUTURE WITH PROJECT WITH MITIGATION CONDITIONS (YEAR 2020)
INTERSECTION PEAK HOUR LEVELS OF SERVICE

No.		Intersection	Peak Hour	Future without Project		Future with Project with TDM Program, Before Mitigation				Future with Project with Mitigation			
				V/C	LOS	V/C	LOS	Change in V/C	Significant Impact?	V/C	LOS	Change in V/C	Significant Impact?
22.	[a]	Alameda Street & 7th Street	A.M. P.M.	0.746 0.784	C C	0.767 0.797	C C	0.021 0.013	NO NO	0.767 0.797	C C	0.021 0.013	NO NO
23.	[a]	Soto Street & 7th Street	A.M. P.M.	0.722 0.736	C C	0.729 0.737	C C	0.007 0.001	NO NO	0.729 0.737	C C	0.007 0.001	NO NO
24.	[a]	Bixel Street/SR 110 SB On-Ramp & 8th Street	A.M. P.M.	0.864 1.084	D F	0.865 1.108	D F	0.001 0.024	NO YES	0.855 1.098	D F	-0.009 0.014	NO YES
25.	[a]	Figueroa Street & 8th Street	A.M. P.M.	0.956 0.930	E E	0.956 0.931	E E	0.000 0.001	NO NO	0.946 0.921	E E	-0.010 -0.009	NO NO
26.	[a]	Flower Street & 8th Street	A.M. P.M.	0.390 0.579	A A	0.390 0.579	A A	0.000 0.000	NO NO	0.380 0.569	A A	-0.010 -0.010	NO NO
27.	[a]	Francisco Street & James M. Wood Boulevard/SR 110 NB Off-Ramp	A.M. P.M.	0.593 0.559	A A	0.618 0.560	B A	0.025 0.001	NO NO	0.608 0.550	B A	0.015 -0.009	NO NO
28.	[a]	Figueroa Street & James M. Wood Boulevard/9th Street	A.M. P.M.	0.643 0.537	B A	0.661 0.539	B A	0.018 0.002	NO NO	0.651 0.529	B A	0.008 -0.008	NO NO
29.	[a]	Cherry Street & Pico Boulevard	A.M. P.M.	0.584 0.716	A C	0.584 0.716	A C	0.000 0.000	NO NO	0.574 0.706	A C	-0.010 -0.010	NO NO
30.	[a]	Figueroa Street & Pico Boulevard	A.M. P.M.	0.598 0.673	A B	0.603 0.675	B B	0.005 0.002	NO NO	0.603 0.675	B B	0.005 0.002	NO NO
31.	[a]	Hoover Street & Alvarado Street/Alvarado Terrace	A.M. P.M.	0.439 0.575	A A	0.439 0.575	A A	0.000 0.000	NO NO	0.429 0.565	A A	-0.010 -0.010	NO NO
32.	[a]	Flower Street & Venice Boulevard	A.M. P.M.	0.216 0.452	A A	0.217 0.461	A A	0.001 0.009	NO NO	0.217 0.461	A A	0.001 0.009	NO NO
33.	[a]	Grand Avenue & 18th Street	A.M. P.M.	0.476 0.678	A B	0.482 0.708	A C	0.006 0.030	NO NO	0.482 0.708	A C	0.006 0.030	NO NO
34.	[a]	Olive Street & 6th Street	A.M. P.M.	0.259 0.399	A A	0.259 0.435	A A	0.000 0.036	NO NO	0.259 0.435	A A	0.000 0.036	NO NO
35.	[a]	Hope Street & 7th Street	A.M. P.M.	0.359 0.478	A A	0.405 0.483	A A	0.046 0.005	NO NO	0.395 0.473	A A	0.036 -0.005	NO NO
36.	[a]	Grand Avenue & 7th Street	A.M. P.M.	0.390 0.475	A A	0.434 0.483	A A	0.044 0.008	NO NO	0.424 0.473	A A	0.034 -0.002	NO NO
37.	[a]	Figueroa Street & Olympic Boulevard	A.M. P.M.	0.825 0.984	D E	0.840 0.985	D E	0.015 0.001	NO NO	0.840 0.985	D E	0.015 0.001	NO NO
38.	[a]	Glendale Boulevard & Temple Street	A.M. P.M.	1.063 1.283	F F	1.063 1.287	F F	0.000 0.004	NO NO	1.063 1.287	F F	0.000 0.004	NO NO
39.	[a]	Glendale Boulevard/Lucas Avenue & Beverly Boulevard/1st Street/2nd Street	A.M. P.M.	0.667 0.766	B C	0.667 0.770	B C	0.000 0.004	NO NO	0.667 0.770	B C	0.000 0.004	NO NO
40.	[a]	Lucas Avenue & 3rd Street	A.M. P.M.	0.701 0.573	C A	0.701 0.577	C A	0.000 0.004	NO NO	0.691 0.567	B A	-0.010 -0.006	NO NO
41.	[a]	Lucas Avenue & 6th Street	A.M. P.M.	0.841 0.711	D C	0.848 0.733	D C	0.007 0.022	NO NO	0.838 0.723	D C	-0.003 0.012	NO NO
42.	[a]	Lucas Avenue & Wilshire Boulevard	A.M. P.M.	0.707 0.944	C E	0.723 0.953	C E	0.016 0.009	NO NO	0.713 0.943	C E	0.006 -0.001	NO NO

Note:
[a] Intersection is operating under the LADOT Adaptive Traffic Control System (ATCS). A credit of 0.10 in V/C ratio was included in the analysis.

TABLE 4 (continued)
ALTERNATE FUTURE WITH PROJECT WITH MITIGATION CONDITIONS (YEAR 2020)

INTERSECTION IMPACT SUMMARY						
Level of Service	**Before Mitigation**		**With TDM**		**With Mitigation**	
	A.M. Peak Hour	**P.M. Peak Hour**	**A.M. Peak Hour**	**P.M. Peak Hour**	**A.M. Peak Hour**	**P.M. Peak Hour**
C	1	3	2	0	1	0
D	2	2	0	1	0	0
E	2	2	2	2	2	1
F	0	7	0	5	0	5
Total Peak Hour Impacts	**5**	**14**	**4**	**8**	**3**	**6**
Total Individual Intersections Impacted	**16**		**10**		**7**	

TABLE 5
COMPARISON OF TRIP GENERATION CREDITS

Land Use	LASED - LA Live (Area A) and Area B [a]	Bunker Hill [b]	Project
Office			
Internal Capture	5%	-	0%
Transit	20%	-	25%
Walk	5%	-	5%
TOTAL	**28%**	**30%**	**29%**
Retail/Restaurant			
Internal Capture	20%	-	20%
Central Business District Adjustment	32%	-	20%
Transit	5%	-	15%
Walk	5%	-	0%
Pass-By [c]	10%	-	0%
TOTAL	**56%**	**55%**	**46%**
Fitness Facility/Spa			
Internal Capture	10%	-	20%
Central Business District Adjustment	0%	-	20%
Transit	5%	-	15%
Walk	5%	-	0%
Pass-By [c]	20%	-	0%
TOTAL	**35%**	**-**	**46%**
Hotel			
Internal Capture	15%	-	0%
Central Business District Adjustment	40%	-	0%
Transit	20%	-	25%
Walk	5%	-	5%
TOTAL	**61%**	**50%**	**29%**
Residential			
Internal Capture	10%	-	0%
Transit	10%	-	25%
Walk	10%	-	5%
TOTAL	**27%**	**30%**	**29%**

Notes:
[a] *Los Angeles Sports and Entertainment District (LASED) Specific Plan* , City of Los Angeles, October 2001
[b] *Bunker Hill Design for Development Program EIR* , Kaku Associates, Inc., August 2005.
[c] Pass-by trips are defined as intermediate stops on the way from an origin to a primary trip destination without a route diversion. These trips are attracted from traffic passing the site on an adjacent street that offers direct access to a site.

TABLE 6
EXISTING PLUS PROJECT CONDITIONS - BEFORE MITIGATION
INTERSECTION PEAK HOUR LEVELS OF SERVICE

No.		Intersection	Peak Hour	Existing		Existing plus Project, Before Mitigation			
				V/C	LOS	V/C	LOS	Change in V/C	Significant Impact?
1.	[a]	Grand Avenue &	A.M.	0.556	A	0.576	A	0.020	NO
		US 101 NB Ramps	P.M.	0.628	B	0.640	B	0.012	NO
2.	[a]	Hope Street/US 101 SB Ramps &	A.M.	0.607	B	0.611	B	0.004	NO
		Temple Street	P.M.	0.703	C	0.724	C	0.021	NO
3.	[b]	Figueroa Street &	A.M.	0.578	A	0.549	A	-0.029	NO
		3rd Street/SR 110 Ramps	P.M.	0.902	E	0.885	D	-0.017	NO
4.	[a]	Flower Street &	A.M.	0.551	A	0.592	A	0.041	NO
		3rd Street	P.M.	0.539	A	0.539	A	0.000	NO
5.	[a]	Grand Avenue &	A.M.	0.339	A	0.361	A	0.022	NO
		3rd Street	P.M.	0.333	A	0.335	A	0.002	NO
6.	[a]	Figueroa Street &	A.M.	0.641	B	0.648	B	0.007	NO
		5th Street/SR 110 On-Ramps	P.M.	0.940	E	0.990	E	0.050	YES
7.	[a]	Flower Street &	A.M.	0.247	A	0.261	A	0.014	NO
		5th Street	P.M.	0.297	A	0.299	A	0.002	NO
8.	[a]	Figueroa Street &	A.M.	0.570	A	0.579	A	0.009	NO
		6th Street/SR 110 Off-Ramps	P.M.	0.785	C	0.849	D	0.064	YES
9.	[a]	Flower Street &	A.M.	0.344	A	0.368	A	0.024	NO
		6th Street	P.M.	0.325	A	0.334	A	0.009	NO
10.	[a]	Alvarado Street &	A.M.	0.570	A	0.579	A	0.009	NO
		Wilshire Boulevard	P.M.	0.602	B	0.620	B	0.018	NO
11.	[a]	Beaudry Avenue &	A.M.	0.569	A	0.605	B	0.036	NO
		Wilshire Boulevard	P.M.	0.418	A	0.419	A	0.001	NO
12.	[a]	Francisco Street &	A.M.	0.513	A	0.690	B	0.177	NO
		Wilshire Boulevard	P.M.	0.444	A	0.665	B	0.221	NO
13.	[a]	Figueroa Street &	A.M.	0.673	B	0.740	C	0.067	YES
		Wilshire Boulevard	P.M.	0.952	E	1.133	F	0.181	YES
14.	[a]	Flower Street &	A.M.	0.556	A	0.670	B	0.114	NO
		Wilshire Boulevard	P.M.	0.603	B	0.604	B	0.001	NO
15.	[a]	Grand Avenue &	A.M.	0.237	A	0.253	A	0.016	NO
		Wilshire Boulevard	P.M.	0.338	A	0.357	A	0.019	NO
16.	[a]	Alvarado Street &	A.M.	0.340	A	0.349	A	0.009	NO
		7th Street	P.M.	0.401	A	0.413	A	0.012	NO
17.	[a]	Bixel Street &	A.M.	0.528	A	0.552	A	0.024	NO
		7th Street	P.M.	0.859	D	0.921	E	0.062	YES
18.	[a]	Francisco Street &	A.M.	0.350	A	0.489	A	0.139	NO
		7th Street	P.M.	0.351	A	0.513	A	0.162	NO
19.	[a]	Figueroa Street &	A.M.	0.666	B	0.812	D	0.146	YES
		7th Street	P.M.	0.891	D	0.947	E	0.056	YES
20.	[a]	Flower Street &	A.M.	0.317	A	0.330	A	0.013	NO
		7th Street	P.M.	0.609	B	0.680	B	0.071	NO
21.	[a]	Olive Street &	A.M.	0.279	A	0.323	A	0.044	NO
		7th Street	P.M.	0.383	A	0.411	A	0.028	NO

Notes:
[a] Intersection is operating under the LADOT Automated Traffic Surveillance and Control (ATSAC) System. A credit of 0.07 in V/C ratio was included in the analysis.
[b] Intersection is operating under the LADOT Adaptive Traffic Control System (ATCS). A credit of 0.10 in V/C ratio was included in the analysis.

TABLE 6 (continued)
EXISTING PLUS PROJECT CONDITIONS - BEFORE MITIGATION
INTERSECTION PEAK HOUR LEVELS OF SERVICE

No.		Intersection	Peak Hour	Existing		Existing plus Project, Before Mitigation			
				V/C	LOS	V/C	LOS	Change in V/C	Significant Impact?
22.	[a]	Alameda Street & 7th Street	A.M. P.M.	0.680 0.673	B B	0.710 0.695	C B	0.030 0.022	NO NO
23.	[b]	Soto Street & 7th Street	A.M. P.M.	0.656 0.656	B B	0.667 0.657	B B	0.011 0.001	NO NO
24.	[b]	Bixel Street/SR 110 SB On-Ramp & 8th Street	A.M. P.M.	0.659 0.768	B C	0.662 0.804	B D	0.003 0.036	NO YES
25.	[b]	Figueroa Street & 8th Street	A.M. P.M.	0.587 0.752	A C	0.595 0.726	A C	0.008 -0.026	NO NO
26.	[b]	Flower Street & 8th Street	A.M. P.M.	0.269 0.451	A A	0.269 0.461	A A	0.000 0.010	NO NO
27.	[b]	Francisco Street & James M. Wood Boulevard/SR 110 NB Off-Ramp	A.M. P.M.	0.426 0.355	A A	0.462 0.359	A A	0.036 0.004	NO NO
28.	[b]	Figueroa Street & James M. Wood Boulevard/9th Street	A.M. P.M.	0.506 0.369	A A	0.533 0.372	A A	0.027 0.003	NO NO
29.	[b]	Cherry Street & Pico Boulevard	A.M. P.M.	0.506 0.619	A B	0.506 0.619	A B	0.000 0.000	NO NO
30.	[b]	Figueroa Street & Pico Boulevard	A.M. P.M.	0.506 0.573	A A	0.512 0.576	A A	0.006 0.003	NO NO
31.	[b]	Hoover Street & Alvarado Street/Alvarado Terrace	A.M. P.M.	0.381 0.499	A A	0.381 0.499	A A	0.000 0.000	NO NO
32.	[a]	Flower Street & Venice Boulevard	A.M. P.M.	0.181 0.395	A A	0.183 0.408	A A	0.002 0.013	NO NO
33.	[a]	Grand Avenue & 18th Street	A.M. P.M.	0.283 0.403	A A	0.292 0.446	A A	0.009 0.043	NO NO
34.	[b]	Olive Street & 6th Street	A.M. P.M.	0.214 0.301	A A	0.215 0.307	A A	0.001 0.006	NO NO
35.	[b]	Hope Street & 7th Street	A.M. P.M.	0.251 0.367	A A	0.319 0.379	A A	0.068 0.012	NO NO
36.	[b]	Grand Avenue & 7th Street	A.M. P.M.	0.290 0.371	A A	0.355 0.387	A A	0.065 0.016	NO NO
37.	[b]	Figueroa Street & Olympic Boulevard	A.M. P.M.	0.691 0.813	B D	0.712 0.816	C D	0.021 0.003	NO NO
38.	[a]	Glendale Boulevard & Temple Street	A.M. P.M.	0.920 1.075	E F	0.920 1.080	E F	0.000 0.005	NO NO
39.	[a]	Glendale Boulevard/Lucas Avenue & Beverly Boulevard/1st Street/2nd Street	A.M. P.M.	0.567 0.669	A B	0.597 0.705	A C	0.030 0.036	NO NO
40.	[a]	Lucas Avenue & 3rd Street	A.M. P.M.	0.597 0.507	A A	0.597 0.512	A A	0.000 0.005	NO NO
41.	[a]	Lucas Avenue & 6th Street	A.M. P.M.	0.711 0.607	C B	0.723 0.638	C B	0.012 0.031	NO NO
42.	[a]	Lucas Avenue & Wilshire Boulevard	A.M. P.M.	0.539 0.650	A B	0.565 0.666	A B	0.026 0.016	NO NO

Notes:
[a] Intersection is operating under the LADOT Automated Traffic Surveillance and Control (ATSAC) System. A credit of 0.07 in V/C ratio was included in the analysis.
[b] Intersection is operating under the LADOT Adaptive Traffic Control System (ATCS). A credit of 0.10 in V/C ratio was included in the analysis.

TABLE 6 (continued)
EXISTING PLUS PROJECT CONDITIONS - BEFORE MITIGATION

INTERSECTION IMPACT SUMMARY		
Level of Service	**A.M. Peak Hour**	**P.M. Peak Hour**
C	1	0
D	1	2
E	0	3
F	0	1
Total Peak Hour Impacts	**2**	**6**
Total Individual Intersections Impacted	**6**	

TABLE 7
EXISTING PLUS PROJECT WITH TDM PROGRAM CONDITIONS
INTERSECTION PEAK HOUR LEVELS OF SERVICE

No.		Intersection	Peak Hour	Existing		Existing plus Project, Before Mitigation				Existing plus Project with TDM Program			
				V/C	LOS	V/C	LOS	Change in V/C	Significant Impact?	V/C	LOS	Change in V/C	Significant Impact?
1.	[a]	Grand Avenue & US 101 NB Ramps	A.M. P.M.	0.556 0.628	A B	0.576 0.640	A B	0.020 0.012	NO NO	0.570 0.632	A B	0.014 0.004	NO NO
2.	[a]	Hope Street/US 101 SB Ramps & Temple Street	A.M. P.M.	0.607 0.703	B C	0.611 0.724	B C	0.004 0.021	NO NO	0.607 0.717	B C	0.000 0.014	NO NO
3.	[b]	Figueroa Street & 3rd Street/SR 110 Ramps	A.M. P.M.	0.578 0.902	A E	0.549 0.885	A D	-0.029 -0.017	NO NO	0.549 0.880	A D	-0.029 -0.022	NO NO
4.	[a]	Flower Street & 3rd Street	A.M. P.M.	0.551 0.539	A A	0.592 0.539	A A	0.041 0.000	NO NO	0.579 0.539	A A	0.028 0.000	NO NO
5.	[a]	Grand Avenue & 3rd Street	A.M. P.M.	0.339 0.333	A A	0.361 0.335	A A	0.022 0.002	NO NO	0.354 0.333	A A	0.015 0.000	NO NO
6.	[a]	Figueroa Street & 5th Street/SR 110 On-Ramps	A.M. P.M.	0.641 0.940	B E	0.648 0.990	B E	0.007 0.050	NO YES	0.644 0.975	B E	0.003 0.035	NO YES
7.	[a]	Flower Street & 5th Street	A.M. P.M.	0.247 0.297	A A	0.261 0.299	A A	0.014 0.002	NO NO	0.257 0.297	A A	0.010 0.000	NO NO
8.	[a]	Figueroa Street & 6th Street/SR 110 Off-Ramps	A.M. P.M.	0.570 0.785	A C	0.579 0.849	A D	0.009 0.064	NO YES	0.576 0.830	A D	0.006 0.045	NO YES
9.	[a]	Flower Street & 6th Street	A.M. P.M.	0.344 0.325	A A	0.368 0.334	A A	0.024 0.009	NO NO	0.361 0.330	A A	0.017 0.005	NO NO
10.	[a]	Alvarado Street & Wilshire Boulevard	A.M. P.M.	0.570 0.602	A B	0.579 0.620	A B	0.009 0.018	NO NO	0.577 0.614	A B	0.007 0.012	NO NO
11.	[a]	Beaudry Avenue & Wilshire Boulevard	A.M. P.M.	0.569 0.418	A A	0.605 0.419	B A	0.036 0.001	NO NO	0.592 0.418	A A	0.023 0.000	NO NO
12.	[a]	Francisco Street & Wilshire Boulevard	A.M. P.M.	0.513 0.444	A A	0.690 0.665	B B	0.177 0.221	NO NO	0.625 0.577	B A	0.112 0.133	NO NO
13.	[a]	Figueroa Street & Wilshire Boulevard	A.M. P.M.	0.673 0.952	B E	0.740 1.133	C F	0.067 0.181	YES YES	0.710 1.073	C F	0.037 0.121	NO YES
14.	[a]	Flower Street & Wilshire Boulevard	A.M. P.M.	0.556 0.603	A B	0.670 0.604	B B	0.114 0.001	NO NO	0.631 0.587	B A	0.075 -0.016	NO NO
15.	[a]	Grand Avenue & Wilshire Boulevard	A.M. P.M.	0.237 0.338	A A	0.253 0.357	A A	0.016 0.019	NO NO	0.248 0.351	A A	0.011 0.013	NO NO
16.	[a]	Alvarado Street & 7th Street	A.M. P.M.	0.340 0.401	A A	0.349 0.413	A A	0.009 0.012	NO NO	0.347 0.409	A A	0.007 0.008	NO NO
17.	[a]	Bixel Street & 7th Street	A.M. P.M.	0.528 0.859	A D	0.552 0.921	A E	0.024 0.062	NO YES	0.543 0.902	A E	0.015 0.043	NO YES
18.	[a]	Francisco Street & 7th Street	A.M. P.M.	0.350 0.351	A A	0.489 0.513	A A	0.139 0.162	NO NO	0.442 0.453	A A	0.092 0.102	NO NO
19.	[a]	Figueroa Street & 7th Street	A.M. P.M.	0.666 0.891	B D	0.812 0.947	D E	0.146 0.056	YES YES	0.770 0.927	C E	0.104 0.036	YES YES
20.	[a]	Flower Street & 7th Street	A.M. P.M.	0.317 0.609	A B	0.330 0.680	A B	0.013 0.071	NO NO	0.325 0.658	A B	0.008 0.049	NO NO
21.	[a]	Olive Street & 7th Street	A.M. P.M.	0.279 0.383	A A	0.323 0.411	A A	0.044 0.028	NO NO	0.309 0.401	A A	0.030 0.018	NO NO

Notes:
[a] Intersection is operating under the LADOT Automated Traffic Surveillance and Control (ATSAC) System. A credit of 0.07 in V/C ratio was included in the analysis.
[b] Intersection is operating under the LADOT Adaptive Traffic Control System (ATCS). A credit of 0.10 in V/C ratio was included in the analysis.

TABLE 7 (continued)
EXISTING PLUS PROJECT WITH TDM PROGRAM CONDITIONS
INTERSECTION PEAK HOUR LEVELS OF SERVICE

No.		Intersection	Peak Hour	Existing		Existing plus Project, Before Mitigation				Existing plus Project with TDM Program			
				V/C	LOS	V/C	LOS	Change in V/C	Significant Impact?	V/C	LOS	Change in V/C	Significant Impact?
22.	[a]	Alameda Street & 7th Street	A.M. P.M.	0.680 0.673	B B	0.710 0.695	C B	0.030 0.022	NO NO	0.701 0.686	C B	0.021 0.013	NO NO
23.	[b]	Soto Street & 7th Street	A.M. P.M.	0.656 0.656	B B	0.667 0.657	B B	0.011 0.001	NO NO	0.664 0.656	B B	0.008 0.000	NO NO
24.	[b]	Bixel Street/SR 110 SB On-Ramp & 8th Street	A.M. P.M.	0.659 0.768	B C	0.662 0.804	B D	0.003 0.036	NO YES	0.660 0.793	B C	0.001 0.025	NO NO
25.	[b]	Figueroa Street & 8th Street	A.M. P.M.	0.587 0.752	A C	0.595 0.726	A C	0.008 -0.026	NO NO	0.583 0.723	A C	-0.004 -0.029	NO NO
26.	[b]	Flower Street & 8th Street	A.M. P.M.	0.269 0.451	A A	0.269 0.461	A A	0.000 0.010	NO NO	0.269 0.459	A A	0.000 0.008	NO NO
27.	[b]	Francisco Street & James M. Wood Boulevard/SR 110 NB Off-Ramp	A.M. P.M.	0.426 0.355	A A	0.462 0.359	A A	0.036 0.004	NO NO	0.451 0.356	A A	0.025 0.001	NO NO
28.	[b]	Figueroa Street & James M. Wood Boulevard/9th Street	A.M. P.M.	0.506 0.369	A A	0.533 0.372	A A	0.027 0.003	NO NO	0.524 0.369	A A	0.018 0.000	NO NO
29.	[b]	Cherry Street & Pico Boulevard	A.M. P.M.	0.506 0.619	A B	0.506 0.619	A B	0.000 0.000	NO NO	0.506 0.619	A B	0.000 0.000	NO NO
30.	[b]	Figueroa Street & Pico Boulevard	A.M. P.M.	0.506 0.573	A A	0.512 0.576	A A	0.006 0.003	NO NO	0.511 0.574	A A	0.005 0.001	NO NO
31.	[b]	Hoover Street & Alvarado Street/Alvarado Terrace	A.M. P.M.	0.381 0.499	A A	0.381 0.499	A A	0.000 0.000	NO NO	0.381 0.499	A A	0.000 0.000	NO NO
32.	[a]	Flower Street & Venice Boulevard	A.M. P.M.	0.181 0.395	A A	0.183 0.408	A A	0.002 0.013	NO NO	0.182 0.404	A A	0.001 0.009	NO NO
33.	[a]	Grand Avenue & 18th Street	A.M. P.M.	0.283 0.403	A A	0.292 0.446	A A	0.009 0.043	NO NO	0.289 0.433	A A	0.006 0.030	NO NO
34.	[b]	Olive Street & 6th Street	A.M. P.M.	0.214 0.301	A A	0.215 0.307	A A	0.001 0.006	NO NO	0.215 0.305	A A	0.001 0.004	NO NO
35.	[b]	Hope Street & 7th Street	A.M. P.M.	0.251 0.367	A A	0.319 0.379	A A	0.068 0.012	NO NO	0.298 0.372	A A	0.047 0.005	NO NO
36.	[b]	Grand Avenue & 7th Street	A.M. P.M.	0.290 0.371	A A	0.355 0.387	A A	0.065 0.016	NO NO	0.334 0.380	A A	0.044 0.009	NO NO
37.	[b]	Figueroa Street & Olympic Boulevard	A.M. P.M.	0.691 0.813	B D	0.712 0.816	C D	0.021 0.003	NO NO	0.705 0.814	C D	0.014 0.001	NO NO
38.	[a]	Glendale Boulevard & Temple Street	A.M. P.M.	0.920 1.075	E F	0.920 1.080	E F	0.000 0.005	NO NO	0.920 1.079	E F	0.000 0.004	NO NO
39.	[a]	Glendale Boulevard/Lucas Avenue & Beverly Boulevard/1st Street/2nd Street	A.M. P.M.	0.567 0.669	A B	0.597 0.705	A C	0.030 0.036	NO NO	0.597 0.699	A B	0.030 0.030	NO NO
40.	[a]	Lucas Avenue & 3rd Street	A.M. P.M.	0.597 0.507	A A	0.597 0.512	A A	0.000 0.005	NO NO	0.597 0.511	A A	0.000 0.004	NO NO
41.	[a]	Lucas Avenue & 6th Street	A.M. P.M.	0.711 0.607	C B	0.723 0.638	C B	0.012 0.031	NO NO	0.719 0.629	C B	0.008 0.022	NO NO
42.	[a]	Lucas Avenue & Wilshire Boulevard	A.M. P.M.	0.539 0.650	A B	0.565 0.666	A B	0.026 0.016	NO NO	0.555 0.659	A B	0.016 0.009	NO NO

Notes:
[a] Intersection is operating under the LADOT Automated Traffic Surveillance and Control (ATSAC) System. A credit of 0.07 in V/C ratio was included in the analysis.
[b] Intersection is operating under the LADOT Adaptive Traffic Control System (ATCS). A credit of 0.10 in V/C ratio was included in the analysis.

TABLE 7 (continued)
EXISTING PLUS PROJECT WITH TDM PROGRAM CONDITIONS

INTERSECTION IMPACT SUMMARY				
Level of Service	Before Mitigation		With TDM	
	A.M. Peak Hour	P.M. Peak Hour	A.M. Peak Hour	P.M. Peak Hour
C	1	0	1	0
D	1	2	0	1
E	0	3	0	3
F	0	1	0	1
Total Peak Hour Impacts	**2**	**6**	**1**	**5**
Total Individual Intersections Impacted	**6**		**5**	

TABLE 8
EXISTING PLUS PROJECT WITH MITIGATION CONDITIONS
INTERSECTION PEAK HOUR LEVELS OF SERVICE

No.		Intersection	Peak Hour	Existing		Existing plus Project, Before Mitigation				Existing plus Project with Mitigation			
				V/C	LOS	V/C	LOS	Change in V/C	Significant Impact?	V/C	LOS	Change in V/C	Significant Impact?
1.	[a]	Grand Avenue & US 101 NB Ramps	A.M. P.M.	0.556 0.628	A B	0.570 0.632	A B	0.014 0.004	NO NO	0.570 0.632	A B	0.014 0.004	NO NO
2.	[a]	Hope Street/US 101 SB Ramps & Temple Street	A.M. P.M.	0.607 0.703	B C	0.607 0.717	B C	0.000 0.014	NO NO	0.597 0.707	A C	-0.010 0.004	NO NO
3.	[b]	Figueroa Street & 3rd Street/SR 110 Ramps	A.M. P.M.	0.578 0.902	A E	0.549 0.880	A D	-0.029 -0.022	NO NO	0.549 0.880	A D	-0.029 -0.022	NO NO
4.	[a]	Flower Street & 3rd Street	A.M. P.M.	0.551 0.539	A A	0.579 0.539	A A	0.028 0.000	NO NO	0.569 0.529	A A	0.018 -0.010	NO NO
5.	[a]	Grand Avenue & 3rd Street	A.M. P.M.	0.339 0.333	A A	0.354 0.333	A A	0.015 0.000	NO NO	0.354 0.333	A A	0.015 0.000	NO NO
6.	[a]	Figueroa Street & 5th Street/SR 110 On-Ramps	A.M. P.M.	0.641 0.940	B E	0.644 0.975	B E	0.003 0.035	NO YES	0.634 0.965	B E	-0.007 0.025	NO YES
7.	[a]	Flower Street & 5th Street	A.M. P.M.	0.247 0.297	A A	0.257 0.297	A A	0.010 0.000	NO NO	0.247 0.287	A A	0.000 -0.010	NO NO
8.	[a]	Figueroa Street & 6th Street/SR 110 Off-Ramps	A.M. P.M.	0.570 0.785	A C	0.576 0.830	A D	0.006 0.045	NO YES	0.566 0.820	A D	-0.004 0.035	NO YES
9.	[a]	Flower Street & 6th Street	A.M. P.M.	0.344 0.325	A A	0.361 0.330	A A	0.017 0.005	NO NO	0.351 0.320	A A	0.007 -0.005	NO NO
10.	[a]	Alvarado Street & Wilshire Boulevard	A.M. P.M.	0.570 0.602	A B	0.577 0.614	A B	0.007 0.012	NO NO	0.577 0.614	A B	0.007 0.012	NO NO
11.	[a]	Beaudry Avenue & Wilshire Boulevard	A.M. P.M.	0.569 0.418	A A	0.592 0.418	A A	0.023 0.000	NO NO	0.582 0.408	A A	0.013 -0.010	NO NO
12.	[a]	Francisco Street & Wilshire Boulevard	A.M. P.M.	0.513 0.444	A A	0.625 0.577	B A	0.112 0.133	NO NO	0.615 0.567	B A	0.102 0.123	NO NO
13.	[a]	Figueroa Street & Wilshire Boulevard	A.M. P.M.	0.673 0.952	B E	0.710 1.073	C F	0.037 0.121	NO YES	0.700 1.063	B F	0.027 0.111	NO YES
14.	[a]	Flower Street & Wilshire Boulevard	A.M. P.M.	0.556 0.603	A B	0.631 0.587	B A	0.075 -0.016	NO NO	0.621 0.577	B A	0.065 -0.026	NO NO
15.	[a]	Grand Avenue & Wilshire Boulevard	A.M. P.M.	0.237 0.338	A A	0.248 0.351	A A	0.011 0.013	NO NO	0.238 0.341	A A	0.001 0.003	NO NO
16.	[a]	Alvarado Street & 7th Street	A.M. P.M.	0.340 0.401	A A	0.347 0.409	A A	0.007 0.008	NO NO	0.347 0.409	A A	0.007 0.008	NO NO
17.	[a]	Bixel Street & 7th Street	A.M. P.M.	0.528 0.859	A D	0.543 0.902	A E	0.015 0.043	NO YES	0.533 0.892	A D	0.005 0.033	NO YES
18.	[a]	Francisco Street & 7th Street	A.M. P.M.	0.350 0.351	A A	0.442 0.453	A A	0.092 0.102	NO NO	0.432 0.443	A A	0.082 0.092	NO NO
19.	[a]	Figueroa Street & 7th Street	A.M. P.M.	0.666 0.891	B D	0.770 0.927	C E	0.104 0.036	YES YES	0.760 0.917	C E	0.094 0.026	YES YES
20.	[a]	Flower Street & 7th Street	A.M. P.M.	0.317 0.609	A B	0.325 0.658	A B	0.008 0.049	NO NO	0.315 0.648	A B	-0.002 0.039	NO NO
21.	[a]	Olive Street & 7th Street	A.M. P.M.	0.279 0.383	A A	0.309 0.401	A A	0.030 0.018	NO NO	0.299 0.391	A A	0.020 0.008	NO NO

Notes:
[a] Intersection is operating under the LADOT Automated Traffic Surveillance and Control (ATSAC) System. A credit of 0.07 in V/C ratio was included in the analysis.
[b] Intersection is operating under the LADOT Adaptive Traffic Control System (ATCS). A credit of 0.10 in V/C ratio was included in the analysis.

TABLE 8 (continued)
EXISTING PLUS PROJECT WITH MITIGATION CONDITIONS
INTERSECTION PEAK HOUR LEVELS OF SERVICE

No.		Intersection	Peak Hour	Existing		Existing plus Project, Before Mitigation				Existing plus Project with Mitigation			
				V/C	LOS	V/C	LOS	Change in V/C	Significant Impact?	V/C	LOS	Change in V/C	Significant Impact?
22.	[a]	Alameda Street & 7th Street	A.M. P.M.	0.680 0.673	B B	0.701 0.686	C B	0.021 0.013	NO NO	0.701 0.686	C B	0.021 0.013	NO NO
23.	[b]	Soto Street & 7th Street	A.M. P.M.	0.656 0.656	B B	0.664 0.656	B B	0.008 0.000	NO NO	0.664 0.656	B B	0.008 0.000	NO NO
24.	[b]	Bixel Street/SR 110 SB On-Ramp & 8th Street	A.M. P.M.	0.659 0.768	B C	0.660 0.793	B C	0.001 0.025	NO NO	0.650 0.783	B C	-0.009 0.015	NO NO
25.	[b]	Figueroa Street & 8th Street	A.M. P.M.	0.587 0.752	A C	0.583 0.723	A C	-0.004 -0.029	NO NO	0.573 0.713	A C	-0.014 -0.039	NO NO
26.	[b]	Flower Street & 8th Street	A.M. P.M.	0.269 0.451	A A	0.269 0.459	A A	0.000 0.008	NO NO	0.259 0.449	A A	-0.010 -0.002	NO NO
27.	[b]	Francisco Street & James M. Wood Boulevard/SR 110 NB Off-Ramp	A.M. P.M.	0.426 0.355	A A	0.451 0.356	A A	0.025 0.001	NO NO	0.441 0.346	A A	0.015 -0.009	NO NO
28.	[b]	Figueroa Street & James M. Wood Boulevard/9th Street	A.M. P.M.	0.506 0.369	A A	0.524 0.369	A A	0.018 0.000	NO NO	0.514 0.359	A A	0.008 -0.010	NO NO
29.	[b]	Cherry Street & Pico Boulevard	A.M. P.M.	0.506 0.619	A B	0.506 0.619	A B	0.000 0.000	NO NO	0.496 0.609	A B	-0.010 -0.010	NO NO
30.	[b]	Figueroa Street & Pico Boulevard	A.M. P.M.	0.506 0.573	A A	0.511 0.574	A A	0.005 0.001	NO NO	0.511 0.574	A A	0.005 0.001	NO NO
31.	[b]	Hoover Street & Alvarado Street/Alvarado Terrace	A.M. P.M.	0.381 0.499	A A	0.381 0.499	A A	0.000 0.000	NO NO	0.371 0.489	A A	-0.010 -0.010	NO NO
32.	[a]	Flower Street & Venice Boulevard	A.M. P.M.	0.181 0.395	A A	0.182 0.404	A A	0.001 0.009	NO NO	0.182 0.404	A A	0.001 0.009	NO NO
33.	[a]	Grand Avenue & 18th Street	A.M. P.M.	0.283 0.403	A A	0.289 0.433	A A	0.006 0.030	NO NO	0.289 0.433	A A	0.006 0.030	NO NO
34.	[b]	Olive Street & 6th Street	A.M. P.M.	0.214 0.301	A A	0.215 0.305	A A	0.001 0.004	NO NO	0.215 0.305	A A	0.001 0.004	NO NO
35.	[b]	Hope Street & 7th Street	A.M. P.M.	0.251 0.367	A A	0.298 0.372	A A	0.047 0.005	NO NO	0.288 0.362	A A	0.037 -0.005	NO NO
36.	[b]	Grand Avenue & 7th Street	A.M. P.M.	0.290 0.371	A A	0.334 0.380	A A	0.044 0.009	NO NO	0.324 0.370	A A	0.034 -0.001	NO NO
37.	[b]	Figueroa Street & Olympic Boulevard	A.M. P.M.	0.691 0.813	B D	0.705 0.814	C D	0.014 0.001	NO NO	0.705 0.814	C D	0.014 0.001	NO NO
38.	[a]	Glendale Boulevard & Temple Street	A.M. P.M.	0.920 1.075	E F	0.920 1.079	E F	0.000 0.004	NO NO	0.920 1.079	E F	0.000 0.004	NO NO
39.	[a]	Glendale Boulevard/Lucas Avenue & Beverly Boulevard/1st Street/2nd Street	A.M. P.M.	0.567 0.669	A B	0.597 0.699	A B	0.030 0.030	NO NO	0.597 0.699	A B	0.030 0.030	NO NO
40.	[a]	Lucas Avenue & 3rd Street	A.M. P.M.	0.597 0.507	A A	0.597 0.511	A A	0.000 0.004	NO NO	0.587 0.501	A A	-0.010 -0.006	NO NO
41.	[a]	Lucas Avenue & 6th Street	A.M. P.M.	0.711 0.607	C B	0.719 0.629	C B	0.008 0.022	NO NO	0.709 0.619	C B	-0.002 0.012	NO NO
42.	[a]	Lucas Avenue & Wilshire Boulevard	A.M. P.M.	0.539 0.650	A B	0.555 0.659	A B	0.016 0.009	NO NO	0.545 0.649	A B	0.006 -0.001	NO NO

Notes:
[a] Intersection is operating under the LADOT Automated Traffic Surveillance and Control (ATSAC) System. A credit of 0.07 in V/C ratio was included in the analysis.
[b] Intersection is operating under the LADOT Adaptive Traffic Control System (ATCS). A credit of 0.10 in V/C ratio was included in the analysis.

TABLE 8 (continued)
EXISTING PLUS PROJECT WITH MITIGATION CONDITIONS

INTERSECTION IMPACT SUMMARY						
Level of Service	**Before Mitigation**		**With TDM**		**With Mitigation**	
	A.M. Peak Hour	**P.M. Peak Hour**	**A.M. Peak Hour**	**P.M. Peak Hour**	**A.M. Peak Hour**	**P.M. Peak Hour**
C	1	0	1	0	1	0
D	1	2	0	1	0	2
E	0	3	0	3	0	2
F	0	1	0	1	0	1
Total Peak Hour Impacts	**2**	**6**	**1**	**5**	**1**	**5**
Total Individual Intersections Impacted	**6**		**5**		**5**	

TABLE 9
FUTURE WITH PROJECT WITH MITIGATION CONDITIONS (YEAR 2020)
INTERSECTION PEAK HOUR LEVELS OF SERVICE

No.		Intersection	Peak Hour	Future without Project		Future with Project with Mitigation			
				V/C	LOS	V/C	LOS	Change in V/C	Significant Impact?
1.	[a]	Hope Street & 1st Street	A.M. P.M.	0.923 1.125	E F	0.931 1.121	E F	0.008 -0.004	NO NO
2.	[a]	Grand Avenue & Olympic Boulevard	A.M. P.M.	0.439 0.527	A A	0.441 0.541	A A	0.002 0.014	NO NO
3.	[a]	Olive Street & Olympic Boulevard	A.M. P.M.	0.445 0.691	A B	0.459 0.692	A B	0.014 0.001	NO NO
4.	[a]	Flower Street & Olympic Boulevard	A.M. P.M.	0.339 0.719	A C	0.339 0.727	A C	0.000 0.008	NO NO
5.	[a]	Union Avenue & Wilshire Boulevard	A.M. P.M.	0.692 0.807	B D	0.699 0.807	B D	0.007 0.000	NO NO

Note:
[a] Intersection is operating under the LADOT Adaptive Traffic Control System (ATCS). A credit of 0.10 in V/C ratio was included in the analysis.

ATTACHMENT A

INTERSECTION LEVEL OF SERVICE WORKSHEETS

EXISTING PLUS PROJECT CONDITIONS

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January 25, 2011 ,Tuesday 01:11:00 PM

INTERSECTION DATA SUMMARY SHEET

N/S:	Grand Ave	W/E:	US 101 NB Ramps	I/S No:	1
AM/PM:	AM	Comments:	EXISTING PLUS PROJECT		
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	138	81	0	0	1078	449	0	0	0	18	0	606
AMBIENT												
RELATED												
PROJECT												
TOTAL	138	81	0	0	1078	449	0	0	0	18	0	606

	NB							SB							WB							EB						
LANE	1		2							2			1														1	1

	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Prot-Fix	<none>	Perm	OLA	<none>	<none>	Split	Auto

Critical Movements Diagram

SouthBound
A: 539
B: 0

EastBound
A: 243
B: 18

WestBound
A: 0
B: 0

NorthBound
A: 41
B: 138

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

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

Results

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

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

$$V/C = \frac{138 + 539 + 0 + 243}{*1425} = 0.576$$

LOS = A

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INTERSECTION DATA SUMMARY SHEET

N/S: Hope St/US 101 SB Ramps W/E: Temple St I/S No: 2

AM/PM: AM Comments: EXISTING PLUS PROJECT

COUNT DATE: STUDY DATE: GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	64	149	97	136	360	41	372	470	160	182	422	246
AMBIENT												
RELATED												
PROJECT												
TOTAL	64	149	97	136	360	41	372	470	160	182	422	246

LANE

	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
Northbound	1		1		1		
Southbound	1		1		1		
Westbound	1		2			1	
Eastbound	1		1		1		

SIGNAL	Phasing	RTOR
Northbound	Perm	Auto
Southbound	Perm	Auto
Westbound	Prot-Fix	Auto
Eastbound	Prot-Fix	Auto

Critical Movements Diagram

	A	B
SouthBound	201	136
EastBound	334	182
WestBound	235	372
NorthBound	123	64

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

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

Results

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

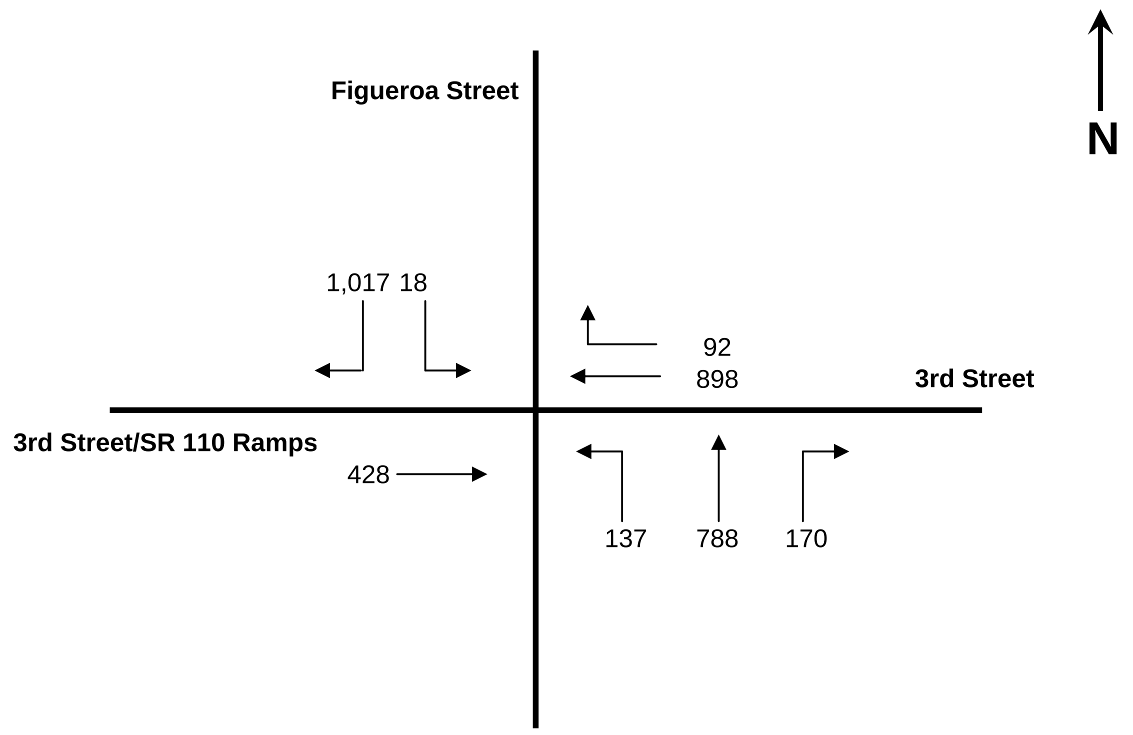
West/East Critical Movements = B(W/B) + A(E/B)

$$V/C = \frac{64 + 201 + 372 + 334}{*1425} = 0.611$$

LOS = B

Intersection 3

Existing plus Project Conditions A.M. Peak Hour



1) Lane Capacity for WB Throughs - 900 vphpl

Number of Lanes - 5

WB Through V/C - $\frac{898}{4,500}$

= **0.2**

<u>or</u>

Lane Capacity for WB Rights - 1,425 vphpl

Number of Lanes - 1

WB Right V/C - $\frac{92}{1,425}$

= **0.065**

<u>or</u>

Lane Capacity for EB Throughs - 1,425 vphpl

Number of Lanes - 2

EB Through V/C - $\frac{428}{2,850}$

= **0.150**

2) Lane Capacity for NB Lefts - 900 vphpl

Number of Lanes - 3

NB Left V/C - $\left\{\frac{137 \quad x \quad 0.37}{900}\right\}$

= ***0.056***

Lane Capacity for SB Rights - 1,425 vphpl

Number of Lanes - 2

SB Right V/C - $\left\{\frac{1,017 \quad x \quad 0.55}{1,425}\right\}$

= ***0.393***

Critical V/C - ***0.056*** **+** ***0.393*** **=** **0.449**

<u>or</u>

Lane Capacity for NB Throughs & Rights - 1,425 vphpl

Number of Lanes - 2 throughs
1 through/right

NB Through/Right V/C - $\left\{\frac{788 \quad + \quad 170}{4,275}\right\}$ or $\frac{170}{1,425}$

= **0.224**

Intersection V/C = 0.649 — 0.100 = 0.549 LOS A

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January 25, 2011 ,Tuesday 01:11:00 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St W/E: 3rd St I/S No: 4

AM/PM: AM Comments: EXISTING PLUS PROJECT

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	1	24	0	0	1011	127	486	848	100	0	0	437
AMBIENT												
RELATED												
PROJECT												
TOTAL	1	24	0	0	1011	127	486	848	100	0	0	437

	NB							SB							WB							EB						
LANE	1		2							2			1		1		3		1								1	

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	<none>	Perm	Auto	Split	Auto	<none>	Free

Critical Movements Diagram

SouthBound
A: 506
B: 0

EastBound
A: 0
B: 0

WestBound
A: 237
B: 486

NorthBound
A: 12
B: 1

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)

$$V/C = \frac{1 + 506 + 486 + 0}{*1500} = 0.592$$

LOS = A

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INTERSECTION DATA SUMMARY SHEET

N/S:	Grand Ave	W/E:	3rd St	I/S No:	5
AM/PM:	AM	Comments:	EXISTING PLUS PROJECT		
COUNT DATE:		STUDY DATE:		GROWTH FACTOR:	

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	16	56	0	0	1051	151	0	0	0	21	0	53
AMBIENT												
RELATED												
PROJECT												
TOTAL	16	56	0	0	1051	151	0	0	0	21	0	53

LANE

	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND	1		2				
SOUTHBOUND			1		1		
WESTBOUND							
EASTBOUND	1					2	

SIGNAL

	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	<none>	<none>
EASTBOUND	Split	Auto

Critical Movements Diagram

	A:	B:
SouthBound	601	0
EastBound	29	21
WestBound	0	0
NorthBound	28	16

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

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

Results

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

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

$$V/C = \frac{16 + 601 + 0 + 29}{*1500} = 0.361$$

LOS = A

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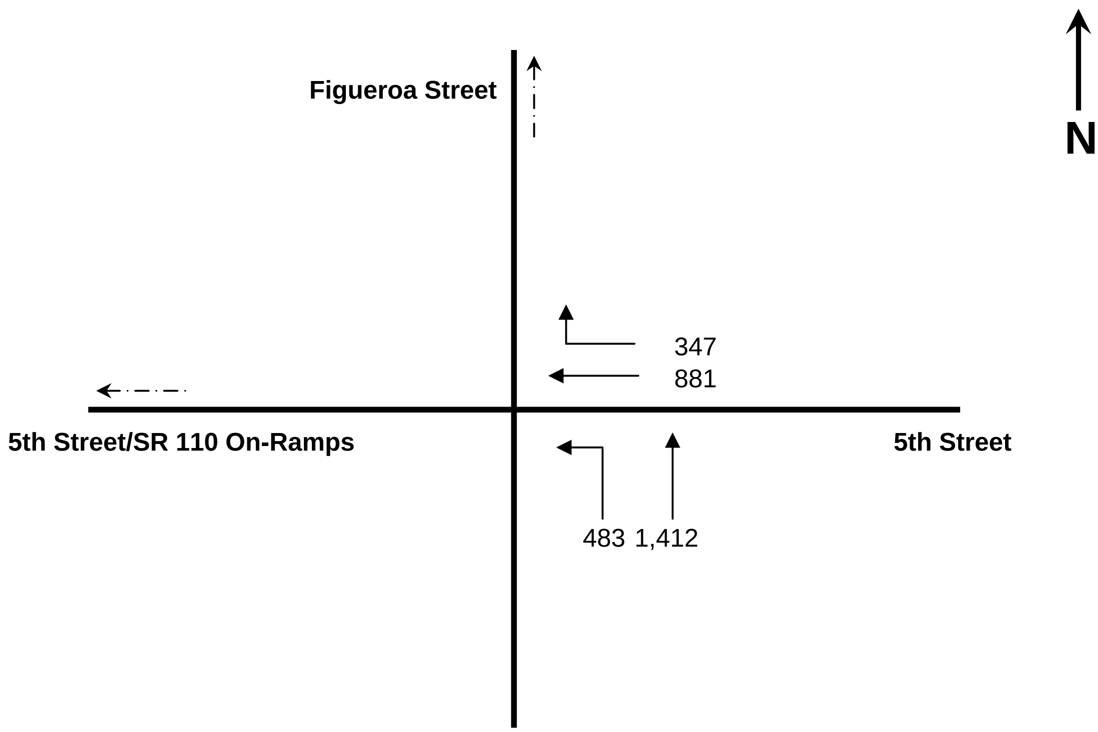
Intersection 6

Existing plus Project Conditions A.M. Peak Hour



1) Lane Capacity for WB Direction - 900 vphpl

Number of Lanes - 7

Critical V/C - $\left\{\dfrac{881 + 347}{6,300}\right\}$

= **0.195**

2) Lane Capacity for NB Throughs - 900 vphpl

Number of Lanes - 3

Critical V/C - $\dfrac{1,412}{2,700}$

= **0.523**

<u>or</u>

Lane Capacity for NB Lefts - 900 vphpl

Number of Lanes - 3

Critical V/C - $\dfrac{483}{2,700}$

= **0.179**

Intersection V/C = 0.718 — 0.070 = 0.648 LOS B

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INTERSECTION DATA SUMMARY SHEET

N/S: Flower St W/E: 5th St I/S No: 7

AM/PM: AM Comments: EXISTING PLUS PROJECT

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	0	0	0	0	1250	280	242	1063	0	0	0	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	0	1250	280	242	1063	0	0	0	0

LANE	NORTHBOUND	SOUTHBOUND	WESTBOUND	EASTBOUND
Box 1			1	
Box 2				
Box 3		4	5	
Box 4				
Box 5		1		
Box 6		1		
Box 7				

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	<none>	<none>	Split	Auto	Split	<none>	<none>	<none>

Critical Movements Diagram

SouthBound
A: 255
B: 0

EastBound
A: 0
B: 0

WestBound
A: 213
B: 242

NorthBound
A: 0
B: 0

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

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

Results

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

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

$$V/C = \frac{0 + 255 + 242 + 0}{*1500} = 0.261$$

LOS = A

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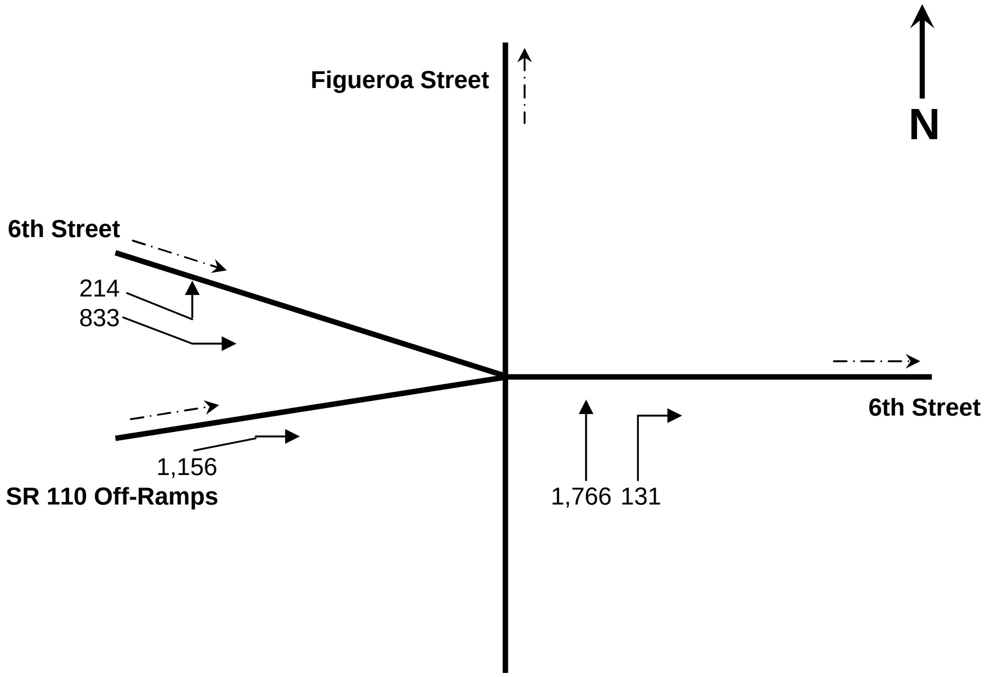
Intersection 8

Existing plus Project Conditions A.M. Peak Hour



1) Lane Capacity for EB Direction - 1,500 vphpl

Number of Lanes -
1 left-turn lane from 6th Street
1 shared left/through lane from 6th Street
1 through lane from 6th Street
3 through lanes from SR 110 Off-Ramps

Critical V/C - $\left\{\frac{833 + 214}{4,500}\right\}$ or $\frac{1,156}{4,500}$

= **0.257**

2) Lane Capacity for NB Throughs - 900 vphpl

Number of Lanes - 5

Critical V/C - $\frac{1,766}{4,500}$

= **0.392**

<u>or</u>

Lane Capacity for NB Rights - 1,500 vphpl

Number of Lanes - 1

Critical V/C - $\frac{131}{1,500}$

= **0.087**

Intersection V/C = 0.649 — 0.070 = 0.579 LOS A

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January 25, 2011 ,Tuesday 01:11:00 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St W/E: 6th St I/S No: 9

AM/PM: AM Comments: EXISTING PLUS PROJECT

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	0	0	0	238	932	0	0	0	0	0	1599	523
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	238	932	0	0	0	0	0	1599	523

LANE	1	2	3	4	5	6	7
NORTHBOUND							
SOUTHBOUND	2		4				
WESTBOUND							
EASTBOUND			3		1	1	

SIGNAL	Phasing	RTOR
NORTHBOUND	<none>	<none>
SOUTHBOUND	Split	<none>
WESTBOUND	<none>	<none>
EASTBOUND	Split	Auto

Critical Movements Diagram

	A	B
SouthBound	233	131
EastBound	424	0
WestBound	0	0
NorthBound	0	0

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) + A(S/B)

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

$$V/C = \frac{0 + 233 + 0 + 424}{*1500} = 0.368$$

LOS = A

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INTERSECTION DATA SUMMARY SHEET

N/S: Alvarado St W/E: Wilshire Blvd I/S No: 10

AM/PM: AM Comments: EXISTING PLUS PROJECT

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	0	805	139	0	890	164	54	823	55	71	1102	36
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	805	139	0	890	164	54	823	55	71	1102	36

LANE	↰	⇧↰	⇧	⇧↰↱	⇧↱	↱	↰↱
NORTHBOUND			2		1		
SOUTHBOUND			2		1		
WESTBOUND	1		1		1		
EASTBOUND	1		1		1		

SIGNAL	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Perm	Auto
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	351	0
EastBound	569	71
WestBound	439	54
NorthBound	315	0

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

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

Results

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

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

$$V/C = \frac{0 + 351 + 54 + 569}{*1500} = 0.579$$

LOS = A

PROJ_AM

CalcaDB

January 25, 2011 ,Tuesday 01:11:00 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Beaudry Ave | W/E: Wilshire Blvd | I/S No: 11

AM/PM: AM | Comments: EXISTING PLUS PROJECT

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	9	0	23	711	29	662	5	463	0	0	916	6
AMBIENT												
RELATED												
PROJECT												
TOTAL	9	0	23	711	29	662	5	463	0	0	916	6

LANE

	1	2	3	4	5	6	7
NORTHBOUND							1
SOUTHBOUND	1			1		1	
WESTBOUND		1	1				
EASTBOUND			2			1	

SIGNAL

	Phasing	RTOR
NORTHBOUND	Split	Auto
SOUTHBOUND	Split	Auto
WESTBOUND	Perm	<none>
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	467	467
EastBound	458	0
WestBound	242	5
NorthBound	32	9

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

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

Results

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

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

$$V/C = \frac{32 + 467 + 5 + 458}{*1425} = 0.605$$

LOS = B

Developed by Chun Wong, 12/94

January 25, 2011 ,Tuesday 01:11:00 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S:	Francisco St	W/E:	Wilshire Blvd	I/S No:	12
AM/PM:	AM	Comments:	EXISTING PLUS PROJECT		
COUNT DATE:		STUDY DATE:		GROWTH FACTOR:	

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	33	13	122	8	1	9	190	400	53	69	1132	507
AMBIENT												
RELATED												
PROJECT												
TOTAL	33	13	122	8	1	9	190	400	53	69	1132	507

LANE	1	2	3	4	5	6	7
NORTHBOUND		1				1	
SOUTHBOUND				1			
WESTBOUND	1		1		1		
EASTBOUND	1		1		1		

SIGNAL	NORTHBOUND Phasing	NORTHBOUND RTOR	SOUTHBOUND Phasing	SOUTHBOUND RTOR	WESTBOUND Phasing	WESTBOUND RTOR	EASTBOUND Phasing	EASTBOUND RTOR
	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	SouthBound	EastBound	WestBound	NorthBound
A:	18	820	227	122
B:	8	69	190	33

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

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

Results

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

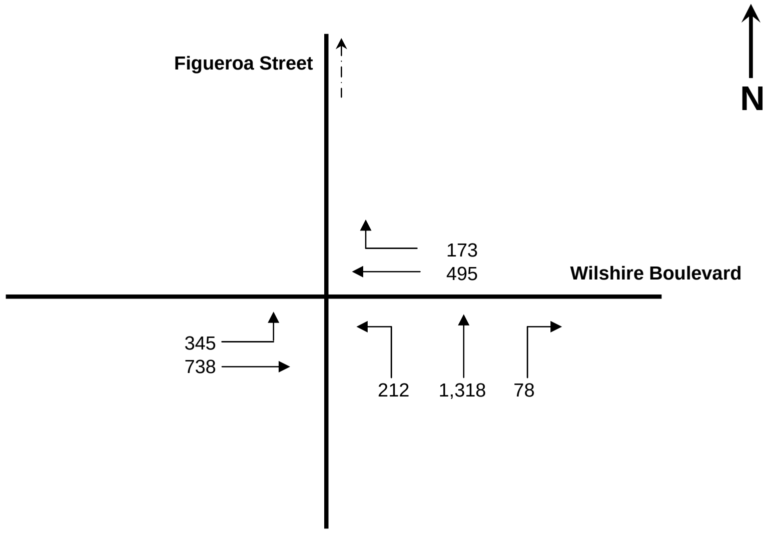
West/East Critical Movements = B(W/B) + A(E/B)

$$V/C = \frac{122 + 8 + 190 + 820}{*1500} = 0.690$$

LOS = B

Intersection 13

Existing plus Project Conditions A.M. Peak Hour



1) Lane Capacity for EB Lefts - 900 vphpl

Number of Lanes - 2

EB Left V/C - $\left\{ \frac{345 \quad X \quad 0.55}{900} \right\}$

= ***0.211***

Lane Capacity for WB Direction - 1,425 vphpl

Number of Lanes - 1 through
1 through/right
1 right-turn only

WB V/C - $\left\{ \frac{495 \quad + \quad 173}{4,275} \right\}$ or $\frac{495}{2,850}$ or $\frac{173}{2,850}$

= ***0.174***

Critical V/C - ***0.211*** **+** ***0.174*** **=** **0.385**

<u>or</u>

Lane Capacity for EB Throughs - 1,425 vphpl

Number of Lanes - 2

Critical V/C - $\frac{738}{2,850}$

= **0.259**

2) Lane Capacity for NB Direction - 900 vphpl

Number of Lanes - 1 left/through
3 throughs
1 right-turn only

Critical V/C - $\left\{ \frac{212 \quad + \quad 1,318}{3,600} \right\}$

or $\frac{212}{900}$

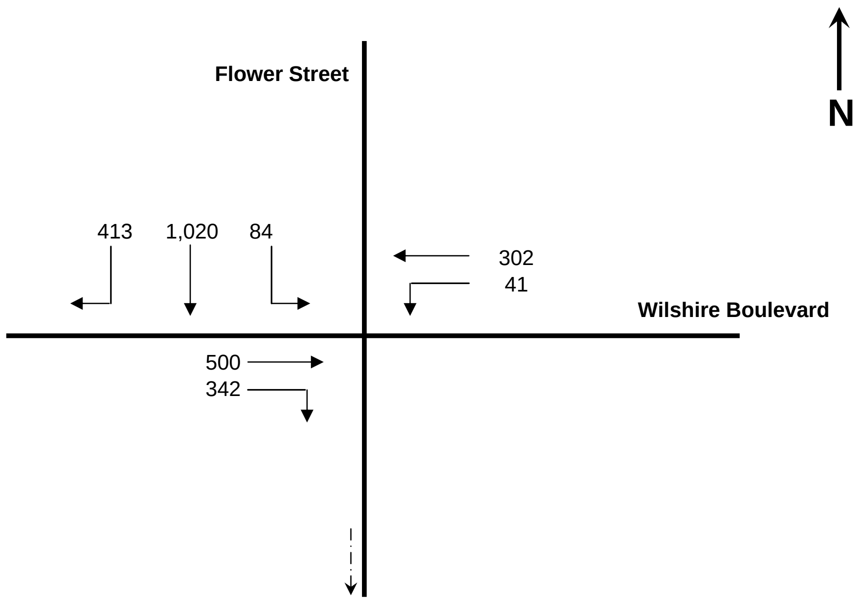
or $\frac{78}{900}$

= **0.425**

Intersection V/C = 0.810 — 0.070 = 0.740 LOS C

Intersection 14

Existing plus Project Conditions A.M. Peak Hour



1) Lane Capacity for WB Direction - 900 vphpl

Number of Lanes - 2

WB Direction V/C - $\left\{ \frac{302 + 41}{1,800} \right\}$ or $\frac{41}{900}$

= **0.191**

Lane Capacity for EB Direction - 1,500 vphpl

Number of Lanes - 2

EB Direction V/C - $\left\{ \frac{500 + 342}{3,000} \right\}$ or $\frac{342}{1,500}$

= **0.281**

2) Lane Capacity for SB Throughs and Lefts - 1,500 vphpl

Number of Lanes - 3 throughs
1 left-turn only

SB Through V/C - $\frac{1,020}{4,500}$

= **0.227**

SB Left V/C - $\frac{84}{1,500}$

= **0.056**

Lane Capacity for SB Rights - 900 vphpl

Number of Lanes - 1

SB Right V/C - $\frac{413}{900}$

= **0.459**

Intersection V/C = 0.740 − 0.070 = 0.670 LOS B

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INTERSECTION DATA SUMMARY SHEET

N/S:	Grand Ave	W/E:	Wilshire Blvd	I/S No:	15
AM/PM:	AM	Comments:	EXISTING PLUS PROJECT		
COUNT DATE:		STUDY DATE:		GROWTH FACTOR:	

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	0	0	59	912	259	9	10	0	0	41	294
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	59	912	259	9	10	0	0	41	294

LANE

NORTHBOUND							
SOUTHBOUND		1	2		1		
WESTBOUND		1					
EASTBOUND					1	1	

SIGNAL	Phasing	RTOR
NORTHBOUND	<none>	<none>
SOUTHBOUND	Split	Auto
WESTBOUND	Perm	<none>
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	308	59
EastBound	168	0
WestBound	19	9
NorthBound	0	0

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) + A(S/B)

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

$$V/C = \frac{0 + 308 + 9 + 168}{*1500} = 0.253$$

LOS = A

Developed by Chun Wong, 12/94

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Alvarado St W/E: 7th St I/S No: 16

AM/PM: AM Comments: EXISTING PLUS PROJECT

COUNT DATE: STUDY DATE: GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	867	61	0	846	74	0	380	65	0	610	30
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	867	61	0	846	74	0	380	65	0	610	30

LANE	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND			2		1		
SOUTHBOUND			2		1		
WESTBOUND			1		1		
EASTBOUND			1		1		

SIGNAL	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Perm	Auto
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A:	B:
SouthBound	307	0
EastBound	320	0
WestBound	223	0
NorthBound	309	0

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 = B(W/B) + A(E/B)

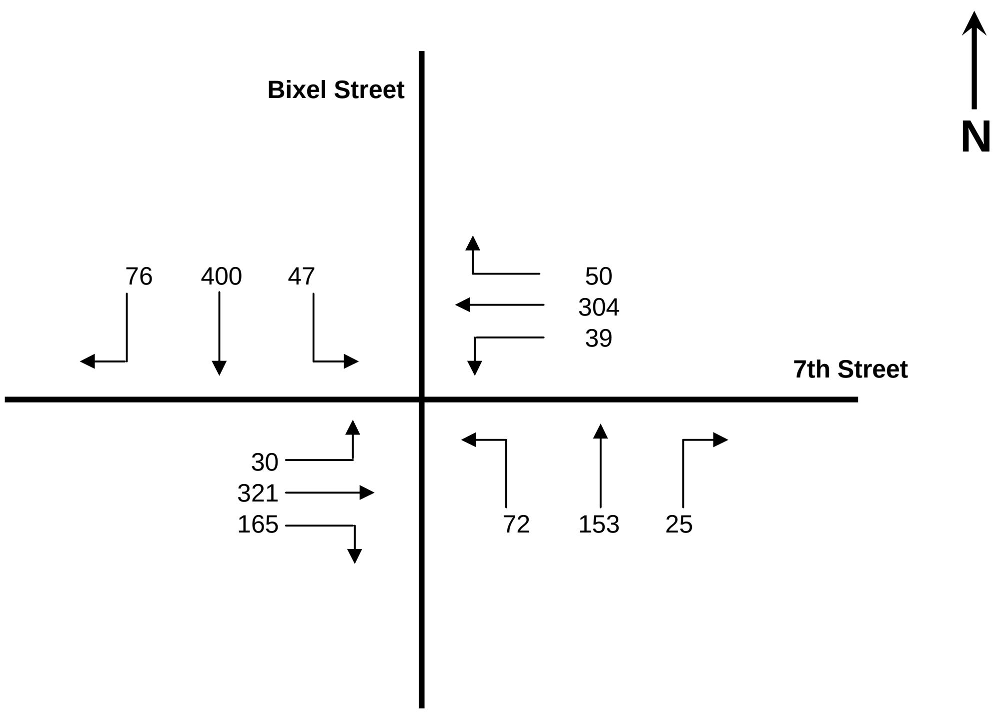
$$V/C = \frac{309 + 0 + 0 + 320}{*1500} = 0.349$$

LOS = A

Developed by Chun Wong, 12/94

Intersection 17

Existing plus Project Conditions A.M. Peak Hour



1) Lane Capacity for WB Lefts - 900 vphpl

Number of Lanes - 1

WB Left V/C - $\frac{39}{900}$

= ***0.043***

Lane Capacity for EB Throughs - 1,500 vphpl

Number of Lanes - 1

EB Through V/C - $\frac{321}{1{,}500}$

= ***0.214***

Lane Capacity for EB Rights - 900 vphpl

Number of Lanes - 1

EB Right V/C - $\frac{165}{900}$

= ***0.183***

Critical V/C - ***0.043*** **+** ***0.214***

= 0.257

<u>or</u>

Lane Capacity for EB Lefts - 1,500 vphpl

Number of Lanes - 1

EB Left V/C - $\frac{30}{1{,}500}$

= ***0.02***

Lane Capacity for WB Throughs/Rights - 1,500 vphpl

Number of Lanes - 2

WB Through V/C - $\left\{\frac{304 + 50}{3{,}000}\right\}$

= ***0.118***

Critical V/C - ***0.02*** **+** ***0.118***

= 0.138

2) Lane Capacity for NB & SB Direction - 1,500 vphpl

Number of Lanes - 1 left
1 through/right

Critical V/C - $\left\{\frac{72 + 400 + 76}{1{,}500}\right\}$

or $\left\{\frac{47 + 153 + 25}{1{,}500}\right\}$

= **0.365**

Intersection V/C = 0.622 — 0.070 = 0.552 LOS A

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CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Francisco St | W/E: 7th St | I/S No: 18

AM/PM: AM | Comments: EXISTING PLUS PROJECT

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	22	10	42	49	198	67	88	503	475	63	460	13
AMBIENT												
RELATED												
PROJECT												
TOTAL	22	10	42	49	198	67	88	503	475	63	460	13

LANE

	NB							SB							WB							EB						
LANE		1				1		1				1			1		1		1			1		1		1		

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	265	49
EastBound	237	63
WestBound	489	88
NorthBound	42	22

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)

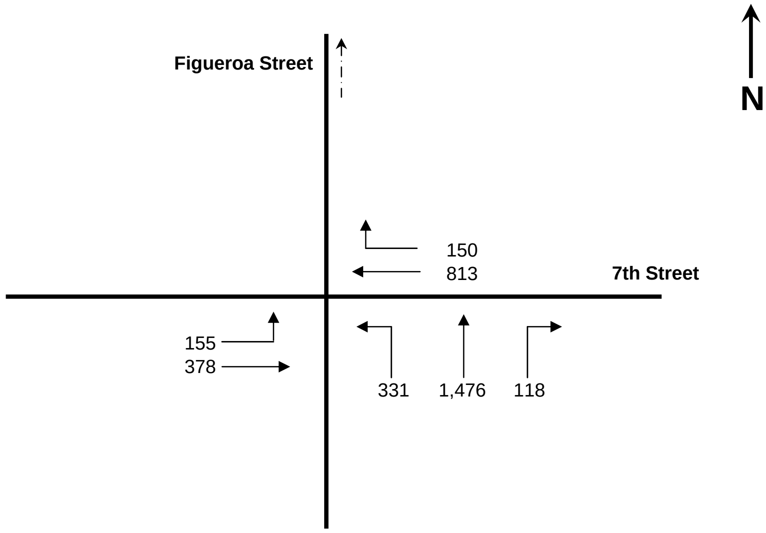
$$V/C = \frac{22 + 265 + 489 + 63}{*1500} = 0.489$$

LOS = A

Developed by Chun Wong, 12/94

Intersection 19

Existing plus Project Conditions A.M. Peak Hour



1) Lane Capacity for EB Lefts - 900 vphpl

Number of Lanes - 2

EB Left V/C - $\left\{ \frac{155 \quad X \quad 0.55}{900} \right\}$

= ***0.095***

Lane Capacity for WB Direction - 1,425 vphpl

Number of Lanes - 2 throughs
1 right-turn only

WB V/C - $\frac{813}{2,850}$ or $\frac{150}{1,425}$

= ***0.285***

Critical V/C - ***0.095*** **+** ***0.285*** **=** **0.380**

<u>or</u>

Lane Capacity for EB Throughs - 1,425 vphpl

Number of Lanes - 2

Critical V/C - $\frac{378}{2,850}$

= **0.133**

2) Lane Capacity for NB Throughs and Through/Left - 900 vphpl
Lane Capacity for NB Right-turns - 450 vphpl

Number of Lanes - 1 left/through
3 throughs
1 right-turn only

Critical V/C - $\left\{ \frac{331 \quad + \quad 1,476}{3,600} \right\}$

or $\frac{331}{900}$

or $\frac{118}{450}$

= **0.502**

Intersection V/C = 0.882 — 0.070 = 0.812 LOS D

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INTERSECTION DATA SUMMARY SHEET

N/S: Flower St | W/E: 7th St | I/S No: 20

AM/PM: AM | Comments: EXISTING PLUS PROJECT

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	0	0	0	68	852	181	84	730	0	0	336	146
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	68	852	181	84	730	0	0	336	146

LANE

NORTHBOUND							
SOUTHBOUND		1	2		1		
WESTBOUND		1	2				
EASTBOUND			1		1		

SIGNAL

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	<none>	<none>	Split	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

	A:	B:
SouthBound	275	68
EastBound	241	0
WestBound	299	84
NorthBound	0	0

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) + A(S/B)

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

$$V/C = \frac{0 + 275 + 84 + 241}{*1500} = 0.330$$

LOS = A

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January 25, 2011 ,Tuesday 01:11:00 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Olive Ave | W/E: 7th St | I/S No: 21

AM/PM: AM | Comments: EXISTING PLUS PROJECT

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	184	893	61	0	0	0	0	609	220	0	435	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	184	893	61	0	0	0	0	609	220	0	435	0

LANE

NORTHBOUND		1	2		1		
SOUTHBOUND							
WESTBOUND			2			1	
EASTBOUND			2				

SIGNAL

	NORTHBOUND	SOUTHBOUND	WESTBOUND	EASTBOUND
Phasing	Split	<none>	Perm	Perm
RTOR	Auto	<none>	Auto	<none>

Critical Movements Diagram

	A:	B:
SouthBound	0	0
EastBound	218	0
WestBound	305	0
NorthBound	285	184

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) + A(S/B)

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

$$V/C = \frac{285 + 0 + 305 + 0}{*1500} = 0.323$$

LOS = A

Developed by Chun Wong, 12/94

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CalcaDB

January 25, 2011 ,Tuesday 01:11:00 PM

INTERSECTION DATA SUMMARY SHEET

N/S:	Alameda St	W/E:	7th St	I/S No:	22
AM/PM:	AM	Comments:	EXISTING PLUS PROJECT		
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	144	622	56	118	860	97	130	765	55	79	373	102
AMBIENT												
RELATED												
PROJECT												
TOTAL	144	622	56	118	860	97	130	765	55	79	373	102

	NB							SB							WB							EB						
LANE	1		1		1			1		1		1			1		1		1			1		1		1		

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Perm	Auto	Prot-Fix	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A:	B:
SouthBound	479	118
EastBound	238	79
WestBound	410	130
NorthBound	339	144

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)

$$V/C = \frac{144 + 479 + 410 + 79}{*1425} = 0.710$$

LOS = C

Developed by Chun Wong, 12/94

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January 25, 2011 ,Tuesday 01:11:00 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Soto St | W/E: 7th St | I/S No: 23

AM/PM: AM | Comments: EXISTING PLUS PROJECT

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	454	712	29	54	599	80	26	104	38	42	51	20
AMBIENT												
RELATED												
PROJECT												
TOTAL	454	712	29	54	599	80	26	104	38	42	51	20

LANE	LT	LT-TH	TH	LT-TH-RT	TH-RT	RT	LT-RT
Northbound	1		1		1		
Southbound	1		1		1		
Westbound				1			
Eastbound		1				1	

SIGNAL	Phasing	RTOR
Northbound	Prot-Fix	Auto
Southbound	Perm	Auto
Westbound	Split	Auto
Eastbound	Split	Auto

Critical Movements Diagram

	A	B
SouthBound	340	54
EastBound	93	42
WestBound	168	26
NorthBound	371	454

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) + A(E/B)

$$V/C = \frac{454 + 340 + 168 + 93}{*1375} = 0.697$$

LOS = B

Developed by Chun Wong, 12/94

Intersection 24

Existing plus Project Conditions A.M. Peak Hour

1) Lane Capacity for WB Lefts - 750 vphpl

Number of Lanes - 2

WB Left V/C - $\frac{163}{1,500}$

= **0.109**

<u>or</u>

Lane Capacity for WB Throughs and Rights - 1,500 vphpl

Number of Lanes - 2 throughs
Number of Lanes - 1 right-turn only

WB Through/Right V/C - $\frac{589}{3,000}$ or $\frac{359}{1,500}$

= **0.239**

2) Lane Capacity for SB Rights - 1,500 vphpl

Number of Lanes - 1

SB Right V/C - $\frac{52}{1,500}$

= **0.035**

<u>or</u>

Lane Capacity for SB Throughs - 750 vphpl

Number of Lanes - 2

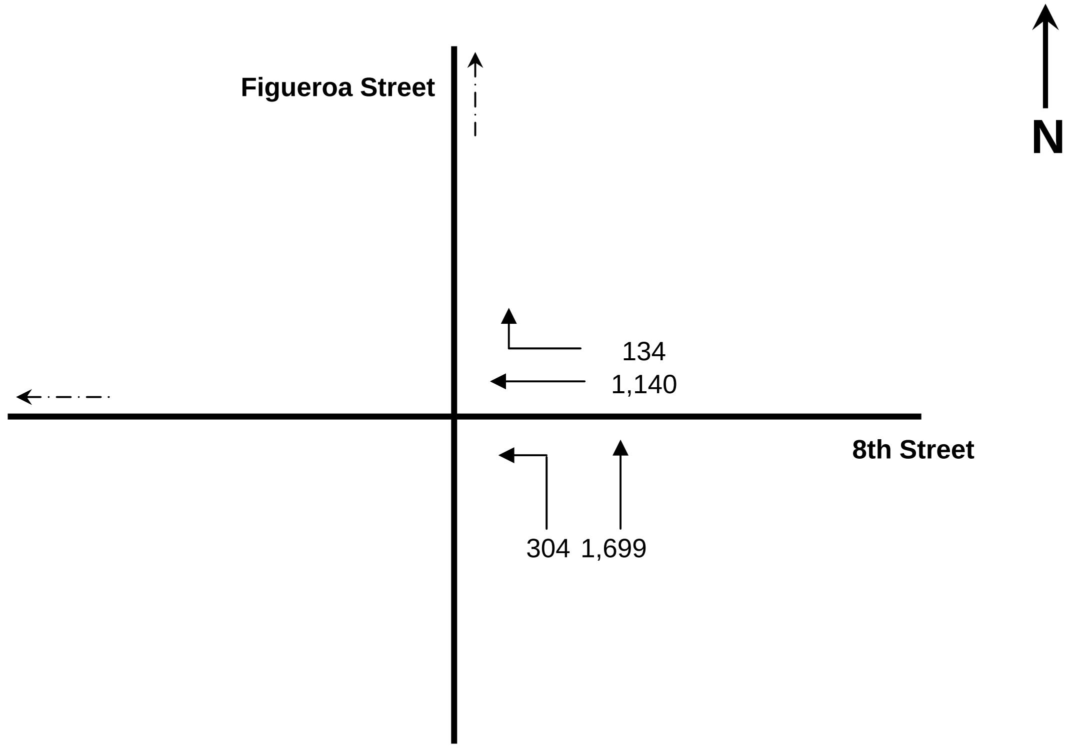
WB Through/Right V/C - $\frac{785}{1,500}$

= **0.523**

Intersection V/C = 0.762 — 0.100 = 0.662 LOS B

Intersection 25

Existing plus Project Conditions A.M. Peak Hour



1) Lane Capacity for WB Direction - 900 vphpl

Number of Lanes - 4 throughs
1 right-turn only

Critical V/C - $\frac{1,140}{3,600}$ or $\frac{134}{900}$

= **0.317**

2) Lane Capacity for NB Direction - 900 vphpl

Number of Lanes - 1 left-turn only
5 throughs

Critical V/C - $\frac{1,699}{4,500}$ or $\frac{304}{900}$

= **0.378**

Intersection V/C = 0.695 — 0.100 = 0.595 LOS A

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CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St | W/E: 8th St | I/S No: 26

AM/PM: AM | Comments: EXISTING PLUS PROJECT

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	0	0	0	0	608	274	72	1042	0	0	0	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	0	608	274	72	1042	0	0	0	0

LANE

	NB							SB							WB							EB						
LANE										4			1			1	3											

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	<none>	<none>	Split	Auto	Split	<none>	<none>	<none>

Critical Movements Diagram

SouthBound
A: 274
B: 0

EastBound
A: 0
B: 0

WestBound
A: 279
B: 72

NorthBound
A: 0
B: 0

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

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

Results

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

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

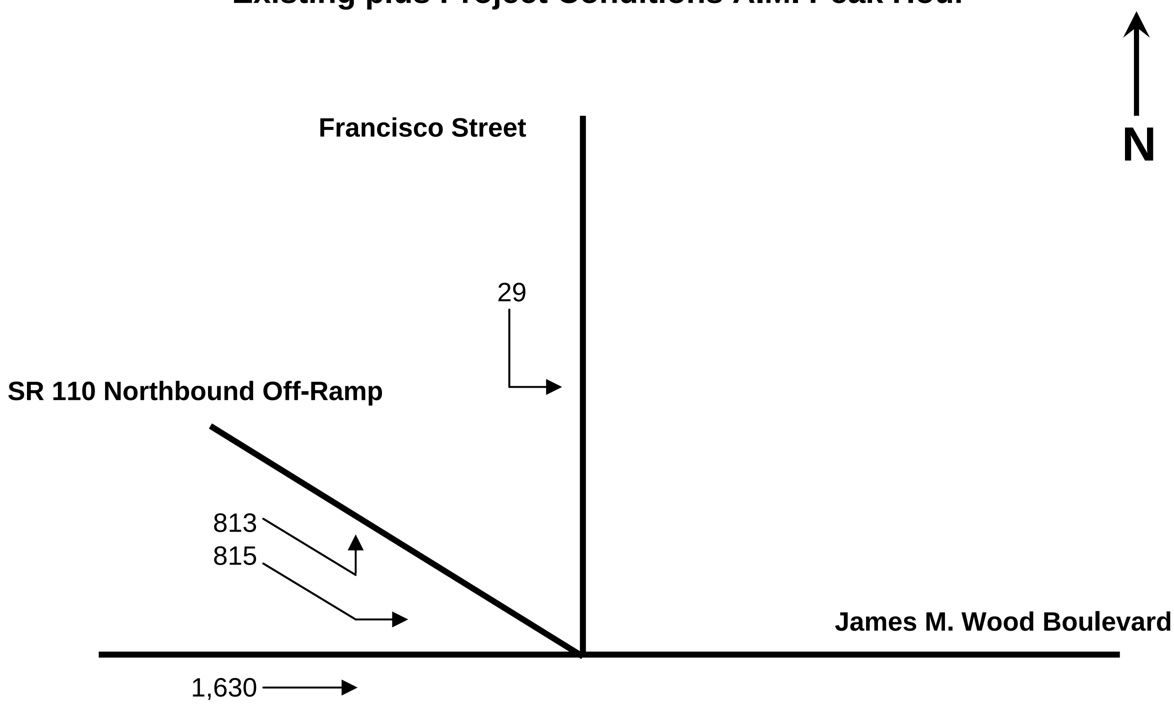
$$V/C = \frac{0 + 274 + 279 + 0}{*1500} = 0.299$$

LOS = A

Developed by Chun Wong, 12/94

Intersection 27

Existing plus Project Conditions A.M. Peak Hour



1) $\left\{ \dfrac{813 \quad + \quad 815}{2} \right\}$

or

$\dfrac{1,630}{3}$

= **814**

2) $\dfrac{29}{1}$

= **29**

Critical Volumes = 814 + 29 = 843

V/C = $\dfrac{843}{1,500}$ 0.100 = 0.462 LOS A

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Figueroa St W/E: 9th St/James M Wood Blvd I/S No: 28

AM/PM: AM Comments: EXISTING PLUS PROJECT

COUNT DATE: STUDY DATE: GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	1406	141	0	0	0	0	0	0	865	1542	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	1406	141	0	0	0	0	0	0	865	1542	0

LANE

	Northbound	Southbound	Westbound	Eastbound
LANE	, , 3, , , 1,	, , , , , ,	, , , , , ,	1, 1, 3, , , ,

	Northbound Phasing	Northbound RTOR	Southbound Phasing	Southbound RTOR	Westbound Phasing	Westbound RTOR	Eastbound Phasing	Eastbound RTOR
SIGNAL	Split	Auto	<none>	<none>	<none>	<none>	Split	<none>

Critical Movements Diagram

SouthBound
A: 0
B: 0

EastBound
A: 481
B: 481

WestBound
A: 0
B: 0

NorthBound
A: 469
B: 0

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

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

Results

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

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

$$V/C = \frac{469 + 0 + 0 + 481}{*1500} = 0.563$$

LOS = A

PROJ_AM

CalcaDB

January 27, 2011 ,Thursday 11:38:18 AM

INTERSECTION DATA SUMMARY SHEET

N/S: Cherry St | W/E: Pico Blvd | I/S No: 29

AM/PM: AM | Comments: EXISTING PLUS PROJECT

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	524	501	221	196	0	7	0	353	238	216	547	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	524	501	221	196	0	7	0	353	238	216	547	0

LANE							
NORTHBOUND	1	1	1			1	
SOUTHBOUND	2					2	
WESTBOUND			1		1	1	
EASTBOUND	1		3				

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	Split	Auto	Split	Auto	Perm	OLA	Perm	<none>

Critical Movements Diagram

	A	B
SouthBound	4	108
EastBound	182	216
WestBound	197	0
NorthBound	342	342

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)

$$V/C = \frac{342 + 108 + 197 + 216}{*1425} = 0.536$$

LOS = A

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CalcaDB

January 25, 2011 ,Tuesday 01:11:00 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Figueroa St | W/E: Pico Blvd | I/S No: 30

AM/PM: AM | Comments: EXISTING PLUS PROJECT

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	200	1736	125	9	146	111	49	304	62	194	638	113
AMBIENT												
RELATED												
PROJECT												
TOTAL	200	1736	125	9	146	111	49	304	62	194	638	113

LANE

	NB	SB	WB	EB
LT	1	1	1	1
LT/TH				
TH	3	2	2	2
LT/TH/RT				
TH/RT	1			
RT		1	1	1
LT/RT				

SIGNAL

	NB	SB	WB	EB
Phasing	Prot-Fix	Perm	Perm	Prot-Fix
RTOR	Auto	OLA	Auto	OLA

Critical Movements Diagram

	A	B
SouthBound	73	9
EastBound	319	194
WestBound	152	49
NorthBound	465	200

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 = B(W/B) + A(E/B)

$$V/C = \frac{465 + 9 + 49 + 319}{*1375} = 0.542$$

LOS = A

CalcaDB

January 25, 2011 ,Tuesday 01:11:00 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Hoover St | W/E: Alvarado St/Alvarado Ter | I/S No: 31

AM/PM: AM | Comments: EXISTING PLUS PROJECT

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	917	592	12	800	0	414	0	0	0	0	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	917	592	12	800	0	414	0	0	0	0	0

LANE

	NB 1	NB 2	NB 3	NB 4	NB 5	NB 6	NB 7	SB 1	SB 2	SB 3	SB 4	SB 5	SB 6	SB 7	WB 1	WB 2	WB 3	WB 4	WB 5	WB 6	WB 7	EB 1	EB 2	EB 3	EB 4	EB 5	EB 6	EB 7
LANE			1		1	1			1	1					1						1							

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Perm	Free	Perm	<none>	Split	Auto	<none>	<none>

Critical Movements Diagram

SouthBound
A: 436
B: 12

EastBound
A: 0
B: 0

WestBound
A: 207
B: 207

NorthBound
A: 503
B: 0

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

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

Results

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

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

$$V/C = \frac{503 + 12 + 207 + 0}{*1500} = 0.411$$

LOS = A

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INTERSECTION DATA SUMMARY SHEET

N/S: Flower St W/E: Venice Blvd I/S No: 32

AM/PM: AM Comments: EXISTING PLUS PROJECT

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	0	0	0	9	400	24	45	285	0	0	332	53
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	9	400	24	45	285	0	0	332	53

LANE	1	2	3	4	5	6	7
NORTHBOUND							
SOUTHBOUND	1		2		1		
WESTBOUND		1	1				
EASTBOUND			1		1		

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	<none>	<none>	Split	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

	A:	B:
SouthBound	141	9
EastBound	193	0
WestBound	188	45
NorthBound	0	0

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) + A(S/B)

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

$$V/C = \frac{0 + 141 + 45 + 193}{*1500} = 0.183$$

LOS = A

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January 25, 2011 ,Tuesday 01:11:00 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S:	Grand Ave	W/E:	18th St	I/S No:	33
AM/PM:	AM	Comments:	EXISTING PLUS PROJECT		
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	0	0	113	182	457	0	0	0	0	0	817	125
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	113	182	457	0	0	0	0	0	817	125

	NORTHBOUND							SOUTHBOUND							WESTBOUND							EASTBOUND						
LANE						2		1		3														2		1	1	

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	Auto	Prot-Fix	<none>	<none>	<none>	Split	Auto

Critical Movements Diagram

	A:	B:
SouthBound	152	182
EastBound	272	0
WestBound	0	0
NorthBound	62	0

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

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

Results

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

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

$$V/C = \frac{62 + 182 + 0 + 272}{*1425} = 0.292$$

LOS = A

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PROJ_AM

CalcaDB

January 25, 2011 ,Tuesday 01:11:00 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Olive St W/E: 6th St I/S No: 34

AM/PM: AM Comments: EXISTING PLUS PROJECT

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	0	888	162	0	0	0	0	0	0	378	932	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	888	162	0	0	0	0	0	0	378	932	0

LANE	NB 1	NB 2	NB 3	NB 4	NB 5	NB 6	NB 7	SB 1	SB 2	SB 3	SB 4	SB 5	SB 6	SB 7	WB 1	WB 2	WB 3	WB 4	WB 5	WB 6	WB 7	EB 1	EB 2	EB 3	EB 4	EB 5	EB 6	EB 7
			4		1																	1	1	3				

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Split	Auto	<none>	<none>	<none>	<none>	Split	<none>

Critical Movements Diagram

	A	B
SouthBound	0	0
EastBound	262	262
WestBound	0	0
NorthBound	210	0

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

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

Results

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

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

$$V/C = \frac{210 + 0 + 0 + 262}{*1500} = 0.245$$

LOS = A

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CalcaDB

January 25, 2011 ,Tuesday 01:11:00 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Hope St | W/E: 7th St | I/S No: 35

AM/PM: AM | Comments: EXISTING PLUS PROJECT

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	37	222	60	9	230	24	0	813	104	0	349	62
AMBIENT												
RELATED												
PROJECT												
TOTAL	37	222	60	9	230	24	0	813	104	0	349	62

LANE

NORTHBOUND		1			1		
SOUTHBOUND		1			1		
WESTBOUND			1		1		
EASTBOUND			1		1		

SIGNAL

	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Perm	Auto
EASTBOUND	Perm	Auto

Critical Movements Diagram

SouthBound
A: 132
B: 9

EastBound
A: 206
B: 0

WestBound
A: 459
B: 0

NorthBound
A: 160
B: 37

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

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

Results

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

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

$$V/C = \frac{37 + 132 + 459 + 0}{*1500} = 0.349$$

LOS = A

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CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave | W/E: 7th St | I/S No: 36

AM/PM: AM | Comments: EXISTING PLUS PROJECT

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	0	0	93	1075	73	0	826	0	0	330	105
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	93	1075	73	0	826	0	0	330	105

LANE

	NB	SB	WB	EB
LT		1		
LT/TH				
TH		4	2	2
LT/TH/RT				
TH/RT				
RT		1		1
LT/RT				

SIGNAL

	NB	SB	WB	EB
Phasing	<none>	Split	Perm	Perm
RTOR	<none>	Auto	<none>	Auto

Critical Movements Diagram

	A	B
SouthBound	269	93
EastBound	165	0
WestBound	413	0
NorthBound	0	0

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) + A(S/B)

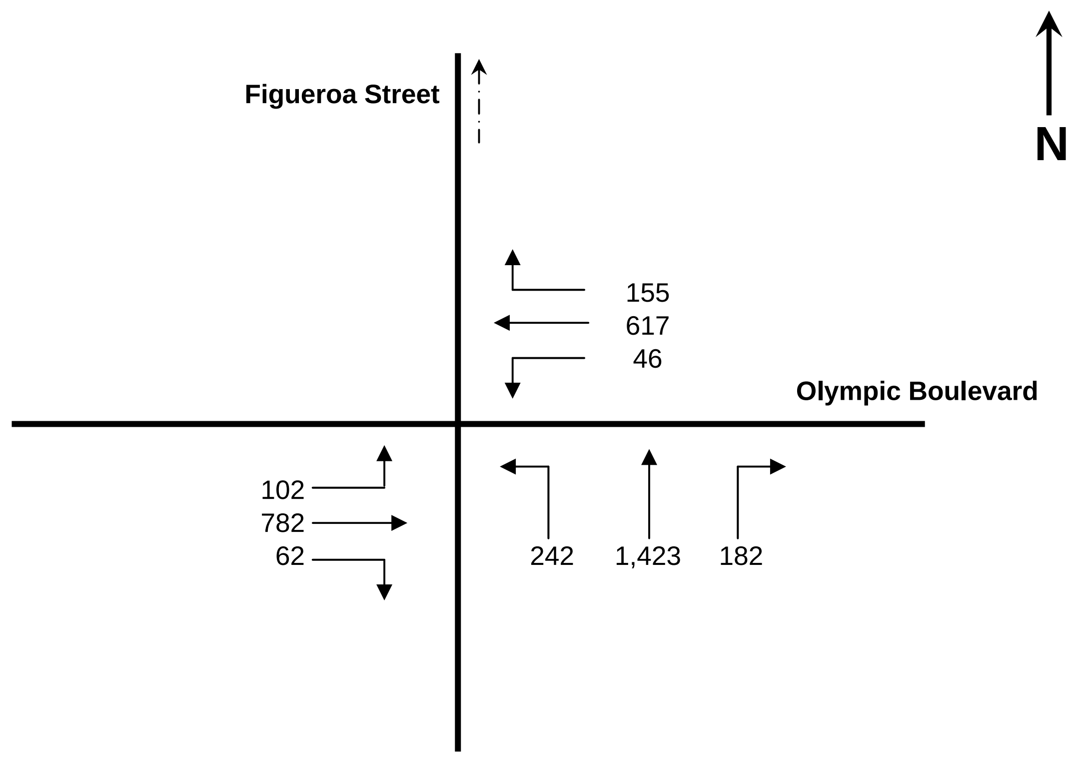
West/East Critical Movements = A(W/B) + B(E/B)

$$V/C = \frac{0 + 269 + 413 + 0}{*1500} = 0.385$$

LOS = A

Intersection 37

Existing plus Project Conditions A.M. Peak Hour



1) Lane Capacity for EB Lefts - 900 vphpl

Number of Lanes - 1

EB Left V/C - $\frac{102}{900}$

= ***0.113***

Lane Capacity for WB Throughs - 1,425 vphpl
Lane Capacity for WB Rights - 900 vphpl

Number of Lanes - 3 throughs
1 right-turn only

WB Through/Right V/C - $\frac{617}{4,275}$ or $\frac{155}{900}$

= ***0.172***

Critical V/C - ***0.113*** **+** ***0.172*** **=** **0.285**

<u>or</u>

Lane Capacity for WB Lefts - 1,425 vphpl

Number of Lanes - 1

WB Left V/C - $\frac{46}{1,425}$

= ***0.032***

Lane Capacity for EB Throughs/Rights - 1,425 vphpl

Number of Lanes - 3 throughs
1 right-turn only

EB Through/Right V/C - $\frac{782}{4,275}$ or $\frac{62}{1,425}$

= ***0.183***

Critical V/C - ***0.032*** **+** ***0.183*** **=** **0.215**

2) Lane Capacity for NB Throughs - 900 vphpl
Lane Capacity for NB Left- and Right-turns - 1,425 vphpl

Number of Lanes - 1 left-turn only
3 throughs
1 right-turn only

Critical V/C - $\frac{1,423}{2,700}$ or $\frac{242}{1,425}$ or $\frac{182}{1,425}$

= **0.527**

Intersection V/C = 0.812 — 0.100 = 0.712 LOS C

PROJ_AM

CalcaDB

January 25, 2011 ,Tuesday 01:11:00 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Glendale Blvd W/E: Temple St I/S No: 38

AM/PM: AM Comments: EXISTING PLUS PROJECT

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	54	452	13	223	1645	140	60	434	119	187	571	132
AMBIENT												
RELATED												
PROJECT												
TOTAL	54	452	13	223	1645	140	60	434	119	187	571	132

	NB							SB							WB							EB						
LANE	1		1		1			1		1		1			1		1		1			1		1		1		

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Perm	Auto	Perm	Auto	Prot-Fix	Auto	Prot-Fix	Auto

Critical Movements Diagram

	A	B
SouthBound	893	223
EastBound	352	187
WestBound	277	60
NorthBound	233	54

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

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

Results

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

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

$$V/C = \frac{54 + 893 + 277 + 187}{*1425} = 0.920$$

LOS = E

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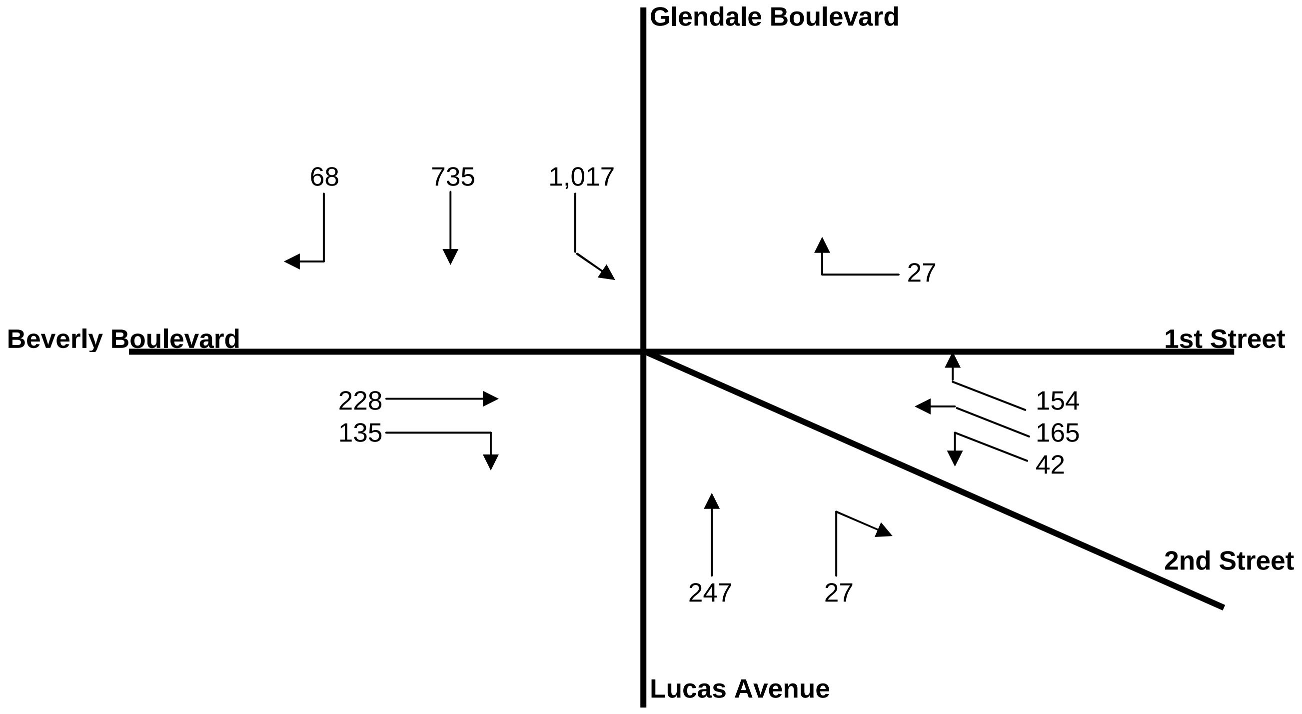
Intersection 39

Existing plus Project Conditions A.M. Peak Hour

N



Phase 1) *Glendale Boulevard and Lucas Avenue - North-South Throughs and Rights*

$$\frac{247 + 27}{2}$$

&

$$\frac{68}{1} \quad \& \quad \frac{735}{1}$$

= **137**

Phase 2) *Glendale Boulevard, 1st Street, and 2nd Street - Southbound Lefts, Throughs, and Rights, and*
a.) Westbound Rights on 1st Street
b.) Westbound Rights on 2nd Street

a.) $$\frac{27}{1}$$

$$\& \quad \left\{ \frac{735}{1} - 137 \right\} \quad \& \quad \left\{ \frac{1{,}017}{2} \right\}$$

= **27**

b.) $$\left\{ \frac{1{,}017}{2} - 27 \right\}$$

$$\text{or} \quad \left\{ \frac{735}{1} - 137 - 27 \right\}$$

$$\& \quad \frac{154}{2}$$

= **571**

Phase 3) *2nd Street - Westbound Lefts, Throughs, and Rights*

$$\left\{ \frac{154}{2} - 571 \right\}$$

$$\& \quad \left\{ \frac{165 + 42}{1} \right\}$$

= **0**

Phase 4) *Beverly Boulevard and 2nd Street - Westbound Lefts and Throughs, and Eastbound Throughs and Rights*

$$\frac{228 + 135}{2}$$

$$\text{or} \quad \left\{ \frac{165 + 42}{1} \right\} - 0$$

= **182**

Critical Volumes = 137 + 27 + 571 + 0 + 182

= 917

V/C = $\mathbf{\frac{917}{1{,}375}}$ **— 0.070 = 0.597** **LOS A**

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Lucas Ave | W/E: 3rd St | I/S No: 40

AM/PM: AM | Comments: EXISTING PLUS PROJECT

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	100	224	100	107	538	128	46	756	58	158	1042	66
AMBIENT												
RELATED												
PROJECT												
TOTAL	100	224	100	107	538	128	46	756	58	158	1042	66

LANE	1		2			1		1		1		1			1		2			1		1		2			1	

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

SouthBound
A: 333
B: 107

EastBound
A: 521
B: 158

WestBound
A: 378
B: 46

NorthBound
A: 112
B: 100

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

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

Results

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

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

$$V/C = \frac{100 + 333 + 46 + 521}{*1500} = 0.597$$

LOS = A

PROJ_AM

CalcaDB

January 25, 2011 ,Tuesday 01:11:00 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Lucas Ave W/E: 6th St I/S No: 41

AM/PM: AM Comments: EXISTING PLUS PROJECT

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	29	174	18	43	294	166	58	644	26	144	1030	168
AMBIENT												
RELATED												
PROJECT												
TOTAL	29	174	18	43	294	166	58	644	26	144	1030	168

	NB							SB							WB							EB						
LANE				1							1				1		2			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	B
SouthBound	503	43
EastBound	599	144
WestBound	322	58
NorthBound	221	29

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)

$$V/C = \frac{29 + 503 + 58 + 599}{*1500} = 0.723$$

LOS = C

Developed by Chun Wong, 12/94

CalcaDB

January 25, 2011 ,Tuesday 01:11:00 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Lucas Ave
W/E: Wilshire Blvd
I/S No: 42

AM/PM: AM
Comments: EXISTING PLUS PROJECT

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	29	139	23	61	204	71	59	502	71	52	951	54
AMBIENT												
RELATED												
PROJECT												
TOTAL	29	139	23	61	204	71	59	502	71	52	951	54

LANE

	NB							SB							WB							EB						
LANE				1							1					1	1			1			1	1			1	

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

SouthBound
A: 336
B: 61

EastBound
A: 528
B: 52

WestBound
A: 428
B: 59

NorthBound
A: 191
B: 29

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

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

Results

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

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

$$V/C = \frac{29 + 336 + 59 + 528}{*1500} = 0.565$$

LOS = A

PROJ_PM

CalcaDB

January 25, 2011 ,Tuesday 01:11:25 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave

W/E: US 101 NB Ramps

I/S No: 1

AM/PM: PM

Comments: EXISTING PLUS PROJECT

COUNT DATE:

STUDY DATE:

GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	675	834	0	0	507	337	0	0	0	67	0	252
AMBIENT												
RELATED												
PROJECT												
TOTAL	675	834	0	0	507	337	0	0	0	67	0	252

LANE

	LT	LT-TH	TH	LT-TH-RT	TH-RT	RT	LT-RT
NORTHBOUND	1		2				
SOUTHBOUND			2			1	
WESTBOUND							
EASTBOUND						1	1

SIGNAL

	Phasing	RTOR
NORTHBOUND	Prot-Fix	<none>
SOUTHBOUND	Perm	OLA
WESTBOUND	<none>	<none>
EASTBOUND	Split	Auto

Critical Movements Diagram

SouthBound
A: 270
B: 0

EastBound
A: 0
B: 67

WestBound
A: 0
B: 0

NorthBound
A: 417
B: 675

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

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

Results

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

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

$$V/C = \frac{675 + 270 + 0 + 67}{*1425} = 0.640$$

LOS = B

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INTERSECTION DATA SUMMARY SHEET

N/S: Hope St/US 101 SB Ramps W/E: Temple St I/S No: 2

AM/PM: PM Comments: EXISTING PLUS PROJECT

COUNT DATE: STUDY DATE: GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	214	240	198	72	34	16	136	733	217	474	731	72
AMBIENT												
RELATED												
PROJECT												
TOTAL	214	240	198	72	34	16	136	733	217	474	731	72

LANE

	NB							SB							WB							EB						
LANE	1		1		1			1		1		1			1		2			1		1		1		1		

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Perm	Auto	Perm	Auto	Prot-Fix	Auto	Prot-Fix	Auto

Critical Movements Diagram

	A	B
SouthBound	25	72
EastBound	402	474
WestBound	367	136
NorthBound	219	214

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)

$$V/C = \frac{219 + 72 + 367 + 474}{*1425} = 0.724$$

LOS = C

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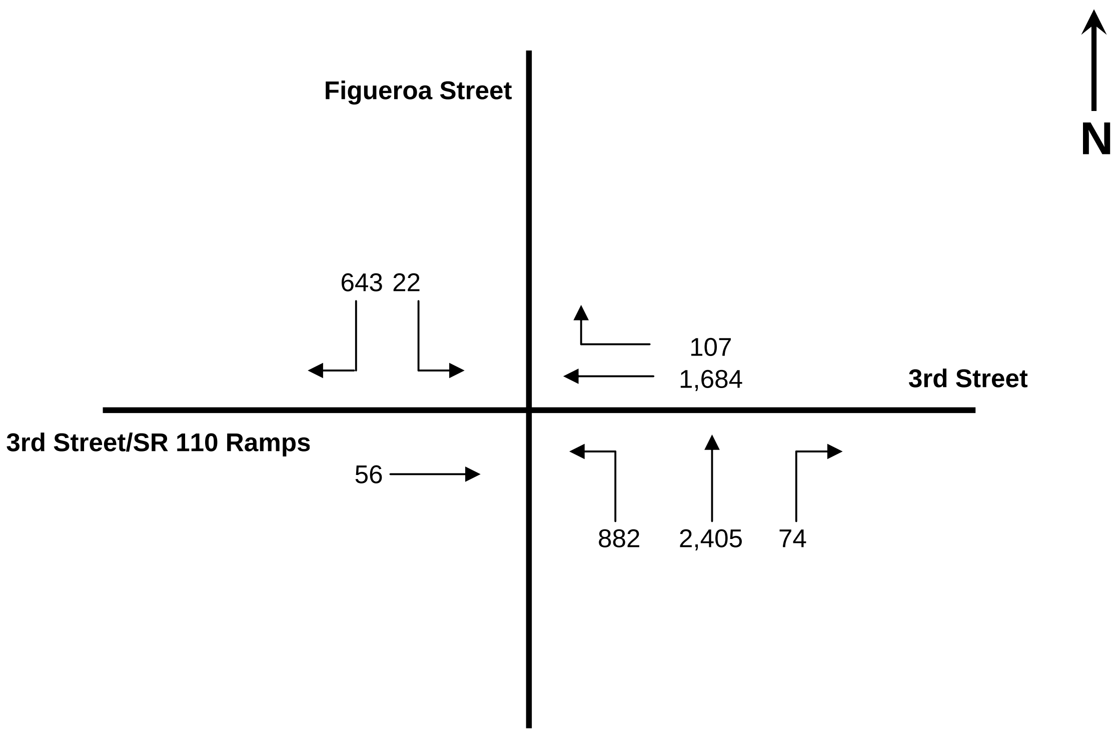
Intersection 3

Existing plus Project Conditions P.M. Peak Hour



1) Lane Capacity for WB Throughs - 900 vphpl

Number of Lanes - 5

WB Through V/C - $\frac{1,684}{4,500}$

= **0.374**

<u>or</u>

Lane Capacity for WB Rights - 1,425 vphpl

Number of Lanes - 1

WB Right V/C - $\frac{107}{1,425}$

= **0.075**

<u>or</u>

Lane Capacity for EB Throughs - 1,425 vphpl

Number of Lanes - 2

EB Through V/C - $\frac{56}{2,850}$

= **0.020**

2) Lane Capacity for NB Lefts - 900 vphpl

Number of Lanes - 3

NB Left V/C - $\left\{\frac{882 \quad x \quad 0.37}{900}\right\}$

= ***0.363***

Lane Capacity for SB Rights - 1,425 vphpl

Number of Lanes - 2

SB Right V/C - $\left\{\frac{643 \quad x \quad 0.55}{1,425}\right\}$

= ***0.248***

Critical V/C - ***0.363*** **+** ***0.248*** **=** **0.611**

<u>or</u>

Lane Capacity for NB Throughs & Rights - 1,425 vphpl

Number of Lanes - 2 throughs
1 through/right

NB Through/Right V/C - $\left\{\frac{2,405 \quad + \quad 74}{4,275}\right\}$ or $\frac{74}{1,425}$

= **0.580**

Intersection V/C = 0.985 — 0.100 = 0.885 LOS D

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January 25, 2011 ,Tuesday 01:11:25 PM

INTERSECTION DATA SUMMARY SHEET

N/S:	Flower St	W/E:	3rd St	I/S No:	4
AM/PM:	PM	Comments:	EXISTING PLUS PROJECT		
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	135	209	0	0	431	473	117	1158	62	0	0	144
AMBIENT												
RELATED												
PROJECT												
TOTAL	135	209	0	0	431	473	117	1158	62	0	0	144

LANE	NB	SB	WB	EB
	1, , 2, , , ,	, , 2, , , 1,	1, , 3, , 1, ,	, , , , , 1,

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	Perm	<none>	Perm	Auto	Split	Auto	<none>	Free

Critical Movements Diagram

	A	B
SouthBound	473	0
EastBound	0	0
WestBound	305	117
NorthBound	105	135

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

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

Results

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

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

$$V/C = \frac{135 + 473 + 305 + 0}{*1500} = 0.539$$

LOS = A

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INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave | W/E: 3rd St | I/S No: 5

AM/PM: PM | Comments: EXISTING PLUS PROJECT

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	268	0	0	803	69	0	0	0	151	0	112
AMBIENT												
RELATED												
PROJECT												
TOTAL	21	268	0	0	803	69	0	0	0	151	0	112

LANE							
NORTHBOUND	1		2				
SOUTHBOUND			1		1		
WESTBOUND							
EASTBOUND	1					2	

SIGNAL	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	<none>	<none>
EASTBOUND	Split	Auto

Critical Movements Diagram

SouthBound
A: 436
B: 0

EastBound
A: 62
B: 151

WestBound
A: 0
B: 0

NorthBound
A: 134
B: 21

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)

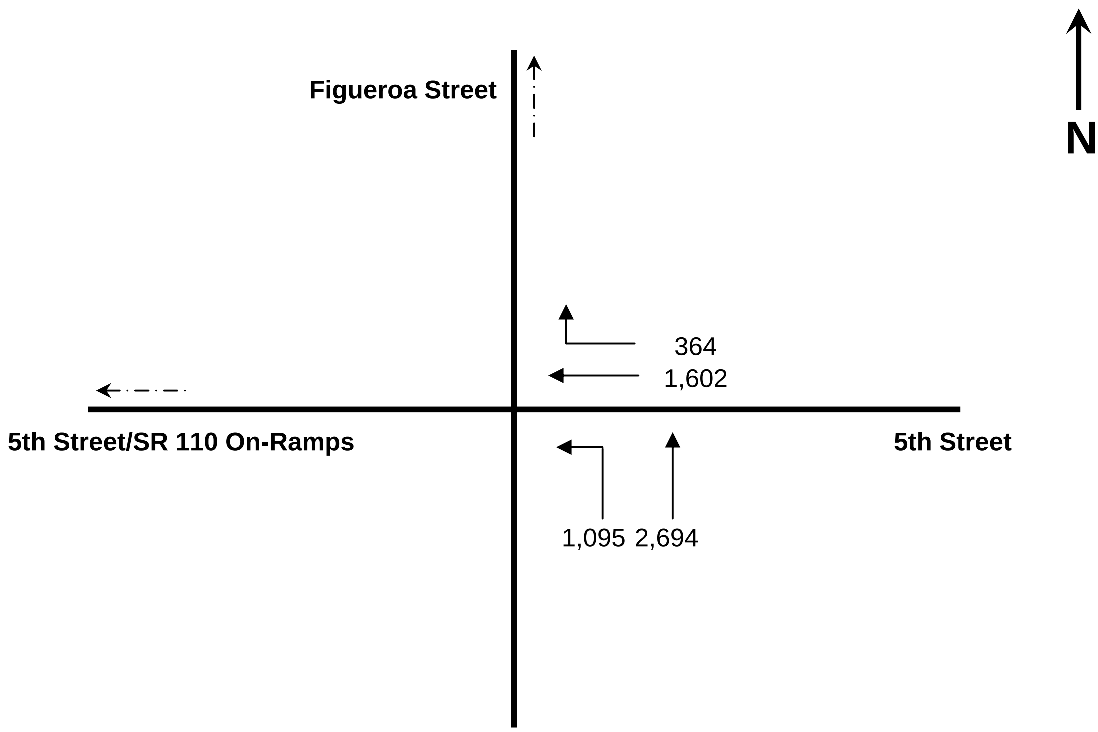
West/East Critical Movements = A(W/B) + B(E/B)

$$V/C = \frac{21 + 436 + 0 + 151}{*1500} = 0.335$$

LOS = A

Intersection 6

Existing plus Project Conditions P.M. Peak Hour



1) Lane Capacity for WB Direction - 900 vphpl

Number of Lanes - 7

Critical V/C - $\left\{\frac{1,602 + 364}{6,300}\right\}$

= **0.312**

2) Lane Capacity for NB Throughs - 900 vphpl

Number of Lanes - 4

Critical V/C - $\frac{2,694}{3,600}$

= **0.748**

<u>or</u>

Lane Capacity for NB Lefts - 900 vphpl

Number of Lanes - 3

Critical V/C - $\frac{1,095}{2,700}$

= **0.406**

Intersection V/C = 1.060 — 0.070 = 0.990 LOS E

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January 25, 2011 ,Tuesday 01:11:25 PM

INTERSECTION DATA SUMMARY SHEET

N/S:	Flower St	W/E:	5th St	I/S No:	7
AM/PM:	PM	Comments:	EXISTING PLUS PROJECT		
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	0	0	0	0	1155	518	212	1372	0	0	0	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	0	1155	518	212	1372	0	0	0	0

LANE

	1	2	3	4	5	6	7
NORTHBOUND							
SOUTHBOUND			4		1	1	
WESTBOUND	1		5				
EASTBOUND							

SIGNAL

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	<none>	<none>	Split	Auto	Split	<none>	<none>	<none>

Critical Movements Diagram

	A:	B:
SouthBound	279	0
EastBound	0	0
WestBound	274	212
NorthBound	0	0

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

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

Results

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

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

V/C = (0 + 279 + 274 + 0) / *1500 = 0.299

LOS = A

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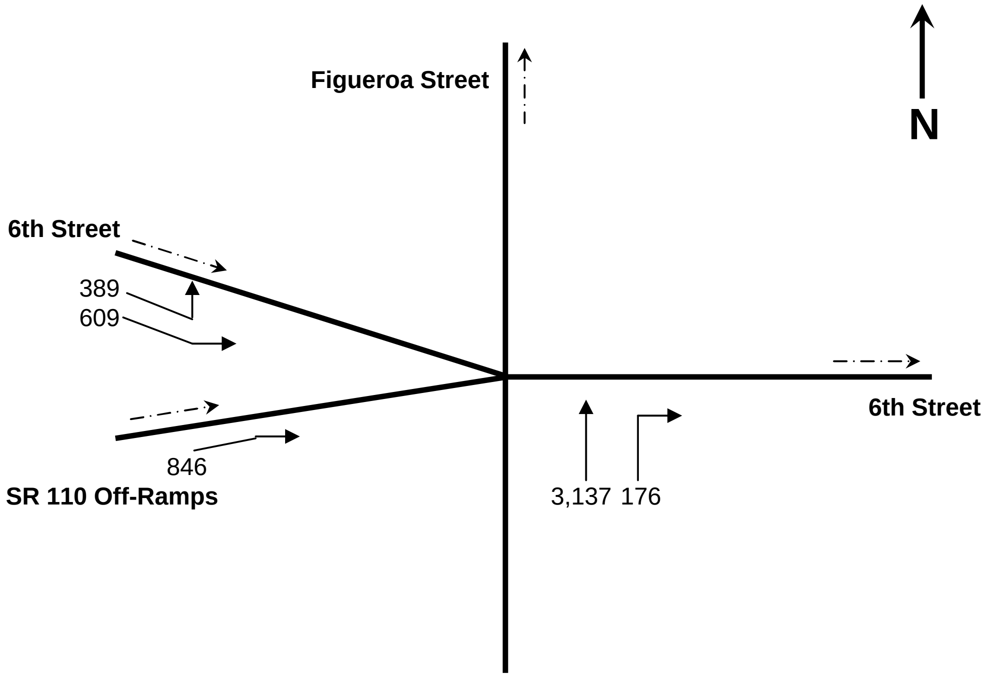
Intersection 8

Existing plus Project Conditions P.M. Peak Hour



1) Lane Capacity for EB Direction - 1,500 vphpl

Number of Lanes -
1 left-turn lane from 6th Street
1 shared left/through lane from 6th Street
1 through lane from 6th Street
3 through lanes from SR 110 Off-Ramps

Critical V/C - $\left\{\frac{609 + 389}{4,500}\right\}$ or $\frac{846}{4,500}$

= **0.222**

2) Lane Capacity for NB Throughs - 900 vphpl

Number of Lanes - 5

Critical V/C - $\frac{3,137}{4,500}$

= **0.697**

or

Lane Capacity for NB Rights - 1,500 vphpl

Number of Lanes - 1

Critical V/C - $\frac{176}{1,500}$

= **0.117**

Intersection V/C = 0.919 — 0.070 = 0.849 LOS D

PROJ_PM

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January 25, 2011 ,Tuesday 01:11:25 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St | W/E: 6th St | I/S No: 9

AM/PM: PM | Comments: EXISTING PLUS PROJECT

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	0	0	316	1091	0	0	0	0	0	1105	560
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	316	1091	0	0	0	0	0	1105	560

LANE

	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND							
SOUTHBOUND	2		4				
WESTBOUND							
EASTBOUND			3		1	1	

SIGNAL

	Phasing	RTOR
NORTHBOUND	<none>	<none>
SOUTHBOUND	Split	<none>
WESTBOUND	<none>	<none>
EASTBOUND	Split	Auto

Critical Movements Diagram

	A	B
SouthBound	273	174
EastBound	333	0
WestBound	0	0
NorthBound	0	0

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

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

Results

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

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

$$V/C = \frac{0 + 273 + 0 + 333}{*1500} = 0.334$$

LOS = A

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January 25, 2011 ,Tuesday 01:11:25 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Alvarado St | W/E: Wilshire Blvd | I/S No: 10

AM/PM: PM | Comments: EXISTING PLUS PROJECT

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	0	1020	67	0	844	95	96	1078	97	85	942	53
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	1020	67	0	844	95	96	1078	97	85	942	53

LANE	NB							SB							WB							EB						
			2		1					2		1			1		1		1			1		1		1		

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	313	0
EastBound	498	85
WestBound	588	96
NorthBound	362	0

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

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

Results

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

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

$$V/C = \frac{362 + 0 + 588 + 85}{*1500} = 0.620$$

LOS = B

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INTERSECTION DATA SUMMARY SHEET

N/S: Beaudry Ave **W/E:** Wilshire Blvd **I/S No:** 11

AM/PM: PM **Comments:** EXISTING PLUS PROJECT

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	5	0	32	225	46	442	8	627	0	0	816	30
AMBIENT												
RELATED												
PROJECT												
TOTAL	5	0	32	225	46	442	8	627	0	0	816	30

LANE (NORTHBOUND)							1
LANE (SOUTHBOUND)	1			1		1	
LANE (WESTBOUND)		1	1				
LANE (EASTBOUND)			2			1	

	NORTHBOUND Phasing	NORTHBOUND RTOR	SOUTHBOUND Phasing	SOUTHBOUND RTOR	WESTBOUND Phasing	WESTBOUND RTOR	EASTBOUND Phasing	EASTBOUND RTOR
SIGNAL	Split	Auto	Split	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

SouthBound
A: 244
B: 225

EastBound
A: 408
B: 0

WestBound
A: 330
B: 8

NorthBound
A: 37
B: 5

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

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

Results

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

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

$$V/C = \frac{37 + 244 + 8 + 408}{*1425} = 0.419$$

LOS = A

PROJ_PM

CalcaDB

January 25, 2011 ,Tuesday 01:11:25 PM

INTERSECTION DATA SUMMARY SHEET

N/S:	Francisco St	W/E:	Wilshire Blvd	I/S No:	12
AM/PM:	PM	Comments:	EXISTING PLUS PROJECT		
COUNT DATE:		STUDY DATE:		GROWTH FACTOR:	

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	156	0	468	51	9	28	40	536	10	13	969	119
AMBIENT												
RELATED												
PROJECT												
TOTAL	156	0	468	51	9	28	40	536	10	13	969	119

LANE

	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND		1				1	
SOUTHBOUND				1			
WESTBOUND	1		1		1		
EASTBOUND	1		1		1		

SIGNAL

	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Perm	Auto
EASTBOUND	Perm	Auto

Critical Movements Diagram

SouthBound
A: 88
B: 51

EastBound
A: 544
B: 13

WestBound
A: 273
B: 40

NorthBound
A: 468
B: 156

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 = B(W/B) + A(E/B)

$$V/C = \frac{468 + 51 + 40 + 544}{*1500} = 0.665$$

LOS = B

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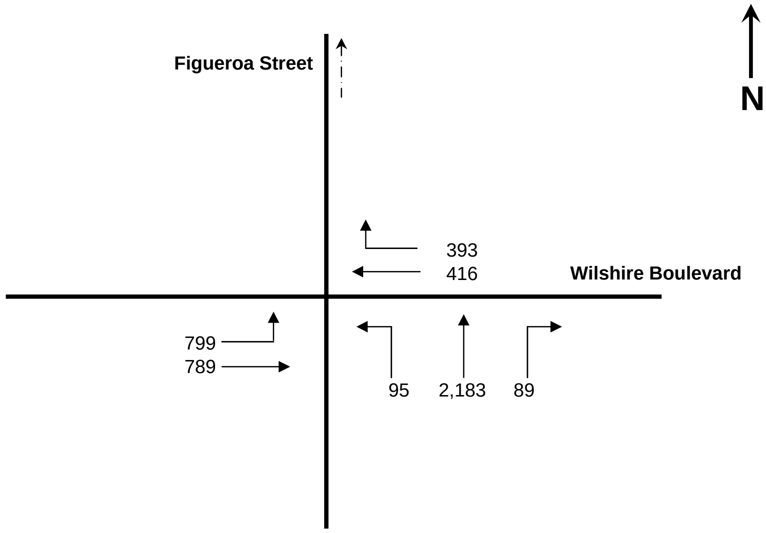
Intersection 13

Existing plus Project Conditions P.M. Peak Hour



1) Lane Capacity for EB Lefts - 900 vphpl

Number of Lanes - 2

EB Left V/C - $\left\{\frac{799 \quad X \quad 0.55}{900}\right\}$

= ***0.488***

Lane Capacity for WB Direction - 1,425 vphpl

Number of Lanes -
1 through
1 through/right
1 right-turn only

WB V/C - $\left\{\frac{416 \quad + \quad 393}{4,275}\right\}$ or $\frac{416}{2,850}$ or $\frac{393}{2,850}$

= ***0.189***

Critical V/C - ***0.488*** **+** ***0.189*** **=** **0.677**

<u>or</u>

Lane Capacity for EB Throughs - 1,425 vphpl

Number of Lanes - 2

Critical V/C - $\frac{789}{2,850}$

= **0.277**

2) Lane Capacity for NB Direction - 900 vphpl

Number of Lanes -
1 left/through
3 throughs
1 through/right

Critical V/C - $\left\{\frac{95 \quad + \quad 2,183 \quad + \quad 89}{4,500}\right\}$

or $\frac{95}{900}$

or $\frac{89}{900}$

= **0.526**

Intersection V/C = 1.203 — 0.070 = 1.133 LOS F

Intersection 14

Existing plus Project Conditions P.M. Peak Hour

1) Lane Capacity for WB Direction - 900 vphpl

Number of Lanes - 2

WB Direction V/C - $\left\{\frac{506 + 47}{1,800}\right\}$ or $\frac{47}{900}$

= **0.307**

Lane Capacity for EB Direction - 1,500 vphpl

Number of Lanes - 2

EB Direction V/C - $\left\{\frac{539 + 404}{3,000}\right\}$ or $\frac{404}{1,500}$

= **0.314**

2) Lane Capacity for SB Throughs and Lefts - 1,500 vphpl

Number of Lanes - 3 throughs
1 left-turn only

SB Through V/C - $\frac{1,493}{4,500}$

= **0.332**

SB Left V/C - $\frac{62}{1,500}$

= **0.041**

Lane Capacity for SB Rights - 900 vphpl

Number of Lanes - 1

SB Right V/C - $\frac{324}{900}$

= **0.360**

Intersection V/C = 0.674 – 0.070 = 0.604 LOS B

PROJ_PM

January 25, 2011 ,Tuesday 01:11:25 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave W/E: Wilshire Blvd I/S No: 15

AM/PM: PM Comments: EXISTING PLUS PROJECT

COUNT DATE: STUDY DATE: GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	0	0	5	1146	160	39	45	0	0	6	540
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	5	1146	160	39	45	0	0	6	540

LANE

	NB 1	NB 2	NB 3	NB 4	NB 5	NB 6	NB 7	SB 1	SB 2	SB 3	SB 4	SB 5	SB 6	SB 7	WB 1	WB 2	WB 3	WB 4	WB 5	WB 6	WB 7	EB 1	EB 2	EB 3	EB 4	EB 5	EB 6	EB 7
LANE									1	2		1				1										1	1	

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	<none>	<none>	Split	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

SouthBound
A: 328
B: 5

EastBound
A: 273
B: 0

WestBound
A: 84
B: 39

NorthBound
A: 0
B: 0

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

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

Results

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

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

$$V/C = \frac{0 + 328 + 39 + 273}{*1500} = 0.357$$

LOS = A

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INTERSECTION DATA SUMMARY SHEET

N/S: Alvarado St W/E: 7th St I/S No: 16

AM/PM: PM Comments: EXISTING PLUS PROJECT

COUNT DATE: STUDY DATE: GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	887	74	0	819	64	0	706	101	0	627	106
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	887	74	0	819	64	0	706	101	0	627	106

LANE							
NORTHBOUND			2		1		
SOUTHBOUND			2		1		
WESTBOUND			1		1		
EASTBOUND			1		1		

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	294	0
EastBound	367	0
WestBound	404	0
NorthBound	320	0

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

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

Results

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

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

$$V/C = \frac{320 + 0 + 404 + 0}{*1500} = 0.413$$

LOS = A

Intersection 17

Existing plus Project Conditions P.M. Peak Hour

1) Lane Capacity for WB Lefts - 900 vphpl

Number of Lanes - 1

WB Left V/C - $\frac{237}{900}$

= ***0.263***

Lane Capacity for EB Throughs - 1,500 vphpl

Number of Lanes - 1

EB Through V/C - $\frac{627}{1,500}$

= ***0.418***

Lane Capacity for EB Rights - 900 vphpl

Number of Lanes - 1

EB Right V/C - $\frac{339}{900}$

= ***0.377***

Critical V/C - ***0.263*** **+** ***0.418***

= 0.681

<u>or</u>

Lane Capacity for EB Lefts - 1,500 vphpl

Number of Lanes - 1

EB Left V/C - $\frac{65}{1,500}$

= ***0.043***

Lane Capacity for WB Throughs/Rights - 1,500 vphpl

Number of Lanes - 2

WB Through V/C - $\left\{\frac{565 + 62}{3,000}\right\}$

= ***0.209***

Critical V/C - ***0.043*** **+** ***0.209***

= 0.252

2) Lane Capacity for NB & SB Direction - 1,500 vphpl

Number of Lanes - 1 left
1 through/right

Critical V/C - $\left\{\frac{111 + 297 + 57}{1,500}\right\}$

or $\left\{\frac{62 + 122 + 58}{1,500}\right\}$

= **0.310**

Intersection V/C = 0.991 — 0.070 = 0.921 LOS E

PROJ_PM

January 25, 2011 ,Tuesday 01:11:25 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Francisco St W/E: 7th St I/S No: 18

AM/PM: PM Comments: EXISTING PLUS PROJECT

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	51	47	140	293	34	177	65	721	114	23	591	8
AMBIENT												
RELATED												
PROJECT												
TOTAL	51	47	140	293	34	177	65	721	114	23	591	8

	NB							SB							WB							EB						
LANE		1				1		1				1			1		1		1			1		1		1		

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	211	293
EastBound	300	23
WestBound	418	65
NorthBound	140	51

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)

$$V/C = \frac{140 + 293 + 418 + 23}{*1500} = 0.513$$

LOS = A

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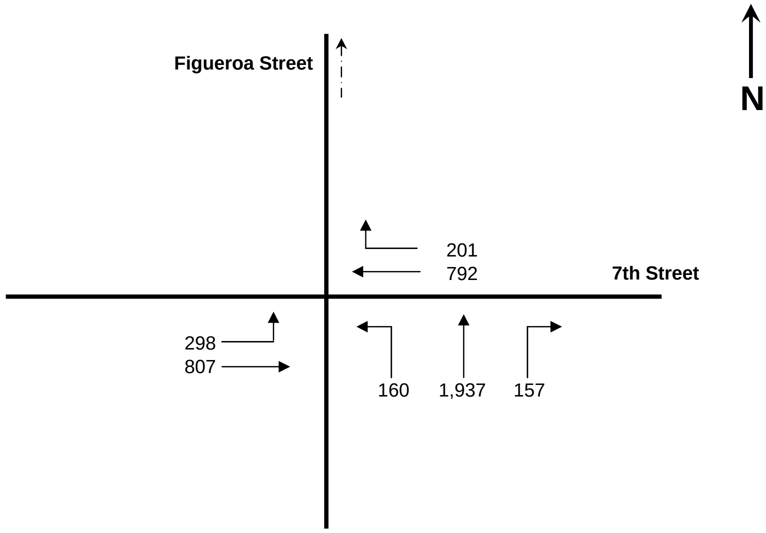
Intersection 19

Existing plus Project Conditions P.M. Peak Hour



1) Lane Capacity for EB Lefts - 900 vphpl

Number of Lanes - 2

EB Left V/C - $\left\{\frac{298 \quad X \quad 0.55}{900}\right\}$

= ***0.182***

Lane Capacity for WB Direction - 1,425 vphpl

Number of Lanes - 2 throughs
1 right-turn only

WB V/C - $\frac{792}{2,850}$ or $\frac{201}{1,425}$

= ***0.278***

Critical V/C - ***0.182*** **+** ***0.278*** **=** **0.460**

<u>or</u>

Lane Capacity for EB Throughs - 1,425 vphpl

Number of Lanes - 2

Critical V/C - $\frac{807}{2,850}$

= **0.283**

2) Lane Capacity for NB Throughs and Through/Left - 900 vphpl
Lane Capacity for NB Through/Right - 450 vphpl

Number of Lanes - 1 left/through
3 throughs
1 through/right

Critical V/C - $\left\{\frac{160 \quad + \quad 1,937 \quad + \quad 157}{4,050}\right\}$

or $\frac{160}{900}$

or $\frac{157}{450}$

= **0.557**

Intersection V/C = 1.017 — 0.070 = 0.947 LOS E

PROJ_PM

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January 25, 2011 ,Tuesday 01:11:25 PM

INTERSECTION DATA SUMMARY SHEET

N/S:	Flower St	W/E:	7th St	I/S No:	20
AM/PM:	PM	Comments:	EXISTING PLUS PROJECT		
COUNT DATE:		STUDY DATE:		GROWTH FACTOR:	

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	0	0	74	1905	196	107	750	0	0	738	210
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	74	1905	196	107	750	0	0	738	210

LANE	↰	↰↑	↑	↰↑↱	↑↱	↱	↰↱
NORTHBOUND							
SOUTHBOUND		1	2		1		
WESTBOUND		1	2				
EASTBOUND			1		1		

SIGNAL	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
	<none>	<none>	Split	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

SouthBound
A: 544
B: 74

EastBound
A: 474
B: 0

WestBound
A: 375
B: 107

NorthBound
A: 0
B: 0

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

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

Results

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

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

$$V/C = \frac{0 + 544 + 107 + 474}{*1500} = 0.680$$

LOS = B

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CalcaDB

January 25, 2011 ,Tuesday 01:11:25 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Olive Ave | W/E: 7th St | I/S No: 21

AM/PM: PM | Comments: EXISTING PLUS PROJECT

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	113	1066	85	0	0	0	0	680	217	0	811	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	113	1066	85	0	0	0	0	680	217	0	811	0

LANE	1	2	3	4	5	6	7
NORTHBOUND		1	2		1		
SOUTHBOUND							
WESTBOUND			2			1	
EASTBOUND			2				

SIGNAL	Phasing	RTOR
NORTHBOUND	Split	Auto
SOUTHBOUND	<none>	<none>
WESTBOUND	Perm	Auto
EASTBOUND	Perm	<none>

Critical Movements Diagram

	A	B
SouthBound	0	0
EastBound	406	0
WestBound	340	0
NorthBound	316	113

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

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

Results

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

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

$$V/C = \frac{316 + 0 + 0 + 406}{*1500} = 0.411$$

LOS = A

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CalcaDB

January 25, 2011 ,Tuesday 01:11:25 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Alameda St | W/E: 7th St | I/S No: 22

AM/PM: PM | Comments: EXISTING PLUS PROJECT

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	81	749	83	106	883	8	99	431	76	107	759	169
AMBIENT												
RELATED												
PROJECT												
TOTAL	81	749	83	106	883	8	99	431	76	107	759	169

LANE	NB							SB							WB							EB						
	1		1		1			1		1		1			1		1		1			1		1		1		

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	Perm	Auto	Prot-Fix	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	446	106
EastBound	464	107
WestBound	254	99
NorthBound	416	81

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

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

Results

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

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

$$V/C = \frac{81 + 446 + 99 + 464}{*1425} = 0.695$$

LOS = B

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PROJ_PM

CalcaDB

January 25, 2011 ,Tuesday 01:11:25 PM

INTERSECTION DATA SUMMARY SHEET

N/S:	Soto St	W/E:	7th St	I/S No:	23
AM/PM:	PM	Comments:	EXISTING PLUS PROJECT		
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	493	875	31	34	686	62	6	32	11	76	49	53
AMBIENT												
RELATED												
PROJECT												
TOTAL	493	875	31	34	686	62	6	32	11	76	49	53

LANE							
NORTHBOUND	1		1		1		
SOUTHBOUND	1		1		1		
WESTBOUND				1			
EASTBOUND		1				1	

SIGNAL	Phasing	RTOR
NORTHBOUND	Prot-Fix	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Split	Auto
EASTBOUND	Split	Auto

Critical Movements Diagram

	A:	B:
SouthBound	374	34
EastBound	125	76
WestBound	49	6
NorthBound	453	493

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) + A(E/B)

$$V/C = \frac{493 + 374 + 49 + 125}{*1375} = 0.687$$

LOS = B

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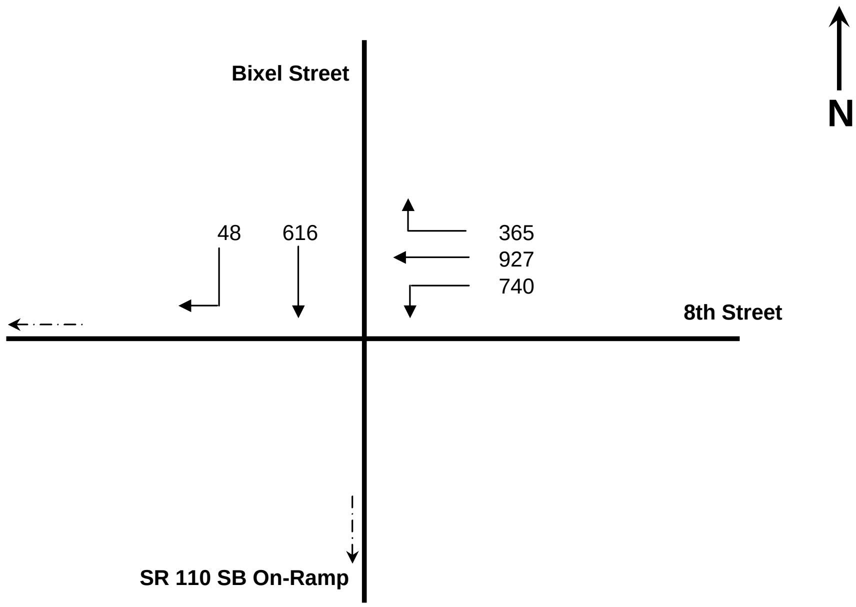
Intersection 24

Existing plus Project Conditions P.M. Peak Hour



1) Lane Capacity for WB Lefts - 750 vphpl

Number of Lanes - 2

WB Left V/C - $\frac{740}{1,500}$

= **0.493**

<u>or</u>

Lane Capacity for WB Throughs and Rights - 1,500 vphpl

Number of Lanes - 2 throughs
Number of Lanes - 1 right-turn only

WB Through/Right V/C - $\frac{927}{3,000}$ or $\frac{365}{1,500}$

= **0.243**

2) Lane Capacity for SB Rights - 1,500 vphpl

Number of Lanes - 1

SB Right V/C - $\frac{48}{1,500}$

= **0.032**

<u>or</u>

Lane Capacity for SB Throughs - 750 vphpl

Number of Lanes - 2

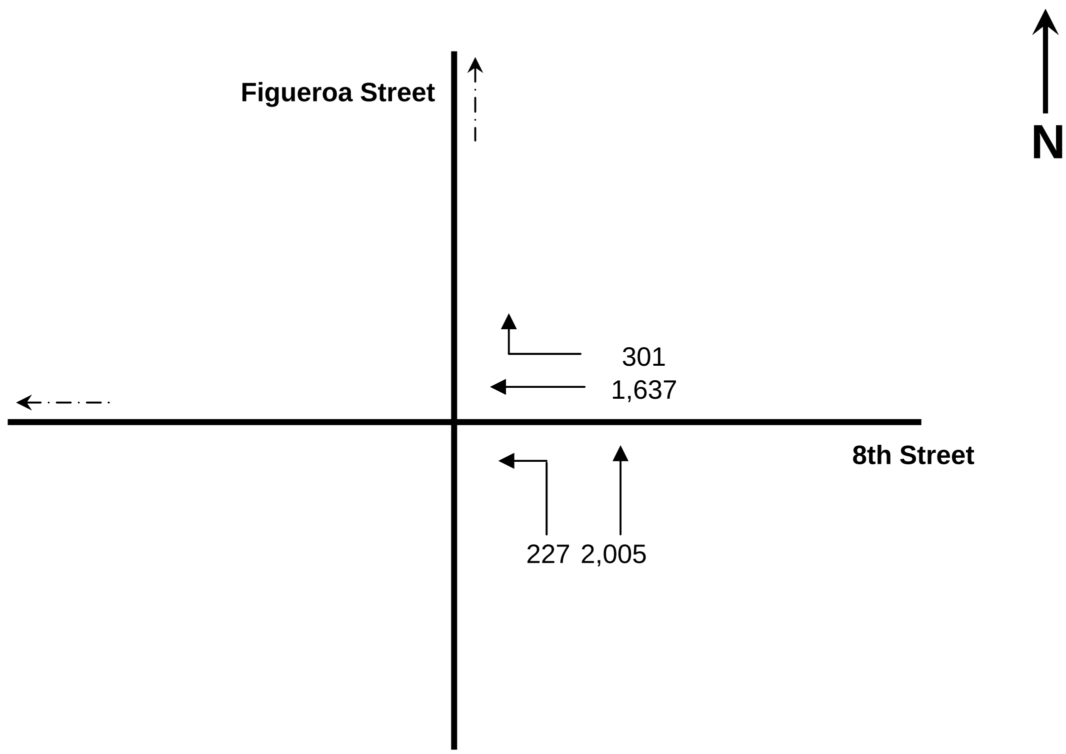
WB Through/Right V/C - $\frac{616}{1,500}$

= **0.411**

Intersection V/C = 0.904 — 0.100 = 0.804 LOS D

Intersection 25

Existing plus Project Conditions P.M. Peak Hour



1) Lane Capacity for WB Direction - 900 vphpl

Number of Lanes - 4 throughs
1 right-turn only

Critical V/C - $\frac{1,637}{3,600}$ or $\frac{301}{900}$

= **0.455**

2) Lane Capacity for NB Direction - 900 vphpl

Number of Lanes - 1 left-turn only
6 throughs

Critical V/C - $\frac{2,005}{5,400}$ or $\frac{227}{900}$

= **0.371**

Intersection V/C = 0.826 — 0.100 = 0.726 LOS C

PROJ_PM

CalcaDB

January 25, 2011 ,Tuesday 01:11:25 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St W/E: 8th St I/S No: 26

AM/PM: PM Comments: EXISTING PLUS PROJECT

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	0	0	0	0	1689	399	89	1590	0	0	0	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	0	1689	399	89	1590	0	0	0	0

LANE

NORTHBOUND							
SOUTHBOUND			4			1	
WESTBOUND		1	3				
EASTBOUND							

SIGNAL

	Phasing	RTOR
NORTHBOUND	<none>	<none>
SOUTHBOUND	Split	Auto
WESTBOUND	Split	<none>
EASTBOUND	<none>	<none>

Critical Movements Diagram

	A:	B:
SouthBound	422	0
EastBound	0	0
WestBound	420	89
NorthBound	0	0

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

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

Results

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

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

$$V/C = \frac{0 + 422 + 420 + 0}{*1500} = 0.491$$

LOS = A

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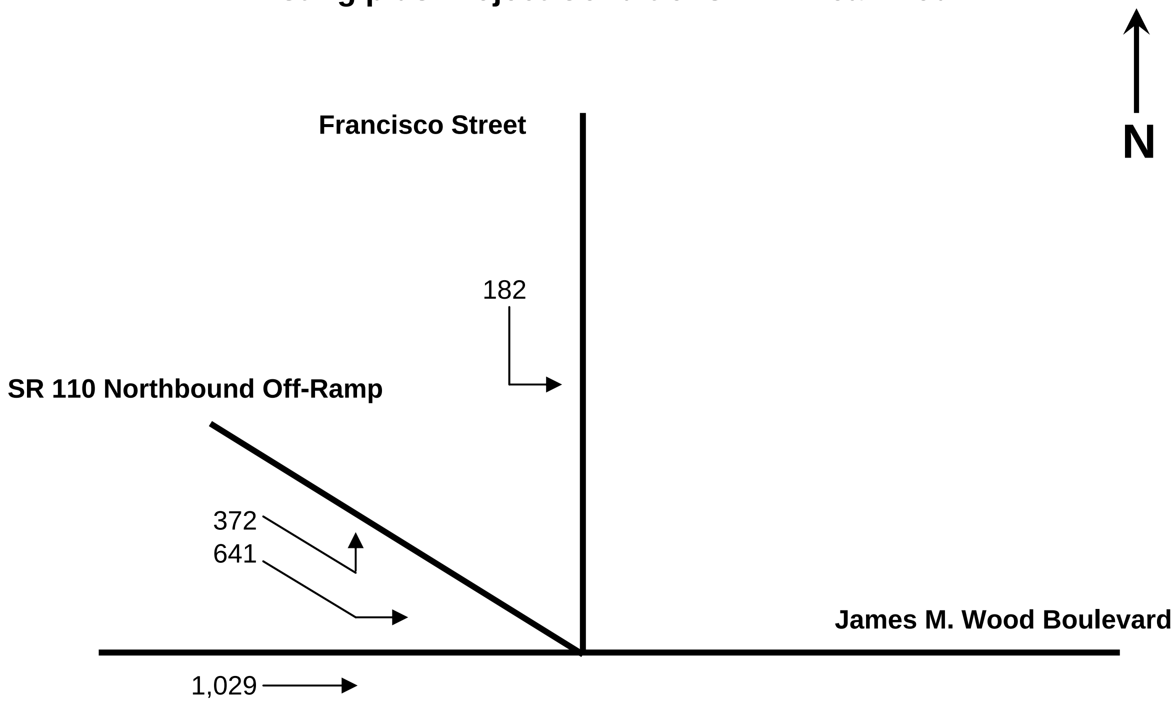
Intersection 27

Existing plus Project Conditions P.M. Peak Hour



1) $\left\{\dfrac{372 \quad + \quad 641}{2}\right\}$

or

$\dfrac{1{,}029}{3}$

= **507**

2) $\dfrac{182}{1}$

= **182**

Critical Volumes = 507 + 182 = 689

V/C = $\dfrac{689}{1{,}500}$ 0.100 = 0.359 LOS A

PROJ_PM

CalcaDB

January 25, 2011 ,Tuesday 01:11:25 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Figueroa St W/E: 9th St/James M Wood Blvd I/S No: 28

AM/PM: PM Comments: EXISTING PLUS PROJECT

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	0	1254	177	0	0	0	0	0	0	421	1328	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	1254	177	0	0	0	0	0	0	421	1328	0

LANE							
NORTHBOUND			3		1		
SOUTHBOUND							
WESTBOUND							
EASTBOUND	1	1	3				

SIGNAL	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
	Split	Auto	<none>	<none>	<none>	<none>	Split	<none>

Critical Movements Diagram

	A	B
SouthBound	0	0
EastBound	350	350
WestBound	0	0
NorthBound	358	0

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

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

Results

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

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

$$V/C = \frac{358 + 0 + 0 + 350}{*1500} = 0.402$$

LOS = A

Developed by Chun Wong, 12/94

PROJ_PM

CalcaDB

January 27, 2011 ,Thursday 11:38:48 AM

INTERSECTION DATA SUMMARY SHEET

N/S: Cherry St | W/E: Pico Blvd | I/S No: 29

AM/PM: PM | Comments: EXISTING PLUS PROJECT

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	667	620	215	96	0	24	0	807	382	139	573	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	667	620	215	96	0	24	0	807	382	139	573	0

LANE							
NORTHBOUND	1	1	1			1	
SOUTHBOUND	2					2	
WESTBOUND			1		1	1	
EASTBOUND	1		3				

SIGNAL	NORTHBOUND	SOUTHBOUND	WESTBOUND	EASTBOUND
Phasing	Split	Split	Perm	Perm
RTOR	Auto	Auto	OLA	<none>

Critical Movements Diagram

	A	B
SouthBound	13	53
EastBound	191	139
WestBound	404	0
NorthBound	429	429

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)

$$V/C = \frac{429 + 53 + 404 + 139}{*1425} = 0.649$$

LOS = B

Developed by Chun Wong, 12/94

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Figueroa St W/E: Pico Blvd I/S No: 30

AM/PM: PM Comments: EXISTING PLUS PROJECT

COUNT DATE: STUDY DATE: GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	130	1299	130	21	299	266	124	744	131	180	544	177
AMBIENT												
RELATED												
PROJECT												
TOTAL	130	1299	130	21	299	266	124	744	131	180	544	177

LANE

	NB	SB	WB	EB
LT	1	1	1	1
LT/TH				
TH	3	2	2	2
LT/TH/RT				
TH/RT	1			
RT		1	1	1
LT/RT				

SIGNAL

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Prot-Fix	Auto	Perm	OLA	Perm	Auto	Prot-Fix	OLA

Critical Movements Diagram

	A	B
SouthBound	150	21
EastBound	272	180
WestBound	372	124
NorthBound	357	130

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

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

Results

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

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

$$V/C = \frac{357 + 21 + 372 + 180}{*1375} = 0.606$$

LOS = B

PROJ_PM

January 25, 2011 ,Tuesday 01:11:25 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Hoover St

W/E: Alvarado St/Alvarado Ter

I/S No: 31

AM/PM: PM

Comments: EXISTING PLUS PROJECT

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	0	1037	623	29	879	0	632	0	0	0	0	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	1037	623	29	879	0	632	0	0	0	0	0

LANE

	NB							SB							WB							EB						
LANE			1		1	1			1	1					1						1							

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Perm	Free	Perm	<none>	Split	Auto	<none>	<none>

Critical Movements Diagram

SouthBound
A: 527
B: 29

EastBound
A: 0
B: 0

WestBound
A: 316
B: 316

NorthBound
A: 553
B: 0

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) + A(E/B)

$$V/C = \frac{553 + 29 + 316 + 0}{*1500} = 0.529$$

LOS = A

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CalcaDB

January 25, 2011 ,Tuesday 01:11:25 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St | W/E: Venice Blvd | I/S No: 32

AM/PM: PM | Comments: EXISTING PLUS PROJECT

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	0	0	0	28	1256	91	61	413	0	0	304	41
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	28	1256	91	61	413	0	0	304	41

LANE

	NB	SB	WB	EB
LT		1		
LT/TH			1	
TH		2	1	1
LT/TH/RT				
TH/RT		1		1
RT				
LT/RT				

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	<none>	<none>	Split	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	449	28
EastBound	173	0
WestBound	268	61
NorthBound	0	0

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

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

Results

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

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

$$V/C = \frac{0 + 449 + 268 + 0}{*1500} = 0.408$$

LOS = A

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CalcaDB

January 25, 2011 ,Tuesday 01:11:25 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave W/E: 18th St I/S No: 33

AM/PM: PM Comments: EXISTING PLUS PROJECT

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	0	0	164	273	920	0	0	0	0	0	1120	183
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	164	273	920	0	0	0	0	0	1120	183

	NORTHBOUND							SOUTHBOUND							WESTBOUND							EASTBOUND						
LANE						2		1		3														2		1	1	

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	Auto	Prot-Fix	<none>	<none>	<none>	Split	Auto

Critical Movements Diagram

SouthBound
A: 307
B: 273

EastBound
A: 373
B: 0

WestBound
A: 0
B: 0

NorthBound
A: 90
B: 0

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

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

Results

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

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

$$V/C = \frac{90 + 273 + 0 + 373}{*1425} = 0.446$$

LOS = A

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CalcaDB

January 25, 2011 ,Tuesday 01:11:25 PM

INTERSECTION DATA SUMMARY SHEET

N/S:	Olive St	W/E:	6th St	I/S No:	34
AM/PM:	PM	Comments:	EXISTING PLUS PROJECT		
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	0	1248	176	0	0	0	0	0	0	573	1052	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	1248	176	0	0	0	0	0	0	573	1052	0

	Northbound							Southbound							Westbound							Eastbound						
LANE			4		1																	1	1	3				

	Northbound Phasing	Northbound RTOR	Southbound Phasing	Southbound RTOR	Westbound Phasing	Westbound RTOR	Eastbound Phasing	Eastbound RTOR
SIGNAL	Split	Auto	<none>	<none>	<none>	<none>	Split	<none>

Critical Movements Diagram

	SouthBound	EastBound	WestBound	NorthBound
A:	0	325	0	285
B:	0	325	0	0

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

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

Results

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

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

$$V/C = \frac{285 + 0 + 0 + 325}{*1500} = 0.337$$

LOS = A

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CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Hope St W/E: 7th St I/S No: 35

AM/PM: PM Comments: EXISTING PLUS PROJECT

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	85	288	71	13	293	27	0	796	83	0	654	88
AMBIENT												
RELATED												
PROJECT												
TOTAL	85	288	71	13	293	27	0	796	83	0	654	88

	NB							SB							WB							EB						
LANE		1			1				1			1					1		1					1		1		

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	173	13
EastBound	371	0
WestBound	440	0
NorthBound	265	85

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)

$$V/C = \frac{265 + 13 + 440 + 0}{*1500} = 0.409$$

LOS = A

PROJ_PM

CalcaDB

January 25, 2011 ,Tuesday 01:11:25 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave W/E: 7th St I/S No: 36

AM/PM: PM Comments: EXISTING PLUS PROJECT

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	0	0	0	170	1339	70	0	792	0	0	629	171
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	170	1339	70	0	792	0	0	629	171

	NORTHBOUND							SOUTHBOUND							WESTBOUND							EASTBOUND						
LANE								1		4			1				2							2			1	

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	<none>	<none>	Split	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

SouthBound
A: 335
B: 170

EastBound
A: 315
B: 0

WestBound
A: 396
B: 0

NorthBound
A: 0
B: 0

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

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

Results

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

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

$$V/C = \frac{0 + 335 + 396 + 0}{*1500} = 0.417$$

LOS = A

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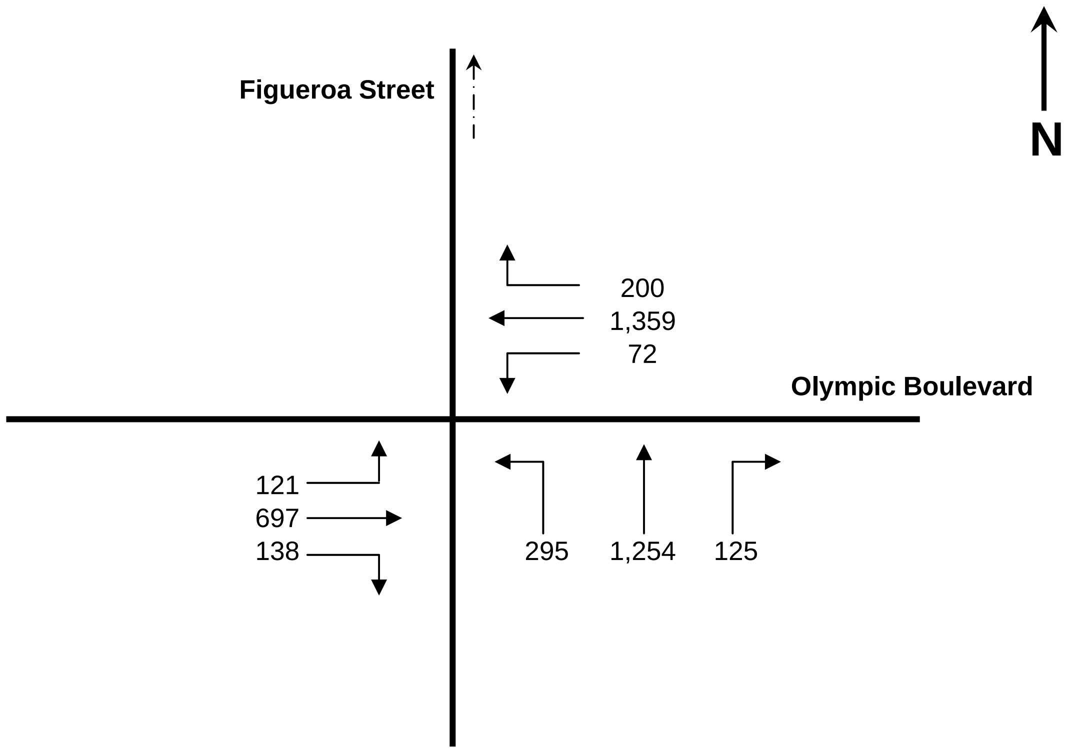
Intersection 37

Existing plus Project Conditions P.M. Peak Hour



1) Lane Capacity for EB Lefts - 900 vphpl

Number of Lanes - 1

EB Left V/C - $\frac{121}{900}$

= ***0.134***

Lane Capacity for WB Throughs - 1,425 vphpl
Lane Capacity for WB Rights - 900 vphpl

Number of Lanes - 3 throughs
1 right-turn only

WB Through/Right V/C - $\frac{1,359}{4,275}$ or $\frac{200}{900}$

= ***0.318***

Critical V/C - ***0.134*** **+** ***0.318*** **=** **0.452**

<u>or</u>

Lane Capacity for WB Lefts - 1,425 vphpl

Number of Lanes - 1

WB Left V/C - $\frac{72}{1,425}$

= ***0.051***

Lane Capacity for EB Throughs/Rights - 1,425 vphpl

Number of Lanes - 3 throughs
1 right-turn only

EB Through/Right V/C - $\frac{697}{4,275}$ or $\frac{138}{1,425}$

= ***0.163***

Critical V/C - ***0.051*** **+** ***0.163*** **=** **0.214**

2) Lane Capacity for NB Throughs - 900 vphpl
Lane Capacity for NB Left- and Right-turns - 1,425 vphpl

Number of Lanes - 1 left-turn only
3 throughs
1 right-turn only

Critical V/C - $\frac{1,254}{2,700}$ or $\frac{295}{1,425}$ or $\frac{125}{1,425}$

= **0.464**

Intersection V/C = 0.916 — 0.100 = 0.816 LOS D

CalcaDB

January 25, 2011 ,Tuesday 01:11:25 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Glendale Blvd | W/E: Temple St | I/S No: 38

AM/PM: PM | Comments: EXISTING PLUS PROJECT

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	60	1657	19	83	716	207	29	565	237	317	665	77
AMBIENT												
RELATED												
PROJECT												
TOTAL	60	1657	19	83	716	207	29	565	237	317	665	77

LANE

	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND	1		1		1		
SOUTHBOUND	1		1		1		
WESTBOUND	1		1		1		
EASTBOUND	1		1		1		

SIGNAL

	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Prot-Fix	Auto
EASTBOUND	Prot-Fix	Auto

Critical Movements Diagram

	A	B
SouthBound	462	83
EastBound	371	317
WestBound	401	29
NorthBound	838	60

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)

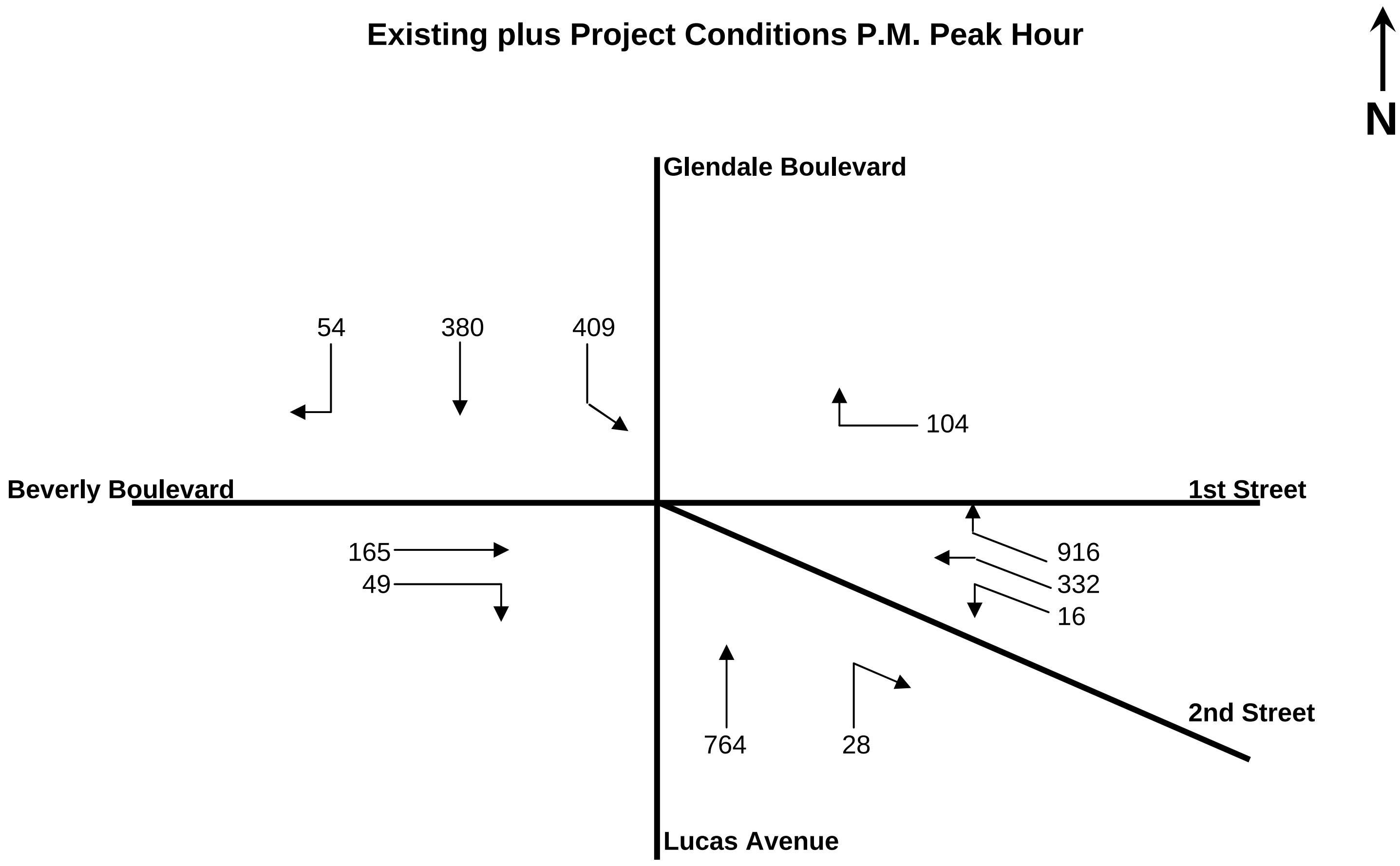
West/East Critical Movements = A(W/B) + B(E/B)

$$V/C = \frac{838 + 83 + 401 + 317}{*1425} = 1.080$$

LOS = F

Intersection 39

Existing plus Project Conditions P.M. Peak Hour



Phase 1) *Glendale Boulevard and Lucas Avenue - North-South Throughs and Rights*

$$\frac{764 \quad + \quad 28}{2}$$

&

$$\frac{54}{1} \quad \& \quad \frac{380}{1}$$

= **396**

Phase 2) *Glendale Boulevard, 1st Street, and 2nd Street - Southbound Lefts, Throughs, and Rights, and*
a.) Westbound Rights on 1st Street
b.) Westbound Rights on 2nd Street

a.) $\frac{104}{1}$

$$\& \quad \left\{ \frac{380}{1} \quad - \quad 396 \right\} \quad \& \quad \left\{ \frac{409}{2} \right\}$$

= **104**

b.) $\left\{ \frac{409}{2} \quad - \quad 104 \right\}$

$$\text{or} \quad \left\{ \frac{380}{1} \quad - \quad 396 \quad - \quad 104 \right\}$$

$$\& \quad \frac{916}{2}$$

= **101**

Phase 3) *2nd Street - Westbound Lefts, Throughs, and Rights*

$$\left\{ \frac{916}{2} \quad - \quad 101 \right\}$$

$$\& \quad \left\{ \frac{332 \quad + \quad 16}{1} \right\}$$

= **357**

Phase 4) *Beverly Boulevard and 2nd Street - Westbound Lefts and Throughs, and Eastbound Throughs and Rights*

$$\frac{165 \quad + \quad 49}{2}$$

$$\text{or} \quad \left\{ \frac{332 \quad + \quad 16}{1} \right\} \quad - \quad 357$$

= **107**

Critical Volumes = 396 + 104 + 101 + 357 + 107

= 1,065

V/C = $\mathbf{\frac{1,065}{1,375}}$ **— 0.070 = 0.705 LOS C**

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Lucas Ave | W/E: 3rd St | I/S No: 40

AM/PM: PM | Comments: EXISTING PLUS PROJECT

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	34	486	81	29	304	82	50	1025	166	88	792	103
AMBIENT												
RELATED												
PROJECT												
TOTAL	34	486	81	29	304	82	50	1025	166	88	792	103

LANE

	NB LT	NB LT/TH	NB TH	NB LT/TH/RT	NB TH/RT	NB RT	NB LT/RT	SB LT	SB LT/TH	SB TH	SB LT/TH/RT	SB TH/RT	SB RT	SB LT/RT	WB LT	WB LT/TH	WB TH	WB LT/TH/RT	WB TH/RT	WB RT	WB LT/RT	EB LT	EB LT/TH	EB TH	EB LT/TH/RT	EB TH/RT	EB RT	EB LT/RT
LANE	1		2			1		1		1		1			1		2			1		1		2			1	

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	193	29
EastBound	396	88
WestBound	513	50
NorthBound	243	34

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

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

Results

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

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

$$V/C = \frac{243 + 29 + 513 + 88}{*1500} = 0.512$$

LOS = A

PROJ_PM

CalcaDB

January 25, 2011 ,Tuesday 01:11:25 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Lucas Ave W/E: 6th St I/S No: 41

AM/PM: PM Comments: EXISTING PLUS PROJECT

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	322	63	27	215	101	65	881	63	149	834	26
AMBIENT												
RELATED												
PROJECT												
TOTAL	60	322	63	27	215	101	65	881	63	149	834	26

LANE

NORTHBOUND				1			
SOUTHBOUND				1			
WESTBOUND	1		2			1	
EASTBOUND	1		1		1		

SIGNAL

	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Perm	Auto
EASTBOUND	Perm	Auto

Critical Movements Diagram

SouthBound
A: 343
B: 27

EastBound
A: 430
B: 149

WestBound
A: 441
B: 65

NorthBound
A: 445
B: 60

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

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

Results

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

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

$$V/C = \frac{445 + 27 + 441 + 149}{*1500} = 0.638$$

LOS = B

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January 25, 2011 ,Tuesday 01:11:25 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Lucas Ave W/E: Wilshire Blvd I/S No: 42

AM/PM: PM Comments: EXISTING PLUS PROJECT

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	48	240	32	19	273	69	85	919	80	65	788	49
AMBIENT												
RELATED												
PROJECT												
TOTAL	48	240	32	19	273	69	85	919	80	65	788	49

LANE	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND				1			
SOUTHBOUND				1			
WESTBOUND		1	1			1	
EASTBOUND		1	1			1	

SIGNAL	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	361	19
EastBound	524	65
WestBound	630	85
NorthBound	320	48

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)

$$V/C = \frac{48 + 361 + 630 + 65}{*1500} = 0.666$$

LOS = B

EXISTING PLUS PROJECT WITH TDM PROGRAM CONDITIONS

TDM_AM

CalcaDB

January 25, 2011 ,Tuesday 01:11:49 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave | W/E: US 101 NB Ramps | I/S No: 1

AM/PM: AM | Comments: EXISTING PLUS PROJECT WITH TDM

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	138	81	0	0	1069	447	0	0	0	18	0	597
AMBIENT												
RELATED												
PROJECT												
TOTAL	138	81	0	0	1069	447	0	0	0	18	0	597

LANE

	NB							SB							WB							EB						
LANE	1		2							2			1														1	1

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Prot-Fix	<none>	Perm	OLA	<none>	<none>	Split	Auto

Critical Movements Diagram

SouthBound
A: 535
B: 0

EastBound
A: 239
B: 18

WestBound
A: 0
B: 0

NorthBound
A: 41
B: 138

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

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

Results

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

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

$$V/C = \frac{138 + 535 + 0 + 239}{*1425} = 0.570$$

LOS = A

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CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Hope St/US 101 SB Ramps
W/E: Temple St
I/S No: 2

AM/PM: AM
Comments: EXISTING PLUS PROJECT WITH TDM

COUNT DATE:
STUDY DATE:
GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	64	149	97	136	336	41	372	470	160	180	422	246
AMBIENT												
RELATED												
PROJECT												
TOTAL	64	149	97	136	336	41	372	470	160	180	422	246

LANE

	NB							SB							WB							EB						
LANE	1		1		1			1		1		1			1		2			1		1		1		1		

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Perm	Auto	Perm	Auto	Prot-Fix	Auto	Prot-Fix	Auto

Critical Movements Diagram

SouthBound
A: 189
B: 136

EastBound
A: 334
B: 180

WestBound
A: 235
B: 372

NorthBound
A: 123
B: 64

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)

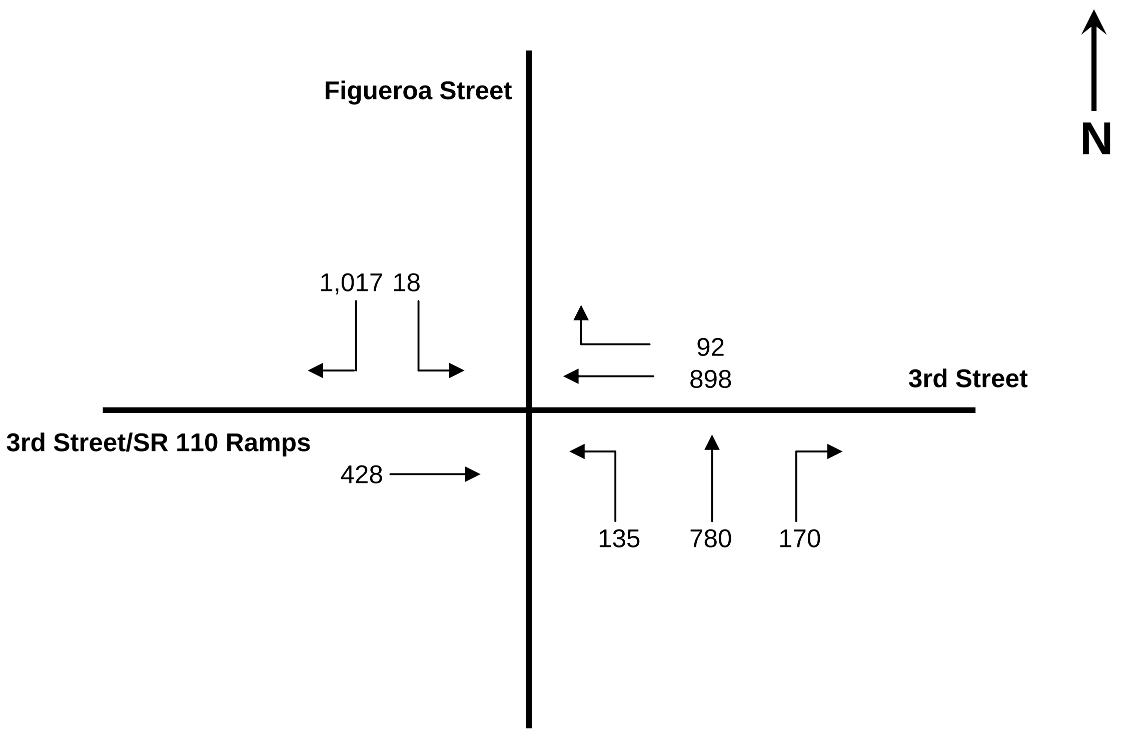
West/East Critical Movements = B(W/B) + A(E/B)

$$V/C = \frac{123 + 136 + 372 + 334}{*1425} = 0.607$$

LOS = B

Intersection 3

Existing plus Project with TDM Conditions A.M. Peak Hour



1) Lane Capacity for WB Throughs - 900 vphpl

Number of Lanes - 5

WB Through V/C - $\frac{898}{4,500}$

= **0.2**

<u>or</u>

Lane Capacity for WB Rights - 1,425 vphpl

Number of Lanes - 1

WB Right V/C - $\frac{92}{1,425}$

= **0.065**

<u>or</u>

Lane Capacity for EB Throughs - 1,425 vphpl

Number of Lanes - 2

EB Through V/C - $\frac{428}{2,850}$

= **0.150**

2) Lane Capacity for NB Lefts - 900 vphpl

Number of Lanes - 3

NB Left V/C - $\left\{\frac{135 \quad x \quad 0.37}{900}\right\}$

= ***0.056***

Lane Capacity for SB Rights - 1,425 vphpl

Number of Lanes - 2

SB Right V/C - $\left\{\frac{1,017 \quad x \quad 0.55}{1,425}\right\}$

= ***0.393***

Critical V/C - ***0.056*** **+** ***0.393*** **=** **0.449**

<u>or</u>

Lane Capacity for NB Throughs & Rights - 1,425 vphpl

Number of Lanes - 2 throughs
1 through/right

NB Through/Right V/C - $\left\{\frac{780 \quad + \quad 170}{4,275}\right\}$ or $\frac{170}{1,425}$

= **0.222**

Intersection V/C = 0.649 — 0.100 = 0.549 LOS A

TDM_AM

January 25, 2011 ,Tuesday 01:11:49 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S:	Flower St	W/E:	3rd St	I/S No:	4
AM/PM:	AM	Comments:	EXISTING PLUS PROJECT WITH TDM		
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	1	24	0	0	971	127	486	848	100	0	0	437
AMBIENT												
RELATED												
PROJECT												
TOTAL	1	24	0	0	971	127	486	848	100	0	0	437

	NB							SB							WB							EB						
LANE	1		2							2			1		1		3		1								1	

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	<none>	Perm	Auto	Split	Auto	<none>	Free

Critical Movements Diagram

	A	B
SouthBound	486	0
EastBound	0	0
WestBound	237	486
NorthBound	12	1

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)

$$V/C = \frac{1 + 486 + 486 + 0}{*1500} = 0.579$$

LOS = A

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TDM_AM

CalcaDB

January 25, 2011 ,Tuesday 01:11:49 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave W/E: 3rd St I/S No: 5

AM/PM: AM Comments: EXISTING PLUS PROJECT WITH TDM

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	16	56	0	0	1030	151	0	0	0	21	0	53
AMBIENT												
RELATED												
PROJECT												
TOTAL	16	56	0	0	1030	151	0	0	0	21	0	53

	NB							SB							WB							EB						
LANE	1		2							1		1										1					2	

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Perm	Auto	Perm	Auto	<none>	<none>	Split	Auto

Critical Movements Diagram

SouthBound
A: 591
B: 0

EastBound
A: 29
B: 21

WestBound
A: 0
B: 0

NorthBound
A: 28
B: 16

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

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

Results

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

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

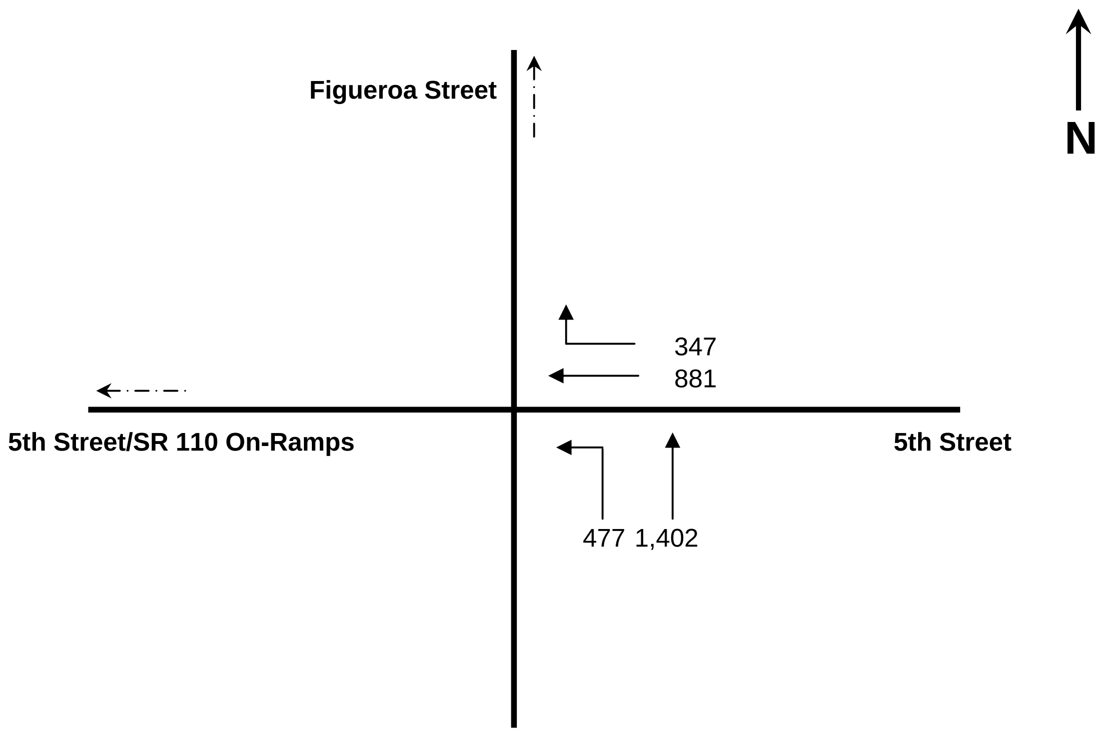
$$V/C = \frac{16 + 591 + 0 + 29}{*1500} = 0.354$$

LOS = A

Developed by Chun Wong, 12/94

Intersection 6

Existing plus Project with TDM Conditions A.M. Peak Hour



1) Lane Capacity for WB Direction - 900 vphpl

Number of Lanes - 7

Critical V/C - $\left\{ \frac{881 + 347}{6,300} \right\}$

= **0.195**

2) Lane Capacity for NB Throughs - 900 vphpl

Number of Lanes - 3

Critical V/C - $\frac{1,402}{2,700}$

= **0.519**

<u>or</u>

Lane Capacity for NB Lefts - 900 vphpl

Number of Lanes - 3

Critical V/C - $\frac{477}{2,700}$

= **0.177**

Intersection V/C = 0.714 — 0.070 = 0.644 LOS B

CalcaDB

January 25, 2011 ,Tuesday 01:11:49 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St | W/E: 5th St | I/S No: 7

AM/PM: AM | Comments: EXISTING PLUS PROJECT WITH TDM

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	0	0	0	1207	280	242	1063	0	0	0	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	0	1207	280	242	1063	0	0	0	0

LANE

	NB	SB	WB	EB
LT			1	
LT/TH				
TH		4	5	
LT/TH/RT				
TH/RT		1		
RT		1		
LT/RT				

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	<none>	<none>	Split	Auto	Split	<none>	<none>	<none>

Critical Movements Diagram

	A	B
SouthBound	248	0
EastBound	0	0
WestBound	213	242
NorthBound	0	0

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) + A(S/B)

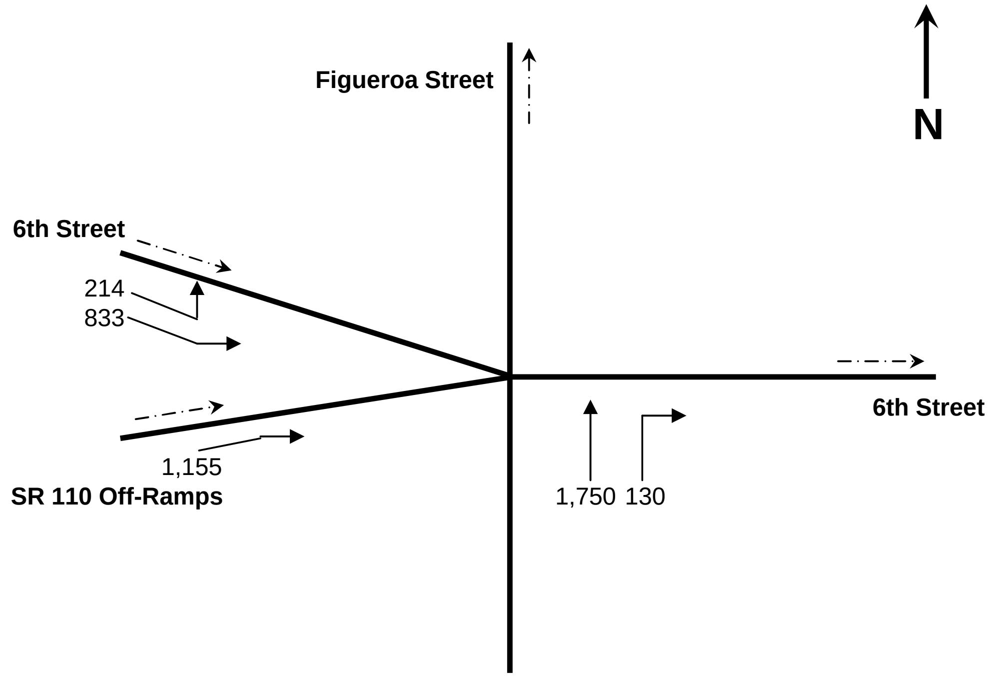
West/East Critical Movements = B(W/B) + A(E/B)

$$V/C = \frac{0 + 248 + 242 + 0}{*1500} = 0.257$$

LOS = A

Intersection 8

Existing plus Project with TDM Conditions A.M. Peak Hour



1) Lane Capacity for EB Direction - 1,500 vphpl

Number of Lanes -
- 1 left-turn lane from 6th Street
- 1 shared left/through lane from 6th Street
- 1 through lane from 6th Street
- 3 through lanes from SR 110 Off-Ramps

Critical V/C - $\left\{\frac{833 + 214}{4,500}\right\}$ or $\frac{1,155}{4,500}$

$= \mathbf{0.257}$

2) Lane Capacity for NB Throughs - 900 vphpl

Number of Lanes - 5

Critical V/C - $\frac{1,750}{4,500}$

$= \mathbf{0.389}$

<u>or</u>

Lane Capacity for NB Rights - 1,500 vphpl

Number of Lanes - 1

Critical V/C - $\frac{130}{1,500}$

$= \mathbf{0.087}$

Intersection V/C = 0.646 − 0.070 = 0.576 LOS A

CalcaDB

January 25, 2011 ,Tuesday 01:11:49 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St W/E: 6th St I/S No: 9

AM/PM: AM Comments: EXISTING PLUS PROJECT WITH TDM

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	0	0	0	238	889	0	0	0	0	0	1598	521
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	238	889	0	0	0	0	0	1598	521

	NB							SB							WB							EB						
LANE								2		4														3		1	1	

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	<none>	<none>	Split	<none>	<none>	<none>	Split	Auto

Critical Movements Diagram

	SouthBound	EastBound	WestBound	NorthBound
A:	222	424	0	0
B:	131	0	0	0

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

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

Results

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

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

$$V/C = \frac{0 + 222 + 0 + 424}{*1500} = 0.361$$

LOS = A

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January 25, 2011 ,Tuesday 01:11:49 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Alvarado St

W/E: Wilshire Blvd

I/S No: 10

AM/PM: AM

Comments: EXISTING PLUS PROJECT WITH TDM

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	0	804	139	0	890	164	54	821	54	71	1093	36
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	804	139	0	890	164	54	821	54	71	1093	36

LANE

	NORTHBOUND							SOUTHBOUND							WESTBOUND							EASTBOUND						
LANE			2		1					2		1			1		1		1			1		1		1		

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

SouthBound
A: 351
B: 0

EastBound
A: 565
B: 71

WestBound
A: 438
B: 54

NorthBound
A: 314
B: 0

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

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

Results

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

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

$$V/C = \frac{0 + 351 + 54 + 565}{*1500} = 0.577$$

LOS = A

TDM_AM

CalcaDB

January 25, 2011 ,Tuesday 01:11:49 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Beaudry Ave | W/E: Wilshire Blvd | I/S No: 11

AM/PM: AM | Comments: EXISTING PLUS PROJECT WITH TDM

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	9	0	23	684	29	662	5	460	0	0	897	6
AMBIENT												
RELATED												
PROJECT												
TOTAL	9	0	23	684	29	662	5	460	0	0	897	6

LANE

	1	2	3	4	5	6	7
NORTHBOUND							1
SOUTHBOUND	1			1		1	
WESTBOUND		1	1				
EASTBOUND			2			1	

SIGNAL

	Phasing	RTOR
NORTHBOUND	Split	Auto
SOUTHBOUND	Split	Auto
WESTBOUND	Perm	<none>
EASTBOUND	Perm	Auto

Critical Movements Diagram

SouthBound
A: 458
B: 458

EastBound
A: 449
B: 0

WestBound
A: 240
B: 5

NorthBound
A: 32
B: 9

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

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

Results

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

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

$$V/C = \frac{32 + 458 + 5 + 449}{*1425} = 0.592$$

LOS = A

Developed by Chun Wong, 12/94

TDM_AM

January 25, 2011 ,Tuesday 01:11:49 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S:	Francisco St	W/E:	Wilshire Blvd	I/S No:	12
AM/PM:	AM	Comments:	EXISTING PLUS PROJECT WITH TDM		
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	30	13	100	8	1	9	138	400	53	69	1130	463
AMBIENT												
RELATED												
PROJECT												
TOTAL	30	13	100	8	1	9	138	400	53	69	1130	463

LANE	1	2	3	4	5	6	7
NORTHBOUND		1				1	
SOUTHBOUND				1			
WESTBOUND	1		1		1		
EASTBOUND	1		1		1		

SIGNAL	NORTHBOUND	SOUTHBOUND	WESTBOUND	EASTBOUND
Phasing	Perm	Perm	Perm	Perm
RTOR	Auto	Auto	Auto	Auto

Critical Movements Diagram

	SouthBound	EastBound	WestBound	NorthBound
A:	18	797	227	100
B:	8	69	138	30

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

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

Results

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

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

$$V/C = \frac{100 + 8 + 138 + 797}{*1500} = 0.625$$

LOS = B

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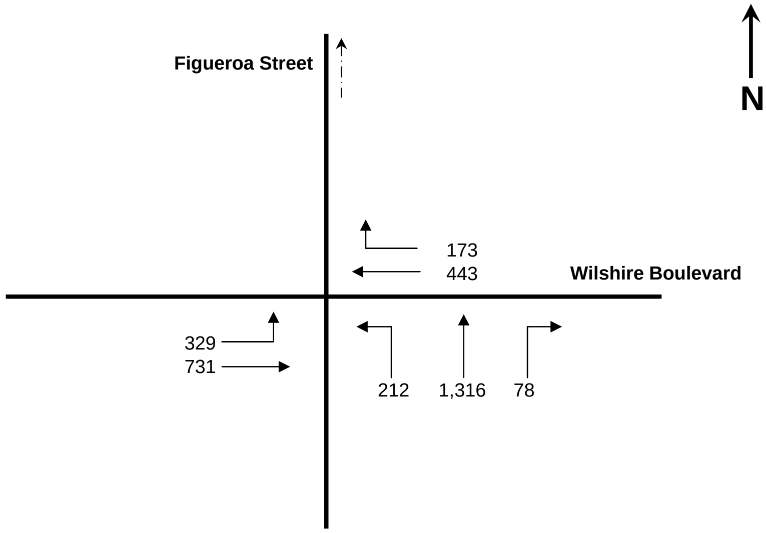
Intersection 13

Existing plus Project with TDM Conditions A.M. Peak Hour



1) Lane Capacity for EB Lefts - 900 vphpl

Number of Lanes - 2

EB Left V/C - $\left\{\frac{329 \quad X \quad 0.55}{900}\right\}$

= ***0.201***

Lane Capacity for WB Direction - 1,425 vphpl

Number of Lanes -
1 through
1 through/right
1 right-turn only

WB V/C - $\left\{\frac{443 \quad + \quad 173}{4,275}\right\}$ or $\frac{443}{2,850}$ or $\frac{173}{2,850}$

= ***0.155***

Critical V/C - ***0.201*** **+** ***0.155*** **=** **0.356**

<u>or</u>

Lane Capacity for EB Throughs - 1,425 vphpl

Number of Lanes - 2

Critical V/C - $\frac{731}{2,850}$

= **0.256**

2) Lane Capacity for NB Direction - 900 vphpl

Number of Lanes -
1 left/through
3 throughs
1 right-turn only

Critical V/C - $\left\{\frac{212 \quad + \quad 1,316}{3,600}\right\}$

or $\frac{212}{900}$

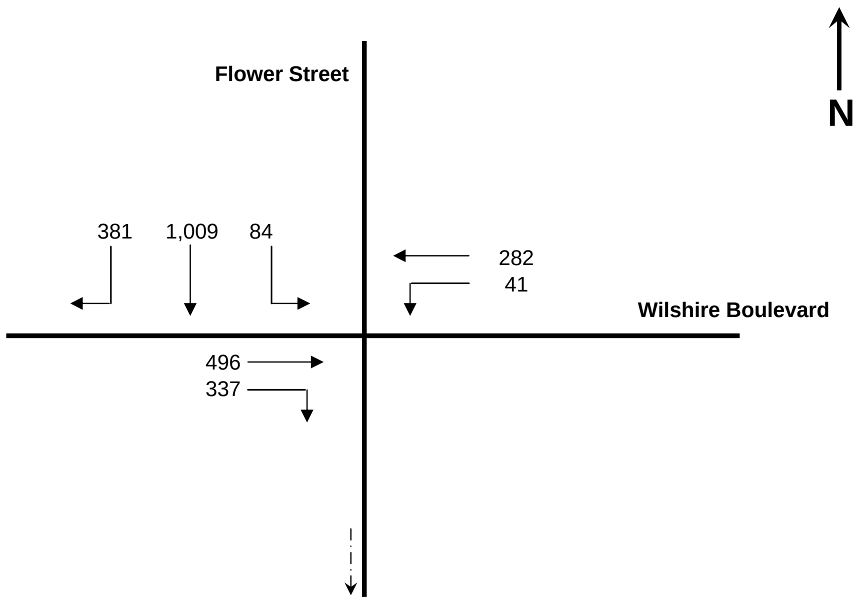
or $\frac{78}{900}$

= **0.424**

Intersection V/C = 0.780 — 0.070 = 0.710 LOS C

Intersection 14

Existing plus Project with TDM Conditions A.M. Peak Hour



1) Lane Capacity for WB Direction - 900 vphpl

Number of Lanes - 2

WB Direction V/C - $\left\{ \frac{282 + 41}{1,800} \right\}$ or $\frac{41}{900}$

= **0.179**

Lane Capacity for EB Direction - 1,500 vphpl

Number of Lanes - 2

EB Direction V/C - $\left\{ \frac{496 + 337}{3,000} \right\}$ or $\frac{337}{1,500}$

= **0.278**

2) Lane Capacity for SB Throughs and Lefts - 1,500 vphpl

Number of Lanes - 3 throughs
1 left-turn only

SB Through V/C - $\frac{1,009}{4,500}$

= **0.224**

SB Left V/C - $\frac{84}{1,500}$

= **0.056**

Lane Capacity for SB Rights - 900 vphpl

Number of Lanes - 1

SB Right V/C - $\frac{381}{900}$

= **0.423**

Intersection V/C = 0.701 − 0.070 = 0.631 LOS B

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave   W/E: Wilshire Blvd   I/S No: 15

AM/PM: AM   Comments: EXISTING PLUS PROJECT WITH TDM

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	0	0	0	59	911	239	9	10	0	0	41	291
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	59	911	239	9	10	0	0	41	291

LANE	NB							SB							WB							EB						
									1	2		1				1										1	1	

SIGNAL	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
	<none>	<none>	Split	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	302	59
EastBound	166	0
WestBound	19	9
NorthBound	0	0

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) + A(S/B)

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

$$V/C = \frac{0 + 302 + 9 + 166}{*1500} = 0.248$$

LOS = A

TDM_AM

January 25, 2011 ,Tuesday 01:11:49 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Alvarado St | W/E: 7th St | I/S No: 16

AM/PM: AM | Comments: EXISTING PLUS PROJECT WITH TDM

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	0	867	61	0	846	74	0	378	64	0	601	30
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	867	61	0	846	74	0	378	64	0	601	30

LANE

	NB							SB							WB							EB						
LANE			2		1					2		1					1		1					1		1		

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

SouthBound
A: 307
B: 0

EastBound
A: 316
B: 0

WestBound
A: 221
B: 0

NorthBound
A: 309
B: 0

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

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

Results

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

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

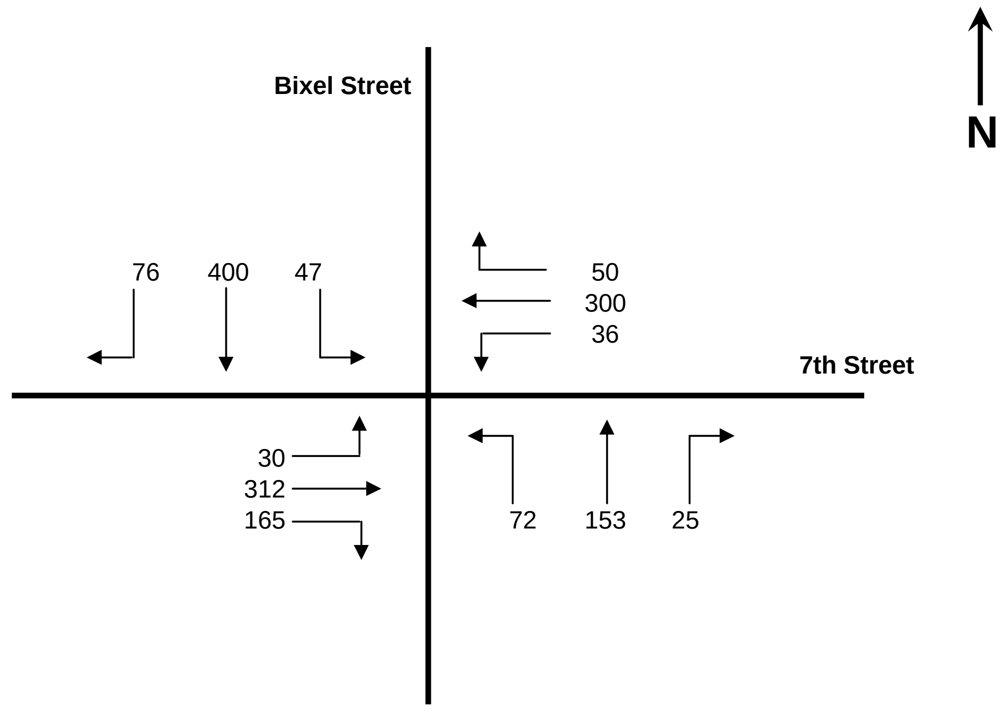
$$V/C = \frac{309 + 0 + 0 + 316}{*1500} = 0.347$$

LOS = A

Developed by Chun Wong, 12/94

Intersection 17

Existing plus Project with TDM Conditions A.M. Peak Hour



1) Lane Capacity for WB Lefts - 900 vphpl

Number of Lanes - 1

WB Left V/C - $\frac{36}{900}$

= ***0.040***

Lane Capacity for EB Throughs - 1,500 vphpl

Number of Lanes - 1

EB Through V/C - $\frac{312}{1{,}500}$

= ***0.208***

Lane Capacity for EB Rights - 900 vphpl

Number of Lanes - 1

EB Right V/C - $\frac{165}{900}$

= ***0.183***

Critical V/C - ***0.040*** **+** ***0.208***

= 0.248

<u>or</u>

Lane Capacity for EB Lefts - 1,500 vphpl

Number of Lanes - 1

EB Left V/C - $\frac{30}{1{,}500}$

= ***0.02***

Lane Capacity for WB Throughs/Rights - 1,500 vphpl

Number of Lanes - 2

WB Through V/C - $\left\{\frac{300 + 50}{3{,}000}\right\}$

= ***0.117***

Critical V/C - ***0.02*** **+** ***0.117***

= 0.137

2) Lane Capacity for NB & SB Direction - 1,500 vphpl

Number of Lanes - 1 left
1 through/right

Critical V/C - $\left\{\frac{72 + 400 + 76}{1{,}500}\right\}$

or $\left\{\frac{47 + 153 + 25}{1{,}500}\right\}$

= **0.365**

Intersection V/C = 0.613 − 0.070 = 0.543 LOS A

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INTERSECTION DATA SUMMARY SHEET

N/S:	Francisco St	W/E:	7th St	I/S No:	18
AM/PM:	AM	Comments:	EXISTING PLUS PROJECT WITH TDM		
COUNT DATE:		STUDY DATE:		GROWTH FACTOR:	

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	22	10	42	39	198	63	88	501	360	54	460	13
AMBIENT												
RELATED												
PROJECT												
TOTAL	22	10	42	39	198	63	88	501	360	54	460	13

LANE	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND		1				1	
SOUTHBOUND	1				1		
WESTBOUND	1		1		1		
EASTBOUND	1		1		1		

SIGNAL	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Perm	Auto
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A:	B:
SouthBound	261	39
EastBound	237	54
WestBound	431	88
NorthBound	42	22

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)

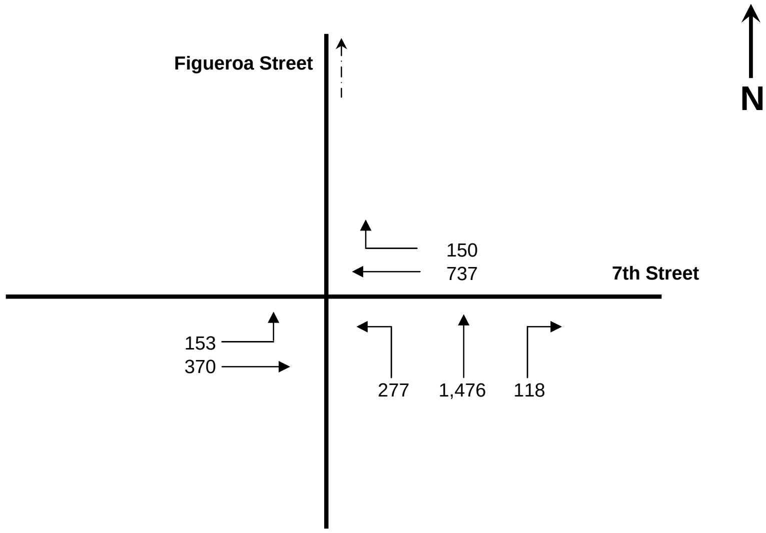
West/East Critical Movements = A(W/B) + B(E/B)

$$V/C = \frac{22 + 261 + 431 + 54}{*1500} = 0.442$$

LOS = A

Intersection 19

Existing plus Project with TDM Conditions A.M. Peak Hour



1) Lane Capacity for EB Lefts - 900 vphpl

Number of Lanes - 2

EB Left V/C - $\left\{\frac{153 \quad X \quad 0.55}{900}\right\}$

= ***0.094***

Lane Capacity for WB Direction - 1,425 vphpl

Number of Lanes - 2 throughs
1 right-turn only

WB V/C - $\frac{737}{2,850}$ or $\frac{150}{1,425}$

= ***0.259***

Critical V/C - ***0.094*** **+** ***0.259*** **=** **0.353**

<u>or</u>

Lane Capacity for EB Throughs - 1,425 vphpl

Number of Lanes - 2

Critical V/C - $\frac{370}{2,850}$

= **0.130**

2) Lane Capacity for NB Throughs and Through/Left - 900 vphpl
Lane Capacity for NB Right-turns - 450 vphpl

Number of Lanes - 1 left/through
3 throughs
1 right-turn only

Critical V/C - $\left\{\frac{277 \quad + \quad 1,476}{3,600}\right\}$

or $\frac{277}{900}$

or $\frac{118}{450}$

= **0.487**

Intersection V/C = 0.840 — 0.070 = 0.770 LOS C

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INTERSECTION DATA SUMMARY SHEET

N/S: Flower St W/E: 7th St I/S No: 20

AM/PM: AM Comments: EXISTING PLUS PROJECT WITH TDM

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	0	0	0	67	850	168	84	668	0	0	329	145
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	67	850	168	84	668	0	0	329	145

LANE

	NORTHBOUND							SOUTHBOUND							WESTBOUND							EASTBOUND						
LANE									1	2		1				1	2							1		1		

SIGNAL	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	<none>	<none>	Split	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	271	67
EastBound	237	0
WestBound	279	84
NorthBound	0	0

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) + A(S/B)

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

$$V/C = \frac{0 + 271 + 84 + 237}{*1500} = 0.325$$

LOS = A

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INTERSECTION DATA SUMMARY SHEET

N/S: Olive Ave   W/E: 7th St   I/S No: 21

AM/PM: AM   Comments: EXISTING PLUS PROJECT WITH TDM

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	147	893	61	0	0	0	0	585	220	0	430	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	147	893	61	0	0	0	0	585	220	0	430	0

LANE

	NB	SB	WB	EB
LT				
LT/TH	1			
TH	2		2	2
LT/TH/RT				
TH/RT	1			
RT			1	
LT/RT				

SIGNAL

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Split	Auto	<none>	<none>	Perm	Auto	Perm	<none>

Critical Movements Diagram

SouthBound A: 0 B: 0

EastBound A: 215 B: 0

WestBound A: 293 B: 0

NorthBound A: 275 B: 147

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) + A(S/B)

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

$$V/C = \frac{275 + 0 + 293 + 0}{*1500} = 0.309$$

LOS = A

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INTERSECTION DATA SUMMARY SHEET

N/S: Alameda St W/E: 7th St I/S No: 22

AM/PM: AM Comments: EXISTING PLUS PROJECT WITH TDM

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	133	622	56	118	860	97	130	760	55	79	372	100
AMBIENT												
RELATED												
PROJECT												
TOTAL	133	622	56	118	860	97	130	760	55	79	372	100

	NORTHBOUND							SOUTHBOUND							WESTBOUND							EASTBOUND						
LANE	1		1		1			1		1		1			1		1		1			1		1		1		

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	Auto	Prot-Fix	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	479	118
EastBound	236	79
WestBound	408	130
NorthBound	339	133

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

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

Results

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

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

$$V/C = \frac{133 + 479 + 408 + 79}{*1425} = 0.701$$

LOS = C

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INTERSECTION DATA SUMMARY SHEET

N/S:	Soto St	W/E:	7th St	I/S No:	23
AM/PM:	AM	Comments:	EXISTING PLUS PROJECT WITH TDM		
COUNT DATE:		STUDY DATE:		GROWTH FACTOR:	

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	449	712	29	54	599	80	26	104	38	42	51	20
AMBIENT												
RELATED												
PROJECT												
TOTAL	449	712	29	54	599	80	26	104	38	42	51	20

LANE

	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND	1		1		1		
SOUTHBOUND	1		1		1		
WESTBOUND				1			
EASTBOUND		1				1	

SIGNAL

	Phasing	RTOR
NORTHBOUND	Prot-Fix	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Split	Auto
EASTBOUND	Split	Auto

Critical Movements Diagram

	A	B
SouthBound	340	54
EastBound	93	42
WestBound	168	26
NorthBound	371	449

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) + A(E/B)

$$V/C = \frac{449 + 340 + 168 + 93}{*1375} = 0.694$$

LOS = B

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Intersection 24

Existing plus Project with TDM Conditions A.M. Peak Hour

1) Lane Capacity for WB Lefts - 750 vphpl

Number of Lanes - 2

WB Left V/C - $\frac{163}{1,500}$

= **0.109**

<u>or</u>

Lane Capacity for WB Throughs and Rights - 1,500 vphpl

Number of Lanes - 2 throughs
Number of Lanes - 1 right-turn only

WB Through/Right V/C - $\frac{589}{3,000}$ or $\frac{359}{1,500}$

= **0.239**

2) Lane Capacity for SB Rights - 1,500 vphpl

Number of Lanes - 1

SB Right V/C - $\frac{52}{1,500}$

= **0.035**

<u>or</u>

Lane Capacity for SB Throughs - 750 vphpl

Number of Lanes - 2

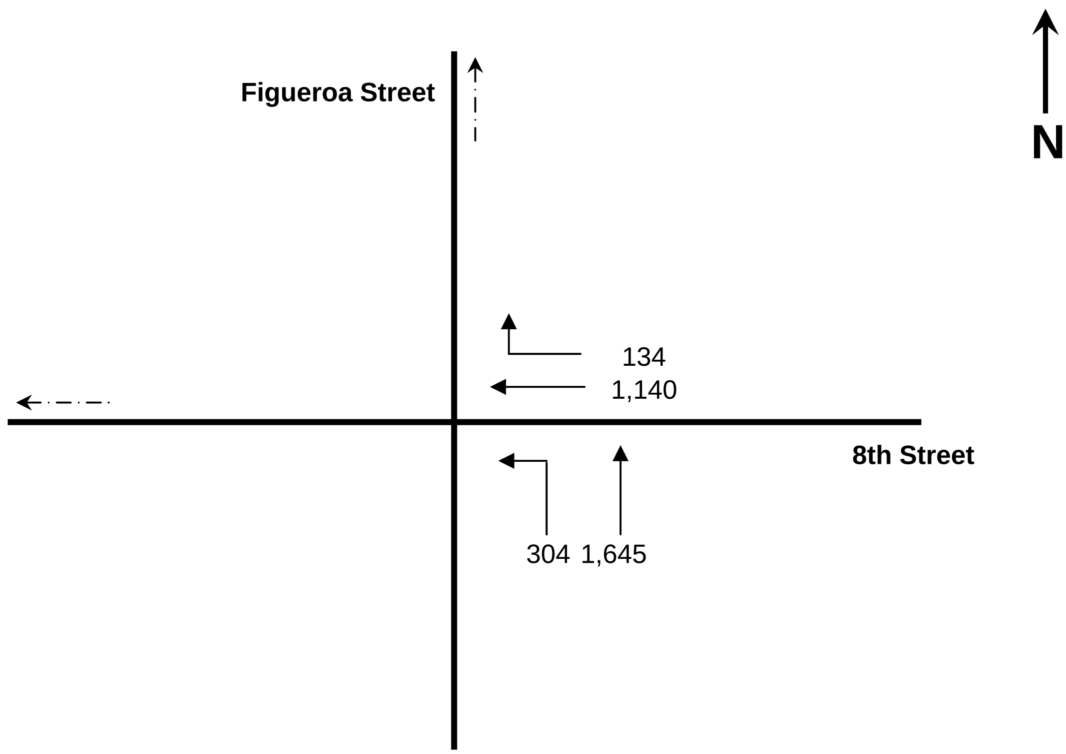
WB Through/Right V/C - $\frac{782}{1,500}$

= **0.521**

Intersection V/C = 0.760 — 0.100 = 0.660 LOS B

Intersection 25

Existing plus Project with TDM Conditions A.M. Peak Hour



1) Lane Capacity for WB Direction - 900 vphpl

Number of Lanes - 4 throughs
1 right-turn only

Critical V/C - $\frac{1{,}140}{3{,}600}$ or $\frac{134}{900}$

= **0.317**

2) Lane Capacity for NB Direction - 900 vphpl

Number of Lanes - 1 left-turn only
5 throughs

Critical V/C - $\frac{1{,}645}{4{,}500}$ or $\frac{304}{900}$

= **0.366**

Intersection V/C = 0.683 — 0.100 = 0.583 LOS A

TDM_AM

CalcaDB

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INTERSECTION DATA SUMMARY SHEET

N/S:	Flower St	W/E:	8th St	I/S No:	26
AM/PM:	AM	Comments:	EXISTING PLUS PROJECT WITH TDM		
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	0	0	0	0	605	274	72	1042	0	0	0	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	0	605	274	72	1042	0	0	0	0

	NORTHBOUND							SOUTHBOUND							WESTBOUND							EASTBOUND						
LANE										4			1			1	3											

	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	<none>	<none>	Split	Auto	Split	<none>	<none>	<none>

Critical Movements Diagram

SouthBound
A: 274
B: 0

EastBound
A: 0
B: 0

WestBound
A: 279
B: 72

NorthBound
A: 0
B: 0

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) + A(S/B)

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

$$V/C = \frac{0 + 274 + 279 + 0}{*1500} = 0.299$$

LOS = A

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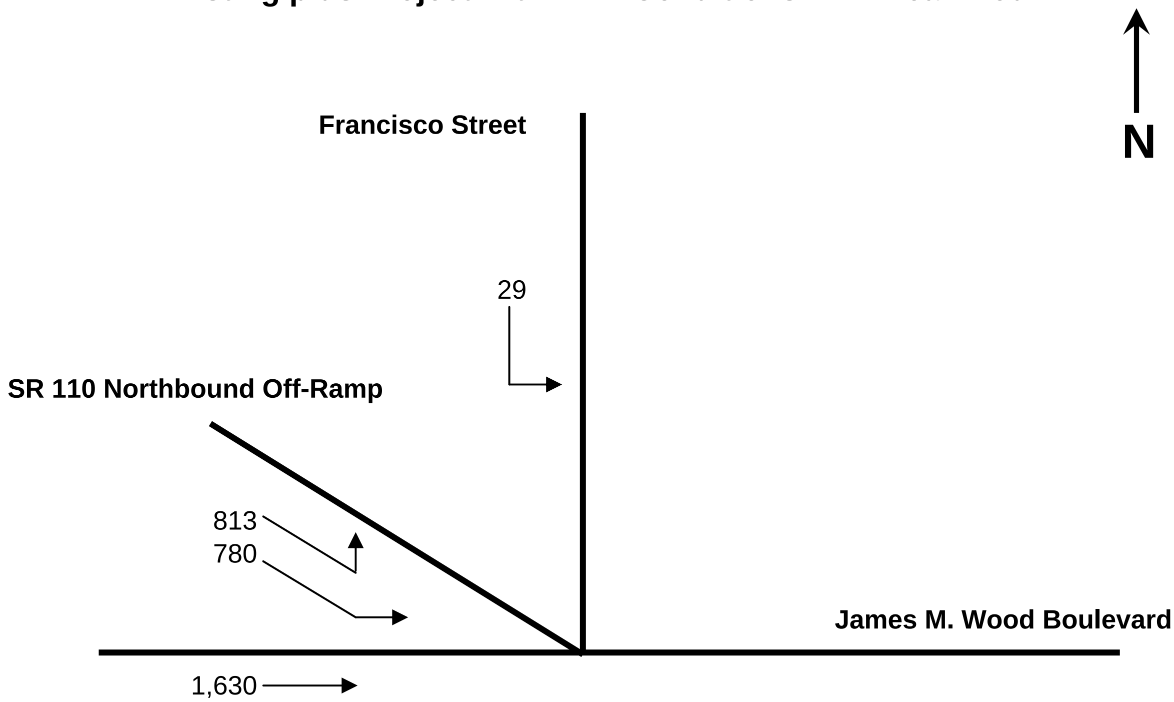
Intersection 27

Existing plus Project with TDM Conditions A.M. Peak Hour



1) $\left\{ \dfrac{813 \quad + \quad 780}{2} \right\}$

or

$\dfrac{1,630}{3}$

= **797**

2) $\dfrac{29}{1}$

= **29**

Critical Volumes = 797 + 29 = 826

V/C = $\dfrac{826}{1,500}$ 0.100 = 0.451 LOS A

TDM_AM

CalcaDB

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INTERSECTION DATA SUMMARY SHEET

N/S: Figueroa St | W/E: 9th St/James M Wood Blvd | I/S No: 28

AM/PM: AM | Comments: EXISTING PLUS PROJECT WITH TDM

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	0	1387	141	0	0	0	0	0	0	830	1542	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	1387	141	0	0	0	0	0	0	830	1542	0

LANE	NB	SB	WB	EB
LT				1
LT-TH				1
TH	3			3
LT-TH-RT				
TH-RT				
RT	1			
LT-RT				

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	Split	Auto	<none>	<none>	<none>	<none>	Split	<none>

Critical Movements Diagram

	A	B
SouthBound	0	0
EastBound	474	474
WestBound	0	0
NorthBound	462	0

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) + A(S/B)

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

$$V/C = \frac{462 + 0 + 0 + 474}{*1500} = 0.554$$

LOS = A

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INTERSECTION DATA SUMMARY SHEET

N/S: Cherry St | W/E: Pico Blvd | I/S No: 29

AM/PM: AM | Comments: EXISTING PLUS PROJECT WITH TDM

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	524	501	214	196	0	7	0	353	238	216	547	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	524	501	214	196	0	7	0	353	238	216	547	0

LANE	1	2	3	4	5	6	7
NORTHBOUND	1	1	1			1	
SOUTHBOUND	2					2	
WESTBOUND			1		1	1	
EASTBOUND	1		3				

SIGNAL	Phasing	RTOR
NORTHBOUND	Split	Auto
SOUTHBOUND	Split	Auto
WESTBOUND	Perm	OLA
EASTBOUND	Perm	<none>

Critical Movements Diagram

	A:	B:
SouthBound	4	108
EastBound	182	216
WestBound	197	0
NorthBound	342	342

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)

$$V/C = \frac{342 + 108 + 197 + 216}{*1425} = 0.536$$

LOS = A

CalcaDB

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INTERSECTION DATA SUMMARY SHEET

N/S: Figueroa St | W/E: Pico Blvd | I/S No: 30

AM/PM: AM | Comments: EXISTING PLUS PROJECT WITH TDM

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	200	1725	125	9	146	111	49	304	62	187	638	113
AMBIENT												
RELATED												
PROJECT												
TOTAL	200	1725	125	9	146	111	49	304	62	187	638	113

LANE

	NB	SB	WB	EB
Left	1	1	1	1
Left/Through				
Through	3	2	2	2
Left/Through/Right				
Through/Right	1			
Right		1	1	1
Left/Right				

	NB	SB	WB	EB
SIGNAL Phasing	Prot-Fix	Perm	Perm	Prot-Fix
SIGNAL RTOR	Auto	OLA	Auto	OLA

Critical Movements Diagram

	A	B
SouthBound	73	9
EastBound	319	187
WestBound	152	49
NorthBound	463	200

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 = B(W/B) + A(E/B)

$$V/C = \frac{463 + 9 + 49 + 319}{*1375} = 0.541$$

LOS = A

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INTERSECTION DATA SUMMARY SHEET

N/S: Hoover St | W/E: Alvarado St/Alvarado Ter | I/S No: 31

AM/PM: AM | Comments: EXISTING PLUS PROJECT WITH TDM

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	917	592	12	800	0	414	0	0	0	0	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	917	592	12	800	0	414	0	0	0	0	0

LANE

	NB 1	NB 2	NB 3	NB 4	NB 5	NB 6	NB 7	SB 1	SB 2	SB 3	SB 4	SB 5	SB 6	SB 7	WB 1	WB 2	WB 3	WB 4	WB 5	WB 6	WB 7	EB 1	EB 2	EB 3	EB 4	EB 5	EB 6	EB 7
LANE			1		1	1			1	1					1						1							

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Perm	Free	Perm	<none>	Split	Auto	<none>	<none>

Critical Movements Diagram

	A	B
SouthBound	436	12
EastBound	0	0
WestBound	207	207
NorthBound	503	0

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) + A(E/B)

$$V/C = \frac{503 + 12 + 207 + 0}{*1500} = 0.411$$

LOS = A

TDM_AM

CalcaDB

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INTERSECTION DATA SUMMARY SHEET

N/S: Flower St | W/E: Venice Blvd | I/S No: 32

AM/PM: AM | Comments: EXISTING PLUS PROJECT WITH TDM

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	0	0	0	9	397	24	45	285	0	0	332	53
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	9	397	24	45	285	0	0	332	53

LANE NORTHBOUND							
LANE SOUTHBOUND	1		2		1		
LANE WESTBOUND		1	1				
LANE EASTBOUND			1		1		

SIGNAL	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	<none>	<none>	Split	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

	A:	B:
SouthBound	140	9
EastBound	193	0
WestBound	188	45
NorthBound	0	0

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

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

Results

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

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

$$V/C = \frac{0 + 140 + 45 + 193}{*1500} = 0.182$$

LOS = A

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January 25, 2011 ,Tuesday 01:11:49 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave   W/E: 18th St   I/S No: 33

AM/PM: AM   Comments: EXISTING PLUS PROJECT WITH TDM

COUNT DATE: STUDY DATE: GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	0	113	179	455	0	0	0	0	0	810	125
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	113	179	455	0	0	0	0	0	810	125

LANE

	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND						2	
SOUTHBOUND	1		3				
WESTBOUND							
EASTBOUND			2		1	1	

SIGNAL

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	Auto	Prot-Fix	<none>	<none>	<none>	Split	Auto

Critical Movements Diagram

	A	B
SouthBound	152	179
EastBound	270	0
WestBound	0	0
NorthBound	62	0

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) + A(E/B)

$$V/C = \frac{62 + 179 + 0 + 270}{*1425} = 0.289$$

LOS = A

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S:	Olive St	W/E:	6th St	I/S No:	34
AM/PM:	AM	Comments:	EXISTING PLUS PROJECT WITH TDM		
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	0	888	162	0	0	0	0	0	0	376	932	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	888	162	0	0	0	0	0	0	376	932	0

LANE	1	2	3	4	5	6	7
NORTHBOUND			4		1		
SOUTHBOUND							
WESTBOUND							
EASTBOUND	1	1	3				

SIGNAL	Phasing	RTOR
NORTHBOUND	Split	Auto
SOUTHBOUND	<none>	<none>
WESTBOUND	<none>	<none>
EASTBOUND	Split	<none>

Critical Movements Diagram

	A:	B:
SouthBound	0	0
EastBound	262	262
WestBound	0	0
NorthBound	210	0

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) + A(S/B)

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

$$V/C = \frac{210 + 0 + 0 + 262}{*1500} = 0.245$$

LOS = A

TDM_AM

CalcaDB

January 25, 2011 ,Tuesday 01:11:49 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Hope St | W/E: 7th St | I/S No: 35

AM/PM: AM | Comments: EXISTING PLUS PROJECT WITH TDM

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	37	222	60	9	230	24	0	751	104	0	341	62
AMBIENT												
RELATED												
PROJECT												
TOTAL	37	222	60	9	230	24	0	751	104	0	341	62

LANE

	NB							SB							WB							EB						
LANE		1			1				1			1					1		1					1		1		

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

SouthBound
A: 132
B: 9

EastBound
A: 202
B: 0

WestBound
A: 428
B: 0

NorthBound
A: 160
B: 37

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

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

Results

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

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

$$V/C = \frac{37 + 132 + 428 + 0}{*1500} = 0.328$$

LOS = A

Developed by Chun Wong, 12/94

TDM_AM

CalcaDB

January 25, 2011 ,Tuesday 01:11:49 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave W/E: 7th St I/S No: 36

AM/PM: AM Comments: EXISTING PLUS PROJECT WITH TDM

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	0	0	0	93	1072	72	0	765	0	0	326	101
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	93	1072	72	0	765	0	0	326	101

LANE							
NORTHBOUND							
SOUTHBOUND	1		4			1	
WESTBOUND			2				
EASTBOUND			2			1	

SIGNAL	Phasing	RTOR
NORTHBOUND	<none>	<none>
SOUTHBOUND	Split	Auto
WESTBOUND	Perm	<none>
EASTBOUND	Perm	Auto

Critical Movements Diagram

SouthBound A: 268 B: 93

EastBound A: 163 B: 0

WestBound A: 383 B: 0

NorthBound A: 0 B: 0

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

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

Results

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

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

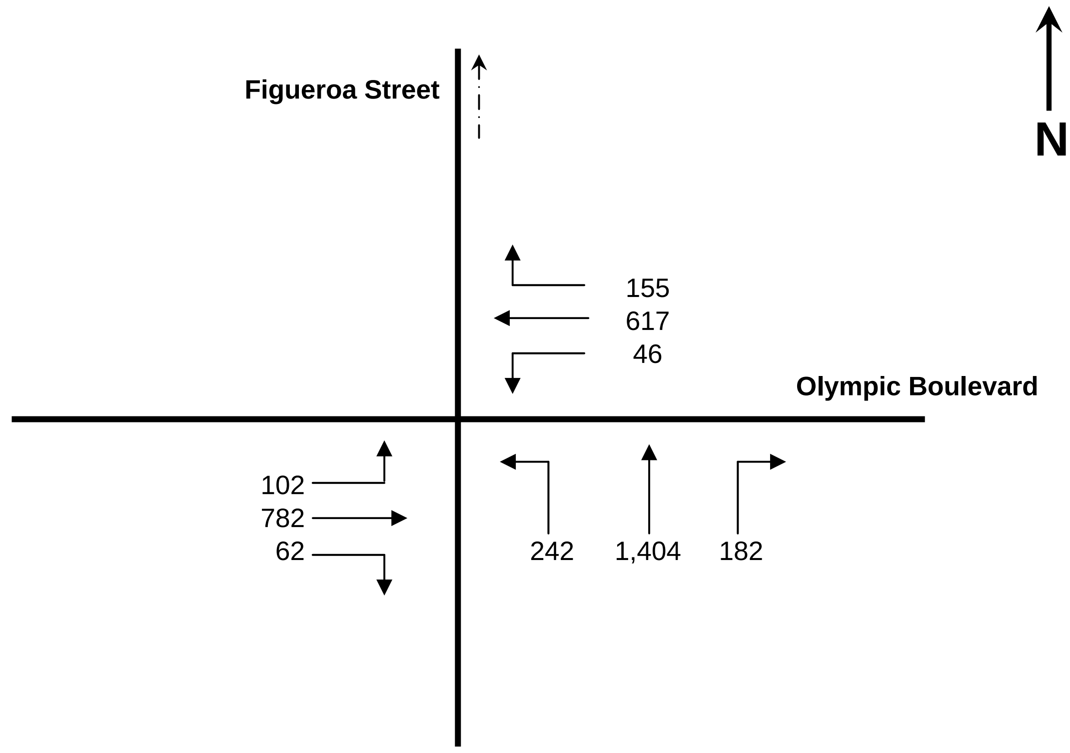
$$V/C = \frac{0 + 268 + 383 + 0}{*1500} = 0.364$$

LOS = A

Developed by Chun Wong, 12/94

Intersection 37

Existing plus Project with TDM Conditions A.M. Peak Hour



1) Lane Capacity for EB Lefts - 900 vphpl

Number of Lanes - 1

EB Left V/C - $\frac{102}{900}$

= ***0.113***

Lane Capacity for WB Throughs - 1,425 vphpl
Lane Capacity for WB Rights - 900 vphpl

Number of Lanes - 3 throughs
1 right-turn only

WB Through/Right V/C - $\frac{617}{4,275}$ or $\frac{155}{900}$

= ***0.172***

Critical V/C - ***0.113*** **+** ***0.172*** **=** **0.285**

<u>or</u>

Lane Capacity for WB Lefts - 1,425 vphpl

Number of Lanes - 1

WB Left V/C - $\frac{46}{1,425}$

= ***0.032***

Lane Capacity for EB Throughs/Rights - 1,425 vphpl

Number of Lanes - 3 throughs
1 right-turn only

EB Through/Right V/C - $\frac{782}{4,275}$ or $\frac{62}{1,425}$

= ***0.183***

Critical V/C - ***0.032*** **+** ***0.183*** **=** **0.215**

2) Lane Capacity for NB Throughs - 900 vphpl
Lane Capacity for NB Left- and Right-turns - 1,425 vphpl

Number of Lanes - 1 left-turn only
3 throughs
1 right-turn only

Critical V/C - $\frac{1,404}{2,700}$ or $\frac{242}{1,425}$ or $\frac{182}{1,425}$

= **0.520**

Intersection V/C = 0.805 — 0.100 = 0.705 LOS C

TDM_AM

CalcaDB

January 25, 2011 ,Tuesday 01:11:49 PM

INTERSECTION DATA SUMMARY SHEET

N/S:	Glendale Blvd	W/E:	Temple St	I/S No:	38
AM/PM:	AM	Comments:	EXISTING PLUS PROJECT WITH TDM		
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	54	451	13	223	1645	140	60	434	119	187	571	132
AMBIENT												
RELATED												
PROJECT												
TOTAL	54	451	13	223	1645	140	60	434	119	187	571	132

	NORTHBOUND							SOUTHBOUND							WESTBOUND							EASTBOUND						
LANE	1		1		1			1		1		1			1		1		1			1		1		1		

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	Auto	Perm	Auto	Prot-Fix	Auto	Prot-Fix	Auto

Critical Movements Diagram

	A	B
SouthBound	893	223
EastBound	352	187
WestBound	277	60
NorthBound	232	54

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)

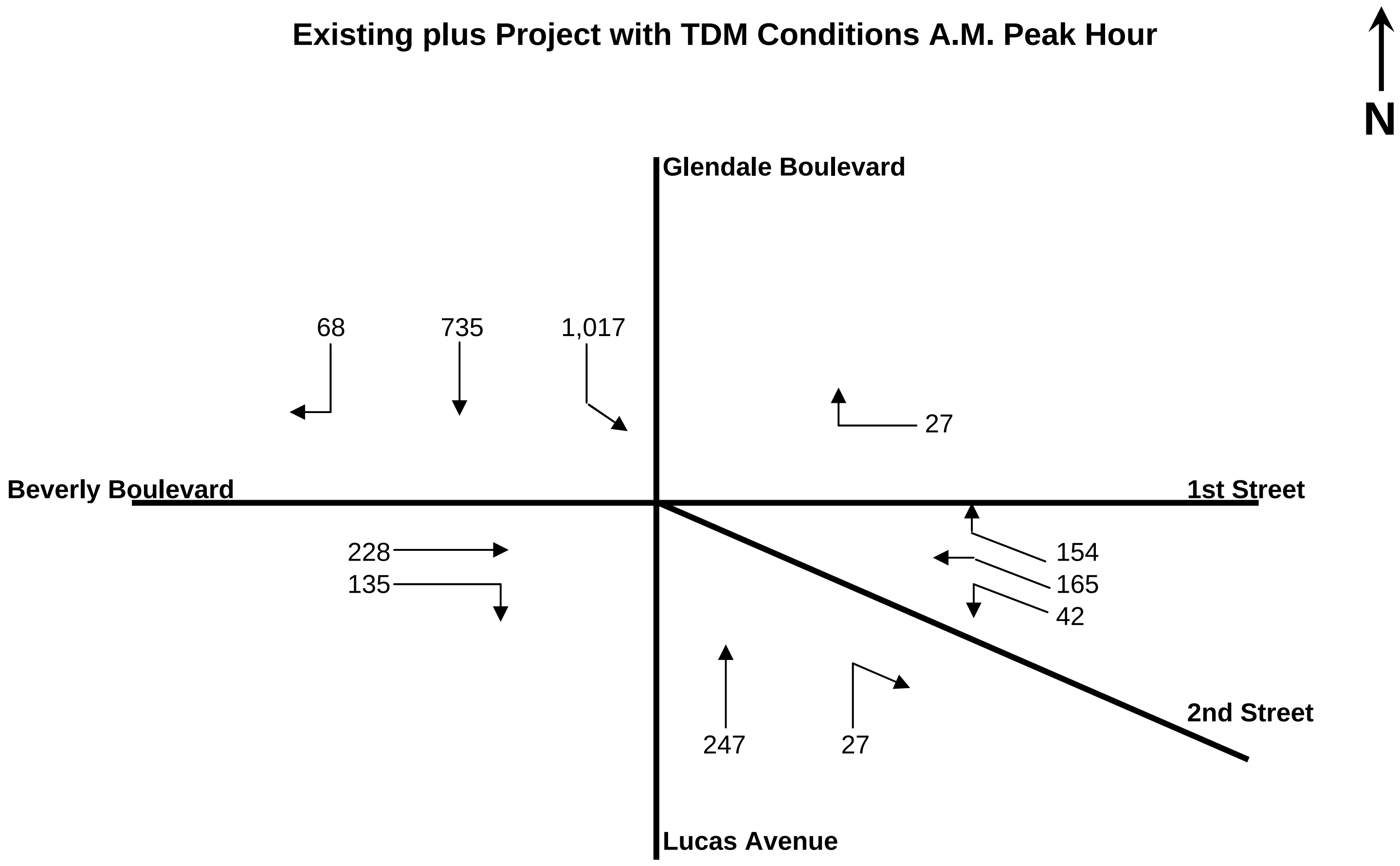
$$V/C = \frac{54 + 893 + 277 + 187}{*1425} = 0.920$$

LOS = E

Developed by Chun Wong, 12/94

Intersection 39

Existing plus Project with TDM Conditions A.M. Peak Hour



Phase 1) *Glendale Boulevard and Lucas Avenue - North-South Throughs and Rights*

$$\frac{247 + 27}{2}$$

&

$$\frac{68}{1} \quad \& \quad \frac{735}{1}$$

= **137**

Phase 2) *Glendale Boulevard, 1st Street, and 2nd Street - Southbound Lefts, Throughs, and Rights, and*
a.) Westbound Rights on 1st Street
b.) Westbound Rights on 2nd Street

a.) $\frac{27}{1}$

& $\left\{ \frac{735}{1} \quad - \quad 137 \right\}$ & $\left\{ \frac{1,017}{2} \right\}$

= **27**

b.) $\left\{ \frac{1,017}{2} \quad - \quad 27 \right\}$

or $\left\{ \frac{735}{1} \quad - \quad 137 \quad - \quad 27 \right\}$

& $\frac{154}{2}$

= **571**

Phase 3) *2nd Street - Westbound Lefts, Throughs, and Rights*

$\left\{ \frac{154}{2} \quad - \quad 571 \right\}$

& $\left\{ \frac{165 + 42}{1} \right\}$

= **0**

Phase 4) *Beverly Boulevard and 2nd Street - Westbound Lefts and Throughs, and Eastbound Throughs and Rights*

$$\frac{228 + 135}{2}$$

or $\left\{ \frac{165 + 42}{1} \right\}$ - 0

= **182**

Critical Volumes = 137 + 27 + 571 + 0 + 182

= 917

V/C = $\frac{917}{1,375}$ — 0.070 = 0.597 LOS A

CalcaDB

January 25, 2011 ,Tuesday 01:11:49 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Lucas Ave W/E: 3rd St I/S No: 40

AM/PM: AM Comments: EXISTING PLUS PROJECT WITH TDM

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	100	223	100	107	538	128	46	756	58	158	1042	66
AMBIENT												
RELATED												
PROJECT												
TOTAL	100	223	100	107	538	128	46	756	58	158	1042	66

LANE	1		2			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

SouthBound
A: 333
B: 107

EastBound
A: 521
B: 158

WestBound
A: 378
B: 46

NorthBound
A: 112
B: 100

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

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

Results

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

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

$$V/C = \frac{100 + 333 + 46 + 521}{*1500} = 0.597$$

LOS = A

CalcaDB

January 25, 2011 ,Tuesday 01:11:49 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Lucas Ave | W/E: 6th St | I/S No: 41

AM/PM: AM | Comments: EXISTING PLUS PROJECT WITH TDM

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	27	173	18	43	294	166	58	644	26	144	1030	159
AMBIENT												
RELATED												
PROJECT												
TOTAL	27	173	18	43	294	166	58	644	26	144	1030	159

LANE	↰	↰↑	↑	↰↑↱	↑↱	↱	↰↱
Northbound				1			
Southbound				1			
Westbound	1		2			1	
Eastbound	1		1		1		

SIGNAL	Phasing	RTOR
Northbound	Perm	Auto
Southbound	Perm	Auto
Westbound	Perm	Auto
Eastbound	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	503	43
EastBound	595	144
WestBound	322	58
NorthBound	218	27

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

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

Results

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

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

$$V/C = \frac{27 + 503 + 58 + 595}{*1500} = 0.719$$

LOS = C

Developed by Chun Wong, 12/94

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Lucas Ave   W/E: Wilshire Blvd   I/S No: 42

AM/PM: AM   Comments: EXISTING PLUS PROJECT WITH TDM

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	29	137	23	52	204	71	59	499	70	52	942	54
AMBIENT												
RELATED												
PROJECT												
TOTAL	29	137	23	52	204	71	59	499	70	52	942	54

LANE (lane configuration boxes, left to right per approach):

	Box 1	Box 2	Box 3	Box 4	Box 5	Box 6	Box 7
NORTHBOUND				1			
SOUTHBOUND				1			
WESTBOUND		1	1			1	
EASTBOUND		1	1			1	

SIGNAL	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Perm	Auto
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	327	52
EastBound	523	52
WestBound	368	59
NorthBound	189	29

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

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

Results

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

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

$$V/C = \frac{29 + 327 + 59 + 523}{*1500} = 0.555$$

LOS = A

TDM_PM

CalcaDB

January 25, 2011 ,Tuesday 01:12:01 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave W/E: US 101 NB Ramps I/S No: 1

AM/PM: PM Comments: EXISTING PLUS PROJECT WITH TDM

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	675	834	0	0	504	325	0	0	0	67	0	249
AMBIENT												
RELATED												
PROJECT												
TOTAL	675	834	0	0	504	325	0	0	0	67	0	249

LANE (NORTHBOUND)	1		2				
LANE (SOUTHBOUND)			2			1	
LANE (WESTBOUND)							
LANE (EASTBOUND)						1	1

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Prot-Fix	<none>	Perm	OLA	<none>	<none>	Split	Auto

Critical Movements Diagram

	A	B
SouthBound	258	0
EastBound	0	67
WestBound	0	0
NorthBound	417	675

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)

$$V/C = \frac{675 + 258 + 0 + 67}{*1425} = 0.632$$

LOS = B

CalcaDB

January 25, 2011 ,Tuesday 01:12:01 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Hope St/US 101 SB Ramps W/E: Temple St I/S No: 2

AM/PM: PM Comments: EXISTING PLUS PROJECT WITH TDM

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	214	240	198	72	28	16	136	733	217	464	731	72
AMBIENT												
RELATED												
PROJECT												
TOTAL	214	240	198	72	28	16	136	733	217	464	731	72

LANE	NB	SB	WB	EB
Left	1	1	1	1
Left/Through				
Through	1	1	2	1
Left/Through/Right				
Through/Right	1	1		1
Right			1	
Left/Right				

SIGNAL	NB	SB	WB	EB
Phasing	Perm	Perm	Prot-Fix	Prot-Fix
RTOR	Auto	Auto	Auto	Auto

Critical Movements Diagram

	A	B
SouthBound	22	72
EastBound	402	464
WestBound	367	136
NorthBound	219	214

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)

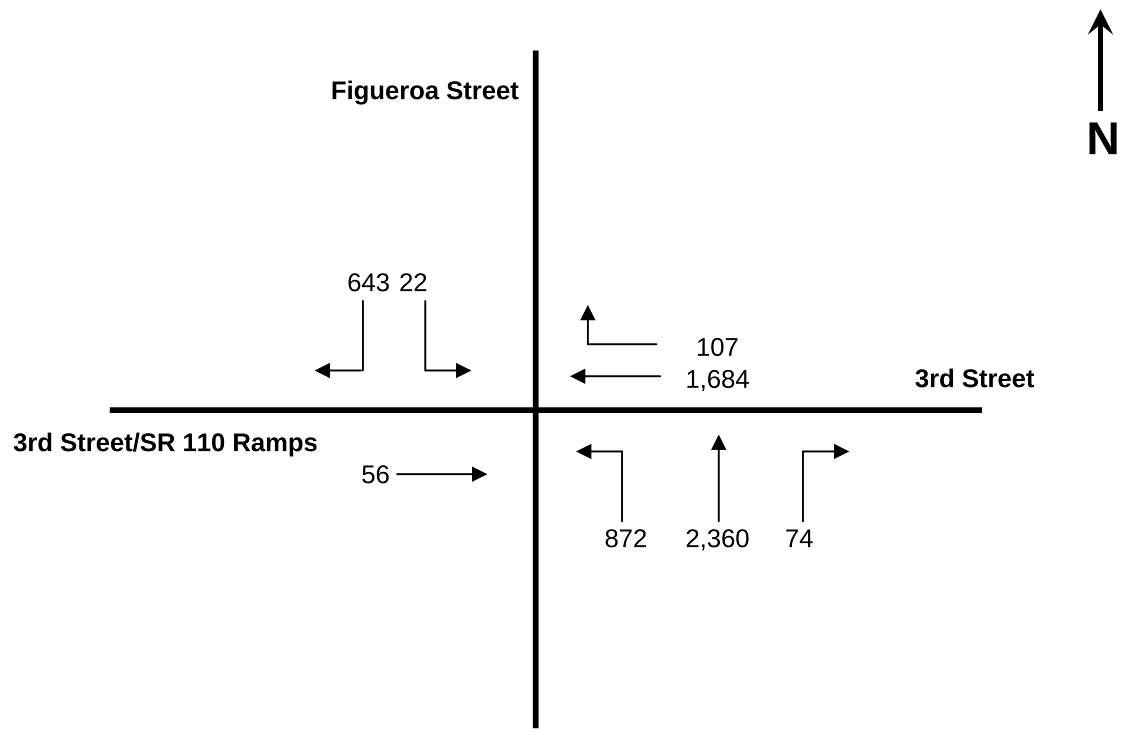
West/East Critical Movements = A(W/B) + B(E/B)

$$V/C = \frac{219 + 72 + 367 + 464}{*1425} = 0.717$$

LOS = C

Intersection 3

Existing plus Project with TDM Conditions P.M. Peak Hour



1) Lane Capacity for WB Throughs - 900 vphpl

Number of Lanes - 5

WB Through V/C - $\frac{1,684}{4,500}$

= **0.374**

<u>or</u>

Lane Capacity for WB Rights - 1,425 vphpl

Number of Lanes - 1

WB Right V/C - $\frac{107}{1,425}$

= **0.075**

<u>or</u>

Lane Capacity for EB Throughs - 1,425 vphpl

Number of Lanes - 2

EB Through V/C - $\frac{56}{2,850}$

= **0.020**

2) Lane Capacity for NB Lefts - 900 vphpl

Number of Lanes - 3

NB Left V/C - $\left\{\frac{872 \quad x \quad 0.37}{900}\right\}$

= ***0.358***

Lane Capacity for SB Rights - 1,425 vphpl

Number of Lanes - 2

SB Right V/C - $\left\{\frac{643 \quad x \quad 0.55}{1,425}\right\}$

= ***0.248***

Critical V/C - ***0.358*** **+** ***0.248*** **=** **0.606**

<u>or</u>

Lane Capacity for NB Throughs & Rights - 1,425 vphpl

Number of Lanes - 2 throughs
1 through/right

NB Through/Right V/C - $\left\{\frac{2,360 \quad + \quad 74}{4,275}\right\}$ or $\frac{74}{1,425}$

= **0.569**

Intersection V/C = 0.980 — 0.100 = 0.880 LOS D

CalcaDB

January 25, 2011 ,Tuesday 01:12:01 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St | W/E: 3rd St | I/S No: 4

AM/PM: PM | Comments: EXISTING PLUS PROJECT WITH TDM

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	135	209	0	0	419	473	117	1158	62	0	0	144
AMBIENT												
RELATED												
PROJECT												
TOTAL	135	209	0	0	419	473	117	1158	62	0	0	144

LANE	1	2	3	4	5	6	7
NORTHBOUND	1		2				
SOUTHBOUND			2			1	
WESTBOUND	1		3		1		
EASTBOUND						1	

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	Perm	<none>	Perm	Auto	Split	Auto	<none>	Free

Critical Movements Diagram

	A	B
SouthBound	473	0
EastBound	0	0
WestBound	305	117
NorthBound	105	135

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) + A(E/B)

$$V/C = \frac{135 + 473 + 305 + 0}{*1500} = 0.539$$

LOS = A

TDM_PM

January 25, 2011 ,Tuesday 01:12:01 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave | W/E: 3rd St | I/S No: 5

AM/PM: PM | Comments: EXISTING PLUS PROJECT WITH TDM

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	268	0	0	797	69	0	0	0	151	0	112
AMBIENT												
RELATED												
PROJECT												
TOTAL	21	268	0	0	797	69	0	0	0	151	0	112

LANE

NORTHBOUND	1		2				
SOUTHBOUND			1		1		
WESTBOUND							
EASTBOUND	1					2	

SIGNAL	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
	Perm	Auto	Perm	Auto	<none>	<none>	Split	Auto

Critical Movements Diagram

SouthBound
A: 433
B: 0

EastBound
A: 62
B: 151

WestBound
A: 0
B: 0

NorthBound
A: 134
B: 21

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

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

Results

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

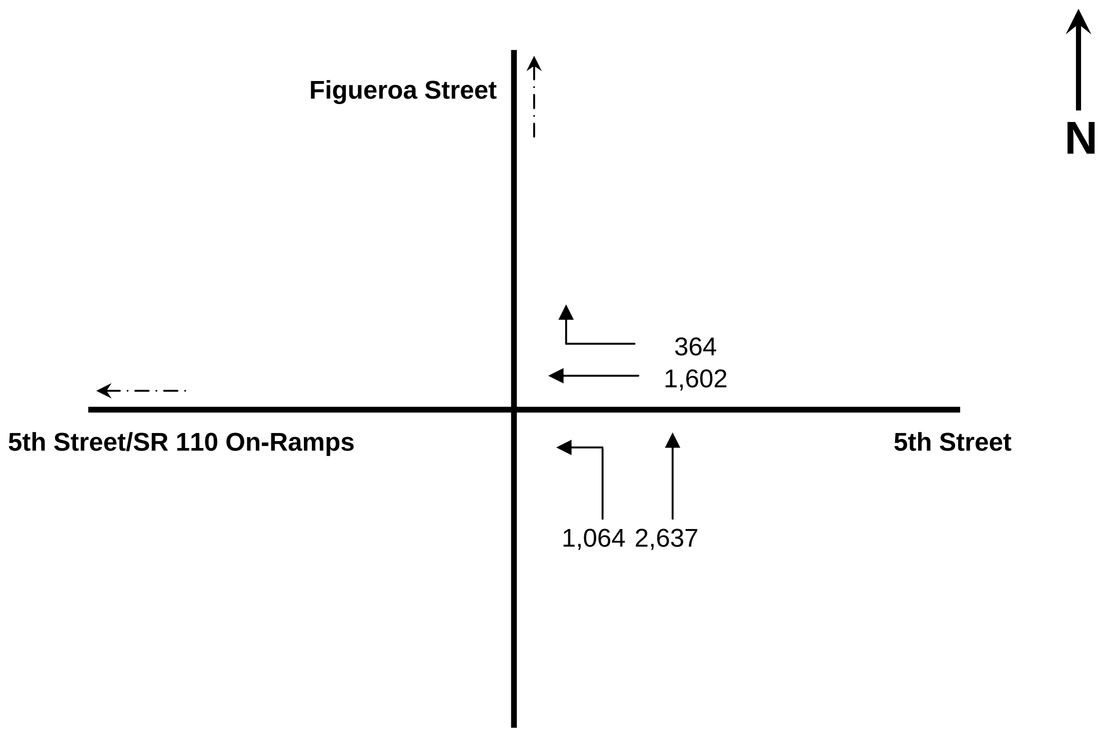
West/East Critical Movements = A(W/B) + B(E/B)

$$V/C = \frac{21 + 433 + 0 + 151}{*1500} = 0.333$$

LOS = A

Intersection 6

Existing plus Project with TDM Conditions P.M. Peak Hour



1) Lane Capacity for WB Direction - 900 vphpl

Number of Lanes - 7

Critical V/C - $\left\{\frac{1,602 \quad + \quad 364}{6,300}\right\}$

= **0.312**

2) Lane Capacity for NB Throughs - 900 vphpl

Number of Lanes - 4

Critical V/C - $\frac{2,637}{3,600}$

= **0.733**

<u>or</u>

Lane Capacity for NB Lefts - 900 vphpl

Number of Lanes - 3

Critical V/C - $\frac{1,064}{2,700}$

= **0.394**

Intersection V/C = 1.045 — 0.070 = 0.975 LOS E

CalcaDB

January 25, 2011 ,Tuesday 01:12:01 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St W/E: 5th St I/S No: 7

AM/PM: PM Comments: EXISTING PLUS PROJECT WITH TDM

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	0	0	0	0	1143	518	212	1372	0	0	0	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	0	1143	518	212	1372	0	0	0	0

LANE

	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
Northbound							
Southbound			4		1	1	
Westbound	1		5				
Eastbound							

SIGNAL

	Northbound		Southbound		Westbound		Eastbound	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	<none>	<none>	Split	Auto	Split	<none>	<none>	<none>

Critical Movements Diagram

	A	B
SouthBound	277	0
EastBound	0	0
WestBound	274	212
NorthBound	0	0

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) + A(S/B)

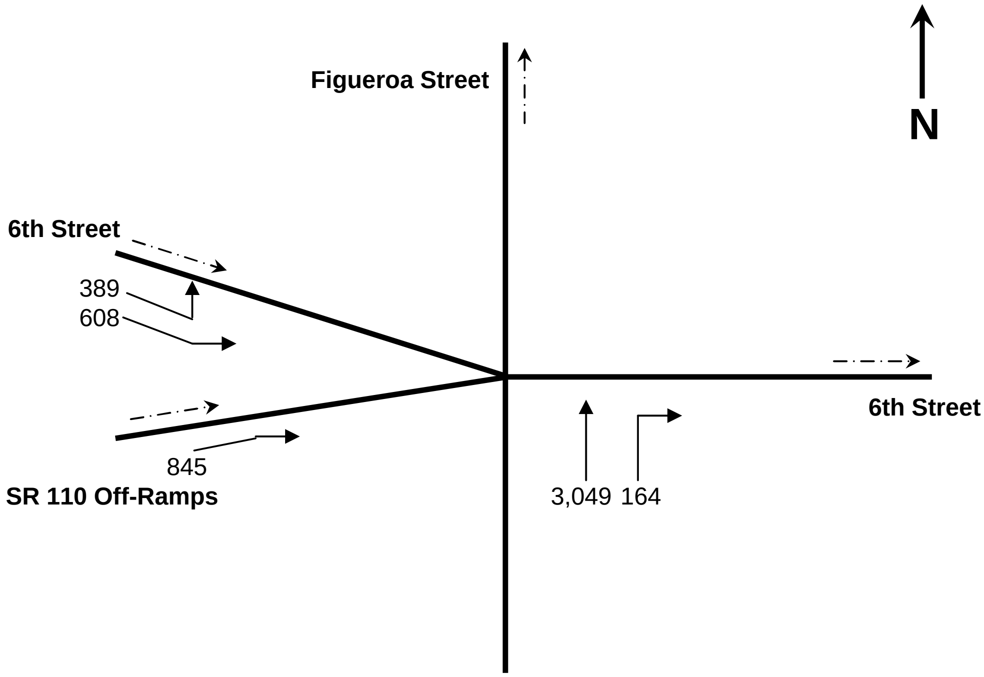
West/East Critical Movements = A(W/B) + A(E/B)

$$V/C = \frac{0 + 277 + 274 + 0}{*1500} = 0.297$$

LOS = A

Intersection 8

Existing plus Project with TDM Conditions P.M. Peak Hour



1) Lane Capacity for EB Direction - 1,500 vphpl

Number of Lanes -
1 left-turn lane from 6th Street
1 shared left/through lane from 6th Street
1 through lane from 6th Street
3 through lanes from SR 110 Off-Ramps

Critical V/C - $\left\{\frac{608 + 389}{4{,}500}\right\}$ or $\frac{845}{4{,}500}$

= **0.222**

2) Lane Capacity for NB Throughs - 900 vphpl

Number of Lanes - 5

Critical V/C - $\frac{3{,}049}{4{,}500}$

= **0.678**

<u>or</u>

Lane Capacity for NB Rights - 1,500 vphpl

Number of Lanes - 1

Critical V/C - $\frac{164}{1{,}500}$

= **0.109**

Intersection V/C = 0.900 − 0.070 = 0.830 LOS D

CalcaDB

January 25, 2011 ,Tuesday 01:12:01 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St   W/E: 6th St   I/S No: 9

AM/PM: PM   Comments: EXISTING PLUS PROJECT WITH TDM

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	0	0	0	316	1079	0	0	0	0	0	1093	558
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	316	1079	0	0	0	0	0	1093	558

	NB							SB							WB							EB						
LANE								2		4														3		1	1	

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	<none>	<none>	Split	<none>	<none>	<none>	Split	Auto

Critical Movements Diagram

	A:	B:
SouthBound	270	174
EastBound	330	0
WestBound	0	0
NorthBound	0	0

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

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

Results

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

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

$$V/C = \frac{0 + 270 + 0 + 330}{*1500} = 0.330$$

LOS = A

TDM_PM

CalcaDB

January 25, 2011 ,Tuesday 01:12:01 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Alvarado St   W/E: Wilshire Blvd   I/S No: 10

AM/PM: PM   Comments: EXISTING PLUS PROJECT WITH TDM

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	0	1020	67	0	844	95	96	1068	90	85	939	53
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	1020	67	0	844	95	96	1068	90	85	939	53

LANE	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND			2		1		
SOUTHBOUND			2		1		
WESTBOUND	1		1		1		
EASTBOUND	1		1		1		

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	313	0
EastBound	496	85
WestBound	579	96
NorthBound	362	0

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)

$$V/C = \frac{362 + 0 + 579 + 85}{*1500} = 0.614$$

LOS = B

Developed by Chun Wong, 12/94

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January 25, 2011 ,Tuesday 01:12:01 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Beaudry Ave | W/E: Wilshire Blvd | I/S No: 11

AM/PM: PM | Comments: EXISTING PLUS PROJECT WITH TDM

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	5	0	32	218	46	442	8	606	0	0	811	30
AMBIENT												
RELATED												
PROJECT												
TOTAL	5	0	32	218	46	442	8	606	0	0	811	30

LANE

NORTHBOUND							1
SOUTHBOUND	1			1		1	
WESTBOUND		1	1				
EASTBOUND			2			1	

	NORTHBOUND Phasing	NORTHBOUND RTOR	SOUTHBOUND Phasing	SOUTHBOUND RTOR	WESTBOUND Phasing	WESTBOUND RTOR	EASTBOUND Phasing	EASTBOUND RTOR
SIGNAL	Split	Auto	Split	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

SouthBound
A: 244
B: 218

EastBound
A: 406
B: 0

WestBound
A: 319
B: 8

NorthBound
A: 37
B: 5

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) + A(S/B)

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

$$V/C = \frac{37 + 244 + 8 + 406}{*1425} = 0.418$$

LOS = A

CalcaDB

January 25, 2011 ,Tuesday 01:12:01 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Francisco St
W/E: Wilshire Blvd
I/S No: 12

AM/PM: PM
Comments: EXISTING PLUS PROJECT WITH TDM

COUNT DATE:
STUDY DATE:
GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	135	0	354	51	9	28	27	536	10	13	968	108
AMBIENT												
RELATED												
PROJECT												
TOTAL	135	0	354	51	9	28	27	536	10	13	968	108

LANE

	NB							SB							WB							EB						
LANE		1				1					1				1		1		1			1		1		1		

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

SouthBound
A: 88
B: 51

EastBound
A: 538
B: 13

WestBound
A: 273
B: 27

NorthBound
A: 354
B: 135

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

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

Results

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

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

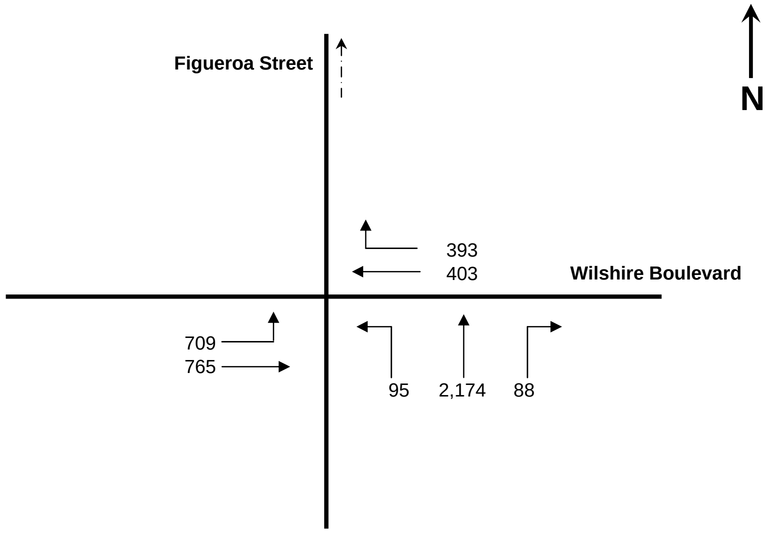
$$V/C = \frac{354 + 51 + 27 + 538}{*1500} = 0.577$$

LOS = A

Developed by Chun Wong, 12/94

Intersection 13

Existing plus Project with TDM Conditions P.M. Peak Hour



1) Lane Capacity for EB Lefts - 900 vphpl

Number of Lanes - 2

EB Left V/C - $\left\{ \frac{709 \quad X \quad 0.55}{900} \right\}$

= ***0.433***

Lane Capacity for WB Direction - 1,425 vphpl

Number of Lanes -
1 through
1 through/right
1 right-turn only

WB V/C - $\left\{ \frac{403 \quad + \quad 393}{4,275} \right\}$ or $\frac{403}{2,850}$ or $\frac{393}{2,850}$

= ***0.186***

Critical V/C - ***0.433*** **+** ***0.186*** **=** **0.619**

<u>or</u>

Lane Capacity for EB Throughs - 1,425 vphpl

Number of Lanes - 2

Critical V/C - $\frac{765}{2,850}$

= **0.268**

2) Lane Capacity for NB Direction - 900 vphpl

Number of Lanes -
1 left/through
3 throughs
1 through/right

Critical V/C - $\left\{ \frac{95 \quad + \quad 2,174 \quad + \quad 88}{4,500} \right\}$

or $\frac{95}{900}$

or $\frac{88}{900}$

= **0.524**

Intersection V/C = 1.143 — 0.070 = 1.073 LOS F

Intersection 14

Existing plus Project with TDM Conditions P.M. Peak Hour

1) Lane Capacity for WB Direction - 900 vphpl

Number of Lanes - 2

WB Direction V/C - $\left\{\frac{502 + 47}{1,800}\right\}$ or $\frac{47}{900}$

= **0.305**

Lane Capacity for EB Direction - 1,500 vphpl

Number of Lanes - 2

EB Direction V/C - $\left\{\frac{525 + 394}{3,000}\right\}$ or $\frac{394}{1,500}$

= **0.306**

2) Lane Capacity for SB Throughs and Lefts - 1,500 vphpl

Number of Lanes - 3 throughs
1 left-turn only

SB Through V/C - $\frac{1,486}{4,500}$

= **0.33**

SB Left V/C - $\frac{62}{1,500}$

= **0.041**

Lane Capacity for SB Rights - 900 vphpl

Number of Lanes - 1

SB Right V/C - $\frac{316}{900}$

= **0.351**

Intersection V/C = 0.657 — 0.070 = 0.587 LOS A

TDM_PM

January 25, 2011 ,Tuesday 01:12:01 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave **W/E:** Wilshire Blvd **I/S No:** 15

AM/PM: PM **Comments:** EXISTING PLUS PROJECT WITH TDM

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	0	0	0	5	1145	156	39	45	0	0	6	526
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	5	1145	156	39	45	0	0	6	526

LANE

	NB							SB							WB							EB						
LANE									1	2		1				1										1	1	

	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	<none>	<none>	Split	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

SouthBound
A: 327
B: 5

EastBound
A: 266
B: 0

WestBound
A: 84
B: 39

NorthBound
A: 0
B: 0

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

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

Results

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

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

$$V/C = \frac{0 + 327 + 39 + 266}{*1500} = 0.351$$

LOS = A

Developed by Chun Wong, 12/94

CalcaDB

January 25, 2011 ,Tuesday 01:12:01 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Alvarado St | W/E: 7th St | I/S No: 16

AM/PM: PM | Comments: EXISTING PLUS PROJECT WITH TDM

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	887	74	0	819	64	0	696	101	0	624	106
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	887	74	0	819	64	0	696	101	0	624	106

LANE

	Northbound	Southbound	Westbound	Eastbound
LT				
LT/TH				
TH	2	2	1	1
LT/TH/RT				
TH/RT	1	1	1	1
RT				
LT/RT				

SIGNAL	Phasing	RTOR
Northbound	Perm	Auto
Southbound	Perm	Auto
Westbound	Perm	Auto
Eastbound	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	294	0
EastBound	365	0
WestBound	399	0
NorthBound	320	0

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)

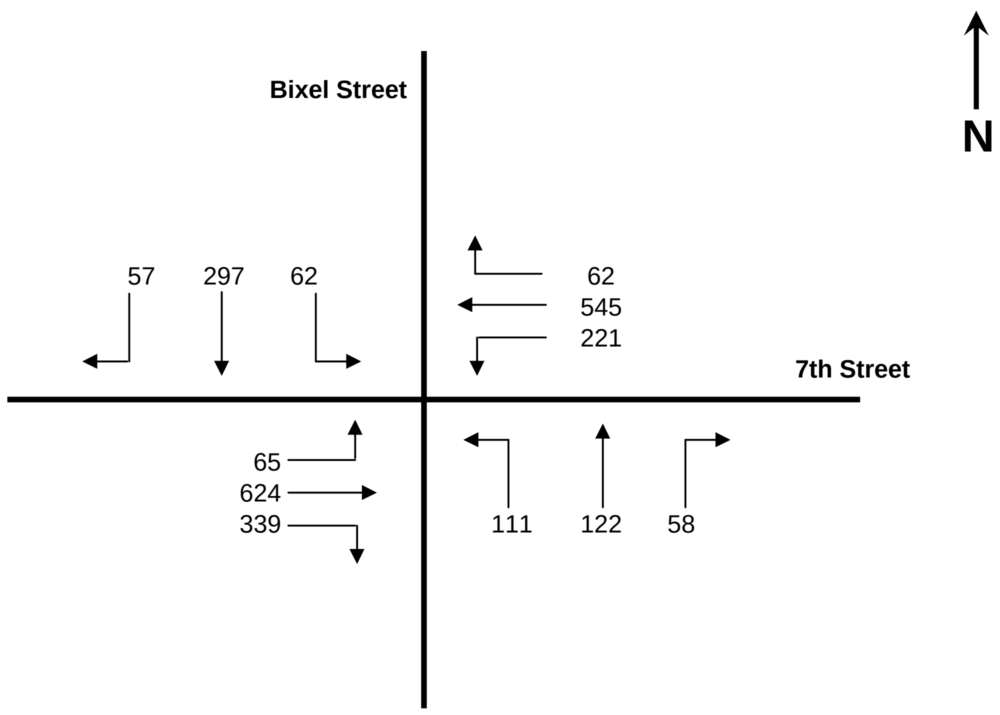
$$V/C = \frac{320 + 0 + 399 + 0}{*1500} = 0.409$$

LOS = A

Developed by Chun Wong, 12/94

Intersection 17

Existing plus Project with TDM Conditions P.M. Peak Hour



1) Lane Capacity for WB Lefts - 900 vphpl

Number of Lanes - 1

WB Left V/C - $\frac{221}{900}$

= ***0.246***

Lane Capacity for EB Throughs - 1,500 vphpl

Number of Lanes - 1

EB Through V/C - $\frac{624}{1,500}$

= ***0.416***

Lane Capacity for EB Rights - 900 vphpl

Number of Lanes - 1

EB Right V/C - $\frac{339}{900}$

= ***0.377***

Critical V/C - ***0.246*** **+** ***0.416***

= 0.662

<u>or</u>

Lane Capacity for EB Lefts - 1,500 vphpl

Number of Lanes - 1

EB Left V/C - $\frac{65}{1,500}$

= ***0.043***

Lane Capacity for WB Throughs/Rights - 1,500 vphpl

Number of Lanes - 2

WB Through V/C - $\left\{\frac{545 + 62}{3,000}\right\}$

= ***0.202***

Critical V/C - ***0.043*** **+** ***0.202***

= 0.245

2) Lane Capacity for NB & SB Direction - 1,500 vphpl

Number of Lanes - 1 left
1 through/right

Critical V/C - $\left\{\frac{111 + 297 + 57}{1,500}\right\}$

or $\left\{\frac{62 + 122 + 58}{1,500}\right\}$

= **0.310**

Intersection V/C = 0.972 — 0.070 = 0.902 LOS E

TDM_PM

CalcaDB

January 25, 2011 ,Tuesday 01:12:01 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Francisco St W/E: 7th St I/S No: 18

AM/PM: PM Comments: EXISTING PLUS PROJECT WITH TDM

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	51	47	140	225	34	143	65	719	78	21	590	8
AMBIENT												
RELATED												
PROJECT												
TOTAL	51	47	140	225	34	143	65	719	78	21	590	8

LANE	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND		1				1	
SOUTHBOUND	1				1		
WESTBOUND	1		1		1		
EASTBOUND	1		1		1		

SIGNAL	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Perm	Auto
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	177	225
EastBound	299	21
WestBound	399	65
NorthBound	140	51

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)

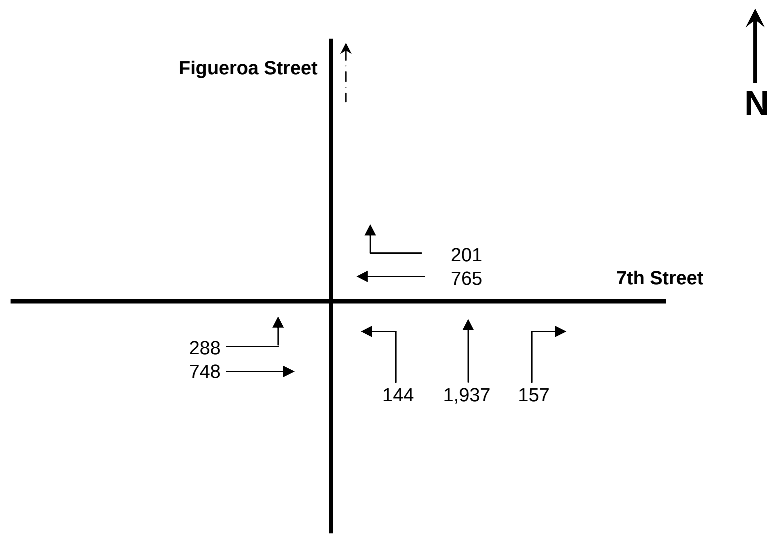
$$V/C = \frac{140 + 225 + 399 + 21}{*1500} = 0.453$$

LOS = A

Developed by Chun Wong, 12/94

Intersection 19

Existing plus Project with TDM Conditions P.M. Peak Hour



1) Lane Capacity for EB Lefts - 900 vphpl

Number of Lanes - 2

EB Left V/C - $\left\{\frac{288 \quad X \quad 0.55}{900}\right\}$

= ***0.176***

Lane Capacity for WB Direction - 1,425 vphpl

Number of Lanes - 2 throughs
1 right-turn only

WB V/C - $\frac{765}{2,850}$ or $\frac{201}{1,425}$

= ***0.268***

Critical V/C - ***0.176*** **+** ***0.268*** **=** **0.444**

<u>or</u>

Lane Capacity for EB Throughs - 1,425 vphpl

Number of Lanes - 2

Critical V/C - $\frac{748}{2,850}$

= **0.262**

2) Lane Capacity for NB Throughs and Through/Left - 900 vphpl
Lane Capacity for NB Through/Right - 450 vphpl

Number of Lanes - 1 left/through
3 throughs
1 through/right

Critical V/C - $\left\{\frac{144 \quad + \quad 1,937 \quad + \quad 157}{4,050}\right\}$

or $\frac{144}{900}$

or $\frac{157}{450}$

= **0.553**

Intersection V/C = 0.997 — 0.070 = 0.927 LOS E

TDM_PM

CalcaDB

January 25, 2011 ,Tuesday 01:12:01 PM

INTERSECTION DATA SUMMARY SHEET

N/S:	Flower St	W/E:	7th St	I/S No:	20
AM/PM:	PM	Comments:	EXISTING PLUS PROJECT WITH TDM		
COUNT DATE:		STUDY DATE:		GROWTH FACTOR:	

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	0	0	73	1898	188	107	731	0	0	691	198
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	73	1898	188	107	731	0	0	691	198

LANE

	↰	↰↑	↑	↰↑↱	↑↱	↱	↰↱
NORTHBOUND							
SOUTHBOUND		1	2		1		
WESTBOUND		1	2				
EASTBOUND			1		1		

SIGNAL

	Phasing	RTOR
NORTHBOUND	<none>	<none>
SOUTHBOUND	Split	Auto
WESTBOUND	Perm	<none>
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	540	73
EastBound	445	0
WestBound	366	107
NorthBound	0	0

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) + A(S/B)

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

$$V/C = \frac{0 + 540 + 107 + 445}{*1500} = 0.658$$

LOS = B

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INTERSECTION DATA SUMMARY SHEET

N/S: Olive Ave | W/E: 7th St | I/S No: 21

AM/PM: PM | Comments: EXISTING PLUS PROJECT WITH TDM

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	102	1066	85	0	0	0	0	674	217	0	788	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	102	1066	85	0	0	0	0	674	217	0	788	0

LANE

Lane type	NORTHBOUND	SOUTHBOUND	WESTBOUND	EASTBOUND
↰				
↰↑	1			
↑	2		2	2
↰↑↱				
↑↱	1			
↱			1	
↰↱				

SIGNAL

	Phasing	RTOR
NORTHBOUND	Split	Auto
SOUTHBOUND	<none>	<none>
WESTBOUND	Perm	Auto
EASTBOUND	Perm	<none>

Critical Movements Diagram

	A:	B:
SouthBound	0	0
EastBound	394	0
WestBound	337	0
NorthBound	313	102

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) + A(S/B)

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

$$V/C = \frac{313 + 0 + 0 + 394}{*1500} = 0.401$$

LOS = A

CalcaDB

January 25, 2011 ,Tuesday 01:12:01 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Alameda St | W/E: 7th St | I/S No: 22

AM/PM: PM | Comments: EXISTING PLUS PROJECT WITH TDM

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	77	749	83	106	883	8	99	430	76	107	755	157
AMBIENT												
RELATED												
PROJECT												
TOTAL	77	749	83	106	883	8	99	430	76	107	755	157

LANE

	NB							SB							WB							EB						
LANE	1		1		1			1		1		1			1		1		1			1		1		1		

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Perm	Auto	Prot-Fix	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	446	106
EastBound	456	107
WestBound	253	99
NorthBound	416	77

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)

$$V/C = \frac{77 + 446 + 99 + 456}{*1425} = 0.686$$

LOS = B

TDM_PM

January 25, 2011 ,Tuesday 01:12:01 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S:	Soto St	W/E:	7th St
I/S No:	23	AM/PM:	PM
Comments:	EXISTING PLUS PROJECT WITH TDM		
COUNT DATE:		STUDY DATE:	
GROWTH FACTOR:			

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	492	875	31	34	686	62	6	32	11	76	49	53
AMBIENT												
RELATED												
PROJECT												
TOTAL	492	875	31	34	686	62	6	32	11	76	49	53

LANE

	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND	1		1		1		
SOUTHBOUND	1		1		1		
WESTBOUND				1			
EASTBOUND		1				1	

SIGNAL

	Phasing	RTOR
NORTHBOUND	Prot-Fix	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Split	Auto
EASTBOUND	Split	Auto

Critical Movements Diagram

	A	B
SouthBound	374	34
EastBound	125	76
WestBound	49	6
NorthBound	453	492

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) + A(E/B)

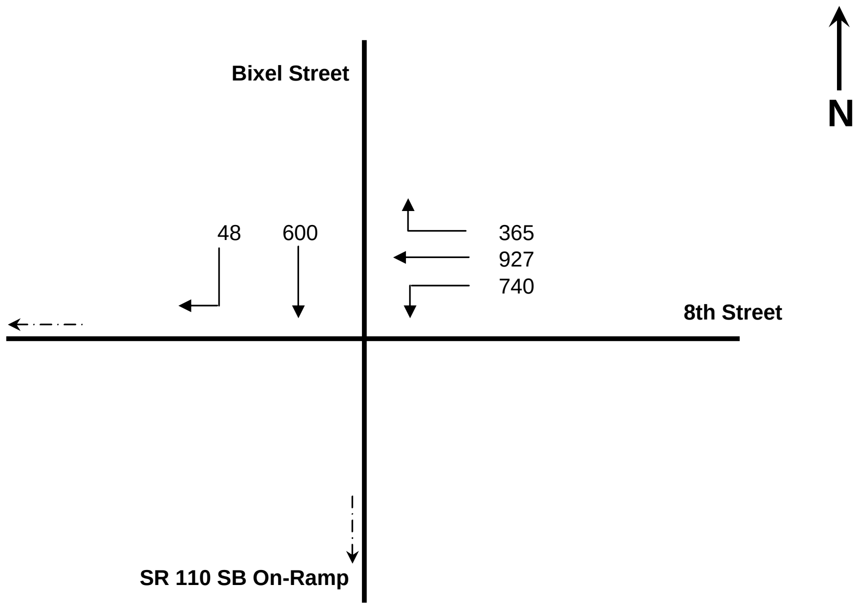
$$V/C = \frac{492 + 374 + 49 + 125}{*1375} = 0.686$$

LOS = B

Developed by Chun Wong, 12/94

Intersection 24

Existing plus Project with TDM Conditions P.M. Peak Hour



1) Lane Capacity for WB Lefts - 750 vphpl

Number of Lanes - 2

WB Left V/C - $\frac{740}{1,500}$

= **0.493**

<u>or</u>

Lane Capacity for WB Throughs and Rights - 1,500 vphpl

Number of Lanes - 2 throughs
Number of Lanes - 1 right-turn only

WB Through/Right V/C - $\frac{927}{3,000}$ or $\frac{365}{1,500}$

= **0.243**

2) Lane Capacity for SB Rights - 1,500 vphpl

Number of Lanes - 1

SB Right V/C - $\frac{48}{1,500}$

= **0.032**

<u>or</u>

Lane Capacity for SB Throughs - 750 vphpl

Number of Lanes - 2

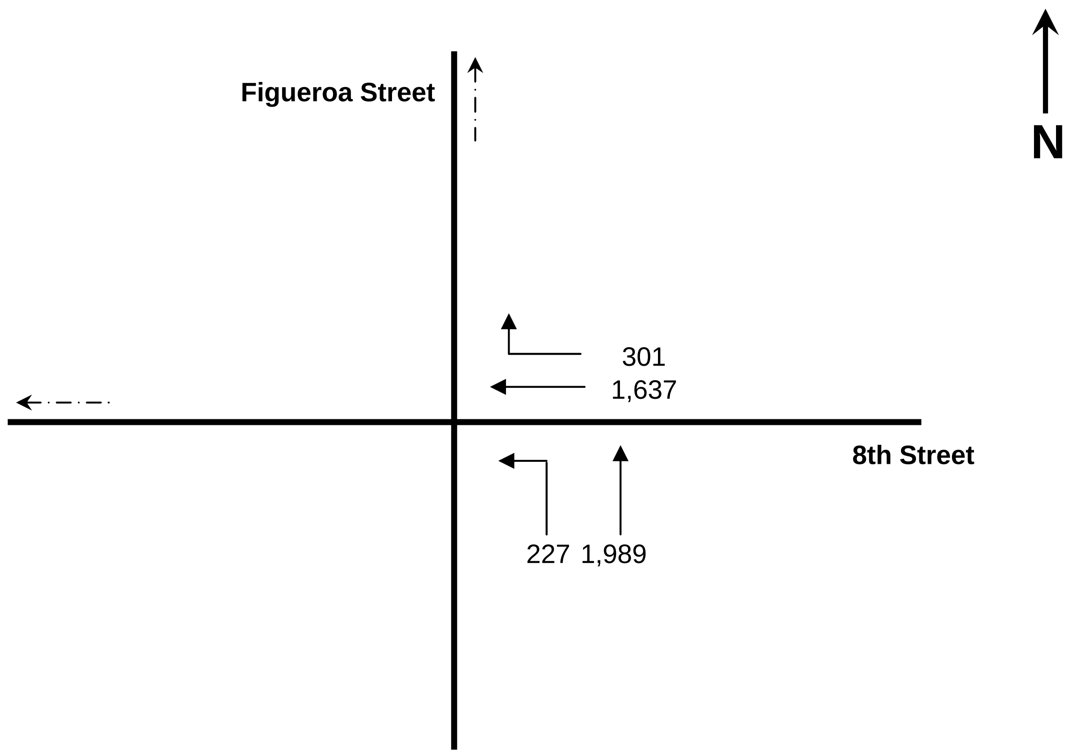
WB Through/Right V/C - $\frac{600}{1,500}$

= **0.400**

Intersection V/C = 0.893 — 0.100 = 0.793 LOS C

Intersection 25

Existing plus Project with TDM Conditions P.M. Peak Hour



1) Lane Capacity for WB Direction - 900 vphpl

Number of Lanes - 4 throughs
1 right-turn only

Critical V/C - $\frac{1,637}{3,600}$ or $\frac{301}{900}$

= **0.455**

2) Lane Capacity for NB Direction - 900 vphpl

Number of Lanes - 1 left-turn only
6 throughs

Critical V/C - $\frac{1,989}{5,400}$ or $\frac{227}{900}$

= **0.368**

Intersection V/C = 0.823 — 0.100 = 0.723 LOS C

TDM_PM

CalcaDB

January 25, 2011 ,Tuesday 01:12:01 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St | W/E: 8th St | I/S No: 26

AM/PM: PM | Comments: EXISTING PLUS PROJECT WITH TDM

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	0	0	0	1670	399	89	1590	0	0	0	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	0	1670	399	89	1590	0	0	0	0

LANE

	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND							
SOUTHBOUND			4			1	
WESTBOUND		1	3				
EASTBOUND							

SIGNAL

	Phasing	RTOR
NORTHBOUND	<none>	<none>
SOUTHBOUND	Split	Auto
WESTBOUND	Split	<none>
EASTBOUND	<none>	<none>

Critical Movements Diagram

SouthBound
A: 418
B: 0

EastBound
A: 0
B: 0

WestBound
A: 420
B: 89

NorthBound
A: 0
B: 0

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) + A(S/B)

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

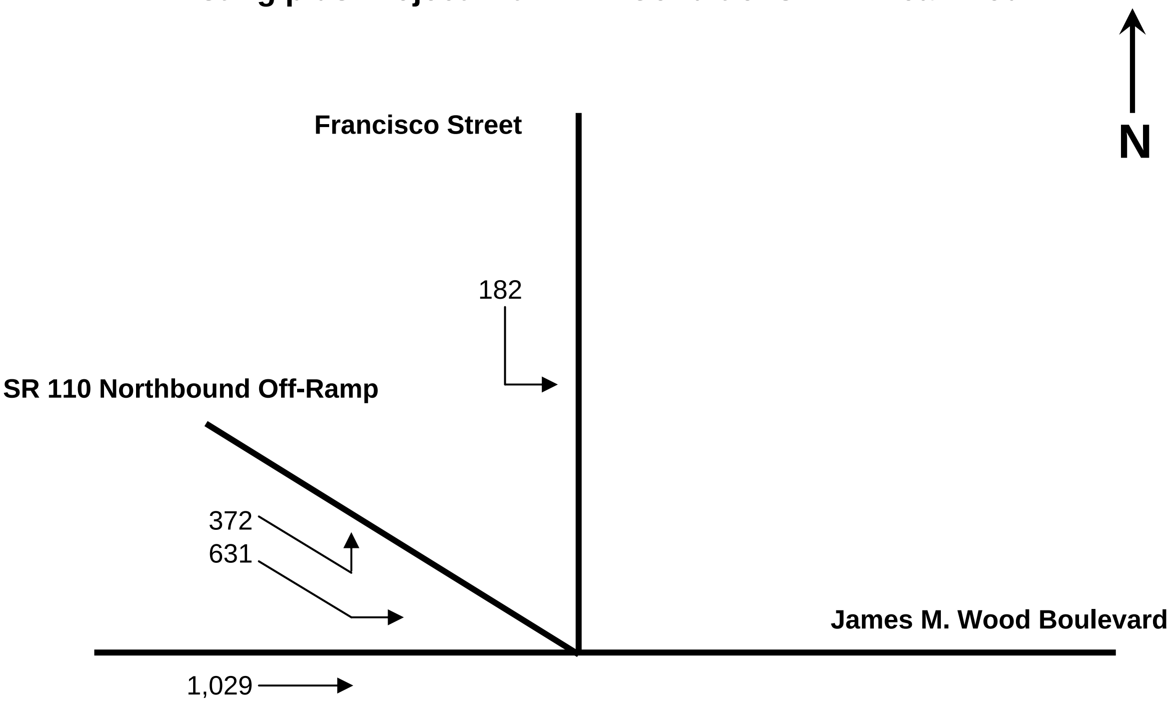
$$V/C = \frac{0 + 418 + 420 + 0}{*1500} = 0.489$$

LOS = A

Developed by Chun Wong, 12/94

Intersection 27

Existing plus Project with TDM Conditions P.M. Peak Hour



1) $\left\{ \frac{372 \quad + \quad 631}{2} \right\}$

or

$\frac{1,029}{3}$

= **502**

2) $\frac{182}{1}$

= **182**

Critical Volumes = **502** **+** **182** **=** **684**

V/C = $\frac{\mathbf{684}}{\mathbf{1,500}}$ **0.100** **=** **0.356** **LOS A**

TDM_PM

CalcaDB

January 25, 2011 ,Tuesday 01:12:01 PM

INTERSECTION DATA SUMMARY SHEET

N/S:	Figueroa St	W/E:	9th St/James M Wood Blvd	I/S No:	28
AM/PM:	PM	Comments:	EXISTING PLUS PROJECT WITH TDM		
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	0	1248	177	0	0	0	0	0	0	411	1328	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	1248	177	0	0	0	0	0	0	411	1328	0

LANE							
NORTHBOUND			3		1		
SOUTHBOUND							
WESTBOUND							
EASTBOUND	1	1	3				

SIGNAL	Phasing	RTOR
NORTHBOUND	Split	Auto
SOUTHBOUND	<none>	<none>
WESTBOUND	<none>	<none>
EASTBOUND	Split	<none>

Critical Movements Diagram

	A:	B:
SouthBound	0	0
EastBound	348	348
WestBound	0	0
NorthBound	356	0

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

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

Results

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

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

$$V/C = \frac{356 + 0 + 0 + 348}{*1500} = 0.399$$

LOS = A

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CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Cherry St
W/E: Pico Blvd
I/S No: 29

AM/PM: PM
Comments: EXISTING PLUS PROJECT WITH TDM

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	667	620	213	96	0	24	0	807	382	139	573	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	667	620	213	96	0	24	0	807	382	139	573	0

LANE	1	1	1			1		2					2				1		1	1		1		3				

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Split	Auto	Split	Auto	Perm	OLA	Perm	<none>

Critical Movements Diagram

	A	B
SouthBound	13	53
EastBound	191	139
WestBound	404	0
NorthBound	429	429

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)

$$V/C = \frac{429 + 53 + 404 + 139}{*1425} = 0.649$$

LOS = B

CalcaDB

January 25, 2011 ,Tuesday 01:12:01 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Figueroa St | W/E: Pico Blvd | I/S No: 30

AM/PM: PM | Comments: EXISTING PLUS PROJECT WITH TDM

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	130	1295	130	21	299	266	124	744	131	178	544	177
AMBIENT												
RELATED												
PROJECT												
TOTAL	130	1295	130	21	299	266	124	744	131	178	544	177

LANE	↰	⇧↰	⇧	⇧↰↱	⇧↱	↱	↰↱
NORTHBOUND	1		3		1		
SOUTHBOUND	1		2			1	
WESTBOUND	1		2			1	
EASTBOUND	1		2			1	

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	Prot-Fix	Auto	Perm	OLA	Perm	Auto	Prot-Fix	OLA

Critical Movements Diagram

	A	B
SouthBound	150	21
EastBound	272	178
WestBound	372	124
NorthBound	356	130

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

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

Results

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

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

V/C = (356 + 21 + 372 + 178) / *1375 = 0.604

LOS = B

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Hoover St | W/E: Alvarado St/Alvarado Ter | I/S No: 31

AM/PM: PM | Comments: EXISTING PLUS PROJECT WITH TDM

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	1037	623	29	879	0	632	0	0	0	0	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	1037	623	29	879	0	632	0	0	0	0	0

LANE

	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND			1		1	1	
SOUTHBOUND		1	1				
WESTBOUND	1						1
EASTBOUND							

SIGNAL

	Phasing	RTOR
NORTHBOUND	Perm	Free
SOUTHBOUND	Perm	<none>
WESTBOUND	Split	Auto
EASTBOUND	<none>	<none>

Critical Movements Diagram

SouthBound A: 527 B: 29

EastBound A: 0 B: 0

WestBound A: 316 B: 316

NorthBound A: 553 B: 0

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) + A(E/B)

$$V/C = \frac{553 + 29 + 316 + 0}{*1500} = 0.529$$

LOS = A

CalcaDB

January 25, 2011 ,Tuesday 01:12:01 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St

W/E: Venice Blvd

I/S No: 32

AM/PM: PM

Comments: EXISTING PLUS PROJECT WITH TDM

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	0	0	0	28	1237	91	61	413	0	0	304	41
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	28	1237	91	61	413	0	0	304	41

LANE

	NB 1	NB 2	NB 3	NB 4	NB 5	NB 6	NB 7	SB 1	SB 2	SB 3	SB 4	SB 5	SB 6	SB 7	WB 1	WB 2	WB 3	WB 4	WB 5	WB 6	WB 7	EB 1	EB 2	EB 3	EB 4	EB 5	EB 6	EB 7
LANE								1		2		1				1	1							1		1		

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	<none>	<none>	Split	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

SouthBound
A: 443
B: 28

EastBound
A: 173
B: 0

WestBound
A: 268
B: 61

NorthBound
A: 0
B: 0

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

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

Results

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

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

$$V/C = \frac{0 + 443 + 268 + 0}{*1500} = 0.404$$

LOS = A

CalcaDB

January 25, 2011 ,Tuesday 01:12:01 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave | W/E: 18th St | I/S No: 33

AM/PM: PM | Comments: EXISTING PLUS PROJECT WITH TDM

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	0	164	254	908	0	0	0	0	0	1118	183
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	164	254	908	0	0	0	0	0	1118	183

LANE

	NB	SB	WB	EB
Left		1		
Left/Through				
Through		3		2
Left/Through/Right				
Through/Right				1
Right	2			1
Left/Right				

SIGNAL

	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Prot-Fix	<none>
WESTBOUND	<none>	<none>
EASTBOUND	Split	Auto

Critical Movements Diagram

	A	B
SouthBound	303	254
EastBound	373	0
WestBound	0	0
NorthBound	90	0

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) + A(E/B)

$$V/C = \frac{90 + 254 + 0 + 373}{*1425} = 0.433$$

LOS = A

TDM_PM

CalcaDB

January 25, 2011 ,Tuesday 01:12:01 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Olive St | W/E: 6th St | I/S No: 34

AM/PM: PM | Comments: EXISTING PLUS PROJECT WITH TDM

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	1248	176	0	0	0	0	0	0	561	1052	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	1248	176	0	0	0	0	0	0	561	1052	0

LANE

	NB							SB							WB							EB						
LANE			4		1																	1	1	3				

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Split	Auto	<none>	<none>	<none>	<none>	Split	<none>

Critical Movements Diagram

	A	B
SouthBound	0	0
EastBound	323	323
WestBound	0	0
NorthBound	285	0

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

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

Results

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

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

$$V/C = \frac{285 + 0 + 0 + 323}{*1500} = 0.335$$

LOS = A

Developed by Chun Wong, 12/94

TDM_PM

CalcaDB

January 25, 2011 ,Tuesday 01:12:01 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Hope St | W/E: 7th St | I/S No: 35

AM/PM: PM | Comments: EXISTING PLUS PROJECT WITH TDM

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	85	288	71	13	293	27	0	777	83	0	606	88
AMBIENT												
RELATED												
PROJECT												
TOTAL	85	288	71	13	293	27	0	777	83	0	606	88

LANE

	L	LT	T	LTR	TR	R	LR
NORTHBOUND		1			1		
SOUTHBOUND		1			1		
WESTBOUND			1		1		
EASTBOUND			1		1		

SIGNAL

	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Perm	Auto
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	173	13
EastBound	347	0
WestBound	430	0
NorthBound	265	85

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)

$$V/C = \frac{265 + 13 + 430 + 0}{*1500} = 0.402$$

LOS = A

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CalcaDB

January 25, 2011 ,Tuesday 01:12:01 PM

INTERSECTION DATA SUMMARY SHEET

N/S:	Grand Ave	W/E:	7th St	I/S No:	36
AM/PM:	PM	Comments:	EXISTING PLUS PROJECT WITH TDM		
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	0	0	0	170	1326	69	0	775	0	0	606	146
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	170	1326	69	0	775	0	0	606	146

LANE

NORTHBOUND							
SOUTHBOUND	1		4			1	
WESTBOUND			2				
EASTBOUND			2			1	

SIGNAL

	Phasing	RTOR
NORTHBOUND	<none>	<none>
SOUTHBOUND	Split	Auto
WESTBOUND	Perm	<none>
EASTBOUND	Perm	Auto

Critical Movements Diagram

SouthBound
A: 332
B: 170

EastBound
A: 303
B: 0

WestBound
A: 388
B: 0

NorthBound
A: 0
B: 0

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

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

Results

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

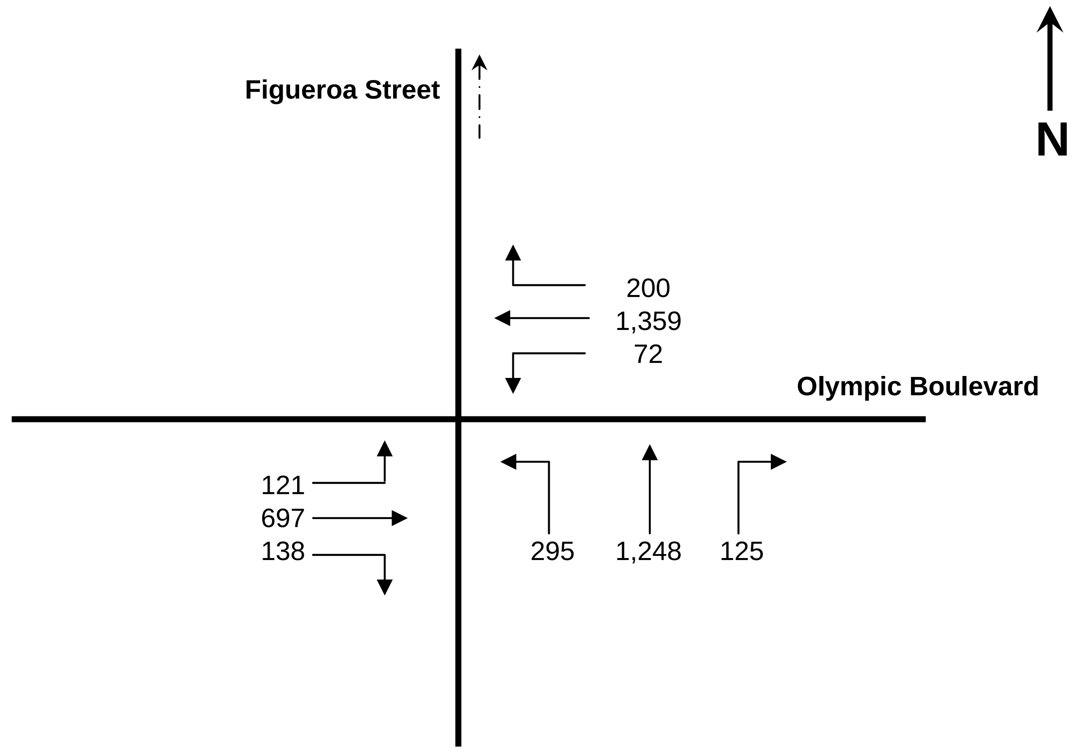
West/East Critical Movements = A(W/B) + B(E/B)

$$V/C = \frac{0 + 332 + 388 + 0}{*1500} = 0.410$$

LOS = A

Intersection 37

Existing plus Project with TDM Conditions P.M. Peak Hour



1) Lane Capacity for EB Lefts - 900 vphpl

Number of Lanes - 1

EB Left V/C - $\frac{121}{900}$

= ***0.134***

Lane Capacity for WB Throughs - 1,425 vphpl
Lane Capacity for WB Rights - 900 vphpl

Number of Lanes - 3 throughs
1 right-turn only

WB Through/Right V/C - $\frac{1,359}{4,275}$ or $\frac{200}{900}$

= ***0.318***

Critical V/C - ***0.134*** **+** ***0.318*** **=** **0.452**

<u>or</u>

Lane Capacity for WB Lefts - 1,425 vphpl

Number of Lanes - 1

WB Left V/C - $\frac{72}{1,425}$

= ***0.051***

Lane Capacity for EB Throughs/Rights - 1,425 vphpl

Number of Lanes - 3 throughs
1 right-turn only

EB Through/Right V/C - $\frac{697}{4,275}$ or $\frac{138}{1,425}$

= ***0.163***

Critical V/C - ***0.051*** **+** ***0.163*** **=** **0.214**

2) Lane Capacity for NB Throughs - 900 vphpl
Lane Capacity for NB Left- and Right-turns - 1,425 vphpl

Number of Lanes - 1 left-turn only
3 throughs
1 right-turn only

Critical V/C - $\frac{1,248}{2,700}$ or $\frac{295}{1,425}$ or $\frac{125}{1,425}$

= **0.462**

Intersection V/C = 0.914 — 0.100 = 0.814 LOS D

CalcaDB

January 25, 2011 ,Tuesday 01:12:01 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Glendale Blvd   W/E: Temple St   I/S No: 38

AM/PM: PM   Comments: EXISTING PLUS PROJECT WITH TDM

COUNT DATE: STUDY DATE: GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	60	1653	19	83	716	207	29	565	237	317	665	77
AMBIENT												
RELATED												
PROJECT												
TOTAL	60	1653	19	83	716	207	29	565	237	317	665	77

LANE	NB	SB	WB	EB
Left	1	1	1	1
Left-Through				
Through	1	1	1	1
Left-Through-Right				
Through-Right	1	1	1	1
Right				
Left-Right				

SIGNAL	NB	SB	WB	EB
Phasing	Perm	Perm	Prot-Fix	Prot-Fix
RTOR	Auto	Auto	Auto	Auto

Critical Movements Diagram

	A	B
SouthBound	462	83
EastBound	371	317
WestBound	401	29
NorthBound	836	60

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)

$$V/C = \frac{836 + 83 + 401 + 317}{*1425} = 1.079$$

LOS = F

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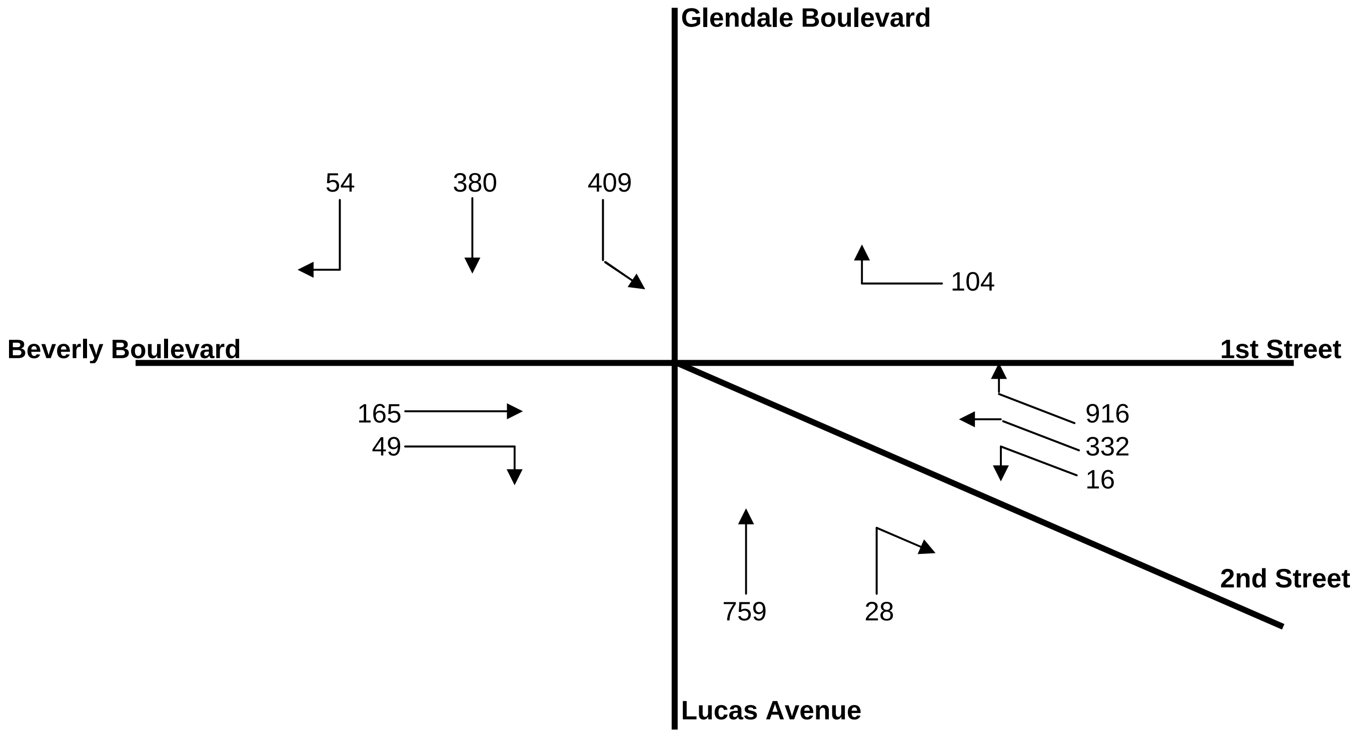
Intersection 39

Existing plus Project with TDM Conditions P.M. Peak Hour



Phase 1) *Glendale Boulevard and Lucas Avenue - North-South Throughs and Rights*

$$\frac{759 + 28}{2}$$

&

$$\frac{54}{1} \quad \& \quad \frac{380}{1}$$

= **394**

Phase 2) *Glendale Boulevard, 1st Street, and 2nd Street - Southbound Lefts, Throughs, and Rights, and*
a.) Westbound Rights on 1st Street
b.) Westbound Rights on 2nd Street

a.) $\frac{104}{1}$

& $\left\{ \frac{380}{1} - 394 \right\}$ & $\left\{ \frac{409}{2} \right\}$

= **104**

b.) $\left\{ \frac{409}{2} - 104 \right\}$

or $\left\{ \frac{380}{1} - 394 - 104 \right\}$

& $\frac{916}{2}$

= **101**

Phase 3) *2nd Street - Westbound Lefts, Throughs, and Rights*

$\left\{ \frac{916}{2} - 101 \right\}$

& $\left\{ \frac{332 + 16}{1} \right\}$

= **357**

Phase 4) *Beverly Boulevard and 2nd Street - Westbound Lefts and Throughs, and Eastbound Throughs and Rights*

$$\frac{165 + 49}{2}$$

or $\left\{ \frac{332 + 16}{1} \right\} - 357$

= **107**

Critical Volumes = 394 + 104 + 101 + 357 + 107

= 1,063

V/C = $\frac{1,063}{1,375}$ – 0.070 = 0.703 LOS C

January 25, 2011 ,Tuesday 01:12:01 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S:	Lucas Ave	W/E:	3rd St	I/S No:	40
AM/PM:	PM	Comments:	EXISTING PLUS PROJECT WITH TDM		
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	34	482	81	29	304	82	50	1025	166	88	792	103
AMBIENT												
RELATED												
PROJECT												
TOTAL	34	482	81	29	304	82	50	1025	166	88	792	103

LANE							
NORTHBOUND	1		2			1	
SOUTHBOUND	1		1		1		
WESTBOUND	1		2			1	
EASTBOUND	1		2			1	

SIGNAL	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Perm	Auto
EASTBOUND	Perm	Auto

Critical Movements Diagram

SouthBound
A: 193
B: 29

EastBound
A: 396
B: 88

WestBound
A: 513
B: 50

NorthBound
A: 241
B: 34

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

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

Results

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

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

$$V/C = \frac{241 + 29 + 513 + 88}{*1500} = 0.511$$

LOS = A

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TDM_PM

CalcaDB

January 25, 2011 ,Tuesday 01:12:01 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Lucas Ave | W/E: 6th St | I/S No: 41

AM/PM: PM | Comments: EXISTING PLUS PROJECT WITH TDM

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	50	318	63	27	215	101	65	881	63	149	833	24
AMBIENT												
RELATED												
PROJECT												
TOTAL	50	318	63	27	215	101	65	881	63	149	833	24

LANE

	NB	SB	WB	EB
LANE	, , , 1, , ,	, , , 1, , ,	1, , 2, , , 1,	1, , 1, , 1, ,

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

SouthBound
A: 343
B: 27

EastBound
A: 429
B: 149

WestBound
A: 441
B: 65

NorthBound
A: 431
B: 50

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

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

Results

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

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

$$V/C = \frac{431 + 27 + 441 + 149}{*1500} = 0.629$$

LOS = B

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TDM_PM

CalcaDB

January 25, 2011 ,Tuesday 01:12:01 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Lucas Ave | W/E: Wilshire Blvd | I/S No: 42

AM/PM: PM | Comments: EXISTING PLUS PROJECT WITH TDM

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	48	230	32	17	273	69	85	903	76	65	785	49
AMBIENT												
RELATED												
PROJECT												
TOTAL	48	230	32	17	273	69	85	903	76	65	785	49

LANE							
NORTHBOUND				1			
SOUTHBOUND				1			
WESTBOUND		1	1			1	
EASTBOUND		1	1			1	

SIGNAL	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Perm	Auto
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	359	17
EastBound	523	65
WestBound	622	85
NorthBound	310	48

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)

$$V/C = \frac{48 + 359 + 622 + 65}{*1500} = 0.659$$

LOS = B

ALTERNATE FUTURE WITHOUT PROJECT CONDITIONS

(YEAR 2020)

CB_AM

CalcaDB

January 25, 2011 ,Tuesday 12:50:00 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave W/E: US 101 NB Ramps I/S No: 1

AM/PM: AM Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

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	696	212	0	0	1239	527	0	0	0	29	0	690
AMBIENT												
RELATED												
PROJECT												
TOTAL	696	212	0	0	1239	527	0	0	0	29	0	690

LANE

NORTHBOUND	1		2				
SOUTHBOUND			2			1	
WESTBOUND							
EASTBOUND						1	1

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Prot-Fix	<none>	Perm	OLA	<none>	<none>	Split	Auto

Critical Movements Diagram

SouthBound
A: 620
B: 0

EastBound
A: 12
B: 29

WestBound
A: 0
B: 0

NorthBound
A: 106
B: 696

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)

$$V/C = \frac{696 + 620 + 0 + 29}{*1425} = 0.874$$

LOS = D

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CB_AM

January 25, 2011 ,Tuesday 12:50:00 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S:	Hope St/US 101 SB Ramps	W/E:	Temple St	I/S No:	2
AM/PM:	AM	Comments:	FUTURE WITHOUT PROJECT (YEAR 2020)		
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	69	381	105	170	389	44	403	595	218	274	513	266
AMBIENT												
RELATED												
PROJECT												
TOTAL	69	381	105	170	389	44	403	595	218	274	513	266

	NORTHBOUND							SOUTHBOUND							WESTBOUND							EASTBOUND						
LANE	1		1		1			1		1		1			1		2			1		1		1		1		

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	Auto	Perm	Auto	Prot-Fix	Auto	Prot-Fix	Auto

Critical Movements Diagram

	A:	B:
SouthBound	217	170
EastBound	390	274
WestBound	298	403
NorthBound	243	69

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 = B(W/B) + A(E/B)

V/C = (243 + 170 + 403 + 390) / *1425 = 0.776   LOS = C

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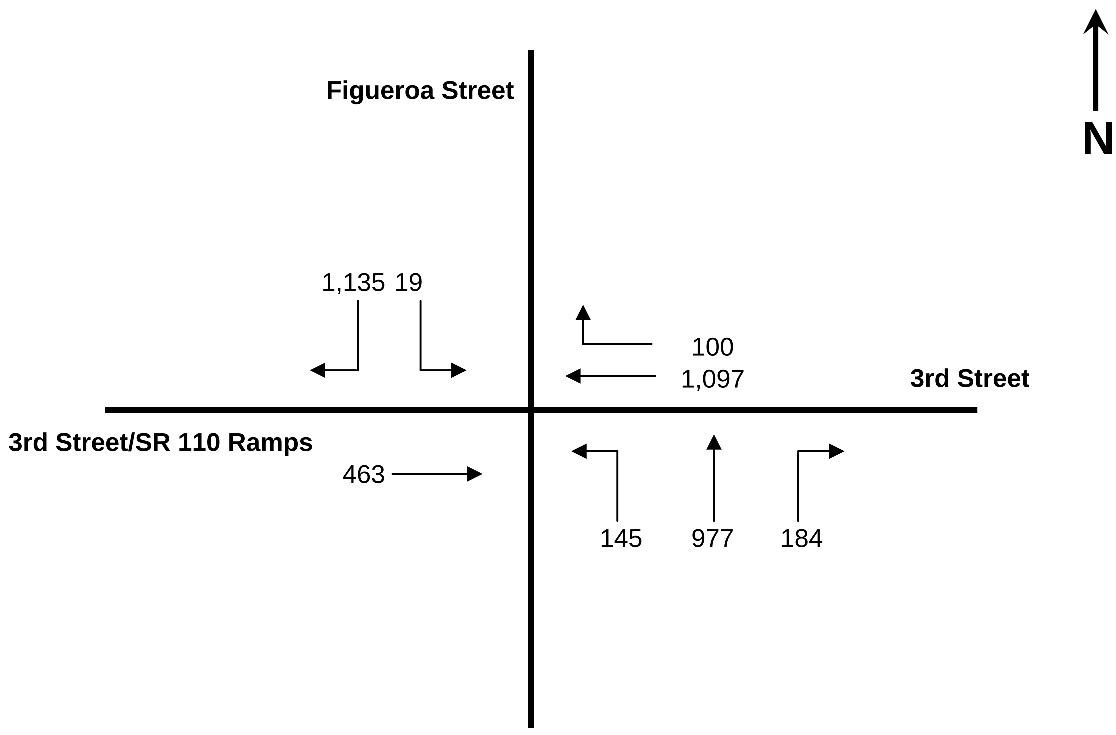
Intersection 3

Future without Project Conditions A.M. Peak Hour (Year 2020)



1) Lane Capacity for WB Throughs - 900 vphpl

Number of Lanes - 5

WB Through V/C - $\frac{1,097}{4,500}$

= **0.244**

<u>or</u>

Lane Capacity for WB Rights - 1,425 vphpl

Number of Lanes - 1

WB Right V/C - $\frac{100}{1,425}$

= **0.070**

<u>or</u>

Lane Capacity for EB Throughs - 1,425 vphpl

Number of Lanes - 2

EB Through V/C - $\frac{463}{2,850}$

= **0.162**

2) Lane Capacity for NB Lefts - 900 vphpl

Number of Lanes - 3

NB Left V/C - $\left\{\frac{145 \quad x \quad 0.37}{900}\right\}$

= ***0.060***

Lane Capacity for SB Rights - 1,425 vphpl

Number of Lanes - 2

SB Right V/C - $\left\{\frac{1,135 \quad x \quad 0.55}{1,425}\right\}$

= ***0.438***

Critical V/C - ***0.060*** **+** ***0.438*** **=** **0.498**

<u>or</u>

Lane Capacity for NB Throughs & Rights - 1,425 vphpl

Number of Lanes - 2 throughs
1 through/right

NB Through/Right V/C - $\left\{\frac{977 \quad + \quad 184}{4,275}\right\}$ or $\frac{184}{1,425}$

= **0.272**

Intersection V/C = 0.742 — 0.100 = 0.642 LOS B

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St W/E: 3rd St I/S No: 4

AM/PM: AM Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

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	1	26	0	0	1030	137	526	1043	108	0	0	473
AMBIENT												
RELATED												
PROJECT												
TOTAL	1	26	0	0	1030	137	526	1043	108	0	0	473

LANE

	NB							SB							WB							EB						
LANE	1		2							2			1		1		3		1								1	

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Perm	<none>	Perm	Auto	Split	Auto	<none>	Free

Critical Movements Diagram

	A	B
SouthBound	515	0
EastBound	0	0
WestBound	288	526
NorthBound	13	1

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)

$$V/C = \frac{1 + 515 + 526 + 0}{*1500} = 0.625$$

LOS = B

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CB_AM

January 25, 2011 ,Tuesday 12:50:00 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S:	Grand Ave	W/E:	3rd St	I/S No:	5
AM/PM:	AM	Comments:	FUTURE WITHOUT PROJECT (YEAR 2020)		
COUNT DATE:		STUDY DATE:		GROWTH FACTOR:	

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	17	68	0	0	1168	163	0	0	0	23	0	88
AMBIENT												
RELATED												
PROJECT												
TOTAL	17	68	0	0	1168	163	0	0	0	23	0	88

LANE	1	2	3	4	5	6	7
NORTHBOUND	1		2				
SOUTHBOUND			1		1		
WESTBOUND							
EASTBOUND	1					2	

SIGNAL	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	<none>	<none>
EASTBOUND	Split	Auto

Critical Movements Diagram

	A	B
SouthBound	666	0
EastBound	48	23
WestBound	0	0
NorthBound	34	17

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) + A(E/B)

$$V/C = \frac{17 + 666 + 0 + 48}{*1500} = 0.417$$

LOS = A

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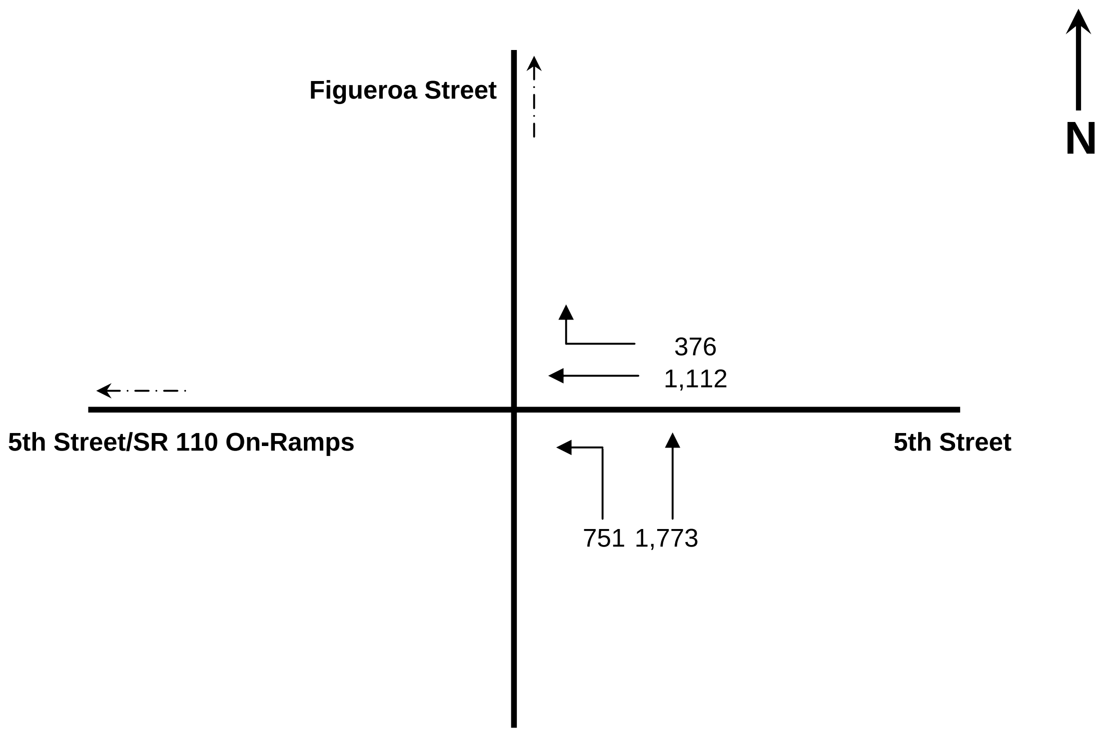
Intersection 6

Future without Project Conditions A.M. Peak Hour (Year 2020)



1) Lane Capacity for WB Direction - 900 vphpl

Number of Lanes - 7

Critical V/C - $\left\{\dfrac{1{,}112 + 376}{6{,}300}\right\}$

= **0.236**

2) Lane Capacity for NB Throughs - 900 vphpl

Number of Lanes - 3

Critical V/C - $\dfrac{1{,}773}{2{,}700}$

= **0.657**

<u>or</u>

Lane Capacity for NB Lefts - 900 vphpl

Number of Lanes - 3

Critical V/C - $\dfrac{751}{2{,}700}$

= **0.278**

Intersection V/C = 0.893 – 0.100 = 0.793 LOS C

CB_AM

CalcaDB

January 25, 2011 ,Tuesday 12:50:00 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St W/E: 5th St I/S No: 7

AM/PM: AM Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

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	0	0	0	0	1273	316	262	1380	0	0	0	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	0	1273	316	262	1380	0	0	0	0

	NORTHBOUND							SOUTHBOUND							WESTBOUND							EASTBOUND						
LANE										3		1	1		1		5											

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	<none>	<none>	Split	Auto	Split	<none>	<none>	<none>

Critical Movements Diagram

SouthBound
A: 318
B: 0

EastBound
A: 0
B: 0

WestBound
A: 276
B: 262

NorthBound
A: 0
B: 0

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) + A(S/B)

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

$$V/C = \frac{0 + 318 + 276 + 0}{*1500} = 0.326$$

LOS = A

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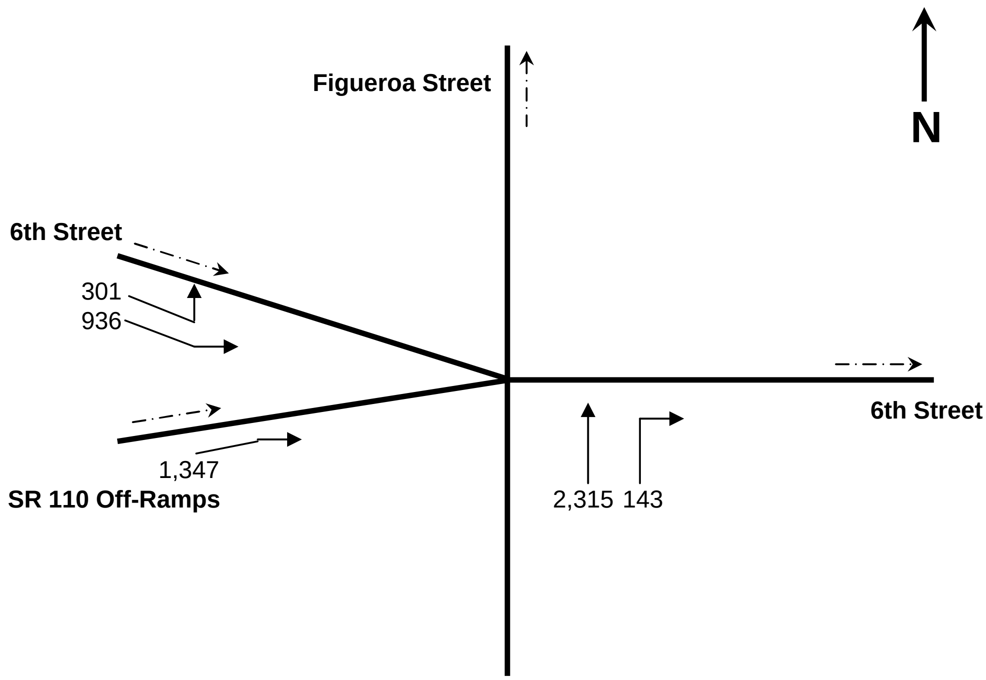
Intersection 8

Future without Project Conditions A.M. Peak Hour (Year 2020)



1) Lane Capacity for EB Direction - 1,500 vphpl

Number of Lanes -
1 left-turn lane from 6th Street
1 shared left/through lane from 6th Street
1 through lane from 6th Street
3 through lanes from SR 110 Off-Ramps

Critical V/C - $\left\{\dfrac{936 \quad + \quad 301}{4{,}500}\right\}$ or $\dfrac{1{,}347}{4{,}500}$

= **0.299**

2) Lane Capacity for NB Throughs - 900 vphpl

Number of Lanes - 5

Critical V/C - $\dfrac{2{,}315}{4{,}500}$

= **0.514**

or

Lane Capacity for NB Rights - 1,500 vphpl

Number of Lanes - 1

Critical V/C - $\dfrac{143}{1{,}500}$

= **0.095**

Intersection V/C = 0.813 — 0.100 = 0.713 LOS C

CB_AM

CalcaDB

January 25, 2011 ,Tuesday 12:50:00 PM

INTERSECTION DATA SUMMARY SHEET

N/S:	Flower St	W/E:	6th St	I/S No:	9
AM/PM:	AM	Comments:	FUTURE WITHOUT PROJECT (YEAR 2020)		
COUNT DATE:		STUDY DATE:		GROWTH FACTOR:	

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	0	0	269	929	0	0	0	0	0	1800	648
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	269	929	0	0	0	0	0	1800	648

LANE

	1	2	3	4	5	6	7
NORTHBOUND							
SOUTHBOUND	2		4				
WESTBOUND							
EASTBOUND			3		1	1	

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	<none>	<none>	Split	<none>	<none>	<none>	Split	Auto

Critical Movements Diagram

	A:	B:
SouthBound	232	148
EastBound	490	0
WestBound	0	0
NorthBound	0	0

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

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

Results

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

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

$$V/C = \frac{0 + 232 + 0 + 490}{*1500} = 0.411$$

LOS = A

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CalcaDB

January 25, 2011 ,Tuesday 12:50:00 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Alvarado St | W/E: Wilshire Blvd | I/S No: 10

AM/PM: AM | Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

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	0	883	154	0	1024	191	76	1009	64	111	1233	39
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	883	154	0	1024	191	76	1009	64	111	1233	39

LANE	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND			2		1		
SOUTHBOUND			2		1		
WESTBOUND	1		1		1		
EASTBOUND	1		1		1		

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	405	0
EastBound	636	111
WestBound	537	76
NorthBound	346	0

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)

$$V/C = \frac{0 + 405 + 76 + 636}{*1500} = 0.675$$

LOS = B

CalcaDB

January 25, 2011 ,Tuesday 12:50:00 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Beaudry Ave | W/E: Wilshire Blvd | I/S No: 11

AM/PM: AM | Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

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	10	0	25	743	31	741	5	612	0	0	1076	6
AMBIENT												
RELATED												
PROJECT												
TOTAL	10	0	25	743	31	741	5	612	0	0	1076	6

LANE							
NORTHBOUND							1
SOUTHBOUND	1			1		1	
WESTBOUND		1	1				
EASTBOUND			2			1	

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	Split	Auto	Split	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

SouthBound
A: 505
B: 505

EastBound
A: 538
B: 0

WestBound
A: 321
B: 5

NorthBound
A: 35
B: 10

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

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

Results

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

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

$$V/C = \frac{35 + 505 + 5 + 538}{*1425} = 0.690$$

LOS = B

CB_AM

January 25, 2011 ,Tuesday 12:50:00 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Francisco St

W/E: Wilshire Blvd

I/S No: 12

AM/PM: AM

Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

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	34	14	67	9	1	10	53	546	57	75	1357	476
AMBIENT												
RELATED												
PROJECT												
TOTAL	34	14	67	9	1	10	53	546	57	75	1357	476

	NB							SB							WB							EB						
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

SouthBound
A: 20
B: 9

EastBound
A: 917
B: 75

WestBound
A: 302
B: 53

NorthBound
A: 67
B: 34

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

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

Results

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

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

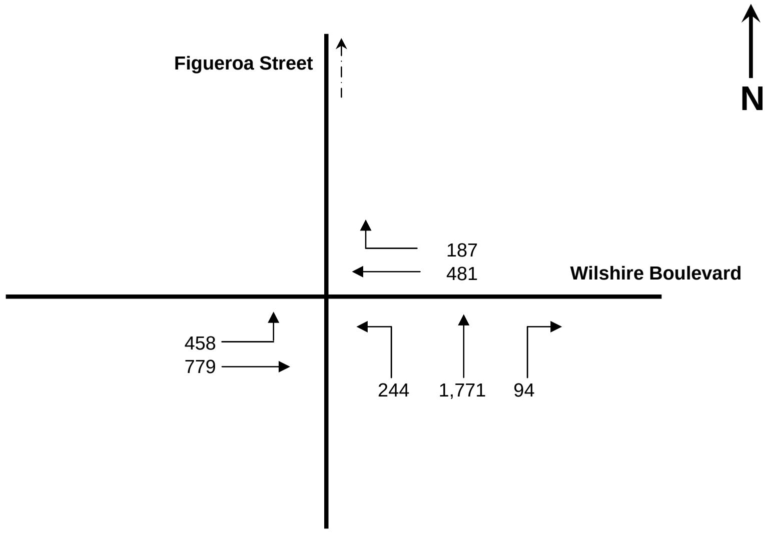
$$V/C = \frac{67 + 9 + 53 + 917}{*1500} = 0.627$$

LOS = B

Developed by Chun Wong, 12/94

Intersection 13

Future without Project Conditions A.M. Peak Hour (Year 2020)



1) Lane Capacity for EB Lefts - 900 vphpl

Number of Lanes - 2

EB Left V/C - $\left\{\frac{458 \times 0.55}{900}\right\}$

= ***0.28***

Lane Capacity for WB Direction - 1,425 vphpl

Number of Lanes -
1 through
1 through/right
1 right-turn only

WB V/C - $\left\{\frac{481 + 187}{4,275}\right\}$ or $\frac{481}{2,850}$ or $\frac{187}{2,850}$

= ***0.169***

Critical V/C - ***0.28*** **+** ***0.169*** **=** **0.449**

<u>or</u>

Lane Capacity for EB Throughs - 1,425 vphpl

Number of Lanes - 2

Critical V/C - $\frac{779}{2,850}$

= **0.273**

2) Lane Capacity for NB Direction - 900 vphpl

Number of Lanes -
1 left/through
3 throughs
1 right-turn only

Critical V/C - $\left\{\frac{244 + 1,771}{3,600}\right\}$

or $\frac{244}{900}$

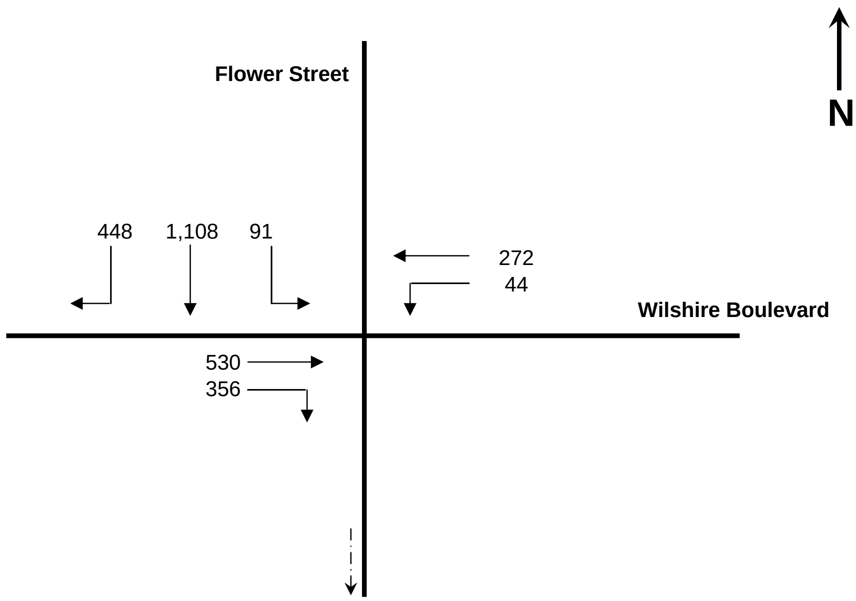
or $\frac{94}{900}$

= **0.560**

Intersection V/C = 1.009 — 0.100 = 0.909 LOS E

Intersection 14

Future without Project Conditions A.M. Peak Hour (Year 2020)



1) Lane Capacity for WB Direction - 900 vphpl

Number of Lanes - 2

WB Direction V/C - $\left\{\frac{272 + 44}{1{,}800}\right\}$ or $\frac{44}{900}$

= **0.176**

Lane Capacity for EB Direction - 1,500 vphpl

Number of Lanes - 2

EB Direction V/C - $\left\{\frac{530 + 356}{3{,}000}\right\}$ or $\frac{356}{1{,}500}$

= **0.295**

2) Lane Capacity for SB Throughs and Lefts - 1,500 vphpl

Number of Lanes - 3 throughs
1 left-turn only

SB Through V/C - $\frac{1{,}108}{4{,}500}$

= **0.246**

SB Left V/C - $\frac{91}{1{,}500}$

= **0.061**

Lane Capacity for SB Rights - 900 vphpl

Number of Lanes - 1

SB Right V/C - $\frac{448}{900}$

= **0.498**

Intersection V/C = 0.793 − 0.100 = 0.693 LOS B

CalcaDB

January 25, 2011 ,Tuesday 12:50:00 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave | W/E: Wilshire Blvd | I/S No: 15

AM/PM: AM | Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

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	0	0	0	64	1121	223	10	11	0	0	44	311
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	64	1121	223	10	11	0	0	44	311

LANE

	NB							SB							WB							EB						
LANE									1	2		1				1										1	1	

	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	<none>	<none>	Split	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	352	64
EastBound	178	0
WestBound	21	10
NorthBound	0	0

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) + A(S/B)

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

$$V/C = \frac{0 + 352 + 10 + 178}{*1500} = 0.290$$

LOS = A

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Alvarado St   W/E: 7th St   I/S No: 16

AM/PM: AM   Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

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	0	958	66	0	995	80	0	463	67	0	700	32
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	958	66	0	995	80	0	463	67	0	700	32

LANE

	NB							SB							WB							EB						
LANE			2		1					2		1					1		1					1		1		

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

SouthBound — A: 358, B: 0

EastBound — A: 366, B: 0

WestBound — A: 265, B: 0

NorthBound — A: 341, B: 0

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

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

Results

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

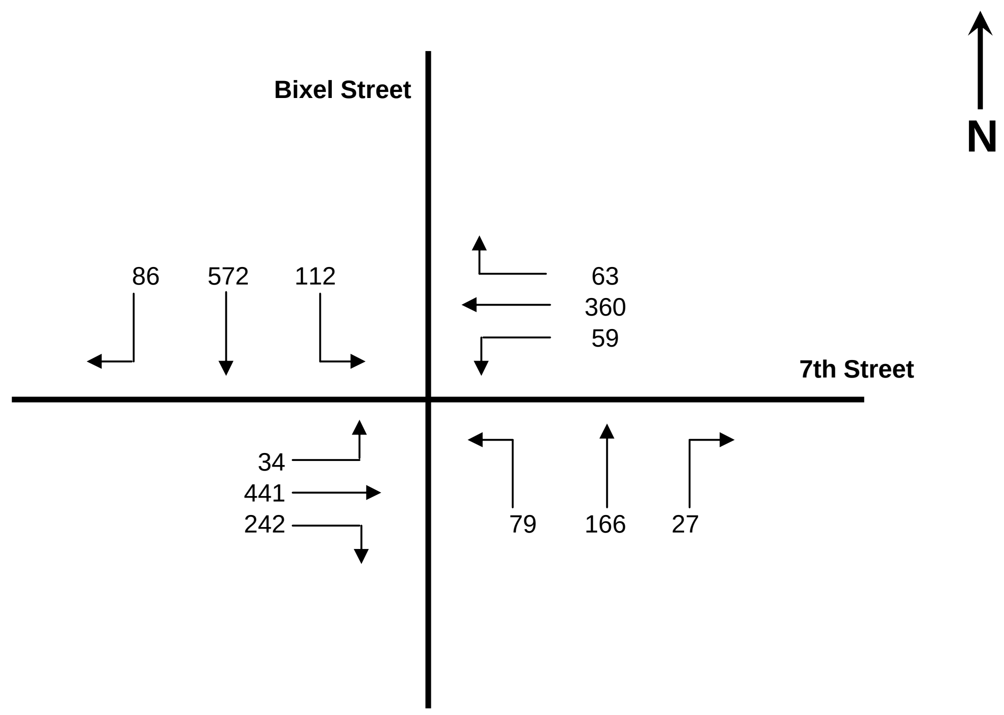
West/East Critical Movements = B(W/B) + A(E/B)

$$V/C = \frac{0 + 358 + 0 + 366}{*1500} = 0.413$$

LOS = A

Intersection 17

Future without Project Conditions A.M. Peak Hour (Year 2020)



1) Lane Capacity for WB Lefts - 900 vphpl

Number of Lanes - 1

WB Left V/C - $\frac{59}{900}$

= ***0.066***

Lane Capacity for EB Throughs - 1,500 vphpl

Number of Lanes - 1

EB Through V/C - $\frac{441}{1,500}$

= ***0.294***

Lane Capacity for EB Rights - 900 vphpl

Number of Lanes - 1

EB Right V/C - $\frac{242}{900}$

= ***0.269***

Critical V/C - ***0.066*** **+** ***0.294***

= 0.360

<u>or</u>

Lane Capacity for EB Lefts - 1,500 vphpl

Number of Lanes - 1

EB Left V/C - $\frac{34}{1,500}$

= ***0.023***

Lane Capacity for WB Throughs/Rights - 1,500 vphpl

Number of Lanes - 2

WB Through V/C - $\left\{\frac{360 + 63}{3,000}\right\}$

= ***0.141***

Critical V/C - ***0.023*** **+** ***0.141***

= 0.164

2) Lane Capacity for NB & SB Direction - 1,500 vphpl

Number of Lanes - 1 left
1 through/right

Critical V/C - $\left\{\frac{79 + 572 + 86}{1,500}\right\}$

or $\left\{\frac{112 + 166 + 27}{1,500}\right\}$

= **0.491**

Intersection V/C = 0.851 — 0.100 = 0.751 LOS C

CB_AM

CalcaDB

January 25, 2011 ,Tuesday 12:50:00 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Francisco St **W/E:** 7th St **I/S No:** 18

AM/PM: AM **Comments:** FUTURE WITHOUT PROJECT (YEAR 2020)

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	41	11	79	56	269	75	150	582	128	42	550	143
AMBIENT												
RELATED												
PROJECT												
TOTAL	41	11	79	56	269	75	150	582	128	42	550	143

	NB							SB							WB							EB						
LANE		1				1		1				1			1		1		1			1		1		1		

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	344	56
EastBound	347	42
WestBound	355	150
NorthBound	79	41

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)

$$V/C = \frac{41 + 344 + 150 + 347}{*1500} = 0.518$$

LOS = A

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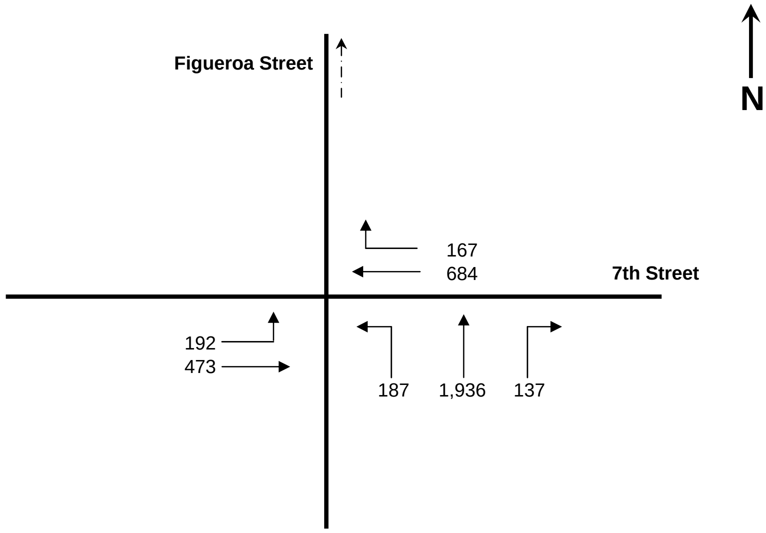
Intersection 19

Future without Project Conditions A.M. Peak Hour (Year 2020)



1) Lane Capacity for EB Lefts - 900 vphpl

Number of Lanes - 2

EB Left V/C - $\left\{\frac{192 \times 0.55}{900}\right\}$

= ***0.117***

Lane Capacity for WB Direction - 1,425 vphpl

Number of Lanes - 2 throughs
1 right-turn only

WB V/C - $\frac{684}{2,850}$ or $\frac{167}{1,425}$

= ***0.240***

Critical V/C - ***0.117*** **+** ***0.240*** **=** **0.357**

<u>or</u>

Lane Capacity for EB Throughs - 1,425 vphpl

Number of Lanes - 2

Critical V/C - $\frac{473}{2,850}$

= **0.166**

2) Lane Capacity for NB Throughs and Through/Left - 900 vphpl
Lane Capacity for NB Right-turns - 450 vphpl

Number of Lanes - 1 left/through
3 throughs
1 right-turn only

Critical V/C - $\left\{\frac{187 + 1,936}{3,600}\right\}$

or $\frac{187}{900}$

or $\frac{137}{450}$

= **0.590**

Intersection V/C = 0.947 — 0.100 = 0.847 LOS D

January 25, 2011 ,Tuesday 12:50:00 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S:	Flower St	W/E:	7th St	I/S No:	20
AM/PM:	AM	Comments:	FUTURE WITHOUT PROJECT (YEAR 2020)		
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	0	0	0	67	1002	115	116	679	0	0	432	163
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	67	1002	115	116	679	0	0	432	163

LANE							
NORTHBOUND							
SOUTHBOUND		1	2		1		
WESTBOUND		1	2				
EASTBOUND			1		1		

SIGNAL	Phasing	RTOR
NORTHBOUND	<none>	<none>
SOUTHBOUND	Split	Auto
WESTBOUND	Perm	<none>
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A:	B:
SouthBound	296	67
EastBound	298	0
WestBound	304	116
NorthBound	0	0

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) + A(S/B)

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

$$V/C = \frac{0 + 296 + 116 + 298}{*1500} = 0.403$$

LOS = A

CB_AM

CalcaDB

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INTERSECTION DATA SUMMARY SHEET

N/S:	Olive Ave	W/E:	7th St	I/S No:	21
AM/PM:	AM	Comments:	FUTURE WITHOUT PROJECT (YEAR 2020)		
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	74	1013	102	0	0	0	0	709	238	0	600	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	74	1013	102	0	0	0	0	709	238	0	600	0

	NORTHBOUND							SOUTHBOUND							WESTBOUND							EASTBOUND						
LANE		1	2		1												2			1				2				

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Split	Auto	<none>	<none>	Perm	Auto	Perm	<none>

Critical Movements Diagram

	A:	B:
SouthBound	0	0
EastBound	300	0
WestBound	355	0
NorthBound	297	74

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) + A(S/B)

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

$$V/C = \frac{297 + 0 + 355 + 0}{*1500} = 0.365$$

LOS = A

Developed by Chun Wong, 12/94

CB_AM

CalcaDB

January 25, 2011 ,Tuesday 12:50:00 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Alameda St | W/E: 7th St | I/S No: 22

AM/PM: AM | Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	117	673	62	128	931	105	146	907	60	86	526	106
AMBIENT												
RELATED												
PROJECT												
TOTAL	117	673	62	128	931	105	146	907	60	86	526	106

LANE

	NB	SB	WB	EB
LT	1	1	1	1
LT-TH				
TH	1	1	1	1
LT-TH-RT				
TH-RT	1	1	1	1
RT				
LT-RT				

SIGNAL

	NB	SB	WB	EB
Phasing	Perm	Prot-Fix	Perm	Perm
RTOR	Auto	Auto	Auto	Auto

Critical Movements Diagram

	A	B
SouthBound	518	128
EastBound	316	86
WestBound	484	146
NorthBound	368	117

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)

$$V/C = \frac{117 + 518 + 484 + 86}{*1425} = 0.776$$

LOS = C

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January 25, 2011 ,Tuesday 12:50:00 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Soto St   W/E: 7th St   I/S No: 23

AM/PM: AM   Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

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	475	771	31	58	648	88	28	113	41	50	55	22
AMBIENT												
RELATED												
PROJECT												
TOTAL	475	771	31	58	648	88	28	113	41	50	55	22

LANE

	NORTHBOUND	SOUTHBOUND	WESTBOUND	EASTBOUND
LT	1	1		
LT/TH				1
TH	1	1		
LT/TH/RT			1	
TH/RT	1	1		
RT				1
LT/RT				

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Prot-Fix	Auto	Perm	Auto	Split	Auto	Split	Auto

Critical Movements Diagram

	SouthBound	EastBound	WestBound	NorthBound
A:	368	105	182	401
B:	58	50	28	475

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)

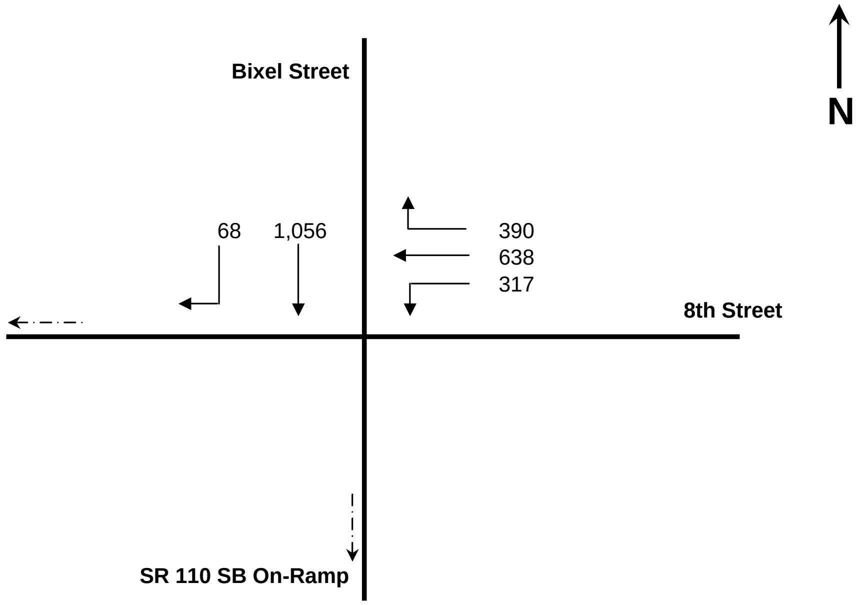
West/East Critical Movements = A(W/B) + A(E/B)

$$V/C = \frac{475 + 368 + 182 + 105}{*1375} = 0.752$$

LOS = C

Intersection 24

Future without Project Conditions A.M. Peak Hour (Year 2020)



1) Lane Capacity for WB Lefts - 750 vphpl

Number of Lanes - 2

WB Left V/C - $\frac{317}{1,500}$

= **0.211**

<u>or</u>

Lane Capacity for WB Throughs and Rights - 1,500 vphpl

Number of Lanes - 2 throughs
Number of Lanes - 1 right-turn only

WB Through/Right V/C - $\frac{638}{3,000}$ or $\frac{390}{1,500}$

= **0.260**

2) Lane Capacity for SB Rights - 1,500 vphpl

Number of Lanes - 1

SB Right V/C - $\frac{68}{1,500}$

= **0.045**

<u>or</u>

Lane Capacity for SB Throughs - 750 vphpl

Number of Lanes - 2

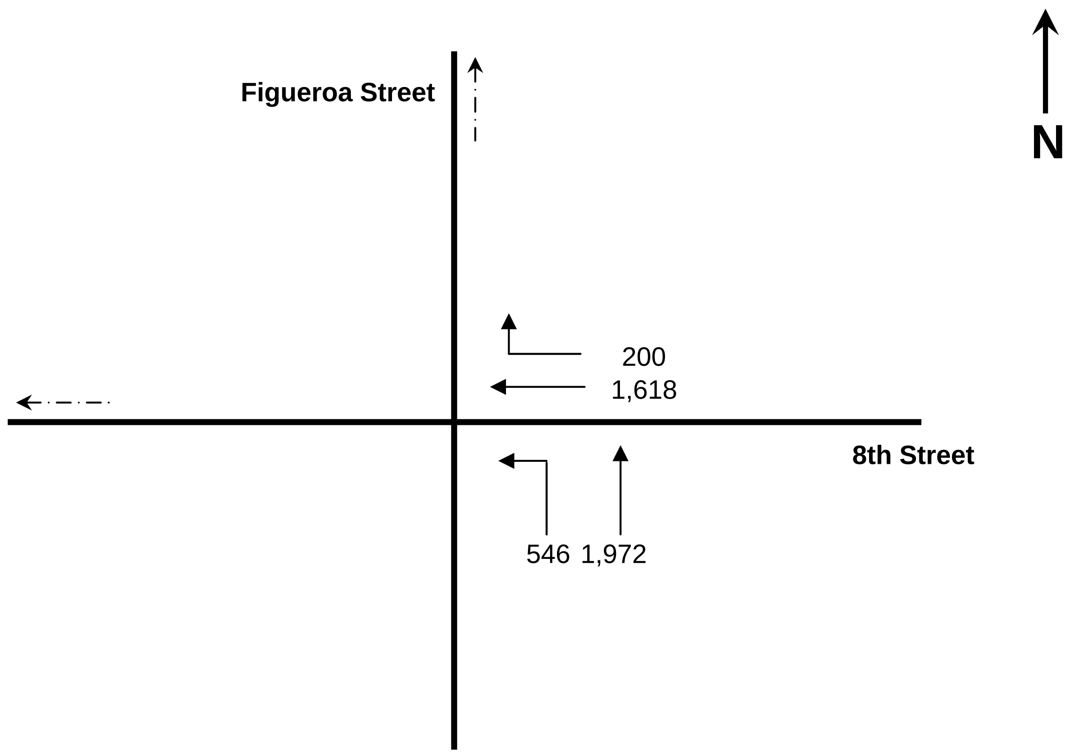
WB Through/Right V/C - $\frac{1,056}{1,500}$

= **0.704**

Intersection V/C = 0.964 — 0.100 = 0.864 LOS D

Intersection 25

Future without Project Conditions A.M. Peak Hour (Year 2020)



1) Lane Capacity for WB Direction - 900 vphpl

Number of Lanes - 4 throughs
1 right-turn only

Critical V/C - $\frac{1,618}{3,600}$ or $\frac{200}{900}$

= **0.449**

2) Lane Capacity for NB Direction - 900 vphpl

Number of Lanes - 1 left-turn only
5 throughs

Critical V/C - $\frac{1,972}{4,500}$ or $\frac{546}{900}$

= **0.607**

Intersection V/C = 1.056 — 0.100 = 0.956 LOS E

CalcaDB

January 25, 2011 ,Tuesday 12:50:00 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St W/E: 8th St I/S No: 26

AM/PM: AM Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

COUNT DATE: STUDY DATE: GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	0	0	0	734	332	79	1532	0	0	0	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	0	734	332	79	1532	0	0	0	0

LANE

	NORTHBOUND	SOUTHBOUND	WESTBOUND	EASTBOUND
LANE		TH: 4, RT: 1	LT: 1, TH: 3	

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	<none>	<none>	Split	Auto	Split	<none>	<none>	<none>

Critical Movements Diagram

	A	B
SouthBound	332	0
EastBound	0	0
WestBound	403	79
NorthBound	0	0

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

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

Results

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

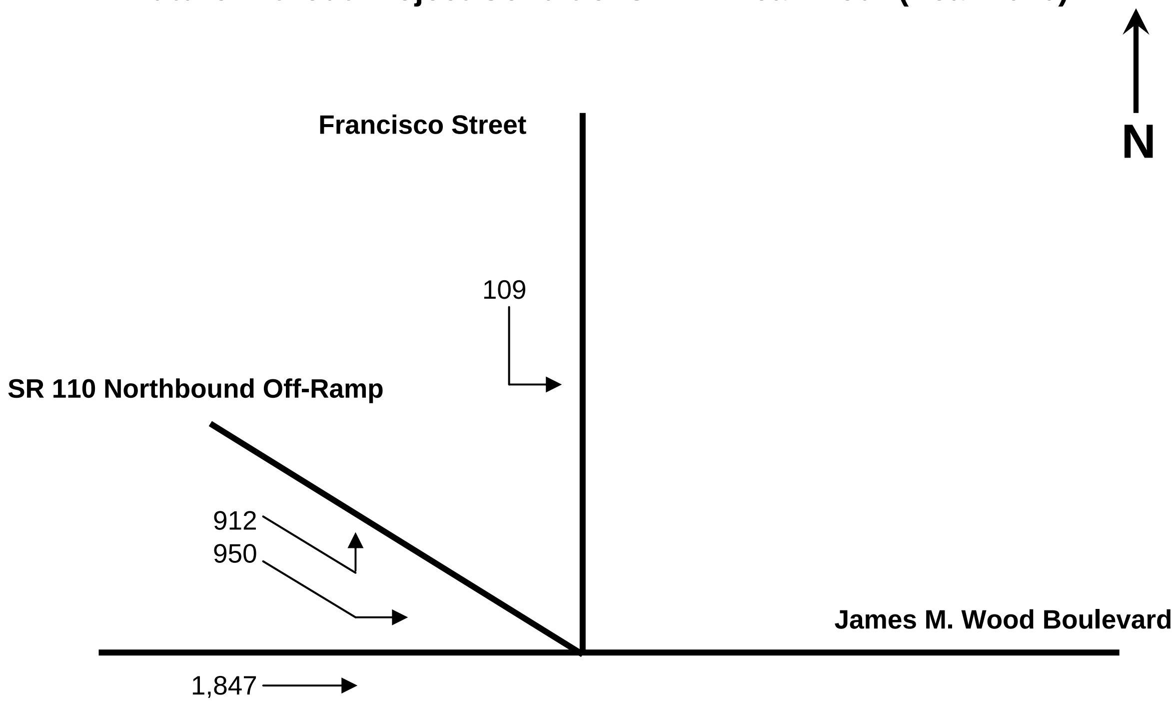
West/East Critical Movements = A(W/B) + A(E/B)

$$V/C = \frac{0 + 332 + 403 + 0}{*1500} = 0.420$$

LOS = A

Intersection 27

Future without Project Conditions A.M. Peak Hour (Year 2020)



1) $\left\{ \dfrac{912 \quad + \quad 950}{3} \right\}$

or

$\dfrac{1{,}847}{3}$

= **931**

2) $\dfrac{109}{1}$

= **109**

Critical Volumes = 931 + 109 = 1,040

V/C = $\dfrac{1{,}040}{1{,}500}$ 0.100 = 0.593 LOS A

January 25, 2011 ,Tuesday 12:50:00 PM

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INTERSECTION DATA SUMMARY SHEET

N/S:	Figueroa St	W/E:	9th St/James M Wood Blvd	I/S No:	28
AM/PM:	AM	Comments:	FUTURE WITHOUT PROJECT (YEAR 2020)		
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	0	1641	158	0	0	0	0	0	0	1024	1810	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	1641	158	0	0	0	0	0	0	1024	1810	0

LANE							
NORTHBOUND			3			1	
SOUTHBOUND							
WESTBOUND							
EASTBOUND	1	1	3				

SIGNAL	Phasing	RTOR
NORTHBOUND	Split	Auto
SOUTHBOUND	<none>	<none>
WESTBOUND	<none>	<none>
EASTBOUND	Split	<none>

Critical Movements Diagram

	A:	B:
SouthBound	0	0
EastBound	567	567
WestBound	0	0
NorthBound	547	0

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) + A(S/B)

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

$$V/C = \frac{547 + 0 + 0 + 567}{*1500} = 0.673$$

LOS = B

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CalcaDB

January 27, 2011 ,Thursday 11:33:04 AM

INTERSECTION DATA SUMMARY SHEET

N/S: Cherry St | W/E: Pico Blvd | I/S No: 29

AM/PM: AM | Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

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	567	542	215	229	0	8	0	406	330	234	600	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	567	542	215	229	0	8	0	406	330	234	600	0

	NB							SB							WB							EB						
LANE	1	1	1			1		2					2				1		1	1		1		3				

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Split	Auto	Split	Auto	Perm	OLA	Perm	<none>

Critical Movements Diagram

	A	B
SouthBound	4	126
EastBound	200	234
WestBound	245	0
NorthBound	370	370

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)

$$V/C = \frac{370 + 126 + 245 + 234}{*1425} = 0.614$$

LOS = B

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CalcaDB

January 25, 2011 ,Tuesday 12:50:00 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Figueroa St W/E: Pico Blvd I/S No: 30

AM/PM: AM Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

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	256	2019	146	10	158	120	59	397	118	186	700	141
AMBIENT												
RELATED												
PROJECT												
TOTAL	256	2019	146	10	158	120	59	397	118	186	700	141

LANE							
NORTHBOUND	1		3		1		
SOUTHBOUND	1		2			1	
WESTBOUND	1		2			1	
EASTBOUND	1		2			1	

SIGNAL	Phasing	RTOR
NORTHBOUND	Prot-Fix	Auto
SOUTHBOUND	Perm	OLA
WESTBOUND	Perm	Auto
EASTBOUND	Prot-Fix	OLA

Critical Movements Diagram

	A	B
SouthBound	79	10
EastBound	350	186
WestBound	199	59
NorthBound	541	256

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 = B(W/B) + A(E/B)

V/C = (541 + 10 + 59 + 350) / *1375 = 0.628 LOS = B

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January 25, 2011 ,Tuesday 12:50:00 PM

INTERSECTION DATA SUMMARY SHEET

N/S:	Hoover St	W/E:	Alvarado St/Alvarado Ter	I/S No:	31
AM/PM:	AM	Comments:	FUTURE WITHOUT PROJECT (YEAR 2020)		
COUNT DATE:		STUDY DATE:		GROWTH FACTOR:	

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	998	648	13	875	0	494	0	0	0	0	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	998	648	13	875	0	494	0	0	0	0	0

LANE	LT	LT-TH	TH	LT-TH-RT	TH-RT	RT	LT-RT
NORTHBOUND			1		1	1	
SOUTHBOUND		1	1				
WESTBOUND	1						1
EASTBOUND							

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	Perm	Free	Perm	<none>	Split	Auto	<none>	<none>

Critical Movements Diagram

	A:	B:
SouthBound	477	13
EastBound	0	0
WestBound	247	247
NorthBound	549	0

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) + A(E/B)

$$V/C = \frac{549 + 13 + 247 + 0}{*1500} = 0.469$$

LOS = A

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INTERSECTION DATA SUMMARY SHEET

N/S: Flower St | W/E: Venice Blvd | I/S No: 32

AM/PM: AM | Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	0	0	10	538	31	49	342	0	0	412	57
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	10	538	31	49	342	0	0	412	57

LANE

	L	LT	T	LTR	TR	R	LR
NORTHBOUND							
SOUTHBOUND	1		2		1		
WESTBOUND		1	1				
EASTBOUND			1		1		

SIGNAL

	Phasing	RTOR
NORTHBOUND	<none>	<none>
SOUTHBOUND	Split	Auto
WESTBOUND	Perm	<none>
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	190	10
EastBound	235	0
WestBound	220	49
NorthBound	0	0

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) + A(S/B)

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

$$V/C = \frac{0 + 190 + 49 + 235}{*1500} = 0.246$$

LOS = A

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CalcaDB

January 25, 2011 ,Tuesday 12:50:00 PM

INTERSECTION DATA SUMMARY SHEET

N/S:	Grand Ave	W/E:	18th St	I/S No:	33
AM/PM:	AM	Comments:	FUTURE WITHOUT PROJECT (YEAR 2020)		
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	0	0	122	406	499	0	0	0	0	0	1045	138
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	122	406	499	0	0	0	0	0	1045	138

LANE

	NB							SB							WB							EB						
LANE						2		1		3														2		1	1	

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	Auto	Prot-Fix	<none>	<none>	<none>	Split	Auto

Critical Movements Diagram

	A:	B:
SouthBound	166	406
EastBound	348	0
WestBound	0	0
NorthBound	67	0

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) + A(E/B)

$$V/C = \frac{67 + 406 + 0 + 348}{*1425} = 0.506$$

LOS = A

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January 25, 2011 ,Tuesday 12:50:00 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Oliv St **W/E:** 6th St **I/S No:** 34

AM/PM: AM **Comments:** FUTURE WITHOUT PROJECT (YEAR 2020)

COUNT DATE: **STUDY DATE:** **GROWTH FACTOR:**

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	1009	175	0	0	0	0	0	0	460	1045	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	1009	175	0	0	0	0	0	0	460	1045	0

LANE

	LT	LT-TH	TH	LT-TH-RT	TH-RT	RT	LT-RT
NORTHBOUND			4		1		
SOUTHBOUND							
WESTBOUND							
EASTBOUND	1	1	3				

SIGNAL

	Phasing	RTOR
NORTHBOUND	Split	Auto
SOUTHBOUND	<none>	<none>
WESTBOUND	<none>	<none>
EASTBOUND	Split	<none>

Critical Movements Diagram

	A	B
SouthBound	0	0
EastBound	301	301
WestBound	0	0
NorthBound	237	0

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) + A(S/B)

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

$$V/C = \frac{237 + 0 + 0 + 301}{*1500} = 0.289$$

LOS = A

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January 25, 2011 ,Tuesday 12:50:00 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S:	Hope St	W/E:	7th St	I/S No:	35
AM/PM:	AM	Comments:	FUTURE WITHOUT PROJECT (YEAR 2020)		
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	41	263	146	10	250	26	0	792	113	0	435	73
AMBIENT												
RELATED												
PROJECT												
TOTAL	41	263	146	10	250	26	0	792	113	0	435	73

LANE

NORTHBOUND		1			1		
SOUTHBOUND		1			1		
WESTBOUND			1		1		
EASTBOUND			1		1		

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A:	B:
SouthBound	148	10
EastBound	254	0
WestBound	453	0
NorthBound	225	41

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

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

Results

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

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

$$V/C = \frac{225 + 10 + 453 + 0}{*1500} = 0.389$$

LOS = A

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January 25, 2011 ,Tuesday 12:50:00 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave | W/E: 7th St | I/S No: 36

AM/PM: AM | Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

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	0	0	0	99	1298	67	0	819	0	0	489	121
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	99	1298	67	0	819	0	0	489	121

LANE	NORTHBOUND	SOUTHBOUND	WESTBOUND	EASTBOUND
1		1		
2				
3		4	2	2
4				
5				
6		1		1
7				

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	<none>	<none>	Split	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	325	99
EastBound	245	0
WestBound	410	0
NorthBound	0	0

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) + A(S/B)

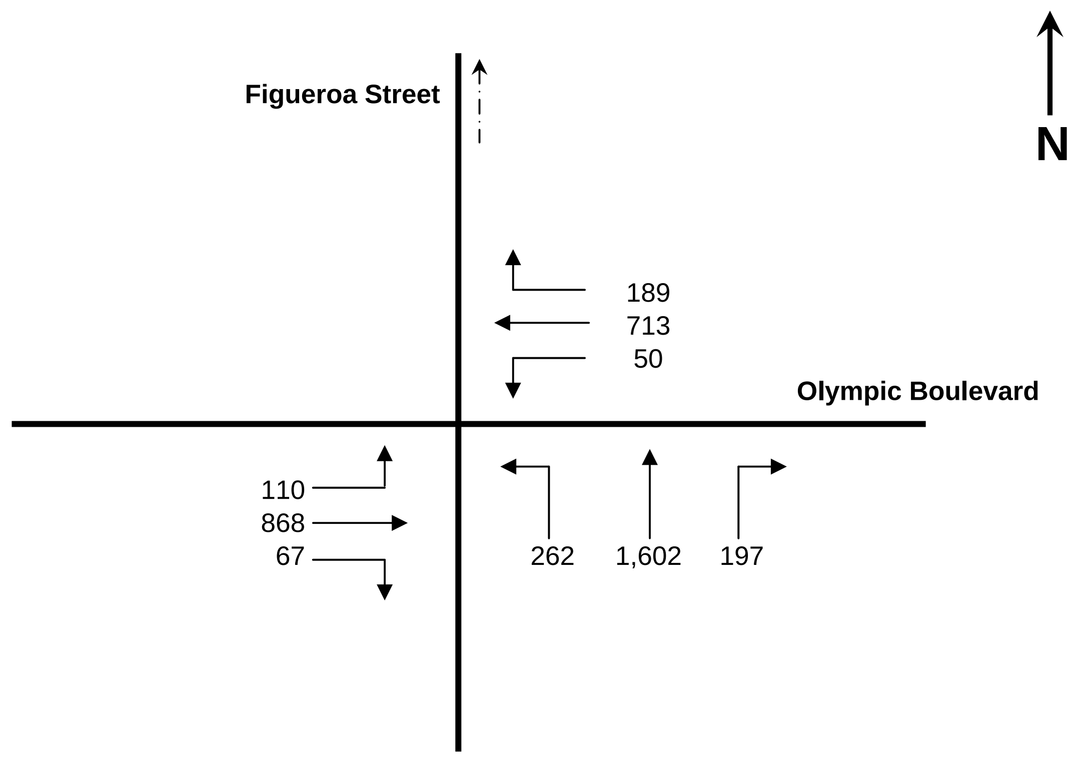
West/East Critical Movements = A(W/B) + B(E/B)

$$V/C = \frac{0 + 325 + 410 + 0}{*1500} = 0.420$$

LOS = A

Intersection 37

Future without Project Conditions A.M. Peak Hour (Year 2020)



1) Lane Capacity for EB Lefts - 900 vphpl

Number of Lanes - 1

EB Left V/C - $\frac{110}{900}$

= ***0.122***

Lane Capacity for WB Throughs - 1,425 vphpl
Lane Capacity for WB Rights - 900 vphpl

Number of Lanes - 3 throughs
1 right-turn only

WB Through/Right V/C - $\frac{713}{4,275}$ or $\frac{189}{900}$

= ***0.210***

Critical V/C - ***0.122*** **+** ***0.210*** **=** **0.332**

<u>or</u>

Lane Capacity for WB Lefts - 1,425 vphpl

Number of Lanes - 1

WB Left V/C - $\frac{50}{1,425}$

= ***0.035***

Lane Capacity for EB Throughs/Rights - 1,425 vphpl

Number of Lanes - 3 throughs
1 right-turn only

EB Through/Right V/C - $\frac{868}{4,275}$ or $\frac{67}{1,425}$

= ***0.203***

Critical V/C - ***0.035*** **+** ***0.203*** **=** **0.238**

2) Lane Capacity for NB Throughs - 900 vphpl
Lane Capacity for NB Left- and Right-turns - 1,425 vphpl

Number of Lanes - 1 left-turn only
3 throughs
1 right-turn only

Critical V/C - $\frac{1,602}{2,700}$ or $\frac{262}{1,425}$ or $\frac{197}{1,425}$

= **0.593**

Intersection V/C = 0.925 — 0.100 = 0.825 LOS D

CalcaDB

January 25, 2011 ,Tuesday 12:50:00 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Glendale Blvd W/E: Temple St I/S No: 38

AM/PM: AM Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

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	58	627	14	252	1850	152	65	607	184	202	657	143
AMBIENT												
RELATED												
PROJECT												
TOTAL	58	627	14	252	1850	152	65	607	184	202	657	143

LANE	↰	⇱	↑	⇹	⇲	↱	↔
NORTHBOUND	1		1		1		
SOUTHBOUND	1		1		1		
WESTBOUND	1		1		1		
EASTBOUND	1		1		1		

SIGNAL	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Prot-Fix	Auto
EASTBOUND	Prot-Fix	Auto

Critical Movements Diagram

	A	B
SouthBound	1001	252
EastBound	400	202
WestBound	396	65
NorthBound	321	58

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)

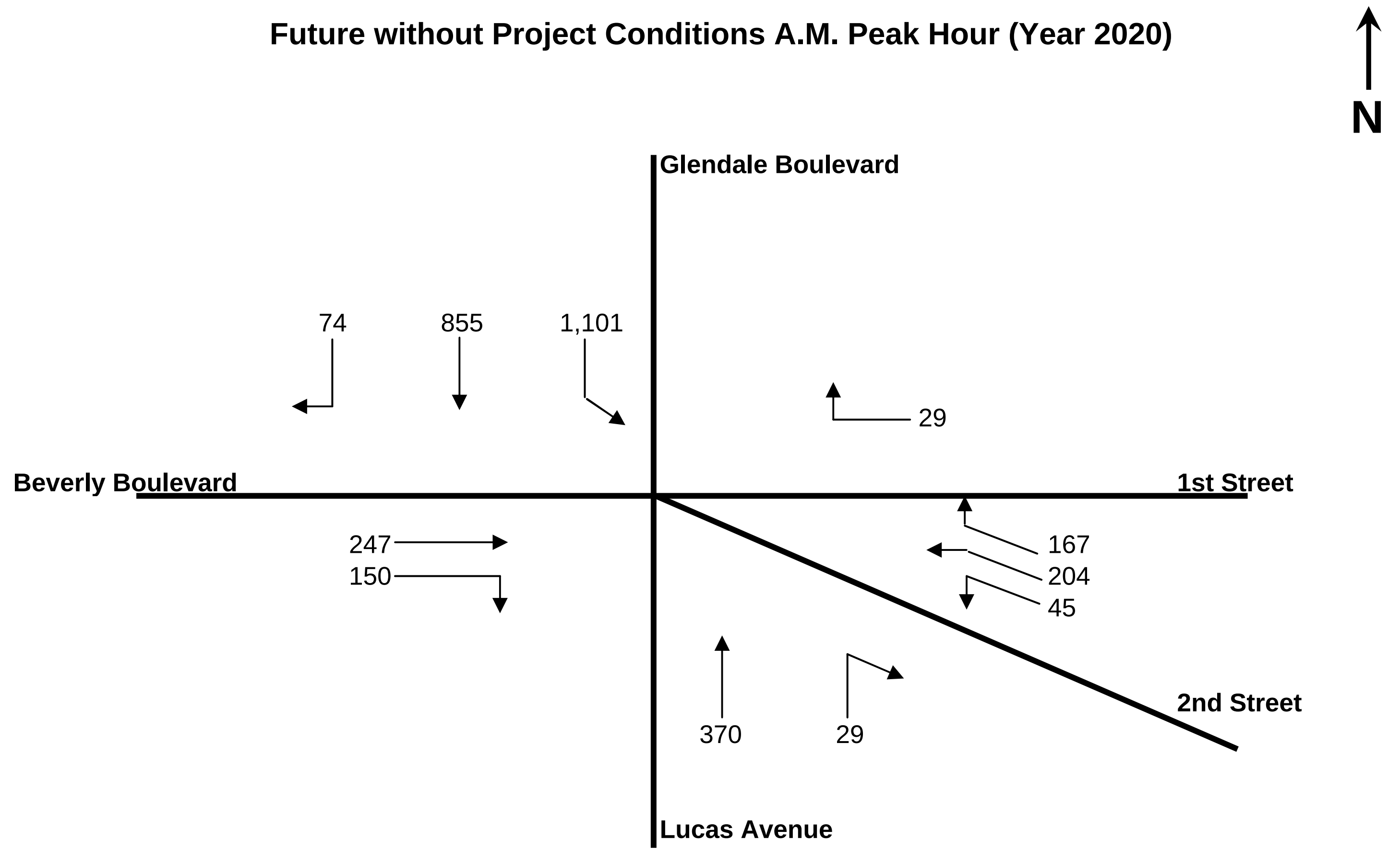
West/East Critical Movements = A(W/B) + B(E/B)

$$V/C = \frac{58 + 1001 + 396 + 202}{*1425} = 1.093$$

LOS = F

Intersection 39

Future without Project Conditions A.M. Peak Hour (Year 2020)



Phase 1) *Glendale Boulevard and Lucas Avenue - North-South Throughs and Rights*

$$\frac{370 + 29}{2}$$

&

$$\frac{74}{1} \quad \& \quad \frac{855}{1}$$

$= \mathbf{200}$

Phase 2) *Glendale Boulevard, 1st Street, and 2nd Street - Southbound Lefts, Throughs, and Rights, and*
a.) Westbound Rights on 1st Street
b.) Westbound Rights on 2nd Street

a.) $$\frac{29}{1}$$

$$\& \left\{ \frac{855}{1} - 200 \right\} \& \left\{ \frac{1,101}{2} \right\}$$

$= \mathbf{29}$

b.) $$\left\{ \frac{1,101}{2} - 29 \right\}$$

$$\text{or} \left\{ \frac{855}{1} - 200 - 29 \right\}$$

$$\& \quad \frac{167}{2}$$

$= \mathbf{626}$

Phase 3) *2nd Street - Westbound Lefts, Throughs, and Rights*

$$\left\{ \frac{167}{2} - 626 \right\}$$

$$\& \left\{ \frac{204 + 45}{1} \right\}$$

$= \mathbf{0}$

Phase 4) *Beverly Boulevard and 2nd Street - Westbound Lefts and Throughs, and Eastbound Throughs and Rights*

$$\frac{247 + 150}{2}$$

$$\text{or} \left\{ \frac{204 + 45}{1} \right\} - 0$$

$= \mathbf{199}$

Critical Volumes = 200 + 29 + 626 + 0 + 199

= 1,054

V/C = $\dfrac{\mathbf{1,054}}{\mathbf{1,375}}$ **— 0.100 = 0.667** **LOS B**

CB_AM

January 25, 2011 ,Tuesday 12:50:00 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Lucas Ave **W/E:** 3rd St **I/S No:** 40

AM/PM: AM **Comments:** FUTURE WITHOUT PROJECT (YEAR 2020)

COUNT DATE: **STUDY DATE:** **GROWTH FACTOR:**

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	140	321	124	131	636	139	74	887	90	171	1200	106
AMBIENT												
RELATED												
PROJECT												
TOTAL	140	321	124	131	636	139	74	887	90	171	1200	106

LANE

	L	LT	T	LTR	TR	R	LR
NORTHBOUND	1		2			1	
SOUTHBOUND	1		1		1		
WESTBOUND	1		2			1	
EASTBOUND	1		2			1	

SIGNAL

	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Perm	Auto
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A:	B:
SouthBound	388	131
EastBound	600	171
WestBound	444	74
NorthBound	161	140

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

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

Results

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

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

$$V/C = \frac{140 + 388 + 74 + 600}{*1500} = 0.731$$

LOS = C

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CB_AM

CalcaDB

January 25, 2011 ,Tuesday 12:50:00 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Lucas Ave   W/E: 6th St   I/S No: 41

AM/PM: AM   Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

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	52	203	19	58	360	210	63	801	41	184	1156	180
AMBIENT												
RELATED												
PROJECT												
TOTAL	52	203	19	58	360	210	63	801	41	184	1156	180

LANE	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND				1			
SOUTHBOUND				1			
WESTBOUND	1		2			1	
EASTBOUND	1		1		1		

SIGNAL	NORTHBOUND	SOUTHBOUND	WESTBOUND	EASTBOUND
Phasing	Perm	Perm	Perm	Perm
RTOR	Auto	Auto	Auto	Auto

Critical Movements Diagram

	A	B
SouthBound	628	58
EastBound	668	184
WestBound	401	63
NorthBound	274	52

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)

$$V/C = \frac{52 + 628 + 63 + 668}{*1500} = 0.871$$

LOS = D

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INTERSECTION DATA SUMMARY SHEET

N/S: Lucas Ave W/E: Wilshire Blvd I/S No: 42

AM/PM: AM Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

COUNT DATE: STUDY DATE: GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	59	164	71	48	278	77	106	655	99	56	1059	72
AMBIENT												
RELATED												
PROJECT												
TOTAL	59	164	71	48	278	77	106	655	99	56	1059	72

LANE

	Lane 1	Lane 2	Lane 3	Lane 4	Lane 5	Lane 6	Lane 7
NORTHBOUND				1			
SOUTHBOUND				1			
WESTBOUND		1	1			1	
EASTBOUND		1	1			1	

SIGNAL

	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Perm	Auto
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	403	48
EastBound	642	56
WestBound	646	106
NorthBound	294	59

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)

$$V/C = \frac{59 + 403 + 106 + 642}{*1500} = 0.737$$

LOS = C

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave W/E: US 101 NB Ramps I/S No: 1

AM/PM: PM Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

COUNT DATE: STUDY DATE: GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	1107	1053	0	0	751	348	0	0	0	120	0	676
AMBIENT												
RELATED												
PROJECT												
TOTAL	1107	1053	0	0	751	348	0	0	0	120	0	676

LANE	1	2	3	4	5	6	7
NORTHBOUND	1		2				
SOUTHBOUND			2			1	
WESTBOUND							
EASTBOUND						1	1

SIGNAL	Phasing	RTOR
NORTHBOUND	Prot-Fix	<none>
SOUTHBOUND	Perm	OLA
WESTBOUND	<none>	<none>
EASTBOUND	Split	Auto

Critical Movements Diagram

SouthBound
A: 376
B: 0

EastBound
A: 0
B: 120

WestBound
A: 0
B: 0

NorthBound
A: 527
B: 1107

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)

$$V/C = \frac{1107 + 376 + 0 + 120}{*1425} = 1.055$$

LOS = F

CB_PM

CalcaDB

January 25, 2011 ,Tuesday 12:50:31 PM

INTERSECTION DATA SUMMARY SHEET

N/S:	Hope St/US 101 SB Ramps	W/E:	Temple St	I/S No:	2
AM/PM:	PM	Comments:	FUTURE WITHOUT PROJECT (YEAR 2020)		
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	232	410	214	130	542	17	147	995	259	536	899	78
AMBIENT												
RELATED												
PROJECT												
TOTAL	232	410	214	130	542	17	147	995	259	536	899	78

LANE							
NORTHBOUND	1		1		1		
SOUTHBOUND	1		1		1		
WESTBOUND	1		2			1	
EASTBOUND	1		1		1		

SIGNAL	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Prot-Fix	Auto
EASTBOUND	Prot-Fix	Auto

Critical Movements Diagram

	A:	B:
SouthBound	280	130
EastBound	489	536
WestBound	498	147
NorthBound	312	232

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)

$$V/C = \frac{232 + 280 + 498 + 536}{*1425} = 1.015$$

LOS = F

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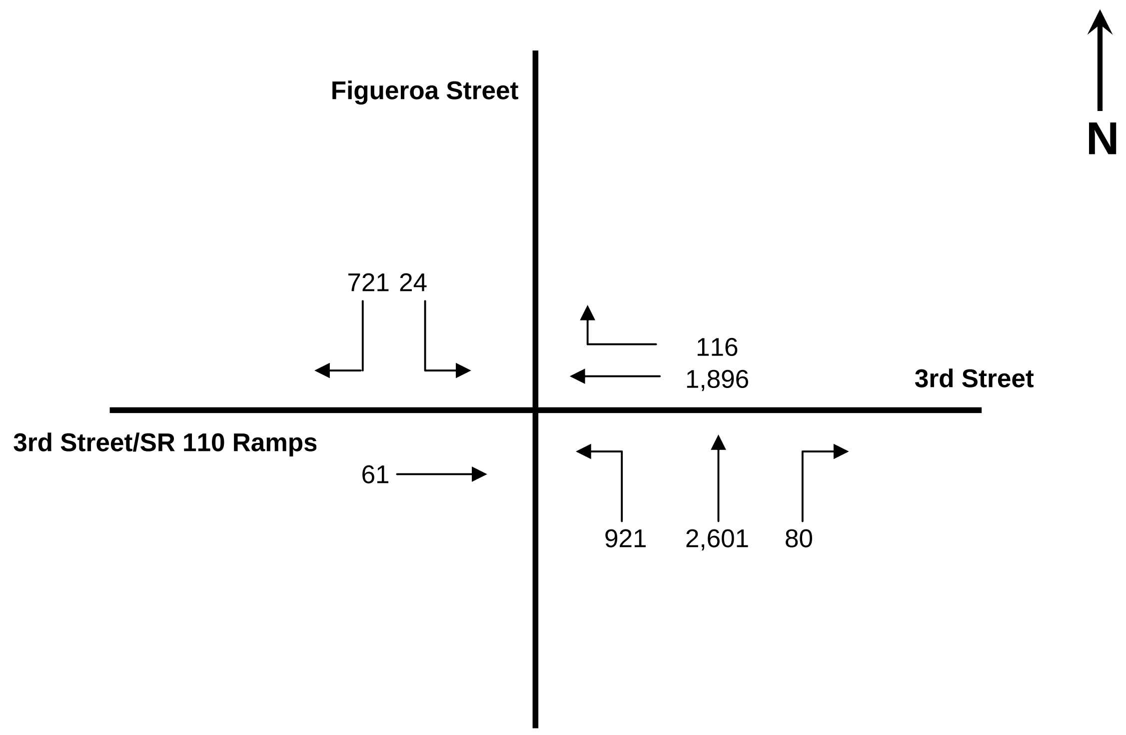
Intersection 3

Future without Project Conditions P.M. Peak Hour (Year 2020)



1) Lane Capacity for WB Throughs - 900 vphpl

Number of Lanes - 5

WB Through V/C - $\frac{1,896}{4,500}$

= **0.421**

<u>or</u>

Lane Capacity for WB Rights - 1,425 vphpl

Number of Lanes - 1

WB Right V/C - $\frac{116}{1,425}$

= **0.081**

<u>or</u>

Lane Capacity for EB Throughs - 1,425 vphpl

Number of Lanes - 2

EB Through V/C - $\frac{61}{2,850}$

= **0.021**

2) Lane Capacity for NB Lefts - 900 vphpl

Number of Lanes - 3

NB Left V/C - $\left\{\frac{921 \quad x \quad 0.37}{900}\right\}$

= ***0.379***

Lane Capacity for SB Rights - 1,425 vphpl

Number of Lanes - 2

SB Right V/C - $\left\{\frac{721 \quad x \quad 0.55}{1,425}\right\}$

= ***0.278***

Critical V/C - ***0.379*** **+** ***0.278*** **=** **0.657**

<u>or</u>

Lane Capacity for NB Throughs & Rights - 1,425 vphpl

Number of Lanes - 2 throughs
1 through/right

NB Through/Right V/C - $\left\{\frac{2,601 \quad + \quad 80}{4,275}\right\}$ or $\frac{80}{1,425}$

= **0.627**

Intersection V/C = 1.078 — 0.100 = 0.978 LOS E

CB_PM

January 25, 2011 ,Tuesday 12:50:31 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St | W/E: 3rd St | I/S No: 4

AM/PM: PM | Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	146	226	0	0	510	512	127	1330	67	0	0	156
AMBIENT												
RELATED												
PROJECT												
TOTAL	146	226	0	0	510	512	127	1330	67	0	0	156

LANE

	1	2	3	4	5	6	7
NORTHBOUND	1		2				
SOUTHBOUND			2			1	
WESTBOUND	1		3		1		
EASTBOUND						1	

SIGNAL

	Phasing	RTOR
NORTHBOUND	Perm	<none>
SOUTHBOUND	Perm	Auto
WESTBOUND	Split	Auto
EASTBOUND	<none>	Free

Critical Movements Diagram

	A	B
SouthBound	512	0
EastBound	0	0
WestBound	349	127
NorthBound	113	146

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

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

Results

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

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

$$V/C = \frac{146 + 512 + 349 + 0}{*1500} = 0.601$$

LOS = B

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CB_PM

CalcaDB

January 25, 2011 ,Tuesday 12:50:31 PM

INTERSECTION DATA SUMMARY SHEET

N/S:	Grand Ave	W/E:	3rd St	I/S No:	5
AM/PM:	PM	Comments:	FUTURE WITHOUT PROJECT (YEAR 2020)		
COUNT DATE:		STUDY DATE:		GROWTH FACTOR:	

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	23	333	0	0	961	75	0	0	0	163	0	127
AMBIENT												
RELATED												
PROJECT												
TOTAL	23	333	0	0	961	75	0	0	0	163	0	127

LANE

	NB	SB	WB	EB
LT	1			1
LT/TH				
TH	2	1		
LT/TH/RT				
TH/RT		1		
RT				2
LT/RT				

SIGNAL

	Phasing	RTOR
Northbound	Perm	Auto
Southbound	Perm	Auto
Westbound	<none>	<none>
Eastbound	Split	Auto

Critical Movements Diagram

	A:	B:
SouthBound	518	0
EastBound	70	163
WestBound	0	0
NorthBound	167	23

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)

$$V/C = \frac{23 + 518 + 0 + 163}{*1500} = 0.399$$

LOS = A

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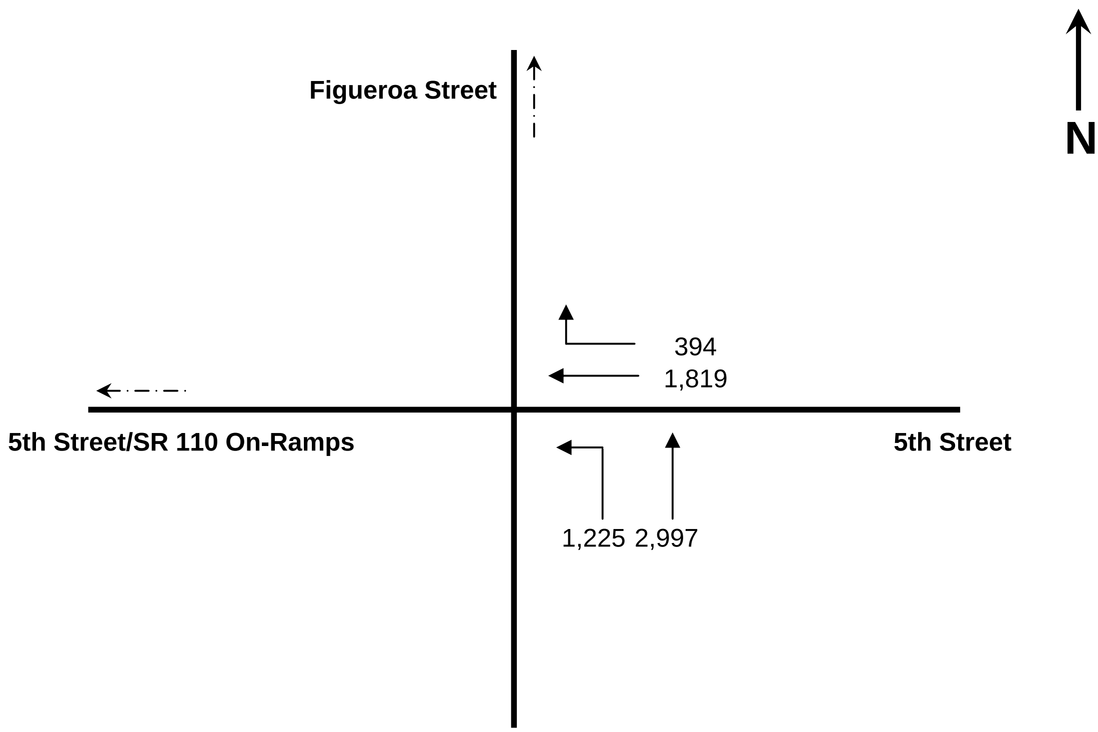
Intersection 6

Future without Project Conditions P.M. Peak Hour (Year 2020)



1) Lane Capacity for WB Direction - 900 vphpl

Number of Lanes - 7

Critical V/C - $\left\{ \frac{1,819 \quad + \quad 394}{6,300} \right\}$

= **0.351**

2) Lane Capacity for NB Throughs - 900 vphpl

Number of Lanes - 4

Critical V/C - $\frac{2,997}{3,600}$

= **0.833**

<u>or</u>

Lane Capacity for NB Lefts - 900 vphpl

Number of Lanes - 3

Critical V/C - $\frac{1,225}{2,700}$

= **0.454**

Intersection V/C = 1.184 — 0.100 = 1.084 LOS F

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St | W/E: 5th St | I/S No: 7

AM/PM: PM | Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

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	0	0	0	0	1312	574	229	1629	0	0	0	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	0	1312	574	229	1629	0	0	0	0

LANE	NB							SB							WB							EB						
										3		1	1		1		5											

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	<none>	<none>	Split	Auto	Split	<none>	<none>	<none>

Critical Movements Diagram

	A	B
SouthBound	377	0
EastBound	0	0
WestBound	326	229
NorthBound	0	0

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) + A(S/B)

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

$$V/C = \frac{0 + 377 + 326 + 0}{*1500} = 0.399$$

LOS = A

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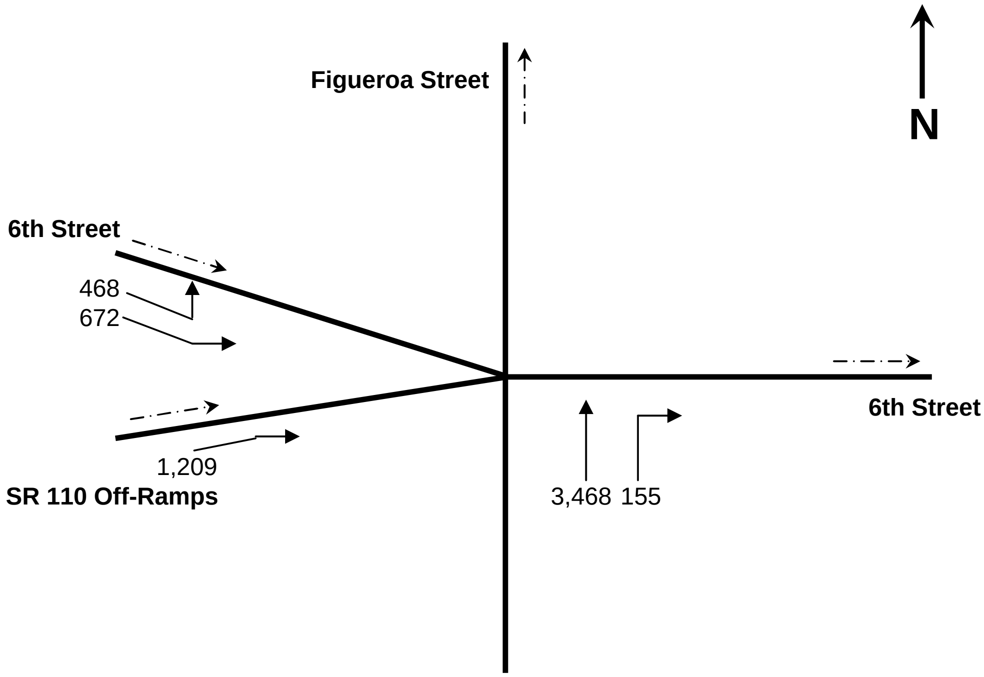
Intersection 8

Future without Project Conditions P.M. Peak Hour (Year 2020)



1) Lane Capacity for EB Direction - 1,500 vphpl

Number of Lanes -
1 left-turn lane from 6th Street
1 shared left/through lane from 6th Street
1 through lane from 6th Street
3 through lanes from SR 110 Off-Ramps

Critical V/C - $\left\{ \frac{672 + 468}{4,500} \right\}$ or $\frac{1,209}{4,500}$

= **0.269**

2) Lane Capacity for NB Throughs - 900 vphpl

Number of Lanes - 5

Critical V/C - $\frac{3,468}{4,500}$

= **0.771**

<u>or</u>

Lane Capacity for NB Rights - 1,500 vphpl

Number of Lanes - 1

Critical V/C - $\frac{155}{1,500}$

= **0.103**

Intersection V/C = 1.040 — 0.100 = 0.940 LOS E

CB_PM

CalcaDB

January 25, 2011 ,Tuesday 12:50:31 PM

INTERSECTION DATA SUMMARY SHEET

N/S:	Flower St	W/E:	6th St	I/S No:	9
AM/PM:	PM	Comments:	FUTURE WITHOUT PROJECT (YEAR 2020)		
COUNT DATE:		STUDY DATE:		GROWTH FACTOR:	

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	0	0	365	1243	0	0	0	0	0	1514	700
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	365	1243	0	0	0	0	0	1514	700

LANE							
NORTHBOUND							
SOUTHBOUND	2		4				
WESTBOUND							
EASTBOUND			3		1	1	

SIGNAL	NORTHBOUND	SOUTHBOUND	WESTBOUND	EASTBOUND
Phasing	<none>	Split	<none>	Split
RTOR	<none>	<none>	<none>	Auto

Critical Movements Diagram

SouthBound
A: 311
B: 201

EastBound
A: 443
B: 0

WestBound
A: 0
B: 0

NorthBound
A: 0
B: 0

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

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

Results

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

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

$$V/C = \frac{0 + 311 + 0 + 443}{*1500} = 0.433$$

LOS = A

Developed by Chun Wong, 12/94

CB_PM

January 25, 2011 ,Tuesday 12:50:31 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Alvarado St W/E: Wilshire Blvd I/S No: 10

AM/PM: PM Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

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	0	1172	99	0	951	124	117	1245	85	100	1166	57
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	1172	99	0	951	124	117	1245	85	100	1166	57

LANE	NB	SB	WB	EB
Lane 1			1	1
Lane 2				
Lane 3	2	2	1	1
Lane 4				
Lane 5	1	1	1	1
Lane 6				
Lane 7				

SIGNAL	NB		SB		WB		EB	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

SouthBound A: 358 B: 0

EastBound A: 612 B: 100

WestBound A: 665 B: 117

NorthBound A: 424 B: 0

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)

$$V/C = \frac{424 + 0 + 665 + 100}{*1500} = 0.723$$

LOS = C

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INTERSECTION DATA SUMMARY SHEET

N/S:	Beaudry Ave	W/E:	Wilshire Blvd	I/S No:	11
AM/PM:	PM	Comments:	FUTURE WITHOUT PROJECT (YEAR 2020)		
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	5	0	35	255	50	619	9	801	0	0	1028	32
AMBIENT												
RELATED												
PROJECT												
TOTAL	5	0	35	255	50	619	9	801	0	0	1028	32

LANE							
NORTHBOUND							1
SOUTHBOUND	1			1		1	
WESTBOUND		1	1				
EASTBOUND			2			1	

SIGNAL	Phasing	RTOR
NORTHBOUND	Split	Auto
SOUTHBOUND	Split	Auto
WESTBOUND	Perm	<none>
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A:	B:
SouthBound	335	255
EastBound	514	0
WestBound	428	9
NorthBound	40	5

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) + A(S/B)

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

$$V/C = \frac{40 + 335 + 9 + 514}{*1425} = 0.560$$

LOS = A

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CB_PM

CalcaDB

January 25, 2011 ,Tuesday 12:50:31 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Francisco St W/E: Wilshire Blvd I/S No: 12

AM/PM: PM Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

COUNT DATE: STUDY DATE: GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	101	0	90	55	10	30	51	770	11	14	1187	146
AMBIENT												
RELATED												
PROJECT												
TOTAL	101	0	90	55	10	30	51	770	11	14	1187	146

LANE

	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND		1				1	
SOUTHBOUND				1			
WESTBOUND	1		1		1		
EASTBOUND	1		1		1		

SIGNAL

	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Perm	Auto
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	95	55
EastBound	667	14
WestBound	391	51
NorthBound	101	101

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

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

Results

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

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

$$V/C = \frac{101 + 95 + 51 + 667}{*1500} = 0.539$$

LOS = A

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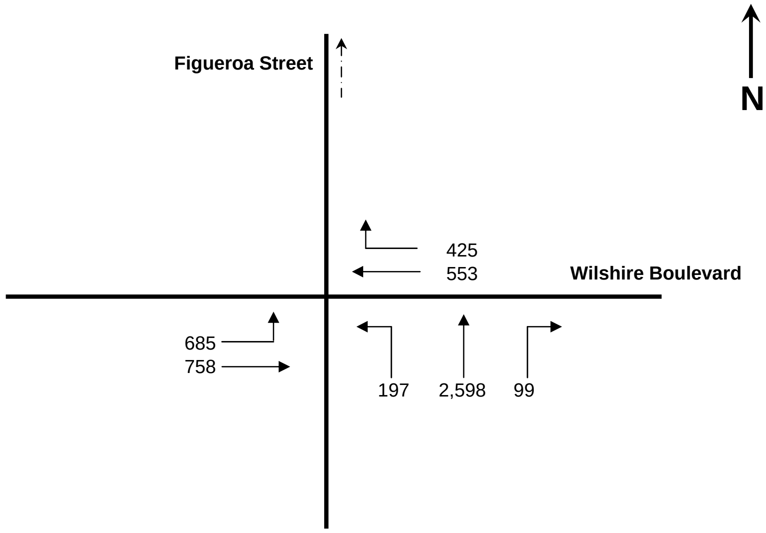
Intersection 13

Future without Project Conditions P.M. Peak Hour (Year 2020)



1) Lane Capacity for EB Lefts - 900 vphpl

Number of Lanes - 2

EB Left V/C - $\left\{\frac{685 \quad X \quad 0.55}{900}\right\}$

= ***0.419***

Lane Capacity for WB Direction - 1,425 vphpl

Number of Lanes - 1 through
1 through/right
1 right-turn only

WB V/C - $\left\{\frac{553 \quad + \quad 425}{4,275}\right\}$ or $\frac{553}{2,850}$ or $\frac{425}{2,850}$

= ***0.229***

Critical V/C - ***0.419*** **+** ***0.229*** **=** **0.648**

<u>or</u>

Lane Capacity for EB Throughs - 1,425 vphpl

Number of Lanes - 2

Critical V/C - $\frac{758}{2,850}$

= **0.266**

2) Lane Capacity for NB Direction - 900 vphpl

Number of Lanes - 1 left/through
3 throughs
1 through/right

Critical V/C - $\left\{\frac{197 \quad + \quad 2,598 \quad + \quad 99}{4,500}\right\}$

or $\frac{197}{900}$

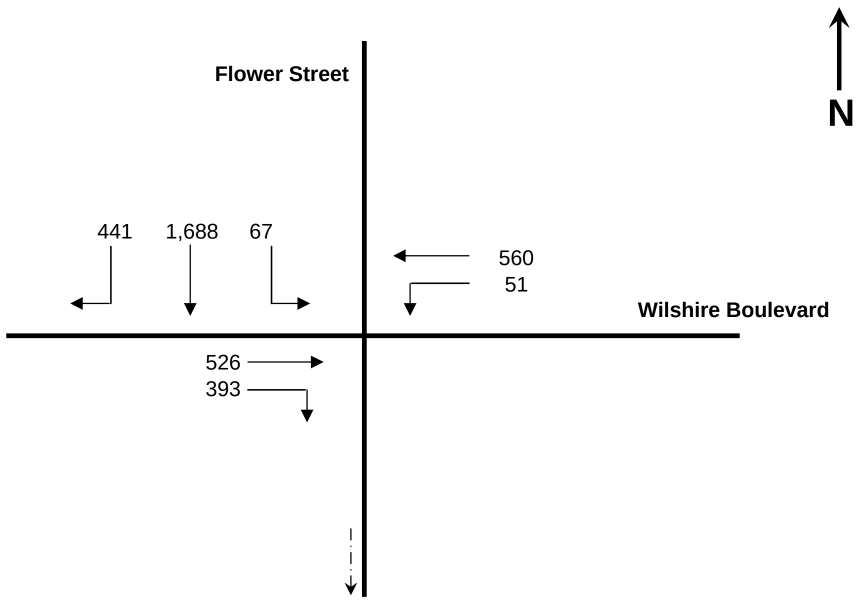
or $\frac{99}{900}$

= **0.643**

Intersection V/C = 1.291 — 0.100 = 1.191 LOS F

Intersection 14

Future without Project Conditions P.M. Peak Hour (Year 2020)



1) Lane Capacity for WB Direction - 900 vphpl

Number of Lanes - 2

WB Direction V/C - $\left\{ \dfrac{560 \quad + \quad 51}{1{,}800} \right\}$ or $\dfrac{51}{900}$

= **0.339**

Lane Capacity for EB Direction - 1,500 vphpl

Number of Lanes - 2

EB Direction V/C - $\left\{ \dfrac{526 \quad + \quad 393}{3{,}000} \right\}$ or $\dfrac{393}{1{,}500}$

= **0.306**

2) Lane Capacity for SB Throughs and Lefts - 1,500 vphpl

Number of Lanes - 3 throughs
1 left-turn only

SB Through V/C - $\dfrac{1{,}688}{4{,}500}$

= **0.375**

SB Left V/C - $\dfrac{67}{1{,}500}$

= **0.045**

Lane Capacity for SB Rights - 900 vphpl

Number of Lanes - 1

SB Right V/C - $\dfrac{441}{900}$

= **0.490**

Intersection V/C = 0.829 — 0.100 = 0.729 LOS C

CB_PM

CalcaDB

January 25, 2011 ,Tuesday 12:50:31 PM

INTERSECTION DATA SUMMARY SHEET

N/S:	Grand Ave	W/E:	Wilshire Blvd	I/S No:	15
AM/PM:	PM	Comments:	FUTURE WITHOUT PROJECT (YEAR 2020)		
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	0	0	0	5	1429	176	42	49	0	0	6	532
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	5	1429	176	42	49	0	0	6	532

LANE							
NORTHBOUND							
SOUTHBOUND		1	2		1		
WESTBOUND		1					
EASTBOUND					1	1	

SIGNAL	Phasing	RTOR
NORTHBOUND	<none>	<none>
SOUTHBOUND	Split	Auto
WESTBOUND	Perm	<none>
EASTBOUND	Perm	Auto

Critical Movements Diagram

SouthBound
A: 403
B: 5

EastBound
A: 269
B: 0

WestBound
A: 91
B: 42

NorthBound
A: 0
B: 0

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) + A(S/B)

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

$$V/C = \frac{0 + 403 + 42 + 269}{*1500} = 0.406$$

LOS = A

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CalcaDB

January 25, 2011 ,Tuesday 12:50:31 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Alvarado St W/E: 7th St I/S No: 16

AM/PM: PM Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

COUNT DATE: STUDY DATE: GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	1058	80	0	938	69	0	812	106	0	759	115
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	1058	80	0	938	69	0	812	106	0	759	115

LANE							
NORTHBOUND			2		1		
SOUTHBOUND			2		1		
WESTBOUND			1		1		
EASTBOUND			1		1		

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A:	B:
SouthBound	336	0
EastBound	437	0
WestBound	459	0
NorthBound	379	0

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)

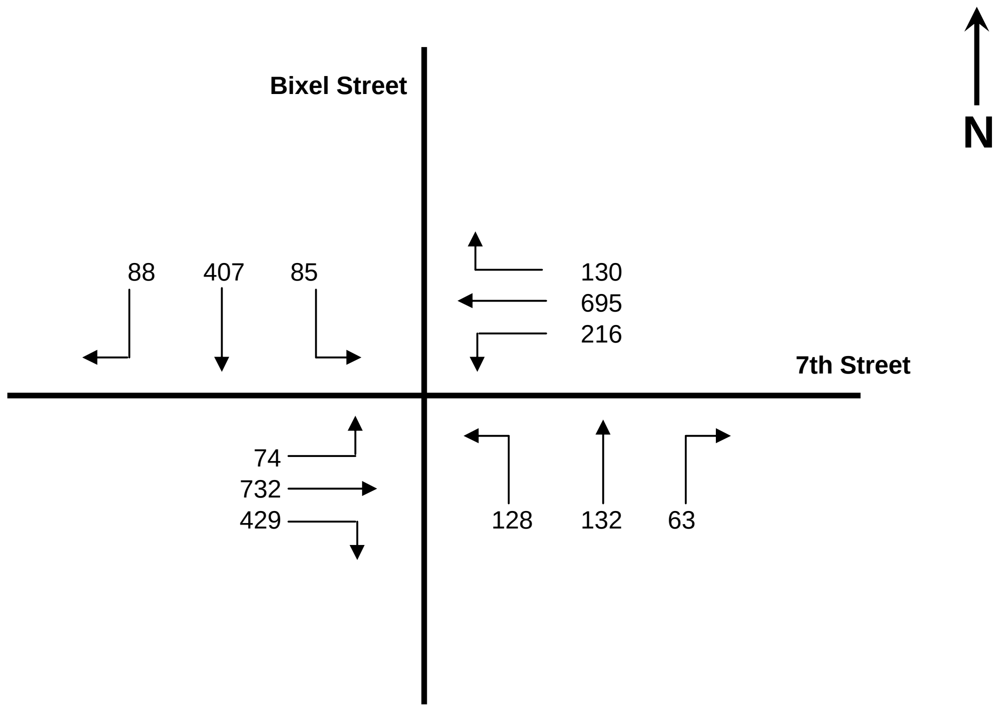
West/East Critical Movements = A(W/B) + B(E/B)

$$V/C = \frac{379 + 0 + 459 + 0}{*1500} = 0.489$$

LOS = A

Intersection 17

Future without Project Conditions P.M. Peak Hour (Year 2020)



1) Lane Capacity for WB Lefts - 900 vphpl

Number of Lanes - 1

WB Left V/C - $\frac{216}{900}$

= ***0.240***

Lane Capacity for EB Throughs - 1,500 vphpl

Number of Lanes - 1

EB Through V/C - $\frac{732}{1,500}$

= ***0.488***

Lane Capacity for EB Rights - 900 vphpl

Number of Lanes - 1

EB Right V/C - $\frac{429}{900}$

= ***0.477***

Critical V/C - ***0.240*** **+** ***0.488***

= 0.728

<u>or</u>

Lane Capacity for EB Lefts - 1,500 vphpl

Number of Lanes - 1

EB Left V/C - $\frac{74}{1,500}$

= ***0.049***

Lane Capacity for WB Throughs/Rights - 1,500 vphpl

Number of Lanes - 2

WB Through V/C - $\left\{\frac{695 + 130}{3,000}\right\}$

= ***0.275***

Critical V/C - ***0.049*** **+** ***0.275***

= 0.324

2) Lane Capacity for NB & SB Direction - 1,500 vphpl

Number of Lanes - 1 left
1 through/right

Critical V/C - $\left\{\frac{128 + 407 + 88}{1,500}\right\}$

or $\left\{\frac{85 + 132 + 63}{1,500}\right\}$

= **0.415**

Intersection V/C = 1.143 — 0.100 = 1.043 LOS F

CB_PM

CalcaDB

January 25, 2011 ,Tuesday 12:50:31 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Francisco St | W/E: 7th St | I/S No: 18

AM/PM: PM | Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

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	175	51	386	105	48	86	81	873	43	26	686	34
AMBIENT												
RELATED												
PROJECT												
TOTAL	175	51	386	105	48	86	81	873	43	26	686	34

LANE							
NORTHBOUND		1				1	
SOUTHBOUND	1				1		
WESTBOUND	1		1		1		
EASTBOUND	1		1		1		

SIGNAL	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Perm	Auto
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	134	105
EastBound	360	26
WestBound	458	81
NorthBound	386	175

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)

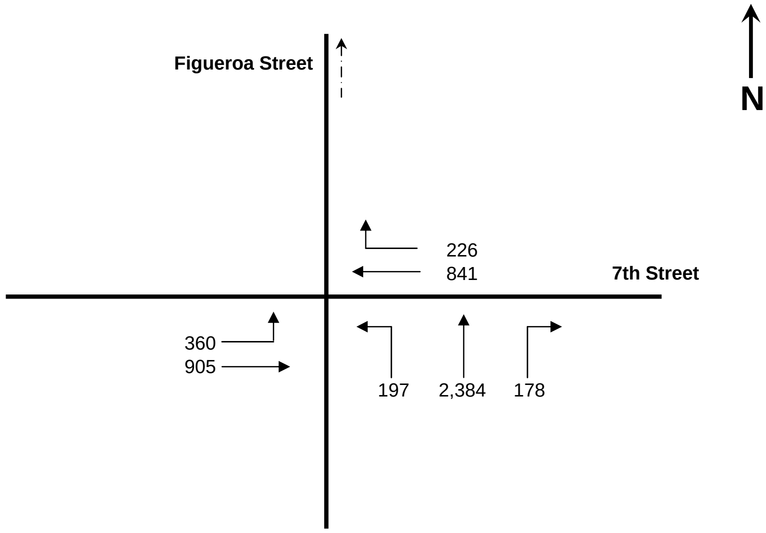
$$V/C = \frac{386 + 105 + 458 + 26}{*1500} = 0.580$$

LOS = A

Developed by Chun Wong, 12/94

Intersection 19

Future without Project Conditions P.M. Peak Hour (Year 2020)



1) Lane Capacity for EB Lefts - 900 vphpl

Number of Lanes - 2

EB Left V/C - $\left\{\dfrac{360 \quad X \quad 0.55}{900}\right\}$

= ***0.22***

Lane Capacity for WB Direction - 1,425 vphpl

Number of Lanes - 2 throughs
1 right-turn only

WB V/C - $\dfrac{841}{2,850}$ or $\dfrac{226}{1,425}$

= ***0.295***

Critical V/C - ***0.22*** **+** ***0.295*** **=** **0.515**

<u>or</u>

Lane Capacity for EB Throughs - 1,425 vphpl

Number of Lanes - 2

Critical V/C - $\dfrac{905}{2,850}$

= **0.318**

2) Lane Capacity for NB Throughs and Through/Left - 900 vphpl
Lane Capacity for NB Through/Right - 450 vphpl

Number of Lanes - 1 left/through
3 throughs
1 through/right

Critical V/C - $\left\{\dfrac{197 \quad + \quad 2,384 \quad + \quad 178}{4,050}\right\}$

or $\dfrac{197}{900}$

or $\dfrac{178}{450}$

= **0.681**

Intersection V/C = 1.196 — 0.100 = 1.096 LOS F

CB_PM

CalcaDB

January 25, 2011 ,Tuesday 12:50:31 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St | W/E: 7th St | I/S No: 20

AM/PM: PM | Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

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	0	0	0	77	2165	157	143	866	0	0	868	221
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	77	2165	157	143	866	0	0	868	221

LANE

	NORTHBOUND							SOUTHBOUND							WESTBOUND							EASTBOUND						
LANE									1	2		1				1	2							1		1		

	NORTHBOUND Phasing	NORTHBOUND RTOR	SOUTHBOUND Phasing	SOUTHBOUND RTOR	WESTBOUND Phasing	WESTBOUND RTOR	EASTBOUND Phasing	EASTBOUND RTOR
SIGNAL	<none>	<none>	Split	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

SouthBound
A: 600
B: 77

EastBound
A: 545
B: 0

WestBound
A: 433
B: 143

NorthBound
A: 0
B: 0

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) + A(S/B)

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

$$V/C = \frac{0 + 600 + 143 + 545}{*1500} = 0.789$$

LOS = C

CB_PM

CalcaDB

January 25, 2011 ,Tuesday 12:50:31 PM

INTERSECTION DATA SUMMARY SHEET

N/S:	Olive Ave	W/E:	7th St	I/S No:	21
AM/PM:	PM	Comments:	FUTURE WITHOUT PROJECT (YEAR 2020)		
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	106	1257	165	0	0	0	0	828	239	0	1053	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	106	1257	165	0	0	0	0	828	239	0	1053	0

	NB							SB							WB							EB						
LANE		1	2		1												2			1				2				

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Split	Auto	<none>	<none>	Perm	Auto	Perm	<none>

Critical Movements Diagram

	A	B
SouthBound	0	0
EastBound	527	0
WestBound	414	0
NorthBound	382	106

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

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

Results

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

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

$$V/C = \frac{382 + 0 + 0 + 527}{*1500} = 0.536$$

LOS = A

CalcaDB

January 25, 2011 ,Tuesday 12:50:31 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Alameda St | W/E: 7th St | I/S No: 22

AM/PM: PM | Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

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	82	811	93	115	956	9	108	655	82	116	1026	142
AMBIENT												
RELATED												
PROJECT												
TOTAL	82	811	93	115	956	9	108	655	82	116	1026	142

LANE	NORTHBOUND	SOUTHBOUND	WESTBOUND	EASTBOUND
LT	1	1	1	1
LT-TH				
TH	1	1	1	1
LT-TH-RT				
TH-RT	1	1	1	1
RT				
LT-RT				

SIGNAL	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
	Perm	Auto	Prot-Fix	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	483	115
EastBound	584	116
WestBound	369	108
NorthBound	452	82

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 = B(W/B) + A(E/B)

$$V/C = \frac{452 + 115 + 108 + 584}{*1425} = 0.814$$

LOS = D

CB_PM

CalcaDB

January 25, 2011 ,Tuesday 12:50:31 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Soto St W/E: 7th St I/S No: 23

AM/PM: PM Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

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	554	947	34	37	743	70	6	35	12	83	53	68
AMBIENT												
RELATED												
PROJECT												
TOTAL	554	947	34	37	743	70	6	35	12	83	53	68

LANE

	NB							SB							WB							EB						
LANE	1		1		1			1		1		1						1					1				1	

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Prot-Fix	Auto	Perm	Auto	Split	Auto	Split	Auto

Critical Movements Diagram

SouthBound
A: 407
B: 37

EastBound
A: 136
B: 83

WestBound
A: 53
B: 6

NorthBound
A: 491
B: 554

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) + A(E/B)

$$V/C = \frac{554 + 407 + 53 + 136}{*1375} = 0.766$$

LOS = C

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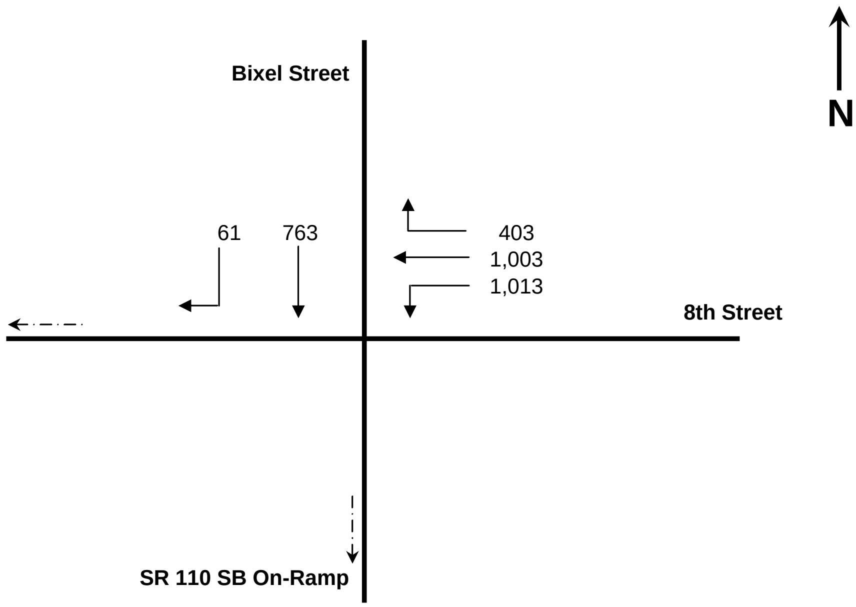
Intersection 24

Future without Project Conditions P.M. Peak Hour (Year 2020)



1) Lane Capacity for WB Lefts - 750 vphpl

Number of Lanes - 2

WB Left V/C - $\frac{1,013}{1,500}$

= **0.675**

or

Lane Capacity for WB Throughs and Rights - 1,500 vphpl

Number of Lanes - 2 throughs
Number of Lanes - 1 right-turn only

WB Through/Right V/C - $\frac{1,003}{3,000}$ or $\frac{403}{1,500}$

= **0.269**

2) Lane Capacity for SB Rights - 1,500 vphpl

Number of Lanes - 1

SB Right V/C - $\frac{61}{1,500}$

= **0.041**

or

Lane Capacity for SB Throughs - 750 vphpl

Number of Lanes - 2

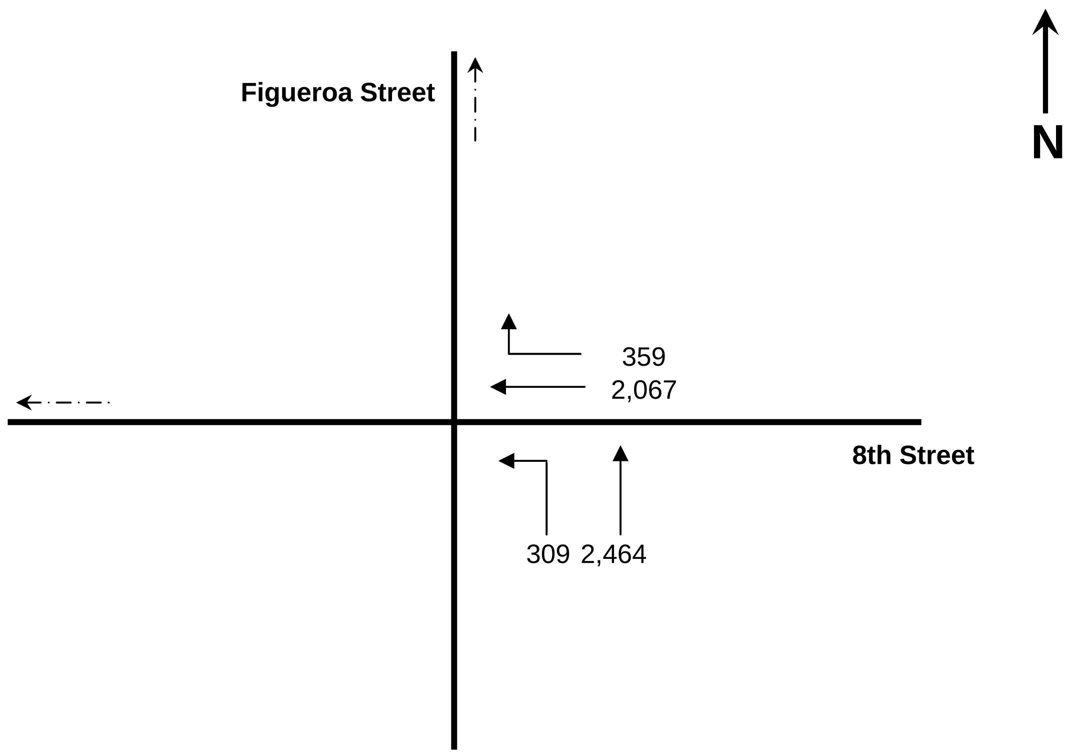
WB Through/Right V/C - $\frac{763}{1,500}$

= **0.509**

Intersection V/C = 1.184 — 0.100 = 1.084 LOS F

Intersection 25

Future without Project Conditions P.M. Peak Hour (Year 2020)



1) Lane Capacity for WB Direction - 900 vphpl

Number of Lanes - 4 throughs
1 right-turn only

Critical V/C - $\frac{2,067}{3,600}$ or $\frac{359}{900}$

= **0.574**

2) Lane Capacity for NB Direction - 900 vphpl

Number of Lanes - 1 left-turn only
6 throughs

Critical V/C - $\frac{2,464}{5,400}$ or $\frac{309}{900}$

= **0.456**

Intersection V/C = 1.030 — 0.100 = 0.930 LOS E

CB_PM

CalcaDB

January 25, 2011 ,Tuesday 12:50:31 PM

INTERSECTION DATA SUMMARY SHEET

N/S:	Flower St	W/E:	8th St	I/S No:	26
AM/PM:	PM	Comments:	FUTURE WITHOUT PROJECT (YEAR 2020)		
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	0	0	0	0	1892	497	102	1984	0	0	0	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	0	1892	497	102	1984	0	0	0	0

LANE

	Lane 1	Lane 2	Lane 3	Lane 4	Lane 5	Lane 6	Lane 7
NORTHBOUND							
SOUTHBOUND			4			1	
WESTBOUND		1	3				
EASTBOUND							

	NORTHBOUND Phasing	NORTHBOUND RTOR	SOUTHBOUND Phasing	SOUTHBOUND RTOR	WESTBOUND Phasing	WESTBOUND RTOR	EASTBOUND Phasing	EASTBOUND RTOR
SIGNAL	<none>	<none>	Split	Auto	Split	<none>	<none>	<none>

Critical Movements Diagram

	SouthBound	EastBound	WestBound	NorthBound
A:	497	0	522	0
B:	0	0	102	0

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

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

Results

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

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

$$V/C = \frac{0 + 497 + 522 + 0}{*1500} = 0.609$$

LOS = B

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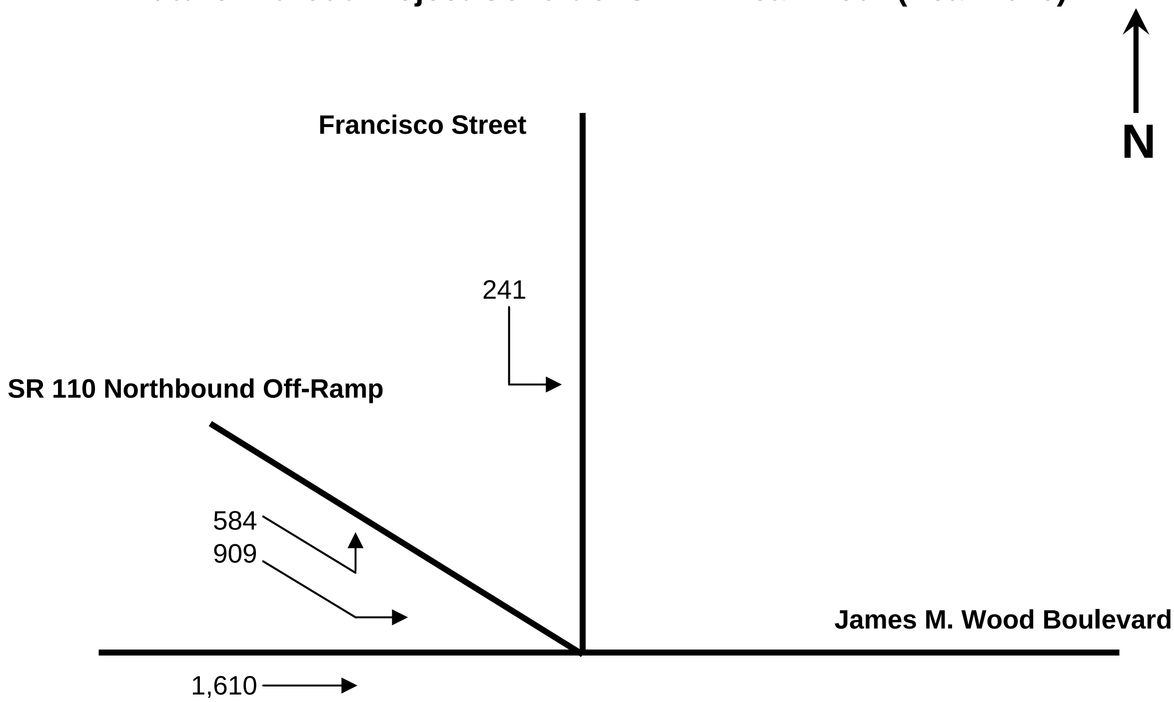
Intersection 27

Future without Project Conditions P.M. Peak Hour (Year 2020)



1) $\left\{ \frac{584 \quad + \quad 909}{3} \right\}$

or

$\frac{1,610}{3}$

= **747**

2) $\frac{241}{1}$

= **241**

Critical Volumes = 747 + 241 = 988

V/C = $\frac{\mathbf{988}}{\mathbf{1,500}}$ **0.100 = 0.559 LOS A**

CB_PM

CalcaDB

January 25, 2011 ,Tuesday 12:50:31 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Figueroa St | W/E: 9th St/James M Wood Blvd | I/S No: 28

AM/PM: PM | Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	1509	195	0	0	0	0	0	0	773	1877	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	1509	195	0	0	0	0	0	0	773	1877	0

LANE

	NB	SB	WB	EB
LT				1
LT/TH				1
TH	3			3
LT/TH/RT				
TH/RT	1			
RT				
LT/RT				

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	Split	Auto	<none>	<none>	<none>	<none>	Split	<none>

Critical Movements Diagram

	A	B
SouthBound	0	0
EastBound	530	530
WestBound	0	0
NorthBound	426	0

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) + A(S/B)

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

$$V/C = \frac{426 + 0 + 0 + 530}{*1500} = 0.567$$

LOS = A

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CB_PM

January 27, 2011 ,Thursday 11:33:20 AM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Cherry St | W/E: Pico Blvd | I/S No: 29

AM/PM: PM | Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

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	722	671	229	183	0	26	0	896	447	150	657	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	722	671	229	183	0	26	0	896	447	150	657	0

LANE							
NORTHBOUND	1	1	1			1	
SOUTHBOUND	2					2	
WESTBOUND			1		1	1	
EASTBOUND	1		3				

SIGNAL	Phasing	RTOR
NORTHBOUND	Split	Auto
SOUTHBOUND	Split	Auto
WESTBOUND	Perm	OLA
EASTBOUND	Perm	<none>

Critical Movements Diagram

	A	B
SouthBound	14	101
EastBound	219	150
WestBound	448	0
NorthBound	464	464

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)

$$V/C = \frac{464 + 101 + 448 + 150}{*1425} = 0.746$$

LOS = C

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INTERSECTION DATA SUMMARY SHEET

N/S: Figueroa St | W/E: Pico Blvd | I/S No: 30

AM/PM: PM | Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	160	1546	155	23	324	288	172	846	172	192	625	284
AMBIENT												
RELATED												
PROJECT												
TOTAL	160	1546	155	23	324	288	172	846	172	192	625	284

LANE

	NB	SB	WB	EB
Left	1	1	1	1
Left-Through				
Through	3	2	2	2
Through-Left-Right				
Through-Right	1			
Right		1	1	1
Left-Right				

SIGNAL

	Phasing	RTOR
NORTHBOUND	Prot-Fix	Auto
SOUTHBOUND	Perm	OLA
WESTBOUND	Perm	Auto
EASTBOUND	Prot-Fix	OLA

Critical Movements Diagram

	A	B
SouthBound	162	23
EastBound	313	192
WestBound	423	172
NorthBound	425	160

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)

$$V/C = \frac{425 + 23 + 423 + 192}{*1375} = 0.703$$

LOS = C

CalcaDB

January 25, 2011 ,Tuesday 12:50:31 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Hoover St | W/E: Alvarado St/Alvarado Ter | I/S No: 31

AM/PM: PM | Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

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	0	1150	719	31	957	0	716	0	0	0	0	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	1150	719	31	957	0	716	0	0	0	0	0

LANE

	NORTHBOUND							SOUTHBOUND							WESTBOUND							EASTBOUND						
LANE			1		1	1			1	1					1						1							

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	Free	Perm	<none>	Split	Auto	<none>	<none>

Critical Movements Diagram

SouthBound
A: 572
B: 31

EastBound
A: 0
B: 0

WestBound
A: 358
B: 358

NorthBound
A: 623
B: 0

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

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

Results

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

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

$$V/C = \frac{623 + 31 + 358 + 0}{*1500} = 0.605$$

LOS = B

CB_PM

CalcaDB

January 25, 2011 ,Tuesday 12:50:31 PM

INTERSECTION DATA SUMMARY SHEET

N/S:	Flower St	W/E:	Venice Blvd	I/S No:	32
AM/PM:	PM	Comments:	FUTURE WITHOUT PROJECT (YEAR 2020)		
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	0	0	0	36	1407	130	66	500	0	0	371	44
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	36	1407	130	66	500	0	0	371	44

LANE								1		2		1				1	1							1		1		

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	<none>	<none>	Split	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	512	36
EastBound	208	0
WestBound	316	66
NorthBound	0	0

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) + A(S/B)

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

$$V/C = \frac{0 + 512 + 316 + 0}{*1500} = 0.482$$

LOS = A

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January 25, 2011 ,Tuesday 12:50:31 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S:	Grand Ave	W/E:	18th St	I/S No:	33
AM/PM:	PM	Comments:	FUTURE WITHOUT PROJECT (YEAR 2020)		
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	0	0	178	392	990	0	0	0	0	0	1857	218
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	178	392	990	0	0	0	0	0	1857	218

	NORTHBOUND							SOUTHBOUND							WESTBOUND							EASTBOUND						
LANE						2		1		3														2		1	1	

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	Auto	Prot-Fix	<none>	<none>	<none>	Split	Auto

Critical Movements Diagram

	A:	B:
SouthBound	330	392
EastBound	619	0
WestBound	0	0
NorthBound	98	0

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

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

Results

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

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

V/C = (98 + 392 + 0 + 619) / *1425 = 0.708

LOS = C

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CB_PM

January 25, 2011 ,Tuesday 12:50:31 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S:	Olive St	W/E:	6th St	I/S No:	34
AM/PM:	PM	Comments:	FUTURE WITHOUT PROJECT (YEAR 2020)		
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	0	1468	191	0	0	0	0	0	0	829	1254	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	1468	191	0	0	0	0	0	0	829	1254	0

	NORTHBOUND							SOUTHBOUND							WESTBOUND							EASTBOUND						
LANE			4		1																	1	1	3				

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Split	Auto	<none>	<none>	<none>	<none>	Split	<none>

Critical Movements Diagram

	SouthBound	EastBound	WestBound	NorthBound
A:	0	417	0	332
B:	0	417	0	0

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

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

Results

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

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

$$V/C = \frac{332 + 0 + 0 + 417}{*1500} = 0.429$$

LOS = A

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CB_PM

CalcaDB

January 25, 2011 ,Tuesday 12:50:31 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Hope St | W/E: 7th St | I/S No: 35

AM/PM: PM | Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

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	105	338	138	14	324	29	0	929	90	0	775	102
AMBIENT												
RELATED												
PROJECT												
TOTAL	105	338	138	14	324	29	0	929	90	0	775	102

LANE	1	2	3	4	5	6	7
NORTHBOUND		1			1		
SOUTHBOUND		1			1		
WESTBOUND			1		1		
EASTBOUND			1		1		

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

SouthBound
A: 191
B: 14

EastBound
A: 439
B: 0

WestBound
A: 510
B: 0

NorthBound
A: 343
B: 105

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)

$$V/C = \frac{343 + 14 + 510 + 0}{*1500} = 0.508$$

LOS = A

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INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave | W/E: 7th St | I/S No: 36

AM/PM: PM | Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

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	0	0	0	191	1582	68	0	933	0	0	850	144
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	191	1582	68	0	933	0	0	850	144

LANE							
NORTHBOUND							
SOUTHBOUND	1		4			1	
WESTBOUND			2				
EASTBOUND			2			1	

SIGNAL	Phasing	RTOR
NORTHBOUND	<none>	<none>
SOUTHBOUND	Split	Auto
WESTBOUND	Perm	<none>
EASTBOUND	Perm	Auto

Critical Movements Diagram

SouthBound
A: 396
B: 191

EastBound
A: 425
B: 0

WestBound
A: 467
B: 0

NorthBound
A: 0
B: 0

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) + A(S/B)

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

$$V/C = \frac{0 + 396 + 467 + 0}{*1500} = 0.505$$

LOS = A

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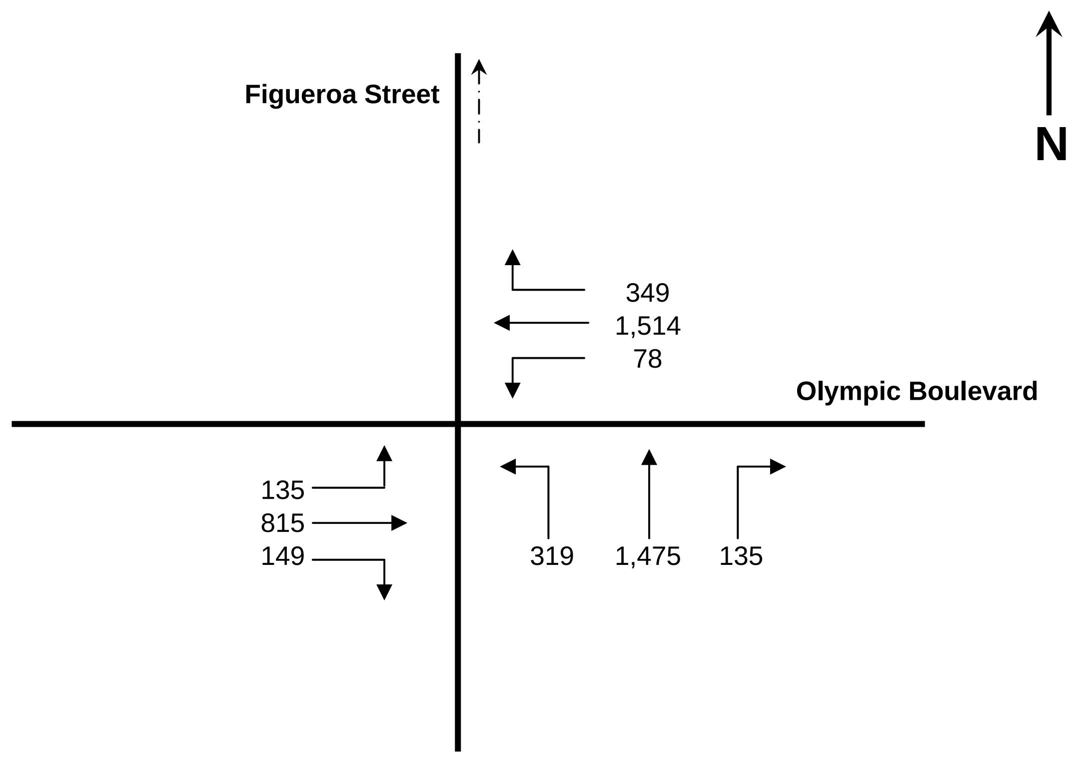
Intersection 37

Future without Project Conditions P.M. Peak Hour (Year 2020)



1) Lane Capacity for EB Lefts - 900 vphpl

Number of Lanes - 1

EB Left V/C - $\frac{135}{900}$

= ***0.15***

Lane Capacity for WB Throughs - 1,425 vphpl
Lane Capacity for WB Rights - 900 vphpl

Number of Lanes - 3 throughs
1 right-turn only

WB Through/Right V/C - $\frac{1,514}{4,275}$ or $\frac{349}{900}$

= ***0.388***

Critical V/C - ***0.15*** **+** ***0.388*** **=** **0.538**

<u>or</u>

Lane Capacity for WB Lefts - 1,425 vphpl

Number of Lanes - 1

WB Left V/C - $\frac{78}{1,425}$

= ***0.055***

Lane Capacity for EB Throughs/Rights - 1,425 vphpl

Number of Lanes - 3 throughs
1 right-turn only

EB Through/Right V/C - $\frac{815}{4,275}$ or $\frac{149}{1,425}$

= ***0.191***

Critical V/C - ***0.055*** **+** ***0.191*** **=** **0.246**

2) Lane Capacity for NB Throughs - 900 vphpl
Lane Capacity for NB Left- and Right-turns - 1,425 vphpl

Number of Lanes - 1 left-turn only
3 throughs
1 right-turn only

Critical V/C - $\frac{1,475}{2,700}$ or $\frac{319}{1,425}$ or $\frac{135}{1,425}$

= **0.546**

Intersection V/C = 1.084 — 0.100 = 0.984 LOS E

CB_PM

January 25, 2011 ,Tuesday 12:50:31 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Glendale Blvd | W/E: Temple St | I/S No: 38

AM/PM: PM | Comments: FUTURE WITHOUT PROJECT (YEAR 2020)

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	65	1888	21	166	934	224	31	720	294	343	908	83
AMBIENT												
RELATED												
PROJECT												
TOTAL	65	1888	21	166	934	224	31	720	294	343	908	83

LANE	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
Northbound	1		1		1		
Southbound	1		1		1		
Westbound	1		1		1		
Eastbound	1		1		1		

SIGNAL	Phasing	RTOR
Northbound	Perm	Auto
Southbound	Perm	Auto
Westbound	Prot-Fix	Auto
Eastbound	Prot-Fix	Auto

Critical Movements Diagram

	A	B
SouthBound	579	166
EastBound	496	343
WestBound	507	31
NorthBound	955	65

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)

$$V/C = \frac{955 + 166 + 507 + 343}{*1425} = 1.313$$

LOS = F

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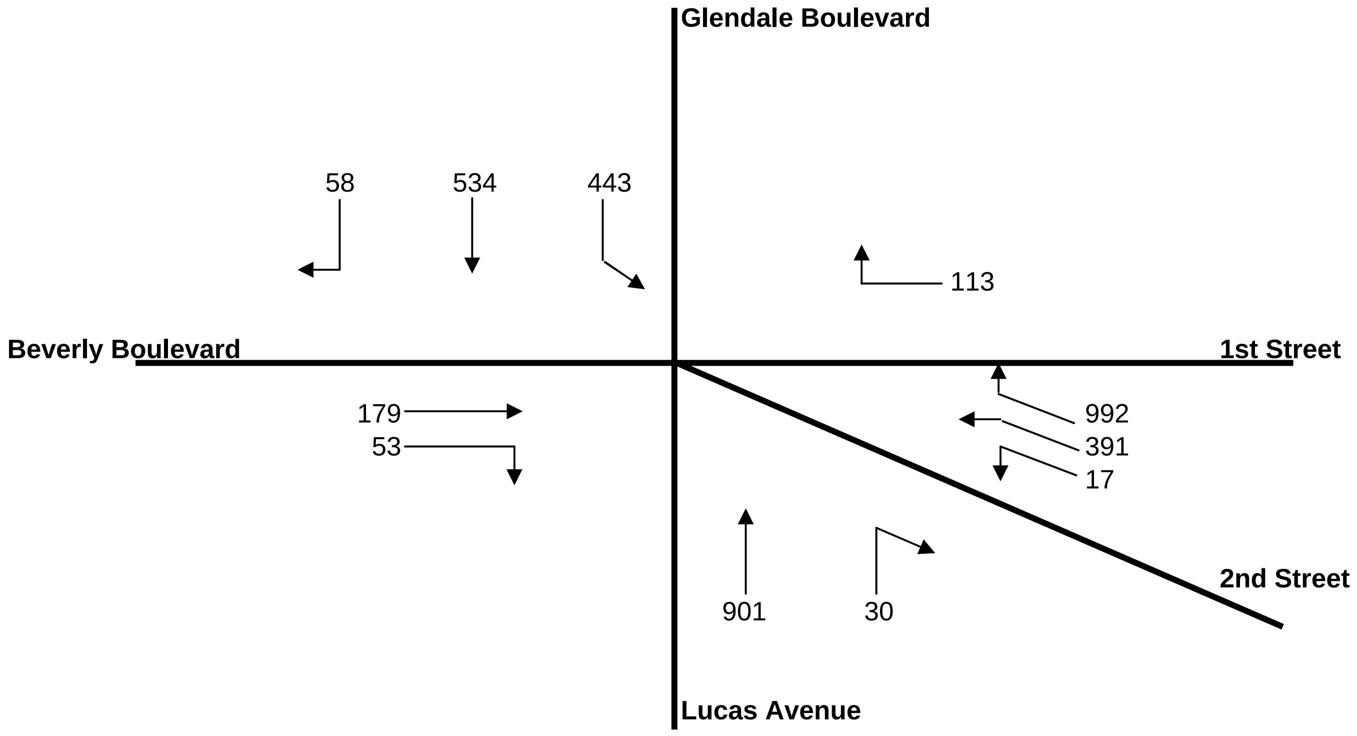
Intersection 39

Future without Project Conditions P.M. Peak Hour (Year 2020)

N



Phase 1) *Glendale Boulevard and Lucas Avenue - North-South Throughs and Rights*

$$\frac{901 + 30}{2}$$

&

$$\frac{58}{1} \quad \& \quad \frac{534}{1}$$

= **466**

Phase 2) *Glendale Boulevard, 1st Street, and 2nd Street - Southbound Lefts, Throughs, and Rights, and*
a.) Westbound Rights on 1st Street
b.) Westbound Rights on 2nd Street

a.) $\frac{113}{1}$

$$\& \left\{ \frac{534}{1} - 466 \right\} \quad \& \quad \left\{ \frac{443}{2} \right\}$$

= **113**

b.) $\left\{ \frac{443}{2} - 113 \right\}$

$$\text{or} \left\{ \frac{534}{1} - 466 - 113 \right\}$$

$$\& \quad \frac{992}{2}$$

= **109**

Phase 3) *2nd Street - Westbound Lefts, Throughs, and Rights*

$$\left\{ \frac{992}{2} - 109 \right\}$$

$$\& \quad \left\{ \frac{391 + 17}{1} \right\}$$

= **387**

Phase 4) *Beverly Boulevard and 2nd Street - Westbound Lefts and Throughs, and Eastbound Throughs and Rights*

$$\frac{179 + 53}{2}$$

$$\text{or} \quad \left\{ \frac{391 + 17}{1} \right\} - 387$$

= **116**

Critical Volumes = 466 + 113 + 109 + 387 + 116

= 1,191

V/C = $\frac{\mathbf{1,191}}{\mathbf{1,375}}$ **— 0.100 = 0.766** **LOS C**

CB_PM

January 25, 2011 ,Tuesday 12:50:31 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Lucas Ave **W/E:** 3rd St **I/S No:** 40

AM/PM: PM **Comments:** FUTURE WITHOUT PROJECT (YEAR 2020)

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	39	589	91	54	429	89	109	1131	192	95	899	116
AMBIENT												
RELATED												
PROJECT												
TOTAL	39	589	91	54	429	89	109	1131	192	95	899	116

LANE	NORTHBOUND	SOUTHBOUND	WESTBOUND	EASTBOUND
	1, , 2, , , 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	B
SouthBound	259	54
EastBound	450	95
WestBound	566	109
NorthBound	295	39

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

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

Results

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

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

$$V/C = \frac{295 + 54 + 566 + 95}{*1500} = 0.603$$

LOS = B

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CB_PM

January 25, 2011 ,Tuesday 12:50:31 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S:	Lucas Ave	W/E:	6th St	I/S No:	41
AM/PM:	PM	Comments:	FUTURE WITHOUT PROJECT (YEAR 2020)		
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	61	370	68	29	259	114	70	1038	68	170	1026	63
AMBIENT												
RELATED												
PROJECT												
TOTAL	61	370	68	29	259	114	70	1038	68	170	1026	63

	NB							SB							WB							EB						
LANE				1							1				1		2			1		1		1		1		

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	402	29
EastBound	545	170
WestBound	519	70
NorthBound	499	61

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

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

Results

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

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

V/C = (499 + 29 + 519 + 170) / *1500 = 0.741

LOS = C

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CalcaDB

January 25, 2011 ,Tuesday 12:50:31 PM

INTERSECTION DATA SUMMARY SHEET

N/S:	Lucas Ave	W/E:	Wilshire Blvd	I/S No:	42
AM/PM:	PM	Comments:	FUTURE WITHOUT PROJECT (YEAR 2020)		
COUNT DATE:		STUDY DATE:		GROWTH FACTOR:	

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	72	279	56	51	327	75	149	1048	86	70	1003	76
AMBIENT												
RELATED												
PROJECT												
TOTAL	72	279	56	51	327	75	149	1048	86	70	1003	76

LANE

	1	2	3	4	5	6	7
NORTHBOUND				1			
SOUTHBOUND				1			
WESTBOUND		1	1			1	
EASTBOUND		1	1			1	

SIGNAL

	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Perm	Auto
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	453	51
EastBound	712	70
WestBound	971	149
NorthBound	407	72

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

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

Results

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

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

$$V/C = \frac{72 + 453 + 971 + 70}{*1500} = 0.974$$

LOS = E

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ALTERNATE FUTURE WITH PROJECT CONDITIONS

(YEAR 2020)

CP_AM

January 25, 2011 ,Tuesday 12:50:42 PM

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INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave W/E: US 101 NB Ramps I/S No: 1

AM/PM: AM Comments: FUTURE WITH PROJECT (YEAR 2020)

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	696	212	0	0	1268	531	0	0	0	29	0	719
AMBIENT												
RELATED												
PROJECT												
TOTAL	696	212	0	0	1268	531	0	0	0	29	0	719

LANE							
NORTHBOUND	1		2				
SOUTHBOUND			2			1	
WESTBOUND							
EASTBOUND						1	1

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	Prot-Fix	<none>	Perm	OLA	<none>	<none>	Split	Auto

Critical Movements Diagram

SouthBound
A: 634
B: 0

EastBound
A: 26
B: 29

WestBound
A: 0
B: 0

NorthBound
A: 106
B: 696

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

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

Results

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

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

$$V/C = \frac{696 + 634 + 0 + 29}{*1425} = 0.884$$

LOS = D

CP_AM

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January 25, 2011 ,Tuesday 12:50:42 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Hope St/US 101 SB Ramps

W/E: Temple St

I/S No: 2

AM/PM: AM

Comments: FUTURE WITH PROJECT (YEAR 2020)

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	69	381	105	170	462	44	403	595	218	277	513	266
AMBIENT												
RELATED												
PROJECT												
TOTAL	69	381	105	170	462	44	403	595	218	277	513	266

	NB							SB							WB							EB						
LANE	1		1		1			1		1		1			1		2			1		1		1		1		

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Perm	Auto	Perm	Auto	Prot-Fix	Auto	Prot-Fix	Auto

Critical Movements Diagram

	A	B
SouthBound	253	170
EastBound	390	277
WestBound	298	403
NorthBound	243	69

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 = B(W/B) + A(E/B)

$$V/C = \frac{243 + 170 + 403 + 390}{*1425} = 0.776$$

LOS = C

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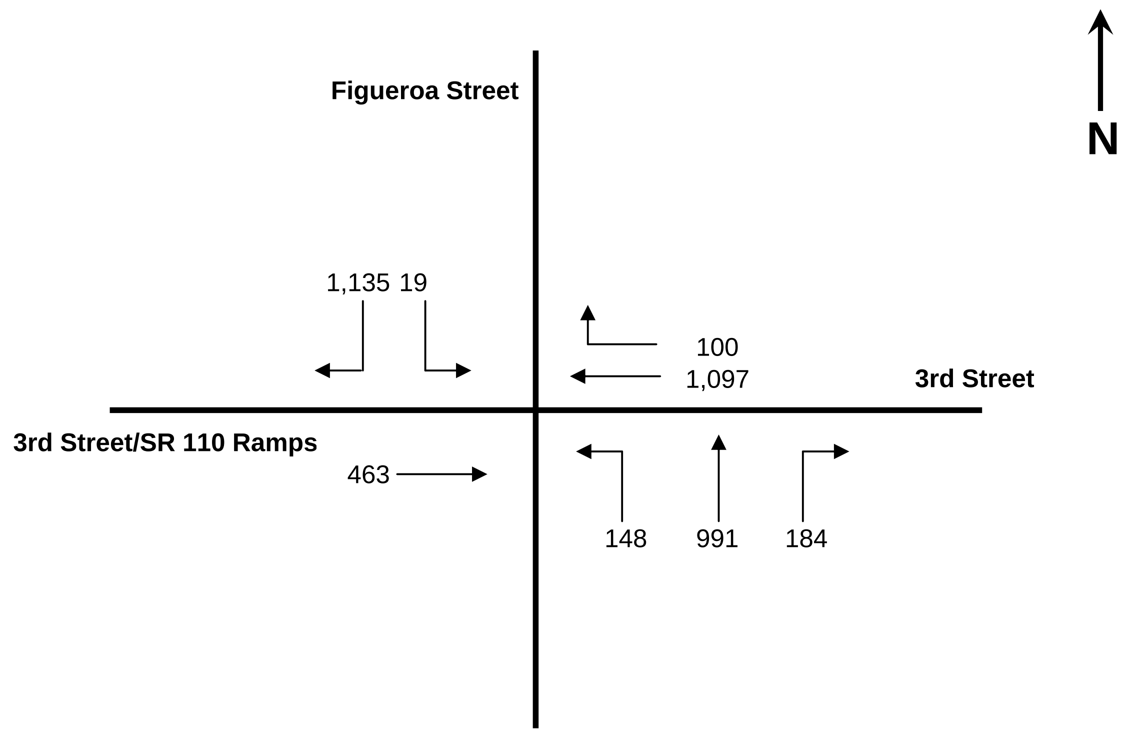
Intersection 3

Future with Project Conditions A.M. Peak Hour (Year 2020)



1) Lane Capacity for WB Throughs - 900 vphpl

Number of Lanes - 5

WB Through V/C - $\frac{1{,}097}{4{,}500}$

= **0.244**

<u>or</u>

Lane Capacity for WB Rights - 1,425 vphpl

Number of Lanes - 1

WB Right V/C - $\frac{100}{1{,}425}$

= **0.070**

<u>or</u>

Lane Capacity for EB Throughs - 1,425 vphpl

Number of Lanes - 2

EB Through V/C - $\frac{463}{2{,}850}$

= **0.162**

2) Lane Capacity for NB Lefts - 900 vphpl

Number of Lanes - 3

NB Left V/C - $\left\{\frac{148 \quad x \quad 0.37}{900}\right\}$

= ***0.061***

Lane Capacity for SB Rights - 1,425 vphpl

Number of Lanes - 2

SB Right V/C - $\left\{\frac{1{,}135 \quad x \quad 0.55}{1{,}425}\right\}$

= ***0.438***

Critical V/C - ***0.061*** **+** ***0.438*** **= 0.499**

<u>or</u>

Lane Capacity for NB Throughs & Rights - 1,425 vphpl

Number of Lanes - 2 throughs
1 through/right

NB Through/Right V/C - $\left\{\frac{991 \quad + \quad 184}{4{,}275}\right\}$ or $\frac{184}{1{,}425}$

= **0.275**

Intersection V/C = 0.743 — 0.100 = 0.643 LOS B

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CalcaDB

January 25, 2011 ,Tuesday 12:50:42 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St W/E: 3rd St I/S No: 4

AM/PM: AM Comments: FUTURE WITH PROJECT (YEAR 2020)

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	1	26	0	0	1153	137	526	1043	108	0	0	473
AMBIENT												
RELATED												
PROJECT												
TOTAL	1	26	0	0	1153	137	526	1043	108	0	0	473

LANE

NORTHBOUND	1		2				
SOUTHBOUND			2			1	
WESTBOUND	1		3		1		
EASTBOUND						1	

SIGNAL

	Phasing	RTOR
NORTHBOUND	Perm	<none>
SOUTHBOUND	Perm	Auto
WESTBOUND	Split	Auto
EASTBOUND	<none>	Free

Critical Movements Diagram

SouthBound
A: 577
B: 0

EastBound
A: 0
B: 0

WestBound
A: 288
B: 526

NorthBound
A: 13
B: 1

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

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

Results

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

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

$$V/C = \frac{1 + 577 + 526 + 0}{*1500} = 0.666$$

LOS = B

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January 25, 2011 ,Tuesday 12:50:42 PM

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INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave | W/E: 3rd St | I/S No: 5

AM/PM: AM | Comments: FUTURE WITH PROJECT (YEAR 2020)

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	17	68	0	0	1233	163	0	0	0	23	0	88
AMBIENT												
RELATED												
PROJECT												
TOTAL	17	68	0	0	1233	163	0	0	0	23	0	88

LANE

	NB	SB	WB	EB
LT	1			1
LT/TH				
TH	2	1		
LT/TH/RT				
TH/RT		1		
RT				2
LT/RT				

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Perm	Auto	Perm	Auto	<none>	<none>	Split	Auto

Critical Movements Diagram

	A	B
SouthBound	698	0
EastBound	48	23
WestBound	0	0
NorthBound	34	17

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) + A(E/B)

$$V/C = \frac{17 + 698 + 0 + 48}{*1500} = 0.439$$

LOS = A

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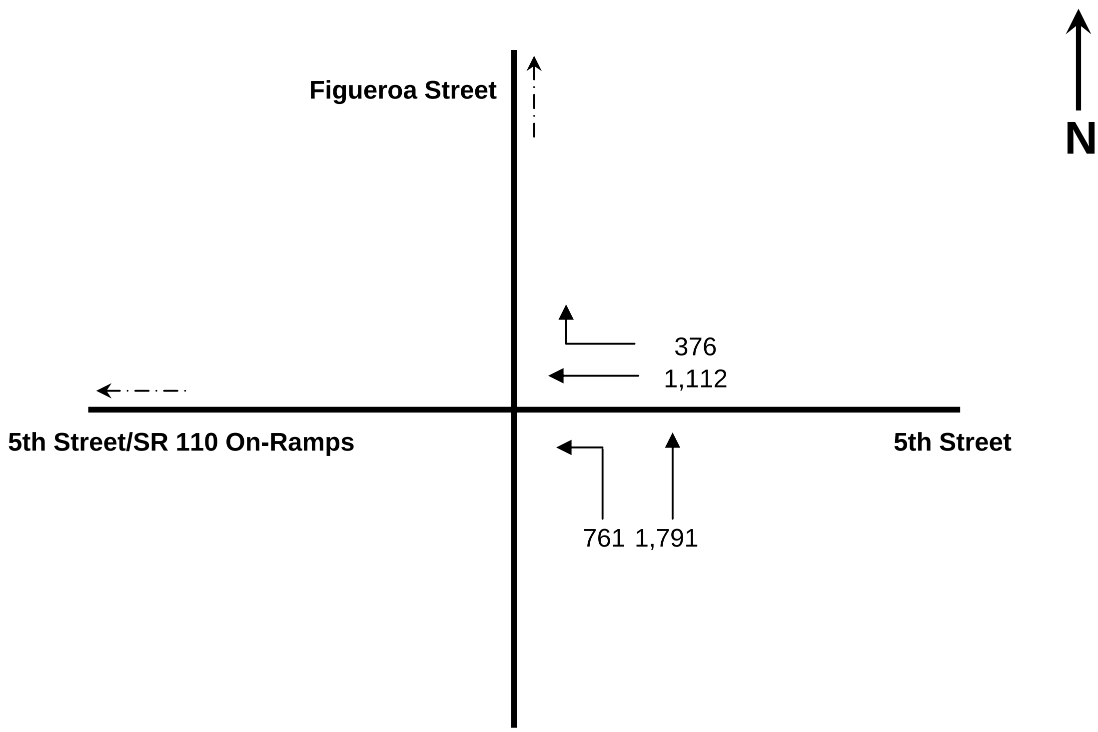
Intersection 6

Future with Project Conditions A.M. Peak Hour (Year 2020)



1) Lane Capacity for WB Direction - 900 vphpl

Number of Lanes - 7

Critical V/C - $\left\{\frac{1,112 + 376}{6,300}\right\}$

= **0.236**

2) Lane Capacity for NB Throughs - 900 vphpl

Number of Lanes - 3

Critical V/C - $\frac{1,791}{2,700}$

= **0.663**

<u>or</u>

Lane Capacity for NB Lefts - 900 vphpl

Number of Lanes - 3

Critical V/C - $\frac{761}{2,700}$

= **0.282**

Intersection V/C = 0.899 — 0.100 = 0.799 LOS C

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January 25, 2011 ,Tuesday 12:50:42 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St W/E: 5th St I/S No: 7

AM/PM: AM Comments: FUTURE WITH PROJECT (YEAR 2020)

COUNT DATE: STUDY DATE: GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	0	0	0	1404	316	262	1380	0	0	0	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	0	1404	316	262	1380	0	0	0	0

LANE

	Northbound	Southbound	Westbound	Eastbound
Lane 1			1	
Lane 2				
Lane 3		3	5	
Lane 4				
Lane 5		1		
Lane 6		1		
Lane 7				

SIGNAL

	Phasing	RTOR
Northbound	<none>	<none>
Southbound	Split	Auto
Westbound	Split	<none>
Eastbound	<none>	<none>

Critical Movements Diagram

	A	B
SouthBound	351	0
EastBound	0	0
WestBound	276	262
NorthBound	0	0

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) + A(S/B)

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

$$V/C = \frac{0 + 351 + 276 + 0}{*1500} = 0.348$$

LOS = A

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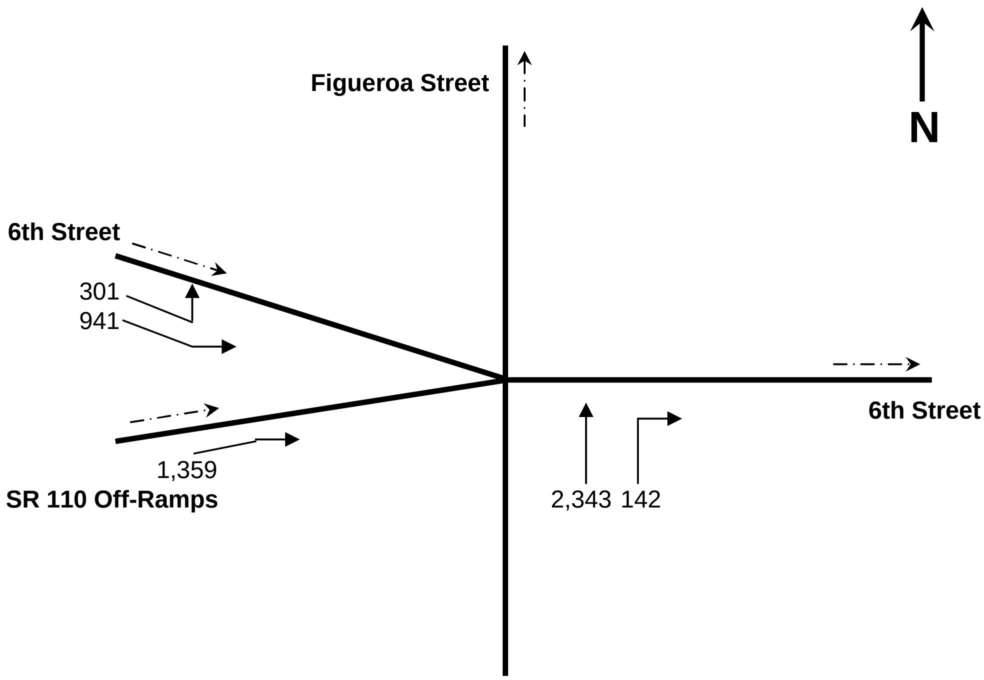
Intersection 8

Future with Project Conditions A.M. Peak Hour (Year 2020)



1) Lane Capacity for EB Direction - 1,500 vphpl

Number of Lanes -
1 left-turn lane from 6th Street
1 shared left/through lane from 6th Street
1 through lane from 6th Street
3 through lanes from SR 110 Off-Ramps

Critical V/C - $\left\{ \frac{941 \quad + \quad 301}{4,500} \right\}$ or $\frac{1,359}{4,500}$

= **0.302**

2) Lane Capacity for NB Throughs - 900 vphpl

Number of Lanes - 5

Critical V/C - $\frac{2,343}{4,500}$

= **0.521**

<u>or</u>

Lane Capacity for NB Rights - 1,500 vphpl

Number of Lanes - 1

Critical V/C - $\frac{142}{1,500}$

= **0.095**

Intersection V/C = 0.823 — 0.100 = 0.723 LOS C

CP_AM

CalcaDB

January 25, 2011 ,Tuesday 12:50:42 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St W/E: 6th St I/S No: 9

AM/PM: AM Comments: FUTURE WITH PROJECT (YEAR 2020)

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	0	0	0	269	1060	0	0	0	0	0	1799	666
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	269	1060	0	0	0	0	0	1799	666

	NB							SB							WB							EB						
LANE								2		4														3		1	1	

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	<none>	<none>	Split	<none>	<none>	<none>	Split	Auto

Critical Movements Diagram

SouthBound
A: 265
B: 148

EastBound
A: 493
B: 0

WestBound
A: 0
B: 0

NorthBound
A: 0
B: 0

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) + A(S/B)

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

$$V/C = \frac{0 + 265 + 0 + 493}{*1500} = 0.435$$

LOS = A

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January 25, 2011 ,Tuesday 12:50:42 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S:	Alvarado St	W/E:	Wilshire Blvd	I/S No:	10
AM/PM:	AM	Comments:	FUTURE WITH PROJECT (YEAR 2020)		
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	0	886	154	0	1024	191	76	1012	64	111	1262	39
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	886	154	0	1024	191	76	1012	64	111	1262	39

LANE							
NORTHBOUND			2		1		
SOUTHBOUND			2		1		
WESTBOUND	1		1		1		
EASTBOUND	1		1		1		

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A:	B:
SouthBound	405	0
EastBound	651	111
WestBound	538	76
NorthBound	347	0

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

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

Results

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

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

$$V/C = \frac{0 + 405 + 76 + 651}{*1500} = 0.685$$

LOS = B

CP_AM

CalcaDB

January 25, 2011 ,Tuesday 12:50:42 PM

INTERSECTION DATA SUMMARY SHEET

N/S:	Beaudry Ave	W/E:	Wilshire Blvd	I/S No:	11
AM/PM:	AM	Comments:	FUTURE WITH PROJECT (YEAR 2020)		
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	10	0	25	818	31	741	5	614	0	0	1129	6
AMBIENT												
RELATED												
PROJECT												
TOTAL	10	0	25	818	31	741	5	614	0	0	1129	6

LANE							
NORTHBOUND							1
SOUTHBOUND	1			1		1	
WESTBOUND		1	1				
EASTBOUND			2			1	

SIGNAL	Phasing	RTOR
NORTHBOUND	Split	Auto
SOUTHBOUND	Split	Auto
WESTBOUND	Perm	<none>
EASTBOUND	Perm	Auto

Critical Movements Diagram

SouthBound
A: 530
B: 530

EastBound
A: 565
B: 0

WestBound
A: 322
B: 5

NorthBound
A: 35
B: 10

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

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

Results

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

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

$$V/C = \frac{35 + 530 + 5 + 565}{*1425} = 0.726$$

LOS = C

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CP_AM

CalcaDB

January 25, 2011 ,Tuesday 12:50:42 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Francisco St **W/E:** Wilshire Blvd **I/S No:** 12

AM/PM: AM **Comments:** FUTURE WITH PROJECT (YEAR 2020)

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	36	14	127	9	1	10	194	546	57	75	1367	594
AMBIENT												
RELATED												
PROJECT												
TOTAL	36	14	127	9	1	10	194	546	57	75	1367	594

LANE	1	2	3	4	5	6	7
NORTHBOUND		1				1	
SOUTHBOUND				1			
WESTBOUND	1		1		1		
EASTBOUND	1		1		1		

SIGNAL	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Perm	Auto
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	20	9
EastBound	981	75
WestBound	302	194
NorthBound	127	36

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 = B(W/B) + A(E/B)

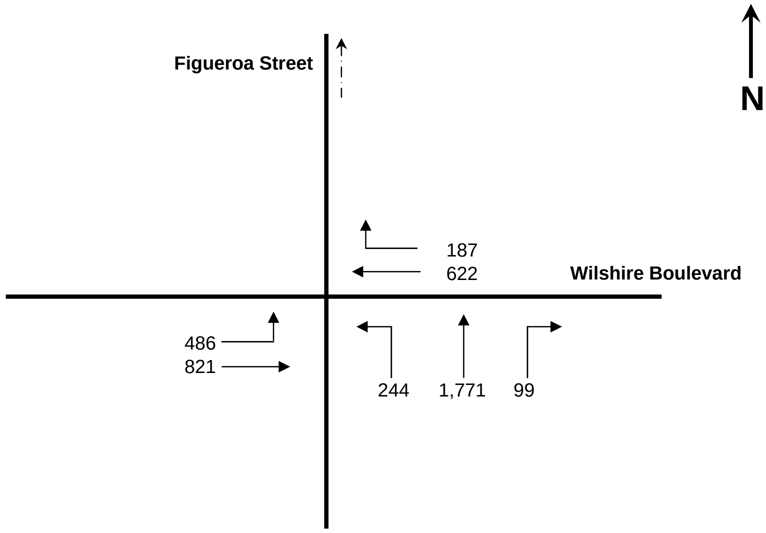
$$V/C = \frac{127 + 9 + 194 + 981}{*1500} = 0.804$$

LOS = D

Developed by Chun Wong, 12/94

Intersection 13

Future with Project Conditions A.M. Peak Hour (Year 2020)



1) Lane Capacity for EB Lefts - 900 vphpl

Number of Lanes - 2

EB Left V/C - $\left\{\frac{486 \times 0.55}{900}\right\}$

= ***0.297***

Lane Capacity for WB Direction - 1,425 vphpl

Number of Lanes -
1 through
1 through/right
1 right-turn only

WB V/C - $\left\{\frac{622 + 187}{4,275}\right\}$ or $\frac{622}{2,850}$ or $\frac{187}{2,850}$

= ***0.218***

Critical V/C - ***0.297*** **+** ***0.218*** **=** **0.515**

<u>or</u>

Lane Capacity for EB Throughs - 1,425 vphpl

Number of Lanes - 2

Critical V/C - $\frac{821}{2,850}$

= **0.288**

2) Lane Capacity for NB Direction - 900 vphpl

Number of Lanes -
1 left/through
3 throughs
1 right-turn only

Critical V/C - $\left\{\frac{244 + 1,771}{3,600}\right\}$

or $\frac{244}{900}$

or $\frac{99}{900}$

= **0.560**

Intersection V/C = 1.075 — 0.100 = 0.975 LOS E

Intersection 14

Future with Project Conditions A.M. Peak Hour (Year 2020)

1) Lane Capacity for WB Direction - 900 vphpl

Number of Lanes - 2

WB Direction V/C - $\left\{\frac{325 + 44}{1{,}800}\right\}$ or $\frac{44}{900}$

= **0.205**

Lane Capacity for EB Direction - 1,500 vphpl

Number of Lanes - 2

EB Direction V/C - $\left\{\frac{549 + 385}{3{,}000}\right\}$ or $\frac{385}{1{,}500}$

= **0.311**

2) Lane Capacity for SB Throughs and Lefts - 1,500 vphpl

Number of Lanes - 3 throughs
1 left-turn only

SB Through V/C - $\frac{1{,}168}{4{,}500}$

= **0.26**

SB Left V/C - $\frac{91}{1{,}500}$

= **0.061**

Lane Capacity for SB Rights - 900 vphpl

Number of Lanes - 1

SB Right V/C - $\frac{536}{900}$

= **0.596**

Intersection V/C = 0.907 − 0.100 = 0.807 LOS D

CP_AM

CalcaDB

January 25, 2011 ,Tuesday 12:50:42 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave **W/E:** Wilshire Blvd **I/S No:** 15

AM/PM: AM **Comments:** FUTURE WITH PROJECT (YEAR 2020)

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	0	0	0	64	1133	276	10	11	0	0	44	326
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	64	1133	276	10	11	0	0	44	326

LANE

	NB 1	NB 2	NB 3	NB 4	NB 5	NB 6	NB 7	SB 1	SB 2	SB 3	SB 4	SB 5	SB 6	SB 7	WB 1	WB 2	WB 3	WB 4	WB 5	WB 6	WB 7	EB 1	EB 2	EB 3	EB 4	EB 5	EB 6	EB 7
LANE									1	2		1				1										1	1	

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	<none>	<none>	Split	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

SouthBound
A: 368
B: 64

EastBound
A: 185
B: 0

WestBound
A: 21
B: 10

NorthBound
A: 0
B: 0

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

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

Results

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

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

$$V/C = \frac{0 + 368 + 10 + 185}{*1500} = 0.305$$

LOS = A

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CalcaDB

January 25, 2011 ,Tuesday 12:50:42 PM

INTERSECTION DATA SUMMARY SHEET

N/S:	Alvarado St	W/E:	7th St	I/S No:	16
AM/PM:	AM	Comments:	FUTURE WITH PROJECT (YEAR 2020)		
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	0	958	66	0	995	80	0	466	70	0	729	32
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	958	66	0	995	80	0	466	70	0	729	32

LANE							
NORTHBOUND			2		1		
SOUTHBOUND			2		1		
WESTBOUND			1		1		
EASTBOUND			1		1		

SIGNAL	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	358	0
EastBound	381	0
WestBound	268	0
NorthBound	341	0

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)

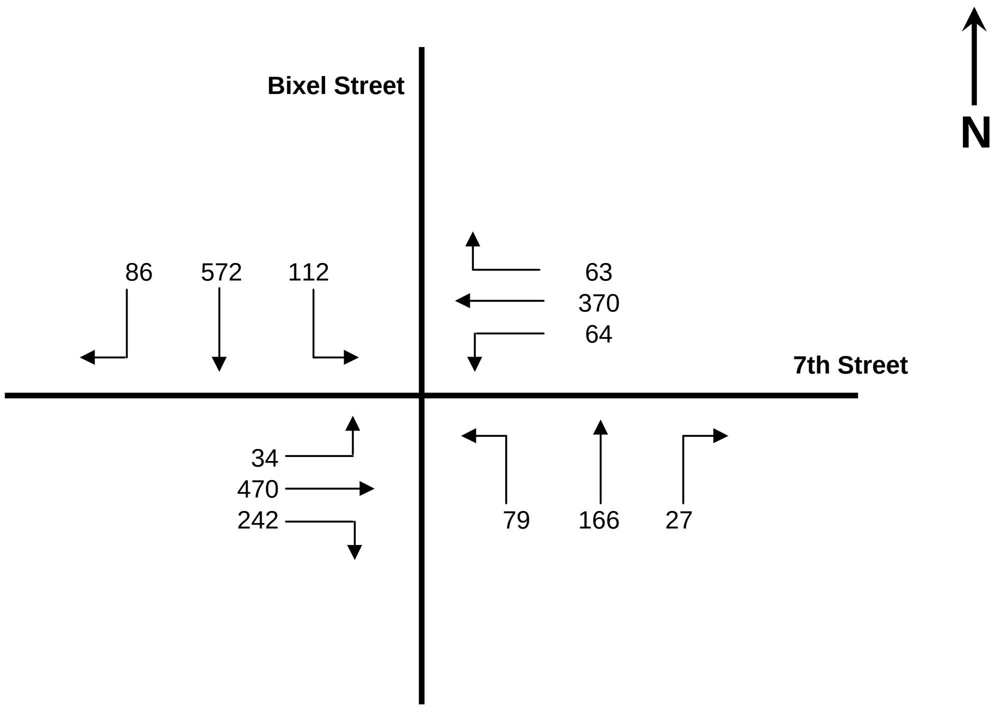
$$V/C = \frac{0 + 358 + 0 + 381}{*1500} = 0.423$$

LOS = A

Developed by Chun Wong, 12/94

Intersection 17

Future with Project Conditions A.M. Peak Hour (Year 2020)



1) Lane Capacity for WB Lefts - 900 vphpl

Number of Lanes - 1

WB Left V/C - $\frac{64}{900}$

= ***0.071***

Lane Capacity for EB Throughs - 1,500 vphpl

Number of Lanes - 1

EB Through V/C - $\frac{470}{1,500}$

= ***0.313***

Lane Capacity for EB Rights - 900 vphpl

Number of Lanes - 1

EB Right V/C - $\frac{242}{900}$

= ***0.269***

Critical V/C - ***0.071*** **+** ***0.313***

= 0.384

<u>or</u>

Lane Capacity for EB Lefts - 1,500 vphpl

Number of Lanes - 1

EB Left V/C - $\frac{34}{1,500}$

= ***0.023***

Lane Capacity for WB Throughs/Rights - 1,500 vphpl

Number of Lanes - 2

WB Through V/C - $\left\{\frac{370 + 63}{3,000}\right\}$

= ***0.144***

Critical V/C - ***0.023*** **+** ***0.144***

= 0.167

2) Lane Capacity for NB & SB Direction - 1,500 vphpl

Number of Lanes - 1 left
1 through/right

Critical V/C - $\left\{\frac{79 + 572 + 86}{1,500}\right\}$

or $\left\{\frac{112 + 166 + 27}{1,500}\right\}$

= **0.491**

Intersection V/C = 0.875 – 0.100 = 0.775 LOS C

CalcaDB

January 25, 2011 ,Tuesday 12:50:42 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Francisco St W/E: 7th St I/S No: 18

AM/PM: AM Comments: FUTURE WITH PROJECT (YEAR 2020)

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	41	11	79	53	269	73	150	599	485	66	555	143
AMBIENT												
RELATED												
PROJECT												
TOTAL	41	11	79	53	269	73	150	599	485	66	555	143

LANE							
NORTHBOUND		1				1	
SOUTHBOUND	1				1		
WESTBOUND	1		1		1		
EASTBOUND	1		1		1		

SIGNAL	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Perm	Auto
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	342	53
EastBound	349	66
WestBound	542	150
NorthBound	79	41

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

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

Results

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

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

$$V/C = \frac{41 + 342 + 542 + 66}{*1500} = 0.591$$

LOS = A

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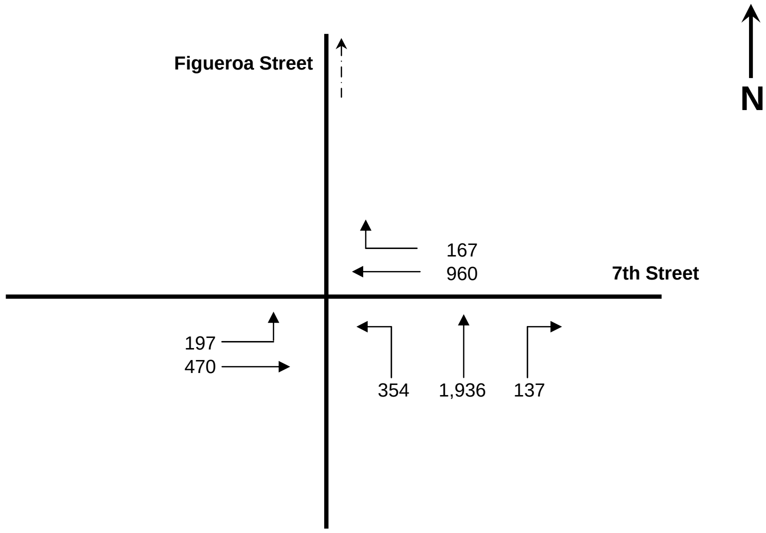
Intersection 19

Future with Project Conditions A.M. Peak Hour (Year 2020)



1) Lane Capacity for EB Lefts - 900 vphpl

Number of Lanes - 2

EB Left V/C - $\left\{\dfrac{197 \quad X \quad 0.55}{900}\right\}$

= ***0.12***

Lane Capacity for WB Direction - 1,425 vphpl

Number of Lanes - 2 throughs
1 right-turn only

WB V/C - $\dfrac{960}{2{,}850}$ or $\dfrac{167}{1{,}425}$

= ***0.337***

Critical V/C - ***0.12*** **+** ***0.337*** **=** **0.457**

<u>or</u>

Lane Capacity for EB Throughs - 1,425 vphpl

Number of Lanes - 2

Critical V/C - $\dfrac{470}{2{,}850}$

= **0.165**

2) Lane Capacity for NB Throughs and Through/Left - 900 vphpl
Lane Capacity for NB Right-turns - 450 vphpl

Number of Lanes - 1 left/through
3 throughs
1 right-turn only

Critical V/C - $\left\{\dfrac{354 \quad + \quad 1{,}936}{3{,}600}\right\}$

or $\dfrac{354}{900}$

or $\dfrac{137}{450}$

= **0.636**

Intersection V/C = 1.093 — 0.100 = 0.993 LOS E

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January 25, 2011 ,Tuesday 12:50:42 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S:	Flower St	W/E:	7th St	I/S No:	20
AM/PM:	AM	Comments:	FUTURE WITH PROJECT (YEAR 2020)		
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	0	0	0	74	1009	190	116	880	0	0	430	162
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	74	1009	190	116	880	0	0	430	162

	NB							SB							WB							EB						
LANE									1	2		1				1	2							1		1		

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	<none>	<none>	Split	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

	A:	B:
SouthBound	318	74
EastBound	296	0
WestBound	371	116
NorthBound	0	0

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

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

Results

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

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

$$V/C = \frac{0 + 318 + 116 + 296}{*1500} = 0.417$$

LOS = A

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CalcaDB

January 25, 2011 ,Tuesday 12:50:42 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Olive Ave | W/E: 7th St | I/S No: 21

AM/PM: AM | Comments: FUTURE WITH PROJECT (YEAR 2020)

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	190	1013	102	0	0	0	0	782	238	0	608	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	190	1013	102	0	0	0	0	782	238	0	608	0

LANE

	NORTHBOUND	SOUTHBOUND	WESTBOUND	EASTBOUND
LT				
LT/TH	1			
TH	2		2	2
LT/TH/RT				
TH/RT	1			
RT			1	
LT/RT				

SIGNAL	Phasing	RTOR
NORTHBOUND	Split	Auto
SOUTHBOUND	<none>	<none>
WESTBOUND	Perm	Auto
EASTBOUND	Perm	<none>

Critical Movements Diagram

	A:	B:
SouthBound	0	0
EastBound	304	0
WestBound	391	0
NorthBound	326	190

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) + A(S/B)

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

$$V/C = \frac{326 + 0 + 391 + 0}{*1500} = 0.408$$

LOS = A

CalcaDB

January 25, 2011 ,Tuesday 12:50:42 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Alameda St | W/E: 7th St | I/S No: 22

AM/PM: AM | Comments: FUTURE WITH PROJECT (YEAR 2020)

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	153	673	62	128	931	105	146	922	60	86	528	110
AMBIENT												
RELATED												
PROJECT												
TOTAL	153	673	62	128	931	105	146	922	60	86	528	110

	NB							SB							WB							EB						
LANE	1		1		1			1		1		1			1		1		1			1		1		1		

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Perm	Auto	Prot-Fix	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	518	128
EastBound	319	86
WestBound	491	146
NorthBound	368	153

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

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

Results

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

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

$$V/C = \frac{153 + 518 + 491 + 86}{*1425} = 0.806$$

LOS = D

CP_AM

CalcaDB

January 25, 2011 ,Tuesday 12:50:42 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Soto St W/E: 7th St I/S No: 23

AM/PM: AM Comments: FUTURE WITH PROJECT (YEAR 2020)

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	490	771	31	58	648	88	28	113	41	50	55	22
AMBIENT												
RELATED												
PROJECT												
TOTAL	490	771	31	58	648	88	28	113	41	50	55	22

LANE	1		1		1			1		1		1						1					1				1	

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Prot-Fix	Auto	Perm	Auto	Split	Auto	Split	Auto

Critical Movements Diagram

	A	B
SouthBound	368	58
EastBound	105	50
WestBound	182	28
NorthBound	401	490

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

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

Results

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

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

$$V/C = \frac{490 + 368 + 182 + 105}{*1375} = 0.763$$

LOS = C

Developed by Chun Wong, 12/94

Intersection 24

Future with Project Conditions A.M. Peak Hour (Year 2020)

1) Lane Capacity for WB Lefts - 750 vphpl

Number of Lanes - 2

WB Left V/C - $\frac{317}{1,500}$

= **0.211**

<u>or</u>

Lane Capacity for WB Throughs and Rights - 1,500 vphpl

Number of Lanes - 2 throughs
Number of Lanes - 1 right-turn only

WB Through/Right V/C - $\frac{638}{3,000}$ or $\frac{390}{1,500}$

= **0.260**

2) Lane Capacity for SB Rights - 1,500 vphpl

Number of Lanes - 1

SB Right V/C - $\frac{68}{1,500}$

= **0.045**

<u>or</u>

Lane Capacity for SB Throughs - 750 vphpl

Number of Lanes - 2

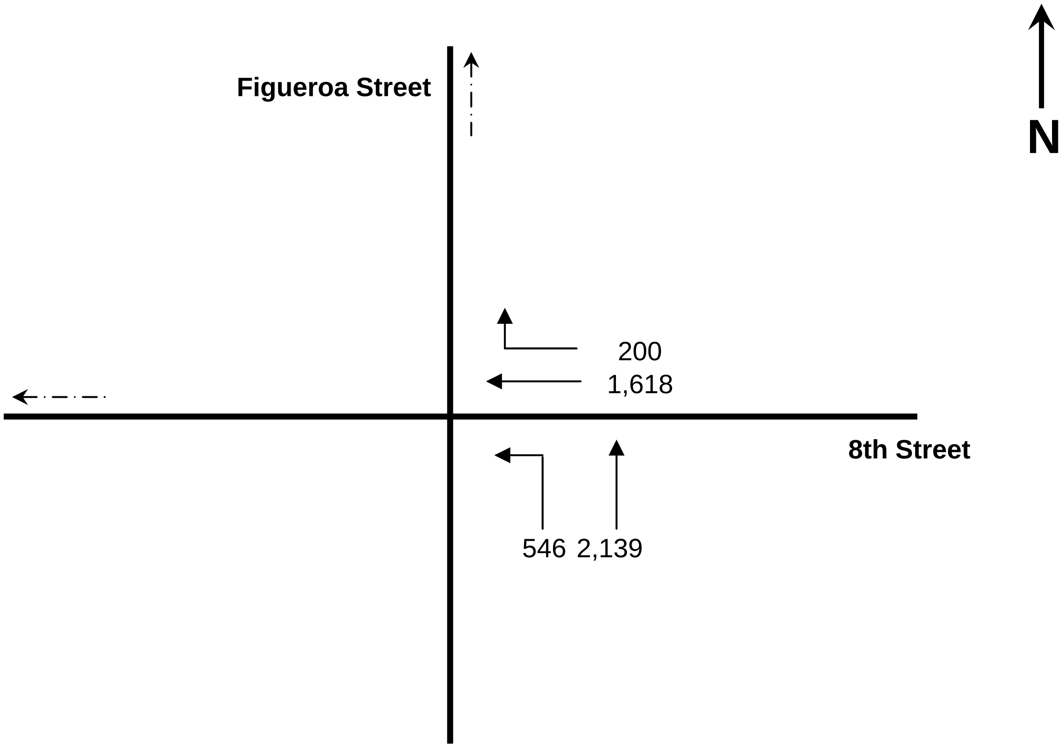
WB Through/Right V/C - $\frac{1,061}{1,500}$

= **0.707**

Intersection V/C = 0.967 — 0.100 = 0.867 LOS D

Intersection 25

Future with Project Conditions A.M. Peak Hour (Year 2020)



1) Lane Capacity for WB Direction - 900 vphpl

Number of Lanes - 4 throughs
1 right-turn only

Critical V/C - $\frac{1{,}618}{3{,}600}$ or $\frac{200}{900}$

= **0.449**

2) Lane Capacity for NB Direction - 900 vphpl

Number of Lanes - 1 left-turn only
5 throughs

Critical V/C - $\frac{2{,}139}{4{,}500}$ or $\frac{546}{900}$

= **0.607**

Intersection V/C = 1.056 − 0.100 = 0.956 LOS E

CP_AM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

January 25, 2011 ,Tuesday 12:50:42 PM

N/S: Flower St **W/E:** 8th St **I/S No:** 26

AM/PM: AM **Comments:** FUTURE WITH PROJECT (YEAR 2020)

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	0	0	0	0	740	332	79	1532	0	0	0	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	0	740	332	79	1532	0	0	0	0

LANE

NORTHBOUND							
SOUTHBOUND			4			1	
WESTBOUND		1	3				
EASTBOUND							

SIGNAL

	Phasing	RTOR
NORTHBOUND	<none>	<none>
SOUTHBOUND	Split	Auto
WESTBOUND	Split	<none>
EASTBOUND	<none>	<none>

Critical Movements Diagram

SouthBound
A: 332
B: 0

EastBound
A: 0
B: 0

WestBound
A: 403
B: 79

NorthBound
A: 0
B: 0

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) + A(S/B)

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

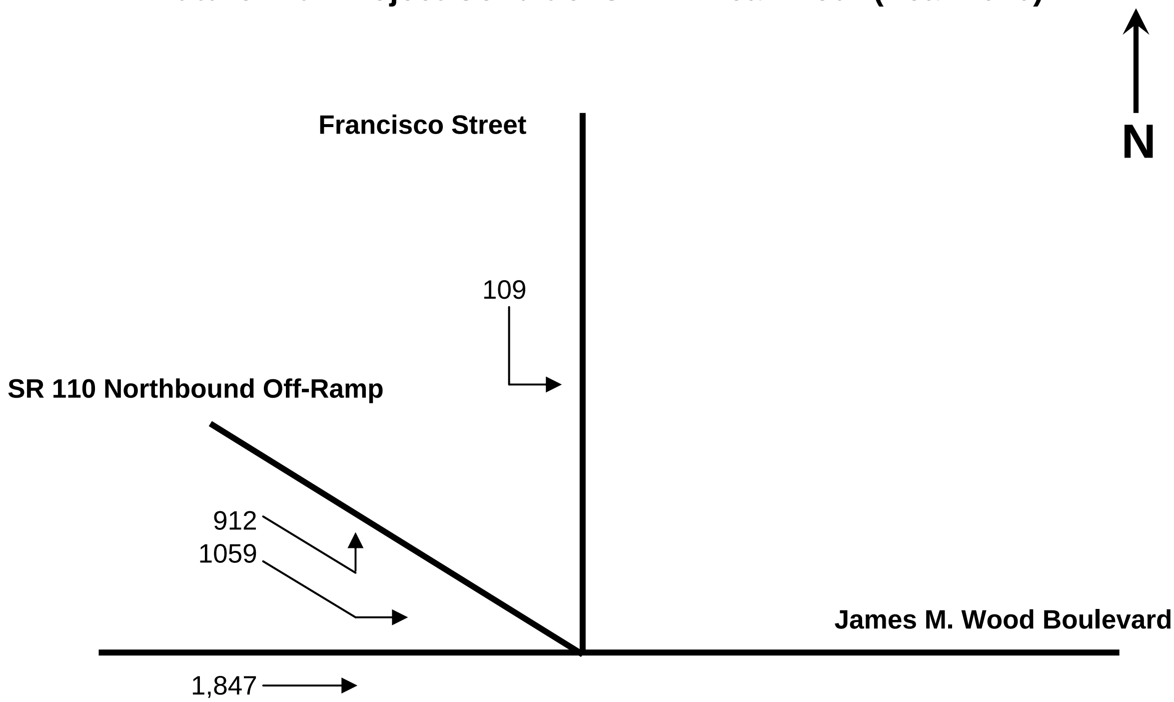
$$V/C = \frac{0 + 332 + 403 + 0}{*1500} = 0.420$$

LOS = A

Developed by Chun Wong, 12/94

Intersection 27

Future with Project Conditions A.M. Peak Hour (Year 2020)



1) $\left\{\frac{912 + 1059}{3}\right\}$

or

$\frac{1,847}{3}$

= **986**

2) $\frac{109}{1}$

= **109**

Critical Volumes = 986 + 109 = 1,095

V/C = $\frac{1,095}{1,500}$ 0.100 = 0.630 LOS B

CP_AM

CalcaDB

January 25, 2011 ,Tuesday 12:50:42 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Figueroa St W/E: 9th St/James M Wood Blvd I/S No: 28

AM/PM: AM Comments: FUTURE WITH PROJECT (YEAR 2020)

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	0	1699	158	0	0	0	0	0	0	1133	1810	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	1699	158	0	0	0	0	0	0	1133	1810	0

LANE

	LT	LT-TH	TH	LT-TH-RT	TH-RT	RT	LT-RT
NORTHBOUND			3			1	
SOUTHBOUND							
WESTBOUND							
EASTBOUND	1	1	3				

SIGNAL

	Phasing	RTOR
NORTHBOUND	Split	Auto
SOUTHBOUND	<none>	<none>
WESTBOUND	<none>	<none>
EASTBOUND	Split	<none>

Critical Movements Diagram

SouthBound
A: 0
B: 0

EastBound
A: 589
B: 589

WestBound
A: 0
B: 0

NorthBound
A: 566
B: 0

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) + A(S/B)

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

$$V/C = \frac{566 + 0 + 0 + 589}{*1500} = 0.700$$

LOS = B

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January 27, 2011 ,Thursday 11:33:43 AM

INTERSECTION DATA SUMMARY SHEET

N/S: Cherry St | W/E: Pico Blvd | I/S No: 29

AM/PM: AM | Comments: FUTURE WITH PROJECT (YEAR 2020)

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	567	542	237	229	0	8	0	406	330	234	600	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	567	542	237	229	0	8	0	406	330	234	600	0

LANE	1	2	3	4	5	6	7
NORTHBOUND	1	1	1			1	
SOUTHBOUND	2					2	
WESTBOUND			1		1	1	
EASTBOUND	1		3				

SIGNAL	Phasing	RTOR
NORTHBOUND	Split	Auto
SOUTHBOUND	Split	Auto
WESTBOUND	Perm	OLA
EASTBOUND	Perm	<none>

Critical Movements Diagram

SouthBound
A: 4
B: 126

EastBound
A: 200
B: 234

WestBound
A: 245
B: 0

NorthBound
A: 370
B: 370

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)

$$V/C = \frac{370 + 126 + 245 + 234}{*1425} = 0.614$$

LOS = B

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January 25, 2011 ,Tuesday 12:50:42 PM

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INTERSECTION DATA SUMMARY SHEET

N/S: Figueroa St W/E: Pico Blvd I/S No: 30

AM/PM: AM Comments: FUTURE WITH PROJECT (YEAR 2020)

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	256	2055	146	10	158	120	59	397	118	208	700	141
AMBIENT												
RELATED												
PROJECT												
TOTAL	256	2055	146	10	158	120	59	397	118	208	700	141

LANE							
NORTHBOUND	1		3		1		
SOUTHBOUND	1		2			1	
WESTBOUND	1		2			1	
EASTBOUND	1		2			1	

SIGNAL	Phasing	RTOR
NORTHBOUND	Prot-Fix	Auto
SOUTHBOUND	Perm	OLA
WESTBOUND	Perm	Auto
EASTBOUND	Prot-Fix	OLA

Critical Movements Diagram

SouthBound
A: 79
B: 10

EastBound
A: 350
B: 208

WestBound
A: 199
B: 59

NorthBound
A: 550
B: 256

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

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

Results

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

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

$$V/C = \frac{550 + 10 + 59 + 350}{*1375} = 0.635$$

LOS = B

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January 25, 2011 ,Tuesday 12:50:42 PM

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INTERSECTION DATA SUMMARY SHEET

N/S:	Hoover St	W/E:	Alvarado St/Alvarado Ter	I/S No:	31
AM/PM:	AM	Comments:	FUTURE WITH PROJECT (YEAR 2020)		
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	0	998	648	13	875	0	494	0	0	0	0	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	998	648	13	875	0	494	0	0	0	0	0

LANE	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
Northbound			1		1	1	
Southbound		1	1				
Westbound	1						1
Eastbound							

SIGNAL	Phasing	RTOR
Northbound	Perm	Free
Southbound	Perm	<none>
Westbound	Split	Auto
Eastbound	<none>	<none>

Critical Movements Diagram

	A:	B:
SouthBound	477	13
EastBound	0	0
WestBound	247	247
NorthBound	549	0

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

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

Results

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

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

$$V/C = \frac{549 + 13 + 247 + 0}{*1500} = 0.469$$

LOS = A

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January 25, 2011 ,Tuesday 12:50:42 PM

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INTERSECTION DATA SUMMARY SHEET

N/S: Flower St **W/E:** Venice Blvd **I/S No:** 32

AM/PM: AM **Comments:** FUTURE WITH PROJECT (YEAR 2020)

COUNT DATE: **STUDY DATE:** **GROWTH FACTOR:**

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	0	0	10	544	31	49	342	0	0	412	57
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	10	544	31	49	342	0	0	412	57

LANE

	1	2	3	4	5	6	7
NORTHBOUND							
SOUTHBOUND	1		2		1		
WESTBOUND		1	1				
EASTBOUND			1		1		

SIGNAL

	Phasing	RTOR
NORTHBOUND	<none>	<none>
SOUTHBOUND	Split	Auto
WESTBOUND	Perm	<none>
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	192	10
EastBound	235	0
WestBound	220	49
NorthBound	0	0

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) + A(S/B)

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

$$V/C = \frac{0 + 192 + 49 + 235}{*1500} = 0.247$$

LOS = A

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January 25, 2011 ,Tuesday 12:50:42 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave | W/E: 18th St | I/S No: 33

AM/PM: AM | Comments: FUTURE WITH PROJECT (YEAR 2020)

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	0	0	122	412	503	0	0	0	0	0	1067	138
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	122	412	503	0	0	0	0	0	1067	138

	NORTHBOUND							SOUTHBOUND							WESTBOUND							EASTBOUND						
LANE						2		1		3														2		1	1	

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	Auto	Prot-Fix	<none>	<none>	<none>	Split	Auto

Critical Movements Diagram

SouthBound
A: 168
B: 412

EastBound
A: 356
B: 0

WestBound
A: 0
B: 0

NorthBound
A: 67
B: 0

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

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

Results

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

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

$$V/C = \frac{67 + 412 + 0 + 356}{*1425} = 0.516$$

LOS = A

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January 25, 2011 ,Tuesday 12:50:42 PM

INTERSECTION DATA SUMMARY SHEET

N/S:	Olive St	W/E:	6th St	I/S No:	34
AM/PM:	AM	Comments:	FUTURE WITH PROJECT (YEAR 2020)		
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	0	1009	175	0	0	0	0	0	0	464	1045	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	1009	175	0	0	0	0	0	0	464	1045	0

LANE							
NORTHBOUND			4		1		
SOUTHBOUND							
WESTBOUND							
EASTBOUND	1	1	3				

SIGNAL	Phasing	RTOR
NORTHBOUND	Split	Auto
SOUTHBOUND	<none>	<none>
WESTBOUND	<none>	<none>
EASTBOUND	Split	<none>

Critical Movements Diagram

	A:	B:
SouthBound	0	0
EastBound	302	302
WestBound	0	0
NorthBound	237	0

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) + A(S/B)

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

$$V/C = \frac{237 + 0 + 0 + 302}{*1500} = 0.289$$

LOS = A

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January 25, 2011 ,Tuesday 12:50:42 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Hope St   W/E: 7th St   I/S No: 35

AM/PM: AM   Comments: FUTURE WITH PROJECT (YEAR 2020)

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	41	263	146	10	250	26	0	993	113	0	440	73
AMBIENT												
RELATED												
PROJECT												
TOTAL	41	263	146	10	250	26	0	993	113	0	440	73

LANE							
NORTHBOUND		1			1		
SOUTHBOUND		1			1		
WESTBOUND			1		1		
EASTBOUND			1		1		

SIGNAL	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Perm	Auto
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A:	B:
SouthBound	148	10
EastBound	257	0
WestBound	553	0
NorthBound	225	41

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

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

Results

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

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

$$V/C = \frac{225 + 10 + 553 + 0}{*1500} = 0.455$$

LOS = A

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January 25, 2011 ,Tuesday 12:50:42 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave | W/E: 7th St | I/S No: 36

AM/PM: AM | Comments: FUTURE WITH PROJECT (YEAR 2020)

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	0	0	0	101	1311	79	0	1008	0	0	495	120
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	101	1311	79	0	1008	0	0	495	120

LANE

LANE								1		4			1				2							2			1	

	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	<none>	<none>	Split	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

SouthBound
A: 328
B: 101

EastBound
A: 248
B: 0

WestBound
A: 504
B: 0

NorthBound
A: 0
B: 0

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

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

Results

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

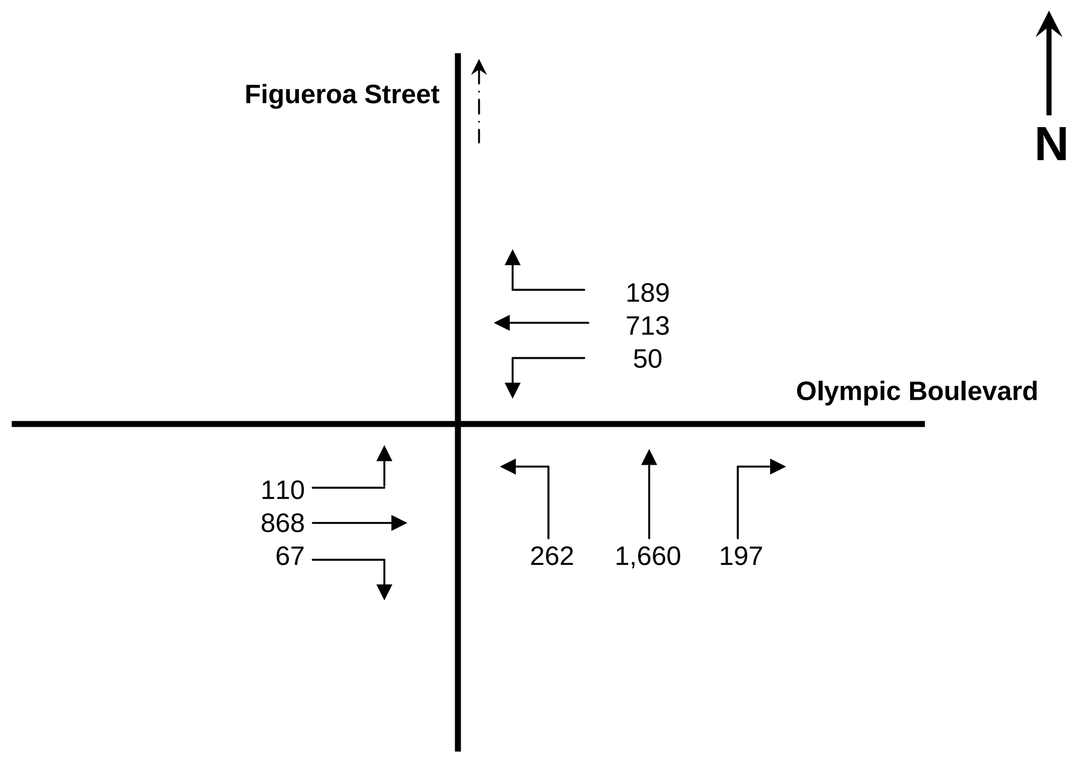
West/East Critical Movements = A(W/B) + B(E/B)

$$V/C = \frac{0 + 328 + 504 + 0}{*1500} = 0.485$$

LOS = A

Intersection 37

Future with Project Conditions A.M. Peak Hour (Year 2020)



1) Lane Capacity for EB Lefts - 900 vphpl

Number of Lanes - 1

EB Left V/C - $\frac{110}{900}$

= ***0.122***

Lane Capacity for WB Throughs - 1,425 vphpl
Lane Capacity for WB Rights - 900 vphpl

Number of Lanes - 3 throughs
1 right-turn only

WB Through/Right V/C - $\frac{713}{4,275}$ or $\frac{189}{900}$

= ***0.210***

Critical V/C - ***0.122*** **+** ***0.210*** **=** **0.332**

<u>or</u>

Lane Capacity for WB Lefts - 1,425 vphpl

Number of Lanes - 1

WB Left V/C - $\frac{50}{1,425}$

= ***0.035***

Lane Capacity for EB Throughs/Rights - 1,425 vphpl

Number of Lanes - 3 throughs
1 right-turn only

EB Through/Right V/C - $\frac{868}{4,275}$ or $\frac{67}{1,425}$

= ***0.203***

Critical V/C - ***0.035*** **+** ***0.203*** **=** **0.238**

2) Lane Capacity for NB Throughs - 900 vphpl
Lane Capacity for NB Left- and Right-turns - 1,425 vphpl

Number of Lanes - 1 left-turn only
3 throughs
1 right-turn only

Critical V/C - $\frac{1,660}{2,700}$ or $\frac{262}{1,425}$ or $\frac{197}{1,425}$

= **0.615**

Intersection V/C = 0.947 — 0.100 = 0.847 LOS D

CalcaDB

January 25, 2011 ,Tuesday 12:50:42 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Glendale Blvd
W/E: Temple St
I/S No: 38
AM/PM: AM
Comments: FUTURE WITH PROJECT (YEAR 2020)
COUNT DATE:
STUDY DATE:
GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	58	629	14	252	1850	152	65	607	184	202	657	143
AMBIENT												
RELATED												
PROJECT												
TOTAL	58	629	14	252	1850	152	65	607	184	202	657	143

LANE

	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND	1		1		1		
SOUTHBOUND	1		1		1		
WESTBOUND	1		1		1		
EASTBOUND	1		1		1		

SIGNAL

	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Prot-Fix	Auto
EASTBOUND	Prot-Fix	Auto

Critical Movements Diagram

SouthBound
A: 1001
B: 252

EastBound
A: 400
B: 202

WestBound
A: 396
B: 65

NorthBound
A: 322
B: 58

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

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

Results

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

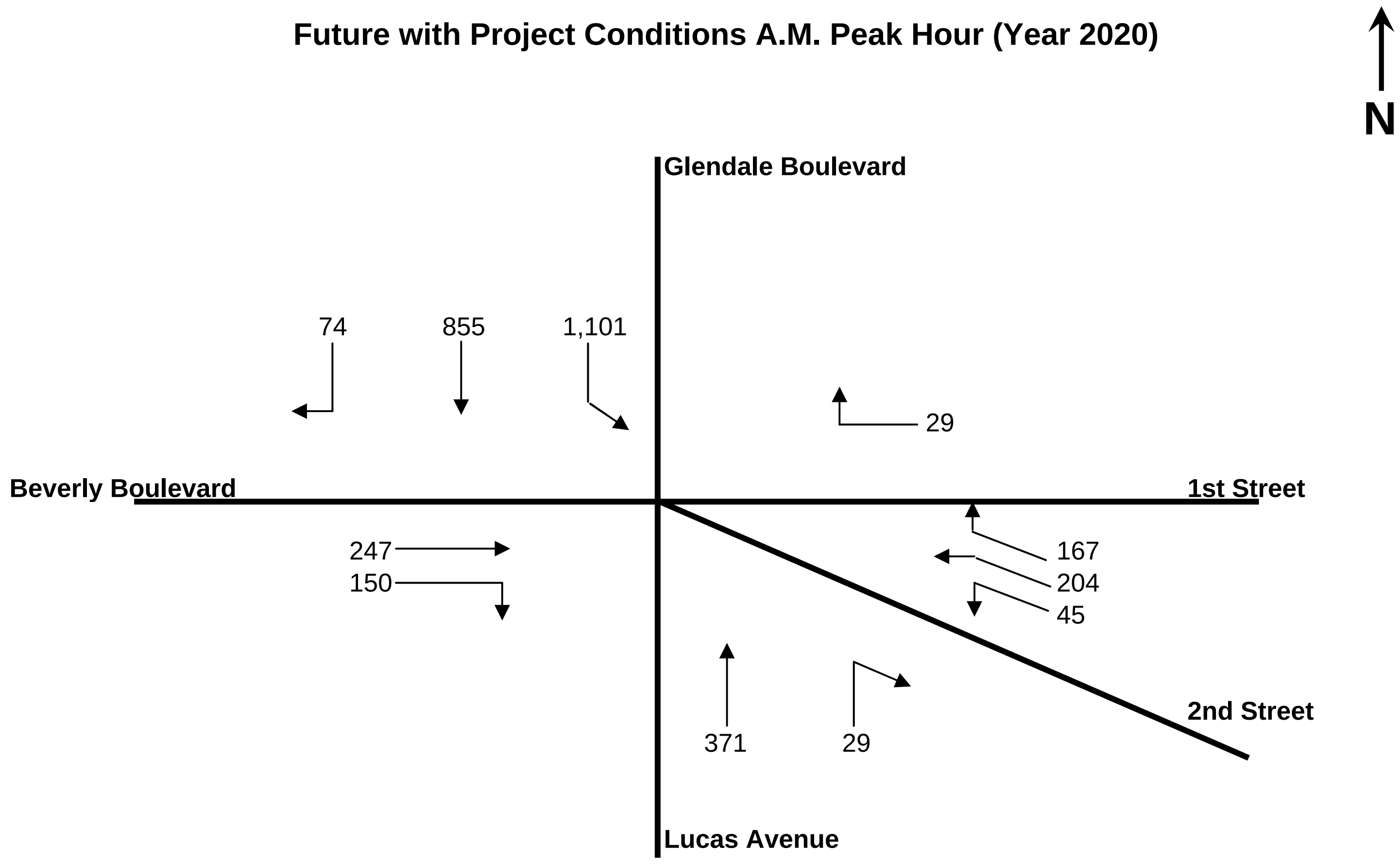
West/East Critical Movements = A(W/B) + B(E/B)

$$V/C = \frac{58 + 1001 + 396 + 202}{*1425} = 1.093$$

LOS = F

Intersection 39

Future with Project Conditions A.M. Peak Hour (Year 2020)



Phase 1) *Glendale Boulevard and Lucas Avenue - North-South Throughs and Rights*

$$\frac{371 + 29}{2}$$

&

$$\frac{74}{1} \quad \& \quad \frac{855}{1}$$

= **200**

Phase 2) *Glendale Boulevard, 1st Street, and 2nd Street - Southbound Lefts, Throughs, and Rights, and*
a.) Westbound Rights on 1st Street
b.) Westbound Rights on 2nd Street

a.) $\frac{29}{1}$

$$\& \left\{ \frac{855}{1} - 200 \right\} \& \left\{ \frac{1,101}{2} \right\}$$

= **29**

b.) $\left\{ \frac{1,101}{2} - 29 \right\}$

$$\text{or} \left\{ \frac{855}{1} - 200 - 29 \right\}$$

$$\& \quad \frac{167}{2}$$

= **626**

Phase 3) *2nd Street - Westbound Lefts, Throughs, and Rights*

$$\left\{ \frac{167}{2} - 626 \right\}$$

$$\& \left\{ \frac{204 + 45}{1} \right\}$$

= **0**

Phase 4) *Beverly Boulevard and 2nd Street - Westbound Lefts and Throughs, and Eastbound Throughs and Rights*

$$\frac{247 + 150}{2}$$

$$\text{or} \left\{ \frac{204 + 45}{1} \right\} - 0$$

= **199**

Critical Volumes = 200 + 29 + 626 + 0 + 199

= 1,054

V/C = $\frac{1,054}{1,375}$ — 0.100 = 0.667 LOS B

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January 25, 2011 ,Tuesday 12:50:42 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Lucas Ave W/E: 3rd St I/S No: 40

AM/PM: AM Comments: FUTURE WITH PROJECT (YEAR 2020)

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	140	323	124	131	636	139	74	887	90	171	1200	106
AMBIENT												
RELATED												
PROJECT												
TOTAL	140	323	124	131	636	139	74	887	90	171	1200	106

	NORTHBOUND							SOUTHBOUND							WESTBOUND							EASTBOUND						
LANE	1		2			1		1		1		1			1		2			1		1		1		1		

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

SouthBound
A: 388
B: 131

EastBound
A: 653
B: 171

WestBound
A: 444
B: 74

NorthBound
A: 162
B: 140

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

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

Results

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

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

$$V/C = \frac{140 + 388 + 74 + 653}{*1500} = 0.767$$

LOS = C

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January 25, 2011 ,Tuesday 12:50:42 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Lucas Ave W/E: 6th St I/S No: 41

AM/PM: AM Comments: FUTURE WITH PROJECT (YEAR 2020)

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	55	205	19	58	360	210	63	801	41	184	1161	204
AMBIENT												
RELATED												
PROJECT												
TOTAL	55	205	19	58	360	210	63	801	41	184	1161	204

	NB							SB							WB							EB						
LANE				1							1				1		2			1		1		2			1	

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	628	58
EastBound	581	184
WestBound	401	63
NorthBound	279	55

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)

$$V/C = \frac{55 + 628 + 63 + 581}{*1500} = 0.815$$

LOS = D

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CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Lucas Ave | W/E: Wilshire Blvd | I/S No: 42

AM/PM: AM | Comments: FUTURE WITH PROJECT (YEAR 2020)

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	59	169	71	72	278	77	106	658	99	56	1088	72
AMBIENT												
RELATED												
PROJECT												
TOTAL	59	169	71	72	278	77	106	658	99	56	1088	72

LANE

	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND				1			
SOUTHBOUND				1			
WESTBOUND		1	1			1	
EASTBOUND		1	1			1	

SIGNAL

	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Perm	Auto
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	427	72
EastBound	656	56
WestBound	647	106
NorthBound	299	59

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)

$$V/C = \frac{59 + 427 + 106 + 656}{*1500} = 0.762$$

LOS = C

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INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave | W/E: US 101 NB Ramps | I/S No: 1

AM/PM: PM | Comments: FUTURE WITH PROJECT (YEAR 2020)

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	1107	1053	0	0	755	386	0	0	0	120	0	680
AMBIENT												
RELATED												
PROJECT												
TOTAL	1107	1053	0	0	755	386	0	0	0	120	0	680

LANE

	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND	1		2				
SOUTHBOUND			2			1	
WESTBOUND							
EASTBOUND						1	1

SIGNAL

	Phasing	RTOR
NORTHBOUND	Prot-Fix	<none>
SOUTHBOUND	Perm	OLA
WESTBOUND	<none>	<none>
EASTBOUND	Split	Auto

Critical Movements Diagram

SouthBound A: 378 B: 0

EastBound A: 0 B: 120

WestBound A: 0 B: 0

NorthBound A: 527 B: 1107

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

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

Results

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

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

$$V/C = \frac{1107 + 378 + 0 + 120}{*1425} = 1.056$$

LOS = F

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INTERSECTION DATA SUMMARY SHEET

N/S: Hope St/US 101 SB Ramps

W/E: Temple St

I/S No: 2

AM/PM: PM

Comments: FUTURE WITH PROJECT (YEAR 2020)

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	232	410	214	130	551	17	147	995	259	567	899	78
AMBIENT												
RELATED												
PROJECT												
TOTAL	232	410	214	130	551	17	147	995	259	567	899	78

LANE

	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND	1		1		1		
SOUTHBOUND	1		1		1		
WESTBOUND	1		2			1	
EASTBOUND	1		1		1		

SIGNAL

	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Prot-Fix	Auto
EASTBOUND	Prot-Fix	Auto

Critical Movements Diagram

	A	B
SouthBound	284	130
EastBound	489	567
WestBound	498	147
NorthBound	312	232

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)

$$V/C = \frac{232 + 284 + 498 + 567}{*1425} = 1.039$$

LOS = F

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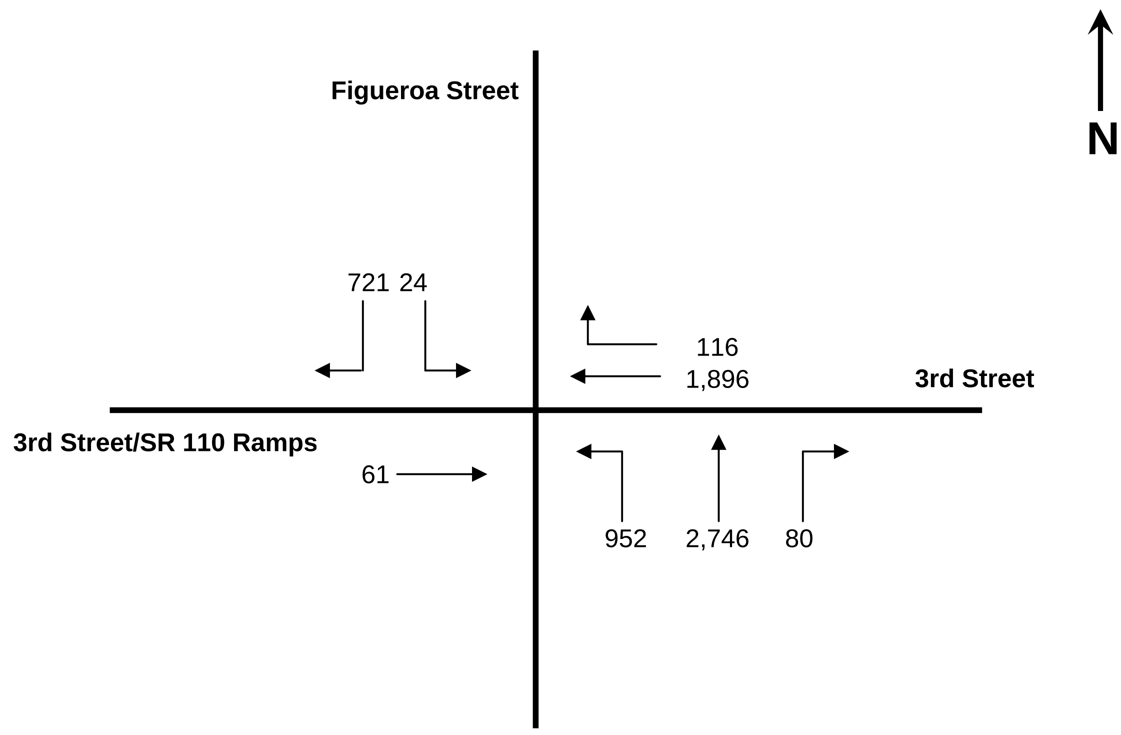
Intersection 3

Future with Project Conditions P.M. Peak Hour (Year 2020)



1) Lane Capacity for WB Throughs - 900 vphpl

Number of Lanes - 5

WB Through V/C - $\frac{1,896}{4,500}$

= **0.421**

<u>or</u>

Lane Capacity for WB Rights - 1,425 vphpl

Number of Lanes - 1

WB Right V/C - $\frac{116}{1,425}$

= **0.081**

<u>or</u>

Lane Capacity for EB Throughs - 1,425 vphpl

Number of Lanes - 2

EB Through V/C - $\frac{61}{2,850}$

= **0.021**

2) Lane Capacity for NB Lefts - 900 vphpl

Number of Lanes - 3

NB Left V/C - $\left\{\frac{952 \times 0.37}{900}\right\}$

= ***0.391***

Lane Capacity for SB Rights - 1,425 vphpl

Number of Lanes - 2

SB Right V/C - $\left\{\frac{721 \times 0.55}{1,425}\right\}$

= ***0.278***

Critical V/C - ***0.391*** **+** ***0.278*** **=** **0.669**

<u>or</u>

Lane Capacity for NB Throughs & Rights - 1,425 vphpl

Number of Lanes - 2 throughs
1 through/right

NB Through/Right V/C - $\left\{\frac{2,746 + 80}{4,275}\right\}$ or $\frac{80}{1,425}$

= **0.661**

Intersection V/C = 1.090 — 0.100 = 0.990 LOS E

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January 25, 2011 ,Tuesday 12:50:55 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St **W/E:** 3rd St **I/S No:** 4

AM/PM: PM **Comments:** FUTURE WITH PROJECT (YEAR 2020)

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	146	226	0	0	526	512	127	1330	67	0	0	156
AMBIENT												
RELATED												
PROJECT												
TOTAL	146	226	0	0	526	512	127	1330	67	0	0	156

LANE							
NORTHBOUND	1		2				
SOUTHBOUND			2			1	
WESTBOUND	1		3		1		
EASTBOUND						1	

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	Perm	<none>	Perm	Auto	Split	Auto	<none>	Free

Critical Movements Diagram

	A	B
SouthBound	512	0
EastBound	0	0
WestBound	349	127
NorthBound	113	146

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) + A(E/B)

$$V/C = \frac{146 + 512 + 349 + 0}{*1500} = 0.601$$

LOS = B

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CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave | W/E: 3rd St | I/S No: 5

AM/PM: PM | Comments: FUTURE WITH PROJECT (YEAR 2020)

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	23	333	0	0	969	75	0	0	0	163	0	127
AMBIENT												
RELATED												
PROJECT												
TOTAL	23	333	0	0	969	75	0	0	0	163	0	127

LANE

	NB	SB	WB	EB
LT	1			1
LT/TH				
TH	2	1		
LT/TH/RT				
TH/RT		1		
RT				2
LT/RT				

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	Perm	Auto	Perm	Auto	<none>	<none>	Split	Auto

Critical Movements Diagram

	A	B
SouthBound	522	0
EastBound	70	163
WestBound	0	0
NorthBound	167	23

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

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

Results

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

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

$$V/C = \frac{23 + 522 + 0 + 163}{*1500} = 0.402$$

LOS = A

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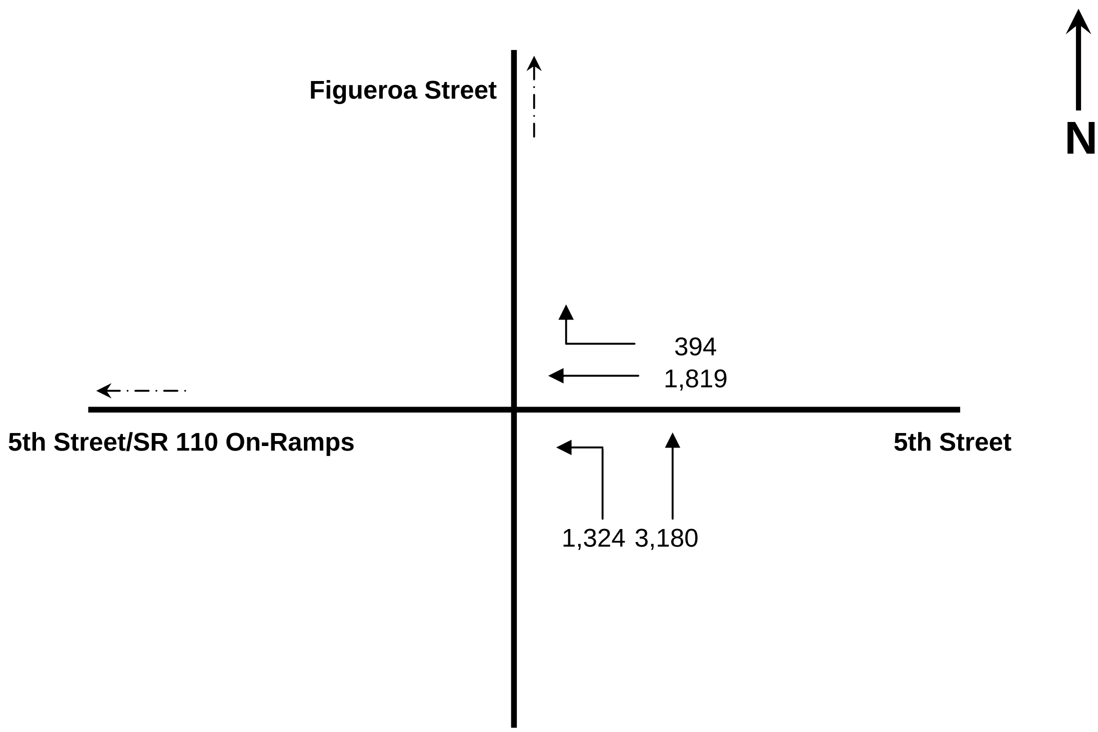
Intersection 6

Future with Project Conditions P.M. Peak Hour (Year 2020)



1) Lane Capacity for WB Direction - 900 vphpl

Number of Lanes - 7

Critical V/C - $\left\{\frac{1,819 \quad + \quad 394}{6,300}\right\}$

= **0.351**

2) Lane Capacity for NB Throughs - 900 vphpl

Number of Lanes - 4

Critical V/C - $\frac{3,180}{3,600}$

= **0.883**

<u>or</u>

Lane Capacity for NB Lefts - 900 vphpl

Number of Lanes - 3

Critical V/C - $\frac{1,324}{2,700}$

= **0.49**

Intersection V/C = 1.234 — 0.100 = 1.134 LOS F

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January 25, 2011 ,Tuesday 12:50:55 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St **W/E:** 5th St **I/S No:** 7

AM/PM: PM **Comments:** FUTURE WITH PROJECT (YEAR 2020)

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	0	0	0	0	1329	574	229	1629	0	0	0	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	0	1329	574	229	1629	0	0	0	0

LANE

Direction	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND							
SOUTHBOUND			3		1	1	
WESTBOUND	1		5				
EASTBOUND							

SIGNAL

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	<none>	<none>	Split	Auto	Split	<none>	<none>	<none>

Critical Movements Diagram

	A	B
SouthBound	381	0
EastBound	0	0
WestBound	326	229
NorthBound	0	0

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) + A(S/B)

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

$$V/C = \frac{0 + 381 + 326 + 0}{*1500} = 0.401$$

LOS = A

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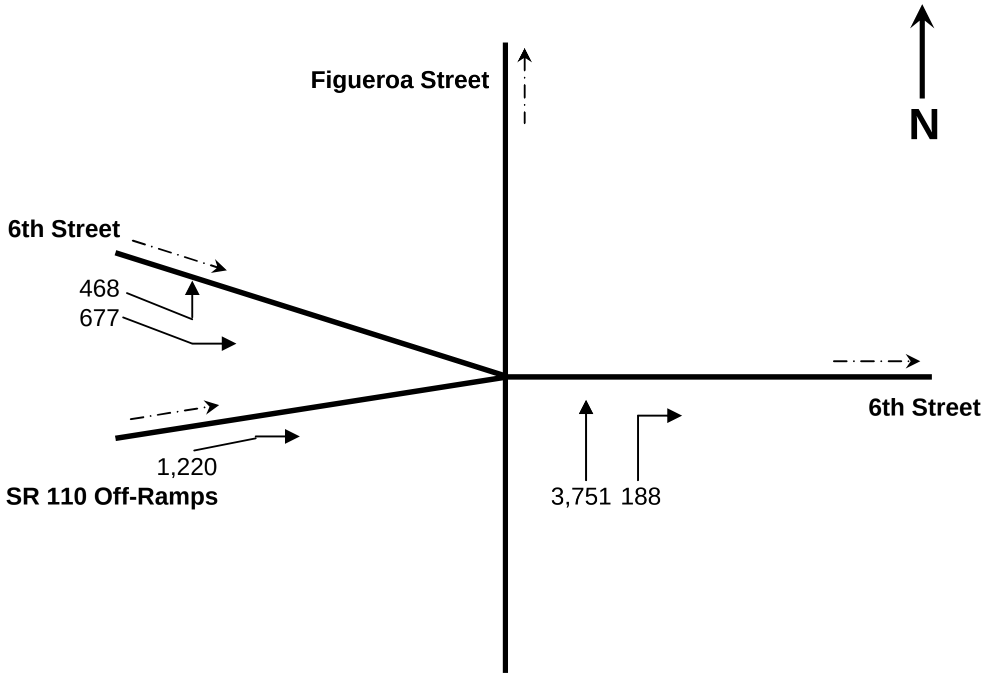
Intersection 8

Future with Project Conditions P.M. Peak Hour (Year 2020)



1) Lane Capacity for EB Direction - 1,500 vphpl

Number of Lanes -
1 left-turn lane from 6th Street
1 shared left/through lane from 6th Street
1 through lane from 6th Street
3 through lanes from SR 110 Off-Ramps

Critical V/C - $\left\{\frac{677 \quad + \quad 468}{4{,}500}\right\}$ or $\frac{1{,}220}{4{,}500}$

= **0.271**

2) Lane Capacity for NB Throughs - 900 vphpl

Number of Lanes - 5

Critical V/C - $\frac{3{,}751}{4{,}500}$

= **0.834**

<u>or</u>

Lane Capacity for NB Rights - 1,500 vphpl

Number of Lanes - 1

Critical V/C - $\frac{188}{1{,}500}$

= **0.125**

Intersection V/C = 1.105 — 0.100 = 1.005 LOS F

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January 25, 2011 ,Tuesday 12:50:55 PM

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INTERSECTION DATA SUMMARY SHEET

N/S:	Flower St	W/E:	6th St	I/S No:	9
AM/PM:	PM	Comments:	FUTURE WITH PROJECT (YEAR 2020)		
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	0	0	0	365	1260	0	0	0	0	0	1547	716
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	365	1260	0	0	0	0	0	1547	716

LANE

	NB	SB	WB	EB
LT		2		
LT/TH				
TH		4		3
LT/TH/RT				
TH/RT				1
RT				1
LT/RT				

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	<none>	<none>	Split	<none>	<none>	<none>	Split	Auto

Critical Movements Diagram

	A:	B:
SouthBound	315	201
EastBound	453	0
WestBound	0	0
NorthBound	0	0

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

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

Results

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

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

$$V/C = \frac{0 + 315 + 0 + 453}{*1500} = 0.442$$

LOS = A

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Alvarado St W/E: Wilshire Blvd I/S No: 10

AM/PM: PM Comments: FUTURE WITH PROJECT (YEAR 2020)

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	0	1175	99	0	951	124	117	1276	105	100	1170	57
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	1175	99	0	951	124	117	1276	105	100	1170	57

LANE							
NORTHBOUND			2		1		
SOUTHBOUND			2		1		
WESTBOUND	1		1		1		
EASTBOUND	1		1		1		

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	358	0
EastBound	614	100
WestBound	691	117
NorthBound	425	0

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)

$$V/C = \frac{425 + 0 + 691 + 100}{*1500} = 0.741$$

LOS = C

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January 25, 2011 ,Tuesday 12:50:55 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Beaudry Ave
W/E: Wilshire Blvd
I/S No: 11

AM/PM: PM
Comments: FUTURE WITH PROJECT (YEAR 2020)

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	5	0	35	255	50	619	9	864	0	0	1031	32
AMBIENT												
RELATED												
PROJECT												
TOTAL	5	0	35	255	50	619	9	864	0	0	1031	32

LANE	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND							1
SOUTHBOUND	1			1		1	
WESTBOUND		1	1				
EASTBOUND			2			1	

SIGNAL	Phasing	RTOR
NORTHBOUND	Split	Auto
SOUTHBOUND	Split	Auto
WESTBOUND	Perm	<none>
EASTBOUND	Perm	Auto

Critical Movements Diagram

SouthBound
A: 335
B: 255

EastBound
A: 516
B: 0

WestBound
A: 459
B: 9

NorthBound
A: 40
B: 5

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

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

Results

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

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

$$V/C = \frac{40 + 335 + 9 + 516}{*1425} = 0.562$$

LOS = A

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CalcaDB

January 25, 2011 ,Tuesday 12:50:55 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Francisco St
W/E: Wilshire Blvd
I/S No: 12

AM/PM: PM
Comments: FUTURE WITH PROJECT (YEAR 2020)

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	164	0	475	55	10	30	44	770	11	14	1196	140
AMBIENT												
RELATED												
PROJECT												
TOTAL	164	0	475	55	10	30	44	770	11	14	1196	140

LANE

	NB							SB							WB							EB						
LANE		1				1					1				1		1		1			1		1		1		

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

SouthBound
A: 95
B: 55

EastBound
A: 668
B: 14

WestBound
A: 391
B: 44

NorthBound
A: 475
B: 164

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

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

Results

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

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

$$V/C = \frac{475 + 55 + 44 + 668}{*1500} = 0.758$$

LOS = C

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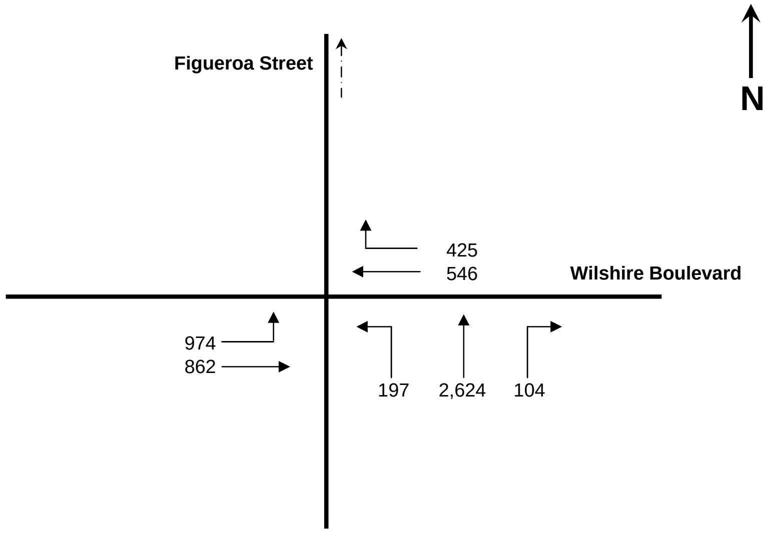
Intersection 13

Future with Project Conditions P.M. Peak Hour (Year 2020)



1) Lane Capacity for EB Lefts - 900 vphpl

Number of Lanes - 2

EB Left V/C - $\left\{ \frac{974 \quad X \quad 0.55}{900} \right\}$

= ***0.595***

Lane Capacity for WB Direction - 1,425 vphpl

Number of Lanes -
1 through
1 through/right
1 right-turn only

WB V/C - $\left\{ \frac{546 \quad + \quad 425}{4{,}275} \right\}$ or $\frac{546}{2{,}850}$ or $\frac{425}{2{,}850}$

= ***0.227***

Critical V/C - ***0.595*** **+** ***0.227*** **=** **0.822**

<u>or</u>

Lane Capacity for EB Throughs - 1,425 vphpl

Number of Lanes - 2

Critical V/C - $\frac{862}{2{,}850}$

= **0.302**

2) Lane Capacity for NB Direction - 900 vphpl

Number of Lanes -
1 left/through
3 throughs
1 through/right

Critical V/C - $\left\{ \frac{197 \quad + \quad 2{,}624 \quad + \quad 104}{4{,}500} \right\}$

or $\frac{197}{900}$

or $\frac{104}{900}$

= **0.650**

Intersection V/C = 1.472 — 0.100 = 1.372 LOS F

Intersection 14

Future with Project Conditions P.M. Peak Hour (Year 2020)

1) Lane Capacity for WB Direction - 900 vphpl

Number of Lanes - 2

WB Direction V/C - $\left\{\frac{557 + 51}{1,800}\right\}$ or $\frac{51}{900}$

= **0.338**

Lane Capacity for EB Direction - 1,500 vphpl

Number of Lanes - 2

EB Direction V/C - $\left\{\frac{584 + 444}{3,000}\right\}$ or $\frac{444}{1,500}$

= **0.343**

2) Lane Capacity for SB Throughs and Lefts - 1,500 vphpl

Number of Lanes - 3 throughs
1 left-turn only

SB Through V/C - $\frac{1,726}{4,500}$

= **0.384**

SB Left V/C - $\frac{67}{1,500}$

= **0.045**

Lane Capacity for SB Rights - 900 vphpl

Number of Lanes - 1

SB Right V/C - $\frac{437}{900}$

= **0.486**

Intersection V/C = 0.829 − 0.100 = 0.729 LOS C

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January 25, 2011 ,Tuesday 12:50:55 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave | W/E: Wilshire Blvd | I/S No: 15

AM/PM: PM | Comments: FUTURE WITH PROJECT (YEAR 2020)

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	0	0	0	5	1440	173	42	49	0	0	6	585
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	5	1440	173	42	49	0	0	6	585

	NORTHBOUND							SOUTHBOUND							WESTBOUND							EASTBOUND						
LANE									1	2		1				1										1	1	

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	<none>	<none>	Split	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	405	5
EastBound	296	0
WestBound	91	42
NorthBound	0	0

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) + A(S/B)

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

V/C = (0 + 405 + 42 + 296) / *1500 = 0.425

LOS = A

Developed by Chun Wong, 12/94

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January 25, 2011 ,Tuesday 12:50:55 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Alvarado St | W/E: 7th St | I/S No: 16

AM/PM: PM | Comments: FUTURE WITH PROJECT (YEAR 2020)

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	1058	80	0	938	69	0	843	109	0	763	115
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	1058	80	0	938	69	0	843	109	0	763	115

LANE

	NB	SB	WB	EB
LT				
LT/TH				
TH	2	2	1	1
LT/TH/RT				
TH/RT	1	1	1	1
RT				
LT/RT				

SIGNAL

	NB	SB	WB	EB
Phasing	Perm	Perm	Perm	Perm
RTOR	Auto	Auto	Auto	Auto

Critical Movements Diagram

	A	B
SouthBound	336	0
EastBound	439	0
WestBound	476	0
NorthBound	379	0

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

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

Results

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

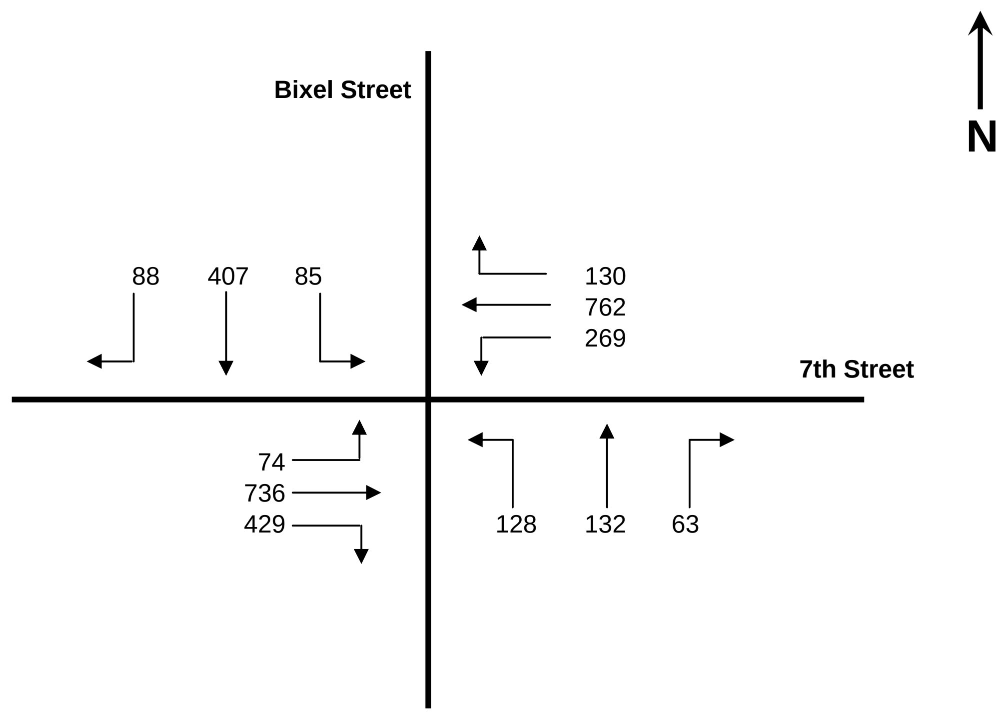
West/East Critical Movements = A(W/B) + B(E/B)

$$V/C = \frac{379 + 0 + 476 + 0}{*1500} = 0.500$$

LOS = A

Intersection 17

Future with Project Conditions P.M. Peak Hour (Year 2020)



1) Lane Capacity for WB Lefts - 900 vphpl

Number of Lanes - 1

WB Left V/C - $\frac{269}{900}$

= ***0.299***

Lane Capacity for EB Throughs - 1,500 vphpl

Number of Lanes - 1

EB Through V/C - $\frac{736}{1{,}500}$

= ***0.491***

Lane Capacity for EB Rights - 900 vphpl

Number of Lanes - 1

EB Right V/C - $\frac{429}{900}$

= ***0.477***

Critical V/C - ***0.299*** **+** ***0.491***

= 0.790

<u>or</u>

Lane Capacity for EB Lefts - 1,500 vphpl

Number of Lanes - 1

EB Left V/C - $\frac{74}{1{,}500}$

= ***0.049***

Lane Capacity for WB Throughs/Rights - 1,500 vphpl

Number of Lanes - 2

WB Through V/C - $\left\{\frac{762 + 130}{3{,}000}\right\}$

= ***0.297***

Critical V/C - ***0.049*** **+** ***0.297***

= 0.346

2) Lane Capacity for NB & SB Direction - 1,500 vphpl

Number of Lanes - 1 left
1 through/right

Critical V/C - $\left\{\frac{128 + 407 + 88}{1{,}500}\right\}$

or $\left\{\frac{85 + 132 + 63}{1{,}500}\right\}$

= **0.415**

Intersection V/C = 1.205 — 0.100 = 1.105 LOS F

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January 25, 2011 ,Tuesday 12:50:55 PM

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INTERSECTION DATA SUMMARY SHEET

N/S: Francisco St W/E: 7th St I/S No: 18

AM/PM: PM Comments: FUTURE WITH PROJECT (YEAR 2020)

COUNT DATE: STUDY DATE: GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	175	51	386	301	48	184	81	895	117	25	691	34
AMBIENT												
RELATED												
PROJECT												
TOTAL	175	51	386	301	48	184	81	895	117	25	691	34

LANE	↰	⇖↑	↑	⇔↑	↑↳	↱	↰↱
NORTHBOUND		1				1	
SOUTHBOUND	1				1		
WESTBOUND	1		1		1		
EASTBOUND	1		1		1		

SIGNAL	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Perm	Auto
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	232	301
EastBound	363	25
WestBound	506	81
NorthBound	386	175

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

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

Results

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

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

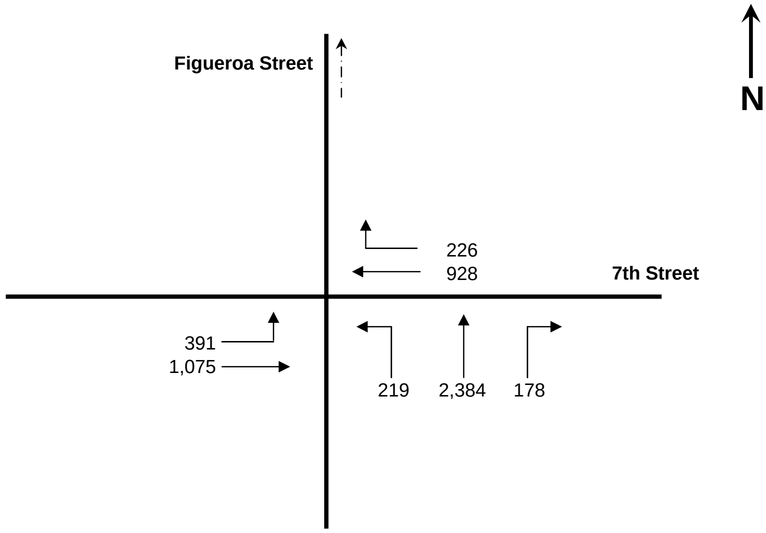
$$V/C = \frac{386 + 301 + 506 + 25}{*1500} = 0.742$$

LOS = C

Developed by Chun Wong, 12/94

Intersection 19

Future with Project Conditions P.M. Peak Hour (Year 2020)



1) Lane Capacity for EB Lefts - 900 vphpl

Number of Lanes - 2

EB Left V/C - $\left\{\dfrac{391 \quad X \quad 0.55}{900}\right\}$

= ***0.239***

Lane Capacity for WB Direction - 1,425 vphpl

Number of Lanes - 2 throughs
1 right-turn only

WB V/C - $\dfrac{928}{2,850}$ or $\dfrac{226}{1,425}$

= ***0.326***

Critical V/C - ***0.239*** **+** ***0.326*** **=** **0.565**

<u>or</u>

Lane Capacity for EB Throughs - 1,425 vphpl

Number of Lanes - 2

Critical V/C - $\dfrac{1,075}{2,850}$

= **0.377**

2) Lane Capacity for NB Throughs and Through/Left - 900 vphpl
Lane Capacity for NB Through/Right - 450 vphpl

Number of Lanes - 1 left/through
3 throughs
1 through/right

Critical V/C - $\left\{\dfrac{219 \quad + \quad 2,384 \quad + \quad 178}{4,050}\right\}$

or $\dfrac{219}{900}$

or $\dfrac{178}{450}$

= **0.687**

Intersection V/C = 1.252 — 0.100 = 1.152 LOS F

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INTERSECTION DATA SUMMARY SHEET

N/S: Flower St | W/E: 7th St | I/S No: 20

AM/PM: PM | Comments: FUTURE WITH PROJECT (YEAR 2020)

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	0	0	0	86	2193	208	143	902	0	0	1005	254
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	86	2193	208	143	902	0	0	1005	254

LANE	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND							
SOUTHBOUND		1	2		1		
WESTBOUND		1	2				
EASTBOUND			1		1		

SIGNAL	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
	<none>	<none>	Split	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	622	86
EastBound	630	0
WestBound	451	143
NorthBound	0	0

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) + A(S/B)

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

$$V/C = \frac{0 + 622 + 143 + 630}{*1500} = 0.860$$

LOS = D

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CalcaDB

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INTERSECTION DATA SUMMARY SHEET

N/S: Olive Ave **W/E:** 7th St **I/S No:** 21

AM/PM: PM **Comments:** FUTURE WITH PROJECT (YEAR 2020)

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	121	1257	165	0	0	0	0	837	239	0	1129	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	121	1257	165	0	0	0	0	837	239	0	1129	0

LANE							
NORTHBOUND		1	2		1		
SOUTHBOUND							
WESTBOUND			2			1	
EASTBOUND			2				

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	Split	Auto	<none>	<none>	Perm	Auto	Perm	<none>

Critical Movements Diagram

SouthBound A: 0 B: 0

EastBound A: 565 B: 0

WestBound A: 419 B: 0

NorthBound A: 386 B: 121

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) + A(S/B)

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

$$V/C = \frac{386 + 0 + 0 + 565}{*1500} = 0.564$$

LOS = A

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January 25, 2011 ,Tuesday 12:50:55 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Alameda St W/E: 7th St I/S No: 22

AM/PM: PM Comments: FUTURE WITH PROJECT (YEAR 2020)

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	87	811	93	115	956	9	108	657	82	116	1041	180
AMBIENT												
RELATED												
PROJECT												
TOTAL	87	811	93	115	956	9	108	657	82	116	1041	180

LANE	NORTHBOUND	SOUTHBOUND	WESTBOUND	EASTBOUND
Lane boxes	1, , 1, , 1, ,	1, , 1, , 1, ,	1, , 1, , 1, ,	1, , 1, , 1, ,

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Perm	Auto	Prot-Fix	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	483	115
EastBound	611	116
WestBound	370	108
NorthBound	452	87

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

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

Results

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

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

$$V/C = \frac{87 + 483 + 108 + 611}{*1425} = 0.835$$

LOS = D

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Soto St

W/E: 7th St

I/S No: 23

AM/PM: PM

Comments: FUTURE WITH PROJECT (YEAR 2020)

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	556	947	34	37	743	70	6	35	12	83	53	68
AMBIENT												
RELATED												
PROJECT												
TOTAL	556	947	34	37	743	70	6	35	12	83	53	68

LANE	1		1		1			1		1		1						1					1				1	

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Prot-Fix	Auto	Perm	Auto	Split	Auto	Split	Auto

Critical Movements Diagram

	A	B
SouthBound	407	37
EastBound	136	83
WestBound	53	6
NorthBound	491	556

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

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

Results

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

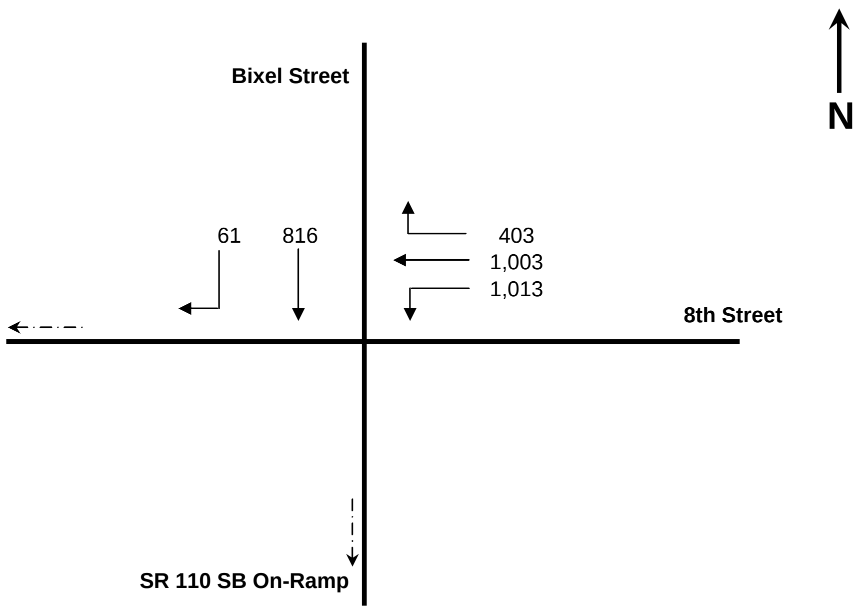
West/East Critical Movements = A(W/B) + A(E/B)

$$V/C = \frac{556 + 407 + 53 + 136}{*1375} = 0.768$$

LOS = C

Intersection 24

Future with Project Conditions P.M. Peak Hour (Year 2020)



1) Lane Capacity for WB Lefts - 750 vphpl

Number of Lanes - 2

WB Left V/C - $\frac{1,013}{1,500}$

= **0.675**

<u>or</u>

Lane Capacity for WB Throughs and Rights - 1,500 vphpl

Number of Lanes - 2 throughs
Number of Lanes - 1 right-turn only

WB Through/Right V/C - $\frac{1,003}{3,000}$ or $\frac{403}{1,500}$

= **0.269**

2) Lane Capacity for SB Rights - 1,500 vphpl

Number of Lanes - 1

SB Right V/C - $\frac{61}{1,500}$

= **0.041**

<u>or</u>

Lane Capacity for SB Throughs - 750 vphpl

Number of Lanes - 2

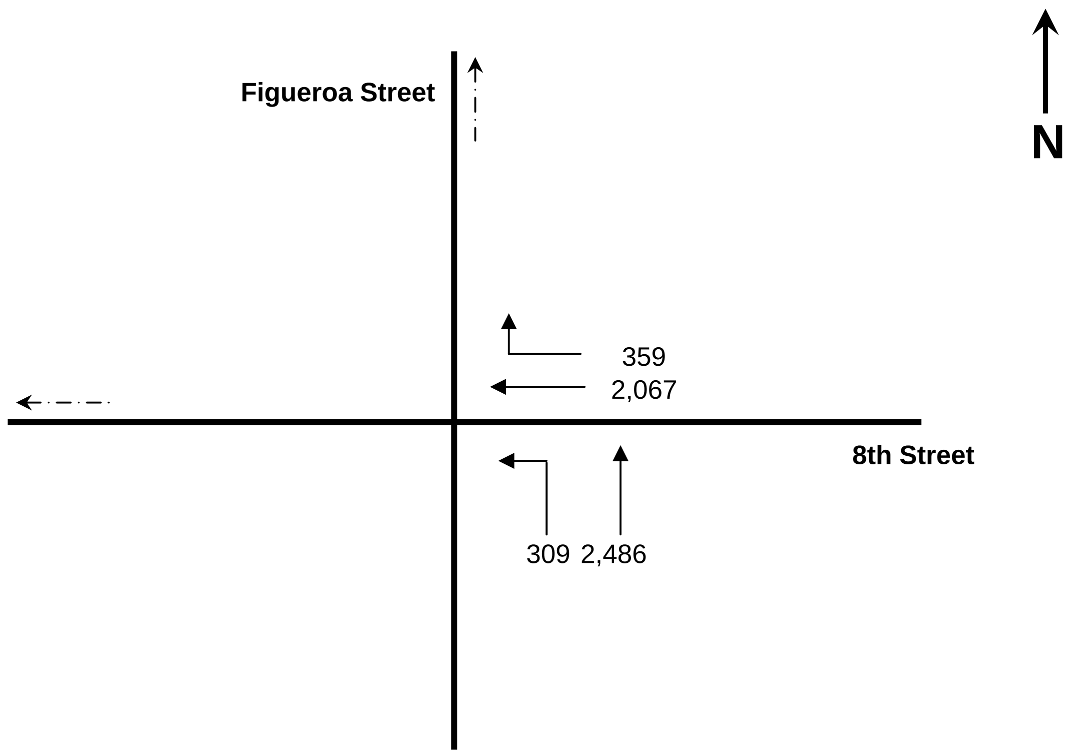
WB Through/Right V/C - $\frac{816}{1,500}$

= **0.544**

Intersection V/C = 1.219 — 0.100 = 1.119 LOS F

Intersection 25

Future with Project Conditions P.M. Peak Hour (Year 2020)



1) Lane Capacity for WB Direction - 900 vphpl

Number of Lanes - 4 throughs
1 right-turn only

Critical V/C - $\frac{2,067}{3,600}$ or $\frac{359}{900}$

= **0.574**

2) Lane Capacity for NB Direction - 900 vphpl

Number of Lanes - 1 left-turn only
6 throughs

Critical V/C - $\frac{2,486}{5,400}$ or $\frac{309}{900}$

= **0.46**

Intersection V/C = 1.034 — 0.100 = 0.934 LOS E

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St | W/E: 8th St | I/S No: 26

AM/PM: PM | Comments: FUTURE WITH PROJECT (YEAR 2020)

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	0	0	0	0	1953	497	102	1984	0	0	0	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	0	1953	497	102	1984	0	0	0	0

	NORTHBOUND							SOUTHBOUND							WESTBOUND							EASTBOUND						
LANE										4			1			1	3											

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	<none>	<none>	Split	Auto	Split	<none>	<none>	<none>

Critical Movements Diagram

	A:	B:
SouthBound	497	0
EastBound	0	0
WestBound	522	102
NorthBound	0	0

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

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

Results

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

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

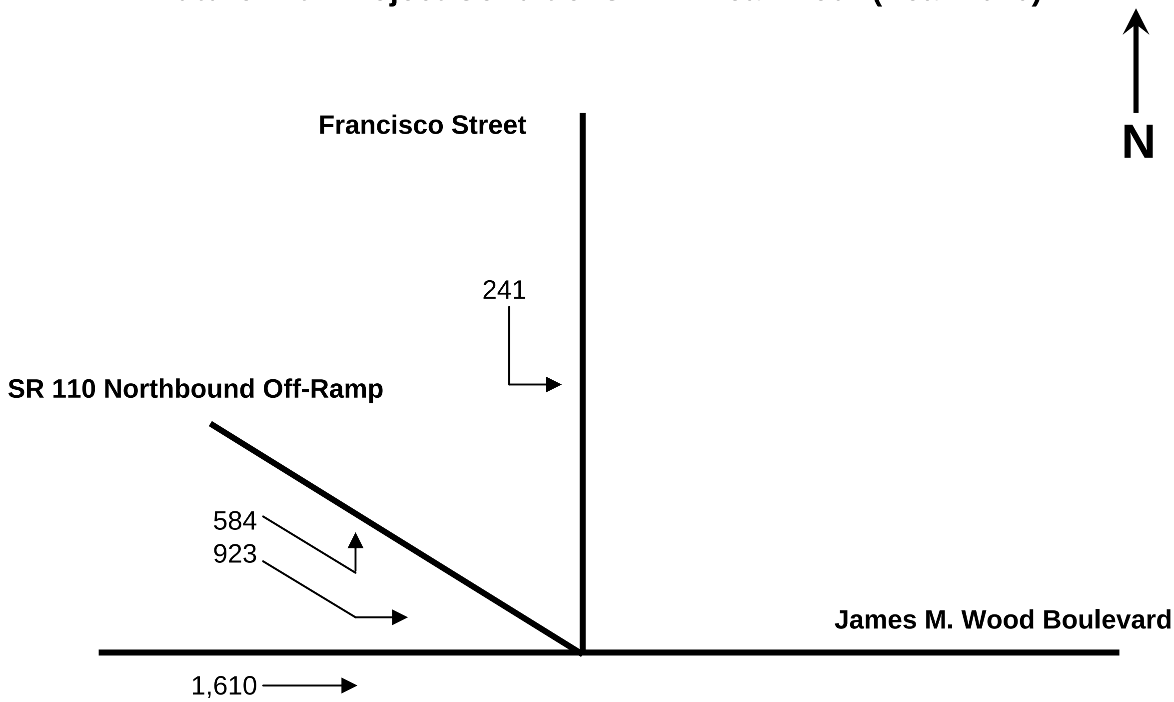
$$V/C = \frac{0 + 497 + 522 + 0}{*1500} = 0.609$$

LOS = B

Developed by Chun Wong, 12/94

Intersection 27

Future with Project Conditions P.M. Peak Hour (Year 2020)



1) $\left\{ \dfrac{584 \quad + \quad 923}{3} \right\}$

or

$\dfrac{1,610}{3}$

= **754**

2) $\dfrac{241}{1}$

= **241**

Critical Volumes = 754 + 241 = 995

V/C = $\dfrac{995}{1,500}$ 0.100 = 0.563 LOS A

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Figueroa St | W/E: 9th St/James M Wood Blvd | I/S No: 28

AM/PM: PM | Comments: FUTURE WITH PROJECT (YEAR 2020)

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	1517	195	0	0	0	0	0	0	787	1877	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	1517	195	0	0	0	0	0	0	787	1877	0

LANE

	NB	SB	WB	EB
LT				1
LT/TH				1
TH	3			3
LT/TH/RT				
TH/RT	1			
RT				
LT/RT				

SIGNAL	Phasing	RTOR
Northbound	Split	Auto
Southbound	<none>	<none>
Westbound	<none>	<none>
Eastbound	Split	<none>

Critical Movements Diagram

	A	B
SouthBound	0	0
EastBound	533	533
WestBound	0	0
NorthBound	428	0

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) + A(S/B)

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

$$V/C = \frac{428 + 0 + 0 + 533}{*1500} = 0.571$$

LOS = A

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Cherry St | W/E: Pico Blvd | I/S No: 29

AM/PM: PM | Comments: FUTURE WITH PROJECT (YEAR 2020)

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	722	671	232	183	0	26	0	896	447	150	657	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	722	671	232	183	0	26	0	896	447	150	657	0

LANE

	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND	1	1	1			1	
SOUTHBOUND	2					2	
WESTBOUND			1		1	1	
EASTBOUND	1		3				

SIGNAL

	Phasing	RTOR
NORTHBOUND	Split	Auto
SOUTHBOUND	Split	Auto
WESTBOUND	Perm	OLA
EASTBOUND	Perm	<none>

Critical Movements Diagram

	A	B
SouthBound	14	101
EastBound	219	150
WestBound	448	0
NorthBound	464	464

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)

$$V/C = \frac{464 + 101 + 448 + 150}{*1425} = 0.746$$

LOS = C

CalcaDB

January 25, 2011 ,Tuesday 12:50:55 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Figueroa St   W/E: Pico Blvd   I/S No: 30

AM/PM: PM   Comments: FUTURE WITH PROJECT (YEAR 2020)

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	160	1551	155	23	324	288	172	846	172	195	625	284
AMBIENT												
RELATED												
PROJECT												
TOTAL	160	1551	155	23	324	288	172	846	172	195	625	284

LANE

	NB	SB	WB	EB
LT	1	1	1	1
LT/TH				
TH	3	2	2	2
LT/TH/RT				
TH/RT	1			
RT		1	1	1
LT/RT				

SIGNAL

	Phasing	RTOR
NORTHBOUND	Prot-Fix	Auto
SOUTHBOUND	Perm	OLA
WESTBOUND	Perm	Auto
EASTBOUND	Prot-Fix	OLA

Critical Movements Diagram

	A	B
SouthBound	162	23
EastBound	313	195
WestBound	423	172
NorthBound	427	160

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)

$$V/C = \frac{427 + 23 + 423 + 195}{*1375} = 0.707$$

LOS = C

CP_PM

CalcaDB

January 25, 2011 ,Tuesday 12:50:55 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Hoover St W/E: Alvarado St/Alvarado Ter I/S No: 31

AM/PM: PM Comments: FUTURE WITH PROJECT (YEAR 2020)

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	0	1150	719	31	957	0	716	0	0	0	0	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	1150	719	31	957	0	716	0	0	0	0	0

LANE	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND			1		1	1	
SOUTHBOUND		1	1				
WESTBOUND	1						1
EASTBOUND							

SIGNAL	Phasing	RTOR
NORTHBOUND	Perm	Free
SOUTHBOUND	Perm	<none>
WESTBOUND	Split	Auto
EASTBOUND	<none>	<none>

Critical Movements Diagram

	A	B
SouthBound	572	31
EastBound	0	0
WestBound	358	358
NorthBound	623	0

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) + A(E/B)

$$V/C = \frac{623 + 31 + 358 + 0}{*1500} = 0.605$$

LOS = B

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CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S:	Flower St	W/E:	Venice Blvd	I/S No:	32
AM/PM:	PM	Comments:	FUTURE WITH PROJECT (YEAR 2020)		
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	0	0	0	36	1468	130	66	500	0	0	371	44
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	36	1468	130	66	500	0	0	371	44

LANE							
NORTHBOUND							
SOUTHBOUND	1		2		1		
WESTBOUND		1	1				
EASTBOUND			1		1		

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	<none>	<none>	Split	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

	A:	B:
SouthBound	533	36
EastBound	208	0
WestBound	316	66
NorthBound	0	0

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) + A(S/B)

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

$$V/C = \frac{0 + 533 + 316 + 0}{*1500} = 0.496$$

LOS = A

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave | W/E: 18th St | I/S No: 33

AM/PM: PM | Comments: FUTURE WITH PROJECT (YEAR 2020)

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	0	178	453	1028	0	0	0	0	0	1860	218
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	178	453	1028	0	0	0	0	0	1860	218

LANE

	NB 1	NB 2	NB 3	NB 4	NB 5	NB 6	NB 7	SB 1	SB 2	SB 3	SB 4	SB 5	SB 6	SB 7	WB 1	WB 2	WB 3	WB 4	WB 5	WB 6	WB 7	EB 1	EB 2	EB 3	EB 4	EB 5	EB 6	EB 7
LANE						2		1		3														2		1	1	

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Perm	Auto	Prot-Fix	<none>	<none>	<none>	Split	Auto

Critical Movements Diagram

	A	B
SouthBound	343	453
EastBound	620	0
WestBound	0	0
NorthBound	98	0

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

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

Results

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

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

$$V/C = \frac{98 + 453 + 0 + 620}{*1425} = 0.752$$

LOS = C

CP_PM

CalcaDB

January 25, 2011 ,Tuesday 12:50:55 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Olive St W/E: 6th St I/S No: 34

AM/PM: PM Comments: FUTURE WITH PROJECT (YEAR 2020)

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	0	1468	191	0	0	0	0	0	0	867	1254	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	1468	191	0	0	0	0	0	0	867	1254	0

LANE

	NB 1	NB 2	NB 3	NB 4	NB 5	NB 6	NB 7	SB 1	SB 2	SB 3	SB 4	SB 5	SB 6	SB 7	WB 1	WB 2	WB 3	WB 4	WB 5	WB 6	WB 7	EB 1	EB 2	EB 3	EB 4	EB 5	EB 6	EB 7
LANE			4		1																	1	1	3				

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Split	Auto	<none>	<none>	<none>	<none>	Split	<none>

Critical Movements Diagram

	A:	B:
SouthBound	0	0
EastBound	418	477
WestBound	0	0
NorthBound	332	0

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) + A(S/B)

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

$$V/C = \frac{332 + 0 + 0 + 477}{*1500} = 0.469$$

LOS = A

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INTERSECTION DATA SUMMARY SHEET

N/S:	Hope St	W/E:	7th St	I/S No:	35
AM/PM:	PM	Comments:	FUTURE WITH PROJECT (YEAR 2020)		
COUNT DATE:		STUDY DATE:		GROWTH FACTOR:	

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	105	338	138	14	324	29	0	965	90	0	921	102
AMBIENT												
RELATED												
PROJECT												
TOTAL	105	338	138	14	324	29	0	965	90	0	921	102

LANE

	NB	SB	WB	EB
LT				
LT/TH	1	1		
TH			1	1
LT/TH/RT				
TH/RT	1	1	1	1
RT				
LT/RT				

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	191	14
EastBound	512	0
WestBound	528	0
NorthBound	343	105

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

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

Results

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

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

$$V/C = \frac{343 + 14 + 528 + 0}{*1500} = 0.520$$

LOS = A

CP_PM

January 25, 2011 ,Tuesday 12:50:55 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave W/E: 7th St I/S No: 36

AM/PM: PM Comments: FUTURE WITH PROJECT (YEAR 2020)

COUNT DATE: STUDY DATE: GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	0	0	193	1632	79	0	957	0	0	924	216
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	193	1632	79	0	957	0	0	924	216

LANE (boxes 1–7 per approach)

	1	2	3	4	5	6	7
NORTHBOUND							
SOUTHBOUND	1		4			1	
WESTBOUND			2				
EASTBOUND			2			1	

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	<none>	<none>	Split	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

SouthBound A: 408 B: 193

EastBound A: 462 B: 0

WestBound A: 479 B: 0

NorthBound A: 0 B: 0

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) + A(S/B)

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

$$V/C = \frac{0 + 408 + 479 + 0}{*1500} = 0.521$$

LOS = A

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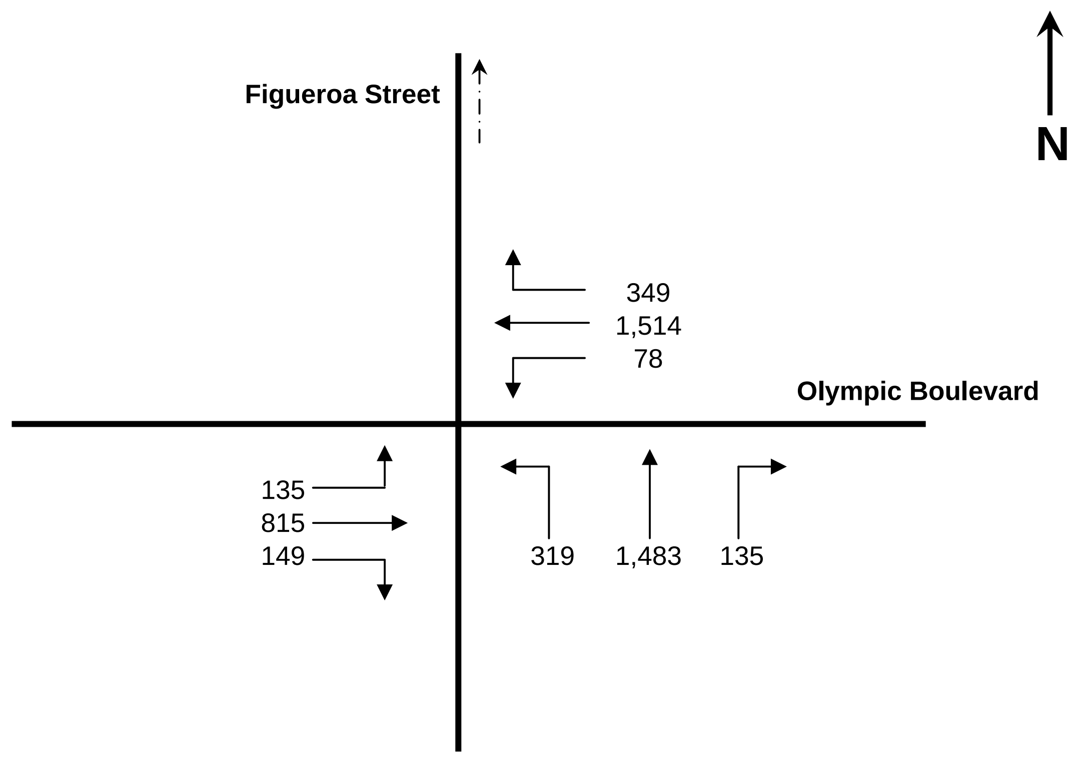
Intersection 37

Future with Project Conditions P.M. Peak Hour (Year 2020)



1) Lane Capacity for EB Lefts - 900 vphpl

Number of Lanes - 1

EB Left V/C - $\frac{135}{900}$

= ***0.15***

Lane Capacity for WB Throughs - 1,425 vphpl
Lane Capacity for WB Rights - 900 vphpl

Number of Lanes - 3 throughs
1 right-turn only

WB Through/Right V/C - $\frac{1,514}{4,275}$ or $\frac{349}{900}$

= ***0.388***

Critical V/C - ***0.15*** **+** ***0.388*** **=** **0.538**

<u>or</u>

Lane Capacity for WB Lefts - 1,425 vphpl

Number of Lanes - 1

WB Left V/C - $\frac{78}{1,425}$

= ***0.055***

Lane Capacity for EB Throughs/Rights - 1,425 vphpl

Number of Lanes - 3 throughs
1 right-turn only

EB Through/Right V/C - $\frac{815}{4,275}$ or $\frac{149}{1,425}$

= ***0.191***

Critical V/C - ***0.055*** **+** ***0.191*** **=** **0.246**

2) Lane Capacity for NB Throughs - 900 vphpl
Lane Capacity for NB Left- and Right-turns - 1,425 vphpl

Number of Lanes - 1 left-turn only
3 throughs
1 right-turn only

Critical V/C - $\frac{1,483}{2,700}$ or $\frac{319}{1,425}$ or $\frac{135}{1,425}$

= **0.549**

Intersection V/C = 1.087 — 0.100 = 0.987 LOS E

CalcaDB

January 25, 2011 ,Tuesday 12:50:55 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Glendale Blvd W/E: Temple St I/S No: 38

AM/PM: PM Comments: FUTURE WITH PROJECT (YEAR 2020)

COUNT DATE: STUDY DATE: GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	65	1903	21	166	934	224	31	720	294	343	908	83
AMBIENT												
RELATED												
PROJECT												
TOTAL	65	1903	21	166	934	224	31	720	294	343	908	83

LANE

	NB	SB	WB	EB
LT	1	1	1	1
LT/TH				
TH	1	1	1	1
LT/TH/RT				
TH/RT	1	1	1	1
RT				
LT/RT				

SIGNAL	NB	SB	WB	EB
Phasing	Perm	Perm	Prot-Fix	Prot-Fix
RTOR	Auto	Auto	Auto	Auto

Critical Movements Diagram

	A	B
SouthBound	579	166
EastBound	496	343
WestBound	507	31
NorthBound	962	65

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)

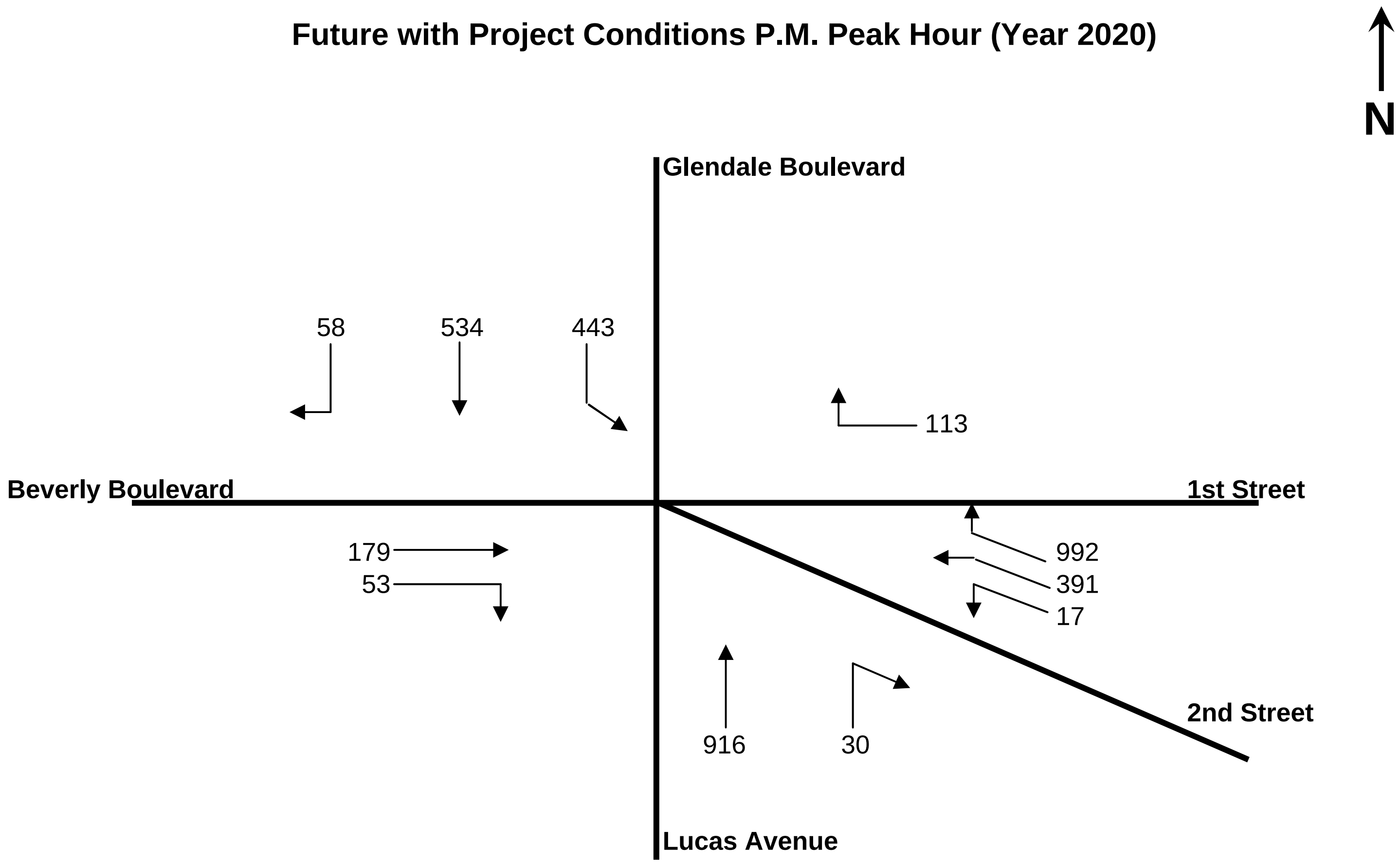
West/East Critical Movements = A(W/B) + B(E/B)

$$V/C = \frac{962 + 166 + 507 + 343}{*1425} = 1.318$$

LOS = F

Intersection 39

Future with Project Conditions P.M. Peak Hour (Year 2020)



Phase 1) *Glendale Boulevard and Lucas Avenue - North-South Throughs and Rights*

$$\frac{916 + 30}{2}$$

&

$$\frac{58}{1} \quad \& \quad \frac{534}{1}$$

= **473**

Phase 2) *Glendale Boulevard, 1st Street, and 2nd Street - Southbound Lefts, Throughs, and Rights, and*
a.) Westbound Rights on 1st Street
b.) Westbound Rights on 2nd Street

a.) $$\frac{113}{1}$$

$$\& \quad \left\{ \frac{534}{1} - 473 \right\} \quad \& \quad \left\{ \frac{443}{2} \right\}$$

= **113**

b.) $$\left\{ \frac{443}{2} - 113 \right\}$$

$$\text{or} \quad \left\{ \frac{534}{1} - 473 - 113 \right\}$$

$$\& \quad \frac{992}{2}$$

= **109**

Phase 3) *2nd Street - Westbound Lefts, Throughs, and Rights*

$$\left\{ \frac{992}{2} - 109 \right\}$$

$$\& \quad \left\{ \frac{391 + 17}{1} \right\}$$

= **387**

Phase 4) *Beverly Boulevard and 2nd Street - Westbound Lefts and Throughs, and Eastbound Throughs and Rights*

$$\frac{179 + 53}{2}$$

$$\text{or} \quad \left\{ \frac{391 + 17}{1} \right\} - 387$$

= **116**

Critical Volumes = 473 + 113 + 109 + 387 + 116

= 1,198

$$\textbf{V/C} = \frac{\textbf{1,198}}{\textbf{1,375}} - \textbf{0.100} = \textbf{0.771} \qquad \textbf{LOS C}$$

CP_PM

January 25, 2011 ,Tuesday 12:50:55 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S:	Lucas Ave	W/E:	3rd St	I/S No:	40
AM/PM:	PM	Comments:	FUTURE WITH PROJECT (YEAR 2020)		
COUNT DATE:		STUDY DATE:		GROWTH FACTOR:	

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	39	604	91	54	429	89	109	1131	192	95	899	116
AMBIENT												
RELATED												
PROJECT												
TOTAL	39	604	91	54	429	89	109	1131	192	95	899	116

LANE							
NORTHBOUND	1		2			1	
SOUTHBOUND	1		1		1		
WESTBOUND	1		2			1	
EASTBOUND	1		2			1	

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A:	B:
SouthBound	259	54
EastBound	450	95
WestBound	566	109
NorthBound	302	39

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)

$$V/C = \frac{302 + 54 + 566 + 95}{*1500} = 0.608$$

LOS = B

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January 25, 2011 ,Tuesday 12:50:55 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Lucas Ave W/E: 6th St I/S No: 41

AM/PM: PM Comments: FUTURE WITH PROJECT (YEAR 2020)

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	92	385	68	29	259	114	70	1038	68	170	1031	62
AMBIENT												
RELATED												
PROJECT												
TOTAL	92	385	68	29	259	114	70	1038	68	170	1031	62

LANE

	1	2	3	4	5	6	7
NORTHBOUND				1			
SOUTHBOUND				1			
WESTBOUND	1		2			1	
EASTBOUND	1		1		1		

SIGNAL

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	402	29
EastBound	547	170
WestBound	519	70
NorthBound	545	92

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)

$$V/C = \frac{545 + 29 + 519 + 170}{*1500} = 0.772$$

LOS = C

CP_PM

CalcaDB

January 25, 2011 ,Tuesday 12:50:55 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Lucas Ave **W/E:** Wilshire Blvd **I/S No:** 42

AM/PM: PM **Comments:** FUTURE WITH PROJECT (YEAR 2020)

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	72	312	56	50	327	75	149	1098	99	70	1007	76
AMBIENT												
RELATED												
PROJECT												
TOTAL	72	312	56	50	327	75	149	1098	99	70	1007	76

	NB							SB							WB							EB						
LANE				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	B
SouthBound	452	50
EastBound	714	70
WestBound	996	149
NorthBound	440	72

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

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

Results

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

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

V/C = (72 + 452 + 996 + 70) / *1500 = 0.990 LOS = E

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ALTERNATE FUTURE WITH PROJECT WITH TDM PROGRAM CONDITIONS

(YEAR 2020)

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave | W/E: US 101 NB Ramps | I/S No: 1

AM/PM: AM | Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	696	212	0	0	1259	529	0	0	0	29	0	710
AMBIENT												
RELATED												
PROJECT												
TOTAL	696	212	0	0	1259	529	0	0	0	29	0	710

LANE

	L	LT	T	LTR	TR	R	LR
NORTHBOUND	1		2				
SOUTHBOUND			2			1	
WESTBOUND							
EASTBOUND						1	1

SIGNAL

	Phasing	RTOR
NORTHBOUND	Prot-Fix	<none>
SOUTHBOUND	Perm	OLA
WESTBOUND	<none>	<none>
EASTBOUND	Split	Auto

Critical Movements Diagram

	A	B
SouthBound	630	0
EastBound	22	29
WestBound	0	0
NorthBound	106	696

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)

$$V/C = \frac{696 + 630 + 0 + 29}{*1425} = 0.881$$

LOS = D

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Hope St/US 101 SB Ramps
W/E: Temple St
I/S No: 2
AM/PM: AM
Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)
COUNT DATE:
STUDY DATE:
GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	69	381	105	170	438	44	403	595	218	275	513	266
AMBIENT												
RELATED												
PROJECT												
TOTAL	69	381	105	170	438	44	403	595	218	275	513	266

LANE

	NB	SB	WB	EB
LT	1	1	1	1
LT/TH				
TH	1	1	2	1
LT/TH/RT				
TH/RT	1	1		1
RT			1	
LT/RT				

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Perm	Auto	Perm	Auto	Prot-Fix	Auto	Prot-Fix	Auto

Critical Movements Diagram

	A	B
SouthBound	241	170
EastBound	390	275
WestBound	298	403
NorthBound	243	69

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)

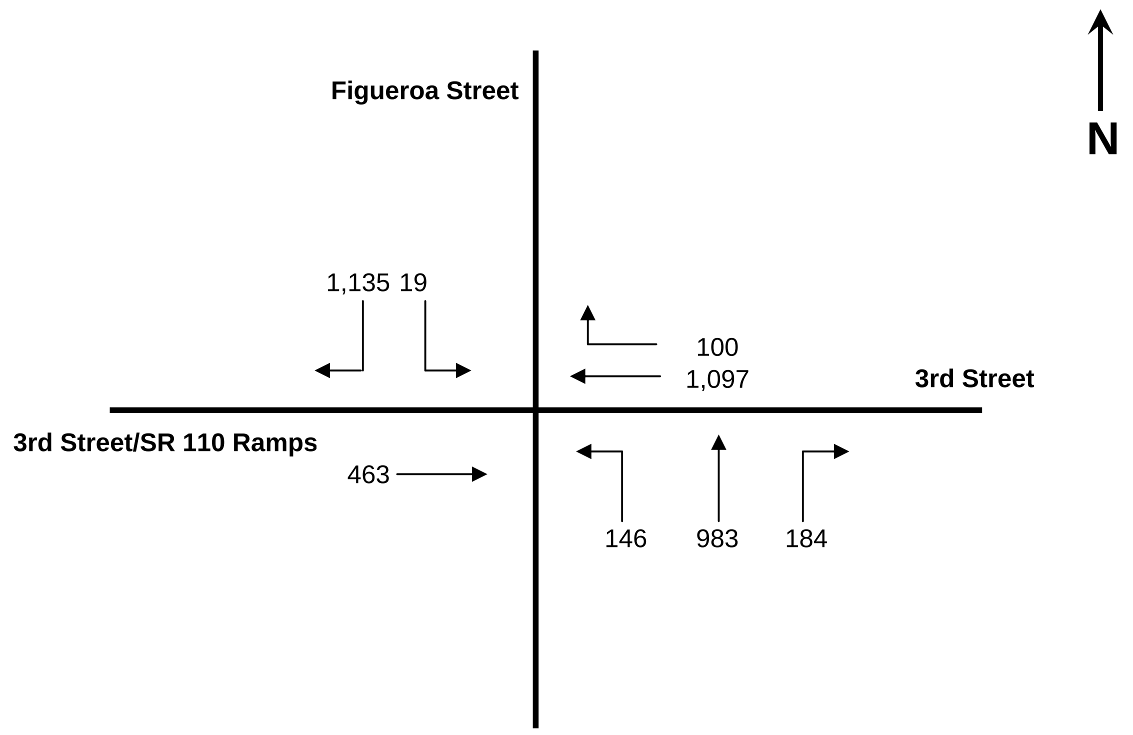
West/East Critical Movements = B(W/B) + A(E/B)

$$V/C = \frac{243 + 170 + 403 + 390}{*1425} = 0.776$$

LOS = C

Intersection 3

Future with Project with TDM Conditions A.M. Peak Hour (Year 2020)



1) Lane Capacity for WB Throughs - 900 vphpl

Number of Lanes - 5

WB Through V/C - $\frac{1,097}{4,500}$

= **0.244**

<u>or</u>

Lane Capacity for WB Rights - 1,425 vphpl

Number of Lanes - 1

WB Right V/C - $\frac{100}{1,425}$

= **0.070**

<u>or</u>

Lane Capacity for EB Throughs - 1,425 vphpl

Number of Lanes - 2

EB Through V/C - $\frac{463}{2,850}$

= **0.162**

2) Lane Capacity for NB Lefts - 900 vphpl

Number of Lanes - 3

NB Left V/C - $\left\{\frac{146 \quad x \quad 0.37}{900}\right\}$

= ***0.060***

Lane Capacity for SB Rights - 1,425 vphpl

Number of Lanes - 2

SB Right V/C - $\left\{\frac{1,135 \quad x \quad 0.55}{1,425}\right\}$

= ***0.438***

Critical V/C - ***0.060*** **+** ***0.438*** **= 0.498**

<u>or</u>

Lane Capacity for NB Throughs & Rights - 1,425 vphpl

Number of Lanes - 2 throughs
1 through/right

NB Through/Right V/C - $\left\{\frac{983 \quad + \quad 184}{4,275}\right\}$ or $\frac{184}{1,425}$

= **0.273**

Intersection V/C = 0.742 — 0.100 = 0.642 LOS B

CP_TDM~1

CalcaDB

January 25, 2011 ,Tuesday 12:51:05 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St | W/E: 3rd St | I/S No: 4

AM/PM: AM | Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

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	1	26	0	0	1113	137	526	1043	108	0	0	473
AMBIENT												
RELATED												
PROJECT												
TOTAL	1	26	0	0	1113	137	526	1043	108	0	0	473

LANE

NORTHBOUND	1		2				
SOUTHBOUND			2			1	
WESTBOUND	1		3		1		
EASTBOUND						1	

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	<none>	Perm	Auto	Split	Auto	<none>	Free

Critical Movements Diagram

	A:	B:
SouthBound	557	0
EastBound	0	0
WestBound	288	526
NorthBound	13	1

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)

$$V/C = \frac{1 + 557 + 526 + 0}{*1500} = 0.653$$

LOS = B

Developed by Chun Wong, 12/94

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January 25, 2011 ,Tuesday 12:51:05 PM

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INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave | W/E: 3rd St | I/S No: 5

AM/PM: AM | Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

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	17	68	0	0	1212	163	0	0	0	23	0	88
AMBIENT												
RELATED												
PROJECT												
TOTAL	17	68	0	0	1212	163	0	0	0	23	0	88

LANE							
NORTHBOUND	1		2				
SOUTHBOUND			1		1		
WESTBOUND							
EASTBOUND	1					2	

SIGNAL	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	<none>	<none>
EASTBOUND	Split	Auto

Critical Movements Diagram

SouthBound
A: 688
B: 0

EastBound
A: 48
B: 23

WestBound
A: 0
B: 0

NorthBound
A: 34
B: 17

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

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

Results

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

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

$$V/C = \frac{17 + 688 + 0 + 48}{*1500} = 0.432$$

LOS = A

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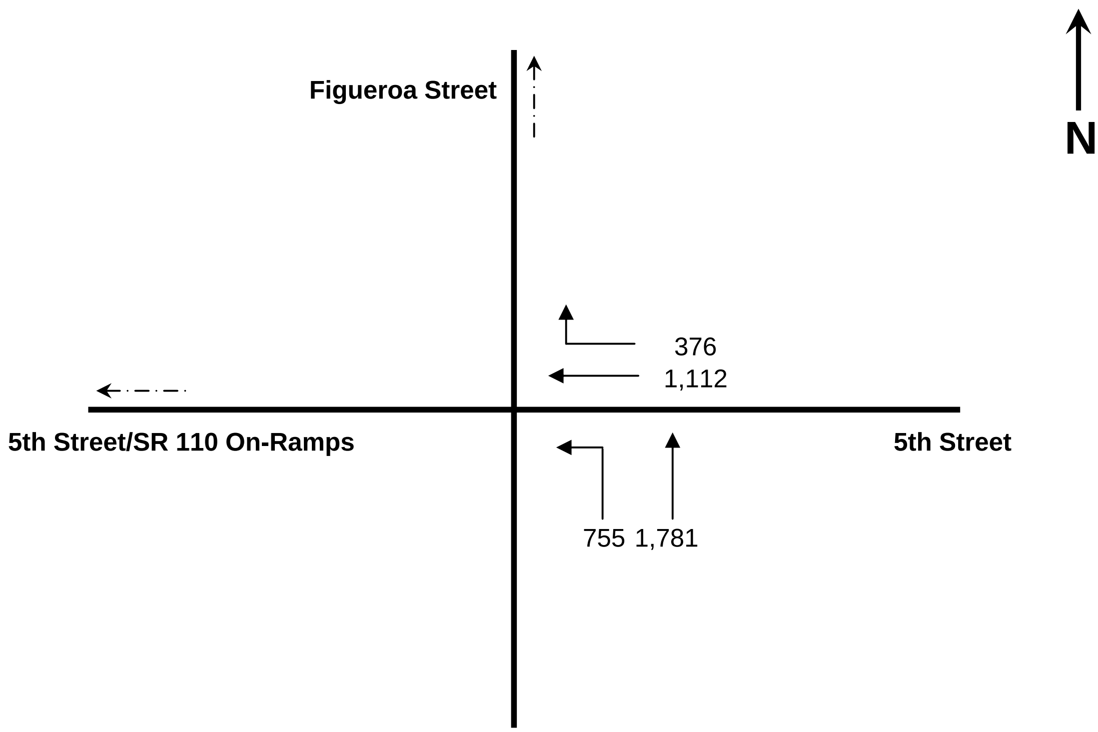
Intersection 6

Future with Project with TDM Conditions A.M. Peak Hour (Year 2020)



1) Lane Capacity for WB Direction - 900 vphpl

Number of Lanes - 7

Critical V/C - $\left\{\frac{1,112 + 376}{6,300}\right\}$

= **0.236**

2) Lane Capacity for NB Throughs - 900 vphpl

Number of Lanes - 3

Critical V/C - $\frac{1,781}{2,700}$

= **0.66**

<u>or</u>

Lane Capacity for NB Lefts - 900 vphpl

Number of Lanes - 3

Critical V/C - $\frac{755}{2,700}$

= **0.28**

Intersection V/C = 0.896 — 0.100 = 0.796 LOS C

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January 25, 2011 ,Tuesday 12:51:05 PM

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INTERSECTION DATA SUMMARY SHEET

N/S:	Flower St	W/E:	5th St	I/S No:	7
AM/PM:	AM	Comments:	FUTURE WITH PROJECT WITH TDM (YEAR 2020)		
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	0	0	0	0	1361	316	262	1380	0	0	0	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	0	1361	316	262	1380	0	0	0	0

LANE	1	2	3	4	5	6	7
NORTHBOUND							
SOUTHBOUND			3		1	1	
WESTBOUND	1		5				
EASTBOUND							

SIGNAL	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
	<none>	<none>	Split	Auto	Split	<none>	<none>	<none>

Critical Movements Diagram

	A:	B:
SouthBound	340	0
EastBound	0	0
WestBound	276	262
NorthBound	0	0

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) + A(S/B)

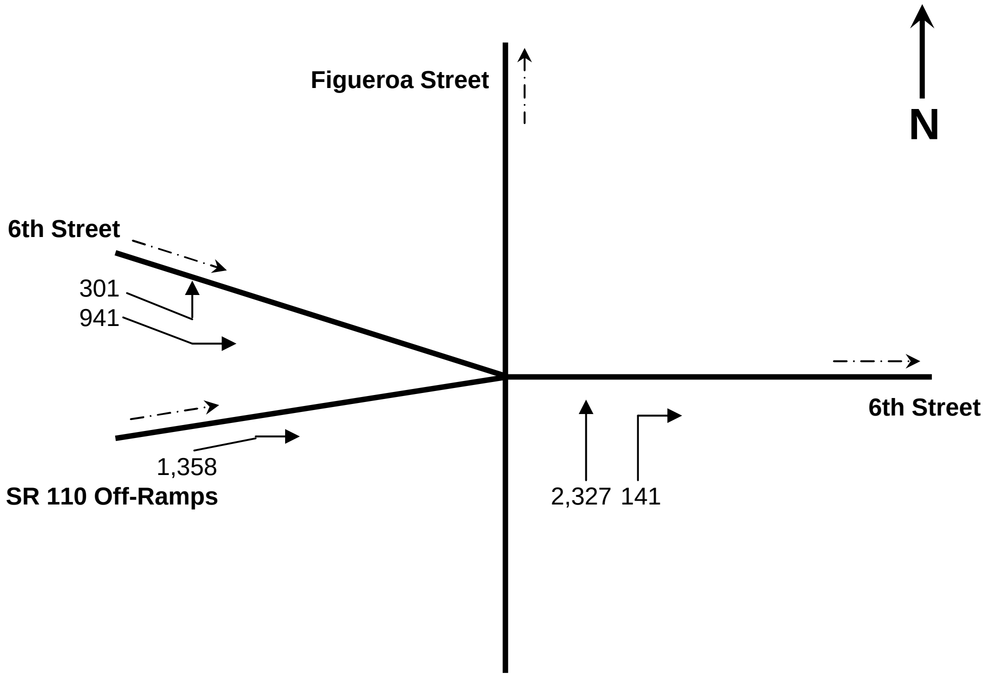
West/East Critical Movements = A(W/B) + A(E/B)

$$V/C = \frac{0 + 340 + 276 + 0}{*1500} = 0.341$$

LOS = A

Intersection 8

Future with Project with TDM Conditions A.M. Peak Hour (Year 2020)



1) Lane Capacity for EB Direction - 1,500 vphpl

Number of Lanes -
1 left-turn lane from 6th Street
1 shared left/through lane from 6th Street
1 through lane from 6th Street
3 through lanes from SR 110 Off-Ramps

Critical V/C - $\left\{\frac{941 + 301}{4,500}\right\}$ or $\frac{1,358}{4,500}$

= **0.302**

2) Lane Capacity for NB Throughs - 900 vphpl

Number of Lanes - 5

Critical V/C - $\frac{2,327}{4,500}$

= **0.517**

<u>or</u>

Lane Capacity for NB Rights - 1,500 vphpl

Number of Lanes - 1

Critical V/C - $\frac{141}{1,500}$

= **0.094**

Intersection V/C = 0.819 – 0.100 = 0.719 LOS C

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INTERSECTION DATA SUMMARY SHEET

N/S:	Flower St	W/E:	6th St	I/S No:	9
AM/PM:	AM	Comments:	FUTURE WITH PROJECT WITH TDM (YEAR 2020)		
COUNT DATE:		STUDY DATE:		GROWTH FACTOR:	

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	0	0	269	1017	0	0	0	0	0	1798	664
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	269	1017	0	0	0	0	0	1798	664

LANE

NORTHBOUND							
SOUTHBOUND	2		4				
WESTBOUND							
EASTBOUND			3		1	1	

SIGNAL

	NORTHBOUND	SOUTHBOUND	WESTBOUND	EASTBOUND
Phasing	<none>	Split	<none>	Split
RTOR	<none>	<none>	<none>	Auto

Critical Movements Diagram

	A:	B:
SouthBound	254	148
EastBound	492	0
WestBound	0	0
NorthBound	0	0

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) + A(S/B)

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

$$V/C = \frac{0 + 254 + 0 + 492}{*1500} = 0.427$$

LOS = A

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January 25, 2011 ,Tuesday 12:51:05 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Alvarado St | W/E: Wilshire Blvd | I/S No: 10

AM/PM: AM | Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	885	154	0	1024	191	76	1010	63	111	1253	39
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	885	154	0	1024	191	76	1010	63	111	1253	39

LANE

	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND			2		1		
SOUTHBOUND			2		1		
WESTBOUND	1		1		1		
EASTBOUND	1		1		1		

SIGNAL

	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Perm	Auto
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	405	0
EastBound	646	111
WestBound	537	76
NorthBound	346	0

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)

$$V/C = \frac{0 + 405 + 76 + 646}{*1500} = 0.681$$

LOS = B

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January 25, 2011 ,Tuesday 12:51:05 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Beaudry Ave   W/E: Wilshire Blvd   I/S No: 11

AM/PM: AM   Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

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	10	0	25	791	31	741	5	611	0	0	1110	6
AMBIENT												
RELATED												
PROJECT												
TOTAL	10	0	25	791	31	741	5	611	0	0	1110	6

LANE							1	1			1		1			1	1							2			1	

	NORTHBOUND Phasing	NORTHBOUND RTOR	SOUTHBOUND Phasing	SOUTHBOUND RTOR	WESTBOUND Phasing	WESTBOUND RTOR	EASTBOUND Phasing	EASTBOUND RTOR
SIGNAL	Split	Auto	Split	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	521	521
EastBound	555	0
WestBound	321	5
NorthBound	35	10

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

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

Results

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

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

$$V/C = \frac{35 + 521 + 5 + 555}{*1425} = 0.713$$

LOS = C

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January 25, 2011 ,Tuesday 12:51:05 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Francisco St W/E: Wilshire Blvd I/S No: 12

AM/PM: AM Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

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	33	14	105	9	1	10	142	546	57	75	1365	550
AMBIENT												
RELATED												
PROJECT												
TOTAL	33	14	105	9	1	10	142	546	57	75	1365	550

LANE	1	2	3	4	5	6	7
NORTHBOUND		1				1	
SOUTHBOUND				1			
WESTBOUND	1		1		1		
EASTBOUND	1		1		1		

SIGNAL	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Perm	Auto
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	20	9
EastBound	958	75
WestBound	302	142
NorthBound	105	33

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)

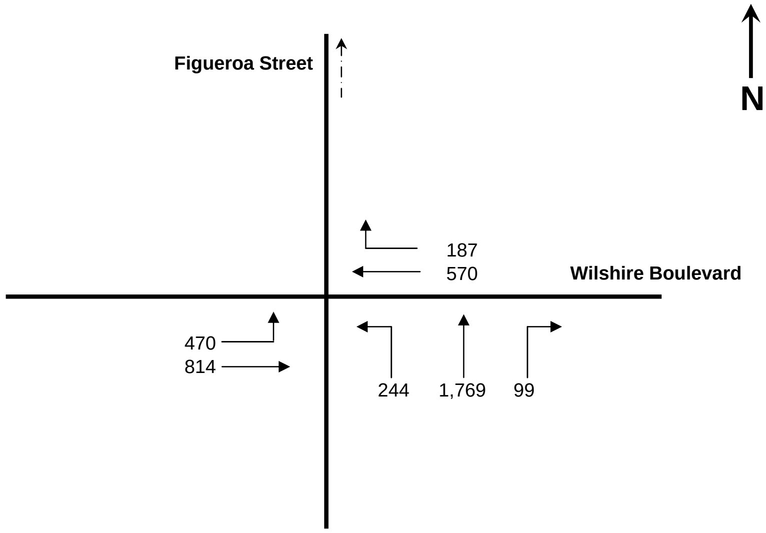
West/East Critical Movements = B(W/B) + A(E/B)

$$V/C = \frac{105 + 9 + 142 + 958}{*1500} = 0.739$$

LOS = C

Intersection 13

Future with Project with TDM Conditions A.M. Peak Hour (Year 2020)



1) Lane Capacity for EB Lefts - 900 vphpl

Number of Lanes - 2

EB Left V/C - $\left\{\dfrac{470 \times 0.55}{900}\right\}$

= ***0.287***

Lane Capacity for WB Direction - 1,425 vphpl

Number of Lanes -
1 through
1 through/right
1 right-turn only

WB V/C - $\left\{\dfrac{570 + 187}{4,275}\right\}$ or $\dfrac{570}{2,850}$ or $\dfrac{187}{2,850}$

= ***0.200***

Critical V/C - ***0.287*** **+** ***0.200*** **=** **0.487**

<u>or</u>

Lane Capacity for EB Throughs - 1,425 vphpl

Number of Lanes - 2

Critical V/C - $\dfrac{814}{2,850}$

= **0.286**

2) Lane Capacity for NB Direction - 900 vphpl

Number of Lanes -
1 left/through
3 throughs
1 right-turn only

Critical V/C - $\left\{\dfrac{244 + 1,769}{3,600}\right\}$

or $\dfrac{244}{900}$

or $\dfrac{99}{900}$

= **0.559**

Intersection V/C = 1.046 — 0.100 = 0.946 LOS E

Intersection 14

Future with Project with TDM Conditions A.M. Peak Hour (Year 2020)

1) Lane Capacity for WB Direction - 900 vphpl

Number of Lanes - 2

WB Direction V/C - $\left\{ \frac{305 + 44}{1,800} \right\}$ or $\frac{44}{900}$

= **0.194**

Lane Capacity for EB Direction - 1,500 vphpl

Number of Lanes - 2

EB Direction V/C - $\left\{ \frac{545 + 380}{3,000} \right\}$ or $\frac{380}{1,500}$

= **0.308**

2) Lane Capacity for SB Throughs and Lefts - 1,500 vphpl

Number of Lanes - 3 throughs
1 left-turn only

SB Through V/C - $\frac{1,157}{4,500}$

= **0.257**

SB Left V/C - $\frac{91}{1,500}$

= **0.061**

Lane Capacity for SB Rights - 900 vphpl

Number of Lanes - 1

SB Right V/C - $\frac{504}{900}$

= **0.560**

Intersection V/C = 0.868 − 0.100 = 0.768 LOS C

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January 25, 2011 ,Tuesday 12:51:05 PM

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INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave **W/E:** Wilshire Blvd **I/S No:** 15

AM/PM: AM **Comments:** FUTURE WITH PROJECT WITH TDM (YEAR 2020)

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	0	0	0	64	1132	256	10	11	0	0	44	323
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	64	1132	256	10	11	0	0	44	323

LANE	NB	SB	WB	EB
LT				
LT-TH		1	1	
TH		2		
LT-TH-RT				
TH-RT		1		1
RT				1
LT-RT				

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	<none>	<none>	Split	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

	A:	B:
SouthBound	363	64
EastBound	184	0
WestBound	21	10
NorthBound	0	0

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) + A(S/B)

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

$$V/C = \frac{0 + 363 + 10 + 184}{*1500} = 0.301$$

LOS = A

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INTERSECTION DATA SUMMARY SHEET

N/S: Alvarado St W/E: 7th St I/S No: 16

AM/PM: AM Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

COUNT DATE: STUDY DATE: GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	958	66	0	995	80	0	464	69	0	720	32
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	958	66	0	995	80	0	464	69	0	720	32

LANE (columns per approach: LT, LT/TH, TH, LT/TH/RT, TH/RT, RT, LT/RT)

	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND			2		1		
SOUTHBOUND			2		1		
WESTBOUND			1		1		
EASTBOUND			1		1		

SIGNAL	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Perm	Auto
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	358	0
EastBound	376	0
WestBound	267	0
NorthBound	341	0

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)

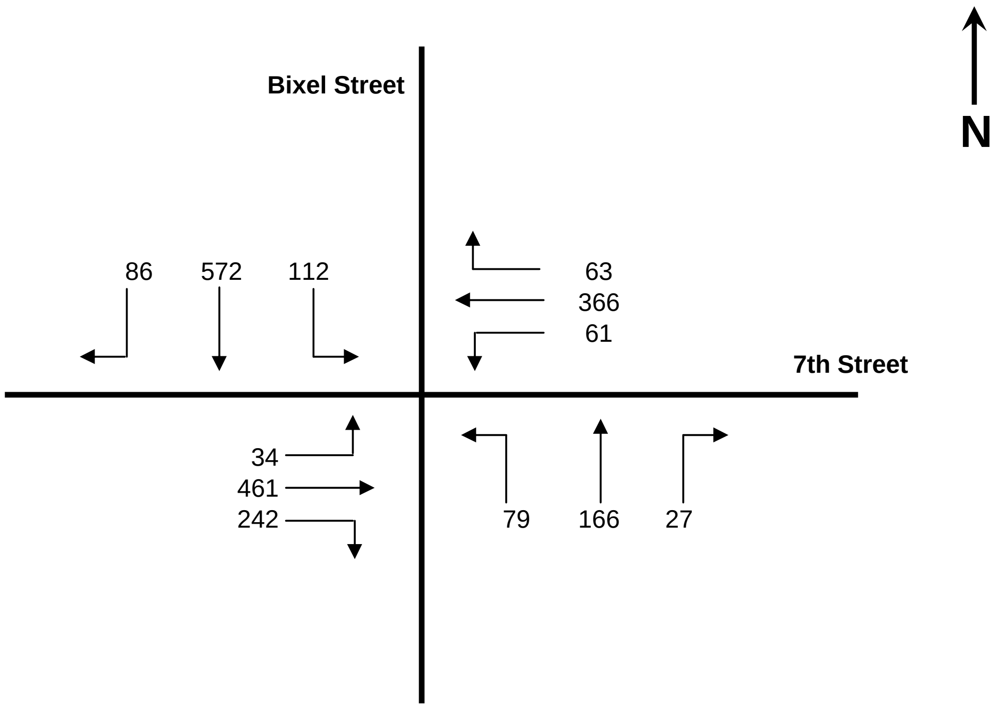
West/East Critical Movements = B(W/B) + A(E/B)

$$V/C = \frac{0 + 358 + 0 + 376}{*1500} = 0.419$$

LOS = A

Intersection 17

Future with Project with TDM Conditions A.M. Peak Hour (Year 2020)



1) Lane Capacity for WB Lefts - 900 vphpl

Number of Lanes - 1

WB Left V/C - $\frac{61}{900}$

= ***0.068***

Lane Capacity for EB Throughs - 1,500 vphpl

Number of Lanes - 1

EB Through V/C - $\frac{461}{1,500}$

= ***0.307***

Lane Capacity for EB Rights - 900 vphpl

Number of Lanes - 1

EB Right V/C - $\frac{242}{900}$

= ***0.269***

Critical V/C - ***0.068*** **+** ***0.307***

= 0.375

<u>or</u>

Lane Capacity for EB Lefts - 1,500 vphpl

Number of Lanes - 1

EB Left V/C - $\frac{34}{1,500}$

= ***0.023***

Lane Capacity for WB Throughs/Rights - 1,500 vphpl

Number of Lanes - 2

WB Through V/C - $\left\{\frac{366 + 63}{3,000}\right\}$

= ***0.143***

Critical V/C - ***0.023*** **+** ***0.143***

= 0.166

2) Lane Capacity for NB & SB Direction - 1,500 vphpl

Number of Lanes - 1 left
1 through/right

Critical V/C - $\left\{\frac{79 + 572 + 86}{1,500}\right\}$

or $\left\{\frac{112 + 166 + 27}{1,500}\right\}$

= **0.491**

Intersection V/C = 0.866 — 0.100 = 0.766 LOS C

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January 25, 2011 ,Tuesday 12:51:05 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Francisco St W/E: 7th St I/S No: 18

AM/PM: AM Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

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	41	11	79	43	269	69	150	597	370	57	555	143
AMBIENT												
RELATED												
PROJECT												
TOTAL	41	11	79	43	269	69	150	597	370	57	555	143

	NB							SB							WB							EB						
LANE		1				1		1				1			1		1		1			1		1		1		

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

SouthBound
A: 338
B: 43

EastBound
A: 349
B: 57

WestBound
A: 484
B: 150

NorthBound
A: 79
B: 41

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

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

Results

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

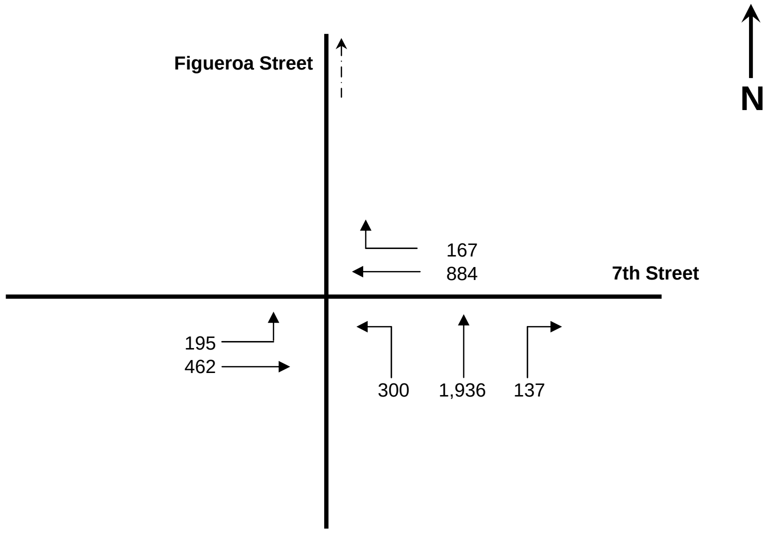
West/East Critical Movements = A(W/B) + B(E/B)

$$V/C = \frac{41 + 338 + 484 + 57}{*1500} = 0.543$$

LOS = A

Intersection 19

Future with Project with TDM Conditions A.M. Peak Hour (Year 2020)



1) Lane Capacity for EB Lefts - 900 vphpl

Number of Lanes - 2

EB Left V/C - $\left\{\frac{195 \quad X \quad 0.55}{900}\right\}$

= ***0.119***

Lane Capacity for WB Direction - 1,425 vphpl

Number of Lanes - 2 throughs
1 right-turn only

WB V/C - $\frac{884}{2,850}$ or $\frac{167}{1,425}$

= ***0.310***

Critical V/C - ***0.119*** **+** ***0.310*** **=** **0.429**

<u>or</u>

Lane Capacity for EB Throughs - 1,425 vphpl

Number of Lanes - 2

Critical V/C - $\frac{462}{2,850}$

= **0.162**

2) Lane Capacity for NB Throughs and Through/Left - 900 vphpl
Lane Capacity for NB Right-turns - 450 vphpl

Number of Lanes - 1 left/through
3 throughs
1 right-turn only

Critical V/C - $\left\{\frac{300 \quad + \quad 1,936}{3,600}\right\}$

or $\frac{300}{900}$

or $\frac{137}{450}$

= **0.621**

Intersection V/C = 1.050 — 0.100 = 0.950 LOS E

CP_TDM~1

CalcaDB

January 25, 2011 ,Tuesday 12:51:05 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St W/E: 7th St I/S No: 20

AM/PM: AM Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

COUNT DATE: STUDY DATE: GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	0	0	73	1007	177	116	818	0	0	423	161
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	73	1007	177	116	818	0	0	423	161

LANE

	LT	LT-TH	TH	LT-TH-RT	TH-RT	RT	LT-RT
NORTHBOUND							
SOUTHBOUND		1	2		1		
WESTBOUND		1	2				
EASTBOUND			1		1		

SIGNAL

	NORTHBOUND Phasing	NORTHBOUND RTOR	SOUTHBOUND Phasing	SOUTHBOUND RTOR	WESTBOUND Phasing	WESTBOUND RTOR	EASTBOUND Phasing	EASTBOUND RTOR
SIGNAL	<none>	<none>	Split	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	314	73
EastBound	292	0
WestBound	350	116
NorthBound	0	0

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) + A(S/B)

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

$$V/C = \frac{0 + 314 + 116 + 292}{*1500} = 0.411$$

LOS = A

CP_TDM~1

CalcaDB

January 25, 2011 ,Tuesday 12:51:05 PM

INTERSECTION DATA SUMMARY SHEET

N/S:	Olive Ave	W/E:	7th St	I/S No:	21
AM/PM:	AM	Comments:	FUTURE WITH PROJECT WITH TDM (YEAR 2020)		
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	153	1013	102	0	0	0	0	758	238	0	603	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	153	1013	102	0	0	0	0	758	238	0	603	0

LANE	1	2	3	4	5	6	7
NORTHBOUND		1	2		1		
SOUTHBOUND							
WESTBOUND			2			1	
EASTBOUND			2				

SIGNAL	Phasing	RTOR
NORTHBOUND	Split	Auto
SOUTHBOUND	<none>	<none>
WESTBOUND	Perm	Auto
EASTBOUND	Perm	<none>

Critical Movements Diagram

	A:	B:
SouthBound	0	0
EastBound	302	0
WestBound	379	0
NorthBound	317	153

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

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

Results

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

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

$$V/C = \frac{317 + 0 + 379 + 0}{*1500} = 0.394$$

LOS = A

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January 25, 2011 ,Tuesday 12:51:05 PM

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INTERSECTION DATA SUMMARY SHEET

N/S: Alameda St | W/E: 7th St | I/S No: 22

AM/PM: AM | Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	142	673	62	128	931	105	146	917	60	86	527	108
AMBIENT												
RELATED												
PROJECT												
TOTAL	142	673	62	128	931	105	146	917	60	86	527	108

LANE

	Approach	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
LANE	NORTHBOUND	1		1		1		
LANE	SOUTHBOUND	1		1		1		
LANE	WESTBOUND	1		1		1		
LANE	EASTBOUND	1		1		1		

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Perm	Auto	Prot-Fix	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	518	128
EastBound	318	86
WestBound	489	146
NorthBound	368	142

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

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

Results

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

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

$$V/C = \frac{142 + 518 + 489 + 86}{*1425} = 0.797$$

LOS = C

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S:	Soto St	W/E:	7th St	I/S No:	23
AM/PM:	AM	Comments:	FUTURE WITH PROJECT WITH TDM (YEAR 2020)		
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	485	771	31	58	648	88	28	113	41	50	55	22
AMBIENT												
RELATED												
PROJECT												
TOTAL	485	771	31	58	648	88	28	113	41	50	55	22

LANE	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND	1		1		1		
SOUTHBOUND	1		1		1		
WESTBOUND				1			
EASTBOUND		1				1	

SIGNAL	NORTHBOUND	SOUTHBOUND	WESTBOUND	EASTBOUND
Phasing	Prot-Fix	Perm	Split	Split
RTOR	Auto	Auto	Auto	Auto

Critical Movements Diagram

	A	B
SouthBound	368	58
EastBound	105	50
WestBound	182	28
NorthBound	401	485

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)

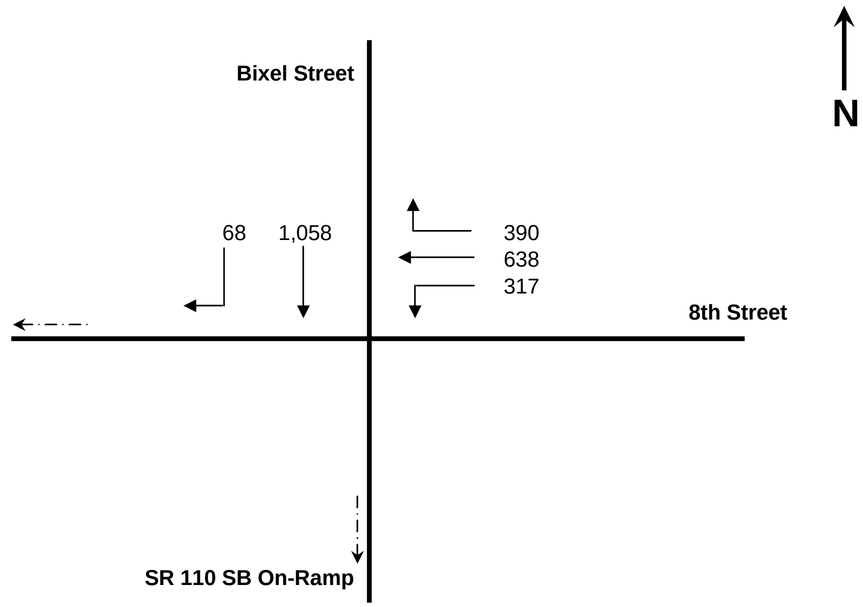
West/East Critical Movements = A(W/B) + A(E/B)

$$V/C = \frac{485 + 368 + 182 + 105}{*1375} = 0.759$$

LOS = C

Intersection 24

Future with Project with TDM Conditions A.M. Peak Hour (Year 2020)



1) Lane Capacity for WB Lefts - 750 vphpl

Number of Lanes - 2

WB Left V/C - $\frac{317}{1,500}$

= **0.211**

<u>or</u>

Lane Capacity for WB Throughs and Rights - 1,500 vphpl

Number of Lanes - 2 throughs
Number of Lanes - 1 right-turn only

WB Through/Right V/C - $\frac{638}{3,000}$ or $\frac{390}{1,500}$

= **0.260**

2) Lane Capacity for SB Rights - 1,500 vphpl

Number of Lanes - 1

SB Right V/C - $\frac{68}{1,500}$

= **0.045**

<u>or</u>

Lane Capacity for SB Throughs - 750 vphpl

Number of Lanes - 2

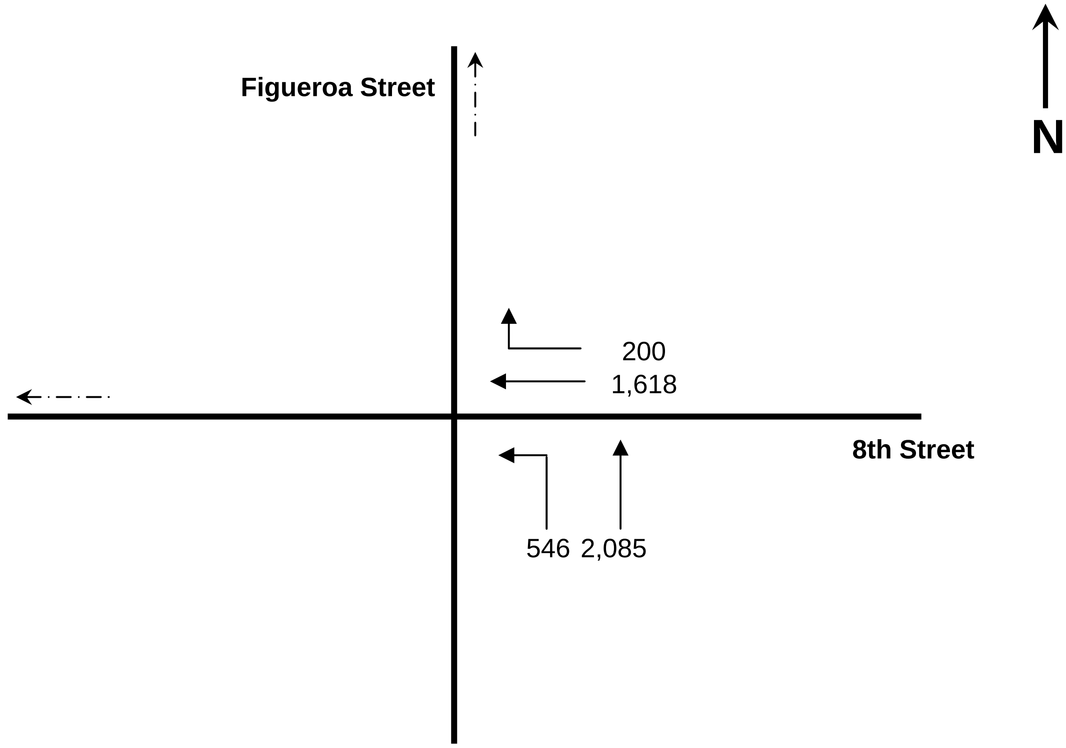
WB Through/Right V/C - $\frac{1,058}{1,500}$

= **0.705**

Intersection V/C = 0.965 — 0.100 = 0.865 LOS D

Intersection 25

Future with Project with TDM Conditions A.M. Peak Hour (Year 2020)



1) Lane Capacity for WB Direction - 900 vphpl

Number of Lanes - 4 throughs
1 right-turn only

Critical V/C - $\frac{1,618}{3,600}$ or $\frac{200}{900}$

= **0.449**

2) Lane Capacity for NB Direction - 900 vphpl

Number of Lanes - 1 left-turn only
5 throughs

Critical V/C - $\frac{2,085}{4,500}$ or $\frac{546}{900}$

= **0.607**

Intersection V/C = 1.056 — 0.100 = 0.956 LOS E

CP_TDM~1

January 25, 2011 ,Tuesday 12:51:05 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St **W/E:** 8th St **I/S No:** 26

AM/PM: AM **Comments:** FUTURE WITH PROJECT WITH TDM (YEAR 2020)

COUNT DATE: **STUDY DATE:** **GROWTH FACTOR:**

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	0	0	0	737	332	79	1532	0	0	0	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	0	737	332	79	1532	0	0	0	0

LANE

	Box 1	Box 2	Box 3	Box 4	Box 5	Box 6	Box 7
NORTHBOUND							
SOUTHBOUND			4			1	
WESTBOUND		1	3				
EASTBOUND							

SIGNAL

	Phasing	RTOR
NORTHBOUND	<none>	<none>
SOUTHBOUND	Split	Auto
WESTBOUND	Split	<none>
EASTBOUND	<none>	<none>

Critical Movements Diagram

	A	B
SouthBound	332	0
EastBound	0	0
WestBound	403	79
NorthBound	0	0

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) + A(S/B)

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

$$V/C = \frac{0 + 332 + 403 + 0}{*1500} = 0.420$$

LOS = A

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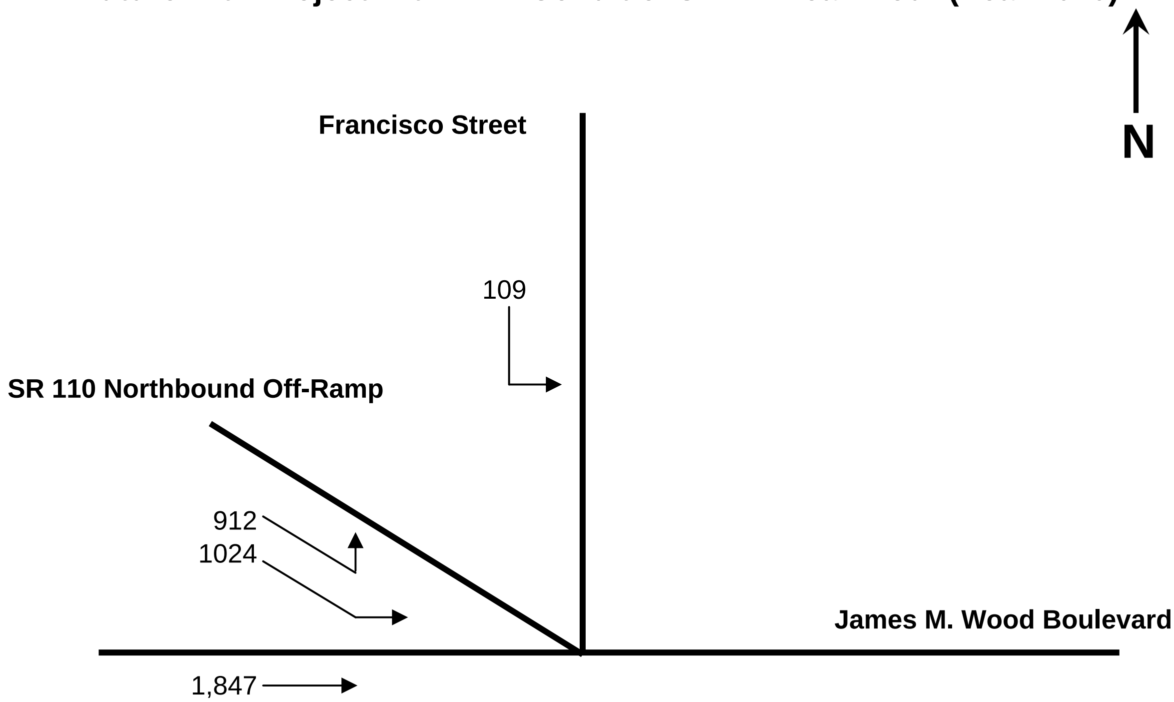
Intersection 27

Future with Project with TDM Conditions A.M. Peak Hour (Year 2020)



1) $\left\{\dfrac{912 + 1024}{3}\right\}$

or

$\dfrac{1{,}847}{3}$

= **968**

2) $\dfrac{109}{1}$

= **109**

Critical Volumes = 968 + 109 = 1,077

V/C = $\dfrac{1{,}077}{1{,}500}$ 0.100 = 0.618 LOS B

CP_TDM~1

January 25, 2011 ,Tuesday 12:51:05 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Figueroa St W/E: 9th St/James M Wood Blvd I/S No: 28

AM/PM: AM Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

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	0	1680	158	0	0	0	0	0	0	1098	1810	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	1680	158	0	0	0	0	0	0	1098	1810	0

LANE

	NB							SB							WB							EB						
LANE			3			1																1	1	3				

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Split	Auto	<none>	<none>	<none>	<none>	Split	<none>

Critical Movements Diagram

	A	B
SouthBound	0	0
EastBound	582	582
WestBound	0	0
NorthBound	560	0

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) + A(S/B)

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

$$V/C = \frac{560 + 0 + 0 + 582}{*1500} = 0.691$$

LOS = B

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CalcaDB

January 27, 2011 ,Thursday 11:34:17 AM

INTERSECTION DATA SUMMARY SHEET

N/S: Cherry St | W/E: Pico Blvd | I/S No: 29

AM/PM: AM | Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

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	567	542	230	229	0	8	0	406	330	234	600	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	567	542	230	229	0	8	0	406	330	234	600	0

LANE							
NORTHBOUND	1	1	1			1	
SOUTHBOUND	2					2	
WESTBOUND			1		1	1	
EASTBOUND	1		3				

SIGNAL	Phasing	RTOR
NORTHBOUND	Split	Auto
SOUTHBOUND	Split	Auto
WESTBOUND	Perm	OLA
EASTBOUND	Perm	<none>

Critical Movements Diagram

SouthBound
A: 4
B: 126

EastBound
A: 200
B: 234

WestBound
A: 245
B: 0

NorthBound
A: 370
B: 370

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)

$$V/C = \frac{370 + 126 + 245 + 234}{*1425} = 0.614$$

LOS = B

Developed by Chun Wong, 12/94

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Figueroa St W/E: Pico Blvd I/S No: 30

AM/PM: AM Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

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	256	2044	146	10	158	120	59	397	118	201	700	141
AMBIENT												
RELATED												
PROJECT												
TOTAL	256	2044	146	10	158	120	59	397	118	201	700	141

LANE							
NORTHBOUND	1		3		1		
SOUTHBOUND	1		2			1	
WESTBOUND	1		2			1	
EASTBOUND	1		2			1	

SIGNAL	Phasing	RTOR
NORTHBOUND	Prot-Fix	Auto
SOUTHBOUND	Perm	OLA
WESTBOUND	Perm	Auto
EASTBOUND	Prot-Fix	OLA

Critical Movements Diagram

	A	B
SouthBound	79	10
EastBound	350	201
WestBound	199	59
NorthBound	548	256

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 = B(W/B) + A(E/B)

$$V/C = \frac{548 + 10 + 59 + 350}{*1375} = 0.633$$

LOS = B

CalcaDB

January 25, 2011 ,Tuesday 12:51:05 PM

INTERSECTION DATA SUMMARY SHEET

N/S:	Hoover St	W/E:	Alvarado St/Alvarado Ter	I/S No:	31
AM/PM:	AM	Comments:	FUTURE WITH PROJECT WITH TDM (YEAR 2020)		
COUNT DATE:		STUDY DATE:		GROWTH FACTOR:	

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	998	648	13	875	0	494	0	0	0	0	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	998	648	13	875	0	494	0	0	0	0	0

LANE

NORTHBOUND			1		1	1	
SOUTHBOUND		1	1				
WESTBOUND	1						1
EASTBOUND							

SIGNAL

	Phasing	RTOR
NORTHBOUND	Perm	Free
SOUTHBOUND	Perm	<none>
WESTBOUND	Split	Auto
EASTBOUND	<none>	<none>

Critical Movements Diagram

	A:	B:
SouthBound	477	13
EastBound	0	0
WestBound	247	247
NorthBound	549	0

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) + A(E/B)

$$V/C = \frac{549 + 13 + 247 + 0}{*1500} = 0.469$$

LOS = A

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St   W/E: Venice Blvd   I/S No: 32

AM/PM: AM   Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

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	0	0	0	10	541	31	49	342	0	0	412	57
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	10	541	31	49	342	0	0	412	57

LANE	1	2	3	4	5	6	7
NORTHBOUND							
SOUTHBOUND	1		2		1		
WESTBOUND		1	1				
EASTBOUND			1		1		

SIGNAL	Phasing	RTOR
NORTHBOUND	<none>	<none>
SOUTHBOUND	Split	Auto
WESTBOUND	Perm	<none>
EASTBOUND	Perm	Auto

Critical Movements Diagram

SouthBound
A: 191
B: 10

EastBound
A: 235
B: 0

WestBound
A: 220
B: 49

NorthBound
A: 0
B: 0

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

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

Results

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

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

$$V/C = \frac{0 + 191 + 49 + 235}{*1500} = 0.247$$

LOS = A

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave | W/E: 18th St | I/S No: 33

AM/PM: AM | Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	0	122	409	501	0	0	0	0	0	1060	138
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	122	409	501	0	0	0	0	0	1060	138

LANE

	Box 1	Box 2	Box 3	Box 4	Box 5	Box 6	Box 7
NORTHBOUND						2	
SOUTHBOUND	1		3				
WESTBOUND							
EASTBOUND			2		1	1	

SIGNAL

	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Prot-Fix	<none>
WESTBOUND	<none>	<none>
EASTBOUND	Split	Auto

Critical Movements Diagram

	A	B
SouthBound	167	409
EastBound	353	0
WestBound	0	0
NorthBound	67	0

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

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

Results

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

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

$$V/C = \frac{67 + 409 + 0 + 353}{*1425} = 0.512$$

LOS = A

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January 25, 2011 ,Tuesday 12:51:05 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Olive St | W/E: 6th St | I/S No: 34

AM/PM: AM | Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

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	0	1009	175	0	0	0	0	0	0	462	1045	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	1009	175	0	0	0	0	0	0	462	1045	0

LANE

	NB							SB							WB							EB						
LANE			4		1																	1	1	3				

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Split	Auto	<none>	<none>	<none>	<none>	Split	<none>

Critical Movements Diagram

	A	B
SouthBound	0	0
EastBound	301	301
WestBound	0	0
NorthBound	237	0

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) + A(S/B)

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

$$V/C = \frac{237 + 0 + 0 + 301}{*1500} = 0.289$$

LOS = A

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January 25, 2011 ,Tuesday 12:51:05 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Hope St | W/E: 7th St | I/S No: 35

AM/PM: AM | Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	41	263	146	10	250	26	0	931	113	0	432	73
AMBIENT												
RELATED												
PROJECT												
TOTAL	41	263	146	10	250	26	0	931	113	0	432	73

LANE

	NB 1	NB 2	NB 3	NB 4	NB 5	NB 6	NB 7	SB 1	SB 2	SB 3	SB 4	SB 5	SB 6	SB 7	WB 1	WB 2	WB 3	WB 4	WB 5	WB 6	WB 7	EB 1	EB 2	EB 3	EB 4	EB 5	EB 6	EB 7
LANE		1			1				1			1					1		1					1		1		

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

SouthBound
A: 148
B: 10

EastBound
A: 253
B: 0

WestBound
A: 522
B: 0

NorthBound
A: 225
B: 41

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)

$$V/C = \frac{225 + 10 + 522 + 0}{*1500} = 0.435$$

LOS = A

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S:	Grand Ave	W/E:	7th St	I/S No:	36
AM/PM:	AM	Comments:	FUTURE WITH PROJECT WITH TDM (YEAR 2020)		
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	0	0	0	101	1308	78	0	947	0	0	491	116
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	101	1308	78	0	947	0	0	491	116

LANE	↰	↰↑	↑	↰↑↱	↑↱	↱	↰↱
NORTHBOUND							
SOUTHBOUND	1		4			1	
WESTBOUND			2				
EASTBOUND			2			1	

SIGNAL	Phasing	RTOR
NORTHBOUND	<none>	<none>
SOUTHBOUND	Split	Auto
WESTBOUND	Perm	<none>
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A:	B:
SouthBound	327	101
EastBound	246	0
WestBound	474	0
NorthBound	0	0

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) + A(S/B)

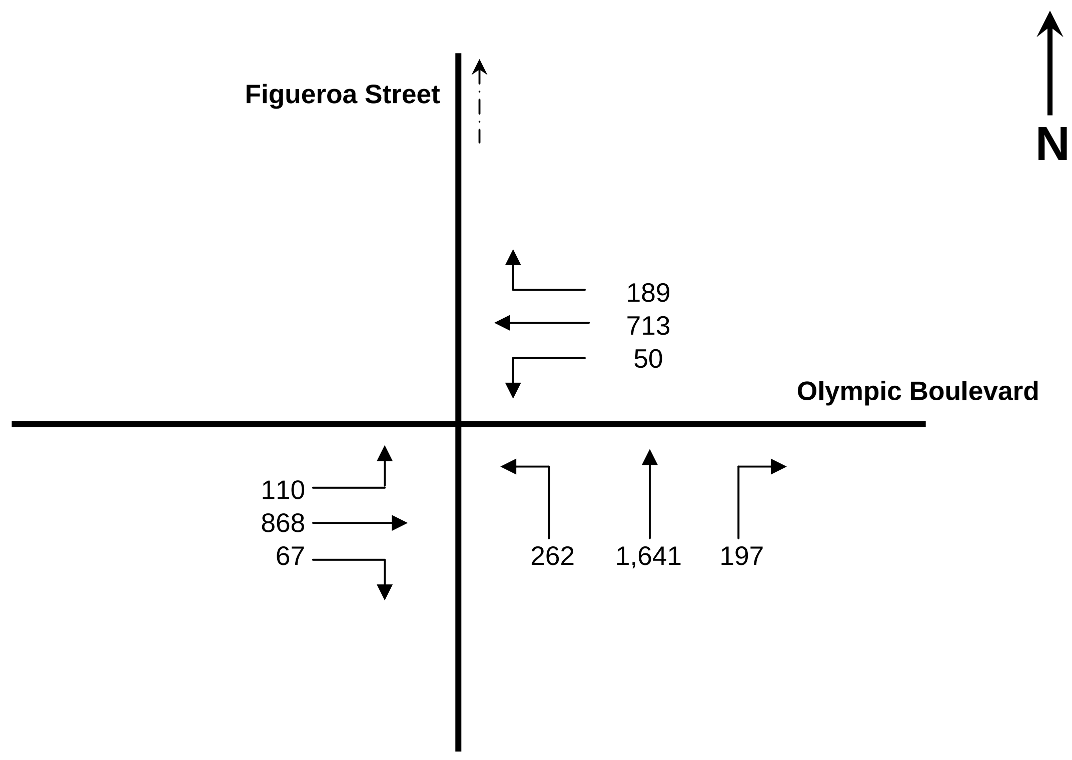
West/East Critical Movements = A(W/B) + B(E/B)

$$V/C = \frac{0 + 327 + 474 + 0}{*1500} = 0.464$$

LOS = A

Intersection 37

Future with Project with TDM Conditions A.M. Peak Hour (Year 2020)



1) Lane Capacity for EB Lefts - 900 vphpl

Number of Lanes - 1

EB Left V/C - $\frac{110}{900}$

= ***0.122***

Lane Capacity for WB Throughs - 1,425 vphpl
Lane Capacity for WB Rights - 900 vphpl

Number of Lanes - 3 throughs
1 right-turn only

WB Through/Right V/C - $\frac{713}{4,275}$ or $\frac{189}{900}$

= ***0.210***

Critical V/C - ***0.122*** **+** ***0.210*** **=** **0.332**

<u>or</u>

Lane Capacity for WB Lefts - 1,425 vphpl

Number of Lanes - 1

WB Left V/C - $\frac{50}{1,425}$

= ***0.035***

Lane Capacity for EB Throughs/Rights - 1,425 vphpl

Number of Lanes - 3 throughs
1 right-turn only

EB Through/Right V/C - $\frac{868}{4,275}$ or $\frac{67}{1,425}$

= ***0.203***

Critical V/C - ***0.035*** **+** ***0.203*** **=** **0.238**

2) Lane Capacity for NB Throughs - 900 vphpl
Lane Capacity for NB Left- and Right-turns - 1,425 vphpl

Number of Lanes - 1 left-turn only
3 throughs
1 right-turn only

Critical V/C - $\frac{1,641}{2,700}$ or $\frac{262}{1,425}$ or $\frac{197}{1,425}$

= **0.608**

Intersection V/C = 0.940 — 0.100 = 0.840 LOS D

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January 25, 2011 ,Tuesday 12:51:05 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Glendale Blvd | W/E: Temple St | I/S No: 38

AM/PM: AM | Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

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	58	628	14	252	1850	152	65	607	184	202	657	143
AMBIENT												
RELATED												
PROJECT												
TOTAL	58	628	14	252	1850	152	65	607	184	202	657	143

	NORTHBOUND							SOUTHBOUND							WESTBOUND							EASTBOUND						
LANE	1		1		1			1		1		1			1		1		1			1		1		1		

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	Auto	Perm	Auto	Prot-Fix	Auto	Prot-Fix	Auto

Critical Movements Diagram

	A	B
SouthBound	1001	252
EastBound	400	202
WestBound	396	65
NorthBound	321	58

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

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

Results

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

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

$$V/C = \frac{58 + 1001 + 396 + 202}{*1425} = 1.093$$

LOS = F

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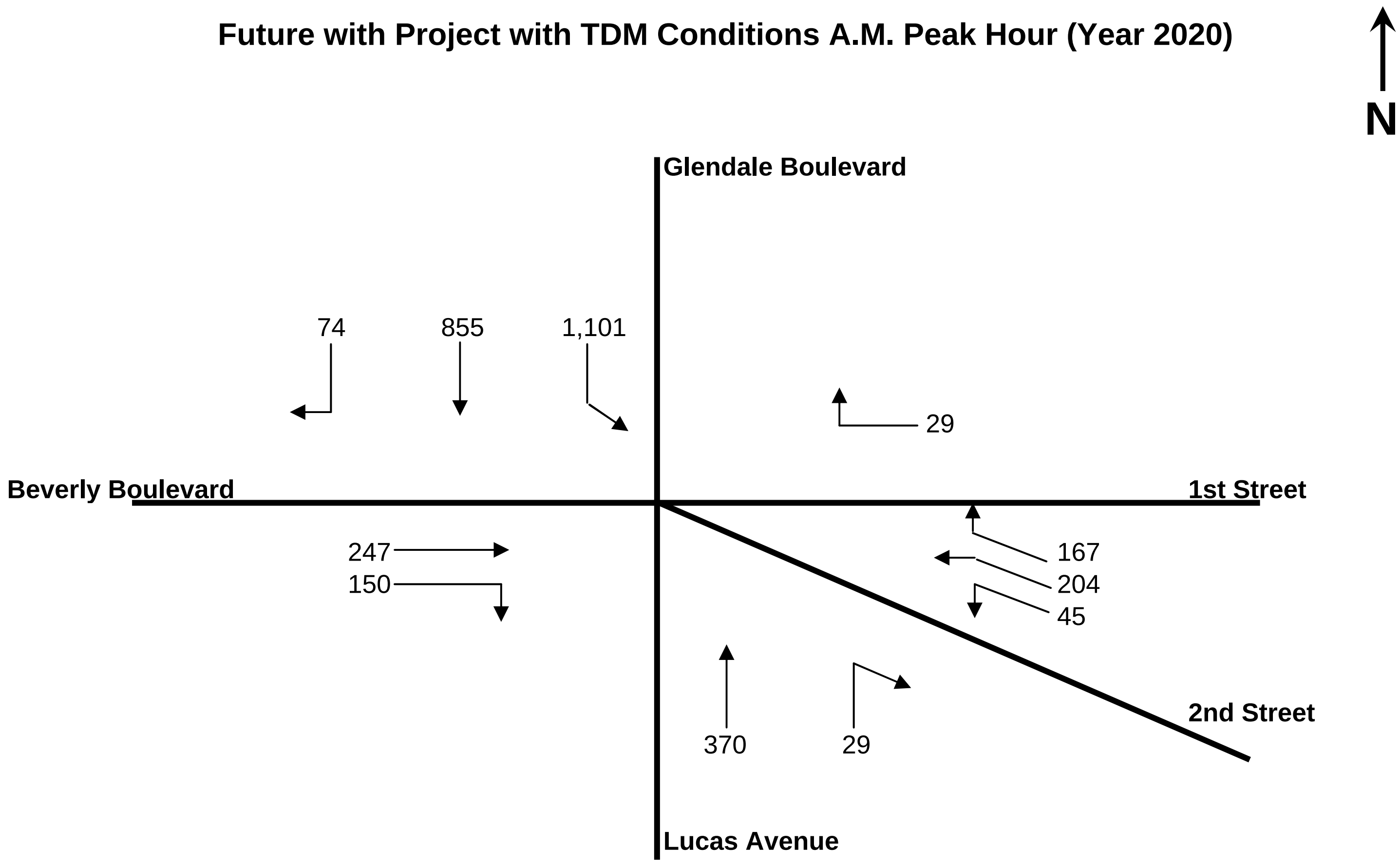
Intersection 39

Future with Project with TDM Conditions A.M. Peak Hour (Year 2020)



Phase 1) *Glendale Boulevard and Lucas Avenue - North-South Throughs and Rights*

$$\frac{370 + 29}{2}$$

&

$$\frac{74}{1} \quad \& \quad \frac{855}{1}$$

= **200**

Phase 2) *Glendale Boulevard, 1st Street, and 2nd Street - Southbound Lefts, Throughs, and Rights, and*
a.) Westbound Rights on 1st Street
b.) Westbound Rights on 2nd Street

a.) $\frac{29}{1}$

$$\& \left\{ \frac{855}{1} - 200 \right\} \& \left\{ \frac{1,101}{2} \right\}$$

= **29**

b.) $\left\{ \frac{1,101}{2} - 29 \right\}$

$$\text{or} \left\{ \frac{855}{1} - 200 - 29 \right\}$$

$$\& \quad \frac{167}{2}$$

= **626**

Phase 3) *2nd Street - Westbound Lefts, Throughs, and Rights*

$$\left\{ \frac{167}{2} - 626 \right\}$$

$$\& \left\{ \frac{204 + 45}{1} \right\}$$

= **0**

Phase 4) *Beverly Boulevard and 2nd Street - Westbound Lefts and Throughs, and Eastbound Throughs and Rights*

$$\frac{247 + 150}{2}$$

$$\text{or} \left\{ \frac{204 + 45}{1} \right\} - 0$$

= **199**

Critical Volumes = 200 + 29 + 626 + 0 + 199

= 1,054

V/C = $\frac{\mathbf{1,054}}{\mathbf{1,375}}$ **— 0.100 = 0.667 LOS B**

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Lucas Ave W/E: 3rd St I/S No: 40

AM/PM: AM Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

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	140	322	124	131	636	139	74	887	90	171	1200	106
AMBIENT												
RELATED												
PROJECT												
TOTAL	140	322	124	131	636	139	74	887	90	171	1200	106

LANE

	NB	SB	WB	EB
LT	1	1	1	1
LT/TH				
TH	2	1	2	2
LT/TH/RT				
TH/RT		1		
RT	1		1	1
LT/RT				

SIGNAL

	Phasing	RTOR
NB	Perm	Auto
SB	Perm	Auto
WB	Perm	Auto
EB	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	388	131
EastBound	600	171
WestBound	444	74
NorthBound	161	140

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)

$$V/C = \frac{140 + 388 + 74 + 600}{*1500} = 0.731$$

LOS = C

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January 25, 2011 ,Tuesday 12:51:05 PM

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INTERSECTION DATA SUMMARY SHEET

N/S: Lucas Ave W/E: 6th St I/S No: 41

AM/PM: AM Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

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	53	204	19	58	360	210	63	801	41	184	1161	195
AMBIENT												
RELATED												
PROJECT												
TOTAL	53	204	19	58	360	210	63	801	41	184	1161	195

LANE	1	2	3	4	5	6	7
NORTHBOUND				1			
SOUTHBOUND				1			
WESTBOUND	1		2			1	
EASTBOUND	1		1		1		

SIGNAL	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	628	58
EastBound	678	184
WestBound	401	63
NorthBound	276	53

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

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

Results

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

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

$$V/C = \frac{53 + 628 + 63 + 678}{*1500} = 0.878$$

LOS = D

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January 25, 2011 ,Tuesday 12:51:05 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Lucas Ave | W/E: Wilshire Blvd | I/S No: 42

AM/PM: AM | Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	59	167	71	63	278	77	106	655	98	56	1079	72
AMBIENT												
RELATED												
PROJECT												
TOTAL	59	167	71	63	278	77	106	655	98	56	1079	72

LANE

	NB	SB	WB	EB
LT				
LT/TH			1	1
TH			1	1
LT/TH/RT	1	1		
TH/RT				
RT			1	1
LT/RT				

SIGNAL

	NB		SB		WB		EB	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	418	63
EastBound	652	56
WestBound	646	106
NorthBound	297	59

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)

$$V/C = \frac{59 + 418 + 106 + 652}{*1500} = 0.753$$

LOS = C

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CalcaDB

January 25, 2011 ,Tuesday 12:51:20 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave | W/E: US 101 NB Ramps | I/S No: 1

AM/PM: PM | Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

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	1107	1053	0	0	752	374	0	0	0	120	0	677
AMBIENT												
RELATED												
PROJECT												
TOTAL	1107	1053	0	0	752	374	0	0	0	120	0	677

LANE							
NORTHBOUND	1		2				
SOUTHBOUND			2			1	
WESTBOUND							
EASTBOUND						1	1

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	Prot-Fix	<none>	Perm	OLA	<none>	<none>	Split	Auto

Critical Movements Diagram

	A	B
SouthBound	376	0
EastBound	0	120
WestBound	0	0
NorthBound	527	1107

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

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

Results

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

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

$$V/C = \frac{1107 + 376 + 0 + 120}{*1425} = 1.055$$

LOS = F

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CalcaDB

January 25, 2011 ,Tuesday 12:51:20 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Hope St/US 101 SB Ramps   W/E: Temple St   I/S No: 2

AM/PM: PM   Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

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	232	410	214	130	545	17	147	995	259	557	899	78
AMBIENT												
RELATED												
PROJECT												
TOTAL	232	410	214	130	545	17	147	995	259	557	899	78

LANE	NB 1	NB 2	NB 3	NB 4	NB 5	NB 6	NB 7	SB 1	SB 2	SB 3	SB 4	SB 5	SB 6	SB 7	WB 1	WB 2	WB 3	WB 4	WB 5	WB 6	WB 7	EB 1	EB 2	EB 3	EB 4	EB 5	EB 6	EB 7
	1		1		1			1		1		1			1		2			1		1		1		1		

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	Perm	Auto	Perm	Auto	Prot-Fix	Auto	Prot-Fix	Auto

Critical Movements Diagram

	A	B
SouthBound	281	130
EastBound	489	557
WestBound	498	147
NorthBound	312	232

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)

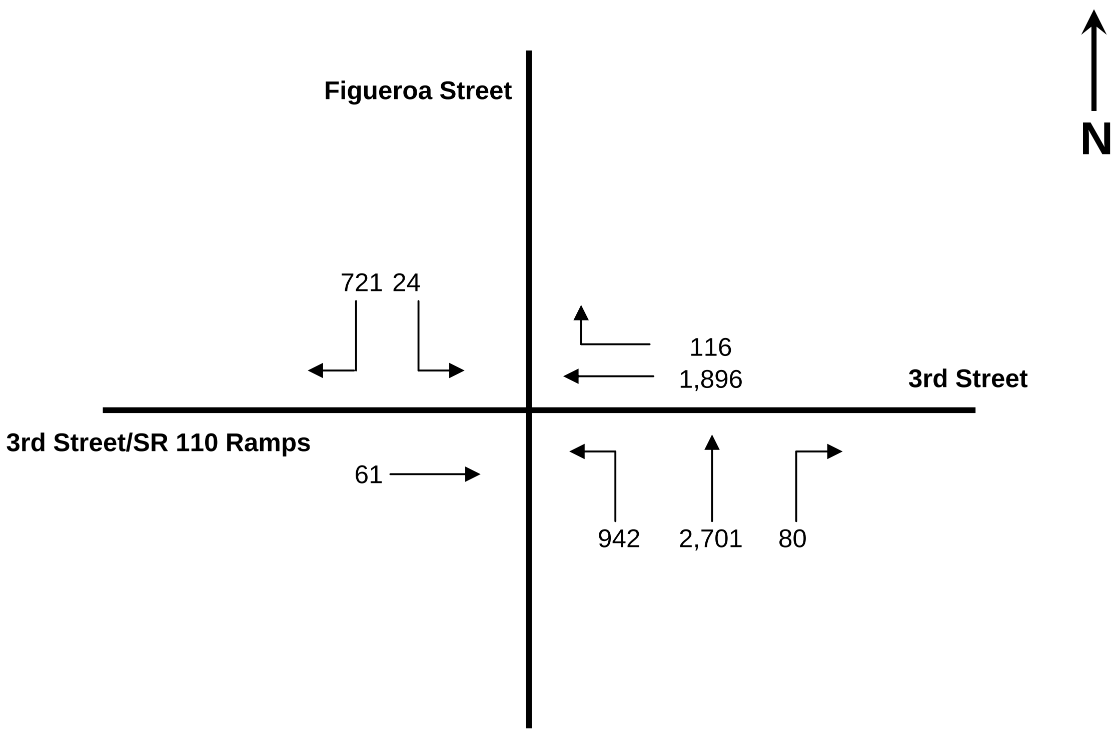
West/East Critical Movements = A(W/B) + B(E/B)

$$V/C = \frac{232 + 281 + 498 + 557}{*1425} = 1.030$$

LOS = F

Intersection 3

Future with Project with TDM Conditions P.M. Peak Hour (Year 2020)



1) Lane Capacity for WB Throughs - 900 vphpl

Number of Lanes - 5

WB Through V/C - $\frac{1,896}{4,500}$

= **0.421**

or

Lane Capacity for WB Rights - 1,425 vphpl

Number of Lanes - 1

WB Right V/C - $\frac{116}{1,425}$

= **0.081**

or

Lane Capacity for EB Throughs - 1,425 vphpl

Number of Lanes - 2

EB Through V/C - $\frac{61}{2,850}$

= **0.021**

2) Lane Capacity for NB Lefts - 900 vphpl

Number of Lanes - 3

NB Left V/C - $\left\{\frac{942 \quad x \quad 0.37}{900}\right\}$

= ***0.387***

Lane Capacity for SB Rights - 1,425 vphpl

Number of Lanes - 2

SB Right V/C - $\left\{\frac{721 \quad x \quad 0.55}{1,425}\right\}$

= ***0.278***

Critical V/C - ***0.387*** **+** ***0.278*** **=** **0.665**

or

Lane Capacity for NB Throughs & Rights - 1,425 vphpl

Number of Lanes - 2 throughs
1 through/right

NB Through/Right V/C - $\left\{\frac{2,701 \quad + \quad 80}{4,275}\right\}$ or $\frac{80}{1,425}$

= **0.651**

Intersection V/C = 1.086 — 0.100 = 0.986 LOS E

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CalcaDB

January 25, 2011 ,Tuesday 12:51:20 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St W/E: 3rd St I/S No: 4

AM/PM: PM Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

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	146	226	0	0	514	512	127	1330	67	0	0	156
AMBIENT												
RELATED												
PROJECT												
TOTAL	146	226	0	0	514	512	127	1330	67	0	0	156

LANE							
NORTHBOUND	1		2				
SOUTHBOUND			2			1	
WESTBOUND	1		3		1		
EASTBOUND						1	

SIGNAL	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
	Perm	<none>	Perm	Auto	Split	Auto	<none>	Free

Critical Movements Diagram

	A	B
SouthBound	512	0
EastBound	0	0
WestBound	349	127
NorthBound	113	146

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) + A(E/B)

$$V/C = \frac{146 + 512 + 349 + 0}{*1500} = 0.601$$

LOS = B

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INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave | W/E: 3rd St | I/S No: 5

AM/PM: PM | Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

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	23	333	0	0	963	75	0	0	0	163	0	127
AMBIENT												
RELATED												
PROJECT												
TOTAL	23	333	0	0	963	75	0	0	0	163	0	127

LANE	1		2							1		1										1					2	

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Perm	Auto	Perm	Auto	<none>	<none>	Split	Auto

Critical Movements Diagram

	A	B
SouthBound	519	0
EastBound	70	163
WestBound	0	0
NorthBound	167	23

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)

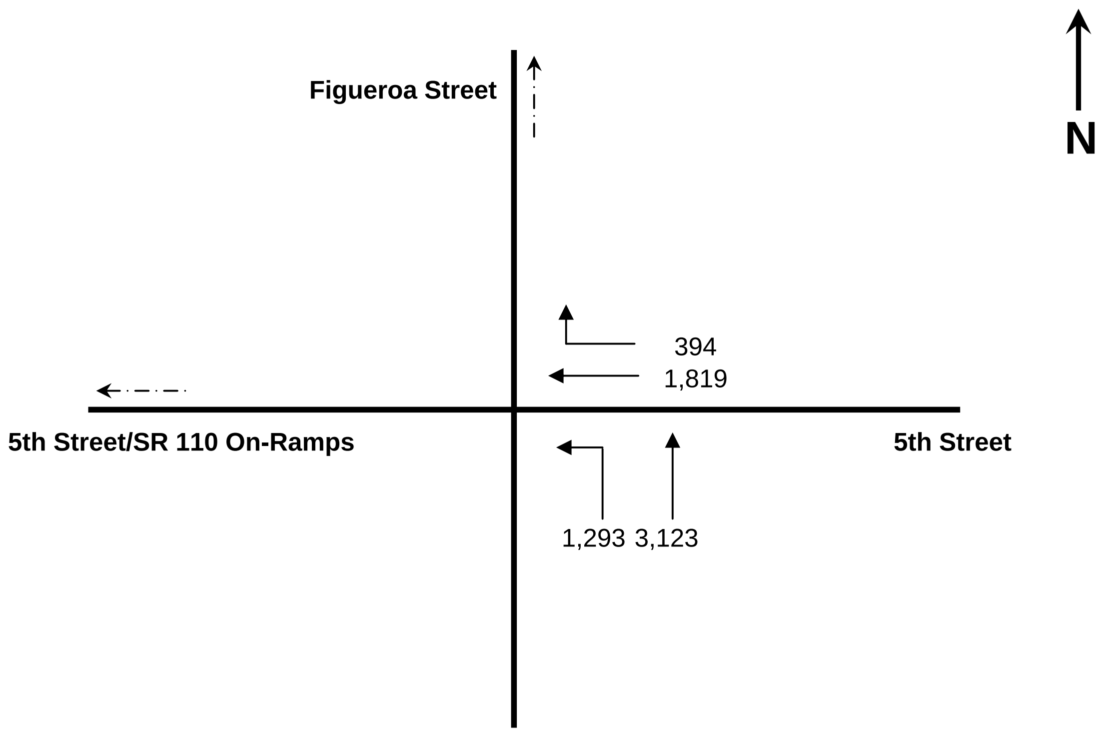
West/East Critical Movements = A(W/B) + B(E/B)

$$V/C = \frac{23 + 519 + 0 + 163}{*1500} = 0.400$$

LOS = A

Intersection 6

Future with Project with TDM Conditions P.M. Peak Hour (Year 2020)



1) Lane Capacity for WB Direction - 900 vphpl

Number of Lanes - 7

Critical V/C - $\left\{\frac{1,819 + 394}{6,300}\right\}$

= **0.351**

2) Lane Capacity for NB Throughs - 900 vphpl

Number of Lanes - 4

Critical V/C - $\frac{3,123}{3,600}$

= **0.868**

<u>or</u>

Lane Capacity for NB Lefts - 900 vphpl

Number of Lanes - 3

Critical V/C - $\frac{1,293}{2,700}$

= **0.479**

Intersection V/C = 1.219 — 0.100 = 1.119 LOS F

CP_TDM~2

CalcaDB

January 25, 2011 ,Tuesday 12:51:20 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St | W/E: 5th St | I/S No: 7

AM/PM: PM | Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

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	0	0	0	0	1317	574	229	1629	0	0	0	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	0	1317	574	229	1629	0	0	0	0

LANE	NORTHBOUND	SOUTHBOUND	WESTBOUND	EASTBOUND
		3, 1, 1	1, 5	

	NORTHBOUND Phasing	NORTHBOUND RTOR	SOUTHBOUND Phasing	SOUTHBOUND RTOR	WESTBOUND Phasing	WESTBOUND RTOR	EASTBOUND Phasing	EASTBOUND RTOR
SIGNAL	<none>	<none>	Split	Auto	Split	<none>	<none>	<none>

Critical Movements Diagram

SouthBound
A: 378
B: 0

EastBound
A: 0
B: 0

WestBound
A: 326
B: 229

NorthBound
A: 0
B: 0

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

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

Results

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

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

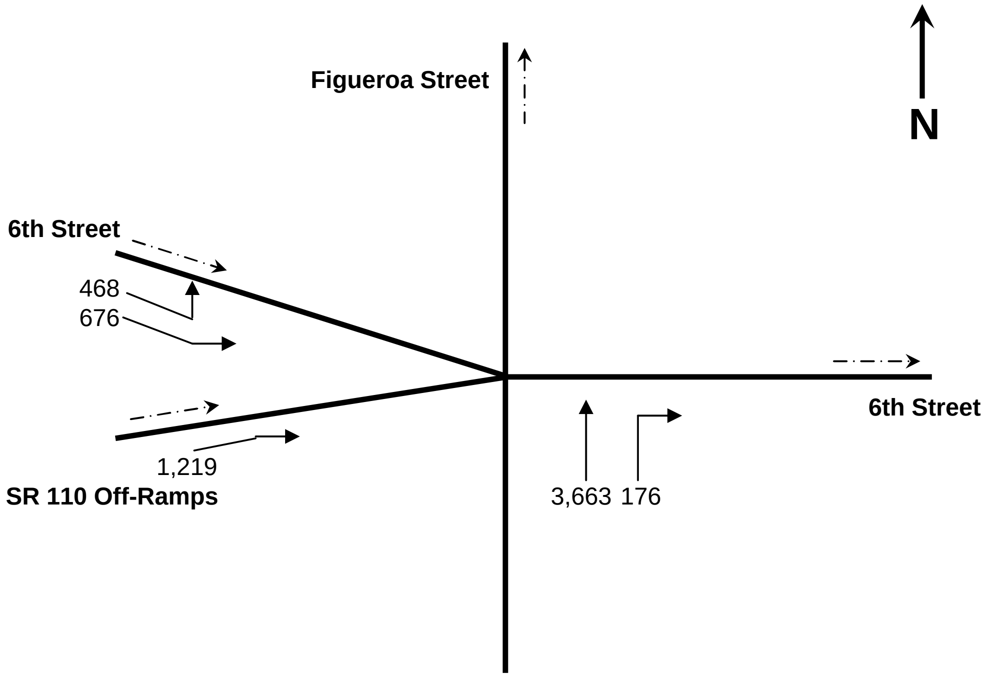
$$V/C = \frac{0 + 378 + 326 + 0}{*1500} = 0.399$$

LOS = A

Developed by Chun Wong, 12/94

Intersection 8

Future with Project with TDM Conditions P.M. Peak Hour (Year 2020)



1) Lane Capacity for EB Direction - 1,500 vphpl

Number of Lanes -
1 left-turn lane from 6th Street
1 shared left/through lane from 6th Street
1 through lane from 6th Street
3 through lanes from SR 110 Off-Ramps

Critical V/C - $\left\{\frac{676 + 468}{4,500}\right\}$ or $\frac{1,219}{4,500}$

= **0.271**

2) Lane Capacity for NB Throughs - 900 vphpl

Number of Lanes - 5

Critical V/C - $\frac{3,663}{4,500}$

= **0.814**

<u>or</u>

Lane Capacity for NB Rights - 1,500 vphpl

Number of Lanes - 1

Critical V/C - $\frac{176}{1,500}$

= **0.117**

Intersection V/C = 1.085 — 0.100 = 0.985 LOS E

CP_TDM~2

January 25, 2011 ,Tuesday 12:51:20 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St   W/E: 6th St   I/S No: 9

AM/PM: PM   Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

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	0	0	0	365	1248	0	0	0	0	0	1535	714
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	365	1248	0	0	0	0	0	1535	714

LANE							
NORTHBOUND							
SOUTHBOUND	2		4				
WESTBOUND							
EASTBOUND			3		1	1	

SIGNAL	Phasing	RTOR
NORTHBOUND	<none>	<none>
SOUTHBOUND	Split	<none>
WESTBOUND	<none>	<none>
EASTBOUND	Split	Auto

Critical Movements Diagram

	A	B
SouthBound	312	201
EastBound	450	0
WestBound	0	0
NorthBound	0	0

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) + A(S/B)

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

$$V/C = \frac{0 + 312 + 0 + 450}{*1500} = 0.438$$

LOS = A

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CP_TDM~2

CalcaDB

January 25, 2011 ,Tuesday 12:51:20 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Alvarado St W/E: Wilshire Blvd I/S No: 10

AM/PM: PM Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

COUNT DATE: STUDY DATE: GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	1175	99	0	951	124	117	1266	98	100	1167	57
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	1175	99	0	951	124	117	1266	98	100	1167	57

LANE (lane types: LT, LT/TH, TH, LT/TH/RT, TH/RT, RT, LT/RT)

	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND			2		1		
SOUTHBOUND			2		1		
WESTBOUND	1		1		1		
EASTBOUND	1		1		1		

SIGNAL

	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Perm	Auto
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	358	0
EastBound	612	100
WestBound	682	117
NorthBound	425	0

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

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

Results

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

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

$$V/C = \frac{425 + 0 + 682 + 100}{*1500} = 0.735$$

LOS = C

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CP_TDM~2

January 25, 2011 ,Tuesday 12:51:20 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S:	Beaudry Ave	W/E:	Wilshire Blvd	I/S No:	11
AM/PM:	PM	Comments:	FUTURE WITH PROJECT WITH TDM (YEAR 2020)		
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	5	0	35	248	50	619	9	843	0	0	1026	32
AMBIENT												
RELATED												
PROJECT												
TOTAL	5	0	35	248	50	619	9	843	0	0	1026	32

LANE							
NORTHBOUND							1
SOUTHBOUND	1			1		1	
WESTBOUND		1	1				
EASTBOUND			2			1	

SIGNAL	Phasing	RTOR
NORTHBOUND	Split	Auto
SOUTHBOUND	Split	Auto
WESTBOUND	Perm	<none>
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A:	B:
SouthBound	335	248
EastBound	513	0
WestBound	449	9
NorthBound	40	5

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

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

Results

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

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

$$V/C = \frac{40 + 335 + 9 + 513}{*1425} = 0.559$$

LOS = A

Developed by Chun Wong, 12/94

CP_TDM~2

CalcaDB

January 25, 2011 ,Tuesday 12:51:20 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Francisco St   W/E: Wilshire Blvd   I/S No: 12

AM/PM: PM   Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

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	143	0	361	55	10	30	31	770	11	14	1195	129
AMBIENT												
RELATED												
PROJECT												
TOTAL	143	0	361	55	10	30	31	770	11	14	1195	129

LANE							
NORTHBOUND		1				1	
SOUTHBOUND				1			
WESTBOUND	1		1		1		
EASTBOUND	1		1		1		

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A:	B:
SouthBound	95	55
EastBound	662	14
WestBound	391	31
NorthBound	361	143

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

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

Results

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

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

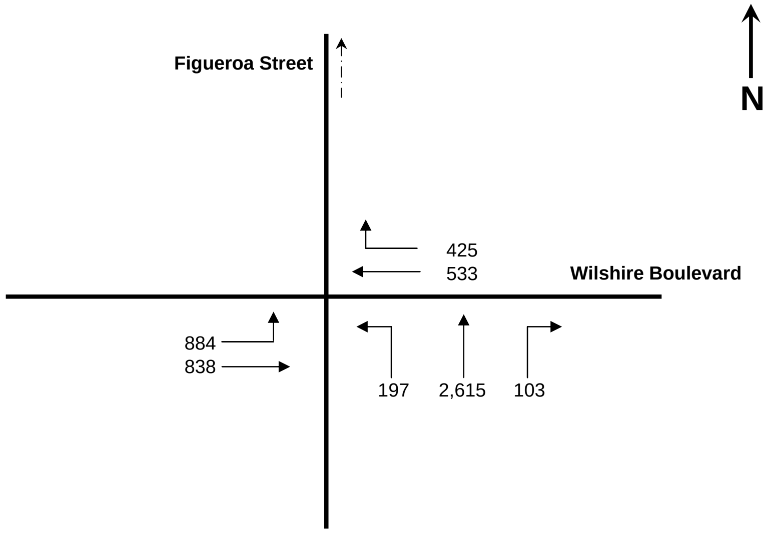
$$V/C = \frac{361 + 55 + 31 + 662}{*1500} = 0.669$$

LOS = B

Developed by Chun Wong, 12/94

Intersection 13

Future with Project with TDM Conditions P.M. Peak Hour (Year 2020)



1) Lane Capacity for EB Lefts - 900 vphpl

Number of Lanes - 2

EB Left V/C - $\left\{\dfrac{884 \quad X \quad 0.55}{900}\right\}$

= ***0.54***

Lane Capacity for WB Direction - 1,425 vphpl

Number of Lanes -
1 through
1 through/right
1 right-turn only

WB V/C - $\left\{\dfrac{533 \quad + \quad 425}{4,275}\right\}$ or $\dfrac{533}{2,850}$ or $\dfrac{425}{2,850}$

= ***0.224***

Critical V/C - ***0.54*** **+** ***0.224*** **=** **0.764**

<u>or</u>

Lane Capacity for EB Throughs - 1,425 vphpl

Number of Lanes - 2

Critical V/C - $\dfrac{838}{2,850}$

= **0.294**

2) Lane Capacity for NB Direction - 900 vphpl

Number of Lanes -
1 left/through
3 throughs
1 through/right

Critical V/C - $\left\{\dfrac{197 \quad + \quad 2,615 \quad + \quad 103}{4,500}\right\}$

or $\dfrac{197}{900}$

or $\dfrac{103}{900}$

= **0.648**

Intersection V/C = 1.412 — 0.100 = 1.312 LOS F

Intersection 14

Future with Project with TDM Conditions P.M. Peak Hour (Year 2020)

1) Lane Capacity for WB Direction - 900 vphpl

Number of Lanes - 2

WB Direction V/C - $\left\{\dfrac{553 + 51}{1{,}800}\right\}$ or $\dfrac{51}{900}$

$= \mathbf{0.336}$

Lane Capacity for EB Direction - 1,500 vphpl

Number of Lanes - 2

EB Direction V/C - $\left\{\dfrac{570 + 434}{3{,}000}\right\}$ or $\dfrac{434}{1{,}500}$

$= \mathbf{0.335}$

2) Lane Capacity for SB Throughs and Lefts - 1,500 vphpl

Number of Lanes - 3 throughs
1 left-turn only

SB Through V/C - $\dfrac{1{,}719}{4{,}500}$

$= \mathbf{0.382}$

SB Left V/C - $\dfrac{67}{1{,}500}$

$= \mathbf{0.045}$

Lane Capacity for SB Rights - 900 vphpl

Number of Lanes - 1

SB Right V/C - $\dfrac{429}{900}$

$= \mathbf{0.477}$

Intersection V/C = 0.813 − 0.100 = 0.713 LOS C

CP_TDM~2

CalcaDB

January 25, 2011 ,Tuesday 12:51:20 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave W/E: Wilshire Blvd I/S No: 15

AM/PM: PM Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

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	0	0	0	5	1439	169	42	49	0	0	6	571
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	5	1439	169	42	49	0	0	6	571

LANE	1	2	3	4	5	6	7
NORTHBOUND							
SOUTHBOUND		1	2		1		
WESTBOUND		1					
EASTBOUND					1	1	

SIGNAL	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
	<none>	<none>	Split	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	403	5
EastBound	289	0
WestBound	91	42
NorthBound	0	0

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) + A(S/B)

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

$$V/C = \frac{0 + 403 + 42 + 289}{*1500} = 0.419$$

LOS = A

CalcaDB

January 25, 2011 ,Tuesday 12:51:20 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Alvarado St
W/E: 7th St
I/S No: 16
AM/PM: PM
Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)
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	0	1058	80	0	938	69	0	833	109	0	760	115
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	1058	80	0	938	69	0	833	109	0	760	115

	NB							SB							WB							EB						
LANE			2		1					2		1					1		1					1		1		

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

SouthBound
A: 336
B: 0

EastBound
A: 438
B: 0

WestBound
A: 471
B: 0

NorthBound
A: 379
B: 0

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

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

Results

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

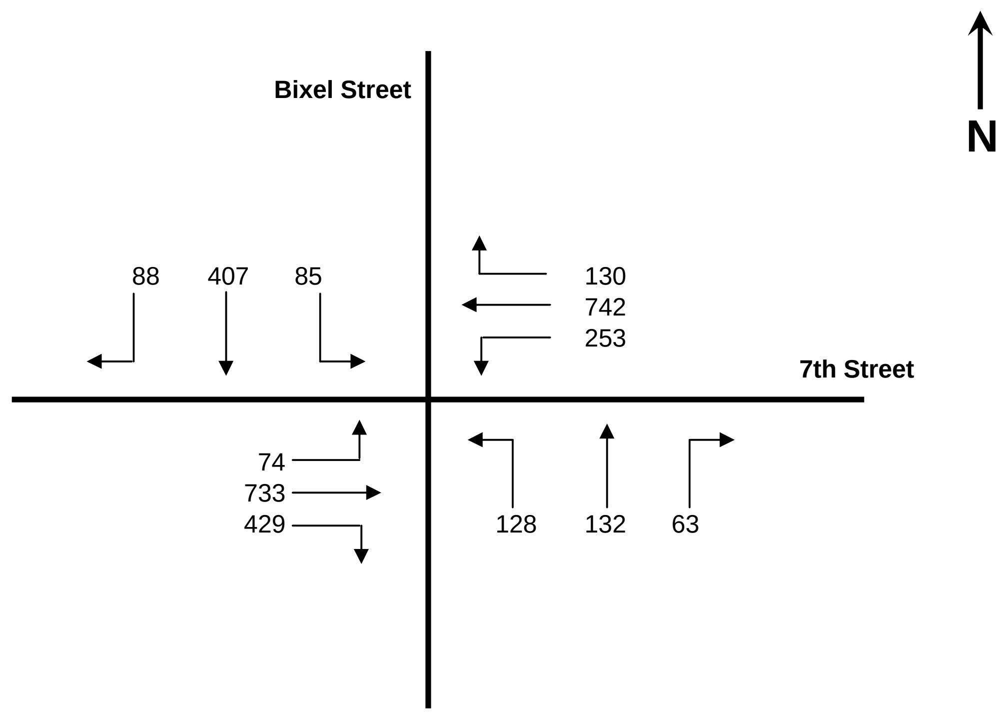
West/East Critical Movements = A(W/B) + B(E/B)

$$V/C = \frac{379 + 0 + 471 + 0}{*1500} = 0.497$$

LOS = A

Intersection 17

Future with Project with TDM Conditions P.M. Peak Hour (Year 2020)



1) Lane Capacity for WB Lefts - 900 vphpl

Number of Lanes - 1

WB Left V/C - $\frac{253}{900}$

= ***0.281***

Lane Capacity for EB Throughs - 1,500 vphpl

Number of Lanes - 1

EB Through V/C - $\frac{733}{1,500}$

= ***0.489***

Lane Capacity for EB Rights - 900 vphpl

Number of Lanes - 1

EB Right V/C - $\frac{429}{900}$

= ***0.477***

Critical V/C - ***0.281*** **+** ***0.489***

= 0.770

<u>or</u>

Lane Capacity for EB Lefts - 1,500 vphpl

Number of Lanes - 1

EB Left V/C - $\frac{74}{1,500}$

= ***0.049***

Lane Capacity for WB Throughs/Rights - 1,500 vphpl

Number of Lanes - 2

WB Through V/C - $\left\{\frac{742 + 130}{3,000}\right\}$

= ***0.291***

Critical V/C - ***0.049*** **+** ***0.291***

= 0.340

2) Lane Capacity for NB & SB Direction - 1,500 vphpl

Number of Lanes - 1 left
1 through/right

Critical V/C - $\left\{\frac{128 + 407 + 88}{1,500}\right\}$

or $\left\{\frac{85 + 132 + 63}{1,500}\right\}$

= **0.415**

Intersection V/C = 1.185 — 0.100 = 1.085 LOS F

CalcaDB

January 25, 2011 ,Tuesday 12:51:20 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Francisco St | W/E: 7th St | I/S No: 18

AM/PM: PM | Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

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	175	51	386	233	48	150	81	893	81	23	690	34
AMBIENT												
RELATED												
PROJECT												
TOTAL	175	51	386	233	48	150	81	893	81	23	690	34

LANE

	NORTHBOUND							SOUTHBOUND							WESTBOUND							EASTBOUND						
LANE		1				1		1				1			1		1		1			1		1		1		

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	198	233
EastBound	362	23
WestBound	487	81
NorthBound	386	175

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)

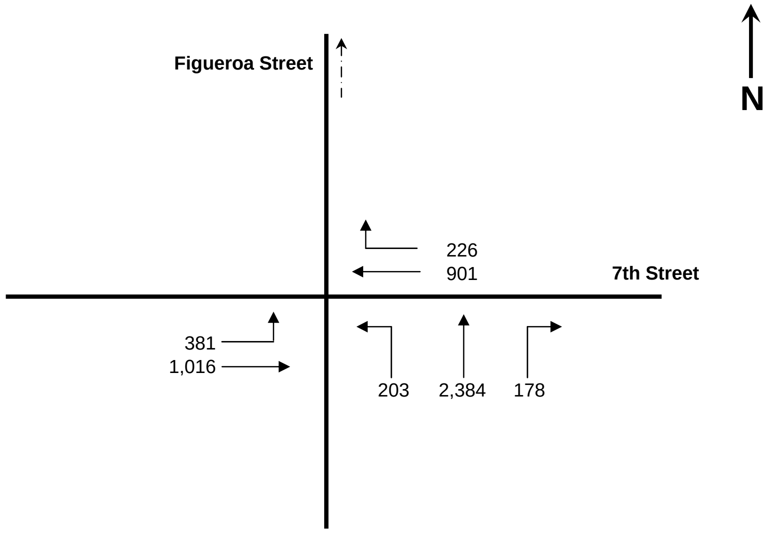
West/East Critical Movements = A(W/B) + B(E/B)

$$V/C = \frac{386 + 233 + 487 + 23}{*1500} = 0.683$$

LOS = B

Intersection 19

Future with Project with TDM Conditions P.M. Peak Hour (Year 2020)



1) Lane Capacity for EB Lefts - 900 vphpl

Number of Lanes - 2

EB Left V/C - $\left\{ \frac{381 \quad X \quad 0.55}{900} \right\}$

= ***0.233***

Lane Capacity for WB Direction - 1,425 vphpl

Number of Lanes - 2 throughs
1 right-turn only

WB V/C - $\frac{901}{2,850}$ or $\frac{226}{1,425}$

= ***0.316***

Critical V/C - ***0.233*** **+** ***0.316*** **=** **0.549**

<u>or</u>

Lane Capacity for EB Throughs - 1,425 vphpl

Number of Lanes - 2

Critical V/C - $\frac{1,016}{2,850}$

= **0.356**

2) Lane Capacity for NB Throughs and Through/Left - 900 vphpl
Lane Capacity for NB Through/Right - 450 vphpl

Number of Lanes - 1 left/through
3 throughs
1 through/right

Critical V/C - $\left\{ \frac{203 \quad + \quad 2,384 \quad + \quad 178}{4,050} \right\}$

or $\frac{203}{900}$

or $\frac{178}{450}$

= **0.683**

Intersection V/C = 1.232 — 0.100 = 1.132 LOS F

CalcaDB

January 25, 2011 ,Tuesday 12:51:20 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St | W/E: 7th St | I/S No: 20

AM/PM: PM | Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

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	0	0	0	85	2186	200	143	883	0	0	958	242
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	85	2186	200	143	883	0	0	958	242

LANE	1	2	3	4	5	6	7
NORTHBOUND							
SOUTHBOUND		1	2		1		
WESTBOUND		1	2				
EASTBOUND			1		1		

SIGNAL	Phasing	RTOR
NORTHBOUND	<none>	<none>
SOUTHBOUND	Split	Auto
WESTBOUND	Perm	<none>
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A:	B:
SouthBound	618	85
EastBound	600	0
WestBound	442	143
NorthBound	0	0

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

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

Results

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

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

$$V/C = \frac{0 + 618 + 143 + 600}{*1500} = 0.837$$

LOS = D

CP_TDM~2

CalcaDB

January 25, 2011 ,Tuesday 12:51:20 PM

INTERSECTION DATA SUMMARY SHEET

N/S:	Olive Ave	W/E:	7th St	I/S No:	21
AM/PM:	PM	Comments:	FUTURE WITH PROJECT WITH TDM (YEAR 2020)		
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	110	1257	165	0	0	0	0	831	239	0	1106	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	110	1257	165	0	0	0	0	831	239	0	1106	0

LANE NORTHBOUND		1	2		1		
LANE SOUTHBOUND							
LANE WESTBOUND			2			1	
LANE EASTBOUND			2				

	NORTHBOUND Phasing	NORTHBOUND RTOR	SOUTHBOUND Phasing	SOUTHBOUND RTOR	WESTBOUND Phasing	WESTBOUND RTOR	EASTBOUND Phasing	EASTBOUND RTOR
SIGNAL	Split	Auto	<none>	<none>	Perm	Auto	Perm	<none>

Critical Movements Diagram

	A:	B:
SouthBound	0	0
EastBound	553	0
WestBound	416	0
NorthBound	383	110

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

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

Results

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

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

$$V/C = \frac{383 + 0 + 0 + 553}{*1500} = 0.554$$

LOS = A

Developed by Chun Wong, 12/94

CP_TDM~2

CalcaDB

January 25, 2011 ,Tuesday 12:51:20 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Alameda St | W/E: 7th St | I/S No: 22

AM/PM: PM | Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

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	83	811	93	115	956	9	108	656	82	116	1037	168
AMBIENT												
RELATED												
PROJECT												
TOTAL	83	811	93	115	956	9	108	656	82	116	1037	168

LANE	1		1		1		
NORTHBOUND	1		1		1		
SOUTHBOUND	1		1		1		
WESTBOUND	1		1		1		
EASTBOUND	1		1		1		

SIGNAL	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Prot-Fix	Auto
WESTBOUND	Perm	Auto
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	483	115
EastBound	603	116
WestBound	369	108
NorthBound	452	83

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

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

Results

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

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

V/C = (452 + 115 + 108 + 603) / *1425 = 0.827   LOS = D

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CP_TDM~2

CalcaDB

January 25, 2011 ,Tuesday 12:51:20 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Soto St | W/E: 7th St | I/S No: 23

AM/PM: PM | Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	555	947	34	37	743	70	6	35	12	83	53	68
AMBIENT												
RELATED												
PROJECT												
TOTAL	555	947	34	37	743	70	6	35	12	83	53	68

LANE

	↰	↰↑	↑	↰↑↱	↑↱	↱	↰↱
NORTHBOUND	1		1		1		
SOUTHBOUND	1		1		1		
WESTBOUND				1			
EASTBOUND		1				1	

SIGNAL

	Phasing	RTOR
NORTHBOUND	Prot-Fix	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Split	Auto
EASTBOUND	Split	Auto

Critical Movements Diagram

	A	B
SouthBound	407	37
EastBound	136	83
WestBound	53	6
NorthBound	491	555

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) + A(E/B)

$$V/C = \frac{555 + 407 + 53 + 136}{*1375} = 0.767$$

LOS = C

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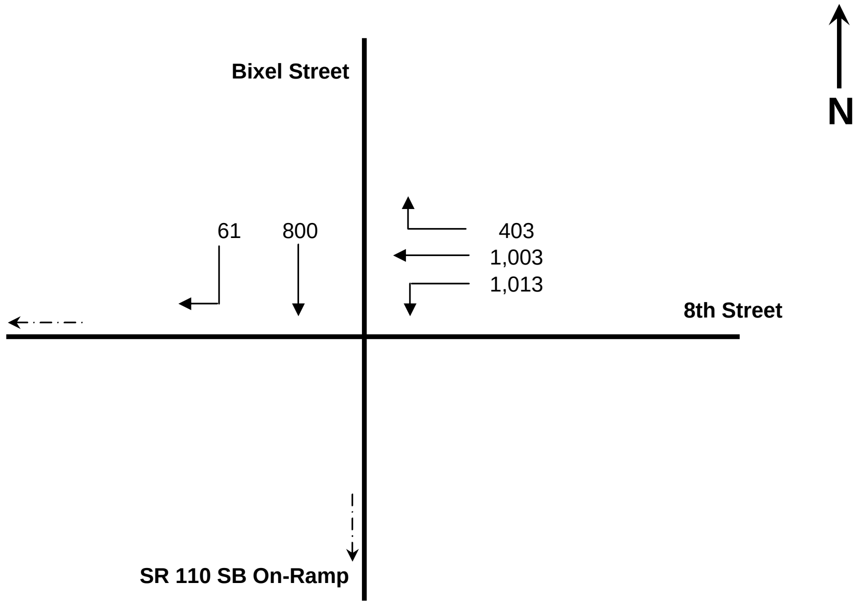
Intersection 24

Future with Project with TDM Conditions P.M. Peak Hour (Year 2020)



1) Lane Capacity for WB Lefts - 750 vphpl

Number of Lanes - 2

WB Left V/C - $\frac{1,013}{1,500}$

= **0.675**

<u>or</u>

Lane Capacity for WB Throughs and Rights - 1,500 vphpl

Number of Lanes - 2 throughs
Number of Lanes - 1 right-turn only

WB Through/Right V/C - $\frac{1,003}{3,000}$ or $\frac{403}{1,500}$

= **0.269**

2) Lane Capacity for SB Rights - 1,500 vphpl

Number of Lanes - 1

SB Right V/C - $\frac{61}{1,500}$

= **0.041**

<u>or</u>

Lane Capacity for SB Throughs - 750 vphpl

Number of Lanes - 2

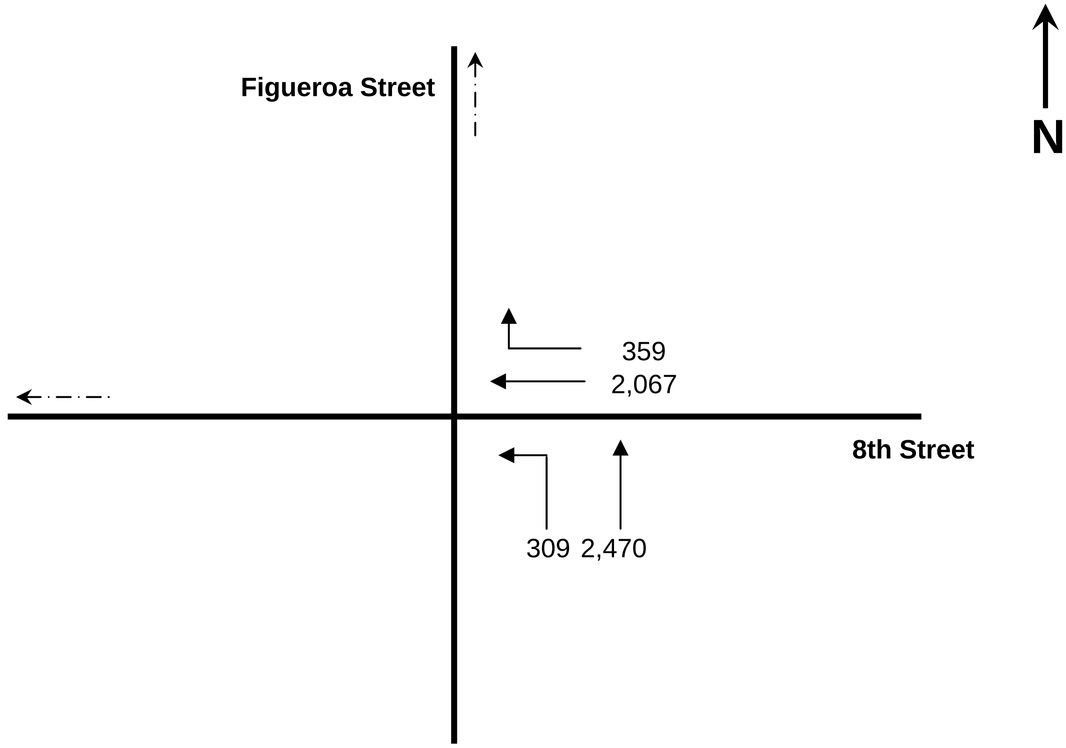
WB Through/Right V/C - $\frac{800}{1,500}$

= **0.533**

Intersection V/C = 1.208 — 0.100 = 1.108 LOS F

Intersection 25

Future with Project with TDM Conditions P.M. Peak Hour (Year 2020)



1) Lane Capacity for WB Direction - 900 vphpl

Number of Lanes - 4 throughs
1 right-turn only

Critical V/C - $\frac{2,067}{3,600}$ or $\frac{359}{900}$

= **0.574**

2) Lane Capacity for NB Direction - 900 vphpl

Number of Lanes - 1 left-turn only
6 throughs

Critical V/C - $\frac{2,470}{5,400}$ or $\frac{309}{900}$

= **0.457**

Intersection V/C = 1.031 — 0.100 = 0.931 LOS E

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CalcaDB

January 25, 2011 ,Tuesday 12:51:20 PM

INTERSECTION DATA SUMMARY SHEET

N/S:	Flower St	W/E:	8th St	I/S No:	26
AM/PM:	PM	Comments:	FUTURE WITH PROJECT WITH TDM (YEAR 2020)		
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	0	0	0	0	1934	497	102	1984	0	0	0	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	0	1934	497	102	1984	0	0	0	0

LANE

	NB							SB							WB							EB						
LANE										4			1			1	3											

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	<none>	<none>	Split	Auto	Split	<none>	<none>	<none>

Critical Movements Diagram

SouthBound
A: 497
B: 0

EastBound
A: 0
B: 0

WestBound
A: 522
B: 102

NorthBound
A: 0
B: 0

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) + A(S/B)

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

$$V/C = \frac{0 + 497 + 522 + 0}{*1500} = 0.609$$

LOS = B

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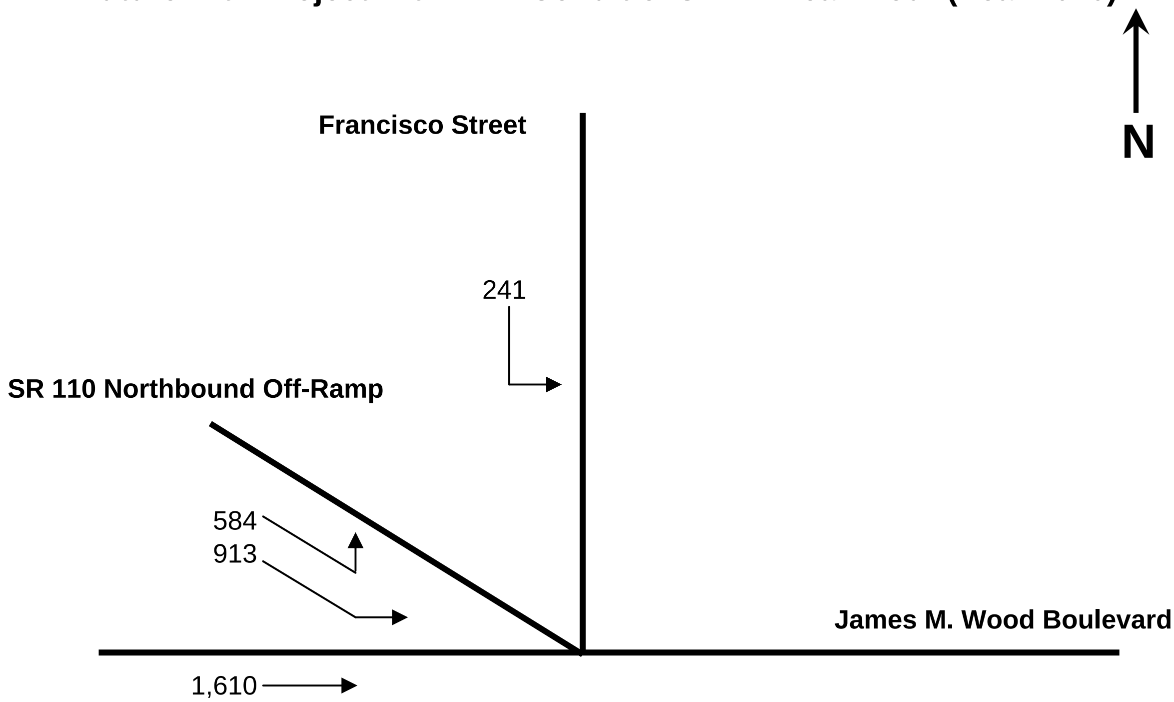
Intersection 27

Future with Project with TDM Conditions P.M. Peak Hour (Year 2020)



1) $\left\{\dfrac{584 \quad + \quad 913}{3}\right\}$

or

$\dfrac{1{,}610}{3}$

= **749**

2) $\dfrac{241}{1}$

= **241**

Critical Volumes = 749 + 241 = 990

V/C = $\dfrac{990}{1{,}500}$ 0.100 = 0.560 LOS A

CP_TDM~2

January 25, 2011 ,Tuesday 12:51:20 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S:	Figueroa St	W/E:	9th St/James M Wood Blvd	I/S No:	28
AM/PM:	PM	Comments:	FUTURE WITH PROJECT WITH TDM (YEAR 2020)		
COUNT DATE:		STUDY DATE:		GROWTH FACTOR:	

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	1511	195	0	0	0	0	0	0	777	1877	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	1511	195	0	0	0	0	0	0	777	1877	0

LANE	1	2	3	4	5	6	7
NORTHBOUND			3		1		
SOUTHBOUND							
WESTBOUND							
EASTBOUND	1	1	3				

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	Split	Auto	<none>	<none>	<none>	<none>	Split	<none>

Critical Movements Diagram

	A:	B:
SouthBound	0	0
EastBound	531	531
WestBound	0	0
NorthBound	427	0

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

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

Results

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

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

$$V/C = \frac{427 + 0 + 0 + 531}{*1500} = 0.569$$

LOS = A

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CP_TDM~2

CalcaDB

January 27, 2011 ,Thursday 11:34:32 AM

INTERSECTION DATA SUMMARY SHEET

N/S:	Cherry St	W/E:	Pico Blvd	I/S No:	29
AM/PM:	PM	Comments:	FUTURE WITH PROJECT WITH TDM (YEAR 2020)		
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	722	671	230	183	0	26	0	896	447	150	657	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	722	671	230	183	0	26	0	896	447	150	657	0

	NB							SB							WB							EB						
LANE	1	1	1			1		2					2				1		1	1		1		3				

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Split	Auto	Split	Auto	Perm	OLA	Perm	<none>

Critical Movements Diagram

	A	B
SouthBound	14	101
EastBound	219	150
WestBound	448	0
NorthBound	464	464

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

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

Results

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

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

$$V/C = \frac{464 + 101 + 448 + 150}{*1425} = 0.746$$

LOS = C

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CP_TDM~2

January 25, 2011 ,Tuesday 12:51:20 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Figueroa St   W/E: Pico Blvd   I/S No: 30

AM/PM: PM   Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

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	160	1547	155	23	324	288	172	846	172	193	625	284
AMBIENT												
RELATED												
PROJECT												
TOTAL	160	1547	155	23	324	288	172	846	172	193	625	284

LANE	NB	SB	WB	EB
LT	1	1	1	1
LT/TH				
TH	3	2	2	2
LT/TH/RT				
TH/RT	1			
RT		1	1	1
LT/RT				

SIGNAL	NB	SB	WB	EB
Phasing	Prot-Fix	Perm	Perm	Prot-Fix
RTOR	Auto	OLA	Auto	OLA

Critical Movements Diagram

	A	B
SouthBound	162	23
EastBound	313	193
WestBound	423	172
NorthBound	426	160

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)

$$V/C = \frac{426 + 23 + 423 + 193}{*1375} = 0.705$$

LOS = C

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January 25, 2011 ,Tuesday 12:51:20 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S:	Hoover St	W/E:	Alvarado St/Alvarado Ter
I/S No:	31	AM/PM:	PM
Comments:	FUTURE WITH PROJECT WITH TDM (YEAR 2020)		
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	0	1150	719	31	957	0	716	0	0	0	0	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	1150	719	31	957	0	716	0	0	0	0	0

	NORTHBOUND							SOUTHBOUND							WESTBOUND							EASTBOUND						
LANE			1		1	1			1	1					1						1							

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	Free	Perm	<none>	Split	Auto	<none>	<none>

Critical Movements Diagram

SouthBound
A: 572
B: 31

EastBound
A: 0
B: 0

WestBound
A: 358
B: 358

NorthBound
A: 623
B: 0

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

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

Results

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

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

$$V/C = \frac{623 + 31 + 358 + 0}{*1500} = 0.605$$

LOS = B

January 25, 2011 ,Tuesday 12:51:20 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St | W/E: Venice Blvd | I/S No: 32

AM/PM: PM | Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

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	0	0	0	36	1449	130	66	500	0	0	371	44
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	36	1449	130	66	500	0	0	371	44

LANE							
NORTHBOUND							
SOUTHBOUND	1		2		1		
WESTBOUND		1	1				
EASTBOUND			1		1		

SIGNAL	NORTHBOUND	SOUTHBOUND	WESTBOUND	EASTBOUND
Phasing	<none>	Split	Perm	Perm
RTOR	<none>	Auto	<none>	Auto

Critical Movements Diagram

	A	B
SouthBound	526	36
EastBound	208	0
WestBound	316	66
NorthBound	0	0

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) + A(S/B)

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

$$V/C = \frac{0 + 526 + 316 + 0}{*1500} = 0.491$$

LOS = A

CP_TDM~2

CalcaDB

January 25, 2011 ,Tuesday 12:51:20 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave W/E: 18th St I/S No: 33

AM/PM: PM Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

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	0	0	178	434	1016	0	0	0	0	0	1858	218
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	178	434	1016	0	0	0	0	0	1858	218

LANE

NORTHBOUND						2	
SOUTHBOUND	1		3				
WESTBOUND							
EASTBOUND			2		1	1	

SIGNAL

	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Prot-Fix	<none>
WESTBOUND	<none>	<none>
EASTBOUND	Split	Auto

Critical Movements Diagram

SouthBound
A: 339
B: 434

EastBound
A: 619
B: 0

WestBound
A: 0
B: 0

NorthBound
A: 98
B: 0

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

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

Results

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

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

V/C = (98 + 434 + 0 + 619) / *1425 = 0.738 LOS = C

January 25, 2011 ,Tuesday 12:51:20 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S:	Olive St	W/E:	6th St	I/S No:	34
AM/PM:	PM	Comments:	FUTURE WITH PROJECT WITH TDM (YEAR 2020)		
COUNT DATE:		STUDY DATE:		GROWTH FACTOR:	

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	1468	191	0	0	0	0	0	0	855	1254	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	1468	191	0	0	0	0	0	0	855	1254	0

LANE	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND			4		1		
SOUTHBOUND							
WESTBOUND							
EASTBOUND	1	1	3				

SIGNAL	Phasing	RTOR
NORTHBOUND	Split	Auto
SOUTHBOUND	<none>	<none>
WESTBOUND	<none>	<none>
EASTBOUND	Split	<none>

Critical Movements Diagram

	A:	B:
SouthBound	0	0
EastBound	418	470
WestBound	0	0
NorthBound	332	0

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) + A(S/B)

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

$$V/C = \frac{332 + 0 + 0 + 470}{*1500} = 0.465$$

LOS = A

Developed by Chun Wong, 12/94

CalcaDB

January 25, 2011 ,Tuesday 12:51:20 PM

INTERSECTION DATA SUMMARY SHEET

N/S:	Hope St	W/E:	7th St	I/S No:	35
AM/PM:	PM	Comments:	FUTURE WITH PROJECT WITH TDM (YEAR 2020)		
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	105	338	138	14	324	29	0	946	90	0	873	102
AMBIENT												
RELATED												
PROJECT												
TOTAL	105	338	138	14	324	29	0	946	90	0	873	102

LANE							
NORTHBOUND		1			1		
SOUTHBOUND		1			1		
WESTBOUND			1		1		
EASTBOUND			1		1		

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A:	B:
SouthBound	191	14
EastBound	488	0
WestBound	518	0
NorthBound	343	105

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

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

Results

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

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

$$V/C = \frac{343 + 14 + 518 + 0}{*1500} = 0.513$$

LOS = A

Developed by Chun Wong, 12/94

CalcaDB

January 25, 2011 ,Tuesday 12:51:20 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Ave
W/E: 7th St
I/S No: 36

AM/PM: PM
Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

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	0	0	0	193	1619	78	0	940	0	0	901	191
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	193	1619	78	0	940	0	0	901	191

LANE	1	2	3	4	5	6	7
NORTHBOUND							
SOUTHBOUND	1		4			1	
WESTBOUND			2				
EASTBOUND			2			1	

SIGNAL	Phasing	RTOR
NORTHBOUND	<none>	<none>
SOUTHBOUND	Split	Auto
WESTBOUND	Perm	<none>
EASTBOUND	Perm	Auto

Critical Movements Diagram

SouthBound
A: 405
B: 193

EastBound
A: 451
B: 0

WestBound
A: 470
B: 0

NorthBound
A: 0
B: 0

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

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

Results

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

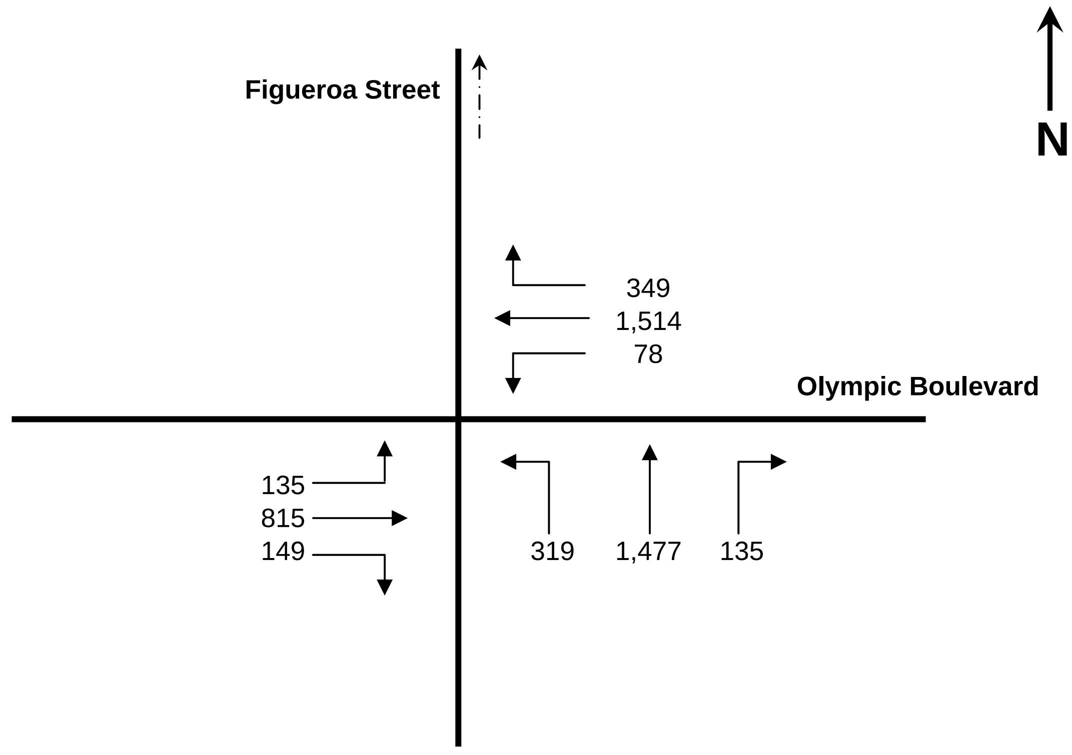
West/East Critical Movements = A(W/B) + B(E/B)

$$V/C = \frac{0 + 405 + 470 + 0}{*1500} = 0.513$$

LOS = A

Intersection 37

Future with Project with TDM Conditions P.M. Peak Hour (Year 2020)



1) Lane Capacity for EB Lefts - 900 vphpl

Number of Lanes - 1

EB Left V/C - $\frac{135}{900}$

= ***0.15***

Lane Capacity for WB Throughs - 1,425 vphpl
Lane Capacity for WB Rights - 900 vphpl

Number of Lanes - 3 throughs
1 right-turn only

WB Through/Right V/C - $\frac{1,514}{4,275}$ or $\frac{349}{900}$

= ***0.388***

Critical V/C - ***0.15*** **+** ***0.388*** **=** **0.538**

<u>or</u>

Lane Capacity for WB Lefts - 1,425 vphpl

Number of Lanes - 1

WB Left V/C - $\frac{78}{1,425}$

= ***0.055***

Lane Capacity for EB Throughs/Rights - 1,425 vphpl

Number of Lanes - 3 throughs
1 right-turn only

EB Through/Right V/C - $\frac{815}{4,275}$ or $\frac{149}{1,425}$

= ***0.191***

Critical V/C - ***0.055*** **+** ***0.191*** **=** **0.246**

2) Lane Capacity for NB Throughs - 900 vphpl
Lane Capacity for NB Left- and Right-turns - 1,425 vphpl

Number of Lanes - 1 left-turn only
3 throughs
1 right-turn only

Critical V/C - $\frac{1,477}{2,700}$ or $\frac{319}{1,425}$ or $\frac{135}{1,425}$

= **0.547**

Intersection V/C = 1.085 — 0.100 = 0.985 LOS E

CP_TDM~2

January 25, 2011 ,Tuesday 12:51:20 PM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Glendale Blvd | W/E: Temple St | I/S No: 38

AM/PM: PM | Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	65	1899	21	166	934	224	31	720	294	343	908	83
AMBIENT												
RELATED												
PROJECT												
TOTAL	65	1899	21	166	934	224	31	720	294	343	908	83

LANE

	NB							SB							WB							EB						
LANE	1		1		1			1		1		1			1		1		1			1		1		1		

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Perm	Auto	Perm	Auto	Prot-Fix	Auto	Prot-Fix	Auto

Critical Movements Diagram

	A	B
SouthBound	579	166
EastBound	496	343
WestBound	507	31
NorthBound	960	65

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

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

Results

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

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

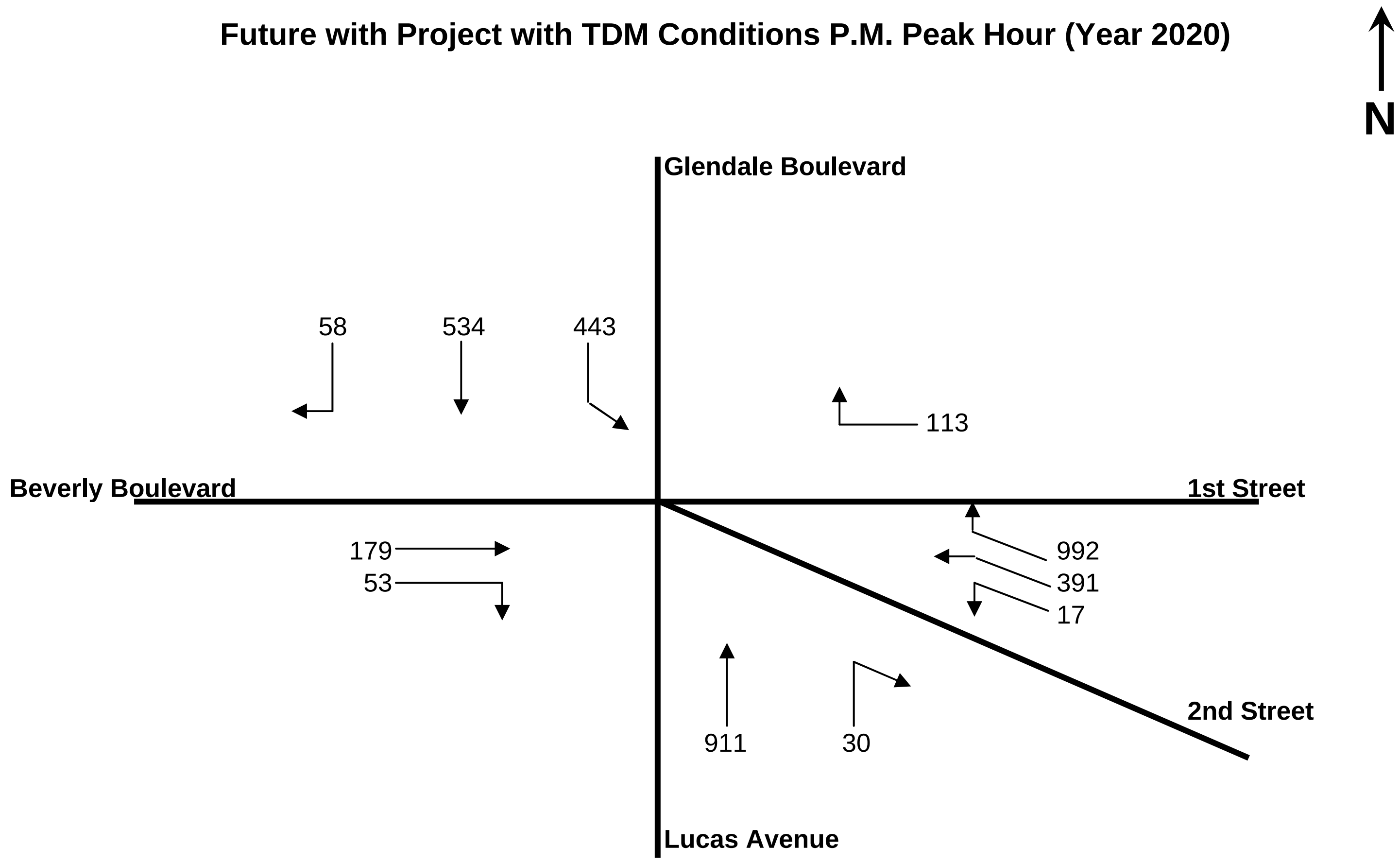
$$V/C = \frac{960 + 166 + 507 + 343}{*1425} = 1.317$$

LOS = F

Developed by Chun Wong, 12/94

Intersection 39

Future with Project with TDM Conditions P.M. Peak Hour (Year 2020)



Phase 1) *Glendale Boulevard and Lucas Avenue - North-South Throughs and Rights*

$$\frac{911 + 30}{2}$$

&

$$\frac{58}{1} \quad \& \quad \frac{534}{1}$$

= **471**

Phase 2) *Glendale Boulevard, 1st Street, and 2nd Street - Southbound Lefts, Throughs, and Rights, and*
a.) Westbound Rights on 1st Street
b.) Westbound Rights on 2nd Street

a.) $$\frac{113}{1}$$

$$\& \left\{ \frac{534}{1} - 471 \right\} \& \left\{ \frac{443}{2} \right\}$$

= **113**

b.) $$\left\{ \frac{443}{2} - 113 \right\}$$

$$\text{or} \left\{ \frac{534}{1} - 471 - 113 \right\}$$

$$\& \quad \frac{992}{2}$$

= **109**

Phase 3) *2nd Street - Westbound Lefts, Throughs, and Rights*

$$\left\{ \frac{992}{2} - 109 \right\}$$

$$\& \left\{ \frac{391 + 17}{1} \right\}$$

= **387**

Phase 4) *Beverly Boulevard and 2nd Street - Westbound Lefts and Throughs, and Eastbound Throughs and Rights*

$$\frac{179 + 53}{2}$$

$$\text{or} \left\{ \frac{391 + 17}{1} \right\} - 387$$

= **116**

Critical Volumes = 471 + 113 + 109 + 387 + 116

= 1,196

V/C = $$\frac{\mathbf{1,196}}{\mathbf{1,375}} - \mathbf{0.100} = \mathbf{0.770}$$ **LOS C**

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Lucas Ave W/E: 3rd St I/S No: 40

AM/PM: PM Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

COUNT DATE: STUDY DATE: GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	39	600	91	54	429	89	109	1131	192	95	899	116
AMBIENT												
RELATED												
PROJECT												
TOTAL	39	600	91	54	429	89	109	1131	192	95	899	116

LANE	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND	1		2			1	
SOUTHBOUND	1		1		1		
WESTBOUND	1		2			1	
EASTBOUND	1		2			1	

SIGNAL	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Perm	Auto
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	259	54
EastBound	450	95
WestBound	566	109
NorthBound	300	39

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)

$$V/C = \frac{300 + 54 + 566 + 95}{*1500} = 0.607$$

LOS = B

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Lucas Ave | W/E: 6th St | I/S No: 41

AM/PM: PM | Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	82	381	68	29	259	114	70	1038	68	170	1030	60
AMBIENT												
RELATED												
PROJECT												
TOTAL	82	381	68	29	259	114	70	1038	68	170	1030	60

LANE

	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND				1			
SOUTHBOUND				1			
WESTBOUND	1		2			1	
EASTBOUND	1		1		1		

SIGNAL	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Perm	Auto
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	402	29
EastBound	545	170
WestBound	519	70
NorthBound	531	82

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)

$$V/C = \frac{531 + 29 + 519 + 170}{*1500} = 0.763$$

LOS = C

Developed by Chun Wong, 12/94

CP_TDM~2

CalcaDB

January 25, 2011 ,Tuesday 12:51:20 PM

INTERSECTION DATA SUMMARY SHEET

N/S: Lucas Ave | W/E: Wilshire Blvd | I/S No: 42

AM/PM: PM | Comments: FUTURE WITH PROJECT WITH TDM (YEAR 2020)

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	72	302	56	48	327	75	149	1082	95	70	1004	76
AMBIENT												
RELATED												
PROJECT												
TOTAL	72	302	56	48	327	75	149	1082	95	70	1004	76

	NB							SB							WB							EB						
LANE				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:	B:
SouthBound	450	48
EastBound	712	70
WestBound	988	149
NorthBound	430	72

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

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

Results

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

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

$$V/C = \frac{72 + 450 + 988 + 70}{*1500} = 0.983$$

LOS = E

Developed by Chun Wong, 12/94

ATTACHMENT B

ANALYSIS OF ADDITIONAL INTERSECTIONS

INTERSECTION TURNING MOVEMENT COUNTS

```
                     Grand Ave. Implementation Plan
                       Existing - A.M Peak Hour
---------------------------------------------------------------------------
                   Level Of Service Computation Report
         Circular 212 Planning Method (Base Volume Alternative)
***************************************************************************
Intersection #5006 Hope St. / 1st St.
***************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.792
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):    xxxxxx
Optimal Cycle:       90              Level Of Service:                  C
***************************************************************************
Approach:     North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted      Prot+Permit
Rights:            Ovl            Include          Include         Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:       1  0  2  0  1   1  0  1  1  0   1  0  2  0  1   1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      55    90    41    53   593   135    93   838   534   255   590    44
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:   55    90    41    53   593   135    93   838   534   255   590    44
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:    55    90    41    53   593   135    93   838   534   255   590    44
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   55    90    41    53   593   135    93   838   534   255   590    44
PCE 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
MLF 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
Final Vol.:    55    90    41    53   593   135    93   838   534   255   590    44
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425  1425  1425  1425  1425  1425  1425  1425  1425  1425  1425  1425
Adjustment:  1.07  1.07  1.07  1.07  1.07  1.07  1.07  1.07  1.07  1.07  1.07  1.07
Lanes:       1.00  2.00  1.00  1.00  1.63  0.37  1.00  2.00  1.00  1.00  2.79  0.21
Final Sat.:  1525  3050  1525  1525  2484   565  1525  3050  1525  1525  4257   317
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.04  0.03  0.03  0.03  0.24  0.24  0.06  0.27  0.35  0.17  0.14  0.14
Crit Vol:      55                     364                     534   255
Crit Moves:  ****                    ****                    ****  ****
***************************************************************************
```

Grand Ave. Implementation Plan
Existing - P.M Peak

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #5006 Hope St. / 1st St.

Cycle (sec):	100	Critical Vol./Cap. (X):	0.601
Loss Time (sec):	0 (Y+R = 4 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	47	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:		Permitted			Permitted			Permitted			Prot+Permit	
Rights:		Ovl			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:		1 0 2 0 1			1 0 1 1 0			1 0 2 0 1			1 0 2 1 0	
Volume Module:												
Base Vol:	149	642	182	44	281	49	216	791	180	156	1033	89
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:	149	642	182	44	281	49	216	791	180	156	1033	89
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:	149	642	182	44	281	49	216	791	180	156	1033	89
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	149	642	182	44	281	49	216	791	180	156	1033	89
PCE 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
MLF 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
Final Vol.:	149	642	182	44	281	49	216	791	180	156	1033	89
Saturation Flow Module:												
Sat/Lane:	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
Adjustment:	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Lanes:	1.00	2.00	1.00	1.00	1.70	0.30	1.00	2.00	1.00	1.00	2.76	0.24
Final Sat.:	1525	3050	1525	1525	2597	453	1525	3050	1525	1525	4211	363
Capacity Analysis Module:												
Vol/Sat:	0.10	0.21	0.12	0.03	0.11	0.11	0.14	0.26	0.12	0.10	0.25	0.25
Crit Vol:		321		44				396		156		
Crit Moves:		****		****				****		****		

Intersection Turning Movement

Prepared by:

NDS

National Data & Surveying Services

TMC Summary of S Olive St/W Olympic Blvd

Project #: 08-5001-012

N

S Olive St

W Olympic Blvd

W Olympic Blvd

SOUTHBOUND APPROACH LANES

Lanes	0	0	0
TOTAL	0	0	0
PM	0	0	0
NOON	0	0	0
AM	0	0	0

EASTBOUND APPROACH LANES

Lanes	TOTAL	AM	NOON	PM
1	250	133	0	117
2	1260	651	0	609
0	0	0	0	0

WESTBOUND APPROACH LANES

AM	NOON	PM	TOTAL	Lanes
69	0	82	151	0
500	0	967	1467	2
0	0	0	0	0

NORTHBOUND APPROACH LANES

PM	87	875	54
NOON	0	0	0
AM	81	1056	40
TOTAL	168	1931	94
Lanes	0	4	0

S Olive St

TURNING MOVEMENT COUNT

S Olive St / W Olympic Blvd

(Intersection Name)

Wednesday
Day

7/16/08
Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: Signalized

AM PEAK HOUR	800 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	500 PM

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: S Olive St DATE: 07/16/2008 LOCATION: City of Los Angeles

E-W STREET: W Olympic Blvd DAY: WEDNESDAY PROJECT# 08-5001-012

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	4	0	0	0	0	1	2	0	0	2	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	10	161	5				25	74			93	13	381
7:15 AM	20	181	1				19	97			118	17	453
7:30 AM	21	199	10				35	115			118	21	519
7:45 AM	22	252	7				34	158			119	17	609
8:00 AM	20	308	10				29	146			144	14	671
8:15 AM	18	268	9				33	175			125	19	647
8:30 AM	22	229	15				35	171			112	18	602
8:45 AM	21	251	6				36	159			119	18	610
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	154	1849	63	0	0	0	246	1095	0	0	948	137	4492

AM Peak Hr Begins at: 800 AM

PEAK VOLUMES =	81	1056	40	0	0	0	133	651	0	0	500	69	2530
PEAK HR. FACTOR:		0.871			0.000			0.942			0.900		0.943

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: S Olive St   DATE: 07/16/2008   LOCATION: City of Los Angeles

E-W STREET: W Olympic Blvd   DAY: WEDNESDAY   PROJECT# 08-5001-012

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	4	0	0	0	0	1	2	0	0	2	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	10	149	14				20	89			174	17	473
4:15 PM	12	124	14				25	123			172	19	489
4:30 PM	17	181	22				26	151			198	21	616
4:45 PM	22	189	11				26	139			199	30	616
5:00 PM	20	194	20				28	143			237	19	661
5:15 PM	19	210	19				30	162			261	11	712
5:30 PM	20	251	7				30	140			264	32	744
5:45 PM	28	220	8				29	164			205	20	674
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	148	1518	115	0	0	0	214	1111	0	0	1710	169	4985

PM Peak Hr Begins at: 500 PM

PEAK VOLUMES =	87	875	54	0	0	0	117	609	0	0	967	82	2791
PEAK HR. FACTOR:		0.914			0.000			0.940			0.886		0.938

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

NDS

National Data & Surveying Services

TMC Summary of N Grand Ave/W Olympic Blvd

Project #: 08-5001-013

N

N Grand Ave

W Olympic Blvd

W Olympic Blvd

SOUTHBOUND APPROACH LANES

	Right	Thru	Left
Lanes	1	4	1
TOTAL	371	2222	302
PM	205	1467	94
NOON	0	0	0
AM	166	755	208

EASTBOUND APPROACH LANES

Lanes	TOTAL	AM	NOON	PM
0	0	0	0	0
2	1279	691	0	588
0	176	90	0	86

WESTBOUND APPROACH LANES

AM	NOON	PM	TOTAL	Lanes
0	0	0	0	0
523	0	909	1432	2
59	0	130	189	1

NORTHBOUND APPROACH LANES

	Left	Thru	Right
PM	0	0	0
NOON	0	0	0
AM	0	0	0
TOTAL	0	0	0
Lanes	0	0	0

N Grand Ave

TURNING MOVEMENT COUNT

N Grand Ave / W Olympic Blvd

(Intersection Name)

Wednesday — Day

7/16/08 — Date

COUNT PERIODS

am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: Signalized

AM PEAK HOUR	745 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	445 PM

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: N Grand Ave | DATE: 07/16/2008 | LOCATION: City of Los Angeles

E-W STREET: W Olympic Blvd | DAY: WEDNESDAY | PROJECT# 08-5001-013

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1	4	1	0	2	0	1	2	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM				21	98	18		74	14	4	112		341
7:15 AM				24	146	26		91	9	11	120		427
7:30 AM				28	124	20		114	19	13	130		448
7:45 AM				50	197	41		160	16	9	136		609
8:00 AM				58	179	31		157	25	17	128		595
8:15 AM				61	214	43		191	24	14	138		685
8:30 AM				39	165	51		183	25	19	121		603
8:45 AM				38	141	40		171	13	7	151		561
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	0	0	319	1264	270	0	1141	145	94	1036	0	4269

AM Peak Hr Begins at: 745 AM

PEAK VOLUMES =	0	0	0	208	755	166	0	691	90	59	523	0	2492
PEAK HR. FACTOR:		0.000			0.888			0.908			0.957		0.909

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: N Grand Ave   DATE: 07/16/2008   LOCATION: City of Los Angeles

E-W STREET: W Olympic Blvd   DAY: WEDNESDAY   PROJECT# 08-5001-013

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1	4	1	0	2	0	1	2	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM				14	244	48		130	25	23	184		668
4:15 PM				21	257	35		137	20	20	181		671
4:30 PM				30	305	57		149	21	31	203		796
4:45 PM				32	321	48		150	19	34	212		816
5:00 PM				23	367	49		151	20	26	219		855
5:15 PM				17	401	48		140	21	25	242		894
5:30 PM				22	378	60		147	26	45	236		914
5:45 PM				17	282	47		181	33	27	222		809
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	0	0	0	176	2555	392	0	1185	185	231	1699	0	6423

PM Peak Hr Begins at: 445 PM

PEAK VOLUMES =	0	0	0	94	1467	205	0	588	86	130	909	0	3479
PEAK HR. FACTOR:		0.000			0.947			0.974			0.924		0.952

CONTROL: Signalized

TRAFFIC COUNT SUMMARY

City of Los Angeles
Department of Transportation
Count by Crain & Associates

STREET:
North/South: FLOWER STREET

East/West: OLYMPIC BOULEVARD

Day: AM Tuesday — Date: JULY 22, 2008 — Weather: CLEAR
PM Tuesday — JULY 22, 2008
Hours: 7-10 AM 3-6 PM

School Day: NO — District: LOS ANGELES

	N/B	S/B	E/B	W/B
DUAL-WHEELED	N/A	N/A	N/A	N/A
BIKES	N/A	N/A	N/A	N/A
BUSES	N/A	N/A	N/A	N/A

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	0	7:00	174	9:15	248	8:00	205	8:15
PM PK 15 MIN	0	3:00	460	5:00	256	5:45	386	5:45
AM PK HOUR	0	7:00	665	8:30	912	8:00	796	8:00
PM PK HOUR	0	3:00	1,691	4:45	930	5:00	####	5:00

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7 - 8	0	0	0	0
8 - 9	0	0	0	0
9 - 10	0	0	0	0
3 - 4	0	0	0	0
4 - 5	0	0	0	0
5 - 6	0	0	0	0
TOTAL	0	0	0	0

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total	TOTAL N-S	XING S/L Ped	XING S/L Sch	XING N/L Ped	XING N/L Sch
7 - 8	38	398	79	515	515	N/A	N/A	N/A	N/A
8 - 9	75	450	107	632	632	N/A	N/A	N/A	N/A
9 - 10	76	405	141	622	622	N/A	N/A	N/A	N/A
3 - 4	44	905	136	1,085	1,085	N/A	N/A	N/A	N/A
4 - 5	54	1,294	130	1,478	1,478	N/A	N/A	N/A	N/A
5 - 6	53	1,471	160	1,684	1,684	N/A	N/A	N/A	N/A
TOTAL	340	4,923	753	6,016	6,016	N/A	N/A	N/A	N/A

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7 - 8	0	638	62	700
8 - 9	0	822	90	912
9 - 10	0	748	67	815
3 - 4	0	753	81	834
4 - 5	0	762	116	878
5 - 6	0	817	113	930
TOTAL	0	4,540	529	5,069

WESTBOUND Approach

Hours	Lt	Th	Rt	Total	TOTAL E-W	XING W/L Ped	XING W/L Sch	XING E/L Ped	XING E/L Sch
7 - 8	46	621	0	667	1,367	N/A	N/A	N/A	N/A
8 - 9	38	758	0	796	1,708	N/A	N/A	N/A	N/A
9 - 10	52	609	0	661	1,476	N/A	N/A	N/A	N/A
3 - 4	60	906	0	966	1,800	N/A	N/A	N/A	N/A
4 - 5	54	921	0	975	1,853	N/A	N/A	N/A	N/A
5 - 6	71	1,305	0	1,376	2,306	N/A	N/A	N/A	N/A
TOTAL	321	5,120	0	5,441	10,510	N/A	N/A	N/A	N/A

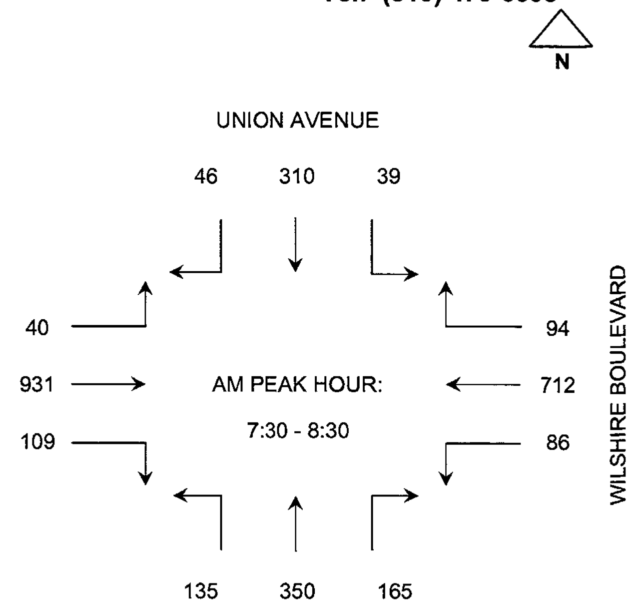
Crain & Associates
2007 Sawtelle Blvd., Suite 4
Los Angeles, CA 90025
Tel: (310) 473-6508

VEHICLE TURNING MOVEMENT COUNT SUMMARY

N/S STREET: UNION AVENUE **E/W STREET:** WILSHIRE BOULEVARD
PERIOD: AM PEAK HOUR **DATE:** THURSDAY NOVEMBER 2, 2006

15-MINUTE	WESTBOUND			EASTBOUND			NORTHBOUND			SOUTHBOUND			
TOTALS	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
7:00 - 7:15	25	177	13	11	136	21	32	76	27	14	61	7	600
7:15 - 7:30	32	177	14	9	152	24	19	91	43	15	77	13	666
7:30 - 7:45	31	165	26	9	200	18	21	69	26	10	90	6	671
7:45 - 8:00	17	194	23	14	264	32	31	83	51	12	97	10	828
8:00 - 8:15	21	141	29	9	230	30	43	93	47	6	59	17	725
8:15 - 8:30	17	212	16	8	237	29	40	105	41	11	64	13	793
8:30 - 8:45	20	147	8	8	201	11	27	84	32	13	50	9	610
8:45 - 9:00	15	143	17	12	192	22	26	64	48	15	68	21	643

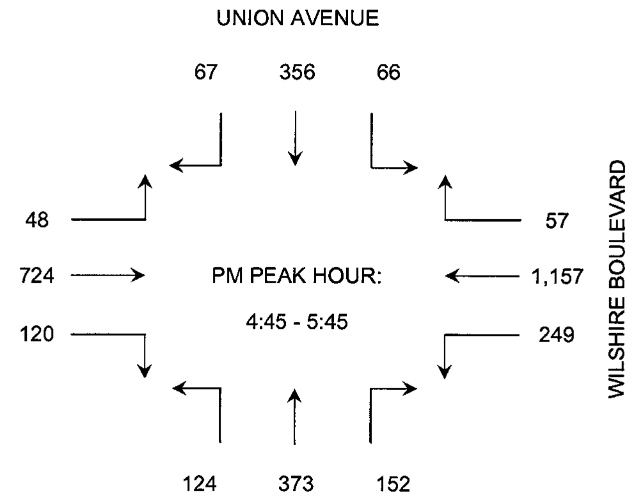
1-HOUR	WESTBOUND			EASTBOUND			NORTHBOUND			SOUTHBOUND			
TOTALS	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
7:00 - 8:00	105	713	76	43	752	95	103	319	147	51	325	36	2,765
7:15 - 8:15	101	677	92	41	846	104	114	336	167	43	323	46	2,890
7:30 - 8:30	86	712	94	40	931	109	135	350	165	39	310	46	3,017 *
7:45 - 8:45	75	694	76	39	932	102	141	365	171	42	270	49	2,956
8:00 - 9:00	73	643	70	37	860	92	136	346	168	45	241	60	2,771



PERIOD: PM PEAK HOUR **DATE:** THURSDAY NOVEMBER 2, 2006

15-MINUTE	WESTBOUND			EASTBOUND			NORTHBOUND			SOUTHBOUND			
TOTALS	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
4:00 - 4:15	46	222	13	7	191	24	27	97	28	12	81	9	757
4:15 - 4:30	57	280	22	15	235	37	32	96	18	10	80	9	891
4:30 - 4:45	49	200	14	15	164	29	26	72	24	15	80	7	695
4:45 - 5:00	62	295	18	12	179	26	33	108	29	15	94	9	880
5:00 - 5:15	46	274	13	9	173	27	31	97	44	20	86	22	842
5:15 - 5:30	76	304	14	13	173	31	31	70	40	23	97	23	895
5:30 - 5:45	65	284	12	14	199	36	29	98	39	8	79	13	876
5:45 - 6:00	51	250	8	8	163	31	34	102	48	22	75	11	803

1-HOUR	WESTBOUND			EASTBOUND			NORTHBOUND			SOUTHBOUND			
TOTALS	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
4:00 - 5:00	214	997	67	49	769	116	118	373	99	52	335	34	3,223
4:15 - 5:15	214	1,049	67	51	751	119	122	373	115	60	340	47	3,308
4:30 - 5:30	233	1,073	59	49	689	113	121	347	137	73	357	61	3,312
4:45 - 5:45	249	1,157	57	48	724	120	124	373	152	66	356	67	3,493 *
5:00 - 6:00	238	1,112	47	44	708	125	125	367	171	73	337	69	3,416



INTERSECTION LEVEL OF SERVICE WORKSHEETS

FUTURE WITHOUT PROJECT CONDITIONS

(YEAR 2020)

BASE_AM

January 31, 2011 ,Monday 11:15:15 AM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S:	Hope St	W/E:	1st St	I/S No:	101
AM/PM:	AM	Comments:	FUTURE WITHOUT PROJECT		
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	62	101	79	138	661	150	395	684	269	104	974	606
AMBIENT												
RELATED												
PROJECT												
TOTAL	62	101	79	138	661	150	395	684	269	104	974	606

	NORTHBOUND							SOUTHBOUND							WESTBOUND							EASTBOUND						
LANE	1		2			1		1		1		1			1		2		1			1		2			1	

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Prot-Fix	OLA	Perm	Auto	Prot-Fix	Auto	Perm	OLA

Critical Movements Diagram

	A	B
SouthBound	406	138
EastBound	544	104
WestBound	318	395
NorthBound	51	62

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)

$$V/C = \frac{62 + 406 + 395 + 544}{*1375} = 0.953$$

LOS = E

Developed by Chun Wong, 12/94

BASE_AM

CalcaDB

January 31, 2011 ,Monday 11:15:15 AM

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Av

W/E: Olympic Blvd

I/S No: 102

AM/PM: AM

Comments: FUTURE WITHOUT PROJECT

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	0	0	0	227	1181	189	72	605	0	0	780	104
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	227	1181	189	72	605	0	0	780	104

LANE

	NB 1	NB 2	NB 3	NB 4	NB 5	NB 6	NB 7	SB 1	SB 2	SB 3	SB 4	SB 5	SB 6	SB 7	WB 1	WB 2	WB 3	WB 4	WB 5	WB 6	WB 7	EB 1	EB 2	EB 3	EB 4	EB 5	EB 6	EB 7
LANE								1		4			1		1		2							1		1		

	NORTHBOUND Phasing	NORTHBOUND RTOR	SOUTHBOUND Phasing	SOUTHBOUND RTOR	WESTBOUND Phasing	WESTBOUND RTOR	EASTBOUND Phasing	EASTBOUND RTOR
SIGNAL	<none>	<none>	Perm	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

SouthBound
A: 295
B: 227

EastBound
A: 442
B: 0

WestBound
A: 303
B: 72

NorthBound
A: 0
B: 0

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

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

Results

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

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

$$V/C = \frac{0 + 295 + 72 + 442}{*1500} = 0.469$$

LOS = A

BASE_AM

CalcaDB

January 31, 2011 ,Monday 11:15:15 AM

INTERSECTION DATA SUMMARY SHEET

N/S:	Olive St	W/E:	Olympic Blvd	I/S No:	103
AM/PM:	AM	Comments:	FUTURE WITHOUT PROJECT		
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	111	1217	51	0	0	0	0	567	76	151	731	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	111	1217	51	0	0	0	0	567	76	151	731	0

	NB							SB							WB							EB						
LANE		1	2		1												1		1			1		2				

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	Auto	<none>	<none>	Perm	Auto	Perm	<none>

Critical Movements Diagram

	A:	B:
SouthBound	0	0
EastBound	366	151
WestBound	322	0
NorthBound	345	111

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

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

Results

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

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

$$V/C = \frac{345 + 0 + 322 + 151}{*1500} = 0.475$$

LOS = A

Developed by Chun Wong, 12/94

BASE_AM

CalcaDB

January 31, 2011 ,Monday 11:15:15 AM

INTERSECTION DATA SUMMARY SHEET

N/S:	Flower St	W/E:	Olympic Blvd	I/S No:	104
AM/PM:	AM	Comments:	FUTURE WITHOUT PROJECT		
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	0	0	0	82	557	143	41	874	0	0	914	99
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	82	557	143	41	874	0	0	914	99

LANE	NB 1	NB 2	NB 3	NB 4	NB 5	NB 6	NB 7	SB 1	SB 2	SB 3	SB 4	SB 5	SB 6	SB 7	WB 1	WB 2	WB 3	WB 4	WB 5	WB 6	WB 7	EB 1	EB 2	EB 3	EB 4	EB 5	EB 6	EB 7
									1	3			1		1		2							2			1	

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	<none>	<none>	Perm	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

	A:	B:
SouthBound	160	82
EastBound	457	0
WestBound	437	41
NorthBound	0	0

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

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

Results

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

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

$$V/C = \frac{0 + 160 + 41 + 457}{*1500} = 0.369$$

LOS = A

BASE_AM

January 31, 2011 ,Monday 11:15:15 AM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Union Ave | W/E: Wilshire Blvd | I/S No: 105

AM/PM: AM | Comments: FUTURE WITHOUT PROJECT

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	149	388	183	43	343	51	95	928	104	44	1081	120
AMBIENT												
RELATED												
PROJECT												
TOTAL	149	388	183	43	343	51	95	928	104	44	1081	120

LANE	LT	LT/TH	TH	LT/TH/RT	TH/RT	RT	LT/RT
NORTHBOUND	1		1			1	
SOUTHBOUND	1		1			1	
WESTBOUND	1		1		1		
EASTBOUND	1		1		1		

SIGNAL	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Perm	Auto
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	343	43
EastBound	601	44
WestBound	516	95
NorthBound	388	149

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)

$$V/C = \frac{149 + 343 + 95 + 601}{*1500} = 0.722$$

LOS = C

Developed by Chun Wong, 12/94

BASE_PM

CalcaDB

January 31, 2011 ,Monday 11:15:26 AM

INTERSECTION DATA SUMMARY SHEET

N/S:	Hope St	W/E:	1st St	I/S No:	101
AM/PM:	PM	Comments:	FUTURE WITHOUT PROJECT		
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	166	716	430	564	313	54	258	1198	250	240	1009	208
AMBIENT												
RELATED												
PROJECT												
TOTAL	166	716	430	564	313	54	258	1198	250	240	1009	208

LANE							
NORTHBOUND	1		2			1	
SOUTHBOUND	1		1		1		
WESTBOUND	1		2		1		
EASTBOUND	1		2			1	

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	Prot-Fix	OLA	Perm	Auto	Prot-Fix	Auto	Perm	OLA

Critical Movements Diagram

SouthBound
A: 184
B: 564

EastBound
A: 505
B: 240

WestBound
A: 483
B: 258

NorthBound
A: 358
B: 166

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 = B(W/B) + A(E/B)

$$V/C = \frac{358 + 564 + 258 + 505}{*1375} = 1.155$$

LOS = F

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BASE_PM

January 31, 2011 ,Monday 11:15:26 AM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Av   W/E: Olympic Blvd   I/S No: 102

AM/PM: PM   Comments: FUTURE WITHOUT PROJECT

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	0	0	0	103	1918	231	46	280	992	0	713	117
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	103	1918	231	46	280	992	0	713	117

LANE	1	2	3	4	5	6	7
NORTHBOUND							
SOUTHBOUND	1		4			1	
WESTBOUND	1		2				
EASTBOUND			1		1		

SIGNAL	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
	<none>	<none>	Perm	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	480	103
EastBound	415	0
WestBound	140	46
NorthBound	0	0

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

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

Results

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

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

$$V/C = \frac{0 + 480 + 46 + 415}{*1500} = 0.557$$

LOS = A

BASE_PM

CalcaDB

January 31, 2011 ,Monday 11:15:26 AM

INTERSECTION DATA SUMMARY SHEET

N/S: Olive St | W/E: Olympic Blvd | I/S No: 103

AM/PM: PM | Comments: FUTURE WITHOUT PROJECT

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	223	1397	62	0	0	0	0	1110	90	166	699	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	223	1397	62	0	0	0	0	1110	90	166	699	0

LANE							
NORTHBOUND		1	2		1		
SOUTHBOUND							
WESTBOUND			1		1		
EASTBOUND	1		2				

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	Perm	Auto	<none>	<none>	Perm	Auto	Perm	<none>

Critical Movements Diagram

	A	B
SouthBound	0	0
EastBound	350	166
WestBound	600	0
NorthBound	421	223

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

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

Results

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

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

$$V/C = \frac{421 + 0 + 600 + 166}{*1500} = 0.721$$

LOS = C

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BASE_PM

January 31, 2011 ,Monday 11:15:26 AM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St W/E: Olympic Blvd I/S No: 104

AM/PM: PM Comments: FUTURE WITHOUT PROJECT

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	0	0	0	57	1735	212	78	1562	0	0	941	123
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	57	1735	212	78	1562	0	0	941	123

	NB							SB							WB							EB						
LANE									1	3			1		1		2							2			1	

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	<none>	<none>	Perm	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

	A:	B:
SouthBound	448	57
EastBound	471	0
WestBound	781	78
NorthBound	0	0

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) + A(S/B)

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

$$V/C = \frac{0 + 448 + 781 + 0}{*1500} = 0.749$$

LOS = C

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BASE_PM

CalcaDB

January 31, 2011 ,Monday 11:15:26 AM

INTERSECTION DATA SUMMARY SHEET

N/S: Union Ave | W/E: Wilshire Blvd | I/S No: 105

AM/PM: PM | Comments: FUTURE WITHOUT PROJECT

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	137	412	168	73	394	75	276	1385	63	53	974	133
AMBIENT												
RELATED												
PROJECT												
TOTAL	137	412	168	73	394	75	276	1385	63	53	974	133

LANE							
NORTHBOUND	1		1			1	
SOUTHBOUND	1		1			1	
WESTBOUND	1		1		1		
EASTBOUND	1		1		1		

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	394	73
EastBound	554	53
WestBound	724	276
NorthBound	412	137

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

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

Results

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

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

$$V/C = \frac{137 + 394 + 276 + 554}{*1500} = 0.837$$

LOS = D

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FUTURE WITH PROJECT
WITH TDM PROGRAM CONDITIONS

(YEAR 2020)

PROJ_AM

January 31, 2011 ,Monday 11:15:35 AM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Hope St | W/E: 1st St | I/S No: 101

AM/PM: AM | Comments: FUTURE WITH PROJECT WITH TDM PROGRAM

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	62	101	79	138	710	150	395	684	269	104	975	606
AMBIENT												
RELATED												
PROJECT												
TOTAL	62	101	79	138	710	150	395	684	269	104	975	606

LANE							
NORTHBOUND	1		2			1	
SOUTHBOUND	1		1		1		
WESTBOUND	1		2		1		
EASTBOUND	1		2			1	

SIGNAL	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
	Prot-Fix	OLA	Perm	Auto	Prot-Fix	Auto	Perm	OLA

Critical Movements Diagram

	A	B
SouthBound	430	138
EastBound	544	104
WestBound	318	395
NorthBound	51	62

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

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

Results

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

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

$$V/C = \frac{62 + 430 + 395 + 544}{*1375} = 0.971$$

LOS = E

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PROJ_AM

CalcaDB

January 31, 2011 ,Monday 11:15:35 AM

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Av | W/E: Olympic Blvd | I/S No: 102

AM/PM: AM | Comments: FUTURE WITH PROJECT WITH TDM PROGRAM

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	0	0	0	227	1186	189	72	605	0	0	780	104
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	227	1186	189	72	605	0	0	780	104

	NORTHBOUND							SOUTHBOUND							WESTBOUND							EASTBOUND						
LANE								1		4			1		1		2							1		1		

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	<none>	<none>	Perm	Auto	Perm	<none>	Perm	Auto

Critical Movements Diagram

SouthBound
A: 297
B: 227

EastBound
A: 442
B: 0

WestBound
A: 303
B: 72

NorthBound
A: 0
B: 0

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) + A(S/B)

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

$$V/C = \frac{0 + 297 + 72 + 442}{*1500} = 0.471$$

LOS = A

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January 31, 2011 ,Monday 11:15:35 AM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S:	Olive St	W/E:	Olympic Blvd	I/S No:	103
AM/PM:	AM	Comments:	FUTURE WITH PROJECT WITH TDM PROGRAM		
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	111	1296	51	0	0	0	0	567	76	151	731	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	111	1296	51	0	0	0	0	567	76	151	731	0

LANE		1	2		1												1		1			1		2				

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Perm	Auto	<none>	<none>	Perm	Auto	Perm	<none>

Critical Movements Diagram

	A:	B:
SouthBound	0	0
EastBound	366	151
WestBound	322	0
NorthBound	365	111

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

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

Results

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

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

$$V/C = \frac{365 + 0 + 322 + 151}{*1500} = 0.489$$

LOS = A

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January 31, 2011 ,Monday 11:15:35 AM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St | W/E: Olympic Blvd | I/S No: 104

AM/PM: AM | Comments: FUTURE WITH PROJECT WITH TDM PROGRAM

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	0	0	0	82	560	143	41	874	0	0	914	99
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	82	560	143	41	874	0	0	914	99

LANE

	1	2	3	4	5	6	7
NORTHBOUND							
SOUTHBOUND		1	3			1	
WESTBOUND	1		2				
EASTBOUND			2			1	

SIGNAL

	NORTHBOUND	SOUTHBOUND	WESTBOUND	EASTBOUND
Phasing	<none>	Perm	Perm	Perm
RTOR	<none>	Auto	<none>	Auto

Critical Movements Diagram

	A	B
SouthBound	161	82
EastBound	457	0
WestBound	437	41
NorthBound	0	0

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

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

Results

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

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

$$V/C = \frac{0 + 161 + 41 + 457}{*1500} = 0.369$$

LOS = A

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January 31, 2011 ,Monday 11:15:35 AM

INTERSECTION DATA SUMMARY SHEET

N/S: Union Ave
W/E: Wilshire Blvd
I/S No: 105

AM/PM: AM
Comments: FUTURE WITH PROJECT WITH TDM PROGRAM

COUNT DATE:
STUDY DATE:
GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	149	388	183	43	343	51	95	928	104	44	1101	120
AMBIENT												
RELATED												
PROJECT												
TOTAL	149	388	183	43	343	51	95	928	104	44	1101	120

LANE

	NB							SB							WB							EB						
LANE	1		1			1		1		1			1		1		1		1			1		1		1		

	NB Phasing	NB RTOR	SB Phasing	SB RTOR	WB Phasing	WB RTOR	EB Phasing	EB RTOR
SIGNAL	Perm	Auto	Perm	Auto	Perm	Auto	Perm	Auto

Critical Movements Diagram

SouthBound
A: 343
B: 43

EastBound
A: 611
B: 44

WestBound
A: 516
B: 95

NorthBound
A: 388
B: 149

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

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

Results

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

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

$$V/C = \frac{149 + 343 + 95 + 611}{*1500} = 0.729$$

LOS = C

Developed by Chun Wong, 12/94

PROJ_PM

CalcaDB

January 31, 2011 ,Monday 11:15:45 AM

INTERSECTION DATA SUMMARY SHEET

N/S: Hope St W/E: 1st St I/S No: 101

AM/PM: PM Comments: FUTURE WITH PROJECT WITH TDM PROGRAM

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	166	716	430	564	316	54	258	1198	250	240	1025	208
AMBIENT												
RELATED												
PROJECT												
TOTAL	166	716	430	564	316	54	258	1198	250	240	1025	208

	NORTHBOUND							SOUTHBOUND							WESTBOUND							EASTBOUND						
LANE	1		2			1		1		1		1			1		2		1			1		2			1	

	NORTHBOUND		SOUTHBOUND		WESTBOUND		EASTBOUND	
	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR	Phasing	RTOR
SIGNAL	Prot-Fix	OLA	Perm	Auto	Prot-Fix	Auto	Perm	OLA

Critical Movements Diagram

	A	B
SouthBound	185	564
EastBound	513	240
WestBound	483	258
NorthBound	358	166

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

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

Results

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

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

V/C = (358 + 564 + 258 + 513) / *1375 = 1.161 LOS = F

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Grand Av   W/E: Olympic Blvd   I/S No: 102

AM/PM: PM   Comments: FUTURE WITH PROJECT WITH TDM PROGRAM

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	0	0	0	103	2002	231	46	280	992	0	713	117
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	103	2002	231	46	280	992	0	713	117

LANE							
NORTHBOUND							
SOUTHBOUND	1		4			1	
WESTBOUND	1		2				
EASTBOUND			1		1		

SIGNAL	Phasing	RTOR
NORTHBOUND	<none>	<none>
SOUTHBOUND	Perm	Auto
WESTBOUND	Perm	<none>
EASTBOUND	Perm	Auto

Critical Movements Diagram

	A	B
SouthBound	501	103
EastBound	415	0
WestBound	140	46
NorthBound	0	0

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

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

Results

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

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

$$V/C = \frac{0 + 501 + 46 + 415}{*1500} = 0.571$$

LOS = A

PROJ_PM

January 31, 2011 ,Monday 11:15:45 AM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Olive St | W/E: Olympic Blvd | I/S No: 103

AM/PM: PM | Comments: FUTURE WITH PROJECT WITH TDM PROGRAM

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	223	1401	62	0	0	0	0	1110	90	166	699	0
AMBIENT												
RELATED												
PROJECT												
TOTAL	223	1401	62	0	0	0	0	1110	90	166	699	0

LANE	1	2	3	4	5	6	7
NORTHBOUND		1	2		1		
SOUTHBOUND							
WESTBOUND			1		1		
EASTBOUND	1		2				

SIGNAL	NORTHBOUND	SOUTHBOUND	WESTBOUND	EASTBOUND
Phasing	Perm	<none>	Perm	Perm
RTOR	Auto	<none>	Auto	<none>

Critical Movements Diagram

	A	B
SouthBound	0	0
EastBound	350	166
WestBound	600	0
NorthBound	422	223

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

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

Results

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

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

$$V/C = \frac{422 + 0 + 600 + 166}{*1500} = 0.722$$

LOS = C

Developed by Chun Wong, 12/94

PROJ_PM

CalcaDB

January 31, 2011 ,Monday 11:15:45 AM

INTERSECTION DATA SUMMARY SHEET

N/S: Flower St | W/E: Olympic Blvd | I/S No: 104

AM/PM: PM | Comments: FUTURE WITH PROJECT WITH TDM PROGRAM

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	0	0	0	57	1777	212	78	1562	0	0	941	123
AMBIENT												
RELATED												
PROJECT												
TOTAL	0	0	0	57	1777	212	78	1562	0	0	941	123

LANE

NORTHBOUND							
SOUTHBOUND		1	3			1	
WESTBOUND	1		2				
EASTBOUND			2			1	

SIGNAL	Phasing	RTOR
NORTHBOUND	<none>	<none>
SOUTHBOUND	Perm	Auto
WESTBOUND	Perm	<none>
EASTBOUND	Perm	Auto

Critical Movements Diagram

SouthBound
A: 459
B: 57

EastBound
A: 471
B: 0

WestBound
A: 781
B: 78

NorthBound
A: 0
B: 0

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) + A(S/B)

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

$$V/C = \frac{0 + 459 + 781 + 0}{*1500} = 0.757$$

LOS = C

PROJ_PM

January 31, 2011 ,Monday 11:15:45 AM

CalcaDB

INTERSECTION DATA SUMMARY SHEET

N/S: Union Ave | W/E: Wilshire Blvd | I/S No: 105

AM/PM: PM | Comments: FUTURE WITH PROJECT WITH TDM PROGRAM

COUNT DATE: | STUDY DATE: | GROWTH FACTOR:

Volume/Lane/Signal Configurations

	NORTHBOUND LT	NORTHBOUND TH	NORTHBOUND RT	SOUTHBOUND LT	SOUTHBOUND TH	SOUTHBOUND RT	WESTBOUND LT	WESTBOUND TH	WESTBOUND RT	EASTBOUND LT	EASTBOUND TH	EASTBOUND RT
EXISTING	137	412	168	73	394	75	276	1419	63	53	975	133
AMBIENT												
RELATED												
PROJECT												
TOTAL	137	412	168	73	394	75	276	1419	63	53	975	133

LANE

	L	LT	T	LTR	TR	R	LR
NORTHBOUND	1		1			1	
SOUTHBOUND	1		1			1	
WESTBOUND	1		1		1		
EASTBOUND	1		1		1		

SIGNAL

	Phasing	RTOR
NORTHBOUND	Perm	Auto
SOUTHBOUND	Perm	Auto
WESTBOUND	Perm	Auto
EASTBOUND	Perm	Auto

Critical Movements Diagram

SouthBound A: 394 B: 73

EastBound A: 554 B: 53

WestBound A: 741 B: 276

NorthBound A: 412 B: 137

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

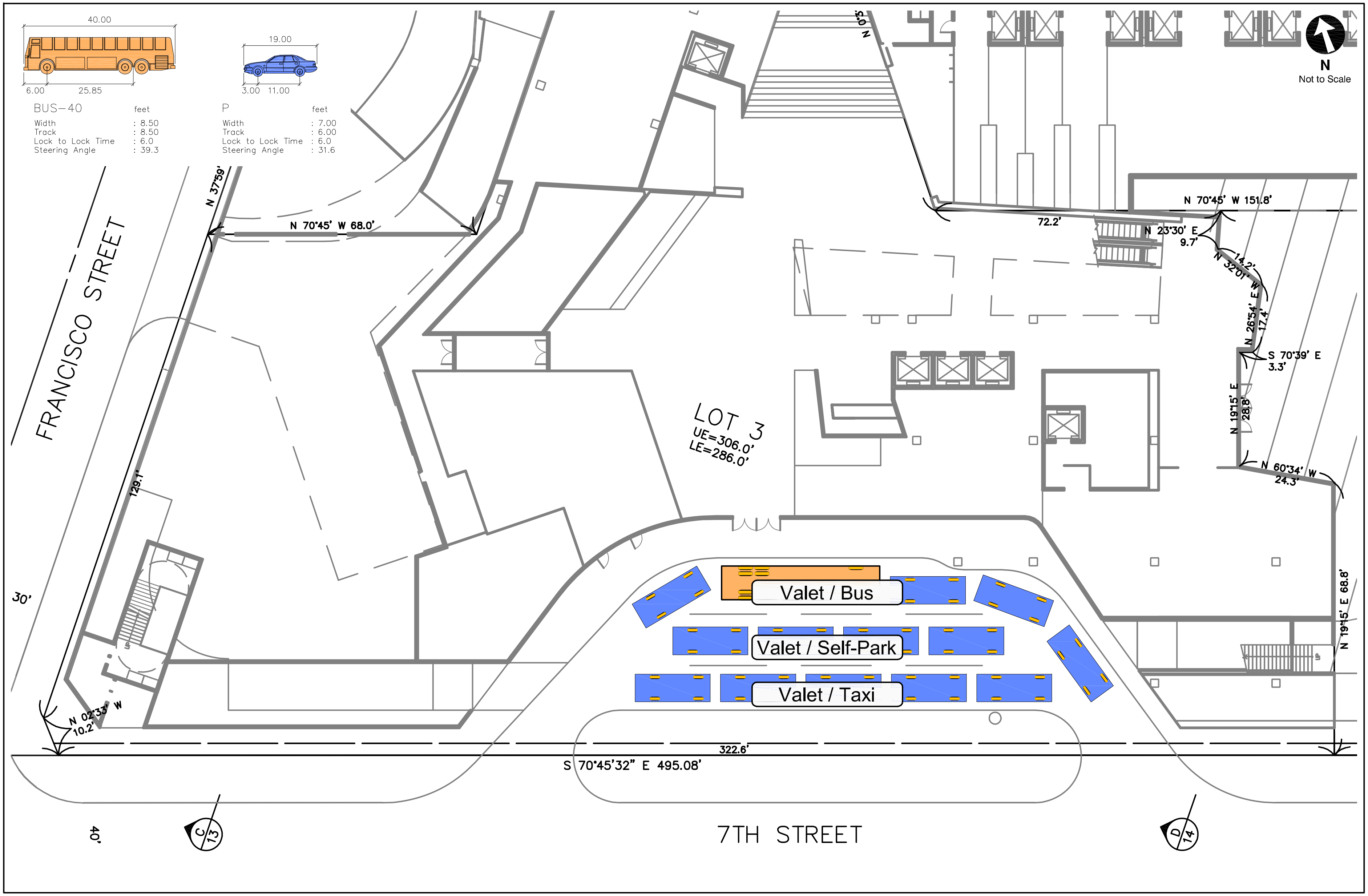
North/South Critical Movements = B(N/B) + A(S/B)

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

$$V/C = \frac{137 + 394 + 276 + 554}{*1500} = 0.837$$

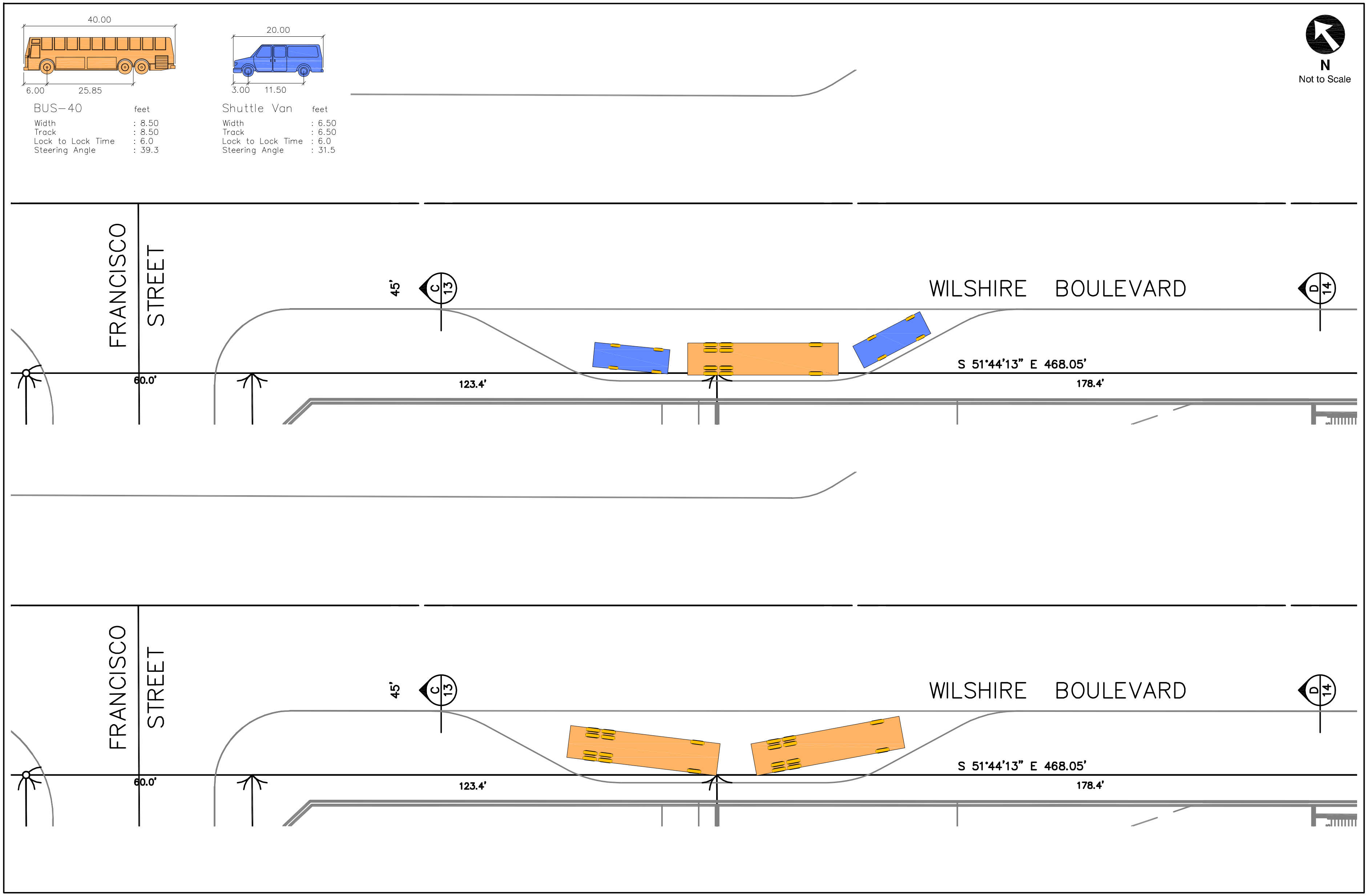
LOS = D

Developed by Chun Wong, 12/94



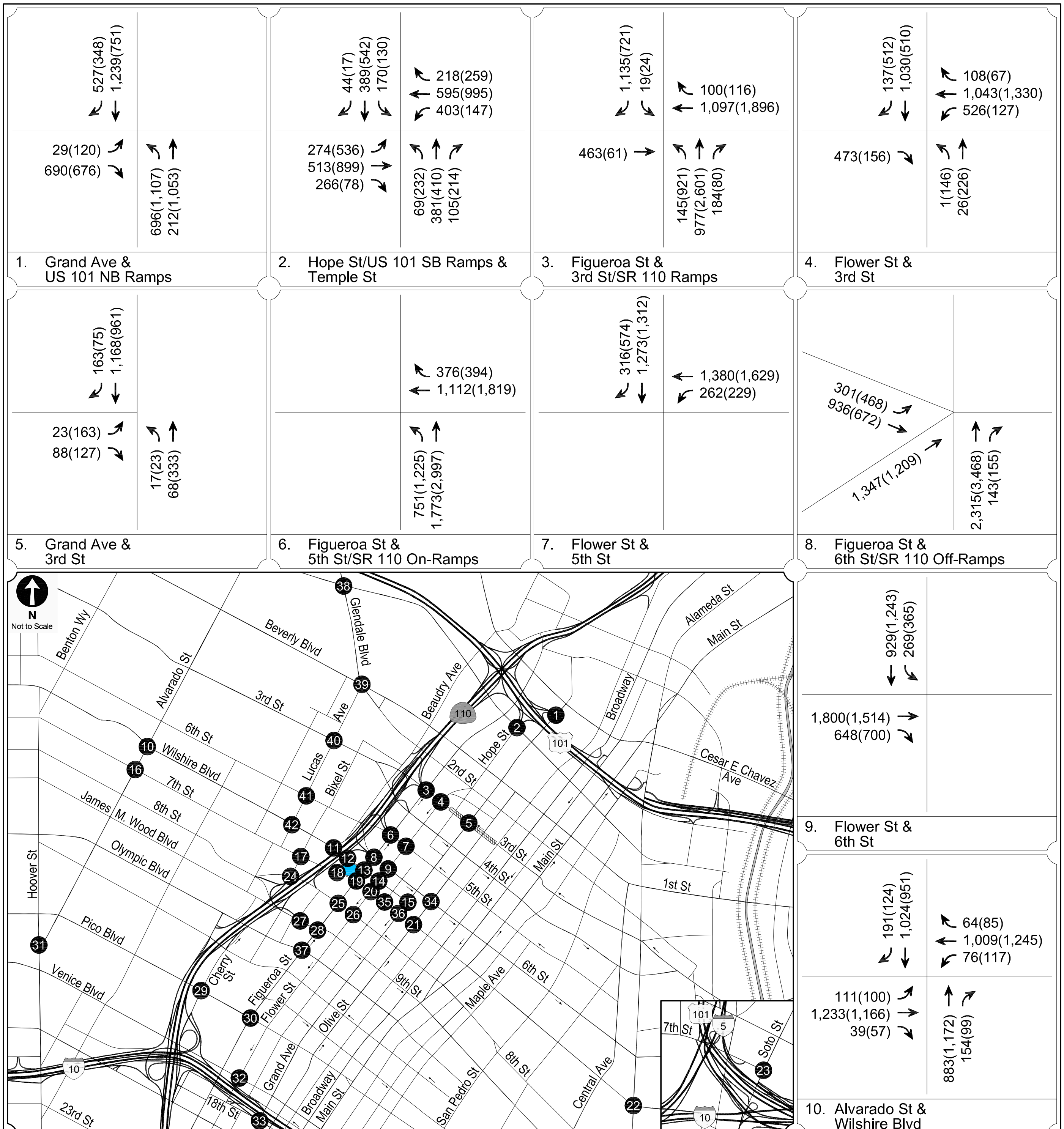
7TH STREET DROP-OFF

FIGURE 1



WILSHIRE BOULEVARD BUS ZONE

FIGURE 2



LEGEND

X(X) AM(PM) Peak Hour Traffic Volumes

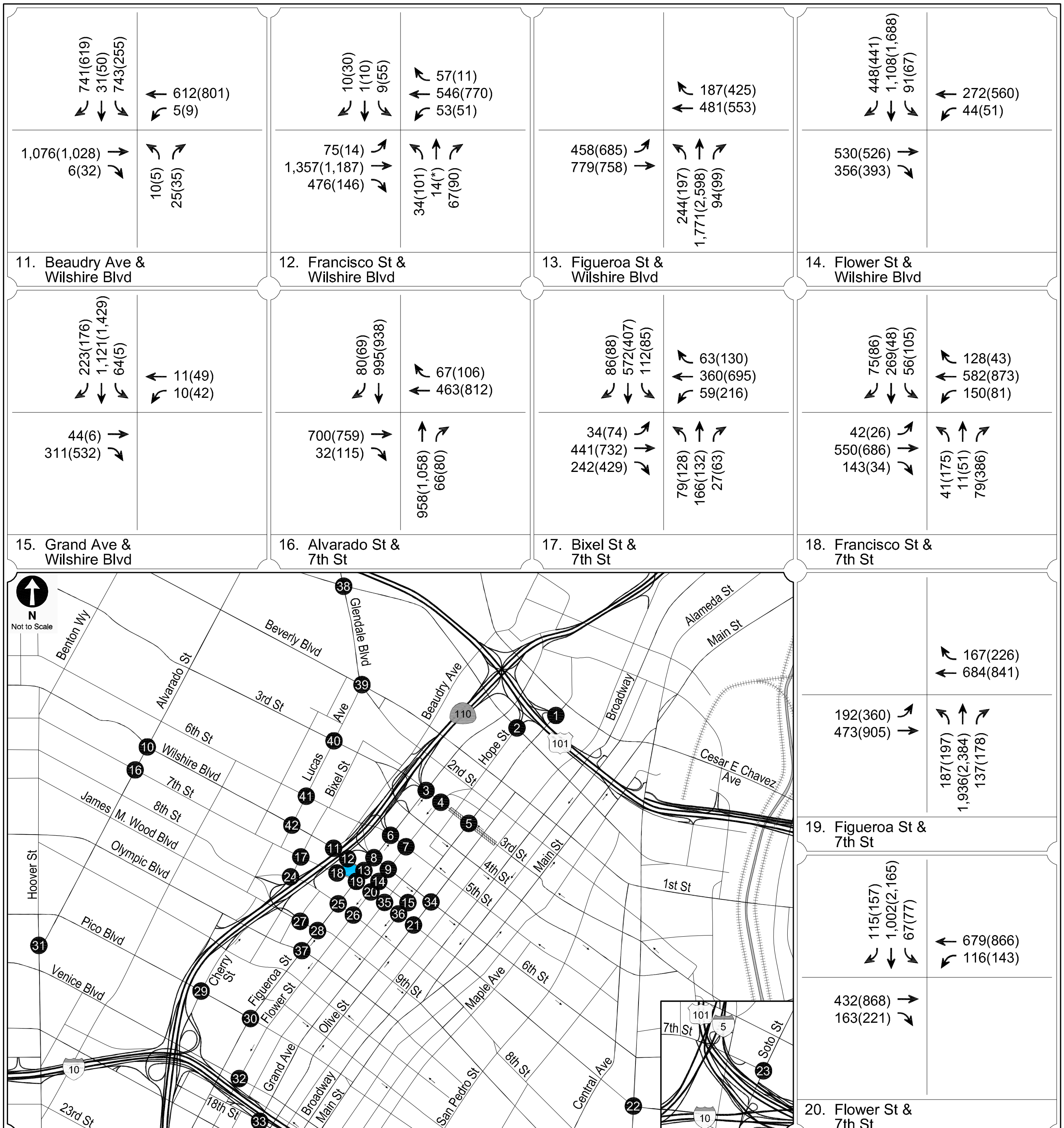
* Negligible Volume

Project Site

Analyzed Intersection

ALTERNATE FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2020)
INTERSECTION PEAK HOUR TRAFFIC VOLUMES

FIGURE 3 A



LEGEND

X(X) AM(PM) Peak Hour Traffic Volumes

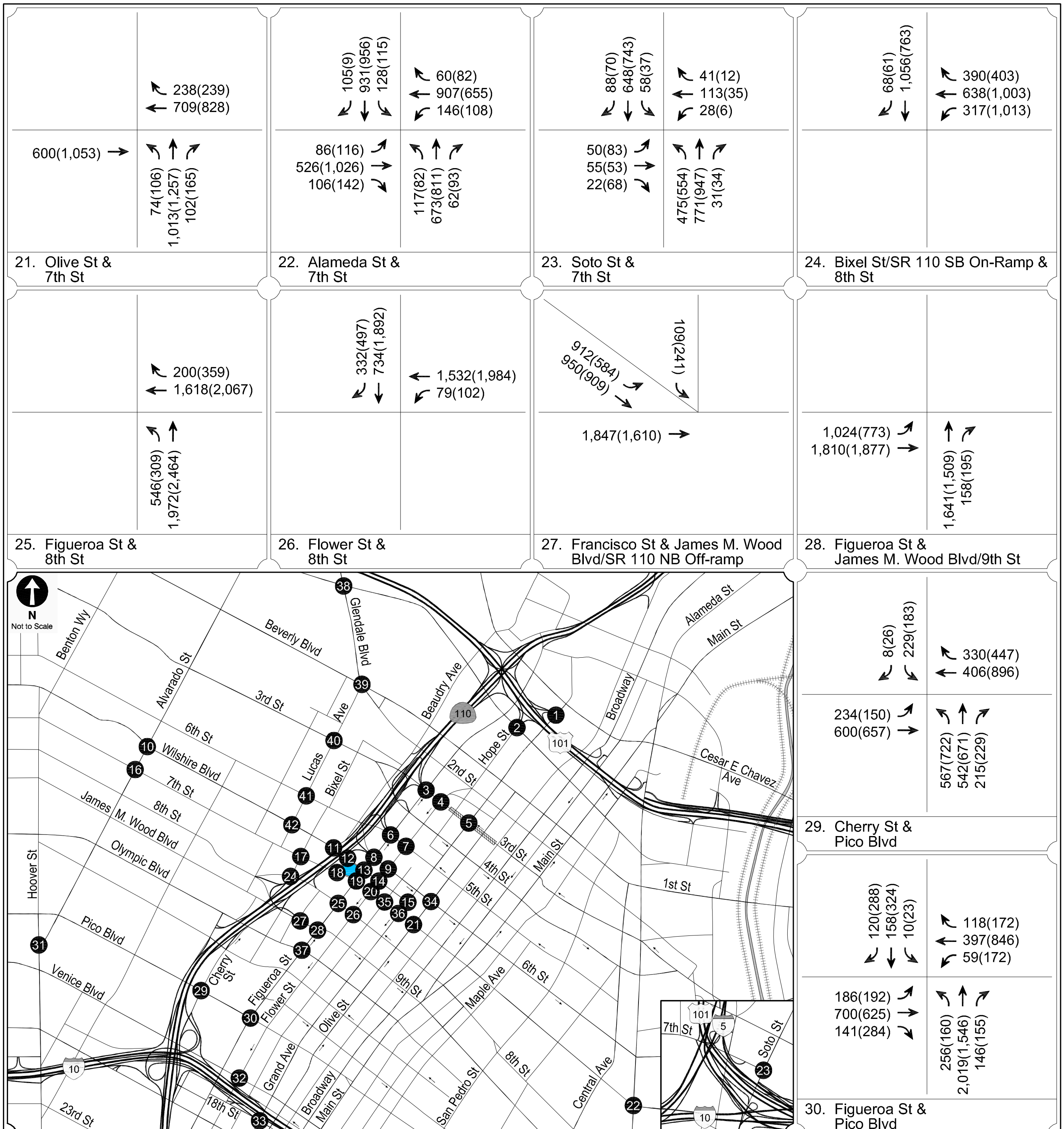
* Negligible Volume

Project Site

Analyzed Intersection

ALTERNATE FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2020)
INTERSECTION PEAK HOUR TRAFFIC VOLUMES

FIGURE
3 B



LEGEND

X(X) AM(PM) Peak Hour Traffic Volumes

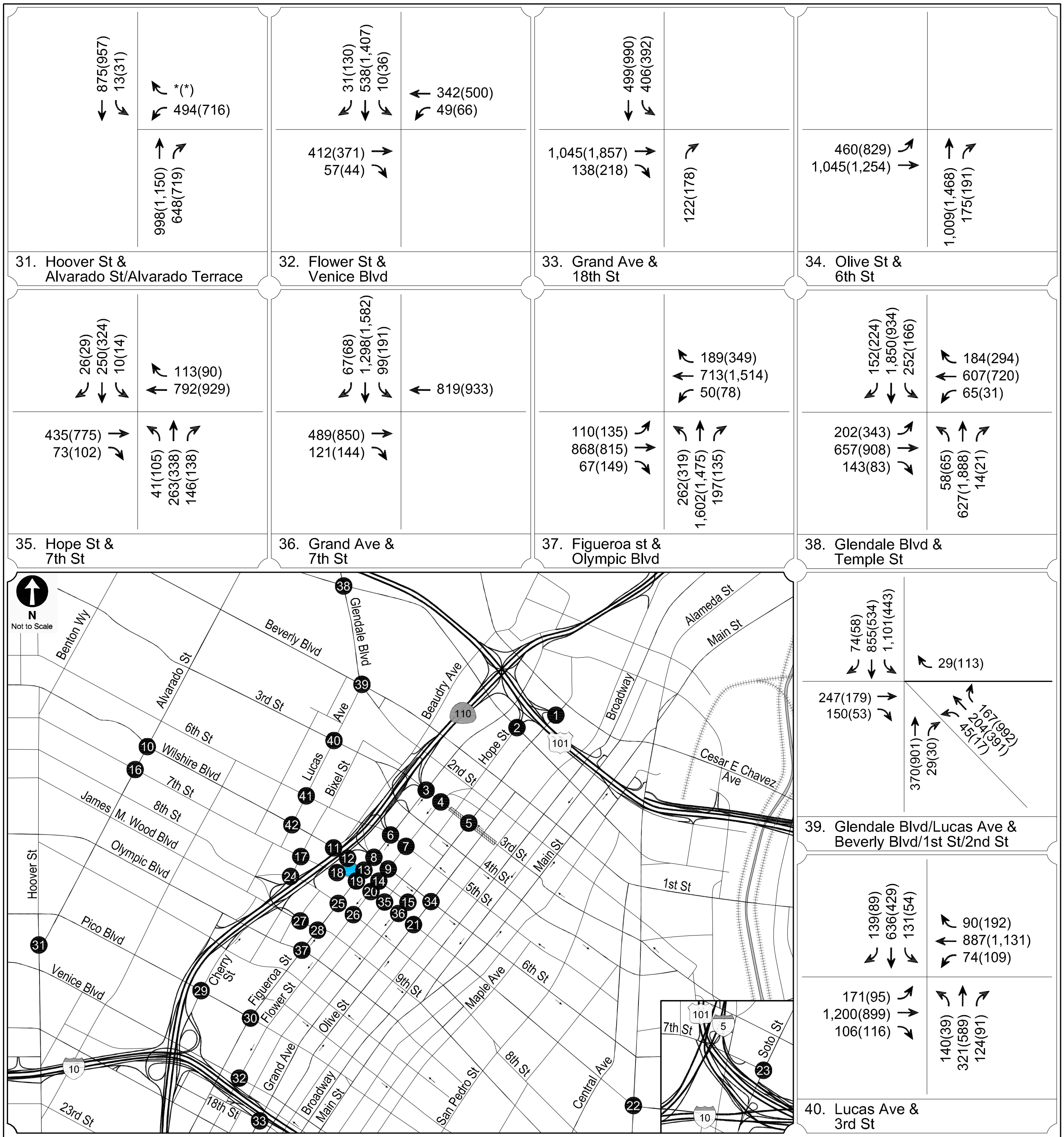
* Negligible Volume

Project Site

Analyzed Intersection

ALTERNATE FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2020)
INTERSECTION PEAK HOUR TRAFFIC VOLUMES

FIGURE
3 C

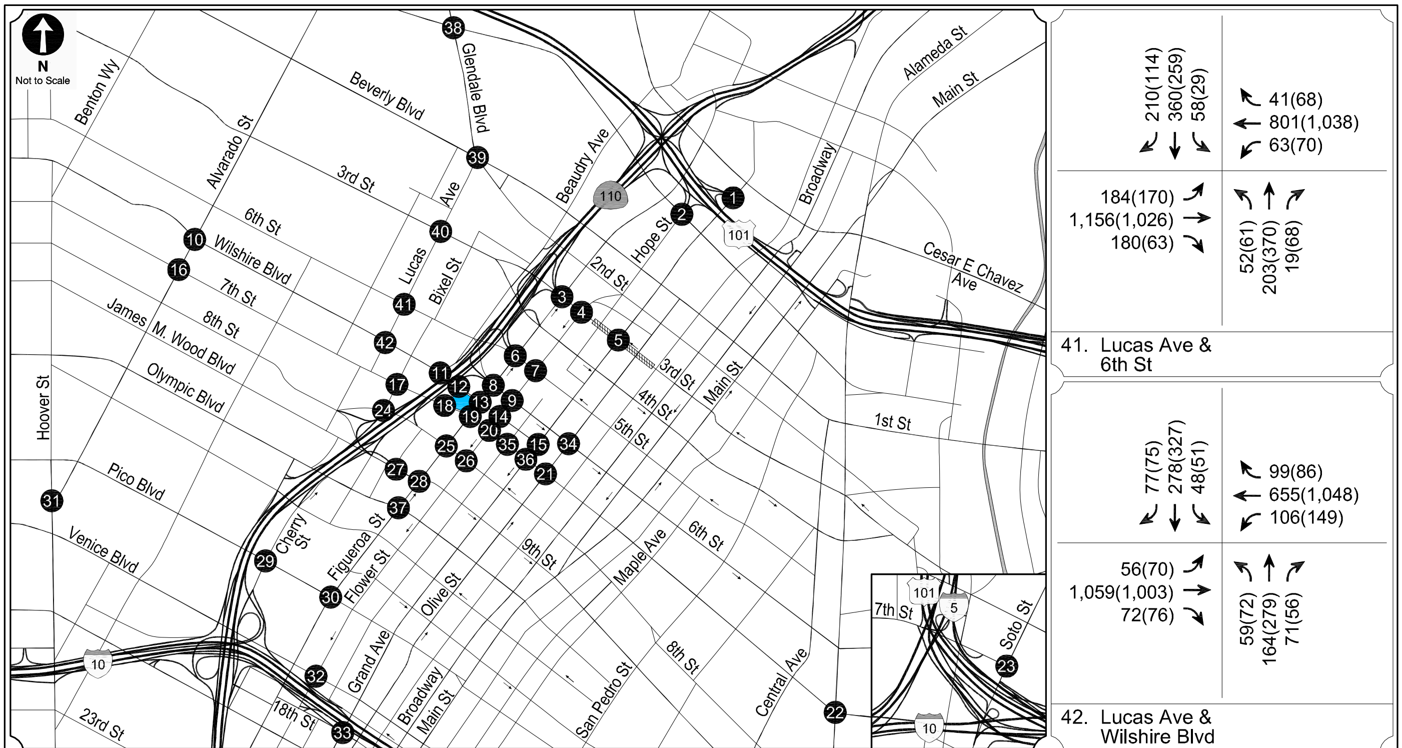


LEGEND

X(X) AM(PM) Peak Hour Traffic Volumes
* Negligible Volume
Project Site
\# Analyzed Intersection

ALTERNATE FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2020)
INTERSECTION PEAK HOUR TRAFFIC VOLUMES

FIGURE
3 D



LEGEND

X(X) AM(PM) Peak Hour Traffic Volumes

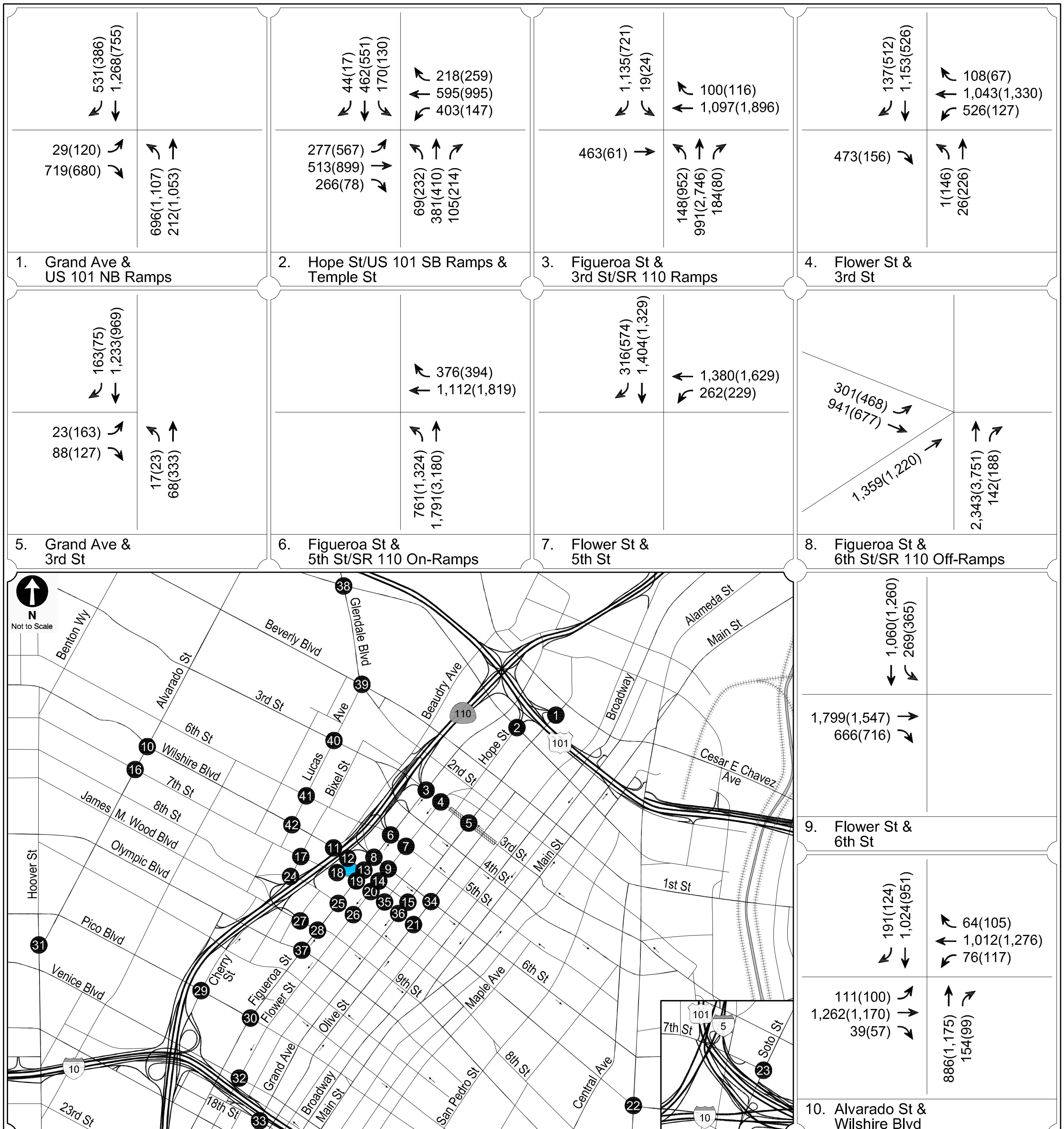
* Negligible Volume

Project Site

\# Analyzed Intersection

ALTERNATE FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2020)
INTERSECTION PEAK HOUR TRAFFIC VOLUMES

FIGURE
3 E



LEGEND

X(X) AM(PM) Peak Hour Traffic Volumes

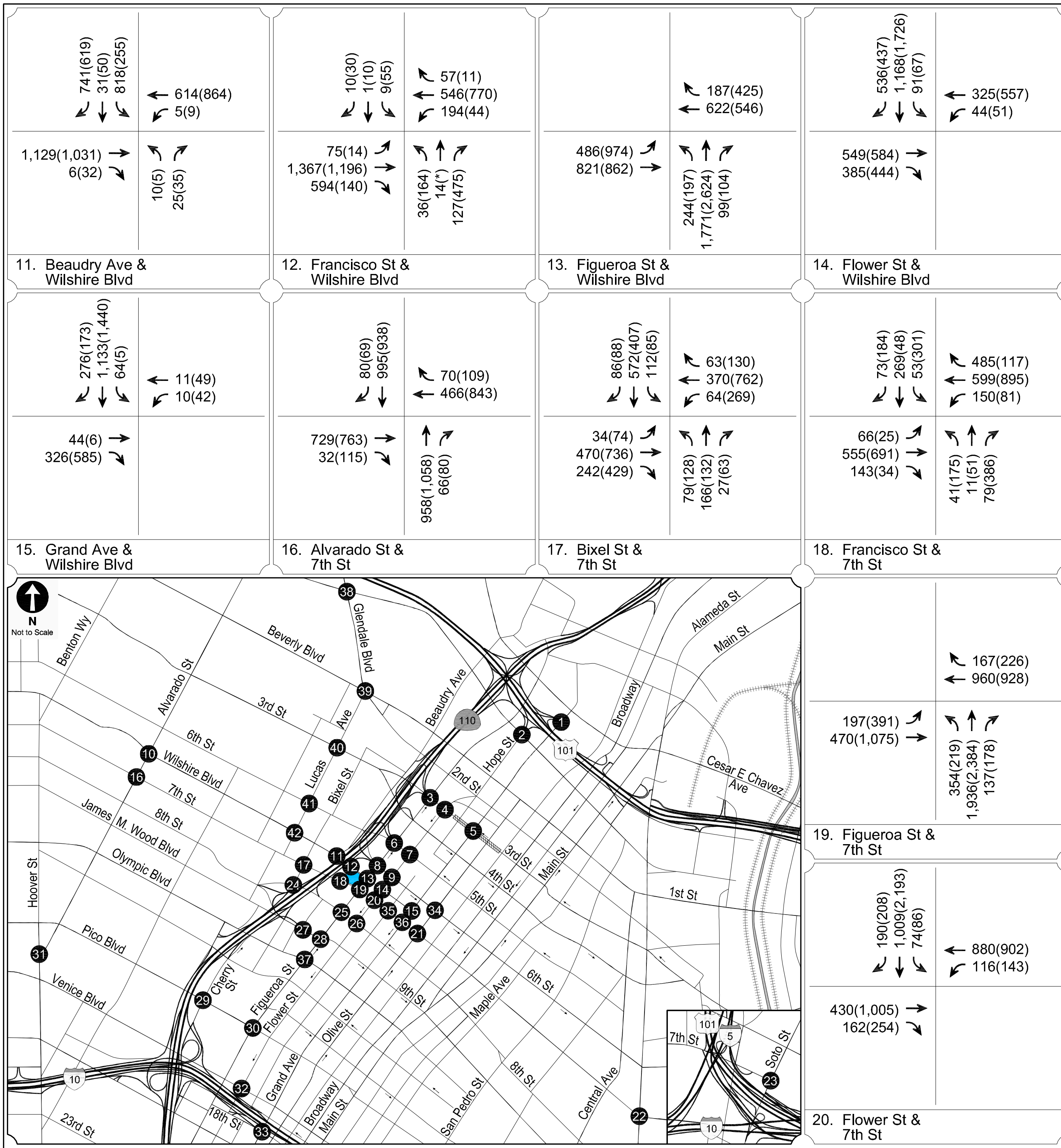
* Negligible Volume

Project Site

Analyzed Intersection

ALTERNATE FUTURE WITH PROJECT CONDITIONS, BEFORE MITIGATION (YEAR 2020)
INTERSECTION PEAK HOUR TRAFFIC VOLUMES

FIGURE 4 A



LEGEND

X(X) AM(PM) Peak Hour Traffic Volumes

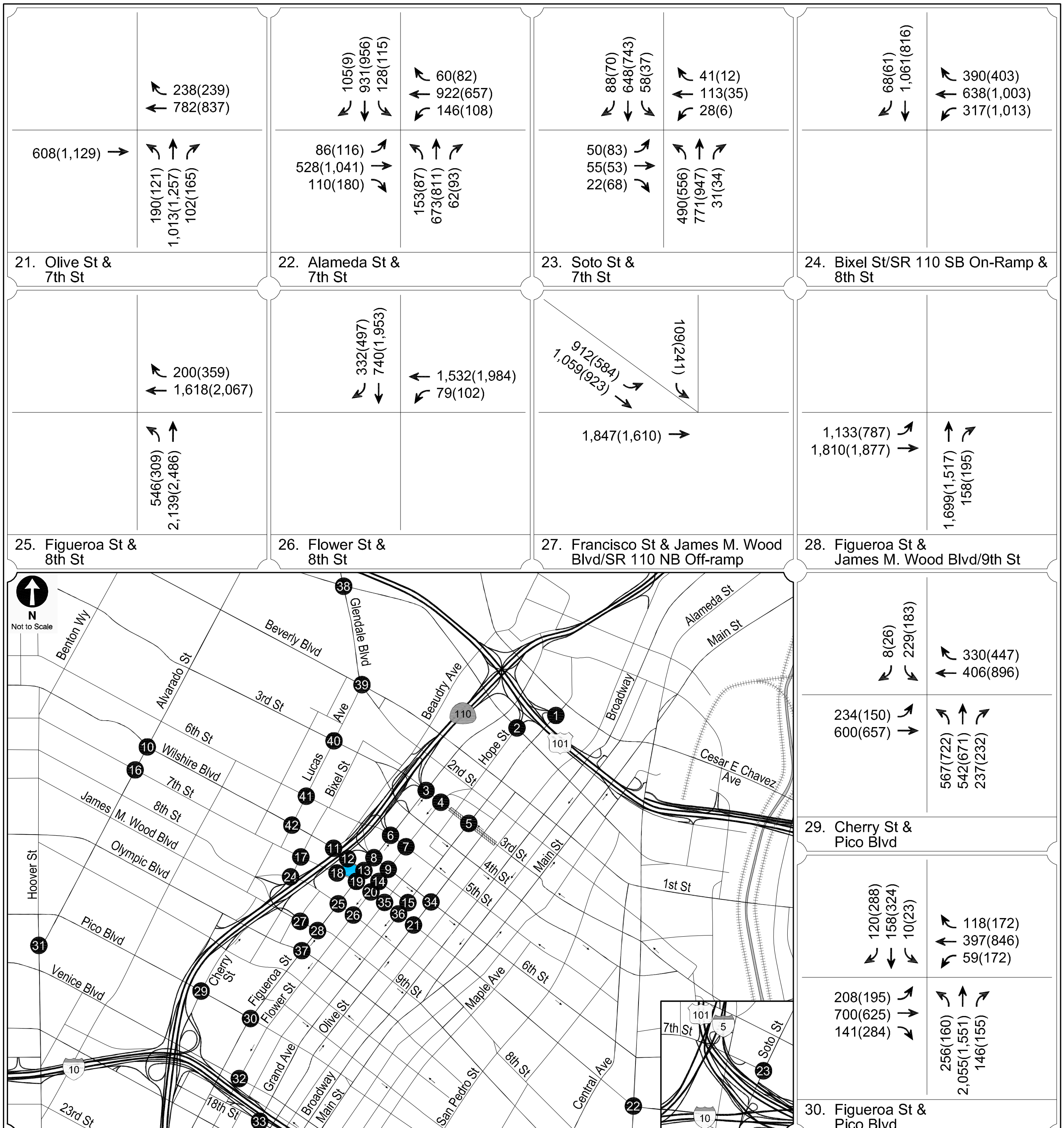
* Negligible Volume

Project Site

\# Analyzed Intersection

ALTERNATE FUTURE WITH PROJECT CONDITIONS, BEFORE MITIGATION (YEAR 2020)
INTERSECTION PEAK HOUR TRAFFIC VOLUMES

FIGURE 4 B



LEGEND

X(X) AM(PM) Peak Hour Traffic Volumes

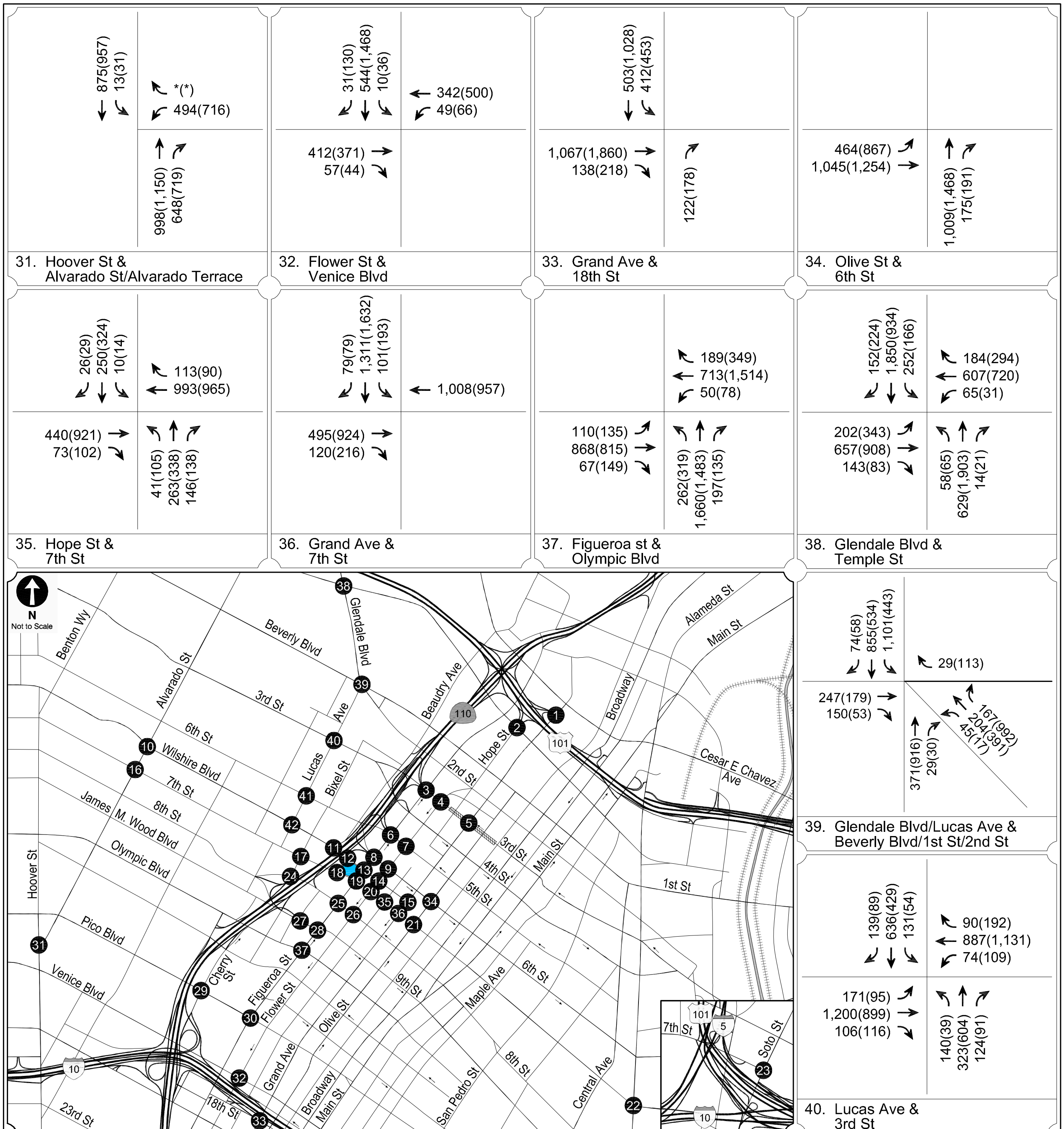
* Negligible Volume

Project Site

Analyzed Intersection

ALTERNATE FUTURE WITH PROJECT CONDITIONS, BEFORE MITIGATION (YEAR 2020)
INTERSECTION PEAK HOUR TRAFFIC VOLUMES

FIGURE 4 C



LEGEND

X(X) AM(PM) Peak Hour Traffic Volumes

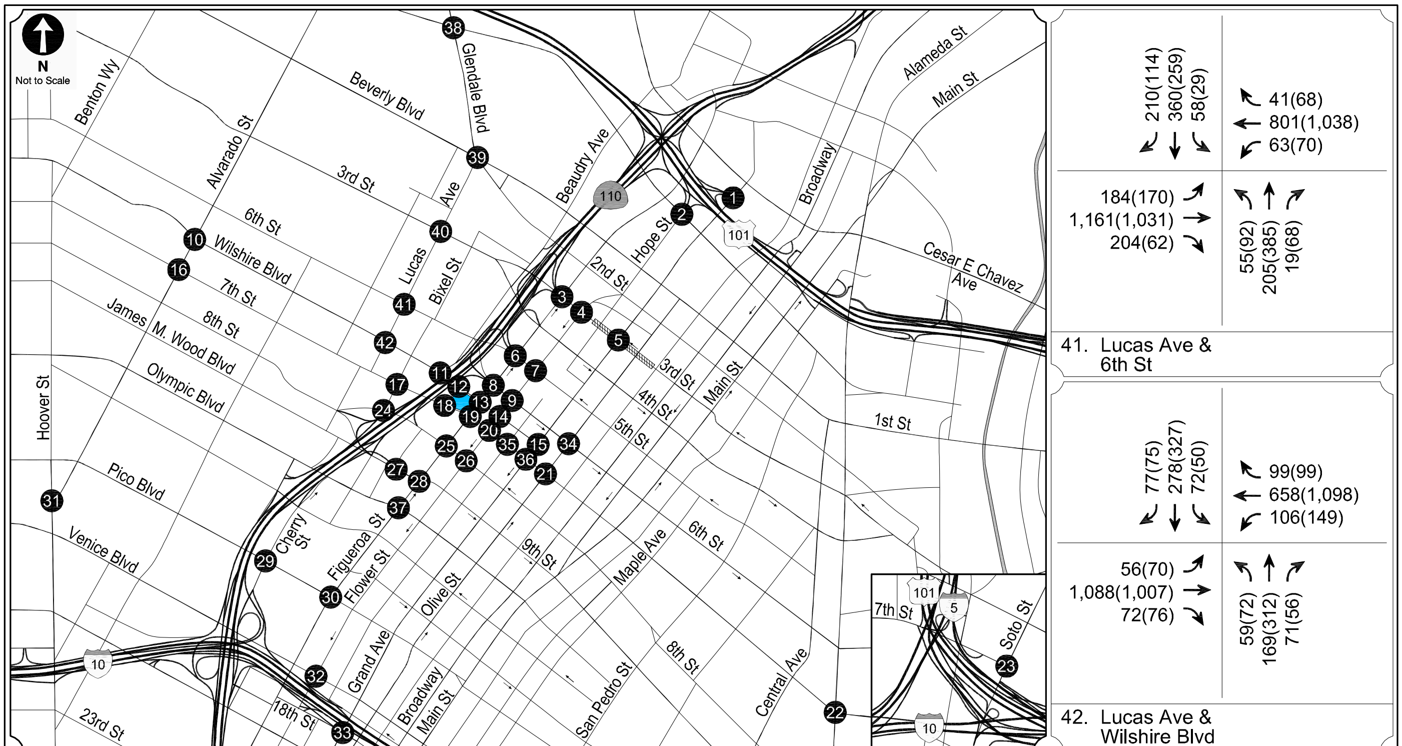
* Negligible Volume

Project Site

Analyzed Intersection

ALTERNATE FUTURE WITH PROJECT CONDITIONS, BEFORE MITIGATION (YEAR 2020)
INTERSECTION PEAK HOUR TRAFFIC VOLUMES

FIGURE 4 D

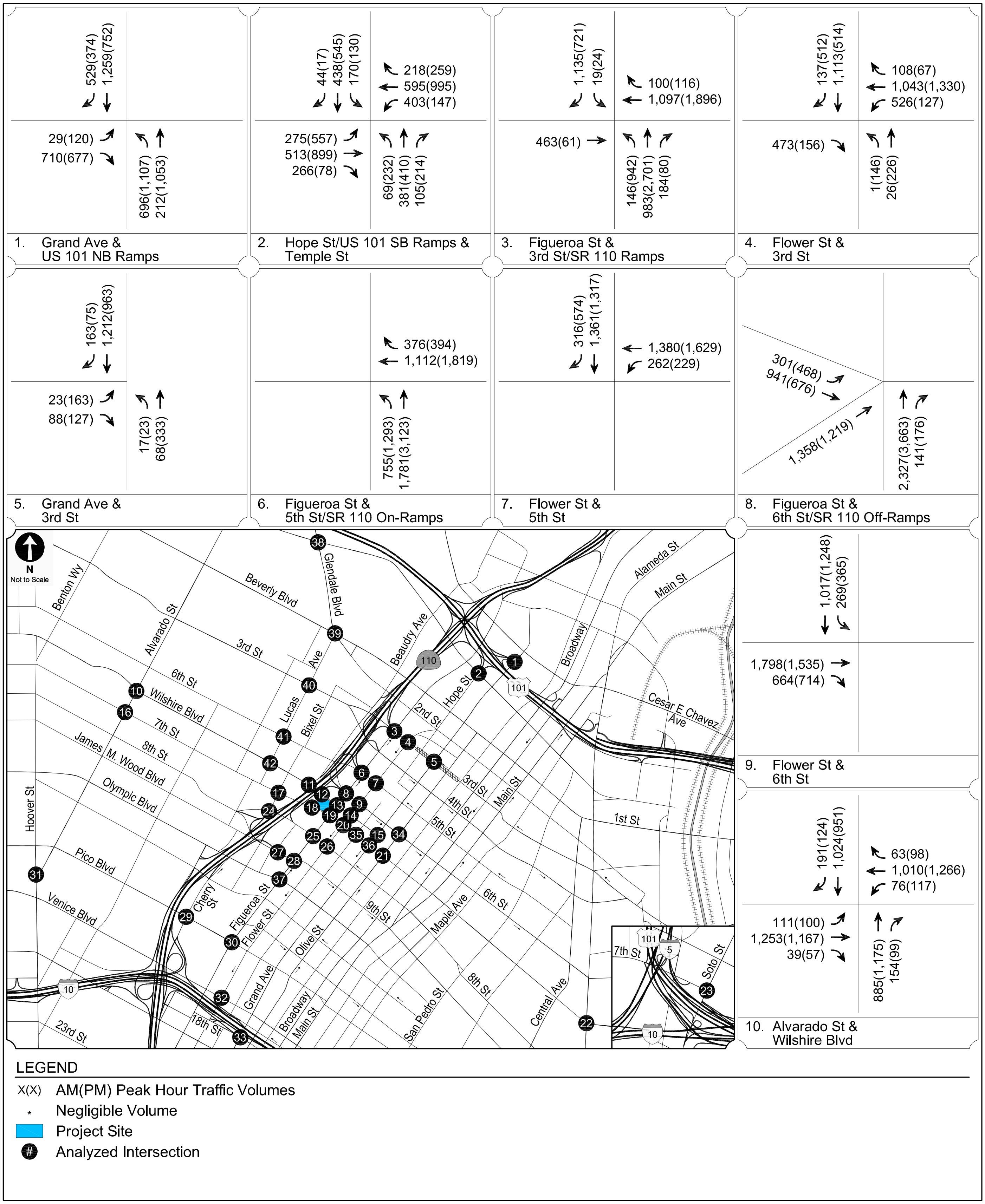


LEGEND

X(X)	AM(PM) Peak Hour Traffic Volumes
*	Negligible Volume
	Project Site
#	Analyzed Intersection

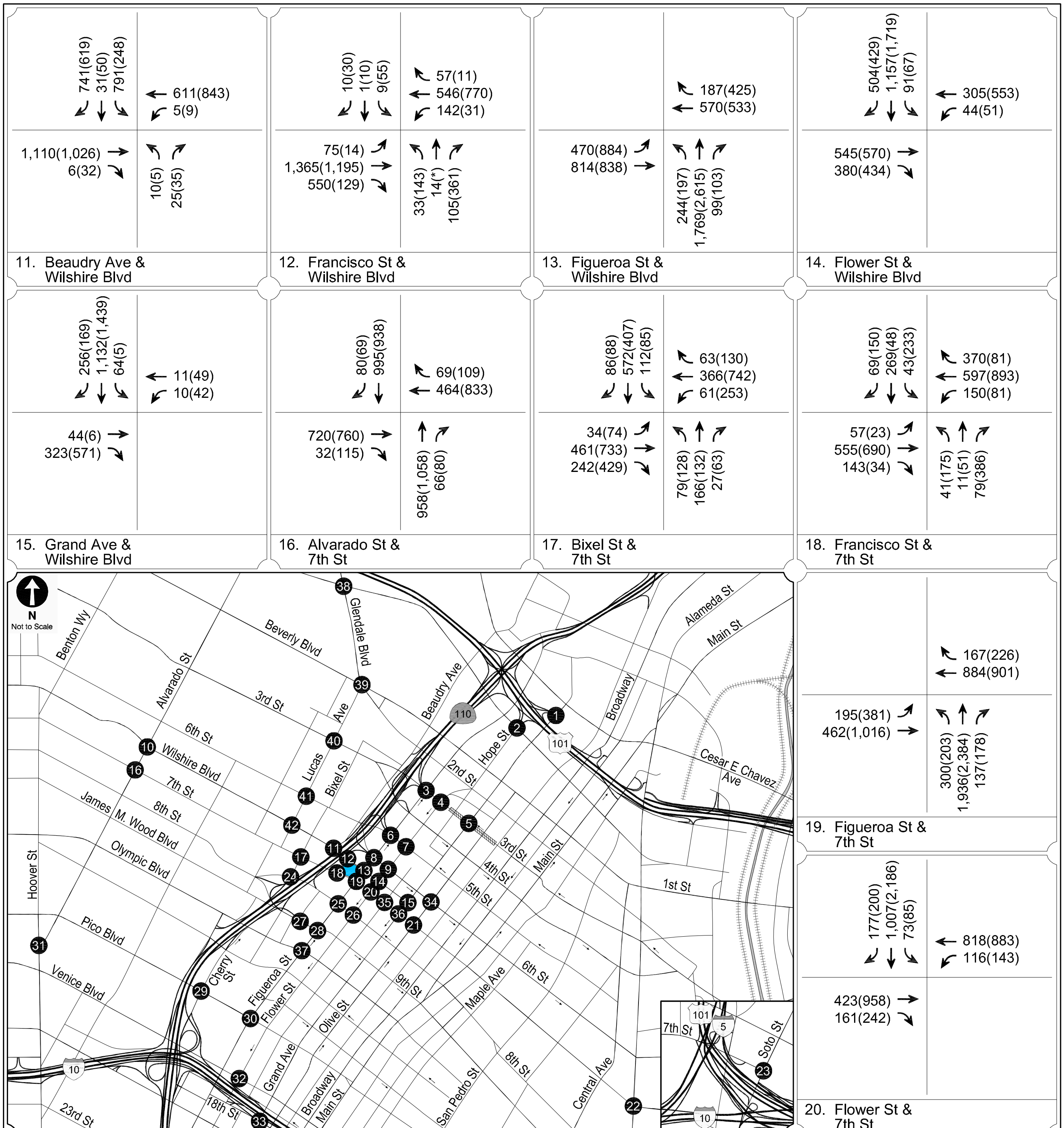
ALTERNATE FUTURE WITH PROJECT CONDITIONS, BEFORE MITIGATION (YEAR 2020)
INTERSECTION PEAK HOUR TRAFFIC VOLUMES

FIGURE 4 E



ALTERNATE FUTURE WITH PROJECT WITH TDM PROGRAM CONDITIONS (YEAR 2020)
INTERSECTION PEAK HOUR TRAFFIC VOLUMES

FIGURE 5 A



LEGEND

X(X) AM(PM) Peak Hour Traffic Volumes

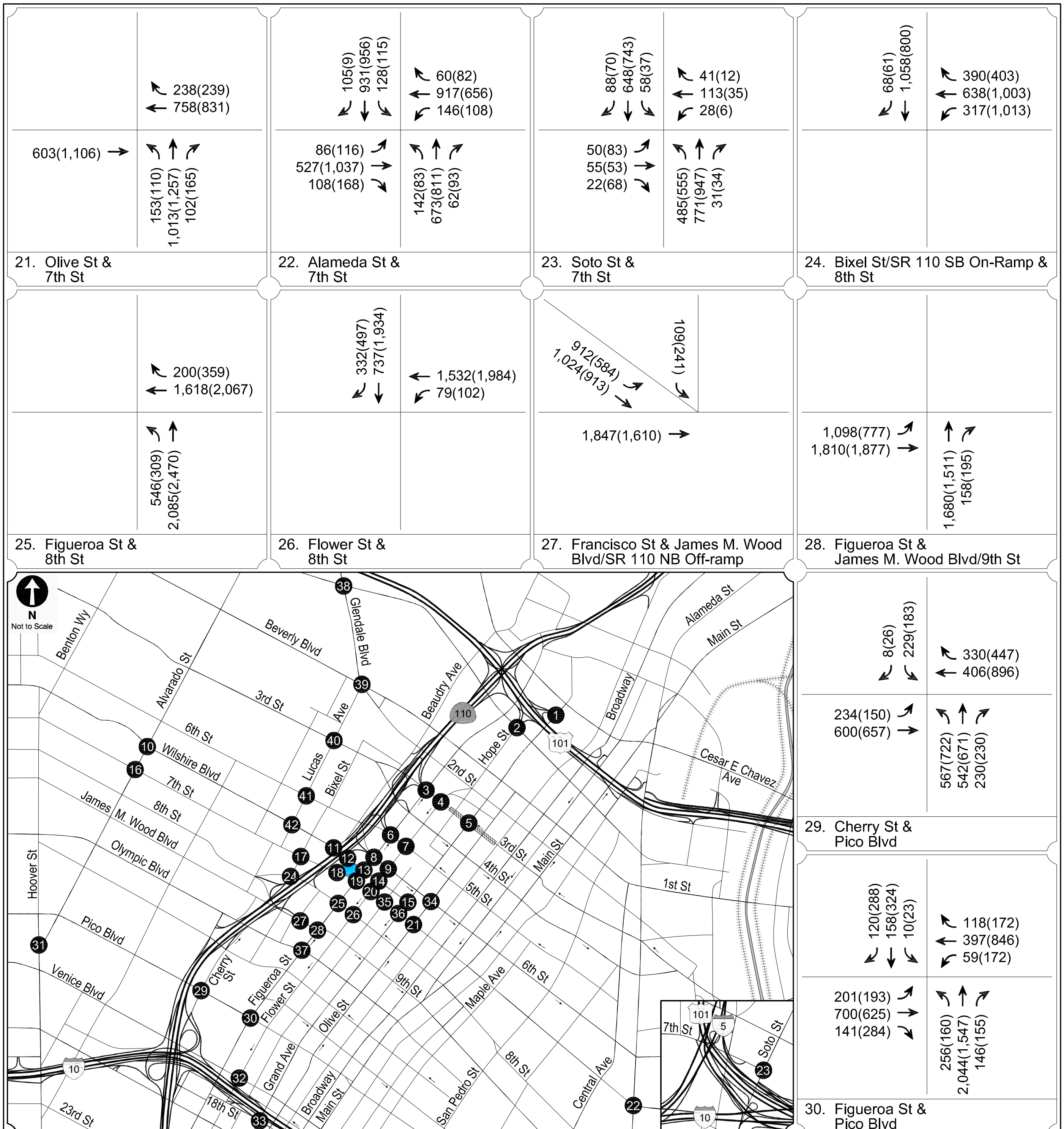
* Negligible Volume

Project Site

Analyzed Intersection

ALTERNATE FUTURE WITH PROJECT WITH TDM PROGRAM CONDITIONS (YEAR 2020)
INTERSECTION PEAK HOUR TRAFFIC VOLUMES

FIGURE
5 B



LEGEND

X(X) AM(PM) Peak Hour Traffic Volumes

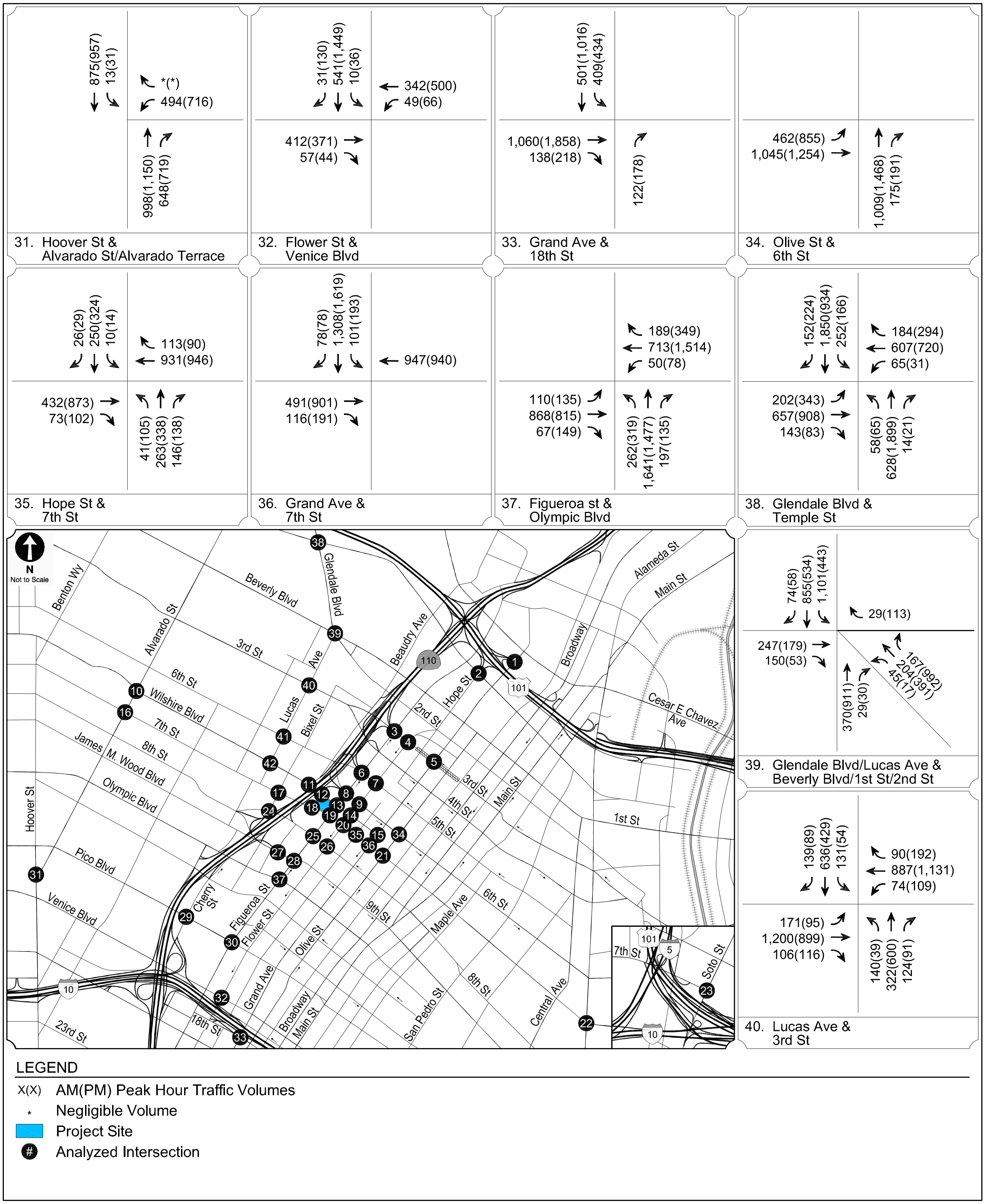
* Negligible Volume

Project Site

\# Analyzed Intersection

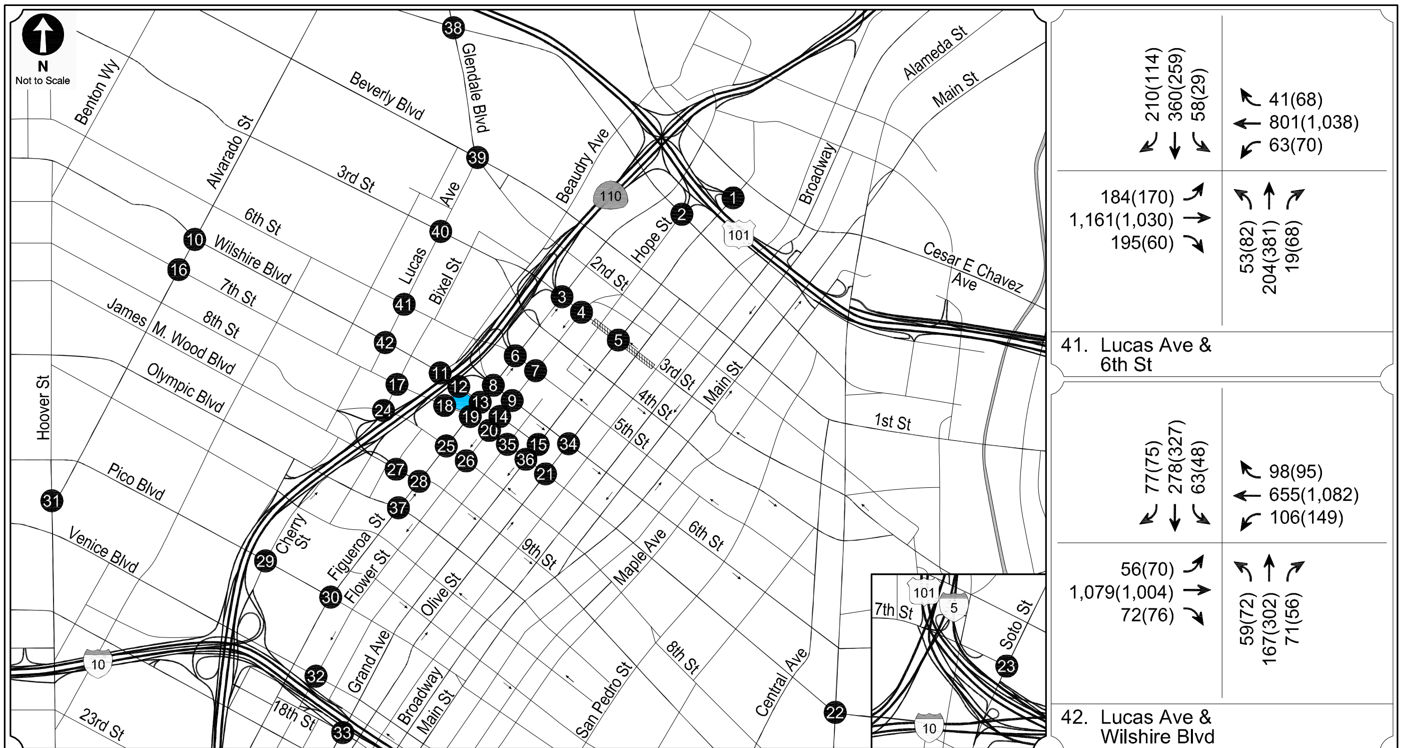
ALTERNATE FUTURE WITH PROJECT WITH TDM PROGRAM CONDITIONS (YEAR 2020)
INTERSECTION PEAK HOUR TRAFFIC VOLUMES

FIGURE
5 C



ALTERNATE FUTURE WITH PROJECT WITH TDM PROGRAM CONDITIONS (YEAR 2020)
INTERSECTION PEAK HOUR TRAFFIC VOLUMES

FIGURE 5 D

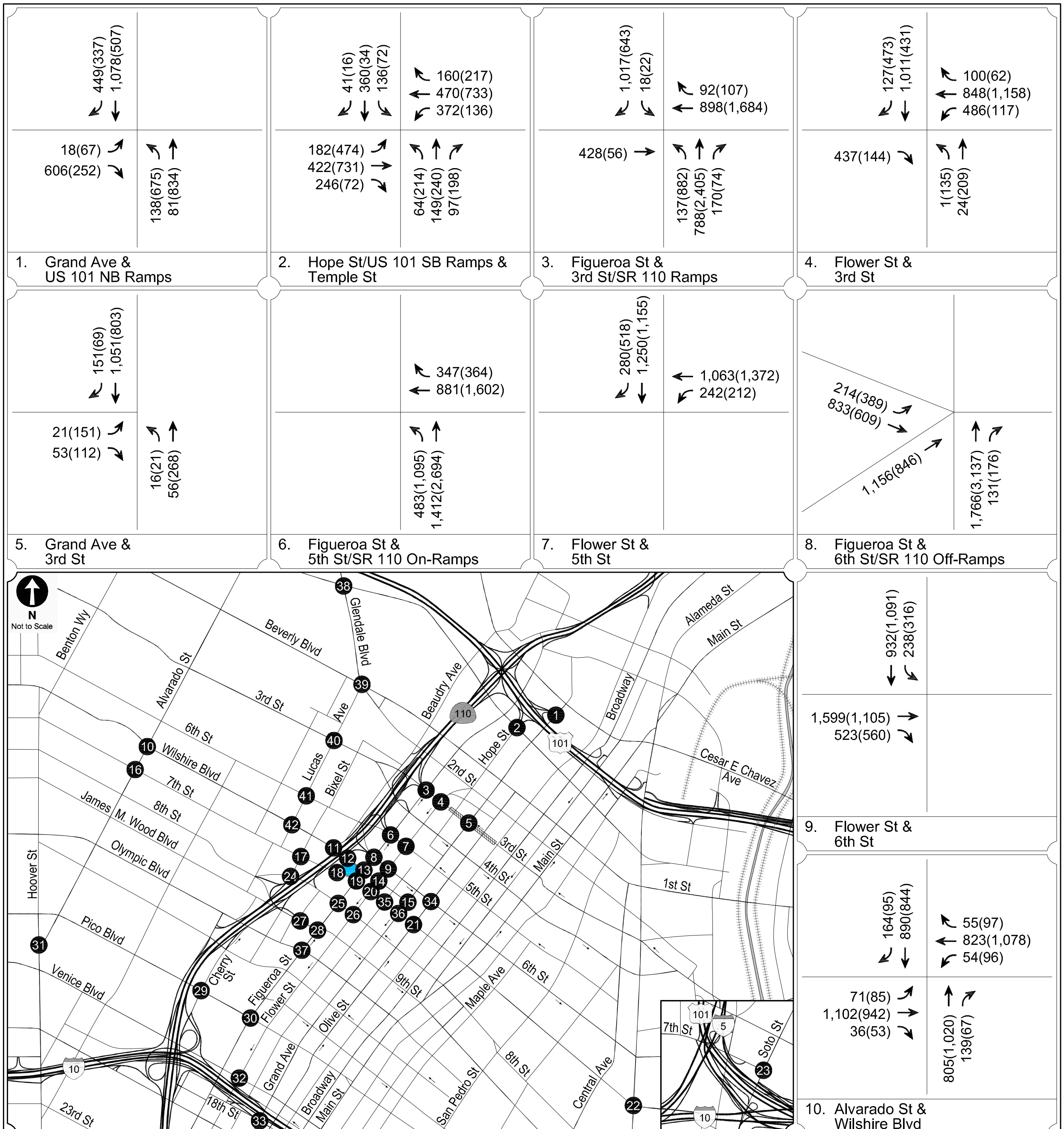


LEGEND

X(X)	AM(PM) Peak Hour Traffic Volumes
*	Negligible Volume
	Project Site
#	Analyzed Intersection

ALTERNATE FUTURE WITH PROJECT WITH TDM PROGRAM CONDITIONS (YEAR 2020)
INTERSECTION PEAK HOUR TRAFFIC VOLUMES

FIGURE 5 E



LEGEND

X(X) AM(PM) Peak Hour Traffic Volumes

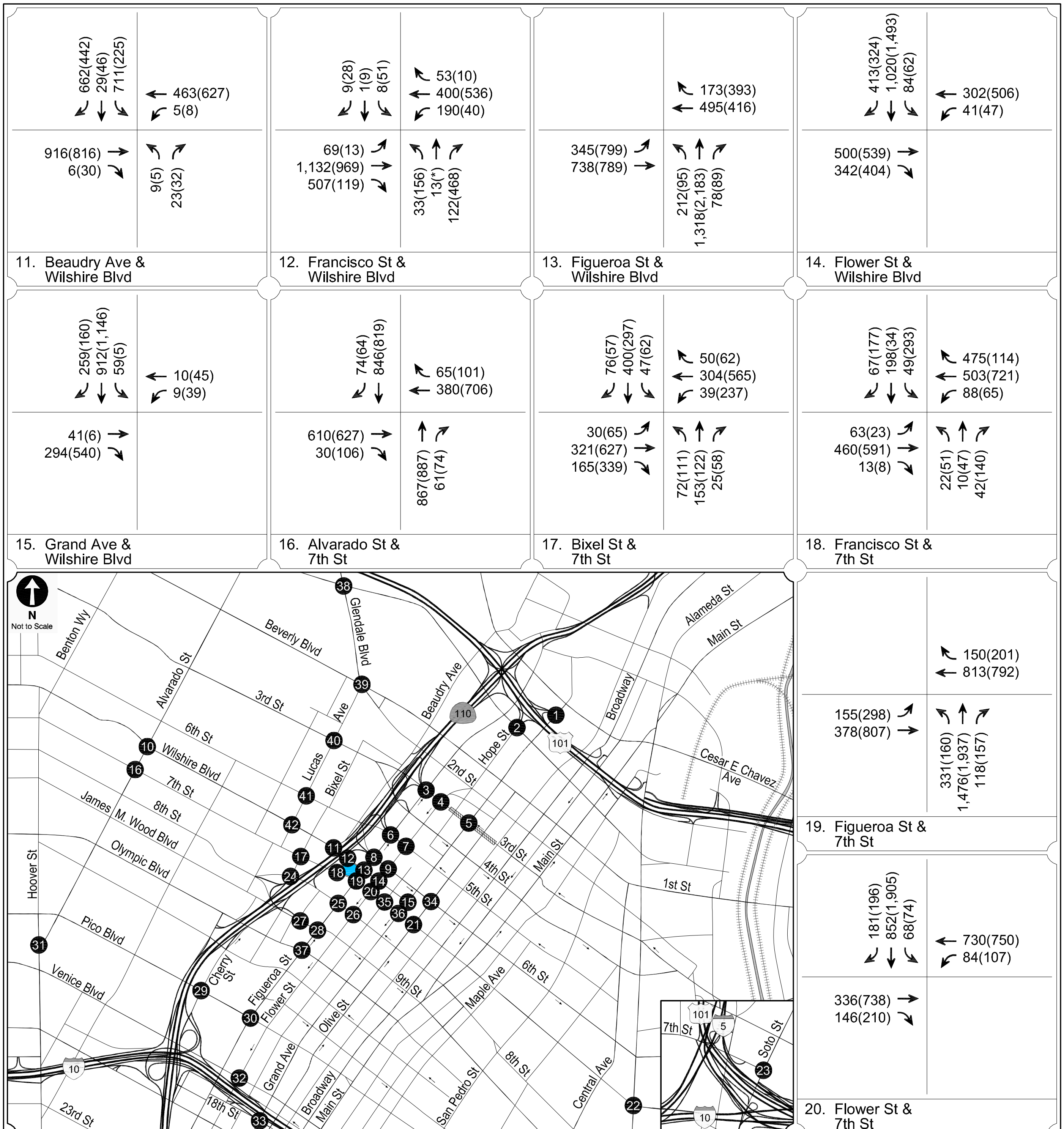
* Negligible Volume

Project Site

\# Analyzed Intersection

EXISTING PLUS PROJECT CONDITIONS
INTERSECTION PEAK HOUR TRAFFIC VOLUMES

FIGURE
6 A



LEGEND

X(X) AM(PM) Peak Hour Traffic Volumes

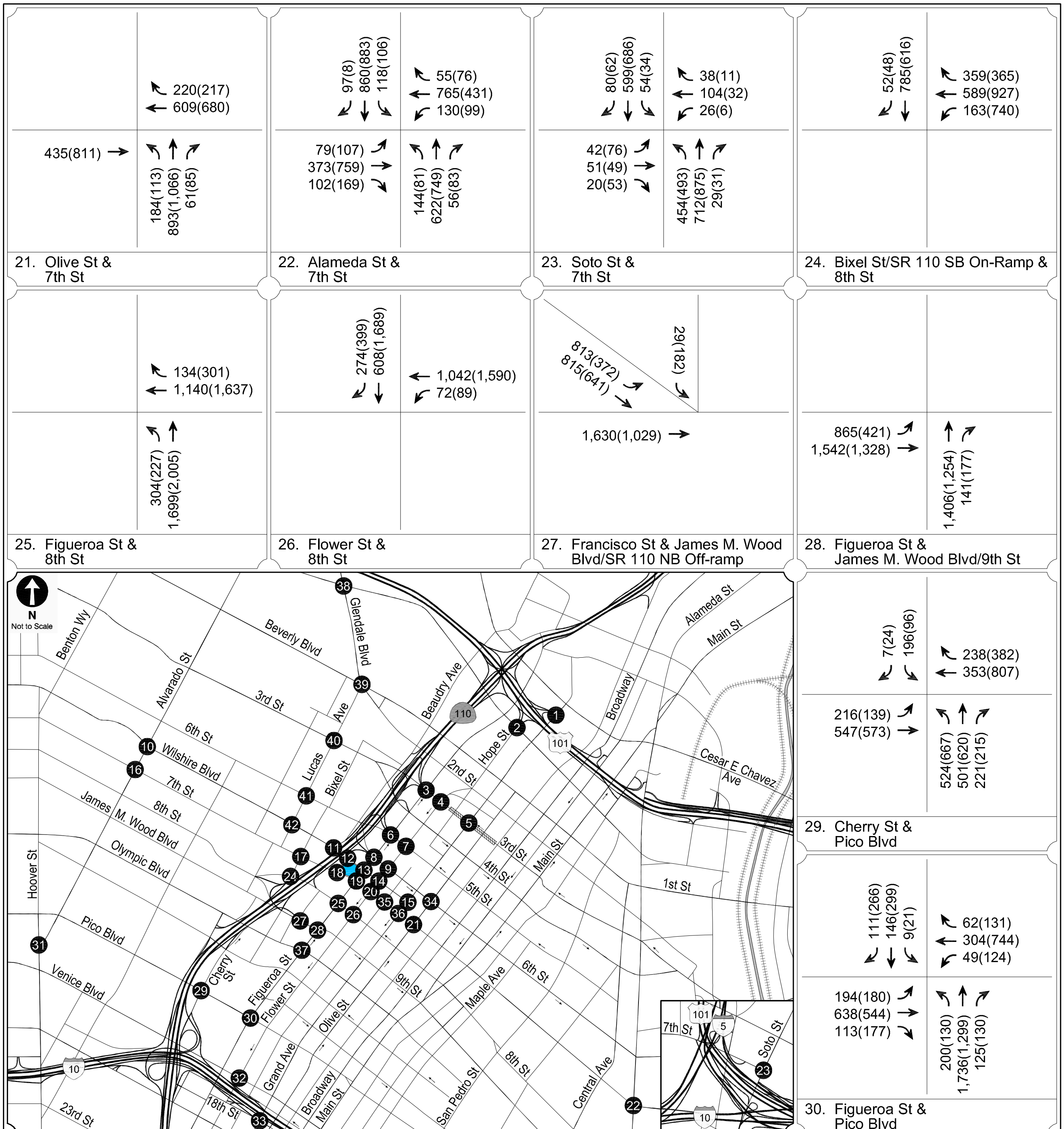
* Negligible Volume

Project Site

Analyzed Intersection

EXISTING PLUS PROJECT CONDITIONS
INTERSECTION PEAK HOUR TRAFFIC VOLUMES

FIGURE
6 B



LEGEND

X(X) AM(PM) Peak Hour Traffic Volumes

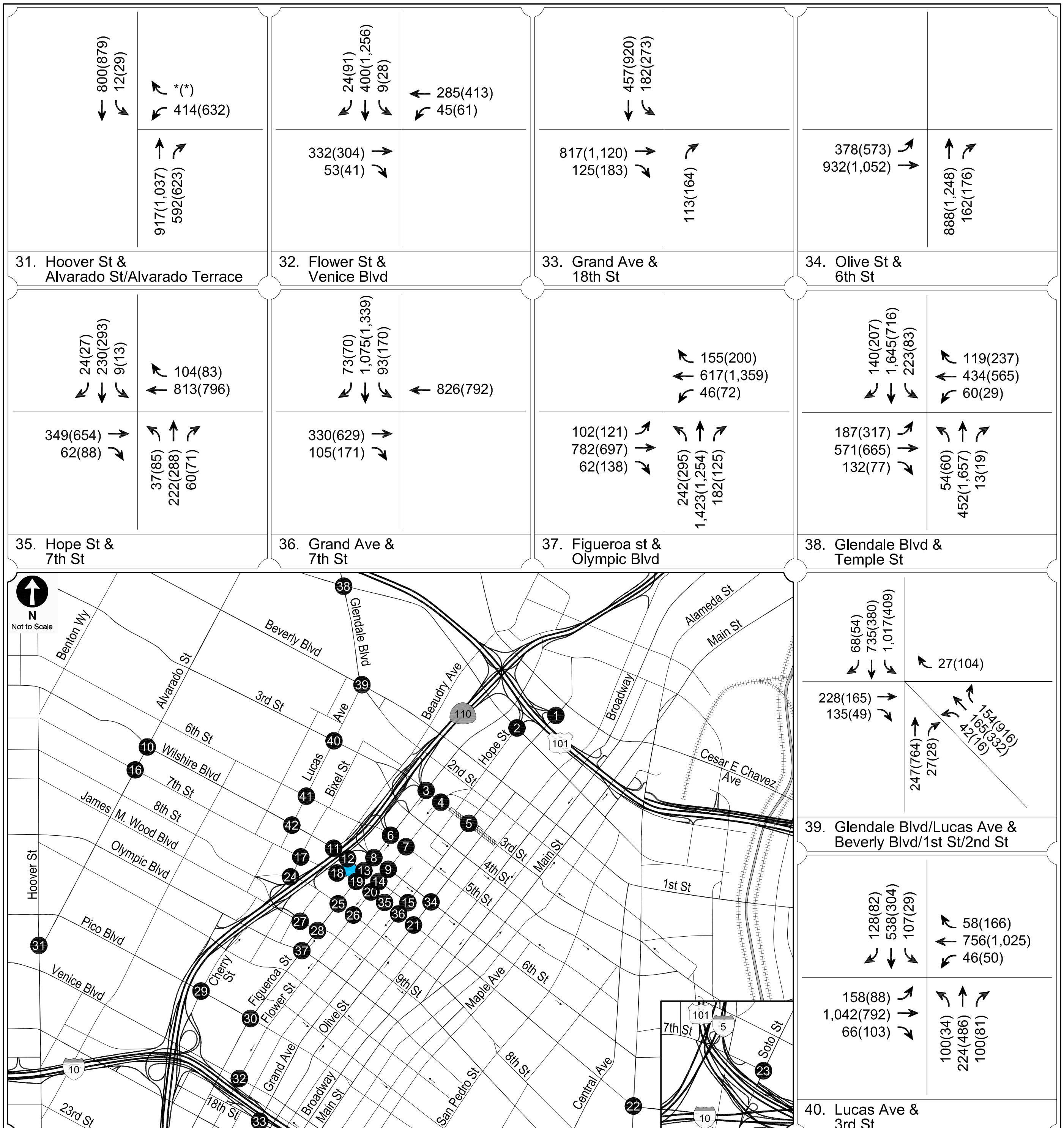
* Negligible Volume

Project Site

Analyzed Intersection

EXISTING PLUS PROJECT CONDITIONS
INTERSECTION PEAK HOUR TRAFFIC VOLUMES

FIGURE
6 C



LEGEND

X(X) AM(PM) Peak Hour Traffic Volumes

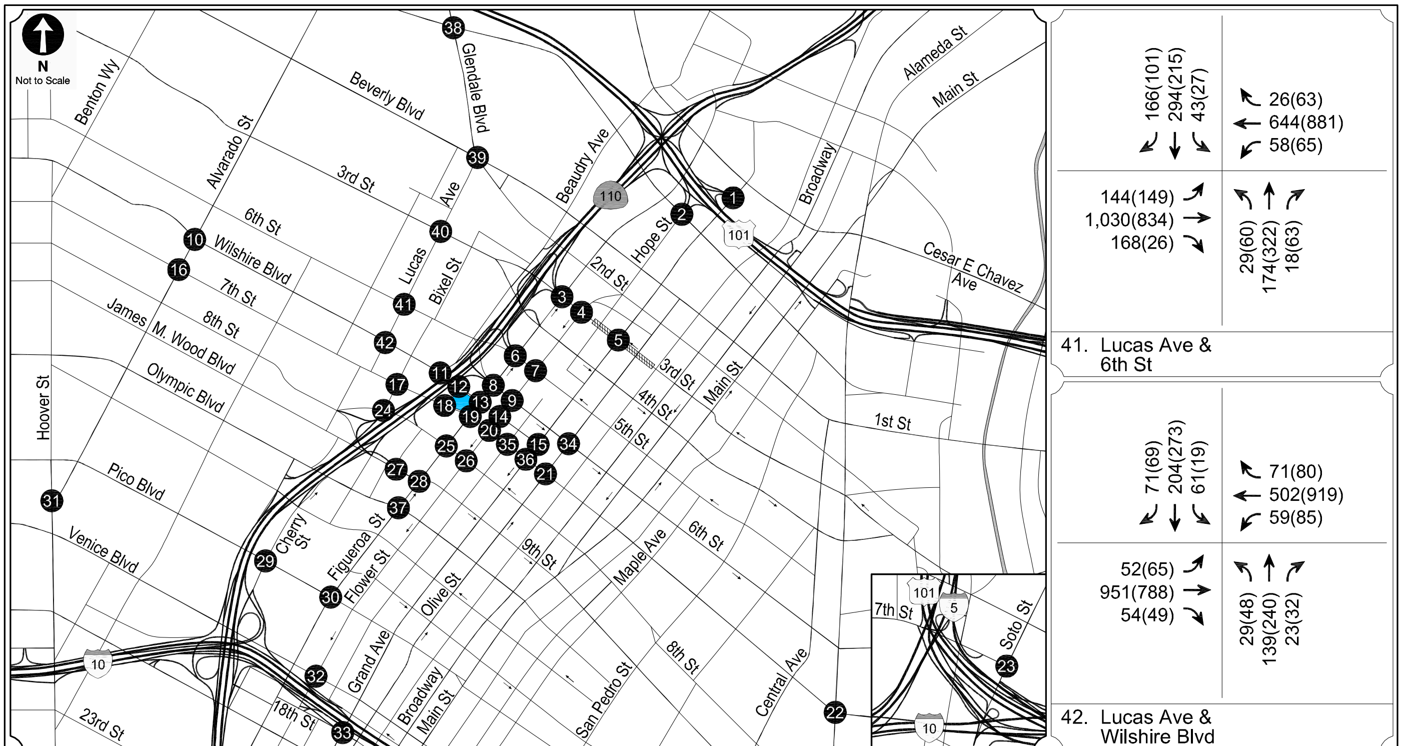
* Negligible Volume

Project Site

Analyzed Intersection

EXISTING PLUS PROJECT CONDITIONS
INTERSECTION PEAK HOUR TRAFFIC VOLUMES

FIGURE
6 D



LEGEND

X(X) AM(PM) Peak Hour Traffic Volumes

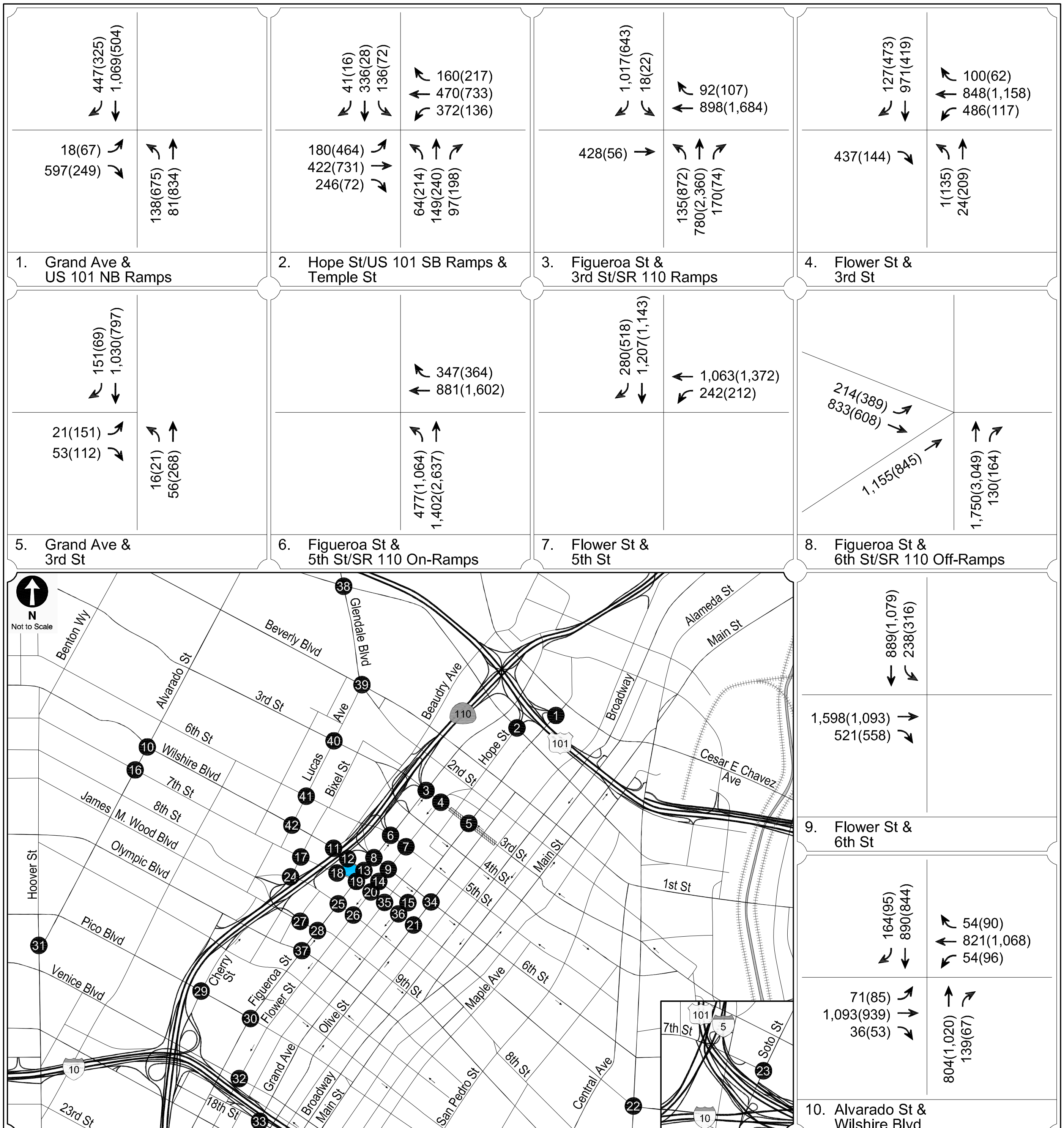
* Negligible Volume

Project Site

\# Analyzed Intersection

EXISTING PLUS PROJECT CONDITIONS
INTERSECTION PEAK HOUR TRAFFIC VOLUMES

FIGURE
6 E



LEGEND

X(X) AM(PM) Peak Hour Traffic Volumes

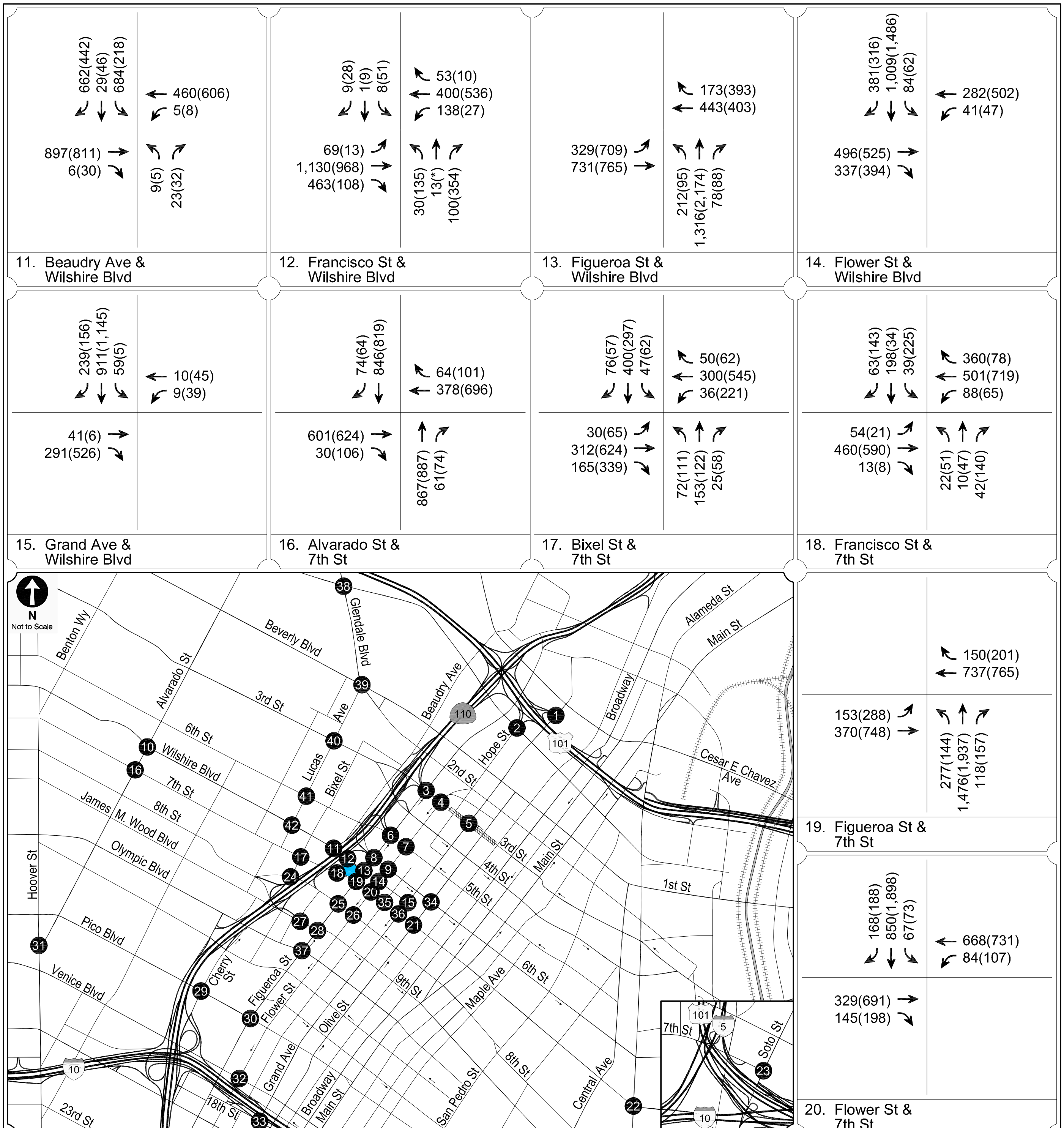
* Negligible Volume

Project Site

Analyzed Intersection

EXISTING PLUS PROJECT WITH TDM PROGRAM CONDITIONS
INTERSECTION PEAK HOUR TRAFFIC VOLUMES

FIGURE
7 A



LEGEND

X(X) AM(PM) Peak Hour Traffic Volumes

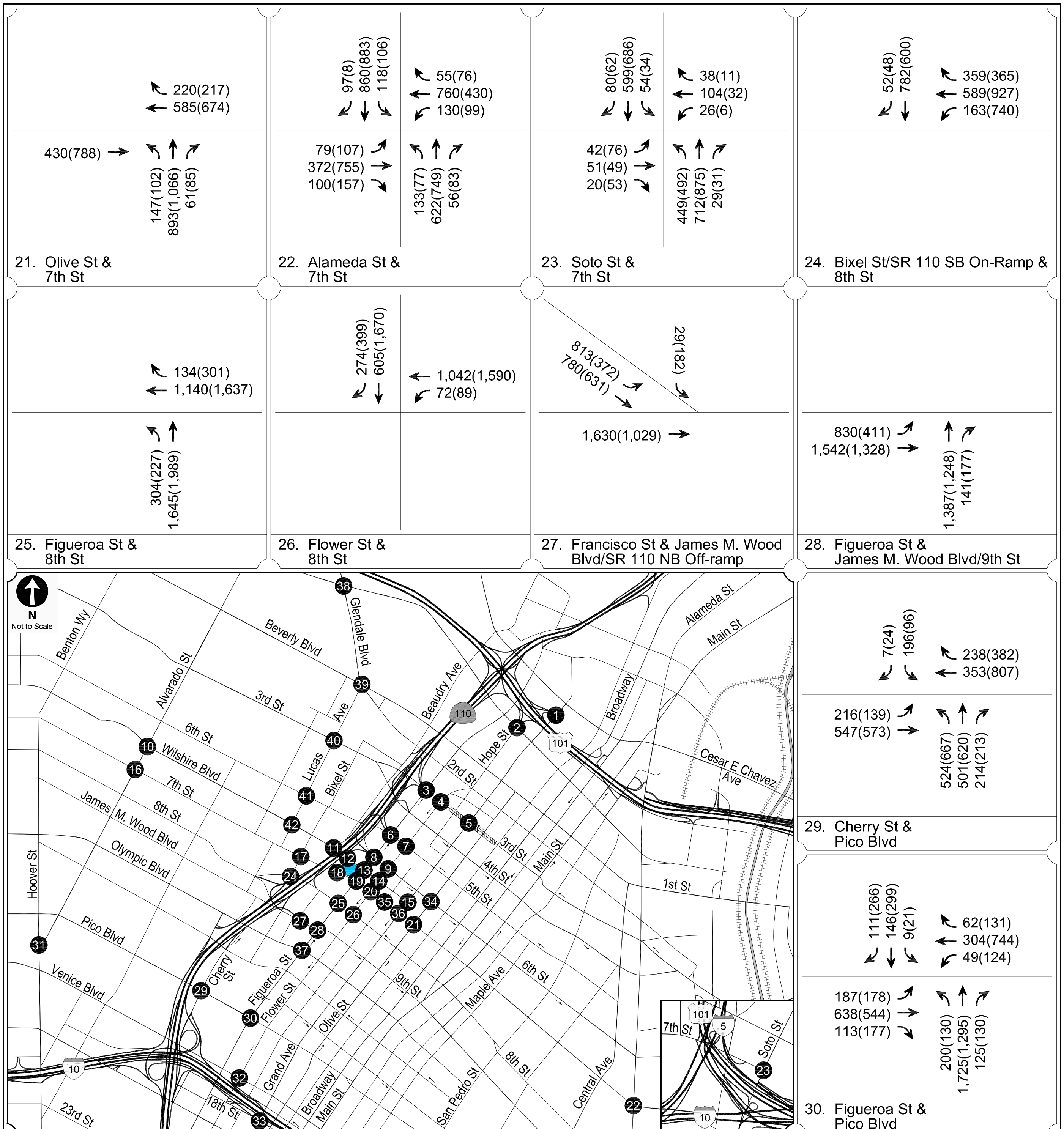
* Negligible Volume

Project Site

Analyzed Intersection

EXISTING PLUS PROJECT WITH TDM PROGRAM CONDITIONS
INTERSECTION PEAK HOUR TRAFFIC VOLUMES

FIGURE 7 B



LEGEND

X(X) AM(PM) Peak Hour Traffic Volumes

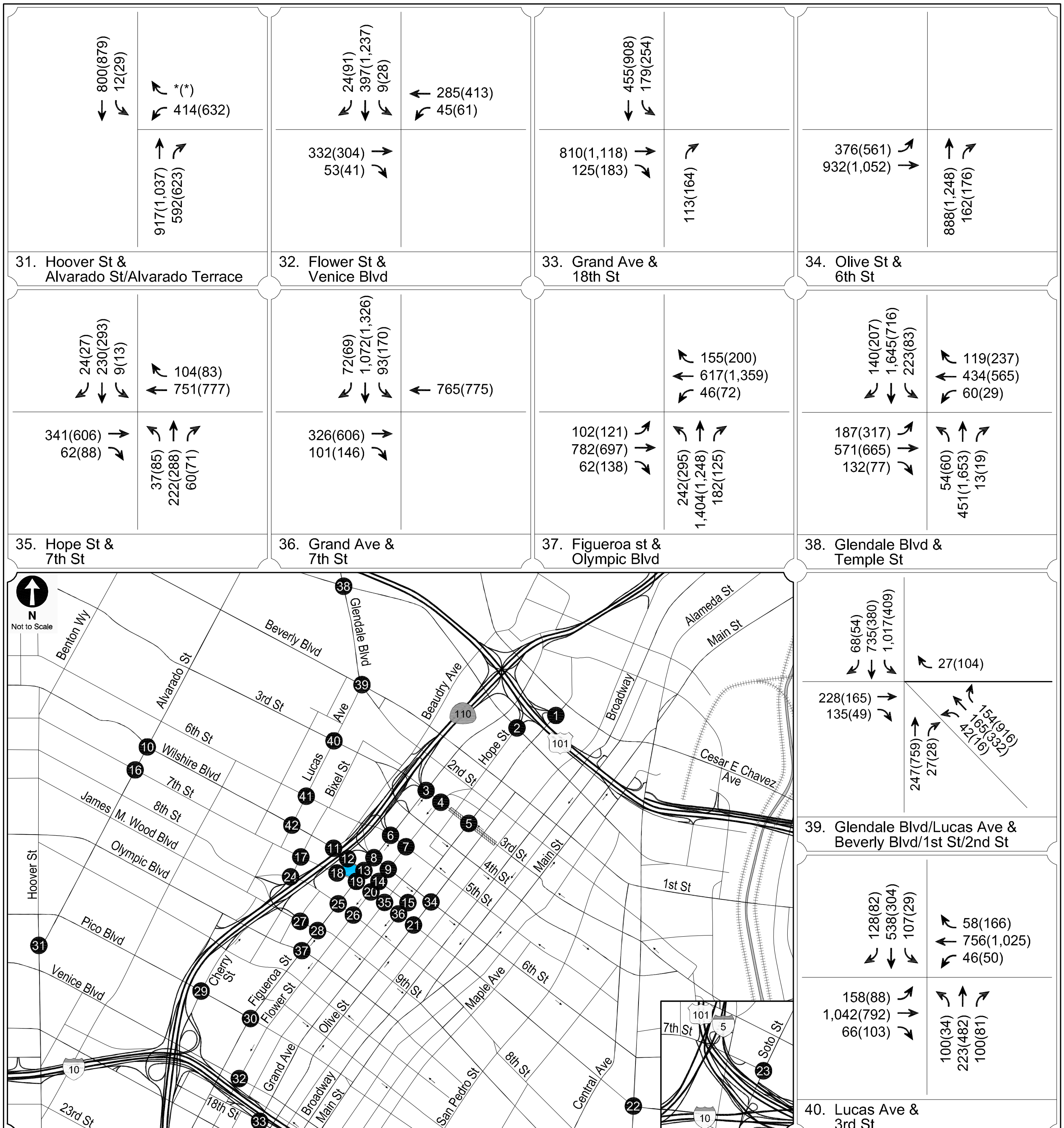
* Negligible Volume

Project Site

\# Analyzed Intersection

EXISTING PLUS PROJECT WITH TDM PROGRAM CONDITIONS
INTERSECTION PEAK HOUR TRAFFIC VOLUMES

FIGURE
7 C



LEGEND

X(X) AM(PM) Peak Hour Traffic Volumes

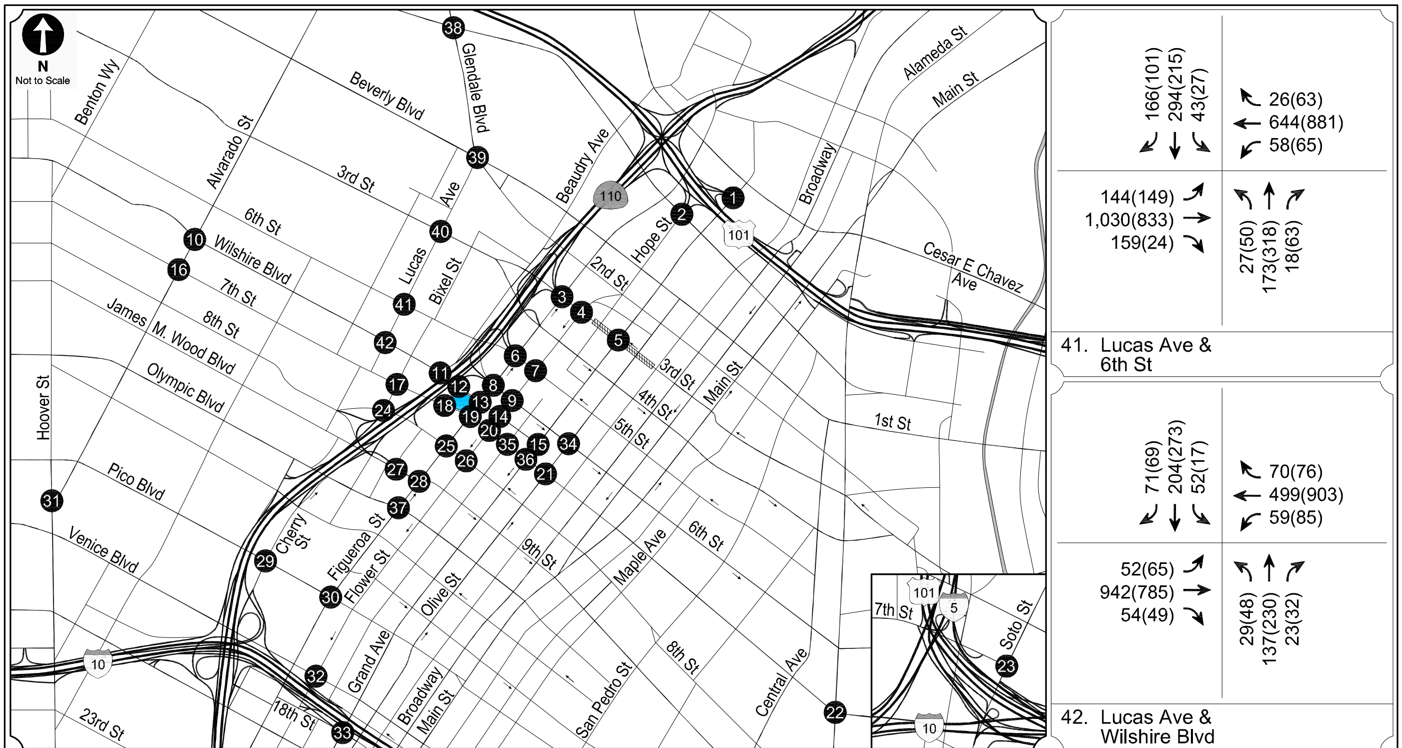
* Negligible Volume

Project Site

Analyzed Intersection

EXISTING PLUS PROJECT WITH TDM PROGRAM CONDITIONS
INTERSECTION PEAK HOUR TRAFFIC VOLUMES

FIGURE
7 D



LEGEND

X(X) AM(PM) Peak Hour Traffic Volumes

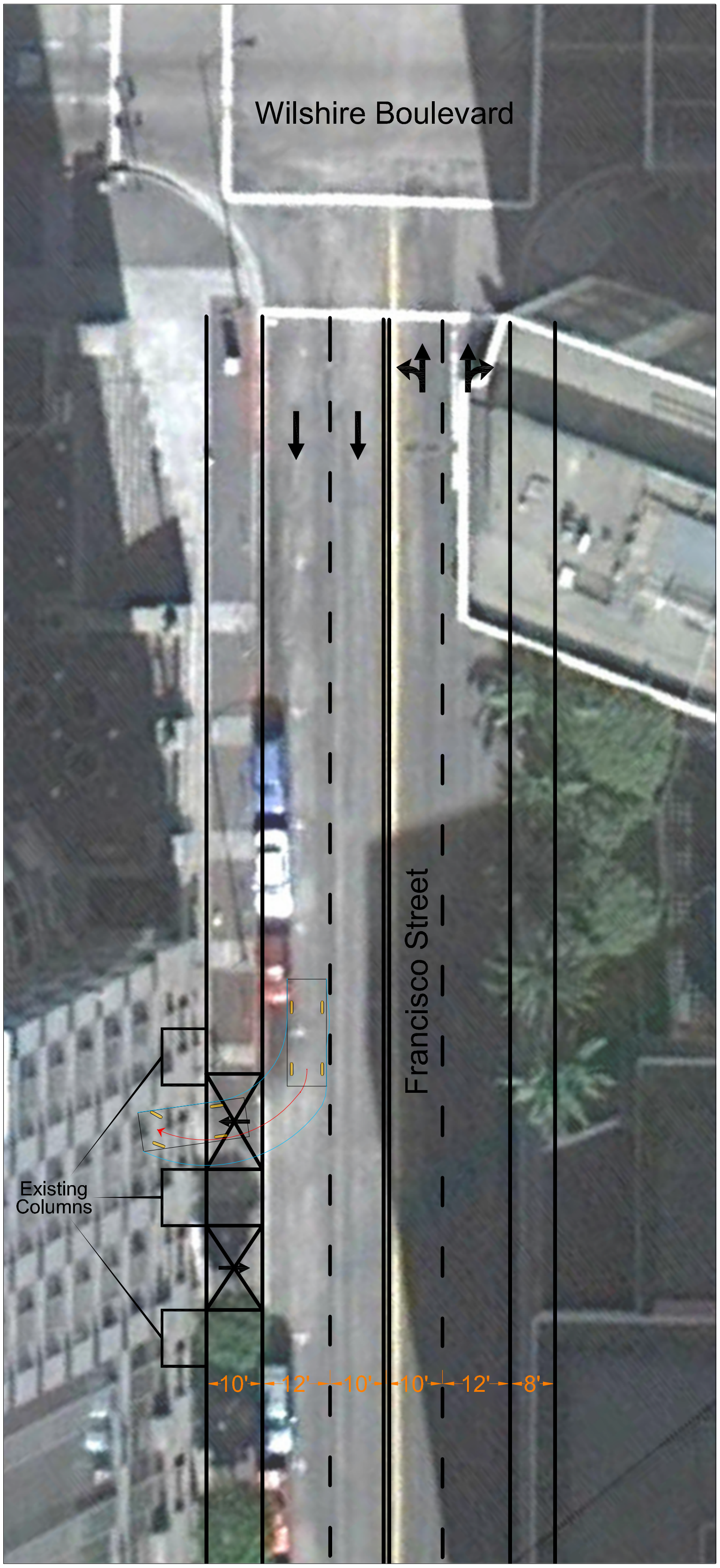
* Negligible Volume

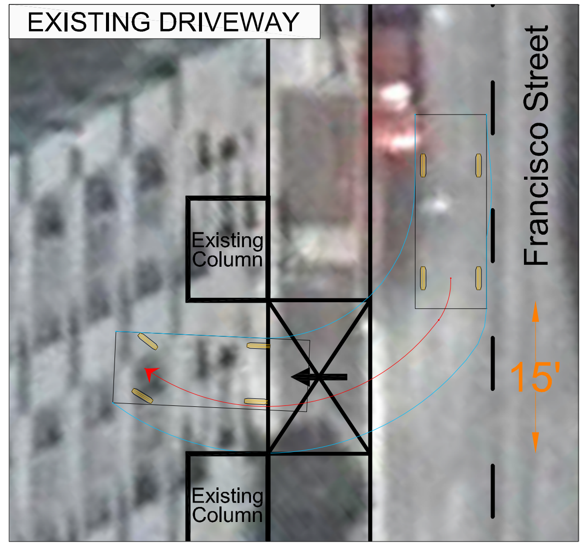
Project Site

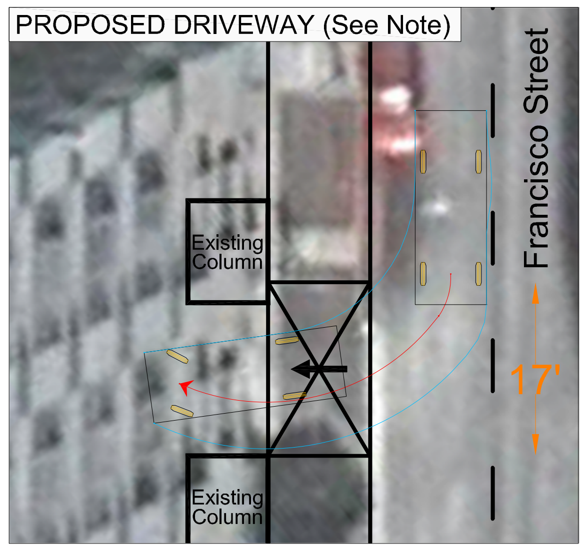
Analyzed Intersection

EXISTING PLUS PROJECT WITH TDM PROGRAM CONDITIONS
INTERSECTION PEAK HOUR TRAFFIC VOLUMES

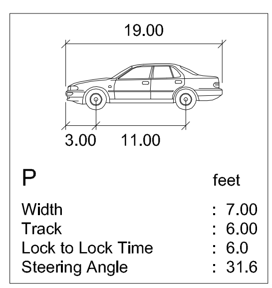
FIGURE
7 E







Note: The existing columns within the 1000 Wilshire building would not be altered or moved.



N
Not to Scale

FRANCISCO STREET ACCESS

FIGURE 8

APPENDIX B

Memorandum, Wilshire Grand Redevelopment EIR – Response to Comment Letters, Acoustical Engineering Services to Thomas Properties Group
February 11, 2010

AES
ACOUSTICAL ENGINEERING SERVICES

22801 Crespi Street
Woodland Hills, CA 91364
Tel: 818.239.4600
Fax: 818.239.4605
www.AESacoustics.com

February 11, 2011

Ayahlushim Hammond
Thomas Properties Group
515 South Flower Street, Sixth Floor
Los Angeles, California 90071

Re: Wilshire Grand Redevelopment EIR – Response to Comment Letters

Dear Ms. Hammond:

This letter report provides responses to the comments related to noise submitted by Brookfield Properties on December 15, 2010 (Letter #1), Jeffer Mangels Butler & Mitchell LLP (JMBM) on November 12, 2010 (Letter #2), DLA Piper LLP on January 14, 2011 ("Letter 3"), and PBS&J Letter dated January 10, 2011 ("Letter 4") for the Wilshire Grand Redevelopment Project ("Project").

LETTER #1 – Brookfield Properties Letter Dated December 15, 2010

Comment #1-1: Letter #1, Comment 4 – "No Heliport", Page 7, Bullet 1

The heliport will create significant noise impacts because the flight path goes directly over our buildings; the heliport is less than 100 feet away; and the noise that will result will exceed the City's General Plan standards.

Response to Comment #1-1

As shown on Figure 5, Helicopter Flight Tracks, in Appendix IV.C.1 of the Project Draft EIR, the proposed helicopter flight paths would not be directly over Brookfield's buildings. Figure 1 on page 2, shows the approximate locations of Brookfield's buildings (i.e., 601 S. Figueroa, 725 S. Figueroa, 333 S. Hope, and 735 S. Figueroa) in relation to the Project's proposed helicopter flight paths. In addition, the closest distances "Slant Distance" between the helicopter flight path and Brookfield's buildings are provided in Table 1 on page 3. The helicopter flight paths would be a minimum 385 feet from the top of the 615 S. Figueroa building, 581 feet from the top of the 725 S. Figueroa building, 1,091 feet from the 735 S. Figueroa building, and 1,108 feet from the top of the 333 S. Hope building. Furthermore, the helicopter would be flying at minimum 1090 feet elevation, which is minimum 355 feet higher than the roof line of the 333 S. Hope building (Brookfield's tallest building).

Source: Wilshire Grand Redevelopment Project Draft EIR, Appendix IV.C.1, Figure 5, Helicopter Flight Tracks.

Figure 1. Helicopter Flight Tracks

Table 1. Distance from Helicopter Flight Path to Brookfield's Building Locations

Building / Location	Nearest Draft EIR Noise Receptor Location	Longitudinal distance to flight path, feet (A)	Building Height,[a] feet (B)	"Slant Distance" to flight path,[b] feet
Figueroa at Wilshire Building / 601 S. Figueroa	R1	90	716	from ground level – 1089 from roof level – 385
Ernst & Young Plaza / 725 S. Figueroa	R3	170	534	from ground level – 1098 from roof level – 581
7th+Fig / 735 S. Figueroa	R3	330	50	from ground level – 1134 from roof level – 1091
Bank of America / 333 S. Hope	R8	1050	735	from ground level – 1510 from roof level – 1108

[a] *Source: www.skyscraperpage.com. Building height for 735 S. Figueroa is estimated.*
[b] *The "Slant Distance" represents the actual distance between the building(at the roof level) and the helicopter flight path, which is calculated as follow. "Slant Distance" = $[A^2 + (1090\text{-}B)^2]^{1/2}$, for ground level B=5 feet.*

Table 2 on page 4 reports the Project's predicted helistop operation noise levels at the exterior and interior of Brookfield's buildings. As reported in Table 2, the predicted exterior noise levels generated by the helistop operation would range from 37 dBA CNEL at the ground (street) level of the 333 S. Hope building to 53 dBA CNEL at the roof level of the 601 S. Figueroa building. These estimated exterior helistop operations noise levels in terms of CNEL would be well below the existing ambient noise levels (Table IV.C-9 of the Draft EIR, Page IV.C-21). With respect to the City's General Plan, the predicted helistop operation noise would be well below the City's General Plan standards (i.e., 65dBA CNEL).

As reported in Table 2, the estimated helistop operations noise levels at the interiors of Brookfield's buildings would range from approximately 2 dBA CNEL at the 333 S. Hope building (ground level) to 18 dBA CNEL at the 601 S. Figueroa building (roof level). These estimated interior noise levels would be well below the required maximum interior noise level of 45 dBA CNEL. The interior noise levels were estimated based on the calculated exterior noise levels and the buildings' estimated façade exterior-to-interior noise reduction. As reported in the Draft EIR, a typical high-rise office building façade (with fixed windows) would provide approximately 35 dBA exterior-to-interior noise reduction.[1]

In addition, the single-event noise levels (as generated by the loudest type of helicopter) experienced at the interiors of Brookfield's buildings would range from approximately 30 dBA L_{max} at the 333 S. Hope building (ground level) to 44 dBA L_{max} at the 601 S. Figueroa building (roof level). These estimated maximum helicopter noise levels at the interiors of Brookfield's buildings would be consistent with typical office background noise levels, per the ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers).[2] ASHRAE recommends a Noise Criteria (NC) of 35 for office interior (Heating Ventilation and Air Conditioning) background noise environment. The NC 35

[1] Westfield Century City New Century Plan, Final EIR, 2008. http://cityplanning.lacity.org/eir/CenturyPlan/FEIR/issues/Vol._I_III._Response_to_Written_Comments.pdf

[2] American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., 2003 ASHRAE Handbook.

rating is equates to approximately 44 dBA (L_{eq}). The estimated interior SEL noise levels are provided for informational purposes only, as the SEL noise descriptor is used to evaluate sleep interference (for residential uses), whereas speech interference (for office or school uses) is best analyzed using L_{max}.[3] With respect to speech interference levels, a maximum noise level of 55 dBA L_{max} is used as criteria for classroom environment, where speech interference is an important consideration.[4]

Therefore, the heliport operations would not result in significant noise impacts and would not generate noise in excess of the City's General Plan standards.

Table 2. Estimated Helistop Noise Levels at the Exterior and Interior of Brookfield's Buildings

Location	Predicted Helistop Operations Noise Levels at the EXTERIOR of the Buildings, dBA			Predicted Helistop Operations Noise Levels at the INTERIOR of the Buildings,[a] dBA		
	CNEL	SEL	L_{max}	CNEL	SEL	L_{max}
601 S. Figueroa						
- Ground Level	45	91	73	10	56	38
- Roof Level	53	100	79	18	65	44
725 S. Figueroa						
- Ground Level	44	91	72	9	56	37
- Roof Level	49	96	77	14	61	42
735 S. Figueroa						
- Ground Level	44	90	72	9	55	37
- Roof Level	44	90	72	9	55	37
333 S. Hope						
- Ground Level	37	83	65	2	48	30
- Roof Level	39	84	68	4	49	33

[a] *Interior noise levels are estimated based on an outdoor-to-indoor noise reduction of 35 dBA.*
Source: Westfield Century City New Century Plan, Final EIR, 2008. http://cityplanning.lacity.org/eir/CenturyPlan/FEIR/issues/ Vol._I_III._Response_to_Written_Comments.pdf

Comment #1-2: Letter #1, Comment 4 – "No Heliport", Page 7, Bullet 2

The EIR states that the facility would be used on an on-demand basis, and this could create many more flights than assumed. Instead of the purported two flights-a-day (and it is not clear if these are two round-trips for four individual flights), considering the heavy street traffic that this Project will help create, there could be a much greater demand for helicopter travel than analyzed. If this occurs, then the impacts will be much more severe than described in the EIR.

Response to Comment #1-2

As described in the Draft EIR (Section IV.C Noise, Page IV.C-44), it is difficult to predict the precise number of helicopter operations in a given day since this facility would be used on an on-demand

[3] Federal Interagency Committee On Aviation Noise (FICAN), The Use of Supplemental Noise Metrics in Aircraft Noise Analyses, February 2002.

[4] Wilshire Grand Redevelopment Project Draft EIR, Appendix IV.C.1, Noise Impact Study, Page 13.

basis and would not have regularly scheduled operations. Therefore, the helistop noise analysis was based upon an average of two flights (four operations - 2 arrivals and 2 departures) per day for an estimated 20 days in a 30 day month.[5] A typical two-flight scenario would include the pilot flying in from a nearby airport to the Project helistop to pick up a passenger in the morning (two operations), then delivering a passenger in the evening to the Project helistop, and returning to the airport (two operations). As reported in the Draft EIR, the estimated noise exposure levels (CNEL) from the helicopter take-offs and landings during this 24 hour period are extremely low, far below the existing ambient background noise and the City's land use planning criteria. In the event that there would be more than two flights per day, the estimated CNEL noise levels would increase by 3 dBA CNEL for every doubling of the number of flights. That is, doubling the number of flight from 2 to 4 flights per day would increase the CNEL noise levels by 3 dBA CNEL and doubling the number of flight from 4 to 8 flights per day would increase the CNEL noise levels by another 3 dBA CNEL. For example, the estimated noise level of 45 dBA CNEL (based on 2 flights per day) at the 601 S. Figueroa building would increase to 48 and 51 dBA CNEL if the number of flights were increased to 4 and 8 flights per day, respectively. Although the helistop operations would be an average of two per day and would not reach 8 flights per day, the estimated CNEL noise levels would still be well below the existing ambient noise environment, which is approximately 72 dBA CNEL. It should be noted that the change in number of flights per day would only affect the calculated CNEL noise levels, not the single event noise analysis (i.e., SEL and L_{max}) as the single event noise analysis is based on a single flight (assuming the noisiest type of helicopter).

<u>Comment #1-3: Letter #1, Comment 4 – "No Heliport", Page 7, Bullet 3</u>

We own two buildings in excess of 40 stories across the street from the heliport. Our buildings will be hundreds of feet closer to the noise source in combined height and distance than any other property. Consequently, there will likely be a huge noise increase heard by occupants of our buildings, and no mitigation is proposed. FAA Advisory Circular AC 91-32B also states that "it is good operating practice to include pertinent noise abatement procedures in the company operations manual," and that "[p]ilots should be trained in techniques to minimize noise and be aware of noise-sensitive areas." Id. The proposed conditions of approval and the EIR do not propose any mitigation measures to reduce noise impacts relating to helicopter operations.

<u>Response to Comment #1-3</u>

See response to Comment #1-1 above with respect to the distances between Brookfield's buildings and the estimated helicopter noise inside Brookfield's offices.

As described in the Heliport Consultants analysis (Draft EIR Appendix IV.C.2), the helicopter flight paths were developed for noise abatement purposes, among other purposes. The flight paths were carefully designed and are consistent with the General Guidelines for noise abatement operation in accordance with the Fly Neighborly Guide.[6] That is, the proposed flight paths would avoid overflying, to the extent possible, noise sensitive areas (residential) and would follow high ambient noise routes such as the freeway (i.e., Freeway I-110). Other noise abatement recommended by the Fly Neighborly Guide

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[5] Footnote "a" of Table IV.C-16 of the Draft EIR provides an explanation of the flights operations. As described by footnote "a", a helicopter flight includes one departure and one arrival, two operations.

[6] Fly Neighborly Guide, produced by the Helicopter Association International, Fly Neighborly Committee, 2007.

specify that the pilot should not make sharp, abrupt maneuvers, but long sweeping curves when executing turns, fly normal cruising speed, and steeper takeoff and land profiles. In keeping with the FAA regulations, the pilot will take into consideration the flight paths, the wind direction and weather conditions before making his final approach and departure decisions. Furthermore, again, the proposed flight paths do not overfly Brookfield's buildings (i.e., 601, 725 and 735 S. Figueroa and 333 S. Hope buildings), as shown on Figure 1.

LETTER #2 – JMBM Letter Dated November 12, 2010 (Exhibit A, JMBM Letter Dated August 23, 2010)

The JMBM letter dated November 12, 2010 includes Exhibit A, which reference JMBM letter dated August 23, 2010. Responses were prepared and were included in the Final EIR, dated October 2010.

LETTER #3 – DLA Piper LLP Letter dated January 14, 2011

Comment #1: Page Six, Item D.2

Add a condition limiting the heliport to no more than two flights (i.e., four flight operations) per day. This is the number of flights analyzed in the EIR.

Response to Comment #1

See Response to Comment #1-2 in Letter #1 above.

Comment #2: Page Six, Item D.5

Add a sound barrier wall at the rooftop level of proposed building A along the perimeter of the helipad constructed such that it attenuates to a minimum 30 dBA.

Response to Comment #2

A helistop consists of the load bearing helipad where the helicopter lands and also the free, unobstructed airspace around this landing pad. All of this empty, unobstructed airspace is vital to creating a well-designed and safe helistop. Therefore, it would not be feasible for the helipad to be surrounded by a sound wall, or to be located behind fencing because it needs the unobstructed airspace for the safety of its operations, the flight paths and the transitional slopes. In addition, because the helicopter is a non-stationary noise source, a sound barrier wall at the rooftop level would not be effective in reducing the sound levels when the helicopter is in the air. Furthermore, the noise analysis provided in the EIR indicates that the noise levels associated with the helistop operations would not generate a significant noise impact.

Comment #3: Page Six, Item D.6

Provide and maintain for the life of the heliport upper floor noise attenuation to the offices at 601 S. Figueroa Street and 725 S. Figueroa Street, including acoustically attenuating windows and additional rooftop and wall insulation, such that interior noise levels within these office buildings do not exceed 65 *dBA SEL or 45 dBA CNEL. Installation and maintenance of noise attenuation features shall occur with verified testing, with testing results provided to the City of Los Angeles and Brookfield prior to commencement of any heliport operations and every two years thereafter. There shall be no heliport operations if interior noise levels within these office buildings exceed 65 dBA SEL or 45 dBA CNEL as a result of heliport operations.*

Response to Comment #3

Table 2 on page 4 reports the estimated helistop operations noise levels at the exterior and the interior of Brookfield's buildings. The interior noise levels were estimated based on the calculated exterior noise levels and the buildings' estimated façade exterior-to-interior noise reduction. As reported in the Draft EIR, a typical high-rise office building façade (with fixed windows) would provide approximately 35 dBA exterior-to-interior noise reduction.[7] Therefore, the estimated noise levels at the interior of Brookfield's building would range from approximately 2 dBA CNEL at the 333 S. Hope building (ground level) to 18 dBA CNEL at the 601 S. Figueroa building (roof level). These estimated interior noise levels would be well below the required maximum interior noise level of 45 dBA CNEL. In addition, the single-event noise levels in terms of L_{max} (as generated by the loudest type of helicopter) experienced at the interiors of Brookfield's buildings would range from approximately 30 dBA L_{max} at the 333 S. Hope building (ground level) to 44 dBA L_{max} at the 601 S. Figueroa building (roof level). These estimated maximum helicopter noise levels at the interiors of Brookfield's buildings would be consistent with typical office background noise levels, per the ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers).[8] ASHRAE recommends a Noise Criteria (NC) of 35 for office interior (Heating Ventilation and Air Conditioning) background noise environment. The NC 35 rating is equates to approximately 44 dBA (L_{eq}). The estimated interior SEL noise levels are provided for information only, as the SEL noise descriptor is used to evaluate sleep interference (for residential uses), whereas speech interference (for office or school uses) is best analyzed using L_{max}.[9] With respect to speech interference levels, a maximum noise level of 55 dBA L_{max} is used as criteria for classroom environment, where speech interference is an important consideration.[10] As the estimated helicopter noise levels at the interior of Brookfield's office buildings would be consistent with the typical office building background noise level, and below the 55 dBA L_{max} criteria for speech interference, additional sound attenuation is not warranted.

Comment #4: Page Seven, Item E.3

Add a mitigation measures requiring a sound barrier wall at the ground level along the north and south perimeter of the construction site such that it attenuates to a minimum of 20 dBA.

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[7] Westfield Century City New Century Plan, Final EIR, 2008. http://cityplanning.lacity.org/eir/ CenturyPlan/FEIR/issues/ Vol._I_III._Response_to_Written_Comments.pdf

[8] American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., 2003 ASHRAE Handbook.

[9] Federal Interagency Committee On Aviation Noise (FICAN), The Use of Supplemental Noise Metrics in Aircraft Noise Analyses, February 2002.

[10] Wilshire Grand Redevelopment Project Draft EIR, Appendix IV.C.1, Noise Impact Study, Page 13.

Response to Comment #4

The comment requested a sound barrier that "attenuates to a minimum of 20 dBA" is not technically feasible, given the typical noise levels generated by construction equipment. Therefore, the response assumed the requested sound barrier as to "attenuates by a minimum of 20 dBA".

As reported in Table IV.C-12 of the Project's Draft EIR (Section IV.C), construction activities would generate exterior noise levels up to 85 dBA (L_{eq}) at receptor location R1 (at 915 Wilshire, which is adjacent to 601 S. Figueroa) and receptor location R3 (at 725 S. Figueroa), during the demolition phase. However, receptor location R1 is located approximately 80 feet from the Project's construction boundary, whereas the 601 S. Figueroa building is approximately 130 feet from the Project's construction boundary; therefore, adjusting for the distance between R1 and the 601 S. Figueroa building, the construction noise at the 601 S. Figueroa building would be reduced to approximately 81 dBA (L_{eq}).

As previously explained in Response to Comment #3, a typical high-rise office building façade (with fixed windows) would provide approximately 35 dBA exterior-to-interior noise reduction.[11] Therefore, the construction noise levels experienced at the interior of the 601 S. Figueroa and 725 Figueroa buildings would be attenuated to approximately 46 dBA (L_{eq}) and 50 dBA (L_{eq}), respectively, during the Project demolition phase (which is the highest noise generating construction phase). Based on these assumptions, the Project-related construction noise levels at the interior (i.e., interior offices with the windows facing Project's construction activities) of the 601 S. Figueroa and 725 S. Figueroa office buildings would be approximately 2 dBA to 6 dBA above the ASHRAE recommended background noise level of approximately 44 dBA (L_{eq}) for office environment (as described in the Project Noise Impact Study, Draft EIR, Appendix IV.C.1). During other construction phases (e.g., site excavation, garage and building construction), the construction-related noise levels would be 2 to 5 dBA lower than the demolition phase. Thus, the construction-related noise levels at the interior of the 601 S. Figueroa and 725 S. Figueroa buildings during these phases would be reduced to maximum of 44 dBA (L_{eq}) and 47 dBA (L_{eq}), respectively.

A sound barrier providing a minimum of 20 dBA sound attenuation is not warranted. Office uses are not considered to be sensitive uses for noise impacts. As described in the Project's EIR, these maximum construction-related noise levels would be temporary and would be experienced only when construction activities are located at the perimeter of the Project Site closest to the 601 S. Figueroa and 725 S. Figueroa buildings. These maximum noise levels would be reduced as construction activities move toward the center of the Project Site. Furthermore, the soft demolition (interior materials) of the existing Wilshire Grand structures would strictly be internal (i.e., with the existing façade in place) to minimize noise transmission to the exterior. The hard demolition (building structure) would be implemented with exterior scaffolding system used for pedestrian protection. The hard demolition material generated would be staged in two main areas for loading, where a temporary sound barrier would be provided to reduce the noise transmitted to the exterior.

Implementing a condition to provide a temporary six-foot tall noise barrier along the north and south perimeter of the project site would reduce the construction noise to the 601 S. Figueroa and 725 S.

[11] Westfield Century City New Century Plan, Final EIR, 2008. http://cityplanning.lacity.org/eir/_CenturyPlan/FEIR/issues/Vol._I_III._Response_to_Written_Comments.pdf

Figueroa office buildings. The temporary noise barrier would be similar to the Project Design Features, PDF-2, as described in the Project Final EIR, Chapter V. Mitigation Monitoring Program, Section C. Noise, which would be placed on top of a two-foot tall K-rail that would increase the effective height of the noise barrier to eight feet. With the proposed mitigation measure, temporary sound barrier, the construction-related noise at the interior of the 601 S. Figueroa and 725 S. Figueroa buildings would be reduced to maximum 40 dBA (L_{eq}) and 44 dBA (L_{eq}), respectively.

Comment #5: Page Seven, Item E.4

Add a mitigation measure requiring upper floor construction of the two high-rise towers to include temporary sound barrier walls along the north and south sides of the high-rise towers as they are constructed to attenuate construction noise impacts at the upper floor offices of at 601 S. Figueroa Street and 725 S. Figueroa Street. These upper floor sound barriers need to be designed such that they attenuate minimum of 20 dBA.

Response to Comment #5

As reported in Table IV.C-12 of the Project's Draft EIR (Section IV.C), the estimated exterior noise levels generated during construction of the towers would be 82 dBA (L_{eq}) at receptor location R1 (915 Wilshire, which adjacent to the 601 S. Figueroa building) and 81 dBA at receptor location R3 (725 S. Figueroa). As discussed previously (in Response to Comment #4), receptor location R1 is located approximately 80 feet from the Project's construction boundary, whereas the 601 S. Figueroa building is approximately 130 feet from the Project's construction boundary. Adjusting for the distance between receptor location R1 and the 601 S. Figueroa building, the construction noise at the 601 S. Figueroa building, therefore, would be reduced to approximately 78 dBA (L_{eq}), during tower construction. Based on a 35 dBA exterior-to-interior sound attenuation provided by the building facades (as discussed previously), the noise levels at the interior of the upper floor offices at 601 S. Figueroa and 725 S. Figueroa would be approximately 43 dBA (L_{eq}) and 46 dBA (L_{eq}), respectively. Therefore, the construction-related noise levels at the interior of the upper floor offices at the 601 S. Figueroa building during the tower construction would be below the typical office interior background noise levels of 44 dBA (L_{eq}). At the interior of the 725 S. Figueroa building, the construction-related noise during the tower construction would be 3 dBA above the typical office interior background noise level.

In addition, construction activities at the upper floor of the Project's towers would involve mainly smaller construction equipment (i.e., hand tools), rather than the large earth moving equipment at the ground level. Furthermore, noise levels generated during construction at the interior of the upper floors of the proposed towers would be minimized by establishing a designated cutting area per floor surrounded by a temporary sound blanket/barrier, which would minimize the construction noise at the exterior of the towers. In addition to a designated cutting area, the structure will have an exterior OSHA (Occupational Safety and Health Administration) approved continuous rail system in place. Furthermore, the exterior skin will follow as the interior framing and rough-in is underway closing in the building which would minimize noise.

Comment #6: Page Seven, Item E.5

Add a mitigation measure requiring the construction contractor to consult with Brookfield in order to coordinate noise intensive activities to avoid interruptions of office activities to the fullest extent feasible.

Response to Comment #6

The Project's Conditions of Approval, Condition 72, mitigation measures MM-34 and MM-35 (Page C-18) require the contractor to utilize construction equipment with state-of-the-art noise shielding and muffling devices; and to locate stationary sources (e.g., generators and compressors) as to maintain the greatest distance from sensitive land uses, and prohibit unnecessary idling of equipment. In addition, Condition 73, CM-1, requires the contractor to provide contact/complaint telephone numbers that provides contact to a live voice during all hours of construction.

Comment #7: Page Seven, Item E.6

Add a mitigation measure requiring that, where health and safety are not compromised, additional temporary sound walls would be used in conjunction with noise intensive construction equipment that has limited mobility while in use (i.e., jackhammers, compressors, etc.).

Response to Comment #7

The Project's Conditions of Approval, Condition 72, mitigation measures MM-34 and MM-35 (Page C-18) require the contractor to utilize construction equipment with state-of-the-art noise shielding and muffling devices; and to locate stationary sources (e.g., generators and compressors) as to maintain the greatest distance from sensitive land uses, and prohibit unnecessary idling of equipment. Additional proposed conditions as previously described in Response to Comment #4 above (temporary sound barrier at the north and south perimeter of the project site) and in Response to Comment #5 above (sound curtain at upper floor construction) would provided additional noise reduction. These conditions will minimize the construction-related noise to the extent possible and are estimated to result in the interior noise levels at the 601 S. Figueroa and the 725 S. Figueroa buildings of 40 dBA (L_{eq}) and 44 dBA (L_{eq}), respectively.

Comment #8: Page Twenty-five, Item O, first paragraph

Response 4-1 of the Paul Hastings Letter dated December 16, 2010 states that the proposed flight path of the heliport would not be directly over the commented building. Considering wind, turbulence and the fact that the wingspan of a helicopter can be greater than 50 feet, there will be times when the helicopters would fly directly over Brookfield's buildings. This would cause the helicopters and their noise to be closer to the Project than analyzed. Further, the analysis in the EIR does not analyze helicopter noise impacts at the area most impacted – the roofline of the adjacent buildings – in CNEL – which would show much worse impacts.

Response to Comment #8

See Response to Comment #1-1 in Letter #1 above.

<u>Comment #9: Page Twenty-six, Item O.1</u>

Add a condition limiting the heliport to no more than two flights (i.e., four flight operations) per day.

<u>Response to Comment #9</u>

See Response to Comment #1-2 in Letter #1 above.

<u>Comment #10: Page Twenty-six, Item O.4</u>

Add a sound barrier wall at the rooftop level of proposed building A along the perimeter of the helipad constructed such that it attenuates to a minimum 30 dBA.

<u>Response to Comment #10</u>

See Response to Comment #2 above.

<u>Comment #11: Page Twenty-six, Item O.5</u>

Provide and maintain for the life of the heliport upper floor noise attenuation to the offices at 601 S. Figueroa Street and 725 S. Figueroa Street, including acoustically attenuating windows and additional rooftop and wall insulation, such that interior noise levels within these office buildings do not exceed 65 dBA SEL or 45 dBA CNEL. Installation and maintenance of noise attenuation features shall occur with verified testing, with testing results provided to the City of Los Angeles and Brookfield prior to commencement of any heliport operations and every two years thereafter. There shall be no heliport operations if interior noise levels within these office buildings exceed 65 dBA SEL or 45 dBA CNEL as a result of heliport operations.

<u>Response to Comment #11</u>

See Response to Comment #3 above.

<u>Comment #12: Page Twenty-seven, Item P.2</u>

There will be rooftop bars, a pool and outdoor restaurants that will create large amounts of noise both from music and from the sheer number of people in these outdoor areas. The EIR measures the sound of these outdoor uses at a sensitive receptor 500 feet away, across the freeway. There will be new significant impacts much closer, both at 601 S. Figueroa Street and at 7th and Figueroa. Law firms, accounting firms, and other professional tenants in offices buildings in the Financial Core District are sensitive uses and a large increase in noise for bars, nightclubs, a pool and other outdoor areas will create a significant impact on them. Further, even if there is a high ambient background noise level, the amplified sound from speakers can still be heard and this new source of noise can and will create a significant impact that has not been analyzed or disclosed with regard to 601 S. Figueroa Street and at 7th and Figueroa. Impacts need to be fully disclosed, analyzed and mitigated and that was not done with regard to the closet properties. Mitigation measures are required to reduce this impact to less than significant.

Response to Comment #12

The Project's noise analysis was prepared in accordance with the City of Los Angeles CEQA Threshold Guide (2006), which provides the threshold of significance for various noise sensitive uses; however, commercial property is not identified as a noise sensitive receptor. Nevertheless, the potential noise impact from the Project-related noise sources (including the rooftop pool/bar and the plazas) to commercial/office building adjacent to the Project site (i.e., receptor locations R0 through R3), were analyzed and summarized in Table IV.C-21 (Project Draft EIR Section IV.C. Noise, Page IV.C-52). As indicated therein, the estimated composite noise levels (from all project-related noise sources) would result in a maximum increase of 2.8 dBA CNEL at receptor location R1 (915 Wilshire Boulevard, which is adjacent to the 601 S. Figueroa and located closer to the Project Site) and at receptor location R3 (725 S. Figueroa). Receptors R1 and R3 are the closest receptors to the north and south of the Project site, respectively. The 7th and Figueroa building (i.e. 735 S. Figueroa) is located south of the receptor location, which is mostly shielded from the Project site by the 725 S. Figueroa building. Therefore, the Project-related noise at the 601 S. Figueroa building (based on analysis at receptor location R1), the 725 S. Figueroa building (receptor location R3), and at the 735 S. Figueroa building (7th+Fig, receptor location R3 and further shielded), would result in a maximum of 2.8 dBA CNEL increase or less. The estimated increased in ambient noise levels would be below the 3 dBA CNEL significance threshold for noise sensitive uses (although, commercial/office buildings are not considered noise sensitive).

Comment #13: Page Twenty-eight, Item P.3

Mitigation measure MM-27 to limit the noise from the Project's outdoor areas does not mitigate noise to a less than significant level. The noise level even with this mitigation measure would exceed the Normally Unacceptable noise level category contained in the City's General Plan for residential, hotel and office uses, yet there is not analysis of this impact. Therefore, there would be a new significant impact not disclosed by the EIR or appropriately mitigated and an inconsistency with the General Plan. This is not permissible. See 14 Cal Code Regs §15125(d).

Response to Comment #13

Mitigation measures MM-27 and MM-28, as presented in the Project's Conditions of Approval Condition 72, provide the noise limits for the outdoor amplified sound system at the Project's outdoor areas. These noise limits were established based on the noise analysis to preclude noise impacts at the off-site noise-sensitive receptors. As presented in the Response to Comment #12 above, the Project-related noise would not result in significant noise impacts to the off-site receptors, including Brookfield building. With respect to the new on-site noise sensitive uses (i.e., residential and hotel), the Project's design feature (as presented in the Project's Draft EIR) requires that the building construction would provide the required sound insulation, as specified in the General Plan. In addition, the Project's Conditions of Approval Condition 73, CM-12, requires that the Project shall comply with the Noise Insulation Standards of Title 24 of the California Code Regulations, which would ensure an acceptable interior noise environment for the proposed development. Therefore, noise impacts from the outdoor uses would be mitigated to less than significant with mitigation measures MM-27, MM-28 and CM-12.

Comment #14: Page Twenty-eight, Item P.4

General Plan Inconsistencies. The Project proposes to place noise sensitive uses, such as dwelling units and hotel rooms in an area with high levels of existing ambient noise. According to Table IV.C-10 of the Draft EIR, existing noise levels along Figueroa Street and Wilshire Boulevard abutting the Project site exceed 70 dBA CNEL. According to the City of Los Angeles General Plan Noise Element, it is Conditionally Acceptable to place multi-family homes and hotel rooms in a 60 to 70 dBA CNEL noise environment. It is Normally Unacceptable to place them in a noise range of 70 to 75 dBA CNEL for residences, and 70 to 80 dBA CNEL for hotels. See Table IV.C-4 of the Draft EIR. The Project will worsen noise levels so that on Wilshire Boulevard across the street from the Project site, noise levels will even exceed 78.0 dBA CNEL, exceeding even the Clearly Unacceptable noise standards contained in the General Plan. The EIR does not analyze the General Plan inconsistency of exposing these sensitive uses to noise levels that exceeds the Conditionally Unacceptable or Clearly Unacceptable categories for noise sensitive uses. The General Plan states that in the Normally Unacceptable category, "New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design." See Table IV.C-4 of the Draft EIR. The Project will place on-site sensitive uses in the Clearly Unacceptable noise category, where according to the General Plan, "New construction or development should generally not be undertaken." Project cannot be approved that are inconsistent with the General Plan.

Response to Comment #14

The potential noise impact from off-site noise sources to the proposed development has been analyzed in the Project's Draft EIR, Section IV.C. Noise (Page IV.C-53). As indicated therein, the EIR estimated that exterior noise levels at the Project site due to off-site noise sources would exceed the City's normally acceptable noise standard for multi-family residential/hotel development. The proposed residential/hotel tower (Building B) would be located at the southwest corner of the Project site, along 7th Street (Project's Draft EIR, Chapter 2 Project Description). As reported in Table IV.C-9 of the Project's Draft EIR, the existing ambient noise along 7th Street (i.e., ambient measurement at Receptor Location R3) is 72.1 dBA CNEL. Thus, the exterior noise environment at the proposed residential/hotel tower fall within the City General Plan land use category of "normally unacceptable" for multi-family and hotel use. However, as presented in the Draft EIR, the Project's design features require that the building construction would provide the required sound insulation, to reduce noise levels at the interior of the residential units and hotel rooms to levels consistent with the General Plan. In addition, the Project's Conditions of Approval Condition 73, CM-12, requires that the Project shall comply with the Noise Insulation Standards of Title 24 of the California Code Regulations, which would insure an acceptable interior noise environment for the proposed development. Therefore, the Project is consistent with the City's General Plan requirements.

Comment #15: Page Twenty-eight, Item P.5

Other Noise Inadequacies.

The EIR claims that there is no significance Lmax noise threshold for commercial property and it is absurd to argue that the Financial Core District has no noise thresholds. Noise impacts of up to 96

SEL (dBA) will be a significant impact and those are the levels that will be heard by individuals in Brookfield Properties' buildings. The LAMC states that "it is hereby declared to be the policy of the City to prohibit unnecessary, excessive and annoying noise from all sources subject to its power. At certain levels noise levels detrimental to the health and welfare of the citizenry and in the public interests shall be systematically proscribed." See LAMC Section 111.00. This high noise level will be unnecessary, excessive and annoying and therefore prohibited by the LAMC. Moreover, this high noise level was not examined for the impact it will have on the future hotel and residential uses proposed. Those uses would likely experience noise level in excess of the purported standard listed in the EIR. The EIR fails to disclose this significant impact and provide all feasible mitigation.

The proposed new on-site residential uses and hotel will be exposed to high noise levels that exceed General Plan standards. This will impact not only indoor use, but also outdoor use of balconies and not allow the opening of windows except with the exposure of a high level of noise. The EIR incorrectly states that the standard is concerned only with the interior noise levels. It is not. There would be a significant impact relating to land use compatibility for the new residential and hotel uses (and their outdoor use of space) that was not disclosed in the EIR.

Response to Comment #15

The noise analysis was prepared in accordance with the City of Los Angeles CEQA Threshold Guide (2006), which provides the threshold of significance for various noise sensitive uses; commercial property, however, is not considered a noise sensitive receptor. Table 2 on page 4 provides the estimated helistop operations noise levels at the exterior and the interior of Brookfield's buildings. As indicated in Table 2, the estimated helicopter at the exterior of Brookfield's buildings would range from 65 dBA L_{max} at the 33 S. Hope building (ground level) to 79 dBA L_{max} at the 601 S. Figueroa building (roof level). The estimated helicopter noise levels inside the Brookfield's building, as indicated in Table 2, would range from approximately 30 dBA L_{max} at the 333 S. Hope building (ground level) to 44 dBA L_{max} at the 601 S. Figueroa building (roof level). The estimated noise levels at the interior of Brookfield's buildings would be consistent with typical office interior background noise levels, approximately 44 dBA L_{eq} (as discussed in Response to Comment #3 above). It should be noted SEL is a calculated noise level that is normalized to a one (1) second time interval and is used to evaluate sleep interference (for residential use). It is not the actual sound level that a person would hear. The sound level that a person would hear is measured by the L_{max} descriptor. With respect to speech interference levels, a maximum noise level of 55 dBA L_{max} is used as criteria for classroom environment, where speech interference is an important consideration.[12] As the estimated helicopter noise levels at the interior of Brookfield's office buildings would be consistent with the typical office building background noise level 44 dBA L_{eq}, as well as the 55 dBA L_{max} criteria for speech interference.

See Response to Comment #13 above regarding new on-site residential and hotel uses consistency with the General Plan. With regard to the Balconies, the City of Los Angeles General Plan does not mention balconies as an outdoor use requiring a noise limit.

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[12] Wilshire Grand Redevelopment Project Draft EIR, Appendix IV.C.1, Noise Impact Study, Page 13.

Comment #16: Page Six, Item D.3

Add a condition that would prohibit the heliport from an elevation lower than 1,090 feet above grade (i.e., 1,368 feet AMSL).

Response to Comment #16

A condition prohibiting the location of the helistop lower than 1,090 feet above grade (1,368 feet above MSL) is not necessary because the EIR evaluated the location of the helistop down to an elevation of 717 feet above ground level (AGL) or 995 feet above mean sea level (MSL) in the Reduced Height Alternative. The helistop elevation under this alternative was estimated to be 373 feet lower than that of the Project, which is located at 1,090 feet AGL (or 1,368 MSL).

The helistop flight paths as well as helistop operations including types and numbers of helicopter flights under the Reduced Height Alternative would be similar to that of the Project as described in the Project EIR. However, the helicopter flight elevation would be lowered due to the lowered helistop at 717 feet AGL. As described in the Reduced Height Alternatives analysis:

> The helicopter would then be taking off from the lower elevation, and would likely require a change in the helicopter flight profile. That is, once departing from the helistop, it would take a longer distance for the helicopter to climb from 717 feet AGL to an optimal cruise altitude, which could potentially increase the noise exposure along the flight paths. The same would hold true when the helicopter is approaching to land at the helistop. Therefore, the helistop operations related noise levels at the nearest off-site noise sensitive receptors could potentially exceed the Project's significance threshold of 94 dBA SEL under this Alternative.

Table 3 on page 16 provides the estimated helistop operations noise levels at the receptor locations analyzed in the Draft EIR (in terms of CNEL) under the Project (helistop at 1,090 feet AGL) and under the Reduced Height Alternative (helistop at 717 feet AGL). As reported in Table 3, the estimated helistop operations noise levels under the Reduced Height Alternative vary from 26.3 to 48.6 dBA CNEL, which represent 0.3 to 3.9 dBA CNEL higher noise levels as compared to the Project. However, the helistop operations noise levels at both 717 feet AGL and 1,090 feet AGL would be well below the existing ambient noise levels (in terms of CNEL).

Table 4 on page 17 shows the estimated helistop single-event noise levels (in terms of SEL), as generated by the loudest type of helicopter, with the helistop at 717 feet AGL and 1,090 feet AGL. The estimated SEL with the helistop at 717 feet AGL would be 1 to 6 decibels higher as compared to the helistop at 1,090 feet AGL (Proposed Project). With the exception of receptor location R17 (Jonathan Club building at 545 S. Figueroa Street), the estimated single-event noise levels at all sensitive receptors (i.e., residential, hotel, and hospital, where sleeping typically occurs) would be below the significance threshold of 94 dBA SEL. At receptor location R17, the estimated SEL noise level of 94.5 dBA SEL due to the helicopter fly over would exceed the significance threshold by 0.5 dBA SEL, which could result in a significant noise impacts.

Table 3. Helistop Noise Impacts Under Proposed Project and Reduced Height Alternative

Location	Predicted Helistop Operations Noise Levels,[1] CNEL (dBA)		Increase in Noise Levels of the Alternative compared with the Proposed Project	Existing Ambient Noise Levels,[2] CNEL (dBA)
	Helistop at 1090 feet AGL (Proposed Project)	Helistop at 717 feet AGL (Reduced Height Alternative)		
R0	44.1	47.5	3.4	71.7
R1	44.7	48.5	3.8	72.0
R2	44.7	48.6	3.9	76.1
R3	44.2	47.7	3.5	72.1
R4	42.9	45.5	2.6	68.6
R5	41.5	43.5	2.0	75.0
R6	40.4	42.0	1.6	72.2
R7	41.7	43.8	2.1	68.9
R8	40.9	42.7	1.8	74.1
R9	37.8	38.4	0.6	75.4
R10	42.6	45.0	2.4	71.1
R11	42.8	45.3	2.5	73.7
R12	39.6	40.8	1.2	71.0
R13	38.0	39.1	1.1	66.2
R14	30.8	31.3	0.5	62.9
R15	26.0	26.3	0.3	63.4
R16	32.2	32.6	0.4	62.1
R17	43.9	47.1	3.2	70.2
R18	36.8	37.9	1.1	60.3

Notes:
[1] Predicted noise level at ground level.
[2] From Draft EIR, Appendix IV.C.1, Table 18.
Source: Acoustical Engineering Services, 2011

Increasing the distance between the helicopter flight path and the respective noise receptor would reduce the helicopter noise levels at the affected receptor, R17. To reduce the SEL noise level at receptor location R17, the helistop would be required to be located at a minimum 817 feet AGL (or 1095 feet MSL). With the helistop at 817 feet AGL, the single-event noise level at receptor location R17 would be 93.6 dBA SEL. A noise mitigation measure to limit the helistop elevation to minimum 817 feet AGL (or 1095 MSL) is recommended. Therefore, the potential noise impacts related to the helistop are less than significant level.

Table 4. Helicopter Single-Event Noise Analysis (SEL)

Location	Predicted Helicopter (Bell 206L) Single-Event Noise Levels, SEL (dBA)				Land Use	Significance Threshold, SEL (dBA)
	Helistop at 1090 feet AGL (Proposed Project)		Helistop at 717 feet AGL (Reduced Height Alternative)			
	At Ground Level	At Building Roof Level	At Ground Level	At Building Roof Level		
R0	90.4	93.4	93.8	97.4	Commercial	--[1]
R1	90.9	93.6	94.7	98.7	Commercial	--[1]
R2	90.9	94.6	94.9	100.6	Commercial	--[1]
R3	90.5	95.8	94.0	100.2	Commercial	--[1]
R4	89.0	89.4	91.5	91.9	Residential/ Office	94
R5	87.6	87.9	89.4	89.7	Residential/ Office	94
R6	86.4	88.1	87.9	89.1	Residential/ Commercial	94
R7	87.9	89.6	89.8	91.3	Hotel/ Commercial	94
R8	86.7	88.5	88.2	89.6	Hotel/ Commercial	94
R9	83.6	84.2	84.1	84.5	Hotel/ Residential/ Commercial	94
R10	88.7	89.5	91.1	91.8	Residential/ Commercial	94
R11	88.9	89.9	91.3	92.3	Hotel/ Residential/ Commercial	94
R12	85.7	86.0	86.7	86.9	Residential/ Commercial	94
R13	83.9	84.2	84.9	85.1	Hospital	94
R14	76.0	--[2]	76.6	--[2]	Residential/ Commercial	94
R15	72.0	--[2]	72.1	--[2]	School/ Commercial	--[1]
R16	77.5	--[2]	77.8	--[2]	Residential/ Commercial	94
R17	90.0	91.2	93.1	94.5	Hotel/ Commercial	94
R18	82.4	--[2]	83.6	--[2]	School/ Residential	94[3]

Notes:
[1] *SEL significance threshold is not applicable to commercial/office and school land uses, data provided for information only.*
[2] *Not calculated for buildings with less than three stories.*
[3] *Significance threshold is applicable to the residential uses at R18, not applicable to the school uses.*
Source: Acoustical Engineering Services, 2011

The single-event noise level in terms of L_{max} was calculated at the nearest school site, the Miguel Contreras Learning and Evelyn Thurman Gratts Elementary School (receptor location R18), to evaluate the potential impacts with respect to speech interference. With the helistop at 717 feet AGL, the Bell 206L would generate maximum noise levels of 69 dBA L_{max} at noise receptor location R18, which is 1 dBA higher than that of the helistop at 1,090 feet AGL. The predicted L_{max} levels at the school sites would be below the 80 dBA L_{max} threshold (for school uses). Therefore, the overall noise exposure due to Helistop operations at 717 feet AGL would be less than significant.

Additional noise analysis was performed to evaluate the helistop noise impacts at the four Brookfield buildings in the vicinity of the Project site. Table 5 below reports the closest distances "Slant Distance" in feet between the helicopter flight path and Brookfield's buildings, with the helistop located at 717 feet AGL. The helicopter flight paths would be a minimum 90 feet from the top of the 601 S. Figueroa building, 225 feet from the top of the 725 S. Figueroa building, 744 feet from the 735 S. Figueroa building, and 1,050 feet from the top of the 333 S. Hope building.

Table 5. Distance from Helicopter Flight Path to Brookfield's Building Locations with Helistop at 717 feet AGL

Building / Location	Nearest Draft EIR Noise Receptor Location	Longitudinal distance to flight path, feet (A)	Building Height,[a] feet (B)	"Slant Distance" to flight path,[b] feet
Figueroa at Wilshire Building / 601 S. Figueroa	R1	90	716	from ground level – 718 from roof level – 90
Ernst & Young Plaza / 725 S. Figueroa	R3	170	534	from ground level – 732 from roof level – 250
7th+Fig / 735 S. Figueroa	R3	330	50	from ground level – 785 from roof level – 744
Bank of America / 333 S. Hope	R8	1050	735	from ground level – 1269 from roof level – 1050

[a] *Source: www.skyscraperpage.com. Building height for 735 S. Figueroa is estimated.*
[b] *The "Slant Distance" represents the actual distance between the building(at the roof level) and the helicopter flight path, which is calculated as follow. "Slant Distance" = $[A^2 + (717\text{-}B)^2]^{1/2}$, for ground level B=5 feet.*

Table 6 on page 19 reports the estimated helistop operations noise levels at the exterior and interior of Brookfield's building. As reported in Table 6, the predicted exterior noise levels generated by the helistop operation with the helistop at 717 feet AGL would range from 38 dBA CNEL at the ground (street) level of the 333 S. Hope building to 59 dBA CNEL at the roof level of the 601 S. Figueroa building. These estimated noise levels represent an increase of approximately 1 to 6 dBA CNEL as compared to the helistop at 1,090 feet AGL condition. The estimated helistop operations noise levels (at both 717 feet AGL and 1,090 feet AGL elevations) at the exterior of Brookfield's building (in terms of CNEL) would be well below the existing ambient noise levels (Table IV.C-9 of the Draft EIR, Page IV.C-21), which is approximately 72 dBA CNEL. With respect to the City's General Plan, the predicted helistop operation noise levels would be well below the City's General Plan standards (i.e., 65 dBA CNEL).

Table 6. Estimated Helistop Noise Levels at Brookfield's Buildings

Location	Predicted Helistop Operations Noise Levels at the EXTERIOR of the Buildings, dBA (Proposed Project/ Reduced Height Alternative)[a]			Predicted Helistop Operations Noise Levels at the INTERIOR of the Buildings,[b] dBA (Proposed Project/ Reduced Height Alternative)		
	CNEL	SEL	L_{max}	CNEL	SEL	L_{max}
601 S. Figueroa						
- Ground Level	45 / 49	91 / 95	73 / 75	10 / 14	56 / 60	38 / 40
- Roof Level	53 / 59	100 / 105	79 / 86	18 / 24	65 / 70	44 / 51
725 S. Figueroa						
- Ground Level	44 / 48	91 / 94	72 / 75	9 / 13	56 / 59	37 / 40
- Roof Level	49 / 54	96 / 100	77 / 80	14 / 19	61 / 65	42 / 45
735 S. Figueroa						
- Ground Level	44 / 47	90 / 93	72 / 74	9 / 12	55 / 58	37 / 39
- Roof Level	44 / 47	90 / 93	72 / 74	9 / 12	55 / 58	37 / 39
333 S. Hope						
- Ground Level	37 / 38	83 / 83	65 / 64[c]	2 / 3	48 / 48	30 / 29[c]
- Roof Level	39 / 40	84 / 84	68 / 70	4 / 5	49 / 49	33 / 35

[a] *Helistop at 1090 feet above ground level under the Proposed Project and at 717 feet above ground level under the Reduced Height Alternative.*

[b] *Interior noise levels are estimated based on an outdoor-to-indoor noise reduction of 35 dBA.*
Source: Westfield Century City New Century Plan, Final EIR, 2008. http://cityplanning.lacity.org/eir/CenturyPlan/FEIR/issues/ Vol._I_III._Response_to_Written_Comments.pdf

[c] *The predicted L_{max} noise levels at 333 S. Hope (ground level) for the helistop at 717 feet AGL are 1 dBA lower than that of the helistop at 1,090 feet AGL. This seemingly incongruous result appears to be an anomaly in the INM model with respect to the receptor and the lateral directivity of the helicopter noise. The INM model is specific to the project and no corrections are allowed in an attempt to resolve the noted condition. The resulting interior noise levels are well below the applicable significance threshold.*

Source: Acoustical Engineering Services, 2011

The helistop single-event noise levels (in terms of SEL and L_{max}) with the helistop at 717 feet and 1,090 feet elevations above ground level are also reported in Table 6. As reported in Table 6, the estimated exterior single-event noise levels (SEL) with the helistop at 717 feet AGL elevation would range from 83 dBA SEL at the ground (street) level of the 333 S. Hope building to 105 dBA SEL at the roof level of the 601 S. Figueroa building. The estimated single-event noise levels in terms of maximum sound level (L_{max}) vary from 64 dBA L_{max} to 86 dBA L_{max} at the exterior of Brookfield's buildings. These estimated single-event noise levels (in terms of SEL and L_{max}) for the helistop at 717 feet AGL elevation would be up to 7 decibels higher as compared to the helistop at 1,090 feet AGL elevation. For comparison, the existing maximum noise levels in the vicinity of the Project site were measured up to 93 dBA L_{max}, at receptor location R1 (Project Draft EIR, Appendix IV.C-1, Appendix A).

Also reported in Table 6 are the estimated noise levels at the interior of Brookfield's building. As previously explained in Response to Comment #3, a typical high-rise office building façade (with fixed windows) would provide approximately 35 dBA exterior-to-interior noise reduction.[13] Therefore, the estimated noise levels at the interior of Brookfield's building would range from approximately 2 dBA CNEL at the 333 S. Hope building (ground level) to a maximum 24 dBA CNEL at the 601 S. Figueroa building (roof level), with the helistop at 717 feet AGL. These estimated interior noise levels would be well below the recommended maximum interior noise level of 45 dBA CNEL. As previously explained, the estimated interior SEL noise levels are provided as information only, as the SEL noise descriptor is used to evaluate sleep interference (for residential uses), where as speech interference (for office or school uses) is best analyzed using L_{max}.[14] The estimated maximum noise levels as experienced at the interiors of Brookfield's buildings would range from approximately 30 dBA L_{max} at the 333 S. Hope building (ground level) to 44 dBA L_{max} at the 601 S. Figueroa building (roof level), with the helistop at 1,090 feet AGL. The estimated maximum helicopter noise levels at the interiors of Brookfield's buildings, with the helistop at 1,090 feet AGL, would be consistent with typical office background noise levels of 44 dBA L_{eq}, per the ASHRAE.[15] The maximum helicopter noise at the interiors of Brookfield buildings would be increased by up to 7 dBA L_{max} at the 601 S. Figueroa building (roof level), if the helistop was to be located at 717 feet AGL. With the helistop at 717 feet AGL, the estimated noise levels at the interior of the 601 S. Figueroa and 725 S. Figueroa buildings would be 51 dBA L_{max} and 45 dBA L_{max}, respectively. The interior noise levels at 601 S. Figueroa and 725 S. Figueroa buildings with the helistop at 717 feet AGL, would be slightly above the typical office background noise environment of 44 dBA L_{eq}, but would be below the 55 dBA L_{max} criteria for speech interference.[16]

In summary, the helistop noise analysis with the helistop at 717 feet AGL elevation could result in a significant noise impact at one off-site noise sensitive receptor, R17. Therefore, a noise mitigation measure, which would limit the helistop elevation to minimum 817 feet AGL elevation (or 1095 MSL) is provided to reduce the potential noise impact to a less than significant level. Furthermore, the proposed noise mitigation (i.e., helistop at 817 feet AGL elevation) would also reduce the noise levels at the Brookfield buildings.

Comment #17: Page Seventeen Item F

The recent case Sunnyvale West Neighborhood Association v. City of Sunnyvale City Council (6th App. Dist., December 16, 2010) throws into question the traffic, noise and air quality analyses since the EIR utilized a future year as the baseline, and not existing environmental conditions. The commenter further states that no analysis in the EIR with regard to the Project's traffic or noise impacts on the existing environment.

Response to Comment #17

The analyses of operational and construction noise presented in the EIR were based upon comparison of Project-related noise levels to the existing noise environment and are therefore satisfy the

[13] Westfield Century City New Century Plan, Final EIR, 2008. http://cityplanning.lacity.org/eir/ CenturyPlan/FEIR/issues/ Vol._I_III._Response_to_Written_Comments.pdf

[14] Federal Interagency Committee On Aviation Noise (FICAN), The Use of Supplemental Noise Metrics in Aircraft Noise Analyses, February 2002.

[15] American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., 2003 ASHRAE Handbook.

[16] Wilshire Grand Redevelopment Project Draft EIR, Appendix IV.C.1, Noise Impact Study, Page 13.

analysis required by the recent *Sunnyvale* decision, with one exception. The traffic noise analysis compared the future with project noise levels to future without project noise levels to determine project impacts. This analysis was re-calculated (Appendix D) by adding Project traffic to existing traffic levels and comparing the resulting noise level to the existing traffic noise levels to determine whether an audible increase (3 dBA) would occur.

The roadway traffic noise impact, as analyzed in the EIR, was based on the incremental increase in the traffic noise levels attributable to Project as compared to the baseline condition when the Project is completed. Additional analysis was made to determine the potential noise impacts, based on the increase in noise levels due to Project-related traffic compared with the existing traffic noise conditions. Table 7 on page 22 reports the off-site roadway traffic noise impacts due to the Project-related traffic as compared to the existing traffic conditions. As reported in Table 7, the Project-related traffic volumes would result in a maximum noise increase of 2.2 dBA CNEL along Francisco Street, between 7^{th} Street and Wilshire Boulevard. For comparison, the Project's traffic noise impacts based on the existing conditions would be approximately 0.1 dBA higher than the analysis presented in the EIR. Overall, the differences in Project's traffic noise impacts based on the Sunnyvale case (i.e., comparing with the existing conditions) and as analyzed in the EIR are 0.2 dBA or less.

In summary, the result of this analysis show that the Project traffic noise impacts based on the existing traffic conditions would not alter the results of the less than significant impact analysis presented in the EIR.

Table 7. Off-Site Roadway Traffic Noise Impacts

Roadway Segment	Calculated Traffic Noise Levels, dBA CNEL Existing (A)	Calculated Traffic Noise Levels, dBA CNEL Existing Plus Project (B)	Increase in Noise Levels due to Project, dBA CNEL (B – A)	Increase in Noise Levels due to Project as Analyzed in the Project EIR, dBA CNEL
Glendale Boulevard				
- Between Temple St. and Beverly Blvd.	73.2	73.2	0.0	0.0
Francisco Street				
- Between 7th Street and Wilshire Blvd.	66.2	68.4	2.2	2.1
Lucas Avenue				
- Between 3rd St. and 6th St.	70.2	70.2	0.0	0.0
- Between 6th St. and Wilshire Blvd.	68.8	69.1	0.3	0.2
Wilshire Boulevard				
- Between Alvarado St. and Lucas Ave.	71.6	71.7	0.1	0.1
- Between Lucas Ave. and Beaudry Ave.	71.3	71.4	0.1	0.1
- Between Francisco St. and Figueroa St.	70.8	71.7	0.9	0.7
- Between Figueroa St. and Grand Ave.	69.0	69.3	0.3	0.2
6th Street				
- Between Figueroa St. and Flower St	69.3	69.5	0.2	0.0
- Between Flower St. and Olive St	68.7	68.7	0.0	0.0
- East of Olive St.	70.0	70.0	0.0	0.0
7th Street				
- Between Alvarado St. and Bixel St.	67.7	67.9	0.1	0.1
- Between Bixel St. and Francisco St.	67.8	68.1	0.3	0.3
- Between Francisco St. and Figueroa St.	68.2	68.9	0.7	0.6
- Between Figueroa St. and Grand Ave.	68.4	69.0	0.6	0.5
- Between Grand Ave. and Alameda Blvd	67.8	68.1	0.3	0.3
Figueroa Street				
- Between 3rd St. and 5th St.	73.3	73.5	0.2	0.2
- Between 5th St. and Wilshire Blvd.	73.6	74.0	0.4	0.3
- Between Wilshire Blvd. and 7th St.	72.2	72.3	0.1	0.1
- Between 7th St. and Olympic Blvd.	71.3	71.4	0.1	0.0
- Between Olympic Blvd. and Pico Blvd.	71.6	71.7	0.1	0.1
Flower Street				
- Between 3rd St. and 5th St.	70.9	71.0	0.2	0.2
- Between 5th St. and Wilshire Blvd.	70.5	70.7	0.2	0.1
- Between Wilshire Blvd. and 8th St.	71.3	71.5	0.2	0.1
- South of 8th St.	70.8	71.0	0.2	0.1

Table 7. Off-Site Roadway Traffic Noise Impacts (continued)

Roadway Segment	Calculated Traffic Noise Levels, dBA CNEL: Existing (A)	Calculated Traffic Noise Levels, dBA CNEL: Existing Plus Project (B)	Increase in Noise Levels due to Project, dBA CNEL (B – A)	Increase in Noise Levels due to Project as Analyzed in the Project EIR, dBA CNEL
Grand Avenue				
- Between 3rd St. and Wilshire Blvd.	69.4	69.5	0.0	0.0
- Between Wilshire Blvd. and 7th St.	70.5	70.6	0.2	0.1
- South of 7th St.	69.9	70.2	0.4	0.3

Source: Acoustical Engineering Services, 2010

LETTER #4 – PBS&J dated January 14, 2011

Comment #1: Page 2, Construction Noise

Construction period noise levels within the interior of the interior of the offices facing the project site would be approximately 70 dBA.

Response to Comment #1

PBS&J estimation of the noise levels at the interior of the offices facing the project site assumed a 15 dBA exterior-to-interior noise reduction. There is no reference in the PBS&J letter as to where the 15 dBA noise reduction was based on. This assumption is likely based EPA's data for residential dwellings with windows open (i.e., EPA Protective Noise Level Document); however, the Brookfield's office buildings are high-rise structures, typically constructed of the steel, concrete and heavy glass curtain walls. High-rise commercial/ office buildings, in general, do not have operable windows. As reported in the Draft EIR, a typical high-rise office building façade (with fixed windows) would provide approximately 35 dBA exterior-to-interior noise reduction.[17]

Comment #2: Page 2, 1st Bullet

- *Specifying a sound barrier wall at the ground level along the north and south perimeter of the construction site such that it attenuates to a minimum of 20 dBA.*

Response to Comment #2

See Response to Letter #3, Comment #4 above.

Comment #3: Page 2, 2nd Bullet

- *Upper floor construction of the two high-rise towers need to include temporary sound barrier walls along the north and south sides of the high-rise towers as they are constructed to attenuate construction noise impacts at the upper floor offices of at 601 S. Figueroa Street and 725 S. Figueroa Street. These upper floor sound barriers need to be designed such that they attenuate to a minimum of 20 dBA.*

Response to Comment #3

See Response to Letter #3, Comment #5 above.

Comment #4: Page 3, 1st Bullet

- *The construction contractor should consult with Brookfield Properties Management in order to coordinate noise intensive activities to avoid interruptions of office activities to the fullest extent feasible.*

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[17] Westfield Century City New Century Plan, Final EIR, 2008. http://cityplanning.lacity.org/eir/ CenturyPlan/FEIR/issues/ Vol._I_III._Response_to_Written_Comments.pdf

Response to Comment #4

See Response to Letter #3, Comment #6 above.

Comment #5: Page 3, 2nd Bullet

- *Where health and safety are not compromised, additional temporary sound walls will be used in conjunction with noise intensive construction equipment that has limited mobility while in use (i.e., jackhammers, compressors, etc.).*

Response to Comment #5

See Response to Letter #3, Comment #7 above.

Comment #6: Page 3, 3rd Bullet

- *Haul trucks should avoid Figueroa Street between 7th Street and Wilshire Boulevard and Wilshire Boulevard east of Francisco Street in order to reduce construction related noise at the offices located at 601 and 725 S Figueroa Street.*

Response to Comment #6

As noted on page 192, Chapter 9 of the Transportation Study, the haul trucks exiting the Project Site would head northeast on Figueroa Street and take the northbound on-ramp at 5th Street to the SR 110 North, take the I-10 exit toward I-5/Santa Ana/San Bernardino, continue on to US 101 South to SR 60 East, and exit the freeway at Crossroads Parkway (South) to Puente Hills Landfill in Whittier, California. On the return route to the Project Site, the trucks would head toward Crossroads Parkway (South), turn right at Crossroads Parkway (North), take the ramp onto SR 60 West, continue on I-10 West, take the exit for SR 110 North, and exit the freeway at 9th Street/James M. Wood Boulevard. The trucks would then turn left at Figueroa Street followed by another left at 7th Street and then a right at Francisco Street.

While the trucks are not expected to travel along Wilshire Boulevard, east of Francisco Street, it would not be possible to restrict travel along Figueroa Street between 7th Street and Wilshire Boulevard as Figueroa Street provides access to the freeway ramps. It should be noted that the Applicant is required to submit a construction management plan to LADOT for approval.

Comment #7: Page 3, Operation Noise, 1st paragraph

The analysis with respect to aviation noise impacts on offsite receptors associated with commercial helicopter operations on the rooftop of the proposed building A directly across the street from 601 Wilshire Boulevard is inadequate. The analysis assumes two round trip helicopter flights to building A per day. These flights could originate at various locations, with a departure and arrival flight track for the heliport specified in the prepared technical documents. While the 24-hour weighted averaging shows the CNEL values to be within the City's noise limits, Table 18 in the Noise Impact Study on Page 59 show that Single Event Noise Levels (SEL) would be 96 dBA on the rooftop and 91 dBA at ground level at R3 (725 S. Figueroa Street). Similar noise levels are shown for R1 which is adjacent to

601 Figueroa Street. In particular anticipated SEL noise levels at R1 are 94 dBA on the rooftop and 91 dBA at ground level. This level of noise generated during the daytime hours constitutes a significant temporary increase in ambient noise and is unacceptable in the offices at 601 and 725 S Figueroa Street. It is estimated that the interior noise level within the offices facing the helipad and helicopter approach and departure paths would range between 75 dBA to 71 dBA depending upon the floor. This level of noise within the offices is a substantial periodic noise increase in ambient noise levels to the occupants of the offices at 601 and 725 S. Figueroa Street. The SEL noise levels would constitute a severe interruption to the activities within the offices. Conversations during these SEL noise events would be impossible, which constitutes a significant noise impact and mitigation is required.

PBS&J provided screening level acoustical modeling of the rooftop helipad at selected points of reception in close proximity to the proposed building A. One receptor that was selected for this screening analysis was the upper floor offices at 601 S. Figueroa Street. This modeling exercise revealed that noise levels from the helicopter approach and rooftop helipad can reach a decibel level of 97.31 dBA SEL at the exterior of the windows of the upper floor offices. Interior noise levels during this noise event are approximately 77.31 dBA SEL. As this would increase the existing ambient noise level by more than 7 dBA this is a significant impact without mitigation at that location, which was not addressed in the Draft or Final EIRs. Additional mitigation is needed to attenuate the significant periodic noise impacts inflicted upon the offices at 601 and 725 S Figueroa Street. PBS&J concluded that the Project's noise impact analysis with respect to the helistop operations is inadequate.

Response to Comment #7

PBS&J estimates that interior noise levels at the offices facing the helipads and helicopter flight paths would range from 75 dBA and 71 dBA depending upon the floor. PBS&J estimates appears to be based on the exterior noise levels of 96 dBA SEL (at the roof) and 91 dBA SEL (at the ground level) and the building exterior-to-interior noise reduction of approximately 20 dBA.

It was noted that the amount of the sound attenuation for the same building changed with the source of noise. That is, PBS&J assumed a 15 dBA exterior-to-interior noise reduction when the source was construction noise and a 20 dBA building noise reduction when the source of the noise was the helicopter. PBS&J concluded that the helicopter noise levels result in a substantial increase in the ambient noise at the inside the Brookfield's offices, using SEL noise metrics. In addition, PBS&J concluded that the estimated SEL noise levels inside Brookfield's offices would make conversation impossible.

Current scientific studies (FICAN reference) and a PBS&J acoustical report recommended using SEL to evaluate *sleep interference in a residential environment.*[18,19] The SEL noise metric is a calculated noise level that is normalized to a one (1) second time interval but it is not the actual sound level that a person would hear. L_{max} is a better measure of what a person hears. It is also used to estimate speech interference. Therefore, the PBS&J conclusion based upon SEL levels with the respect to speech interference in a typical office environment is incorrect.

[18] Federal Interagency Committee On Aviation Noise (FICAN), The Use of Supplemental Noise Metrics in Aircraft Noise Analyses, February 2002.

[19] Stanford University Medical Center Facilities Renewal and Replacement, Draft EIR, 2010, Chapter 3.7 Noise, Page 3.7-21.

See also Response to Letter #3, Comment #16 above.

Comment #8: Page 4, 1st Bullet

- *Specifying a sound barrier wall at the rooftop level of proposed building A along the perimeter of the helipad constructed such that it attenuates to a minimum 30 dBA.*

Response to Comment #8

See Response to Letter #3, Comment #2 above.

Comment #9: Page 4, 2nd Bullet

- *Upper floor attenuation of the offices at 601 S. Figueroa Street and 725 S. Figueroa Street, including acoustically attenuating windows and additional rooftop and wall insulation, such that interior noise levels within these office buildings do not exceed 65 dBA SEL or 45 dBA CNEL.*

Response to Comment #9

See Response to Letter #3, Comment #3 above.

Comment #10: Page 4, 3rd Bullet

- *The manager of building A should consult with Brookfield Properties Management in order to inform and coordinate helicopter flight times in order for the occupants of 601 S Figueroa Street and 725 S. Figueroa Street to plan for and avoid interruptions of office activities to the fullest extent feasible.*

Response to Comment #10

The suggested condition that the building manager for Building A consult with and receive approval from an adjacent property with respect to helicopter flight times would be infeasible. The proposed helistop on Building A would not conduct regularly scheduled service but rather would be serviced by periodic flights for which the facility would need to be available.

The helistop would be operated in accordance with the requirements and regulations of the FAA and California Division of Aeronautics. Moreover, the noise analysis provided in the EIR does not identify significant impacts on adjacent uses as a result of helicopter operations. Therefore, this proposed measure is not needed to address an environmental impact.

Comment #11: Page 4, 4th Bullet

- *A detailed approach and departure path showing elevations of the approach and departure should be included as mitigation. The elevation in the approach and departure paths should* *be designed so that the helicopter avoids undue noise impacts to the surrounding buildings while maintaining safe and stable flight of the helicopter.*

Response to Comment #11

The FAA controls the aircraft in the airspace and the pilot is responsible for the safety of flight. The City cannot interfere with the navigation of the helicopter by making the elevation of the helicopter in the airspace a mitigation measure. There are several different helicopters that could qualify to land at the helistop. Their approach/departure glides slopes will depend upon the weather, the wind, the performance characteristics of the aircraft and the noise abatement procedures that are appropriate for this helicopter. The flight paths presented in the DEIR were originally designed to avoid undue noise exposure to the surrounding neighbors, both residential and commercial. The helicopters landing or departing from the helistop will be flying at an altitude above the elevations of the commenter's buildings and not at the window level of these buildings. The pilots will use the best noise abatement procedures possible commensurate with safety of flight. Commenter is also referred to Figure 1 on page 2 and Responses to Letter #1, Comment #1-1 and Comment #1-3 above.

Comment #12: Page 4, 5th Bullet

- *Mitigation should include limiting commercial helicopter flights to a maximum of two round trips per day as was analyzed in the DEIR in order to avoid additional noise impacts.*

Response to Comment #12

See Response to Letter #1, Comment #1-2 above.

Yours sincerely,

Amir Yazdanniyaz, P.E.
Principal

Cc: Jeanet Babauta, Thomas Properties Group
Alix Wisner, Thomas Properties Group
Craig Fajnor, Ecotierra Consultants
Ricarda Bennett, Heliport Consultants
Sean Bui, Acoustical Engineering Services

APPENDIX C

Memorandum, Assessment of Air Quality Impacts for the Wilshire Grand Redevelopment Project in Comparison to 2009 Existing Baseline Conditions, Environ to Thomas Properties Group
February 11, 2010

ENVIRON

February 11, 2011

Via Electronic Mail

Jeanet Babauta
Thomas Properties Group, Inc.
City National Plaza
515 South Flower Street, 6th Floor
Los Angeles, CA 90071

Re: Assessment of Air Quality Impacts for the Wilshire Grand Redevelopment Project in Comparison to 2009 Existing Baseline Conditions

Dear Ms. Babauta:

ENVIRON International Corporation (ENVIRON) presents this technical letter report (Report) regarding air quality impacts of the Wilshire Grand Redevelopment Project (Project). ENVIRON has conducted additional quantitative analyses at the request of Thomas Properties Group to further assess the Project's air quality impacts in comparison to baseline conditions existing in 2009. This Report includes a description of the Project background related to this analysis, methodologies used, and analysis results.

Project Background

The original Air Quality analyses were completed by Christopher A. Joseph and Associates (CAJA), and were included in the Project Draft Environmental Impact Report (DEIR). In response to public comments and a recent court decision made in regards to Environmental Impact Reports (EIR), ENVIRON has further evaluated the Project's air quality impacts in comparison to existing conditions (assumed to be 2009 in the Air Quality DEIR analysis). ENVIRON's evaluation is based on analyses conducted originally by CAJA and reported in the Project DEIR.

Methodology

ENVIRON relied upon the air quality impact analysis methodology as used by CAJA in the DEIR. Details regarding the original analyses can be found in section IV.G of the DEIR. The primary differences in this analysis compared to the DEIR analysis are described below.

Construction

The analyses of construction air emissions presented in the DEIR were based upon comparison of Project-related construction emissions to the existing 2009 levels of construction emissions on the project site (i.e., zero existing construction emissions). Therefore, no update of the DEIR analysis of mass daily emissions, localized emissions of CO, NOx, PM_{10} and $PM_{2.5}$, or toxic air contaminants during the construction phase was required.

Operations

ENVIRON evaluated Project operational emissions in comparison to 2009 baseline emissions. The emissions inventory relied upon in this analysis was reported in the DEIR and Appendix IV.G.6 of the DEIR. This analysis further compared the Project to existing conditions in 2009 to estimate the incremental change in operational mass emissions due to the Project. To evaluate the Project against South Coast Air Quality Management District (SCAQMD) localized significance thresholds (LSTs), ENVIRON modified the CAJA URBEMIS modeling calculations to estimate onsite operational mobile emissions for existing site conditions in 2009. All other Project assumptions remained consistent with those assumed in the DEIR. To assess operational health risk for 2009 conditions, ENVIRON applied a ratio based on the change in onsite PM_{10} emissions, which were used as to represent the change in air toxic emissions as compared to that reported in the DEIR.

CO Hotspots

ENVIRON evaluated the Project CO hotspots in comparison to existing 2009 baseline conditions. ENVIRON modified CAJA CO hotspots modeling calculations to estimate CO concentrations at the same intersections using 2009 traffic volumes and background CO concentrations. The numbers of trips at intersections were based on existing (2009) trips plus those associated with the Project.[1] Background CO concentrations were those used by CAJA in its analysis of 2009 existing Project site emissions. Other project assumptions remained consistent with those assumed in the DEIR.

Harbor Freeway Health Risk Assessment (HRA)

ENVIRON estimated risk impacts from the Harbor Freeway as if the Project were to have existed in 2009. All other assumptions remained consistent with those assumed in the DEIR. Freeway emissions referenced to 2009 existing conditions were estimated using the ratio of 2009 on-road emission factors to those in the year evaluated in the DEIR (2015). Emission factors were determined using EMFAC2007. Health risk relative to 2009 existing conditions was calculated by multiplying risk impacts in the DEIR by the 2009-to-2015 emission factor ratio. For cancer and chronic hazard indices, maximum health impacts associated with TAC emissions from the Harbor Freeway under 2009 conditions were estimated by multiplying the risks reported in the DEIR by the 2009-to-2015 ratio of diesel PM emission factors, and for acute hazard indices, by the 2009-to-2015 ratio of emission factors for total organics.

Odor

ENVIRON did not modify the odor analysis.

Results

Operations

Operational emissions are shown in Tables 1 and 2. Table 1 shows total operational emissions. Table 2 shows onsite operational emissions. Table 3 shows the estimated health risk impact due to operational emissions. Note that the risk impact of Project operations is negative relative to 2009 existing conditions, indicating that health risk from Project operations would be less than from operation of the currently existing hotel. Based on the net change in onsite PM_{10} emissions as reported in Table 2, the Project 2009 risk impact is approximately 1.1 times higher than that reported in the DEIR.[2]

---

[1] Gibson, 2010. Data provided via email from Thomas Properties Group. February 9, 2011.

[2] This estimate is based on the ratio of the sum of summertime and wintertime net emissions, which are 0.36 pounds per day and 0.35 pounds per day, respectively, in the DEIR to that estimated for 2009 conditions.

Table 3
Maximum Health Impacts Associated With TAC Emissions from Operations in 2009 Conditions

Health Impact	Maximum Impacted Off-Site Receptor [a]	Maximum Risk Impact from Project Emissions (Risk in 1 million)	SCAQMD Threshold (Risk in 1 million)
Inhalation Cancer Risk	Residential	(14.8)	10
	Worker	(3.0)	10
Health Impact	**Maximum Impacted Off-Site Receptor [a]**	**Maximum Risk Impact from Project Emissions (Index)**	**SCAQMD Threshold (Index)**
Chronic Non-cancer Hazard Index	Residential	(0.07)	1.0
	Worker	(0.07)	1.0
Health Impact	**Maximum Impacted Off-Site Receptor [a]**	**Maximum Risk Impact from Project Emissions (Index)**	**SCAQMD Threshold (Index)**
Acute Non-cancer Hazard Index	Residential	(0.6)	1.0
	Worker	(0.6)	1.0

Note: Numbers in parenthesis denote negative values. ( ) indicates decrease.

[a] *The maximum impacted off-site residential receptor is the 1010 Wilshire apartments located approximately 450 feet northwest of the Project Site, across the Harbor Freeway, and the maximum impacted off-site worker receptor is the 1000 Wilshire building located approximately 60 feet west of the Project Site, across Francisco Street.*

CO Hotspots

The localized CO hotspots analysis results are shown in Table 4.

Harbor Freeway Health Risk Assessment (HRA)

The Harbor Freeway HRA results are shown in Table 5. Based on the ratio of 2009-to-2015 emission factors, diesel PM emissions were estimated to be 2.18 times higher in 2009 than 2015. Total organic emission factors were estimated to be 1.76 times higher in 2009 than 2015.

Table 5
Maximum Health Impacts Associated With TAC Emissions from Harbor Freeway in 2009 Conditions

Health Impact	Population Receptor	Maximum Risk Impact from Harbor Freeway Emissions (Risk in 1 million)	SCAQMD Threshold (Risk in 1 million)
Inhalation Cancer Risk	Adult	4.6	10
	Child	2.3	10
Chronic Non-cancer Hazard Index	Future Project Residents	0.010	1.0
Acute Non-cancer Hazard Index	Future Project Residents	0.007	1.0

Summary

ENVIRON has further evaluated the Project's air quality impacts in comparison to existing conditions in 2009. While the DEIR included analyses for baseline 2009 existing conditions, ENVIRON has performed additional analyses to supplement what was reported in the DEIR. Project operational emissions as reported in the DEIR were adjusted for comparison to 2009 existing site conditions. The CO hotspots analysis was adjusted to evaluate existing 2009 traffic volumes and 2009 background CO concentrations with Project traffic. The Harbor Freeway HRA analysis was adjusted to 2009 conditions. These additional analyses show that estimated air quality impacts from Project operations, CO Hotspots, and the Harbor Freeway HRA in comparison to 2009 existing conditions would also remain below the significance thresholds, similar to what was reported in the DEIR.

Closing

The analysis presented herein represents ENVIRON's understanding based on the information available at the time of this report. To the extent that information that was relied upon changes, the results reported may also change. The evaluation of the Project against 2009 existing site conditions is a hypothetical representation of Project impacts and is based on information as reported in the Project DEIR. Please feel free to contact Eric Lu (949) 798-3650 or Stan Hayes at (510) 420-2527 if you have any questions.

Sincerely,

Eric C. Lu, MS, PE
Senior Manager

Stan R. Hayes
Principal

ECL:py
Los Angeles\projects\t\thomas properties group\wilshire grand\air quality\year 2009 project evaluation\wg aq ltr rpt sunnyvale 110216.docx
[03-23501A]

Attachment: Tables 1, 2, and 4

Tables

Table 1
Estimated Daily Operational Emissions 2009 Conditions

Emissions Source	Emissions in Pounds per Day					
	VOC	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
Summertime Emissions						
Project Emissions						
Natural Gas Usage	1.46	20.09	8.03	0.00	0.04	0.04
Landscape Maintenance Equipment	0.61	0.10	7.73	0.00	0.03	0.03
Consumer Products	5.13	--	--	--	--	--
Architectural Coatings	11.00	--	--	--	--	--
Mobile (Vehicle) Sources	58.61	48.76	616.19	1.20	212.10	40.58
Helicopters	0.12	4.06	3.21	--	--	--
On-site Broilers	0.08	0.35	0.30	0.00	1.25	0.03
Total Emissions	*77.01*	*73.36*	*635.46*	*1.20*	*213.42*	*40.68*
Existing Site Emissions						
Natural Gas Usage	3.57	49.23	19.69	0.00	0.09	0.09
Landscape Maintenance Equipment	0.52	0.07	6.41	0.00	0.02	0.02
Architectural Coatings	4.41	--	--	--	--	--
Mobile (Vehicle) Sources	78.28	77.45	909.09	0.82	143.43	27.30
On-site Broilers	0.10	0.44	0.37	0.00	1.57	0.03
Total Emissions	*86.88*	*127.19*	*935.56*	*0.82*	*145.11*	*27.44*
Total Project Net Emissions	***(9.87)***	***(53.83)***	***(300.10)***	***0.38***	***68.31***	***13.24***
SCAQMD Thresholds	55.00	55.00	550.00	150.00	150.00	55.00
Significant Impact?	No	No	No	No	No	No
Wintertime Emissions						
Project Emissions						
Natural Gas Usage	1.46	20.09	8.03	0.00	0.04	0.04
Consumer Products	5.13	--	--	--	--	--
Architectural Coatings	11.00	--	--	--	--	--
Mobile (Vehicle) Sources	59.47	59.81	580.51	0.95	212.10	40.58
Helicopters	0.12	4.06	3.21	--	--	--
On-site Broilers	0.08	0.35	0.30	0.00	1.25	0.03
Total Emissions	*77.26*	*84.31*	*592.05*	*0.95*	*213.39*	*40.65*
Existing Site Emissions						
Natural Gas Usage	3.57	49.23	19.69	0.00	0.09	0.09
Architectural Coatings	4.41	--	--	--	--	--
Mobile (Vehicle) Sources	83.77	95.48	875.58	0.65	143.43	27.30
On-site Broilers	0.10	0.44	0.37	0.00	1.57	0.03
Total Emissions	*91.85*	*145.15*	*895.64*	*0.65*	*145.09*	*27.42*
Total Project Net Emissions	***(14.59)***	***(60.84)***	***(303.59)***	***0.30***	***68.30***	***13.23***
SCAQMD Thresholds	55.00	55.00	550.00	150.00	150.00	55.00
Significant Impact?	No	No	No	No	No	No

Table 2
Localized Estimated Daily Operational Emissions 2009 Conditions

Emissions Source	Total On-site Emissions (Pounds per Day)			
	NOx	**CO**	**PM10**	**PM2.5**
Summertime Emissions				
Project Emissions				
Natural Gas Usage	20.09	8.03	0.04	0.04
Landscape Maintenance Equipment	0.10	7.73	0.03	0.03
Consumer Products	--	--	--	--
Architectural Coatings	--	--	--	--
Mobile (Vehicle) Sources	5.88	74.58	2.45	0.67
Helicopters	0.05	0.17	--	--
On-site Broilers	0.35	0.30	1.25	0.03
Total Emissions	*26.47*	*90.81*	*3.77*	*0.77*
Existing Site Emissions				
Natural Gas Usage	49.23	19.69	0.09	0.09
Landscape Maintenance Equipment	0.07	6.41	0.02	0.02
Architectural Coatings	--	--	--	--
Mobile (Vehicle) Sources	10.06	105.70	1.70	0.44
On-site Broilers	0.44	0.37	1.57	0.03
Total Emissions	*59.80*	*132.17*	*3.38*	*0.58*
Total Project Net Emissions	***(33.33)***	***(41.36)***	***0.39***	***0.19***
SCAQMD Thresholds	95.63	1,350.82	2.95	1.77
Significant Impact?	No	No	No	No
Wintertime Emissions				
Project Emissions				
Natural Gas Usage	20.09	8.03	0.04	0.04
Consumer Products	--	--	--	--
Architectural Coatings	--	--	--	--
Mobile (Vehicle) Sources	6.84	93.51	2.45	0.67
Helicopters	0.05	0.17	--	--
On-site Broilers	0.35	0.30	1.25	0.03
Total Emissions	*27.33*	*102.01*	*3.74*	*0.74*
Existing Site Emissions				
Natural Gas Usage	49.23	19.69	0.09	0.09
Architectural Coatings	--	--	--	--
Mobile (Vehicle) Sources	11.69	138.42	1.70	0.44
On-site Broilers	0.44	0.37	1.57	0.03
Total Emissions	*61.36*	*158.48*	*3.36*	*0.56*
Total Project Net Emissions	***(34.03)***	***(56.47)***	***0.38***	***0.18***
SCAQMD Thresholds	95.63	1,350.82	2.95	1.77
Significant Impact?	No	No	No	No

Table 4
Project Existing Conditions (2009) Localized Carbon Monoxide Concentrations

Intersection	CO Concentrations in Parts per Million[a]							
	Roadway Edge		25 feet		50 feet		100 feet	
	1-Hour	8-Hour	1-Hour	8-Hour	1-Hour	8-Hour	1-Hour	8-Hour
Grand Ave. and Hollywood Freeway NB Ramps	4.0	2.9	3.6	2.6	3.5	2.5	3.3	2.4
Hope St./Hollywood Freeway SB Ramps and Temple St.	3.6	2.6	3.4	2.4	3.3	2.4	3.2	2.3
Figueroa St. and 3rd St.	4.1	3.0	3.7	2.7	3.6	2.6	3.4	2.5
Figueroa St. and 5th St./Harbor Freeway On-Ramps	4.1	3.0	3.7	2.7	3.6	2.6	3.5	2.5
Figueroa St. and 6th St./Harbor Freeway Off-Ramps	4.1	3.0	3.7	2.7	3.6	2.6	3.4	2.5
Alvarado St. and Wilshire Blvd.	3.6	2.6	3.4	2.5	3.3	2.4	3.2	2.4
Beaudry Ave. and Wilshire Blvd.	3.6	2.6	3.4	2.4	3.3	2.4	3.2	2.3
Francisco St. and Wilshire Blvd.	3.5	2.6	3.3	2.4	3.3	2.4	3.2	2.3
Figueroa St. and Wilshire Blvd.	4.2	3.0	3.7	2.7	3.6	2.6	3.4	2.5
Flower St. and Wilshire Blvd.	3.6	2.6	3.4	2.4	3.3	2.4	3.2	2.3
Bixel St. and 7th St.	3.6	2.6	3.3	2.4	3.3	2.4	3.2	2.3
Figueroa St. and 7th St.	3.8	2.7	3.5	2.5	3.4	2.5	3.3	2.4
Flower St. and 7th St.	3.6	2.6	3.4	2.5	3.3	2.4	3.2	2.4
Alameda St. and 7th St.	3.6	2.6	3.4	2.5	3.3	2.4	3.2	2.3
Soto St. and 7th St.	3.6	2.6	3.3	2.4	3.3	2.4	3.2	2.3
Bixel St./Harbor Freeway SB On-Ramp and 8th St.	3.7	2.7	3.4	2.5	3.3	2.4	3.2	2.3
Figueroa St. and 8th St.	3.5	2.6	3.4	2.5	3.3	2.4	3.2	2.4
Cherry St. and Pico Blvd.	3.6	2.6	3.4	2.5	3.3	2.4	3.2	2.3
Grand Ave. and 18th St.	3.4	2.5	3.3	2.4	3.2	2.4	3.2	2.3
Figueroa St. and Olympic Blvd.	3.7	2.7	3.5	2.5	3.4	2.5	3.3	2.4
Glendale Blvd. and Temple St.	4.4	3.2	3.9	2.8	3.7	2.7	3.5	2.5
Glendale Blvd./Lucas Ave. and 1st St./2nd St.	3.6	2.6	3.3	2.4	3.3	2.4	3.2	2.3
Lucas Ave. and 3rd St.	3.6	2.6	3.4	2.5	3.3	2.4	3.2	2.3
Lucas Ave. and 6th St.	3.6	2.6	3.3	2.4	3.3	2.4	3.2	2.3
Lucas Ave. and Wilshire Blvd.	3.7	2.7	3.4	2.5	3.3	2.4	3.2	2.4

a The national 1-hour CO ambient air quality standard is 35.0 ppm, and the state 1-hour CO ambient air quality standard is 20.0 ppm. National and state 8-hour standards are 9.0 parts per million.

Traffic Information Source: Provided by Thomas Properties Group and prepared by Gibson Transportation Consulting, Inc. via email February 9, 2010.

APPENDIX D

Caltrans Letter, August 18, 2010

DEPARTMENT OF TRANSPORTATION
DISTRICT 7, OFFICE OF PUBLIC
TRANSPORTATION AND REGIONAL PLANNING
IGR/CEQA BRANCH
100 SOUTH MAIN STREET
LOS ANGELES, CA 90012
PHONE (213) 897-6696
FAX (213) 897-1337

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August 18, 2010

IGR/CEQA DEIR CS/100704
City of Los Angeles
Wilshire Grand Redevelopment Project
Case No. ENV-2009-1577-EIR
Vic. LA-110-22.66, SCH# 2009071035

Ms. Mariana Salazar
City of Los Angeles
Department of City Planning
200 N. Spring Street, Room 620
Los Angeles, CA 90012

Dear Ms. Salazar:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the Draft Environmental Impact Report (DEIR) for the proposed Wilshire Grand Redevelopment Project. Based on the information received, we have the following comments:

The project includes redevelopment of an existing facility at 930 Wilshire Boulevard on a 3.2- acre site located in the Downtown district of the City of Los Angeles. The project includes demolition of the Wilshire Grand Hotel/Center, and the development of a maximum of 560 hotel rooms and/or condo-hotel units, 1,500,000 sq. ft of office, and 275,000 sq. ft of amenity areas.

The redeveloped site will be a grand-plaza style with two (65-story and 45-story) main structures. The project site is in a business district where several other large developments are underway, approved or planned. The site is surrounded by a network of four major freeways. The closest being the I-110, Harbor Freeway.

Project Traffic Study:
The scope of the study is a geographical area approximately 2.5 miles (north-south) by approximately 4 miles (east-west) that includes facilities in the jurisdiction of the City and CALTRANS. The study analyzes 8 freeway segments (I-110) and 42 intersections including 7 freeway ramp locations. For the purpose of Caltrans review, the traffic analysis for the facilities under CALTRANS jurisdiction is further isolated and presented in a separate section -Appendix J of the DEIR.

CALTRANS ANALYSIS (Appendix J):
The analysis concludes that most freeway facilities (mainline & ramps) in the project vicinity which are currently running congested (LOS E thru F) during AM & PM peaks will continue to do so and worsen by the Wilshire Grand build -out in 2020. This is due to the increased traffic resulting from the ambient growth and other 90 plus related projects. Having concluded this, the analysis identifies a couple of feasible physical improvements (one being I-110 freeway segment in the immediate vicinity of the proposed project and the other a Grand Ave Off-ramp at NB US-101) that would help relieve some of the congestion.

CALTRANS currently has an approved improvement project that includes construction of auxiliary lanes on the I-110 freeway (in both directions) from 0.18 mile south of the Washington Blvd. undercrossing to 0.2 mile north of Wilshire Blvd. overcrossing.

Traffic Mitigation for State Highways:
The developers of the project (DEIR PDF-5) have agreed to participate in CALTRANS' I-110 widening by offering a pro-rata share of $1,950,000.

Comments:
The I-110 widening (auxiliary lanes) project is underway and may be completed before build-out of the entire or part of the Wilshire Grand project. In that case the balance of the offered cost share may need to be transferred for the improvement at the Grand Ave. off-ramp at NB101.

We recommend that construction related truck trips on State Highways be limited to off-peak commute periods. Transport of over-size or over-weight vehicles on State Highways will need a Caltrans Transportation Permit. The contractor should agree to avoid platooning of truck trips on mainline freeways, on freeway ramps and at freeway ramp intersections.

If you have any questions regarding our comments, you may reach me at (213) 897-1726 and please refer to our record number 100704/CS.

Sincerely,

Carl Shiigi
IGR/CEQA Coordinator
Office of Regional Planning

cc: Scott Morgan, State Clearinghouse