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TRANSPORTATION ENGINEERING / PLANNING
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CULVER CITY COSTCO TRAFFIC ANALYSIS

Date:	October 14, 2015	Project #: 18075.0
To:	Barry Kurtz, PE and John Fisher, PE City of Culver City Transportation Engineering	
From:	Casey Bergh and Joe Bessman, KAI	
Cc:	Jenifer Murillo, Costco Wholesale and Terry Odle, MG2	

Kittelson & Associates, Inc. (KAI) has assessed the transportation impacts associated with the proposed expansion of the existing Culver City Costco warehouse on the 18.41-acre lot located on Washington Boulevard. The proposed project includes demolition of the adjacent 63,000 square foot Albertson's grocery store in order to expand the existing Costco by 29,111 square feet. The store will include a new tire center, food center addition, and warehouse expansion. Along with the building changes, parking and circulation improvements are planned to address internal traffic circulation and congestion. The revised layout maintains a similar number of parking stalls while improving the drive aisles, storage space, and circulation routes. The proposed project is expected to decrease site trips, reduce internal congestion, and reduce delays at the two signalized accesses onto Washington Boulevard.

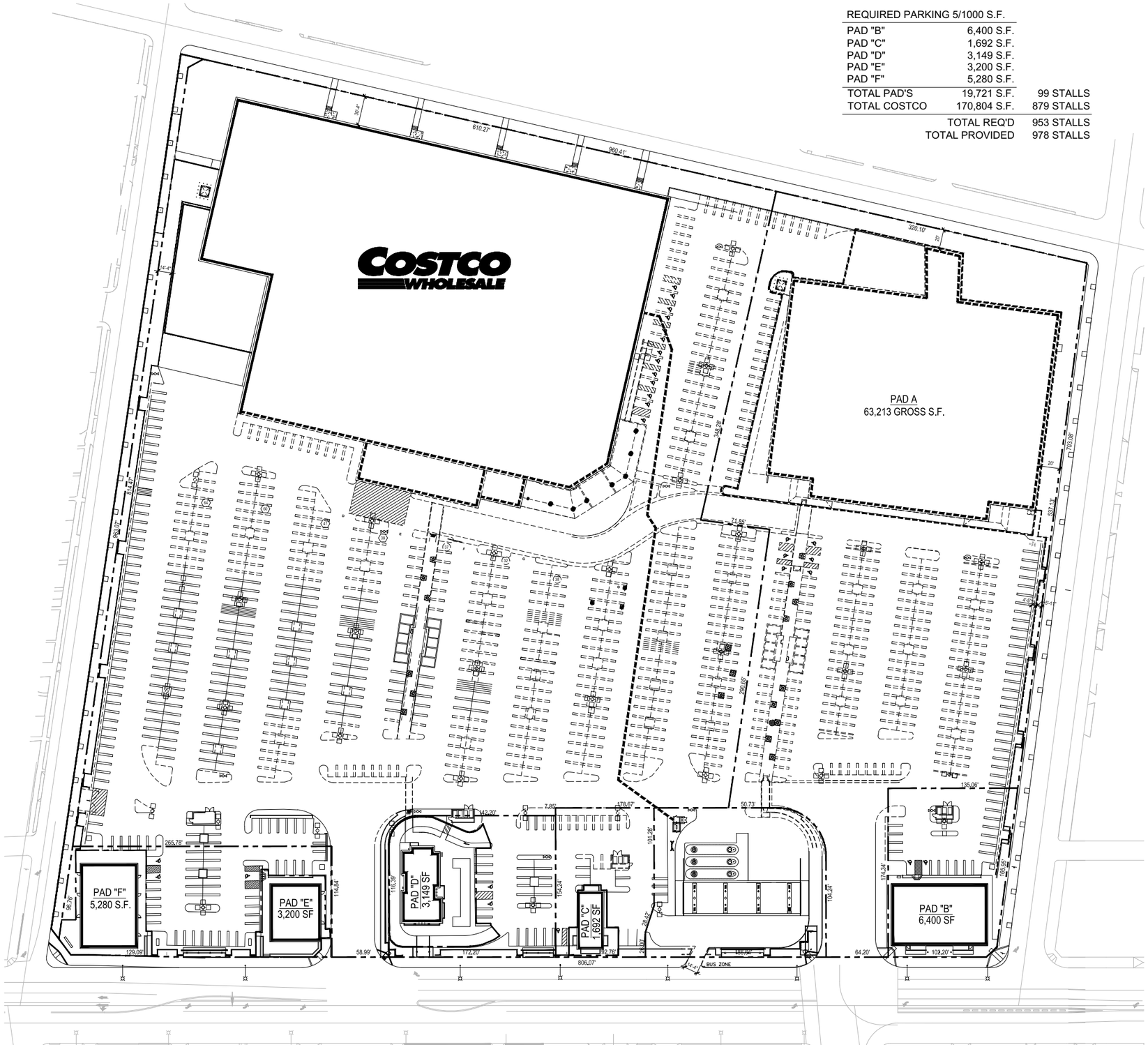
This report provides an update to the original analysis including additional details that address staff and public comments. This report summarizes the overall site changes, anticipated trip impacts to the transportation system, recommended mitigation measures, and a review of neighborhood traffic calming.

EXISTING ACCESS AND SITE PLAN

The Culver City Costco is located on Washington Boulevard, just east of Lincoln Boulevard (US 1). Two signalized intersections on Washington Boulevard provide full access to the Culver City Costco and the adjacent Albertson's. A right-out egress is provided from the Costco fuel station onto Washington Boulevard between the two signalized driveways. The western signalized access is a three-legged ("T") intersection. The eastern signalized access is aligned with Glencoe Avenue, creating a four-legged intersection.

Immediately north of the traffic signals, internal intersections are stop-controlled on the east-west approaches requiring traffic to yield right-of-way to inbound traffic. These internal intersections are located approximately 175 feet north of the traffic signals. During peak times, store staff direct traffic at the internal intersections to prevent gridlock or backups onto Washington Boulevard. The existing layout of the site showing adjacent roadways, access points, and buildings is shown in Figure 1.

REQUIRED PARKING 5/1000 S.F.		
PAD "B"	6,400 S.F.	
PAD "C"	1,692 S.F.	
PAD "D"	3,149 S.F.	
PAD "E"	3,200 S.F.	
PAD "F"	5,280 S.F.	
TOTAL PAD'S	19,721 S.F.	99 STALLS
TOTAL COSTCO	170,804 S.F.	879 STALLS
	TOTAL REQ'D	953 STALLS
	TOTAL PROVIDED	978 STALLS



PROJECT DATA

CLIENT:	COSTCO WHOLESALE 999 LAKE DRIVE ISSAQUAH, WA 98027
PROJECT ADDRESS:	13463 WASHINGTON BLVD. CULVER CITY, CA
ZONING:	COMMERCIAL REGIONAL RETAIL (CRR)
SITE AREA:	18.41 ACRES (801,881 S.F.)
JURISDICTION:	CULVER CITY
SETBACKS:	20 FT. FROM ZANJA ST (NORTH) 20 FT. FROM WALNUT AVE. (WEST)

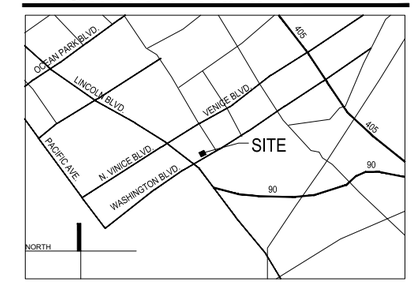
EXIST. BUILDING DATA:	
EXIST. BUILDING AREA	141,693 S.F.
EXIST. TIRE CENTER DEMOLISHED	-5,200 S.F.
EXIST. FOOD SERVICE DEMOLISHED	-1,310 S.F.
TOTAL EXISTING BUILDING	135,183 S.F.
BUILDING ADDITION	28,370 S.F.
FOOD SERVICE ADDITION	1,829 S.F.
TIRE CENTER ADDITION	5,422 S.F.
TOTAL REVISED COSTCO	170,804 S.F.
EXISTING PAD A, B, C, D, E, F	83,024 S.F.
DEMO EXISTING PAD A (ALBERTSON'S)	(63,213 S.F.)
REVISED TOTAL OUT BUILDINGS	19,811 S.F.
TOTAL REVISED SITE BUILDING	190,615 S.F.

PARKING DATA:	
EXISTING PARKING	1,042 STALLS
PROPOSED PARKING:	
10' WIDE STALLS	500 STALLS
9' WIDE STALLS	365 STALLS
9' WIDE COMPACT STALLS	84 STALLS
HC HANDICAP STALLS	29 STALLS
TOTAL PARKING FOR CENTER	978 STALLS
NO. OF STALLS PER 1000 S.F. OF NEW BUILDING AREA:	5.13 STALLS
CITY REQUIRED PARKING 5 / 1000	953 STALLS

NOTES:
EXISTING CONDITIONS TO BE FIELD VERIFIED.

0 20' 40' 80'
1" = 40'

VICINITY MAP



COSTCO WHOLESALE
CULVER CITY, CA
#479
13463 WASHINGTON BLVD.
CULVER CITY, CA 90292

MULVANNY G2
1110 112TH AVE. NE | SUITE 500
BELLEVUE, WA | 98004
t 425.463.2000 | f 425.463.2002
MulvannyG2.com

94-0630-31
MAy 20, 2015
EXISTING / DEMOLITION SITE PLAN
DD10-23

COSTCO WHOLESALE

EXISTING / DEMOLITION SITE PLAN

CULVER CITY, CALIFORNIA

MAY 20, 2015

TRIP GENERATION

Trip generation estimates are commonly prepared using the standard reference *Trip Generation, 9th Edition,* published by the Institute of Transportation Engineers. This reference provides trip generation information collected nationally at suburban stand-alone locations. The land use code most commonly applied to Costco warehouse sites is the *Discount Club*, ITE Land Use Code 857. This land use was first introduced within the 8th Edition of the manual in 2008. The land use description states the following:

> *A discount club is a discount store or warehouse where shoppers pay a membership fee in order to take advantage of discounted prices on a wide variety of items such as food, clothing, tires and appliances; many items are sold in large quantities or in bulk.*

The 9th Edition *Trip Generation* manual notes the peak of these uses occurs between 11:00 a.m. and 2:00 p.m., and trip data that comprises this classification was collected between the 1980's and 2000's. This land use does not distinguish between sites with or without fueling centers, but notes the importance to include this information in future studies. ITE also notes the weekday AM peak hour trip information is based on a small sample size and cautions the user about application of the data.

Based on numerous site-specific surveys we have conducted or compiled nationally at Costco warehouses, we have prepared a trip generation database that more accurately describes store characteristics than the *Trip Generation, 9th Edition*. The trip generation database we have compiled catalogs the overall building size, presence of fuel centers, carwash, and many other site characteristics. *Costco-specific* t*rip generation study data are provided in Attachment A.*

Tables 1 and 2 provide a comparison of the Costco-specific trip generation data to *Discount Club* data within *Trip Generation, 9th Edition*. As shown, the Costco-specific trip generation data indicates Costco generates more trips than a typical *Discount Club*. However, many of the Costco trips are classified as *diverted* or *pass-by* because of the fuel center, food court, typical location along major roadways, and product mix. Therefore, the impacts associated with new trips at the site access points is limited as many customers are motorists that divert from their existing routes.

At the request of City staff, our study area focused only on the access points; *pass-by and diverted trip reductions are not accounted for in this analysis,* as summarized in Table 1. This provides for consistent comparison between the Costco and the adjacent supermarket; however, this approach over-represents system transportation and emissions impacts of adjacent intersections.

The trip estimates shown in Table 1 only include trips associated with the Costco, Albertson's, and fuel center. No changes are proposed to other outparcel buildings on the site, so their impact was excluded. The Saturday peak hour of Costco traffic was summarized in Table 2. The Saturday peak hour generates more traffic than the Sunday peak hour per the Costco-specific trip generation data.

Table 1. Estimated Weekday Trip Generation Potential

Land Use	Size	Weekday Daily Trips		Weekday PM Peak Hour of Adjacent Traffic					
		Costco-Specific Trip Generation	ITE 9th Edition Trip Generation	Costco-Specific Trip Generation			ITE 9th Edition Trip Generation		
				Total	In	Out	Total	In	Out
Costco Expansion									
Existing Warehouse US Costco Warehouse with Fuel	141,693 SF 16 Fueling Positions	(10,256)	(5,923)	(1,013)	(491)	(522)	(592)	(296)	(296)
Proposed Expansion US Costco Warehouse with Fuel	170,804 SF 16 Fueling Positions	12,364	7,140	1,221	591	630	714	357	357
Net Difference		***+2,108***	***+1,217***	***+208***	***+100***	***+108***	***+122***	***+61***	***+61***
Albertsons Demolition									
Albertson's Demolition Supermarket (850)	63,000 SF	(6,462)		(599)	(305)	(294)	(599)	(305)	(294)
Trip Difference (Proposed Uses - Existing Uses)									
Trip Difference		**(4,354)**	**(5,245)**	**(391)**	**(205)**	**(186)**	**(477)**	**(244)**	**(233)**

Table 2. Estimated Saturday Trip Generation Potential

Land Use	Size	Saturday Daily Trips		Saturday Peak Hour of Generator					
		Costco-Specific Trip Generation	ITE 9th Edition Trip Generation	Costco-Specific Trip Generation			ITE 9th Edition Trip Generation		
				Total	In	Out	Total	In	Out
Costco Expansion									
Existing Warehouse US Costco Warehouse with Fuel	141,693 SF 16 Fueling Positions	N/A	(5,447)	(1,349)	(686)	(663)	(902)	(442)	(460)
Proposed Expansion US Costco Warehouse with Fuel	170,804 SF 16 Fueling Positions	N/A	6,566	1,626	827	799	1,088	533	555
Net Difference		***N/A***	***+1,119***	***+277***	***+141***	***+136***	***+186***	***+91***	***+95***
Albertsons Demolition									
Albertson's Demolition Supermarket (850)	63,000 SF	(11,188)		(673)	(343)	(330)	(673)	(343)	(330)
Trip Difference (Proposed Uses - Existing Uses)									
Trip Difference		**N/A**	**(10,069)**	**(396)**	**(202)**	**(194)**	**(487)**	**(252)**	**(235)**

As shown in Tables 1 and 2, removing the supermarket and expanding the existing Costco will reduce overall site trips during all assessment periods.

EXISTING TRAFFIC CONDITIONS AND SITE CIRCULATION

While trip generation for the site is reduced during all analysis periods, KAI prepared operational analysis and reviewed internal site circulation to identify opportunities to optimize traffic flow to, from, and within the site. This was largely in response to observed peak period congestion.

Data Collection

KAI collected turning movement volume counts and obtained video of traffic flow during a typical midday Saturday peak period (11:00 a.m. to 2:00 p.m.) on July 19, 2014 at the two signalized driveways. Costco sales data and Costco-specific trip generation data indicate the period from 11 a.m. to 2:00 p.m. is the peak period for an average Saturday. *Traffic count worksheets are provided in Attachment B.*

Signal timing sheets were initially obtained from the City of Culver City on July 24, 2014 and used to conduct simulated intersection operations analysis for the Saturday peak hour that were compared to field observations. It was noted that while the simulation models showed acceptable operations and low overall delays, site observations noted that factors related to internal circulation, site-specific uses and activities, signal timing, and signal hardware resulted in poorer field conditions.

The analysis results and comparison to field conditions were discussed with Culver City staff on September 22, 2014. Based on these discussions, City signal staff immediately reviewed traffic signal detection problems and made additional modifications to the signal timing. Revised signal timing sheets reflecting these changes were obtained from the City of Culver City on December 15, 2014. *Signal timing sheets are provided in Attachment C.*

The initial data collection and analysis was focused on peak Saturday conditions (referred to as the *peak of generator*) to highlight maximum parking demands and internal trips. Findings from this initial review showed that the existing lane configuration and signal phasing were not optimal for serving the traffic flows. This finding required additional analyses during the weekday evening commute peak to ensure that changes to the lane configurations would also serve the commute period traffic patterns.

Additional turning movement counts were collected during a weekday evening peak period (4:00 p.m. to 6:00 p.m.) on Thursday, November 20, 2014 at the two signalized intersections and two downstream unsignalized intersections (Washington Boulevard/Glencoe Avenue and Washington Boulevard/Walgrove Avenue). This time of year reflects higher retail sales and grocery sales in preparation for the holiday season.

Based on review of the original traffic City staff noted differences between the November 20, 2014 counts and older counts from 2010. Because the traffic counts were videotaped we were able to recount the videos and confirmed that the count data was correct (comparison of the counts showed less than a 1% difference in volumes), and note that the volume differences from the 2010 counts may reflect seasonal, economic, or data collection accuracy variations.

Existing Traffic Operations on Washington Boulevard

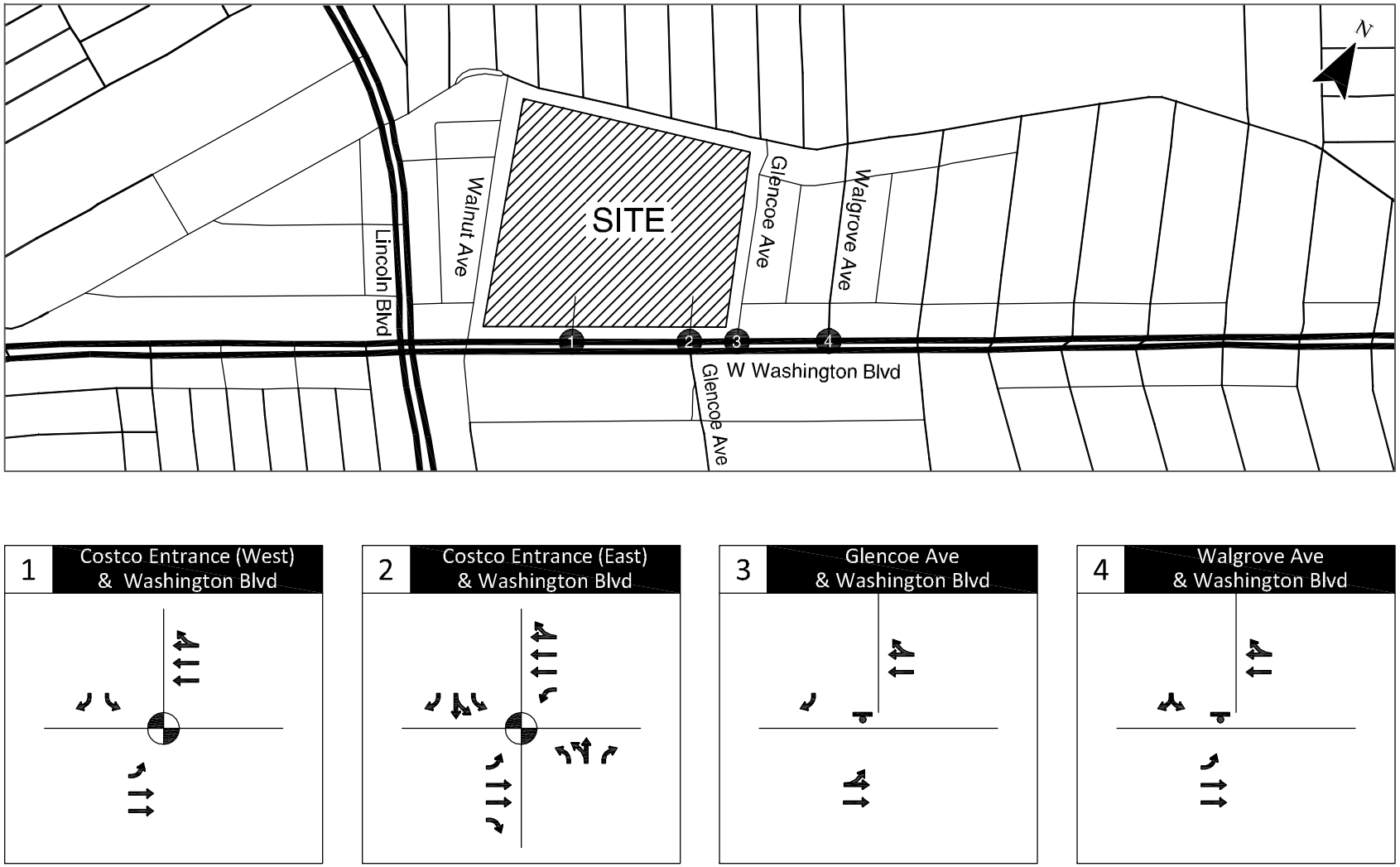
KAI prepared an operational analysis using the *Highway Capacity Manual 2000* methodology and reflecting the weekday evening commute peak hour volumes and signal timing data as provided by the City. Figure 2 illustrates the existing lane configurations and traffic control devices and Figure 3 summarizes existing traffic operations. As shown in Figure 3, the existing signalized intersections operate at Level of Service "C" or better during the weekday p.m. peak hour and Saturday midday peak hours. Based on field review we did note that adjacent intersections can cause queuing and delay which backs up through the Costco signals.

The revised analysis also assessed conditions at the adjacent unsignalized intersections of Walgrove Avenue/Washington Boulevard and Glencoe Avenue (East)/Washington Boulevard. Glencoe Avenue (East) is restricted to right-in, right-out movements due to its proximity to the signalized and offset Glencoe (West) intersection, and Walgrove Avenue provides full-access maneuvers. Results of the operational analysis showed that under existing conditions the Walgrove Avenue/Washington Boulevard intersection experiences Level of Service "F" for the critical stop-controlled southbound left-turn maneuver. However, given the existing local street connections to the signalized Redwood Avenue intersection one block to the east, no mitigation is recommended.

Existing Signalized Queueing Analysis

Signalized queues at the two access intersections are summarized in Table 3. The analysis shows signalized 95th percentile queues exceed available storage on the southbound approach (outbound Costco) at the East Driveway traffic signal today (specifically on the through/left and left-turn lane) but are generally within the available storage at the western access. This was confirmed based on field observations.

Existing conditions worksheets are included in Attachment "D".



- STOP SIGN

- TRAFFIC SIGNAL

EXISTING LANE CONFIGURATION
& TRAFFIC CONTROL DEVICES
CULVER CITY, CALIFORNIA

Figure
2

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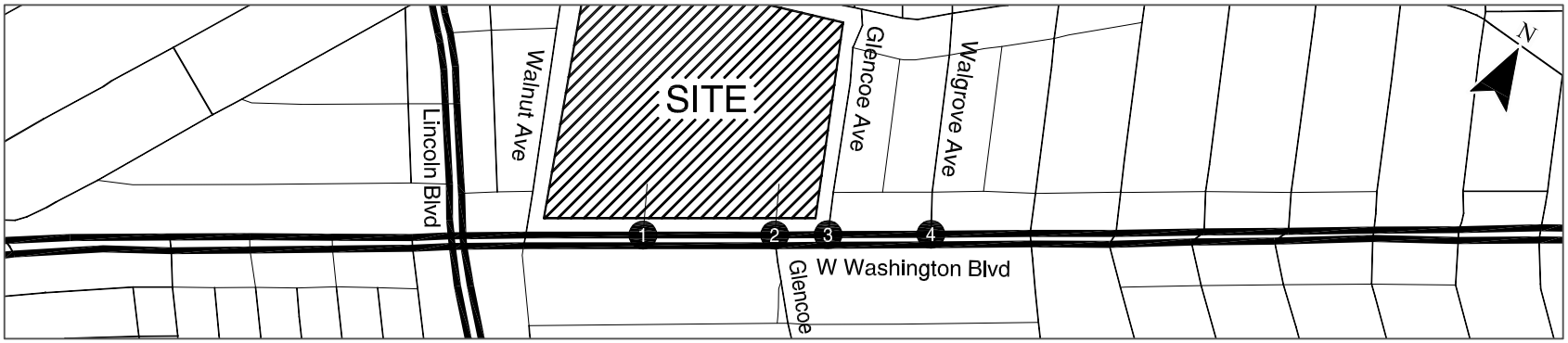
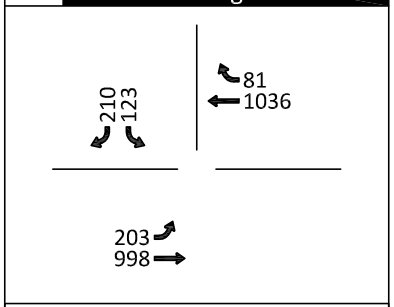


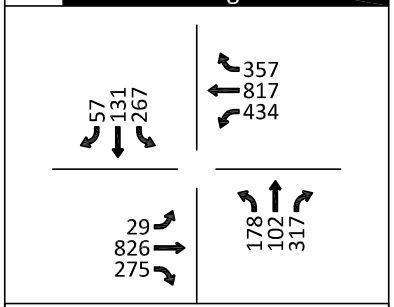
WEEKDAY

1 Costco Entrance (West) & Washington Blvd



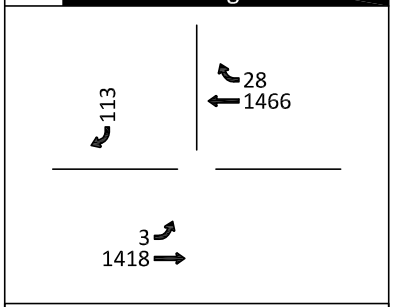
LOS=A DEL=7.6 V/C=0.42

2 Costco Entrance (East) & Washington Blvd



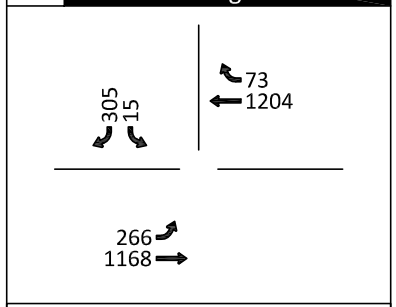
LOS=C DEL=32.2 V/C=0.88

3 Glencoe Ave & Washington Blvd



LOS=C DEL=19.4 V/C=0.55

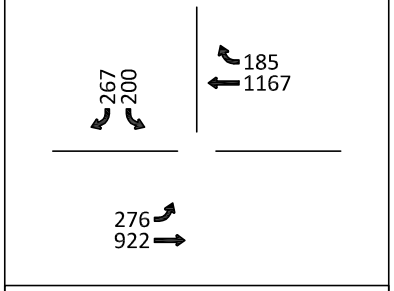
4 Walgrove Ave & Washington Blvd



LOS=E DEL=48.4 V/C=0.85

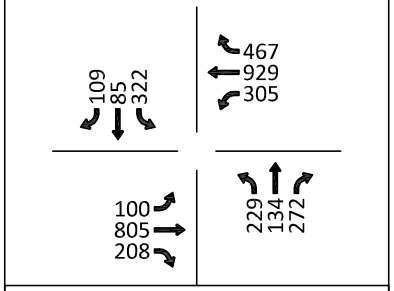
SATURDAY

1 Costco Entrance (West) & Washington Blvd



LOS=B DEL=12.9 V/C=0.80

2 Costco Entrance (East) & Washington Blvd



LOS=C DEL=25.2 V/C=0.73

LOS = INTERSECTION LEVEL OF SERVICE
Del = INTERSECTION AVERAGE CONTROL DELAY
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

EXISTING TRAFFIC CONDITIONS
WEEKDAY PM AND SATURDAY MIDDAY PEAK HOURS
CULVER CITY, CALIFORNIA

Figure
3

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Table 3. Existing 95th Percentile Queuing Analysis

Intersection/ Movement	Weekday PM Peak Hour		Saturday Midday Peak Hour		Adequate?
	Existing Queue (ft)	Storage Length (ft)	Existing Queue (ft)	Storage Length (ft)	
Washington Blvd/ West Driveway					
Southbound left	112	175	**176**	175	**No**
Southbound right	124	175	156	175	Yes
Eastbound left	62	125	**161**	125	**No**
Eastbound through	160	325	146	325	Yes
Westbound through/right	76	325	110	325	Yes
Washington Blvd/ East Driveway (Glencoe Avenue)					
Southbound left	**256**	140	264	140	**No**
Southbound through	**263**	140	264	140	**No**
Southbound right	1	140	36	140	Yes
Eastbound left	13	325	72	325	Yes
Eastbound through	347	425	318	425	Yes
Eastbound right	112	125	63	125	Yes
Westbound left	**469**	325	254	325	**No**
Westbound through/right	227	450	281	450	Yes
Northbound left	131	125	**167**	125	**No**
Northbound through	135	200	171	200	Yes
Northbound right	110	200	88	200	Yes

Site Circulation Observations

Three separate site visits were conducted during different time periods to observe site operations. KAI made the following observations based on these visits, discussions with store management, and review of the data collection videotapes:

- Queues at the In-N-Out drive-through lane are backing onto the east-west drive-aisle and the inbound travel lane from the west signalized driveway. These queues create additional internal confusion and congestion for patrons.
- Internal congestion occurs at both of the stop-controlled intersections located immediately north of the traffic signals. The congestion is influenced by the presence of offset drive-aisle intersections, conflicts with inbound traffic, and southbound signalized queuing. Costco has positioned employees at the internal intersections to help facilitate traffic flow and prevent blockage of the intersections.
- Westbound queues on Washington Boulevard extended from the intersection with US 1 through the west signalized driveway. This appears to limit southbound right-turn capacity at the west driveway and further increases queuing and congestion.
- There is a steep grade change exiting the Costco onto Washington Boulevard and pavement condition concerns, as shown in Figure 4.

Figure 4. Valley gutter slopes and pavement conditions exiting Costco. *Photo courtesy of Barry Kurtz.*

- The Costco fuel station exit onto Washington Boulevard is narrow and descends approximately three feet to the street grade, as shown in Figure 5. Damage to the adjacent retaining walls indicates that some widening of this access may be helpful to accommodate the exit maneuver for larger vehicles. Retro-reflective sheeting should be installed on the walls; yellow on left, white on right. The retaining walls and landscaping should also be reviewed to ensure clear sight lines of the sidewalk for exiting motorists, particularly given its location adjacent to a transit stop.

Figure 5. Right-out Fuel Center Exit to Washington Boulevard.

PROPOSED TRAFFIC CONDITIONS AND SITE CIRCULATION

The trip generation estimates indicate the proposed project is expected to reduce trips to the site. Although no traffic impacts are expected, KAI assessed operations at the study intersections and identified opportunities to improve traffic flow at the signalized driveways on Washington Boulevard and within the site.

Many of the traffic issues noted above are related to the internal site layout and are further complicated by separate parcel ownership and lease agreements. To the extent practical, we have worked with the Costco development team and City staff to incorporate improvements that will address these issues.

The primary site circulation modifications are shown in the revised site plan in Figure 6. This site plan was developed collaboratively with City staff and includes the following modifications:

1. Increased the queue storage at the fuel station;
2. Increased the throat depth from 140 to 185 feet at the eastern access to provide additional queue storage for southbound vehicles;
3. Provides a three-lane cross-section on the east-west internal connection road between the two accesses. This provides a center turn lane and a right-turn storage lane for the In-N-Out drive-through queue near the west driveway;
4. Relocates the In-N-Out driveway farther east to increase storage area;
5. Eliminates offset intersections near the accesses to simplify maneuvers and reduce conflicts;
6. The new parking lot layout provides a fourth leg to the internal intersection at the east entrance, which improves traffic flow in the parking lot; and,
7. Widens the fuel station exit onto Washington Boulevard and removes the sight line obstructions.

Signalized Intersection Modifications at East Signalized Driveway (Glencoe Avenue)

The traffic study assessed the possibility of modifying the lane configuration of the east driveway from its present configuration of left, left/through, and right-turn lanes to explore whether better outbound utilization could be accommodated with dual southbound left-turns. Based on field observations, the right-turn lane is poorly utilized, whereas the through and left-turn lane queues exceed the available storage space. In order to make this intersection operate more efficiently, we considered whether two dedicated left-turn lanes and a shared through/right-turn lane would be more efficient. While the analysis showed an incremental improvement, there are several assumptions related to the estimated trip generation changes and seasonal fluctuations, off-peak changes in travel patterns that were not assessed, and impacts the realignment would have on roadways within the jurisdiction of Los Angeles.

Accordingly, based on discussions and review with City staff we determined that conducting a follow-up assessment approximately six months following completion of the remodel would provide the most prudent approach. This more detailed data collection and analysis effort will more fully consider queuing and operational impacts during the peak and off-peak periods. If Culver City staff (and Los Angeles to the extent affected) determine that the benefits of the reconfiguration could provide a substantive benefit to the system, the applicant shall be responsible for all work, including modification to the traffic signals to implement the change.

WASHINGTON BOULEVARD VALLEY GUTTER IMPROVEMENTS

City staff noted that the slopes for Costco patrons accessing Washington Boulevard are relatively severe and result in reduced speeds and flows. In addition, the pavement conditions near the access are poor, with the roads experiencing potholes and several patches (as shown in Figure 4). From our

discussions with City staff Fuscoe Engineering will review these slopes and pavement conditions and prepare improvement plans to address these needs as part of the construction drawings. Costs for these improvements will be the responsibility of Costco and plans and construction will be reviewed and approved by the City.

NEIGHBORHOOD TRAFFIC CONCERNS

A public open house was held on May 12, 2015 to understand neighborhood concerns associated with the Costco modifications. Most of the comments related to the volume and speed of "cut-through trips using the neighborhood roads bordering the Costco site. We collected additional traffic data to better understand the severity of these issues and the effectiveness of the existing channelization treatments.

Traffic Volumes on Walnut Avenue and Elm Street

In order to assess concerns about cut-through traffic, data was collected over a 24-hour period on Thursday, May 19, 2015 to reflect typical traffic conditions on Walnut Street and Elm Street. The data collected includes traffic volumes and speeds by direction, along with videotapes that were collected for further review. For reference, the data collected is provided in Attachment "E".

Based on comments received at the public meeting, vehicles using the neighborhood streets as a cut-through route were most likely westbound trips on Washington Boulevard. These motorists could avoid the congestion at the Washington Boulevard/Lincoln Boulevard - Pacific Coast Highway traffic signal by turning north onto Walnut Avenue, turning west onto Elm Street, and turning north to continue on Lincoln Boulevard. The cut-through route is illustrated in Figure 6.

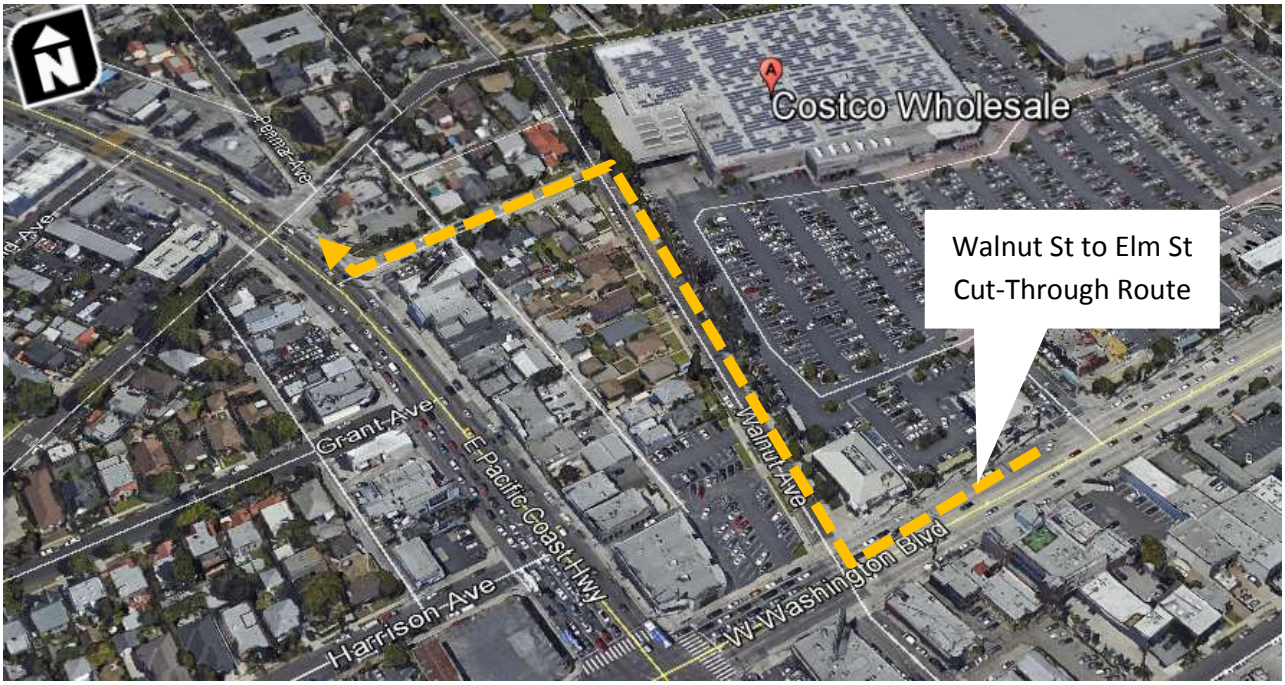


Figure 6. Potential Cut-Through Route.

Hourly traffic volumes are provided in Figure 7. It was noted that over the course of a day, nearly twice as many vehicles travel south on Walnut Avenue compared to the number traveling north. This is likely a result of the channelization at the Walnut Avenue/Elm Street intersection that restricts travel north of Elm Street as we would otherwise expect daily inbound and outbound traffic to be relatively equal throughout a 24-hour period. A sharp spike in traffic was noted within the peak commute hours within the daily volume profile. While the volume of traffic easily remains within the capacity of a local street, these volumes are well beyond the traffic associated with the adjacent homes served by these roads.

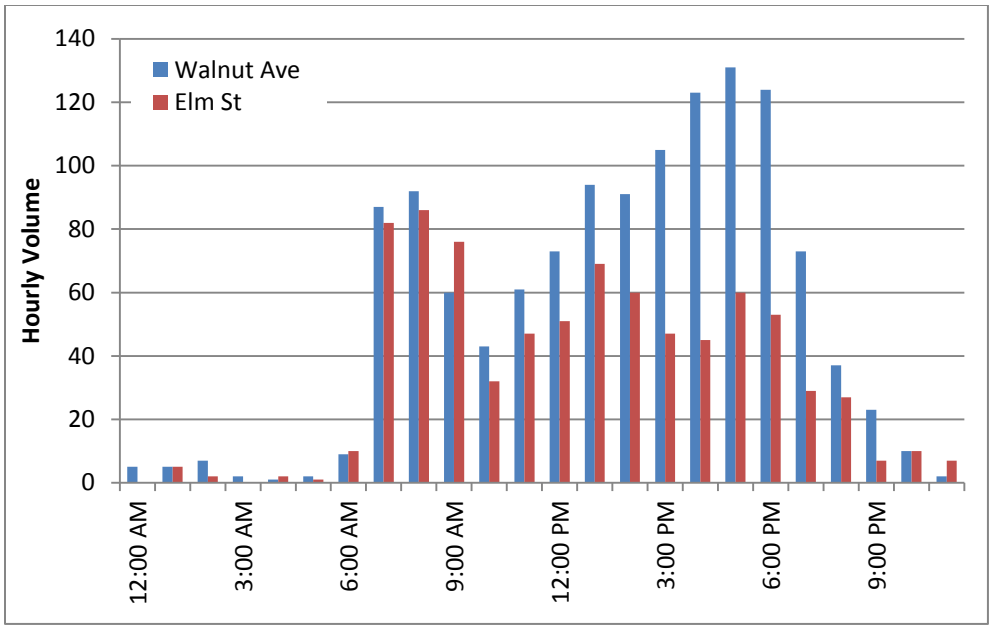


Figure 7. Vehicle Volume for Walnut Avenue and Elm Street over 24-hour Period.

Turning movement counts were also collected at several intersections on Washington Boulevard. Through movement data for Costco West Driveway/Washington Boulevard and the Lincoln Boulevard (Pacific Coast Highway)/Washington Boulevard intersection is illustrated in Figure 8. Traffic count data was evaluated on a typical weekday in May 2015 during the weekday p.m. peak period (4:00 – 6:00 p.m.). These counts show that during the peak hour (when congestion is likely to be highest) from 5:00 to 6:00 p.m. there were 52 vehicles that turned onto Walnut Avenue between the western Costco access and Lincoln Boulevard. This traffic flow represents four percent of the westbound vehicles, and reflects a combination of vehicles turning on to Walnut Avenue to access residences along the corridor, turning south on Del Rey Avenue, accessing businesses along Washington Boulevard, and using the cut-through route. This does not indicate an excessive number of trips given the potential destinations.

Figure 8. Westbound Volumes on Washington Boulevard

Speeds of Vehicles on Walnut Avenue and Elm Street

The most significant concern to area residents was speeds of vehicles on Walnut and Elm Street within these residential areas. We measured speeds on both roadways with automated tubes. It was noted that there are no posted speed limit signs on Walnut Avenue and Elm Street; accordingly, Los Angeles has designated a 25 miles per hour (mph) speed limit for residential streets unless otherwise specified that would apply.

The measured 85th percentile speed is the speed that 85 percent of all vehicles are traveling at or below. This concept is generally used for establishing the posted roadway speed, and is a good indicator of how a reasonable driver interprets the roadway context. Over the course of the day, drivers travelling north on Walnut exhibit an 85th percentile speed of 31 mph northbound and 28 mph southbound. We noted that this difference may be due to lack of on-street parking on the east side of the road, which has been shown to serve as a traffic calming measure. Figures 9 and 10 illustrate the speed of vehicles on Walnut Avenue and Elm Street over a 24-hour period. While it should be noted that there are factors that can influence speeds on tube counters (such as multiple-axle vehicles and other anomalies), all occurrences of vehicles traveling over 40 miles per hour were recorded between 7:30 a.m. and 5:45 p.m.

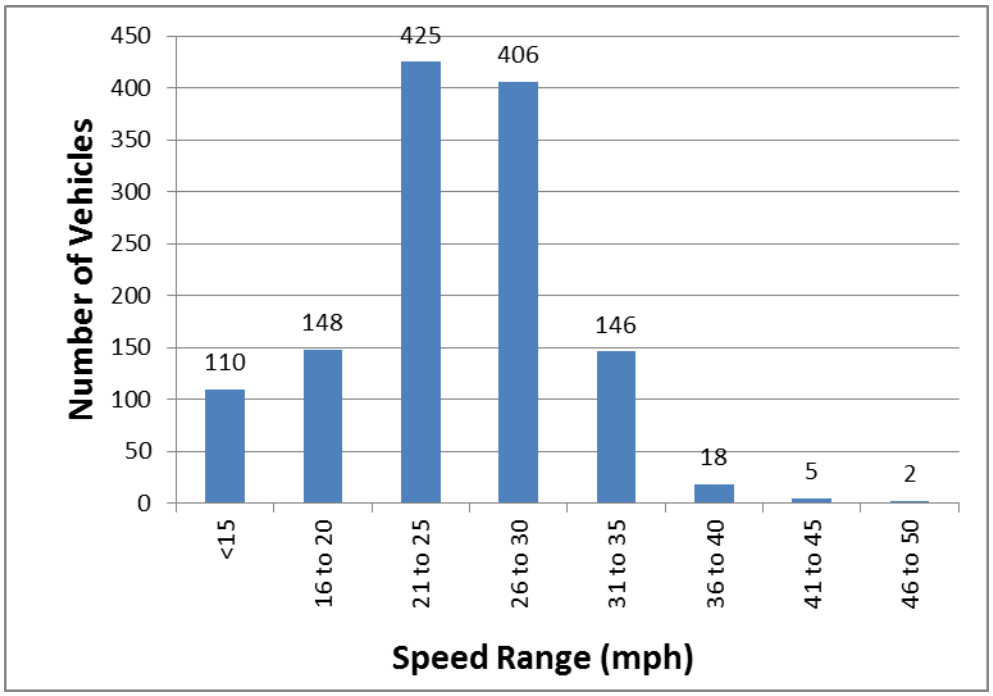


Figure 9. Speed of Vehicles on Walnut Avenue (combined northbound/southbound)

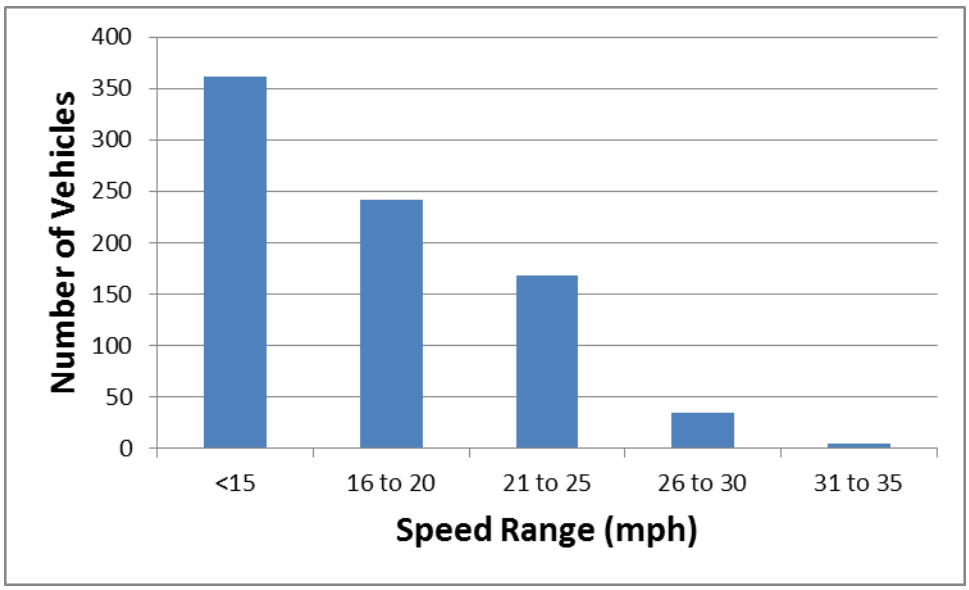


Figure 10. Speed of Vehicles on Elm Street (combined northbound/southbound)

The daily 85th percentile speed for Elm Street is 22 mph in both directions, generally consistent with a typical local street speed. The speed data was collected near the middle of Elm Street to avoid the impact of vehicles accelerating and decelerating. Lower speeds on Elm Street could be a result of the short length of the street, which does not provide time for vehicles to accelerate between the start and end of the street. However, it was noted that the sound of accelerating vehicles, particularly on a road as short as Elm Street, may cause speeds to appear higher than on a longer roadway.

Effectiveness of Channelization

At the intersection of Walnut Avenue and Elm Street there is raised channelization that requires northbound vehicles on Walnut Avenue turn left, and vehicles on Elm Street to only turn right. Figure 11 illustrates the channelization.

Figure 11. Channelization at Walnut Avenue and Elm Street Intersection.
Image Source: maps.google.com.

Videotape footage of this intersection was taken over a 24-hour period. Observations from the 5:00 p.m. to 6:00 p.m. peak hour showed 5 vehicles on Walnut Avenue performing an illegal maneuver and continuing straight on Walnut instead of turning left. There was also one vehicle observed during this time period that was traveling east on Elm Street and illegally turned left onto Walnut Avenue. Overall, the channelization appears to be effective.

Potential Mitigation Measures

Based on this review, the key findings from review of the surrounding local streets and cut-through traffic concerns were as follows:

- The volume of traffic using Walnut Avenue and Elm Street is higher than would be expected based on the number of homes these roads serve. However, the volumes are well below the carrying capacity of a local street. This indicates that the roads are being used as a cut-through route.
- 85th percentile speeds on Walnut Avenue are higher than a typical residential speed of 25 miles per hour.

- The 85th percentile speeds on Elm Street are consistent with local street speeds, but there were several vehicles that had a much higher speed during the study period.

Based on this review and the findings, we recommend consideration of treatments that address the excessive speeds. If overall speeds are better managed consistent with a neighborhood speed of 25 miles per hour or less, the desirability of this cut-through route would be lessened. Recorded speeds are higher along the longer length of Walnut Avenue that may make treatments more effective on this road. Potential options are as follows:

- Provide posted speed signs on Walnut Avenue, particularly in the northbound direction.
- Speed tables on Walnut Avenue near the residential transition.
- Speed tables on Elm Street near the alley (approximate midway point of the road).

As the cut-through issues are not associated with the Costco site, these neighborhood traffic calming materials were provided to the City of Los Angeles as the road authority to review and comment on. As of the date of this report no comments have been received.

FINDINGS AND RECOMMENDATIONS

As summarized herein, the proposed demolition of the Albertson's and expansion of the Costco will result in an overall decrease in vehicular trips to the site. However, several improvements are recommended to improve parking, circulation, and reduce congestion. The revised site plan contains several plan elements that were developed in coordination with the City and team.

In addition to the changes shown, a follow-up assessment of the Washington Boulevard/Glencoe intersection is proposed following completion of the Costco expansion and remodel. The scope of this assessment will be coordinated with City staff, and if staff determines that the lane configuration and realignment changes would be beneficial to the system, the costs associated with the modification will be at Costco's expense.

Please let us know if you have any questions on this memorandum or if any additional information is required to complete your review.

ATTACHMENTS

Attachment A: Trip Generation Study Data

Attachment B: Traffic Count Worksheets

Attachment C: Signal Timing Worksheets

Attachment D: Existing Traffic Operations Worksheets

Attachment E: Neighborhood Traffic Data Collection

Attachment A
Trip Generation Study Data

Record #	Country	State/ Province	County	City	Count Year	Store Size (SF)	Store Type	Number of Fueling Positions?
79	USA	AZ	Maricopa	Scottsdale	2011		Warehouse	20
78	USA	WA	King	Issaquah	2009	150585	Warehouse	12
77	USA	WA	King	Issaquah	2009	150585	Warehouse	12
76	USA	WA	King	Issaquah	2009	150585	Warehouse	12
75	USA	WA	Clark	Vancouver	2010	155465	Warehouse	16
37	USA	WA	Spokane	Spokane	2001	156987	Warehouse	16
36	USA	CA	Ventura	Simi Valley	2001	136296	Warehouse	12
35	USA	FL	Seminole	Altamonte Springs	2001	135229	Warehouse	12
34	USA	CO	Arapahoe	Aurora	2001	133711	Warehouse	12
33	USA	VA	West Henrico		2001	126976	Warehouse	
32	USA	CA	Solano	Vallejo	2001	125434	Warehouse	16
31	USA	NY	Richmond	Staten Island	2001	121216	Warehouse	12
30	USA	OR	Lane	Eugene	2001	140700	Warehouse	16
29	USA	OR	Jackson	Medford	2001	136144	Warehouse	12
28	USA	WA	Thurston	Tumwater	2001	120000	Warehouse	12
16	USA	AZ	Maricopa	Glendale	2009	153876	Warehouse	16
17	USA	CA	San Francisco	South San Francisco	2009	138468	Warehouse	16
18	USA	OR	Multnomah	Portland	2008	162115	Warehouse	16
19	USA	MT	Lewis & Clark	Helena	2008	146217	Warehouse	12
20	USA	MT	Missoula	Missoula	2008	122528	Warehouse	12
21	USA	OR	Linn	Albany	2008	148161	Warehouse	12
22	USA	UT	Salt Lake	Salt Lake City	2006	135444	Warehouse	12
23	USA	CA	San Diego	Morena	2006	161674	Warehouse	16
24	USA	OR	Marion	Salem	2005	145363	Warehouse	12
25	USA	CA	Orange	Laguna Niguel	2004	149705	Warehouse	12
26	USA	CA	Santa Clara		2002/2004	135444	Warehouse	12
27	USA	UT	Salt Lake	Sandy	2002	161600	Warehouse	12

COSTCO TRIP GENERATION DATA

Surveys conducted at established Costco sites have shown that Costco Warehouses typically generate higher traffic volumes than other land uses with similar building sizes. An overview of weekday p.m. peak hour trip generation characteristics is provided that has been collected between 2001 and 2011 at Costco Wholesale locations containing fuel stations. The rates shown for the sites include the fuel station as part of the calculated trip rate. In addition to the driveway trip rates, customer survey information has been included to provide the percentage of primary, pass-by, and diverted trips, as further described below.

- *Primary Trips* (an entirely new trip on the roadway system for the express purpose of driving to and from Costco);
- *Pass-by Trips* (existing trips that are on roadways adjacent to the site which allow the motorist to turn into the Costco development, and then continue on to their ultimate destination when their shopping is concluded); and
- *Diverted-Linked Trips* (existing trips on nearby roadways in which the motorist makes a decision to drive out-of-direction for a distance to stop at Costco, and when their shopping is concluded, continue on their trip to the ultimate destination).

Trip Characteristics Application

The analysis models prepared for the Torrance site should explicitly account for pass-by and diverted trip impacts at the study intersections. Typically, pass-by trips would have an impact only at the site-access driveways, whereas the impact of diverted trips could extend throughout the study area intersections (these would be modeled similar to net new trips at many or all of the study area intersections in the operations models). The key difference between inclusion and omission of the diverted trips is related to the overall vehicle miles traveled (VMT), as diverted trips do not create the same system impacts (air quality, noise, and freeway impacts) that entirely new trips to the system could create.

The previously surveyed Costco buildings are sited in a variety of locations, some adjacent to freeways/arterials, others a couple blocks away. This variation in store locations results in differences in diverted and pass-by trips from store to store. For example, sites adjacent to major arterial roadways tend to exhibit a high percentage of pass-by trips and a lower percentage of diverted trips. Similarly, Costco facilities located a block or two away from a freeway tend to experience a higher percentage of diverted trips. Given these factors, diverted and pass-by trips should be considered together, with engineering judgment used to identify how these two trip characteristics should be applied.

Trip Generation Estimate

Trip generation studies were conducted at Costco Wholesale sites located across the country using industry standard engineering practices consistent with guidance within the Institute of Transportation Engineers (ITE) standard reference, *Trip Generation Handbook, 2nd Edition.* These surveys were conducted between 2001 and 2011, and include surveys of twenty-seven Costco Warehouses with fuel centers[3]. The Costco Wholesale buildings surveyed range in size between 122,528 square-feet and 162,115 square-feet, with an average size of 143,869 square-feet. The fuel centers in the sample range between 12 and 20 fueling positions. The trip generation rates are correlated to the overall warehouse size regardless of the number of fueling positions as trip generation studies are conducted at the site entrances. Table A1 summarizes the average trip rates recorded; additional details on these sites are included at the end of this appendix.

Table A1

Average Trip Characteristics for a Costco Warehouse with Fuel Center

Land Use	Weekday Daily Trip Rate (per KSF)	Weekday AM Peak Hour of Adjacent Street Traffic Trip Rate (per KSF)			Weekday PM Peak Hour of Adjacent Street Traffic Trip Rate (per KSF)		
		Total	In	Out	Total	In	Out
Costco With Fuel Center	72.39	2.38	55%	45%	7.15	48%	52%
Pass-by Trips	*No Data*		34%			35%	
Diverted Trips	*No Data*		43%			32%	

COSTCO FUEL CENTER CHARACTERISTICS

The Costco Wholesale trip generation rates shown in Tables 1, 2, and A1 inherently account for fuel station trips within the overall rate. However, supplemental information on the fuel centers from isolated studies is provided to describe the fuel center characteristics separately. This information was collected to highlight the trip characteristics of adding fuel centers to existing Costco Wholesale sites, but the isolated fuel center data can also be considered applicable to the Torrance site during the weekday a.m. peak hour, when the Costco warehouse is closed.

Information related to internal trip capture and pass-by trip percentages was collected by interviewing Costco Gasoline customers about their trip patterns as they are purchasing fuel. Because Costco member cards are also scanned as part of fuel center and Costco purchases, transaction data was also matched up to identify internalization rates.

[3] Daily trip data was collected at eight of the sites, weekday a.m. peak hour data was collected at two sites, and weekday p.m. peak hour data was collected at 27 sites.

COSTCO FUEL STATION TRIP CHARACTERISTICS

The data collected at existing Costco Gasoline sites indicate the following general trip generation characteristics:

- Costco Gasoline fuel stations are an ancillary use for the warehouse and there is a large proportion of shared trips between the two.
- The fuel stations are member-only and require a membership card for pump activation.
- Credit/debit card is the only method of payment at the fuel stations and they do not provide any other services (automotive or convenience) besides gas.
- The fuel stations are staffed by a minimum of one attendant who is trained to help members operate the pumps and direct waiting vehicles to open pumps to manage on-site queuing and circulation.

The unique nature of Costco operations and its membership requirements result in different trip characteristics than those observed at the standard fuel stations summarized in ITE *Trip Generation*. The percentage of pass-by trips at Costco fuel stations is considerably lower than that reported in ITE *Trip Generation* for typical fuel stations. Correspondingly, membership requirements also have a significant effect on trip internalization (or sharing of trips) between the warehouse and the fuel station. Fewer people exclusively visit a Costco fuel station during the evening commute period (in comparison to a typical stand-alone station) because they have another primary purpose for visiting the site (that being a trip to the warehouse).

Internal Fuel Station Trips

A key finding from the driver surveys conducted at Costco facilities is the fact that approximately 50 percent of the weekday p.m. peak hour trips to and from Costco fueling stations are internal capture trips. Internal capture trips account for those customers who patronize both the warehouse and the gasoline pumps during a single visit to the Costco site. As such, although they account for a trip to both the warehouse and the fuel station, they only result in one overall vehicle trip to the site and on the surrounding transportation system. On average, 50 percent of the customers buying gas during the weekday p.m. peak hour are customers whose main purpose to the site is to visit the Costco warehouse. At some sites this number ranges as high as 75 percent but for the purposes of analysis a conservative average estimate is typically used.

Attachment B
Traffic Count Worksheets

Type of peak hour being reported: System Peak

Method for determining peak hour: Total Entering Volume

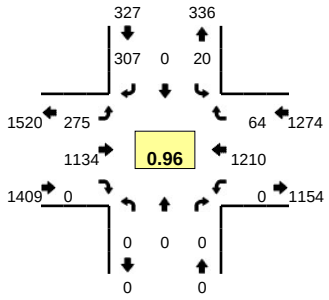
LOCATION: Walgrove Ave -- W Washington Blvd

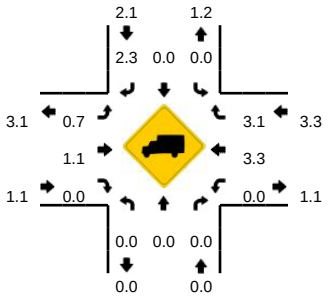
CITY/STATE: Culver City, CA

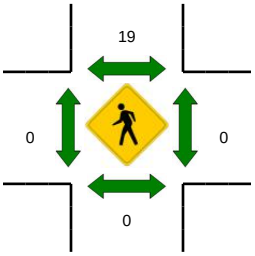
QC JOB #: 13151505

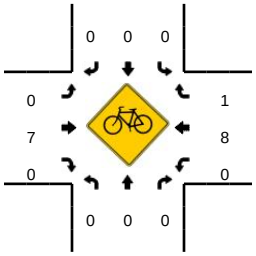
DATE: Thu, Nov 20 2014

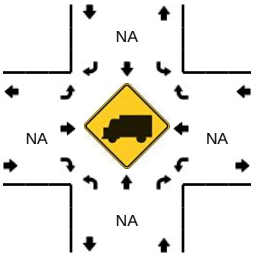
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:35 PM -- 5:50 PM

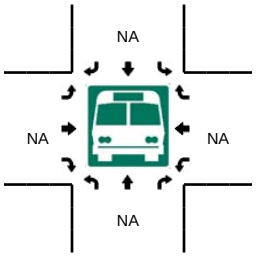












5-Min Count Period Beginning At	Walgrove Ave (Northbound)				Walgrove Ave (Southbound)				W Washington Blvd (Eastbound)				W Washington Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	3	0	26	0	15	92	0	0	0	97	7	0	240	
4:05 PM	0	0	0	0	1	0	33	0	18	97	0	0	0	105	7	0	261	
4:10 PM	0	0	0	0	2	0	28	0	24	86	0	0	0	86	4	0	230	
4:15 PM	0	0	0	0	0	0	24	0	18	93	0	0	0	94	3	0	232	
4:20 PM	0	0	0	0	1	0	23	0	16	106	0	0	0	103	5	0	254	
4:25 PM	0	0	0	0	4	0	21	0	19	85	0	0	0	106	6	0	241	
4:30 PM	0	0	0	0	1	0	26	0	21	87	0	0	0	88	5	0	228	
4:35 PM	0	0	0	0	1	0	26	0	21	92	0	0	0	90	4	0	234	
4:40 PM	0	0	0	0	1	0	34	0	20	80	0	0	0	88	1	0	224	
4:45 PM	0	0	0	0	5	0	25	0	19	105	0	0	0	81	4	0	239	
4:50 PM	0	0	0	0	0	0	19	0	18	97	0	1	0	122	7	0	264	
4:55 PM	0	0	0	0	0	0	22	0	20	103	0	0	0	89	7	0	241	2888
5:00 PM	0	0	0	0	4	0	25	0	10	101	0	1	0	110	7	0	258	2906
5:05 PM	0	0	0	0	2	0	34	0	28	114	0	0	0	88	5	0	271	2916
5:10 PM	0	0	0	0	2	0	30	0	32	89	0	0	0	80	4	0	237	2923
5:15 PM	0	0	0	0	3	0	23	0	16	99	0	1	0	96	8	0	246	2937
5:20 PM	0	0	0	0	0	0	27	0	24	86	0	0	0	98	3	0	238	2921
5:25 PM	0	0	0	0	1	0	22	0	24	95	0	0	0	106	7	0	255	2935
5:30 PM	0	0	0	0	1	0	31	0	22	96	0	0	0	79	8	0	237	2944
5:35 PM	0	0	0	0	1	0	26	0	20	97	0	0	0	106	6	0	256	2966
5:40 PM	0	0	0	0	1	0	20	0	26	104	0	0	0	115	4	0	270	3012
5:45 PM	0	0	0	0	0	0	26	0	22	87	0	1	0	115	7	0	258	3031
5:50 PM	0	0	0	0	3	0	16	0	22	91	0	0	0	116	2	0	250	3017
5:55 PM	0	0	0	0	2	0	27	0	26	75	0	0	0	101	3	0	234	3010

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	8	0	288	0	272	1152	0	4	0	1344	68	0	3136
Heavy Trucks	0	0	0		0	0	8		4	8	0		0	64	4		88
Pedestrians		0				20				0				0			20
Bicycles	0	0	0		0	0	0		0	1	0		0	3	1		5
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/28/2014 4:13 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: System Peak

Method for determining peak hour: Total Entering Volume

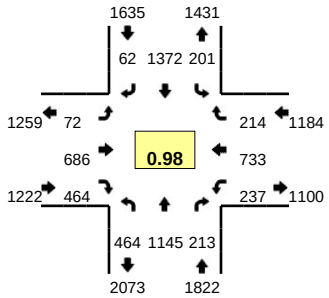
LOCATION: Lincoln Blvd -- W Washington Blvd

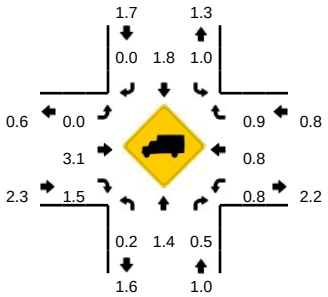
CITY/STATE: Los Angeles, CA

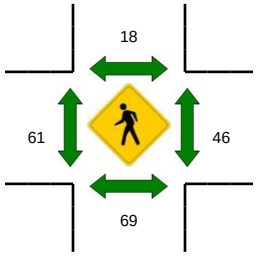
QC JOB #: 13151504

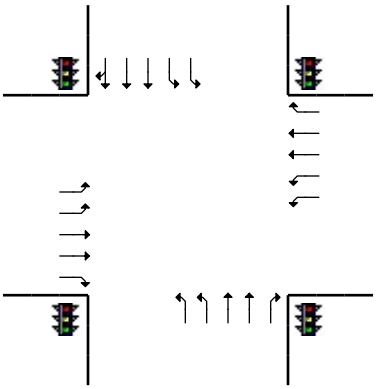
DATE: Thu, Nov 20 2014

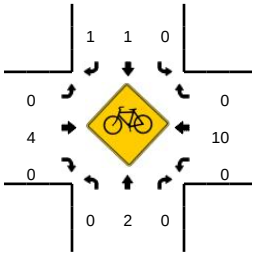
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:35 PM -- 5:50 PM

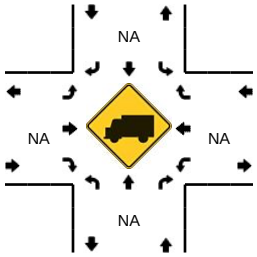


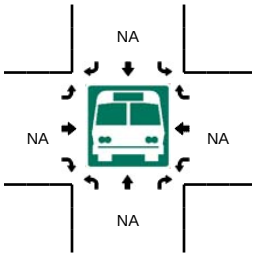












5-Min Count Period Beginning At	Lincoln Blvd (Northbound)				Lincoln Blvd (Southbound)				W Washington Blvd (Eastbound)				W Washington Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	35	94	17	0	12	113	11	0	6	57	41	0	22	52	17	0	477	
4:05 PM	42	98	19	0	15	121	4	0	9	55	32	0	17	49	27	0	488	
4:10 PM	36	98	20	0	14	124	4	0	13	57	23	0	64	25	23	0	501	
4:15 PM	36	92	22	0	17	111	4	0	6	57	41	0	21	63	20	0	490	
4:20 PM	34	111	17	0	17	131	8	0	9	54	27	0	31	50	21	0	510	
4:25 PM	32	79	12	0	14	107	5	0	8	52	23	0	18	57	30	0	437	
4:30 PM	40	95	19	1	15	117	6	0	9	53	42	0	22	68	17	0	504	
4:35 PM	44	96	12	0	15	126	8	0	6	56	45	0	20	51	27	0	506	
4:40 PM	44	99	18	0	16	129	5	0	6	58	49	0	19	50	21	0	514	
4:45 PM	37	103	18	0	9	114	7	0	10	54	32	0	27	68	19	0	498	
4:50 PM	45	96	14	0	13	96	6	0	7	57	40	0	23	55	20	0	472	
4:55 PM	41	93	18	0	11	104	8	0	4	55	26	0	31	54	10	0	455	5852
5:00 PM	39	91	15	0	18	113	5	0	8	62	36	0	16	60	17	0	480	5855
5:05 PM	40	89	19	0	18	111	7	0	6	58	43	0	28	50	23	0	492	5859
5:10 PM	41	90	21	0	19	101	1	0	1	54	27	0	20	50	22	0	447	5805
5:15 PM	34	101	21	0	16	121	6	0	7	56	39	0	21	62	17	0	501	5816
5:20 PM	37	111	15	0	12	116	5	0	5	59	33	0	21	48	14	0	476	5782
5:25 PM	38	85	24	0	12	110	7	0	9	57	38	0	22	51	17	0	470	5815
5:30 PM	32	72	20	0	22	120	6	0	10	59	42	0	17	52	22	0	474	5785
5:35 PM	33	110	16	0	14	121	4	0	4	60	43	0	19	62	18	0	504	5783
5:40 PM	40	117	20	0	13	109	5	0	5	58	44	0	18	71	13	0	513	5782
5:45 PM	38	73	13	0	23	116	9	0	5	55	41	0	17	69	24	0	483	5767
5:50 PM	46	106	11	0	21	120	3	0	12	56	36	0	20	49	9	0	489	5784
5:55 PM	46	100	18	0	13	114	4	0	0	52	42	0	18	109	18	0	534	5863

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	444	1200	196	0	200	1384	72	0	56	692	512	0	216	808	220	0	6000
Heavy Trucks	0	16	0		4	16	0		0	12	0		4	4	4		60
Pedestrians		40				8				76				52			176
Bicycles	0	1	0		0	1	1		0	1	0		0	2	0		6
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/28/2014 4:13 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: System Peak

Method for determining peak hour: Total Entering Volume

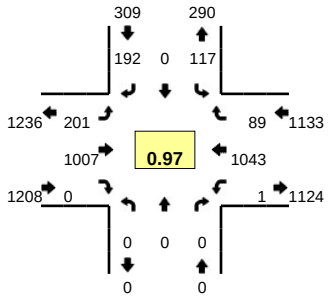
LOCATION: Costco West Dwy -- W Washington Blvd

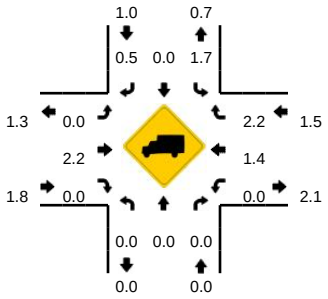
CITY/STATE: Culver City, CA

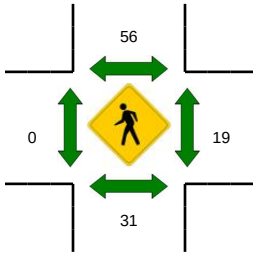
QC JOB #: 13151503

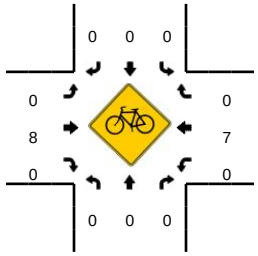
DATE: Thu, Nov 20 2014

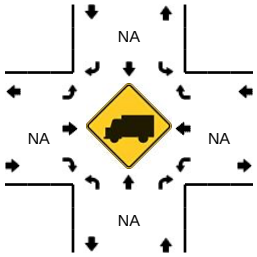
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:35 PM -- 5:50 PM

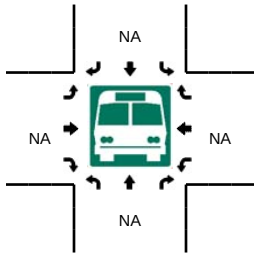












5-Min Count Period Beginning At	Costco West Dwy (Northbound)				Costco West Dwy (Southbound)				W Washington Blvd (Eastbound)				W Washington Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	7	0	25	0	20	73	0	0	0	91	12	0	228	
4:05 PM	0	0	0	0	15	0	23	0	20	79	0	0	0	71	11	0	219	
4:10 PM	0	0	0	0	14	0	17	0	20	81	0	0	0	85	10	0	227	
4:15 PM	0	0	0	0	13	0	27	0	12	87	0	0	0	94	6	0	239	
4:20 PM	0	0	0	0	11	0	20	0	20	78	0	0	0	87	13	2	231	
4:25 PM	0	0	0	0	8	0	19	0	14	71	0	0	0	103	9	0	224	
4:30 PM	0	0	0	0	11	0	28	0	20	79	0	0	0	74	6	0	218	
4:35 PM	0	0	0	0	13	0	14	0	12	74	0	0	0	81	7	0	201	
4:40 PM	0	0	0	0	7	0	15	0	19	72	0	0	0	87	8	0	208	
4:45 PM	0	0	0	0	8	0	22	0	10	77	0	0	0	87	11	0	215	
4:50 PM	0	0	0	0	16	0	20	0	16	77	0	0	0	88	3	0	220	
4:55 PM	0	0	0	0	13	0	23	0	18	73	0	0	0	75	7	0	209	2639
5:00 PM	0	0	0	0	7	0	13	0	18	93	0	0	0	97	11	1	240	2651
5:05 PM	0	0	0	0	10	0	23	0	21	73	0	0	0	77	2	0	206	2638
5:10 PM	0	0	0	0	11	0	16	0	16	89	0	1	0	84	6	0	223	2634
5:15 PM	0	0	0	0	17	0	22	0	14	80	0	0	0	95	9	0	237	2632
5:20 PM	0	0	0	0	10	0	17	0	12	78	0	0	0	73	11	0	201	2602
5:25 PM	0	0	0	0	9	0	14	0	16	87	0	0	0	88	4	0	218	2596
5:30 PM	0	0	0	0	7	0	9	0	23	88	0	0	0	82	7	0	216	2594
5:35 PM	0	0	0	0	11	0	16	0	12	82	0	0	0	89	5	0	215	2608
5:40 PM	0	0	0	0	7	0	23	0	25	97	0	0	0	80	5	0	237	2637
5:45 PM	0	0	0	0	5	0	14	0	11	81	0	0	0	108	11	0	230	2652
5:50 PM	0	0	0	0	13	0	16	1	14	83	0	0	0	63	5	0	195	2627
5:55 PM	0	0	0	0	9	0	9	0	18	76	0	0	0	107	13	0	232	2650

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	92	0	212	0	192	1040	0	0	0	1108	84	0	2728
Heavy Trucks	0	0	0		4	0	0		0	8	0		0	8	0		20
Pedestrians		40				36				0				4			80
Bicycles	0	0	0		0	0	0		0	1	0		0	4	0		5
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/28/2014 4:13 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: System Peak

Method for determining peak hour: Total Entering Volume

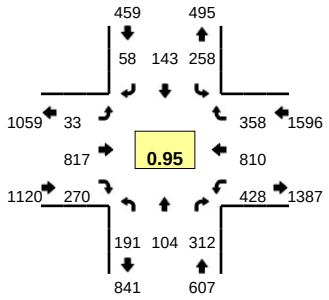
LOCATION: Costco East Dwy -- W Washington Blvd

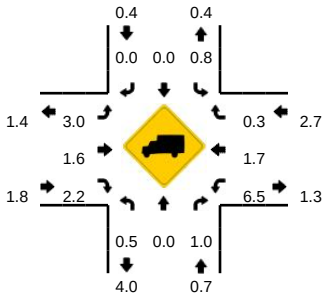
CITY/STATE: Culver City, CA

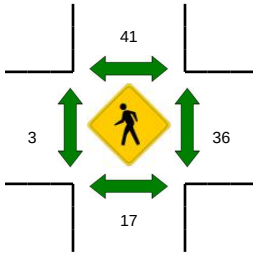
QC JOB #: 13151502

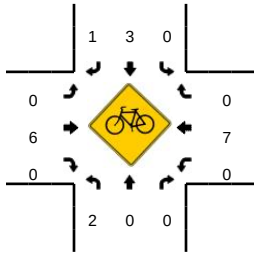
DATE: Thu, Nov 20 2014

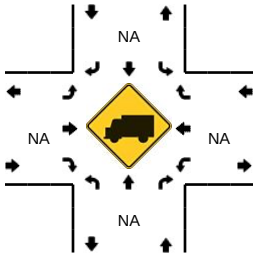
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:35 PM -- 5:50 PM

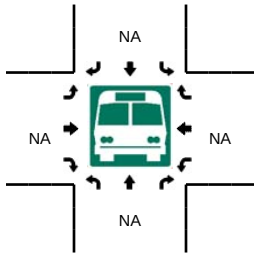












5-Min Count Period Beginning At	Costco East Dwy (Northbound)				Costco East Dwy (Southbound)				W Washington Blvd (Eastbound)				W Washington Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	14	18	24	0	23	3	4	0	4	59	24	0	32	65	26	0	296	
4:05 PM	11	9	21	0	33	12	5	0	1	57	22	0	35	59	42	0	307	
4:10 PM	13	5	16	0	26	7	7	0	5	67	20	0	32	72	38	0	308	
4:15 PM	15	14	20	0	23	9	5	0	5	74	22	0	33	62	35	0	317	
4:20 PM	19	16	24	0	34	13	7	0	8	61	14	0	32	63	25	0	316	
4:25 PM	15	9	13	0	25	9	6	0	1	67	22	0	30	83	38	0	318	
4:30 PM	11	7	19	0	29	12	5	0	9	66	27	0	24	57	35	0	301	
4:35 PM	13	10	17	0	27	11	5	0	4	67	20	0	32	64	36	0	306	
4:40 PM	18	8	14	0	20	7	8	0	4	66	15	0	34	65	21	0	280	
4:45 PM	11	14	26	0	33	6	7	0	4	58	20	0	28	64	27	0	298	
4:50 PM	15	9	22	0	32	15	7	0	2	59	15	0	26	60	22	0	284	
4:55 PM	9	6	25	0	27	5	5	0	2	70	24	0	43	79	28	0	323	3654
5:00 PM	15	12	23	0	20	5	6	0	4	68	24	0	38	69	31	0	315	3673
5:05 PM	7	10	28	0	33	12	2	0	2	70	16	0	38	67	24	0	309	3675
5:10 PM	22	4	34	0	18	11	5	0	3	77	25	0	36	68	23	0	326	3693
5:15 PM	15	10	22	0	19	13	4	0	1	69	33	0	31	67	27	0	311	3687
5:20 PM	13	5	26	0	28	14	4	0	2	55	20	0	38	68	29	0	302	3673
5:25 PM	15	9	18	0	19	6	3	0	3	84	20	0	29	58	34	0	298	3653
5:30 PM	19	14	24	0	20	14	6	0	4	66	19	0	37	54	26	0	303	3655
5:35 PM	17	7	27	0	23	17	10	0	1	63	18	0	35	68	33	0	319	3668
5:40 PM	8	4	29	0	20	15	6	0	2	84	23	0	41	78	34	0	344	3732
5:45 PM	19	15	34	0	17	11	3	0	1	63	35	0	28	66	39	0	331	3765
5:50 PM	19	6	27	0	23	8	3	0	4	57	18	0	40	75	29	0	309	3790
5:55 PM	22	8	20	0	18	17	6	0	6	61	19	0	37	72	29	0	315	3782

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	176	104	360	0	240	172	76	0	16	840	304	0	416	848	424	0	3976
Heavy Trucks	0	0	12		0	0	0		0	4	8		44	8	4		80
Pedestrians		20				24				4				52			100
Bicycles	0	0	0		0	1	1		0	1	0		0	4	0		7
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/28/2014 4:13 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

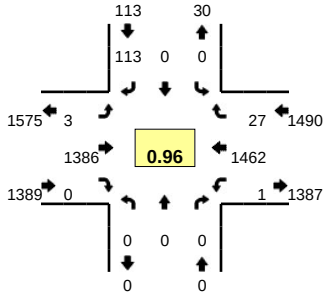
Type of peak hour being reported: System Peak

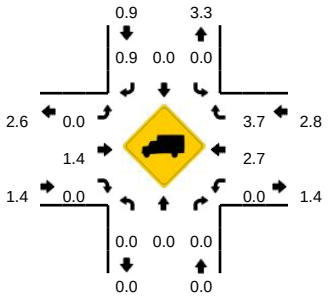
Method for determining peak hour: Total Entering Volume

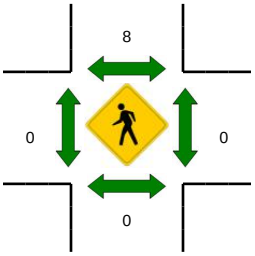
LOCATION: Glencoe Ave -- W Washington Blvd
CITY/STATE: Culver City, CA

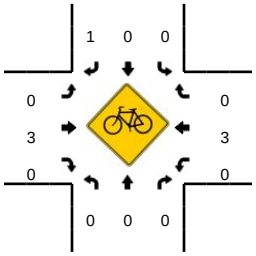
QC JOB #: 13151501
DATE: Thu, Nov 20 2014

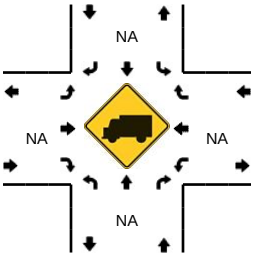
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:35 PM -- 5:50 PM

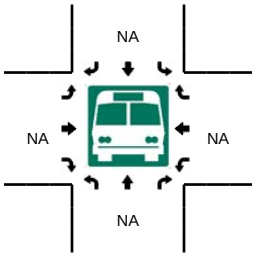












5-Min Count Period Beginning At	Glencoe Ave (Northbound)				Glencoe Ave (Southbound)				W Washington Blvd (Eastbound)				W Washington Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	7	0	0	104	0	0	0	119	1	0	231	
4:05 PM	0	0	0	0	0	0	10	0	0	112	0	0	0	131	0	0	253	
4:10 PM	0	0	0	0	0	0	14	0	0	113	0	0	0	119	2	0	248	
4:15 PM	0	0	0	0	0	0	11	0	0	108	0	0	0	116	0	0	235	
4:20 PM	0	0	0	0	0	0	12	0	1	118	0	0	0	112	4	0	247	
4:25 PM	0	0	0	0	0	0	13	0	0	109	0	0	0	131	3	0	256	
4:30 PM	0	0	0	0	0	0	11	0	0	111	0	0	0	115	0	0	237	
4:35 PM	0	0	0	0	0	0	13	0	0	106	0	0	0	113	2	0	234	
4:40 PM	0	0	0	0	0	0	6	0	0	105	0	0	0	120	2	0	233	
4:45 PM	0	0	0	0	0	0	13	0	0	118	0	0	0	105	2	0	238	
4:50 PM	0	0	0	0	0	0	7	0	0	108	0	0	0	120	3	0	238	
4:55 PM	0	0	0	0	0	0	9	0	0	124	0	0	0	120	3	0	256	2906
5:00 PM	0	0	0	0	0	0	10	0	1	110	0	0	0	128	4	0	253	2928
5:05 PM	0	0	0	0	0	0	10	0	0	132	0	0	0	124	2	1	269	2944
5:10 PM	0	0	0	0	0	0	10	0	0	128	0	0	0	107	1	0	246	2942
5:15 PM	0	0	0	0	0	0	11	0	0	112	0	0	0	110	4	0	237	2944
5:20 PM	0	0	0	0	0	0	11	0	0	105	0	0	0	116	4	0	236	2933
5:25 PM	0	0	0	0	0	0	9	0	0	121	0	0	0	128	2	0	260	2937
5:30 PM	0	0	0	0	0	0	7	0	0	113	0	0	0	108	0	0	228	2928
5:35 PM	0	0	0	0	0	0	12	0	1	118	0	0	0	118	1	0	250	2944
5:40 PM	0	0	0	0	0	0	9	0	0	135	0	0	0	135	3	0	282	2993
5:45 PM	0	0	0	0	0	0	7	0	0	110	0	0	0	134	0	0	251	3006
5:50 PM	0	0	0	0	0	0	8	0	1	100	0	0	0	138	4	0	251	3019
5:55 PM	0	0	0	0	0	0	9	0	0	102	0	0	0	116	2	0	229	2992

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	112	0	4	1452	0	0	0	1548	16	0	3132
Heavy Trucks	0	0	0		0	0	0		0	16	0		0	60	0		76
Pedestrians		0				12				0				0			12
Bicycles	0	0	0		0	0	0		0	1	0		0	1	0		2
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/28/2014 4:13 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

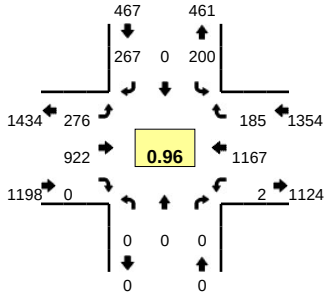
Type of peak hour being reported: Intersection Peak

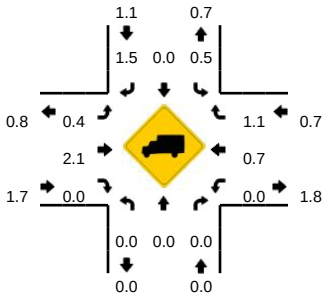
Method for determining peak hour: Total Entering Volume

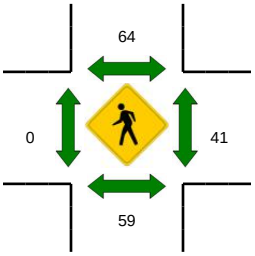
LOCATION: Costco Center West Dwy -- Washington Blvd
CITY/STATE: Culver City, CA

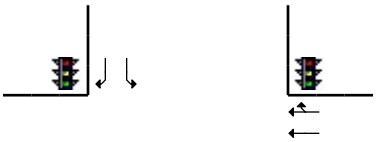
QC JOB #: 12743504
DATE: Sat, Jul 19 2014

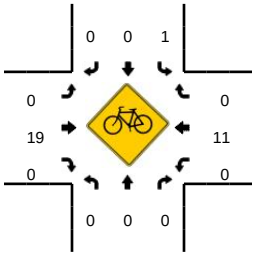
Peak-Hour: 12:40 PM -- 1:40 PM
Peak 15-Min: 1:25 PM -- 1:40 PM

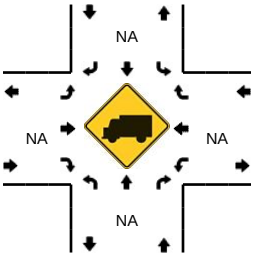


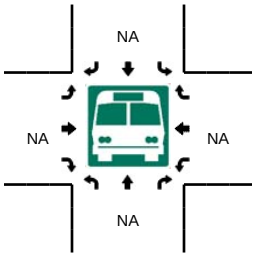












5-Min Count Period Beginning At	Costco Center West Dwy (Northbound)				Costco Center West Dwy (Southbound)				Washington Blvd (Eastbound)				Washington Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
12:00 PM	0	0	0	0	14	0	25	0	24	86	0	0	0	97	19	0	265	2874
12:05 PM	0	0	0	0	18	0	30	0	21	77	0	2	0	110	9	0	267	2905
12:10 PM	0	0	0	0	14	0	27	0	25	81	0	0	0	117	14	0	278	2952
12:15 PM	0	0	0	0	13	0	25	0	23	75	0	0	0	80	16	0	232	2949
12:20 PM	0	0	0	0	20	0	27	0	20	66	0	0	0	101	12	0	246	2975
12:25 PM	0	0	0	0	9	0	20	0	21	69	0	1	0	107	21	0	248	2974
12:30 PM	0	0	0	0	14	0	17	0	27	70	0	0	0	71	10	0	209	2947
12:35 PM	0	0	0	0	18	0	26	0	41	68	0	0	0	52	12	0	217	2922
12:40 PM	0	0	0	0	13	0	21	0	15	81	0	0	0	120	19	0	269	2959
12:45 PM	0	0	0	0	19	0	26	0	25	83	0	0	0	90	18	0	261	2971
12:50 PM	0	0	0	0	16	0	22	0	21	78	0	0	0	86	14	1	238	2985
12:55 PM	0	0	0	0	15	0	16	0	22	82	0	0	0	125	13	0	273	3003
1:00 PM	0	0	0	0	19	0	25	0	28	70	0	0	0	87	16	0	245	2983
1:05 PM	0	0	0	0	17	0	27	0	25	66	0	0	0	72	21	0	228	2944
1:10 PM	0	0	0	0	16	0	18	0	22	84	0	0	0	100	9	0	249	2915
1:15 PM	0	0	0	0	15	0	18	0	18	78	0	0	0	74	19	0	222	2905
1:20 PM	0	0	0	0	21	0	31	0	32	65	0	0	0	83	12	0	244	2903
1:25 PM	0	0	0	0	14	0	14	0	16	83	0	0	0	135	16	0	278	2933
1:30 PM	0	0	0	0	21	0	29	0	27	67	0	0	0	78	14	0	236	2960
1:35 PM	0	0	0	0	14	0	20	0	25	85	0	0	0	117	14	1	276	3019
1:40 PM	0	0	0	0	16	0	24	0	20	83	0	0	0	99	10	0	252	3002
1:45 PM	0	0	0	0	16	0	25	0	16	64	0	0	0	97	16	0	234	2975
1:50 PM	0	0	0	0	18	0	12	0	33	86	0	0	0	100	9	0	258	2995
1:55 PM	0	0	0	0	12	0	22	0	15	84	0	0	0	109	20	0	262	2984

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	196	0	252	0	272	940	0	0	0	1320	176	4	3160
Heavy Trucks	0	0	0		0	0	0		0	12	0		0	16	0		28
Pedestrians		36				48				0				20			104
Bicycles	0	0	0		0	0	0		0	6	0		0	3	0		9
Railroad																	
Stopped Buses																	

Comments:

Report generated on 7/22/2014 8:13 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

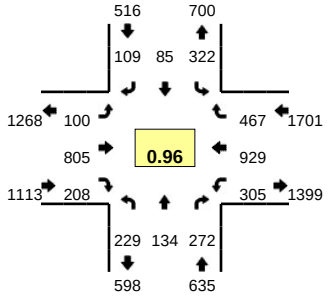
LOCATION: Glencoe Ave -- Washington Blvd

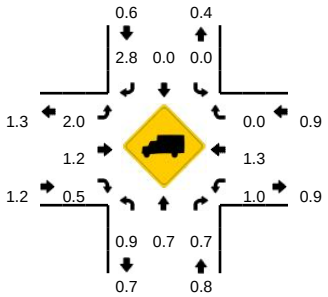
CITY/STATE: Culver City, CA

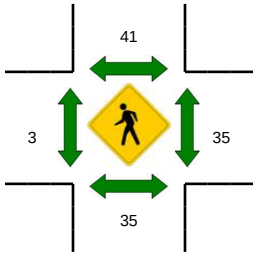
QC JOB #: 12743503

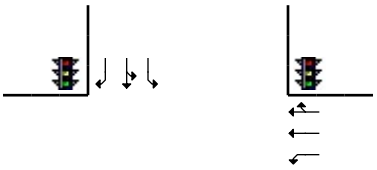
DATE: Wed, Jun 18 2014

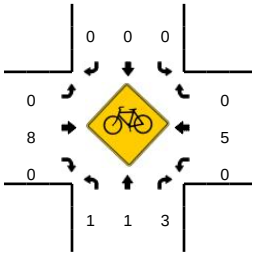
Peak-Hour: 11:55 AM -- 12:55 PM
Peak 15-Min: 12:00 PM -- 12:15 PM

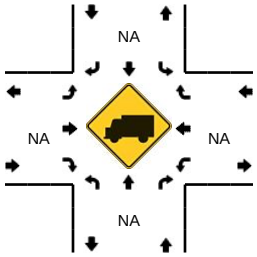


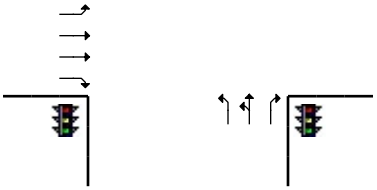


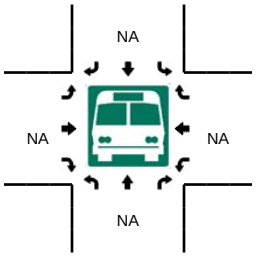












5-Min Count Period Beginning At	Glencoe Ave (Northbound)				Glencoe Ave (Southbound)				Washington Blvd (Eastbound)				Washington Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:25 AM	15	13	12	0	22	6	8	0	10	61	14	1	22	75	38	0	297	
11:30 AM	11	13	17	0	23	12	9	0	9	66	10	0	13	61	39	0	283	
11:35 AM	19	12	14	0	21	6	6	0	11	73	14	0	22	67	45	0	310	
11:40 AM	14	16	17	0	25	8	12	0	4	59	19	0	12	67	40	0	293	
11:45 AM	13	20	14	0	35	6	10	0	7	79	11	0	18	69	47	0	329	
11:50 AM	11	7	13	0	26	11	7	0	6	77	18	0	32	78	35	0	321	
11:55 AM	15	6	19	0	17	9	13	0	3	67	17	0	29	72	47	0	314	3711
12:00 PM	21	11	23	0	25	12	8	0	14	59	21	0	21	82	34	0	331	3737
12:05 PM	18	8	26	0	28	6	8	0	9	81	19	0	30	92	49	0	374	3781
12:10 PM	23	13	26	0	25	7	5	0	5	66	18	0	20	80	42	0	330	3812
12:15 PM	22	13	27	0	34	5	10	0	6	62	15	1	25	64	35	0	319	3816
12:20 PM	21	9	20	0	29	3	14	0	10	67	15	0	26	94	36	0	344	3845
12:25 PM	20	17	25	0	25	8	8	0	8	53	13	0	31	76	43	0	327	3875
12:30 PM	16	19	22	0	28	9	8	0	9	56	23	0	18	61	28	0	297	3889
12:35 PM	14	9	21	0	24	6	7	0	11	71	21	0	28	71	39	0	322	3901
12:40 PM	15	11	29	0	26	7	13	0	8	67	13	0	22	71	34	0	316	3924
12:45 PM	18	11	15	0	32	11	12	0	6	69	15	0	29	71	44	0	333	3928
12:50 PM	26	7	19	0	29	2	3	0	10	87	18	0	26	95	36	0	358	3965
12:55 PM	16	16	22	0	25	4	8	0	6	69	15	0	19	71	36	0	307	3958
1:00 PM	13	12	31	0	30	11	9	0	4	71	16	0	17	77	38	0	329	3956
1:05 PM	15	10	23	0	24	6	8	0	4	84	14	0	22	95	41	0	346	3928
1:10 PM	22	12	24	0	25	5	12	0	4	72	12	0	24	61	41	0	314	3912
1:15 PM	20	12	19	0	34	5	7	0	3	75	18	0	18	65	29	0	305	3898
1:20 PM	14	11	23	0	28	6	13	0	4	75	16	0	30	71	41	0	332	3886

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	248	128	300	0	312	100	84	0	112	824	232	0	284	1016	500	0	4140
Heavy Trucks	0	0	0		0	0	0		0	8	4		8	12	0		32
Pedestrians		44				28				0				40			112
Bicycles	0	0	0		0	0	0		0	1	0		0	1	0		2
Railroad																	
Stopped Buses																	

Comments:

Report generated on 7/22/2014 8:13 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Attachment C
Signal Timing Worksheets

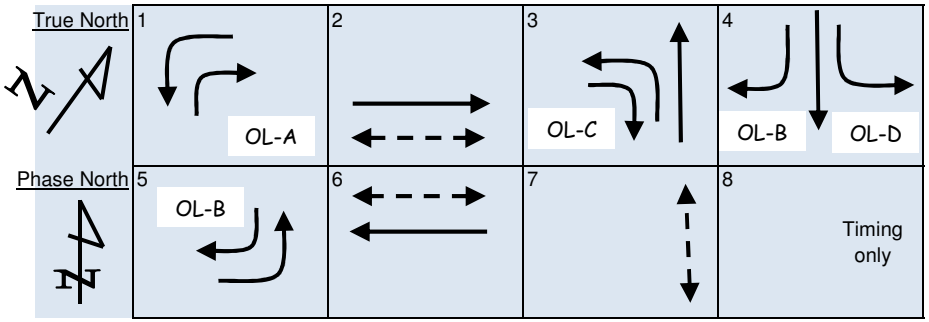
CITY OF CULVER CITY
Public Works Department

BiTran 233CC Type 170 Program

Prepared By:	D Mitchell	Checked By:		Field Installed By:	
Date:	11/08/00	Date:		Date:	

Asset No.	Intersection Name
2	**Wash Bl&Glencoe**
Channel No.	Comm/Drop Address
CHAN 09	**3**

PHASE DIAGRAM / INFO



Phase	
1	WBL
	Washington Bl WB LT
2	EBT
	Washington Bl EB & SS Ped Xing
3	NBT
	Glencoe Ave NB & NB LT
4	SBT
	Costco Dwy SB
5	EBL
	Washington Bl EB LT
6	WBT
	Washington Bl WB & NS Ped Xing
7	
	ES Ped Xing
8	
	Timing Only
Overlap	
A	
	Glencoe Av NB RT
B	
	Costco Dwy SB RT
C	
	Washington Bl EB RT
D	
	Costco Dwy SB LT
E	
F	
G	
H	

Page Name	Last Change
Assignable Inputs	8/5/2009 11:06
Assignable Outputs	8/5/2009 11:06
Basic Timing Phase Bank 1	3/2/2012 13:18
Basic Timing Phase Bank 2	8/5/2009 11:06
Basic Timing Phase Bank3	8/5/2009 11:06
Configuration Parameters	8/5/2009 11:06
Configuration Setup	12/29/2011 10:18
Configuration Timers	8/5/2009 11:06
Coordination All Plans	6/15/2011 13:03
Coordination Parameters	6/15/2011 13:00
Coordination Timing	2/7/2011 16:56
Detector Parameters	8/5/2009 11:06
Detectors	8/5/2009 11:06
Holiday Dates	8/5/2009 11:06
Holiday Events	8/5/2009 11:06
Holiday TOD Functions	8/5/2009 11:06
Overlaps	2/16/2011 7:34
Preemption Parameters	8/5/2009 11:06
Preemption Special Events Table 1	8/5/2009 11:06
Preemption Special Events Table 2	8/5/2009 11:06
Redirect Outputs	8/5/2009 11:06
TOD Functions	8/5/2009 11:06
TOD Schedule	12/19/2011 13:36

Last System Update By: alex.georgiev Last System Update Date: 3/2/2012

NOTES and COMMENTS

1. OLD is omitted during phase 7.
2. Phases 1 & 5 call phase 3, and phase 7 calls phases 3 & 4.

EMERGENCY VEHICLE PREEMPTION

1. When preemption is initiated, hold E.V. clearance phases. If E.V. clearance phases are not green, advance to them after timing the conflicting ped & vehicle clearance intervals.
2. After preemption, resume normal operation from current position.
3. E.V. clearance phasea are phases 2 & 6 for both EVA & EVB.

CITY OF CULVER CITY
Public Works Department

BiTran 233CC Type 170 Program

Prepared By:	D Mitchell	Checked By:		Field Installed By:	
Date:	11/08/00	Date:		Date:	

Asset No.	Intersection Name
2	Wash Bl&Glencoe
Channel No.	Comm/Drop Address
CHAN 09	3

PHASE TIMING

	Interval	PHASE 1	2	3	4	5	6	7	8
0	WALK	0	7	0	0	0	7	5	0
1	DONT WALK	0	12	0	0	0	12	18	0
2	MIN INITIAL	5	10	5	10	5	10	0	5
3	TYPE 3 LIMIT	0	27	0	0	0	27	0	0
4	ADD PER VEH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	VEH EXT	3.0	5.0	2.5	2.5	2.5	5.0	3.0	0.0
6	MAX GAP	3.0	5.0	2.5	2.5	2.5	5.0	3.0	0.0
7	MIN GAP	3.0	3.0	2.5	3.0	2.5	3.0	3.0	0.0
8	MAX LIMIT	20	40	20	15	15	40	20	0
9	MAXIMUM 2	10	30	10	10	10	30	20	0
A	ADV/DLY WLK	0	0	0	0	0	0	0	0
B	MIN PED CLR	0	0	0	0	0	0	0	0
C	COND SRV MIN	0	0	0	0	0	0	0	0
D	REDUCE EVERY	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0
E	YELLOW	3.6	3.9	3.2	3.2	3.6	3.9	3.0	3.0
F	RED CLEAR	0.8	0.9	0.8	0.8	0.8	0.9	1.0	0.0

PHASE BANK 1 < C + 0 + F = 1 >

		ALTERNATE TIMING 9	A	B	C	D
1	Ph. 1	0	0	0	0	0
2	Ph. 2	20	0	0	0	0
3	Ph. 3	0	0	0	0	0
4	Ph. 4	20	0	0	0	0
5	Ph. 5	0	0	0	0	0
6	Ph. 6	20	0	0	0	0
7	Ph. 7	0	0	0	0	0
8	Ph. 8	20	0	0	0	0
		Maximum Initial	Alternate Walk	Alternate FDW	Alternate Initial	Alternate Extension

ALL RED START: <F/ + C + 0> = 6.0
RED REVERT: <F/ 1 + 0 + F> = 3.0
FLASH START: <F/ 1 + 0 + E> = 0.0

PREEMPT	E
RR1 DLY	0
RR1 CLR	0
EVA DLY	0
EVA CLR	10
EVB DLY	0
EVB CLR	10
EVC DLY	0
EVC CLR	0
EVD DLY	0
EVD CLR	0
RR2 DLY	0
RR2 CLR	0

PHASE FUNCTION FLAGS

		Column F
0	PERMIT	12345678
1	RED LOCK	
2	YELLOW LOCK	
3	VEH MIN CALL	2 6
4	PED RECALL	
5	PEDESTRIANS	2 67
6	REST IN WALK	
7	RED REST	
8	DOUBLE ENTRY	4 8
9	VEH MAX CALL	
A	SOFT RECALL	
B	MAXIMUM 2	
C	COND SERVICE	
D	MAN CONT CALL	
E	YELLOW START	
F	FIRST PHASES	2 6

< C + 0 + F = 1 >

SPECIALS

		Column F
0	FAST GRN FLH	
1	GREEN FLSH	
2	FLASH WALK	
3	GUAR PASS	
4	SIMUL GAP	12345678
5	SEQ TIMING	
6	ADV WALK	
7	DELAY WALK	
8	EXT RECALL	
9	START OPV GRN	
A	MAX EXTEN	
B	INH PED RSRV	
C	SEMI ACTUA.	
D	O'LAP STRT UP	
E	STRT VEH CALL	12345678
F	STRT PED CALL	2 67

Specials <C + 0 + F = 2>

Controller Intervals

0 = Walk
1 = FDW
2 = MIN. Green
3 =
4 = Var. Initial
5 = Extension
6 =
7 = Reduce Gap
8 = Red Rest
9 = Preempt
A = Stop Time
B = Red Revrt
C = Gap Term.
D = MAX Term.
E = Forceoff
F = Red Clear.

MANUAL PLAN SELECT:
(C/0 + A + 1) = 0
AUTO = 0 FREE = 62
PLAN = 1 - 12 FLASH= 63

MANUAL OFFSET SELECT:
(C/0 + B + 1) =
AUTO = 0
OFFSET A = 1

COMM/DROP ADDRESS:
(C/0 + 0 + 0) =

ZONE NUMBER:
(C/0 + 0 + 1) =

AREA NUMBER:
(C/0 + 0 + 2) =

AREA ADDRESS:
(C/0 + 0 + 3) =

EXCL. PED. OPERATION:
WALK:
(F/1+0+0) = 0
DONT WALK:
(F/1+0+1) = 0
RED CLEAR:
(F/1+0+2) = 0.0

EXTRA 1
1 = TBC Type 1
2 = NEMA External Coordinator
3 = Auto Daylight Savings
4 = EV Preempt Advance
5 = Expanded Status Report
6 = International Ped.
7 = Clear Outputs During Flash
8 = Split Ring Operation

IC SELECT
2 = 2 Way Modem
3 = 7 Wire Slave
4 = Flash/Free
5 = Simplex Master
7 = 7 Wire Master
8 = Offset Interruptor

INPUT KEYSTROKES:
1) Set PAGE to required BANK #
< C+0+PAGE = BANK # >
2) Key stroke: PAGE + COLUMN + ROW

To Enable "E" Page, Set < F/1 + 9 + E = Not Zero >

CONTROLLER CONFIGURATION FLAGS

		Column E
0	EXCLUSIVE	
1	RR 1 CLEAR	
2	RR 2 CLEAR	
3	RR 2 LTD SRV	
4	PROT/PERM	1 5
5	FLH TO PREMT	
6	FLASH ENTRY	
7	DSABL MIN YEL	
8	DSABL OVP YEL	
9	OVP FLH YEL	
A	EM. VEH. A	2 6
B	EM. VEH. B	2 6
C	EM. VEH. C	
D	EM. VEH. D	
E	EXTRA 1	1 3 5
F	IC SELECT	2

< C + 0 + E = 125 >

		Column F
0	EXT PERMIT 0	
1	EXT PERMIT 1	
2	EXT PERMIT 2	
3	EXCLU PED	
4	PE NON-LOCK	12345678
5	PED 2 P OUT	2
6	PED 6 P OUT	6
7	PED 4 P OUT	
8	PED 8 P OUT	7
9	FLH YELLOW	
A	LOW PRL A	
B	LOW PRL B	
C	LOW PRL C	
D	LOW PRL D	
E	RESTRICTED	
F	EXTRA 2	

< C + 0 + E = 125 >

EXTRA 2
1 = AWB On during Phase Initial
2 = LMU installed

FLASH TO PREMPT
1 = EV A
2 = EV B
3 = EV C
4 = EV D
5 = RR 1
6 = RR2
7 = SE 1
8 = SE 2

CITY OF CULVER CITY
Public Works Department

BiTran 233CC Type 170 Program

Prepared By:	D Mitchell	Checked By:		Field Installed By:	
Date:	11/08/00	Date:		Date:	

Asset No.	Intersection Name
2	Wash Bl&Glencoe
Channel No.	Comm/Drop Address
CHAN 09	3

DETECTOR TIMING

DESCRIPTION	COL->	DELAY 1	CARRY OVER 3	Standard 332 CABINET LOCATION	Column 0 C1 PIN No.	Column 1 ATTRIBUTES 1	2	3	4	5	6	7	8	Column 2 PHASE(S) 1	2	3	4	5	6	7	8	Column 3 ASSIGNMENTS 1	2	3	4	5	6	7	8
	0	15.0	0.0	I-1U&L	0 56				X	X		X		X								X	X	X					X
	1	0.0	0.0	I-2U	1 39				X	X		X						X				X	X	X					X
	2	0.0	0.0	I-2L	2 43				X	X		X						X				X	X	X					X
	3	0.0	0.0	I-3U	3 63				X	X		X						X				X	X	X					X
	4	0.0	0.0	I-3L	4 76				X	X		X			X							X	X	X					X
	5	0.0	2.0	I-4U&L	5 47						X	X			X							X	X	X					X
	6	0.0	0.0	I-5U&L	6 58				X	X		X				X						X	X	X					X
	7	0.0	0.0	I-6U	7 41				X	X		X			X							X	X	X					X
	8	0.0	0.0	I-6L	8 45				X	X		X			X							X	X	X					X
	9	0.0	0.0	I-7U	9 65																	X	X	X					X
	A	0.0	0.0	I-7L	A 78																	X	X	X					X
	B	0.0	0.0	I-8U&L	B 49				X	X		X					X					X	X	X					X
	C	0.0	0.0	I-9U	C 60				X	X		X					X					X	X	X					X
	D	0.0	0.0	I-9L	D 62				X	X		X					X					X	X	X					X
	E	0.0	0.0	I-12U	E 67		X								X							X	X	X					X
	F	0.0	0.0	I-12L	F 69		X										X					X	X	X					X

< C + 0 + D = 0 > DETECTOR ASSIGNMENTS, < C + O + E = 126 >

DESCRIPTION	COL->	DELAY 2	CARRY OVER 4	Standard 332 CABINET LOCATION	Column 4 C1 PIN No.	Column 5 ATTRIBUTES 1	2	3	4	5	6	7	8	Column 6 PHASE(S) 1	2	3	4	5	6	7	8	Column 7 ASSIGNMENTS 1	2	3	4	5	6	7	8
	0	15.0	0.0	J-1U&L	0 55				X	X		X						X				X	X	X					X
	1	0.0	0.0	J-2U	1 40																	X	X	X					X
	2	0.0	0.0	J-2L	2 44																	X	X	X					X
	3	0.0	0.0	J-3U	3 64																	X	X	X					X
	4	0.0	0.0	J-3L	4 77																	X	X	X					X
	5	0.0	2.0	J-4U&L	5 48						X	X							X			X	X	X					X
	6	0.0	0.0	J-5U&L	6 57				X	X		X								X		X	X	X					X
	7	0.0	0.0	J-6U	7 42				X	X		X									X	X	X	X					X
	8	0.0	0.0	J-6L	8 46				X	X		X									X	X	X	X					X
	9	0.0	0.0	J-7U	9 66				X	X		X									X	X	X	X					X
	A	0.0	0.0	J-7L	A 79				X	X		X									X	X	X	X					X
	B	0.0	0.0	J-8U&L	B 50				X	X		X									X	X	X	X					X
	C	0.0	0.0	J-9U	C 59				X	X		X									X	X	X	X					X
	D	0.0	0.0	J-9L	D 61				X	X		X									X	X	X	X					X
	E	0.0	0.0	J-13U	E 68		X												X			X	X	X					X
	F	0.0	0.0	J-13L	F 70		X													X		X	X	X					X

< C + 0 + D = 0 > DETECTOR ASSIGNMENTS, < C + O + E = 126 >

NOTE: PLEASE DO NOT CLEAR DEFAULT SETTINGS UNLESS SHOWN OTHERWISE!

Legend: "•" = Default Settings; "X" = New Settings; "O" = Cleared Default Settings

Detector Monitor			1	2	3	4	5	6	7	8	
MAX OFF:	0	LOAD SW #	9	10	11	8	0	0	0	0	0
(D/0 + 0 + 1) = 20			1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	
MAX ON:	1	VEH SET 1	X	X X	X	X					1
(D/0 + 0 + 2) = 7	2	VEH SET 2									2
	3	VEH SET 3									3
Power Cycle	4	NEG. VEH.	X X	X X	X X X X	X X X X X					4
Correction Factors	5	NEG. PED.	X X	X	X X	X X					5
LONG FAILURE:	6	GREEN OMIT	X	X							6
(F/1 + 0 + 6) = 0.7	7	GRN CLR OMIT									7
SHORT FAILURE:	8										8
(F/1 + 0 + 7) = 0.7	D	GREEN CLEAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	D
NOTE:	E	YELLOW	3.2	0.2	3.2	3.2	0.0	0.0	0.0	0.0	E
Do Not Set To Zero	F	RED CLEAR	0.8	0.8	0.8	0.8	0.0	0.0	0.0	0.0	F
Default Value = 0.5 Sec											

OVERLAP ASSIGNMENTS < C + 0 + E = 29 >

DETECTOR ATTRIBUTES
1= Full Time Delay
2 = Pedestrian Call
4 = Count
5 = Extension
6 = Type 3
7 = Calling
8 = Alternate

DETECTOR ASSIGNMENTS
1 = Det. Set # 1
2 = Det. Set # 2
3 = Det. Set # 3
6 = MIN Recall On Failure
7 = MAX Recall On Failure
8 = Report On Failure

CITY OF CULVER CITY
Public Works Department

BiTran 233CC Type 170 Program

Prepared By:	D Mitchell	Checked By:		ield Installed By:	
Date:	11/08/00	Date:		Date:	

Asset No.	Intersection Name
2	**Wash Bl&Glencoe**
Channel No.	Comm/Drop Address
CHAN 09	**3**

COORDINATION TIMING

PLAN NUMBER

		1	2	3	4	5	6	7	8	9	10	11	12
0	CYCLE	90	90	0	0	0	0	90	90	0	0	90	90
1	FORCE 1	54	60	0	0	0	0	54	60	0	0	54	60
2	FORCE 2	0	0	0	0	0	0	0	0	0	0	0	0
3	FORCE 3	23	27	0	0	0	0	23	27	0	0	23	27
4	FORCE 4	35	41	0	0	0	0	35	41	0	0	35	41
5	FORCE 5	46	50	0	0	0	0	46	50	0	0	46	50
6	FORCE 6	0	0	0	0	0	0	0	0	0	0	0	0
7	FORCE 7	0	0	0	0	0	0	0	0	0	0	0	0
8	FORCE 8	0	0	0	0	0	0	0	0	0	0	0	0
9	RING OFFSET	0	0	0	0	0	0	0	0	0	0	0	0
A	OFFSET 1	35	8	0	0	0	0	35	8	0	0	35	8
B	SYNC	2 6	2 6	2 6	2 6	2 6	2 6	2 6	2 6	2 6		2 6	2 6
C	LAG	2 4 6 8	2 4 6 8	2 4 6 8	2 4 6 8	2 4 6 8	2 4 6 8	2 4 6 8	2 4 6 8	2 4 6 8		2 4 6 8	2 4 6 8
D	END PERM 1	1	1	0	0	0	0	1	1	0	0	1	1
E	HOLD RELEASE	255	255	255	255	255	255	255	255	255	0	255	255
F	ZONE OFFSET	0	0	0	0	0	0	0	0	0	0	0	0

< C + 0 + C = 1 >

COLUMN 2
Coord Min.

10
22
10
10
10
24
26
10

< C + 0 + C = 5 >

TRANSITION TYPE:
< C/5 + 1 + 9 > = 0.3

0.X = SHORTWAY
1.X = DWELL
X.1 THRU X.4 = NUMBER OF CYCLES WHEN LENGTHENING

LAG HOLD PHASES:
< C/5 + 1 + A > = 0

7-WIRE SYNC TIME:
< C/5 + 1 + C > = 0.0

Low Priority Channel:
< E/125 + C + 8 > : 0.0
1 - Channel A
2 - Channel B
3 - Channel C
4 - Channel D

COORDINATION EXTRA:
1- Programmed Walk Time for SYNC Phases

< C/5 +1+B >

Daylight Savings Time

Begin Month	<C/5+2+A>	3
Begin Week	<C/5+2+B>	2
End Month	<C/5+2+C>	11
End Week	<C/5+2+D>	1

Plan # -->	1	2	3	4	5	6	7	8	9	10	11	12	
0 PED ADJUS	0	0	0	0	0	0	0	0	0	0	0	0	0
1 STRT PERM	0	0	0	0	0	0	0	0	0	0	0	0	1
2 END PERM	0	0	0	0	0	0	0	0	0	0	0	0	2
3 STRT PERM	0	0	0	0	0	0	0	0	0	0	0	0	3
4 END PERM	0	0	0	0	0	0	0	0	0	0	0	0	4
5 SERVE TI	0	0	0	0	0	0	0	0	0	0	0	0	5
6 RSERVE PH													6
7													7
8 PRETIMED													8
9 MAX RECALL													9
A PERM 1 VE	X	X	X	X	X	X	X	X	X	X	X	X	A
B PERM 1 PE	X	X	X	X	X	X	X	X	X	X	X	X	B
C PERM 2 VEH													C
D PERM 2 PED													D
E PERM 3 VEH													E
F PERM 3 PED													F

COORDINATION PAGE 2 < C + 0 + C = 2 >

Ext Lag <F/1+E+E>
2 4 6 8

Lag Free<F/1+E+F>
2 4 6 8

Advance Warning Beacon - Sign 1

Time Before Yellow	<F/1+C+E>	0.0
Phase Number	<F/1+C+F>	0

Advance Warning Beacon - Sign 2

Time Before Yellow	<F/1+D+E>	0.0
Phase Number	<F/1+D+F>	0

Min Green Before PE Force Off

Min Time, sec.	<F/1+0+8>	4

Max Preemt Time Before Failure

Max Time, min.	<F/1+0+9>	255

Min Time Bet.Same Preempts
(Does Not Apply To Railroad Preempt)

Min Time, sec.	<F/1+0+A>	0

CITY OF CULVER CITY
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Prepared By:	D Mitchell	Checked By:		Field Installed By:	
Date:	11/08/00	Date:		Date:	

Asset No.	Intersection Name
2	**Wash Bl&Glencoe**
Channel No.	Comm/Drop Address
CHAN 09	**3**

TOD FUNCTIONS AND PLANS

Column D

		1	2	3	4	5	6	7	8
0									
1	OUT PORT 1								
2	OUT PORT 2								
3	OUT PORT 3								
4	OUT PORT 4								
5	OUT PORT 5								
6	OUT PORT 6								
7	OUT PORT 7								

Dimming<C + 0 + E = 125>

Enable "E" Page:
F/1+9+E= Not Zero

Display Locations

Manual Plan	= C/0+A+1
Master Plan	= C/0+A+2
Current Plan	= C/0+A+3
Next Plan	= C/0+A+4
TOD Plan	= C/0+A+5
Master Cycle	= C/0+A+0
Ring A Cycle	= C/0+B+0
Ring B Cycle	= C/0+D+0
MIN Cycle	= C/0+A+E
MAX Cycle	= C/0+B+E
CALCULATED CYCLE	= C/0+B+F
Phase HOLD	= C/0+F+D
Phase Next	= C/0+F+E
Force Off	= C/0+F+F

Interval Timer Display
Ring A = F/0 + A + Interval
Ring B = F/0 + B + Interval

PED/PHASE/OVERLAP

		1	2	3	4	5	6	7	8
0	WALK	0	0	0	0	0	0	0	0
1	DON'T WALK	0	0	0	0	0	0	0	0
2	PHASE GREEN	0	0	0	0	0	0	0	0
3	PHAZE YELLOW	0	0	0	0	0	0	0	0
4	PHASE RED	0	0	0	0	0	0	0	0
5	OV'LAP GREEN	35	36	0	0	0	0	0	0
6	OV'LAP YELLOW	37	38	0	0	0	0	0	0
7	OV'LAP RED	0	0	0	0	0	0	0	0

REDIRECT PHASE OUTPUTS < C+0+E = 127>

ENABLE/DISABLE
PHASE REDIRECTION
CABINET TYPE:
(E/125+D+0)= 30
CABINET TYPE:
30 = TYPE 303/330 CABINET
(TO ENABLE REDIRECTION)
0 = ALL OTHER TYPES
(TO DISABLE REDIRECTION)

412C Memory Module Battery:
IF E/112 + 0 + A = 84, battery is bad
IF E/112 + 0 + A = 85, battery is OK.

CONTINUOUS MEMORY ERROR MONITORING

"bAdA"-ERROR WAS DETECTED IN THE CPU'S RAM OR A NEW PROGRAM HAS BEEN INSTALLED ON THE MEMORY MODULE OFTEN CAUSED BY A BAD CONTROL LER "GEL-CELL" BATTERY.

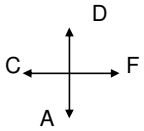
"bAdB" **-** ERROR WAS DETECTED IN THE MEMORY MODULE'S RAM. OFTEN CAUSED BY BAD "LITHIUM" BATTERY ON THE MEMORY MODULE.

"bAdE"- AN ERROR WAS DETECTED IN THE EPROM.

"bAdF" - AN ERROR WAS DETECTED IN THE Z-RAM (DALLAS CHIP) ON THE MEMORY MODULE.

DISPLAY MOVEMENT CODES

A = Advance ROW
D = Decrement ROW
C = COLUMN Back
F = Forward COLUMN.



LOGIC DELAY GATE
DELAY TIMER DISP

DELAY A Timer=C/0+9+A
DELAY B Timer=C/0+9+B
"thru" "thru"
DELAY F Timer=C/0+9+F

TOD COORD (9 Key) / DAY OF WEEK

	TIME HHMM	PLAN	S 1	M 2	T 3	W 4	T 5	F 6	S 7
0	0100	62	X	X	X	X	X	X	X
1	600	1	X	X	X	X	X	X	X
2	1000	1		X	X	X	X	X	
3	1500	2	X	X	X	X	X	X	X
4	1900	2		X	X	X	X	X	
5	2100	62	X	X	X	X	X	X	X
6	0600	1							
7	2100	62							
8	0000	0							
9	0000	0							
A	0000	0							
B	0000	0							
C	0000	0							
D	0000	0							
E	0000	0							
F	0000	0							

< C + 0 + 9 = 0.1 >

TOD FUNCT / DAY OF WEEK

	TIME (7 KEY)	Func	S	M	T	W	T 5	F	S
0	0000	0							
1	0000	0							
2	0000	0							
3	0000	0							
4	0000	0							
5	0000	0							
6	0000	0							
7	0000	0							
8	0000	0							
9	0000	0							
A	0000	0							
B	0000	0							
C	0000	0							
D	0000	0							
E	0000	0							
F	0000	0							

< C + 0 + 7 = 0.1 >

Column 4
PHASES / BITS

				4			

< C + 0 + E = 27 >

PREEMPT PRIORITY

		Row
EV-A	0	0
EV-B	0	1
EV-C	0	2
EV-D	0	3
RR-1	0	4
RR-2	0	5
SE-1	0	6
SE-2	0	7

< C + 0 + E = 125 >

CITY OF CULVER CITY
Public Works Department

BiTran 233CC Type 170 Program

Prepared By:	D Mitchell	Checked By:		Field Installed By:	
Date:	11/08/00	Date:		Date:	

Asset No.	Intersection Name
2	**Wash Bl&Glencoe**
Channel No.	Comm/Drop Address
CHAN 09	**3**

INPUT / OUTPUT ASSIGNMENTS - SPECIAL EVENTS

	Column 9		Column A		Column B		Column C		Column D		Column E		Column F		
0	SPF 1	0	NOT-3	0	MAX 2	0	PRE TIM	0	x Perm0	0	DIAL 2	0	SIM TRM	0	0
1	SPF 2	0	NOT-4	0	SY DET 1	0	Plan 1		x Perm1	0	DIAL 3	0	EV A	71	1
2	SPF 3	0	OR-4 (a)	0	SY DET 2	0	Plan 2		x Perm2	0	OFF 1	0	EV B	72	2
3	SPF 4	0	OR-4 (b)	0	SY DET 3	0	Plan 3		WK DAY	0	OFF 2	0	EV C	73	3
4	NAND-3	0	OR-5 (a)	0	SY DET 4	0	Plan 4		X Clock	0	OFF 3	0	EV D	74	4
5	NAND-3	0	OR-5 (b)	0	SY DET 5	0	Plan 5		ST Time	82	FREE	0	RR 1	51	5
6	NAND-4	0	OR-6 (a)	0	SY DET 6	0	Plan 6		FL SENS	81	FLASH	0	RR 2	52	6
7	NAND-4	0	OR-6 (b)	0	SY DET 7	0	Plan 7		ENABLE	0	XPD OMT	0	SP 1	0	7
8	OR 7 (a)	0	Fig 3 Dia.	0	SY DET 8	0	Plan 8		ADVANCE	0	NOT 1	0	SP 2	0	8
9	OR 7 (b)	0	Fig 4 Dia.	0	MX INIBT	0	Plan 9		ALARM	0	NOT 2	0	X LAG	0	9
A	OR 7 (c)	0	AND4 (a)	0	FORCE A	0	DELAY-A	0	PH BNK 2	0	OR 1	0	AND 1	0	A
B	OR 7 (d)	0	AND4 (b)	0	FORCE B	0	DELAY-B	0	PH BNK 3	0	OR 1	0	AND 1	0	B
C	OR 8 (a)	0	NAND1(a)	0	CNA	0	DELAY-C	0	OL SET 2	0	OR 2	0	AND 2	0	C
D	OR 8 (b)	0	NAND1(b)	0	HOLD	0	DELAY-D	0	OL SET 3	0	OR 2	0	AND 2	0	D
E	OR-8 (c)	0	NAND2(a)	0	VEH CALL	0	DELAY-E	0	DET ST 2	0	OR 3	0	AND 3	0	E
F	OR-8 (d)	0	NAND2(b)	0	RECALL	0	DELAY-F	0	DET ST 3	0	OR 3	0	AND 3	0	F

ASSIGNABLE INPUTS < C + 0 + E = 126 >

	Column 9		Column A		Column B		Column C		Column D		Column E		Column F		
0	Fz ON - 1	0	PrEmp Fl	0	FLHR 0	0	FREE	0	NOT 1	0	TOD 1	0	DIAL 2	0	0
1	Fz ON - 2	0	SP EV 1	0	FLHR 1	0	Plan 1		OR 1	0	TOD 2	0	DIAL 3	0	1
2	Fz ON - 3	0	SP EV 2	0	F FLHR	0	Plan 2		OR 2	0	TOD 3	0	OFF 1	0	2
3	Fz ON - 4	0	SP EV 3	0	Fig 3 Dia.	0	Plan 3		OR 3	0	TOD 4	0	OFF 2	0	3
4	Fz ON - 5	0	SP EV 4	0	Fig 4 Dia.	0	Plan 4		AND 1	0	TOD 5	0	OFF 3	0	4
5	Fz ON - 6	0	SP EV 5	0			Plan 5		AND 2	0	TOD 6	0	FREE	0	5
6	Fz ON - 7	0	SP EV 6	0			Plan 6		AND 3	0	TOD 7	0	FLASH	0	6
7	Fz ON - 8	0	SP EV 7	0			Plan 7		NOT 2	0	TOD 8	0	PREMPT	0	7
8	Fz Ck - 1	0	SP EV 8	0	NOT 3	0	Plan 8		EV A	0	WARN 1	0	Priority A	0	8
9	Fz Ck - 2	0			NOT 4	0	Plan 9		EV B	0	WARN 2	0	Priority B	0	9
A	Fz Ck - 3	0	DET FAIL	0	OR 4	0			EV C	0	DELAY A	0	Priority C	0	A
B	Fz Ck - 4	0			OR 5	0			EV D	0	DELAY B	0	Priority D	0	B
C	Fz Ck - 5	0			OR 6	0	NAND 3	0	RR 1	0	DELAY C	0			C
D	Fz Ck - 6	0	CNT CTL	0	AND 4	0	NAND 4	0	RR 2	0	DELAY D	0			D
E	Fz Ck - 7	0	XDWALK	0	NAND 1	0	OR 7	0	SP 1	0	DELAY E	0			E
F	Fz Ck - 8	0	X WALK	0	NAND 2	0	OR 8	0	SP 2	0	DELAY F	0			F

ASSIGNABLE OUTPUTS < C + 0 + E =127>

	6	7	8	9	A	B	C	D	E	F	
	CLEAR	TIME	PED CALL	HOLD	ADVANCE	FORCE OFF	CALL	PERMIT	PED OMIT	OUTPUT	
	1 2 3 4 5 6 7 8		1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	
0		0000									0
1		0000									1
2		0000									2
3		0000									3
4		0000									4
5		0000									5
6		0000									6
7		0000									7
8		0000									8
9		0000									9
A		0000									A
B		0000									B
C		0000									C
D		0000									D
E		0000									E
F		0000									F

SPECIAL EVENT SCHEDULE < C + 0 + E = 27 >

COLUMN B		
A	DELAY A	0
B	DELAY B	0
C	DELAY C	0
D	DELAY D	0
E	DELAY E	0
F	DELAY F	0

<C+ 0 + D = 0>
LOGIC **DELAY** TIMES

FOR SPECIAL EVENT Table 1:
LIMITED SERVICE INTERVAL:
< E/27+5+ F > = 0

FOR SPECIAL EVENT TABLE #2:
<C+0+E=28> And use same key strokes as table 1 to access table.

CITY OF CULVER CITY
Public Works Department

BiTran 233CC Type 170 Program

Prepared By:	D Mitchell	Checked By:		Field Installed By:	
Date:	11/08/00	Date:		Date:	

Asset No.	Intersection Name
2	**Wash Bl&Glencoe**
Channel No.	Comm/Drop Address
CHAN 09	**3**

BSP Timing

Row	Time	Day of Week	Approach	Time*
0				
1				
2				
3				
4				
5				
6				
7				
8				
9				
A				
B				
C				
D				
E				
F				

BSP Time of Day <C+0+9=2.1>

Time value is between 0 and 15 only

<C/0+0+Row >	
City Code	
Address	

Headway Time	
Delay Time	
Early Green Max	
Extension Max	

Bus Priority Settings

<C+0+E=125>	
Low A Phase	
Low B Phase	
Low C Phase	
Low D Phase	

Bus Phases

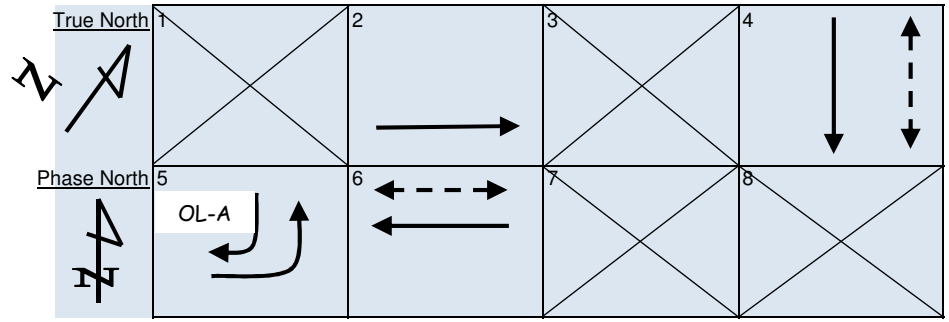
CITY OF CULVER CITY
Public Works Department

BiTran 233CC Type 170 Program

Prepared By:	D Barnett	Checked By:		Field Installed By:	
Date:	06/07/99	Date:		Date:	6/17/2004

Asset No.	Intersection Name
1	**Wash Bl&Costco**
Channel No.	Comm/Drop Address
CHAN 09	**4**

PHASE DIAGRAM / INFO



Phase	
1	
2	EBT Washington Bl EB
3	
4	SBT Costco Dwy SB, EB Ped Xing
5	EBL Washington Bl EB LT
6	WBT Washington Bl WB & NS Ped Xing
7	
8	
Overlap	
A	Costco Dwy SB RT
B	
C	
D	
E	
F	
G	
H	

Page Name	Last Change
Assignable Inputs	10/18/2010 8:00
Assignable Outputs	10/18/2010 8:00
Basic Timing Phase Bank 1	10/23/2014 8:07
Basic Timing Phase Bank 2	10/18/2010 8:00
Basic Timing Phase Bank3	10/18/2010 8:00
Bus Priority	10/18/2010 8:00
Configuration Parameters	10/18/2010 8:00
Configuration Setup	12/29/2011 10:16
Configuration Timers	10/18/2010 8:00
Coordination All Plans	6/15/2011 13:00
Coordination Parameters	6/15/2011 12:59
Coordination Timing	2/8/2011 15:05
Detector Parameters	10/18/2010 8:00
Detectors	10/18/2010 8:00
Holiday Dates	10/18/2010 8:00
Holiday Events	10/18/2010 8:00
Holiday TOD Functions	10/18/2010 8:00
Overlaps	2/16/2011 7:31
Preemption Parameters	10/18/2010 8:00
Preemption Special Events Table 1	10/18/2010 8:00
Preemption Special Events Table 2	10/18/2010 8:00
Redirect Outputs	10/18/2010 8:00
TOD Functions	10/18/2010 8:00
TOD Schedule	12/19/2011 13:10
Last System Update By: alex.georgiev	Last System Update Date: ########

NOTES and COMMENTS

EMERGENCY VEHICLE PREEMPTION

1. When preemption is initiated, hold E.V. clearance phases. If E.V. clearance phases are not green, advance to them after timing the conflicting ped & vehicle clearance intervals.
2. After preemption, resume normal operation from current position.
3. E.V. clearance phases are phases 2 & 6 for both EVA & EVB.

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PHASE TIMING

	Interval	PHASE 1	2	3	4	5	6	7	8
0	WALK	0	0	0	5	0	7	0	0
1	DONT WALK	0	0	0	18	0	11	0	0
2	MIN INITIAL	0	10	0	5	5	10	0	0
3	TYPE 3 LIMIT	0	0	0	0	0	0	0	0
4	ADD PER VEH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	VEH EXT	0.0	5.0	0.0	2.5	2.0	5.0	0.0	0.0
6	MAX GAP	0.0	5.0	0.0	2.5	2.0	5.0	0.0	0.0
7	MIN GAP	0.0	3.0	0.0	2.5	2.0	3.0	0.0	0.0
8	MAX LIMIT	0	40	0	20	16	40	0	0
9	MAXIMUM 2	0	30	0	15	10	30	0	0
A	ADV/DLY WLK	0	0	0	0	0	0	0	0
B	MIN PED CLR	0	0	0	0	0	0	0	0
C	COND SRV MIN	0	0	0	0	0	0	0	0
D	REDUCE EVERY	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0
E	YELLOW	0.0	3.9	0.0	3.2	3.6	3.9	0.0	0.0
F	RED CLEAR	0.0	0.9	0.0	0.8	0.9	0.9	0.0	0.0

PHASE BANK 1 < C + 0 + F = 1 >

		ALTERNATE TIMING 9	A	B	C	D
		Maximum Initial	Alternate Walk	Alternate FDW	Alternate Initial	Alternate Extension
1	Ph. 1	0	0	0	0	0
2	Ph. 2	20	0	0	0	0
3	Ph. 3	0	0	0	0	0
4	Ph. 4	20	0	0	0	0
5	Ph. 5	0	0	0	0	0
6	Ph. 6	20	0	0	0	0
7	Ph. 7	0	0	0	0	0
8	Ph. 8	20	0	0	0	0

ALL RED START: <F/ + C + 0> = 6.0
RED REVERT: <F/ 1 + 0 + F> = 2.0
FLASH START: <F/ 1 + 0 + E> = 0.0

PREEMPT		E
RR1 DLY	0	
RR1 CLR	0	
EVA DLY	0	
EVA CLR	10	
EVB DLY	0	
EVB CLR	0	
EVC DLY	0	
EVC CLR	10	
EVD DLY	0	
EVD CLR	0	
RR2 DLY	0	
RR2 CLR	0	

PHASE FUNCTION FLAGS		Column F
0	PERMIT	2 456
1	RED LOCK	
2	YELLOW LOCK	
3	VEH MIN CALL	2 6
4	PED RECALL	
5	PEDESTRIANS	4 6
6	REST IN WALK	
7	RED REST	
8	DOUBLE ENTRY	
9	VEH MAX CALL	
A	SOFT RECALL	
B	MAXIMUM 2	
C	COND SERVICE	
D	MAN CONT CALL	
E	YELLOW START	
F	FIRST PHASES	2 6

< C + 0 + F = 1 >

SPECIALS		Column F
0	FAST GRN FLH	
1	GREEN FLSH	
2	FLASH WALK	
3	GUAR PASS	
4	SIMUL GAP	12345678
5	SEQ TIMING	
6	ADV WALK	
7	DELAY WALK	
8	EXT RECALL	
9	START OPV GRN	
A	MAX EXTEN	
B	INH PED RSRV	
C	SEMI ACTUA.	
D	O'LAP STRT UP	
E	STRT VEH CALL	12345678
F	STRT PED CALL	4 6

Specials <C + 0 + F = 2>

Controller Intervals
0 = Walk
1 = FDW
2 = MIN. Green
3 =
4 = Var. Initial
5 = Extension
6 =
7 = Reduce Gap
8 = Red Rest
9 = Preempt
A = Stop Time
B = Red Revrt
C = Gap Term.
D = MAX Term.
E = Forceoff
F = Red Clear.

MANUAL PLAN SELECT:
(C/0 + A + 1) = 0
AUTO = 0 FREE = 62
PLAN = 1 - 12 FLASH= 63

MANUAL OFFSET SELECT:
(C/0 + B + 1) =
AUTO = 0
OFFSET A = 1

COMM/DROP ADDRESS:
(C/0 + 0 + 0) =

ZONE NUMBER:
(C/0 + 0 + 1) =

AREA NUMBER:
(C/0 + 0 + 2) =

AREA ADDRESS:
(C/0 + 0 + 3) =

EXCL. PED. OPERATION:
WALK:
(F/1+0+0) = 0
DONT WALK:
(F/1+0+1) = 0
RED CLEAR:
(F/1+0+2) = 0.0

EXTRA 1
1 = TBC Type 1
2 = NEMA External Coordinator
3 = Auto Daylight Savings
4 = EV Preempt Advance
5 = Expanded Status Report
6 = International Ped.
7 = Clear Outputs During Flash
8 = Split Ring Operation

IC SELECT
2 = 2 Way Modem
3 = 7 Wire Slave
4 = Flash/Free
5 = Simplex Master
7 = 7 Wire Master
8 = Offset Interruptor

INPUT KEYSTROKES:
1) Set PAGE to required BANK #
< C+0+PAGE = BANK # >
2) Key stroke: PAGE + COLUMN + ROW

To Enable "E" Page, Set < F/1 + 9 + E = Not Zero >

CONTROLLER CONFIGURATION FLAGS

	Column E	
0	EXCLUSIVE	
1	RR 1 CLEAR	
2	RR 2 CLEAR	
3	RR 2 LTD SRV	
4	PROT/PERM	5
5	FLH TO PREMT	
6	FLASH ENTRY	
7	DSABL MIN YEL	
8	DSABL OVP YEL	
9	OVP FLH YEL	
A	EM. VEH. A	2 5
B	EM. VEH. B	2
C	EM. VEH. C	6
D	EM. VEH. D	
E	EXTRA 1	1 3 5
F	IC SELECT	2

< C + 0 + E = 125 >

	Column F	
0	EXT PERMIT 0	
1	EXT PERMIT 1	
2	EXT PERMIT 2	
3	EXCLU PED	
4	PE NON-LOCK	12345678
5	PED 2 P OUT	
6	PED 6 P OUT	6
7	PED 4 P OUT	4
8	PED 8 P OUT	
9	FLH YELLOW	
A	LOW PRL A	
B	LOW PRL B	
C	LOW PRL C	
D	LOW PRL D	
E	RESTRICTED	
F	EXTRA 2	

< C + 0 + E = 125 >

EXTRA 2
1 = AWB On during Phase Initial
2 = LMU installed

FLASH TO PREMPT
1 = EV A
2 = EV B
3 = EV C
4 = EV D
5 = RR 1
6 = RR2
7 = SE 1
8 = SE 2

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Asset No.	Intersection Name
1	**Wash Bl&Costco**
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CHAN 09	**4**

DETECTOR TIMING

DESCRIPTION	COL->	DELAY 1	CARRY OVER 3	Standard 332 CABINET LOCATION	Column 0 C1 PIN No.	Column 1 ATTRIBUTES 1	2	3	4	5	6	7	8	Column 2 PHASE(S) 1	2	3	4	5	6	7	8	Column 3 ASSIGNMENTS 1	2	3	4	5	6	7	8
	0	0.0	0.0		0 56				X	X		X		X								X	X	X					X
	1	0.0	0.0		1 39																	X	X	X					X
	2	0.0	0.0		2 43																	X	X	X					X
	3	0.0	0.0		3 63																	X	X	X					X
	4	0.0	0.0		4 76																	X	X	X					X
	5	0.0	0.0		5 47				X	X		X			X							X	X	X					X
	6	0.0	0.0		6 58				X	X		X				X						X	X	X					X
	7	0.0	0.0		7 41																	X	X	X					X
	8	0.0	0.0		8 45																	X	X	X					X
	9	0.0	0.0		9 65																	X	X	X					X
	A	0.0	0.0		A 78																	X	X	X					X
	B	10.0	0.0		B 49				X	X		X					X					X	X	X					X
	C	0.0	0.0		C 60				X	X		X					X					X	X	X					X
	D	0.0	0.0		D 62				X	X		X					X					X	X	X					X
	E	0.0	0.0		E 67		X								X							X	X	X					X
	F	0.0	0.0		F 69		X										X					X	X	X					X

< C + 0 + D = 0 > DETECTOR ASSIGNMENTS, < C + O + E = 126 >

DESCRIPTION	COL->	DELAY 2	CARRY OVER 4	Standard 332 CABINET LOCATION	Column 4 C1 PIN No.	Column 5 ATTRIBUTES 1	2	3	4	5	6	7	8	Column 6 PHASE(S) 1	2	3	4	5	6	7	8	Column 7 ASSIGNMENTS 1	2	3	4	5	6	7	8
	0	15.0	0.0		0 55				X	X		X						X				X	X	X					X
	1	0.0	0.0		1 40																	X	X	X					X
	2	0.0	0.0		2 44																	X	X	X					X
	3	0.0	0.0		3 64																	X	X	X					X
	4	0.0	0.0		4 77																	X	X	X					X
	5	0.0	0.0		5 48				X	X		X							X			X	X	X					X
	6	0.0	0.0		6 57				X	X		X								X		X	X	X					X
	7	0.0	0.0		7 42				X	X		X									X	X	X	X					X
	8	0.0	0.0		8 46				X	X		X									X	X	X	X					X
	9	0.0	0.0		9 66				X	X		X									X	X	X	X					X
	A	0.0	0.0		A 79				X	X		X									X	X	X	X					X
	B	0.0	0.0		B 50				X	X		X									X	X	X	X					X
	C	0.0	0.0		C 59				X	X		X									X	X	X	X					X
	D	0.0	0.0		D 61				X	X		X									X	X	X	X					X
	E	0.0	0.0		E 68		X												X			X	X	X					X
	F	0.0	0.0		F 70		X														X	X	X	X					X

< C + 0 + D = 0 > DETECTOR ASSIGNMENTS, < C + O + E = 126 >

NOTE: PLEASE DO NOT CLEAR DEFAULT SETTINGS UNLESS SHOWN OTHERWISE!

Legend: "•" = Default Settings; "X" = New Settings; "O" = Cleared Default Settings

Detector Monitor			1	2	3	4	5	6	7	8	
MAX OFF:	0	LOAD SW #	7	0	0	0	0	0	0	0	0
(D/0 + 0 + 1) = 20			1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	
MAX ON:	1	VEH SET 1	X X								1
(D/0 + 0 + 2) = 7	2	VEH SET 2									2
	3	VEH SET 3									3
Power Cycle	4	NEG. VEH.	X								4
Correction Factors	5	NEG. PED.	X								5
LONG FAILURE:	6	GREEN OMIT	X								6
(F/1 + 0 + 6) = 0.7	7	GRN CLR OMIT									7
SHORT FAILURE:	8										8
(F/1 + 0 + 7) = 0.7	D	GREEN CLEAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	D
NOTE:	E	YELLOW	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	E
Do Not Set To Zero	F	RED CLEAR	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	F
Default Value = 0.5 Sec											

OVERLAP ASSIGNMENTS < C + 0 + E = 29 >

DETECTOR ATTRIBUTES
1= Full Time Delay
2 = Pedestrian Call
4 = Count
5 = Extension
6 = Type 3
7 = Calling
8 = Alternate

DETECTOR ASSIGNMENTS
1 = Det. Set # 1
2 = Det. Set # 2
3 = Det. Set # 3
6 = MIN Recall On Failure
7 = MAX Recall On Failure
8 = Report On Failure

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COORDINATION TIMING

PLAN NUMBER

		1	2	3	4	5	6	7	8	9	10	11	12
0	CYCLE	90	90	0	0	0	0	90	90	0	0	90	90
1	FORCE 1	0	0	0	0	0	0	0	0	0	0	0	0
2	FORCE 2	0	0	0	0	0	0	0	0	0	0	0	0
3	FORCE 3	0	0	0	0	0	0	0	0	0	0	0	0
4	FORCE 4	25	25	0	0	0	0	25	25	0	0	25	25
5	FORCE 5	46	50	0	0	0	0	46	50	0	0	46	50
6	FORCE 6	0	0	0	0	0	0	0	0	0	0	0	0
7	FORCE 7	0	0	0	0	0	0	0	0	0	0	0	0
8	FORCE 8	0	0	0	0	0	0	0	0	0	0	0	0
9	RING OFFSET	0	0	0	0	0	0	0	0	0	0	0	0
A	OFFSET 1	48	0	0	0	0	0	48	0	0	0	48	0
B	SYNC	2 6	2 6	2 6	2 6	2 6	2 6	2 6	2 6	2 6		2 6	2 6
C	LAG	2 4 6	2 4 6	2 4 6	2 4 6	2 4 6	2 4 6	2 4 6	2 4 6	2 4 6		2 4 6	2 4 6
D	END PERM 1	1	1	0	0	0	0	1	1	0	0	1	1
E	HOLD RELEASE	255	255	255	255	255	255	255	255	255	0	255	255
F	ZONE OFFSET	0	0	0	0	0	0	0	0	0	0	0	0

< C + 0 + C = 1 >

COLUMN 2
Coord Min.

0
10
0
24
10
21
0
0

< C + 0 + C = 5 >

TRANSITION TYPE:
< C/5 + 1 + 9 > = 0.3

0.X = SHORTWAY
1.X = DWELL
X.1 THRU X.4 = NUMBER OF CYCLES WHEN LENGTHENING

LAG HOLD PHASES:
< C/5 + 1 + A > = 0

7-WIRE SYNC TIME:
< C/5 + 1 + C > = 0.0

Low Priority Channel:
< E/125 + C + 8 > : 0.0
1 - Channel A
2 - Channel B
3 - Channel C
4 - Channel D

COORDINATION EXTRA:
1- Programmed Walk Time for SYNC Phases

< C/5 +D+0 >

Daylight Savings Time

Begin Month	<C/5+2+A>	3
Begin Week	<C/5+2+B>	2
End Month	<C/5+2+C>	11
End Week	<C/5+2+D>	1

Ext Lag <F/1+E+E>
2 4 6 8

Lag Free<F/1+E+E>
2 4 6

Advance Warning Beacon - Sign 1

Time Before Yellow	<F/1+C+E>	0.0
Phase Number	<F/1+C+F>	0

Advance Warning Beacon - Sign 2

Time Before Yellow	<F/1+D+E>	0.0
Phase Number	<F/1+D+F>	0

Min Green Before PE Force Off

Min Time, sec.	<F/1+0+8>	4

Max Preemt Time Before Failure

Max Time, min.	<F/1+0+9>	255

Min Time Bet.Same Preempts
(Does Not Apply To Railroad Preempt)

Min Time, sec.	<F/1+0+A>	0

Plan # -->	1	2	3	4	5	6	7	8	9	10	11	12	
0 PED ADJUS	0	0	0	0	0	0	0	0	0	0	0	0	0
1 STRT PERM	0	0	0	0	0	0	0	0	0	0	0	0	1
2 END PERM	0	0	0	0	0	0	0	0	0	0	0	0	2
3 STRT PERM	0	0	0	0	0	0	0	0	0	0	0	0	3
4 END PERM	0	0	0	0	0	0	0	0	0	0	0	0	4
5 SERVE TI	0	0	0	0	0	0	0	0	0	0	0	0	5
	1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	
6 RSERVE PH													6
7													7
8 PRETIMED													8
9 MAX RECALL													9
A PERM 1 VE	X X X X X X X X	X X X X X X X X	X X X X X X X X	X X X X X X X X	X X X X X X X X	X X X X X X X X	X X X X X X X X	X X X X X X X X	X X X X X X X X	X		X X X X X X X X	A
B PERM 1 PE	X X X X X X X X	X X X X X X X X	X X X X X X X X	X X X X X X X X	X X X X X X X X	X X X X X X X X	X X X X X X X X	X X X X X X X X	X X X X X X X X	X		X X X X X X X X	B
C PERM 2 VEH													C
D PERM 2 PED													D
E PERM 3 VEH													E
F PERM 3 PED													F

COORDINATION PAGE 2 < C + 0 + C = 2 >

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TOD FUNCTIONS AND PLANS

Column D

		1	2	3	4	5	6	7	8
0									
1	OUT PORT 1								
2	OUT PORT 2								
3	OUT PORT 3								
4	OUT PORT 4								
5	OUT PORT 5								
6	OUT PORT 6								
7	OUT PORT 7								

Dimming<C + 0 + E = 125>

Enable "E" Page:
F/1+9+E= Not Zero

Display Locations

Manual Plan	= C/0+A+1
Master Plan	= C/0+A+2
Current Plan	= C/0+A+3
Next Plan	= C/0+A+4
TOD Plan	= C/0+A+5
Master Cycle	= C/0+A+0
Ring A Cycle	= C/0+B+0
Ring B Cycle	= C/0+D+0
MIN Cycle	= C/0+A+E
MAX Cycle	= C/0+B+E
CALCULATED CYCLE	= C/0+B+F
Phase HOLD	= C/0+F+D
Phase Next	= C/0+F+E
Force Off	= C/0+F+F

Interval Timer Display
Ring A = F/0 + A + Interval
Ring B = F/0 + B + Interval

PED/PHASE/OVERLAP

		1	2	3	4	5	6	7	8
0	WALK	0	0	0	0	0	0	0	0
1	DON'T WALK	0	0	0	0	0	0	0	0
2	PHASE GREEN	0	0	0	0	0	0	0	0
3	PHAZE YELLOW	0	0	0	0	0	0	0	0
4	PHASE RED	0	0	0	0	0	0	0	0
5	OV'LAP GREEN	0	0	0	0	0	0	0	0
6	OV'LAP YELLOW	0	0	0	0	0	0	0	0
7	OV'LAP RED	0	0	0	0	0	0	0	0

REDIRECT PHASE OUTPUTS < C+0+E = 127>

ENABLE/DISABLE
PHASE REDIRECTION
CABINET TYPE:
(E/125+D+0)= **0**
CABINET TYPE:
30 = TYPE 303/330 CABINET
(TO ENABLE REDIRECTION)
0 = ALL OTHER TYPES
(TO DISABLE REDIRECTION)

412C Memory Module Battery:
IF E/112 + 0 + A = 84, battery is bad
IF E/112 + 0 + A = 85, battery is OK.

CONTINUOUS MEMORY ERROR MONITORING

"bAdA"-ERROR WAS DETECTED IN THE CPU'S RAM OR A NEW PROGRAM HAS BEEN INSTALLED ON THE MEMORY MODULE OFTEN CAUSED BY A BAD CONTROL LER "GEL-CELL" BATTERY.

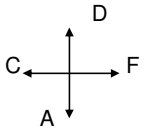
"bAdB" **-** ERROR WAS DETECTED IN THE MEMORY MODULE'S RAM. OFTEN CAUSED BY BAD "LITHIUM" BATTERY ON THE MEMORY MODULE.

"bAdE"- AN ERROR WAS DETECTED IN THE EPROM.

"bAdF" - AN ERROR WAS DETECTED IN THE Z-RAM (DALLAS CHIP) ON THE MEMORY MODULE.

DISPLAY MOVEMENT CODES

A = Advance ROW
D = Decrement ROW
C = COLUMN Back
F = Forward COLUMN.



LOGIC DELAY GATE
DELAY TIMER DISP

DELAY A Timer=C/0+9+A
DELAY B Timer=C/0+9+B
"thru" "thru"
DELAY F Timer=C/0+9+F

TOD COORD (9 Key) / DAY OF WEEK

	TIME HHMM	PLAN	S 1	M 2	T 3	W 4	T 5	F 6	S 7
0	0100	62	X	X	X	X	X	X	X
1	600	1	X	X	X	X	X	X	X
2	1000	1		X	X	X	X	X	
3	1500	2	X	X	X	X	X	X	X
4	1900	2		X	X	X	X	X	
5	2100	62	X	X	X	X	X	X	X
6	0600	1							
7	2100	62							
8	0000	0							
9	0000	0							
A	0000	0							
B	0000	0							
C	0000	0							
D	0000	0							
E	0000	0							
F	0000	0							

< C + 0 + 9 = 0.1 >

TOD FUNCT / DAY OF WEEK

	(7 KEY) TIME	Func	S	M	T	W	T 5	F	S
0	0000	0							
1	0000	0							
2	0000	0							
3	0000	0							
4	0000	0							
5	0000	0							
6	0000	0							
7	0000	0							
8	0000	0							
9	0000	0							
A	0000	0							
B	0000	0							
C	0000	0							
D	0000	0							
E	0000	0							
F	0000	0							

< C + 0 + 7 = 0.1 >

Column 4
PHASES / BITS

				4			

< C + 0 + E = 27 >

PREEMPT PRIORITY

		Row
EV-A	**0**	**0**
EV-B	**0**	**1**
EV-C	**0**	**2**
EV-D	**0**	**3**
RR-1	**0**	**4**
RR-2	**0**	**5**
SE-1	**0**	**6**
SE-2	**0**	**7**

< C + 0 + E = 125 >

CITY OF CULVER CITY
Public Works Department

BiTran 233CC Type 170 Program

Prepared By:	D Barnett	Checked By:		Field Installed By:	
Date:	06/07/99	Date:		Date:	06/17/04

Asset No.	Intersection Name
1	**Wash Bl&Costco**
Channel No.	Comm/Drop Address
CHAN 09	**4**

INPUT / OUTPUT ASSIGNMENTS - SPECIAL EVENTS

	Column 9		Column A		Column B		Column C		Column D		Column E		Column F		
0	SPF 1	0	NOT-3	0	MAX 2	0	PRE TIM	0	x Perm0	0	DIAL 2	0	SIM TRM	0	0
1	SPF 2	0	NOT-4	0	SY DET 1	0	Plan 1		x Perm1	0	DIAL 3	0	EV A	71	1
2	SPF 3	0	OR-4 (a)	0	SY DET 2	0	Plan 2		x Perm2	0	OFF 1	0	EV B	72	2
3	SPF 4	0	OR-4 (b)	0	SY DET 3	0	Plan 3		WK DAY	0	OFF 2	0	EV C	73	3
4	NAND-3	0	OR-5 (a)	0	SY DET 4	0	Plan 4		X Clock	0	OFF 3	0	EV D	74	4
5	NAND-3	0	OR-5 (b)	0	SY DET 5	0	Plan 5		ST Time	82	FREE	0	RR 1	51	5
6	NAND-4	0	OR-6 (a)	0	SY DET 6	0	Plan 6		FL SENS	81	FLASH	0	RR 2	52	6
7	NAND-4	0	OR-6 (b)	0	SY DET 7	0	Plan 7		ENABLE	0	XPD OMT	0	SP 1	0	7
8	OR 7 (a)	0	Fig 3 Dia.	0	SY DET 8	0	Plan 8		ADVANCE	0	NOT 1	0	SP 2	0	8
9	OR 7 (b)	0	Fig 4 Dia.	0	MX INIBT	0	Plan 9		ALARM	0	NOT 2	0	X LAG	0	9
A	OR 7 (c)	0	AND4 (a)	0	FORCE A	0	DELAY-A	0	PH BNK 2	0	OR 1	0	AND 1	0	A
B	OR 7 (d)	0	AND4 (b)	0	FORCE B	0	DELAY-B	0	PH BNK 3	0	OR 1	0	AND 1	0	B
C	OR 8 (a)	0	NAND1(a)	0	CNA	0	DELAY-C	0	OL SET 2	0	OR 2	0	AND 2	0	C
D	OR 8 (b)	0	NAND1(b)	0	HOLD	0	DELAY-D	0	OL SET 3	0	OR 2	0	AND 2	0	D
E	OR-8 (c)	0	NAND2(a)	0	VEH CALL	0	DELAY-E	0	DET ST 2	0	OR 3	0	AND 3	0	E
F	OR-8 (d)	0	NAND2(b)	0	RECALL	0	DELAY-F	0	DET ST 3	0	OR 3	0	AND 3	0	F

ASSIGNABLE INPUTS < C + 0 + E = 126 >

	Column 9		Column A		Column B		Column C		Column D		Column E		Column F		
0	Fz ON - 1	0	PrEmp FI	0	FLHR 0	0	FREE	0	NOT 1	0	TOD 1	0	DIAL 2	0	0
1	Fz ON - 2	0	SP EV 1	0	FLHR 1	0	Plan 1		OR 1	0	TOD 2	0	DIAL 3	0	1
2	Fz ON - 3	0	SP EV 2	0	F FLHR	0	Plan 2		OR 2	0	TOD 3	0	OFF 1	0	2
3	Fz ON - 4	0	SP EV 3	0	Fig 3 Dia.	0	Plan 3		OR 3	0	TOD 4	0	OFF 2	0	3
4	Fz ON - 5	0	SP EV 4	0	Fig 4 Dia.	0	Plan 4		AND 1	0	TOD 5	0	OFF 3	0	4
5	Fz ON - 6	0	SP EV 5	0			Plan 5		AND 2	0	TOD 6	0	FREE	0	5
6	Fz ON - 7	0	SP EV 6	0			Plan 6		AND 3	0	TOD 7	0	FLASH	0	6
7	Fz ON - 8	0	SP EV 7	0			Plan 7		NOT 2	0	TOD 8	0	PREMPT	0	7
8	Fz Ck - 1	0	SP EV 8	0	NOT 3	0	Plan 8		EV A	35	WARN 1	0	Priority A	0	8
9	Fz Ck - 2	0			NOT 4	0	Plan 9		EV B	37	WARN 2	0	Priority B	0	9
A	Fz Ck - 3	0	DET FAIL	0	OR 4	0			EV C	36	DELAY A	0	Priority C	0	A
B	Fz Ck - 4	0			OR 5	0			EV D	38	DELAY B	0	Priority D	0	B
C	Fz Ck - 5	0			OR 6	0	NAND 3	0	RR 1	0	DELAY C	0			C
D	Fz Ck - 6	0	CNT CTL	0	AND 4	0	NAND 4	0	RR 2	0	DELAY D	0			D
E	Fz Ck - 7	0	XDWALK	0	NAND 1	0	OR 7	0	SP 1	0	DELAY E	0			E
F	Fz Ck - 8	0	X WALK	0	NAND 2	0	OR 8	0	SP 2	0	DELAY F	0			F

ASSIGNABLE OUTPUTS < C + 0 + E =127>

	6	7	8	9	A	B	C	D	E	F	
	CLEAR	TIME	PED CALL	HOLD	ADVANCE	FORCE OFF	CALL	PERMIT	PED OMIT	OUTPUT	
0		0000									0
1		0000									1
2		0000									2
3		0000									3
4		0000									4
5		0000									5
6		0000									6
7		0000									7
8		0000									8
9		0000									9
A		0000									A
B		0000									B
C		0000									C
D		0000									D
E		0000									E
F		0000									F

SPECIAL EVENT SCHEDULE < C + 0 + E = 27 >

COLUMN B		
A	DELAY A	0
B	DELAY B	0
C	DELAY C	0
D	DELAY D	0
E	DELAY E	0
F	DELAY F	0

<C+ 0 + D = 0>
LOGIC **DELAY** TIMES

FOR SPECIAL EVENT Table 1:
LIMITED SERVICE INTERVAL:
< E/27+5+ F > = 0

FOR SPECIAL EVENT TABLE #2:
<C+0+E=28> And use same key strokes as table 1 to access table.

CITY OF CULVER CITY
Public Works Department

BiTran 233CC Type 170 Program

Prepared By:	D Barnett	Checked By:		Field Installed By:	
Date:	06/07/99	Date:		Date:	06/17/04

Asset No.	Intersection Name
1	**Wash Bl&Costco**
Channel No.	Comm/Drop Address
CHAN 09	**4**

BSP Timing

Row	Time	Day of Week	Approach	Time*
0	**00 00**	_____	**A**	**0**
1	**00 00**	_____	**A**	**0**
2	**00 00**	_____	**A**	**0**
3	**00 00**	_____	**A**	**0**
4	**00 00**	_____	**A**	**0**
5	**00 00**	_____	**A**	**0**
6	**00 00**	_____	**A**	**0**
7	**00 00**	_____	**A**	**0**
8	**00 00**	_____	**A**	**0**
9	**00 00**	_____	**A**	**0**
A	**00 00**	_____	**A**	**0**
B	**00 00**	_____	**A**	**0**
C	**00 00**	_____	**A**	**0**
D	**00 00**	_____	**A**	**0**
E	**00 00**	_____	**A**	**0**
F	**00 00**	_____	**A**	**0**

BSP Time of Day <C+0+9=2.1>

Time value is between 0 and 15 only

<C/0+0+Row >	
City Code	**0**
Address	**0**

Headway Time	**0**
Delay Time	**0**
Early Green Max	**0**
Extension Max	**0**

Bus Priority Settings

<C+0+E=125>	
Low A Phase	_____
Low B Phase	_____
Low C Phase	_____
Low D Phase	_____

Bus Phases

Attachment D
Existing Traffic Operations Worksheets

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	209	1029	1152	127	216
v/c Ratio	0.53	0.41	0.38	0.45	0.43
Control Delay	9.2	5.6	6.9	37.8	22.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	9.2	5.6	6.9	37.8	22.6
Queue Length 50th (ft)	27	90	61	67	86
Queue Length 95th (ft)	62	160	76	112	124
Internal Link Dist (ft)		580	345	536	
Turn Bay Length (ft)	125			140	140
Base Capacity (vph)	521	2507	3006	383	644
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	69	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.40	0.42	0.38	0.33	0.34

Intersection Summary

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	203	998	1036	81	123	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.8	4.8		4.0	4.0
Lane Util. Factor	1.00	0.95	0.91		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		0.97	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1799	3396	5006		1724	1599
Flt Permitted	0.19	1.00	1.00		0.95	1.00
Satd. Flow (perm)	362	3396	5006		1724	1599
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	209	1029	1068	84	127	216
RTOR Reduction (vph)	0	0	7	0	0	21
Lane Group Flow (vph)	209	1029	1145	0	127	195
Confl. Peds. (#/hr)	67			67	22	
Confl. Bikes (#/hr)				7		
Heavy Vehicles (%)	0%	1%	1%	2%	2%	1%
Parking (#/hr)		0				
Turn Type	pm+pt	NA	NA		Perm	pt+ov
Protected Phases	5	2	6			4 5
Permitted Phases	2				4	
Actuated Green, G (s)	66.5	66.5	54.0		14.7	26.7
Effective Green, g (s)	66.5	66.5	54.0		14.7	26.7
Actuated g/C Ratio	0.74	0.74	0.60		0.16	0.30
Clearance Time (s)	4.5	4.8	4.8		4.0	
Vehicle Extension (s)	2.0	5.0	5.0		2.5	
Lane Grp Cap (vph)	395	2509	3003		281	474
v/s Ratio Prot	c0.05	0.30	0.23			c0.12
v/s Ratio Perm	c0.34				0.07	
v/c Ratio	0.53	0.41	0.38		0.45	0.41
Uniform Delay, d1	4.7	4.4	9.3		34.0	25.4
Progression Factor	1.00	1.00	0.63		1.00	1.00
Incremental Delay, d2	0.6	0.5	0.3		0.8	0.4
Delay (s)	5.3	4.9	6.2		34.9	25.8
Level of Service	A	A	A		C	C
Approach Delay (s)		5.0	6.2		29.1	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	8.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	31	869	289	457	1236	144	150	334	205	214	60
v/c Ratio	0.15	0.86	0.36	1.05	0.55	0.49	0.49	0.53	0.85	0.85	0.12
Control Delay	12.5	37.7	7.5	84.1	17.9	38.1	37.8	12.3	69.3	68.8	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.5	37.7	7.5	84.1	17.9	38.1	37.8	12.3	69.3	68.8	0.5
Queue Length 50th (ft)	6	250	54	~281	179	73	76	63	122	128	0
Queue Length 95th (ft)	m13	#347	112	#469	227	131	135	110	#256	#263	1
Internal Link Dist (ft)		345			117		284			355	
Turn Bay Length (ft)	325		125	350		100			140		140
Base Capacity (vph)	210	1016	875	436	2229	377	394	633	242	252	479
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.86	0.33	1.05	0.55	0.38	0.38	0.53	0.85	0.85	0.13

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	826	275	434	817	357	178	102	317	267	131	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.4	4.8	4.0	4.4	4.8		4.0	4.0	4.4	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		0.95	0.95	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	0.96		1.00	1.00	0.98	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.99	1.00	0.95	0.98	1.00
Satd. Flow (prot)	1747	3574	1529	1703	4698		1698	1774	1563	1698	1767	1615
Flt Permitted	0.21	1.00	1.00	0.13	1.00		0.95	0.99	1.00	0.95	0.98	1.00
Satd. Flow (perm)	394	3574	1529	239	4698		1698	1774	1563	1698	1767	1615
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	31	869	289	457	860	376	187	107	334	281	138	60
RTOR Reduction (vph)	0	0	95	0	80	0	0	0	43	0	0	46
Lane Group Flow (vph)	31	869	194	457	1156	0	144	150	291	205	214	14
Confl. Peds. (#/hr)	43		15	15		43	3		33	33		3
Confl. Bikes (#/hr)			8			6						2
Heavy Vehicles (%)	3%	1%	2%	6%	2%	0%	1%	0%	1%	1%	0%	0%
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		Split	NA	pm+ov	Split	NA	pt+ov
Protected Phases	5	2	3	1	6		3	3	1	4	4	4 5
Permitted Phases	2		2	6					3			
Actuated Green, G (s)	29.6	25.6	41.2	48.8	40.4		15.6	15.6	34.4	12.8	12.8	20.8
Effective Green, g (s)	29.6	25.6	41.2	48.8	40.4		15.6	15.6	34.4	12.8	12.8	20.8
Actuated g/C Ratio	0.33	0.28	0.46	0.54	0.45		0.17	0.17	0.38	0.14	0.14	0.23
Clearance Time (s)	4.4	4.8	4.0	4.4	4.8		4.0	4.0	4.4	4.0	4.0	
Vehicle Extension (s)	2.5	5.0	2.5	3.0	5.0		2.5	2.5	3.0	2.5	2.5	
Lane Grp Cap (vph)	189	1016	699	435	2108		294	307	597	241	251	373
v/s Ratio Prot	0.01	0.24	0.05	c0.22	0.25		c0.08	0.08	0.10	0.12	c0.12	0.01
v/s Ratio Perm	0.05		0.08	c0.35					0.08			
v/c Ratio	0.16	0.86	0.28	1.05	0.55		0.49	0.49	0.49	0.85	0.85	0.04
Uniform Delay, d1	20.6	30.4	15.2	25.6	18.1		33.6	33.6	21.1	37.7	37.7	26.8
Progression Factor	0.88	0.93	1.44	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	8.7	0.1	57.0	1.0		0.9	0.9	0.6	23.6	23.1	0.0
Delay (s)	18.4	37.0	22.0	82.6	19.2		34.5	34.5	21.7	61.3	60.8	26.9
Level of Service	B	D	C	F	B		C	C	C	E	E	C
Approach Delay (s)		32.8			36.3			27.7			56.7	
Approach LOS		C			D			C			E	

Intersection Summary			
HCM 2000 Control Delay	36.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	87.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	3	1418	1466	28	0	113
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	3	1477	1527	29	0	118
Pedestrians					8	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)		197				
pX, platoon unblocked					0.77	
vC, conflicting volume	1564				2294	786
vC1, stage 1 conf vol					1550	
vC2, stage 2 conf vol					745	
vCu, unblocked vol	1564				2083	786
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	65
cM capacity (veh/h)	425				156	335

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	495	985	1018	538	118
Volume Left	3	0	0	0	0
Volume Right	0	0	0	29	118
cSH	425	1700	1700	1700	335
Volume to Capacity	0.01	0.58	0.60	0.32	0.35
Queue Length 95th (ft)	1	0	0	0	38
Control Delay (s)	0.2	0.0	0.0	0.0	21.5
Lane LOS	A				C
Approach Delay (s)	0.1		0.0		21.5
Approach LOS					C

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	266	1168	1204	73	15	305
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	274	1204	1241	75	15	314
Pedestrians					22	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					2	
Right turn flare (veh)						
Median type		TWLTL	None			
Median storage veh)		2				
Upstream signal (ft)		536				
pX, platoon unblocked					0.80	
vC, conflicting volume	1338				2451	680
vC1, stage 1 conf vol					1301	
vC2, stage 2 conf vol					1151	
vCu, unblocked vol	1338				2311	680
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	46				88	19
cM capacity (veh/h)	507				129	386

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	274	602	602	827	489	330
Volume Left	274	0	0	0	0	15
Volume Right	0	0	0	0	75	314
cSH	507	1700	1700	1700	1700	353
Volume to Capacity	0.54	0.35	0.35	0.49	0.29	0.93
Queue Length 95th (ft)	80	0	0	0	0	244
Control Delay (s)	20.2	0.0	0.0	0.0	0.0	67.6
Lane LOS	C					F
Approach Delay (s)	3.7			0.0		67.6
Approach LOS						F

Intersection Summary			
Average Delay	8.9		
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	288	960	1409	208	278
v/c Ratio	0.76	0.40	0.53	0.67	0.47
Control Delay	25.6	5.9	9.5	44.6	21.5
Queue Delay	0.0	0.0	0.1	0.0	0.0
Total Delay	25.6	5.9	9.6	44.6	21.5
Queue Length 50th (ft)	68	94	87	111	109
Queue Length 95th (ft)	161	146	110	176	156
Internal Link Dist (ft)		321	345	527	
Turn Bay Length (ft)	125			140	140
Base Capacity (vph)	448	2423	2647	381	664
Starvation Cap Reductn	0	0	300	0	0
Spillback Cap Reductn	0	68	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.64	0.41	0.60	0.55	0.42

Intersection Summary

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	276	922	1167	185	200	267
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.8	4.8		4.0	4.0
Lane Util. Factor	1.00	0.95	0.91		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.97		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		0.95	1.00
Frt	1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1803	3362	4904		1718	1599
Flt Permitted	0.12	1.00	1.00		0.95	1.00
Satd. Flow (perm)	233	3362	4904		1718	1599
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	288	960	1216	193	208	278
RTOR Reduction (vph)	0	0	20	0	0	12
Lane Group Flow (vph)	288	960	1389	0	208	266
Confl. Peds. (#/hr)	64			64	41	
Confl. Bikes (#/hr)				11		
Heavy Vehicles (%)	0%	2%	1%	1%	0%	1%
Parking (#/hr)		0				
Turn Type	pm+pt	NA	NA		Perm	pt+ov
Protected Phases	5	2	6			4 5
Permitted Phases	2				4	
Actuated Green, G (s)	64.9	64.9	48.3		16.3	32.4
Effective Green, g (s)	64.9	64.9	48.3		16.3	32.4
Actuated g/C Ratio	0.72	0.72	0.54		0.18	0.36
Clearance Time (s)	4.5	4.8	4.8		4.0	
Vehicle Extension (s)	2.0	5.0	5.0		2.5	
Lane Grp Cap (vph)	379	2424	2631		311	575
v/s Ratio Prot	c0.10	0.29	0.28			0.17
v/s Ratio Perm	c0.45				c0.12	
v/c Ratio	0.76	0.40	0.53		0.67	0.46
Uniform Delay, d1	14.5	4.9	13.5		34.3	22.1
Progression Factor	1.00	1.00	0.61		1.00	1.00
Incremental Delay, d2	7.6	0.5	0.6		4.8	0.4
Delay (s)	22.0	5.4	8.9		39.2	22.5
Level of Service	C	A	A		D	C
Approach Delay (s)		9.2	8.9		29.7	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	12.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	104	839	217	318	1454	186	193	283	211	213	114
v/c Ratio	0.55	0.71	0.24	0.83	0.70	0.61	0.61	0.50	0.85	0.85	0.23
Control Delay	26.9	30.5	4.6	37.7	21.3	41.7	41.4	12.3	69.7	67.7	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.9	30.5	4.6	37.7	21.3	41.7	41.4	12.3	69.7	67.7	6.0
Queue Length 50th (ft)	21	243	15	115	226	97	101	49	126	127	0
Queue Length 95th (ft)	#72	#318	63	#254	281	167	171	88	#264	#264	36
Internal Link Dist (ft)		345			430		408			345	
Turn Bay Length (ft)	325		125	250		100			140		140
Base Capacity (vph)	190	1175	949	399	2088	377	391	579	247	252	489
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.71	0.23	0.80	0.70	0.49	0.49	0.49	0.85	0.85	0.23

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	805	208	305	929	467	229	134	272	322	85	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.4	4.8	4.0	4.4	4.8		4.0	4.0	4.4	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		0.95	0.95	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.94	1.00	0.96		1.00	1.00	0.97	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.99	1.00	0.95	0.97	1.00
Satd. Flow (prot)	1768	3574	1519	1787	4699		1698	1763	1554	1715	1754	1568
Flt Permitted	0.14	1.00	1.00	0.15	1.00		0.95	0.99	1.00	0.95	0.97	1.00
Satd. Flow (perm)	252	3574	1519	273	4699		1698	1763	1554	1715	1754	1568
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	104	839	217	318	968	486	239	140	283	335	89	114
RTOR Reduction (vph)	0	0	107	0	96	0	0	0	46	0	0	86
Lane Group Flow (vph)	104	839	110	318	1358	0	186	193	237	211	213	28
Confl. Peds. (#/hr)	41		35	35		41	3		35	35		3
Confl. Bikes (#/hr)			8			5			1			
Heavy Vehicles (%)	2%	1%	0%	1%	1%	0%	1%	1%	1%	0%	0%	3%
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		Split	NA	pm+ov	Split	NA	pt+ov
Protected Phases	5	2	3	1	6		3	3	1	4	4	4 5
Permitted Phases	2		2	6					3			
Actuated Green, G (s)	34.9	29.5	45.8	47.9	38.1		16.3	16.3	30.3	13.0	13.0	22.4
Effective Green, g (s)	34.9	29.5	45.8	47.9	38.1		16.3	16.3	30.3	13.0	13.0	22.4
Actuated g/C Ratio	0.39	0.33	0.51	0.53	0.42		0.18	0.18	0.34	0.14	0.14	0.25
Clearance Time (s)	4.4	4.8	4.0	4.4	4.8		4.0	4.0	4.4	4.0	4.0	
Vehicle Extension (s)	2.5	5.0	2.5	3.0	5.0		2.5	2.5	3.0	2.5	2.5	
Lane Grp Cap (vph)	188	1171	773	380	1989		307	319	523	247	253	390
v/s Ratio Prot	0.03	0.23	0.03	c0.13	0.29		c0.11	0.11	0.07	c0.12	0.12	0.02
v/s Ratio Perm	0.18		0.05	c0.31					0.08			
v/c Ratio	0.55	0.72	0.14	0.84	0.68		0.61	0.61	0.45	0.85	0.84	0.07
Uniform Delay, d1	18.5	26.6	11.7	18.8	21.0		33.9	33.9	23.4	37.6	37.5	25.9
Progression Factor	1.07	0.95	2.71	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	3.5	0.1	14.7	1.9		2.8	2.7	0.6	23.6	21.3	0.1
Delay (s)	22.5	28.9	31.8	33.5	23.0		36.7	36.6	24.0	61.1	58.8	25.9
Level of Service	C	C	C	C	C		D	D	C	E	E	C
Approach Delay (s)		28.8			24.9			31.2			52.8	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	30.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	80.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Attachment E
Neighborhood Traffic Data Collection

LOCATION: Walnut Ave between Elm St and Washington Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397503
DIRECTION: NB
DATE: May 20 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	21-30	1
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
1:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	15-24	0
1:15 AM	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	16-25	1
1:30 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	21-30	1
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
2:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	15-24	0
2:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	16-25	1
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
3:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	21-30	1
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
4:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	15-24	0
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
5:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	16-25	1
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
Day Total																	
Percent																	
AM Peak Volume																	
PM Peak Volume																	

Comments:

LOCATION: Walnut Ave between Elm St and Washington Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397503
DIRECTION: NB
DATE: May 20 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
6:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	26-35	1
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
6:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	26-35	1
7:00 AM	0	0	1	4	0	0	0	0	0	0	0	0	0	0	5	21-30	5
7:15 AM	0	**1**	3	4	4	0	0	0	0	0	0	0	0	0	12	26-35	8
7:30 AM	0	0	**8**	5	9	1	0	0	0	0	0	0	0	0	23	26-35	14
7:45 AM	1	0	2	**16**	**10**	1	0	0	0	0	0	0	0	0	**30**	26-35	26
8:00 AM	0	1	8	11	7	**3**	0	0	0	0	0	0	0	0	30	21-30	19
8:15 AM	1	0	3	2	1	0	0	0	0	0	0	0	0	0	7	21-30	5
8:30 AM	0	1	1	4	1	0	0	0	0	0	0	0	0	0	7	21-30	5
8:45 AM	2	0	2	7	6	1	0	0	0	0	0	0	0	0	18	26-35	12
9:00 AM	0	0	0	6	1	1	0	0	0	0	0	0	0	0	8	26-35	6
9:15 AM	0	0	1	2	1	1	0	0	0	0	0	0	0	0	5	26-35	3
9:30 AM	1	0	5	5	2	0	0	0	0	0	0	0	0	0	13	21-30	10
9:45 AM	1	1	2	1	2	0	0	0	0	0	0	0	0	0	7	26-35	3
10:00 AM	0	1	1	1	2	0	0	0	0	0	0	0	0	0	5	26-35	3
10:15 AM	**3**	0	0	1	1	0	0	0	0	0	0	0	0	0	5	26-35	2
10:30 AM	2	0	0	1	0	0	0	0	0	0	0	0	0	0	3	8-17	1
10:45 AM	1	0	0	5	0	0	0	0	0	0	0	0	0	0	6	21-30	5
11:00 AM	0	1	1	3	0	0	0	0	0	0	0	0	0	0	5	21-30	4
11:15 AM	0	0	1	5	1	0	0	0	0	0	0	0	0	0	7	21-30	6
11:30 AM	1	0	1	2	1	1	**1**	0	0	0	0	0	0	0	7	26-35	3
11:45 AM	1	1	8	3	0	0	0	0	0	0	0	0	0	0	13	21-30	11
Day Total																	
Percent																	
AM Peak Volume																	
PM Peak Volume																	

Comments:

LOCATION: Walnut Ave between Elm St and Washington Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397503
DIRECTION: NB
DATE: May 20 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 PM	0	1	3	2	2	0	0	0	0	0	0	0	0	0	8	21-30	5
12:15 PM	2	0	1	3	3	0	0	0	0	0	0	0	0	0	9	27-36	5
12:30 PM	0	**4**	2	1	0	0	0	0	0	0	0	0	0	0	7	16-25	6
12:45 PM	1	1	2	**7**	0	0	0	0	0	0	0	0	0	0	11	21-30	9
1:00 PM	**4**	2	4	1	1	0	**1**	0	0	0	0	0	0	0	13	16-25	6
1:15 PM	1	0	5	3	1	0	1	0	0	0	0	0	0	0	11	22-31	7
1:30 PM	2	0	2	2	0	0	0	0	0	0	0	0	0	0	6	21-30	4
1:45 PM	3	1	5	4	1	0	0	0	0	0	0	0	0	0	**14**	21-30	9
2:00 PM	0	0	1	1	1	0	1	**1**	0	0	0	0	0	0	5	41-50	2
2:15 PM	0	0	0	3	2	0	0	0	0	0	0	0	0	0	5	26-35	5
2:30 PM	0	3	3	4	1	0	0	0	0	0	0	0	0	0	11	21-30	7
2:45 PM	1	0	2	3	1	0	0	1	0	0	0	0	0	0	8	25-34	4
3:00 PM	0	3	1	3	**4**	0	0	0	0	0	0	0	0	0	11	26-35	7
3:15 PM	0	0	1	2	0	**1**	0	0	0	0	0	0	0	0	4	21-30	3
3:30 PM	1	0	6	1	0	0	0	0	0	0	0	0	0	0	8	21-30	6
3:45 PM	2	3	3	2	2	0	0	0	0	0	0	0	0	0	12	21-30	5
4:00 PM	2	0	1	4	0	0	0	0	0	0	0	0	0	0	7	21-30	5
4:15 PM	0	0	3	4	0	0	0	0	0	0	0	0	0	0	7	21-30	7
4:30 PM	0	0	**7**	1	2	0	0	0	0	0	0	0	0	0	10	21-30	7
4:45 PM	0	0	1	3	0	1	0	0	0	0	0	0	0	0	5	21-30	4
5:00 PM	0	0	4	1	0	0	0	0	0	0	0	0	0	0	5	22-31	4
5:15 PM	0	1	3	0	1	0	0	0	0	0	0	0	0	0	5	16-25	4
5:30 PM	0	0	1	5	2	1	0	0	0	0	0	0	0	0	9	26-35	7
5:45 PM	0	2	2	3	2	0	0	0	0	0	0	0	0	0	9	26-35	5
Day Total																	
Percent																	
AM Peak Volume																	
PM Peak Volume																	

Comments:

LOCATION: Walnut Ave between Elm St and Washington Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397503
DIRECTION: NB
DATE: May 20 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
6:00 PM	0	2	3	4	1	0	0	0	0	0	0	0	0	0	10	21-30	7
6:15 PM	0	0	4	2	1	0	0	0	0	0	0	0	0	0	7	21-30	6
6:30 PM	0	0	3	1	1	0	0	0	0	0	0	0	0	0	5	21-30	4
6:45 PM	1	3	3	3	1	0	0	0	0	0	0	0	0	0	11	23-32	5
7:00 PM	1	0	1	5	0	0	0	0	0	0	0	0	0	0	7	21-30	6
7:15 PM	0	1	2	1	1	0	0	0	0	0	0	0	0	0	5	21-30	3
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
7:45 PM	2	0	3	3	2	0	0	0	0	0	0	0	0	0	10	26-35	5
8:00 PM	0	0	5	0	1	0	0	0	0	0	0	0	0	0	6	16-25	5
8:15 PM	0	1	1	4	0	0	0	0	0	0	0	0	0	0	6	21-30	5
8:30 PM	0	2	3	1	0	0	0	0	0	0	0	0	0	0	6	20-29	4
8:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	11-20	1
9:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	15-24	0
9:15 PM	1	0	1	0	1	0	0	0	0	0	0	0	0	0	3	16-25	1
9:30 PM	1	0	1	2	0	0	0	0	0	0	0	0	0	0	4	21-30	3
9:45 PM	0	0	2	0	2	0	0	0	0	0	0	0	0	0	4	16-25	2
10:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	11-20	1
10:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	21-30	1
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
10:45 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2	16-25	2
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
11:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	16-25	1
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
Day Total	44	40	148	181	88	12	4	2	0	0	0	0	0	0	519	21-30	329
Percent	8.5%	7.7%	28.5%	34.9%	17.0%	2.3%	0.8%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

ADT
519

AM Peak Volume	10:15 AM 3	7:15 AM 1	7:30 AM 8	7:45 AM 16	7:45 AM 10	8:00 AM 3	11:30 AM 1								7:45 AM 30		
PM Peak Volume	1:00 PM 4	12:30 PM 4	4:30 PM 7	12:45 PM 7	3:00 PM 4	3:15 PM 1	1:00 PM 1	2:00 PM 1							1:45 PM 14		

Comments:

SUMMARY - Tube Count - Speed Data

LOCATION: Walnut Ave between Elm St and Washington Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397503
DIRECTION: NB
DATE: May 20 2015 - May 20 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	44	40	148	181	88	12	4	2	0	0	0	0	0	0	519	21-30	329
Percent	8.5%	7.7%	28.5%	34.9%	17.0%	2.3%	0.8%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
Cumulative Percent	8.5%	16.2%	44.7%	79.6%	96.5%	98.8%	99.6%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%			

ADT
519

85th Percentile 31 MPH

Mean Speed(Average): 24 MPH

Median 25 MPH
Mode: 28 MPH

Comments:

Report generated on 5/27/2015 4:54 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Quality Counts
TRANSPORTATION DATA COLLECTION

LOCATION: Elm St between Walnut Ave and Lincoln Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397504
DIRECTION: SB
DATE: May 20 2015 - May 20 2015

Start Time	Mon	Tue	Wed 20-May-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM			0			0			0	
12:15 AM			0			0			0	
12:30 AM			0			0			0	
12:45 AM			0			0			0	
1:00 AM			0			0			0	
1:15 AM			3			3			3	
1:30 AM			1			1			1	
1:45 AM			0			0			0	
2:00 AM			0			0			0	
2:15 AM			1			1			1	
2:30 AM			0			0			0	
2:45 AM			0			0			0	
3:00 AM			0			0			0	
3:15 AM			0			0			0	
3:30 AM			0			0			0	
3:45 AM			0			0			0	
4:00 AM			2			2			2	
4:15 AM			0			0			0	
4:30 AM			0			0			0	
4:45 AM			0			0			0	
5:00 AM			0			0			0	
5:15 AM			0			0			0	
5:30 AM			0			0			0	
5:45 AM			0			0			0	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										

Comments:

Quality Counts
TRANSPORTATION DATA COLLECTION

LOCATION: Elm St between Walnut Ave and Lincoln Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397504
DIRECTION: SB
DATE: May 20 2015 - May 20 2015

Start Time	Mon	Tue	Wed 20-May-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 AM			1			1			1	
6:15 AM			0			0			0	
6:30 AM			2			2			2	
6:45 AM			3			3			3	
7:00 AM			5			5			5	
7:15 AM			12			12			12	
7:30 AM			22			22			22	
7:45 AM			31			31			31	
8:00 AM			**34**			**34**			**34**	
8:15 AM			11			11			11	
8:30 AM			13			13			13	
8:45 AM			14			14			14	
9:00 AM			16			16			16	
9:15 AM			11			11			11	
9:30 AM			18			18			18	
9:45 AM			11			11			11	
10:00 AM			3			3			3	
10:15 AM			5			5			5	
10:30 AM			4			4			4	
10:45 AM			9			9			9	
11:00 AM			2			2			2	
11:15 AM			10			10			10	
11:30 AM			8			8			8	
11:45 AM			11			11			11	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										

Comments:

Quality Counts
TRANSPORTATION DATA COLLECTION

LOCATION: Elm St between Walnut Ave and Lincoln Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397504
DIRECTION: SB
DATE: May 20 2015 - May 20 2015

Start Time	Mon	Tue	Wed 20-May-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 PM			11			11			11	
12:15 PM			9			9			9	
12:30 PM			6			6			6	
12:45 PM			6			6			6	
1:00 PM			15			15			15	
1:15 PM			7			7			7	
1:30 PM			9			9			9	
1:45 PM			16			16			16	
2:00 PM			6			6			6	
2:15 PM			5			5			5	
2:30 PM			11			11			11	
2:45 PM			13			13			13	
3:00 PM			7			7			7	
3:15 PM			10			10			10	
3:30 PM			8			8			8	
3:45 PM			10			10			10	
4:00 PM			6			6			6	
4:15 PM			7			7			7	
4:30 PM			12			12			12	
4:45 PM			9			9			9	
5:00 PM			6			6			6	
5:15 PM			8			8			8	
5:30 PM			10			10			10	
5:45 PM			11			11			11	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										

Comments:

LOCATION: Elm St between Walnut Ave and Lincoln Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397504
DIRECTION: SB
DATE: May 20 2015 - May 20 2015

Start Time	Mon	Tue	Wed 20-May-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 PM			11			11			11	
6:15 PM			5			5			5	
6:30 PM			5			5			5	
6:45 PM			**18**			**18**			**18**	
7:00 PM			6			6			6	
7:15 PM			4			4			4	
7:30 PM			3			3			3	
7:45 PM			7			7			7	
8:00 PM			4			4			4	
8:15 PM			8			8			8	
8:30 PM			5			5			5	
8:45 PM			1			1			1	
9:00 PM			0			0			0	
9:15 PM			2			2			2	
9:30 PM			1			1			1	
9:45 PM			1			1			1	
10:00 PM			4			4			4	
10:15 PM			1			1			1	
10:30 PM			1			1			1	
10:45 PM			2			2			2	
11:00 PM			2			2			2	
11:15 PM			1			1			1	
11:30 PM			0			0			0	
11:45 PM			1			1			1	
Day Total			574			574			574	
% Weekday Average			100.0%							
% Week Average			100.0%			100.0%				
AM Peak Volume			8:00 AM 34			8:00 AM 34			8:00 AM 34	
PM Peak Volume			6:45 PM 18			6:45 PM 18			6:45 PM 18	

Comments:

Quality Counts
TRANSPORTATION DATA COLLECTION

LOCATION: Elm St between Walnut Ave and Lincoln Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397504
DIRECTION: SB
DATE: May 20 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
1:15 AM	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3	15-24	1
1:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	16-25	1
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
2:15 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	15-24	0
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
4:00 AM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	8-17	1
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
Day Total																	
Percent																	
AM Peak Volume																	
PM Peak Volume																	

Comments:

LOCATION: Elm St between Walnut Ave and Lincoln Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397504
DIRECTION: SB
DATE: May 20 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
6:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	11-20	1
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
6:30 AM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	8-17	1
6:45 AM	2	0	0	1	0	0	0	0	0	0	0	0	0	0	3	8-17	1
7:00 AM	2	1	1	1	0	0	0	0	0	0	0	0	0	0	5	21-30	2
7:15 AM	5	3	3	1	0	0	0	0	0	0	0	0	0	0	12	18-27	5
7:30 AM	10	8	3	1	0	0	0	0	0	0	0	0	0	0	22	16-25	11
7:45 AM	9	**15**	6	1	0	0	0	0	0	0	0	0	0	0	31	16-25	21
8:00 AM	**11**	13	**9**	1	0	0	0	0	0	0	0	0	0	0	**34**	16-25	21
8:15 AM	5	3	2	1	0	0	0	0	0	0	0	0	0	0	11	16-25	5
8:30 AM	7	2	4	0	0	0	0	0	0	0	0	0	0	0	13	16-25	6
8:45 AM	3	7	3	1	0	0	0	0	0	0	0	0	0	0	14	16-25	10
9:00 AM	6	4	5	1	0	0	0	0	0	0	0	0	0	0	16	16-25	9
9:15 AM	4	3	3	1	0	0	0	0	0	0	0	0	0	0	11	18-27	5
9:30 AM	8	4	4	**2**	0	0	0	0	0	0	0	0	0	0	18	16-25	8
9:45 AM	9	1	1	0	0	0	0	0	0	0	0	0	0	0	11	8-17	5
10:00 AM	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	6-15	2
10:15 AM	0	2	3	0	0	0	0	0	0	0	0	0	0	0	5	18-27	4
10:30 AM	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4	8-17	2
10:45 AM	5	3	1	0	0	0	0	0	0	0	0	0	0	0	9	15-24	4
11:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	11-20	2
11:15 AM	7	2	1	0	0	0	0	0	0	0	0	0	0	0	10	12-21	4
11:30 AM	1	4	2	1	0	0	0	0	0	0	0	0	0	0	8	16-25	6
11:45 AM	5	4	2	0	0	0	0	0	0	0	0	0	0	0	11	16-25	6
Day Total																	
Percent																	
AM Peak Volume																	
PM Peak Volume																	

Comments:

LOCATION: Elm St between Walnut Ave and Lincoln Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397504
DIRECTION: SB
DATE: May 20 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 PM	3	5	3	0	0	0	0	0	0	0	0	0	0	0	11	16-25	7
12:15 PM	5	3	1	0	0	0	0	0	0	0	0	0	0	0	9	15-24	4
12:30 PM	1	3	2	0	0	0	0	0	0	0	0	0	0	0	6	16-25	5
12:45 PM	2	1	2	1	0	0	0	0	0	0	0	0	0	0	6	21-30	3
1:00 PM	8	**6**	0	0	**1**	0	0	0	0	0	0	0	0	0	15	12-21	8
1:15 PM	2	3	1	1	0	0	0	0	0	0	0	0	0	0	7	16-25	4
1:30 PM	5	2	2	0	0	0	0	0	0	0	0	0	0	0	9	16-25	4
1:45 PM	5	6	2	**3**	0	0	0	0	0	0	0	0	0	0	16	16-25	8
2:00 PM	3	1	1	0	1	0	0	0	0	0	0	0	0	0	6	16-25	2
2:15 PM	2	1	0	1	1	0	0	0	0	0	0	0	0	0	5	26-35	2
2:30 PM	3	4	4	0	0	0	0	0	0	0	0	0	0	0	11	16-25	8
2:45 PM	3	3	4	2	1	0	0	0	0	0	0	0	0	0	13	16-25	7
3:00 PM	4	2	1	0	0	0	0	0	0	0	0	0	0	0	7	16-25	3
3:15 PM	3	2	**5**	0	0	0	0	0	0	0	0	0	0	0	10	16-25	7
3:30 PM	3	3	1	1	0	0	0	0	0	0	0	0	0	0	8	11-20	4
3:45 PM	1	5	3	1	0	0	0	0	0	0	0	0	0	0	10	17-26	7
4:00 PM	3	3	0	0	0	0	0	0	0	0	0	0	0	0	6	11-20	4
4:15 PM	4	0	3	0	0	0	0	0	0	0	0	0	0	0	7	16-25	3
4:30 PM	5	3	1	3	0	0	0	0	0	0	0	0	0	0	12	17-26	4
4:45 PM	4	2	2	1	0	0	0	0	0	0	0	0	0	0	9	16-25	4
5:00 PM	3	1	2	0	0	0	0	0	0	0	0	0	0	0	6	16-25	3
5:15 PM	5	1	2	0	0	0	0	0	0	0	0	0	0	0	8	16-25	3
5:30 PM	8	1	1	0	0	0	0	0	0	0	0	0	0	0	10	6-15	5
5:45 PM	2	6	2	1	0	0	0	0	0	0	0	0	0	0	11	16-25	8
Day Total																	
Percent																	
AM Peak Volume																	
PM Peak Volume																	

Comments:

LOCATION: Elm St between Walnut Ave and Lincoln Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397504
DIRECTION: SB
DATE: May 20 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
6:00 PM	3	3	5	0	0	0	0	0	0	0	0	0	0	0	11	16-25	8
6:15 PM	3	0	2	0	0	0	0	0	0	0	0	0	0	0	5	6-15	2
6:30 PM	3	2	0	0	0	0	0	0	0	0	0	0	0	0	5	11-20	3
6:45 PM	**13**	3	2	0	0	0	0	0	0	0	0	0	0	0	**18**	8-17	8
7:00 PM	1	4	1	0	0	0	0	0	0	0	0	0	0	0	6	17-26	4
7:15 PM	3	1	0	0	0	0	0	0	0	0	0	0	0	0	4	11-20	2
7:30 PM	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3	15-24	1
7:45 PM	0	4	3	0	0	0	0	0	0	0	0	0	0	0	7	17-26	6
8:00 PM	1	2	1	0	0	0	0	0	0	0	0	0	0	0	4	16-25	3
8:15 PM	5	2	1	0	0	0	0	0	0	0	0	0	0	0	8	16-25	3
8:30 PM	3	2	0	0	0	0	0	0	0	0	0	0	0	0	5	11-20	3
8:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	15-24	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
9:15 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2	16-25	2
9:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	21-30	1
9:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	11-20	1
10:00 PM	3	1	0	0	0	0	0	0	0	0	0	0	0	0	4	11-20	2
10:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	16-25	1
10:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	15-24	0
10:45 PM	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2	15-24	1
11:00 PM	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2	15-24	1
11:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	16-25	1
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
11:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	15-24	0
Day Total	245	179	117	29	4	0	0	0	0	0	0	0	0	0	574	16-25	295
Percent	42.7%	31.2%	20.4%	5.1%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

ADT
574

AM Peak Volume	8:00 AM 11	7:45 AM 15	8:00 AM 9	9:30 AM 2			8:00 AM 34	
PM Peak Volume	6:45 PM 13	1:00 PM 6	3:15 PM 5	1:45 PM 3	1:00 PM 1		6:45 PM 18	

Comments:

SUMMARY - Tube Count - Speed Data

LOCATION: Elm St between Walnut Ave and Lincoln Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397504
DIRECTION: SB
DATE: May 20 2015 - May 20 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	245	179	117	29	4	0	0	0	0	0	0	0	0	0	574	16-25	295
Percent	42.7%	31.2%	20.4%	5.1%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
Cumulative Percent	42.7%	73.9%	94.3%	99.3%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%			

ADT
574

85th Percentile 22 MPH

Mean Speed(Average): 14 MPH

Median 16 MPH
Mode: 8 MPH

Comments:

Report generated on 5/27/2015 4:54 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Quality Counts
TRANSPORTATION DATA COLLECTION

LOCATION: Elm St between Walnut Ave and Lincoln Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397504
DIRECTION: NB
DATE: May 20 2015 - May 20 2015

Start Time	Mon	Tue	Wed 20-May-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM			0			0			0	
12:15 AM			0			0			0	
12:30 AM			0			0			0	
12:45 AM			0			0			0	
1:00 AM			0			0			0	
1:15 AM			1			1			1	
1:30 AM			0			0			0	
1:45 AM			0			0			0	
2:00 AM			0			0			0	
2:15 AM			1			1			1	
2:30 AM			0			0			0	
2:45 AM			0			0			0	
3:00 AM			0			0			0	
3:15 AM			0			0			0	
3:30 AM			0			0			0	
3:45 AM			0			0			0	
4:00 AM			0			0			0	
4:15 AM			0			0			0	
4:30 AM			0			0			0	
4:45 AM			0			0			0	
5:00 AM			0			0			0	
5:15 AM			1			1			1	
5:30 AM			0			0			0	
5:45 AM			0			0			0	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										

Comments:

LOCATION: Elm St between Walnut Ave and Lincoln Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397504
DIRECTION: NB
DATE: May 20 2015 - May 20 2015

Start Time	Mon	Tue	Wed 20-May-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 AM			0			0			0	
6:15 AM			4			4			4	
6:30 AM			0			0			0	
6:45 AM			0			0			0	
7:00 AM			0			0			0	
7:15 AM			2			2			2	
7:30 AM			6			6			6	
7:45 AM			4			4			4	
8:00 AM			5			5			5	
8:15 AM			3			3			3	
8:30 AM			1			1			1	
8:45 AM			5			5			5	
9:00 AM			4			4			4	
9:15 AM			5			5			5	
9:30 AM			4			4			4	
9:45 AM			**7**			**7**			**7**	
10:00 AM			2			2			2	
10:15 AM			3			3			3	
10:30 AM			5			5			5	
10:45 AM			1			1			1	
11:00 AM			5			5			5	
11:15 AM			2			2			2	
11:30 AM			2			2			2	
11:45 AM			7			7			7	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										

Comments:

Quality Counts
TRANSPORTATION DATA COLLECTION

LOCATION: Elm St between Walnut Ave and Lincoln Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397504
DIRECTION: NB
DATE: May 20 2015 - May 20 2015

Start Time	Mon	Tue	Wed 20-May-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 PM			8			8			8	
12:15 PM			7			7			7	
12:30 PM			1			1			1	
12:45 PM			3			3			3	
1:00 PM			4			4			4	
1:15 PM			7			7			7	
1:30 PM			7			7			7	
1:45 PM			4			4			4	
2:00 PM			9			9			9	
2:15 PM			5			5			5	
2:30 PM			7			7			7	
2:45 PM			4			4			4	
3:00 PM			4			4			4	
3:15 PM			4			4			4	
3:30 PM			3			3			3	
3:45 PM			1			1			1	
4:00 PM			2			2			2	
4:15 PM			0			0			0	
4:30 PM			4			4			4	
4:45 PM			5			5			5	
5:00 PM			8			8			8	
5:15 PM			3			3			3	
5:30 PM			**11**			**11**			**11**	
5:45 PM			3			3			3	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										

Comments:

Quality Counts
TRANSPORTATION DATA COLLECTION

LOCATION: Elm St between Walnut Ave and Lincoln Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397504
DIRECTION: NB
DATE: May 20 2015 - May 20 2015

Start Time	Mon	Tue	Wed 20-May-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 PM			5			5			5	
6:15 PM			4			4			4	
6:30 PM			2			2			2	
6:45 PM			3			3			3	
7:00 PM			1			1			1	
7:15 PM			3			3			3	
7:30 PM			4			4			4	
7:45 PM			1			1			1	
8:00 PM			2			2			2	
8:15 PM			0			0			0	
8:30 PM			4			4			4	
8:45 PM			3			3			3	
9:00 PM			0			0			0	
9:15 PM			1			1			1	
9:30 PM			2			2			2	
9:45 PM			0			0			0	
10:00 PM			1			1			1	
10:15 PM			1			1			1	
10:30 PM			0			0			0	
10:45 PM			0			0			0	
11:00 PM			1			1			1	
11:15 PM			2			2			2	
11:30 PM			0			0			0	
11:45 PM			0			0			0	
Day Total			234			234			234	
% Weekday Average			100.0%							
% Week Average			100.0%			100.0%				
AM Peak Volume			9:45 AM 7			9:45 AM 7			9:45 AM 7	
PM Peak Volume			5:30 PM 11			5:30 PM 11			5:30 PM 11	

Comments:

Quality Counts
TRANSPORTATION DATA COLLECTION

LOCATION: Elm St between Walnut Ave and Lincoln Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397504
DIRECTION: NB
DATE: May 20 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
1:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	16-25	1
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
2:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	11-20	1
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
5:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	11-20	1
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
Day Total																	
Percent																	
AM Peak Volume																	
PM Peak Volume																	

Comments:

Quality Counts
TRANSPORTATION DATA COLLECTION

LOCATION: Elm St between Walnut Ave and Lincoln Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397504
DIRECTION: NB
DATE: May 20 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
6:15 AM	3	1	0	0	0	0	0	0	0	0	0	0	0	0	4	11-20	2
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
7:15 AM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	8-17	1
7:30 AM	**5**	1	0	0	0	0	0	0	0	0	0	0	0	0	6	8-17	3
7:45 AM	3	0	1	0	0	0	0	0	0	0	0	0	0	0	4	6-15	2
8:00 AM	4	0	1	0	0	0	0	0	0	0	0	0	0	0	5	8-17	2
8:15 AM	1	2	0	0	0	0	0	0	0	0	0	0	0	0	3	15-24	2
8:30 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	15-24	0
8:45 AM	4	1	0	0	0	0	0	0	0	0	0	0	0	0	5	12-21	2
9:00 AM	3	0	1	0	0	0	0	0	0	0	0	0	0	0	4	6-15	2
9:15 AM	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5	6-15	3
9:30 AM	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4	8-17	2
9:45 AM	4	1	2	0	0	0	0	0	0	0	0	0	0	0	**7**	16-25	3
10:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2	16-25	2
10:15 AM	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3	15-24	1
10:30 AM	2	0	**3**	0	0	0	0	0	0	0	0	0	0	0	5	16-25	3
10:45 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	15-24	0
11:00 AM	3	0	2	0	0	0	0	0	0	0	0	0	0	0	5	6-15	2
11:15 AM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	8-17	1
11:30 AM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	8-17	1
11:45 AM	1	**3**	3	0	0	0	0	0	0	0	0	0	0	0	7	17-26	5
Day Total																	
Percent																	
AM Peak Volume																	
PM Peak Volume																	

Comments:

LOCATION: Elm St between Walnut Ave and Lincoln Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397504
DIRECTION: NB
DATE: May 20 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 PM	**4**	2	2	0	0	0	0	0	0	0	0	0	0	0	8	16-25	4
12:15 PM	3	1	3	0	0	0	0	0	0	0	0	0	0	0	7	16-25	4
12:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	11-20	1
12:45 PM	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3	15-24	1
1:00 PM	1	2	1	0	0	0	0	0	0	0	0	0	0	0	4	16-25	3
1:15 PM	4	3	0	0	0	0	0	0	0	0	0	0	0	0	7	12-21	4
1:30 PM	3	**4**	0	0	0	0	0	0	0	0	0	0	0	0	7	11-20	5
1:45 PM	0	3	0	**1**	0	0	0	0	0	0	0	0	0	0	4	11-20	3
2:00 PM	4	1	**4**	0	0	0	0	0	0	0	0	0	0	0	9	16-25	5
2:15 PM	2	3	0	0	0	0	0	0	0	0	0	0	0	0	5	15-24	3
2:30 PM	2	4	1	0	0	0	0	0	0	0	0	0	0	0	7	17-26	4
2:45 PM	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	16-25	4
3:00 PM	2	2	0	0	0	0	0	0	0	0	0	0	0	0	4	15-24	2
3:15 PM	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4	8-17	2
3:30 PM	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3	15-24	1
3:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	11-20	1
4:00 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	16-25	2
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
4:30 PM	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4	16-25	4
4:45 PM	2	2	1	0	0	0	0	0	0	0	0	0	0	0	5	16-25	3
5:00 PM	4	0	3	1	0	0	0	0	0	0	0	0	0	0	8	21-30	4
5:15 PM	2	0	0	1	0	0	0	0	0	0	0	0	0	0	3	8-17	1
5:30 PM	4	3	4	0	0	0	0	0	0	0	0	0	0	0	**11**	16-25	7
5:45 PM	2	0	1	0	0	0	0	0	0	0	0	0	0	0	3	8-17	1
Day Total																	
Percent																	
AM Peak Volume																	
PM Peak Volume																	

Comments:

LOCATION: Elm St between Walnut Ave and Lincoln Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397504
DIRECTION: NB
DATE: May 20 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
6:00 PM	3	1	0	1	0	0	0	0	0	0	0	0	0	0	5	11-20	2
6:15 PM	3	0	1	0	0	0	0	0	0	0	0	0	0	0	4	6-15	2
6:30 PM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	8-17	1
6:45 PM	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3	16-25	3
7:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	11-20	1
7:15 PM	1	1	1	0	0	0	0	0	0	0	0	0	0	0	3	16-25	2
7:30 PM	1	2	1	0	0	0	0	0	0	0	0	0	0	0	4	16-25	3
7:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	11-20	1
8:00 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2	16-25	2
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
8:30 PM	2	1	1	0	0	0	0	0	0	0	0	0	0	0	4	16-25	2
8:45 PM	2	0	0	1	0	0	0	0	0	0	0	0	0	0	3	8-17	1
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
9:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	11-20	1
9:30 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2	16-25	2
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
10:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	15-24	0
10:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	16-25	1
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
11:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	16-25	1
11:15 PM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	8-17	1
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
Day Total	116	62	51	5	0	0	0	0	0	0	0	0	0	0	234	16-25	112
Percent	49.6%	26.5%	21.8%	2.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

ADT
234

AM Peak Volume	7:30 AM 5	11:45 AM 3	10:30 AM 3		9:45 AM 7	
PM Peak Volume	12:00 PM 4	1:30 PM 4	2:00 PM 4	1:45 PM 1	5:30 PM 11	

Comments:

SUMMARY - Tube Count - Speed Data

LOCATION: Elm St between Walnut Ave and Lincoln Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397504
DIRECTION: NB
DATE: May 20 2015 - May 20 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	116	62	51	5	0	0	0	0	0	0	0	0	0	0	234	16-25	112
Percent	49.6%	26.5%	21.8%	2.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
Cumulative Percent	49.6%	76.1%	97.9%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%			

ADT
234

85th Percentile 22 MPH

Mean Speed(Average): 13 MPH

Median 15 MPH
Mode: 8 MPH

Comments:

Report generated on 5/27/2015 4:54 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Quality Counts
TRANSPORTATION DATA COLLECTION

LOCATION: Walnut Ave between Elm St and Washington Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397503
DIRECTION: SB
DATE: May 20 2015 - May 20 2015

Start Time	Mon	Tue	Wed 20-May-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM			2			2			2	
12:15 AM			0			0			0	
12:30 AM			0			0			0	
12:45 AM			2			2			2	
1:00 AM			0			0			0	
1:15 AM			1			1			1	
1:30 AM			0			0			0	
1:45 AM			0			0			0	
2:00 AM			4			4			4	
2:15 AM			1			1			1	
2:30 AM			0			0			0	
2:45 AM			0			0			0	
3:00 AM			1			1			1	
3:15 AM			0			0			0	
3:30 AM			0			0			0	
3:45 AM			0			0			0	
4:00 AM			0			0			0	
4:15 AM			0			0			0	
4:30 AM			0			0			0	
4:45 AM			0			0			0	
5:00 AM			0			0			0	
5:15 AM			1			1			1	
5:30 AM			0			0			0	
5:45 AM			0			0			0	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										

Comments:

LOCATION: Walnut Ave between Elm St and Washington Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397503
DIRECTION: SB
DATE: May 20 2015 - May 20 2015

Start Time	Mon	Tue	Wed 20-May-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 AM			1			1			1	
6:15 AM			3			3			3	
6:30 AM			2			2			2	
6:45 AM			1			1			1	
7:00 AM			4			4			4	
7:15 AM			5			5			5	
7:30 AM			5			5			5	
7:45 AM			3			3			3	
8:00 AM			6			6			6	
8:15 AM			**14**			**14**			**14**	
8:30 AM			3			3			3	
8:45 AM			7			7			7	
9:00 AM			4			4			4	
9:15 AM			6			6			6	
9:30 AM			10			10			10	
9:45 AM			7			7			7	
10:00 AM			6			6			6	
10:15 AM			8			8			8	
10:30 AM			7			7			7	
10:45 AM			3			3			3	
11:00 AM			6			6			6	
11:15 AM			5			5			5	
11:30 AM			8			8			8	
11:45 AM			10			10			10	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										

Comments:

Quality Counts
TRANSPORTATION DATA COLLECTION

LOCATION: Walnut Ave between Elm St and Washington Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397503
DIRECTION: SB
DATE: May 20 2015 - May 20 2015

Start Time	Mon	Tue	Wed 20-May-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 PM			12			12			12	
12:15 PM			17			17			17	
12:30 PM			5			5			5	
12:45 PM			4			4			4	
1:00 PM			17			17			17	
1:15 PM			13			13			13	
1:30 PM			13			13			13	
1:45 PM			7			7			7	
2:00 PM			17			17			17	
2:15 PM			12			12			12	
2:30 PM			13			13			13	
2:45 PM			20			20			20	
3:00 PM			12			12			12	
3:15 PM			19			19			19	
3:30 PM			11			11			11	
3:45 PM			28			28			28	
4:00 PM			25			25			25	
4:15 PM			17			17			17	
4:30 PM			26			26			26	
4:45 PM			26			26			26	
5:00 PM			29			29			29	
5:15 PM			19			19			19	
5:30 PM			**30**			**30**			**30**	
5:45 PM			25			25			25	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										

Comments:

Quality Counts
TRANSPORTATION DATA COLLECTION

LOCATION: Walnut Ave between Elm St and Washington Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397503
DIRECTION: SB
DATE: May 20 2015 - May 20 2015

Start Time	Mon	Tue	Wed 20-May-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 PM			27			27			27	
6:15 PM			18			18			18	
6:30 PM			23			23			23	
6:45 PM			23			23			23	
7:00 PM			9			9			9	
7:15 PM			16			16			16	
7:30 PM			17			17			17	
7:45 PM			9			9			9	
8:00 PM			7			7			7	
8:15 PM			2			2			2	
8:30 PM			3			3			3	
8:45 PM			6			6			6	
9:00 PM			3			3			3	
9:15 PM			4			4			4	
9:30 PM			4			4			4	
9:45 PM			0			0			0	
10:00 PM			5			5			5	
10:15 PM			0			0			0	
10:30 PM			1			1			1	
10:45 PM			0			0			0	
11:00 PM			1			1			1	
11:15 PM			0			0			0	
11:30 PM			0			0			0	
11:45 PM			0			0			0	
Day Total			741			741			741	
% Weekday Average			100.0%							
% Week Average			100.0%			100.0%				
AM Peak Volume			8:15 AM 14			8:15 AM 14			8:15 AM 14	
PM Peak Volume			5:30 PM 30			5:30 PM 30			5:30 PM 30	

Comments:

Quality Counts
TRANSPORTATION DATA COLLECTION

LOCATION: Walnut Ave between Elm St and Washington Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397503
DIRECTION: SB
DATE: May 20 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2	16-25	1
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
12:45 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	16-25	2
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
1:15 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	15-24	0
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
2:00 AM	2	1	1	0	0	0	0	0	0	0	0	0	0	0	4	16-25	2
2:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	11-20	1
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
3:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	21-30	1
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
5:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	11-20	1
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
Day Total																	
Percent																	
AM Peak Volume																	
PM Peak Volume																	

Comments:

LOCATION: Walnut Ave between Elm St and Washington Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397503
DIRECTION: SB
DATE: May 20 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
6:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	21-30	1
6:15 AM	0	1	1	1	0	0	0	0	0	0	0	0	0	0	3	21-30	2
6:30 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	26-35	1
6:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	11-20	1
7:00 AM	0	1	1	2	0	0	0	0	0	0	0	0	0	0	4	21-30	3
7:15 AM	0	1	2	1	1	0	0	0	0	0	0	0	0	0	5	21-30	3
7:30 AM	0	2	3	0	0	0	0	0	0	0	0	0	0	0	5	18-27	4
7:45 AM	0	0	1	1	0	**1**	0	0	0	0	0	0	0	0	3	21-30	2
8:00 AM	3	1	2	0	0	0	0	0	0	0	0	0	0	0	6	16-25	3
8:15 AM	0	0	**7**	**4**	**2**	1	0	0	0	0	0	0	0	0	**14**	21-30	11
8:30 AM	0	0	1	0	2	0	0	0	0	0	0	0	0	0	3	26-35	2
8:45 AM	**4**	0	1	2	0	0	0	0	0	0	0	0	0	0	7	21-30	3
9:00 AM	1	1	2	0	0	0	0	0	0	0	0	0	0	0	4	16-25	3
9:15 AM	0	0	2	4	0	0	0	0	0	0	0	0	0	0	6	21-30	6
9:30 AM	1	**6**	2	1	0	0	0	0	0	0	0	0	0	0	10	16-25	8
9:45 AM	0	0	4	2	1	0	0	0	0	0	0	0	0	0	7	21-30	6
10:00 AM	1	1	3	1	0	0	0	0	0	0	0	0	0	0	6	16-25	4
10:15 AM	0	4	3	1	0	0	0	0	0	0	0	0	0	0	8	17-26	6
10:30 AM	0	1	3	3	0	0	0	0	0	0	0	0	0	0	7	22-31	5
10:45 AM	0	1	1	1	0	0	0	0	0	0	0	0	0	0	3	21-30	2
11:00 AM	0	1	2	3	0	0	0	0	0	0	0	0	0	0	6	23-32	4
11:15 AM	1	1	1	1	1	0	0	0	0	0	0	0	0	0	5	26-35	2
11:30 AM	1	2	3	1	0	1	0	0	0	0	0	0	0	0	8	20-29	4
11:45 AM	2	0	4	4	0	0	0	0	0	0	0	0	0	0	10	21-30	8
Day Total																	
Percent																	
AM Peak Volume																	
PM Peak Volume																	

Comments:

LOCATION: Walnut Ave between Elm St and Washington Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397503
DIRECTION: SB
DATE: May 20 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 PM	2	1	4	2	3	0	0	0	0	0	0	0	0	0	12	21-30	6
12:15 PM	2	5	5	4	1	0	0	0	0	0	0	0	0	0	17	16-25	10
12:30 PM	0	3	0	2	0	0	0	0	0	0	0	0	0	0	5	11-20	3
12:45 PM	2	0	1	1	0	0	0	0	0	0	0	0	0	0	4	21-30	2
1:00 PM	1	4	7	4	1	0	0	0	0	0	0	0	0	0	17	21-30	11
1:15 PM	1	3	5	3	0	0	**1**	0	0	0	0	0	0	0	13	16-25	8
1:30 PM	**4**	1	5	3	0	0	0	0	0	0	0	0	0	0	13	21-30	7
1:45 PM	1	1	3	1	1	0	0	0	0	0	0	0	0	0	7	16-25	4
2:00 PM	3	2	6	4	2	0	0	0	0	0	0	0	0	0	17	21-30	10
2:15 PM	0	2	3	3	3	**1**	0	0	0	0	0	0	0	0	12	28-37	5
2:30 PM	1	4	4	2	2	0	0	0	0	0	0	0	0	0	13	16-25	8
2:45 PM	1	3	11	3	2	0	0	0	0	0	0	0	0	0	20	21-30	14
3:00 PM	4	1	2	5	0	0	0	0	0	0	0	0	0	0	12	21-30	7
3:15 PM	1	1	8	7	2	0	0	0	0	0	0	0	0	0	19	21-30	14
3:30 PM	2	2	2	3	2	0	0	0	0	0	0	0	0	0	11	26-35	5
3:45 PM	2	3	11	10	2	0	0	0	0	0	0	0	0	0	28	21-30	21
4:00 PM	1	2	6	12	3	1	0	0	0	0	0	0	0	0	25	22-31	17
4:15 PM	2	2	7	6	0	0	0	0	0	0	0	0	0	0	17	21-30	12
4:30 PM	2	3	8	10	3	0	0	0	0	0	0	0	0	0	26	21-30	18
4:45 PM	2	3	9	9	3	0	0	0	0	0	0	0	0	0	26	21-30	18
5:00 PM	2	3	9	12	3	0	0	0	0	0	0	0	0	0	29	21-30	20
5:15 PM	3	1	8	5	2	0	0	0	0	0	0	0	0	0	19	21-30	13
5:30 PM	0	2	**12**	**15**	1	0	0	0	0	0	0	0	0	0	**30**	21-30	27
5:45 PM	1	1	12	7	3	1	0	0	0	0	0	0	0	0	25	21-30	18
Day Total																	
Percent																	
AM Peak Volume																	
PM Peak Volume																	

Comments:

LOCATION: Walnut Ave between Elm St and Washington Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397503
DIRECTION: SB
DATE: May 20 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
6:00 PM	0	4	10	8	**5**	0	0	0	0	0	0	0	0	0	27	21-30	18
6:15 PM	0	1	8	7	2	0	0	0	0	0	0	0	0	0	18	21-30	14
6:30 PM	2	0	6	12	3	0	0	0	0	0	0	0	0	0	23	22-31	17
6:45 PM	1	**7**	10	5	0	0	0	0	0	0	0	0	0	0	23	16-25	17
7:00 PM	0	0	6	3	0	0	0	0	0	0	0	0	0	0	9	21-30	9
7:15 PM	1	2	8	5	0	0	0	0	0	0	0	0	0	0	16	21-30	13
7:30 PM	1	4	9	3	0	0	0	0	0	0	0	0	0	0	17	16-25	13
7:45 PM	0	3	3	3	0	0	0	0	0	0	0	0	0	0	9	22-31	5
8:00 PM	0	1	5	1	0	0	0	0	0	0	0	0	0	0	7	16-25	6
8:15 PM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	21-30	2
8:30 PM	0	1	1	1	0	0	0	0	0	0	0	0	0	0	3	21-30	2
8:45 PM	0	0	6	0	0	0	0	0	0	0	0	0	0	0	6	16-25	6
9:00 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3	16-25	3
9:15 PM	1	1	1	1	0	0	0	0	0	0	0	0	0	0	4	21-30	2
9:30 PM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	4	11-20	2
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
10:00 PM	2	1	0	2	0	0	0	0	0	0	0	0	0	0	5	21-30	2
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
10:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	21-30	1
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
11:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	21-30	1
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
Day Total	66	108	277	225	58	6	1	0	0	0	0	0	0	0	741	21-30	502
Percent	8.9%	14.6%	37.4%	30.4%	7.8%	0.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

ADT
741

AM Peak Volume	8:45 AM 4	9:30 AM 6	8:15 AM 7	8:15 AM 4	8:15 AM 2	7:45 AM 1		8:15 AM 14		
PM Peak Volume	1:30 PM 4	6:45 PM 7	5:30 PM 12	5:30 PM 15	6:00 PM 5	2:15 PM 1	1:15 PM 1	5:30 PM 30		

Comments:

SUMMARY - Tube Count - Speed Data

LOCATION: Walnut Ave between Elm St and Washington Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397503
DIRECTION: SB
DATE: May 20 2015 - May 20 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	66	108	277	225	58	6	1	0	0	0	0	0	0	0	741	21-30	502
Percent	8.9%	14.6%	37.4%	30.4%	7.8%	0.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
Cumulative Percent	8.9%	23.5%	60.9%	91.2%	99.1%	99.9%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%			

ADT
741

85th Percentile 28 MPH

Mean Speed(Average) 22 MPH

Median 23 MPH
Mode: 23 MPH

Comments:

Report generated on 5/27/2015 4:54 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Quality Counts
TRANSPORTATION DATA COLLECTION

LOCATION: Walnut Ave between Elm St and Washington Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397503
DIRECTION: NB
DATE: May 20 2015 - May 20 2015

Start Time	Mon	Tue	Wed 20-May-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM			1			1			1	
12:15 AM			0			0			0	
12:30 AM			0			0			0	
12:45 AM			0			0			0	
1:00 AM			1			1			1	
1:15 AM			2			2			2	
1:30 AM			1			1			1	
1:45 AM			0			0			0	
2:00 AM			1			1			1	
2:15 AM			1			1			1	
2:30 AM			0			0			0	
2:45 AM			0			0			0	
3:00 AM			0			0			0	
3:15 AM			1			1			1	
3:30 AM			0			0			0	
3:45 AM			0			0			0	
4:00 AM			1			1			1	
4:15 AM			0			0			0	
4:30 AM			0			0			0	
4:45 AM			0			0			0	
5:00 AM			0			0			0	
5:15 AM			1			1			1	
5:30 AM			0			0			0	
5:45 AM			0			0			0	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										

Comments:

Quality Counts
TRANSPORTATION DATA COLLECTION

LOCATION: Walnut Ave between Elm St and Washington Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397503
DIRECTION: NB
DATE: May 20 2015 - May 20 2015

Start Time	Mon	Tue	Wed 20-May-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 AM			1			1			1	
6:15 AM			0			0			0	
6:30 AM			0			0			0	
6:45 AM			1			1			1	
7:00 AM			5			5			5	
7:15 AM			12			12			12	
7:30 AM			23			23			23	
7:45 AM			**30**			**30**			**30**	
8:00 AM			30			30			30	
8:15 AM			7			7			7	
8:30 AM			7			7			7	
8:45 AM			18			18			18	
9:00 AM			8			8			8	
9:15 AM			5			5			5	
9:30 AM			13			13			13	
9:45 AM			7			7			7	
10:00 AM			5			5			5	
10:15 AM			5			5			5	
10:30 AM			3			3			3	
10:45 AM			6			6			6	
11:00 AM			5			5			5	
11:15 AM			7			7			7	
11:30 AM			7			7			7	
11:45 AM			13			13			13	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										

Comments:

Quality Counts
TRANSPORTATION DATA COLLECTION

LOCATION: Walnut Ave between Elm St and Washington Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397503
DIRECTION: NB
DATE: May 20 2015 - May 20 2015

Start Time	Mon	Tue	Wed 20-May-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 PM			8			8			8	
12:15 PM			9			9			9	
12:30 PM			7			7			7	
12:45 PM			11			11			11	
1:00 PM			13			13			13	
1:15 PM			11			11			11	
1:30 PM			6			6			6	
1:45 PM			**14**			**14**			**14**	
2:00 PM			5			5			5	
2:15 PM			5			5			5	
2:30 PM			11			11			11	
2:45 PM			8			8			8	
3:00 PM			11			11			11	
3:15 PM			4			4			4	
3:30 PM			8			8			8	
3:45 PM			12			12			12	
4:00 PM			7			7			7	
4:15 PM			7			7			7	
4:30 PM			10			10			10	
4:45 PM			5			5			5	
5:00 PM			5			5			5	
5:15 PM			5			5			5	
5:30 PM			9			9			9	
5:45 PM			9			9			9	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										

Comments:

Quality Counts
TRANSPORTATION DATA COLLECTION

LOCATION: Walnut Ave between Elm St and Washington Blvd
SPECIFIC LOCATION: 0 ft from
CITY/STATE: Culver City, CA

QC JOB #: 13397503
DIRECTION: NB
DATE: May 20 2015 - May 20 2015

Start Time	Mon	Tue	Wed 20-May-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 PM			10			10			10	
6:15 PM			7			7			7	
6:30 PM			5			5			5	
6:45 PM			11			11			11	
7:00 PM			7			7			7	
7:15 PM			5			5			5	
7:30 PM			0			0			0	
7:45 PM			10			10			10	
8:00 PM			6			6			6	
8:15 PM			6			6			6	
8:30 PM			6			6			6	
8:45 PM			1			1			1	
9:00 PM			1			1			1	
9:15 PM			3			3			3	
9:30 PM			4			4			4	
9:45 PM			4			4			4	
10:00 PM			1			1			1	
10:15 PM			1			1			1	
10:30 PM			0			0			0	
10:45 PM			2			2			2	
11:00 PM			0			0			0	
11:15 PM			1			1			1	
11:30 PM			0			0			0	
11:45 PM			0			0			0	
Day Total			519			519			519	
% Weekday Average			100.0%							
% Week Average			100.0%			100.0%				
AM Peak Volume			7:45 AM 30			7:45 AM 30			7:45 AM 30	
PM Peak Volume			1:45 PM 14			1:45 PM 14			1:45 PM 14	

Comments:

Quality Counts
TRANSPORTATION DATA COLLECTION