



T. KEAR

TRANSPORTATION PLANNING
& MANAGEMENT, INC.

Memorandum

TO: Michael O'Rourke (Westmont Development, LLC)
FROM: Tom Kear, PhD, PE
Date: September 30, 2015
RE: Westmont of El Dorado Hills On-site Transportation Review



Summary

As detailed in the body this memorandum, the On-site Transportation Review of the Westmont of El Dorado Hills project (the proposed project) finds:

- With modification of the roadway striping plans for Golden Foothill Parkway fronting the proposed project, approval of a conditional use permit for the existing site plan will not result in traffic operations issues under existing (2015) or near-term (2025) conditions. Anticipated 95% queue lengths are one vehicle long or shorter.
- The eastbound approach to the Golden Foothill Parkway/Carson Crossing Drive intersection should be striped as a single shared lane, which differs from the proposed striping in the October 2014 plan set for the intersection. The westbound approach should be striped as a through lane plus a left turn pocket (consistent with the October 2014 plan set for the intersection). The northbound approach should be striped as a shared through-left lane plus a right turn pocket (consistent with the October 2014 plan set for the intersection).
- Under cumulative (2035) conditions the Golden Foothill Parkway/Carson Crossing Drive intersection is anticipated to require signalization. El Dorado County should condition the proposed project to allow for a future raised median on Golden Foothill Parkway that would restrict driveway turning movements to right-in/right-out.
- The on-site parking lot aisle design is unlikely to accommodate the swept path for the turning movements of a California legal truck (CA Legal-65)¹. Full size commercial vehicles may need to park on Golden Foothill Parkway or Carson Crossing Drive to service the proposed project. This limitation is common and is not anticipated to be a problem.

¹ California statutes limit the overall length of a tractor semi-trailer combination to 65'. The law also limits the kingpin to rearmost axle dimension to 40' for semi-trailers with two or more axles and 38' for single axle semi-trailers. Turning templates for the CA Legal-65 "design vehicle" are used to identify where these full sized trucks cannot be accommodated by proposed roadway and parking lot geometry.

Introduction

This memorandum presents results of an On-site Transportation Review, consistent with the El Dorado County's requirements for approval of the conditional use permit for the proposed Westmont of El Dorado Hills project. The proposed project is a continuing care community that provides senior adult living. These facilities combine aspects of independent living with increased care, as lifestyle needs change with time. Westmont of El Dorado Hills will offer attached senior housing, assisted living, skilled nursing, and cognitive care aimed at allowing residents to live in one community, as their medical needs change. The proposed project includes 134 attached units (15 two-bedroom units, 59 one-bedroom units, 25 studios, and 35 memory care units). A site plan is attached; proposed access would be via driveways to both Golden Foothill Parkway and Carson Crossing Drive.

The proposed project is located on the southwest corner of the planned Golden Foothill Parkway/Carson Crossing Drive intersection within Unit 2 of the Carson Creek Specific Plan. A Carson Creek Traffic Impact Study was completed by AECOM in 2010 for both Carson Creek Units 2 and 3. This 2010 study documented Unit 2 with 136 attached and 488 detached senior housing units. A revision to the study occurred in 2012 that changed the Unit 2 description to 634 detached senior housing units. The proposed continuing care facility produces fewer trips than either attached or detached senior housing would on the same parcel. The existing traffic studies adequately address off-site circulation. El Dorado County has limited its analysis request to an On-site Transportation Review. To facilitate the timely approval of the conditional use permit for the proposed project, this review includes items 1-8 below, which are required by El Dorado County². For the proposed project, Item 2 (in bold font) is the factor that El Dorado County is most interested in.

1. *Existence of any current traffic problems in the local area such as a high-accident location, non-standard intersection or roadway, or an intersection in need of a traffic signal.*
2. ***Proximity of proposed site driveway(s) to other driveways or intersections.***
3. *Adequacy of vehicle parking relative to both the anticipated demand and zoning code requirements.*
4. *Adequacy of the project site design to fully satisfy truck loading demand on-site, when the anticipated number of deliveries and service calls may exceed 10 per day.*
5. *Adequacy of the project site design to provide at least a 25' minimum required throat depth (MRTD) at project driveways. Include calculation of the MRTD.*
6. *Adequacy of the project site design to convey all vehicle types.*
7. *Adequacy of sight distance on-site.*
8. *Queueing analysis of drive-through facilities.*

² El Dorado County (2014) Transportation Impact Study Guidelines,
<http://www.edcgov.us/Government/LongRangePlanning/Transportation/TIS-Guidelines/transportation-impact-study-guidelines.aspx>.

Based on the information provided by El Dorado County staff and Westmont Development, the focus of this review is on the potential for vehicle queueing to block turning movements at the project’s proposed driveway or the future intersection of Golden Foothill Parkway and Carson Crossing Drive, located adjacent to the proposed project. As part of Item 2, specific review of the future need for a left turn pocket from eastbound Golden Foothill Parkway to the northbound extension of Carson Crossing Drive, and a review of anticipated 95% queue lengths at the proposed Westmont of El Dorado Hills driveway and the planned Golden Foothill Parkway/Carson Crossing Drive intersection was conducted.

Methods

Traffic Forecasts

For this On-site Transportation Review, the El Dorado County Travel Demand Model was utilized to grow existing traffic counts to reflect cumulative 2035 conditions, and then linear interpolation was used to estimate near-term (2025) conditions. Modeling procedures are detailed in an attached memorandum. AM and PM peak-hour loaded model networks and the existing traffic count are also attached. Traffic to and from the northern leg of Carson Crossing Drive was estimated assuming that it would be the access point for 614 office jobs by 2035. Forecasts for this project was adapted from modeling for work near the Promontory.

Trip Generation and Distribution

Trip generation for the proposed project was based on published Institute of Transportation Engineers³ trip generation rates (land use 255 - continuing care facilities).

Table 1. Project Trip Generation for 134 Units

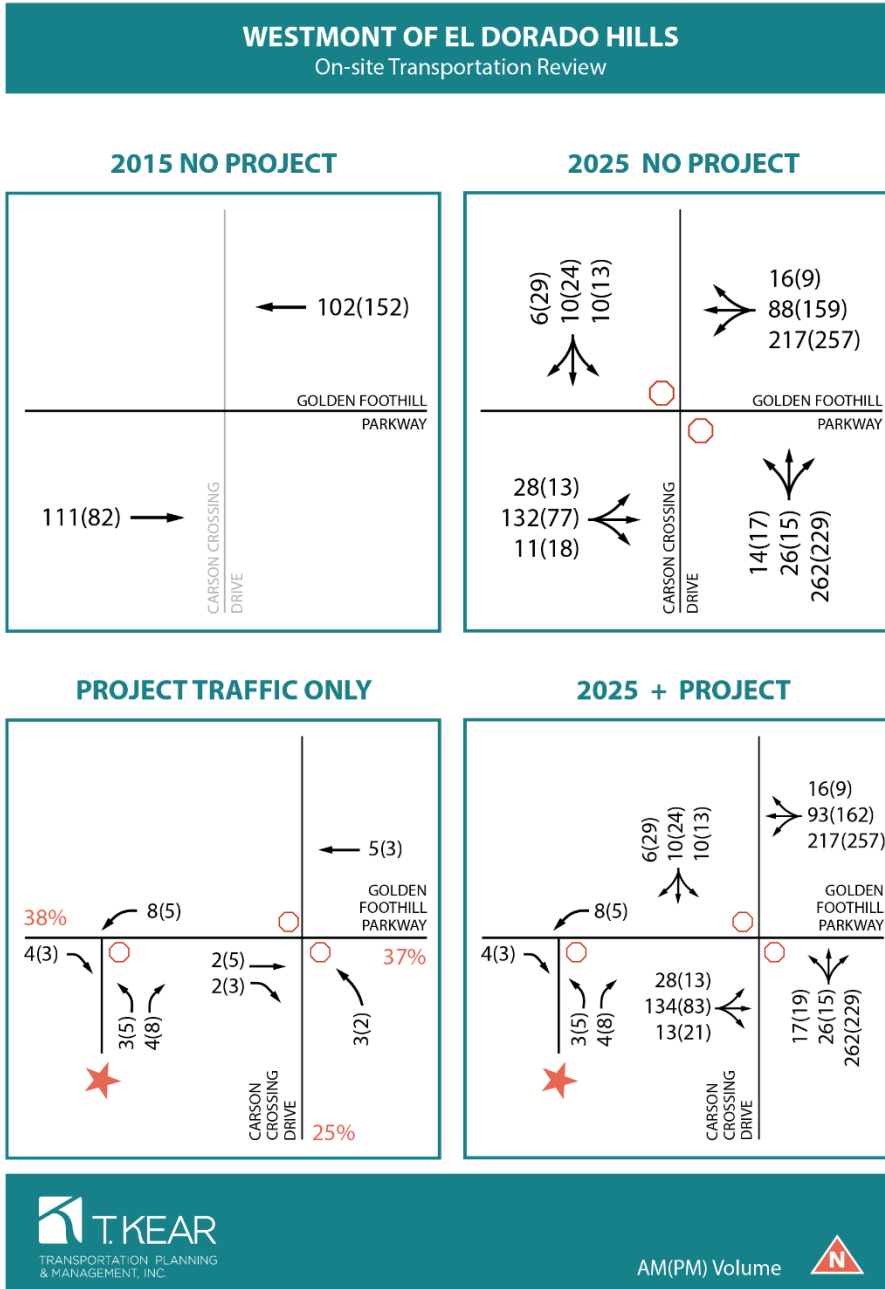
Description	ITE Land Use	Units	Daily	AM Peak Hour of Generator				PM Peak Hour of Generator					
			Total Trips	Total Trips	In %	Trips	Out %	Trips	Total Trips	In %	Trips	Out %	Trips
Continuing Care Units	255	134	322	19	65%	12	35%	7	21	39%	8	61%	13
Daily rate: 2.4, AM peak-hour rate: 0.14, PM peak-hour rate 0.16													

Source: Trip Generation 9th Ed., 2012, ITE , land use 255 (Continuing Care Facility)

The distribution of project trips was based on results of select zone analysis from the TDM, trip distribution assumptions from previous traffic impact studies in the vicinity (including previous studies for this group of projects), discussion with the project team, input from County staff, and local area knowledge. Project trips, derived from the trip generation and distribution above, were assigned to study intersection(s) to estimate near-term (2025) traffic levels with the proposed project. **Figure 1** below shows existing and forecast peak-hour turning movements.

³ ITE (2012) Trip Generation, 9th Edition, Institute of Transportation Engineers, Washington, DC 20006

Figure 1. Existing 2015 traffic, near-term 2025 traffic, project trip assignment, and near-term (2025) plus project traffic



Analysis

Each of the eight required elements of the On-site Transportation review are addressed below.

1. Existence of any current traffic problems in the local area such as a high-accident location, non-standard intersection or roadway, or an intersection in need of a traffic signal.

The Statewide Integrated Traffic Records System (SWITRS) maintained by the California Highway Patrol was used to identify accidents near the project. Additionally a site visit was conducted to evaluate roadway geometry and identify any existing traffic concerns. No existing traffic problems were identified.

2. Proximity of proposed site driveway(s) to other driveways or intersections.

The proposed Golden Foothill Parkway driveway was reviewed for intersection spacing relative to the planned Golden Foothill Parkway/Carson Crossing Drive intersection along with traffic operations and queuing at both the driveway and intersection.

Driveway location

The proposed driveway is consistent with El Dorado County requirements. El Dorado County Zoning Ordinance⁴ requires that parking area ingress and egress driveways be located a minimum of one hundred fifty feet from the intersection of two major arterials; one hundred feet from the intersection of a major arterial and collector street; and seventy feet from the intersection of two collector streets or a collector and local street. Measurements are taken from the centerline of the nearest travel lane of the intersecting streets and the centerline of the driveway. The centerline of the proposed Golden Foothill Parkway driveway is located more than two hundred feet from the centerline of Carson Crossing Drive.

Near Term (2025) Traffic Operations

Traffic operations were evaluated based on Highway Capacity Manual 2010 level-of-service methods for Side Street Stop Controlled (SSSC) intersections. Two sets of geometry were studied for the AM and the PM peak hours:

- The first set of geometry reflected the El Dorado County intersection layout dated June 9, 2015, which includes a westbound left turn pocket at the Golden Foothill Parkway/Carson Crossing Drive intersection and striped median in front of the proposed project's driveway. For this scenario, the driveway traffic was limited to right-in/right-out (RIRO) operation. Traffic desiring to turn left from the driveway instead turns right and then makes a U-turn at the Golden Foothill Parkway/Carson Crossing Drive intersection.
- The second set of geometry restripes the westbound approach to the Golden Foothill Parkway/Carson Crossing Drive intersection so that it has a single shared left-through-right

⁴ El Dorado County Zoning Ordinance (Revised November 2010) Section 17.18.030 (B) 4.

lane. The striped median blocking the proposed project driveway is removed so that the driveway operates as a full access driveway.

Level-of-service for SSSC intersections is defined by the amount of control delay on either the worst approach on single lane approaches, or the worst lane for multi-lane approaches. Level-of-service is graded on an A (best) through F (worst) scale. Results are reported below. Synchro (version 9) was used to perform level-of-service calculations; calculation sheets are included as attachments.

Table 2. Anticipated near term 2025 delay, level-of-service, and worst approach (SSSC analysis)

Location	2025 AM Peak-Hour, RIRO Driveway	2025 PM Peak-hour, RIRO Driveway	2025 AM Peak-Hour, Full-access Driveway	2025 PM Peak-Hour, Full-access Driveway
Golden Foothill Parkway/Carson Crossing Drive	22.5 seconds, C, NB left turn	26.4 seconds, D, NB left turn	22.3 seconds, C, NB left turn	25.9 seconds, D, NB left turn
Project Driveway	Driveway was not analyzed for RIRO scenario	Driveway was not analyzed for RIRO scenario	9.8 seconds, A, NB left turn	9.6 seconds, A, NB left turn

Within the Carson Creek Specific Plan area, The El Dorado County General Plan established level-of-service E or better as acceptable. The peak hour signal warrant was checked to confirm that the Golden Foothill Parkway/Carson Crossing Drive intersection did not meet the signal warrant in 2025. Anticipated 2035 traffic volumes were also used to check the peak-hour signal warrant, by 2035 the intersection is expected to require signalization, and El Dorado County may need to restrict driveway movements at that time.

A sensitivity test was done insure that additional traffic in and out of the Carson Creek Corporate Center would not alter these findings. In the test, traffic accessing the northern leg of Carson Crossing Drive was increased by about 50%. The northbound through-left delay at the Golden Foothill Parkway/Carson Crossing Drive intersection increased by just about four seconds and the 95% queue length increased by about ten feet. Neither result effects the findings if this study.

Queueing

The 95th percentile queue length was also checked to confirm that queueing from the driveway or intersection would not block traffic. The longest 95% queues at either the driveway or intersection are not anticipated to be longer than 1 vehicle (about 25 feet) in length. There are no queueing issues.

3. Adequacy of vehicle parking relative to both the anticipated demand and zoning code requirements.

Parking adequacy was checked against both the El Dorado County Standard of one space per three beds for convalescent hospitals, nursing homes, and clinics, and more specific estimates for continuing care parking demand of 0.404 spaces per bed from the literature⁵. The proposed project provides 70 parking spaces to accommodate the proposed 149 bed facility: 15 two-bedroom units (30 beds), 59 one-bedroom units (59 beds), 25 studios (25 beds), and 35 memory care units (35 beds).

- The 70 parking spaces provided exceeds the 50 parking spaces required by El Dorado County zoning ordinance.
- The 70 parking spaces provided also exceeds the estimated demand of 60 parking spaces derived from the literature.

The provided parking is adequate relative to both anticipated demand and zoning code requirements.

4. Adequacy of the project site design to fully satisfy truck loading demand on-site, when the anticipated number of deliveries and service calls may exceed 10 per day.

The anticipated number of deliveries and service calls is not expected to exceed 10 per day.

5. Adequacy of the project site design to provide at least a 25' minimum required throat depth (MRTD) at project driveways. Include calculation of the MRTD.

The provided throat depth of approximately 34' is adequate to accommodate the anticipated queue lengths. See the queuing discussion and calculation sheets for item 2 above.

6. Adequacy of the project site design to convey all vehicle types.

The on-site parking lot aisle design is unlikely to accommodate the swept path for the turning movements of a California legal truck (CA Legal-65). Full size commercial vehicles may need to park on Golden Foothill Parkway or Carson Crossing Drive to service the proposed project. This limitation is common and is not anticipated to be a problem.

7. Adequacy of sight distance on-site.

Site distance was checked in the field and found to be more than adequate.

8. Queuing analysis of drive-through facilities.

This check is not applicable.

Findings and Recommendations

Findings and recommendations are reported in the summary at the beginning of this memorandum.

⁵ Stephen Corcoran (1996) Senior housing Trip Generation and Parking Demand Characteristics, presented at the Institute of Transportation Engineers 66th Annual Meeting.

Attachments



T. KEAR

TRANSPORTATION PLANNING
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Memorandum

TO: file

FROM: Tom Kear, PhD, PE

Date: September 18, 2015

RE: Network edits, land use edits, and select zone scripting for El Dorado County travel demand model, version EDC-CAT_7525_090514 for Westmont of El Dorado Hills On-site Transportation Review

This document summarizes changes made to the El Dorado County travel demand model (EDC-CAT_7525_090514) land use and networks for use in the Westmont of El Dorado Hills On-site Transportation Review. Select-zone code has also been hard coded into the assignment scripts. Modification to each network and land use file are detailed below.

[HWNetwork_2010](#)

This network is used along with observed counts to derive localized calibration factors for link level volume estimates from the model.

- Added connection for Windfield Way (nodes 2028 ↔ 3123), and removed Centroid connector from TAZ 610 to node 2028. This edit allows the model to reflect traffic to/from the business parks west of Latrobe Road that directly access White Rock Road.
- Added new centroid connector from TAZ 193 to node 2199, representing Olson Way.
- Added a new node (#15928) on Golden Foothill Parkway between nodes #3127 and #3125 for the future Carson Crossing Drive and connected TAZ 611 through the new node.

[HWNetwork_2035](#)

This is the cumulative model network.

- Added connection for Windfield Way (nodes 2028 ↔ 3123), and removed Centroid connector from TAZ 610 to node 2028. This edit allows the model to reflect traffic to/from the business parks west of Latrobe Road that directly access White Rock Road.
- Added new centroid connector from TAZ 193 to node 2199, representing Olson Way.
- Split TAZ 180 into TAZ 180 and TAZ 626. The new TAZ 626 represents the Valley View Specific Plan East Ridge Village development, and is connected to the Valley View Parkway at node 2045.
- Confirmed Removal of US-50 HOV lanes east of Cameron Park Drive (in both directions)
- Removed Country Club extension (Bass Lake to Silva Valley)

- Confirmed Reduction of Serrano Parkway from 4 to 2 lanes between Bass Lake and Villagio.
- Added a new node (#15925) on Golden Foothill Parkway between nodes #3127 and #3125 and rerouted Carson Crossing Drive through the new node and connected TAZ 611 through the new node.
- Split the 250 acre TAZ 164 into a 195 acre TAZ 164 and 55 acre TAZ 627. The new TAZ 627 represents parcels 117-210-28, 117-210-30, and 117-210-33 and loads via the northerly extension of Carson Crossing Drive at node #15925.

[NoEmpRnch_HWNetwork_2035](#)

This is the same cumulative network as above , however the empire ranch interchange is turned off, including the proposed overpass crossing US 50 and all freeway ramps. This scenario is used in EPAP 2025 traffic forecasts.

[2010 Land Use \(2010zbas.dbf and 2010hhmv.dbf\)](#)

Increased 2010 land use as follows to reflect development between 2010 and 2015.

2010zbas.dbf (land use and employment data)

- TAZ 171 (part of Carson Creek Specific Plan): Added 20 additional dwelling units (DUs).
- TAZ 203 (part of the El Dorado Hills Specific Plan): Added 50 additional DUs.

2010hhmv.dbf (distribution of households by socioeconomic characteristics)

- No edits to the HHMV data were required.

[2035 Land Use \(2035zbas.dbf and 2035hhmv.dbf\)](#)

Increased 2035 land use as follows to reflect build-out of the Carson Creek Specific Plan, Valley View Specific Plan, El Dorado Hills Specific Plan, and Dixon Ranch. Land use in the TAZs that include Promontory Village 7 and “Lot C” project, was reduced by 131 DUs to reflect a no-project scenario.

2035zbas.dbf (land use and employment data)

- TAZ 171 (part of Carson Creek Specific Plan): Added 20 additional DUs.
- TAZ 611 (part of Carson Creek Specific Plan): Added 324 additional DUs.
- TAZ 167 (Valley View Specific Plan, Blackstone): Added 375 DUs.
- TAZ 626 (new TAZ for Valley View Specific Plan, East Ridge): Added 339 DU and shifted 362 DUs from TAZ 180 for a total of 701 DUs.
- TAZ 203 (part of the El Dorado Hills Specific Plan): Added 218 additional DUs.
- TAZ 180: Shifted 362 DUs to TAZ 626, leaving 457 in the balance of TAZ 180.
- TAZ 212 (Dixon Ranch): Added 525 DUs¹.

¹ Dixon Ranch contains 160 new age-restricted DUs, 444 new single family DUs, and one existing home, totaling 605 DUs. The travel demand model does not include an age restricted housing type; the age

- TAZ 193 (Promontory): Reduced land use by 113 DUs reflecting the portion of the 131 DUs from Promontory Village 7 and “Lot C” that lay within TAZ 193.
- TAZ 615 (Promontory): Reduced land use by 18 DUs, reflecting the portion of the 131 DUs from Promontory Village 7 and “Lot C” that lay within TAZ 615.
- TAZ 169 (Town Center) removed 114 retail employees and added 250 high density DUs to account for the approved Town Center Apartments project (4.565 ac * 24.96 emp/ac = 114 emp).
- TAZ 164 (**Carson Creek Corporate Center**) TAZ 627 was moved in to load Carson Crossing Drive. Employment was split into TAZ 164 and 627 based on acreage, resulting in 614 office jobs being allocated to TAZ 627.

2035hmv.dbf (distribution of households by socioeconomic characteristics)

- TAZ 180: Rescaled “HHLDS” so that it summed to 457 DUs but maintained the same distribution of persons, workers, and income within the TAZ.
- TAZ 626: used the hmv data from TAZ 180. Rescaled “HHLDS” so that it summed to 701 DUs while maintaining the same distribution of persons, workers, and income from TAZ 180.
- TAZ 169: used the distributions from TAZ 168 hmv data to represent the Town Center Apartments .

Script edits for Select Zone

The following highway load and related scripts were updated to add select zone group and select link code. The target zone is hard coded in the LINKREAD phase.

Multi-hour period assignments

- 3AHL00a.s (AM 3-hour peak period assignment)
- 3AHL00b.s (Mid-day 5-hour period assignment)
- 3AHL00c.s (PM 3-hour peak period assignment)
- 3AHL00d.s (Evening 13-hour period assignment)

Peak Period Assignments

- 02HWY00a.s (AM Peak Hour)
- 02HWY00b.s (PM Peak Hour)

Reporting scripts

- 02NET00c.s (AM and PM peak hour network summary)
- 3CHWN00e.s (Daily network assignment summary)

restricted land use was modeled at 50% of actual based on the ratio of Institute of Transportation Engineers Generation Manual data for land use 210 (single Family) and 251 (detached senior housing).

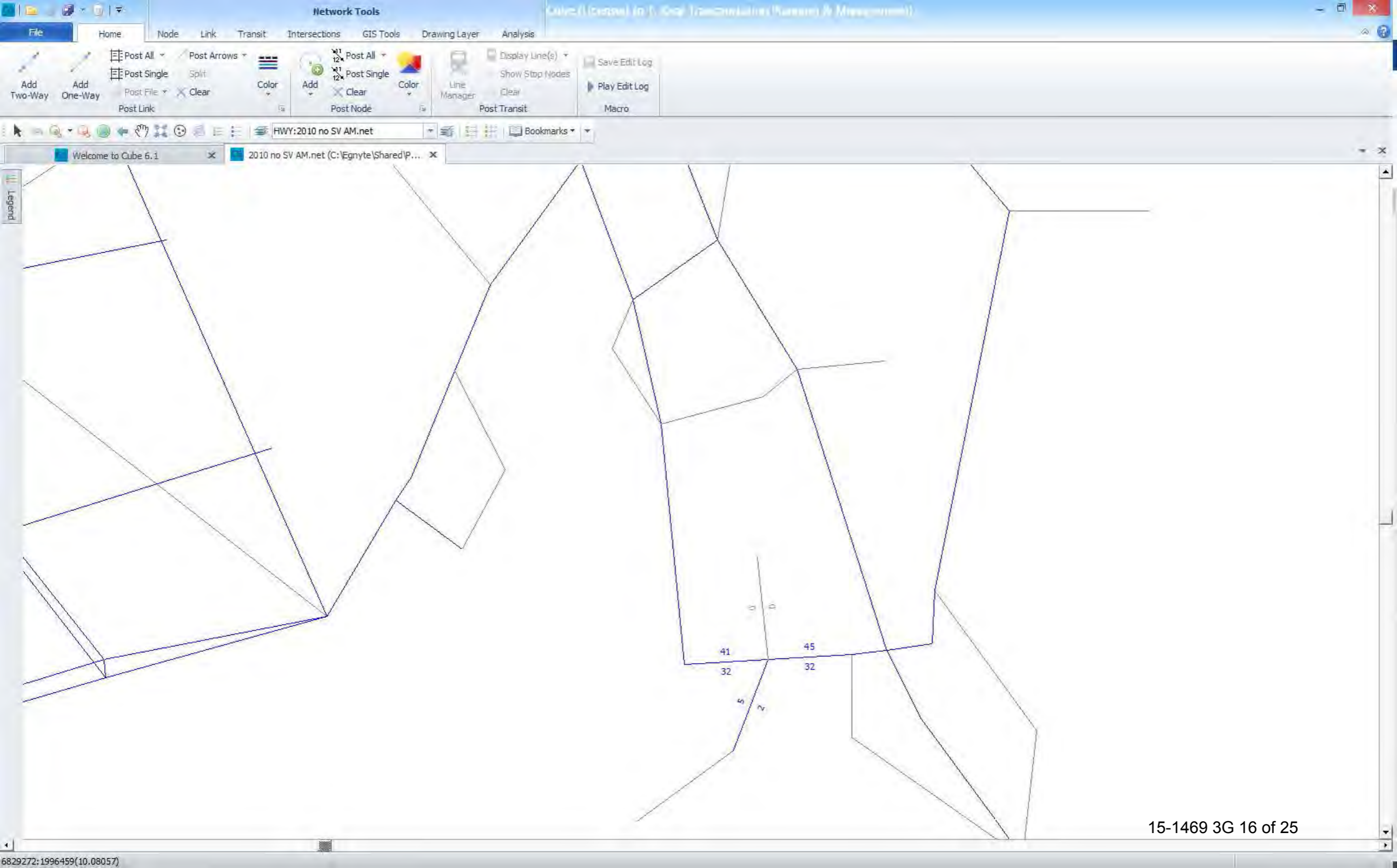
The zone selected for tracking is listed in a line of code similar to the highlighted line in the LINKREAD phase of script example shown below (where TAZ 193 is selected). The tracking of the trips in and out of the selected TAZ is performed via the SELECTLINKGROUP syntax within the second PATHLOAD command, highlighted further down in the example.

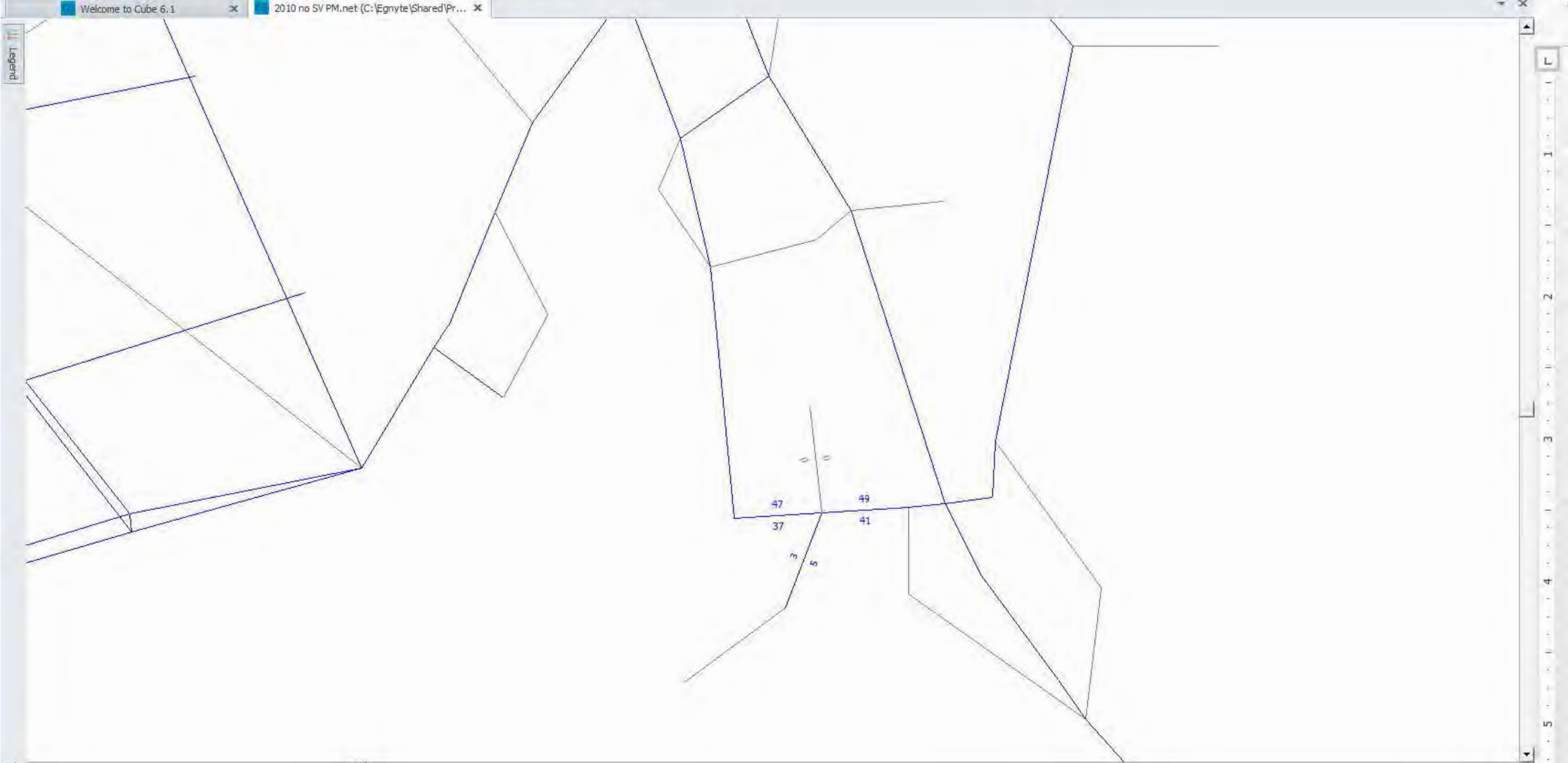
```
30 PHASE=LINKREAD
31 SPEED=LI.TSVA*.1
32 LINKCLASS=LI.SPDCURV
33 IF (LI.HOVLINK=0) ADDTOGROUP=1 ;no restriction
34 IF (LI.HOVLINK=1) ADDTOGROUP=2 ;walk
35 IF (LI.HOVLINK=2) ADDTOGROUP=3 ;HOV lanes
36 IF (LI.HOVLINK=3) ADDTOGROUP=4 ;HOV bypasses
37 IF (LI.CAPCLASS=99) ADDTOGROUP=5 ;switched off links
38 IF (A=193 || B=193)ADDTOGROUP=6 ;SLEECT ZONE GROUP T.Kear 20150107 tkear@tkearinc.com
39
40 ;----- ramp meter flag
41 IF (LI.DELCURV=1)
42 RAMP=1
43 ELSE
44 RAMP=0
45 ENDIF
46 ENDPHASE
47 ;----- path load
48 PHASE=ILOOP
49 PATHLOAD PATH=TIME,EXCLUDEGRP=2-5 VOL[1]=MI.1.1+MI.1.5+MI.1.6,PENI=1 ;No HOV lanes/bypasses
50 PATH=TIME,EXCLUDEGRP=2-3,5 VOL[2]=MI.1.2,PENI=1 ;No HOV lanes but bypas.
51 PATH=TIME,EXCLUDEGRP=2,5 VOL[3]=MI.1.3+MI.1.4,PENI=1 ;HOV lanes/bypasses
52
53 PATHLOAD PATH=TIME,EXCLUDEGRP=2-5 MW[19]=(MI.1.1+MI.1.5+MI.1.6),SELECTLINKGROUP=(GRP[6]>0) ;S.
54 PATH=TIME,EXCLUDEGRP=2-3,5 MW[18]=(MI.1.2), SELECTLINKGROUP=(GRP[6]>0) ;S.
55 PATH=TIME,EXCLUDEGRP=2,5 MW[17]=MI.1.3+MI.1.4, SELECTLINKGROUP=(GRP[6]>0), ;S.
56 VOL[6]=(MW[19]+MW[18]+MW[17]); ;S.
57
```

Editing this line in the six assignment scripts listed previously allows the tracking of trips to/from the TAZ under study. There is no need to edit the network summary scripts.

LOCATION: Golden Foothill Parkway SPECIFIC LOCATION: Golden Foothill Parkway CITY/STATE: El Dorado Hills, CA						QC JOB #: 13580401 DIRECTION: EB DATE: Sep 02 2015 - Sep 02 2015				
Start Time	Mon	Tue	Wed 02-Sep-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM			0			0			0	
1:00 AM			1			1			1	
2:00 AM			1			1			1	
3:00 AM			0			0			0	
4:00 AM			2			2			2	
5:00 AM			20			20			20	
6:00 AM			47			47			47	
7:00 AM			92			92			92	
8:00 AM			111			111			111	
9:00 AM			78			78			78	
10:00 AM			83			83			83	
11:00 AM			63			63			63	
12:00 PM			79			79			79	
1:00 PM			54			54			54	
2:00 PM			77			77			77	
3:00 PM			82			82			82	
4:00 PM			72			72			72	
5:00 PM			81			81			81	
6:00 PM			31			31			31	
7:00 PM			25			25			25	
8:00 PM			10			10			10	
9:00 PM			5			5			5	
10:00 PM			0			0			0	
11:00 PM			0			0			0	
Day Total			1014			1014			1014	
% Weekday Average			100.0%							
% Week Average			100.0%			100.0%				
AM Peak Volume			8:00 AM 111			8:00 AM 111			8:00 AM 111	
PM Peak Volume			3:00 PM 82			3:00 PM 82			3:00 PM 82	
<i>Comments:</i>										

LOCATION: Golden Foothill Parkway SPECIFIC LOCATION: Golden Foothill Parkway CITY/STATE: El Dorado Hills, CA							QC JOB #: 13580401 DIRECTION: WB DATE: Sep 02 2015 - Sep 02 2015			
Start Time	Mon	Tue	Wed 02-Sep-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM			0			0			0	
1:00 AM			1			1			1	
2:00 AM			1			1			1	
3:00 AM			0			0			0	
4:00 AM			2			2			2	
5:00 AM			23			23			23	
6:00 AM			82			82			82	
7:00 AM			54			54			54	
8:00 AM			102			102			102	
9:00 AM			57			57			57	
10:00 AM			47			47			47	
11:00 AM			66			66			66	
12:00 PM			53			53			53	
1:00 PM			56			56			56	
2:00 PM			61			61			61	
3:00 PM			81			81			81	
4:00 PM			152			152			152	
5:00 PM			130			130			130	
6:00 PM			56			56			56	
7:00 PM			13			13			13	
8:00 PM			10			10			10	
9:00 PM			6			6			6	
10:00 PM			1			1			1	
11:00 PM			2			2			2	
Day Total			1056			1056			1056	
% Weekday Average			100.0%							
% Week Average			100.0%			100.0%				
AM Peak			8:00 AM			8:00 AM			8:00 AM	
Volume			102			102			102	
PM Peak			4:00 PM			4:00 PM			4:00 PM	
Volume			152			152			152	
<i>Comments:</i>										





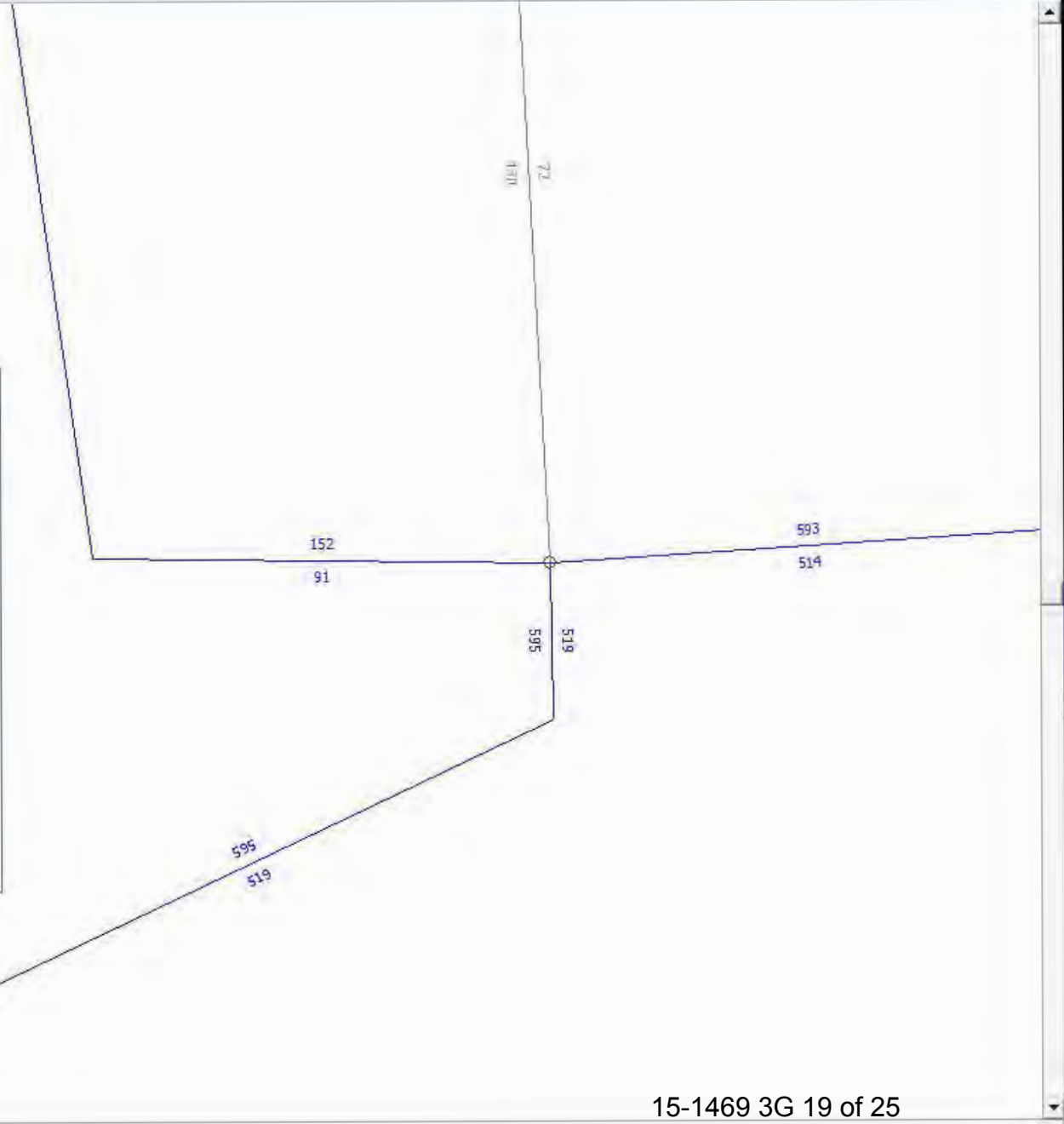
C:\Egnyte\Shared\Projects\P15200 Westmont\Loaded Networks\2035 NoEmpRnch PM...

GoTo: 15925

From/To	627	3124	3125	15926
627	--	57.11	26.03	46.8
3124	25.31	--	30.71	34.86
3125	18.3	61.68	--	513.21
15926	28.55	33.1	457.32	--

Left Button: Select Inbound Leg
Right Button: Select Outbound Leg

Volume Sets: 1 2 3 6 All Close Select All Clear All



Intersection

Int Delay, s/veh 7.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	31	134	13	217	93	16	17	26	262	10	10	6
Future Vol, veh/h	31	134	13	217	93	16	17	26	262	10	10	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	224	-	-	220	-	-	-	-	37	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	34	146	14	236	101	17	18	28	285	11	11	7

Major/Minor	Major1	Major2	Minor1	Minor2								
Conflicting Flow All	118	0	0	160	0	0	810	810	153	816	809	110
Stage 1	-	-	-	-	-	-	220	220	-	582	582	-
Stage 2	-	-	-	-	-	-	590	590	-	234	227	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1470	-	-	1419	-	-	298	314	893	296	314	943
Stage 1	-	-	-	-	-	-	782	721	-	499	499	-
Stage 2	-	-	-	-	-	-	494	495	-	769	716	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1470	-	-	1419	-	-	246	256	893	159	256	943
Mov Cap-2 Maneuver	-	-	-	-	-	-	246	256	-	159	256	-
Stage 1	-	-	-	-	-	-	764	704	-	487	416	-
Stage 2	-	-	-	-	-	-	398	413	-	491	699	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	5.4	12.5	22
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	252	893	1470	-	-	1419	-	-	240
HCM Lane V/C Ratio	0.185	0.319	0.023	-	-	0.166	-	-	0.118
HCM Control Delay (s)	22.5	10.9	7.5	-	-	8	-	-	22
HCM Lane LOS	C	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.7	1.4	0.1	-	-	0.6	-	-	0.4

Intersection

Int Delay, s/veh 7.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	28	134	13	217	93	16	17	26	262	10	10	6
Future Vol, veh/h	28	134	13	217	93	16	17	26	262	10	10	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	220	-	-	-	-	37	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	146	14	236	101	17	18	28	285	11	11	7

Major/Minor	Major1	Major2	Minor1	Minor2								
Conflicting Flow All	118	0	0	160	0	0	804	804	153	810	803	110
Stage 1	-	-	-	-	-	-	214	214	-	582	582	-
Stage 2	-	-	-	-	-	-	590	590	-	228	221	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1470	-	-	1419	-	-	301	316	893	298	317	943
Stage 1	-	-	-	-	-	-	788	725	-	499	499	-
Stage 2	-	-	-	-	-	-	494	495	-	775	720	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1470	-	-	1419	-	-	249	258	893	160	258	943
Mov Cap-2 Maneuver	-	-	-	-	-	-	249	258	-	160	258	-
Stage 1	-	-	-	-	-	-	771	709	-	488	416	-
Stage 2	-	-	-	-	-	-	398	413	-	496	704	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	5.4	12.5	21.8
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	254	893	1470	-	-	1419	-	-	242
HCM Lane V/C Ratio	0.184	0.319	0.021	-	-	0.166	-	-	0.117
HCM Control Delay (s)	22.3	10.9	7.5	0	-	8	-	-	21.8
HCM Lane LOS	C	B	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.7	1.4	0.1	-	-	0.6	-	-	0.4

Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	171	4	8	108	0	3	0	4	0	0	0
Future Vol, veh/h	0	171	4	8	108	0	3	0	4	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	186	4	9	117	0	3	0	4	0	0	0

Major/Minor	Major1	Major2	Minor1						
Conflicting Flow All	117	0	0	190	0	0	323	323	188
Stage 1	-	-	-	-	-	-	188	188	-
Stage 2	-	-	-	-	-	-	135	135	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1471	-	-	1384	-	-	671	595	854
Stage 1	-	-	-	-	-	-	844	745	-
Stage 2	-	-	-	-	-	-	891	785	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1471	-	-	1384	-	-	666	0	854
Mov Cap-2 Maneuver	-	-	-	-	-	-	666	0	-
Stage 1	-	-	-	-	-	-	844	0	-
Stage 2	-	-	-	-	-	-	885	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	762	1471	-	-	1384	-	-
HCM Lane V/C Ratio	0.01	-	-	-	0.006	-	-
HCM Control Delay (s)	9.8	0	-	-	7.6	0	-
HCM Lane LOS	A	A	-	-	A	A	-
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-

Intersection

Int Delay, s/veh 7.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	18	82	21	257	162	9	19	15	229	13	24	29
Future Vol, veh/h	18	82	21	257	162	9	19	15	229	13	24	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	224	-	-	220	-	-	-	-	37	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	89	23	279	176	10	21	16	249	14	26	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	186	0	0	112	0	0	908	885	101	888	891	181
Stage 1	-	-	-	-	-	-	140	140	-	740	740	-
Stage 2	-	-	-	-	-	-	768	745	-	148	151	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1388	-	-	1478	-	-	256	284	954	264	282	862
Stage 1	-	-	-	-	-	-	863	781	-	409	423	-
Stage 2	-	-	-	-	-	-	394	421	-	855	772	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1388	-	-	1478	-	-	191	227	954	156	225	862
Mov Cap-2 Maneuver	-	-	-	-	-	-	191	227	-	156	225	-
Stage 1	-	-	-	-	-	-	851	770	-	403	343	-
Stage 2	-	-	-	-	-	-	285	342	-	610	761	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	4.8	12.2	21.1
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	205	954	1388	-	-	1478	-	-	295
HCM Lane V/C Ratio	0.18	0.261	0.014	-	-	0.189	-	-	0.243
HCM Control Delay (s)	26.4	10.1	7.6	-	-	8	-	-	21.1
HCM Lane LOS	D	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.6	1	0	-	-	0.7	-	-	0.9

Intersection

Int Delay, s/veh 7.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	13	82	21	257	162	9	19	15	229	13	24	29
Future Vol, veh/h	13	82	21	257	162	9	19	15	229	13	24	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	220	-	-	-	-	37	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	89	23	279	176	10	21	16	249	14	26	32

Major/Minor	Major1	Major2	Minor1	Minor2								
Conflicting Flow All	186	0	0	112	0	0	897	874	101	877	880	181
Stage 1	-	-	-	-	-	-	129	129	-	740	740	-
Stage 2	-	-	-	-	-	-	768	745	-	137	140	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1388	-	-	1478	-	-	261	288	954	269	286	862
Stage 1	-	-	-	-	-	-	875	789	-	409	423	-
Stage 2	-	-	-	-	-	-	394	421	-	866	781	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1388	-	-	1478	-	-	195	231	954	160	229	862
Mov Cap-2 Maneuver	-	-	-	-	-	-	195	231	-	160	229	-
Stage 1	-	-	-	-	-	-	865	780	-	405	343	-
Stage 2	-	-	-	-	-	-	285	342	-	620	772	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	4.8	12.1	20.7
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	209	954	1388	-	-	1478	-	-	300
HCM Lane V/C Ratio	0.177	0.261	0.01	-	-	0.189	-	-	0.239
HCM Control Delay (s)	25.9	10.1	7.6	0	-	8	-	-	20.7
HCM Lane LOS	D	B	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.6	1	0	-	-	0.7	-	-	0.9

Intersection

Int Delay, s/veh 0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	108	3	5	205	0	5	0	8	0	0	0
Future Vol, veh/h	0	108	3	5	205	0	5	0	8	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	117	3	5	223	0	5	0	9	0	0	0

Major/Minor	Major1	Major2	Minor1						
Conflicting Flow All	223	0	0	121	0	0	353	353	119
Stage 1	-	-	-	-	-	-	119	119	-
Stage 2	-	-	-	-	-	-	234	234	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1346	-	-	1467	-	-	645	572	933
Stage 1	-	-	-	-	-	-	906	797	-
Stage 2	-	-	-	-	-	-	805	711	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1346	-	-	1467	-	-	642	0	933
Mov Cap-2 Maneuver	-	-	-	-	-	-	642	0	-
Stage 1	-	-	-	-	-	-	906	0	-
Stage 2	-	-	-	-	-	-	802	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	794	1346	-	-	1467	-	-
HCM Lane V/C Ratio	0.018	-	-	-	0.004	-	-
HCM Control Delay (s)	9.6	0	-	-	7.5	0	-
HCM Lane LOS	A	A	-	-	A	A	-
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-