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BELLA LAGO APARTMENTS

TRAFFIC ANALYSIS

MARCH, 2016

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EXECUTIVE SUMMARY

The Bella Lago Apartment development is located in Carson City, Nevada. The project site is generally located on the west side of Airport Road, south of US-50 and north of Menlo Drive. The project site currently contains existing apartment buildings. The purpose of this study is to address the project's impact upon the adjacent street network. The Airport Road intersections with US-50, Woodside Drive, Menlo Drive, and the two project driveways have been identified for intersection capacity analysis for the existing, existing plus project, 2035 base and 2035 base plus project scenarios.

The Bella Lago Apartment development will consist of the construction of 64 additional apartment units within the existing complex. The Bella Lago Apartment development is anticipated to generate 426 average weekday trips with 33 trips occurring during the AM peak hour and 40 trips occurring during the PM peak hour.

Traffic generated by the Bella Lago Apartment development will have little impact on the adjacent street network. The following recommendations are made to mitigate project traffic impacts.

It is recommended that any required signing, striping or traffic control improvements comply with Carson City requirements.

It is recommended that any new internal streets and on-site parking areas be designed per Carson City standards.

INTRODUCTION

STUDY AREA

The Bella Lago Apartment development is located in Carson City, Nevada. The project site is generally located on the west side of Airport Road, south of US-50 and north of Menlo Drive. Figure 1 shows the approximate location of the project site. The purpose of this study is to address the project's impact upon the adjacent street network. The Airport Road intersections with US-50, Woodside Drive, Menlo Drive, and the two project driveways have been identified for intersection capacity analysis for the existing, existing plus project, 2035 base and 2035 base plus project scenarios.

EXISTING AND PROPOSED LAND USES

The project site currently contains existing apartment buildings. Adjacent land generally includes commercial development to the north, multi-family residential units to the south, single family residential units to the east, and commercial development and vacant land to the west. The Bella Lago Apartment development will consist of the construction of 64 additional apartment units within the existing complex.

EXISTING AND PROPOSED ROADWAYS AND INTERSECTIONS

US-50 (William Street) is a four-lane roadway with two through lanes in each direction in the vicinity of the site. The speed limit is posted for 45 miles per hour. Roadway improvements generally include curb and gutter on both sides of the street and center two-way left turn lane. Sidewalks exist in developed areas and raised center medians exist in some areas.

Airport Road is a two-lane roadway with one through lane in each direction in the vicinity of the site. The speed limit is posted for 25 miles per hour. Roadway improvements generally include curb, gutter, and sidewalk on both sides of the street. Parking is allowed on both sides of the street adjacent to the project site.

Menlo Drive is a two-lane roadway with one through lane in each direction in the vicinity of the site. The speed limit is posted for 25 miles per hour adjacent to the site. Roadway improvements generally include curb, gutter, and sidewalk on both sides of the street. Parking is allowed on both sides of the street.

Woodside Drive is a two-lane roadway with one through lane in each direction east of Airport Road. The speed limit is posted for 25 miles per hour adjacent to the site. Roadway improvements generally include curb, gutter, and sidewalk on both sides of the street. Parking is allowed on both sides of the street.

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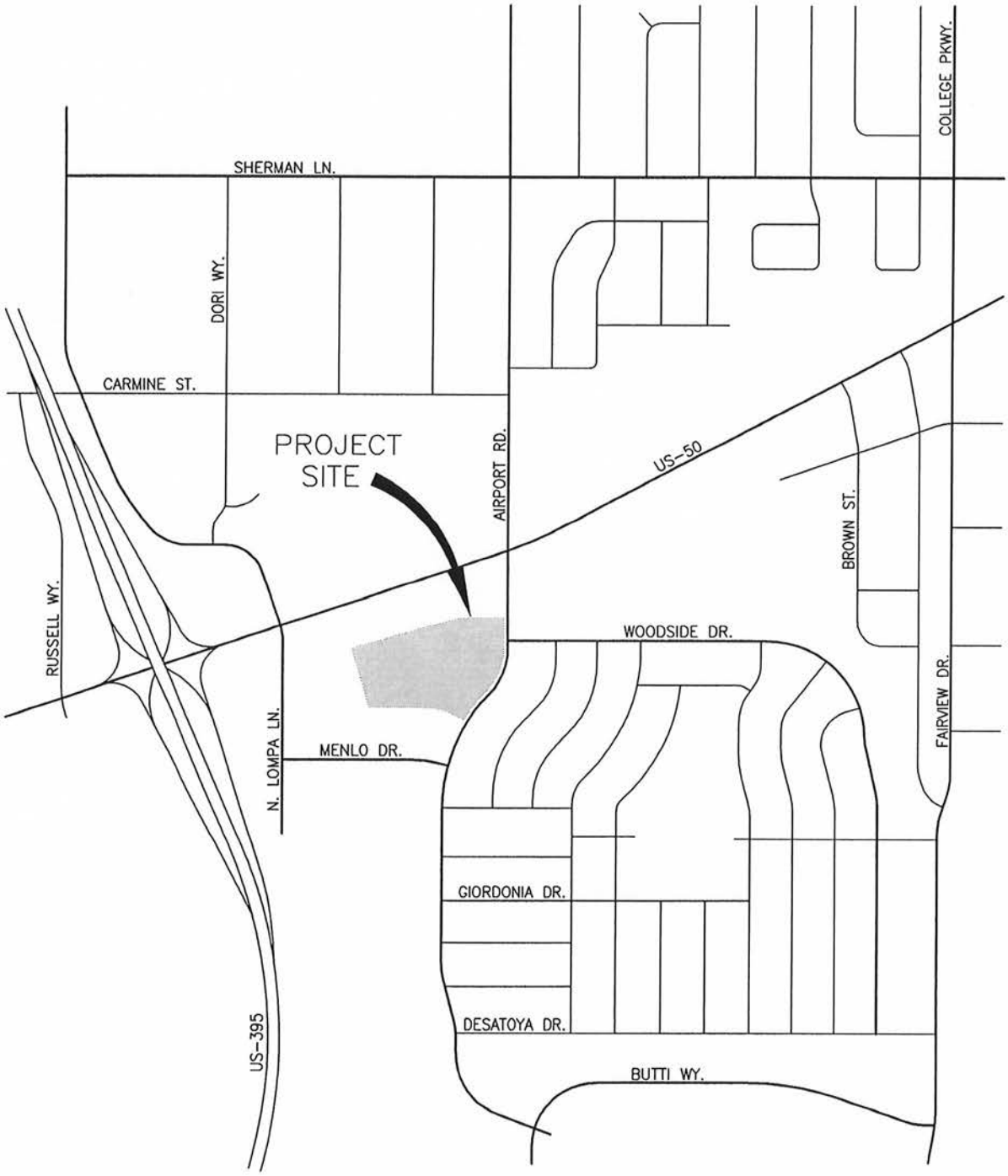

BELLA LAGO APARTMENTS

VICINITY MAP

FIGURE 1

The US-50/Airport Road intersection is a signalized four-leg intersection with protected/permissive left turn phasing at the north and south approaches and protected left turn phasing at the east and west approaches. The north approach contains one left turn lane, one through lane and one right turn lane. The south approach contains one left turn lane and one shared through-right turn lane. The east and west approaches each contain one left turn lane, two through lanes and one right turn lane.

The Airport Road/Menlo Drive intersection is an unsignalized three-leg intersection with stop sign control at the west approach. The north approach contains one shared through-right turn lane. The south approach contains one shared left turn-through lane. The west approach contains one shared left turn-right turn lane. Pedestrian crosswalks exist at all approaches.

The Airport Road/Woodside Drive intersection is an unsignalized three-leg intersection with stop sign control at all approaches. The north approach contains one left turn lane and one through lane. The south approach contains one shared through-right turn lane. The east approach contains one shared left turn-right turn lane. Pedestrian crosswalks exist at the north and east approaches.

The Airport Road/North Project Driveway intersection is an unsignalized three-leg intersection with stop control at the west approach. The north approach contains one shared through-right turn lane. The south approach contains one shared left turn-through lane. The west approach contains one shared left turn-right turn lane.

The Airport Road/South Project Driveway intersection is an unsignalized three-leg intersection with stop control at the west approach. The north approach contains one shared through-right turn lane. The south approach contains one shared left turn-through lane. The west approach contains one shared left turn-right turn lane.

TRIP GENERATION

In order to assess the magnitude of traffic impacts of the proposed development on the key intersections, trip generation rates and peak hours had to be determined. Trip generation rates were obtained from the Ninth Edition of *ITE Trip Generation* (2012) for Land Use 220: Apartment. Trip generation for the proposed development was calculated for the peak hours occurring between 7:00 AM and 9:00 AM and 4:00 PM and 6:00 PM which correspond to the peak hours of adjacent street traffic. The trip generation worksheet is included in the Appendix. Table 1 shows a summary of the average daily traffic (ADT) volumes and peak hour volumes generated by the proposed project.

TABLE 1
TRIP GENERATION

LAND USE	ADT	AM PEAK HOUR			PM PEAK HOUR		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Apartments (64 Dwelling Units)	426	7	26	33	26	14	40

TRIP DISTRIBUTION AND ASSIGNMENT

The distribution of project traffic to the key intersections was based on existing peak hour traffic patterns and the locations of existing and future attractions and productions. The anticipated trip distribution is shown in Figure 2.

The project trips shown in Table 1 were subsequently assigned to the key intersections based on the trip distribution shown on Figure 2. Figure 3 shows the AM and PM peak hour trip assignment at the key intersections.

EXISTING AND PROJECTED TRAFFIC VOLUMES

Figure 4 shows the existing AM and PM peak hour traffic volumes at the key intersections. The existing traffic volumes at the US-50/Airport Road intersection were obtained from the Carson City Public Works Department. The existing traffic volumes at the remaining intersections were obtained from traffic counts conducted in March of 2016.

Figure 5 shows the existing plus project traffic volumes for the AM and PM peak hours. The existing plus project traffic volumes were obtained by adding the trip assignment volumes shown on Figure 3 to the existing traffic volumes shown on Figure 4.

Figure 6 shows the 2035 base AM and PM peak hour traffic volumes at the key intersections. The 2035 base volumes at the US-50/Airport Road intersection were obtained from the Carson City Public Works Department. The 2035 base traffic volumes at the remaining intersections were estimated by applying a 1% average annual growth rate to the existing traffic volumes. The growth rate ware derived based on a comparison of 2016 existing and 2035 base traffic volumes on Airport Road south of US-50.

Figure 7 shows the 2035 base plus project traffic volumes at the key intersections for the AM and PM peak hours. The 2035 base plus project traffic volumes were obtained by adding the trip assignment volumes shown on Figure 3 to the 2035 base traffic volumes shown on Figure 6.

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LEGEND
● KEY INTERSECTIONS

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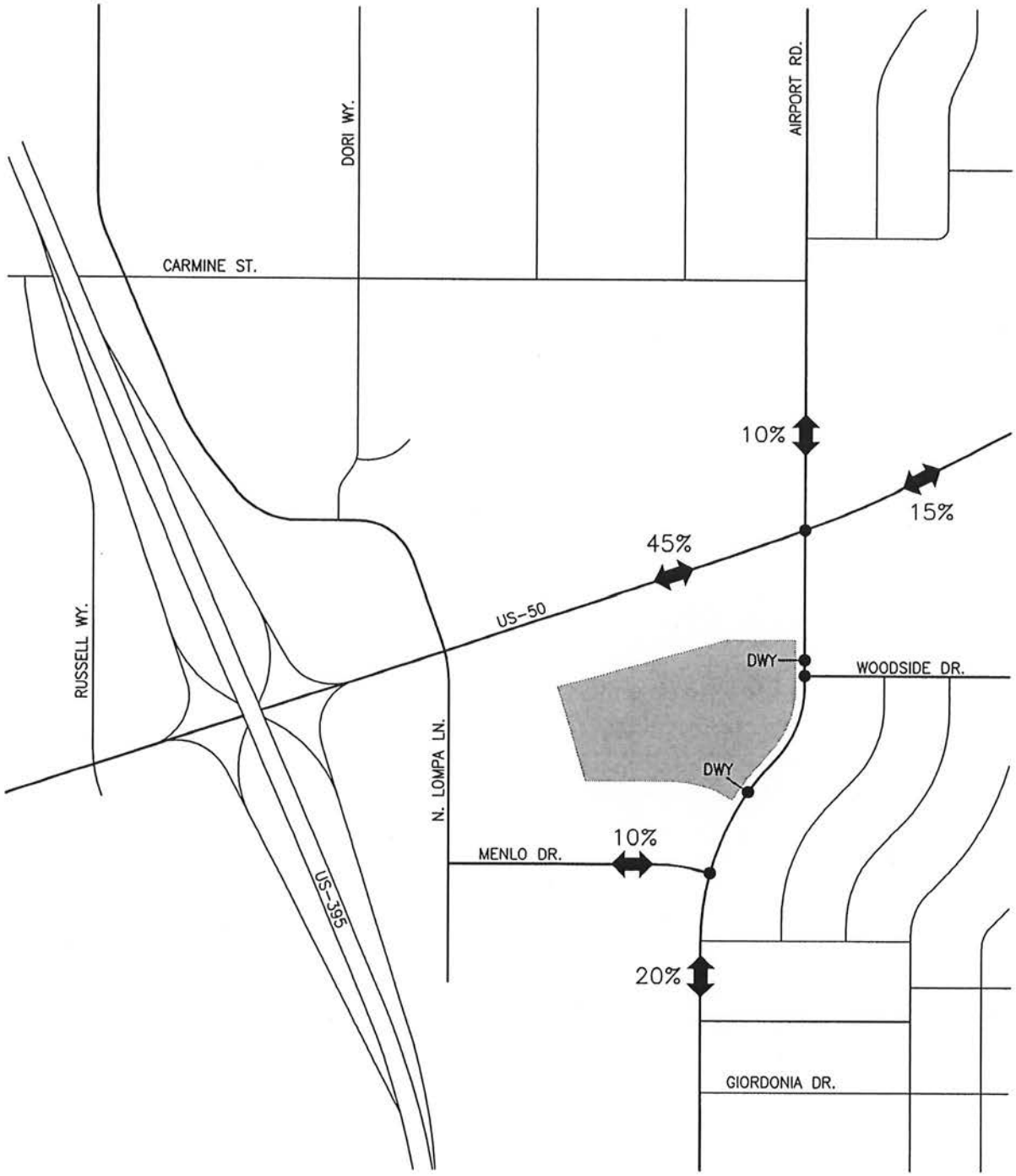

BELLA LAGO APARTMENTS

TRIP DISTRIBUTION

FIGURE 2

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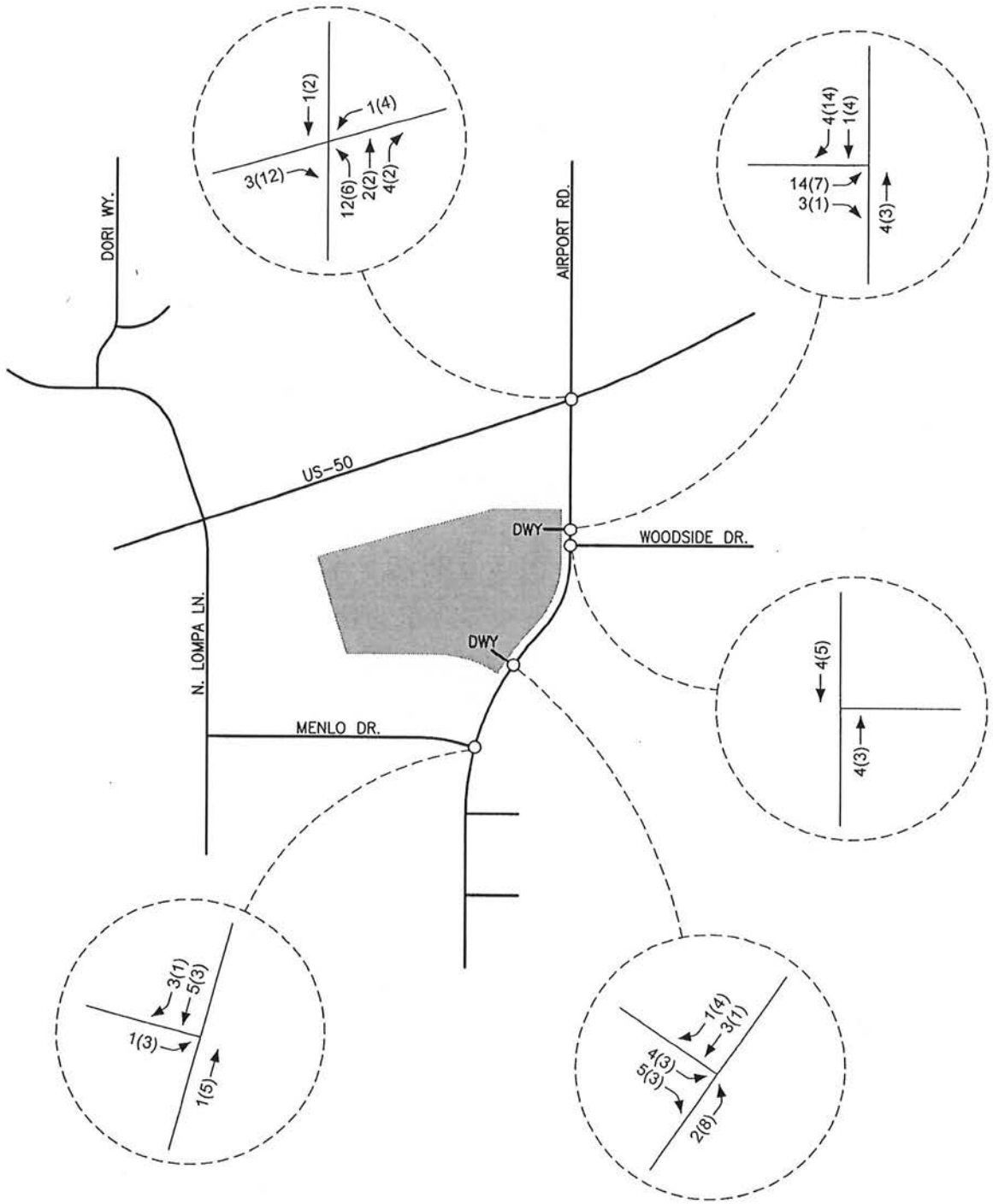
LEGEND
– AM PEAK HOUR
(–) PM PEAK HOUR



BELLA LAGO APARTMENTS

TRIP ASSIGNMENT

FIGURE 3

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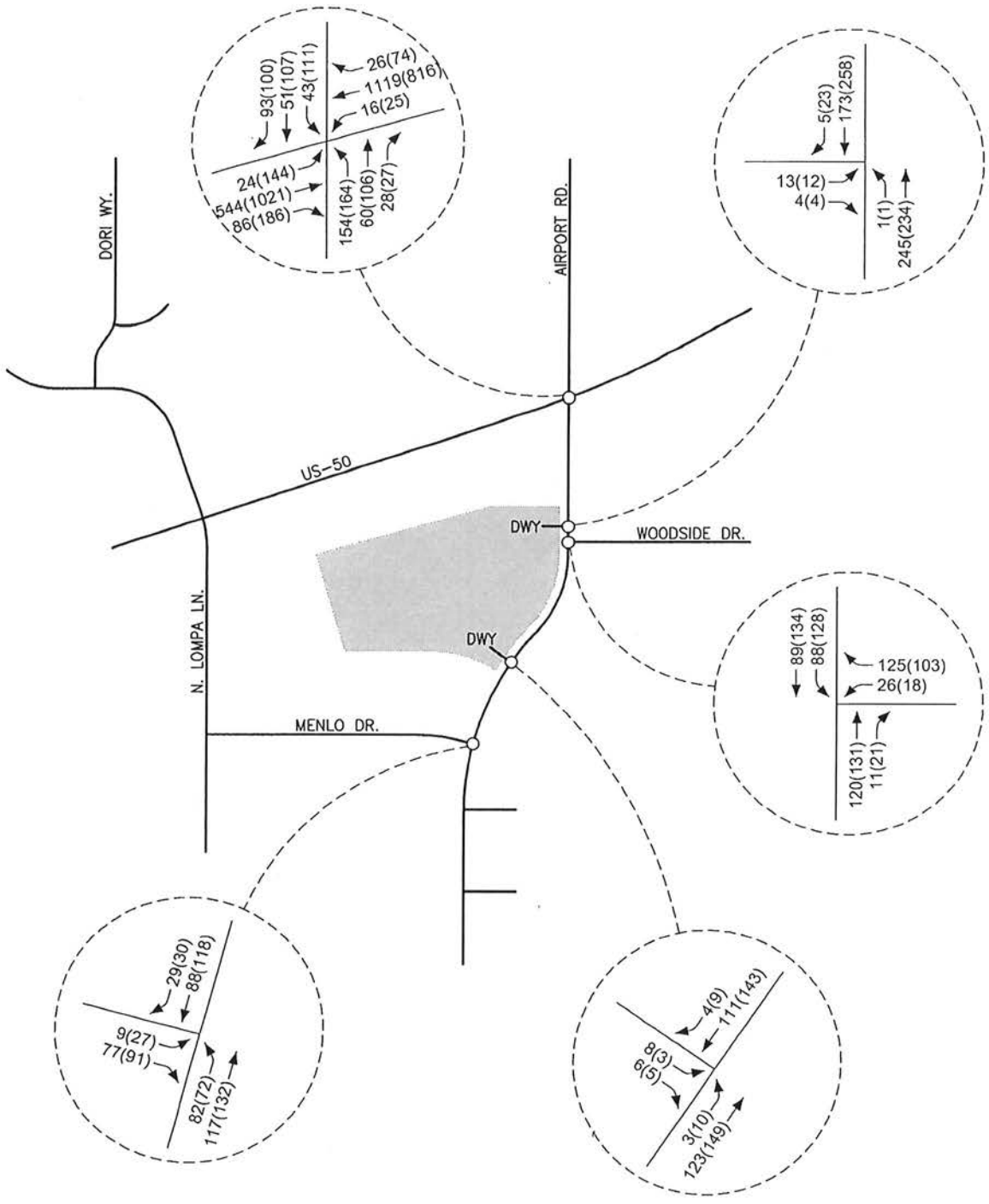
LEGEND
– AM PEAK HOUR
(–) PM PEAK HOUR



BELLA LAGO APARTMENTS
EXISTING TRAFFIC VOLUMES
FIGURE 4

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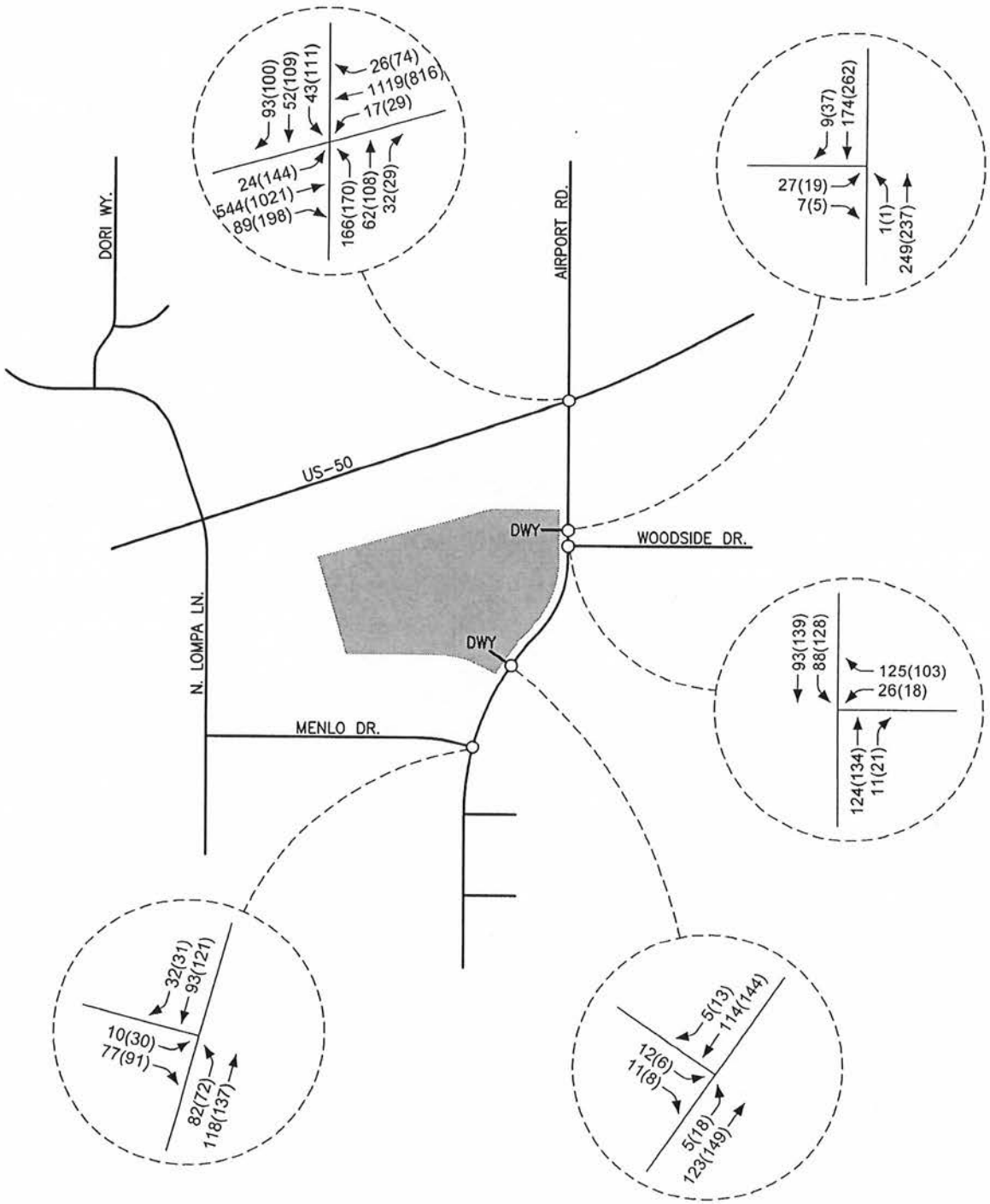
LEGEND
– AM PEAK HOUR
(–) PM PEAK HOUR



BELLA LAGO APARTMENTS
EXISTING PLUS PROJECT TRAFFIC VOLUMES
FIGURE 5

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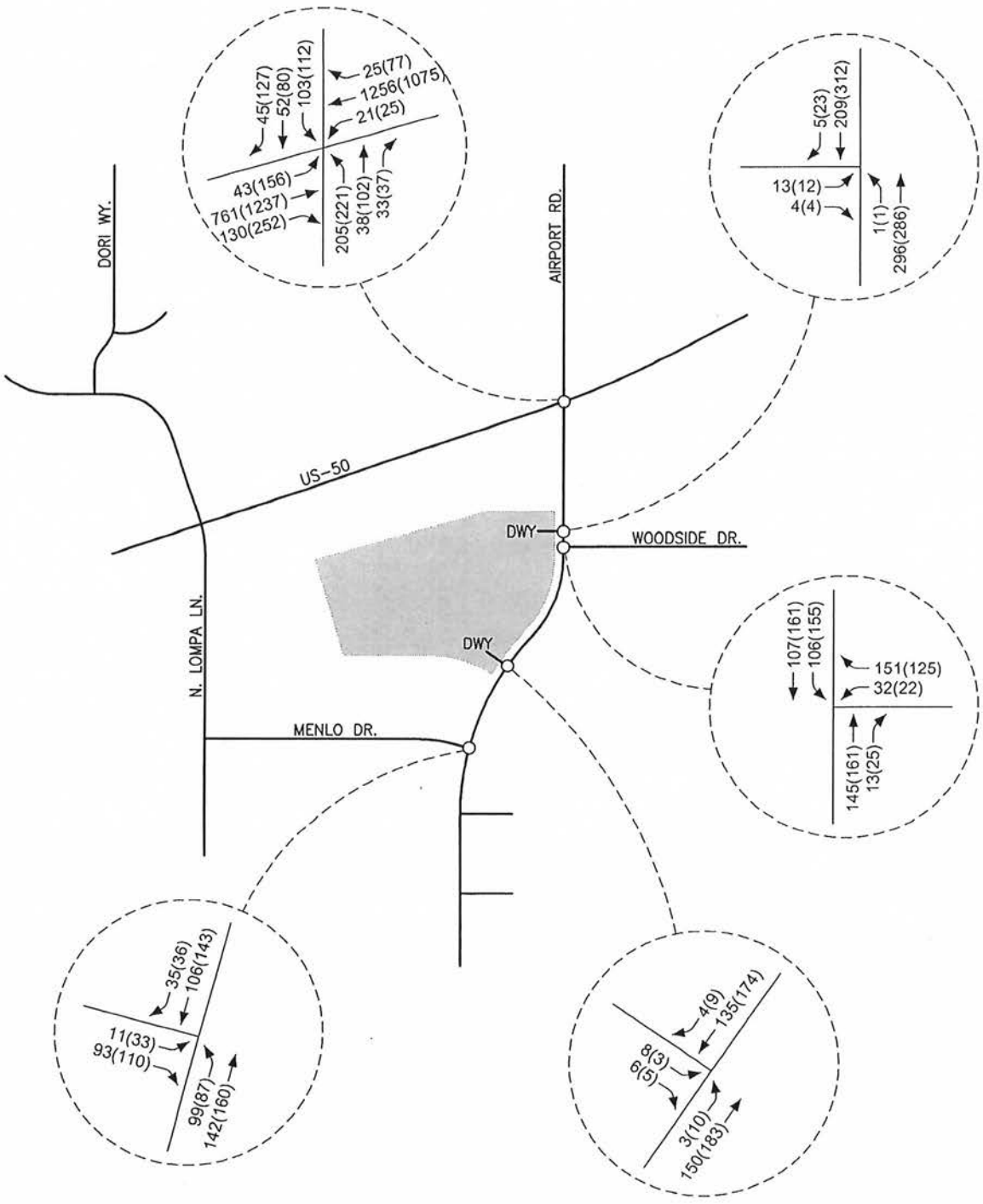
LEGEND
– AM PEAK HOUR
(–) PM PEAK HOUR



BELLA LAGO APARTMENTS
2035 BASE TRAFFIC VOLUMES
FIGURE 6

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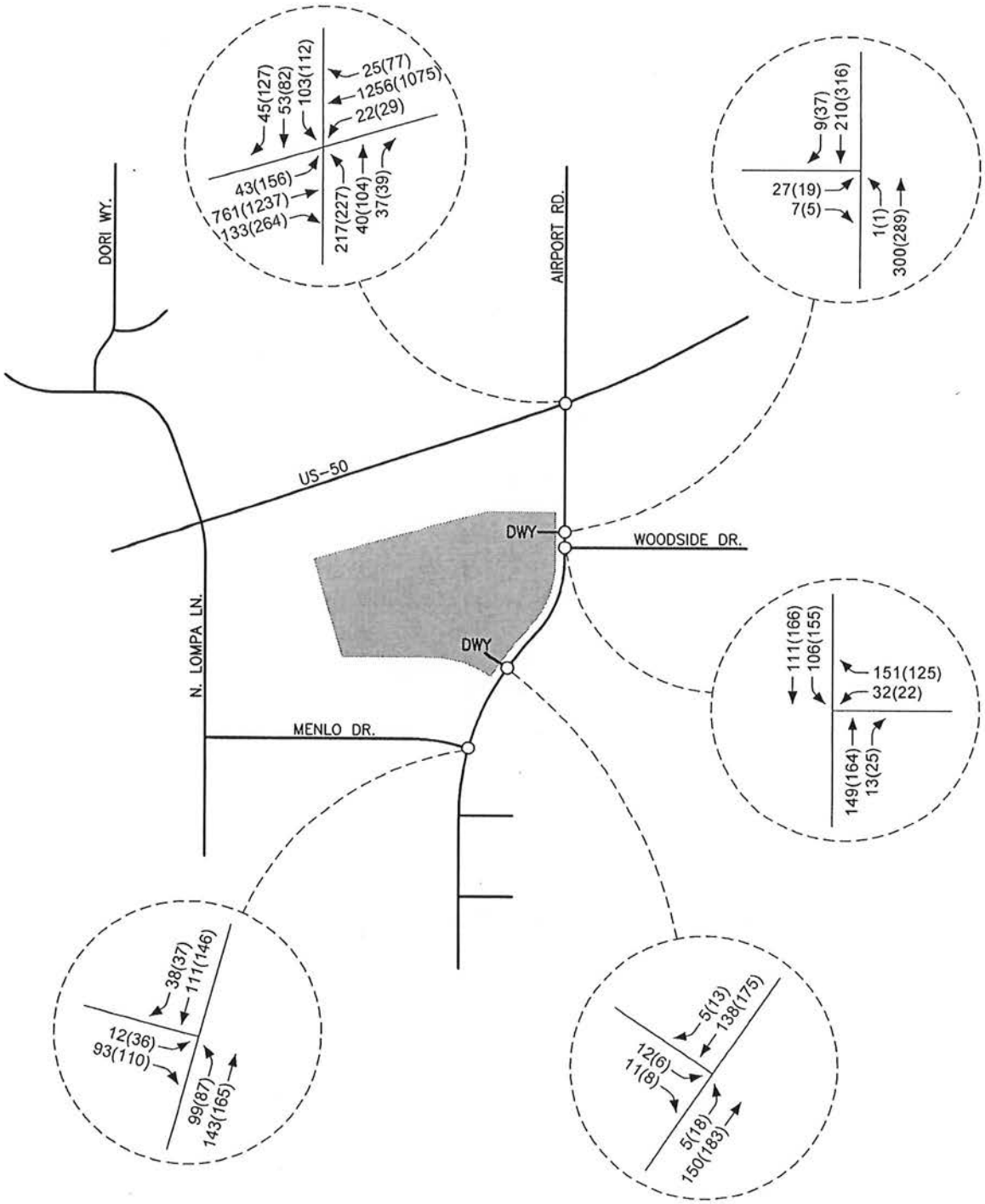
LEGEND
– AM PEAK HOUR
(–) PM PEAK HOUR



BELLA LAGO APARTMENTS
2035 BASE PLUS PROJECT TRAFFIC VOLUMES
FIGURE 7

INTERSECTION CAPACITY ANALYSIS

The key intersections were analyzed for capacity based on procedures presented in the *Highway Capacity Manual* (2010), prepared by the Transportation Research Board, for unsignalized and signalized intersections using the latest version of the Highway Capacity software.

The result of capacity analysis is a level of service (LOS) rating for each signalized intersection and unsignalized intersection minor movement. Level of service is a qualitative measure of traffic operating conditions where a letter grade "A" through "F", corresponding to progressively worsening traffic operation, is assigned to the intersection or minor movement.

The *Highway Capacity Manual* defines level of service for stop controlled intersections in terms of computed or measured control delay for each minor movement. Level of service is not defined for the intersection as a whole. The level of service criteria for unsignalized intersections is shown in Table 2.

TABLE 2
LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

LEVEL OF SERVICE	DELAY RANGE (SEC/VEH)
A	≤10
B	>10 and ≤15
C	>15 and ≤25
D	>25 and ≤35
E	>35 and ≤50
F	>50

Level of service for signalized intersections is stated in terms of the average control delay per vehicle for a peak 15 minute analysis period. The level of service criteria for signalized intersections is shown in Table 3.

TABLE 3
LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

LEVEL OF SERVICE	CONTROL DELAY PER VEHICLE (SEC)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

Table 4 shows a summary of the level of service and delay results at the key intersections for the existing, existing plus project, 2035 base and 2035 base plus project scenarios. The intersection capacity worksheets are included in the Appendix.

TABLE 4
INTERSECTION LEVEL OF SERVICE AND DELAY RESULTS

INTERSECTION	EXISTING		EXISTING + PROJECT		2035 BASE		2035 BASE + PROJECT	
	AM	PM	AM	PM	AM	PM	AM	PM
US-50/Airport Road	C26.4	C28.0	C26.6	C28.1	C27.9	C30.5	C28.1	C30.6
Airport Road/Woodside Drive								
Westbound Left-Right	A8.3	A8.3	A8.3	A8.4	A8.9	A9.0	A8.9	A9.0
Northbound Thru-Right	A8.6	A8.7	A8.7	A8.9	A9.2	A9.5	A9.2	A9.6
Southbound Left	A9.2	A9.7	A9.2	A9.7	A9.7	B10.4	A9.7	B10.4
Southbound Thru	A8.5	A9.0	A8.6	A9.0	A8.9	A9.5	A9.0	A9.6
Airport Road/Menlo Drive								
Eastbound Left-Right	A9.6	B10.5	A9.7	B10.7	B10.0	B11.3	B10.1	B11.5
Northbound Left	A7.6	A7.7	A7.7	A7.7	A7.7	A7.8	A7.8	A7.8
Airport Road/North Driveway								
Eastbound Left-Right	B11.1	B11.9	B11.4	B12.3	B11.9	B13.0	B12.3	B13.5
Northbound Left	A7.6	A7.9	A7.6	A7.9	A7.7	A8.0	A7.7	A8.1
Airport Road/South Driveway								
Eastbound Left-Right	A9.6	A9.7	A9.6	A9.9	B10.0	B10.0	B10.3	B10.3
Northbound Left	A7.5	A7.6	A7.5	A7.6	A7.7	A7.7	A7.7	A7.7

US-50/Airport Road Intersection

The US-50/Airport Road intersection was analyzed as a signalized four-leg intersection with the existing phasing for all scenarios. The intersection currently operates at LOS C with a delay of 26.4 seconds per vehicle during the AM peak hour and 28.0 seconds per vehicle during the PM peak hour. For the existing plus project volumes the intersection will continue to operate at LOS C with delays slightly increasing to 26.6 seconds per vehicle during the AM peak hour and 28.1 seconds per vehicle during the PM peak hour. For the 2035 base volumes the intersection is anticipated to operate at LOS C with a delay of 27.9 seconds per vehicle during the AM peak hour and 30.5 seconds per vehicle during the PM peak hour. For the 2035 base plus project volumes the intersection continues to operate at LOS C with delays slightly increasing to 28.1 seconds per vehicle during the AM peak hour and 30.6 seconds per vehicle during the PM peak hour. The intersection was analyzed with the existing approach lanes for all scenarios. No improvements are recommended at the US-50/Airport Road intersection.

Airport Road/Woodside Drive Intersection

The Airport Road/Woodside Drive intersection was analyzed as an unsignalized three-leg intersection with stop sign control at all approaches for all scenarios. The intersection movements currently operates at LOS A during the AM and PM peak hours. For the existing plus project traffic volumes the intersection movements continue to operate at LOS A during the AM and PM peak hours. For the 2035 base traffic volumes the intersection movements are anticipated to operate at LOS B or better during the AM and PM peak hours. For the 2035 base plus project traffic volumes the intersection movements continue to operate at LOS B or better during the AM and PM peak hours. The intersection was analyzed with the existing approach lanes for all scenarios. No improvements are recommended at the Airport Road/Woodside Drive intersection.

Airport Road/Menlo Drive Intersection

The Airport Road/Menlo Drive intersection was analyzed as an unsignalized three-leg intersection with stop sign control at the west approach for all scenarios. The intersection minor movements currently operates at LOS A during the AM peak hour and LOS B or better during the PM peak hour. For the existing plus project traffic volumes the intersection minor movements continue to operate at LOS A during the AM peak hour and LOS B or better during the PM peak hour. For the 2035 base traffic volumes the intersection minor movements are anticipated to operate at LOS B or better during the AM and PM peak hours. For the 2035 base plus project traffic volumes the intersection minor movements continue to operate at LOS B or better during the AM and PM peak hours. The intersection was analyzed with the existing approach lanes for all scenarios. No improvements are recommended at the Airport Road/Menlo Drive intersection.

Airport Road/North Project Driveway Intersection

The Airport Road/North Project Driveway intersection was analyzed as an unsignalized three-leg intersection with stop control at the west approach for all scenarios. The intersection minor movements currently operates at LOS B or better during the AM and PM peak hours. For the existing plus project traffic volumes the intersection movements continue to operate at LOS B or better during the AM and PM peak hours. For the 2035 base traffic volumes the intersection movements are anticipated to operate at LOS B or better during the AM and PM peak hours. For the 2035 base plus project traffic volumes the intersection movements continue to operate at LOS B or better during the AM and PM peak hours. The intersection was analyzed with the existing approach lanes for all scenarios.

Airport Road/South Project Driveway Intersection

The Airport Road/South Project Driveway intersection was analyzed as an unsignalized three-leg intersection with stop control at the west approach for all scenarios. The intersection minor movements currently operates at LOS A during the AM and PM peak hours. For the existing plus project traffic volumes the intersection movements continue to operate at LOS A during the AM and PM peak hours. For the 2035 base traffic volumes the intersection movements are anticipated to operate at LOS B or better during the AM and PM peak hours. For the 2035 base plus project traffic volumes the intersection movements continue to operate at LOS B or better during the AM and PM peak hours. The intersection was analyzed with the existing approach lanes for all scenarios.

SITE PLAN REVIEW

A copy of the site plan for the Bella Lago Apartment development is included with this submittal. The site plan indicates that project access will be provided from two existing driveways on Airport Road. Both driveways currently operate with full turning movements allowed. The project driveways connect to the on-site streets and parking areas providing good internal circulation. It is recommended that any new on-site streets and parking areas be designed per Carson City standards.

The north project driveway on Airport Road is located within the north approach of the Airport Road/Woodside Drive intersection. Observations at this driveway during the critical AM and PM peak hours indicated that queuing at the stop controlled north approach of the Airport Road/Woodside Drive intersection sometimes blocked the project driveway. However, no conflicts were observed on Airport Road due to the low project traffic volumes entering the driveway. The south project driveway on Airport Road is located approximately 50 feet north of an existing driveway serving the adjacent apartment complex. No conflicts were observed at the south driveway.

RECOMMENDATIONS

Traffic generated by the Bella Lago Apartment development will have little impact on the adjacent street network. The following recommendations are made to mitigate project traffic impacts.

It is recommended that any required signing, striping or traffic control improvements comply with Carson City requirements.

It is recommended that any new internal streets and on-site parking areas be designed per Carson City standards.

APPENDIX

Trip Generation Summary - Alternative 1

Project: New Project
Alternative: Alternative 1

Open Date: 3/9/2016
Analysis Date: 3/9/2016

ITE	Land Use	Average Daily Trips			AM Peak Hour of Adjacent Street Traffic			PM Peak Hour of Adjacent Street Traffic		
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
220	APT 1	213	213	426	7	26	33	26	14	40
	64 Dwelling Units									
Unadjusted Volume		0	0	0	0	0	0	0	0	0
Internal Capture Trips		0	0	0	0	0	0	0	0	0
Pass-By Trips		0	0	0	0	0	0	0	0	0
Volume Added to Adjacent Streets		0	0	0	0	0	0	0	0	0

Total AM Peak Hour Internal Capture = 0 Percent

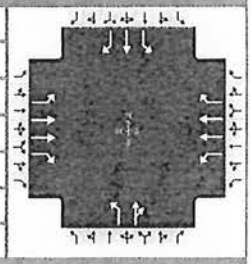
Total PM Peak Hour Internal Capture = 0 Percent

Source: Institute of Transportation Engineers, Trip Generation Manual 9th Edition, 2012

TRIP GENERATION 2014, TRAFFICWARE, LLC

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	Solaegui Engineers	Analysis Date	3/10/2016	Area Type	Other
Jurisdiction	Carson City	Time Period	AM Peak Hour	PHF	0.92
Urban Street		Analysis Year	Existing	Analysis Period	1> 7:00
Intersection	US-50 & Airport	File Name	UsAi16ax.xus		
Project Description	Bella Lago				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	24	544	86	16	1119	26	154	60	28	43	51	93

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	10.0	60.0	7.0	1.0	22.0	0.0	1	2	3	4	
Yellow	4.0	4.0	4.0	0.0	4.0	0.0	5	6	7	8	
Red	1.0	1.0	1.0	0.0	1.0	0.0					

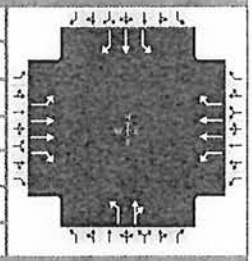
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	3.0	2.0	3.0	1.1	4.0	1.1	3.0
Phase Duration, s	15.0	65.0	15.0	65.0	13.0	28.0	12.0	27.0
Change Period, ($Y+R_c$), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0	3.1	3.2	3.1	3.2
Queue Clearance Time (g_s), s	3.6		3.1		10.0	7.6	4.5	8.7
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.4
Phase Call Probability	1.00		1.00		1.00	1.00	1.00	1.00
Max Out Probability	0.00		0.00		1.00	0.00	1.00	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	26	591	72	17	1216	28	167	96		47	55	101
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1774	1773	1579	1774	1773	1579	1774	1762		1774	1863	1579
Queue Service Time (g_s), s	1.6	12.0	2.9	1.1	31.3	1.1	8.0	5.6		2.5	3.0	6.7
Cycle Queue Clearance Time (g_c), s	1.6	12.0	2.9	1.1	31.3	1.1	8.0	5.6		2.5	3.0	6.7
Green Ratio (*g/C*)	0.08	0.50	0.50	0.08	0.50	0.50	0.25	0.19		0.24	0.18	0.18
Capacity (*c*), veh/h	148	1773	789	148	1773	789	391	338		330	342	289
Volume-to-Capacity Ratio (*X*)	0.176	0.333	0.091	0.118	0.686	0.036	0.428	0.283		0.142	0.162	0.349
Available Capacity (c_a), veh/h	148	1773	789	148	1773	789	391	338		330	342	289
Back of Queue (*Q*), veh/ln (50 th percentile)	0.7	4.9	1.1	0.5	13.1	0.4	4.2	2.4		1.1	1.4	2.6
Queue Storage Ratio (*RQ*) (50 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Uniform Delay (d_1), s/veh	51.2	18.0	15.7	50.9	22.8	15.3	37.7	41.5		35.6	41.2	42.8
Incremental Delay (d_2), s/veh	0.2	0.5	0.2	0.1	2.2	0.1	0.3	0.2		0.1	0.1	0.3
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Control Delay (*d*), s/veh	51.4	18.5	15.9	51.0	25.0	15.4	38.0	41.6		35.7	41.3	43.0
Level of Service (LOS)	D	B	B	D	C	B	D	D		D	D	D
Approach Delay, s/veh / LOS	19.5	B		25.2	C		39.3	D		40.9	D	
Intersection Delay, s/veh / LOS	26.4						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.3	B	2.4	B	3.0	C	3.0	C
Bicycle LOS Score / LOS	1.1	A	1.5	A	0.9	A	0.8	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	Solaegui Engineers	Analysis Date	3/10/2016	Area Type	Other
Jurisdiction	Carson City	Time Period	PM Peak Hour	PHF	0.92
Urban Street		Analysis Year	Existing	Analysis Period	1> 7:00
Intersection	US-50 & Airport	File Name	UsAi16px.xus		
Project Description	Bell Lago				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	144	1021	186	25	816	74	164	106	27	111	107	100

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

								1	2	3	4	
Green	8.0	5.0	56.0	7.0	2.0	22.0						
Yellow	4.0	0.0	4.0	4.0	0.0	4.0						
Red	1.0	0.0	1.0	1.0	0.0	1.0	5	6	7	8		

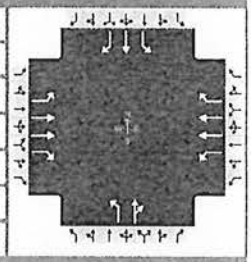
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	3.0	2.0	3.0	1.1	4.0	1.1	3.0
Phase Duration, s	18.0	66.0	13.0	61.0	14.0	29.0	12.0	27.0
Change Period, ($Y+R_c$), s	0.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0	3.1	3.1	3.1	3.1
Queue Clearance Time (g_s), s	11.9		3.7		11.0	10.4	8.6	8.5
Green Extension Time (g_e), s	0.1	0.0	0.0	0.0	0.0	0.6	0.0	0.6
Phase Call Probability	1.00		1.00		1.00	1.00	1.00	1.00
Max Out Probability	0.03		0.11		1.00	0.00	1.00	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	157	1110	159	27	887	70	178	145		121	116	87
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1774	1773	1579	1774	1773	1579	1774	1797		1774	1863	1579
Queue Service Time (g_s), s	9.9	26.9	6.6	1.7	21.3	3.0	9.0	8.4		6.6	6.5	5.7
Cycle Queue Clearance Time (g_c), s	9.9	26.9	6.6	1.7	21.3	3.0	9.0	8.4		6.6	6.5	5.7
Green Ratio (*g/C*)	0.15	0.51	0.51	0.07	0.47	0.47	0.26	0.20		0.24	0.18	0.18
Capacity (*c*), veh/h	266	1803	802	118	1655	737	357	359		304	342	289
Volume-to-Capacity Ratio (*X*)	0.588	0.616	0.198	0.230	0.536	0.094	0.499	0.402		0.397	0.341	0.300
Available Capacity (c_a), veh/h	266	1803	802	118	1655	737	357	359		304	342	289
Back of Queue (Q), veh/ln (50 th percentile)	4.5	11.1	2.5	0.8	9.0	1.1	4.3	3.7		2.9	3.0	2.2
Queue Storage Ratio (*RQ*) (50 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Uniform Delay (d_1), s/veh	47.5	21.1	16.1	53.1	22.8	17.9	37.4	41.8		37.3	42.7	42.3
Incremental Delay (d_2), s/veh	2.3	1.6	0.6	0.4	1.2	0.3	0.4	0.3		0.3	0.2	0.2
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Control Delay (*d*), s/veh	49.9	22.7	16.7	53.4	24.0	18.1	37.8	42.0		37.7	42.9	42.6
Level of Service (LOS)	D	C	B	D	C	B	D	D		D	D	D
Approach Delay, s/veh / LOS	25.0	C		24.4	C		39.7	D		40.9	D	
Intersection Delay, s/veh / LOS	28.0						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.3	B	2.5	B	3.0	C	3.0	C
Bicycle LOS Score / LOS	1.7	A	1.3	A	1.0	A	1.0	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	Solaegui Engineers	Analysis Date	3/10/2016	Area Type	Other
Jurisdiction	Carson City	Time Period	AM Peak Hour	PHF	0.92
Urban Street		Analysis Year	Existing + Project	Analysis Period	1> 7:00
Intersection	US-50 & Airport	File Name	UsAi16aw.xus		
Project Description	Bella Lago				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	24	544	89	17	1119	26	166	62	32	43	52	93

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	10.0	60.0	7.0	1.0	22.0	0.0	1	2	3	4	
Yellow	4.0	4.0	4.0	0.0	4.0	0.0	5	6	7	8	
Red	1.0	1.0	1.0	0.0	1.0	0.0					

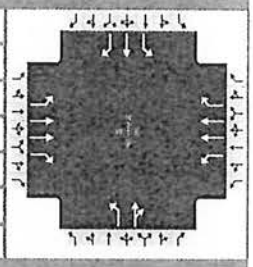
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	3.0	2.0	3.0	1.1	4.0	1.1	3.0
Phase Duration, s	15.0	65.0	15.0	65.0	13.0	28.0	12.0	27.0
Change Period, ($Y+R_c$), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0	3.1	3.2	3.1	3.2
Queue Clearance Time (g_s), s	3.6		3.2		10.0	8.0	4.5	8.7
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.4
Phase Call Probability	1.00		1.00		1.00	1.00	1.00	1.00
Max Out Probability	0.00		0.00		1.00	0.00	1.00	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	26	591	75	18	1216	28	180	102		47	57	101
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1774	1773	1579	1774	1773	1579	1774	1755		1774	1863	1579
Queue Service Time (g_s), s	1.6	12.0	3.0	1.2	31.3	1.1	8.0	6.0		2.5	3.1	6.7
Cycle Queue Clearance Time (g_c), s	1.6	12.0	3.0	1.2	31.3	1.1	8.0	6.0		2.5	3.1	6.7
Green Ratio (*g/C*)	0.08	0.50	0.50	0.08	0.50	0.50	0.25	0.19		0.24	0.18	0.18
Capacity (*c*), veh/h	148	1773	789	148	1773	789	390	336		324	342	289
Volume-to-Capacity Ratio (*X*)	0.176	0.333	0.095	0.125	0.686	0.036	0.463	0.304		0.144	0.166	0.349
Available Capacity (c_a), veh/h	148	1773	789	148	1773	789	390	336		324	342	289
Back of Queue (*Q*), veh/ln (50 th percentile)	0.7	4.9	1.1	0.5	13.1	0.4	4.6	2.6		1.1	1.4	2.6
Queue Storage Ratio (*RQ*) (50 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Uniform Delay (d_1), s/veh	51.2	18.0	15.7	50.9	22.8	15.3	38.3	41.6		35.6	41.3	42.8
Incremental Delay (d_2), s/veh	0.2	0.5	0.2	0.1	2.2	0.1	0.3	0.2		0.1	0.1	0.3
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Control Delay (*d*), s/veh	51.4	18.5	16.0	51.1	25.0	15.4	38.6	41.8		35.7	41.4	43.0
Level of Service (LOS)	D	B	B	D	C	B	D	D		D	D	D
Approach Delay, s/veh / LOS	19.5	B		25.2	C		39.7	D		40.9	D	
Intersection Delay, s/veh / LOS	26.6						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.3	B	2.4	B	3.0	C	3.0	C
Bicycle LOS Score / LOS	1.1	A	1.5	A	1.0	A	0.8	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	Solaegui Engineers	Analysis Date	3/10/2016	Area Type	Other
Jurisdiction	Carson City	Time Period	PM Peak Hour	PHF	0.92
Urban Street		Analysis Year	Existing + Project	Analysis Period	1> 7:00
Intersection	US-50 & Airport	File Name	UsAi16pw.xus		
Project Description	Bella Lago				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	144	1021	198	29	816	74	170	108	29	111	109	100

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

								1	2	3	4	
Green	8.0	5.0	56.0	7.0	2.0	22.0						
Yellow	4.0	0.0	4.0	4.0	0.0	4.0						
Red	1.0	0.0	1.0	1.0	0.0	1.0	5	6	7	8		

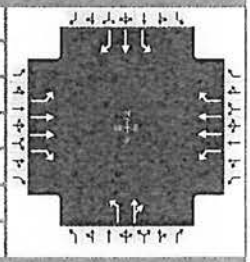
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	3.0	2.0	3.0	1.1	4.0	1.1	3.0
Phase Duration, s	18.0	66.0	13.0	61.0	14.0	29.0	12.0	27.0
Change Period, ($Y+R_c$), s	0.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0	3.1	3.1	3.1	3.1
Queue Clearance Time (g_s), s	11.9		4.0		11.0	10.7	8.6	8.7
Green Extension Time (g_e), s	0.1	0.0	0.0	0.0	0.0	0.6	0.0	0.6
Phase Call Probability	1.00		1.00		1.00	1.00	1.00	1.00
Max Out Probability	0.03		0.20		1.00	0.00	1.00	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	157	1110	172	32	887	70	185	149		121	118	87
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1774	1773	1579	1774	1773	1579	1774	1794		1774	1863	1579
Queue Service Time (g_s), s	9.9	26.9	7.2	2.0	21.3	3.0	9.0	8.7		6.6	6.7	5.7
Cycle Queue Clearance Time (g_c), s	9.9	26.9	7.2	2.0	21.3	3.0	9.0	8.7		6.6	6.7	5.7
Green Ratio (*g/C*)	0.15	0.51	0.51	0.07	0.47	0.47	0.26	0.20		0.24	0.18	0.18
Capacity (*c*), veh/h	266	1803	802	118	1655	737	355	359		300	342	289
Volume-to-Capacity Ratio (*X*)	0.588	0.616	0.214	0.267	0.536	0.094	0.520	0.415		0.402	0.347	0.300
Available Capacity (c_a), veh/h	266	1803	802	118	1655	737	355	359		300	342	289
Back of Queue (Q), veh/ln (50 th percentile)	4.5	11.1	2.7	0.9	9.0	1.1	0.5	3.9		2.9	3.1	2.2
Queue Storage Ratio (*RQ*) (50 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Uniform Delay (d_1), s/veh	47.5	21.1	16.3	53.2	22.8	17.9	37.8	41.9		37.4	42.7	42.3
Incremental Delay (d_2), s/veh	2.3	1.6	0.6	0.4	1.2	0.3	0.6	0.3		0.3	0.2	0.2
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Control Delay (*d*), s/veh	49.9	22.7	16.9	53.7	24.0	18.1	38.5	42.2		37.7	43.0	42.6
Level of Service (LOS)	D	C	B	D	C	B	D	D		D	D	D
Approach Delay, s/veh / LOS	25.0	C		24.5	C		40.1	D		40.9	D	
Intersection Delay, s/veh / LOS	28.1						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.3	B	2.5	B	3.0	C	3.0	C
Bicycle LOS Score / LOS	1.7	A	1.3	A	1.0	A	1.0	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	Solaegui Engineers	Analysis Date	3/10/2016	Area Type	Other
Jurisdiction	Carson City	Time Period	AM Peak Hour	PHF	0.92
Urban Street		Analysis Year	2035 Base	Analysis Period	1> 7:00
Intersection	US-50 & Airport	File Name	UsAi35ax.xus		
Project Description	Bella Lago				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	43	761	130	21	1256	25	205	38	33	103	52	45

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

							1	2	3	4	
Green	10.0	60.0	7.0	1.0	22.0	0.0					
Yellow	4.0	4.0	4.0	0.0	4.0	0.0					
Red	1.0	1.0	1.0	0.0	1.0	0.0	5	6	7	8	

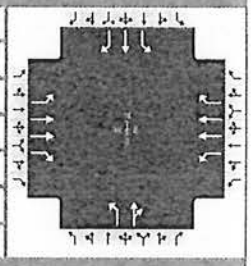
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	3.0	2.0	3.0	1.1	4.0	1.1	3.0
Phase Duration, s	15.0	65.0	15.0	65.0	13.0	28.0	12.0	27.0
Change Period, ($Y+R_c$), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0	3.1	3.2	3.1	3.2
Queue Clearance Time (g_s), s	5.0		3.4		10.0	6.6	8.1	5.1
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.3
Phase Call Probability	1.00		1.00		1.00	1.00	1.00	1.00
Max Out Probability	0.04		0.00		1.00	0.00	1.00	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	47	827	114	23	1365	27	223	77		112	57	49
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1774	1773	1579	1774	1773	1579	1774	1719		1774	1863	1579
Queue Service Time (g_s), s	3.0	18.2	4.7	1.4	37.5	1.1	8.0	4.6		6.1	3.1	3.1
Cycle Queue Clearance Time (g_c), s	3.0	18.2	4.7	1.4	37.5	1.1	8.0	4.6		6.1	3.1	3.1
Green Ratio (*g/C*)	0.08	0.50	0.50	0.08	0.50	0.50	0.25	0.19		0.24	0.18	0.18
Capacity (*c*), veh/h	148	1773	789	148	1773	789	390	329		344	342	289
Volume-to-Capacity Ratio (*X*)	0.316	0.466	0.145	0.154	0.770	0.034	0.571	0.234		0.326	0.166	0.169
Available Capacity (c_a), veh/h	148	1773	789	148	1773	789	390	329		344	342	289
Back of Queue (Q), veh/ln (50 th percentile)	1.3	7.5	1.8	0.6	15.8	0.4	2.1	1.9		2.7	1.4	1.2
Queue Storage Ratio (*RQ*) (50 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Uniform Delay (d_1), s/veh	51.8	19.6	16.2	51.1	24.4	15.3	40.0	41.0		37.0	41.3	41.3
Incremental Delay (d_2), s/veh	0.5	0.9	0.4	0.2	3.3	0.1	1.3	0.1		0.2	0.1	0.1
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Control Delay (*d*), s/veh	52.2	20.4	16.6	51.3	27.7	15.3	41.3	41.2		37.2	41.4	41.4
Level of Service (LOS)	D	C	B	D	C	B	D	D		D	D	D
Approach Delay, s/veh / LOS	21.5	C		27.8	C		41.2	D		39.2	D	
Intersection Delay, s/veh / LOS	27.9						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.3	B	2.4	B	3.0	C	3.0	C
Bicycle LOS Score / LOS	1.3	A	1.7	A	1.0	A	0.8	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	Solaegui Engineers	Analysis Date	3/10/2016	Area Type	Other
Jurisdiction	Carson City	Time Period	PM Peak Hour	PHF	0.92
Urban Street		Analysis Year	2035 Base	Analysis Period	1> 7:00
Intersection	US-50 & Airport	File Name	UsAi35px.xus		
Project Description	Bella Lago				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	156	1237	252	25	1075	77	221	102	37	112	80	127

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	8.0	5.0	56.0	7.0	2.0	22.0	1	2	3	4		
Yellow	4.0	0.0	4.0	4.0	0.0	4.0	5	6	7	8		
Red	1.0	0.0	1.0	1.0	0.0	1.0						

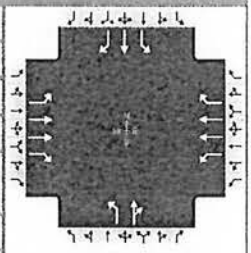
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	3.0	2.0	3.0	1.1	4.0	1.1	3.0
Phase Duration, s	18.0	66.0	13.0	61.0	14.0	29.0	12.0	27.0
Change Period, ($Y+R_c$), s	0.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0	3.1	3.2	3.1	3.2
Queue Clearance Time (g_s), s	12.8		3.7		11.0	10.9	8.7	9.4
Green Extension Time (g_e), s	0.1	0.0	0.0	0.0	0.0	0.6	0.0	0.6
Phase Call Probability	1.00		1.00		1.00	1.00	1.00	1.00
Max Out Probability	0.10		0.11		1.00	0.00	1.00	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	170	1345	220	27	1168	73	240	151		122	87	111
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1774	1773	1579	1774	1773	1579	1774	1778		1774	1863	1579
Queue Service Time (g_s), s	10.8	36.0	9.5	1.7	31.4	3.1	9.0	8.9		6.7	4.8	7.4
Cycle Queue Clearance Time (g_c), s	10.8	36.0	9.5	1.7	31.4	3.1	9.0	8.9		6.7	4.8	7.4
Green Ratio (*g/C*)	0.15	0.51	0.51	0.07	0.47	0.47	0.26	0.20		0.24	0.18	0.18
Capacity (*c*), veh/h	266	1803	802	118	1655	737	380	356		298	342	289
Volume-to-Capacity Ratio (*X*)	0.637	0.746	0.274	0.230	0.706	0.099	0.632	0.425		0.409	0.255	0.383
Available Capacity (c_a), veh/h	266	1803	802	118	1655	737	380	356		298	342	289
Back of Queue (*Q*), veh/ln (50 th percentile)	5.0	15.1	3.6	0.8	13.4	1.2	2.3	3.9		2.9	2.2	2.9
Queue Storage Ratio (*RQ*) (50 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Uniform Delay (d_1), s/veh	47.9	23.4	16.8	53.1	25.5	17.9	40.1	42.0		37.4	42.0	43.0
Incremental Delay (d_2), s/veh	3.9	2.9	0.8	0.4	2.6	0.3	2.6	0.3		0.3	0.1	0.3
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Control Delay (*d*), s/veh	51.8	26.2	17.7	53.4	28.0	18.2	42.7	42.3		37.7	42.1	43.3
Level of Service (LOS)	D	C	B	D	C	B	D	D		D	D	D
Approach Delay, s/veh / LOS	27.6	C		28.0	C		42.5	D		40.9	D	
Intersection Delay, s/veh / LOS	30.5						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.3	B	2.5	B	3.0	C	3.0	C
Bicycle LOS Score / LOS	1.9	A	1.5	A	1.1	A	1.0	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	Solaegui Engineers	Analysis Date	3/10/2016	Area Type	Other
Jurisdiction	Carson City	Time Period	AM Peak Hour	PHF	0.92
Urban Street		Analysis Year	2035 Base + Project	Analysis Period	1> 7:00
Intersection	US-50 & Airport	File Name	UsAi35aw.xus		
Project Description	Bella Lago				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	43	761	133	22	1256	25	217	40	37	103	53	45

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

							1	2	3	4	
Green	10.0	60.0	7.0	1.0	22.0	0.0	5	6	7	8	
Yellow	4.0	4.0	4.0	0.0	4.0	0.0					
Red	1.0	1.0	1.0	0.0	1.0	0.0					

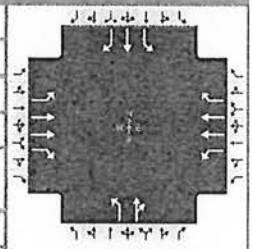
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	3.0	2.0	3.0	1.1	4.0	1.1	3.0
Phase Duration, s	15.0	65.0	15.0	65.0	13.0	28.0	12.0	27.0
Change Period, ($Y+R_c$), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0	3.1	3.2	3.1	3.2
Queue Clearance Time (g_s), s	5.0		3.5		10.0	7.0	8.1	5.1
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.3
Phase Call Probability	1.00		1.00		1.00	1.00	1.00	1.00
Max Out Probability	0.04		0.00		1.00	0.00	1.00	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	47	827	117	24	1365	27	236	84		112	58	49
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1774	1773	1579	1774	1773	1579	1774	1714		1774	1863	1579
Queue Service Time (g_s), s	3.0	18.2	4.8	1.5	37.5	1.1	8.0	5.0		6.1	3.1	3.1
Cycle Queue Clearance Time (g_c), s	3.0	18.2	4.8	1.5	37.5	1.1	8.0	5.0		6.1	3.1	3.1
Green Ratio (*g/C*)	0.08	0.50	0.50	0.08	0.50	0.50	0.25	0.19		0.24	0.18	0.18
Capacity (*c*), veh/h	148	1773	789	148	1773	789	389	329		338	342	289
Volume-to-Capacity Ratio (*X*)	0.316	0.466	0.149	0.162	0.770	0.034	0.606	0.255		0.331	0.169	0.169
Available Capacity (c_a), veh/h	148	1773	789	148	1773	789	389	329		338	342	289
Back of Queue (*Q*), veh/ln (50 th percentile)	1.3	7.5	1.8	0.7	15.8	0.4	2.6	2.1		2.7	1.4	1.2
Queue Storage Ratio (*RQ*) (50 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Uniform Delay (d_1), s/veh	51.8	19.6	16.2	51.1	24.4	15.3	40.5	41.2		37.0	41.3	41.3
Incremental Delay (d_2), s/veh	0.5	0.9	0.4	0.2	3.3	0.1	1.9	0.2		0.2	0.1	0.1
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Control Delay (*d*), s/veh	52.2	20.4	16.6	51.3	27.7	15.3	42.5	41.4		37.2	41.4	41.4
Level of Service (LOS)	D	C	B	D	C	B	D	D		D	D	D
Approach Delay, s/veh / LOS	21.5	C		27.8	C		42.2	D		39.2	D	
Intersection Delay, s/veh / LOS	28.1						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.3	B	2.4	B	3.0	C	3.0	C
Bicycle LOS Score / LOS	1.3	A	1.7	A	1.0	A	0.8	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	Solaegui Engineers	Analysis Date	3/10/2016	Area Type	Other
Jurisdiction	Carson City	Time Period	PM Peak Hour	PHF	0.92
Urban Street		Analysis Year	2035 Base + Project	Analysis Period	1> 7:00
Intersection	US-50 & Airport	File Name	UsAi35pw.xus		
Project Description	Bella Lago				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	156	1237	264	29	1075	77	227	104	39	112	82	127

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

								1	2	3	4	
Green	8.0	5.0	56.0	7.0	2.0	22.0						
Yellow	4.0	0.0	4.0	4.0	0.0	4.0						
Red	1.0	0.0	1.0	1.0	0.0	1.0						
							5	6	7	8		

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	3.0	2.0	3.0	1.1	4.0	1.1	3.0
Phase Duration, s	18.0	66.0	13.0	61.0	14.0	29.0	12.0	27.0
Change Period, ($Y+R_c$), s	0.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0	3.1	3.2	3.1	3.2
Queue Clearance Time (g_s), s	12.8		4.0		11.0	11.2	8.7	9.4
Green Extension Time (g_e), s	0.1	0.0	0.0	0.0	0.0	0.6	0.0	0.6
Phase Call Probability	1.00		1.00		1.00	1.00	1.00	1.00
Max Out Probability	0.10		0.20		1.00	0.00	1.00	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	170	1345	233	32	1168	73	247	155		122	89	111
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1774	1773	1579	1774	1773	1579	1774	1776		1774	1863	1579
Queue Service Time (g_s), s	10.8	36.0	10.2	2.0	31.4	3.1	9.0	9.2		6.7	4.9	7.4
Cycle Queue Clearance Time (g_c), s	10.8	36.0	10.2	2.0	31.4	3.1	9.0	9.2		6.7	4.9	7.4
Green Ratio (*g/C*)	0.15	0.51	0.51	0.07	0.47	0.47	0.26	0.20		0.24	0.18	0.18
Capacity (*c*), veh/h	266	1803	802	118	1655	737	378	355		294	342	289
Volume-to-Capacity Ratio (*X*)	0.637	0.746	0.290	0.267	0.706	0.099	0.652	0.438		0.414	0.261	0.383
Available Capacity (c_a), veh/h	266	1803	802	118	1655	737	378	355		294	342	289
Back of Queue (*Q*), veh/ln (50 th percentile)	5.0	15.1	3.8	0.9	13.4	1.2	2.6	4.0		2.9	2.3	2.9
Queue Storage Ratio (*RQ*) (50 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Uniform Delay (d_1), s/veh	47.9	23.4	17.0	53.2	25.5	17.9	40.5	42.1		37.4	42.0	43.0
Incremental Delay (d_2), s/veh	3.9	2.9	0.9	0.4	2.6	0.3	3.1	0.3		0.3	0.1	0.3
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Control Delay (*d*), s/veh	51.8	26.2	17.9	53.7	28.0	18.2	43.6	42.4		37.8	42.2	43.3
Level of Service (LOS)	D	C	B	D	C	B	D	D		D	D	D
Approach Delay, s/veh / LOS	27.6	C		28.1	C		43.2	D		40.9	D	
Intersection Delay, s/veh / LOS	30.6						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.3	B	2.5	B	3.0	C	3.0	C
Bicycle LOS Score / LOS	1.9	A	1.5	A	1.2	A	1.0	A

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Phone: Fax:
E-Mail:

ALL-WAY STOP CONTROL(AWSC) ANALYSIS

Analyst: MSH
Agency/Co.: Solaegui Engineers
Date Performed: 3/10/2016
Analysis Time Period: AM Peak Hour
Intersection: Airport & Woodside
Jurisdiction: Carson City
Units: U. S. Customary
Analysis Year: Existing
Project ID: Bella Lago
East/West Street: Woodsie Drive
North/South Street: Airport Road

Worksheet 2 - Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	0	0	0	26	0	125	0	120	11	88	89	0
% Thrus Left Lane												

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration			LR		TR		L	T
PHF			0.92		0.92		0.92	0.92
Flow Rate			163		141		95	96
% Heavy Veh			3		3		3	3
No. Lanes			1		1		2	
Opposing-Lanes			0		2		1	
Conflicting-lanes			2		1		1	
Geometry group			1		3a		5	

Duration, T 0.25 hrs.

Worksheet 3 - Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rates:								
Total in Lane			163		141		95	96
Left-Turn			28		0		95	0
Right-Turn			135		11		0	0
Prop. Left-Turns			0.2		0.0		1.0	0.0
Prop. Right-Turns			0.8		0.1		0.0	0.0
Prop. Heavy Vehicle			0.0		0.0		0.0	0.0
Geometry Group			1		3a		5	
Adjustments Exhibit 17-33:								
hLT-adj			0.2		0.2		0.5	

hRT-adj			-0.6		-0.6		-0.7	
hHV-adj			1.7		1.7		1.7	
hadj, computed			-0.4		0.0		0.6	0.1

Worksheet 4 - Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow rate			163		141		95	96
hd, initial value	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x, initial			0.14		0.13		0.08	0.09
hd, final value			4.29		4.62		5.56	5.06
x, final value			0.194		0.181		0.147	0.135
Move-up time, m			2.0		2.0		2.3	
Service Time			2.3		2.6		3.3	2.8

Worksheet 5 - Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rate			163		141		95	96
Service Time			2.3		2.6		3.3	2.8
Utilization, x			0.194		0.181		0.147	0.135
Dep. headway, hd			4.29		4.62		5.56	5.06
Capacity			858		783		633	738
Delay			8.3		8.6		9.2	8.5
LOS			A		A		A	A
Approach:								
Delay			8.3		8.6		8.9	
LOS			A		A		A	

Intersection Delay 8.6 Intersection LOS A

Phone: Fax:
E-Mail:

ALL-WAY STOP CONTROL(AWSC) ANALYSIS

Analyst: MSH
Agency/Co.: Solaegui Engineers
Date Performed: 3/10/2016
Analysis Time Period: PM Peak Hour
Intersection: Airport & Woodside
Jurisdiction: Carson City
Units: U. S. Customary
Analysis Year: Existing
Project ID: Bella Lago
East/West Street: Woodsie Drive
North/South Street: Airport Road

Worksheet 2 - Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	0	0	0	18	0	103	0	121	21	128	134	0
% Thrus Left Lane												

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration			LR		TR		L	T
PHF			0.92		0.92		0.92	0.92
Flow Rate			130		153		139	145
% Heavy Veh			3		3		3	3
No. Lanes			1		1		2	
Opposing-Lanes			0		2		1	
Conflicting-lanes			2		1		1	
Geometry group			1		3a		5	
Duration, T 0.25 hrs.								

Worksheet 3 - Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rates:								
Total in Lane			130		153		139	145
Left-Turn			19		0		139	0
Right-Turn			111		22		0	0
Prop. Left-Turns			0.1		0.0		1.0	0.0
Prop. Right-Turns			0.9		0.1		0.0	0.0
Prop. Heavy Vehicle			0.0		0.0		0.0	0.0
Geometry Group			1		3a		5	
Adjustments Exhibit 17-33:								
hLT-adj			0.2		0.2		0.5	

hRT-adj			-0.6		-0.6		-0.7	
hHV-adj			1.7		1.7		1.7	
hadj, computed			-0.4		-0.0		0.6	0.1

Worksheet 4 - Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow rate			130		153		139	145
hd, initial value	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x, initial			0.12		0.14		0.12	0.13
hd, final value			4.48		4.61		5.50	5.00
x, final value			0.162		0.196		0.212	0.201
Move-up time, m			2.0		2.0		2.3	
Service Time			2.5		2.6		3.2	2.7

Worksheet 5 - Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rate			130		153		139	145
Service Time			2.5		2.6		3.2	2.7
Utilization, x			0.162		0.196		0.212	0.201
Dep. headway, hd			4.48		4.61		5.50	5.00
Capacity			813		765		662	725
Delay			8.3		8.7		9.7	9.0
LOS			A		A		A	A
Approach:								
Delay			8.3		8.7		9.3	
LOS			A		A		A	
Intersection Delay 8.9			Intersection LOS A					

HCS+: Unsignalized Intersections Release 5.6

Phone: Fax:
E-Mail:

ALL-WAY STOP CONTROL(AWSC) ANALYSIS

Analyst: MSH
Agency/Co.: Solaegui Engineers
Date Performed: 3/10/2016
Analysis Time Period: AM Peak Hour
Intersection: Airport & Woodside
Jurisdiction: Carson City
Units: U. S. Customary
Analysis Year: Existing + Project
Project ID: Bella Lago
East/West Street: Woodsie Drive
North/South Street: Airport Road

Worksheet 2 - Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	0	0	0	26	0	125	0	124	11	88	93	0

% Thrus Left Lane

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration			LR		TR		L	T
PHF			0.92		0.92		0.92	0.92
Flow Rate			163		145		95	101
% Heavy Veh			3		3		3	3
No. Lanes			1		1		2	
Opposing-Lanes			0		2		1	
Conflicting-lanes			2		1		1	
Geometry group			1		3a		5	

Duration, T 0.25 hrs.

Worksheet 3 - Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rates:								
Total in Lane			163		145		95	101
Left-Turn			28		0		95	0
Right-Turn			135		11		0	0
Prop. Left-Turns			0.2		0.0		1.0	0.0
Prop. Right-Turns			0.8		0.1		0.0	0.0
Prop. Heavy Vehicle			0.0		0.0		0.0	0.0
Geometry Group			1		3a		5	
Adjustments Exhibit 17-33:								
hLT-adj			0.2		0.2		0.5	

hRT-adj			-0.6		-0.6		-0.7	
hHV-adj			1.7		1.7		1.7	
hadj, computed			-0.4		0.0		0.6	0.1

Worksheet 4 - Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow rate			163		145		95	101
hd, initial value	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x, initial			0.14		0.13		0.08	0.09
hd, final value			4.31		4.63		5.56	5.06
x, final value			0.195		0.187		0.147	0.142
Move-up time, m			2.0		2.0		2.3	
Service Time			2.3		2.6		3.3	2.8

Worksheet 5 - Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rate			163		145		95	101
Service Time			2.3		2.6		3.3	2.8
Utilization, x			0.195		0.187		0.147	0.142
Dep. headway, hd			4.31		4.63		5.56	5.06
Capacity			815		763		633	721
Delay			8.3		8.7		9.2	8.6
LOS			A		A		A	A
Approach:								
Delay			8.3		8.7		8.9	
LOS			A		A		A	

Intersection Delay 8.7 Intersection LOS A

HCS+: Unsignalized Intersections Release 5.6

Phone: Fax:
E-Mail:

ALL-WAY STOP CONTROL(AWSC) ANALYSIS

Analyst: MSH
Agency/Co.: Solaegui Engineers
Date Performed: 3/10/2016
Analysis Time Period: PM Peak Hour
Intersection: Airport & Woodside
Jurisdiction: Carson City
Units: U. S. Customary
Analysis Year: Existing + Project
Project ID: Bella Lago
East/West Street: Woodsie Drive
North/South Street: Airport Road

Worksheet 2 - Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	0	0	0	18	0	103	0	134	21	128	139	0
% Thrus Left Lane												

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration			LR		TR		L	T
PHF			0.92		0.92		0.92	0.92
Flow Rate			130		167		139	151
% Heavy Veh			3		3		3	3
No. Lanes		1		1		2		
Opposing-Lanes		0		2		1		
Conflicting-lanes		2		1		1		
Geometry group		1		3a		5		

Duration, T 0.25 hrs.

Worksheet 3 - Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rates:								
Total in Lane			130		167		139	151
Left-Turn			19		0		139	0
Right-Turn			111		22		0	0
Prop. Left-Turns			0.1		0.0		1.0	0.0
Prop. Right-Turns			0.9		0.1		0.0	0.0
Prop. Heavy Vehicle			0.0		0.0		0.0	0.0
Geometry Group		1		3a		5		
Adjustments Exhibit 17-33:								
hLT-adj		0.2		0.2		0.5		

hRT-adj			-0.6		-0.6		-0.7	
hHV-adj			1.7		1.7		1.7	
hadj, computed			-0.4		-0.0		0.6	0.1

Worksheet 4 - Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow rate			130		167		139	151
hd, initial value	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x, initial			0.12		0.15		0.12	0.13
hd, final value			4.53		4.63		5.52	5.01
x, final value			0.164		0.215		0.213	0.210
Move-up time, m			2.0		2.0		2.3	
Service Time			2.5		2.6		3.2	2.7

Worksheet 5 - Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rate			130		167		139	151
Service Time			2.5		2.6		3.2	2.7
Utilization, x			0.164		0.215		0.213	0.210
Dep. headway, hd			4.53		4.63		5.52	5.01
Capacity			813		795		662	719
Delay			8.4		8.9		9.7	9.0
LOS			A		A		A	A
Approach:								
Delay			8.4		8.9		9.4	
LOS			A		A		A	

Intersection Delay 9.0 Intersection LOS A

HCS+: Unsignalized Intersections Release 5.6

Phone: Fax:
E-Mail:

ALL-WAY STOP CONTROL(AWSC) ANALYSIS

Analyst: MSH
Agency/Co.: Solaegui Engineers
Date Performed: 3/10/2016
Analysis Time Period: AM Peak Hour
Intersection: Airport & Woodside
Jurisdiction: Carson City
Units: U. S. Customary
Analysis Year: 2035 Base
Project ID: Bella Lago
East/West Street: Woodsie Drive
North/South Street: Airport Road

Worksheet 2 - Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	0	0	0	32	0	151	0	145	13	106	107	0
% Thrus Left Lane												

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration			LR		TR		L	T
PHF			0.92		0.92		0.92	0.92
Flow Rate			198		171		115	116
% Heavy Veh			3		3		3	3
No. Lanes			1		1		2	
Opposing-Lanes			0		2		1	
Conflicting-lanes			2		1		1	
Geometry group			1		3a		5	

Duration, T 0.25 hrs.

Worksheet 3 - Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rates:								
Total in Lane			198		171		115	116
Left-Turn			34		0		115	0
Right-Turn			164		14		0	0
Prop. Left-Turns			0.2		0.0		1.0	0.0
Prop. Right-Turns			0.8		0.1		0.0	0.0
Prop. Heavy Vehicle			0.0		0.0		0.0	0.0
Geometry Group			1		3a		5	
Adjustments Exhibit 17-33:								
hLT-adj			0.2		0.2		0.5	

hRT-adj			-0.6		-0.6		-0.7	
hHV-adj			1.7		1.7		1.7	
hadj, computed			-0.4		0.0		0.6	0.1

Worksheet 4 - Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow rate			198		171		115	116
hd, initial value	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x, initial			0.18		0.15		0.10	0.10
hd, final value			4.47		4.78		5.70	5.20
x, final value			0.246		0.227		0.182	0.167
Move-up time, m			2.0		2.0		2.3	
Service Time			2.5		2.8		3.4	2.9

Worksheet 5 - Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rate			198		171		115	116
Service Time			2.5		2.8		3.4	2.9
Utilization, x			0.246		0.227		0.182	0.167
Dep. headway, hd			4.47		4.78		5.70	5.20
Capacity			792		743		639	682
Delay			8.9		9.2		9.7	8.9
LOS			A		A		A	A
Approach:								
Delay			8.9		9.2		9.3	
LOS			A		A		A	

Intersection Delay 9.1 Intersection LOS A

HCS+: Unsignalized Intersections Release 5.6

Phone: Fax:
E-Mail:

ALL-WAY STOP CONTROL(AWSC) ANALYSIS

Analyst: MSH
Agency/Co.: Solaegui Engineers
Date Performed: 3/10/2016
Analysis Time Period: PM Peak Hour
Intersection: Airport & Woodside
Jurisdiction: Carson City
Units: U. S. Customary
Analysis Year: 2035 Base
Project ID: Bella Lago
East/West Street: Woodsie Drive
North/South Street: Airport Road

Worksheet 2 - Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	0	0	0	22	0	125	0	161	25	155	161	0
% Thrus Left Lane												

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration			LR		TR		L	T
PHF			0.92		0.92		0.92	0.92
Flow Rate			158		201		168	174
% Heavy Veh			3		3		3	3
No. Lanes			1		1		2	
Opposing-Lanes			0		2		1	
Conflicting-lanes			2		1		1	
Geometry group			1		3a		5	
Duration, T 0.25 hrs.								

Worksheet 3 - Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rates:								
Total in Lane			158		201		168	174
Left-Turn			23		0		168	0
Right-Turn			135		27		0	0
Prop. Left-Turns			0.1		0.0		1.0	0.0
Prop. Right-Turns			0.9		0.1		0.0	0.0
Prop. Heavy Vehicle			0.0		0.0		0.0	0.0
Geometry Group			1		3a		5	
Adjustments Exhibit 17-33:								
hLT-adj			0.2		0.2		0.5	

hRT-adj			-0.6		-0.6		-0.7	
hHV-adj			1.7		1.7		1.7	
hadj, computed			-0.4		-0.0		0.6	0.1

Worksheet 4 - Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow rate			158		201		168	174
hd, initial value	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x, initial			0.14		0.18		0.15	0.15
hd, final value			4.73		4.78		5.65	5.14
x, final value			0.208		0.267		0.264	0.249
Move-up time, m			2.0		2.0		2.3	
Service Time			2.7		2.8		3.3	2.8

Worksheet 5 - Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rate			158		201		168	174
Service Time			2.7		2.8		3.3	2.8
Utilization, x			0.208		0.267		0.264	0.249
Dep. headway, hd			4.73		4.78		5.65	5.14
Capacity			752		744		646	696
Delay			9.0		9.5		10.4	9.5
LOS			A		A		B	A
Approach:								
Delay			9.0		9.5		9.9	
LOS			A		A		A	

Intersection Delay 9.6 Intersection LOS A

HCS+: Unsignalized Intersections Release 5.6

Phone: Fax:
E-Mail:

ALL-WAY STOP CONTROL(AWSC) ANALYSIS

Analyst: MSH
Agency/Co.: Solaegui Engineers
Date Performed: 3/10/2016
Analysis Time Period: AM Peak Hour
Intersection: Airport & Woodside
Jurisdiction: Carson City
Units: U. S. Customary
Analysis Year: 2035 Base + Project
Project ID: Bella Lago
East/West Street: Woodsie Drive
North/South Street: Airport Road

Worksheet 2 - Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	0	0	0	32	0	151	0	149	13	106	111	0
% Thrus Left Lane												

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration			LR		TR		L	T
PHF			0.92		0.92		0.92	0.92
Flow Rate			198		175		115	120
% Heavy Veh			3		3		3	3
No. Lanes			1		1		2	
Opposing-Lanes			0		2		1	
Conflicting-lanes			2		1		1	
Geometry group			1		3a		5	

Duration, T 0.25 hrs.

Worksheet 3 - Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rates:								
Total in Lane			198		175		115	120
Left-Turn			34		0		115	0
Right-Turn			164		14		0	0
Prop. Left-Turns			0.2		0.0		1.0	0.0
Prop. Right-Turns			0.8		0.1		0.0	0.0
Prop. Heavy Vehicle			0.0		0.0		0.0	0.0
Geometry Group			1		3a		5	
Adjustments Exhibit 17-33:								
hLT-adj			0.2		0.2		0.5	

hRT-adj			-0.6		-0.6		-0.7	
hHV-adj			1.7		1.7		1.7	
hadj, computed			-0.4		0.0		0.6	0.1

Worksheet 4 - Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow rate			198		175		115	120
hd, initial value	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x, initial			0.18		0.16		0.10	0.11
hd, final value			4.48		4.79		5.71	5.20
x, final value			0.247		0.233		0.182	0.173
Move-up time, m			2.0		2.0		2.3	
Service Time			2.5		2.8		3.4	2.9

Worksheet 5 - Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rate			198		175		115	120
Service Time			2.5		2.8		3.4	2.9
Utilization, x			0.247		0.233		0.182	0.173
Dep. headway, hd			4.48		4.79		5.71	5.20
Capacity			792		761		639	706
Delay			8.9		9.2		9.7	9.0
LOS			A		A		A	A
Approach:								
Delay			8.9		9.2		9.3	
LOS			A		A		A	

Intersection Delay 9.2 Intersection LOS A

HCS+: Unsignalized Intersections Release 5.6

Phone: Fax:
E-Mail:

ALL-WAY STOP CONTROL(AWSC) ANALYSIS

Analyst: MSH
Agency/Co.: Solaegui Engineers
Date Performed: 3/10/2016
Analysis Time Period: PM Peak Hour
Intersection: Airport & Woodside
Jurisdiction: Carson City
Units: U. S. Customary
Analysis Year: 2035 Base + Project
Project ID: Bella Lago
East/West Street: Woodsie Drive
North/South Street: Airport Road

Worksheet 2 - Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	0	0	0	22	0	125	0	164	25	155	166	0
% Thrus Left Lane												

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration			LR		TR		L	T
PHF			0.92		0.92		0.92	0.92
Flow Rate			158		205		168	180
% Heavy Veh			3		3		3	3
No. Lanes			1		1		2	
Opposing-Lanes			0		2		1	
Conflicting-lanes			2		1		1	
Geometry group			1		3a		5	

Duration, T 0.25 hrs.

Worksheet 3 - Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rates:								
Total in Lane			158		205		168	180
Left-Turn			23		0		168	0
Right-Turn			135		27		0	0
Prop. Left-Turns			0.1		0.0		1.0	0.0
Prop. Right-Turns			0.9		0.1		0.0	0.0
Prop. Heavy Vehicle			0.0		0.0		0.0	0.0
Geometry Group			1		3a		5	
Adjustments Exhibit 17-33:								
hLT-adj			0.2		0.2		0.5	

hRT-adj			-0.6		-0.6		-0.7	
hHV-adj			1.7		1.7		1.7	
hadj, computed			-0.4		-0.0		0.6	0.1

Worksheet 4 - Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow rate			158		205		168	180
hd, initial value	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x, initial			0.14		0.18		0.15	0.16
hd, final value			4.75		4.79		5.65	5.15
x, final value			0.209		0.273		0.264	0.258
Move-up time, m			2.0		2.0		2.3	
Service Time			2.8		2.8		3.4	2.9

Worksheet 5 - Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rate			158		205		168	180
Service Time			2.8		2.8		3.4	2.9
Utilization, x			0.209		0.273		0.264	0.258
Dep. headway, hd			4.75		4.79		5.65	5.15
Capacity			752		759		646	692
Delay			9.0		9.6		10.4	9.6
LOS			A		A		B	A
Approach:								
Delay			9.0		9.6		10.0-	
LOS			A		A		A	

Intersection Delay 9.7 Intersection LOS A

HCS 2010 Two-Way Stop Control Summary Report

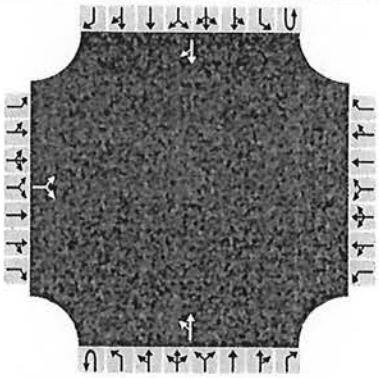
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	3/10/2016
Analysis Year	2016
Time Analyzed	AM Existing
Intersection Orientation	North-South
Project Description	Bella Lago

Site Information

Intersection	Airport & Menlo
Jurisdiction	Carson City
East/West Street	Menlo Drive
North/South Street	Airport Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		9		77						82	117				88	29
Percent Heavy Vehicles		3		3						3						
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			94							216						
Capacity			873							1450						
v/c Ratio			0.11							0.15						
95% Queue Length			0.4							0.2						
Control Delay (s/veh)			9.6							7.6						
Level of Service (LOS)			A							A						
Approach Delay (s/veh)	9.6								3.4							
Approach LOS	A								A							

HCS 2010 Two-Way Stop Control Summary Report

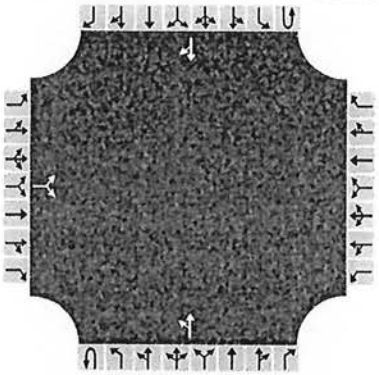
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	3/10/2016
Analysis Year	2016
Time Analyzed	PM Existing
Intersection Orientation	North-South
Project Description	Bella Lago

Site Information

Intersection	Airport & Menlo
Jurisdiction	Carson City
East/West Street	Menlo Drive
North/South Street	Airport Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		27		91						72	132				118	30
Percent Heavy Vehicles		3		3						3						
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			128							221						
Capacity			781							1410						
v/c Ratio			0.16							0.16						
95% Queue Length			0.6							0.2						
Control Delay (s/veh)			10.5							7.7						
Level of Service (LOS)			B							A						
Approach Delay (s/veh)	10.5								3.0							
Approach LOS	B								A							

HCS 2010 Two-Way Stop Control Summary Report

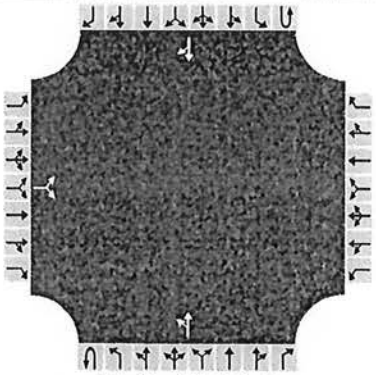
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	3/10/2016
Analysis Year	2016
Time Analyzed	AM Existing + Project
Intersection Orientation	North-South
Project Description	Bella Lago

Site Information

Intersection	Airport & Menlo
Jurisdiction	Carson City
East/West Street	Menlo Drive
North/South Street	Airport Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		10		77						82	118				93	32
Percent Heavy Vehicles		3		3						3						
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			95							217						
Capacity			861							1440						
v/c Ratio			0.11							0.15						
95% Queue Length			0.4							0.2						
Control Delay (s/veh)			9.7							7.7						
Level of Service (LOS)			A							A						
Approach Delay (s/veh)	9.7								3.4							
Approach LOS	A								A							

HCS 2010 Two-Way Stop Control Summary Report

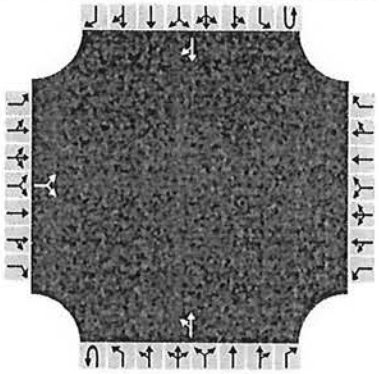
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	3/10/2016
Analysis Year	2016
Time Analyzed	PM Existing + Project
Intersection Orientation	North-South
Project Description	Bella Lago

Site Information

Intersection	Airport & Menlo
Jurisdiction	Carson City
East/West Street	Menlo Drive
North/South Street	Airport Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		30		91						72	137				121	31
Percent Heavy Vehicles		3		3						3						
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			132							227						
Capacity			763							1404						
v/c Ratio			0.17							0.16						
95% Queue Length			0.6							0.2						
Control Delay (s/veh)			10.7							7.7						
Level of Service (LOS)			B							A						
Approach Delay (s/veh)	10.7								3.0							
Approach LOS	B								A							

HCS 2010 Two-Way Stop Control Summary Report

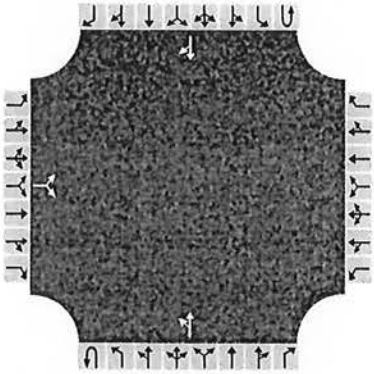
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	3/10/2016
Analysis Year	2035
Time Analyzed	AM Base
Intersection Orientation	North-South
Project Description	Bella Lago

Site Information

Intersection	Airport & Menlo
Jurisdiction	Carson City
East/West Street	Menlo Drive
North/South Street	Airport Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		11		93						99	142				106	35
Percent Heavy Vehicles		3		3						3						
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			113							262						
Capacity			834							1420						
v/c Ratio			0.14							0.18						
95% Queue Length			0.5							0.2						
Control Delay (s/veh)			10.0							7.7						
Level of Service (LOS)			A							A						
Approach Delay (s/veh)	10.0								3.6							
Approach LOS	A								A							

HCS 2010 Two-Way Stop Control Summary Report

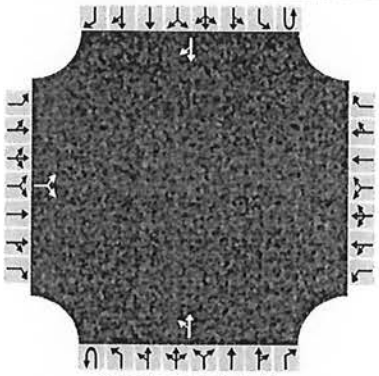
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	3/10/2016
Analysis Year	2035
Time Analyzed	PM Base
Intersection Orientation	North-South
Project Description	Bella Lago

Site Information

Intersection	Airport & Menlo
Jurisdiction	Carson City
East/West Street	Menlo Drive
North/South Street	Airport Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		33		110						87	160				143	36
Percent Heavy Vehicles		3		3						3						
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			156							269						
Capacity			724							1372						
v/c Ratio			0.22							0.20						
95% Queue Length			0.8							0.2						
Control Delay (s/veh)			11.3							7.8						
Level of Service (LOS)			B							A						
Approach Delay (s/veh)	11.3								3.1							
Approach LOS	B								A							

HCS 2010 Two-Way Stop Control Summary Report

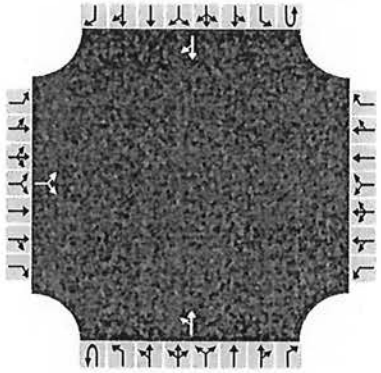
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	3/10/2016
Analysis Year	2035
Time Analyzed	AM Base + Project
Intersection Orientation	North-South
Project Description	Bella Lago

Site Information

Intersection	Airport & Menlo
Jurisdiction	Carson City
East/West Street	Menlo Drive
North/South Street	Airport Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		12		93						99	143				111	38
Percent Heavy Vehicles		3		3						3						
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			114							263						
Capacity			820							1409						
v/c Ratio			0.14							0.19						
95% Queue Length			0.5							0.2						
Control Delay (s/veh)			10.1							7.8						
Level of Service (LOS)			B							A						
Approach Delay (s/veh)	10.1								3.6							
Approach LOS	B								A							

HCS 2010 Two-Way Stop Control Summary Report

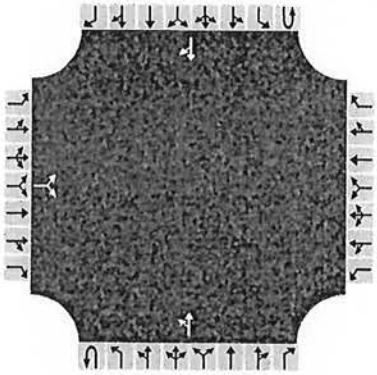
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	3/10/2016
Analysis Year	2035
Time Analyzed	PM Base + Project
Intersection Orientation	North-South
Project Description	Bella Lago

Site Information

Intersection	Airport & Menlo
Jurisdiction	Carson City
East/West Street	Menlo Drive
North/South Street	Airport Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		36		110						87	165				146	37
Percent Heavy Vehicles		3		3						3						
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			159							274						
Capacity			710							1366						
v/c Ratio			0.22							0.20						
95% Queue Length			0.9							0.2						
Control Delay (s/veh)			11.5							7.8						
Level of Service (LOS)			B							A						
Approach Delay (s/veh)	11.5								3.1							
Approach LOS	B								A							

HCS 2010 Two-Way Stop Control Summary Report

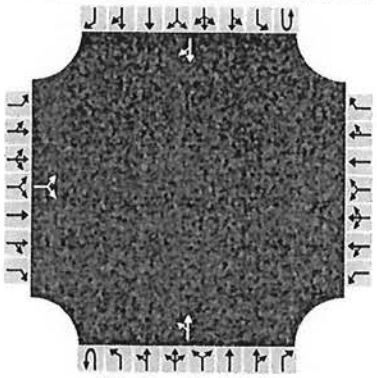
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	3/10/2016
Analysis Year	2016
Time Analyzed	AM Existing
Intersection Orientation	North-South
Project Description	Bella Lago

Site Information

Intersection	Airport & North Driveway
Jurisdiction	Carson City
East/West Street	North Driveway
North/South Street	Airport Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		13		4						1	245				173	5
Percent Heavy Vehicles		3		3						3						
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			18							267						
Capacity			604							1373						
v/c Ratio			0.03							0.19						
95% Queue Length			0.1							0.0						
Control Delay (s/veh)			11.1							7.6						
Level of Service (LOS)			B							A						
Approach Delay (s/veh)	11.1								0.0							
Approach LOS	B								A							

HCS 2010 Two-Way Stop Control Summary Report

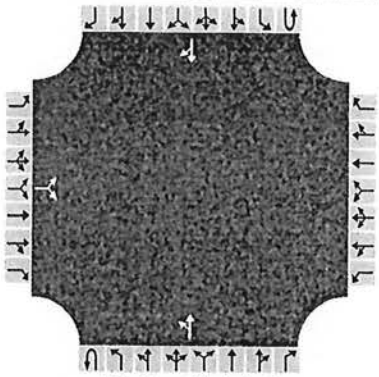
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	3/10/2016
Analysis Year	2016
Time Analyzed	PM Existing
Intersection Orientation	North-South
Project Description	Bella Lago

Site Information

Intersection	Airport & North Driveway
Jurisdiction	Carson City
East/West Street	North Driveway
North/South Street	Airport Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		12		4						1	234				258	23
Percent Heavy Vehicles		3		3						3						
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			17							255						
Capacity			537							1249						
v/c Ratio			0.03							0.20						
95% Queue Length			0.1							0.0						
Control Delay (s/veh)			11.9							7.9						
Level of Service (LOS)			B							A						
Approach Delay (s/veh)	11.9								0.0							
Approach LOS	B								A							

HCS 2010 Two-Way Stop Control Summary Report

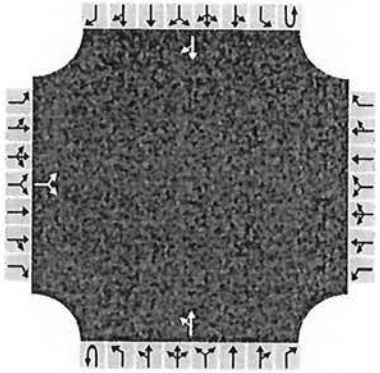
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	3/10/2016
Analysis Year	2016
Time Analyzed	AM Existing + Project
Intersection Orientation	North-South
Project Description	Bella Lago

Site Information

Intersection	Airport & North Driveway
Jurisdiction	Carson City
East/West Street	North Driveway
North/South Street	Airport Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		27		7						1	249				174	9
Percent Heavy Vehicles		3		3						3						
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			37							272						
Capacity			596							1366						
v/c Ratio			0.06							0.20						
95% Queue Length			0.2							0.0						
Control Delay (s/veh)			11.4							7.6						
Level of Service (LOS)			B							A						
Approach Delay (s/veh)	11.4								0.0							
Approach LOS	B								A							

HCS 2010 Two-Way Stop Control Summary Report

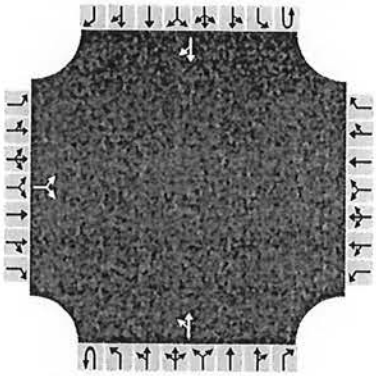
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	3/10/2016
Analysis Year	2016
Time Analyzed	PM Existing + Project
Intersection Orientation	North-South
Project Description	Bella Lago

Site Information

Intersection	Airport & North Driveway
Jurisdiction	Carson City
East/West Street	North Driveway
North/South Street	Airport Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		19		5						1	237				262	37
Percent Heavy Vehicles		3		3						3						
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			26							259						
Capacity			518							1228						
v/c Ratio			0.05							0.21						
95% Queue Length			0.2							0.0						
Control Delay (s/veh)			12.3							7.9						
Level of Service (LOS)			B							A						
Approach Delay (s/veh)	12.3								0.0							
Approach LOS	B								A							

HCS 2010 Two-Way Stop Control Summary Report

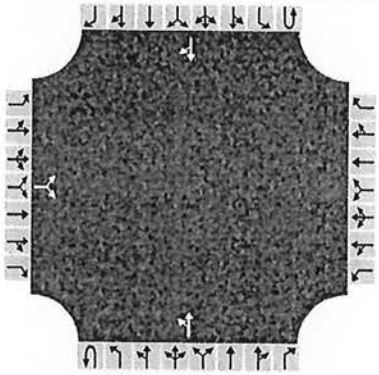
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	3/10/2016
Analysis Year	2035
Time Analyzed	AM Base
Intersection Orientation	North-South
Project Description	Bella Lago

Site Information

Intersection	Airport & North Driveway
Jurisdiction	Carson City
East/West Street	North Driveway
North/South Street	Airport Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		13		4						1	296				209	5
Percent Heavy Vehicles		3		3						3						
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			18							323						
Capacity			538							1328						
v/c Ratio			0.03							0.24						
95% Queue Length			0.1							0.0						
Control Delay (s/veh)			11.9							7.7						
Level of Service (LOS)			B							A						
Approach Delay (s/veh)	11.9								0.0							
Approach LOS	B								A							

HCS 2010 Two-Way Stop Control Summary Report

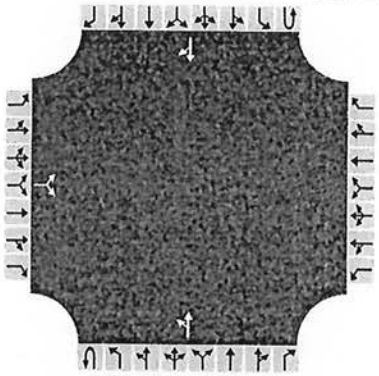
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	3/10/2016
Analysis Year	2035
Time Analyzed	PM Base
Intersection Orientation	North-South
Project Description	Bella Lago

Site Information

Intersection	Airport & North Driveway
Jurisdiction	Carson City
East/West Street	North Driveway
North/South Street	Airport Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		12		4						1	286				312	23
Percent Heavy Vehicles		3		3						3						
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			17							312						
Capacity			466							1188						
v/c Ratio			0.04							0.26						
95% Queue Length			0.1							0.0						
Control Delay (s/veh)			13.0							8.0						
Level of Service (LOS)			B							A						
Approach Delay (s/veh)	13.0								0.0							
Approach LOS	B								A							

HCS 2010 Two-Way Stop Control Summary Report

General Information

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Agency/Co.	Solaegui Engineers
Date Performed	3/10/2016
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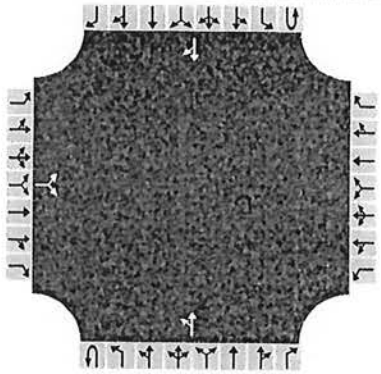
Time Analyzed	AM Base + Project
Intersection Orientation	North-South
Project Description	Bella Lago

Site Information

Intersection	Airport & North Driveway
Jurisdiction	Carson City
East/West Street	North Driveway
North/South Street	Airport Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		27		7						1	300				210	9
Percent Heavy Vehicles		3		3						3						
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			37							327						
Capacity			532							1322						
v/c Ratio			0.07							0.25						
95% Queue Length			0.2							0.0						
Control Delay (s/veh)			12.3							7.7						
Level of Service (LOS)			B							A						
Approach Delay (s/veh)	12.3								0.0							
Approach LOS	B								A							

HCS 2010 Two-Way Stop Control Summary Report

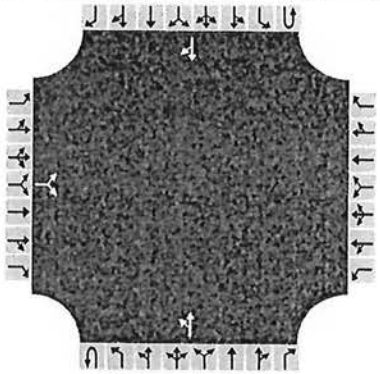
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	3/10/2016
Analysis Year	2035
Time Analyzed	PM Base + Project
Intersection Orientation	North-South
Project Description	Bella Lago

Site Information

Intersection	Airport & North Driveway
Jurisdiction	Carson City
East/West Street	North Driveway
North/South Street	Airport Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		19		5						1	289				316	37
Percent Heavy Vehicles		3		3						3						
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			26							315						
Capacity			449							1169						
v/c Ratio			0.06							0.27						
95% Queue Length			0.2							0.0						
Control Delay (s/veh)			13.5							8.1						
Level of Service (LOS)			B							A						
Approach Delay (s/veh)	13.5								0.0							
Approach LOS	B								A							

HCS 2010 Two-Way Stop Control Summary Report

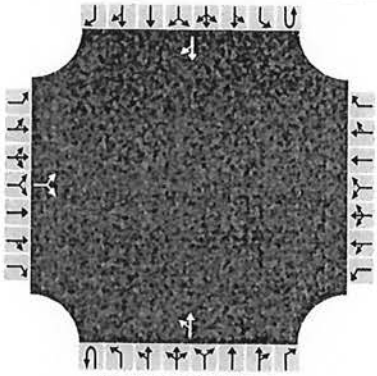
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	3/10/2016
Analysis Year	2016
Time Analyzed	AM Existing
Intersection Orientation	North-South
Project Description	Bella Lago

Site Information

Intersection	Airport & South Driveway
Jurisdiction	Carson City
East/West Street	South Driveway
North/South Street	Airport Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		8		6						3	123				111	4
Percent Heavy Vehicles		3		3						3						
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			16							137						
Capacity			798							1454						
v/c Ratio			0.02							0.09						
95% Queue Length			0.1							0.0						
Control Delay (s/veh)			9.6							7.5						
Level of Service (LOS)			A							A						
Approach Delay (s/veh)	9.6								0.2							
Approach LOS	A								A							

HCS 2010 Two-Way Stop Control Summary Report

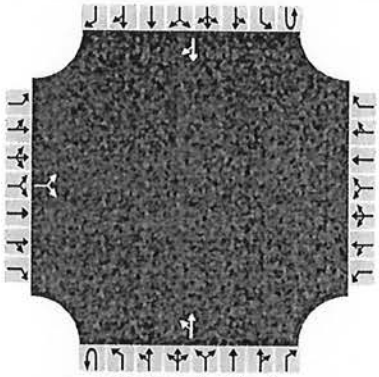
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	3/10/2016
Analysis Year	2016
Time Analyzed	PM Existing
Intersection Orientation	North-South
Project Description	Bella Lago

Site Information

Intersection	Airport & South Driveway
Jurisdiction	Carson City
East/West Street	South Driveway
North/South Street	Airport Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		3		5						10	149				143	9
Percent Heavy Vehicles		3		3						3						
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			8							173						
Capacity			775							1406						
v/c Ratio			0.01							0.12						
95% Queue Length			0.0							0.0						
Control Delay (s/veh)			9.7							7.6						
Level of Service (LOS)			A							A						
Approach Delay (s/veh)	9.7								0.5							
Approach LOS	A								A							

HCS 2010 Two-Way Stop Control Summary Report

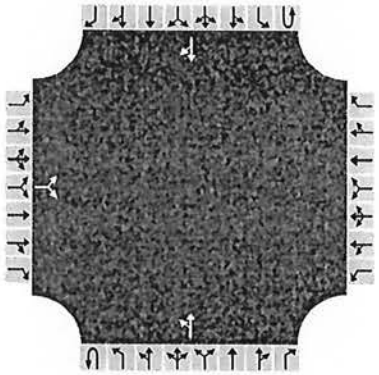
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	3/10/2016
Analysis Year	2016
Time Analyzed	AM Existing + Project
Intersection Orientation	North-South
Project Description	Bella Lago

Site Information

Intersection	Airport & South Driveway
Jurisdiction	Carson City
East/West Street	South Driveway
North/South Street	Airport Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		12		11						5	123				114	5
Percent Heavy Vehicles		3		3						3						
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			25							139						
Capacity			801							1449						
v/c Ratio			0.03							0.10						
95% Queue Length			0.1							0.0						
Control Delay (s/veh)			9.6							7.5						
Level of Service (LOS)			A							A						
Approach Delay (s/veh)	9.6								0.3							
Approach LOS	A								A							

HCS 2010 Two-Way Stop Control Summary Report

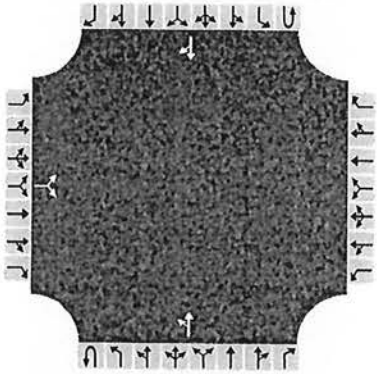
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	3/10/2016
Analysis Year	2016
Time Analyzed	PM Existing + Project
Intersection Orientation	North-South
Project Description	Bella Lago

Site Information

Intersection	Airport & South Driveway
Jurisdiction	Carson City
East/West Street	South Driveway
North/South Street	Airport Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		6		8						18	149				144	13
Percent Heavy Vehicles		3		3						3						
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			16							182						
Capacity			744							1398						
v/c Ratio			0.02							0.13						
95% Queue Length			0.1							0.0						
Control Delay (s/veh)			9.9							7.6						
Level of Service (LOS)			A							A						
Approach Delay (s/veh)	9.9								0.9							
Approach LOS	A								A							

HCS 2010 Two-Way Stop Control Summary Report

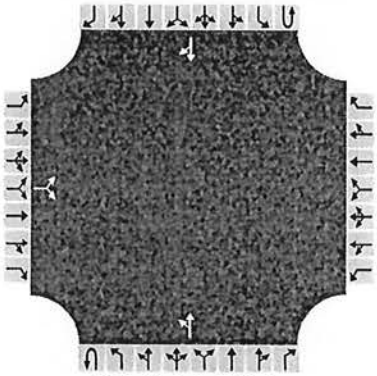
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	3/10/2016
Analysis Year	2035
Time Analyzed	PM Base
Intersection Orientation	North-South
Project Description	Bella Lago

Site Information

Intersection	Airport & South Driveway
Jurisdiction	Carson City
East/West Street	South Driveway
North/South Street	Airport Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		3		5						10	183				174	9
Percent Heavy Vehicles		3		3						3						
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			8							210						
Capacity			725							1366						
v/c Ratio			0.01							0.15						
95% Queue Length			0.0							0.0						
Control Delay (s/veh)			10.0							7.7						
Level of Service (LOS)			B							A						
Approach Delay (s/veh)	10.0								0.5							
Approach LOS	B								A							

HCS 2010 Two-Way Stop Control Summary Report

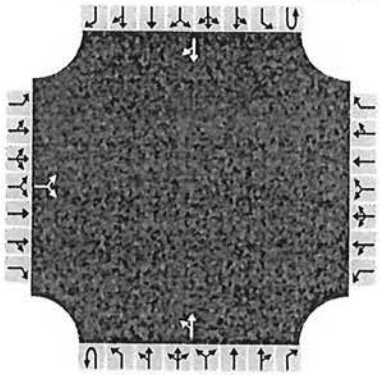
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	3/10/2016
Analysis Year	2035
Time Analyzed	PM Base
Intersection Orientation	North-South
Project Description	Bella Lago

Site Information

Intersection	Airport & South Driveway
Jurisdiction	Carson City
East/West Street	South Driveway
North/South Street	Airport Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		3		5						10	183				174	9
Percent Heavy Vehicles		3		3						3						
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			8							210						
Capacity			725							1366						
v/c Ratio			0.01							0.15						
95% Queue Length			0.0							0.0						
Control Delay (s/veh)			10.0							7.7						
Level of Service (LOS)			B							A						
Approach Delay (s/veh)	10.0								0.5							
Approach LOS	B								A							

HCS 2010 Two-Way Stop Control Summary Report

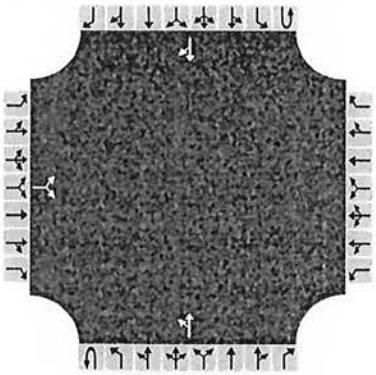
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	3/10/2016
Analysis Year	2035
Time Analyzed	PM Base + Project
Intersection Orientation	North-South
Project Description	Bella Lago

Site Information

Intersection	Airport & South Driveway
Jurisdiction	Carson City
East/West Street	South Driveway
North/South Street	Airport Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		6		8						18	183				175	13
Percent Heavy Vehicles		3		3						3						
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			16							219						
Capacity			694							1360						
v/c Ratio			0.02							0.16						
95% Queue Length			0.1							0.0						
Control Delay (s/veh)			10.3							7.7						
Level of Service (LOS)			B							A						
Approach Delay (s/veh)	10.3								0.8							
Approach LOS	B								A							

HCS 2010 Two-Way Stop Control Summary Report

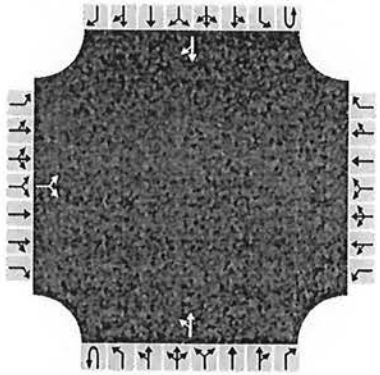
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	3/10/2016
Analysis Year	2035
Time Analyzed	PM Base + Project
Intersection Orientation	North-South
Project Description	Bella Lago

Site Information

Intersection	Airport & South Driveway
Jurisdiction	Carson City
East/West Street	South Driveway
North/South Street	Airport Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		6		8						18	183				175	13
Percent Heavy Vehicles		3		3						3						
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			16							219						
Capacity			694							1360						
v/c Ratio			0.02							0.16						
95% Queue Length			0.1							0.0						
Control Delay (s/veh)			10.3							7.7						
Level of Service (LOS)			B							A						
Approach Delay (s/veh)	10.3								0.8							
Approach LOS	B								A							