



Asphalt Concrete Recycling, LLC
2104 Janitell Road
Transportation Memorandum
May 26, 2020



Traffic Engineer's Statement

The attached traffic report and supporting information were prepared under my responsible charge and they comport with the standard of care. So far as is consistent with the standard of care, said report was prepared in general conformance with the criteria established by the County for traffic reports.





Elijah C. Farney
Colorado P.E. #41677

5/26/2020
Date

Developer's Statement

I, the Developer, have read and will comply with all commitments made on my behalf within this report.



Perry Hastings
Asphalt Concrete Recycling, LLC
235 S FRANCEVILLE COAL MINE ROAD
COLORADO SPRINGS 80929

6/23/20
Date

Asphalt Concrete Recycling, LLC
2104 Janitell Road
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Perry Hastings
Asphalt Concrete Recycling, LLC
235 S FRANCEVILLE COAL MINE ROAD
COLORADO SPRINGS 80929

Date

TRANSPORTATION MEMORANDUM



To: Perry Hastings, Asphalt Concrete Recycling, LLC

From: Eli Farney, PE, PTOE

Date: May 26, 2020

Subject: Transportation Memorandum for proposed Asphalt Concrete Recycling Site at 2104 Janitell Road, El Paso County, CO

Introduction

JR Engineering (JR) has completed an evaluation of impacts to the existing transportation infrastructure resulting from the proposed Asphalt Concrete Recycling (ACR) site at 2104 Janitell Road. The facility has already been built and is expected to be in operation upon approval of this evaluation, which is expected within the Year 2020. Since the proposed vehicular traffic generated to and from the site will be less than 500 vehicles per day, the evaluation required the preparation of a Transportation Memorandum based on El Paso County requirements. The evaluation included requirements contained in the *Engineering Criteria Manual* by El Paso County for a Traffic Memorandum.

The evaluation included:

- Collection of existing traffic counts at Las Vegas Street & Janitell Road intersection
- Develop site-generated traffic
- Determine level of service (LOS) for Opening Day 2020 and Future 2040
- Check sight distance of proposed driveway
- Develop Road Impact Fee
- Roadway Improvement Recommendations

Proposed Site Location and Operations

The proposed ACR site is located in the County of El Paso, Colorado. The site is south of Highway 24 and east of Interstate 25 and is an area containing other industrial land uses.

Proposed operation of the site is as follows:

- The proposed ACR site will have two employees
- A crushing company will have a limited number of employees (one to three) on site during periods when the crusher will be in operation
- Independent trucking companies will deliver waste concrete and asphalt to the site
- Independent trucking companies will also enter the site to load saleable crushed asphalt and concrete for road base and will subsequently exit the site



Figure 1 – Project Location Map – Asphalt Concrete Recycling Project Site, El Paso County, CO

Background Traffic and Trip Generation

Traffic counts were taken at the intersection of Las Vegas Street & Janitell Road on March 12, 2020 in the AM and PM peak hours (7:00-9:00AM and 4:00-6:00PM). Actual peak hours occurred at 7:15AM and 4:15PM. The traffic counts are included in Attachment 1.

A growth rate of 2.3% was applied toward Future Year 2040 traffic volumes along Las Vegas Street and Janitell Road, based on projected average daily trips (ADT) provided by the *Pikes Peak Area Council of Governments*.

Trips to and from the site were estimated using two methods. The first method was to hold a detailed discussion with the Owner regarding his proposed business model and the number of daily and peak hour trips that will be generated to and from his site. The second method was to estimate the trips using the industry standard, Institute of Transportation Engineers (ITE) *Trip Generation Manual 10th Edition, Volume 1, 2017*, which is based on land use and acreage of the site.

Based on the business plan for the proposed site provided by the Owner, the following truck volumes were estimated:

- Maximum ADT = 400 trucks per day
- Peak hour turning movements = 50 trucks per hour

The ADT and turn movement counts were estimated using the standard ITE Land Use Code 140 for Manufacturing with units of acreage. This was determined to be the closest land use contained in the ITE manual for this ACR site. The entering and exiting numbers in the AM and PM may differ slightly in the field based on the amount of time it takes for trucks to load/unload and enter/exit the site. No adjustments were made for internal capture or pass-by trips.

For the proposed ACR facility area of 12 acres, the following volumes were estimated using ITE:

- Average Daily Trips = 482 trips
- AM Entering Site = 56 trips
- AM Exiting Site = 6 trips
- PM Entering Site = 23 trips
- PM Exiting Site = 31 trips

In order to comply with El Paso County *Engineering Criteria Manual*, the ITE *Trip Generation Manual* was selected for the traffic volume projections.

The Trip Generation reports are included in Attachment 2. A site plan is included in Attachment 3.

Site Access and Sight Distance

As shown in Figure 2, there is a proposed driveway along Janitell Road that will provide access to the site approximately 335 feet west of the Las Vegas Street intersection. This driveway is shifted approximately 30 feet east from the existing gravel driveway in order to improve sight distance for vehicles traveling eastbound on Janitell Road. According to the El Paso County *Engineering Criteria Manual*, a posted speed of 30 MPH requires sight distance of 510 feet. However, vehicles are expected to be traveling below 30 MPH between the horizontal curve of Janitell Road and the T intersection at Las Vegas Street. Regardless of the low speeds, the sight distance of 510 feet is not met.

Additionally, there is an existing driveway on the south side of Janitell Road, approximately 35 feet east of the proposed ACR site driveway. This creates a staggered driveway situation, which reduces the safety for vehicles making left turns from accesses to Janitell Road.

In summary, sight distance standards are not met at the access on the east side of project site. The access also has the issue with the staggered driveway. Due to these issues, an alternative driveway location was reviewed on the west side of the project site. Sight distance standards are met at the west access, and the sight distance triangles are shown in Figure 3. Since sight distance standards are met and staggered driveways are less of an issue, JR recommends placing the access on the west side of the project site.

The turning template for a WB-67 design vehicle is shown in Figure 4. It is anticipated that when a WB-67 makes a turn at the access, it will encroach into the opposing lane of Janitell Road.

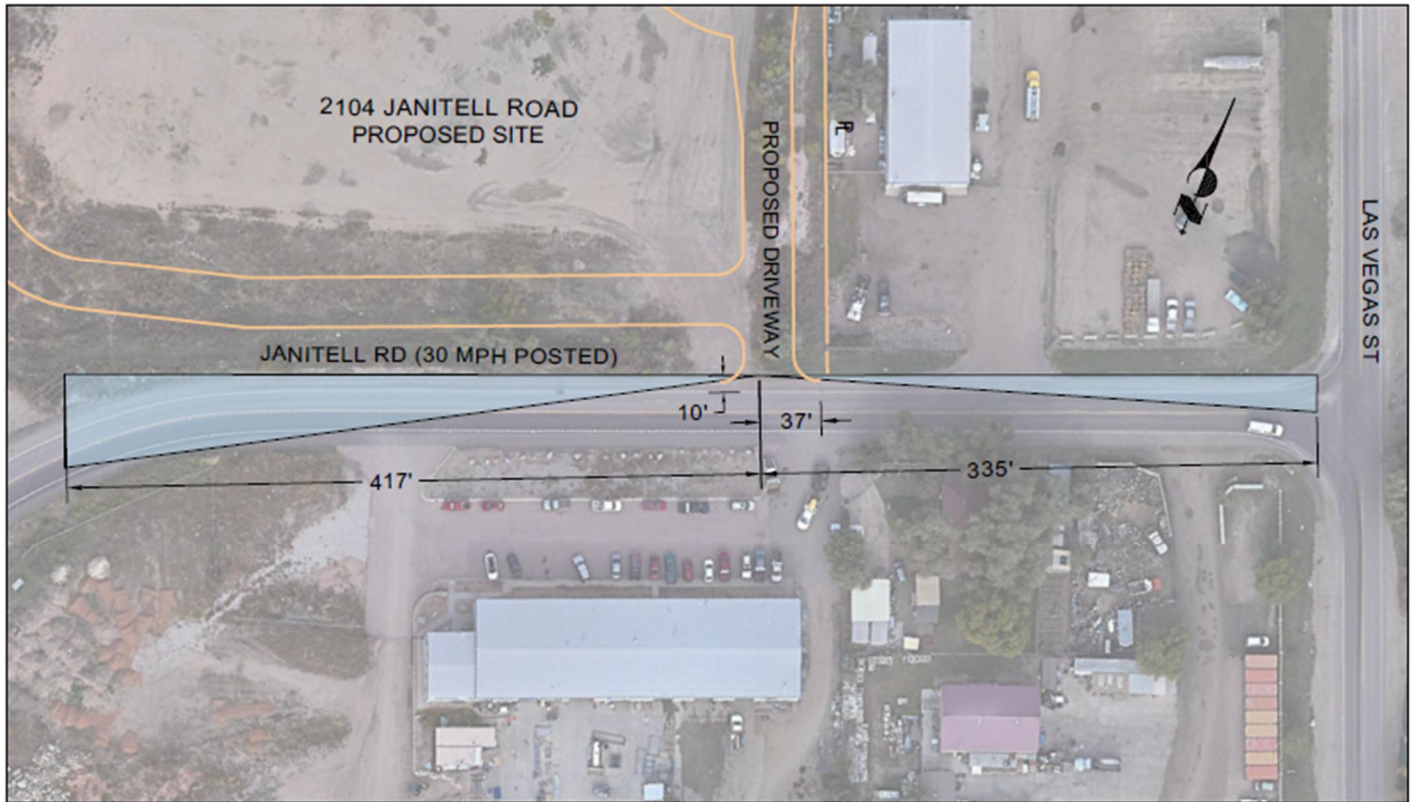


Figure 2 – East Site Access and Sight Distance – Asphalt Concrete Recycling Project Site, El Paso County, CO

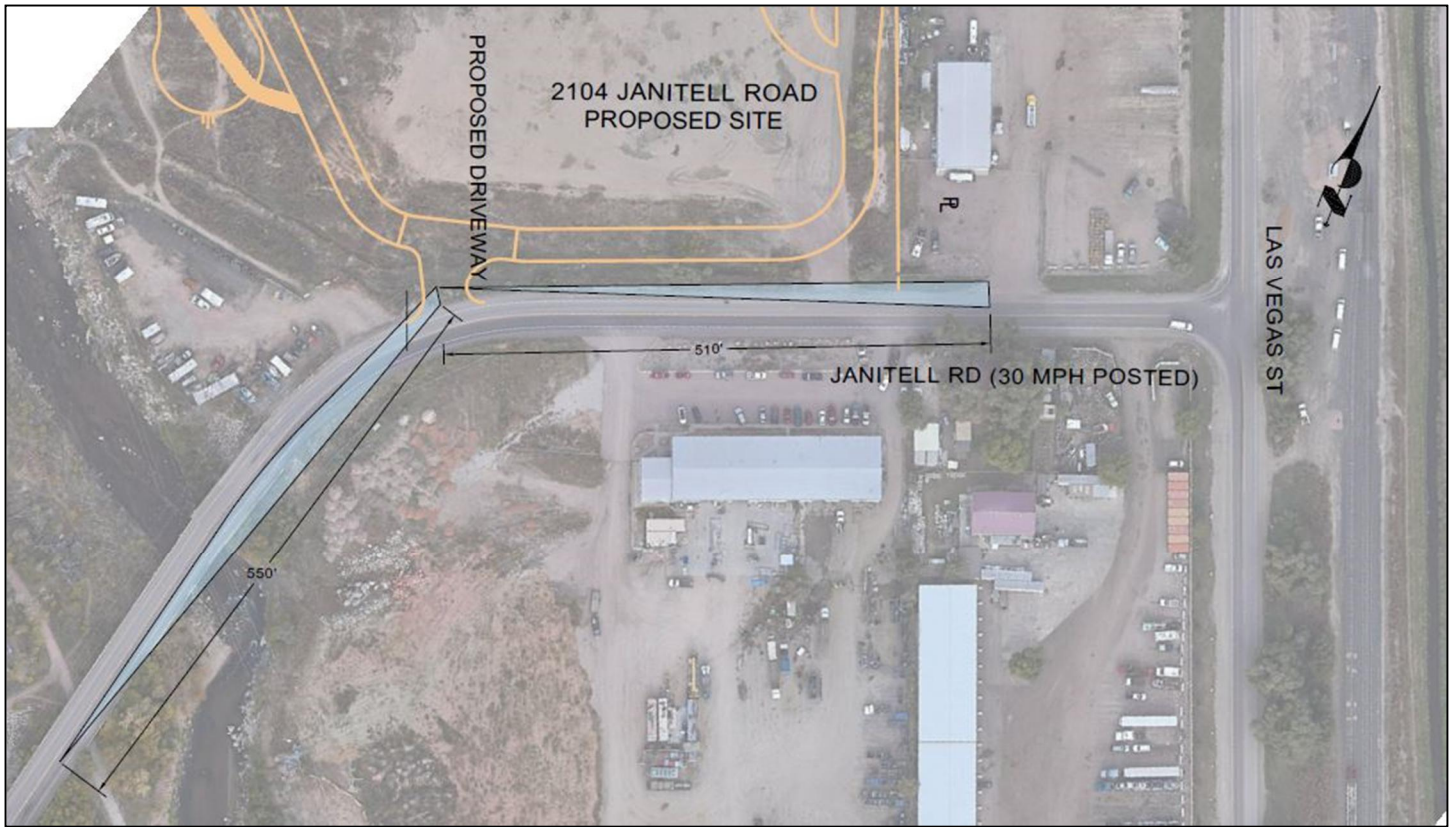


Figure 3 – West Site Access and Sight Distance – Asphalt Concrete Recycling Project Site, El Paso County, CO

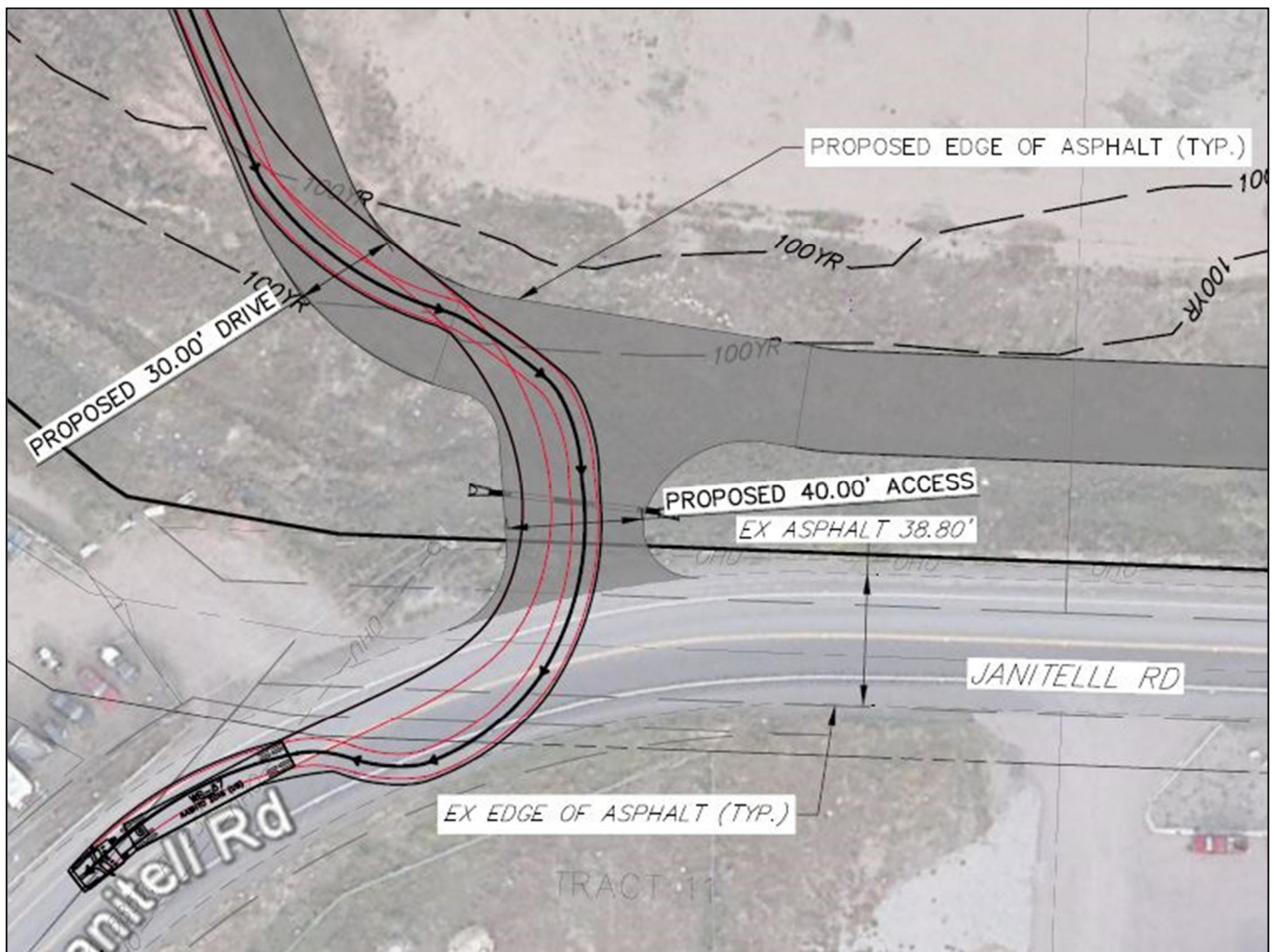


Figure 4 – WB-67 Turning Template – Asphalt Concrete Recycling Project Site, El Paso County, CO

Trip Distribution and Haul Route

Distribution of trips is shown in Figure 5 below. Based on existing traffic counts taken at Las Vegas Street and Janitell Road, the distribution is expected to be as follows:

- 25% oriented south along Janitell Road
- 37.5% oriented northwest along Las Vegas Street
- 37.5% oriented southeast along Las Vegas Street

The haul routes to and from the site are also represented by the distribution of trips shown in Figure 5.

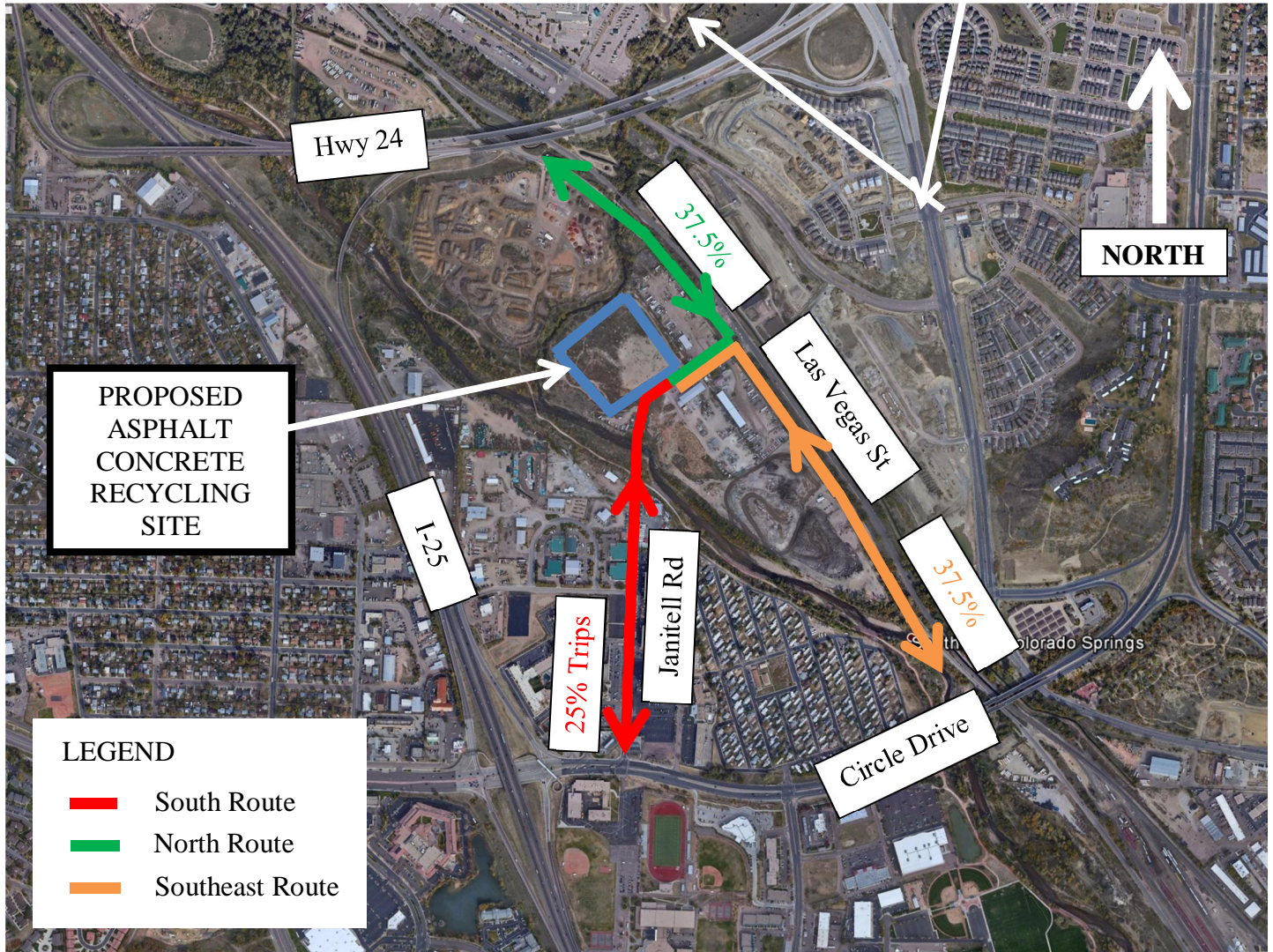


Figure 5 – Trip Distribution and Haul Route – Asphalt Concrete Recycling Project Site, El Paso County, CO

Level of Service

The capacity of an intersection is measured by how well it operates during the peak hours of the day. Intersection capacities are expressed in terms of levels of service (LOS). LOS is a qualitative measure of intersection functionality, which is based on average delay experienced at an intersection. LOS ratings range from LOS A (best – free flow conditions) to LOS F (worst – unstable flow or high vehicle delay). According to El Paso County's *Engineering Criteria Manual* Section B.8, intersections or movements with an LOS rating of D or better are considered satisfactory.

The study intersections were analyzed with the *Synchro 11* software. Input data for creating the Synchro network included intersection geometry (number of travel lanes, turning lanes, and lengths of storage bays), traffic control mitigation (speed limits and stop signs), and vehicular traffic volumes. Operational analyses were conducted in the AM and PM peak hours to determine the levels of service. Level of Service reports for the Year 2020 Existing Conditions, Year 2020 Opening Day, Year 2040 Background, and Year 2040 Total traffic were generated using the *HCM 6th Edition*. The lane movement LOS results for Year 2020 and Year 2040 are summarized in Table 1 and Table 2, respectively. The detailed *HCM 6th Edition* Synchro reports are included in Attachment 4.

Table 1 – Year 2020 Level of Service					
TWSC Intersection	Movement	2020 Existing Traffic LOS		2020 Opening Day Traffic LOS	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
E1 - Las Vegas Street & Janitell Road	NWBLT	A	A	A	A
	NEBLR	B	C	B	C
A1 - Janitell Road & ACR Access	SEBLR	N/A	N/A	A	A
	NEBLT	N/A	N/A	A	A

Notes:

1. SEB=Southeast-bound, NWB=Northwest-bound, NEB=Northeast-bound
L=Left, R=Right, T=Through
2. N/A=Not Applicable
3. Yellow highlight exceeds Established Threshold of LOS D

As shown in Table 1, all movements in the Year 2020 operate satisfactorily at the intersections of Las Vegas Street & Janitell Road (E1) and Janitell Road & ACR Access (A1), with and without site generated traffic. Therefore, no roadway improvements are anticipated for Year 2020 Opening Day of the asphalt concrete recycling plant.

Table 2 – Year 2040 Level of Service					
TWSC Intersection	Movement	2040 Background Traffic LOS		2040 Total Traffic LOS	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
E1 - Las Vegas Street & Janitell Road	NWBLT	A	A	A	B
	NEBLR	B	F	B	F
A1 - Janitell Road & ACR Access	SEBLR	N/A	N/A	A	B
	NEBLT	N/A	N/A	A	A

Notes:

1. SEB=Southeast-bound, NWB=Northwest-bound, NEB=Northeast-bound
L=Left, R=Right, T=Through
2. N/A=Not Applicable
3. Yellow highlight exceeds Established Threshold of LOS D

As shown in Table 2, all movements in the Year 2040 operate satisfactorily at the ACR Access (A1) with site generated traffic. However, the intersection of Las Vegas Street & Janitell Road (E1) yields LOS F for the northeast-bound left/right movements in the PM peak hour. This failure occurs in both the background and total traffic scenarios, indicating that the site generated traffic does not degrade the intersection to fail.

There is an existing driveway approximately 65 feet southwest of the E1 intersection. Even minor queue lengths would impede this non-standard driveway. The queue lengths for the PM peak hour background and total scenarios are 198 feet and 276 feet, respectively. Roadway improvements are not anticipated to be triggered by the asphalt concrete recycling plant, but should be evaluated in future transportation studies of surrounding development. Relocation of the driveway, a northeast-bound left turn lane, and/or signal warrant analysis may be proposed in a future transportation study.

Road Impact Fee

As part of the study, a road impact fee was prepared. The road impact fee is based on the number of daily trips multiplied by the rate provided by the County. According to El Paso County Resolution No 19-471, \$398.55 is the cost per trip. With a total of 481 anticipated daily trips to and from the site, the calculation is $\$398.55 \times 481 = \$191,703$.

Existing Signage and Striping

It is not anticipated that changes to signage and striping will be required for the proposed project. Figure 6 shows the existing conditions.



Figure 6 – Existing Signage and Striping – Asphalt Concrete Recycling Project Site, El Paso County, CO

El Paso County MTCP

The El Paso County MTCP does not include any improvements on Las Vegas Street nor Janitell Road within the project limits. No other corridor studies were found for this area.

Conclusion

Based on the site generated traffic and level of service results, it is not anticipated that the existing roadways will require improvements with the opening of the asphalt recycling plant in Year 2020. However, the intersection of Las Vegas Street and Janitell Road may need improvements by the Year 2040, due to continued surrounding development. A future transportation study of a nearby site would need to evaluate if/when relocation of the nearest driveway, a northeast-bound left turn lane, and/or traffic signal may be warranted at this existing intersection. The ACR access along Janitell Road operates satisfactorily in all scenarios.

Please feel free to contact me at efarney@jrengineering.com or 303-267-6183 if you have any questions or comments.

ATTACHMENT 1

Traffic Counts

☐ 7200 South Alton Way, Suite C400
Centennial, CO 80112
303-740-9393 • Fax 303-921-7320

☐ 5475 Tech Center Dr, Suite 235
Colorado Springs, CO 80919
719-593-2593 • Fax 303-921-7320

☐ 2900 South College Avenue, Suite 3D
Fort Collins, CO 80525
970-491-9888 • Fax 303-921-7320



(303) 216-2439
www.alltrafficdata.net

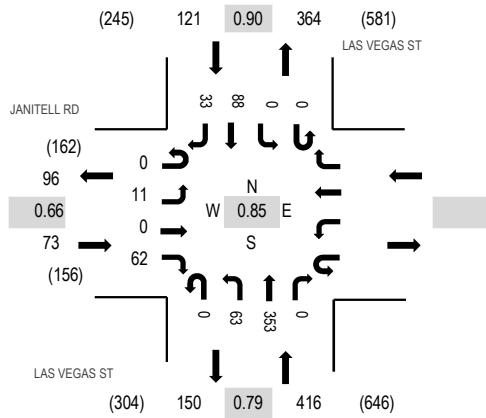
Location: 1 LAS VEGAS ST & JANITELL RD AM

Date: Thursday, March 12, 2020

Peak Hour: 07:15 AM - 08:15 AM

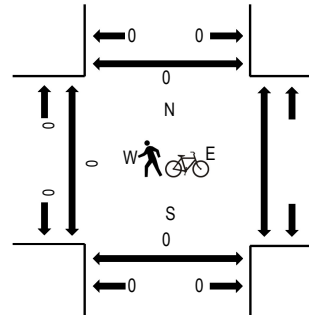
Peak 15-Minutes: 07:15 AM - 07:30 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	JANITELL RD Eastbound				Westbound				LAS VEGAS ST Northbound				LAS VEGAS ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	2	0	11					0	9	51	0	0	0	18	5	96	588	0		0	0
7:15 AM	0	3	0	20					0	21	111	0	0	0	16	9	180	610	0		0	0
7:30 AM	0	3	0	16					0	13	100	0	0	0	15	9	156	545	0		0	0
7:45 AM	0	3	0	16					0	13	91	0	0	0	26	7	156	501	0		0	0
8:00 AM	0	2	0	10					0	16	51	0	0	0	31	8	118	459	0		0	0
8:15 AM	0	8	0	24					0	8	39	0	0	0	29	7	115		0		0	0
8:30 AM	0	7	0	14					0	11	50	0	0	0	23	7	112		0		0	0
8:45 AM	0	6	0	11					0	8	54	0	0	0	24	11	114		0		0	0
Count Total	0	34	0	122					0	99	547	0	0	0	182	63	1,047		0		0	0
Peak Hour	0	11	0	62					0	63	353	0	0	0	88	33	610		0		0	0



(303) 216-2439
www.alltrafficdata.net

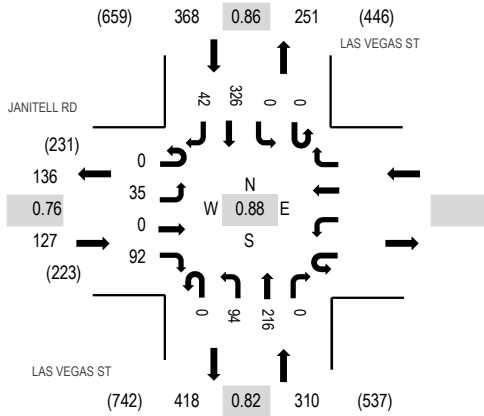
Location: 1 LAS VEGAS ST & JANITELL RD PM

Date: Thursday, March 12, 2020

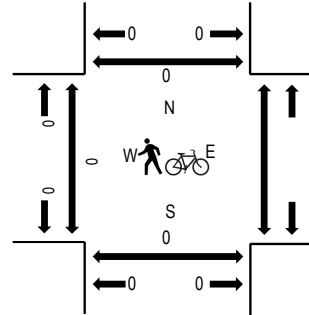
Peak Hour: 04:15 PM - 05:15 PM

Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	JANITELL RD Eastbound				Westbound				LAS VEGAS ST Northbound				LAS VEGAS ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	11	0	20					0	30	55	0	0	0	63	14	193	768	0	0	0	0
4:15 PM	0	12	0	16					0	23	48	0	0	0	69	14	182	805	0	0	0	0
4:30 PM	0	5	0	39					0	25	67	0	0	0	76	8	220	803	0	0	0	0
4:45 PM	0	11	0	19					0	13	40	0	0	0	79	11	173	725	0	0	0	0
5:00 PM	0	7	0	18					0	33	61	0	0	0	102	9	230	651	0	0	0	0
5:15 PM	0	6	0	21					0	13	44	0	0	0	89	7	180		0	0	0	0
5:30 PM	0	10	0	9					0	16	38	0	0	0	65	4	142		0	0	0	0
5:45 PM	1	7	0	11					0	7	24	0	0	0	46	3	99		0	0	0	0
Count Total	1	69	0	153					0	160	377	0	0	0	589	70	1,419		0	0	0	0
Peak Hour	0	35	0	92					0	94	216	0	0	0	326	42	805		0	0	0	0

ATTACHMENT 2

Trip Generation Details

☐ 7200 South Alton Way, Suite C400
Centennial, CO 80112
303-740-9393 • Fax 303-921-7320

☐ 5475 Tech Center Dr, Suite 235
Colorado Springs, CO 80919
719-593-2593 • Fax 303-921-7320

☐ 2900 South College Avenue, Suite 3D
Fort Collins, CO 80525
970-491-9888 • Fax 303-921-7320

Trip Generation Summary

Alternative: Alternative 1

Phase:

Project: ACR Recycling

Open Date: 3/19/2020

Analysis Date: 3/19/2020

ITE	Land Use	Weekday Average Daily Trips				Weekday AM Peak Hour of Adjacent Street Traffic				Weekday PM Peak Hour of Adjacent Street Traffic			
		*	Enter	Exit	Total	*	Enter	Exit	Total	*	Enter	Exit	Total
140	ACR Recycling Plant 12 Acres		241	240	481		56	6	62		23	31	54
Unadjusted Volume			241	240	481		56	6	62		23	31	54
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			241	240	481		56	6	62		23	31	54

Total Weekday Average Daily Trips Internal Capture = 0 Percent

Total Weekday AM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

Total Weekday PM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

* - Custom rate used for selected time period.

Detailed Land Use Data
For 12 Acres of ACR Recycling Plant
(140) Manufacturing

Project: ACR Recycling

Open Date: 3/19/2020
Analysis Date: 3/19/2020

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips Source : Trip Generation Manual 10th Edition	481	0	35.02	3.72	245.83	28.72	23	50	50	True	$T = 29.63(X) + 125.78$	0.67
Weekday AM Peak Hour of Adjacent Street Traffic Source : Trip Generation Manual 10th Edition	62	0	4.62	0.13	39.75	5.61	21	90	10	True	$T = 3.84(X) + 16.16$	0.63
Weekday PM Peak Hour of Adjacent Street Traffic Source : Trip Generation Manual 10th Edition	54	0	4.54	0.19	65	6.54	16	43	57	False		

ATTACHMENT 3

Proposed Site Plan

☐ 7200 South Alton Way, Suite C400
Centennial, CO 80112
303-740-9393 • Fax 303-921-7320

☐ 5475 Tech Center Dr, Suite 235
Colorado Springs, CO 80919
719-593-2593 • Fax 303-921-7320

☐ 2900 South College Avenue, Suite 3D
Fort Collins, CO 80525
970-491-9888 • Fax 303-921-7320

ATTACHMENT 4

HCM 6th Edition LOS Reports










☐ 7200 South Alton Way, Suite C400
Centennial, CO 80112
303-740-9393 • Fax 303-921-7320




☐ 5475 Tech Center Dr, Suite 235
Colorado Springs, CO 80919
719-593-2593 • Fax 303-921-7320

☐ 2900 South College Avenue, Suite 3D
Fort Collins, CO 80525
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Lanes, Volumes, Timings
1: Janitell Rd & Las Vegas St










JR Engineering
03/26/2020




						
Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	88	33	63	353	11	62
Future Volume (vph)	88	33	63	353	11	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.962				0.886	
Flt Protected				0.992	0.992	
Satd. Flow (prot)	1692	0	0	1745	1546	0
Flt Permitted				0.992	0.992	
Satd. Flow (perm)	1692	0	0	1745	1546	0
Link Speed (mph)	50			50	30	
Link Distance (ft)	331			301	399	
Travel Time (s)	4.5			4.1	9.1	
Peak Hour Factor	0.81	0.78	0.79	0.89	0.78	0.79
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%
Adj. Flow (vph)	109	42	80	397	14	78
Shared Lane Traffic (%)						
Lane Group Flow (vph)	151	0	0	477	92	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	43.1%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	2.2					
Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	88	33	63	353	11	62
Future Vol, veh/h	88	33	63	353	11	62
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	78	79	89	78	79
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	109	42	80	397	14	78
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	151	0	687	130
Stage 1	-	-	-	-	130	-
Stage 2	-	-	-	-	557	-
Critical Hdwy	-	-	4.18	-	6.48	6.28
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	-	-	2.272	-	3.572	3.372
Pot Cap-1 Maneuver	-	-	1394	-	404	904
Stage 1	-	-	-	-	881	-
Stage 2	-	-	-	-	562	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1394	-	374	904
Mov Cap-2 Maneuver	-	-	-	-	374	-
Stage 1	-	-	-	-	881	-
Stage 2	-	-	-	-	520	-
Approach	SE		NW		NE	
HCM Control Delay, s	0		1.3		10.5	
HCM LOS	B					
Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER	
Capacity (veh/h)	744	1394	-	-	-	
HCM Lane V/C Ratio	0.124	0.057	-	-	-	
HCM Control Delay (s)	10.5	7.7	0	-	-	
HCM Lane LOS	B	A	A	-	-	
HCM 95th %tile Q(veh)	0.4	0.2	-	-	-	

Lanes, Volumes, Timings
1: Janitell Rd & Las Vegas St










JR Engineering
03/26/2020




						
Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	326	42	94	216	35	92
Future Volume (vph)	326	42	94	216	35	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.983				0.904	
Flt Protected				0.984	0.986	
Satd. Flow (prot)	1729	0	0	1731	1568	0
Flt Permitted				0.984	0.986	
Satd. Flow (perm)	1729	0	0	1731	1568	0
Link Speed (mph)	50			50	30	
Link Distance (ft)	331			301	399	
Travel Time (s)	4.5			4.1	9.1	
Peak Hour Factor	0.89	0.78	0.82	0.87	0.78	0.82
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%
Adj. Flow (vph)	366	54	115	248	45	112
Shared Lane Traffic (%)						
Lane Group Flow (vph)	420	0	0	363	157	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	53.9%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	3.8					
Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	326	42	94	216	35	92
Future Vol, veh/h	326	42	94	216	35	92
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	78	82	87	78	82
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	366	54	115	248	45	112
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	420	0	871	393
Stage 1	-	-	-	-	393	-
Stage 2	-	-	-	-	478	-
Critical Hdwy	-	-	4.18	-	6.48	6.28
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	-	-	2.272	-	3.572	3.372
Pot Cap-1 Maneuver	-	-	1108	-	314	643
Stage 1	-	-	-	-	669	-
Stage 2	-	-	-	-	611	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1108	-	276	643
Mov Cap-2 Maneuver	-	-	-	-	276	-
Stage 1	-	-	-	-	669	-
Stage 2	-	-	-	-	538	-
Approach	SE	NW		NE		
HCM Control Delay, s	0	2.7		16.6		
HCM LOS	C					
Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER	
Capacity (veh/h)	466	1108	-	-	-	
HCM Lane V/C Ratio	0.337	0.103	-	-	-	
HCM Control Delay (s)	16.6	8.6	0	-	-	
HCM Lane LOS	C	A	A	-	-	
HCM 95th %tile Q(veh)	1.5	0.3	-	-	-	

Lanes, Volumes, Timings
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Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	88	44	73	353	13	64
Future Volume (vph)	88	44	73	353	13	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.954				0.888	
Flt Protected				0.991	0.991	
Satd. Flow (prot)	1678	0	0	1743	1548	0
Flt Permitted				0.991	0.991	
Satd. Flow (perm)	1678	0	0	1743	1548	0
Link Speed (mph)	50			50	30	
Link Distance (ft)	331			301	399	
Travel Time (s)	4.5			4.1	9.1	
Peak Hour Factor	0.81	0.78	0.80	0.89	0.78	0.79
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%
Adj. Flow (vph)	109	56	91	397	17	81
Shared Lane Traffic (%)						
Lane Group Flow (vph)	165	0	0	488	98	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	44.6%			ICU Level of Service A		
Analysis Period (min)	15					




Intersection						
Int Delay, s/veh	2.4					
Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	88	44	73	353	13	64
Future Vol, veh/h	88	44	73	353	13	64
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	78	80	89	78	79
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	109	56	91	397	17	81
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	165	0	716	137
Stage 1	-	-	-	-	137	-
Stage 2	-	-	-	-	579	-
Critical Hdwy	-	-	4.18	-	6.48	6.28
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	-	-	2.272	-	3.572	3.372
Pot Cap-1 Maneuver	-	-	1378	-	388	896
Stage 1	-	-	-	-	875	-
Stage 2	-	-	-	-	549	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1378	-	355	896
Mov Cap-2 Maneuver	-	-	-	-	355	-
Stage 1	-	-	-	-	875	-
Stage 2	-	-	-	-	502	-
Approach	SE		NW		NE	
HCM Control Delay, s	0		1.5		10.9	
HCM LOS	B					
Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER	
Capacity (veh/h)	711	1378	-	-	-	
HCM Lane V/C Ratio	0.137	0.066	-	-	-	
HCM Control Delay (s)	10.9	7.8	0	-	-	
HCM Lane LOS	B	A	A	-	-	
HCM 95th %tile Q(veh)	0.5	0.2	-	-	-	

Lanes, Volumes, Timings
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Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	4	2	14	37	48	21
Future Volume (vph)	4	2	14	37	48	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.949				0.959	
Flt Protected	0.970			0.986		
Satd. Flow (prot)	1619	0	0	1735	1687	0
Flt Permitted	0.970			0.986		
Satd. Flow (perm)	1619	0	0	1735	1687	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	282			245	399	
Travel Time (s)	6.4			5.6	9.1	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%
Adj. Flow (vph)	5	3	18	47	62	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	8	0	0	65	89	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type: Other						
Control Type: Unsignalized						
Intersection Capacity Utilization 19.4% ICU Level of Service A						
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	1.3					
Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	4	2	14	37	48	21
Future Vol, veh/h	4	2	14	37	48	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	5	3	18	47	62	27
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	159	76	89	0	-	0
Stage 1	76	-	-	-	-	-
Stage 2	83	-	-	-	-	-
Critical Hdwy	6.48	6.28	4.18	-	-	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.372	2.272	-	-	-
Pot Cap-1 Maneuver	818	969	1469	-	-	-
Stage 1	932	-	-	-	-	-
Stage 2	925	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	807	969	1469	-	-	-
Mov Cap-2 Maneuver	807	-	-	-	-	-
Stage 1	920	-	-	-	-	-
Stage 2	925	-	-	-	-	-
Approach	SE	NE		SW		
HCM Control Delay, s	9.2	2.1		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR	
Capacity (veh/h)	1469	-	855	-	-	
HCM Lane V/C Ratio	0.012	-	0.009	-	-	
HCM Control Delay (s)	7.5	0	9.2	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

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Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	326	50	103	216	47	103
Future Volume (vph)	326	50	103	216	47	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.980				0.909	
Flt Protected				0.984	0.984	
Satd. Flow (prot)	1724	0	0	1731	1574	0
Flt Permitted				0.984	0.984	
Satd. Flow (perm)	1724	0	0	1731	1574	0
Link Speed (mph)	50			50	30	
Link Distance (ft)	331			301	399	
Travel Time (s)	4.5			4.1	9.1	
Peak Hour Factor	0.89	0.78	0.83	0.87	0.78	0.83
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%
Adj. Flow (vph)	366	64	124	248	60	124
Shared Lane Traffic (%)						
Lane Group Flow (vph)	430	0	0	372	184	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	56.2%			ICU Level of Service B		
Analysis Period (min)	15					




Intersection						
Int Delay, s/veh	4.7					
Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	326	50	103	216	47	103
Future Vol, veh/h	326	50	103	216	47	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	78	83	87	78	83
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	366	64	124	248	60	124
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	430	0	894	398
Stage 1	-	-	-	-	398	-
Stage 2	-	-	-	-	496	-
Critical Hdwy	-	-	4.18	-	6.48	6.28
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	-	-	2.272	-	3.572	3.372
Pot Cap-1 Maneuver	-	-	1098	-	304	639
Stage 1	-	-	-	-	666	-
Stage 2	-	-	-	-	600	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1098	-	264	639
Mov Cap-2 Maneuver	-	-	-	-	264	-
Stage 1	-	-	-	-	666	-
Stage 2	-	-	-	-	521	-
Approach	SE		NW		NE	
HCM Control Delay, s	0		2.9		19.2	
HCM LOS	C					
Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER	
Capacity (veh/h)	436	1098	-	-	-	
HCM Lane V/C Ratio	0.423	0.113	-	-	-	
HCM Control Delay (s)	19.2	8.7	0	-	-	
HCM Lane LOS	C	A	A	-	-	
HCM 95th %tile Q(veh)	2.1	0.4	-	-	-	

Lanes, Volumes, Timings
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Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	23	8	6	64	68	17
Future Volume (vph)	23	8	6	64	68	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.965				0.972	
Flt Protected	0.964			0.996		
Satd. Flow (prot)	1637	0	0	1752	1710	0
Flt Permitted	0.964			0.996		
Satd. Flow (perm)	1637	0	0	1752	1710	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	282			245	399	
Travel Time (s)	6.4			5.6	9.1	
Peak Hour Factor	0.78	0.78	0.78	0.79	0.79	0.78
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%
Adj. Flow (vph)	29	10	8	81	86	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	39	0	0	89	108	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	18.3%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	1.9					
Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	23	8	6	64	68	17
Future Vol, veh/h	23	8	6	64	68	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	78	79	79	78
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	29	10	8	81	86	22
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	194	97	108	0	-	0
Stage 1	97	-	-	-	-	-
Stage 2	97	-	-	-	-	-
Critical Hdwy	6.48	6.28	4.18	-	-	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.372	2.272	-	-	-
Pot Cap-1 Maneuver	781	943	1446	-	-	-
Stage 1	912	-	-	-	-	-
Stage 2	912	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	776	943	1446	-	-	-
Mov Cap-2 Maneuver	776	-	-	-	-	-
Stage 1	907	-	-	-	-	-
Stage 2	912	-	-	-	-	-
Approach	SE	NE		SW		
HCM Control Delay, s	9.7	0.7		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR	
Capacity (veh/h)	1446	-	813	-	-	
HCM Lane V/C Ratio	0.005	-	0.049	-	-	
HCM Control Delay (s)	7.5	0	9.7	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.2	-	-	

Lanes, Volumes, Timings
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Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	139	52	100	559	17	98
Future Volume (vph)	139	52	100	559	17	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.961				0.886	
Flt Protected				0.992	0.992	
Satd. Flow (prot)	1691	0	0	1745	1546	0
Flt Permitted				0.992	0.992	
Satd. Flow (perm)	1691	0	0	1745	1546	0
Link Speed (mph)	50			50	30	
Link Distance (ft)	331			301	399	
Travel Time (s)	4.5			4.1	9.1	
Peak Hour Factor	0.84	0.78	0.83	0.92	0.78	0.83
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%
Adj. Flow (vph)	165	67	120	608	22	118
Shared Lane Traffic (%)						
Lane Group Flow (vph)	232	0	0	728	140	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	62.4%			ICU Level of Service B		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	2.6					
Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	139	52	100	559	17	98
Future Vol, veh/h	139	52	100	559	17	98
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	78	83	92	78	83
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	165	67	120	608	22	118
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	232	0	1047	199
Stage 1	-	-	-	-	199	-
Stage 2	-	-	-	-	848	-
Critical Hdwy	-	-	4.18	-	6.48	6.28
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	-	-	2.272	-	3.572	3.372
Pot Cap-1 Maneuver	-	-	1301	-	246	827
Stage 1	-	-	-	-	820	-
Stage 2	-	-	-	-	410	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1301	-	212	827
Mov Cap-2 Maneuver	-	-	-	-	212	-
Stage 1	-	-	-	-	820	-
Stage 2	-	-	-	-	353	-
Approach	SE		NW		NE	
HCM Control Delay, s	0		1.3		13.4	
HCM LOS	B					
Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER	
Capacity (veh/h)	570	1301	-	-	-	
HCM Lane V/C Ratio	0.245	0.093	-	-	-	
HCM Control Delay (s)	13.4	8	0	-	-	
HCM Lane LOS	B	A	A	-	-	
HCM 95th %tile Q(veh)	1	0.3	-	-	-	

Lanes, Volumes, Timings
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Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	516	67	149	342	55	146
Future Volume (vph)	516	67	149	342	55	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.982				0.904	
Flt Protected				0.985	0.986	
Satd. Flow (prot)	1728	0	0	1733	1568	0
Flt Permitted				0.985	0.986	
Satd. Flow (perm)	1728	0	0	1733	1568	0
Link Speed (mph)	50			50	30	
Link Distance (ft)	331			301	399	
Travel Time (s)	4.5			4.1	9.1	
Peak Hour Factor	0.92	0.79	0.85	0.89	0.78	0.84
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%
Adj. Flow (vph)	561	85	175	384	71	174
Shared Lane Traffic (%)						
Lane Group Flow (vph)	646	0	0	559	245	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	79.5%			ICU Level of Service D		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	14.5					
Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	516	67	149	342	55	146
Future Vol, veh/h	516	67	149	342	55	146
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	79	85	89	78	84
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	561	85	175	384	71	174
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	646	0	1338	604
Stage 1	-	-	-	-	604	-
Stage 2	-	-	-	-	734	-
Critical Hdwy	-	-	4.18	-	6.48	6.28
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	-	-	2.272	-	3.572	3.372
Pot Cap-1 Maneuver	-	-	911	-	164	487
Stage 1	-	-	-	-	534	-
Stage 2	-	-	-	-	464	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	911	-	124	487
Mov Cap-2 Maneuver	-	-	-	-	124	-
Stage 1	-	-	-	-	534	-
Stage 2	-	-	-	-	351	-
Approach	SE		NW		NE	
HCM Control Delay, s	0		3.1		79.1	
HCM LOS	F					
Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER	
Capacity (veh/h)	264	911	-	-	-	
HCM Lane V/C Ratio	0.925	0.192	-	-	-	
HCM Control Delay (s)	79.1	9.9	0	-	-	
HCM Lane LOS	F	A	A	-	-	
HCM 95th %tile Q(veh)	8.4	0.7	-	-	-	

Lanes, Volumes, Timings
1: Janitell Rd & Las Vegas St

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Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	139	63	110	559	19	100
Future Volume (vph)	139	63	110	559	19	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.956				0.887	
Flt Protected				0.991	0.992	
Satd. Flow (prot)	1682	0	0	1743	1548	0
Flt Permitted				0.991	0.992	
Satd. Flow (perm)	1682	0	0	1743	1548	0
Link Speed (mph)	50			50	30	
Link Distance (ft)	331			301	399	
Travel Time (s)	4.5			4.1	9.1	
Peak Hour Factor	0.84	0.79	0.83	0.92	0.78	0.83
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%
Adj. Flow (vph)	165	80	133	608	24	120
Shared Lane Traffic (%)						
Lane Group Flow (vph)	245	0	0	741	144	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	63.9%			ICU Level of Service B		
Analysis Period (min)	15					




Intersection						
Int Delay, s/veh	2.8					
Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	139	63	110	559	19	100
Future Vol, veh/h	139	63	110	559	19	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	79	83	92	78	83
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	165	80	133	608	24	120
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	245	0	1079	205
Stage 1	-	-	-	-	205	-
Stage 2	-	-	-	-	874	-
Critical Hdwy	-	-	4.18	-	6.48	6.28
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	-	-	2.272	-	3.572	3.372
Pot Cap-1 Maneuver	-	-	1287	-	235	821
Stage 1	-	-	-	-	815	-
Stage 2	-	-	-	-	398	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1287	-	198	821
Mov Cap-2 Maneuver	-	-	-	-	198	-
Stage 1	-	-	-	-	815	-
Stage 2	-	-	-	-	336	-
Approach	SE		NW		NE	
HCM Control Delay, s	0		1.5		14.2	
HCM LOS	B					
Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER	
Capacity (veh/h)	537	1287	-	-	-	
HCM Lane V/C Ratio	0.27	0.103	-	-	-	
HCM Control Delay (s)	14.2	8.1	0	-	-	
HCM Lane LOS	B	A	A	-	-	
HCM 95th %tile Q(veh)	1.1	0.3	-	-	-	

Lanes, Volumes, Timings
2: Janitell Rd & ACR Access

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








Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	4	2	14	58	76	21
Future Volume (vph)	4	2	14	58	76	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.949				0.970	
Flt Protected	0.970			0.990		
Satd. Flow (prot)	1619	0	0	1742	1706	0
Flt Permitted	0.970			0.990		
Satd. Flow (perm)	1619	0	0	1742	1706	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	282			245	399	
Travel Time (s)	6.4			5.6	9.1	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.80	0.78
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%
Adj. Flow (vph)	5	3	18	74	95	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	8	0	0	92	122	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type: Other						
Control Type: Unsignalized						
Intersection Capacity Utilization 20.5%				ICU Level of Service A		
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	1					
Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	4	2	14	58	76	21
Future Vol, veh/h	4	2	14	58	76	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	78	78	80	78
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	5	3	18	74	95	27
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	219	109	122	0	-	0
Stage 1	109	-	-	-	-	-
Stage 2	110	-	-	-	-	-
Critical Hdwy	6.48	6.28	4.18	-	-	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.372	2.272	-	-	-
Pot Cap-1 Maneuver	756	929	1429	-	-	-
Stage 1	901	-	-	-	-	-
Stage 2	900	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	746	929	1429	-	-	-
Mov Cap-2 Maneuver	746	-	-	-	-	-
Stage 1	889	-	-	-	-	-
Stage 2	900	-	-	-	-	-
Approach	SE	NE		SW		
HCM Control Delay, s	9.6	1.5		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR	
Capacity (veh/h)	1429	-	798	-	-	
HCM Lane V/C Ratio	0.013	-	0.01	-	-	
HCM Control Delay (s)	7.6	0	9.6	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

Lanes, Volumes, Timings
1: Janitell Rd & Las Vegas St

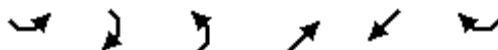
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Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	516	75	158	342	67	157
Future Volume (vph)	516	75	158	342	67	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.981				0.907	
Flt Protected				0.984	0.985	
Satd. Flow (prot)	1726	0	0	1731	1572	0
Flt Permitted				0.984	0.985	
Satd. Flow (perm)	1726	0	0	1731	1572	0
Link Speed (mph)	50			50	30	
Link Distance (ft)	331			301	399	
Travel Time (s)	4.5			4.1	9.1	
Peak Hour Factor	0.92	0.80	0.85	0.89	0.79	0.85
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%
Adj. Flow (vph)	561	94	186	384	85	185
Shared Lane Traffic (%)						
Lane Group Flow (vph)	655	0	0	570	270	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	81.8%			ICU Level of Service D		
Analysis Period (min)	15					




Intersection						
Int Delay, s/veh	25.1					
Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	516	75	158	342	67	157
Future Vol, veh/h	516	75	158	342	67	157
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	80	85	89	79	85
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	561	94	186	384	85	185
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	655	0	1364	608
Stage 1	-	-	-	-	608	-
Stage 2	-	-	-	-	756	-
Critical Hdwy	-	-	4.18	-	6.48	6.28
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	-	-	2.272	-	3.572	3.372
Pot Cap-1 Maneuver	-	-	904	-	158	485
Stage 1	-	-	-	-	532	-
Stage 2	-	-	-	-	453	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	904	-	117	485
Mov Cap-2 Maneuver	-	-	-	-	117	-
Stage 1	-	-	-	-	532	-
Stage 2	-	-	-	-	334	-
Approach	SE		NW		NE	
HCM Control Delay, s	0		3.3		132.1	
HCM LOS	F					
Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER	
Capacity (veh/h)	244	904	-	-	-	
HCM Lane V/C Ratio	1.105	0.206	-	-	-	
HCM Control Delay (s)	132.1	10	0	-	-	
HCM Lane LOS	F	B	A	-	-	
HCM 95th %tile Q(veh)	11.8	0.8	-	-	-	

Lanes, Volumes, Timings
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Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	23	8	6	101	108	17
Future Volume (vph)	23	8	6	101	108	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.965				0.980	
Flt Protected	0.964			0.997		
Satd. Flow (prot)	1637	0	0	1754	1724	0
Flt Permitted	0.964			0.997		
Satd. Flow (perm)	1637	0	0	1754	1724	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	282			245	399	
Travel Time (s)	6.4			5.6	9.1	
Peak Hour Factor	0.78	0.78	0.78	0.83	0.83	0.78
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%
Adj. Flow (vph)	29	10	8	122	130	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	39	0	0	130	152	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type: Other						
Control Type: Unsignalized						
Intersection Capacity Utilization 20.2% ICU Level of Service A						
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	1.5					
Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	23	8	6	101	108	17
Future Vol, veh/h	23	8	6	101	108	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	78	83	83	78
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	29	10	8	122	130	22
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	279	141	152	0	-	0
Stage 1	141	-	-	-	-	-
Stage 2	138	-	-	-	-	-
Critical Hdwy	6.48	6.28	4.18	-	-	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.372	2.272	-	-	-
Pot Cap-1 Maneuver	698	891	1393	-	-	-
Stage 1	871	-	-	-	-	-
Stage 2	874	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	694	891	1393	-	-	-
Mov Cap-2 Maneuver	694	-	-	-	-	-
Stage 1	866	-	-	-	-	-
Stage 2	874	-	-	-	-	-
Approach	SE	NE		SW		
HCM Control Delay, s	10.2	0.5		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR	
Capacity (veh/h)	1393	-	736	-	-	
HCM Lane V/C Ratio	0.006	-	0.054	-	-	
HCM Control Delay (s)	7.6	0	10.2	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.2	-	-	