APPENDIX 1.1

Approved Traffic Study Scoping Agreement

URBAN CROSSROADS

41 Corporate Park | Suite 300 | Irvine, CA 92606 | (949) 660-1994
www.urbanXroads.com

Date: September 26, 2013

This letter acknowledges the City of Moreno Valley Transportation Engineering Division requirements for the traffic impact analysis of the following project:

Case No.	PA13-0037/0038
Project Name:	First Nandina Logistics Center
Project Address:	Southwest corner of Indian Street and Nandina Avenue
Project Description:	1,450,000 square feet of high-cube warehouse use
Related Cases:	

	Consultant	Developer
Name:	URBAN CROSSROADS, INC. Attn: Charlene Hwang	FIRST INDUSTRIAL REALTY TRUST Attn: Larry Cochran
Address:	41 Corporate Park, Suite 300 Irvine, CA 92606	898 N. Sepulveda Boulevard, Suite 750 El Segundo, CA 90245
Telephone:	949-660-1994 x. 222	

I. Background

The proposed First Nandina Logistics Center (Project) is located on the southwest corner of Indian Street and Nandina Avenue (see **Exhibit 1**). The Project site layout is illustrated on **Exhibit 2**. As shown on **Exhibit 2**, one (1) building is proposed to be constructed on the Project site. The proposed Project includes the development of a 1,450,000 square foot high-cube warehouse.

The City's traffic study guideline requires that the opening year have a five (5) year minimum horizon. As such, the Opening Year analysis will assess 2018 traffic conditions.

II. Trip Geographic Distribution and Assignment

N: Varies % S: Varies % E: Varies % W: Varies %

The Project trip distribution patterns for both passenger cars and trucks were developed based on an understanding of existing travel patterns in the area, the geographical location of the site, and the site's proximity to the regional arterial and state highway system (see **Exhibits 3 & 4**). As shown on **Exhibit 3**, a total of 20% of the passenger

car traffic is anticipated to head north on Heacock Street with 30% headed east on Nandina Avenue towards Perris Boulevard, 10% headed east on Grove View Road, 5% headed south on Indian Street to go east on Harley Knox Boulevard, 10% heading south on Indian Street, 5% heading south on Indian Street to go south on Patterson Avenue, and the remaining 20% heading west on Harley Knox Boulevard to access the I-215 Freeway. Passenger car distribution patterns have been based on existing and planned land uses and roadway infrastructure in the area. As shown on **Exhibit 4**, a total of 90% of the inbound truck traffic will head towards the Project from the north on the I-215 Freeway (presumably from the Port of Long Beach/Port of Los Angeles) via Harley Knox Boulevard. 70% of the truck traffic is anticipated to head north on the I-215 Freeway with 20% heading south on the I-215 Freeway via Harley Knox Boulevard. 5% of the truck traffic in anticipated to head north on Heacock Street with the remaining 5% heading east on Nandina Avenue towards Perris Boulevard (presumably to access the SR-60 Freeway). It should be noted that the distribution pattern for truck traffic is based on designated truck routes as identified in the City's Designated Truck Route Map and based on preliminary discussions with City staff.

III. Site Trip Generation Forecast

A. Source for trip generation rates: Institute of Transportation Engineers (ITE) *Trip Generation Manual* 9th Edition (2012) and vehicle-mix has been determined based on recently collected empirical data for similar sites surveyed within the City of Moreno Valley.

   Based on discussions with City staff, the weighted average trip generation rates have been utilized for the high-cube warehousing (ITE LU 152) land use.

B. Weekday AM Peak: 7:00-9:00 AM

C. Weekday PM Peak: 4:00-6:00 PM

D. Intersection and link acceptable Level of Service "D" for some intersections and links and Level of Service "C" for others based upon the current City policy. (Use Highway Capacity Manual - latest edition - operations procedures; parameters per County of Riverside Traffic Impact Analysis Guidelines)

Proposed Use Rates [1]

First Nandina Logistics Center:

High Cube Warehouse (per TSF)	Daily: 1.68	AM: 0.11	PM: 0.12

(see attached **Table 1 & Table 2**)

Existing Use Rates

Towing Company (per TSF)	Daily: ***See Note***	AM: ***See Note***	PM: ***See Note***
Internal Trip Allowance:	Yes: _____	No: X	Percentage: _____
Pass-by Trip Allowance:	Yes: _____	No: X	Percentage: _____

(1) Institute of Transportation Engineers 9th Edition *Trip Generation Manual* (2012).

NOTE: The existing trips currently being generated by the towing company will be subtracted from the proposed Project trip generation to assess only the net increase in trips. The existing trips currently being generated will be determined based on a traffic count at the existing driveway into the facility.

IV. Specific Project Issues to be Analyzed

A. The traffic study will address the adequacy of site access and identify specific near-term circulation improvements required at study area intersections and roadways to maintain acceptable peak hour and daily levels of service (LOS).
B. The traffic study shall address the project traffic impacts at all study intersections listed in Section VI and provide appropriate mitigation measures if applicable. Peak-hour traffic signal warrants shall be evaluated for all intersections that are not currently signalized.
C. Qualitative assessment of existing and planned non-motorized facilities (e.g., pedestrians, bike routes, trails, etc.) within the study area.
D. As the project is proposed to contribute heavy vehicle (trucks) to the I-215 Freeway, an analysis of the I-215 Freeway will also be included. Analysis of the I-215 Freeway at Harley Knox Boulevard interchange will include basic freeway segment analysis for all freeway segments immediately adjacent to the I-215 Freeway and Harley Knox Boulevard interchange, merge/diverge analysis for the ramp junctions at the I-215 Freeway and Harley Knox Boulevard interchange, a Synchro progression analysis for the I-215 Freeway ramp termini intersections on Harley Knox Boulevard and a ramp queue analysis for all nearby Caltrans off-ramps to identify storage necessary to accommodate peak hour queuing.

V. Study Horizon Year

A. Existing (2013)
B. Existing (2013) Plus Project
C. Opening Year Cumulative (2018) Without Project (existing to opening year-2018, assuming a growth rate of 2% per year and includes the traffic from other cumulative development projects in the vicinity)
D. Opening Year Cumulative (2018) With Project

VI. Facilities to be Studied

A. Intersections: (See **Exhibit 1**)

Count data utilized for other Urban Crossroads traffic studies within the vicinity of the proposed Project are shown below for the applicable intersections. Intersections denoted in **boldface text** and without a date shown will be counted.

1. I-215 Southbound Ramps / Harley Knox Boulevard (1/17/2013)
2. I-215 Northbound Ramps / Harley Knox Boulevard (1/17/2013)
3. Western Way / Harley Knox Boulevard (1/17/2013)
4. Patterson Avenue / Harley Knox Boulevard (1/17/2013)
5. **Heacock Street / Nandina Avenue**
6. Heacock Street / Grove View Road – Future Intersection
7. Webster Avenue / Harley Knox Boulevard (5/16/2013)
8. Driveway 1 / Nandina Avenue – Future Intersection
9. Driveway 2 / Grove View Road – Future Intersection
10. **Driveway 3/Existing Driveway / Nandina Avenue**
11. Indian Street / Nandina Avenue (5/16/2013)
12. Indian Street / Driveway 4 – Future Intersection
13. **Indian Street / Driveway 5 (Waste Management Driveway)**
14. **Indian Street / Driveway 6 (Waste Management Driveway)**
15. **Indian Street / Grove View Road**
16. Indian Street / Harley Knox Boulevard (5/16/2013)

The site plan is currently being revised to address City comments on driveway locations; however, the square foot of the Project is not anticipated to change.

B. Roadway Segments:
All roadway segments adjacent to intersection analysis locations will be analyzed (e.g. all legs of an intersection listed above).

VII. Cumulative Development Projects

A list of cumulative development projects located within the City of Perris, City of Moreno Valley, County of Riverside and March Joint Powers Authority (JPA) is attached on **Table 3**. The list of cumulative development projects has been compiled consistent with the cumulative development list utilized in other near-by traffic studies and is based on information provided by City of Moreno Valley and City of Perris staff. A map of the cumulative development projects is provided on **Exhibit 5**, which correspond with the numbers shown on **Table 3**. The project team will be reaching out to adjacent jurisdictions to refresh the current cumulative project list. The revised version will be utilized for the purposes of this analysis.

VIII. Deliverables

a. Draft traffic impact studies (2 copies each)
b. Final traffic impact studies (4 copies each)

All draft and final traffic impact studies shall be delivered with the appropriate review fee to the Permit Technician, Land Development Division - Moreno Valley City Hall, 14177 Frederick Street, Moreno Valley, CA 92552. Please contact the Land Development Division at 951-413-3110 prior to the delivery of the traffic study.

A review fee will be required upon submittal of the traffic study. **A signed copy of this *Scoping Agreement* must be included in the submitted draft and final traffic impact studies.**

If you have any questions regarding this *Scoping Agreement*, please contact Eric Lewis at 951-413-3140.

Recommended By:

Charlene So

Charlene So, PE
Senior Transportation Engineer
Urban Crossroads, Inc.

Approved By:

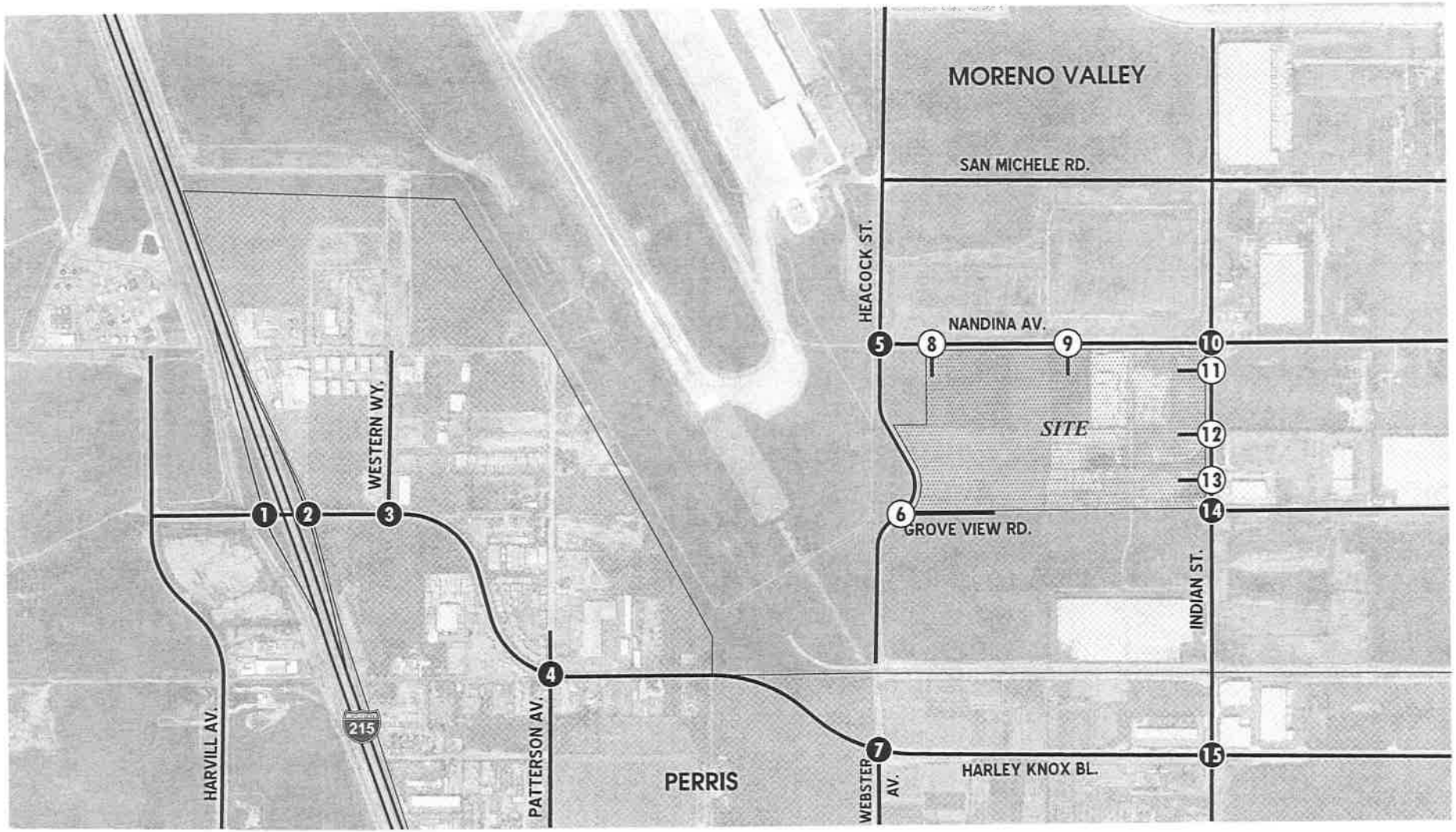
Eric Lewis

MICHAEL LLOYD FOR

Attachments

EXHIBIT 1

LOCATION MAP



LEGEND:

- 0 = EXISTING INTERSECTION ANALYSIS LOCATION
- 0 = FUTURE INTERSECTION ANALYSIS LOCATION

N

First Nandina Logistics Center
City of Moreno Valley, CA (JN - 08578:002)

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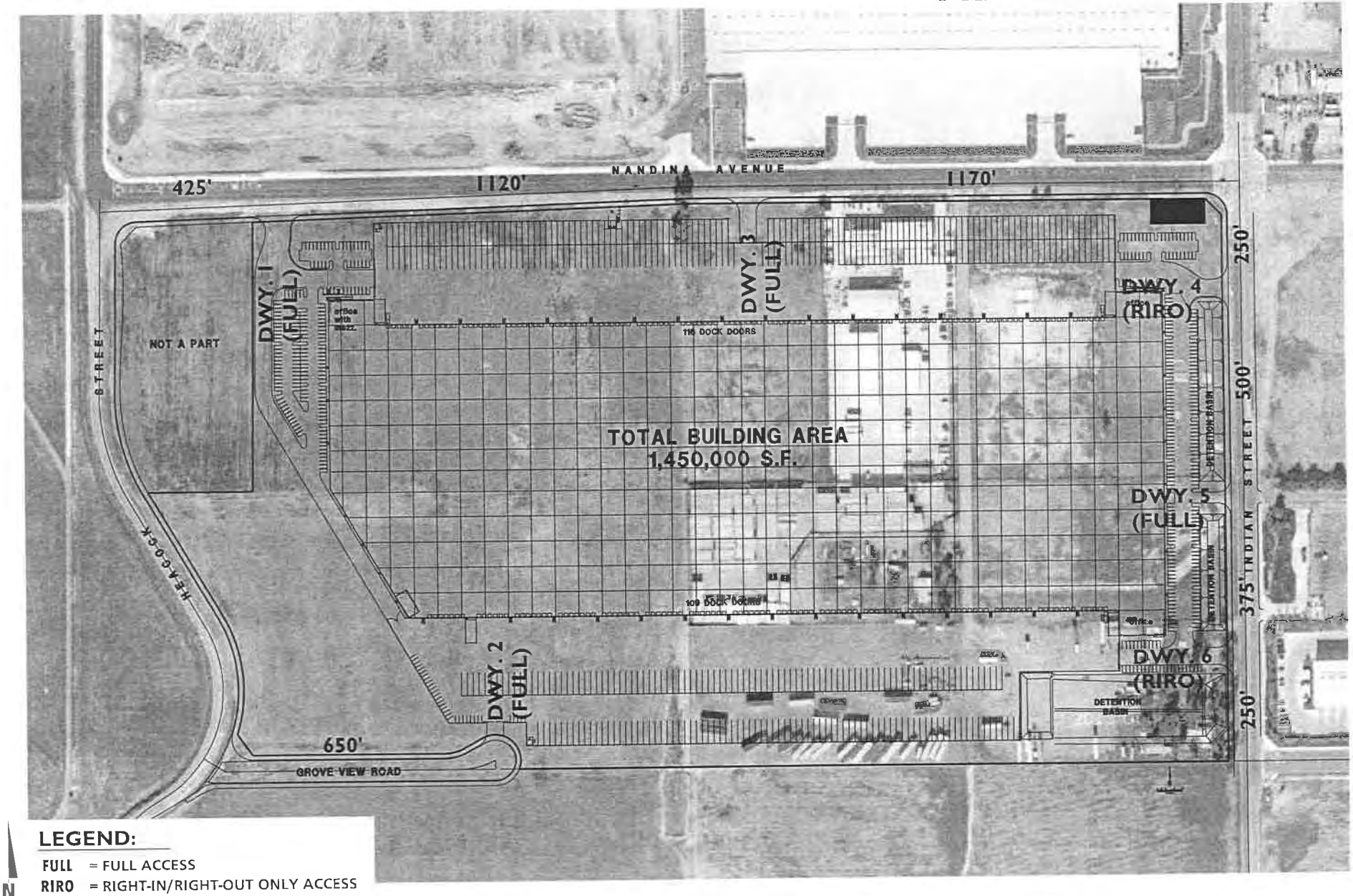
EXHIBIT 2

PRELIMINARY SITE PLAN



LEGEND:

FULL = FULL ACCESS

RIRO = RIGHT-IN/RIGHT-OUT ONLY ACCESS

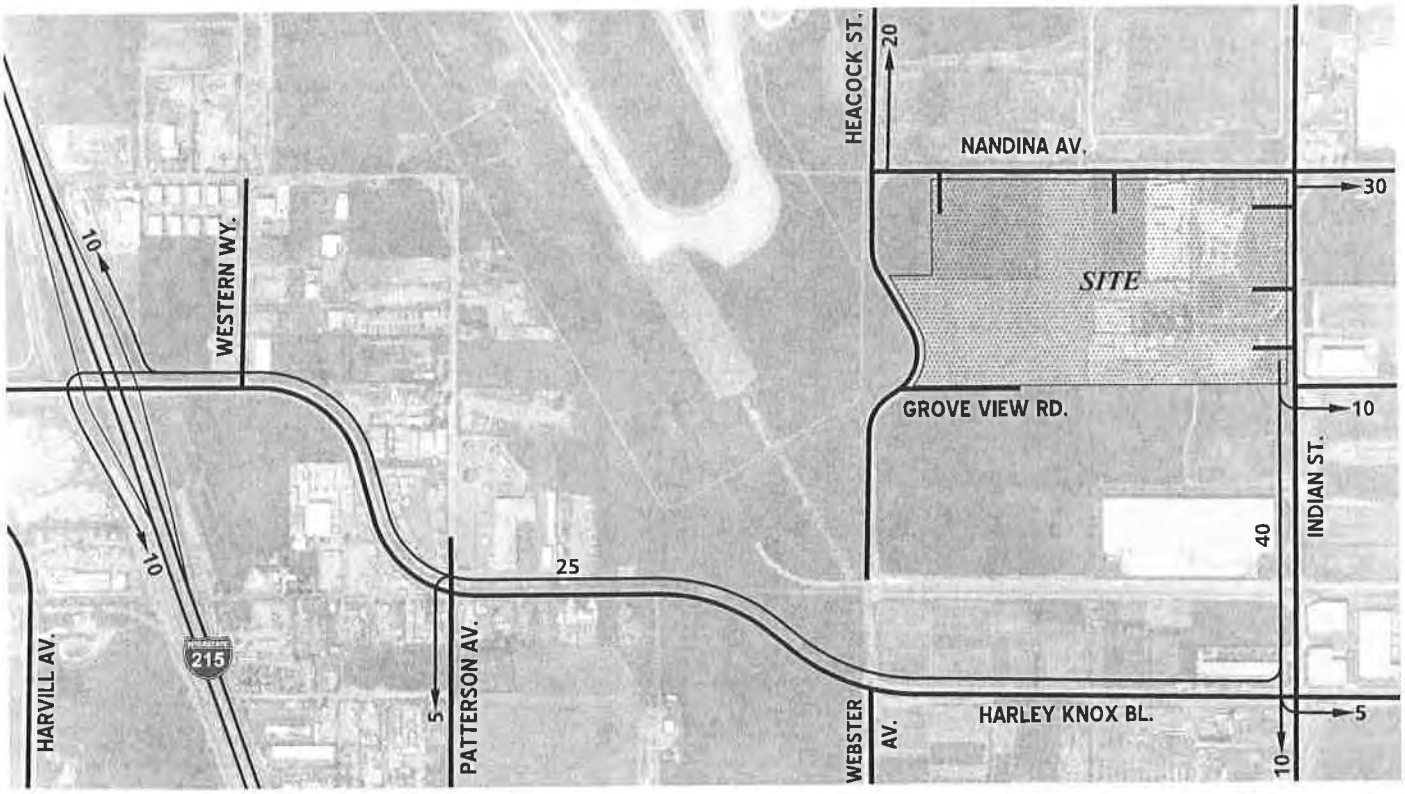
N

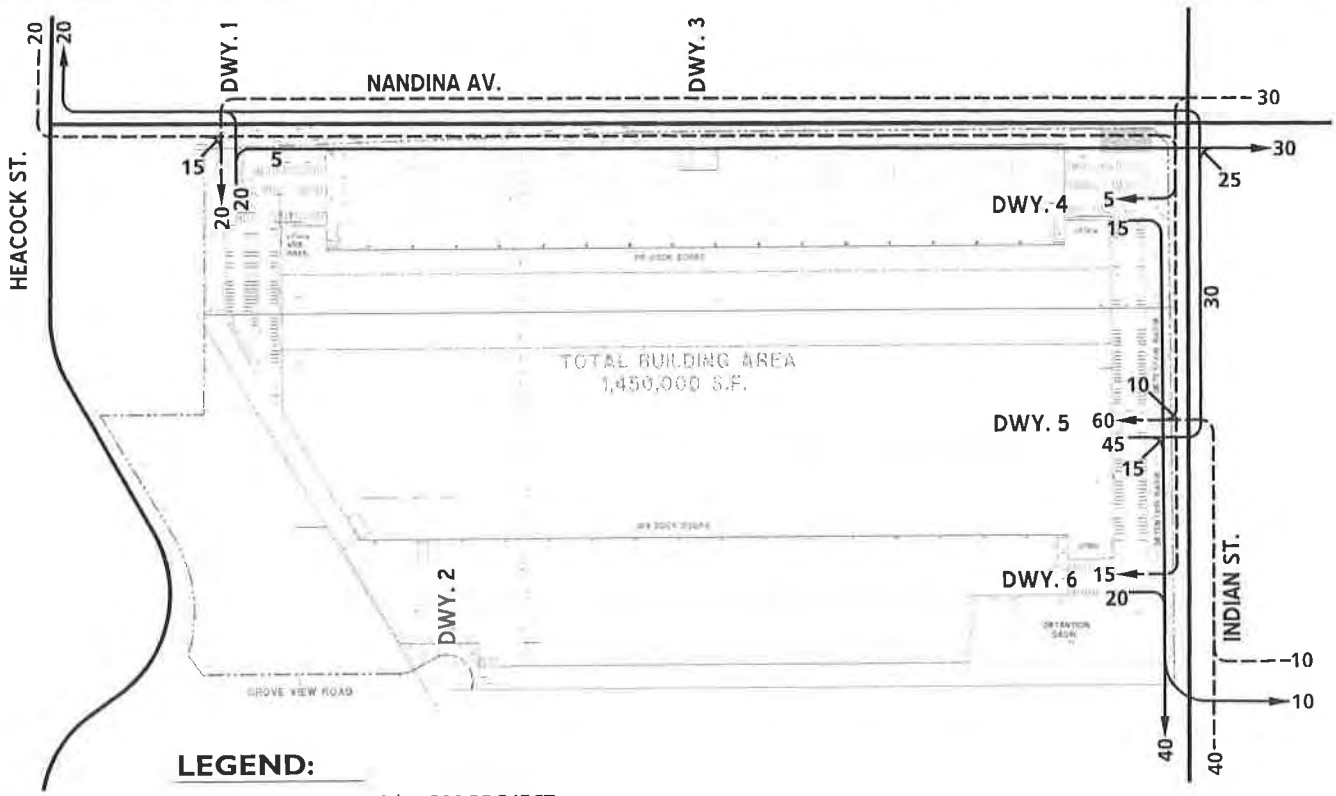
First Nandina Logistics Center
City of Moreno Valley, CA (JN - 08578:siteplan)

URBAN CROSSROADS

EXHIBIT 3

PROJECT (PASSENGER CAR) TRIP DISTRIBUTION





LEGEND:

10 = PERCENT TO/FROM PROJECT

——— = OUTBOUND

– – – – = INBOUND

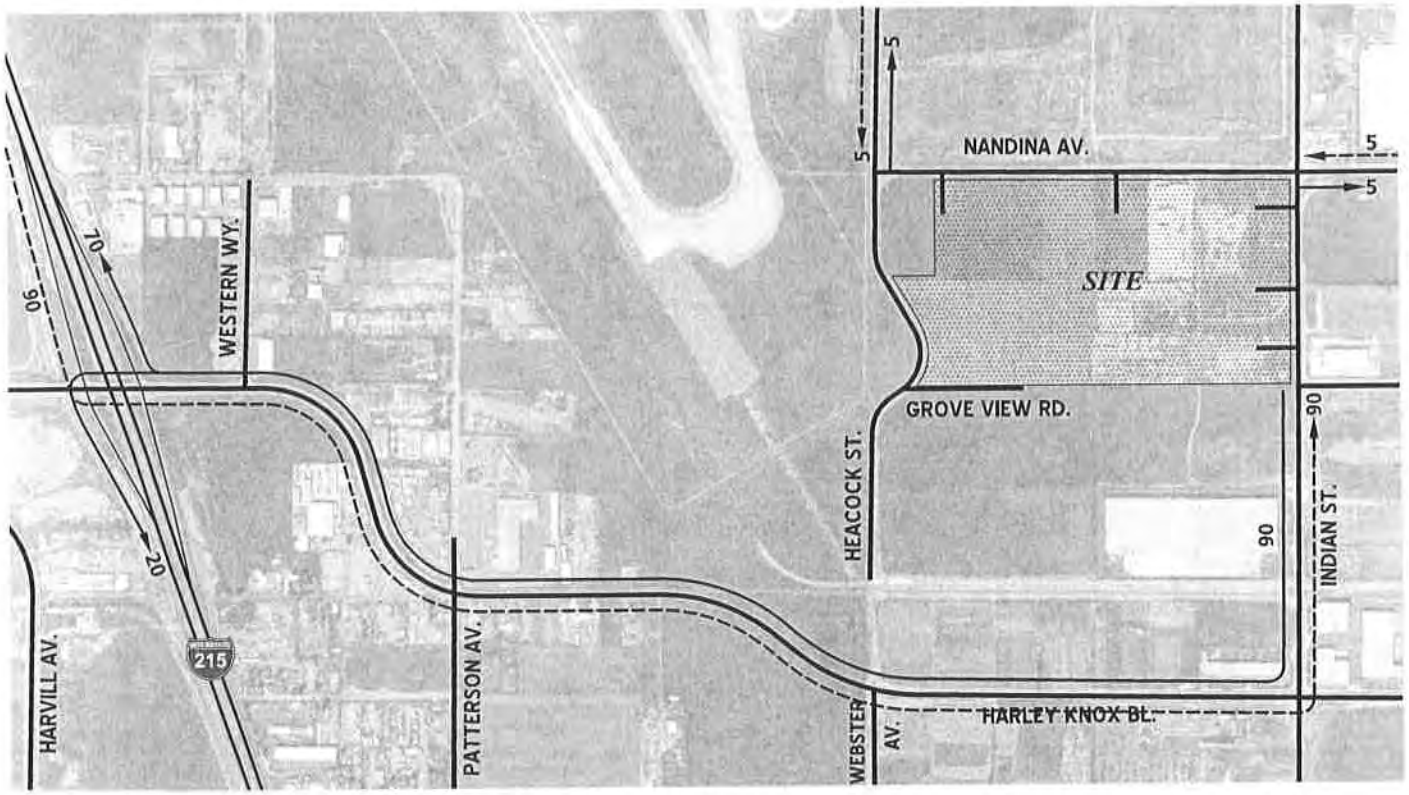
N

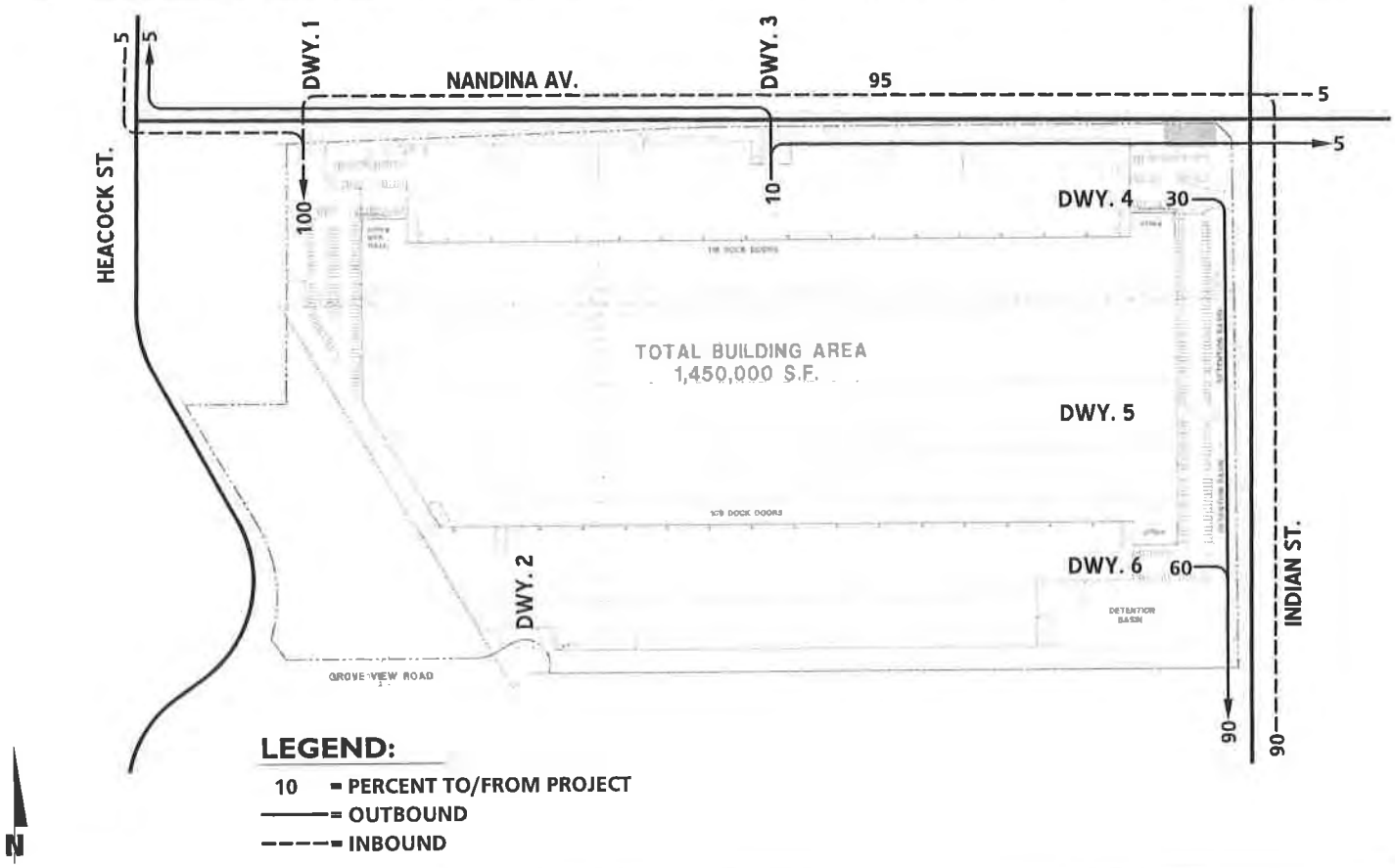
First Nandina Logistics Center
City of Moreno Valley, CA (JN - 08578:004)

URBAN CROSSROADS

EXHIBIT 4

PROJECT (TRUCK) TRIP DISTRIBUTION





LEGEND:

10 = PERCENT TO/FROM PROJECT

——— = OUTBOUND

– – – – = INBOUND

First Nandina Logistics Center
City of Moreno Valley, CA (JN - 08578:005)

URBAN CROSSROADS

EXHIBIT 5

CUMULATIVE DEVELOPMENT PROJECTS LOCATION MAP

First Nandina Logistics Center
City of Moreno Valley, CA (JN - 08578:CD11x17.mxd)

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Table 1

Project Trip Generation Rates[1]

Land Use[1]	Units[3]	ITE LU Code	AM Peak Hour			PM Peak Hour			Daily
			Inbound	Outbound	Total	Inbound	Outbound	Total	
High-Cube Warehouse[2]	TSF	152	0.08	0.03	0.11	0.04	0.08	0.12	1.68
76% Passenger Cars			0.061	0.023	0.084	0.030	0.061	0.091	1.277
3% 2-Axle Trucks (PCE = 1.5)			0.004	0.001	0.005	0.002	0.004	0.005	0.076
3% 3-Axle Trucks (PCE = 2.0)			0.005	0.002	0.007	0.002	0.005	0.007	0.101
18% 4-Axle+ Trucks (PCE = 3.0)			0.043	0.016	0.059	0.022	0.043	0.065	0.907

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Ninth Edition (2012).

[2] Vehicle Mix Source: Based on empirical data of surveyed sites within the City of Moreno Valley. PCE rates are per SANBAG.

[3] TSF = thousand square feet

Table 2

Project Trip Generation Summary

Land Use	Quantity	Units[1]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
High-Cube Warehouse	1,450.000	TSF							
Passenger Cars:			88	33	121	44	88	132	1,851
Truck Trips:									
2-axle:			*5*	*2*	*7*	*3*	*5*	*8*	*110*
3-axle:			*7*	*3*	*10*	*3*	*7*	*10*	*146*
4+-axle:			*63*	*23*	*86*	*31*	*63*	*94*	*1,315*
- Net Truck Trips (PCE) [2]			*75*	*28*	*103*	*37*	*75*	*112*	*1,571*
First Nandina Logistics (PCE) [3]			**163**	**61**	**224**	**81**	**163**	**244**	**3,423**

[1] TSF = Thousand Square Feet.

[2] Based on the following Passenger Car Equivalent Factors: 2-axle = 1.5 PCE, 3-axle = 2.0 PCE, 4+-axle = 3.0 PCE. (See Table 1)

[3] TOTAL TRIPS (PCE) = Passenger Cars + Net Truck Trips (PCE).

Table 3 (Page 1 of 5)

Cumulative Development Land Use Summary

TAZ	Project Name	Land Use[1]	Quantity	Units[2]
1	PA 06-0152 & PA 06-0153 (First Park Nandina I & II)	High-Cube Warehouse	1,182.918	TSF
2	Moreno Valley Walmart	Free-Standing Discount Store	189.520	TSF
		Gas Station	16	VFP
3A	PA 08-0072 (Overton Moore Properties)	High-Cube Warehouse	520.000	TSF
3B	Harbor Freight Expansion	High-Cube Warehouse	1,279.910	TSF
4	PA 04-0063 (Centerpointe Buildings 8 and 9)	General Light Industrial	361.384	TSF
5	PA 07-0035; PA 07-0039 (Moreno Valley Industrial Park)	General Light Industrial	204.657	TSF
		High-Cube Warehouse	409.920	TSF
6	PA 07-0079 (Indian Business Park)	High-Cube Warehouse	1,560.046	TSF
7	PA 08-0047-0052 (Komar Cactus Plaza)[3]	Hotel	110	RMS
		Fast Food w/Drive Thru	8.000	TSF
		Commercial	42.400	TSF
8	First Inland Logistics Center	High-Cube Warehouse	400.130	TSF
9	TM 33607	Condo/Townhomes	54	DU
10	PA 08-0093 (Centerpointe Business Park II)	General Light Industrial	99.988	TSF
11	PA 06-0021; PA 06-0022; PA 06-0048; PA 06-0049 (Komar Investments)	Warehousing	2,057.400	TSF
12	PA 06-0017 (Ivan Devries)	Industrial Park	569.200	TSF
13	PA 09-0004 (Vogel)	High-Cube Warehouse	1,616.133	TSF
14	TM 34748	SFDR	135	DU
15	TR 32548 (Gabel, Cook & Associates)	SFDR	107	DU
16	PA 09-0031	Gas Station	12	VFP
17	First Park Nandina III	High-Cube Warehouse	691.960	TSF
	Moreno Valley Commerce Park	High-Cube Warehouse	354.321	TSF
18	March Business Center	General Light Industrial	16.732	TSF
		Warehousing	87.429	TSF
		High-Cube Warehouse	1,380.246	TSF
19A	TM 33810	SFDR	16	DU
19B	TM 34151	SFDR	37	DU
20	373K Industrial Facility	High-Cube Warehouse	373.030	TSF
21	TM 32716	SFDR	57	DU
22	TM 32917	Condo/Townhomes	227	DU
23	TM 33417	Condo/Townhomes	10	DU
24	TM 34988	Condo/Townhomes	251	DU
25A	TM 34216	Condo/Townhomes	40	DU
25B	TM 34681	Condo/Townhomes	49	DU
25C	PA 08-0079-0081 (Winco Foods)	Discount Supermarket	95.440	TSF
		Specialty Retail	14.800	TSF

Table 3 (Page 2 of 5)

Cumulative Development Land Use Summary

TAZ	Project Name	Land Use[1]	Quantity	Units[2]
26	Moreno Beach Marketplace (Lowe's)	Commercial Retail	175.000	TSF
	Auto Mall Specific Plan (Planning Area C)	Commercial Retail	304.500	TSF
	Westridge	High-Cube Warehouse	937.260	TSF
	ProLogis	High-Cube Warehouse	1,916.190	TSF
		Warehousing	328.448	TSF
	World Logistics Center	High-Cube Warehouse	41,400.000	TSF
		Warehousing	200.000	TSF
		Gas Station w/ Market	12	VFP
		Existing SFDR	7	DU
27	March Lifecare Campus Specific Plan[4]	Medical Offices	190.000	TSF
		Commercial Retail	210.000	TSF
		Research & Education	200.000	TSF
		Hospital	50	Beds
		Institutional Residential	660	Beds
28	Alessandro Metrolink Station	Light Rail Transit Station	300	SP
29	Airport Master Plan	Airport Use	559.000	TSF
30	Meridian Business Park North	Industrial Park	5,985.000	TSF
31	SP 341; PP 21552 (Majestic Freeway Business Center)	High-Cube Warehouse	6,200.000	TSF
32	PP 20699 (Oleander Business Park)	Warehousing	1,206.710	TSF
33	Ramona Metrolink Station	Light Rail Transit Station	300	SP
34	PP 22925 (Amstar/Kaliber Development)	Office (258.102 TSF)	258.102	TSF
		Warehousing	409.312	TSF
		General Light Industrial	42.222	TSF
		Retail	10.000	TSF
35	P07-1028 (Alessandro Business Park)	General Light Industrial	652.018	TSF
36	P 05-0113 (IDI)	High-Cube Warehouse	1,750.000	TSF
37	P 05-0192 (Oakmont I)	High-Cube Warehouse	697.600	TSF
38	P 05-0477	High-Cube Warehouse	462.692	TSF
39	Rados Distribution Center	High-Cube Warehouse	1,200.000	TSF
40	Investment Development Services (IDS) II	High-Cube Warehouse	350.000	TSF
41	P 07-09-0018	Warehousing	170.000	TSF
42	P 07-07-0029 (Oakmont II)	High-Cube Warehouse	1,600.000	TSF
43	TR 32707	SFDR	137	DU
44	TR 34716	SFDR	318	DU
45	P 05-0493 (Ridge I)	High-Cube Warehouse	700.000	TSF
46	Ridge II	High-Cube Warehouse	2,000.000	TSF

Table 3 (Page 3 of 5)

Cumulative Development Land Use Summary

TAZ	Project Name	Land Use[1]	Quantity	Units[2]
47	Harvest Landing Specific Plan	SFDR	717	DU
		Condo/Townhomes	1,139	DU
		Sports Park	16.700	AC
		Business Park	1,233.401	TSF
		Shopping Center	73.181	TSF
	Perris Marketplace	Shopping Center	450.000	TSF
48	P 06-0411 (Concrete Batch Plant)	Manufacturing	2.000	TSF
49	Jordan Distribution	High-Cube Warehouse	378.000	TSF
50	Aiere	High-Cube Warehouse	642.000	TSF
51	P 08-11-0005; P 08-11-0006 (Starcrest)	High-Cube Warehouse	454.088	TSF
52A	Stratford Ranch Specific Plan	High-Cube Warehouse	1,725.411	TSF
52B	Stratford Ranch Specific Plan	High-Cube Warehouse	480.000	TSF
		General Light Industrial	120.000	TSF
53	PP 18908	General Light Industrial	133.000	TSF
54	Tract 33869	SFDR	39.000	DU
55	PP 16976	General Light Industrial	85.000	TSF
56	PP 21144	Industrial Park	190.802	TSF
57	Quail Ranch Specific Plan	Private School (K-12)	300	STU
		Golf Course	18	Holes
		Hotel	500	ROOMS
		Specialty Retail	66.667	TSF
		General office	66.667	TSF
		Assisted Living	500	Beds
		Senior Living (Detached)	200	DU
		SFDR	600	DU
58	a TR 32460 (Sussex Capital)	SFDR	58	DU
	b TR 32459 (Sussex Capital)	SFDR	11	DU
	c TR 30411 (Pacific Communities)	SFDR	24	DU
	d TR 33962 (Pacific Scene Homes)	SFDR	31	DU
	e TR 30998 (Pacific Communities)	SFDR	47	DU
59	a Westridge Commerce Center	High-Cube Warehouse	937.260	TSF
	b P06-158 (Gascon)	Commercial Retail	116.360	TSF
	c Auto Mall Specific Plan (PAC)	Commercial Retail	304.500	TSF
	d ProLogis	Warehousing	367.000	TSF
		High-Cube Warehouse	1,901.000	TSF
	e TR 35823 (Stowe Passco)	SFDR	262	DU
		Apartments	216	DU
60	TR 36340	SFDR	275	DU

Table 3 (Page 4 of 5)

Cumulative Development Land Use Summary

TAZ	Project Name	Land Use[1]	Quantity	Units[2]
61	a TR 31771 (Sanchez)	SFDR	25	DU
	b TR 34397 (Winchester Associates)	SFDR	52	DU
	c TR 32645 (Winchester Associates)	SFDR	54	DU
62	Lowe's (Moreno Beach Marketplace)	Home Improvement Store	175.000	TSF
63	a Convenience Store/ Fueling Station	Gas Station w/ Market	30.750	TSF
	b Senior Assisted Living	Assisted Living Units	139	DU
	c TR 31590 (Winchester Associates)	SFDR	96	DU
	d TR 32548 (Gabel, Cook & Associates)	SFDR	107	DU
	e 26th Corp. & Granite Capitol	SFDR	32	DU
	f TR 32218 (Whitney)	SFDR	63	DU
	g Moreno Marketplace	Commercial Retail	93.788	TSF
	h Medical Plaza	Medical Offices	311.633	TSF
64	a Moreno Medical Campus	Medical Offices	80.000	TSF
	b Aqua Bella Specific Plan	SFDR	2,922	DU
	c TR 34329 (Granite Capitol)	SFDR	90	DU
	d Cresta Bella	General Office	30.000	TSF
65	a Villages of Lakeview	SFDR	860	DU
		Condo/Townhomes	1,920	DU
		Elementary School	1,200	STU
		Commercial Retail	100.000	TSF
		Soccer Complex	12	Fields
		City Park	8.900	AC
		County Park	8.100	AC
		Regional Park	107.100	AC
	b Motte Lakeview Ranch	SFDR	847	DU
		Condo/Townhomes	686	DU
		Apartments	467	DU
		Elementary School	650	STU
		Middle School	300	STU
		Commercial Retail	120.000	TSF
		Regional Park	177.000	AC
66	Gateway Area Specific Plan	Commercial Retail	255.000	AC
		General Office	510.000	AC
		Business Park	595.000	AC
		Residential	340.000	AC
67	Moreno Valley Industrial Center (Industrial Area SP)	General Light Industrial	354.810	TSF
68	Centerpointe Business Park	General Light Industrial	356.000	TSF
69	ProLogis/Rolling Hills Ranch Industrial	Heavy Industrial	2,565.684	TSF
70	P05-0493	Logistics	597.370	TSF

Table 3 (Page 5 of 5)

Cumulative Development Land Use Summary

TAZ	Project Name	Land Use[1]	Quantity	Units[2]
71	P07-1028, -0102; and P09-0416, -0418, -0419	General Light Industrial	652.018	TSF
72	Amstar/Kaliber Development, PP22925	General Light Industrial	42.222	TSF
		Heavy Industrial	409.312	TSF
		Commercial Retail	10.000	TSF
		General Office	258.102	TSF
73	TR 31305 / Richmond American	Residential	87	DU
74	TR 32505 / DR Horton	Residential	71	DU
75	TR 34329 / Granite Capitol	Residential	90	DU
76	TR 31814 / Moreno Valley Investors	Residential	60	DU
77	TR 33771 / Creative Design Associates	Residential	12	DU
78	TR 35663 / Kha	Residential	12	DU
79	TR 22180 / Young Homes	Residential	87	DU
80	TR 32515	Residential	161	DU
81	TR 32142	Residential	81	DU
82	Heartland	Residential	922	DU
83	San Michele Industrial Center (Industrial Area SP)	General Light Industrial	865.960	TSF
84	Hidden Canyon	General Light Industrial	2,890.000	TSF
85	Starcrest, P011-0005; 08-11-0006	General Light Industrial	454.088	TSF
86	Commercial Medical Plaza	Medical Offices	311.633	TSF
87	Mountain Bridge Regional Commercial Community	Commercial	1,853.251	TSF
88	Jack Rabbit Trail	Residential	2,000	DU
89	The Preserve / Legacy Highlands SP	Commercial	595.901	TSF
		Residential	3,412	DU
90	South Perris Industrial Phase 1	Logistics	787.700	TSF
91	South Perris Industrial Phase 2	Logistics	3,448.734	TSF
92	South Perris Industrial Phase 3	Logistics	3,166.857	TSF

[1] SFDR = Single Family Detached Residential

[2] DU = Dwelling Units; TSF = Thousand Square Feet; SP = Spaces; VFP = Vehicle Fueling Positions

[3] Source: Cactus Avenue and Commerce Center Drive Commercial Center TIA, Urban Crossroads, Inc., December 9, 2008 (Revised).

[4] Source: March Lifecare Campus Specific Plan Traffic Impact Analysis, Mountain Pacific, Inc., May 2009 (Revised).

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APPENDIX 3.1

Traffic Count Data – January, May and October 2013

Counts Unlimited Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Southbound Ramps
E/W: Harley Knox Boulevard
Weather: Sunny

File Name : PER215SHKAM
Site Code : 00000001
Start Date : 1/17/2013
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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	I-215 Southbound Off Ramp Southbound				Harley Knox Boulevard Westbound				I-215 Southbound On Ramp Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	54	1	17	72	31	83	0	114	0	0	0	0	0	69	0	69	255
07:15 AM	67	2	29	98	27	44	0	71	0	0	0	0	0	81	1	82	251
07:30 AM	75	0	28	103	27	27	0	54	0	0	0	0	0	111	1	112	269
07:45 AM	80	2	17	99	30	32	0	62	0	0	0	0	0	64	2	66	227
Total	276	5	91	372	115	186	0	301	0	0	0	0	0	325	4	329	1002
08:00 AM	62	1	18	81	25	13	0	38	0	0	0	0	0	52	1	53	172
08:15 AM	58	1	21	80	19	16	0	35	0	0	0	0	0	33	0	33	148
08:30 AM	54	0	10	64	23	14	0	37	0	0	0	0	0	26	1	27	128
08:45 AM	35	1	17	53	18	11	0	29	0	0	0	0	0	24	1	25	107
Total	209	3	66	278	85	54	0	139	0	0	0	0	0	135	3	138	555
Grand Total	485	8	157	650	200	240	0	440	0	0	0	0	0	460	7	467	1557
Apprch %	74.6	1.2	24.2		45.5	54.5	0		0	0	0		0	98.5	1.5		
Total %	31.1	0.5	10.1	41.7	12.8	15.4	0	28.3	0	0	0	0	0	29.5	0.4	30	
Passenger Vehicles	374	4	146	524	160	229	0	389	0	0	0	0	0	424	7	431	1344
% Passenger Vehicles	77.1	50	93	80.6	80	95.4	0	88.4	0	0	0	0	0	92.2	100	92.3	86.3
Large 2 Axle Vehicles	34	2	8	44	24	8	0	32	0	0	0	0	0	18	0	18	94
% Large 2 Axle Vehicles	7	25	5.1	6.8	12	3.3	0	7.3	0	0	0	0	0	3.9	0	3.9	6
3 Axle Vehicles	20	1	3	24	9	0	0	9	0	0	0	0	0	7	0	7	40
% 3 Axle Vehicles	4.1	12.5	1.9	3.7	4.5	0	0	2	0	0	0	0	0	1.5	0	1.5	2.6
4+ Axle Trucks	57	1	0	58	7	3	0	10	0	0	0	0	0	11	0	11	79
% 4+ Axle Trucks	11.8	12.5	0	8.9	3.5	1.2	0	2.3	0	0	0	0	0	2.4	0	2.4	5.1

	I-215 Southbound Off Ramp Southbound				Harley Knox Boulevard Westbound				I-215 Southbound On Ramp Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	54	1	17	72	**31**	**83**	0	**114**	0	0	0	0	0	69	0	69	255
07:15 AM	67	**2**	**29**	98	27	44	0	71	0	0	0	0	0	81	1	82	251
07:30 AM	75	0	28	**103**	27	27	0	54	0	0	0	0	0	**111**	1	**112**	**269**
07:45 AM	**80**	2	17	99	30	32	0	62	0	0	0	0	0	64	**2**	66	227
Total Volume	276	5	91	372	115	186	0	301	0	0	0	0	0	325	4	329	1002
% App. Total	74.2	1.3	24.5		38.2	61.8	0		0	0	0		0	98.8	1.2		
PHF	.863	.625	.784	.903	.927	.560	.000	.660	.000	.000	.000	.000	.000	.732	.500	.734	.931

Counts Unlimited Inc.
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City of Perris
N/S: I-215 Southbound Ramps
E/W: Harley Knox Boulevard
Weather: Sunny

File Name : PER215SHKAM
Site Code : 00000001
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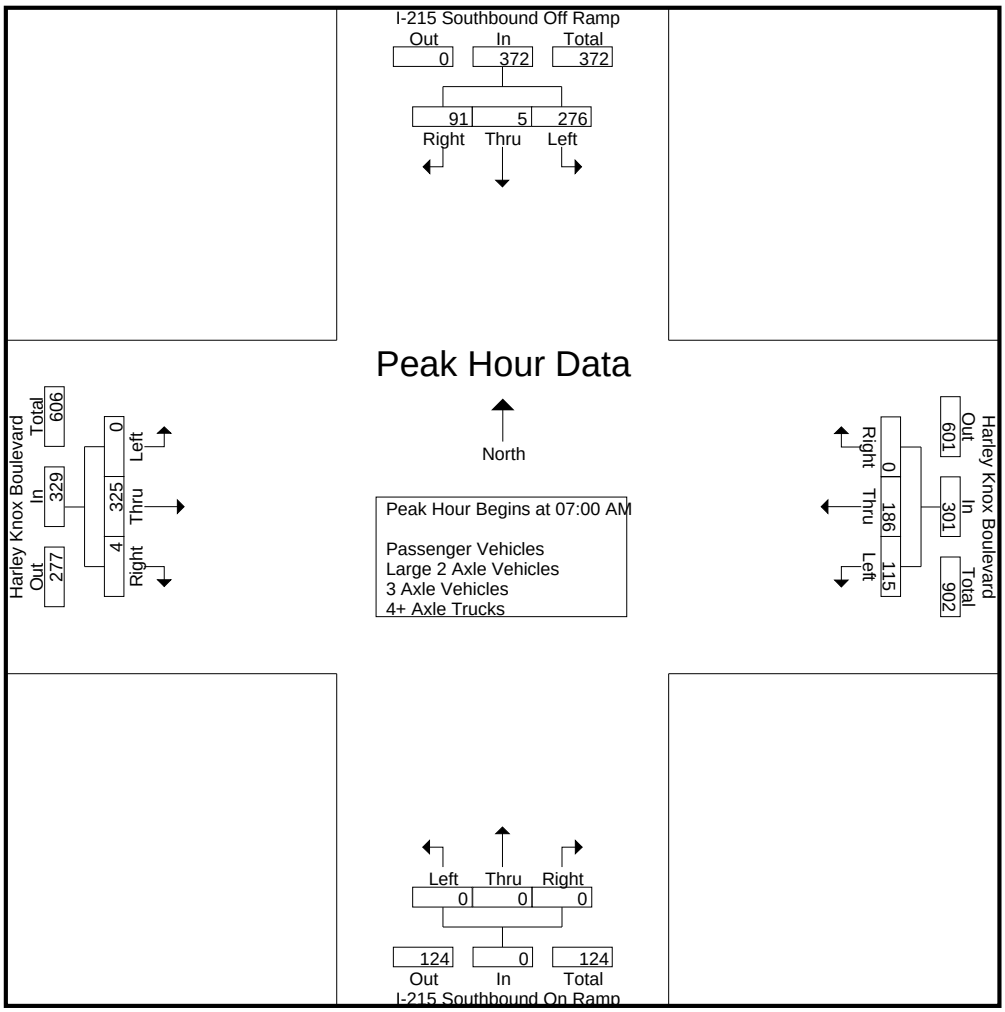

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:15 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	67	**2**	**29**	98	**31**	**83**	0	**114**	0	0	0	0	0	69	0	69
+15 mins.	75	0	28	**103**	27	44	0	71	0	0	0	0	0	81	1	82
+30 mins.	**80**	2	17	99	27	27	0	54	0	0	0	0	0	**111**	1	**112**
+45 mins.	62	1	18	81	30	32	0	62	0	0	0	0	0	64	**2**	66
Total Volume	284	5	92	381	115	186	0	301	0	0	0	0	0	325	4	329
% App. Total	74.5	1.3	24.1		38.2	61.8	0		0	0	0		0	98.8	1.2	
PHF	.888	.625	.793	.925	.927	.560	.000	.660	.000	.000	.000	.000	.000	.732	.500	.734

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City of Perris
N/S: I-215 Southbound Ramps
E/W: Harley Knox Boulevard
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File Name : PER215SHKAM
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Groups Printed- Large 2 Axle Vehicles

	I-215 Southbound Off Ramp Southbound				Harley Knox Boulevard Westbound				I-215 Southbound On Ramp Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	3	0	0	3	5	2	0	7	0	0	0	0	0	2	0	2	12
07:15 AM	3	1	3	7	5	1	0	6	0	0	0	0	0	4	0	4	17
07:30 AM	5	0	2	7	2	0	0	2	0	0	0	0	0	3	0	3	12
07:45 AM	7	1	1	9	2	1	0	3	0	0	0	0	0	3	0	3	15
Total	18	2	6	26	14	4	0	18	0	0	0	0	0	12	0	12	56
08:00 AM	3	0	0	3	4	1	0	5	0	0	0	0	0	3	0	3	11
08:15 AM	2	0	1	3	2	0	0	2	0	0	0	0	0	2	0	2	7
08:30 AM	6	0	0	6	1	2	0	3	0	0	0	0	0	1	0	1	10
08:45 AM	5	0	1	6	3	1	0	4	0	0	0	0	0	0	0	0	10
Total	16	0	2	18	10	4	0	14	0	0	0	0	0	6	0	6	38
Grand Total	34	2	8	44	24	8	0	32	0	0	0	0	0	18	0	18	94
Apprch %	77.3	4.5	18.2		75	25	0		0	0	0		0	100	0		
Total %	36.2	2.1	8.5	46.8	25.5	8.5	0	34	0	0	0	0	0	19.1	0	19.1	

	I-215 Southbound Off Ramp Southbound				Harley Knox Boulevard Westbound				I-215 Southbound On Ramp Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	3	0	0	3	**5**	**2**	0	**7**	0	0	0	0	0	2	0	2	12
07:15 AM	3	**1**	**3**	7	5	1	0	6	0	0	0	0	0	**4**	0	**4**	**17**
07:30 AM	5	0	2	7	2	0	0	2	0	0	0	0	0	3	0	3	12
07:45 AM	**7**	1	1	**9**	2	1	0	3	0	0	0	0	0	3	0	3	15
Total Volume	18	2	6	26	14	4	0	18	0	0	0	0	0	12	0	12	56
% App. Total	69.2	7.7	23.1		77.8	22.2	0		0	0	0		0	100	0		
PHF	.643	.500	.500	.722	.700	.500	.000	.643	.000	.000	.000	.000	.000	.750	.000	.750	.824

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File Name : PER215SHKAM
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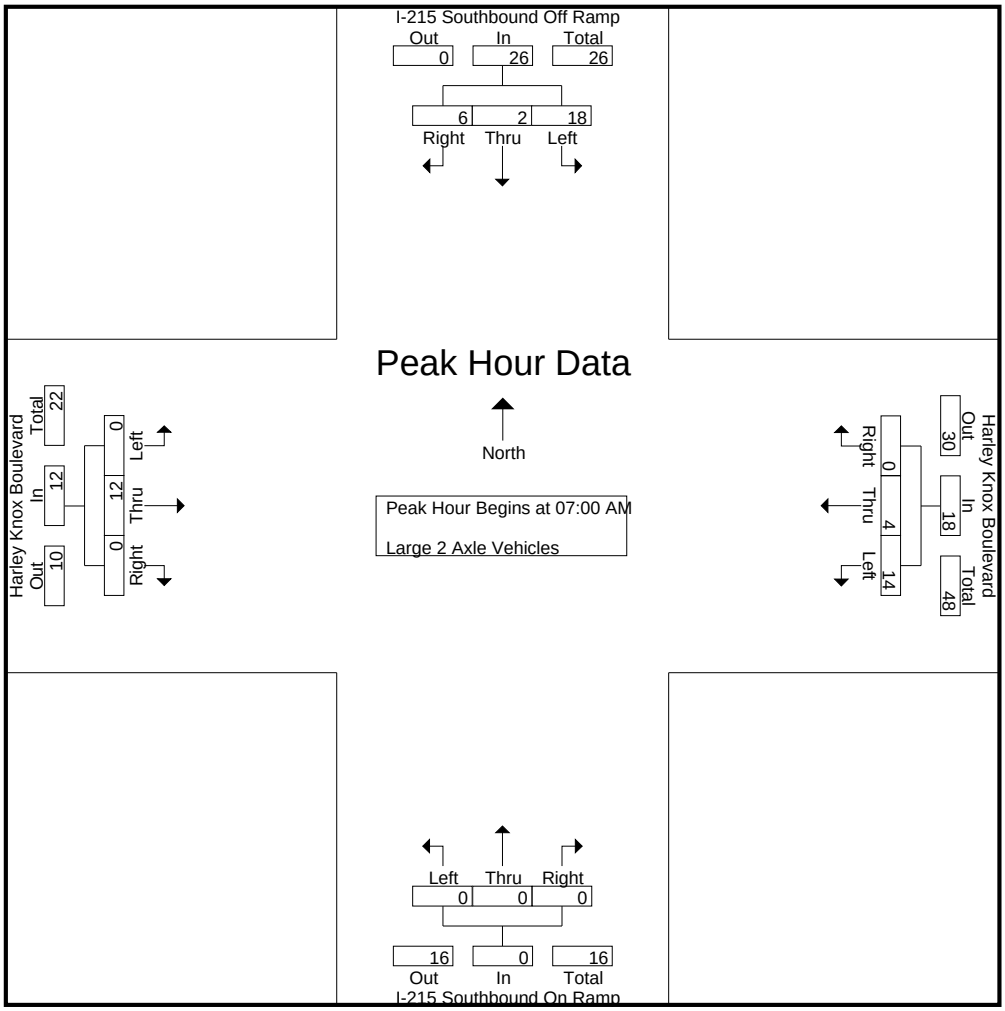

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	3	0	0	3	**5**	**2**	0	**7**	0	0	0	0	0	2	0	2
+15 mins.	3	**1**	**3**	7	5	1	0	6	0	0	0	0	0	**4**	0	**4**
+30 mins.	5	0	2	7	2	0	0	2	0	0	0	0	0	3	0	3
+45 mins.	**7**	1	1	**9**	2	1	0	3	0	0	0	0	0	3	0	3
Total Volume	18	2	6	26	14	4	0	18	0	0	0	0	0	12	0	12
% App. Total	69.2	7.7	23.1		77.8	22.2	0		0	0	0		0	100	0	
PHF	.643	.500	.500	.722	.700	.500	.000	.643	.000	.000	.000	.000	.000	.750	.000	.750

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City of Perris
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Groups Printed- 3 Axle Vehicles

	I-215 Southbound Off Ramp Southbound				Harley Knox Boulevard Westbound				I-215 Southbound On Ramp Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	0	1	2	2	0	0	2	0	0	0	0	0	0	0	0	4
07:15 AM	5	0	0	5	1	0	0	1	0	0	0	0	0	2	0	2	8
07:30 AM	3	0	0	3	0	0	0	0	0	0	0	0	0	1	0	1	4
07:45 AM	2	0	1	3	1	0	0	1	0	0	0	0	0	0	0	0	4
Total	11	0	2	13	4	0	0	4	0	0	0	0	0	3	0	3	20
08:00 AM	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
08:15 AM	2	0	0	2	2	0	0	2	0	0	0	0	0	0	0	0	4
08:30 AM	2	0	1	3	1	0	0	1	0	0	0	0	0	2	0	2	6
08:45 AM	2	1	0	3	2	0	0	2	0	0	0	0	0	2	0	2	7
Total	9	1	1	11	5	0	0	5	0	0	0	0	0	4	0	4	20
Grand Total	20	1	3	24	9	0	0	9	0	0	0	0	0	7	0	7	40
Apprch %	83.3	4.2	12.5		100	0	0		0	0	0		0	100	0		
Total %	50	2.5	7.5	60	22.5	0	0	22.5	0	0	0	0	0	17.5	0	17.5	

	I-215 Southbound Off Ramp Southbound				Harley Knox Boulevard Westbound				I-215 Southbound On Ramp Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	1	0	**1**	2	**2**	0	0	**2**	0	0	0	0	0	0	0	0	4
07:15 AM	**5**	0	0	**5**	1	0	0	1	0	0	0	0	0	**2**	0	**2**	**8**
07:30 AM	3	0	0	3	0	0	0	0	0	0	0	0	0	1	0	1	4
07:45 AM	2	0	1	3	1	0	0	1	0	0	0	0	0	0	0	0	4
Total Volume	11	0	2	13	4	0	0	4	0	0	0	0	0	3	0	3	20
% App. Total	84.6	0	15.4		100	0	0		0	0	0		0	100	0		
PHF	.550	.000	.500	.650	.500	.000	.000	.500	.000	.000	.000	.000	.000	.375	.000	.375	.625

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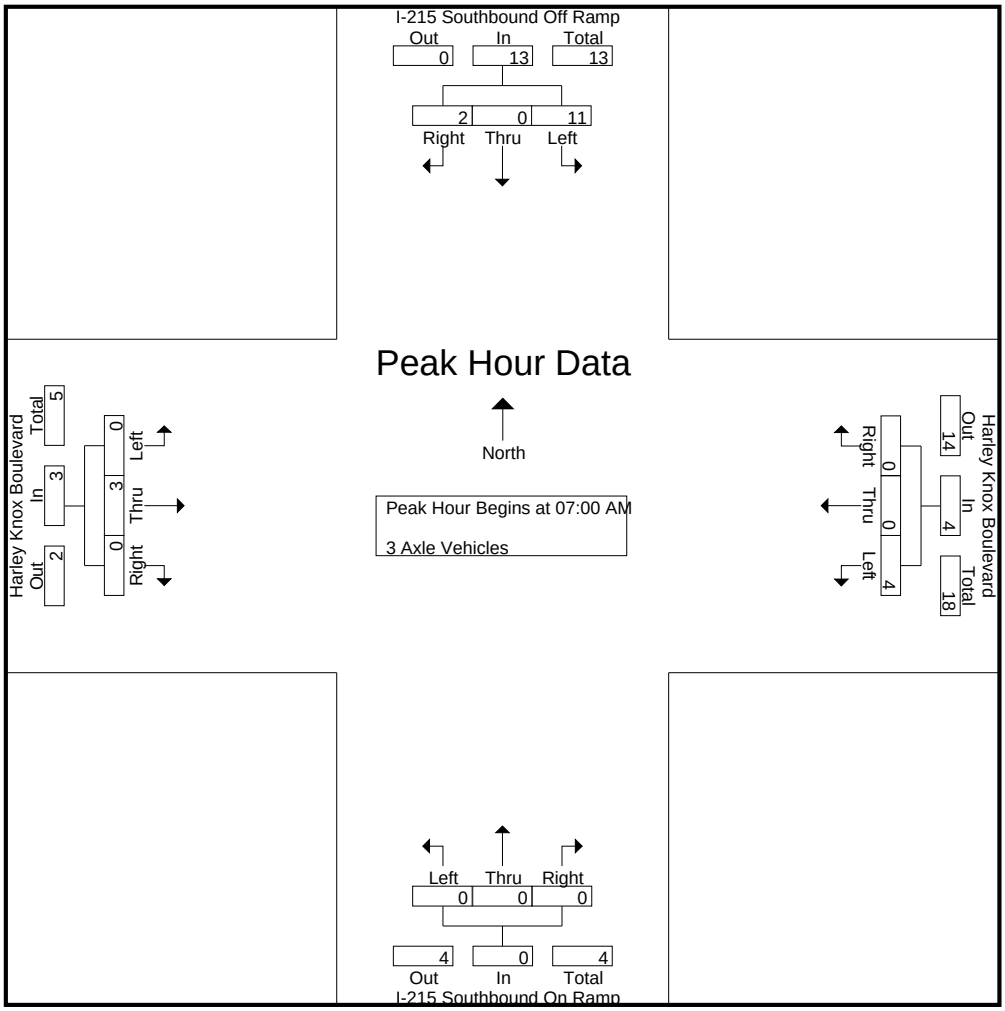

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	1	0	**1**	2	**2**	0	0	**2**	0	0	0	0	0	0	0	0
+15 mins.	**5**	0	0	**5**	1	0	0	1	0	0	0	0	0	**2**	0	**2**
+30 mins.	3	0	0	3	0	0	0	0	0	0	0	0	0	1	0	1
+45 mins.	2	0	1	3	1	0	0	1	0	0	0	0	0	0	0	0
Total Volume	11	0	2	13	4	0	0	4	0	0	0	0	0	3	0	3
% App. Total	84.6	0	15.4		100	0	0		0	0	0		0	100	0	
PHF	.550	.000	.500	.650	.500	.000	.000	.500	.000	.000	.000	.000	.000	.375	.000	.375

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City of Perris
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File Name : PER215SHKAM
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Groups Printed- 4+ Axle Trucks

	I-215 Southbound Off Ramp Southbound				Harley Knox Boulevard Westbound				I-215 Southbound On Ramp Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	10	0	0	10	1	0	0	1	0	0	0	0	0	0	0	0	11
07:15 AM	9	1	0	10	1	0	0	1	0	0	0	0	0	4	0	4	15
07:30 AM	6	0	0	6	1	0	0	1	0	0	0	0	0	2	0	2	9
07:45 AM	7	0	0	7	0	2	0	2	0	0	0	0	0	0	0	0	9
Total	32	1	0	33	3	2	0	5	0	0	0	0	0	6	0	6	44
08:00 AM	12	0	0	12	1	0	0	1	0	0	0	0	0	2	0	2	15
08:15 AM	6	0	0	6	1	0	0	1	0	0	0	0	0	2	0	2	9
08:30 AM	3	0	0	3	1	0	0	1	0	0	0	0	0	1	0	1	5
08:45 AM	4	0	0	4	1	1	0	2	0	0	0	0	0	0	0	0	6
Total	25	0	0	25	4	1	0	5	0	0	0	0	0	5	0	5	35
Grand Total	57	1	0	58	7	3	0	10	0	0	0	0	0	11	0	11	79
Apprch %	98.3	1.7	0		70	30	0		0	0	0		0	100	0		
Total %	72.2	1.3	0	73.4	8.9	3.8	0	12.7	0	0	0	0	0	13.9	0	13.9	

	I-215 Southbound Off Ramp Southbound				Harley Knox Boulevard Westbound				I-215 Southbound On Ramp Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	**10**	0	0	**10**	**1**	0	0	1	0	0	0	0	0	0	0	0	11
07:15 AM	9	**1**	0	10	1	0	0	1	0	0	0	0	0	**4**	0	**4**	**15**
07:30 AM	6	0	0	6	1	0	0	1	0	0	0	0	0	2	0	2	9
07:45 AM	7	0	0	7	0	**2**	0	**2**	0	0	0	0	0	0	0	0	9
Total Volume	32	1	0	33	3	2	0	5	0	0	0	0	0	6	0	6	44
% App. Total	97	3	0		60	40	0		0	0	0		0	100	0		
PHF	.800	.250	.000	.825	.750	.250	.000	.625	.000	.000	.000	.000	.000	.375	.000	.375	.733

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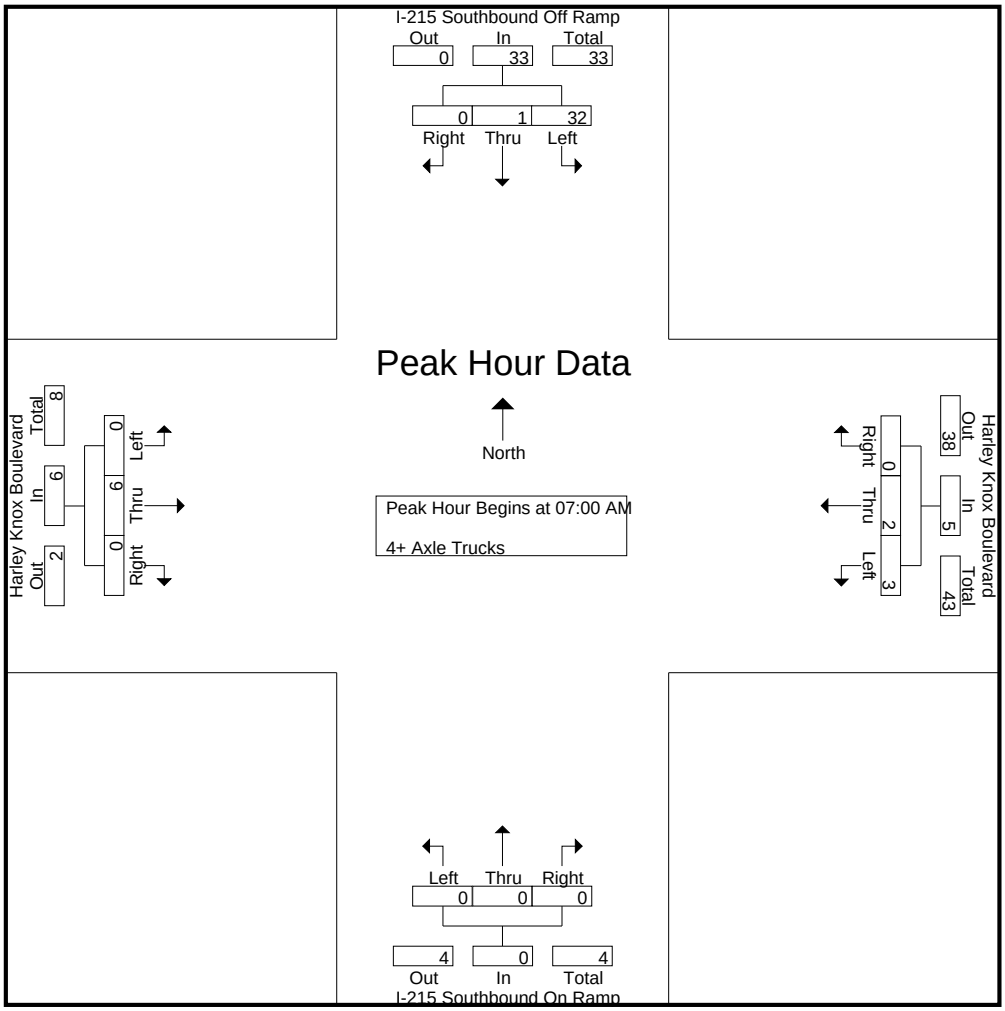

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	**10**	0	0	**10**	**1**	0	0	1	0	0	0	0	0	0	0	0
+15 mins.	9	**1**	0	10	1	0	0	1	0	0	0	0	0	**4**	0	**4**
+30 mins.	6	0	0	6	1	0	0	1	0	0	0	0	0	2	0	2
+45 mins.	7	0	0	7	0	**2**	0	**2**	0	0	0	0	0	0	0	0
Total Volume	32	1	0	33	3	2	0	5	0	0	0	0	0	6	0	6
% App. Total	97	3	0		60	40	0		0	0	0		0	100	0	
PHF	.800	.250	.000	.825	.750	.250	.000	.625	.000	.000	.000	.000	.000	.375	.000	.375

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City of Perris
N/S:I-215 Southbound Ramps
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File Name : PER215SHKPM
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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	I-215 Southbound Off Ramp Southbound				Harley Knox Boulevard Westbound				I-215 Southbound On Ramp Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	72	1	46	119	33	26	0	59	0	0	0	0	0	64	1	65	243
04:15 PM	65	2	24	91	29	24	0	53	0	0	0	0	0	49	1	50	194
04:30 PM	71	2	57	130	30	24	0	54	0	0	0	0	0	66	2	68	252
04:45 PM	68	0	40	108	28	29	0	57	0	0	0	0	0	42	2	44	209
Total	276	5	167	448	120	103	0	223	0	0	0	0	0	221	6	227	898
05:00 PM	65	1	40	106	28	23	0	51	0	0	0	0	0	63	1	64	221
05:15 PM	69	2	52	123	20	18	0	38	0	0	0	0	0	54	1	55	216
05:30 PM	74	0	45	119	20	21	0	41	0	0	0	0	0	53	0	53	213
05:45 PM	78	1	52	131	13	15	0	28	0	0	0	0	0	38	0	38	197
Total	286	4	189	479	81	77	0	158	0	0	0	0	0	208	2	210	847
Grand Total	562	9	356	927	201	180	0	381	0	0	0	0	0	429	8	437	1745
Apprch %	60.6	1	38.4		52.8	47.2	0		0	0	0		0	98.2	1.8		
Total %	32.2	0.5	20.4	53.1	11.5	10.3	0	21.8	0	0	0	0	0	24.6	0.5	25	
Passenger Vehicles	491	7	334	832	187	168	0	355	0	0	0	0	0	406	6	412	1599
% Passenger Vehicles	87.4	77.8	93.8	89.8	93	93.3	0	93.2	0	0	0	0	0	94.6	75	94.3	91.6
Large 2 Axle Vehicles	16	0	13	29	5	5	0	10	0	0	0	0	0	13	2	15	54
% Large 2 Axle Vehicles	2.8	0	3.7	3.1	2.5	2.8	0	2.6	0	0	0	0	0	3	25	3.4	3.1
3 Axle Vehicles	9	0	1	10	2	3	0	5	0	0	0	0	0	0	0	0	15
% 3 Axle Vehicles	1.6	0	0.3	1.1	1	1.7	0	1.3	0	0	0	0	0	0	0	0	0.9
4+ Axle Trucks	46	2	8	56	7	4	0	11	0	0	0	0	0	10	0	10	77
% 4+ Axle Trucks	8.2	22.2	2.2	6	3.5	2.2	0	2.9	0	0	0	0	0	2.3	0	2.3	4.4

	I-215 Southbound Off Ramp Southbound				Harley Knox Boulevard Westbound				I-215 Southbound On Ramp Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	**72**	1	46	119	**33**	26	0	**59**	0	0	0	0	0	64	1	65	243
04:15 PM	65	**2**	24	91	29	24	0	53	0	0	0	0	0	49	1	50	194
04:30 PM	71	2	**57**	**130**	30	24	0	54	0	0	0	0	0	**66**	**2**	**68**	**252**
04:45 PM	68	0	40	108	28	**29**	0	57	0	0	0	0	0	42	2	44	209
Total Volume	276	5	167	448	120	103	0	223	0	0	0	0	0	221	6	227	898
% App. Total	61.6	1.1	37.3		53.8	46.2	0		0	0	0		0	97.4	2.6		
PHF	.958	.625	.732	.862	.909	.888	.000	.945	.000	.000	.000	.000	.000	.837	.750	.835	.891

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City of Perris
N/S:I-215 Southbound Ramps
E/W: Harley Knox Boulevard
Weather: Sunny

File Name : PER215SHKPM
Site Code : 00000001
Start Date : 1/17/2013
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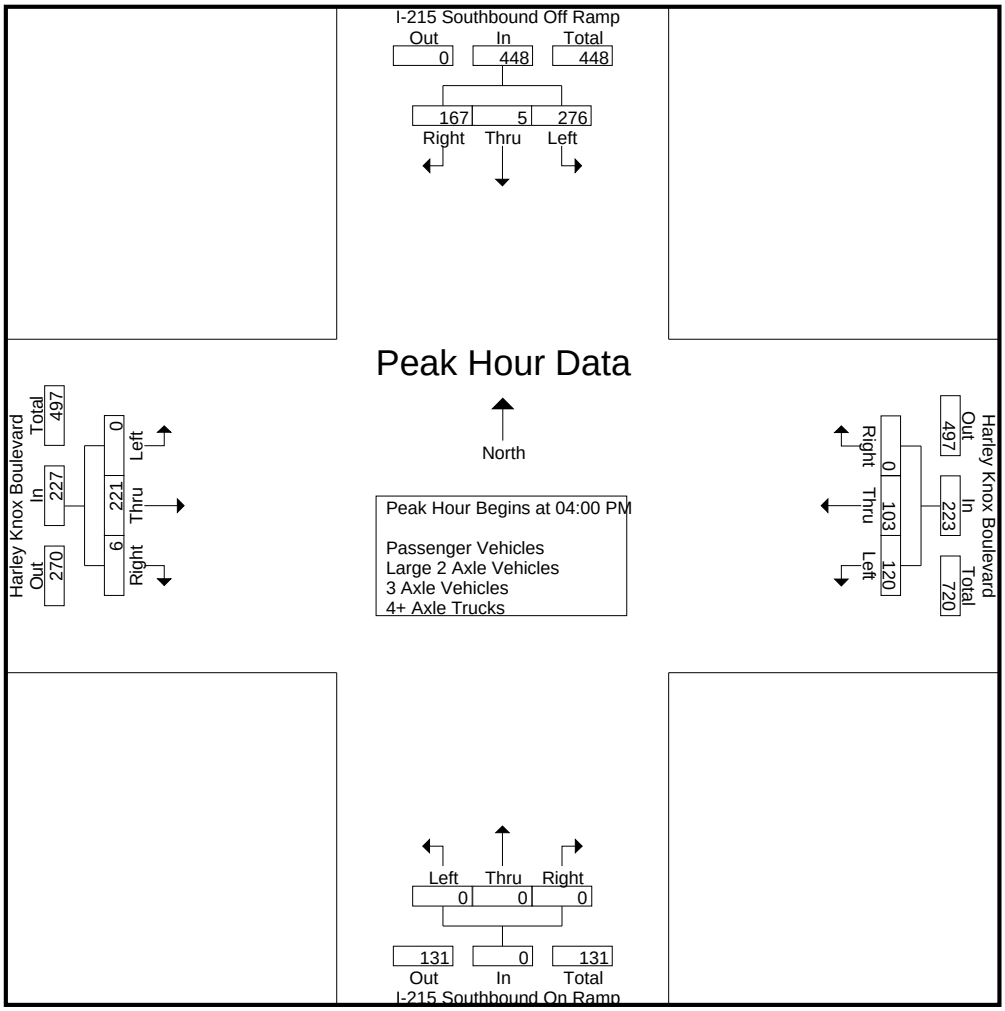

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	05:00 PM				04:00 PM				04:00 PM				04:30 PM			
+0 mins.	65	1	40	106	**33**	26	0	**59**	0	0	0	0	0	**66**	**2**	**68**
+15 mins.	69	**2**	**52**	123	29	24	0	53	0	0	0	0	0	42	2	44
+30 mins.	74	0	45	119	30	24	0	54	0	0	0	0	0	63	1	64
+45 mins.	**78**	1	52	**131**	28	**29**	0	57	0	0	0	0	0	54	1	55
Total Volume	286	4	189	479	120	103	0	223	0	0	0	0	0	225	6	231
% App. Total	59.7	0.8	39.5		53.8	46.2	0		0	0	0		0	97.4	2.6	
PHF	.917	.500	.909	.914	.909	.888	.000	.945	.000	.000	.000	.000	.000	.852	.750	.849

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City of Perris
N/S:I-215 Southbound Ramps
E/W: Harley Knox Boulevard
Weather: Sunny

File Name : PER215SHKPM
Site Code : 00000001
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Groups Printed- Large 2 Axle Vehicles

	I-215 Southbound Off Ramp Southbound				Harley Knox Boulevard Westbound				I-215 Southbound On Ramp Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	3	0	1	4	1	1	0	2	0	0	0	0	0	6	0	6	12
04:15 PM	1	0	5	6	0	0	0	0	0	0	0	0	0	0	0	0	6
04:30 PM	2	0	4	6	2	0	0	2	0	0	0	0	0	3	1	4	12
04:45 PM	2	0	1	3	0	1	0	1	0	0	0	0	0	1	0	1	5
Total	8	0	11	19	3	2	0	5	0	0	0	0	0	10	1	11	35
05:00 PM	1	0	0	1	1	2	0	3	0	0	0	0	0	1	0	1	5
05:15 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	2
05:30 PM	4	0	2	6	1	1	0	2	0	0	0	0	0	2	0	2	10
05:45 PM	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	8	0	2	10	2	3	0	5	0	0	0	0	0	3	1	4	19
Grand Total	16	0	13	29	5	5	0	10	0	0	0	0	0	13	2	15	54
Apprch %	55.2	0	44.8		50	50	0		0	0	0		0	86.7	13.3		
Total %	29.6	0	24.1	53.7	9.3	9.3	0	18.5	0	0	0	0	0	24.1	3.7	27.8	

	I-215 Southbound Off Ramp Southbound				Harley Knox Boulevard Westbound				I-215 Southbound On Ramp Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	**3**	0	1	4	1	**1**	0	**2**	0	0	0	0	0	**6**	0	**6**	**12**
04:15 PM	1	0	**5**	**6**	0	0	0	0	0	0	0	0	0	0	0	0	6
04:30 PM	2	0	4	6	**2**	0	0	2	0	0	0	0	0	3	**1**	4	12
04:45 PM	2	0	1	3	0	1	0	1	0	0	0	0	0	1	0	1	5
Total Volume	8	0	11	19	3	2	0	5	0	0	0	0	0	10	1	11	35
% App. Total	42.1	0	57.9		60	40	0		0	0	0		0	90.9	9.1		
PHF	.667	.000	.550	.792	.375	.500	.000	.625	.000	.000	.000	.000	.000	.417	.250	.458	.729

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City of Perris
N/S:I-215 Southbound Ramps
E/W: Harley Knox Boulevard
Weather: Sunny

File Name : PER215SHKPM
Site Code : 00000001
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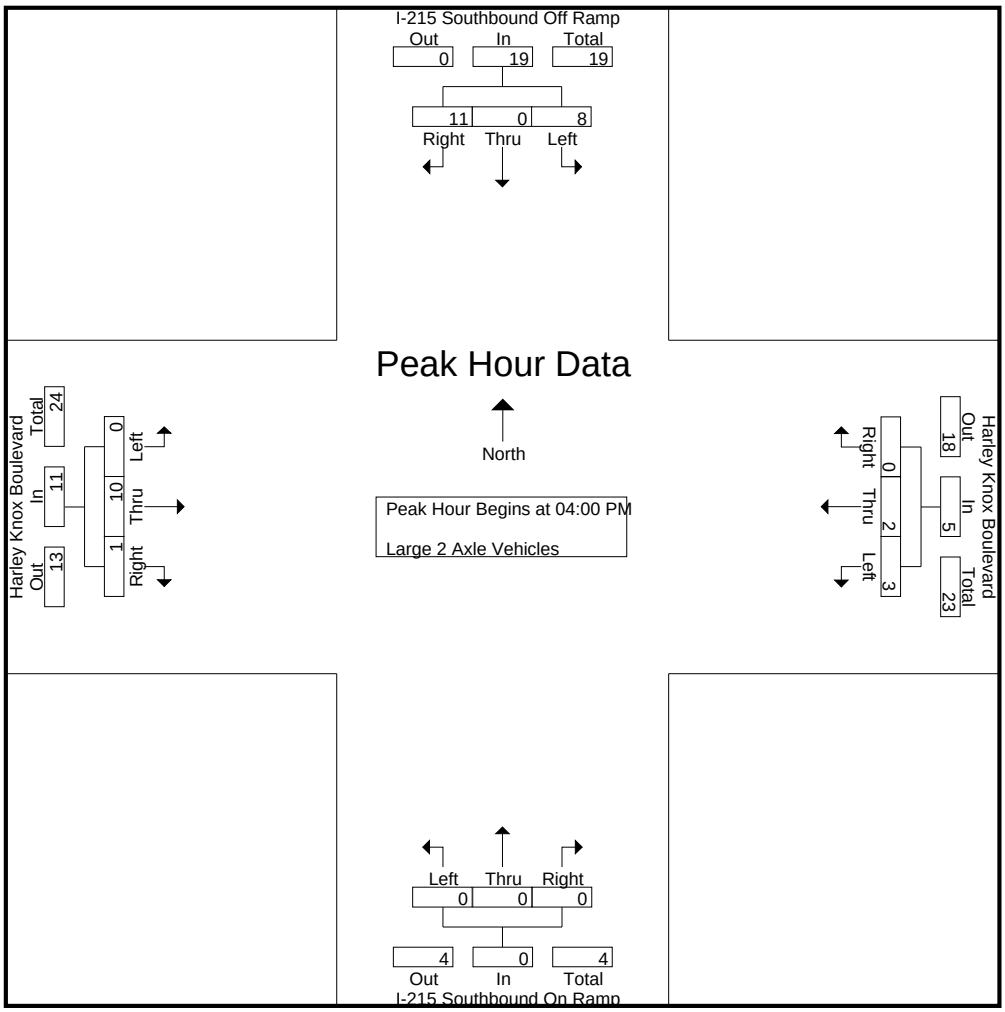

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	**3**	0	1	4	1	**1**	0	**2**	0	0	0	0	0	**6**	0	**6**
+15 mins.	1	0	**5**	**6**	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	2	0	4	6	**2**	0	0	2	0	0	0	0	0	3	**1**	4
+45 mins.	2	0	1	3	0	1	0	1	0	0	0	0	0	1	0	1
Total Volume	8	0	11	19	3	2	0	5	0	0	0	0	0	10	1	11
% App. Total	42.1	0	57.9		60	40	0		0	0	0		0	90.9	9.1	
PHF	.667	.000	.550	.792	.375	.500	.000	.625	.000	.000	.000	.000	.000	.417	.250	.458

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City of Perris
N/S:I-215 Southbound Ramps
E/W: Harley Knox Boulevard
Weather: Sunny

File Name : PER215SHKPM
Site Code : 00000001
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Groups Printed- 3 Axle Vehicles

	I-215 Southbound Off Ramp Southbound				Harley Knox Boulevard Westbound				I-215 Southbound On Ramp Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	3	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	4
04:15 PM	1	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	2
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
Total	4	0	1	5	1	2	0	3	0	0	0	0	0	0	0	0	8
05:00 PM	1	0	0	1	1	1	0	2	0	0	0	0	0	0	0	0	3
05:15 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
05:45 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	5	0	0	5	1	1	0	2	0	0	0	0	0	0	0	0	7
Grand Total	9	0	1	10	2	3	0	5	0	0	0	0	0	0	0	0	15
Apprch %	90	0	10		40	60	0		0	0	0		0	0	0		
Total %	60	0	6.7	66.7	13.3	20	0	33.3	0	0	0	0	0	0	0	0	

	I-215 Southbound Off Ramp Southbound				Harley Knox Boulevard Westbound				I-215 Southbound On Ramp Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	**3**	0	**1**	**4**	0	0	0	0	0	0	0	0	0	0	0	0	**4**
04:15 PM	1	0	0	1	**1**	0	0	1	0	0	0	0	0	0	0	0	2
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	**2**	0	**2**	0	0	0	0	0	0	0	0	2
Total Volume	4	0	1	5	1	2	0	3	0	0	0	0	0	0	0	0	8
% App. Total	80	0	20		33.3	66.7	0		0	0	0		0	0	0		
PHF	.333	.000	.250	.313	.250	.250	.000	.375	.000	.000	.000	.000	.000	.000	.000	.000	.500

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City of Perris
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File Name : PER215SHKPM
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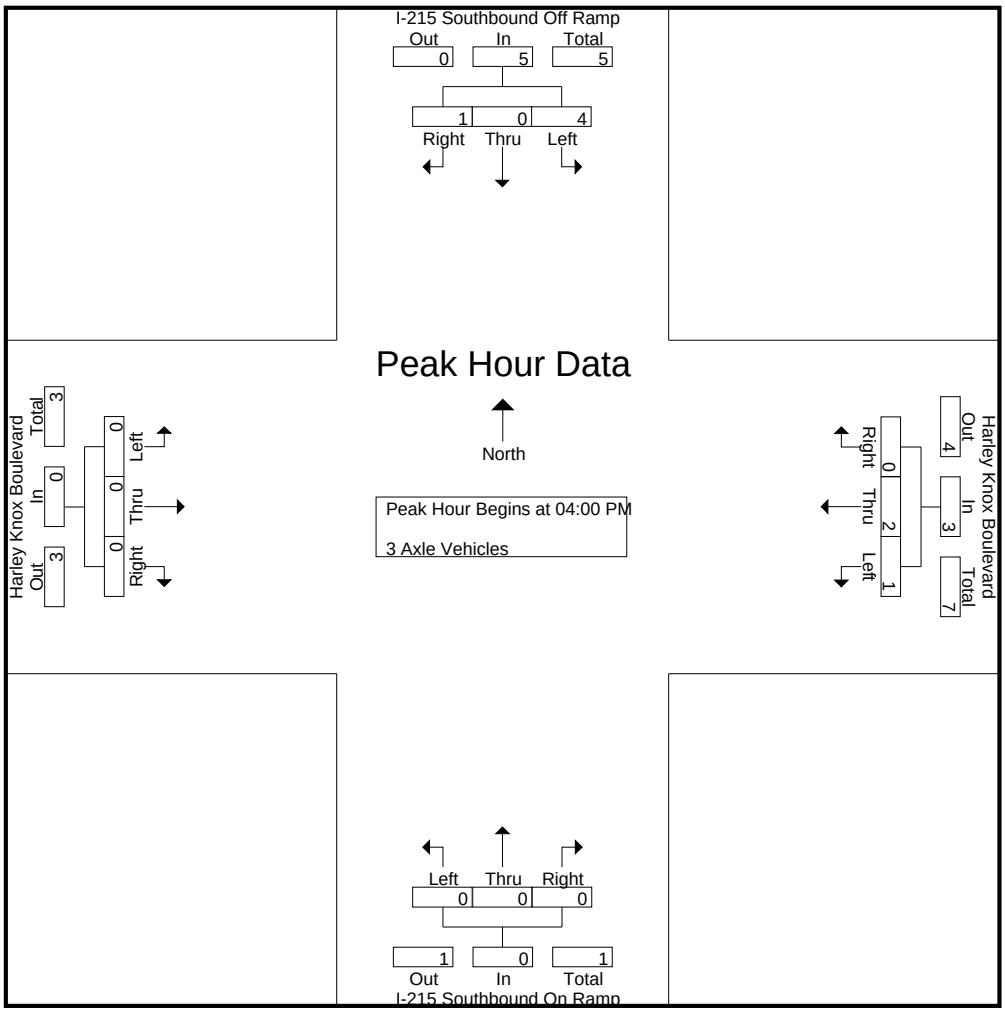

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	**3**	0	**1**	**4**	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	1	0	0	1	**1**	0	0	1	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	**2**	0	**2**	0	0	0	0	0	0	0	0
Total Volume	4	0	1	5	1	2	0	3	0	0	0	0	0	0	0	0
% App. Total	80	0	20		33.3	66.7	0		0	0	0		0	0	0	
PHF	.333	.000	.250	.313	.250	.250	.000	.375	.000	.000	.000	.000	.000	.000	.000	.000

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City of Perris
N/S:I-215 Southbound Ramps
E/W: Harley Knox Boulevard
Weather: Sunny

File Name : PER215SHKPM
Site Code : 00000001
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Groups Printed- 4+ Axle Trucks

	I-215 Southbound Off Ramp Southbound				Harley Knox Boulevard Westbound				I-215 Southbound On Ramp Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	6	1	1	8	2	0	0	2	0	0	0	0	0	1	0	1	11
04:15 PM	3	0	0	3	1	1	0	2	0	0	0	0	0	1	0	1	6
04:30 PM	4	0	1	5	1	0	0	1	0	0	0	0	0	0	0	0	6
04:45 PM	8	0	1	9	2	0	0	2	0	0	0	0	0	1	0	1	12
Total	21	1	3	25	6	1	0	7	0	0	0	0	0	3	0	3	35
05:00 PM	5	0	0	5	1	0	0	1	0	0	0	0	0	2	0	2	8
05:15 PM	4	1	2	7	0	0	0	0	0	0	0	0	0	1	0	1	8
05:30 PM	6	0	2	8	0	0	0	0	0	0	0	0	0	1	0	1	9
05:45 PM	10	0	1	11	0	3	0	3	0	0	0	0	0	3	0	3	17
Total	25	1	5	31	1	3	0	4	0	0	0	0	0	7	0	7	42
Grand Total	46	2	8	56	7	4	0	11	0	0	0	0	0	10	0	10	77
Apprch %	82.1	3.6	14.3		63.6	36.4	0		0	0	0		0	100	0		
Total %	59.7	2.6	10.4	72.7	9.1	5.2	0	14.3	0	0	0	0	0	13	0	13	

	I-215 Southbound Off Ramp Southbound				Harley Knox Boulevard Westbound				I-215 Southbound On Ramp Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	6	**1**	**1**	8	**2**	0	0	**2**	0	0	0	0	0	**1**	0	**1**	11
04:15 PM	3	0	0	3	1	**1**	0	2	0	0	0	0	0	1	0	1	6
04:30 PM	4	0	1	5	1	0	0	1	0	0	0	0	0	0	0	0	6
04:45 PM	**8**	0	1	**9**	2	0	0	2	0	0	0	0	0	1	0	1	**12**
Total Volume	21	1	3	25	6	1	0	7	0	0	0	0	0	3	0	3	35
% App. Total	84	4	12		85.7	14.3	0		0	0	0		0	100	0		
PHF	.656	.250	.750	.694	.750	.250	.000	.875	.000	.000	.000	.000	.000	.750	.000	.750	.729

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City of Perris
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File Name : PER215SHKPM
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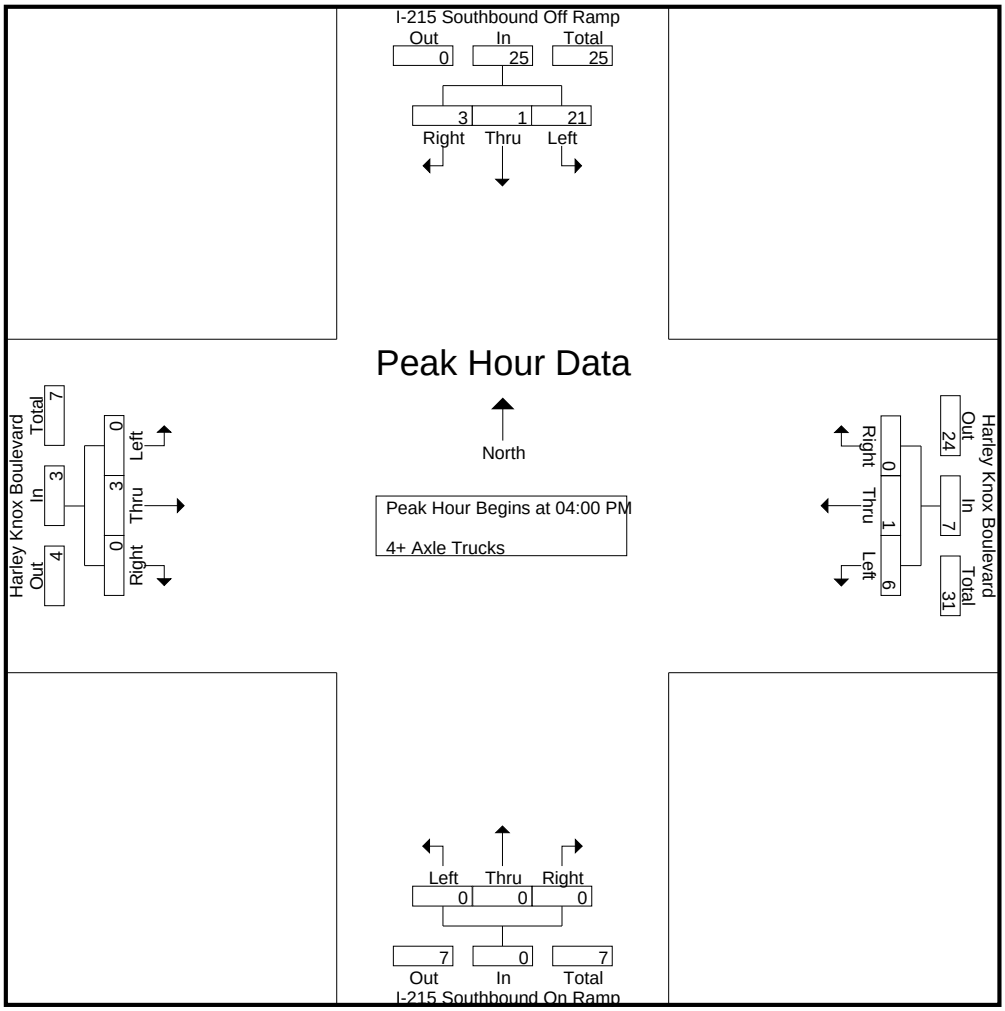

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	6	**1**	**1**	8	**2**	0	0	**2**	0	0	0	0	0	**1**	0	**1**
+15 mins.	3	0	0	3	1	**1**	0	2	0	0	0	0	0	1	0	1
+30 mins.	4	0	1	5	1	0	0	1	0	0	0	0	0	0	0	0
+45 mins.	**8**	0	1	**9**	2	0	0	2	0	0	0	0	0	1	0	1
Total Volume	21	1	3	25	6	1	0	7	0	0	0	0	0	3	0	3
% App. Total	84	4	12		85.7	14.3	0		0	0	0		0	100	0	
PHF	.656	.250	.750	.694	.750	.250	.000	.875	.000	.000	.000	.000	.000	.750	.000	.750

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City of Perris
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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	I-215 Northbound On Ramp Southbound				Harley Knox Boulevard Westbound				I-215 Northbound Off Ramp Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	121	106	227	1	0	27	28	31	90	0	121	376
07:15 AM	0	0	0	0	0	73	108	181	2	1	26	29	42	112	0	154	364
07:30 AM	0	0	0	0	0	54	87	141	2	1	19	22	42	136	0	178	341
07:45 AM	0	0	0	0	0	55	71	126	7	2	32	41	33	120	0	153	320
Total	0	0	0	0	0	303	372	675	12	4	104	120	148	458	0	606	1401
08:00 AM	0	0	0	0	0	36	43	79	5	0	24	29	41	77	0	118	226
08:15 AM	0	0	0	0	0	31	41	72	2	1	28	31	28	67	0	95	198
08:30 AM	0	0	0	0	0	31	42	73	0	0	21	21	15	63	0	78	172
08:45 AM	0	0	0	0	0	28	38	66	1	1	27	29	18	40	0	58	153
Total	0	0	0	0	0	126	164	290	8	2	100	110	102	247	0	349	749
Grand Total	0	0	0	0	0	429	536	965	20	6	204	230	250	705	0	955	2150
Apprch %	0	0	0		0	44.5	55.5		8.7	2.6	88.7		26.2	73.8	0		
Total %	0	0	0	0	0	20	24.9	44.9	0.9	0.3	9.5	10.7	11.6	32.8	0	44.4	
Passenger Vehicles	0	0	0	0	0	380	458	838	17	4	172	193	229	580	0	809	1840
% Passenger Vehicles	0	0	0	0	0	88.6	85.4	86.8	85	66.7	84.3	83.9	91.6	82.3	0	84.7	85.6
Large 2 Axle Vehicles	0	0	0	0	0	29	18	47	3	2	7	12	8	42	0	50	109
% Large 2 Axle Vehicles	0	0	0	0	0	6.8	3.4	4.9	15	33.3	3.4	5.2	3.2	6	0	5.2	5.1
3 Axle Vehicles	0	0	0	0	0	7	6	13	0	0	12	12	5	20	0	25	50
% 3 Axle Vehicles	0	0	0	0	0	1.6	1.1	1.3	0	0	5.9	5.2	2	2.8	0	2.6	2.3
4+ Axle Trucks	0	0	0	0	0	13	54	67	0	0	13	13	8	63	0	71	151
% 4+ Axle Trucks	0	0	0	0	0	3	10.1	6.9	0	0	6.4	5.7	3.2	8.9	0	7.4	7

	I-215 Northbound On Ramp Southbound				Harley Knox Boulevard Westbound				I-215 Northbound Off Ramp Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	**121**	106	**227**	1	0	27	28	31	90	0	121	**376**
07:15 AM	0	0	0	0	0	73	**108**	181	2	1	26	29	**42**	112	0	154	364
07:30 AM	0	0	0	0	0	54	87	141	2	1	19	22	42	**136**	0	**178**	341
07:45 AM	0	0	0	0	0	55	71	126	**7**	**2**	**32**	**41**	33	120	0	153	320
Total Volume	0	0	0	0	0	303	372	675	12	4	104	120	148	458	0	606	1401
% App. Total	0	0	0		0	44.9	55.1		10	3.3	86.7		24.4	75.6	0		
PHF	.000	.000	.000	.000	.000	.626	.861	.743	.429	.500	.813	.732	.881	.842	.000	.851	.932

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City of Perris
N/S: I-215 Northbound Ramps
E/W: Harley Knox Boulevard
Weather: Sunny

File Name : PER215NHKAM
Site Code : 00000001
Start Date : 1/17/2013
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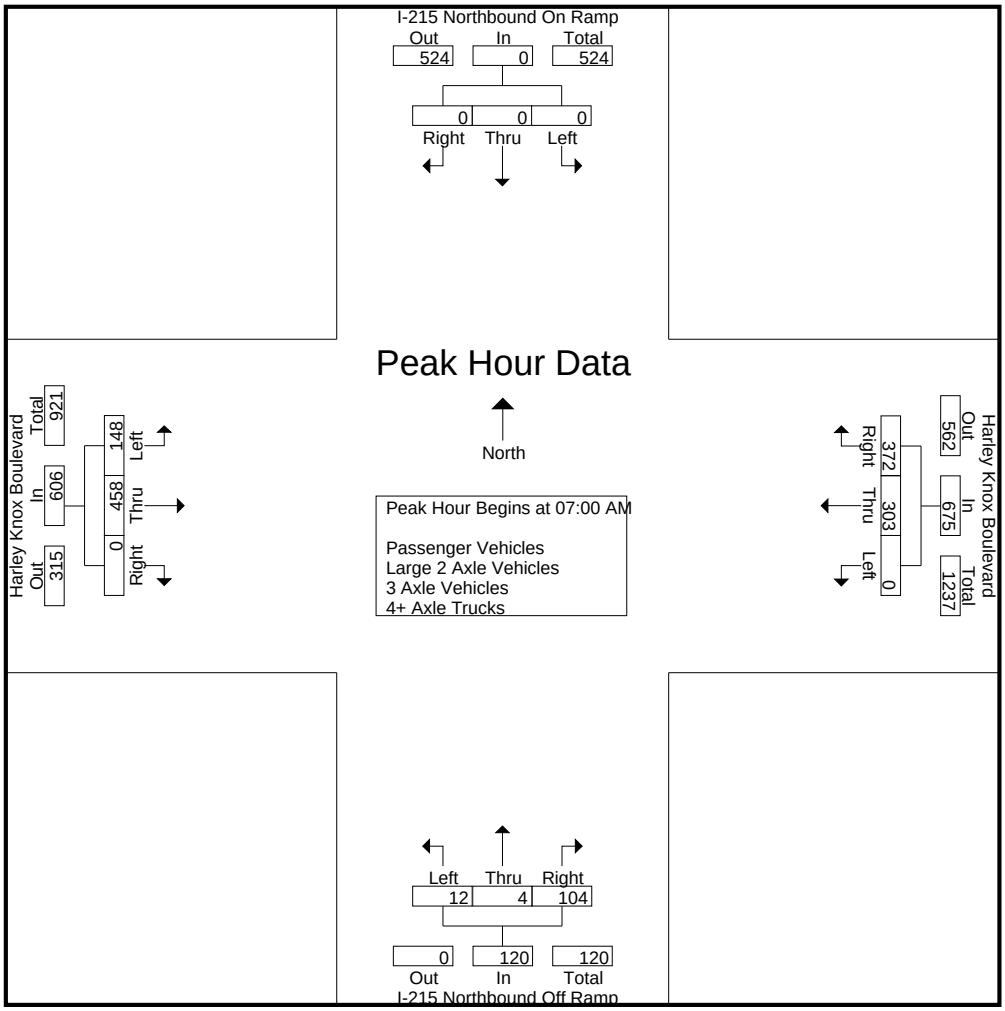

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	0	0	0	0	**121**	106	**227**	1	0	27	28	31	90	0	121
+15 mins.	0	0	0	0	0	73	**108**	181	2	1	26	29	**42**	112	0	154
+30 mins.	0	0	0	0	0	54	87	141	2	1	19	22	42	**136**	0	**178**
+45 mins.	0	0	0	0	0	55	71	126	**7**	**2**	**32**	**41**	33	120	0	153
Total Volume	0	0	0	0	0	303	372	675	12	4	104	120	148	458	0	606
% App. Total	0	0	0		0	44.9	55.1		10	3.3	86.7		24.4	75.6	0	
PHF	.000	.000	.000	.000	.000	.626	.861	.743	.429	.500	.813	.732	.881	.842	.000	.851

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City of Perris
N/S: I-215 Northbound Ramps
E/W: Harley Knox Boulevard
Weather: Sunny

File Name : PER215NHKAM
Site Code : 00000001
Start Date : 1/17/2013
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Groups Printed- Large 2 Axle Vehicles

	I-215 Northbound On Ramp Southbound				Harley Knox Boulevard Westbound				I-215 Northbound Off Ramp Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	6	3	9	0	0	0	0	1	2	0	3	12
07:15 AM	0	0	0	0	0	6	6	12	0	1	0	1	0	8	0	8	21
07:30 AM	0	0	0	0	0	1	2	3	0	0	0	0	2	6	0	8	11
07:45 AM	0	0	0	0	0	3	4	7	0	0	2	2	3	7	0	10	19
Total	0	0	0	0	0	16	15	31	0	1	2	3	6	23	0	29	63
08:00 AM	0	0	0	0	0	6	1	7	2	0	3	5	0	6	0	6	18
08:15 AM	0	0	0	0	0	1	1	2	1	1	1	3	0	4	0	4	9
08:30 AM	0	0	0	0	0	2	0	2	0	0	1	1	1	6	0	7	10
08:45 AM	0	0	0	0	0	4	1	5	0	0	0	0	1	3	0	4	9
Total	0	0	0	0	0	13	3	16	3	1	5	9	2	19	0	21	46
Grand Total	0	0	0	0	0	29	18	47	3	2	7	12	8	42	0	50	109
Apprch %	0	0	0		0	61.7	38.3		25	16.7	58.3		16	84	0		
Total %	0	0	0	0	0	26.6	16.5	43.1	2.8	1.8	6.4	11	7.3	38.5	0	45.9	

	I-215 Northbound On Ramp Southbound				Harley Knox Boulevard Westbound				I-215 Northbound Off Ramp Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	**6**	3	9	0	0	0	0	1	2	0	3	12
07:15 AM	0	0	0	0	0	6	**6**	**12**	0	**1**	0	1	0	**8**	0	8	**21**
07:30 AM	0	0	0	0	0	1	2	3	0	0	0	0	2	6	0	8	11
07:45 AM	0	0	0	0	0	3	4	7	0	0	**2**	**2**	**3**	7	0	**10**	19
Total Volume	0	0	0	0	0	16	15	31	0	1	2	3	6	23	0	29	63
% App. Total	0	0	0		0	51.6	48.4		0	33.3	66.7		20.7	79.3	0		
PHF	.000	.000	.000	.000	.000	.667	.625	.646	.000	.250	.250	.375	.500	.719	.000	.725	.750

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City of Perris
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Weather: Sunny

File Name : PER215NHKAM
Site Code : 00000001
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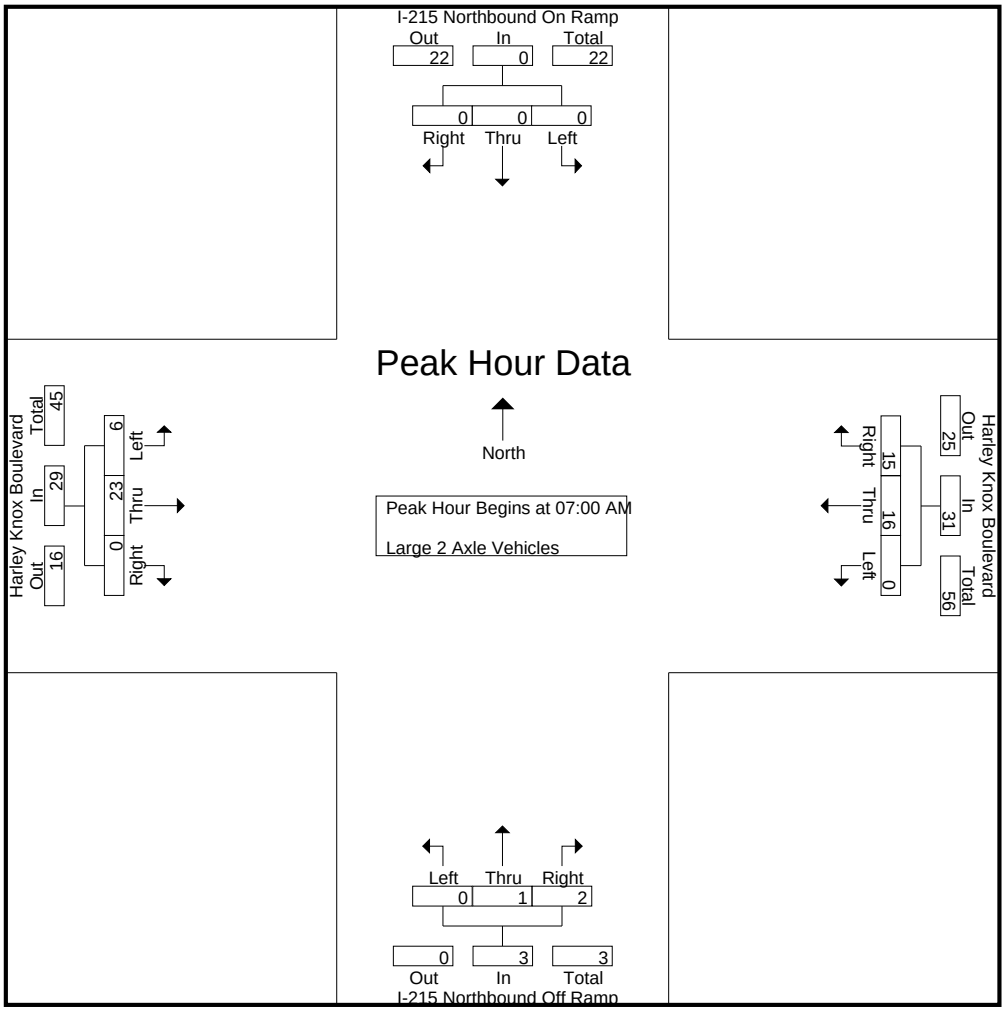

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	0	0	0	0	**6**	3	9	0	0	0	0	1	2	0	3
+15 mins.	0	0	0	0	0	6	**6**	**12**	0	**1**	0	1	0	**8**	0	8
+30 mins.	0	0	0	0	0	1	2	3	0	0	0	0	2	6	0	8
+45 mins.	0	0	0	0	0	3	4	7	0	0	**2**	**2**	**3**	7	0	**10**
Total Volume	0	0	0	0	0	16	15	31	0	1	2	3	6	23	0	29
% App. Total	0	0	0		0	51.6	48.4		0	33.3	66.7		20.7	79.3	0	
PHF	.000	.000	.000	.000	.000	.667	.625	.646	.000	.250	.250	.375	.500	.719	.000	.725

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Groups Printed- 3 Axle Vehicles

	I-215 Northbound On Ramp Southbound				Harley Knox Boulevard Westbound				I-215 Northbound Off Ramp Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	3
07:15 AM	0	0	0	0	0	1	1	2	0	0	0	0	3	3	0	6	8
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
07:45 AM	0	0	0	0	0	0	2	2	0	0	0	0	0	1	0	1	3
Total	0	0	0	0	0	3	3	6	0	0	0	0	3	7	0	10	16
08:00 AM	0	0	0	0	0	1	0	1	0	0	3	3	0	3	0	3	7
08:15 AM	0	0	0	0	0	1	1	2	0	0	4	4	0	3	0	3	9
08:30 AM	0	0	0	0	0	1	1	2	0	0	0	0	1	3	0	4	6
08:45 AM	0	0	0	0	0	1	1	2	0	0	5	5	1	4	0	5	12
Total	0	0	0	0	0	4	3	7	0	0	12	12	2	13	0	15	34
Grand Total	0	0	0	0	0	7	6	13	0	0	12	12	5	20	0	25	50
Apprch %	0	0	0		0	53.8	46.2		0	0	100		20	80	0		
Total %	0	0	0	0	0	14	12	26	0	0	24	24	10	40	0	50	

	I-215 Northbound On Ramp Southbound				Harley Knox Boulevard Westbound				I-215 Northbound Off Ramp Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	**2**	0	**2**	0	0	0	0	0	1	0	1	3
07:15 AM	0	0	0	0	0	1	1	2	0	0	0	0	**3**	**3**	0	**6**	**8**
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
07:45 AM	0	0	0	0	0	0	**2**	2	0	0	0	0	0	1	0	1	3
Total Volume	0	0	0	0	0	3	3	6	0	0	0	0	3	7	0	10	16
% App. Total	0	0	0		0	50	50		0	0	0		30	70	0		
PHF	.000	.000	.000	.000	.000	.375	.375	.750	.000	.000	.000	.000	.250	.583	.000	.417	.500

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City of Perris
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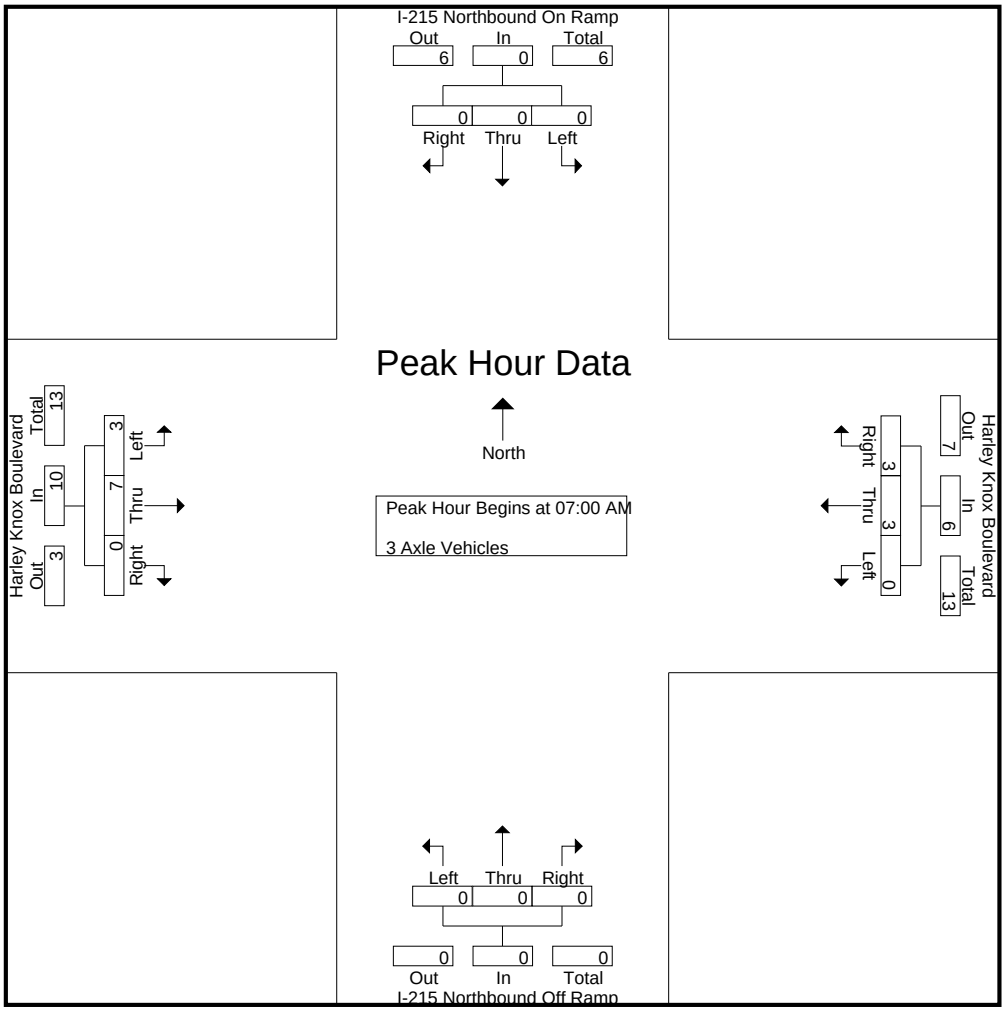

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	0	0	0	0	**2**	0	**2**	0	0	0	0	0	1	0	1
+15 mins.	0	0	0	0	0	1	1	2	0	0	0	0	**3**	**3**	0	**6**
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
+45 mins.	0	0	0	0	0	0	**2**	2	0	0	0	0	0	1	0	1
Total Volume	0	0	0	0	0	3	3	6	0	0	0	0	3	7	0	10
% App. Total	0	0	0		0	50	50		0	0	0		30	70	0	
PHF	.000	.000	.000	.000	.000	.375	.375	.750	.000	.000	.000	.000	.250	.583	.000	.417

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City of Perris
N/S: I-215 Northbound Ramps
E/W: Harley Knox Boulevard
Weather: Sunny

File Name : PER215NHKAM
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Groups Printed- 4+ Axle Trucks

	I-215 Northbound On Ramp Southbound				Harley Knox Boulevard Westbound				I-215 Northbound Off Ramp Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	1	5	6	0	0	0	0	1	9	0	10	16
07:15 AM	0	0	0	0	0	2	7	9	0	0	0	0	1	12	0	13	22
07:30 AM	0	0	0	0	0	1	9	10	0	0	2	2	2	7	0	9	21
07:45 AM	0	0	0	0	0	2	8	10	0	0	0	0	1	7	0	8	18
Total	0	0	0	0	0	6	29	35	0	0	2	2	5	35	0	40	77
08:00 AM	0	0	0	0	0	1	5	6	0	0	0	0	2	12	0	14	20
08:15 AM	0	0	0	0	0	2	7	9	0	0	3	3	1	8	0	9	21
08:30 AM	0	0	0	0	0	2	7	9	0	0	5	5	0	4	0	4	18
08:45 AM	0	0	0	0	0	2	6	8	0	0	3	3	0	4	0	4	15
Total	0	0	0	0	0	7	25	32	0	0	11	11	3	28	0	31	74
Grand Total	0	0	0	0	0	13	54	67	0	0	13	13	8	63	0	71	151
Apprch %	0	0	0		0	19.4	80.6		0	0	100		11.3	88.7	0		
Total %	0	0	0	0	0	8.6	35.8	44.4	0	0	8.6	8.6	5.3	41.7	0	47	

	I-215 Northbound On Ramp Southbound				Harley Knox Boulevard Westbound				I-215 Northbound Off Ramp Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	1	5	6	0	0	0	0	1	9	0	10	16
07:15 AM	0	0	0	0	0	**2**	7	9	0	0	0	0	1	**12**	0	**13**	**22**
07:30 AM	0	0	0	0	0	1	**9**	**10**	0	0	**2**	**2**	**2**	7	0	9	21
07:45 AM	0	0	0	0	0	2	8	10	0	0	0	0	1	7	0	8	18
Total Volume	0	0	0	0	0	6	29	35	0	0	2	2	5	35	0	40	77
% App. Total	0	0	0		0	17.1	82.9		0	0	100		12.5	87.5	0		
PHF	.000	.000	.000	.000	.000	.750	.806	.875	.000	.000	.250	.250	.625	.729	.000	.769	.875

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City of Perris
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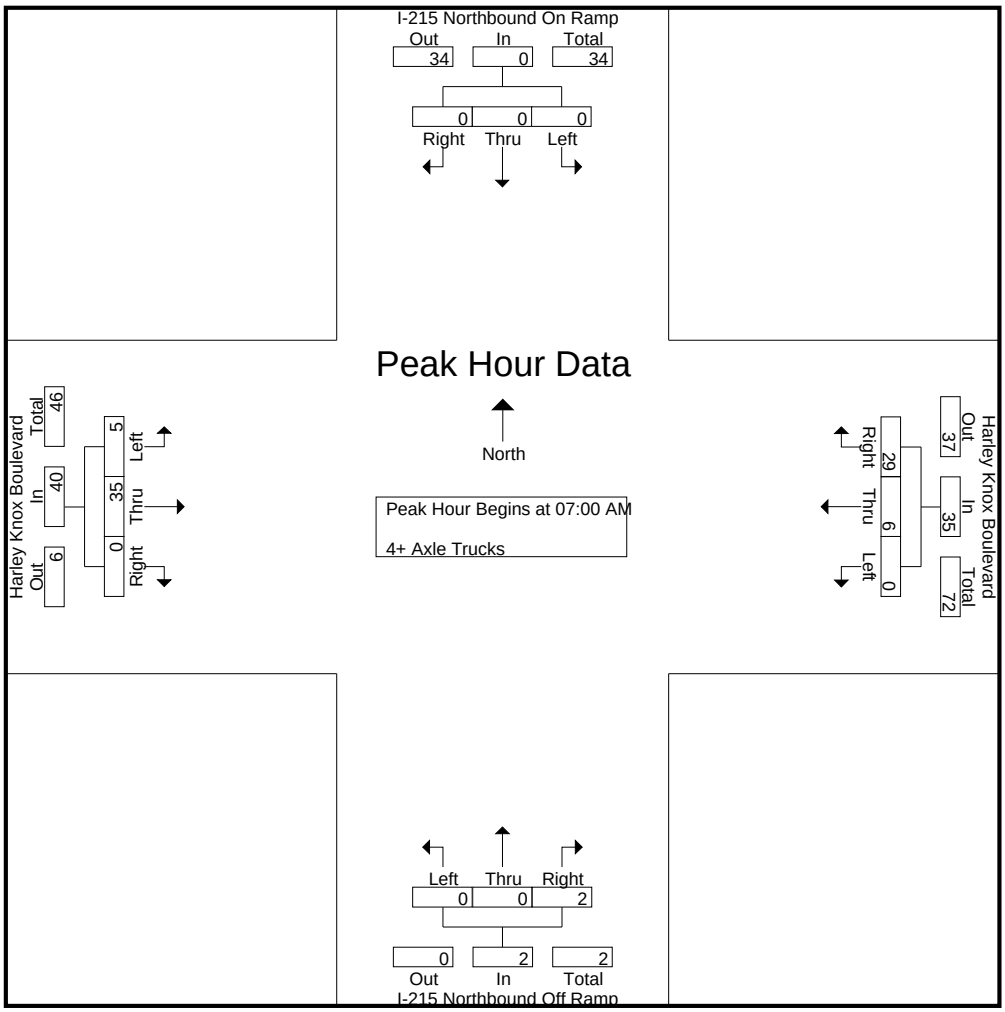

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	0	0	0	0	1	5	6	0	0	0	0	1	9	0	10
+15 mins.	0	0	0	0	0	**2**	7	9	0	0	0	0	1	**12**	0	**13**
+30 mins.	0	0	0	0	0	1	**9**	**10**	0	0	**2**	**2**	**2**	7	0	9
+45 mins.	0	0	0	0	0	2	8	10	0	0	0	0	1	7	0	8
Total Volume	0	0	0	0	0	6	29	35	0	0	2	2	5	35	0	40
% App. Total	0	0	0		0	17.1	82.9		0	0	100		12.5	87.5	0	
PHF	.000	.000	.000	.000	.000	.750	.806	.875	.000	.000	.250	.250	.625	.729	.000	.769

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City of Perris
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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	I-215 Northbound On Ramp Southbound				Harley Knox Boulevard Westbound				I-215 Northbound Off Ramp Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	52	73	125	3	0	24	27	47	86	0	133	285
04:15 PM	0	0	0	0	0	58	42	100	3	2	35	40	38	79	0	117	257
04:30 PM	0	0	0	0	0	53	86	139	1	0	21	22	44	93	0	137	298
04:45 PM	0	0	0	0	0	54	74	128	2	1	26	29	36	81	0	117	274
Total	0	0	0	0	0	217	275	492	9	3	106	118	165	339	0	504	1114
05:00 PM	0	0	0	0	0	48	75	123	1	0	24	25	43	90	0	133	281
05:15 PM	0	0	0	0	0	40	34	74	0	0	25	25	40	92	0	132	231
05:30 PM	0	0	0	0	0	40	54	94	0	1	24	25	36	90	0	126	245
05:45 PM	0	0	0	0	0	26	36	62	1	1	23	25	23	87	0	110	197
Total	0	0	0	0	0	154	199	353	2	2	96	100	142	359	0	501	954
Grand Total	0	0	0	0	0	371	474	845	11	5	202	218	307	698	0	1005	2068
Apprch %	0	0	0		0	43.9	56.1		5	2.3	92.7		30.5	69.5	0		
Total %	0	0	0	0	0	17.9	22.9	40.9	0.5	0.2	9.8	10.5	14.8	33.8	0	48.6	
Passenger Vehicles	0	0	0	0	0	345	408	753	10	4	187	201	292	619	0	911	1865
% Passenger Vehicles	0	0	0	0	0	93	86.1	89.1	90.9	80	92.6	92.2	95.1	88.7	0	90.6	90.2
Large 2 Axle Vehicles	0	0	0	0	0	11	13	24	1	1	5	7	13	18	0	31	62
% Large 2 Axle Vehicles	0	0	0	0	0	3	2.7	2.8	9.1	20	2.5	3.2	4.2	2.6	0	3.1	3
3 Axle Vehicles	0	0	0	0	0	2	6	8	0	0	5	5	0	6	0	6	19
% 3 Axle Vehicles	0	0	0	0	0	0.5	1.3	0.9	0	0	2.5	2.3	0	0.9	0	0.6	0.9
4+ Axle Trucks	0	0	0	0	0	13	47	60	0	0	5	5	2	55	0	57	122
% 4+ Axle Trucks	0	0	0	0	0	3.5	9.9	7.1	0	0	2.5	2.3	0.7	7.9	0	5.7	5.9

	I-215 Northbound On Ramp Southbound				Harley Knox Boulevard Westbound				I-215 Northbound Off Ramp Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	52	73	125	**3**	0	24	27	**47**	86	0	133	285
04:15 PM	0	0	0	0	0	**58**	42	100	3	**2**	**35**	**40**	38	79	0	117	257
04:30 PM	0	0	0	0	0	53	**86**	**139**	1	0	21	22	44	**93**	0	**137**	**298**
04:45 PM	0	0	0	0	0	54	74	128	2	1	26	29	36	81	0	117	274
Total Volume	0	0	0	0	0	217	275	492	9	3	106	118	165	339	0	504	1114
% App. Total	0	0	0		0	44.1	55.9		7.6	2.5	89.8		32.7	67.3	0		
PHF	.000	.000	.000	.000	.000	.935	.799	.885	.750	.375	.757	.738	.878	.911	.000	.920	.935

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City of Perris
N/S: I-215 Northbound Ramps
E/W: Harley Knox Boulevard
Weather: Sunny

File Name : PER215NHKPM
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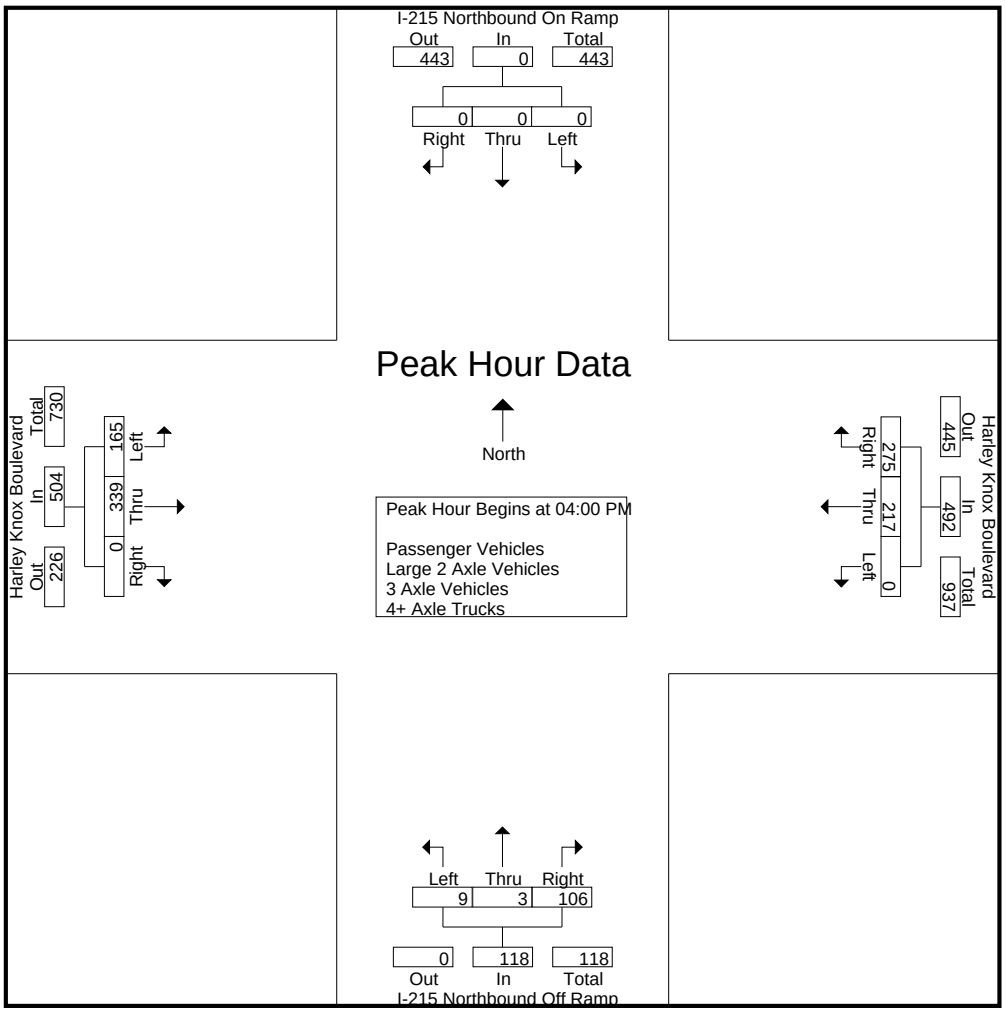

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:30 PM			
+0 mins.	0	0	0	0	0	52	73	125	**3**	0	24	27	**44**	**93**	0	**137**
+15 mins.	0	0	0	0	0	**58**	42	100	3	**2**	**35**	**40**	36	81	0	117
+30 mins.	0	0	0	0	0	53	**86**	**139**	1	0	21	22	43	90	0	133
+45 mins.	0	0	0	0	0	54	74	128	2	1	26	29	40	92	0	132
Total Volume	0	0	0	0	0	217	275	492	9	3	106	118	163	356	0	519
% App. Total	0	0	0		0	44.1	55.9		7.6	2.5	89.8		31.4	68.6	0	
PHF	.000	.000	.000	.000	.000	.935	.799	.885	.750	.375	.757	.738	.926	.957	.000	.947

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City of Perris
N/S: I-215 Northbound Ramps
E/W: Harley Knox Boulevard
Weather: Sunny

File Name : PER215NHKPM
Site Code : 00000001
Start Date : 1/17/2013
Page No : 1

Groups Printed- Large 2 Axle Vehicles

	I-215 Northbound On Ramp Southbound				Harley Knox Boulevard Westbound				I-215 Northbound Off Ramp Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	4	2	6	0	0	1	1	3	4	0	7	14
04:15 PM	0	0	0	0	0	0	1	1	0	1	0	1	3	2	0	5	7
04:30 PM	0	0	0	0	0	2	3	5	0	0	0	0	2	3	0	5	10
04:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	1	2	0	3	4
Total	0	0	0	0	0	7	6	13	0	1	1	2	9	11	0	20	35
05:00 PM	0	0	0	0	0	2	1	3	1	0	1	2	2	1	0	3	8
05:15 PM	0	0	0	0	0	0	1	1	0	0	2	2	0	1	0	1	4
05:30 PM	0	0	0	0	0	2	2	4	0	0	1	1	2	3	0	5	10
05:45 PM	0	0	0	0	0	0	3	3	0	0	0	0	0	2	0	2	5
Total	0	0	0	0	0	4	7	11	1	0	4	5	4	7	0	11	27
Grand Total	0	0	0	0	0	11	13	24	1	1	5	7	13	18	0	31	62
Apprch %	0	0	0		0	45.8	54.2		14.3	14.3	71.4		41.9	58.1	0		
Total %	0	0	0	0	0	17.7	21	38.7	1.6	1.6	8.1	11.3	21	29	0	50	

	I-215 Northbound On Ramp Southbound				Harley Knox Boulevard Westbound				I-215 Northbound Off Ramp Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	**4**	2	**6**	0	0	**1**	**1**	**3**	**4**	0	**7**	**14**
04:15 PM	0	0	0	0	0	0	1	1	0	**1**	0	1	3	2	0	5	7
04:30 PM	0	0	0	0	0	2	**3**	5	0	0	0	0	2	3	0	5	10
04:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	1	2	0	3	4
Total Volume	0	0	0	0	0	7	6	13	0	1	1	2	9	11	0	20	35
% App. Total	0	0	0		0	53.8	46.2		0	50	50		45	55	0		
PHF	.000	.000	.000	.000	.000	.438	.500	.542	.000	.250	.250	.500	.750	.688	.000	.714	.625

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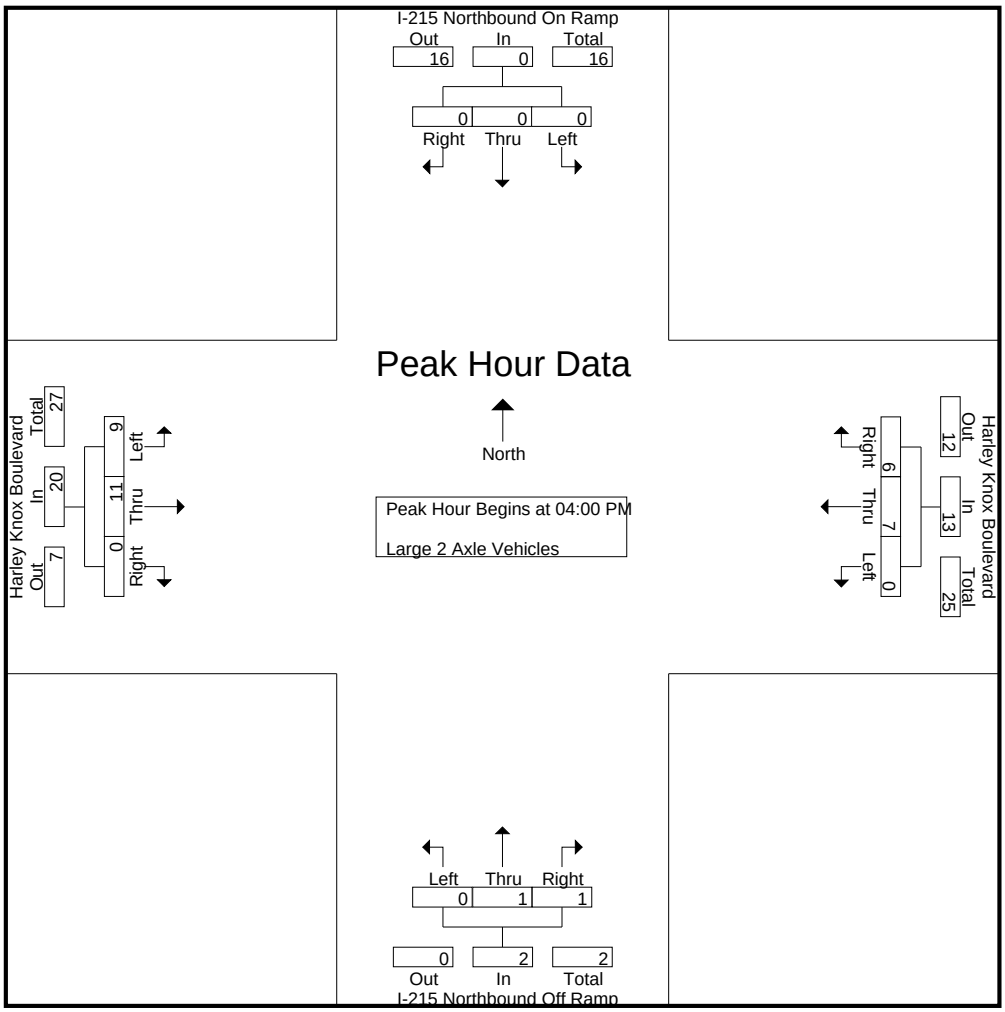
City of Perris
N/S: I-215 Northbound Ramps
E/W: Harley Knox Boulevard
Weather: Sunny

File Name : PER215NHKPM
Site Code : 00000001
Start Date : 1/17/2013
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	**4**	2	**6**	0	0	**1**	**1**	**3**	**4**	0	**7**
+15 mins.	0	0	0	0	0	0	1	1	0	**1**	0	1	3	2	0	5
+30 mins.	0	0	0	0	0	2	**3**	5	0	0	0	0	2	3	0	5
+45 mins.	0	0	0	0	0	1	0	1	0	0	0	0	1	2	0	3
Total Volume	0	0	0	0	0	7	6	13	0	1	1	2	9	11	0	20
% App. Total	0	0	0		0	53.8	46.2		0	50	50		45	55	0	
PHF	.000	.000	.000	.000	.000	.438	.500	.542	.000	.250	.250	.500	.750	.688	.000	.714

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City of Perris
N/S: I-215 Northbound Ramps
E/W: Harley Knox Boulevard
Weather: Sunny

File Name : PER215NHKPM
Site Code : 00000001
Start Date : 1/17/2013
Page No : 1

Groups Printed- 3 Axle Vehicles

	I-215 Northbound On Ramp Southbound				Harley Knox Boulevard Westbound				I-215 Northbound Off Ramp Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	2	2	0	0	0	0	0	3	0	3	5
04:15 PM	0	0	0	0	0	1	0	1	0	0	1	1	0	0	0	0	2
04:30 PM	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	2
04:45 PM	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	2
Total	0	0	0	0	0	1	4	5	0	0	3	3	0	3	0	3	11
05:00 PM	0	0	0	0	0	1	1	2	0	0	0	0	0	1	0	1	3
05:15 PM	0	0	0	0	0	0	0	0	0	0	2	2	0	1	0	1	3
05:30 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	1	2
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	2	3	0	0	2	2	0	3	0	3	8
Grand Total	0	0	0	0	0	2	6	8	0	0	5	5	0	6	0	6	19
Apprch %	0	0	0		0	25	75		0	0	100		0	100	0		
Total %	0	0	0	0	0	10.5	31.6	42.1	0	0	26.3	26.3	0	31.6	0	31.6	

	I-215 Northbound On Ramp Southbound				Harley Knox Boulevard Westbound				I-215 Northbound Off Ramp Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	**2**	**2**	0	0	0	0	0	**3**	0	**3**	**5**
04:15 PM	0	0	0	0	0	**1**	0	1	0	0	**1**	**1**	0	0	0	0	2
04:30 PM	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	2
04:45 PM	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	2
Total Volume	0	0	0	0	0	1	4	5	0	0	3	3	0	3	0	3	11
% App. Total	0	0	0		0	20	80		0	0	100		0	100	0		
PHF	.000	.000	.000	.000	.000	.250	.500	.625	.000	.000	.750	.750	.000	.250	.000	.250	.550

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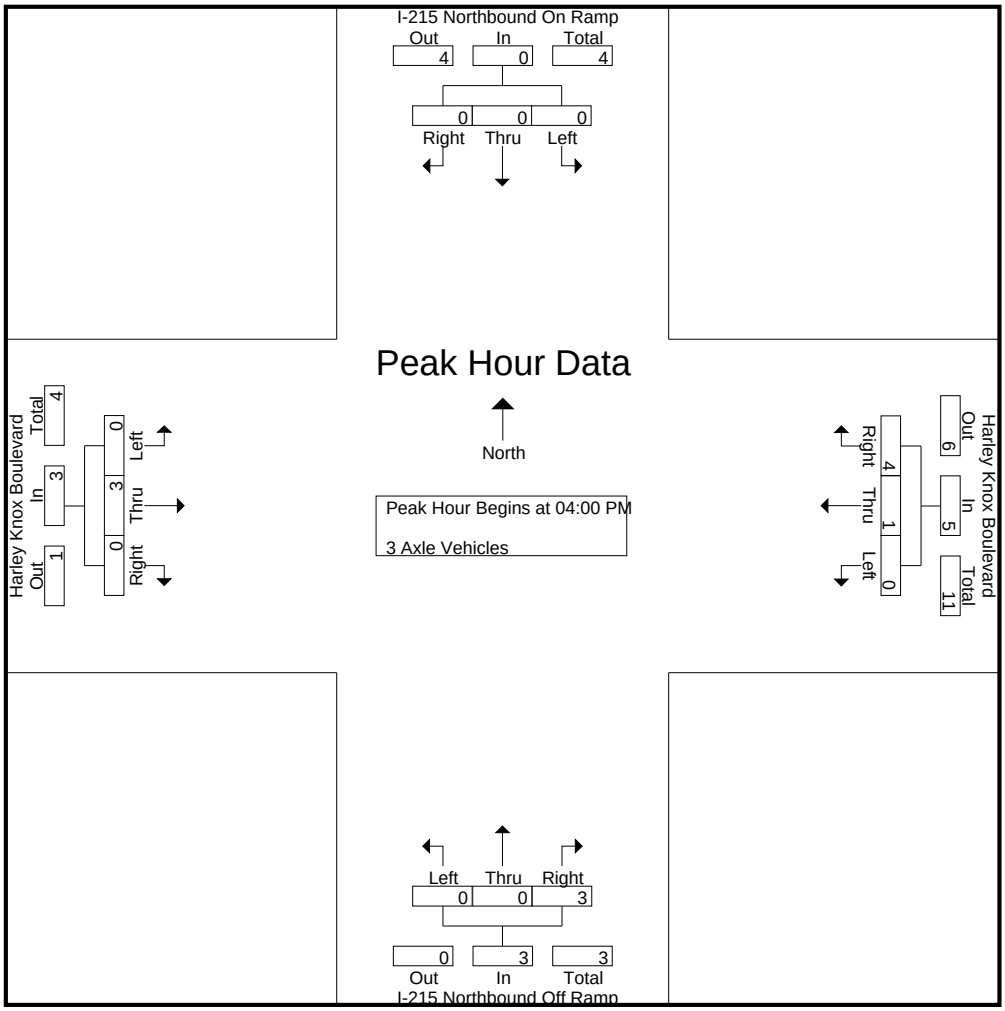
City of Perris
N/S: I-215 Northbound Ramps
E/W: Harley Knox Boulevard
Weather: Sunny

File Name : PER215NHKPM
Site Code : 00000001
Start Date : 1/17/2013
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	**2**	**2**	0	0	0	0	0	**3**	0	**3**
+15 mins.	0	0	0	0	0	**1**	0	1	0	0	**1**	**1**	0	0	0	0
+30 mins.	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0
+45 mins.	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0
Total Volume	0	0	0	0	0	1	4	5	0	0	3	3	0	3	0	3
% App. Total	0	0	0		0	20	80		0	0	100		0	100	0	
PHF	.000	.000	.000	.000	.000	.250	.500	.625	.000	.000	.750	.750	.000	.250	.000	.250

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City of Perris
N/S: I-215 Northbound Ramps
E/W: Harley Knox Boulevard
Weather: Sunny

File Name : PER215NHKPM
Site Code : 00000001
Start Date : 1/17/2013
Page No : 1

Groups Printed- 4+ Axle Trucks

	I-215 Northbound On Ramp Southbound				Harley Knox Boulevard Westbound				I-215 Northbound Off Ramp Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	2	9	11	0	0	0	0	0	8	0	8	19
04:15 PM	0	0	0	0	0	2	1	3	0	0	2	2	1	3	0	4	9
04:30 PM	0	0	0	0	0	1	6	7	0	0	1	1	0	5	0	5	13
04:45 PM	0	0	0	0	0	2	6	8	0	0	0	0	0	9	0	9	17
Total	0	0	0	0	0	7	22	29	0	0	3	3	1	25	0	26	58
05:00 PM	0	0	0	0	0	1	4	5	0	0	0	0	0	6	0	6	11
05:15 PM	0	0	0	0	0	1	8	9	0	0	0	0	0	5	0	5	14
05:30 PM	0	0	0	0	0	1	7	8	0	0	2	2	0	7	0	7	17
05:45 PM	0	0	0	0	0	3	6	9	0	0	0	0	1	12	0	13	22
Total	0	0	0	0	0	6	25	31	0	0	2	2	1	30	0	31	64
Grand Total	0	0	0	0	0	13	47	60	0	0	5	5	2	55	0	57	122
Apprch %	0	0	0		0	21.7	78.3		0	0	100		3.5	96.5	0		
Total %	0	0	0	0	0	10.7	38.5	49.2	0	0	4.1	4.1	1.6	45.1	0	46.7	

	I-215 Northbound On Ramp Southbound				Harley Knox Boulevard Westbound				I-215 Northbound Off Ramp Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	**2**	**9**	**11**	0	0	0	0	0	8	0	8	**19**
04:15 PM	0	0	0	0	0	2	1	3	0	0	**2**	**2**	**1**	3	0	4	9
04:30 PM	0	0	0	0	0	1	6	7	0	0	1	1	0	5	0	5	13
04:45 PM	0	0	0	0	0	2	6	8	0	0	0	0	0	**9**	0	**9**	17
Total Volume	0	0	0	0	0	7	22	29	0	0	3	3	1	25	0	26	58
% App. Total	0	0	0		0	24.1	75.9		0	0	100		3.8	96.2	0		
PHF	.000	.000	.000	.000	.000	.875	.611	.659	.000	.000	.375	.375	.250	.694	.000	.722	.763

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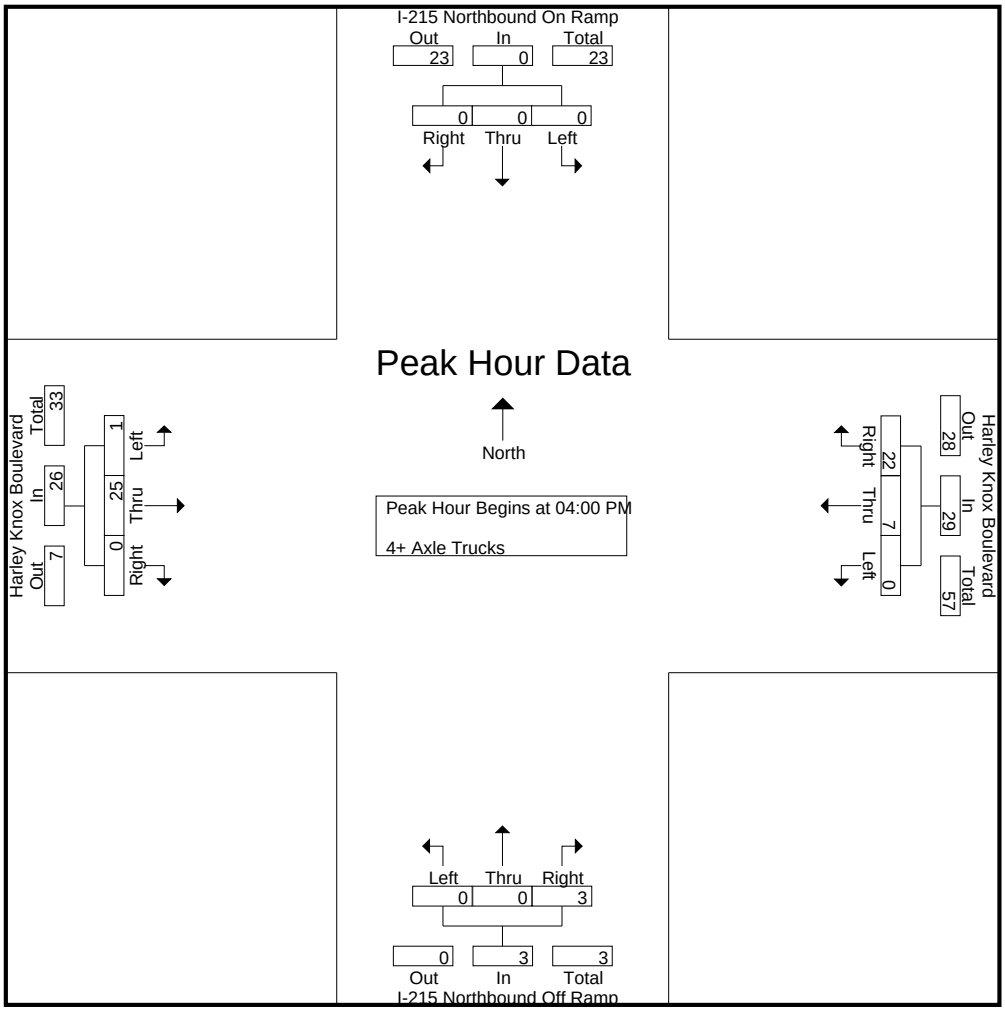
City of Perris
N/S: I-215 Northbound Ramps
E/W: Harley Knox Boulevard
Weather: Sunny

File Name : PER215NHKPM
Site Code : 00000001
Start Date : 1/17/2013
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	**2**	**9**	**11**	0	0	0	0	0	8	0	8
+15 mins.	0	0	0	0	0	2	1	3	0	0	**2**	**2**	**1**	3	0	4
+30 mins.	0	0	0	0	0	1	6	7	0	0	1	1	0	5	0	5
+45 mins.	0	0	0	0	0	2	6	8	0	0	0	0	0	**9**	0	**9**
Total Volume	0	0	0	0	0	7	22	29	0	0	3	3	1	25	0	26
% App. Total	0	0	0		0	24.1	75.9		0	0	100		3.8	96.2	0	
PHF	.000	.000	.000	.000	.000	.875	.611	.659	.000	.000	.375	.375	.250	.694	.000	.722

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City of Perris
N/S: Western Way
E/W: Harley Knox Boulevard
Weather: Sunny

File Name : PERWEHKAM
Site Code : 00000001
Start Date : 1/17/2013
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Western Way Southbound			Harley Knox Boulevard Westbound			Harley Knox Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
07:00 AM	0	11	11	212	7	219	10	109	119	349
07:15 AM	3	5	8	169	3	172	14	123	137	317
07:30 AM	0	1	1	142	3	145	13	145	158	304
07:45 AM	3	8	11	112	13	125	25	129	154	290
Total	6	25	31	635	26	661	62	506	568	1260
08:00 AM	5	8	13	69	5	74	16	75	91	178
08:15 AM	3	9	12	62	5	67	23	85	108	187
08:30 AM	0	8	8	72	2	74	9	68	77	159
08:45 AM	1	9	10	59	2	61	10	63	73	144
Total	9	34	43	262	14	276	58	291	349	668
Grand Total	15	59	74	897	40	937	120	797	917	1928
Apprch %	20.3	79.7		95.7	4.3		13.1	86.9		
Total %	0.8	3.1	3.8	46.5	2.1	48.6	6.2	41.3	47.6	
Passenger Vehicles	10	38	48	791	35	826	98	660	758	1632
% Passenger Vehicles	66.7	64.4	64.9	88.2	87.5	88.2	81.7	82.8	82.7	84.6
Large 2 Axle Vehicles	5	16	21	35	3	38	14	37	51	110
% Large 2 Axle Vehicles	33.3	27.1	28.4	3.9	7.5	4.1	11.7	4.6	5.6	5.7
3 Axle Vehicles	0	1	1	10	0	10	4	27	31	42
% 3 Axle Vehicles	0	1.7	1.4	1.1	0	1.1	3.3	3.4	3.4	2.2
4+ Axle Trucks	0	4	4	61	2	63	4	73	77	144
% 4+ Axle Trucks	0	6.8	5.4	6.8	5	6.7	3.3	9.2	8.4	7.5

	Western Way Southbound			Harley Knox Boulevard Westbound			Harley Knox Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	**11**	**11**	**212**	7	**219**	10	109	119	**349**
07:15 AM	**3**	5	8	169	3	172	14	123	137	317
07:30 AM	0	1	1	142	3	145	13	**145**	**158**	304
07:45 AM	3	8	11	112	**13**	125	**25**	129	154	290
Total Volume	6	25	31	635	26	661	62	506	568	1260
% App. Total	19.4	80.6		96.1	3.9		10.9	89.1		
PHF	.500	.568	.705	.749	.500	.755	.620	.872	.899	.903

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City of Perris
N/S: Western Way
E/W: Harley Knox Boulevard
Weather: Sunny

File Name : PERWEHKAM
Site Code : 00000001
Start Date : 1/17/2013
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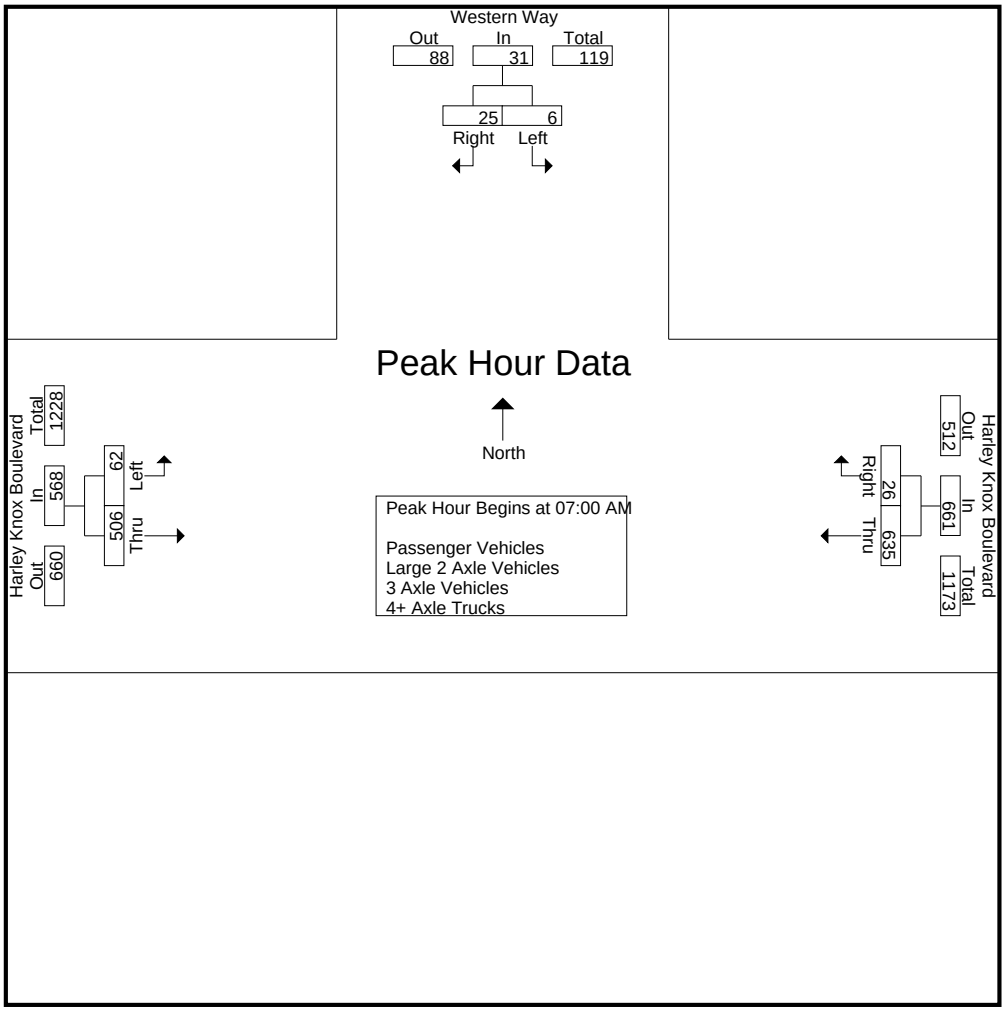

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:45 AM			07:00 AM			07:00 AM		
+0 mins.	3	8	11	**212**	7	**219**	10	109	119
+15 mins.	**5**	8	**13**	169	3	172	14	123	137
+30 mins.	3	**9**	12	142	3	145	13	**145**	**158**
+45 mins.	0	8	8	112	**13**	125	**25**	129	154
Total Volume	11	33	44	635	26	661	62	506	568
% App. Total	25	75		96.1	3.9		10.9	89.1	
PHF	.550	.917	.846	.749	.500	.755	.620	.872	.899

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City of Perris
N/S: Western Way
E/W: Harley Knox Boulevard
Weather: Sunny

File Name : PERWEHKAM
Site Code : 00000001
Start Date : 1/17/2013
Page No : 1

Groups Printed- Large 2 Axle Vehicles

	Western Way Southbound			Harley Knox Boulevard Westbound			Harley Knox Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
07:00 AM	0	3	3	6	1	7	0	1	1	11
07:15 AM	1	1	2	11	0	11	1	6	7	20
07:30 AM	0	1	1	3	0	3	3	5	8	12
07:45 AM	2	3	5	4	1	5	2	7	9	19
Total	3	8	11	24	2	26	6	19	25	62
08:00 AM	1	5	6	2	0	2	4	6	10	18
08:15 AM	1	0	1	3	1	4	2	3	5	10
08:30 AM	0	1	1	2	0	2	1	4	5	8
08:45 AM	0	2	2	4	0	4	1	5	6	12
Total	2	8	10	11	1	12	8	18	26	48
Grand Total	5	16	21	35	3	38	14	37	51	110
Apprch %	23.8	76.2		92.1	7.9		27.5	72.5		
Total %	4.5	14.5	19.1	31.8	2.7	34.5	12.7	33.6	46.4	

	Western Way Southbound			Harley Knox Boulevard Westbound			Harley Knox Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	**3**	3	6	**1**	7	0	1	1	11
07:15 AM	1	1	2	**11**	0	**11**	1	6	7	**20**
07:30 AM	0	1	1	3	0	3	**3**	5	8	12
07:45 AM	**2**	3	**5**	4	1	5	2	**7**	**9**	19
Total Volume	3	8	11	24	2	26	6	19	25	62
% App. Total	27.3	72.7		92.3	7.7		24	76		
PHF	.375	.667	.550	.545	.500	.591	.500	.679	.694	.775

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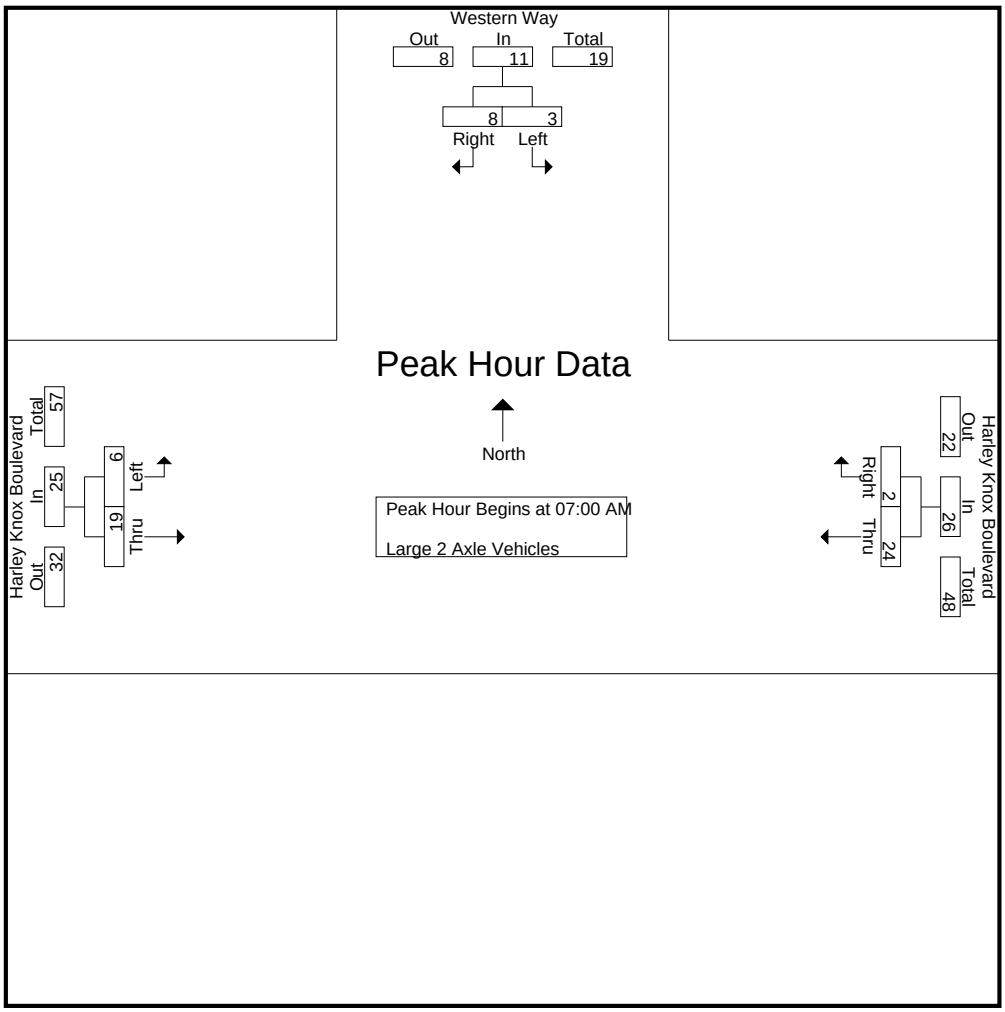

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	**3**	3	6	**1**	7	0	1	1
+15 mins.	1	1	2	**11**	0	**11**	1	6	7
+30 mins.	0	1	1	3	0	3	**3**	5	8
+45 mins.	**2**	3	**5**	4	1	5	2	**7**	**9**
Total Volume	3	8	11	24	2	26	6	19	25
% App. Total	27.3	72.7		92.3	7.7		24	76	
PHF	.375	.667	.550	.545	.500	.591	.500	.679	.694

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Groups Printed- 3 Axle Vehicles

	Western Way Southbound			Harley Knox Boulevard Westbound			Harley Knox Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
07:00 AM	0	0	0	1	0	1	0	1	1	2
07:15 AM	0	0	0	2	0	2	0	3	3	5
07:30 AM	0	0	0	0	0	0	0	3	3	3
07:45 AM	0	0	0	2	0	2	1	1	2	4
Total	0	0	0	5	0	5	1	8	9	14
08:00 AM	0	0	0	0	0	0	0	4	4	4
08:15 AM	0	0	0	1	0	1	2	6	8	9
08:30 AM	0	0	0	2	0	2	1	3	4	6
08:45 AM	0	1	1	2	0	2	0	6	6	9
Total	0	1	1	5	0	5	3	19	22	28
Grand Total	0	1	1	10	0	10	4	27	31	42
Apprch %	0	100		100	0		12.9	87.1		
Total %	0	2.4	2.4	23.8	0	23.8	9.5	64.3	73.8	

	Western Way Southbound			Harley Knox Boulevard Westbound			Harley Knox Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	1	0	1	0	1	1	2
07:15 AM	0	0	0	**2**	0	**2**	0	**3**	**3**	**5**
07:30 AM	0	0	0	0	0	0	0	3	3	3
07:45 AM	0	0	0	2	0	2	**1**	1	2	4
Total Volume	0	0	0	5	0	5	1	8	9	14
% App. Total	0	0		100	0		11.1	88.9		
PHF	.000	.000	.000	.625	.000	.625	.250	.667	.750	.700

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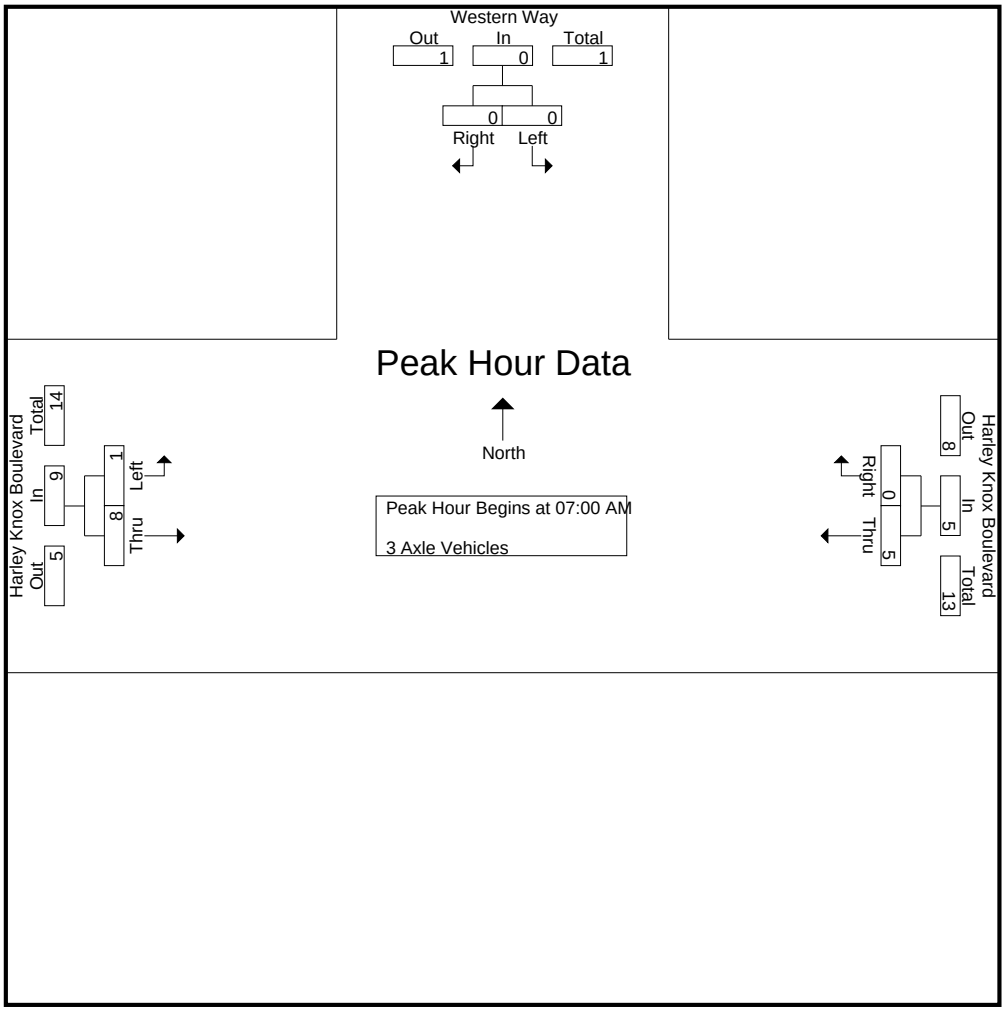

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	0	0	1	0	1	0	1	1
+15 mins.	0	0	0	**2**	0	**2**	0	**3**	**3**
+30 mins.	0	0	0	0	0	0	0	3	3
+45 mins.	0	0	0	2	0	2	**1**	1	2
Total Volume	0	0	0	5	0	5	1	8	9
% App. Total	0	0		100	0		11.1	88.9	
PHF	.000	.000	.000	.625	.000	.625	.250	.667	.750

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Groups Printed- 4+ Axle Trucks

	Western Way Southbound			Harley Knox Boulevard Westbound			Harley Knox Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
07:00 AM	0	0	0	6	0	6	0	9	9	15
07:15 AM	0	0	0	8	0	8	1	10	11	19
07:30 AM	0	0	0	9	0	9	0	11	11	20
07:45 AM	0	1	1	8	0	8	0	6	6	15
Total	0	1	1	31	0	31	1	36	37	69
08:00 AM	0	0	0	6	0	6	1	12	13	19
08:15 AM	0	1	1	8	0	8	1	9	10	19
08:30 AM	0	0	0	10	0	10	1	10	11	21
08:45 AM	0	2	2	6	2	8	0	6	6	16
Total	0	3	3	30	2	32	3	37	40	75
Grand Total	0	4	4	61	2	63	4	73	77	144
Apprch %	0	100		96.8	3.2		5.2	94.8		
Total %	0	2.8	2.8	42.4	1.4	43.8	2.8	50.7	53.5	

	Western Way Southbound			Harley Knox Boulevard Westbound			Harley Knox Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	6	0	6	0	9	9	15
07:15 AM	0	0	0	8	0	8	**1**	10	**11**	19
07:30 AM	0	0	0	**9**	0	**9**	0	**11**	11	**20**
07:45 AM	0	**1**	**1**	8	0	8	0	6	6	15
Total Volume	0	1	1	31	0	31	1	36	37	69
% App. Total	0	100		100	0		2.7	97.3		
PHF	.000	.250	.250	.861	.000	.861	.250	.818	.841	.863

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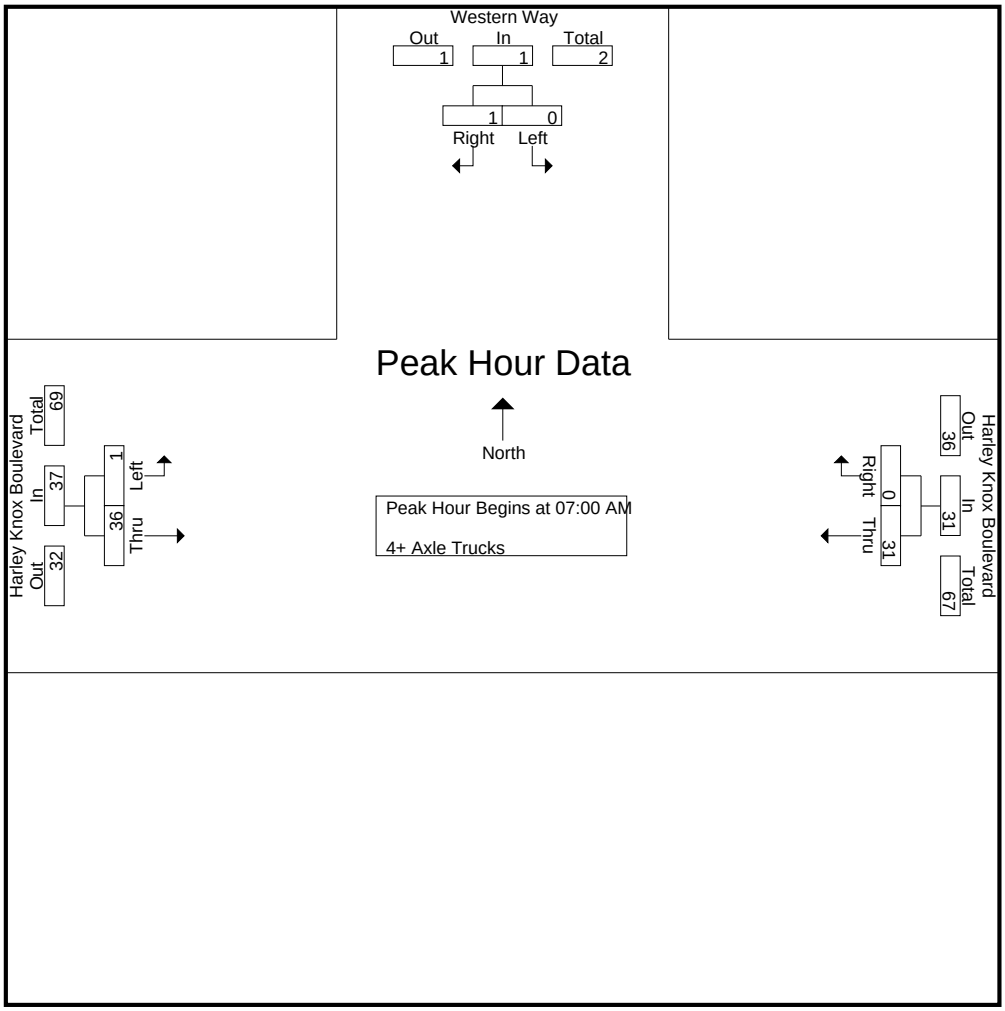

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	0	0	6	0	6	0	9	9
+15 mins.	0	0	0	8	0	8	**1**	10	**11**
+30 mins.	0	0	0	**9**	0	**9**	0	**11**	11
+45 mins.	0	**1**	**1**	8	0	8	0	6	6
Total Volume	0	1	1	31	0	31	1	36	37
% App. Total	0	100		100	0		2.7	97.3	
PHF	.000	.250	.250	.861	.000	.861	.250	.818	.841

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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Western Way Southbound			Harley Knox Boulevard Westbound			Harley Knox Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
04:00 PM	3	9	12	114	2	116	3	114	117	245
04:15 PM	3	11	14	87	1	88	3	109	112	214
04:30 PM	0	14	14	117	1	118	2	124	126	258
04:45 PM	4	13	17	122	1	123	1	111	112	252
Total	10	47	57	440	5	445	9	458	467	969
05:00 PM	2	6	8	117	0	117	1	109	110	235
05:15 PM	1	8	9	59	0	59	6	111	117	185
05:30 PM	0	9	9	85	1	86	1	108	109	204
05:45 PM	1	4	5	63	1	64	1	105	106	175
Total	4	27	31	324	2	326	9	433	442	799
Grand Total	14	74	88	764	7	771	18	891	909	1768
Apprch %	15.9	84.1		99.1	0.9		2	98		
Total %	0.8	4.2	5	43.2	0.4	43.6	1	50.4	51.4	
Passenger Vehicles	13	68	81	680	6	686	13	803	816	1583
% Passenger Vehicles	92.9	91.9	92	89	85.7	89	72.2	90.1	89.8	89.5
Large 2 Axle Vehicles	1	4	5	20	0	20	4	16	20	45
% Large 2 Axle Vehicles	7.1	5.4	5.7	2.6	0	2.6	22.2	1.8	2.2	2.5
3 Axle Vehicles	0	1	1	7	0	7	0	12	12	20
% 3 Axle Vehicles	0	1.4	1.1	0.9	0	0.9	0	1.3	1.3	1.1
4+ Axle Trucks	0	1	1	57	1	58	1	60	61	120
% 4+ Axle Trucks	0	1.4	1.1	7.5	14.3	7.5	5.6	6.7	6.7	6.8

	Western Way Southbound			Harley Knox Boulevard Westbound			Harley Knox Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	3	9	12	114	**2**	116	**3**	114	117	245
04:15 PM	3	11	14	87	1	88	3	109	112	214
04:30 PM	0	**14**	14	117	1	118	2	**124**	**126**	**258**
04:45 PM	**4**	13	**17**	**122**	1	**123**	1	111	112	252
Total Volume	10	47	57	440	5	445	9	458	467	969
% App. Total	17.5	82.5		98.9	1.1		1.9	98.1		
PHF	.625	.839	.838	.902	.625	.904	.750	.923	.927	.939

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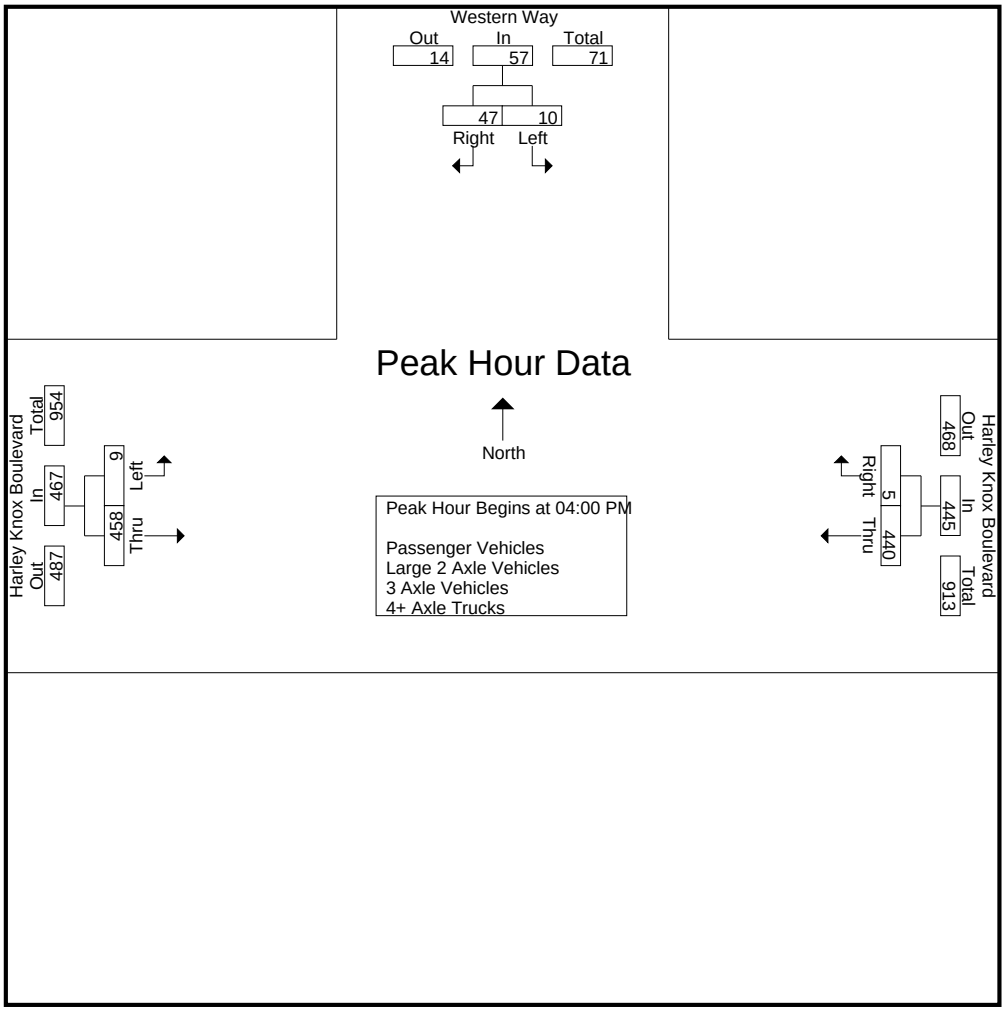

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM			04:15 PM			04:00 PM		
+0 mins.	3	9	12	87	**1**	88	**3**	114	117
+15 mins.	3	11	14	117	1	118	3	109	112
+30 mins.	0	**14**	14	**122**	1	**123**	2	**124**	**126**
+45 mins.	**4**	13	**17**	117	0	117	1	111	112
Total Volume	10	47	57	443	3	446	9	458	467
% App. Total	17.5	82.5		99.3	0.7		1.9	98.1	
PHF	.625	.839	.838	.908	.750	.907	.750	.923	.927

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Groups Printed- Large 2 Axle Vehicles

	Western Way Southbound			Harley Knox Boulevard Westbound			Harley Knox Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
04:00 PM	0	2	2	2	0	2	1	5	6	10
04:15 PM	0	0	0	1	0	1	0	1	1	2
04:30 PM	0	1	1	4	0	4	0	2	2	7
04:45 PM	0	0	0	2	0	2	0	2	2	4
Total	0	3	3	9	0	9	1	10	11	23
05:00 PM	0	0	0	3	0	3	0	1	1	4
05:15 PM	1	0	1	1	0	1	2	1	3	5
05:30 PM	0	1	1	4	0	4	1	2	3	8
05:45 PM	0	0	0	3	0	3	0	2	2	5
Total	1	1	2	11	0	11	3	6	9	22
Grand Total	1	4	5	20	0	20	4	16	20	45
Apprch %	20	80		100	0		20	80		
Total %	2.2	8.9	11.1	44.4	0	44.4	8.9	35.6	44.4	

	Western Way Southbound			Harley Knox Boulevard Westbound			Harley Knox Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	**2**	**2**	2	0	2	**1**	**5**	**6**	**10**
04:15 PM	0	0	0	1	0	1	0	1	1	2
04:30 PM	0	1	1	**4**	0	**4**	0	2	2	7
04:45 PM	0	0	0	2	0	2	0	2	2	4
Total Volume	0	3	3	9	0	9	1	10	11	23
% App. Total	0	100		100	0		9.1	90.9		
PHF	.000	.375	.375	.563	.000	.563	.250	.500	.458	.575

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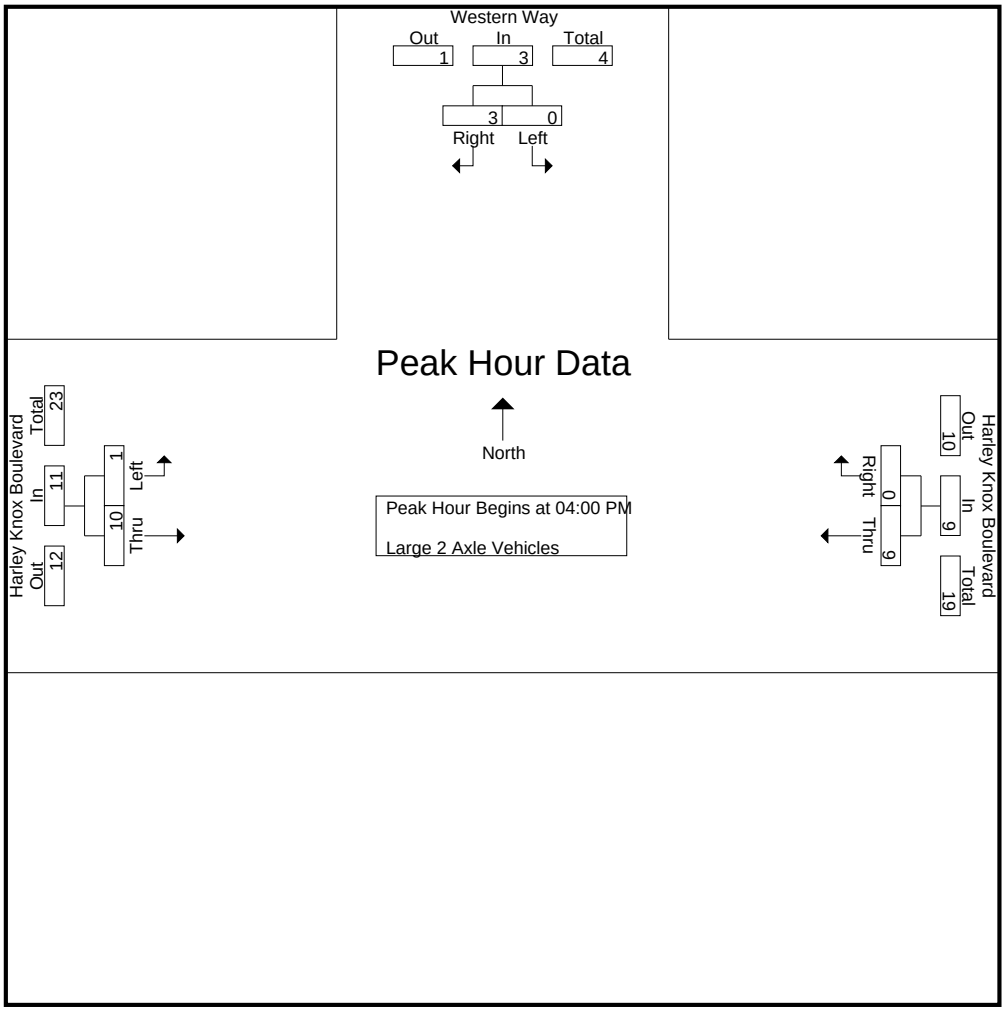

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	0	**2**	**2**	2	0	2	**1**	**5**	**6**
+15 mins.	0	0	0	1	0	1	0	1	1
+30 mins.	0	1	1	**4**	0	**4**	0	2	2
+45 mins.	0	0	0	2	0	2	0	2	2
Total Volume	0	3	3	9	0	9	1	10	11
% App. Total	0	100		100	0		9.1	90.9	
PHF	.000	.375	.375	.563	.000	.563	.250	.500	.458

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Groups Printed- 3 Axle Vehicles

	Western Way Southbound			Harley Knox Boulevard Westbound			Harley Knox Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
04:00 PM	0	0	0	1	0	1	0	1	1	2
04:15 PM	0	0	0	1	0	1	0	2	2	3
04:30 PM	0	0	0	0	0	0	0	1	1	1
04:45 PM	0	1	1	2	0	2	0	2	2	5
Total	0	1	1	4	0	4	0	6	6	11
05:00 PM	0	0	0	2	0	2	0	0	0	2
05:15 PM	0	0	0	0	0	0	0	2	2	2
05:30 PM	0	0	0	0	0	0	0	3	3	3
05:45 PM	0	0	0	1	0	1	0	1	1	2
Total	0	0	0	3	0	3	0	6	6	9
Grand Total	0	1	1	7	0	7	0	12	12	20
Apprch %	0	100		100	0		0	100		
Total %	0	5	5	35	0	35	0	60	60	

	Western Way Southbound			Harley Knox Boulevard Westbound			Harley Knox Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	1	0	1	0	1	1	2
04:15 PM	0	0	0	1	0	1	0	**2**	**2**	3
04:30 PM	0	0	0	0	0	0	0	1	1	1
04:45 PM	0	**1**	**1**	**2**	0	**2**	0	2	2	**5**
Total Volume	0	1	1	4	0	4	0	6	6	11
% App. Total	0	100		100	0		0	100		
PHF	.000	.250	.250	.500	.000	.500	.000	.750	.750	.550

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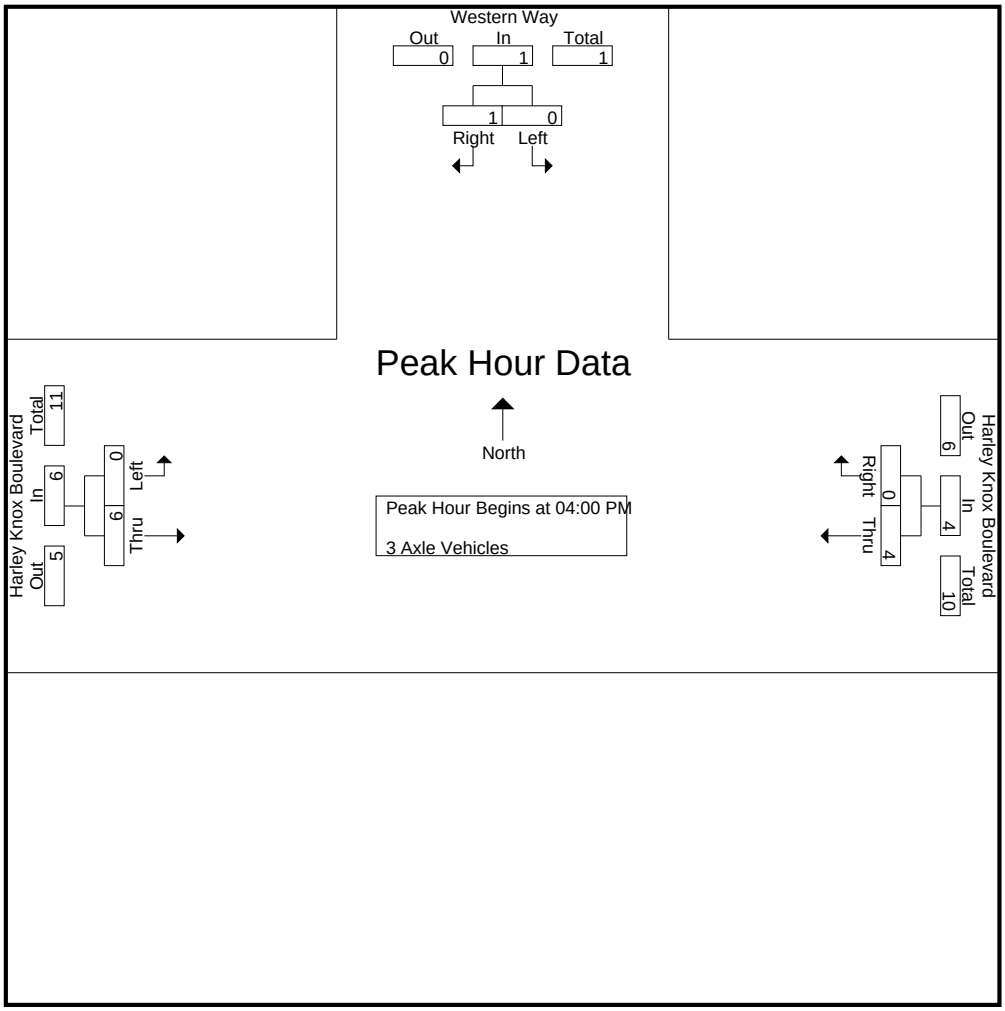

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	0	0	0	1	0	1	0	1	1
+15 mins.	0	0	0	1	0	1	0	**2**	**2**
+30 mins.	0	0	0	0	0	0	0	1	1
+45 mins.	0	**1**	**1**	**2**	0	**2**	0	2	2
Total Volume	0	1	1	4	0	4	0	6	6
% App. Total	0	100		100	0		0	100	
PHF	.000	.250	.250	.500	.000	.500	.000	.750	.750

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Groups Printed- 4+ Axle Trucks

	Western Way Southbound			Harley Knox Boulevard Westbound			Harley Knox Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
04:00 PM	0	0	0	12	0	12	0	8	8	20
04:15 PM	0	0	0	3	0	3	0	6	6	9
04:30 PM	0	0	0	9	0	9	1	5	6	15
04:45 PM	0	0	0	6	0	6	0	9	9	15
Total	0	0	0	30	0	30	1	28	29	59
05:00 PM	0	0	0	5	0	5	0	7	7	12
05:15 PM	0	0	0	5	0	5	0	4	4	9
05:30 PM	0	1	1	9	1	10	0	10	10	21
05:45 PM	0	0	0	8	0	8	0	11	11	19
Total	0	1	1	27	1	28	0	32	32	61
Grand Total	0	1	1	57	1	58	1	60	61	120
Apprch %	0	100		98.3	1.7		1.6	98.4		
Total %	0	0.8	0.8	47.5	0.8	48.3	0.8	50	50.8	

	Western Way Southbound			Harley Knox Boulevard Westbound			Harley Knox Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	**12**	0	**12**	0	8	8	**20**
04:15 PM	0	0	0	3	0	3	0	6	6	9
04:30 PM	0	0	0	9	0	9	**1**	5	6	15
04:45 PM	0	0	0	6	0	6	0	**9**	**9**	15
Total Volume	0	0	0	30	0	30	1	28	29	59
% App. Total	0	0		100	0		3.4	96.6		
PHF	.000	.000	.000	.625	.000	.625	.250	.778	.806	.738

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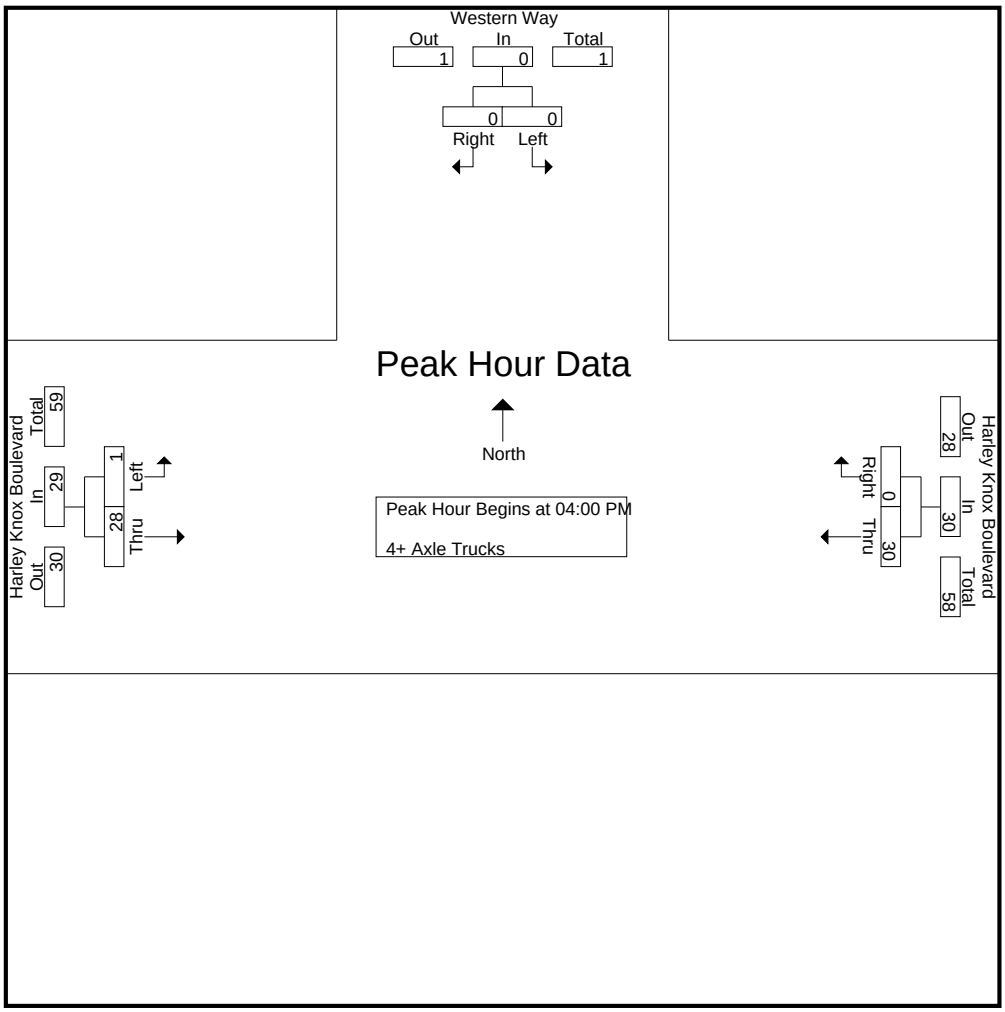

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	0	0	0	**12**	0	**12**	0	8	8
+15 mins.	0	0	0	3	0	3	0	6	6
+30 mins.	0	0	0	9	0	9	**1**	5	6
+45 mins.	0	0	0	6	0	6	0	**9**	**9**
Total Volume	0	0	0	30	0	30	1	28	29
% App. Total	0	0		100	0		3.4	96.6	
PHF	.000	.000	.000	.625	.000	.625	.250	.778	.806

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City of Perris
N/S: Patterson Avenue
E/W: Harley Knox Boulevard
Weather: Sunny

File Name : PERPAHKAM
Site Code : 00000001
Start Date : 1/17/2013
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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Patterson Avenue Southbound				Harley Knox Boulevard Westbound				Patterson Avenue Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	1	0	1	1	163	0	164	43	2	0	45	1	98	6	105	315
07:15 AM	0	1	3	4	0	134	0	134	45	0	1	46	1	118	9	128	312
07:30 AM	0	0	2	2	0	116	0	116	27	0	0	27	3	133	5	141	286
07:45 AM	0	0	2	2	1	101	1	103	18	0	0	18	4	123	6	133	256
Total	0	2	7	9	2	514	1	517	133	2	1	136	9	472	26	507	1169
08:00 AM	0	2	0	2	2	69	1	72	12	1	2	15	1	68	9	78	167
08:15 AM	0	1	0	1	0	55	4	59	12	3	0	15	1	75	6	82	157
08:30 AM	0	0	1	1	0	65	1	66	5	0	0	5	1	66	6	73	145
08:45 AM	1	2	1	4	0	52	0	52	11	1	0	12	4	62	4	70	138
Total	1	5	2	8	2	241	6	249	40	5	2	47	7	271	25	303	607
Grand Total	1	7	9	17	4	755	7	766	173	7	3	183	16	743	51	810	1776
Apprch %	5.9	41.2	52.9		0.5	98.6	0.9		94.5	3.8	1.6		2	91.7	6.3		
Total %	0.1	0.4	0.5	1	0.2	42.5	0.4	43.1	9.7	0.4	0.2	10.3	0.9	41.8	2.9	45.6	
Passenger Vehicles	1	7	7	15	3	655	6	664	167	6	3	176	16	610	46	672	1527
% Passenger Vehicles	100	100	77.8	88.2	75	86.8	85.7	86.7	96.5	85.7	100	96.2	100	82.1	90.2	83	86
Large 2 Axle Vehicles	0	0	0	0	1	30	1	32	3	0	0	3	0	34	3	37	72
% Large 2 Axle Vehicles	0	0	0	0	25	4	14.3	4.2	1.7	0	0	1.6	0	4.6	5.9	4.6	4.1
3 Axle Vehicles	0	0	0	0	0	10	0	10	0	1	0	1	0	25	0	25	36
% 3 Axle Vehicles	0	0	0	0	0	1.3	0	1.3	0	14.3	0	0.5	0	3.4	0	3.1	2
4+ Axle Trucks	0	0	2	2	0	60	0	60	3	0	0	3	0	74	2	76	141
% 4+ Axle Trucks	0	0	22.2	11.8	0	7.9	0	7.8	1.7	0	0	1.6	0	10	3.9	9.4	7.9

	Patterson Avenue Southbound				Harley Knox Boulevard Westbound				Patterson Avenue Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	**1**	0	1	**1**	**163**	0	**164**	43	**2**	0	45	1	98	6	105	**315**
07:15 AM	0	1	**3**	**4**	0	134	0	134	**45**	0	**1**	**46**	1	118	**9**	128	312
07:30 AM	0	0	2	2	0	116	0	116	27	0	0	27	3	**133**	5	**141**	286
07:45 AM	0	0	2	2	1	101	**1**	103	18	0	0	18	**4**	123	6	133	256
Total Volume	0	2	7	9	2	514	1	517	133	2	1	136	9	472	26	507	1169
% App. Total	0	22.2	77.8		0.4	99.4	0.2		97.8	1.5	0.7		1.8	93.1	5.1		
PHF	.000	.500	.583	.563	.500	.788	.250	.788	.739	.250	.250	.739	.563	.887	.722	.899	.928

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Weather: Sunny

File Name : PERPAHKAM
Site Code : 00000001
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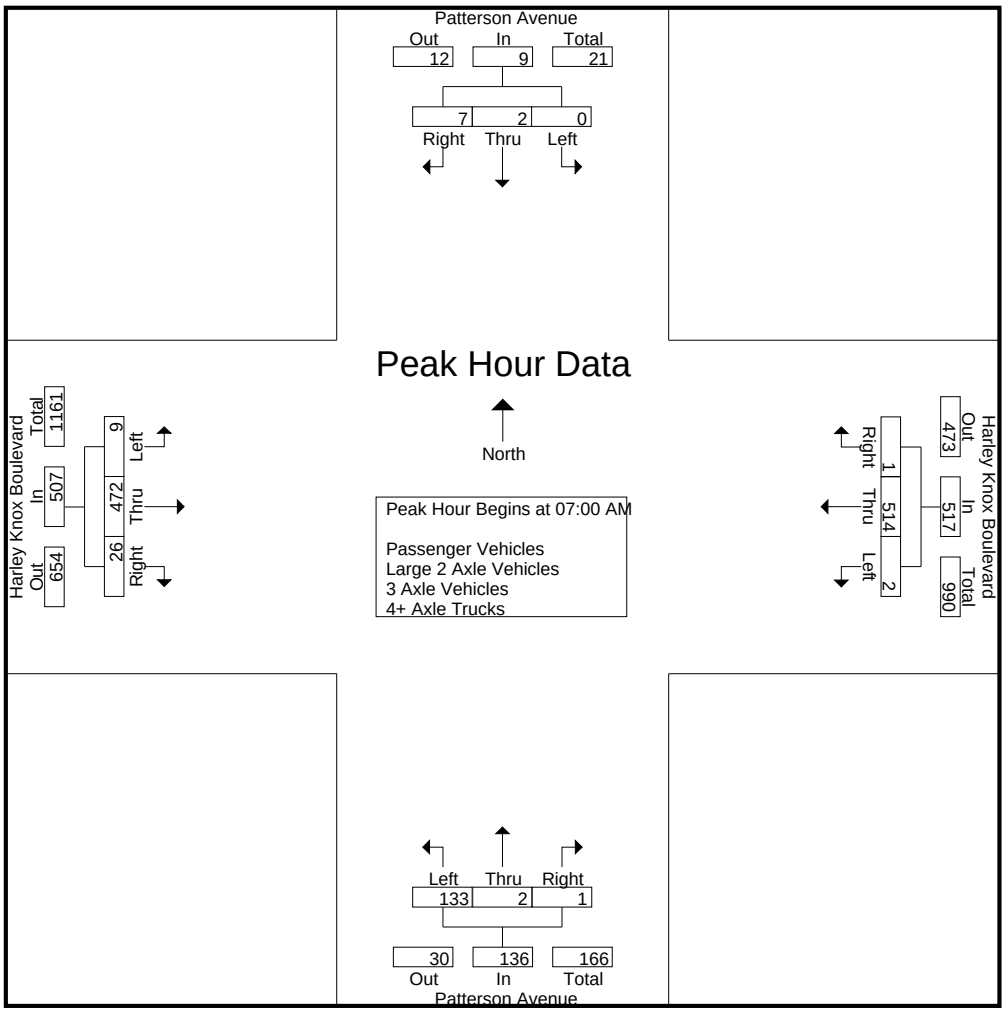

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:15 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	1	**3**	**4**	**1**	**163**	0	**164**	43	**2**	0	45	1	98	6	105
+15 mins.	0	0	2	2	0	134	0	134	**45**	0	**1**	**46**	1	118	**9**	128
+30 mins.	0	0	2	2	0	116	0	116	27	0	0	27	3	**133**	5	**141**
+45 mins.	0	**2**	0	2	1	101	**1**	103	18	0	0	18	**4**	123	6	133
Total Volume	0	3	7	10	2	514	1	517	133	2	1	136	9	472	26	507
% App. Total	0	30	70		0.4	99.4	0.2		97.8	1.5	0.7		1.8	93.1	5.1	
PHF	.000	.375	.583	.625	.500	.788	.250	.788	.739	.250	.250	.739	.563	.887	.722	.899

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City of Perris
N/S: Patterson Avenue
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File Name : PERPAHKAM
Site Code : 00000001
Start Date : 1/17/2013
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Groups Printed- Large 2 Axle Vehicles

	Patterson Avenue Southbound				Harley Knox Boulevard Westbound				Patterson Avenue Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	1	5	0	6	0	0	0	0	0	0	1	1	7
07:15 AM	0	0	0	0	0	8	0	8	2	0	0	2	0	8	0	8	18
07:30 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	3	0	3	5
07:45 AM	0	0	0	0	0	5	0	5	0	0	0	0	0	7	0	7	12
Total	0	0	0	0	1	20	0	21	2	0	0	2	0	18	1	19	42
08:00 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	2	2	4	6
08:15 AM	0	0	0	0	0	3	1	4	1	0	0	1	0	3	0	3	8
08:30 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	6	0	6	8
08:45 AM	0	0	0	0	0	3	0	3	0	0	0	0	0	5	0	5	8
Total	0	0	0	0	0	10	1	11	1	0	0	1	0	16	2	18	30
Grand Total	0	0	0	0	1	30	1	32	3	0	0	3	0	34	3	37	72
Apprch %	0	0	0		3.1	93.8	3.1		100	0	0		0	91.9	8.1		
Total %	0	0	0	0	1.4	41.7	1.4	44.4	4.2	0	0	4.2	0	47.2	4.2	51.4	

	Patterson Avenue Southbound				Harley Knox Boulevard Westbound				Patterson Avenue Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	**1**	5	0	6	0	0	0	0	0	0	**1**	1	7
07:15 AM	0	0	0	0	0	**8**	0	**8**	**2**	0	0	**2**	0	**8**	0	**8**	**18**
07:30 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	3	0	3	5
07:45 AM	0	0	0	0	0	5	0	5	0	0	0	0	0	7	0	7	12
Total Volume	0	0	0	0	1	20	0	21	2	0	0	2	0	18	1	19	42
% App. Total	0	0	0		4.8	95.2	0		100	0	0		0	94.7	5.3		
PHF	.000	.000	.000	.000	.250	.625	.000	.656	.250	.000	.000	.250	.000	.563	.250	.594	.583

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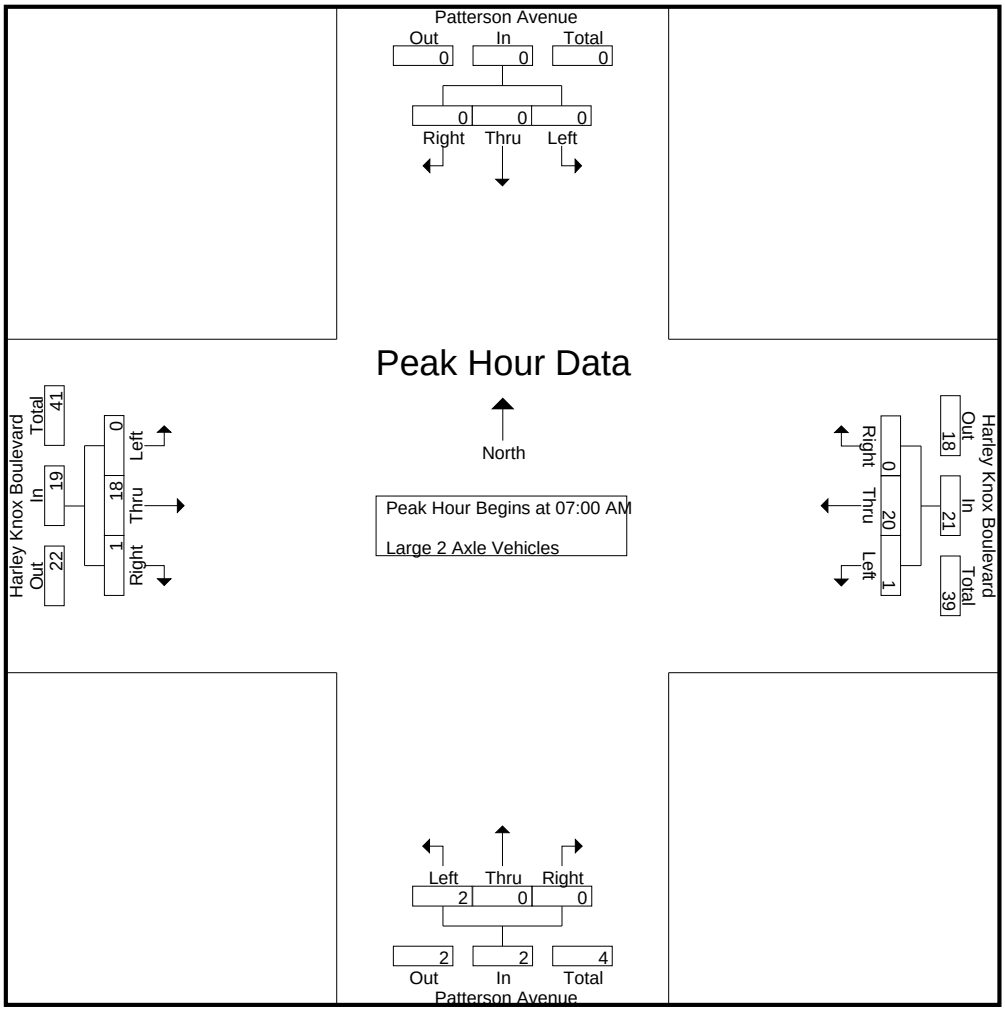

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	0	0	0	**1**	5	0	6	0	0	0	0	0	0	**1**	1
+15 mins.	0	0	0	0	0	**8**	0	**8**	**2**	0	0	**2**	0	**8**	0	**8**
+30 mins.	0	0	0	0	0	2	0	2	0	0	0	0	0	3	0	3
+45 mins.	0	0	0	0	0	5	0	5	0	0	0	0	0	7	0	7
Total Volume	0	0	0	0	1	20	0	21	2	0	0	2	0	18	1	19
% App. Total	0	0	0		4.8	95.2	0		100	0	0		0	94.7	5.3	
PHF	.000	.000	.000	.000	.250	.625	.000	.656	.250	.000	.000	.250	.000	.563	.250	.594

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Groups Printed- 3 Axle Vehicles

	Patterson Avenue Southbound				Harley Knox Boulevard Westbound				Patterson Avenue Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
07:15 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	3	0	3	5
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
07:45 AM	0	0	0	0	0	3	0	3	0	0	0	0	0	1	0	1	4
Total	0	0	0	0	0	6	0	6	0	0	0	0	0	7	0	7	13
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	3
08:15 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	6	0	6	7
08:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	3
08:45 AM	0	0	0	0	0	2	0	2	0	1	0	1	0	7	0	7	10
Total	0	0	0	0	0	4	0	4	0	1	0	1	0	18	0	18	23
Grand Total	0	0	0	0	0	10	0	10	0	1	0	1	0	25	0	25	36
Apprch %	0	0	0		0	100	0		0	100	0		0	100	0		
Total %	0	0	0	0	0	27.8	0	27.8	0	2.8	0	2.8	0	69.4	0	69.4	

	Patterson Avenue Southbound				Harley Knox Boulevard Westbound				Patterson Avenue Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
07:15 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	**3**	0	**3**	**5**
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
07:45 AM	0	0	0	0	0	**3**	0	**3**	0	0	0	0	0	1	0	1	4
Total Volume	0	0	0	0	0	6	0	6	0	0	0	0	0	7	0	7	13
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.000	.583	.000	.583	.650

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City of Perris
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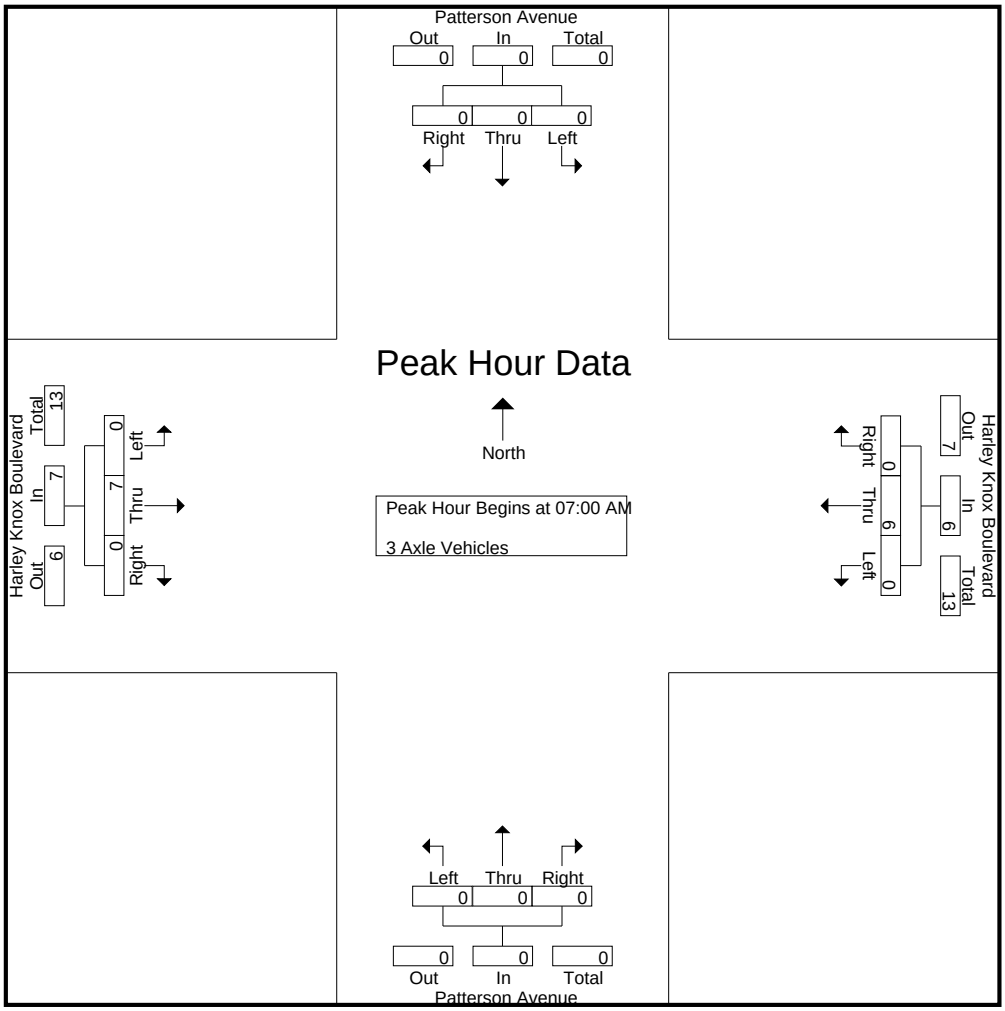

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1
+15 mins.	0	0	0	0	0	2	0	2	0	0	0	0	0	**3**	0	**3**
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
+45 mins.	0	0	0	0	0	**3**	0	**3**	0	0	0	0	0	1	0	1
Total Volume	0	0	0	0	0	6	0	6	0	0	0	0	0	7	0	7
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0	
PHF	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.000	.583	.000	.583

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City of Perris
N/S: Patterson Avenue
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Weather: Sunny

File Name : PERPAHKAM
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Start Date : 1/17/2013
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Groups Printed- 4+ Axle Trucks

	Patterson Avenue Southbound				Harley Knox Boulevard Westbound				Patterson Avenue Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	5	0	5	1	0	0	1	0	8	1	9	15
07:15 AM	0	0	0	0	0	7	0	7	1	0	0	1	0	10	0	10	18
07:30 AM	0	0	0	0	0	9	0	9	0	0	0	0	0	11	0	11	20
07:45 AM	0	0	2	2	0	5	0	5	0	0	0	0	0	5	1	6	13
Total	0	0	2	2	0	26	0	26	2	0	0	2	0	34	2	36	66
08:00 AM	0	0	0	0	0	6	0	6	0	0	0	0	0	14	0	14	20
08:15 AM	0	0	0	0	0	9	0	9	1	0	0	1	0	9	0	9	19
08:30 AM	0	0	0	0	0	9	0	9	0	0	0	0	0	10	0	10	19
08:45 AM	0	0	0	0	0	10	0	10	0	0	0	0	0	7	0	7	17
Total	0	0	0	0	0	34	0	34	1	0	0	1	0	40	0	40	75
Grand Total	0	0	2	2	0	60	0	60	3	0	0	3	0	74	2	76	141
Apprch %	0	0	100		0	100	0		100	0	0		0	97.4	2.6		
Total %	0	0	1.4	1.4	0	42.6	0	42.6	2.1	0	0	2.1	0	52.5	1.4	53.9	

	Patterson Avenue Southbound				Harley Knox Boulevard Westbound				Patterson Avenue Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	5	0	5	**1**	0	0	**1**	0	8	**1**	9	15
07:15 AM	0	0	0	0	0	7	0	7	1	0	0	1	0	10	0	10	18
07:30 AM	0	0	0	0	0	**9**	0	**9**	0	0	0	0	0	**11**	0	**11**	**20**
07:45 AM	0	0	**2**	**2**	0	5	0	5	0	0	0	0	0	5	1	6	13
Total Volume	0	0	2	2	0	26	0	26	2	0	0	2	0	34	2	36	66
% App. Total	0	0	100		0	100	0		100	0	0		0	94.4	5.6		
PHF	.000	.000	.250	.250	.000	.722	.000	.722	.500	.000	.000	.500	.000	.773	.500	.818	.825

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City of Perris
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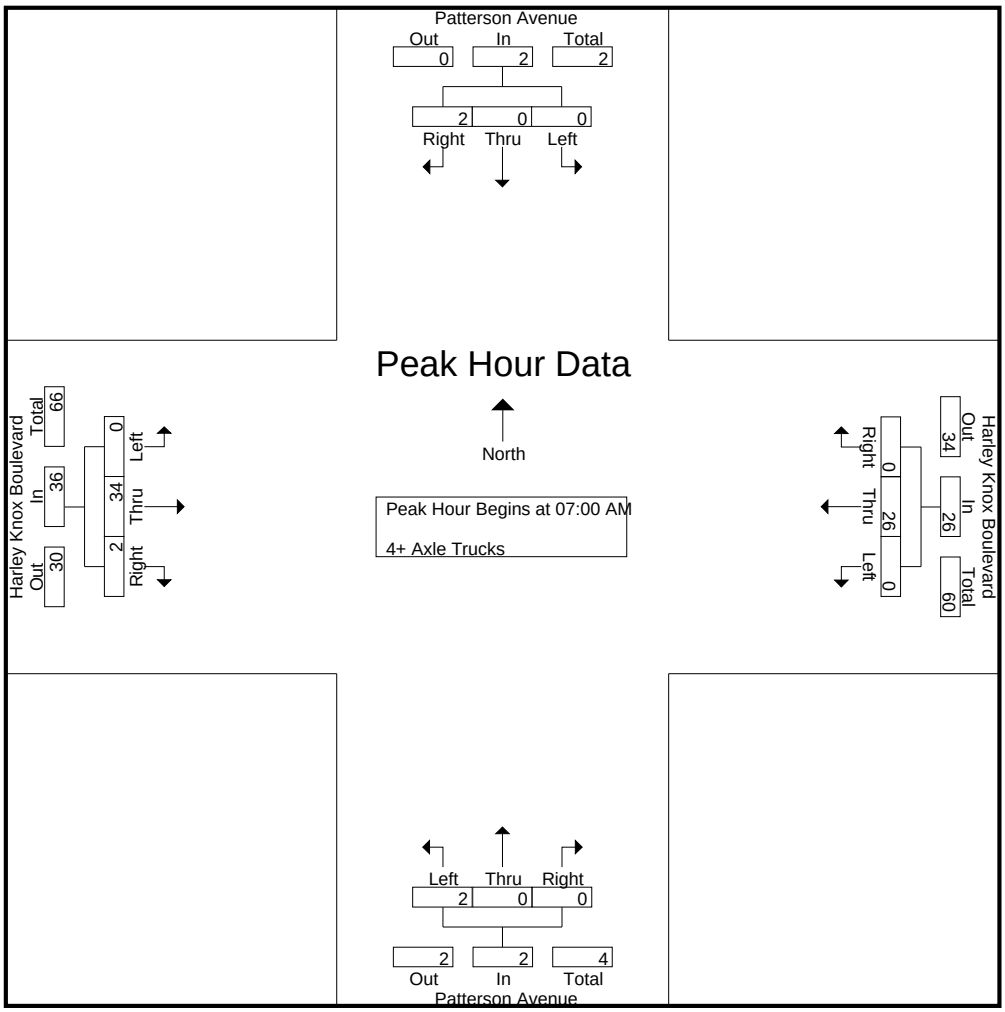

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	0	0	0	0	5	0	5	**1**	0	0	**1**	0	8	**1**	9
+15 mins.	0	0	0	0	0	7	0	7	1	0	0	1	0	10	0	10
+30 mins.	0	0	0	0	0	**9**	0	**9**	0	0	0	0	0	**11**	0	**11**
+45 mins.	0	0	**2**	**2**	0	5	0	5	0	0	0	0	0	5	1	6
Total Volume	0	0	2	2	0	26	0	26	2	0	0	2	0	34	2	36
% App. Total	0	0	100		0	100	0		100	0	0		0	94.4	5.6	
PHF	.000	.000	.250	.250	.000	.722	.000	.722	.500	.000	.000	.500	.000	.773	.500	.818

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City of Perris
N/S: Patterson Avenue
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File Name : PERPAHKPM
Site Code : 00000001
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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Patterson Avenue Southbound				Harley Knox Boulevard Westbound				Patterson Avenue Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	2	2	3	7	0	102	0	102	9	0	0	9	0	93	14	107	225
04:15 PM	1	2	1	4	0	68	0	68	8	0	3	11	1	100	10	111	194
04:30 PM	3	0	4	7	0	102	0	102	21	1	0	22	1	101	12	114	245
04:45 PM	0	0	0	0	0	88	0	88	24	0	1	25	2	110	12	124	237
Total	6	4	8	18	0	360	0	360	62	1	4	67	4	404	48	456	901
05:00 PM	0	1	0	1	0	103	0	103	9	0	0	9	0	108	5	113	226
05:15 PM	0	0	0	0	0	55	1	56	5	1	0	6	1	96	10	107	169
05:30 PM	2	4	2	8	0	71	0	71	10	0	0	10	1	97	9	107	196
05:45 PM	0	0	0	0	0	56	0	56	3	3	0	6	1	103	11	115	177
Total	2	5	2	9	0	285	1	286	27	4	0	31	3	404	35	442	768
Grand Total	8	9	10	27	0	645	1	646	89	5	4	98	7	808	83	898	1669
Apprch %	29.6	33.3	37		0	99.8	0.2		90.8	5.1	4.1		0.8	90	9.2		
Total %	0.5	0.5	0.6	1.6	0	38.6	0.1	38.7	5.3	0.3	0.2	5.9	0.4	48.4	5	53.8	
Passenger Vehicles	7	8	8	23	0	568	1	569	85	4	4	93	6	735	71	812	1497
% Passenger Vehicles	87.5	88.9	80	85.2	0	88.1	100	88.1	95.5	80	100	94.9	85.7	91	85.5	90.4	89.7
Large 2 Axle Vehicles	1	1	2	4	0	15	0	15	2	1	0	3	1	8	6	15	37
% Large 2 Axle Vehicles	12.5	11.1	20	14.8	0	2.3	0	2.3	2.2	20	0	3.1	14.3	1	7.2	1.7	2.2
3 Axle Vehicles	0	0	0	0	0	9	0	9	0	0	0	0	0	12	1	13	22
% 3 Axle Vehicles	0	0	0	0	0	1.4	0	1.4	0	0	0	0	0	1.5	1.2	1.4	1.3
4+ Axle Trucks	0	0	0	0	0	53	0	53	2	0	0	2	0	53	5	58	113
% 4+ Axle Trucks	0	0	0	0	0	8.2	0	8.2	2.2	0	0	2	0	6.6	6	6.5	6.8

	Patterson Avenue Southbound				Harley Knox Boulevard Westbound				Patterson Avenue Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	1	**2**	1	4	0	68	0	68	8	0	**3**	11	1	100	10	111	194
04:30 PM	**3**	0	**4**	**7**	0	102	0	102	21	**1**	0	22	1	101	**12**	114	**245**
04:45 PM	0	0	0	0	0	88	0	88	**24**	0	1	**25**	**2**	**110**	12	**124**	237
05:00 PM	0	1	0	1	0	**103**	0	**103**	9	0	0	9	0	108	5	113	226
Total Volume	4	3	5	12	0	361	0	361	62	1	4	67	4	419	39	462	902
% App. Total	33.3	25	41.7		0	100	0		92.5	1.5	6		0.9	90.7	8.4		
PHF	.333	.375	.313	.429	.000	.876	.000	.876	.646	.250	.333	.670	.500	.952	.813	.931	.920

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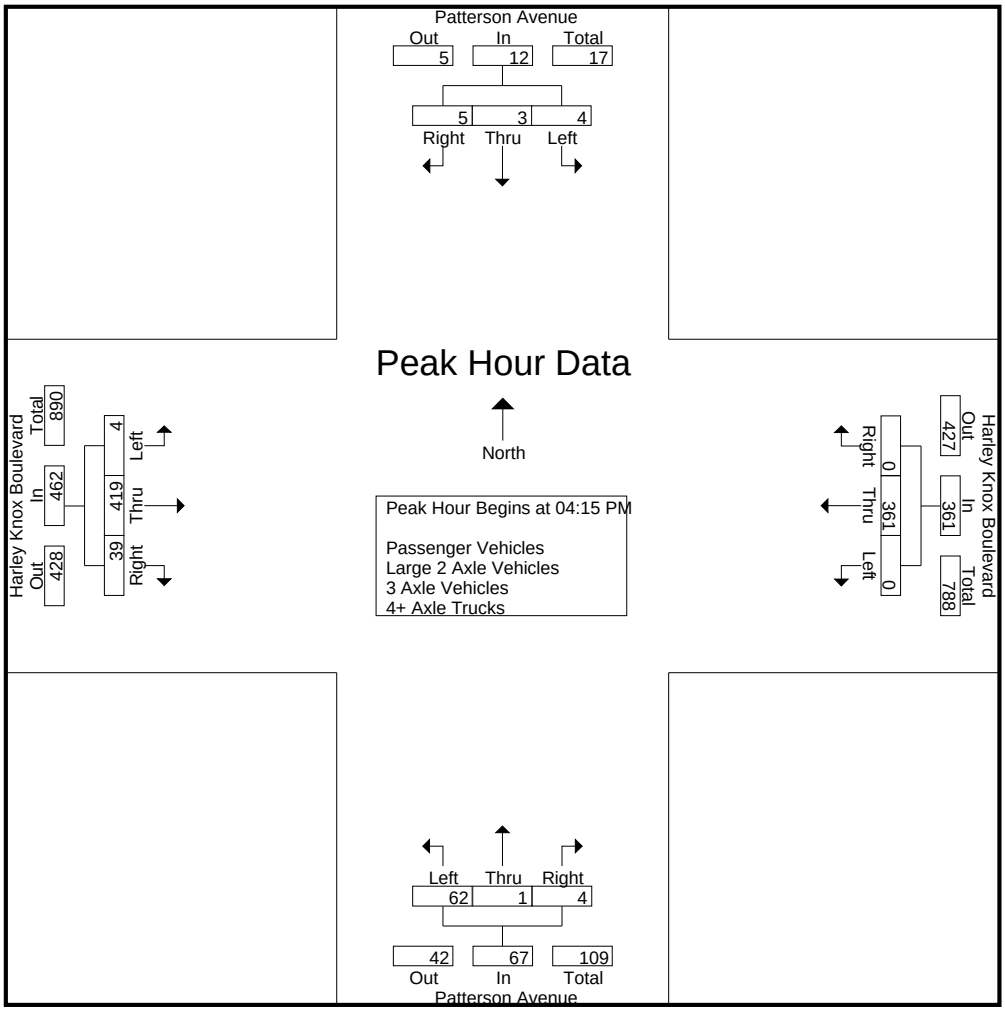
City of Perris
N/S: Patterson Avenue
E/W: Harley Knox Boulevard
Weather: Sunny

File Name : PERPAHKPM
Site Code : 00000001
Start Date : 1/17/2013
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM				04:15 PM				04:00 PM				04:15 PM			
+0 mins.	2	**2**	3	**7**	0	68	0	68	9	0	0	9	1	100	10	111
+15 mins.	1	2	1	4	0	102	0	102	8	0	**3**	11	1	101	**12**	114
+30 mins.	**3**	0	**4**	7	0	88	0	88	21	**1**	0	22	**2**	**110**	12	**124**
+45 mins.	0	0	0	0	0	**103**	0	**103**	**24**	0	1	**25**	0	108	5	113
Total Volume	6	4	8	18	0	361	0	361	62	1	4	67	4	419	39	462
% App. Total	33.3	22.2	44.4		0	100	0		92.5	1.5	6		0.9	90.7	8.4	
PHF	.500	.500	.500	.643	.000	.876	.000	.876	.646	.250	.333	.670	.500	.952	.813	.931

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City of Perris
N/S: Patterson Avenue
E/W: Harley Knox Boulevard
Weather: Sunny

File Name : PERPAHKPM
Site Code : 00000001
Start Date : 1/17/2013
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Groups Printed- Large 2 Axle Vehicles

	Patterson Avenue Southbound				Harley Knox Boulevard Westbound				Patterson Avenue Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	1	1	0	3	0	3	0	0	0	0	0	0	1	1	5
04:15 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	2
04:30 PM	0	0	0	0	0	5	0	5	0	0	0	0	0	2	0	2	7
04:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	1	1	1	3	4
Total	0	0	2	2	0	9	0	9	0	0	0	0	1	3	3	7	18
05:00 PM	0	0	0	0	0	1	0	1	1	0	0	1	0	2	0	2	4
05:15 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
05:30 PM	1	1	0	2	0	1	0	1	1	0	0	1	0	2	1	3	7
05:45 PM	0	0	0	0	0	2	0	2	0	1	0	1	0	1	2	3	6
Total	1	1	0	2	0	6	0	6	2	1	0	3	0	5	3	8	19
Grand Total	1	1	2	4	0	15	0	15	2	1	0	3	1	8	6	15	37
Apprch %	25	25	50		0	100	0		66.7	33.3	0		6.7	53.3	40		
Total %	2.7	2.7	5.4	10.8	0	40.5	0	40.5	5.4	2.7	0	8.1	2.7	21.6	16.2	40.5	

	Patterson Avenue Southbound				Harley Knox Boulevard Westbound				Patterson Avenue Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	0	**1**	**1**	0	0	0	0	0	0	0	0	0	0	**1**	1	2
04:30 PM	0	0	0	0	0	**5**	0	**5**	0	0	0	0	0	**2**	0	2	**7**
04:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	**1**	1	1	**3**	4
05:00 PM	0	0	0	0	0	1	0	1	**1**	0	0	**1**	0	2	0	2	4
Total Volume	0	0	1	1	0	7	0	7	1	0	0	1	1	5	2	8	17
% App. Total	0	0	100		0	100	0		100	0	0		12.5	62.5	25		
PHF	.000	.000	.250	.250	.000	.350	.000	.350	.250	.000	.000	.250	.250	.625	.500	.667	.607

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City of Perris
N/S: Patterson Avenue
E/W: Harley Knox Boulevard
Weather: Sunny

File Name : PERPAHKPM
Site Code : 00000001
Start Date : 1/17/2013
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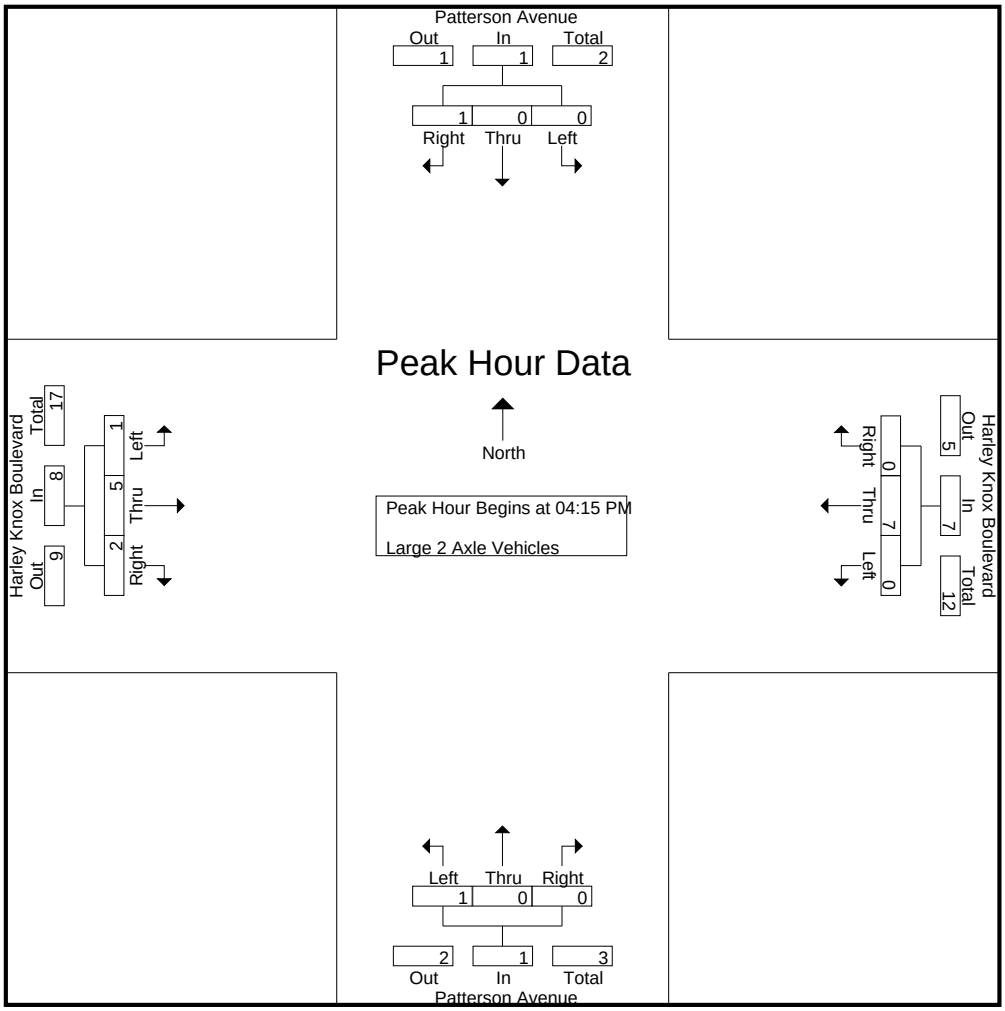

Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:15 PM				04:15 PM				04:15 PM				04:15 PM			
+0 mins.	0	0	**1**	**1**	0	0	0	0	0	0	0	0	0	0	**1**	1
+15 mins.	0	0	0	0	0	**5**	0	**5**	0	0	0	0	0	**2**	0	2
+30 mins.	0	0	0	0	0	1	0	1	0	0	0	0	**1**	1	1	**3**
+45 mins.	0	0	0	0	0	1	0	1	**1**	0	0	**1**	0	2	0	2
Total Volume	0	0	1	1	0	7	0	7	1	0	0	1	1	5	2	8
% App. Total	0	0	100		0	100	0		100	0	0		12.5	62.5	25	
PHF	.000	.000	.250	.250	.000	.350	.000	.350	.250	.000	.000	.250	.250	.625	.500	.667

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City of Perris
N/S: Patterson Avenue
E/W: Harley Knox Boulevard
Weather: Sunny

File Name : PERPAHKPM
Site Code : 00000001
Start Date : 1/17/2013
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Groups Printed- 3 Axle Vehicles

	Patterson Avenue Southbound				Harley Knox Boulevard Westbound				Patterson Avenue Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	1	2	4
04:15 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	3	0	3	4
04:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
04:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
Total	0	0	0	0	0	5	0	5	0	0	0	0	0	6	1	7	12
05:00 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	3
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
05:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	3	0	3	4
05:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	4	0	4	0	0	0	0	0	6	0	6	10
Grand Total	0	0	0	0	0	9	0	9	0	0	0	0	0	12	1	13	22
Apprch %	0	0	0		0	100	0		0	0	0		0	92.3	7.7		
Total %	0	0	0	0	0	40.9	0	40.9	0	0	0	0	0	54.5	4.5	59.1	

	Patterson Avenue Southbound				Harley Knox Boulevard Westbound				Patterson Avenue Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	**3**	0	**3**	**4**
04:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
04:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
05:00 PM	0	0	0	0	0	**2**	0	**2**	0	0	0	0	0	1	0	1	3
Total Volume	0	0	0	0	0	5	0	5	0	0	0	0	0	6	0	6	11
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.625	.000	.625	.000	.000	.000	.000	.000	.500	.000	.500	.688

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City of Perris
N/S: Patterson Avenue
E/W: Harley Knox Boulevard
Weather: Sunny

File Name : PERPAHKPM
Site Code : 00000001
Start Date : 1/17/2013
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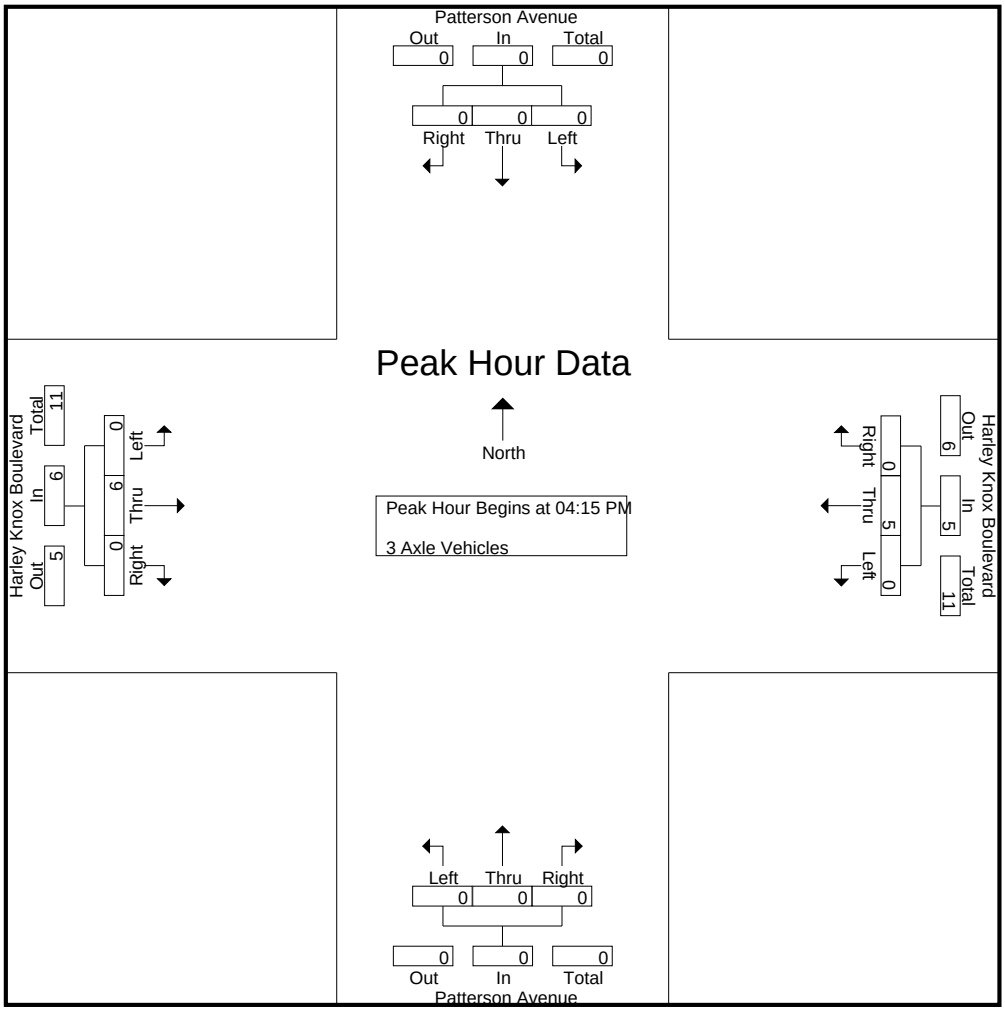

Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:15 PM				04:15 PM				04:15 PM				04:15 PM			
+0 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	**3**	0	**3**
+15 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1
+30 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1
+45 mins.	0	0	0	0	0	**2**	0	**2**	0	0	0	0	0	1	0	1
Total Volume	0	0	0	0	0	5	0	5	0	0	0	0	0	6	0	6
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0	
PHF	.000	.000	.000	.000	.000	.625	.000	.625	.000	.000	.000	.000	.000	.500	.000	.500

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City of Perris
N/S: Patterson Avenue
E/W: Harley Knox Boulevard
Weather: Sunny

File Name : PERPAHKPM
Site Code : 00000001
Start Date : 1/17/2013
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Groups Printed- 4+ Axle Trucks

	Patterson Avenue Southbound				Harley Knox Boulevard Westbound				Patterson Avenue Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	7	0	7	0	0	0	0	0	7	1	8	15
04:15 PM	0	0	0	0	0	3	0	3	0	0	0	0	0	5	0	5	8
04:30 PM	0	0	0	0	0	9	0	9	0	0	0	0	0	3	2	5	14
04:45 PM	0	0	0	0	0	7	0	7	0	0	0	0	0	10	0	10	17
Total	0	0	0	0	0	26	0	26	0	0	0	0	0	25	3	28	54
05:00 PM	0	0	0	0	0	5	0	5	0	0	0	0	0	5	1	6	11
05:15 PM	0	0	0	0	0	6	0	6	2	0	0	2	0	5	0	5	13
05:30 PM	0	0	0	0	0	7	0	7	0	0	0	0	0	8	0	8	15
05:45 PM	0	0	0	0	0	9	0	9	0	0	0	0	0	10	1	11	20
Total	0	0	0	0	0	27	0	27	2	0	0	2	0	28	2	30	59
Grand Total	0	0	0	0	0	53	0	53	2	0	0	2	0	53	5	58	113
Apprch %	0	0	0		0	100	0		100	0	0		0	91.4	8.6		
Total %	0	0	0	0	0	46.9	0	46.9	1.8	0	0	1.8	0	46.9	4.4	51.3	

	Patterson Avenue Southbound				Harley Knox Boulevard Westbound				Patterson Avenue Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	0	0	0	0	3	0	3	0	0	0	0	0	5	0	5	8
04:30 PM	0	0	0	0	0	**9**	0	**9**	0	0	0	0	0	3	**2**	5	14
04:45 PM	0	0	0	0	0	7	0	7	0	0	0	0	0	**10**	0	**10**	**17**
05:00 PM	0	0	0	0	0	5	0	5	0	0	0	0	0	5	1	6	11
Total Volume	0	0	0	0	0	24	0	24	0	0	0	0	0	23	3	26	50
% App. Total	0	0	0		0	100	0		0	0	0		0	88.5	11.5		
PHF	.000	.000	.000	.000	.000	.667	.000	.667	.000	.000	.000	.000	.000	.575	.375	.650	.735

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City of Perris
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File Name : PERPAHKPM
Site Code : 00000001
Start Date : 1/17/2013
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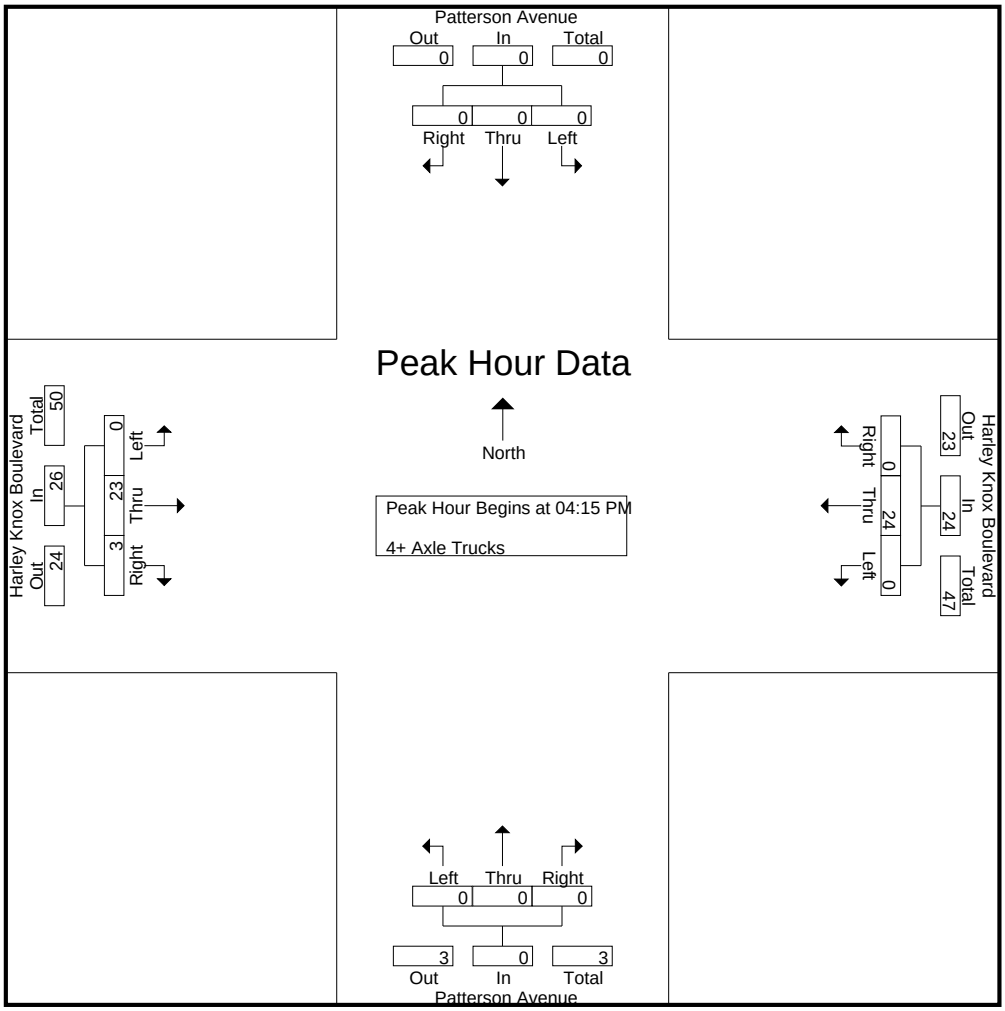

Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:15 PM				04:15 PM				04:15 PM				04:15 PM			
+0 mins.	0	0	0	0	0	3	0	3	0	0	0	0	0	5	0	5
+15 mins.	0	0	0	0	0	**9**	0	**9**	0	0	0	0	0	3	**2**	5
+30 mins.	0	0	0	0	0	7	0	7	0	0	0	0	0	**10**	0	**10**
+45 mins.	0	0	0	0	0	5	0	5	0	0	0	0	0	5	1	6
Total Volume	0	0	0	0	0	24	0	24	0	0	0	0	0	23	3	26
% App. Total	0	0	0		0	100	0		0	0	0		0	88.5	11.5	
PHF	.000	.000	.000	.000	.000	.667	.000	.667	.000	.000	.000	.000	.000	.575	.375	.650

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City of Moreno Valley
N/S: Heacock Street
E/W: Nandina Avenue
Weather: Sunny

File Name : MRVHENAAM
Site Code : 05113389
Start Date : 10/1/2013
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Heacock Street Southbound			Nandina Avenue Westbound			Heacock Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	15	0	15	0	19	19	0	0	0	34
07:15 AM	15	0	15	0	14	14	0	0	0	29
07:30 AM	17	1	18	0	14	14	0	0	0	32
07:45 AM	15	0	15	1	17	18	1	0	1	34
Total	62	1	63	1	64	65	1	0	1	129
08:00 AM	10	1	11	0	5	5	0	1	1	17
08:15 AM	7	0	7	0	15	15	0	0	0	22
08:30 AM	7	1	8	0	4	4	1	0	1	13
08:45 AM	6	0	6	0	4	4	0	0	0	10
Total	30	2	32	0	28	28	1	1	2	62
Grand Total	92	3	95	1	92	93	2	1	3	191
Apprch %	96.8	3.2		1.1	98.9		66.7	33.3		
Total %	48.2	1.6	49.7	0.5	48.2	48.7	1	0.5	1.6	
Passenger Vehicles	82	3	85	0	86	86	2	1	3	174
% Passenger Vehicles	89.1	100	89.5	0	93.5	92.5	100	100	100	91.1
Large 2 Axle Vehicles	3	0	3	0	4	4	0	0	0	7
% Large 2 Axle Vehicles	3.3	0	3.2	0	4.3	4.3	0	0	0	3.7
3 Axle Vehicles	5	0	5	1	2	3	0	0	0	8
% 3 Axle Vehicles	5.4	0	5.3	100	2.2	3.2	0	0	0	4.2
4+ Axle Trucks	2	0	2	0	0	0	0	0	0	2
% 4+ Axle Trucks	2.2	0	2.1	0	0	0	0	0	0	1

	Heacock Street Southbound			Nandina Avenue Westbound			Heacock Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	15	0	15	0	**19**	**19**	0	0	0	**34**
07:15 AM	15	0	15	0	14	14	0	0	0	29
07:30 AM	**17**	**1**	**18**	0	14	14	0	0	0	32
07:45 AM	15	0	15	**1**	17	18	**1**	0	**1**	34
Total Volume	62	1	63	1	64	65	1	0	1	129
% App. Total	98.4	1.6		1.5	98.5		100	0		
PHF	.912	.250	.875	.250	.842	.855	.250	.000	.250	.949

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Weather: Sunny

File Name : MRVHENAAM
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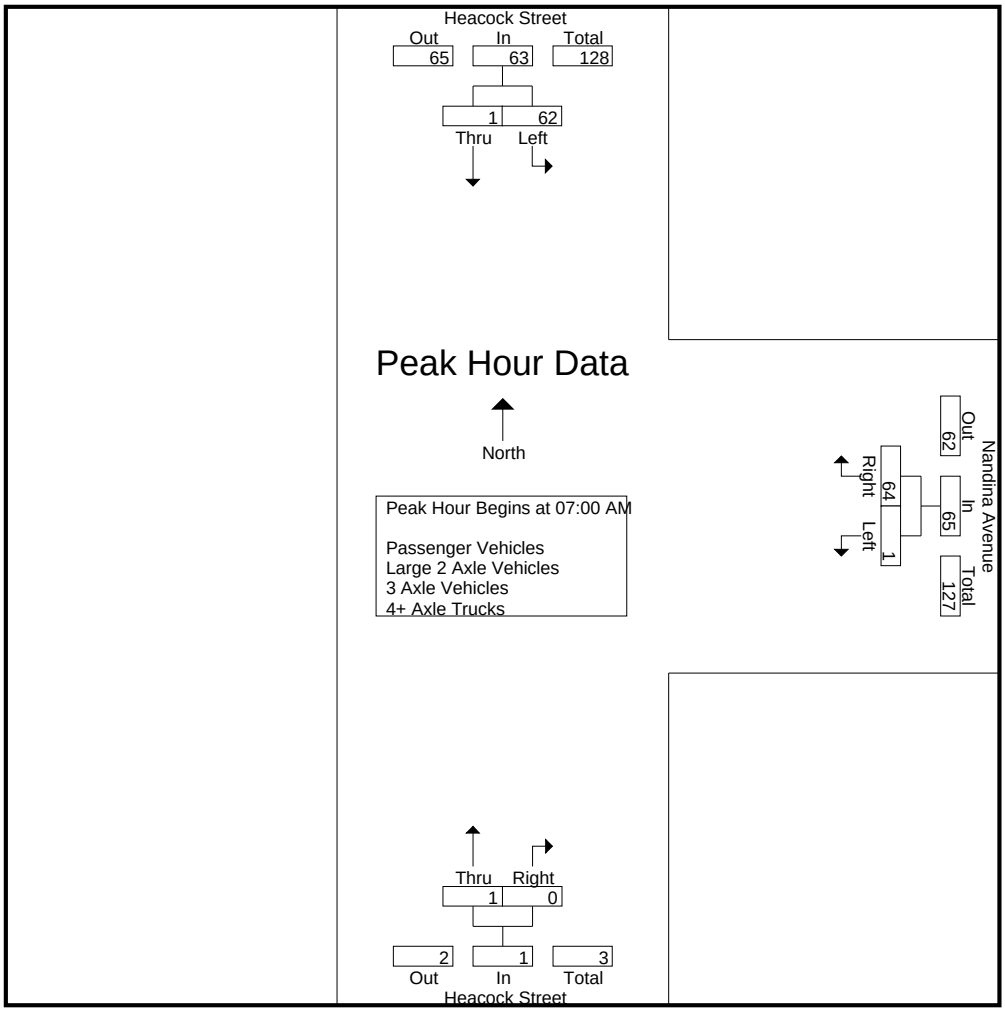

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:45 AM		
+0 mins.	15	0	15	0	**19**	**19**	**1**	0	**1**
+15 mins.	15	0	15	0	14	14	0	**1**	1
+30 mins.	**17**	**1**	**18**	0	14	14	0	0	0
+45 mins.	15	0	15	**1**	17	18	1	0	1
Total Volume	62	1	63	1	64	65	2	1	3
% App. Total	98.4	1.6		1.5	98.5		66.7	33.3	
PHF	.912	.250	.875	.250	.842	.855	.500	.250	.750

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Groups Printed- Large 2 Axle Vehicles

	Heacock Street Southbound			Nandina Avenue Westbound			Heacock Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	1	1	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	1	1	0	0	0	1
07:45 AM	0	0	0	0	2	2	0	0	0	2
Total	0	0	0	0	4	4	0	0	0	4
08:00 AM	1	0	1	0	0	0	0	0	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	2	0	2	0	0	0	0	0	0	2
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	3	0	3	0	0	0	0	0	0	3
Grand Total	3	0	3	0	4	4	0	0	0	7
Apprch %	100	0		0	100		0	0		
Total %	42.9	0	42.9	0	57.1	57.1	0	0	0	

	Heacock Street Southbound			Nandina Avenue Westbound			Heacock Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	0	1	1	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	1	1	0	0	0	1
07:45 AM	0	0	0	0	**2**	**2**	0	0	0	**2**
Total Volume	0	0	0	0	4	4	0	0	0	4
% App. Total	0	0		0	100		0	0		
PHF	.000	.000	.000	.000	.500	.500	.000	.000	.000	.500

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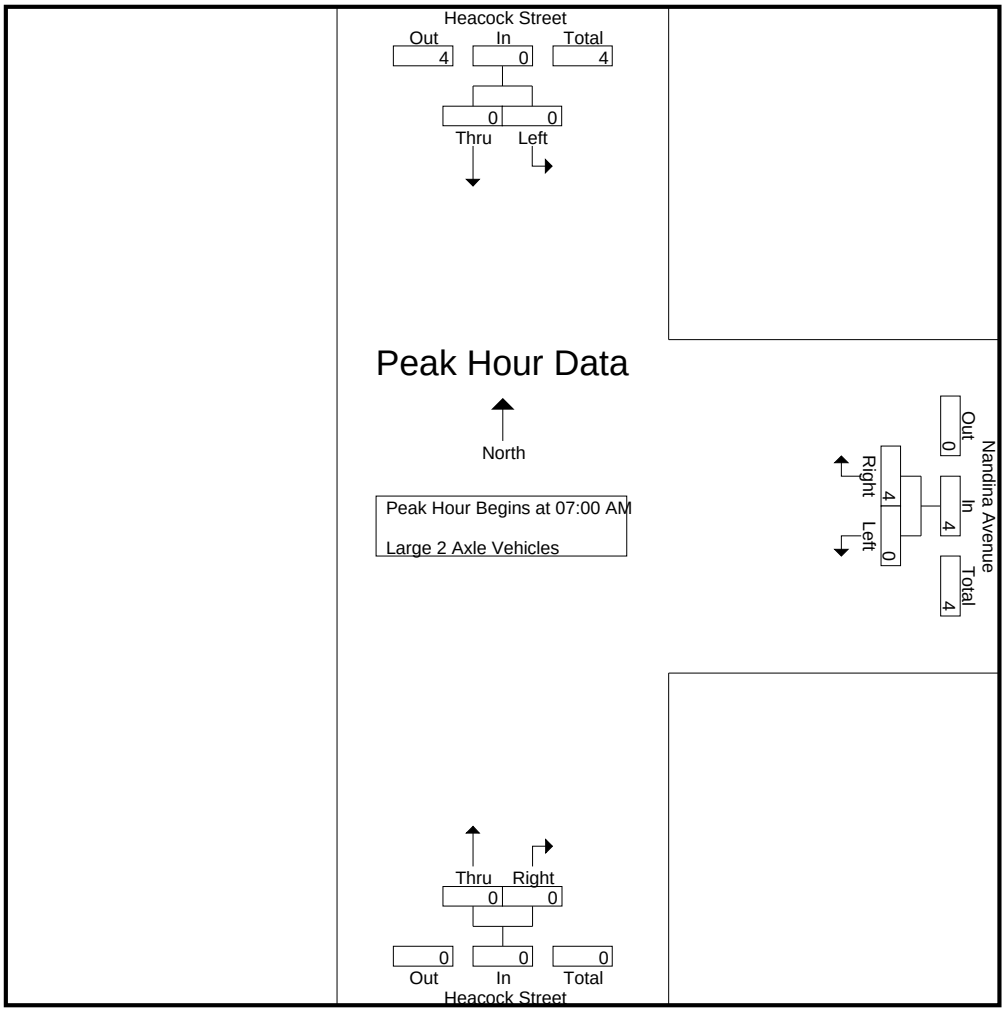

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	0	0	0	1	1	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	1	1	0	0	0
+45 mins.	0	0	0	0	**2**	**2**	0	0	0
Total Volume	0	0	0	0	4	4	0	0	0
% App. Total	0	0		0	100		0	0	
PHF	.000	.000	.000	.000	.500	.500	.000	.000	.000

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Groups Printed- 3 Axle Vehicles

	Heacock Street Southbound			Nandina Avenue Westbound			Heacock Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	1	0	1	0	0	0	0	0	0	1
07:30 AM	2	0	2	0	0	0	0	0	0	2
07:45 AM	0	0	0	1	1	2	0	0	0	2
Total	3	0	3	1	1	2	0	0	0	5
08:00 AM	1	0	1	0	0	0	0	0	0	1
08:15 AM	1	0	1	0	1	1	0	0	0	2
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	2	0	2	0	1	1	0	0	0	3
Grand Total	5	0	5	1	2	3	0	0	0	8
Apprch %	100	0		33.3	66.7		0	0		
Total %	62.5	0	62.5	12.5	25	37.5	0	0	0	

	Heacock Street Southbound			Nandina Avenue Westbound			Heacock Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	1	0	1	0	0	0	0	0	0	1
07:30 AM	**2**	0	**2**	0	0	0	0	0	0	**2**
07:45 AM	0	0	0	**1**	**1**	**2**	0	0	0	2
Total Volume	3	0	3	1	1	2	0	0	0	5
% App. Total	100	0		50	50		0	0		
PHF	.375	.000	.375	.250	.250	.250	.000	.000	.000	.625

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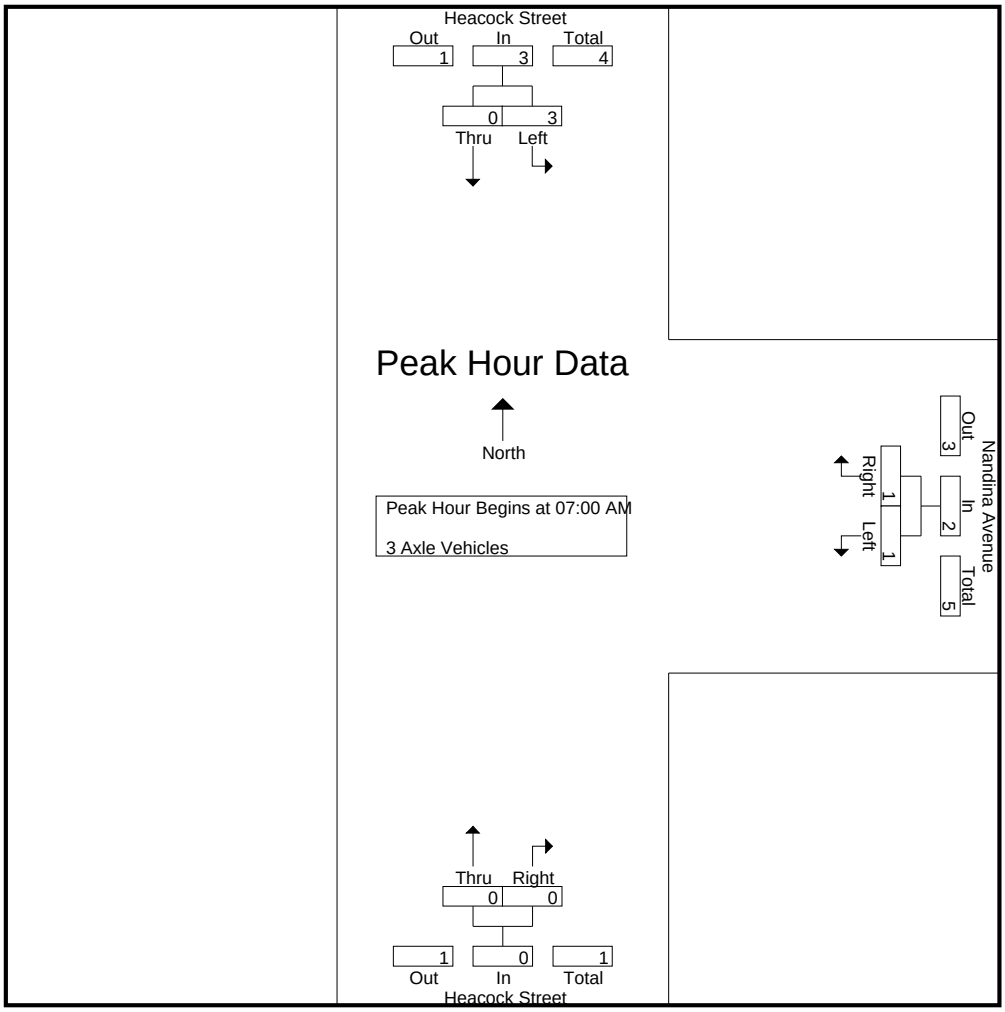

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	1	0	1	0	0	0	0	0	0
+30 mins.	**2**	0	**2**	0	0	0	0	0	0
+45 mins.	0	0	0	**1**	**1**	**2**	0	0	0
Total Volume	3	0	3	1	1	2	0	0	0
% App. Total	100	0		50	50		0	0	
PHF	.375	.000	.375	.250	.250	.250	.000	.000	.000

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Groups Printed- 4+ Axle Trucks

	Heacock Street Southbound			Nandina Avenue Westbound			Heacock Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	1	0	1	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	1	0	1	0	0	0	0	0	0	1
Total	2	0	2	0	0	0	0	0	0	2
Grand Total	2	0	2	0	0	0	0	0	0	2
Apprch %	100	0		0	0		0	0		
Total %	100	0	100	0	0	0	0	0	0	

	Heacock Street Southbound			Nandina Avenue Westbound			Heacock Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

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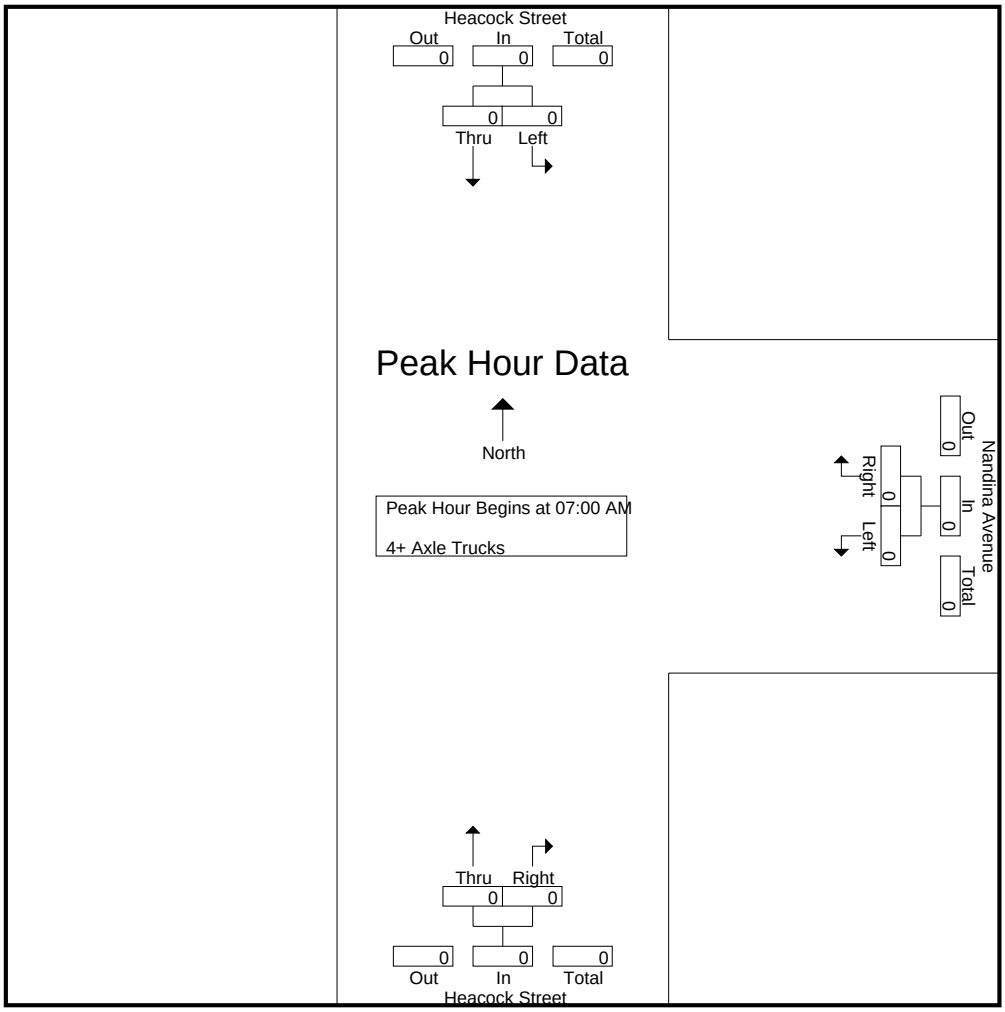

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000

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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Heacock Street Southbound			Nandina Avenue Westbound			Heacock Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	16	1	17	0	15	15	1	0	1	33
04:15 PM	22	3	25	0	4	4	1	1	2	31
04:30 PM	28	1	29	0	12	12	1	1	2	43
04:45 PM	27	1	28	0	13	13	0	1	1	42
Total	93	6	99	0	44	44	3	3	6	149
05:00 PM	17	0	17	0	11	11	0	0	0	28
05:15 PM	14	1	15	0	9	9	0	1	1	25
05:30 PM	23	3	26	0	7	7	0	3	3	36
05:45 PM	14	0	14	0	5	5	0	0	0	19
Total	68	4	72	0	32	32	0	4	4	108
Grand Total	161	10	171	0	76	76	3	7	10	257
Apprch %	94.2	5.8		0	100		30	70		
Total %	62.6	3.9	66.5	0	29.6	29.6	1.2	2.7	3.9	
Passenger Vehicles	146	10	156	0	72	72	3	7	10	238
% Passenger Vehicles	90.7	100	91.2	0	94.7	94.7	100	100	100	92.6
Large 2 Axle Vehicles	2	0	2	0	1	1	0	0	0	3
% Large 2 Axle Vehicles	1.2	0	1.2	0	1.3	1.3	0	0	0	1.2
3 Axle Vehicles	11	0	11	0	1	1	0	0	0	12
% 3 Axle Vehicles	6.8	0	6.4	0	1.3	1.3	0	0	0	4.7
4+ Axle Trucks	2	0	2	0	2	2	0	0	0	4
% 4+ Axle Trucks	1.2	0	1.2	0	2.6	2.6	0	0	0	1.6

	Heacock Street Southbound			Nandina Avenue Westbound			Heacock Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	16	1	17	0	**15**	**15**	**1**	0	1	33
04:15 PM	22	**3**	25	0	4	4	1	**1**	**2**	31
04:30 PM	**28**	1	**29**	0	12	12	1	1	2	**43**
04:45 PM	27	1	28	0	13	13	0	1	1	42
Total Volume	93	6	99	0	44	44	3	3	6	149
% App. Total	93.9	6.1		0	100		50	50		
PHF	.830	.500	.853	.000	.733	.733	.750	.750	.750	.866

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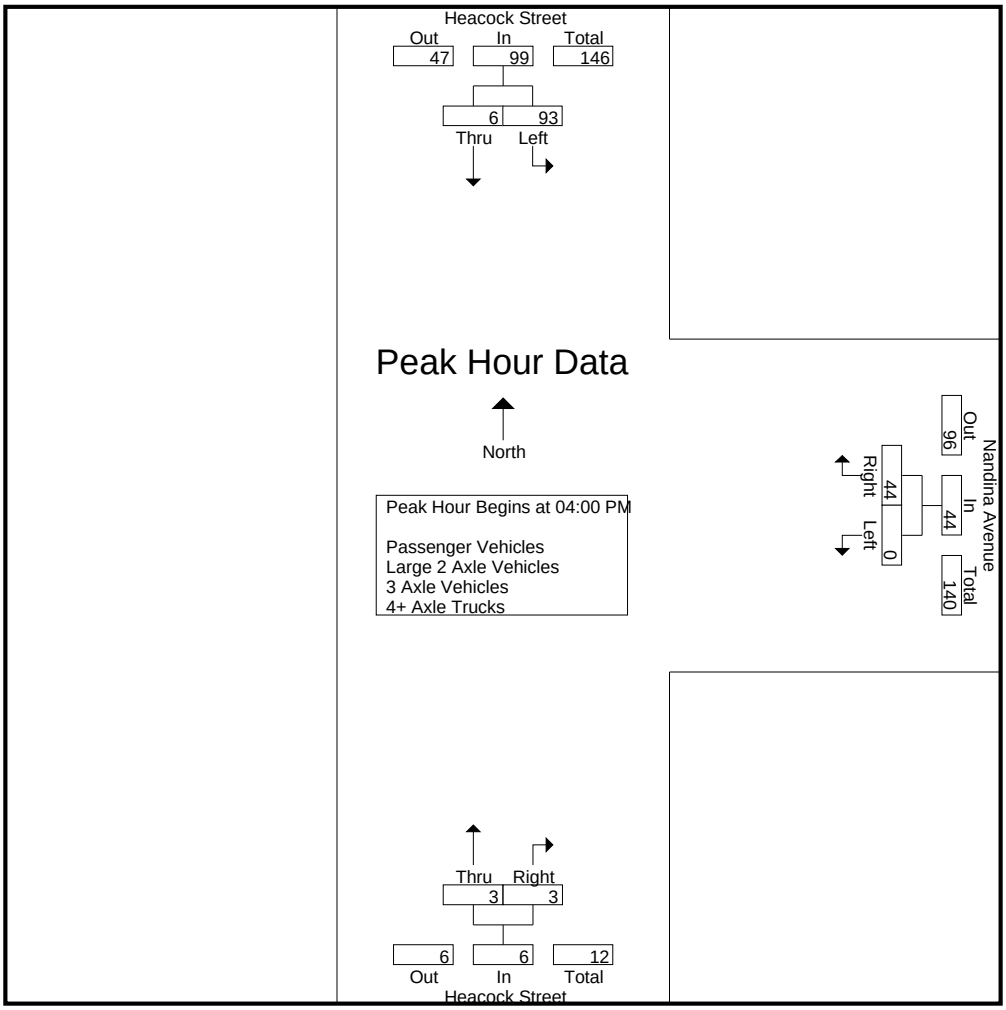

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM			04:30 PM			04:00 PM		
+0 mins.	16	1	17	0	12	12	**1**	0	1
+15 mins.	22	**3**	25	0	**13**	**13**	1	**1**	**2**
+30 mins.	**28**	1	**29**	0	11	11	1	1	2
+45 mins.	27	1	28	0	9	9	0	1	1
Total Volume	93	6	99	0	45	45	3	3	6
% App. Total	93.9	6.1		0	100		50	50	
PHF	.830	.500	.853	.000	.865	.865	.750	.750	.750

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Groups Printed- Large 2 Axle Vehicles

	Heacock Street Southbound			Nandina Avenue Westbound			Heacock Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	1	1	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	2	0	2	0	0	0	0	0	0	2
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	2	0	2	0	1	1	0	0	0	3
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	2	0	2	0	1	1	0	0	0	3
Apprch %	100	0		0	100		0	0		
Total %	66.7	0	66.7	0	33.3	33.3	0	0	0	

	Heacock Street Southbound			Nandina Avenue Westbound			Heacock Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	**1**	**1**	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	**2**	0	**2**	0	0	0	0	0	0	**2**
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	2	0	2	0	1	1	0	0	0	3
% App. Total	100	0		0	100		0	0		
PHF	.250	.000	.250	.000	.250	.250	.000	.000	.000	.375

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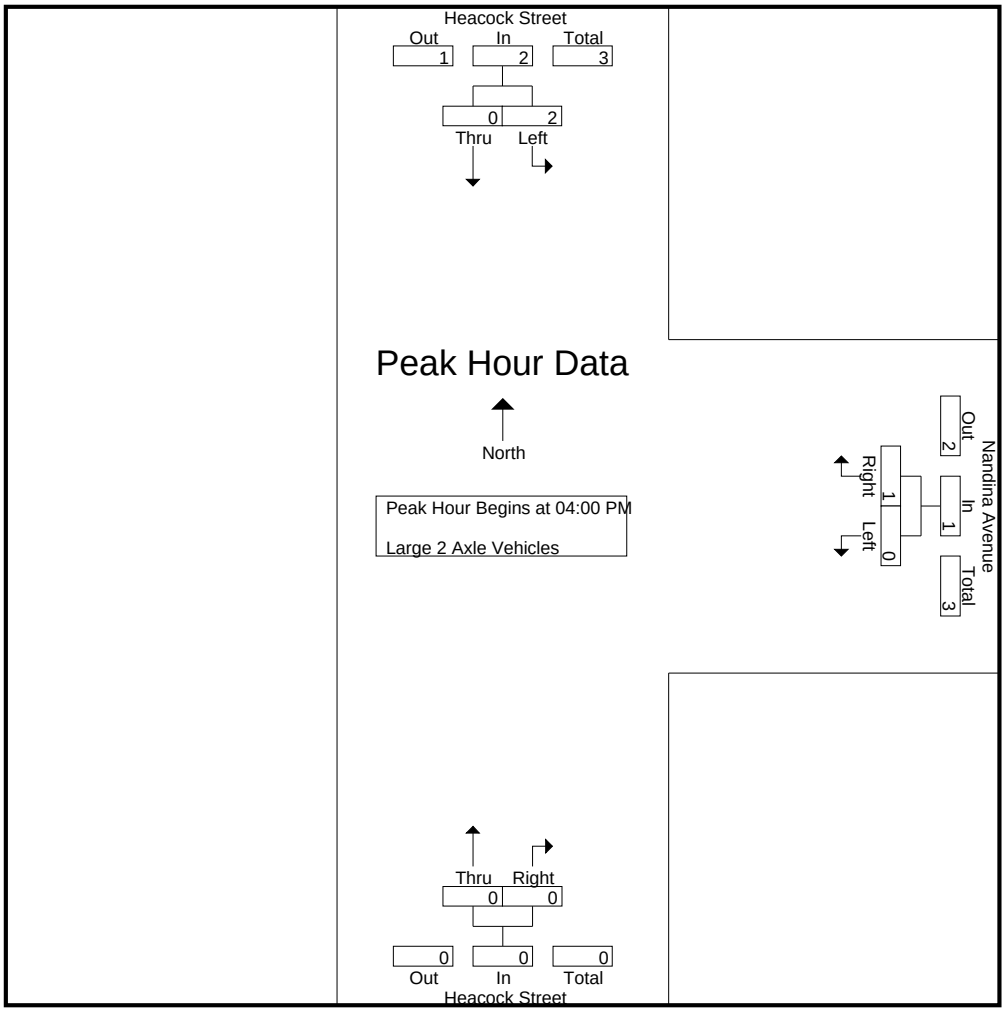

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	0	0	0	0	**1**	**1**	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	**2**	0	**2**	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	2	0	2	0	1	1	0	0	0
% App. Total	100	0		0	100		0	0	
PHF	.250	.000	.250	.000	.250	.250	.000	.000	.000

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Groups Printed- 3 Axle Vehicles

	Heacock Street Southbound			Nandina Avenue Westbound			Heacock Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	1	0	1	0	0	0	0	0	0	1
04:15 PM	4	0	4	0	0	0	0	0	0	4
04:30 PM	2	0	2	0	0	0	0	0	0	2
04:45 PM	1	0	1	0	0	0	0	0	0	1
Total	8	0	8	0	0	0	0	0	0	8
05:00 PM	1	0	1	0	1	1	0	0	0	2
05:15 PM	1	0	1	0	0	0	0	0	0	1
05:30 PM	1	0	1	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	3	0	3	0	1	1	0	0	0	4
Grand Total	11	0	11	0	1	1	0	0	0	12
Apprch %	100	0		0	100		0	0		
Total %	91.7	0	91.7	0	8.3	8.3	0	0	0	

	Heacock Street Southbound			Nandina Avenue Westbound			Heacock Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	1	0	1	0	0	0	0	0	0	1
04:15 PM	**4**	0	**4**	0	0	0	0	0	0	**4**
04:30 PM	2	0	2	0	0	0	0	0	0	2
04:45 PM	1	0	1	0	0	0	0	0	0	1
Total Volume	8	0	8	0	0	0	0	0	0	8
% App. Total	100	0		0	0		0	0		
PHF	.500	.000	.500	.000	.000	.000	.000	.000	.000	.500

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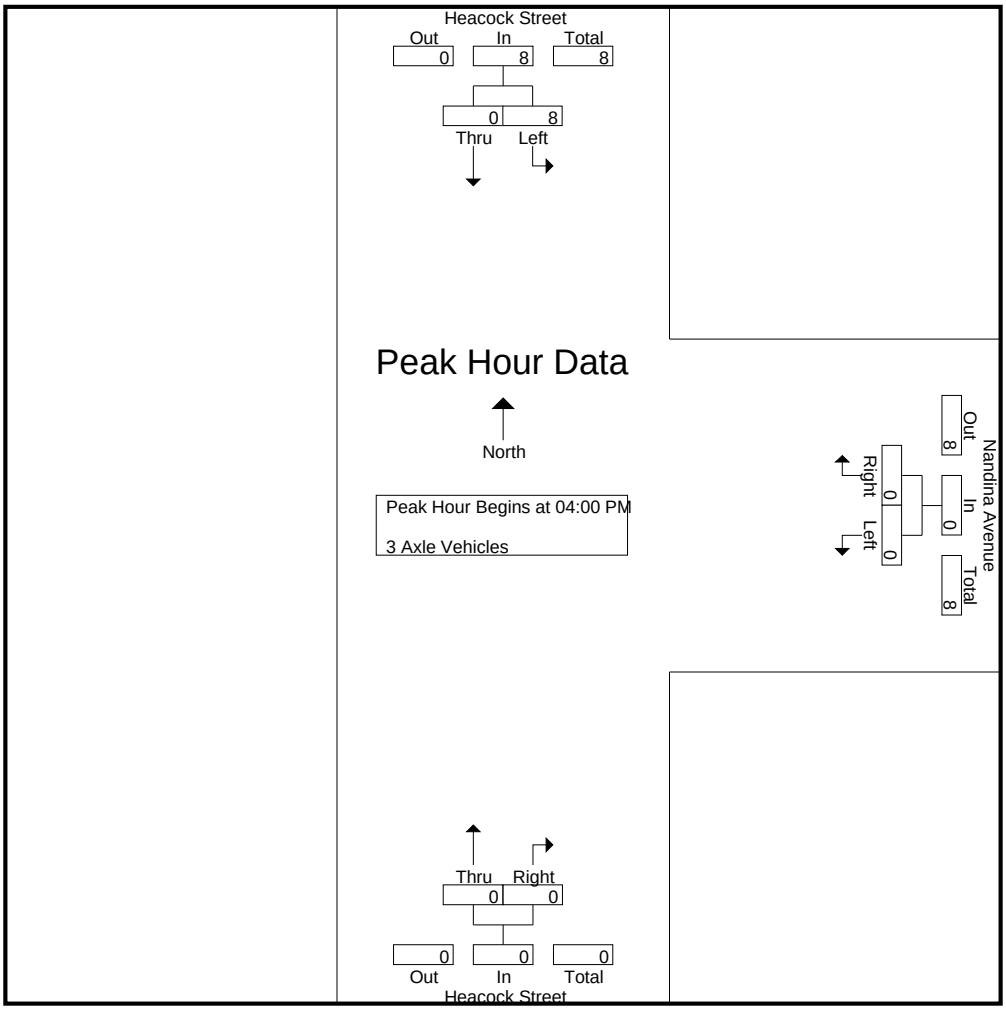

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	1	0	1	0	0	0	0	0	0
+15 mins.	**4**	0	**4**	0	0	0	0	0	0
+30 mins.	2	0	2	0	0	0	0	0	0
+45 mins.	1	0	1	0	0	0	0	0	0
Total Volume	8	0	8	0	0	0	0	0	0
% App. Total	100	0		0	0		0	0	
PHF	.500	.000	.500	.000	.000	.000	.000	.000	.000

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City of Moreno Valley
N/S: Heacock Street
E/W: Nandina Avenue
Weather: Sunny

File Name : MRVHENAPM
Site Code : 05113389
Start Date : 10/1/2013
Page No : 1

Groups Printed- 4+ Axle Trucks

	Heacock Street Southbound			Nandina Avenue Westbound			Heacock Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	1	0	1	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	1	1	0	0	0	1
Total	1	0	1	0	1	1	0	0	0	2
05:00 PM	1	0	1	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	1	1	0	0	0	1
Total	1	0	1	0	1	1	0	0	0	2
Grand Total	2	0	2	0	2	2	0	0	0	4
Apprch %	100	0		0	100		0	0		
Total %	50	0	50	0	50	50	0	0	0	

	Heacock Street Southbound			Nandina Avenue Westbound			Heacock Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	**1**	0	**1**	0	0	0	0	0	0	**1**
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	**1**	**1**	0	0	0	1
Total Volume	1	0	1	0	1	1	0	0	0	2
% App. Total	100	0		0	100		0	0		
PHF	.250	.000	.250	.000	.250	.250	.000	.000	.000	.500

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City of Moreno Valley
N/S: Heacock Street
E/W: Nandina Avenue
Weather: Sunny

File Name : MRVHENAPM
Site Code : 05113389
Start Date : 10/1/2013
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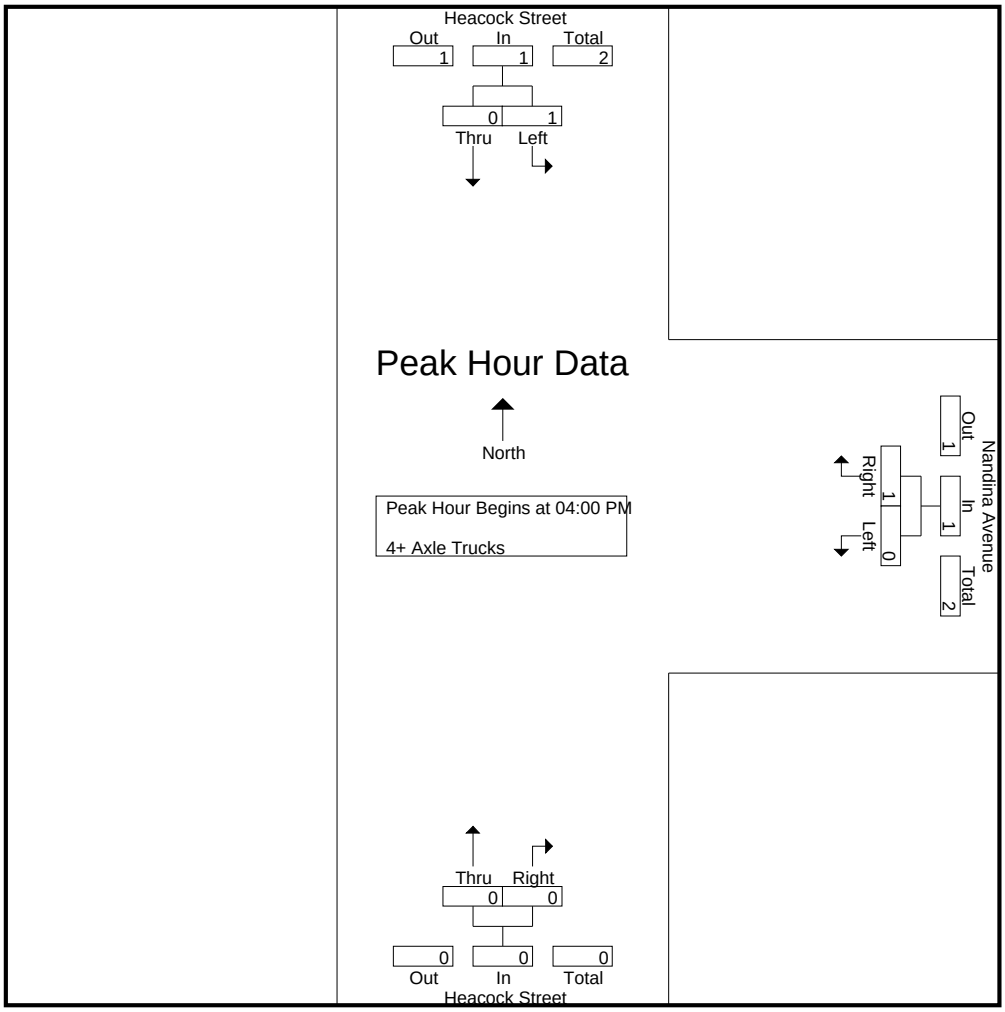

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	**1**	0	**1**	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	**1**	**1**	0	0	0
Total Volume	1	0	1	0	1	1	0	0	0
% App. Total	100	0		0	100		0	0	
PHF	.250	.000	.250	.000	.250	.250	.000	.000	.000

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City of Moreno Valley
N/S: Heacok Street
E/W: Harley Knox Boulevard
Weather: Sunny

File Name : MRVHEHKAM
Site Code : 00000097
Start Date : 5/16/2013
Page No : 1

Groups Printed- Total Volume

	Heacok Street Southbound				Harley Knox Boulevard Westbound				Webster Avenue Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	1	1	2	0	122	0	122	0	2	0	2	0	99	0	99	225
07:15 AM	0	0	0	0	0	99	0	99	0	0	0	0	0	93	0	93	192
07:30 AM	0	0	0	0	0	67	0	67	1	0	1	2	0	91	1	92	161
07:45 AM	0	0	0	0	0	69	0	69	0	0	0	0	0	75	0	75	144
Total	0	1	1	2	0	357	0	357	1	2	1	4	0	358	1	359	722
08:00 AM	0	0	0	0	0	59	0	59	2	0	0	2	0	59	0	59	120
08:15 AM	0	0	0	0	0	56	0	56	0	0	1	1	0	74	1	75	132
08:30 AM	0	0	0	0	0	54	0	54	1	0	0	1	0	69	0	69	124
08:45 AM	0	0	0	0	0	32	0	32	0	0	0	0	0	50	0	50	82
Total	0	0	0	0	0	201	0	201	3	0	1	4	0	252	1	253	458
Grand Total	0	1	1	2	0	558	0	558	4	2	2	8	0	610	2	612	1180
Apprch %	0	50	50		0	100	0		50	25	25		0	99.7	0.3		
Total %	0	0.1	0.1	0.2	0	47.3	0	47.3	0.3	0.2	0.2	0.7	0	51.7	0.2	51.9	

	Heacok Street Southbound				Harley Knox Boulevard Westbound				Webster Avenue Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	**1**	**1**	**2**	0	**122**	0	**122**	0	**2**	0	**2**	0	**99**	0	**99**	**225**
07:15 AM	0	0	0	0	0	99	0	99	0	0	0	0	0	93	0	93	192
07:30 AM	0	0	0	0	0	67	0	67	**1**	0	**1**	2	0	91	**1**	92	161
07:45 AM	0	0	0	0	0	69	0	69	0	0	0	0	0	75	0	75	144
Total Volume	0	1	1	2	0	357	0	357	1	2	1	4	0	358	1	359	722
% App. Total	0	50	50		0	100	0		25	50	25		0	99.7	0.3		
PHF	.000	.250	.250	.250	.000	.732	.000	.732	.250	.250	.250	.500	.000	.904	.250	.907	.802

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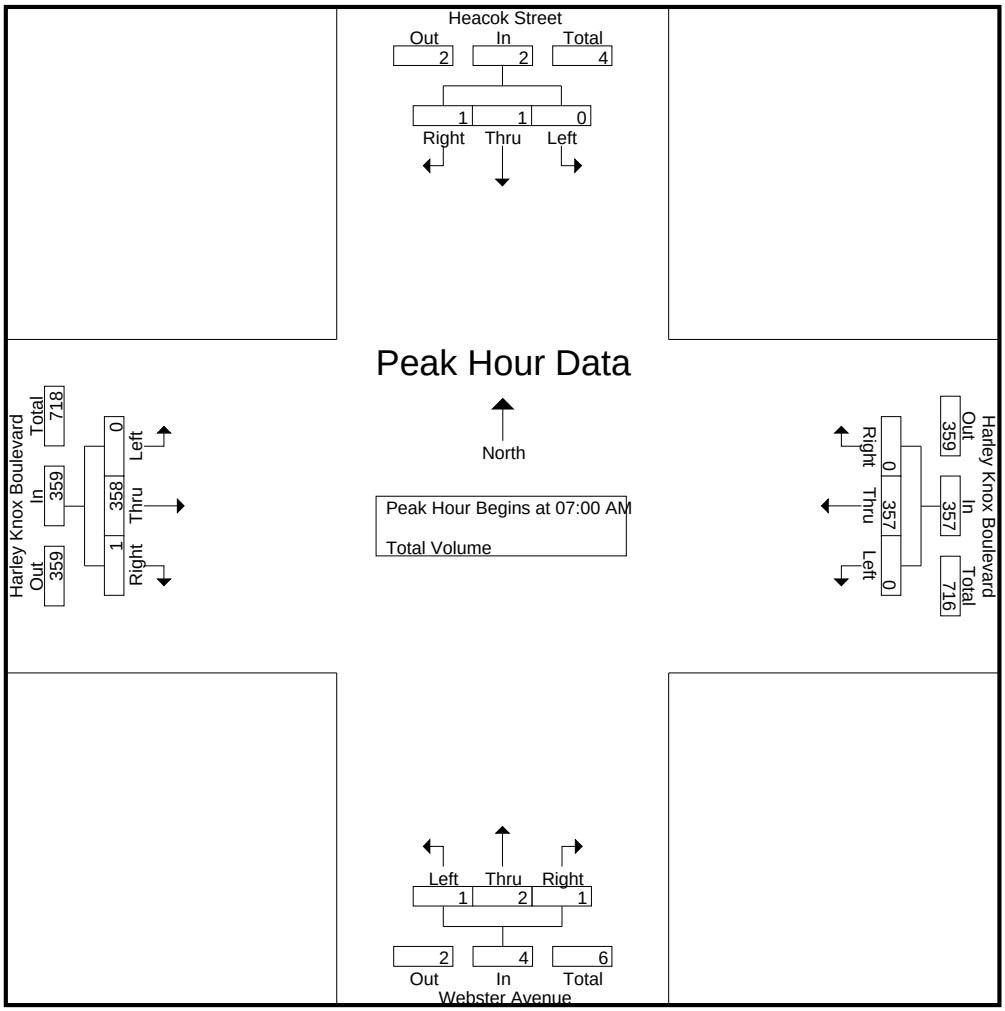
City of Moreno Valley
N/S: Heacok Street
E/W: Harley Knox Boulevard
Weather: Sunny

File Name : MRVHEHKAM
Site Code : 00000097
Start Date : 5/16/2013
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:30 AM				07:00 AM			
+0 mins.	0	**1**	**1**	**2**	0	**122**	0	**122**	1	0	**1**	**2**	0	**99**	0	**99**
+15 mins.	0	0	0	0	0	99	0	99	0	0	0	0	0	93	0	93
+30 mins.	0	0	0	0	0	67	0	67	**2**	0	0	2	0	91	**1**	92
+45 mins.	0	0	0	0	0	69	0	69	0	0	1	1	0	75	0	75
Total Volume	0	1	1	2	0	357	0	357	3	0	2	5	0	358	1	359
% App. Total	0	50	50		0	100	0		60	0	40		0	99.7	0.3	
PHF	.000	.250	.250	.250	.000	.732	.000	.732	.375	.000	.500	.625	.000	.904	.250	.907

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City of Moreno Valley
N/S: Heacok Street
E/W: Harley Knox Boulevard
Weather: Sunny

File Name : MRVHEHKPM
Site Code : 00000097
Start Date : 5/16/2013
Page No : 1

Groups Printed- Total Volume

	Heacok Street Southbound				Harley Knox Boulevard Westbound				Webster Avenue Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	2	94	0	96	1	0	0	1	0	99	0	99	196
04:15 PM	0	0	0	0	0	90	0	90	0	0	1	1	0	122	0	122	213
04:30 PM	0	0	0	0	0	80	0	80	0	0	0	0	0	119	0	119	199
04:45 PM	0	1	0	1	0	74	0	74	1	0	0	1	1	94	0	95	171
Total	0	1	0	1	2	338	0	340	2	0	1	3	1	434	0	435	779
05:00 PM	0	0	0	0	0	78	0	78	0	0	0	0	0	114	0	114	192
05:15 PM	0	0	0	0	0	54	0	54	0	1	0	1	0	107	1	108	163
05:30 PM	0	0	1	1	1	54	0	55	0	0	0	0	0	100	0	100	156
05:45 PM	0	0	0	0	0	63	0	63	0	0	1	1	0	111	0	111	175
Total	0	0	1	1	1	249	0	250	0	1	1	2	0	432	1	433	686
Grand Total	0	1	1	2	3	587	0	590	2	1	2	5	1	866	1	868	1465
Apprch %	0	50	50		0.5	99.5	0		40	20	40		0.1	99.8	0.1		
Total %	0	0.1	0.1	0.1	0.2	40.1	0	40.3	0.1	0.1	0.1	0.3	0.1	59.1	0.1	59.2	

	Heacok Street Southbound				Harley Knox Boulevard Westbound				Webster Avenue Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	**2**	**94**	0	**96**	**1**	0	0	**1**	0	99	0	99	196
04:15 PM	0	0	0	0	0	90	0	90	0	0	**1**	1	0	**122**	0	**122**	**213**
04:30 PM	0	0	0	0	0	80	0	80	0	0	0	0	0	119	0	119	199
04:45 PM	0	**1**	0	**1**	0	74	0	74	1	0	0	1	**1**	94	0	95	171
Total Volume	0	1	0	1	2	338	0	340	2	0	1	3	1	434	0	435	779
% App. Total	0	100	0		0.6	99.4	0		66.7	0	33.3		0.2	99.8	0		
PHF	.000	.250	.000	.250	.250	.899	.000	.885	.500	.000	.250	.750	.250	.889	.000	.891	.914

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City of Moreno Valley
N/S: Heacok Street
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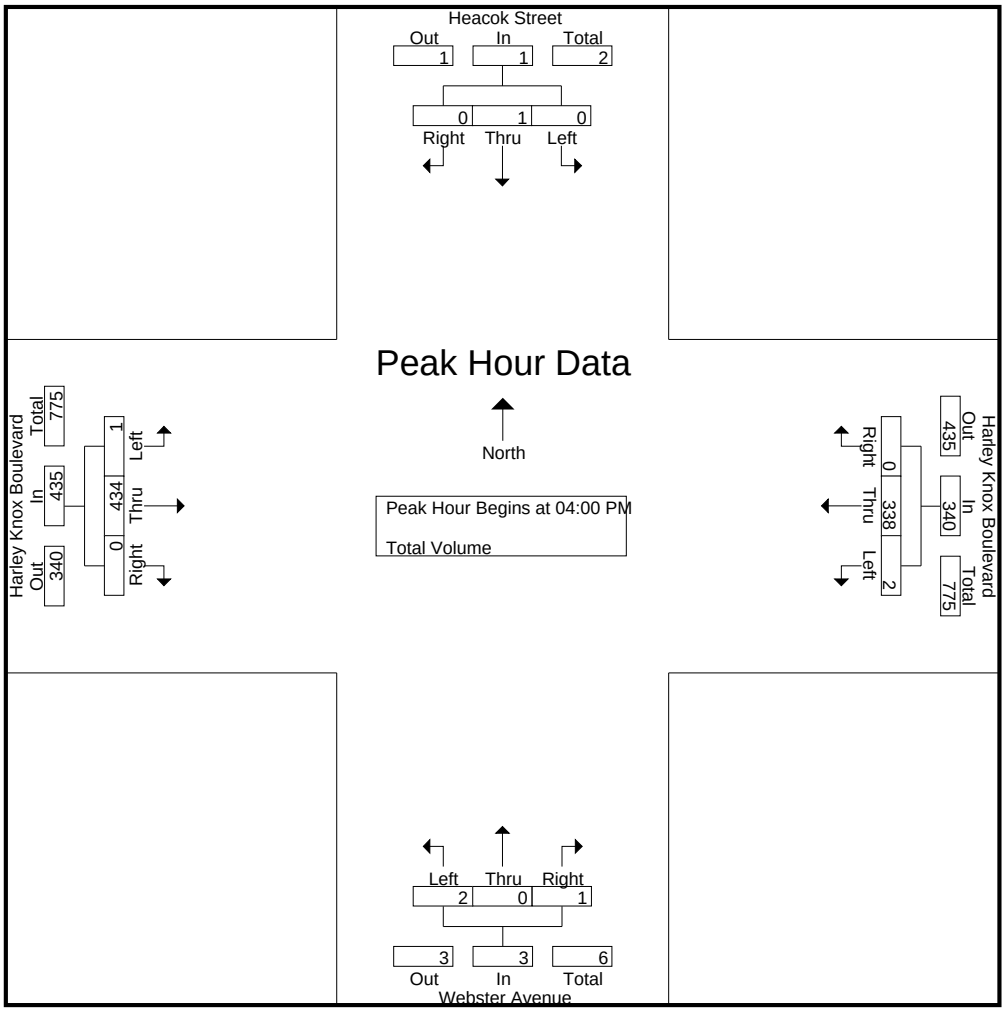
Weather: Sunny

File Name : MRVHEHKPM
Site Code : 00000097
Start Date : 5/16/2013
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:45 PM				04:00 PM				04:00 PM				04:15 PM			
+0 mins.	0	**1**	0	**1**	**2**	**94**	0	**96**	**1**	0	0	**1**	0	**122**	0	**122**
+15 mins.	0	0	0	0	0	90	0	90	0	0	**1**	1	0	119	0	119
+30 mins.	0	0	0	0	0	80	0	80	0	0	0	0	**1**	94	0	95
+45 mins.	0	0	**1**	1	0	74	0	74	1	0	0	1	0	114	0	114
Total Volume	0	1	1	2	2	338	0	340	2	0	1	3	1	449	0	450
% App. Total	0	50	50		0.6	99.4	0		66.7	0	33.3		0.2	99.8	0	
PHF	.000	.250	.250	.500	.250	.899	.000	.885	.500	.000	.250	.750	.250	.920	.000	.922

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City of Moreno Valley
N/S: Indian Street
E/W: Nandina Avenue
Weather: Sunny

File Name : MRVINNAAM
Site Code : 00000155
Start Date : 5/16/2013
Page No : 1

Groups Printed- Total Volume

	Indian Street Southbound				Nandina Avenue Westbound				Indian Street Northbound				Nandina Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	22	1	23	20	5	1	26	18	23	6	47	0	1	14	15	111
07:15 AM	0	26	0	26	17	2	1	20	13	18	14	45	0	1	10	11	102
07:30 AM	0	19	0	19	11	6	0	17	14	34	6	54	0	2	10	12	102
07:45 AM	0	10	1	11	7	7	0	14	13	33	8	54	1	4	10	15	94
Total	0	77	2	79	55	20	2	77	58	108	34	200	1	8	44	53	409
08:00 AM	0	20	0	20	6	6	0	12	11	20	16	47	0	0	5	5	84
08:15 AM	0	11	0	11	8	4	0	12	5	8	3	16	0	2	5	7	46
08:30 AM	0	12	0	12	8	2	0	10	4	12	3	19	0	5	11	16	57
08:45 AM	0	12	0	12	14	5	2	21	6	9	9	24	0	2	10	12	69
Total	0	55	0	55	36	17	2	55	26	49	31	106	0	9	31	40	256
Grand Total	0	132	2	134	91	37	4	132	84	157	65	306	1	17	75	93	665
Apprch %	0	98.5	1.5		68.9	28	3		27.5	51.3	21.2		1.1	18.3	80.6		
Total %	0	19.8	0.3	20.2	13.7	5.6	0.6	19.8	12.6	23.6	9.8	46	0.2	2.6	11.3	14	

	Indian Street Southbound				Nandina Avenue Westbound				Indian Street Northbound				Nandina Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	22	**1**	23	**20**	5	**1**	**26**	**18**	23	6	47	0	1	**14**	**15**	**111**
07:15 AM	0	**26**	0	**26**	17	2	1	20	13	18	**14**	45	0	1	10	11	102
07:30 AM	0	19	0	19	11	6	0	17	14	**34**	6	**54**	0	2	10	12	102
07:45 AM	0	10	1	11	7	**7**	0	14	13	33	8	54	**1**	**4**	10	15	94
Total Volume	0	77	2	79	55	20	2	77	58	108	34	200	1	8	44	53	409
% App. Total	0	97.5	2.5		71.4	26	2.6		29	54	17		1.9	15.1	83		
PHF	.000	.740	.500	.760	.688	.714	.500	.740	.806	.794	.607	.926	.250	.500	.786	.883	.921

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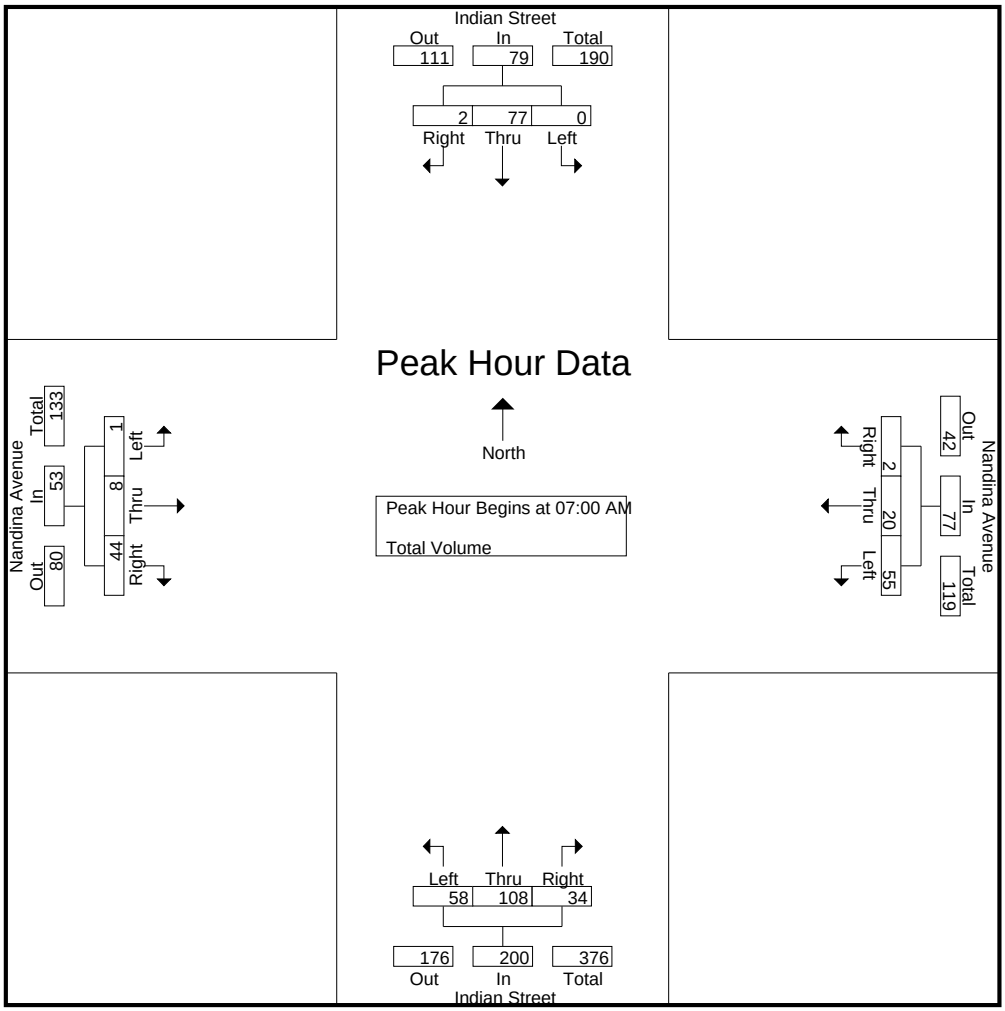
City of Moreno Valley
N/S: Indian Street
E/W: Nandina Avenue
Weather: Sunny

File Name : MRVINNAAM
Site Code : 00000155
Start Date : 5/16/2013
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	22	**1**	23	**20**	5	**1**	**26**	**18**	23	6	47	0	1	**14**	**15**
+15 mins.	0	**26**	0	**26**	17	2	1	20	13	18	**14**	45	0	1	10	11
+30 mins.	0	19	0	19	11	6	0	17	14	**34**	6	**54**	0	2	10	12
+45 mins.	0	10	1	11	7	**7**	0	14	13	33	8	54	**1**	**4**	10	15
Total Volume	0	77	2	79	55	20	2	77	58	108	34	200	1	8	44	53
% App. Total	0	97.5	2.5		71.4	26	2.6		29	54	17		1.9	15.1	83	
PHF	.000	.740	.500	.760	.688	.714	.500	.740	.806	.794	.607	.926	.250	.500	.786	.883

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City of Moreno Valley
N/S: Indian Street
E/W: Nandina Avenue
Weather: Sunny

File Name : MRVINNAPM
Site Code : 00000155
Start Date : 5/16/2013
Page No : 1

Groups Printed- Total Volume

	Indian Street Southbound				Nandina Avenue Westbound				Indian Street Northbound				Nandina Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	18	0	18	12	2	1	15	7	22	6	35	0	3	22	25	93
04:15 PM	0	18	0	18	15	4	0	19	11	29	6	46	0	8	19	27	110
04:30 PM	0	20	0	20	11	1	0	12	13	22	9	44	0	7	31	38	114
04:45 PM	0	14	0	14	6	2	0	8	8	15	5	28	0	7	40	47	97
Total	0	70	0	70	44	9	1	54	39	88	26	153	0	25	112	137	414
05:00 PM	0	13	0	13	6	2	0	8	7	22	4	33	2	15	32	49	103
05:15 PM	0	8	0	8	4	1	0	5	15	29	4	48	0	6	23	29	90
05:30 PM	0	9	0	9	2	1	0	3	7	26	3	36	0	5	27	32	80
05:45 PM	0	13	0	13	8	2	0	10	9	20	6	35	0	10	19	29	87
Total	0	43	0	43	20	6	0	26	38	97	17	152	2	36	101	139	360
Grand Total	0	113	0	113	64	15	1	80	77	185	43	305	2	61	213	276	774
Apprch %	0	100	0		80	18.8	1.2		25.2	60.7	14.1		0.7	22.1	77.2		
Total %	0	14.6	0	14.6	8.3	1.9	0.1	10.3	9.9	23.9	5.6	39.4	0.3	7.9	27.5	35.7	

	Indian Street Southbound				Nandina Avenue Westbound				Indian Street Northbound				Nandina Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	18	0	18	**15**	**4**	0	**19**	11	**29**	6	**46**	0	8	19	27	110
04:30 PM	0	**20**	0	**20**	11	1	0	12	**13**	22	**9**	44	0	7	31	38	**114**
04:45 PM	0	14	0	14	6	2	0	8	8	15	5	28	0	7	**40**	47	97
05:00 PM	0	13	0	13	6	2	0	8	7	22	4	33	**2**	**15**	32	**49**	103
Total Volume	0	65	0	65	38	9	0	47	39	88	24	151	2	37	122	161	424
% App. Total	0	100	0		80.9	19.1	0		25.8	58.3	15.9		1.2	23	75.8		
PHF	.000	.813	.000	.813	.633	.563	.000	.618	.750	.759	.667	.821	.250	.617	.763	.821	.930

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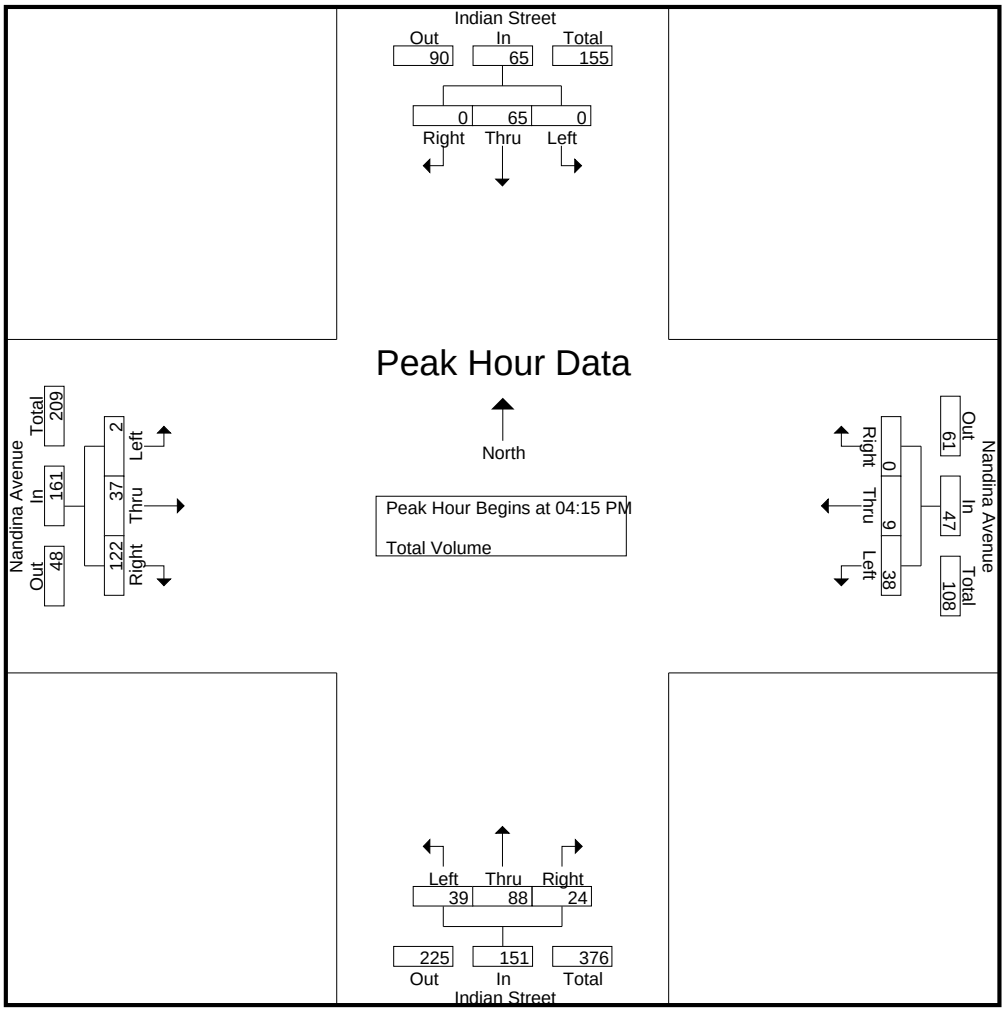
(951) 268-6268

City of Moreno Valley
N/S: Indian Street
E/W: Nandina Avenue
Weather: Sunny

File Name : MRVINNAPM
Site Code : 00000155
Start Date : 5/16/2013
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:30 PM			
+0 mins.	0	18	0	18	12	2	**1**	15	7	22	6	35	0	7	31	38
+15 mins.	0	18	0	18	**15**	**4**	0	**19**	11	**29**	6	**46**	0	7	**40**	47
+30 mins.	0	**20**	0	**20**	11	1	0	12	**13**	22	**9**	44	**2**	**15**	32	**49**
+45 mins.	0	14	0	14	6	2	0	8	8	15	5	28	0	6	23	29
Total Volume	0	70	0	70	44	9	1	54	39	88	26	153	2	35	126	163
% App. Total	0	100	0		81.5	16.7	1.9		25.5	57.5	17		1.2	21.5	77.3	
PHF	.000	.875	.000	.875	.733	.563	.250	.711	.750	.759	.722	.832	.250	.583	.788	.832

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City of Moreno Valley
N/S: Indian Street
E/W: Waste Management North Driveway
Weather: Sunny

File Name : MRVWMNAM
Site Code : 05113389
Start Date : 10/1/2013
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4 Axle Trucks

	Indian Street Southbound			Waste Management North Driveway Westbound			Indian Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	54	54	3	1	4	55	2	57	115
07:15 AM	1	44	45	4	2	6	53	3	56	107
07:30 AM	4	37	41	3	1	4	62	1	63	108
07:45 AM	2	39	41	3	3	6	80	3	83	130
Total	7	174	181	13	7	20	250	9	259	460
08:00 AM	1	27	28	4	1	5	22	4	26	59
08:15 AM	1	13	14	2	2	4	27	8	35	53
08:30 AM	1	23	24	2	2	4	20	2	22	50
08:45 AM	2	19	21	2	1	3	22	5	27	51
Total	5	82	87	10	6	16	91	19	110	213
Grand Total	12	256	268	23	13	36	341	28	369	673
Apprch %	4.5	95.5		63.9	36.1		92.4	7.6		
Total %	1.8	38	39.8	3.4	1.9	5.3	50.7	4.2	54.8	
Passenger Vehicles	5	241	246	3	2	5	316	9	325	576
% Passenger Vehicles	41.7	94.1	91.8	13	15.4	13.9	92.7	32.1	88.1	85.6
Large 2 Axle Vehicles	2	7	9	4	5	9	16	3	19	37
% Large 2 Axle Vehicles	16.7	2.7	3.4	17.4	38.5	25	4.7	10.7	5.1	5.5
3 Axle Vehicles	5	1	6	5	6	11	4	10	14	31
% 3 Axle Vehicles	41.7	0.4	2.2	21.7	46.2	30.6	1.2	35.7	3.8	4.6
4 Axle Trucks	0	7	7	11	0	11	5	6	11	29
% 4 Axle Trucks	0	2.7	2.6	47.8	0	30.6	1.5	21.4	3	4.3

	Indian Street Southbound			Waste Management North Driveway Westbound			Indian Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	**54**	**54**	3	1	4	55	2	57	115
07:15 AM	1	44	45	**4**	2	**6**	53	**3**	56	107
07:30 AM	**4**	37	41	3	1	4	62	1	63	108
07:45 AM	2	39	41	3	**3**	6	**80**	3	**83**	**130**
Total Volume	7	174	181	13	7	20	250	9	259	460
% App. Total	3.9	96.1		65	35		96.5	3.5		
PHF	.438	.806	.838	.813	.583	.833	.781	.750	.780	.885

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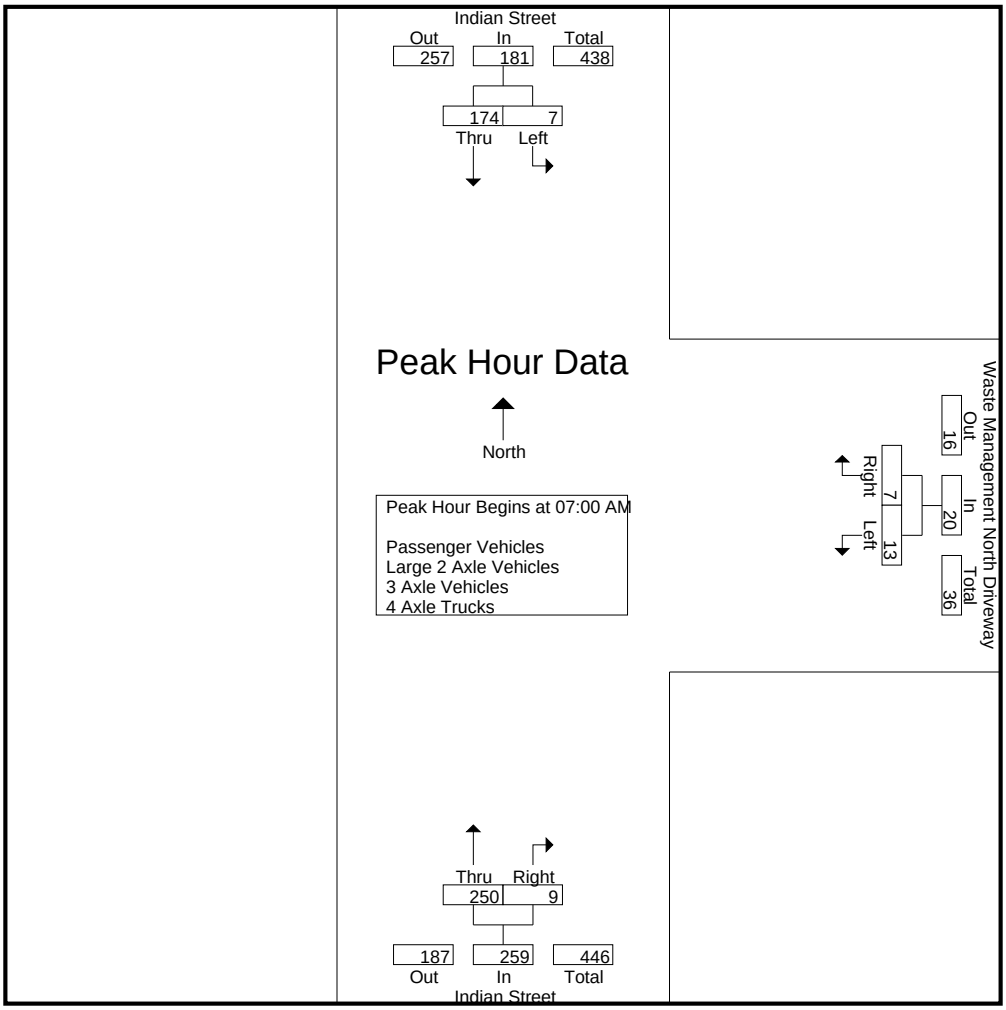
City of Moreno Valley
N/S: Indian Street
E/W: Waste Management North Driveway
Weather: Sunny

File Name : MRVWMNAM
Site Code : 05113389
Start Date : 10/1/2013
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM			07:15 AM			07:00 AM		
+0 mins.	0	**54**	**54**	**4**	2	**6**	55	2	57
+15 mins.	1	44	45	3	1	4	53	**3**	56
+30 mins.	**4**	37	41	3	**3**	6	62	1	63
+45 mins.	2	39	41	4	1	5	**80**	3	**83**
Total Volume	7	174	181	14	7	21	250	9	259
% App. Total	3.9	96.1		66.7	33.3		96.5	3.5	
PHF	.438	.806	.838	.875	.583	.875	.781	.750	.780

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City of Moreno Valley
N/S: Indian Street
E/W: Waste Management North Driveway
Weather: Sunny

File Name : MRVWMNAM
Site Code : 05113389
Start Date : 10/1/2013
Page No : 1

Groups Printed- Large 2 Axle Vehicles

	Indian Street Southbound			Waste Management North Driveway Westbound			Indian Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	1	1	1	0	1	2
07:15 AM	0	0	0	1	1	2	2	1	3	5
07:30 AM	0	1	1	0	0	0	4	0	4	5
07:45 AM	1	0	1	0	1	1	3	0	3	5
Total	1	1	2	1	3	4	10	1	11	17
08:00 AM	0	2	2	0	0	0	1	0	1	3
08:15 AM	0	0	0	2	2	4	1	1	2	6
08:30 AM	1	3	4	0	0	0	3	0	3	7
08:45 AM	0	1	1	1	0	1	1	1	2	4
Total	1	6	7	3	2	5	6	2	8	20
Grand Total	2	7	9	4	5	9	16	3	19	37
Apprch %	22.2	77.8		44.4	55.6		84.2	15.8		
Total %	5.4	18.9	24.3	10.8	13.5	24.3	43.2	8.1	51.4	

	Indian Street Southbound			Waste Management North Driveway Westbound			Indian Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	0	**1**	1	1	0	1	2
07:15 AM	0	0	0	**1**	1	**2**	2	**1**	3	**5**
07:30 AM	0	**1**	**1**	0	0	0	**4**	0	**4**	5
07:45 AM	**1**	0	1	0	1	1	3	0	3	5
Total Volume	1	1	2	1	3	4	10	1	11	17
% App. Total	50	50		25	75		90.9	9.1		
PHF	.250	.250	.500	.250	.750	.500	.625	.250	.688	.850

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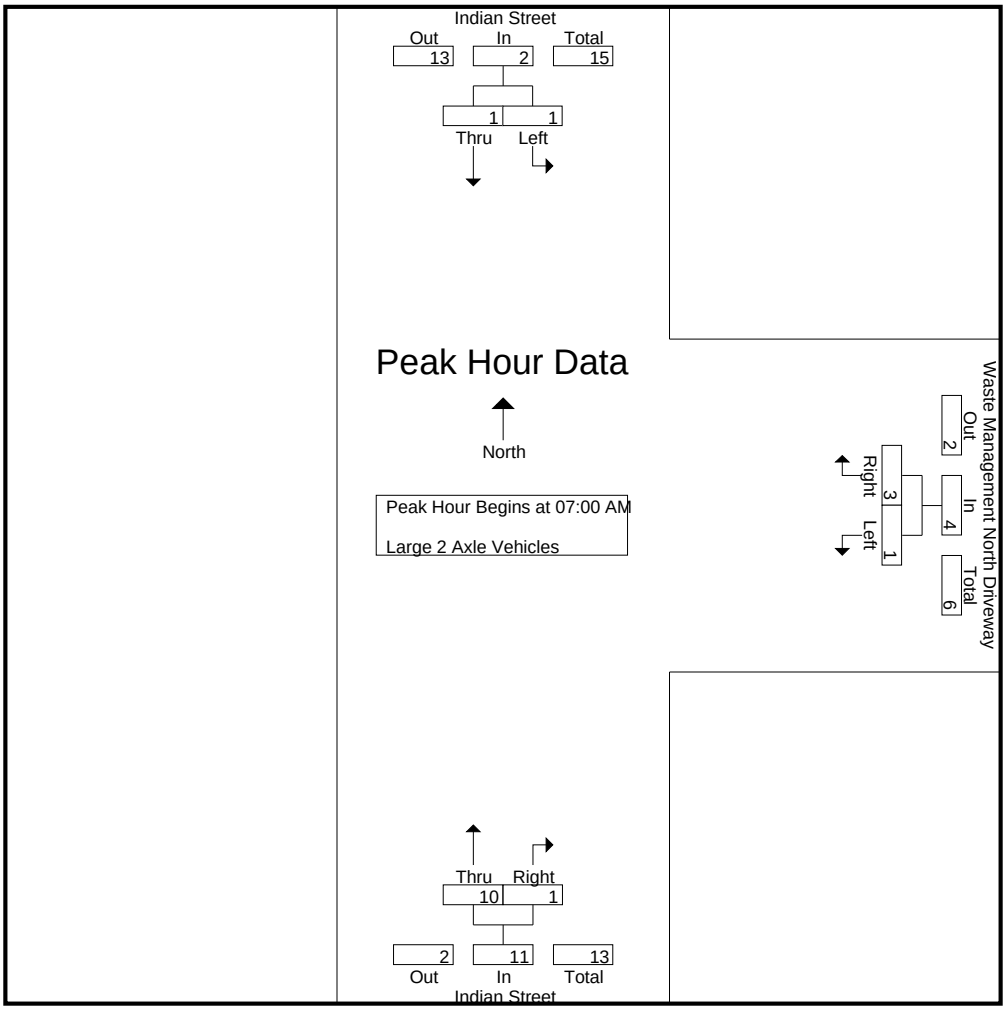
City of Moreno Valley
N/S: Indian Street
E/W: Waste Management North Driveway
Weather: Sunny

File Name : MRVWMNAM
Site Code : 05113389
Start Date : 10/1/2013
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	0	0	0	**1**	1	1	0	1
+15 mins.	0	0	0	**1**	1	**2**	2	**1**	3
+30 mins.	0	**1**	**1**	0	0	0	**4**	0	**4**
+45 mins.	**1**	0	1	0	1	1	3	0	3
Total Volume	1	1	2	1	3	4	10	1	11
% App. Total	50	50		25	75		90.9	9.1	
PHF	.250	.250	.500	.250	.750	.500	.625	.250	.688

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City of Moreno Valley
N/S: Indian Street
E/W: Waste Management North Driveway
Weather: Sunny

File Name : MRVWMNAM
Site Code : 05113389
Start Date : 10/1/2013
Page No : 1

Groups Printed- 3 Axle Vehicles

	Indian Street Southbound			Waste Management North Driveway Westbound			Indian Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	1	0	1	0	0	0	1
07:15 AM	1	0	1	2	1	3	0	0	0	4
07:30 AM	3	0	3	0	1	1	0	0	0	4
07:45 AM	0	0	0	0	1	1	1	1	2	3
Total	4	0	4	3	3	6	1	1	2	12
08:00 AM	0	0	0	1	1	2	0	2	2	4
08:15 AM	1	0	1	0	0	0	1	4	5	6
08:30 AM	0	1	1	1	1	2	1	1	2	5
08:45 AM	0	0	0	0	1	1	1	2	3	4
Total	1	1	2	2	3	5	3	9	12	19
Grand Total	5	1	6	5	6	11	4	10	14	31
Apprch %	83.3	16.7		45.5	54.5		28.6	71.4		
Total %	16.1	3.2	19.4	16.1	19.4	35.5	12.9	32.3	45.2	

	Indian Street Southbound			Waste Management North Driveway Westbound			Indian Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	1	0	1	0	0	0	1
07:15 AM	1	0	1	**2**	**1**	**3**	0	0	0	**4**
07:30 AM	**3**	0	**3**	0	1	1	0	0	0	4
07:45 AM	0	0	0	0	1	1	**1**	**1**	**2**	3
Total Volume	4	0	4	3	3	6	1	1	2	12
% App. Total	100	0		50	50		50	50		
PHF	.333	.000	.333	.375	.750	.500	.250	.250	.250	.750

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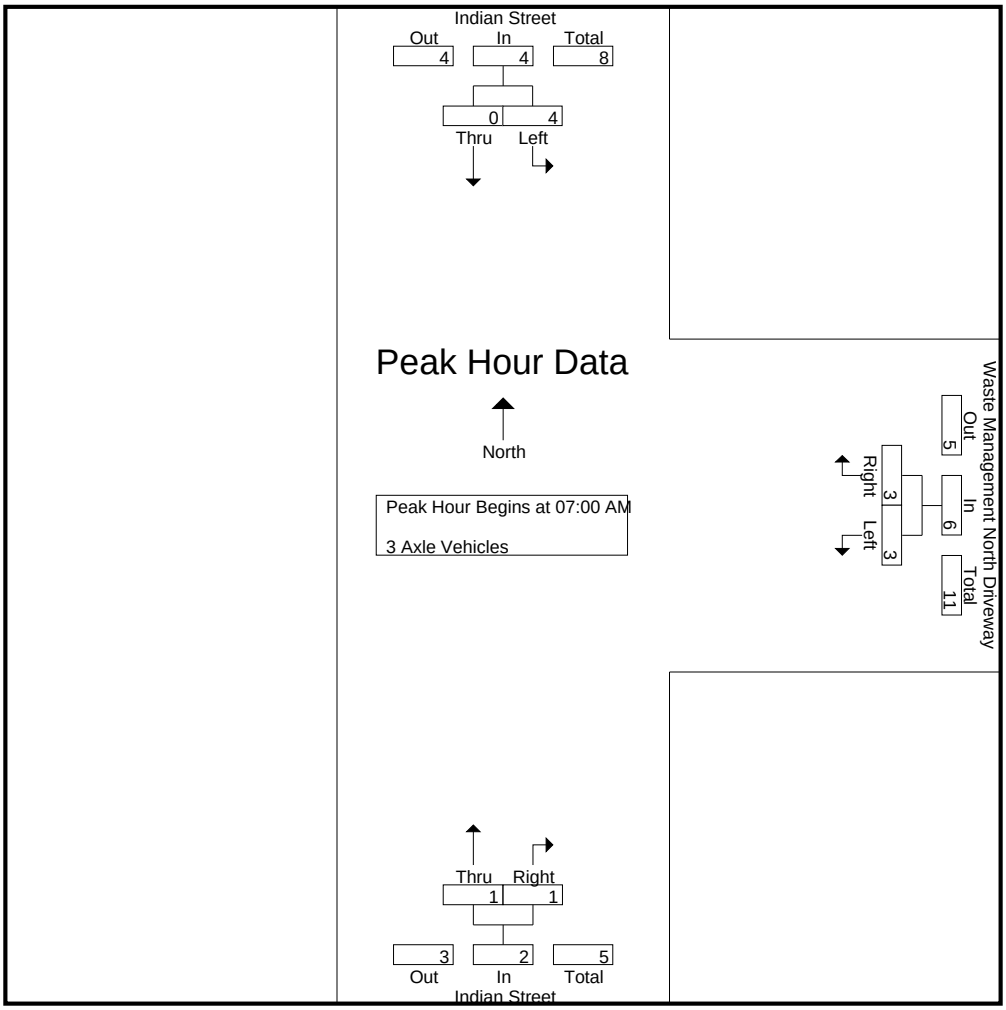
City of Moreno Valley
N/S: Indian Street
E/W: Waste Management North Driveway
Weather: Sunny

File Name : MRVWMNAM
Site Code : 05113389
Start Date : 10/1/2013
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	0	0	1	0	1	0	0	0
+15 mins.	1	0	1	**2**	**1**	**3**	0	0	0
+30 mins.	**3**	0	**3**	0	1	1	0	0	0
+45 mins.	0	0	0	0	1	1	**1**	**1**	**2**
Total Volume	4	0	4	3	3	6	1	1	2
% App. Total	100	0		50	50		50	50	
PHF	.333	.000	.333	.375	.750	.500	.250	.250	.250

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City of Moreno Valley
N/S: Indian Street
E/W: Waste Management North Driveway
Weather: Sunny

File Name : MRVWMNAM
Site Code : 05113389
Start Date : 10/1/2013
Page No : 1

Groups Printed- 4 Axle Trucks

	Indian Street Southbound			Waste Management North Driveway Westbound			Indian Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	2	0	2	0	1	1	3
07:15 AM	0	0	0	1	0	1	1	1	2	3
07:30 AM	0	2	2	2	0	2	0	0	0	4
07:45 AM	0	0	0	2	0	2	2	0	2	4
Total	0	2	2	7	0	7	3	2	5	14
08:00 AM	0	0	0	2	0	2	0	0	0	2
08:15 AM	0	2	2	0	0	0	1	3	4	6
08:30 AM	0	2	2	1	0	1	0	1	1	4
08:45 AM	0	1	1	1	0	1	1	0	1	3
Total	0	5	5	4	0	4	2	4	6	15
Grand Total	0	7	7	11	0	11	5	6	11	29
Apprch %	0	100		100	0		45.5	54.5		
Total %	0	24.1	24.1	37.9	0	37.9	17.2	20.7	37.9	

	Indian Street Southbound			Waste Management North Driveway Westbound			Indian Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	**2**	0	**2**	0	**1**	1	3
07:15 AM	0	0	0	1	0	1	1	1	**2**	3
07:30 AM	0	**2**	**2**	2	0	2	0	0	0	**4**
07:45 AM	0	0	0	2	0	2	**2**	0	2	4
Total Volume	0	2	2	7	0	7	3	2	5	14
% App. Total	0	100		100	0		60	40		
PHF	.000	.250	.250	.875	.000	.875	.375	.500	.625	.875

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City of Moreno Valley
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E/W: Waste Management North Driveway
Weather: Sunny

File Name : MRVWMNAM
Site Code : 05113389
Start Date : 10/1/2013
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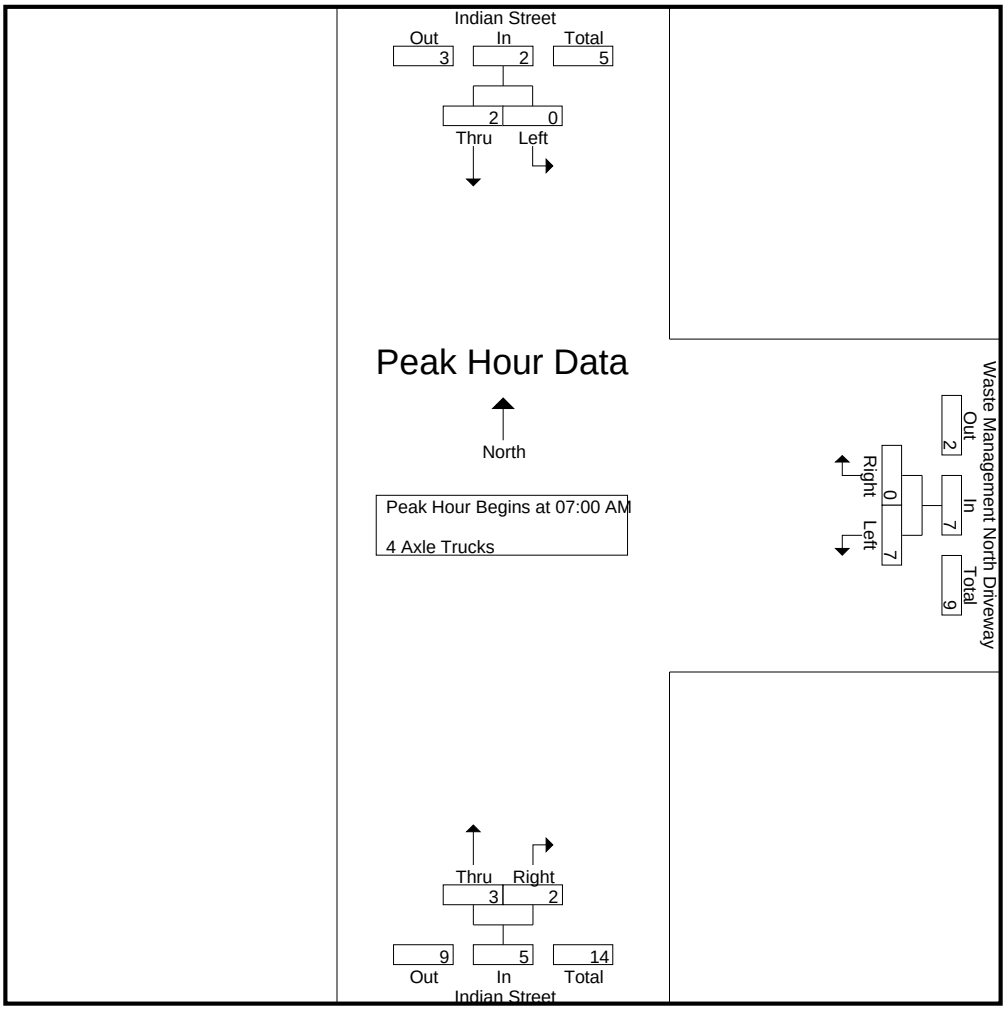

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	0	0	**2**	0	**2**	0	**1**	1
+15 mins.	0	0	0	1	0	1	1	1	**2**
+30 mins.	0	**2**	**2**	2	0	2	0	0	0
+45 mins.	0	0	0	2	0	2	**2**	0	2
Total Volume	0	2	2	7	0	7	3	2	5
% App. Total	0	100		100	0		60	40	
PHF	.000	.250	.250	.875	.000	.875	.375	.500	.625

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City of Moreno Valley
N/S: Indian Street
E/W: Waste Management North Driveway
Weather: Sunny

File Name : MRVWMNPM
Site Code : 05113389
Start Date : 10/1/2013
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4 Axle Trucks

	Indian Street Southbound			Waste Management North Driveway Westbound			Indian Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	3	50	53	10	1	11	43	13	56	120
04:15 PM	7	46	53	6	1	7	36	8	44	104
04:30 PM	9	40	49	9	5	14	57	7	64	127
04:45 PM	1	40	41	16	2	18	28	6	34	93
Total	20	176	196	41	9	50	164	34	198	444
05:00 PM	3	35	38	9	4	13	43	7	50	101
05:15 PM	5	27	32	8	3	11	32	6	38	81
05:30 PM	2	38	40	12	3	15	27	6	33	88
05:45 PM	1	23	24	7	3	10	23	6	29	63
Total	11	123	134	36	13	49	125	25	150	333
Grand Total	31	299	330	77	22	99	289	59	348	777
Apprch %	9.4	90.6		77.8	22.2		83	17		
Total %	4	38.5	42.5	9.9	2.8	12.7	37.2	7.6	44.8	
Passenger Vehicles	7	285	292	62	22	84	277	8	285	661
% Passenger Vehicles	22.6	95.3	88.5	80.5	100	84.8	95.8	13.6	81.9	85.1
Large 2 Axle Vehicles	7	3	10	1	0	1	2	4	6	17
% Large 2 Axle Vehicles	22.6	1	3	1.3	0	1	0.7	6.8	1.7	2.2
3 Axle Vehicles	17	0	17	1	0	1	3	45	48	66
% 3 Axle Vehicles	54.8	0	5.2	1.3	0	1	1	76.3	13.8	8.5
4 Axle Trucks	0	11	11	13	0	13	7	2	9	33
% 4 Axle Trucks	0	3.7	3.3	16.9	0	13.1	2.4	3.4	2.6	4.2

	Indian Street Southbound			Waste Management North Driveway Westbound			Indian Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	3	**50**	**53**	10	1	11	43	**13**	56	120
04:15 PM	7	46	53	6	1	7	36	8	44	104
04:30 PM	**9**	40	49	9	**5**	14	**57**	7	**64**	**127**
04:45 PM	1	40	41	**16**	2	**18**	28	6	34	93
Total Volume	20	176	196	41	9	50	164	34	198	444
% App. Total	10.2	89.8		82	18		82.8	17.2		
PHF	.556	.880	.925	.641	.450	.694	.719	.654	.773	.874

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File Name : MRVWMNPM
Site Code : 05113389
Start Date : 10/1/2013
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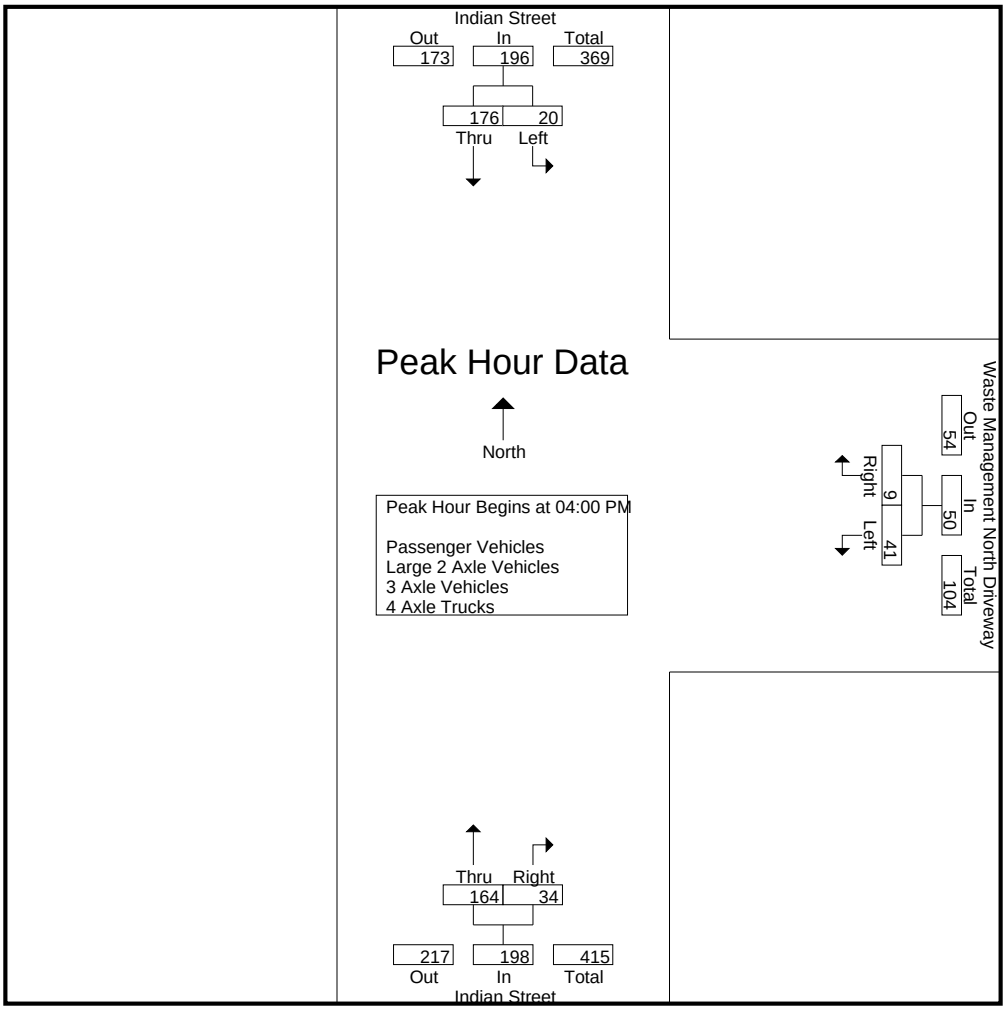

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM			04:45 PM			04:00 PM		
+0 mins.	3	**50**	**53**	**16**	2	**18**	43	**13**	56
+15 mins.	7	46	53	9	**4**	13	36	8	44
+30 mins.	**9**	40	49	8	3	11	**57**	7	**64**
+45 mins.	1	40	41	12	3	15	28	6	34
Total Volume	20	176	196	45	12	57	164	34	198
% App. Total	10.2	89.8		78.9	21.1		82.8	17.2	
PHF	.556	.880	.925	.703	.750	.792	.719	.654	.773

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E/W: Waste Management North Driveway
Weather: Sunny

File Name : MRVWMNPM
Site Code : 05113389
Start Date : 10/1/2013
Page No : 1

Groups Printed- Large 2 Axle Vehicles

	Indian Street Southbound			Waste Management North Driveway Westbound			Indian Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	2	2	4	0	0	0	0	1	1	5
04:30 PM	2	0	2	1	0	1	1	1	2	5
04:45 PM	0	0	0	0	0	0	1	1	2	2
Total	4	2	6	1	0	1	2	3	5	12
05:00 PM	0	1	1	0	0	0	0	0	0	1
05:15 PM	1	0	1	0	0	0	0	1	1	2
05:30 PM	1	0	1	0	0	0	0	0	0	1
05:45 PM	1	0	1	0	0	0	0	0	0	1
Total	3	1	4	0	0	0	0	1	1	5
Grand Total	7	3	10	1	0	1	2	4	6	17
Apprch %	70	30		100	0		33.3	66.7		
Total %	41.2	17.6	58.8	5.9	0	5.9	11.8	23.5	35.3	

	Indian Street Southbound			Waste Management North Driveway Westbound			Indian Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	**2**	**2**	**4**	0	0	0	0	**1**	1	**5**
04:30 PM	2	0	2	**1**	0	**1**	**1**	1	**2**	5
04:45 PM	0	0	0	0	0	0	1	1	2	2
Total Volume	4	2	6	1	0	1	2	3	5	12
% App. Total	66.7	33.3		100	0		40	60		
PHF	.500	.250	.375	.250	.000	.250	.500	.750	.625	.600

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City of Moreno Valley
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E/W: Waste Management North Driveway
Weather: Sunny

File Name : MRVWMNPM
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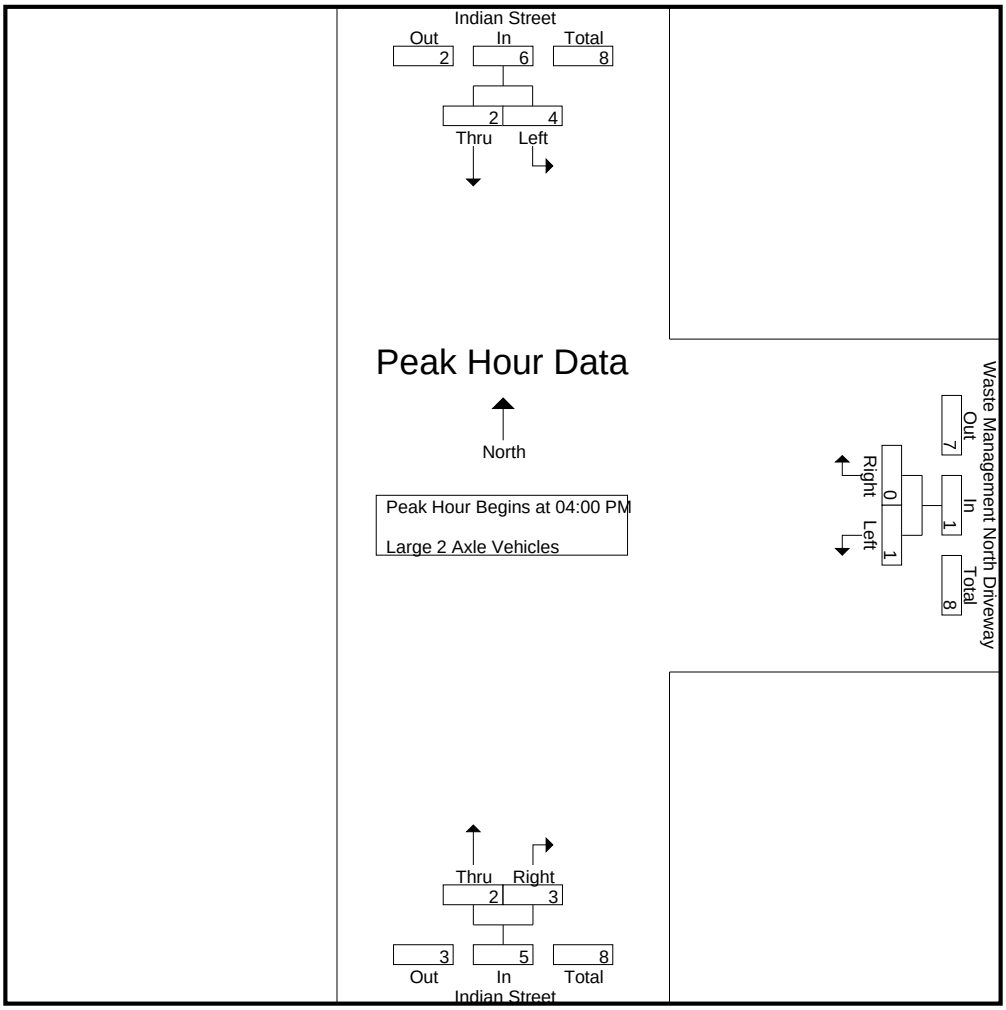

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	**2**	**2**	**4**	0	0	0	0	**1**	1
+30 mins.	2	0	2	**1**	0	**1**	**1**	1	**2**
+45 mins.	0	0	0	0	0	0	1	1	2
Total Volume	4	2	6	1	0	1	2	3	5
% App. Total	66.7	33.3		100	0		40	60	
PHF	.500	.250	.375	.250	.000	.250	.500	.750	.625

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Groups Printed- 3 Axle Vehicles

	Indian Street Southbound			Waste Management North Driveway Westbound			Indian Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	3	0	3	1	0	1	1	12	13	17
04:15 PM	3	0	3	0	0	0	1	6	7	10
04:30 PM	5	0	5	0	0	0	0	4	4	9
04:45 PM	1	0	1	0	0	0	0	5	5	6
Total	12	0	12	1	0	1	2	27	29	42
05:00 PM	2	0	2	0	0	0	1	3	4	6
05:15 PM	2	0	2	0	0	0	0	4	4	6
05:30 PM	1	0	1	0	0	0	0	6	6	7
05:45 PM	0	0	0	0	0	0	0	5	5	5
Total	5	0	5	0	0	0	1	18	19	24
Grand Total	17	0	17	1	0	1	3	45	48	66
Apprch %	100	0		100	0		6.2	93.8		
Total %	25.8	0	25.8	1.5	0	1.5	4.5	68.2	72.7	

	Indian Street Southbound			Waste Management North Driveway Westbound			Indian Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	3	0	3	**1**	0	**1**	**1**	**12**	**13**	**17**
04:15 PM	3	0	3	0	0	0	1	6	7	10
04:30 PM	**5**	0	**5**	0	0	0	0	4	4	9
04:45 PM	1	0	1	0	0	0	0	5	5	6
Total Volume	12	0	12	1	0	1	2	27	29	42
% App. Total	100	0		100	0		6.9	93.1		
PHF	.600	.000	.600	.250	.000	.250	.500	.563	.558	.618

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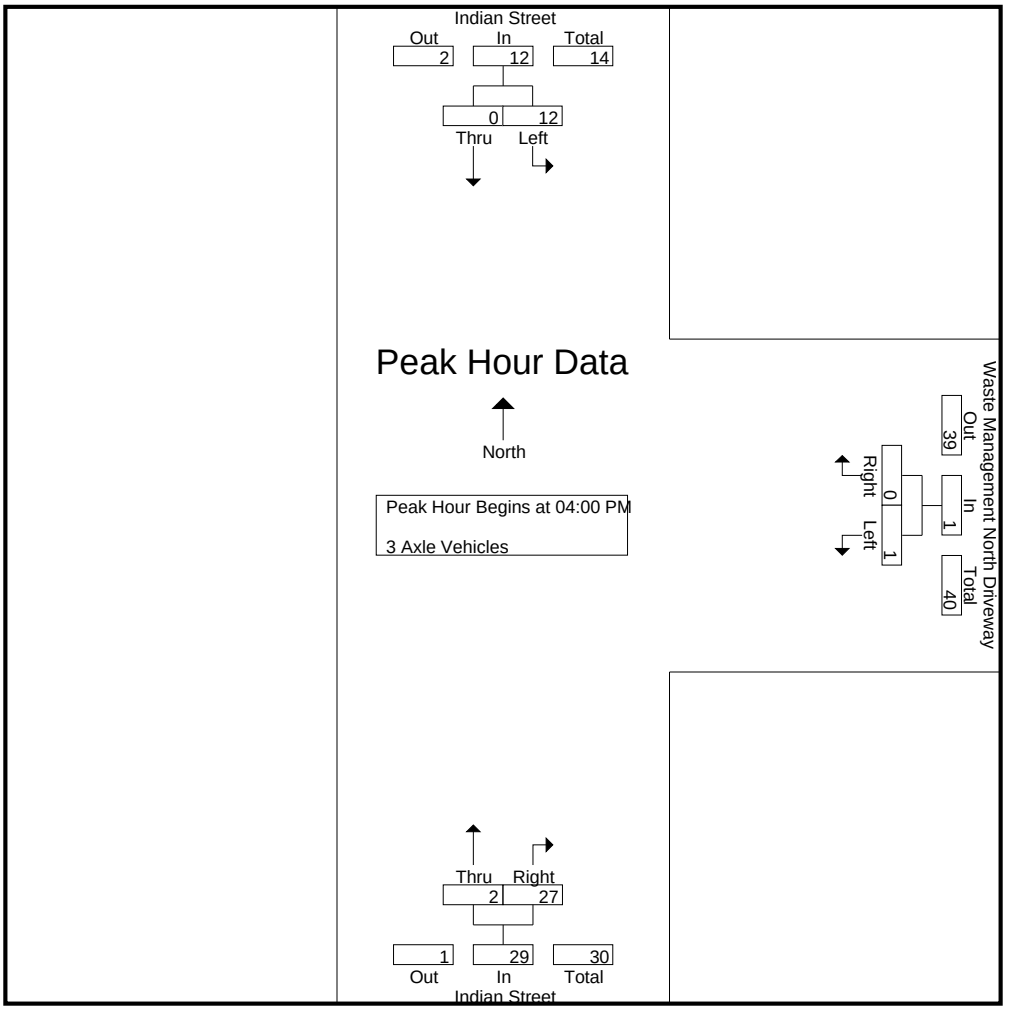

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	3	0	3	**1**	0	**1**	**1**	**12**	**13**
+15 mins.	3	0	3	0	0	0	1	6	7
+30 mins.	**5**	0	**5**	0	0	0	0	4	4
+45 mins.	1	0	1	0	0	0	0	5	5
Total Volume	12	0	12	1	0	1	2	27	29
% App. Total	100	0		100	0		6.9	93.1	
PHF	.600	.000	.600	.250	.000	.250	.500	.563	.558

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Groups Printed- 4 Axle Trucks

	Indian Street Southbound			Waste Management North Driveway Westbound			Indian Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	2	2	3	0	3	0	1	1	6
04:15 PM	0	1	1	2	0	2	3	0	3	6
04:30 PM	0	2	2	0	0	0	0	0	0	2
04:45 PM	0	2	2	1	0	1	1	0	1	4
Total	0	7	7	6	0	6	4	1	5	18
05:00 PM	0	0	0	4	0	4	1	1	2	6
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	2	2	1	0	1	0	0	0	3
05:45 PM	0	2	2	2	0	2	2	0	2	6
Total	0	4	4	7	0	7	3	1	4	15
Grand Total	0	11	11	13	0	13	7	2	9	33
Apprch %	0	100		100	0		77.8	22.2		
Total %	0	33.3	33.3	39.4	0	39.4	21.2	6.1	27.3	

	Indian Street Southbound			Waste Management North Driveway Westbound			Indian Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	**2**	**2**	**3**	0	**3**	0	**1**	1	**6**
04:15 PM	0	1	1	2	0	2	**3**	0	**3**	6
04:30 PM	0	2	2	0	0	0	0	0	0	2
04:45 PM	0	2	2	1	0	1	1	0	1	4
Total Volume	0	7	7	6	0	6	4	1	5	18
% App. Total	0	100		100	0		80	20		
PHF	.000	.875	.875	.500	.000	.500	.333	.250	.417	.750

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File Name : MRVWMNPM
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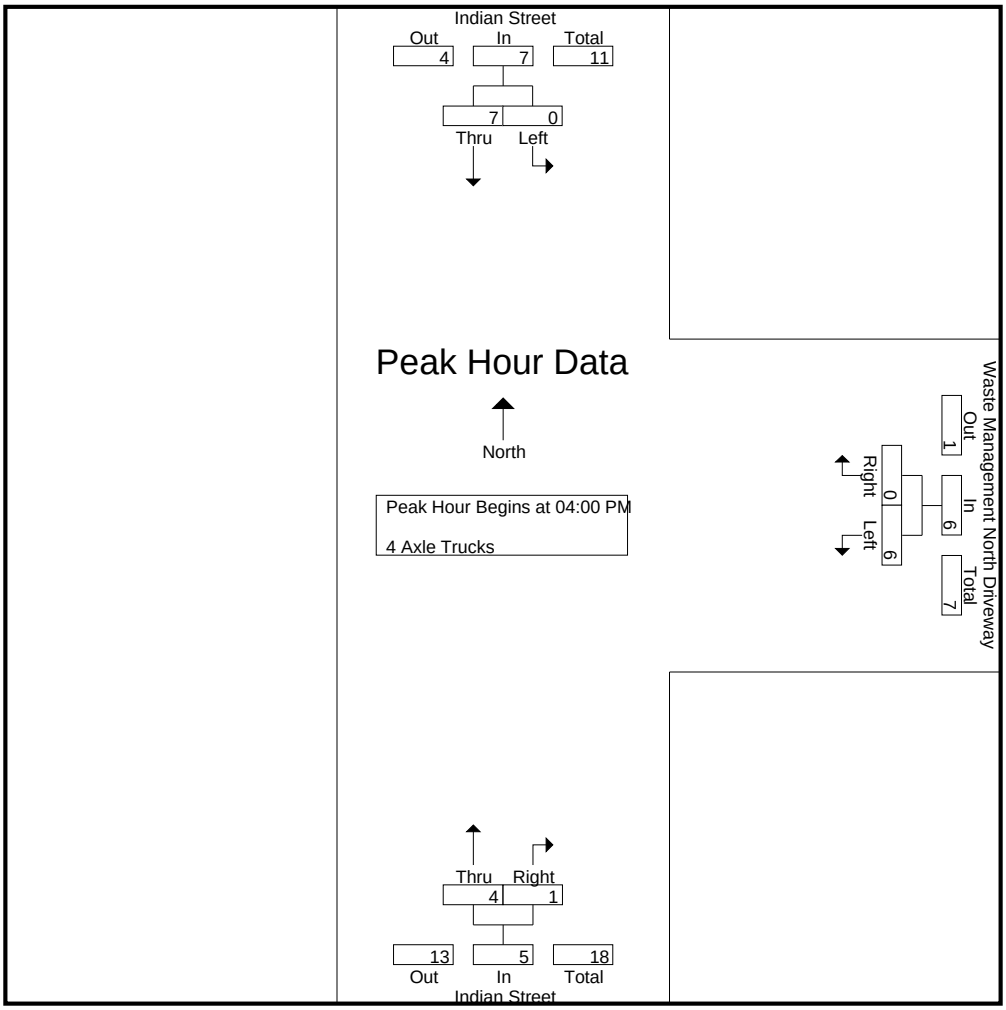

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	0	**2**	**2**	**3**	0	**3**	0	**1**	1
+15 mins.	0	1	1	2	0	2	**3**	0	**3**
+30 mins.	0	2	2	0	0	0	0	0	0
+45 mins.	0	2	2	1	0	1	1	0	1
Total Volume	0	7	7	6	0	6	4	1	5
% App. Total	0	100		100	0		80	20	
PHF	.000	.875	.875	.500	.000	.500	.333	.250	.417

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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4 Axle Trucks

	Indian Street Southbound			Grove View Road Westbound			Indian Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	59	59	16	0	16	54	7	61	136
07:15 AM	0	50	50	11	0	11	50	2	52	113
07:30 AM	1	36	37	17	0	17	60	6	66	120
07:45 AM	1	38	39	8	3	11	80	3	83	133
Total	2	183	185	52	3	55	244	18	262	502
08:00 AM	0	34	34	14	0	14	31	2	33	81
08:15 AM	0	16	16	11	0	11	33	2	35	62
08:30 AM	0	26	26	13	1	14	21	3	24	64
08:45 AM	0	26	26	3	0	3	25	2	27	56
Total	0	102	102	41	1	42	110	9	119	263
Grand Total	2	285	287	93	4	97	354	27	381	765
Apprch %	0.7	99.3		95.9	4.1		92.9	7.1		
Total %	0.3	37.3	37.5	12.2	0.5	12.7	46.3	3.5	49.8	
Passenger Vehicles	2	253	255	69	2	71	314	13	327	653
% Passenger Vehicles	100	88.8	88.9	74.2	50	73.2	88.7	48.1	85.8	85.4
Large 2 Axle Vehicles	0	10	10	10	1	11	17	1	18	39
% Large 2 Axle Vehicles	0	3.5	3.5	10.8	25	11.3	4.8	3.7	4.7	5.1
3 Axle Vehicles	0	5	5	2	1	3	12	3	15	23
% 3 Axle Vehicles	0	1.8	1.7	2.2	25	3.1	3.4	11.1	3.9	3
4 Axle Trucks	0	17	17	12	0	12	11	10	21	50
% 4 Axle Trucks	0	6	5.9	12.9	0	12.4	3.1	37	5.5	6.5

	Indian Street Southbound			Grove View Road Westbound			Indian Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	**59**	**59**	16	0	16	54	**7**	61	**136**
07:15 AM	0	50	50	11	0	11	50	2	52	113
07:30 AM	**1**	36	37	**17**	0	**17**	60	6	66	120
07:45 AM	1	38	39	8	**3**	11	**80**	3	**83**	133
Total Volume	2	183	185	52	3	55	244	18	262	502
% App. Total	1.1	98.9		94.5	5.5		93.1	6.9		
PHF	.500	.775	.784	.765	.250	.809	.763	.643	.789	.923

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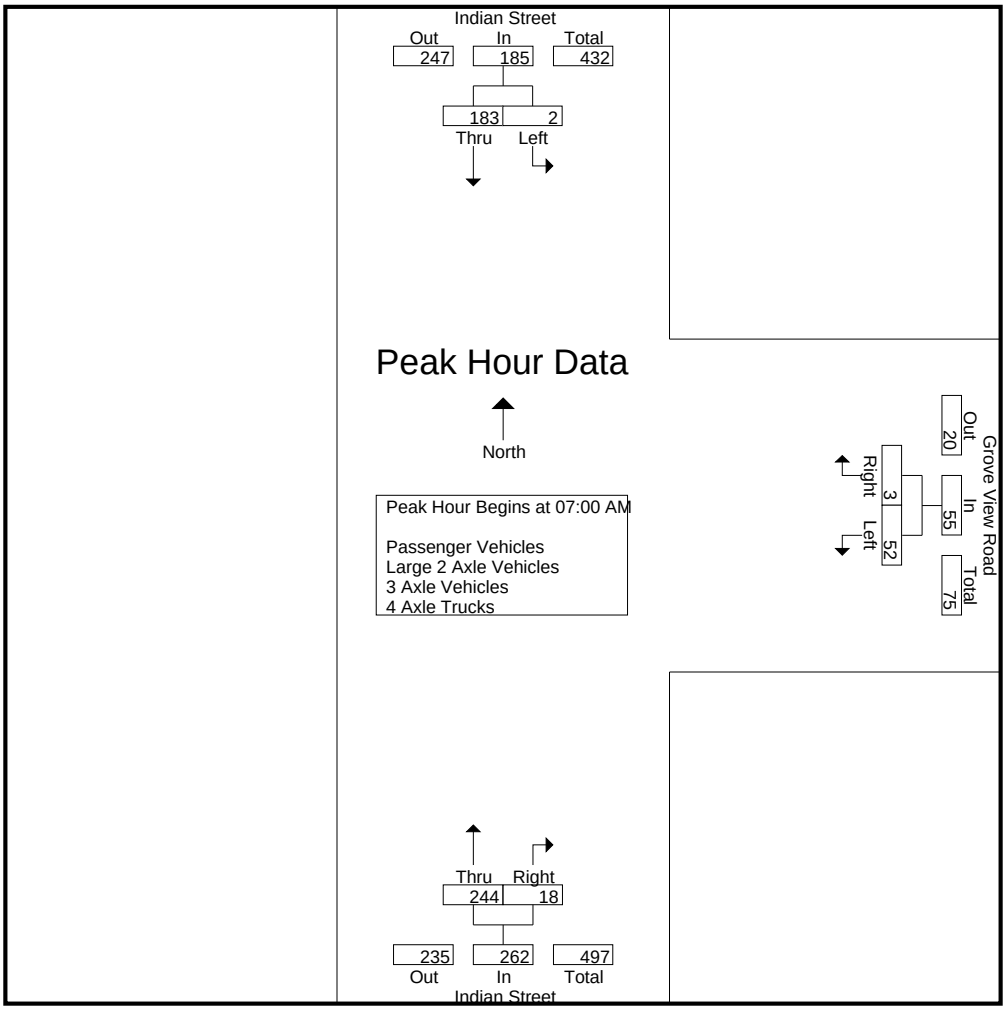

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	**59**	**59**	16	0	16	54	**7**	61
+15 mins.	0	50	50	11	0	11	50	2	52
+30 mins.	**1**	36	37	**17**	0	**17**	60	6	66
+45 mins.	1	38	39	8	**3**	11	**80**	3	**83**
Total Volume	2	183	185	52	3	55	244	18	262
% App. Total	1.1	98.9		94.5	5.5		93.1	6.9	
PHF	.500	.775	.784	.765	.250	.809	.763	.643	.789

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City of Moreno Valley
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E/W: Grove View Road
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Groups Printed- Large 2 Axle Vehicles

	Indian Street Southbound			Grove View Road Westbound			Indian Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	1	0	1	0	0	0	1
07:15 AM	0	0	0	0	0	0	2	0	2	2
07:30 AM	0	1	1	3	0	3	5	0	5	9
07:45 AM	0	0	0	1	0	1	3	0	3	4
Total	0	1	1	5	0	5	10	0	10	16
08:00 AM	0	2	2	1	0	1	1	0	1	4
08:15 AM	0	1	1	3	0	3	2	0	2	6
08:30 AM	0	3	3	1	1	2	2	1	3	8
08:45 AM	0	3	3	0	0	0	2	0	2	5
Total	0	9	9	5	1	6	7	1	8	23
Grand Total	0	10	10	10	1	11	17	1	18	39
Apprch %	0	100		90.9	9.1		94.4	5.6		
Total %	0	25.6	25.6	25.6	2.6	28.2	43.6	2.6	46.2	

	Indian Street Southbound			Grove View Road Westbound			Indian Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	1	0	1	0	0	0	1
07:15 AM	0	0	0	0	0	0	2	0	2	2
07:30 AM	0	**1**	**1**	**3**	0	**3**	**5**	0	**5**	**9**
07:45 AM	0	0	0	1	0	1	3	0	3	4
Total Volume	0	1	1	5	0	5	10	0	10	16
% App. Total	0	100		100	0		100	0		
PHF	.000	.250	.250	.417	.000	.417	.500	.000	.500	.444

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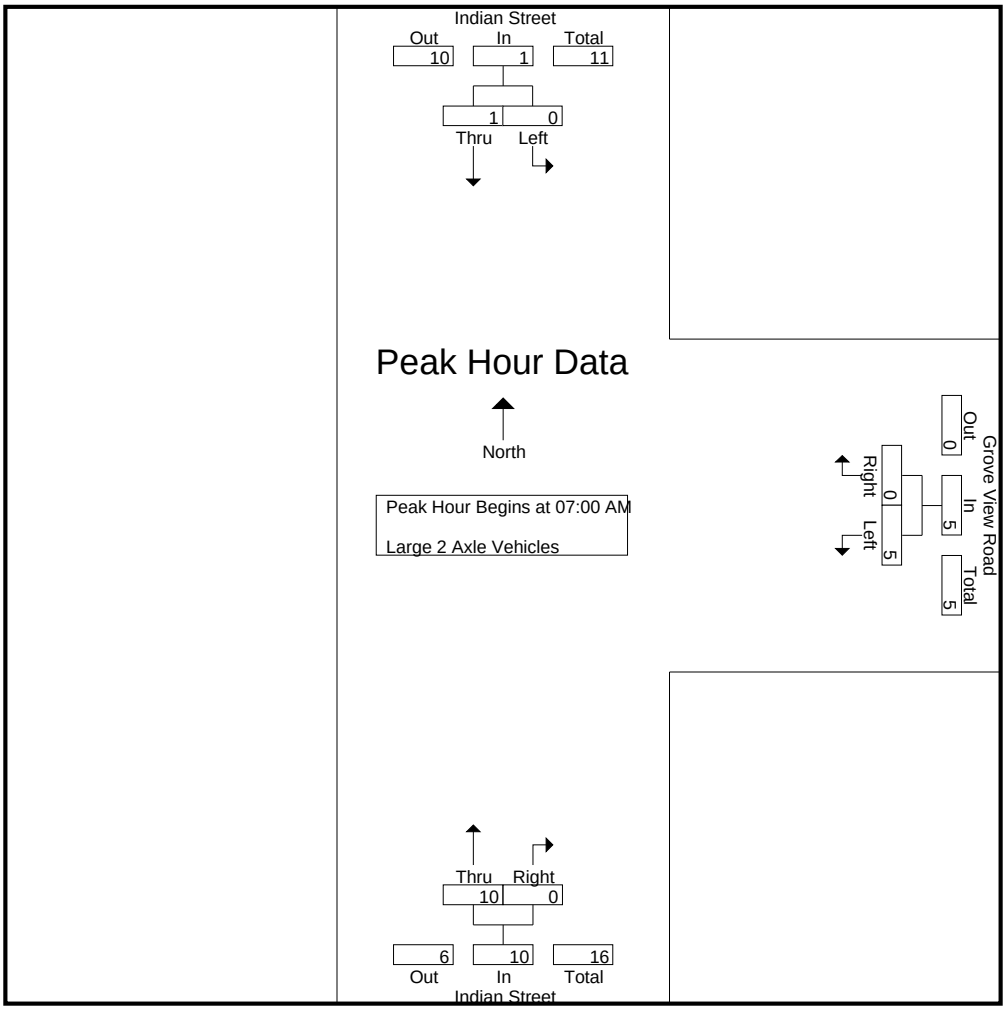

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	0	0	1	0	1	0	0	0
+15 mins.	0	0	0	0	0	0	2	0	2
+30 mins.	0	**1**	**1**	**3**	0	**3**	**5**	0	**5**
+45 mins.	0	0	0	1	0	1	3	0	3
Total Volume	0	1	1	5	0	5	10	0	10
% App. Total	0	100		100	0		100	0	
PHF	.000	.250	.250	.417	.000	.417	.500	.000	.500

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Groups Printed- 3 Axle Vehicles

	Indian Street Southbound			Grove View Road Westbound			Indian Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	1	1	1	0	1	0	3	3	5
07:15 AM	0	2	2	0	0	0	0	0	0	2
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	1	1	0	0	0	1
Total	0	3	3	1	1	2	0	3	3	8
08:00 AM	0	0	0	1	0	1	2	0	2	3
08:15 AM	0	0	0	0	0	0	5	0	5	5
08:30 AM	0	2	2	0	0	0	2	0	2	4
08:45 AM	0	0	0	0	0	0	3	0	3	3
Total	0	2	2	1	0	1	12	0	12	15
Grand Total	0	5	5	2	1	3	12	3	15	23
Apprch %	0	100		66.7	33.3		80	20		
Total %	0	21.7	21.7	8.7	4.3	13	52.2	13	65.2	

	Indian Street Southbound			Grove View Road Westbound			Indian Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	1	1	**1**	0	**1**	0	**3**	**3**	**5**
07:15 AM	0	**2**	**2**	0	0	0	0	0	0	2
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	**1**	1	0	0	0	1
Total Volume	0	3	3	1	1	2	0	3	3	8
% App. Total	0	100		50	50		0	100		
PHF	.000	.375	.375	.250	.250	.500	.000	.250	.250	.400

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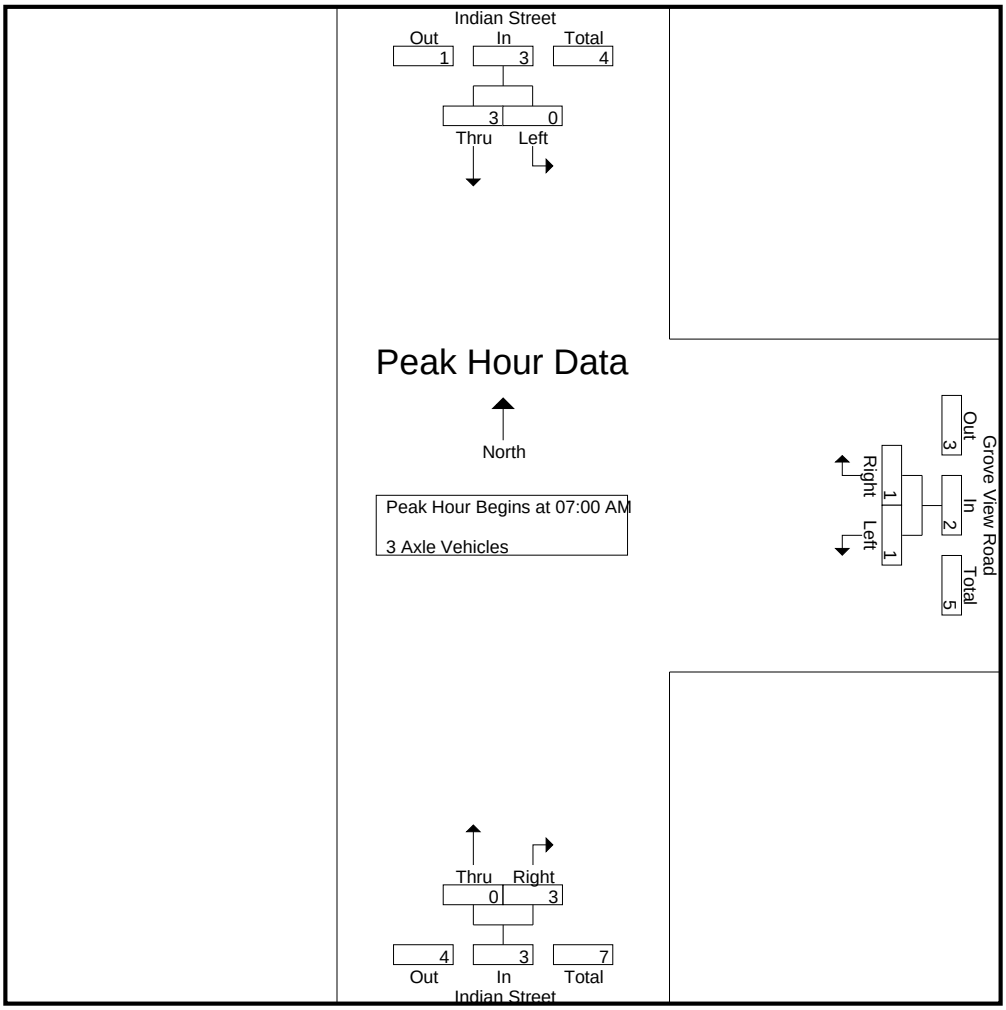

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	1	1	**1**	0	**1**	0	**3**	**3**
+15 mins.	0	**2**	**2**	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	**1**	1	0	0	0
Total Volume	0	3	3	1	1	2	0	3	3
% App. Total	0	100		50	50		0	100	
PHF	.000	.375	.375	.250	.250	.500	.000	.250	.250

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Groups Printed- 4 Axle Trucks

	Indian Street Southbound			Grove View Road Westbound			Indian Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	2	2	0	0	0	0	2	2	4
07:15 AM	0	1	1	1	0	1	2	1	3	5
07:30 AM	0	3	3	2	0	2	0	0	0	5
07:45 AM	0	1	1	2	0	2	3	0	3	6
Total	0	7	7	5	0	5	5	3	8	20
08:00 AM	0	3	3	1	0	1	0	2	2	6
08:15 AM	0	2	2	4	0	4	4	2	6	12
08:30 AM	0	3	3	2	0	2	1	2	3	8
08:45 AM	0	2	2	0	0	0	1	1	2	4
Total	0	10	10	7	0	7	6	7	13	30
Grand Total	0	17	17	12	0	12	11	10	21	50
Apprch %	0	100		100	0		52.4	47.6		
Total %	0	34	34	24	0	24	22	20	42	

	Indian Street Southbound			Grove View Road Westbound			Indian Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	2	2	0	0	0	0	**2**	2	4
07:15 AM	0	1	1	1	0	1	2	1	**3**	5
07:30 AM	0	**3**	**3**	**2**	0	**2**	0	0	0	5
07:45 AM	0	1	1	2	0	2	**3**	0	3	**6**
Total Volume	0	7	7	5	0	5	5	3	8	20
% App. Total	0	100		100	0		62.5	37.5		
PHF	.000	.583	.583	.625	.000	.625	.417	.375	.667	.833

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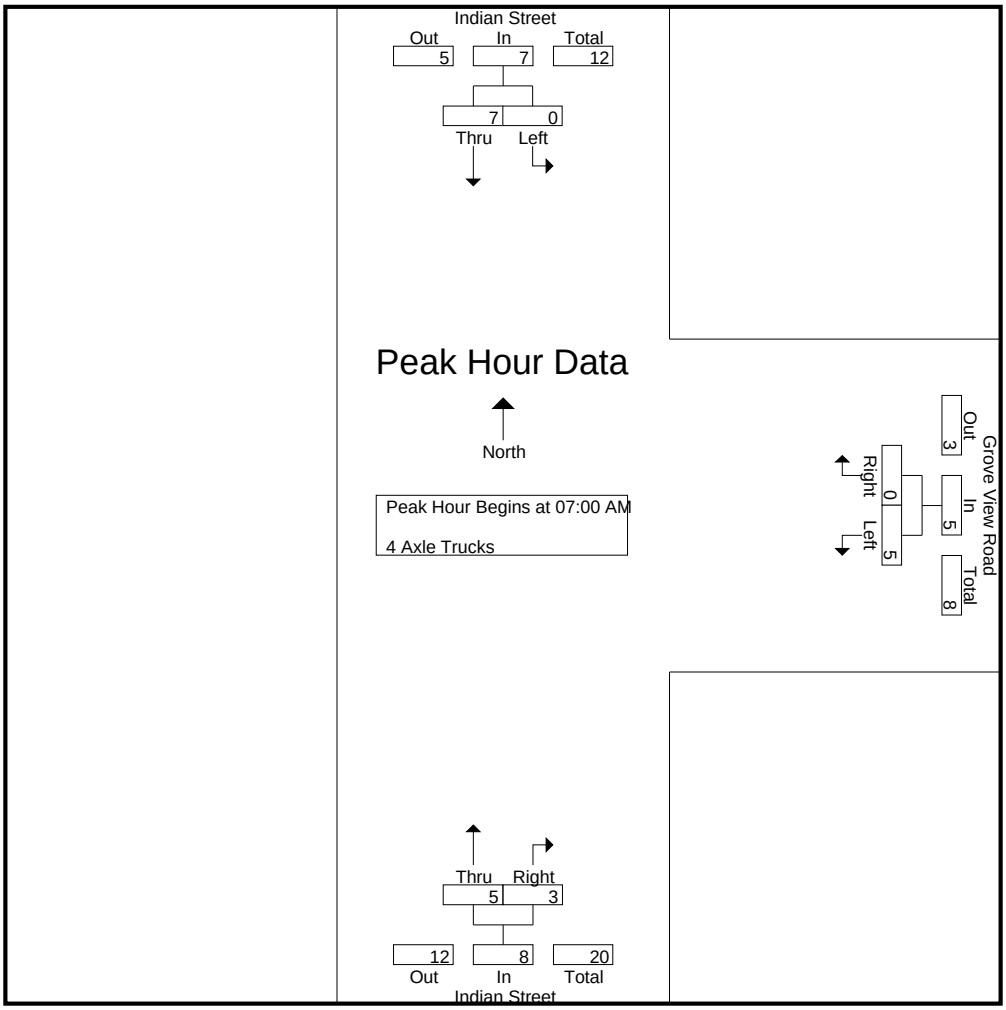
City of Moreno Valley
N/S: Indian Street
E/W: Grove View Road
Weather: Sunny

File Name : MRVINGVAM
Site Code : 05113389
Start Date : 10/1/2013
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	2	2	0	0	0	0	**2**	2
+15 mins.	0	1	1	1	0	1	2	1	**3**
+30 mins.	0	**3**	**3**	**2**	0	**2**	0	0	0
+45 mins.	0	1	1	2	0	2	**3**	0	3
Total Volume	0	7	7	5	0	5	5	3	8
% App. Total	0	100		100	0		62.5	37.5	
PHF	.000	.583	.583	.625	.000	.625	.417	.375	.667

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File Name : MRVINGVPM
Site Code : 05113389
Start Date : 10/1/2013
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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4 Axle Trucks

	Indian Street Southbound			Grove View Road Westbound			Indian Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	1	61	62	10	3	13	49	7	56	131
04:15 PM	0	53	53	16	1	17	42	3	45	115
04:30 PM	3	43	46	30	1	31	61	7	68	145
04:45 PM	0	49	49	10	0	10	38	3	41	100
Total	4	206	210	66	5	71	190	20	210	491
05:00 PM	1	48	49	7	0	7	45	6	51	107
05:15 PM	1	33	34	7	0	7	44	2	46	87
05:30 PM	0	47	47	15	0	15	31	1	32	94
05:45 PM	0	28	28	6	0	6	36	1	37	71
Total	2	156	158	35	0	35	156	10	166	359
Grand Total	6	362	368	101	5	106	346	30	376	850
Apprch %	1.6	98.4		95.3	4.7		92	8		
Total %	0.7	42.6	43.3	11.9	0.6	12.5	40.7	3.5	44.2	
Passenger Vehicles	5	336	341	74	4	78	283	9	292	711
% Passenger Vehicles	83.3	92.8	92.7	73.3	80	73.6	81.8	30	77.7	83.6
Large 2 Axle Vehicles	1	2	3	4	0	4	7	4	11	18
% Large 2 Axle Vehicles	16.7	0.6	0.8	4	0	3.8	2	13.3	2.9	2.1
3 Axle Vehicles	0	1	1	1	1	2	46	1	47	50
% 3 Axle Vehicles	0	0.3	0.3	1	20	1.9	13.3	3.3	12.5	5.9
4 Axle Trucks	0	23	23	22	0	22	10	16	26	71
% 4 Axle Trucks	0	6.4	6.2	21.8	0	20.8	2.9	53.3	6.9	8.4

	Indian Street Southbound			Grove View Road Westbound			Indian Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	1	**61**	**62**	10	**3**	13	49	**7**	56	131
04:15 PM	0	53	53	16	1	17	42	3	45	115
04:30 PM	**3**	43	46	**30**	1	**31**	**61**	7	**68**	**145**
04:45 PM	0	49	49	10	0	10	38	3	41	100
Total Volume	4	206	210	66	5	71	190	20	210	491
% App. Total	1.9	98.1		93	7		90.5	9.5		
PHF	.333	.844	.847	.550	.417	.573	.779	.714	.772	.847

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File Name : MRVINGVPM
Site Code : 05113389
Start Date : 10/1/2013
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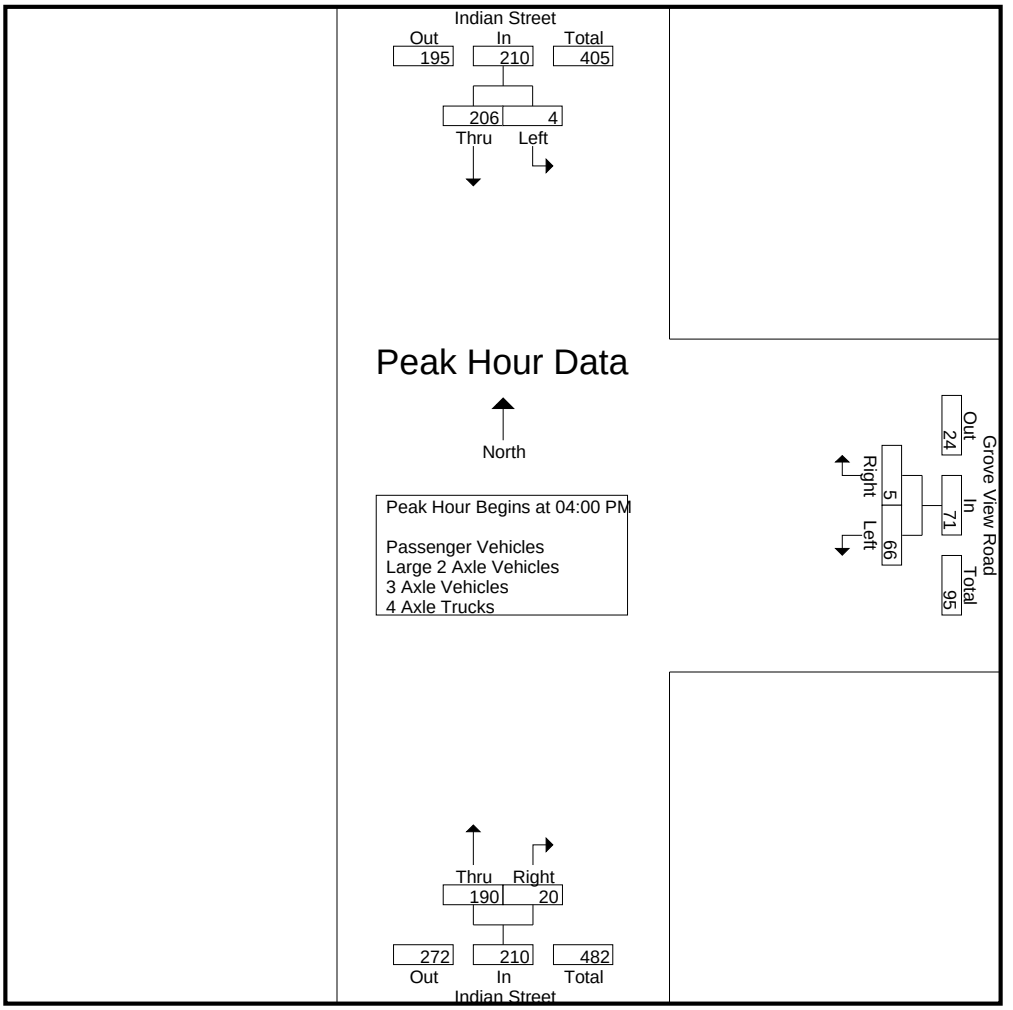

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	1	**61**	**62**	10	**3**	13	49	**7**	56
+15 mins.	0	53	53	16	1	17	42	3	45
+30 mins.	**3**	43	46	**30**	1	**31**	**61**	7	**68**
+45 mins.	0	49	49	10	0	10	38	3	41
Total Volume	4	206	210	66	5	71	190	20	210
% App. Total	1.9	98.1		93	7		90.5	9.5	
PHF	.333	.844	.847	.550	.417	.573	.779	.714	.772

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Groups Printed- Large 2 Axle Vehicles

	Indian Street Southbound			Grove View Road Westbound			Indian Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	2	2	0	0	0	0	0	0	2
04:30 PM	1	0	1	1	0	1	3	1	4	6
04:45 PM	0	0	0	0	0	0	2	1	3	3
Total	1	2	3	1	0	1	5	2	7	11
05:00 PM	0	0	0	0	0	0	0	2	2	2
05:15 PM	0	0	0	1	0	1	1	0	1	2
05:30 PM	0	0	0	1	0	1	1	0	1	2
05:45 PM	0	0	0	1	0	1	0	0	0	1
Total	0	0	0	3	0	3	2	2	4	7
Grand Total	1	2	3	4	0	4	7	4	11	18
Apprch %	33.3	66.7		100	0		63.6	36.4		
Total %	5.6	11.1	16.7	22.2	0	22.2	38.9	22.2	61.1	

	Indian Street Southbound			Grove View Road Westbound			Indian Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	**2**	**2**	0	0	0	0	0	0	2
04:30 PM	**1**	0	1	**1**	0	**1**	**3**	**1**	**4**	**6**
04:45 PM	0	0	0	0	0	0	2	1	3	3
Total Volume	1	2	3	1	0	1	5	2	7	11
% App. Total	33.3	66.7		100	0		71.4	28.6		
PHF	.250	.250	.375	.250	.000	.250	.417	.500	.438	.458

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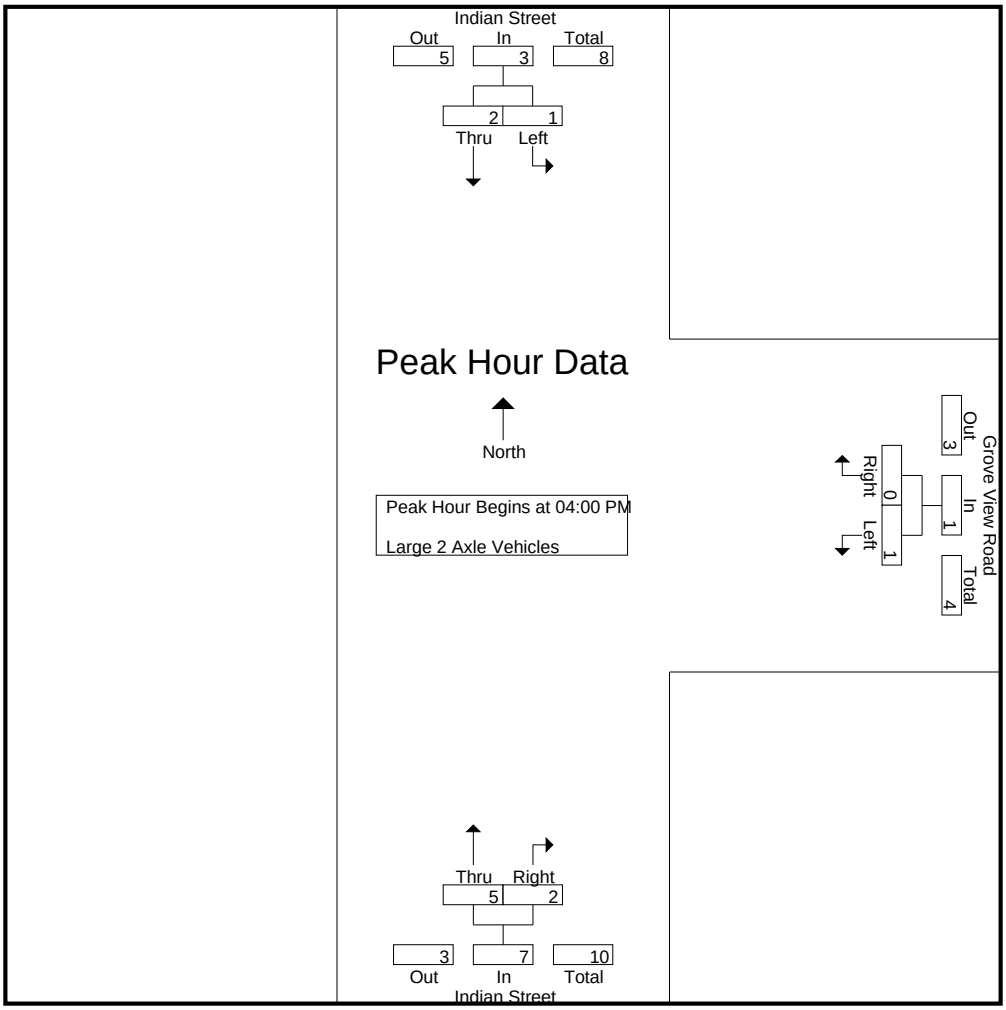

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	**2**	**2**	0	0	0	0	0	0
+30 mins.	**1**	0	1	**1**	0	**1**	**3**	**1**	**4**
+45 mins.	0	0	0	0	0	0	2	1	3
Total Volume	1	2	3	1	0	1	5	2	7
% App. Total	33.3	66.7		100	0		71.4	28.6	
PHF	.250	.250	.375	.250	.000	.250	.417	.500	.438

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Groups Printed- 3 Axle Vehicles

	Indian Street Southbound			Grove View Road Westbound			Indian Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	1	1	0	1	1	11	0	11	13
04:15 PM	0	0	0	1	0	1	7	0	7	8
04:30 PM	0	0	0	0	0	0	4	0	4	4
04:45 PM	0	0	0	0	0	0	5	0	5	5
Total	0	1	1	1	1	2	27	0	27	30
05:00 PM	0	0	0	0	0	0	5	1	6	6
05:15 PM	0	0	0	0	0	0	4	0	4	4
05:30 PM	0	0	0	0	0	0	5	0	5	5
05:45 PM	0	0	0	0	0	0	5	0	5	5
Total	0	0	0	0	0	0	19	1	20	20
Grand Total	0	1	1	1	1	2	46	1	47	50
Apprch %	0	100		50	50		97.9	2.1		
Total %	0	2	2	2	2	4	92	2	94	

	Indian Street Southbound			Grove View Road Westbound			Indian Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	**1**	**1**	0	**1**	**1**	**11**	0	**11**	**13**
04:15 PM	0	0	0	**1**	0	1	7	0	7	8
04:30 PM	0	0	0	0	0	0	4	0	4	4
04:45 PM	0	0	0	0	0	0	5	0	5	5
Total Volume	0	1	1	1	1	2	27	0	27	30
% App. Total	0	100		50	50		100	0		
PHF	.000	.250	.250	.250	.250	.500	.614	.000	.614	.577

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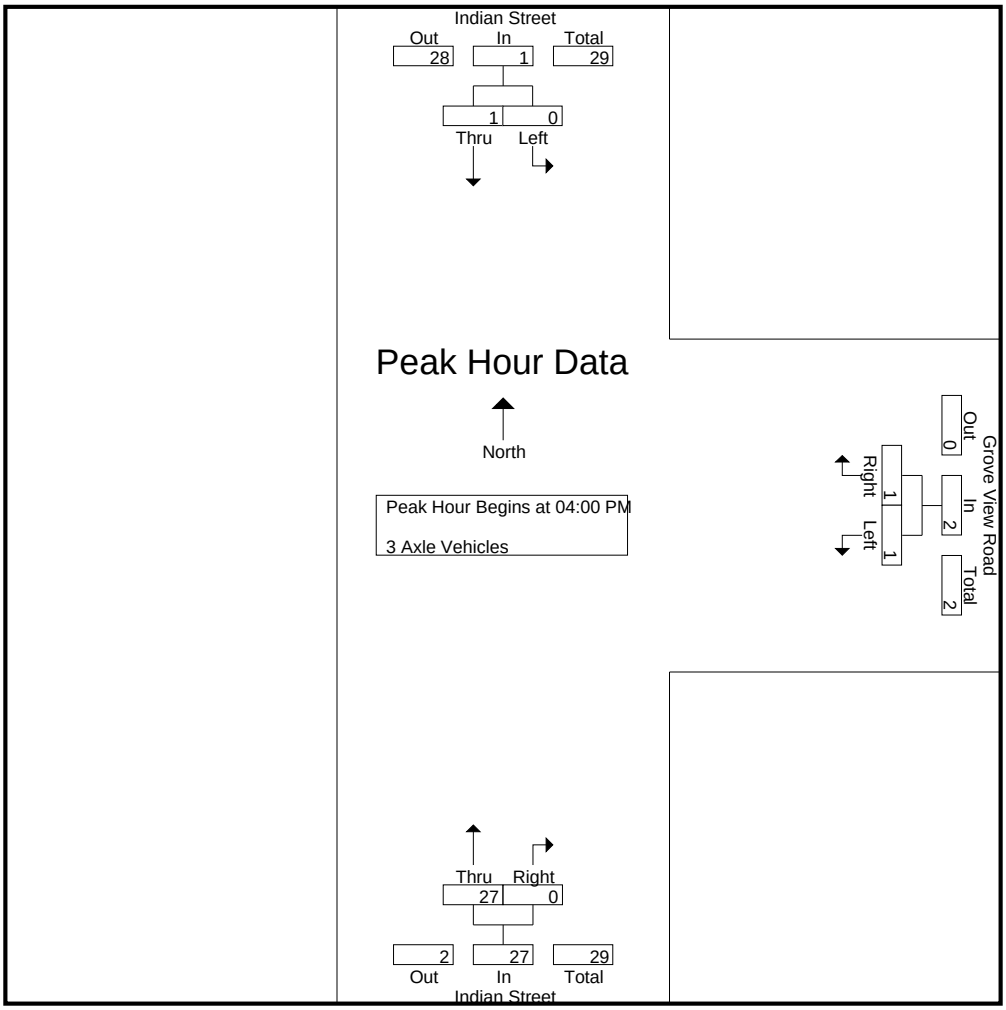

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	0	**1**	**1**	0	**1**	**1**	**11**	0	**11**
+15 mins.	0	0	0	**1**	0	1	7	0	7
+30 mins.	0	0	0	0	0	0	4	0	4
+45 mins.	0	0	0	0	0	0	5	0	5
Total Volume	0	1	1	1	1	2	27	0	27
% App. Total	0	100		50	50		100	0	
PHF	.000	.250	.250	.250	.250	.500	.614	.000	.614

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City of Moreno Valley
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Weather: Sunny

File Name : MRVINGVPM
Site Code : 05113389
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Groups Printed- 4 Axle Trucks

	Indian Street Southbound			Grove View Road Westbound			Indian Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	4	4	2	0	2	2	4	6	12
04:15 PM	0	4	4	5	0	5	2	2	4	13
04:30 PM	0	2	2	1	0	1	0	5	5	8
04:45 PM	0	3	3	3	0	3	1	1	2	8
Total	0	13	13	11	0	11	5	12	17	41
05:00 PM	0	4	4	2	0	2	2	3	5	11
05:15 PM	0	0	0	2	0	2	0	0	0	2
05:30 PM	0	3	3	5	0	5	1	1	2	10
05:45 PM	0	3	3	2	0	2	2	0	2	7
Total	0	10	10	11	0	11	5	4	9	30
Grand Total	0	23	23	22	0	22	10	16	26	71
Apprch %	0	100		100	0		38.5	61.5		
Total %	0	32.4	32.4	31	0	31	14.1	22.5	36.6	

	Indian Street Southbound			Grove View Road Westbound			Indian Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	**4**	**4**	2	0	2	**2**	4	**6**	12
04:15 PM	0	4	4	**5**	0	**5**	2	2	4	**13**
04:30 PM	0	2	2	1	0	1	0	**5**	5	8
04:45 PM	0	3	3	3	0	3	1	1	2	8
Total Volume	0	13	13	11	0	11	5	12	17	41
% App. Total	0	100		100	0		29.4	70.6		
PHF	.000	.813	.813	.550	.000	.550	.625	.600	.708	.788

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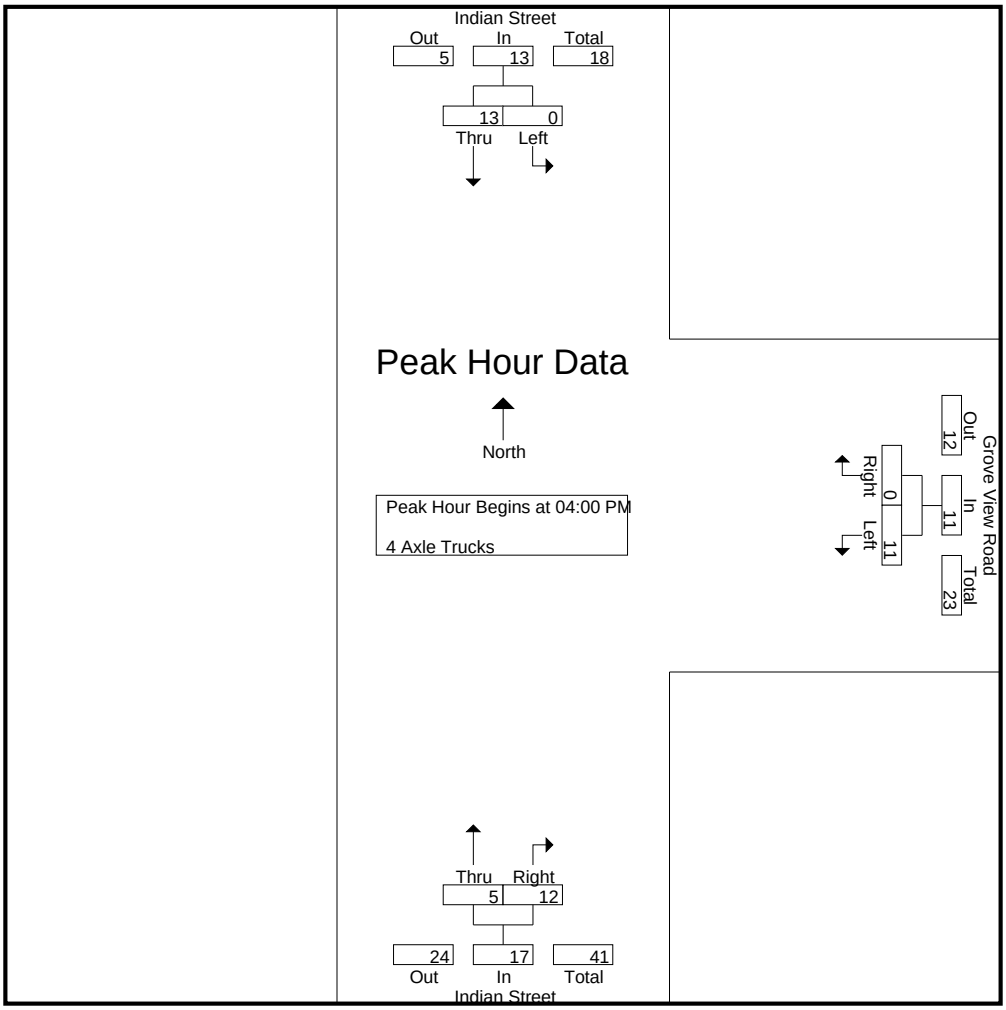

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	0	**4**	**4**	2	0	2	**2**	4	**6**
+15 mins.	0	4	4	**5**	0	**5**	2	2	4
+30 mins.	0	2	2	1	0	1	0	**5**	5
+45 mins.	0	3	3	3	0	3	1	1	2
Total Volume	0	13	13	11	0	11	5	12	17
% App. Total	0	100		100	0		29.4	70.6	
PHF	.000	.813	.813	.550	.000	.550	.625	.600	.708

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City of Moreno Valley
N/S: Indian Street
E/W: Harley Knox Boulevard
Weather: Sunny

File Name : MRVINHKAM
Site Code : 00000001
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Groups Printed- Total Volume

	Indian Street Southbound				Harley Knox Boulevard Westbound				Indian Street Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	8	57	65	3	72	1	76	14	22	1	37	36	41	7	84	262
07:15 AM	5	18	54	77	2	55	2	59	15	19	3	37	35	53	6	94	267
07:30 AM	2	15	39	56	3	50	1	54	7	21	5	33	41	48	4	93	236
07:45 AM	1	12	23	36	3	39	4	46	12	28	7	47	36	46	4	86	215
Total	8	53	173	234	11	216	8	235	48	90	16	154	148	188	21	357	980
08:00 AM	0	6	28	34	1	35	4	40	5	25	3	33	27	25	5	57	164
08:15 AM	1	7	21	29	2	29	2	33	12	12	2	26	15	34	3	52	140
08:30 AM	0	14	18	32	1	31	5	37	8	13	1	22	20	35	4	59	150
08:45 AM	2	6	16	24	0	23	3	26	5	15	1	21	30	25	4	59	130
Total	3	33	83	119	4	118	14	136	30	65	7	102	92	119	16	227	584
Grand Total	11	86	256	353	15	334	22	371	78	155	23	256	240	307	37	584	1564
Apprch %	3.1	24.4	72.5		4	90	5.9		30.5	60.5	9		41.1	52.6	6.3		
Total %	0.7	5.5	16.4	22.6	1	21.4	1.4	23.7	5	9.9	1.5	16.4	15.3	19.6	2.4	37.3	

	Indian Street Southbound				Harley Knox Boulevard Westbound				Indian Street Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	8	**57**	65	**3**	**72**	1	**76**	14	22	1	37	36	41	**7**	84	262
07:15 AM	**5**	**18**	54	**77**	2	55	2	59	**15**	19	3	37	35	**53**	6	**94**	**267**
07:30 AM	2	15	39	56	3	50	1	54	7	21	5	33	**41**	48	4	93	236
07:45 AM	1	12	23	36	3	39	**4**	46	12	**28**	**7**	**47**	36	46	4	86	215
Total Volume	8	53	173	234	11	216	8	235	48	90	16	154	148	188	21	357	980
% App. Total	3.4	22.6	73.9		4.7	91.9	3.4		31.2	58.4	10.4		41.5	52.7	5.9		
PHF	.400	.736	.759	.760	.917	.750	.500	.773	.800	.804	.571	.819	.902	.887	.750	.949	.918

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File Name : MRVINHKAM
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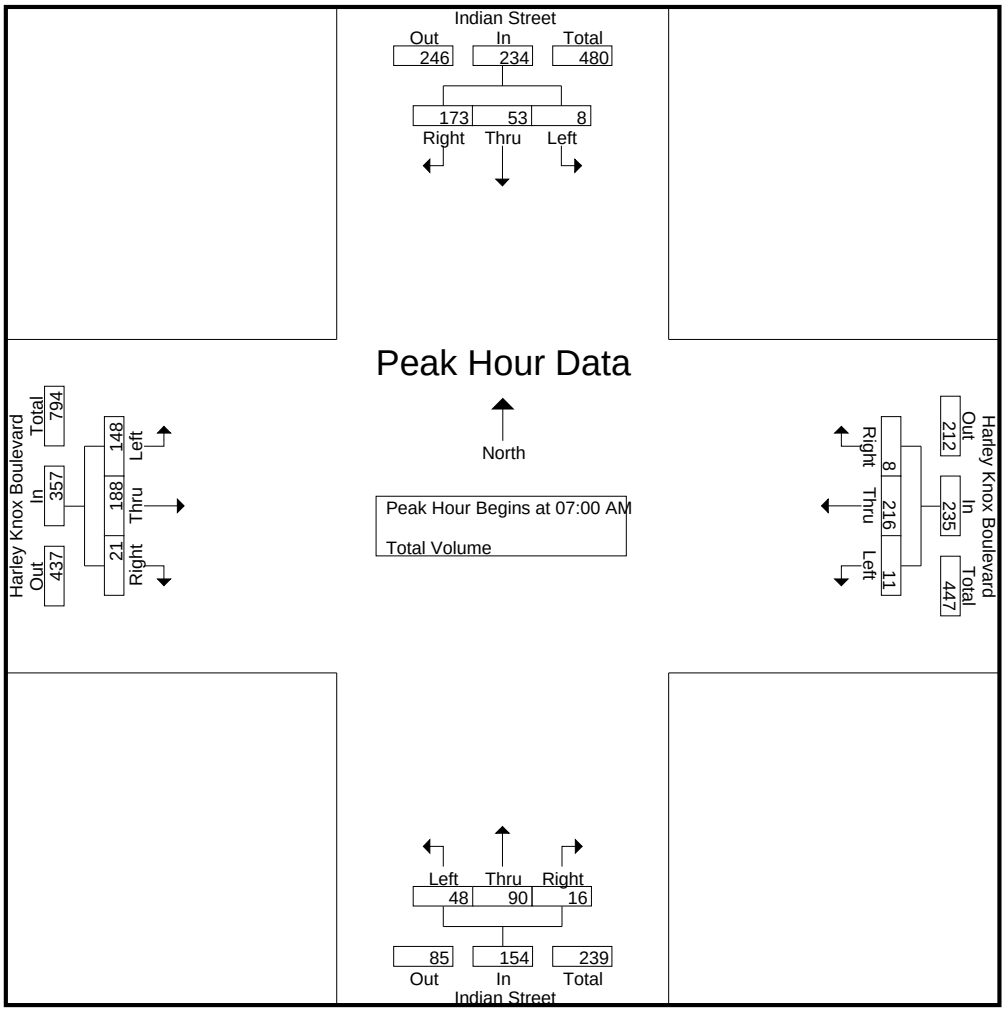

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	8	**57**	65	**3**	**72**	1	**76**	14	22	1	37	36	41	**7**	84
+15 mins.	**5**	**18**	54	**77**	2	55	2	59	**15**	19	3	37	35	**53**	6	**94**
+30 mins.	2	15	39	56	3	50	1	54	7	21	5	33	**41**	48	4	93
+45 mins.	1	12	23	36	3	39	**4**	46	12	**28**	**7**	**47**	36	46	4	86
Total Volume	8	53	173	234	11	216	8	235	48	90	16	154	148	188	21	357
% App. Total	3.4	22.6	73.9		4.7	91.9	3.4		31.2	58.4	10.4		41.5	52.7	5.9	
PHF	.400	.736	.759	.760	.917	.750	.500	.773	.800	.804	.571	.819	.902	.887	.750	.949

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Groups Printed- Total Volume

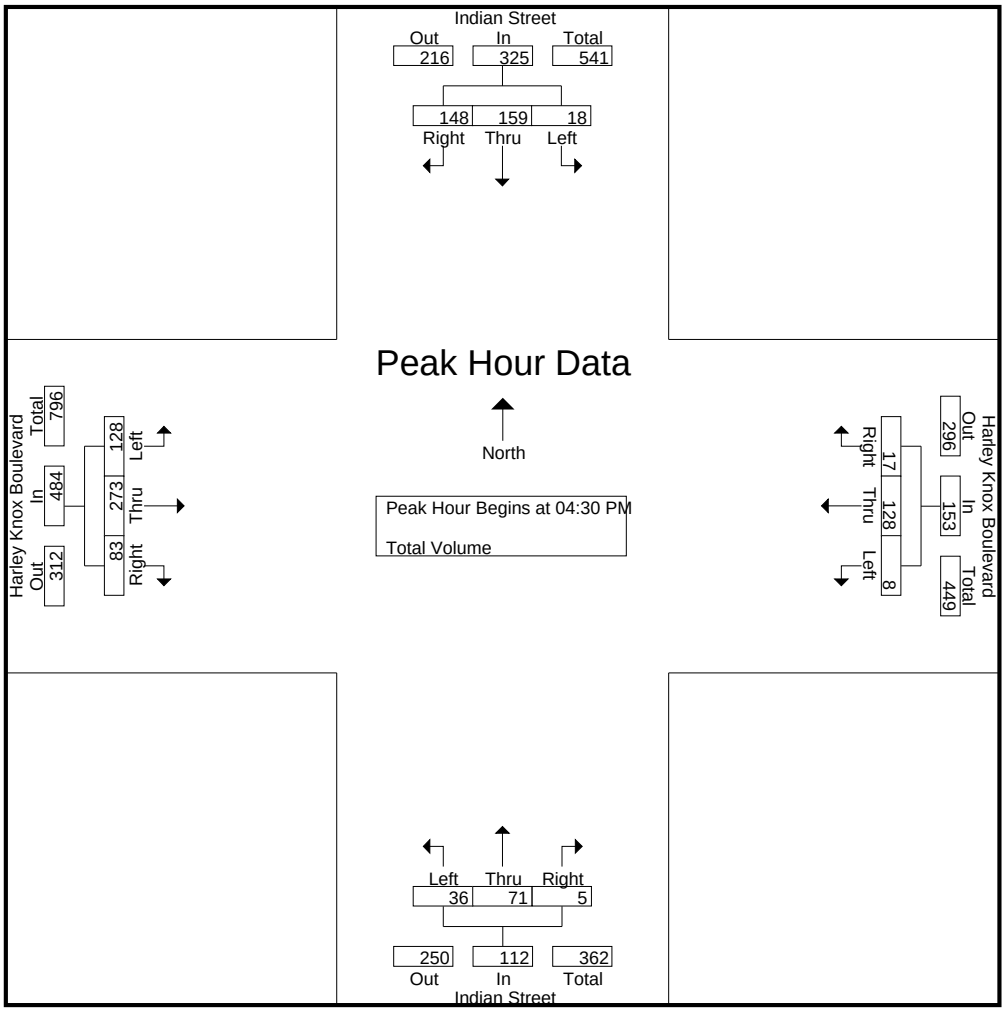
	Indian Street Southbound				Harley Knox Boulevard Westbound				Indian Street Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	3	22	45	70	0	36	3	39	10	19	4	33	34	59	16	109	251
04:15 PM	3	13	40	56	1	32	11	44	20	20	2	42	47	52	14	113	255
04:30 PM	6	42	39	87	3	26	10	39	11	20	2	33	39	63	18	120	279
04:45 PM	3	49	37	89	1	28	3	32	9	13	0	22	22	51	21	94	237
Total	15	126	161	302	5	122	27	154	50	72	8	130	142	225	69	436	1022
05:00 PM	4	40	39	83	1	39	3	43	9	13	3	25	36	82	21	139	290
05:15 PM	5	28	33	66	3	35	1	39	7	25	0	32	31	77	23	131	268
05:30 PM	1	31	23	55	1	31	4	36	5	15	2	22	29	75	24	128	241
05:45 PM	2	35	26	63	1	28	3	32	4	12	1	17	26	72	22	120	232
Total	12	134	121	267	6	133	11	150	25	65	6	96	122	306	90	518	1031
Grand Total	27	260	282	569	11	255	38	304	75	137	14	226	264	531	159	954	2053
Apprch %	4.7	45.7	49.6		3.6	83.9	12.5		33.2	60.6	6.2		27.7	55.7	16.7		
Total %	1.3	12.7	13.7	27.7	0.5	12.4	1.9	14.8	3.7	6.7	0.7	11	12.9	25.9	7.7	46.5	

	Indian Street Southbound				Harley Knox Boulevard Westbound				Indian Street Northbound				Harley Knox Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	**6**	42	**39**	87	**3**	26	**10**	39	**11**	20	2	**33**	**39**	63	18	120	279
04:45 PM	3	**49**	37	**89**	1	28	3	32	9	13	0	22	22	51	21	94	237
05:00 PM	4	40	39	83	1	**39**	3	**43**	9	13	**3**	25	36	**82**	21	**139**	**290**
05:15 PM	5	28	33	66	3	35	1	39	7	**25**	0	32	31	77	**23**	131	268
Total Volume	18	159	148	325	8	128	17	153	36	71	5	112	128	273	83	484	1074
% App. Total	5.5	48.9	45.5		5.2	83.7	11.1		32.1	63.4	4.5		26.4	56.4	17.1		
PHF	.750	.811	.949	.913	.667	.821	.425	.890	.818	.710	.417	.848	.821	.832	.902	.871	.926

Counts Unlimited Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Moreno Valley
N/S: Indian Street
E/W: Harley Knox Boulevard
Weather: Sunny

File Name : MRVINHKPM
Site Code : 00000001
Start Date : 5/16/2013
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM				04:15 PM				04:00 PM				05:00 PM			
+0 mins.	**6**	42	**39**	87	1	32	**11**	**44**	10	19	**4**	33	**36**	**82**	21	**139**
+15 mins.	3	**49**	37	**89**	**3**	26	10	39	**20**	**20**	2	**42**	31	77	23	131
+30 mins.	4	40	39	83	1	28	3	32	11	20	2	33	29	75	**24**	128
+45 mins.	5	28	33	66	1	**39**	3	43	9	13	0	22	26	72	22	120
Total Volume	18	159	148	325	6	125	27	158	50	72	8	130	122	306	90	518
% App. Total	5.5	48.9	45.5		3.8	79.1	17.1		38.5	55.4	6.2		23.6	59.1	17.4	
PHF	.750	.811	.949	.913	.500	.801	.614	.898	.625	.900	.500	.774	.847	.933	.938	.932

APPENDIX 3.2

Existing (2013) Conditions
Intersection Operations Analysis Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	356	4	137	203	0	0	0	0	365	8	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	3.5	5.0						5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95						1.00	1.00
Frpb, ped/bikes		1.00	0.97	1.00	1.00						1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		3610	1567	1805	3610						1811	1586
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		3610	1567	1805	3610						1811	1586
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	383	4	147	218	0	0	0	0	392	9	103
RTOR Reduction (vph)	0	0	2	0	0	0	0	0	0	0	0	78
Lane Group Flow (vph)	0	383	2	147	218	0	0	0	0	0	401	25
Confl. Peds. (#/hr)			5									5
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		37.2	37.2	9.8	50.5						19.5	19.5
Effective Green, g (s)		37.2	37.2	9.8	50.5						19.5	19.5
Actuated g/C Ratio		0.47	0.47	0.12	0.63						0.24	0.24
Clearance Time (s)		5.0	5.0	3.5	5.0						5.0	5.0
Vehicle Extension (s)		2.0	2.0	2.0	2.0						3.0	3.0
Lane Grp Cap (vph)		1678	728	221	2278						441	386
v/s Ratio Prot		c0.11		c0.08	0.06						c0.22	
v/s Ratio Perm			0.00									0.02
v/c Ratio		0.23	0.00	0.67	0.10						0.91	0.07
Uniform Delay, d1		12.8	11.5	33.5	5.8						29.4	23.2
Progression Factor		1.00	1.00	1.00	1.00						1.00	1.00
Incremental Delay, d2		0.3	0.0	5.7	0.1						22.2	0.1
Delay (s)		13.1	11.5	39.3	5.9						51.6	23.3
Level of Service		B	B	D	A						D	C
Approach Delay (s)		13.1			19.3			0.0			45.8	
Approach LOS		B			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	28.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	167	555	0	0	327	441	14	5	109	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0			5.0	5.0		5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00		1.00	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.97		1.00	0.98			
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.96	1.00			
Satd. Flow (prot)	1805	3610			3610	1563		1831	1587			
Flt Permitted	0.95	1.00			1.00	1.00		0.96	1.00			
Satd. Flow (perm)	1805	3610			3610	1563		1831	1587			
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	180	597	0	0	352	474	15	5	117	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	261	0	0	86	0	0	0
Lane Group Flow (vph)	180	597	0	0	352	213	0	20	31	0	0	0
Confl. Peds. (#/hr)						5			5			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Actuated Green, G (s)	13.8	60.0			42.7	42.7		25.0	25.0			
Effective Green, g (s)	13.8	60.0			42.7	42.7		25.0	25.0			
Actuated g/C Ratio	0.15	0.63			0.45	0.45		0.26	0.26			
Clearance Time (s)	3.5	5.0			5.0	5.0		5.0	5.0			
Vehicle Extension (s)	2.0	2.0			2.0	2.0		3.0	3.0			
Lane Grp Cap (vph)	262	2280			1622	702		481	417			
v/s Ratio Prot	c0.10	0.17			0.10			0.01				
v/s Ratio Perm						c0.14			c0.02			
v/c Ratio	0.69	0.26			0.22	0.30		0.04	0.07			
Uniform Delay, d1	38.5	7.7			16.0	16.7		26.1	26.3			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	5.8	0.3			0.3	1.1		0.2	0.3			
Delay (s)	44.4	8.0			16.3	17.8		26.2	26.6			
Level of Service	D	A			B	B		C	C			
Approach Delay (s)		16.4			17.1			26.6			0.0	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

```
-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                          Existing (2013) Conditions
                                 AM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #3 Western Way / Harley Knox Boulevard
*******************************************************************************
Average Delay (sec/veh):      0.9       Worst Case Level Of Service: C[ 16.2]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  0    0  0  1! 0  0    0  1  1  0  0    0  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0     8    0    31    68  596     0     0  736    27
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0     8    0    31    68  596     0     0  736    27
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:     0    0     0     9    0    34    75  660     0     0  815    30
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0     0     9    0    34    75  660     0     0  815    30
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   6.8  6.5   6.9   4.1 xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx   3.5  4.0   3.3   2.2 xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  1296 1626   408   845 xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx   157  103   599   800 xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx   145   93   599   800 xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  0.06 0.00  0.06  0.09 xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.3 xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx  10.0 xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     A    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx  364 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx  0.4 xxxxx   0.3 xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx 16.2 xxxxx  10.0 xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    C     *     A    *     *     *    *     *
ApproachDel:    xxxxxx             16.2           xxxxxx           xxxxxx
ApproachLOS:         *               C                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```

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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Existing (2013) Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #4 Patterson Avenue / Harley Knox Boulevard

Cycle (sec): 120 Critical Vol./Cap.(X): 0.497
Loss Time (sec): 12 Average Delay (sec/veh): 20.6
Optimal Cycle: OPTIMIZED Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	27	27	27	27	27	27	10	18	18	10	18	18
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1! 0	0	0 1	0 0	1	1 0	1 0	1	1 0	0 1	0
Volume Module:												
Base Vol:	138	2	1	0	2	11	9	556	31	3	582	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	138	2	1	0	2	11	9	556	31	3	582	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	149	2	1	0	2	12	10	599	33	3	627	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	149	2	1	0	2	12	10	599	33	3	627	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	149	2	1	0	2	12	10	599	33	3	627	1
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.72	0.72	0.72	1.00	1.00	0.85	0.95	1.00	0.85	0.95	1.00	1.00
Lanes:	0.98	0.01	0.01	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.01
Final Sat.:	1332	19	10	0	1900	1615	1805	1900	1615	1805	1897	3
Capacity Analysis Module:												
Vol/Sat:	0.11	0.11	0.11	0.00	0.00	0.01	0.01	0.32	0.02	0.00	0.33	0.33
Crit Moves:		****					****				****	
Green/Cycle:	0.23	0.23	0.23	0.00	0.23	0.23	0.08	0.53	0.53	0.14	0.59	0.59
Volume/Cap:	0.50	0.50	0.50	0.00	0.01	0.03	0.06	0.59	0.04	0.01	0.56	0.56
Delay/Veh:	41.8	41.8	41.8	0.0	36.1	36.3	50.9	20.0	13.3	44.4	15.6	15.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.8	41.8	41.8	0.0	36.1	36.3	50.9	20.0	13.3	44.4	15.6	15.6
LOS by Move:	D	D	D	A	D	D	D	B	B	D	B	B
HCM2kAvgQ:	5	5	5	0	0	0	0	15	1	0	14	14

Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                          Existing (2013) Conditions
                                 AM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #5 Heacock Street / Nandina Avenue
*******************************************************************************
Average Delay (sec/veh):      7.8       Worst Case Level Of Service: A[  8.6]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  1  0  0    1  0  1  0  0    0  0  0  0  0    1  0  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    1     0    65    1     0     0    0     0     2    0    67
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    1     0    65    1     0     0    0     0     2    0    67
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:     0    1     0    68    1     0     0    0     0     2    0    71
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    1     0    68    1     0     0    0     0     2    0    71
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4 xxxx   6.2
FollowUpTim:xxxxx xxxx xxxxx   2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5 xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx     1 xxxx xxxxx  xxxx xxxx xxxxx   139 xxxx     1
Potent Cap.: xxxx xxxx xxxxx  1635 xxxx xxxxx  xxxx xxxx xxxxx   859 xxxx  1089
Move Cap.:   xxxx xxxx xxxxx  1635 xxxx xxxxx  xxxx xxxx xxxxx   831 xxxx  1089
Volume/Cap:  xxxx xxxx  xxxx  0.04 xxxx  xxxx  xxxx xxxx  xxxx  0.00 xxxx  0.06
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx   0.1 xxxx xxxxx  xxxx xxxx xxxxx   0.0 xxxx   0.2
Control Del:xxxxx xxxx xxxxx   7.3 xxxx xxxxx xxxxx xxxx xxxxx   9.3 xxxx   8.5
LOS by Move:    *    *     *     A    *     *     *    *     *     A    *     A
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx              8.6
ApproachLOS:         *                *                *                A
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```

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```
-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                          Existing (2013) Conditions
                                 AM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #7 Webster Avenue / Harley Knox Boulevard
*******************************************************************************
Average Delay (sec/veh):      0.1       Worst Case Level Of Service: C[ 16.4]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  0  1  0    1  0  0  1  0    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       1    2     1     0    1     1     0  358     1     0  357     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    1    2     1     0    1     1     0  358     1     0  357     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.80 0.80  0.80  0.80 0.80  0.80  0.80 0.80  0.80  0.80 0.80  0.80
PHF Volume:     1    2     1     0    1     1     0  446     1     0  445     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    1    2     1     0    1     1     0  446     1     0  445     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  7.1  6.5   6.2 xxxxx  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  893  892   447  xxxx  893   445  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.:  264  283   616  xxxx  283   617  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:    263  283   616  xxxx  283   617  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  0.00 0.01  0.00  xxxx 0.00  0.00  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  320 xxxxx  xxxx xxxx   388  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.0 xxxxx xxxxx xxxx   0.0 xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 16.4 xxxxx xxxxx xxxx  14.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    C     *     *    *     B     *    *     *     *    *     *
ApproachDel:      16.4             14.3           xxxxxx           xxxxxx
ApproachLOS:         C                B                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Existing (2013) Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #10 Indian Street / Nandina Avenue

Cycle (sec): 90 Critical Vol./Cap.(X): 0.121
Loss Time (sec): 16 Average Delay (sec/veh): 23.3
Optimal Cycle: OPTIMIZED Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Ovl			Include		
Min. Green:	10	27	27	10	27	27	10	28	28	10	28	28
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	0 1	1 0	1	0 1
Volume Module:												
Base Vol:	58	167	48	0	89	2	1	8	46	55	20	2
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	58	167	48	0	89	2	1	8	46	55	20	2
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	63	181	52	0	97	2	1	9	50	60	22	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	63	181	52	0	97	2	1	9	50	60	22	2
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	63	181	52	0	97	2	1	9	50	60	22	2
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.92	0.92	1.00	0.95	0.95	0.95	1.00	0.85	0.95	1.00	0.85
Lanes:	1.00	1.55	0.45	1.00	1.96	0.04	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1805	2712	779	1900	3520	79	1805	1900	1615	1805	1900	1615
Capacity Analysis Module:												
Vol/Sat:	0.03	0.07	0.07	0.00	0.03	0.03	0.00	0.00	0.03	0.03	0.01	0.00
Crit Moves:	****				****			****		****		
Green/Cycle:	0.11	0.41	0.41	0.00	0.30	0.30	0.11	0.31	0.42	0.11	0.31	0.31
Volume/Cap:	0.32	0.16	0.16	0.00	0.09	0.09	0.01	0.01	0.07	0.30	0.04	0.00
Delay/Veh:	38.3	17.2	17.2	0.0	23.2	23.2	36.1	21.9	16.0	38.1	22.1	21.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.3	17.2	17.2	0.0	23.2	23.2	36.1	21.9	16.0	38.1	22.1	21.8
LOS by Move:	D	B	B	A	C	C	D	C	B	D	C	C
HCM2kAvgQ:	2	2	2	0	1	1	0	0	1	2	0	0

Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                          Existing (2013) Conditions
                                 AM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #12 Indian Street / Driveway 5/Waste Management Driveway
*******************************************************************************
Average Delay (sec/veh):      1.2       Worst Case Level Of Service: B[ 12.0]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  1  0  1    1  0  1  0  0    0  0  0  0  0    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  262    15    12  180     0     0    0     0    31    0    12
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  262    15    12  180     0     0    0     0    31    0    12
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.89 0.89  0.89  0.89 0.89  0.89  0.89 0.89  0.89  0.89 0.89  0.89
PHF Volume:     0  296    17    14  203     0     0    0     0    35    0    14
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0  296    17    14  203     0     0    0     0    35    0    14
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4  6.5   6.2
FollowUpTim:xxxxx xxxx xxxxx   2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx   313 xxxx xxxxx  xxxx xxxx xxxxx   527  527   296
Potent Cap.: xxxx xxxx xxxxx  1259 xxxx xxxxx  xxxx xxxx xxxxx   515  459   748
Move Cap.:   xxxx xxxx xxxxx  1259 xxxx xxxxx  xxxx xxxx xxxxx   511  454   748
Volume/Cap:  xxxx xxxx  xxxx  0.01 xxxx  xxxx  xxxx xxxx  xxxx  0.07 0.00  0.02
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx   0.0 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx   7.9 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  561 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  0.3 xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 12.0 xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    B     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             12.0
ApproachLOS:         *                *                *                B
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                          Existing (2013) Conditions
                                 AM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #14 Indian Street / Grove View Road
*******************************************************************************
Average Delay (sec/veh):      1.6       Worst Case Level Of Service: B[ 13.1]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  1  0    1  0  1  0  0    0  0  0  0  0    1  0  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  273    27     2  208     0     0    0     0    66    0     4
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  273    27     2  208     0     0    0     0    66    0     4
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0  296    29     2  225     0     0    0     0    72    0     4
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0  296    29     2  225     0     0    0     0    72    0     4
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4 xxxx   6.2
FollowUpTim:xxxxx xxxx xxxxx   2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5 xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx   325 xxxx xxxxx  xxxx xxxx xxxxx   540 xxxx   310
Potent Cap.: xxxx xxxx xxxxx  1246 xxxx xxxxx  xxxx xxxx xxxxx   506 xxxx   734
Move Cap.:   xxxx xxxx xxxxx  1246 xxxx xxxxx  xxxx xxxx xxxxx   505 xxxx   734
Volume/Cap:  xxxx xxxx  xxxx  0.00 xxxx  xxxx  xxxx xxxx  xxxx  0.14 xxxx  0.01
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx   0.0 xxxx xxxxx  xxxx xxxx xxxxx   0.5 xxxx   0.0
Control Del:xxxxx xxxx xxxxx   7.9 xxxx xxxxx xxxxx xxxx xxxxx  13.3 xxxx   9.9
LOS by Move:    *    *     *     A    *     *     *    *     *     B    *     A
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             13.1
ApproachLOS:         *                *                *                B
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Existing (2013) Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #15 Indian Street / Harley Knox Boulevard

Cycle (sec): 120 Critical Vol./Cap.(X): 0.259
Loss Time (sec): 16 Average Delay (sec/veh): 32.2
Optimal Cycle: OPTIMIZED Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	10	39	39	10	39	39	10	34	34	10	34	34
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	1 0	1 1	0	1 0	1 0	1	2 0	1 1	0
Volume Module:												
Base Vol:	48	91	16	8	54	187	171	211	21	11	222	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	48	91	16	8	54	187	171	211	21	11	222	8
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	52	99	17	9	59	204	186	230	23	12	242	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	52	99	17	9	59	204	186	230	23	12	242	9
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	52	99	17	9	59	204	186	230	23	12	242	9
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.85	0.95	0.84	0.84	0.95	1.00	0.85	0.92	0.95	0.95
Lanes:	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.93	0.07
Final Sat.:	3502	3610	1615	1805	1596	1596	1805	1900	1615	3502	3467	125
Capacity Analysis Module:												
Vol/Sat:	0.01	0.03	0.01	0.00	0.04	0.13	0.10	0.12	0.01	0.00	0.07	0.07
Crit Moves:	****				****		****				****	
Green/Cycle:	0.08	0.33	0.33	0.08	0.33	0.50	0.18	0.35	0.35	0.10	0.28	0.28
Volume/Cap:	0.18	0.08	0.03	0.06	0.11	0.26	0.59	0.34	0.04	0.03	0.25	0.25
Delay/Veh:	51.5	28.1	27.7	50.8	28.4	17.3	48.5	28.8	25.4	48.4	33.3	33.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.5	28.1	27.7	50.8	28.4	17.3	48.5	28.8	25.4	48.4	33.3	33.3
LOS by Move:	D	C	C	D	C	B	D	C	C	D	C	C
HCM2kAvgQ:	1	1	0	0	2	4	6	6	1	0	4	4

Note: Queue reported is the number of cars per lane.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	248	7	135	112	0	0	0	0	339	7	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	3.5	5.0						5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95						1.00	1.00
Frpb, ped/bikes		1.00	0.97	1.00	1.00						1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		3610	1567	1805	3610						1811	1586
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		3610	1567	1805	3610						1811	1586
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	279	8	152	126	0	0	0	0	381	8	202
RTOR Reduction (vph)	0	0	4	0	0	0	0	0	0	0	0	153
Lane Group Flow (vph)	0	279	4	152	126	0	0	0	0	0	389	49
Confl. Peds. (#/hr)			5									5
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		37.3	37.3	9.9	50.7						19.3	19.3
Effective Green, g (s)		37.3	37.3	9.9	50.7						19.3	19.3
Actuated g/C Ratio		0.47	0.47	0.12	0.63						0.24	0.24
Clearance Time (s)		5.0	5.0	3.5	5.0						5.0	5.0
Vehicle Extension (s)		2.0	2.0	2.0	2.0						3.0	3.0
Lane Grp Cap (vph)		1683	730	223	2287						436	382
v/s Ratio Prot		c0.08		c0.08	0.03						c0.21	
v/s Ratio Perm			0.00									0.03
v/c Ratio		0.17	0.01	0.68	0.06						0.89	0.13
Uniform Delay, d1		12.4	11.4	33.5	5.6						29.3	23.8
Progression Factor		1.00	1.00	1.00	1.00						1.00	1.00
Incremental Delay, d2		0.2	0.0	6.7	0.0						20.0	0.2
Delay (s)		12.6	11.4	40.2	5.6						49.3	23.9
Level of Service		B	B	D	A						D	C
Approach Delay (s)		12.5			24.5			0.0			40.6	
Approach LOS		B			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	29.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	55.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	172	416	0	0	238	328	9	4	123	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0			5.0	5.0		5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00		1.00	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.97		1.00	0.98			
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.97	1.00			
Satd. Flow (prot)	1805	3610			3610	1563		1834	1587			
Flt Permitted	0.95	1.00			1.00	1.00		0.97	1.00			
Satd. Flow (perm)	1805	3610			3610	1563		1834	1587			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	183	443	0	0	253	349	10	4	131	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	193	0	0	97	0	0	0
Lane Group Flow (vph)	183	443	0	0	253	156	0	14	34	0	0	0
Confl. Peds. (#/hr)						5			5			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Actuated Green, G (s)	14.0	60.0			42.5	42.5		25.0	25.0			
Effective Green, g (s)	14.0	60.0			42.5	42.5		25.0	25.0			
Actuated g/C Ratio	0.15	0.63			0.45	0.45		0.26	0.26			
Clearance Time (s)	3.5	5.0			5.0	5.0		5.0	5.0			
Vehicle Extension (s)	2.0	2.0			2.0	2.0		3.0	3.0			
Lane Grp Cap (vph)	266	2280			1615	699		482	417			
v/s Ratio Prot	c0.10	0.12			0.07			0.01				
v/s Ratio Perm						c0.10			c0.02			
v/c Ratio	0.69	0.19			0.16	0.22		0.03	0.08			
Uniform Delay, d1	38.4	7.3			15.6	16.1		26.0	26.4			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	5.8	0.2			0.2	0.7		0.1	0.4			
Delay (s)	44.2	7.5			15.8	16.9		26.1	26.8			
Level of Service	D	A			B	B		C	C			
Approach Delay (s)		18.3			16.4			26.7			0.0	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	55.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

```
-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                          Existing (2013) Conditions
                                 PM Peak Hour
-------------------------------------------------------------------------------
                       Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #3 Western Way / Harley Knox Boulevard
*******************************************************************************
Average Delay (sec/veh):      0.7       Worst Case Level Of Service: B[ 11.9]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  0    0  0  1! 0  0    0  1  1  0  0    0  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0    10    0    50    12  527     0     0  516     5
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0    10    0    50    12  527     0     0  516     5
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.94 0.94  0.94  0.94 0.94  0.94  0.94 0.94  0.94  0.94 0.94  0.94
PHF Volume:     0    0     0    11    0    53    13  561     0     0  550     5
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0     0    11    0    53    13  561     0     0  550     5
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   6.8  6.5   6.9   4.1 xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx   3.5  4.0   3.3   2.2 xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx   856 1136   275   555 xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx   301  204   729  1026 xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx   298  201   729  1026 xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  0.04 0.00  0.07  0.01 xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.0 xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.6 xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     A    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx  587 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx  0.4 xxxxx   0.0 xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx 11.9 xxxxx   8.6 xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    B     *     A    *     *     *    *     *
ApproachDel:    xxxxxx             11.9           xxxxxx           xxxxxx
ApproachLOS:         *               B                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```

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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Existing (2013) Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #4 Patterson Avenue / Harley Knox Boulevard

Cycle (sec): 120 Critical Vol./Cap.(X): 0.327
Loss Time (sec): 12 Average Delay (sec/veh): 13.2
Optimal Cycle: OPTIMIZED Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	27	27	27	27	27	27	10	18	18	10	18	18
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1! 0	0	0 1	0 0	1	1 0	1 0	1	1 0	0 1	0
Volume Module:												
Base Vol:	63	1	4	4	3	8	5	474	46	0	418	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	63	1	4	4	3	8	5	474	46	0	418	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	68	1	4	4	3	9	5	515	50	0	454	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	68	1	4	4	3	9	5	515	50	0	454	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	68	1	4	4	3	9	5	515	50	0	454	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.74	0.74	0.74	0.92	0.92	0.85	0.95	1.00	0.85	1.00	1.00	1.00
Lanes:	0.93	0.01	0.06	0.57	0.43	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1304	21	83	1001	751	1615	1805	1900	1615	1900	1900	0
Capacity Analysis Module:												
Vol/Sat:	0.05	0.05	0.05	0.00	0.00	0.01	0.00	0.27	0.03	0.00	0.24	0.00
Crit Moves:		****					****				****	
Green/Cycle:	0.23	0.23	0.23	0.23	0.23	0.23	0.08	0.68	0.68	0.00	0.59	0.00
Volume/Cap:	0.23	0.23	0.23	0.02	0.02	0.02	0.04	0.40	0.05	0.00	0.40	0.00
Delay/Veh:	38.4	38.4	38.4	36.2	36.2	36.3	50.7	8.9	6.6	0.0	13.4	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.4	38.4	38.4	36.2	36.2	36.3	50.7	8.9	6.6	0.0	13.4	0.0
LOS by Move:	D	D	D	D	D	D	D	A	A	A	B	A
HCM2kAvgQ:	2	2	2	0	0	0	0	8	1	0	9	0

Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                          Existing (2013) Conditions
                                 PM Peak Hour
-------------------------------------------------------------------------------
                       Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #5 Heacock Street / Nandina Avenue
*******************************************************************************
Average Delay (sec/veh):      7.2       Worst Case Level Of Service: A[  8.5]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  1  0    1  0  1  0  0    0  0  0  0  0    1  0  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    3     3   104    6     0     0    0     0     0    0    47
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    3     3   104    6     0     0    0     0     0    0    47
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.87 0.87  0.87  0.87 0.87  0.87  0.87 0.87  0.87  0.87 0.87  0.87
PHF Volume:     0    3     3   120    7     0     0    0     0     0    0    54
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    3     3   120    7     0     0    0     0     0    0    54
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4 xxxx   6.2
FollowUpTim:xxxxx xxxx xxxxx   2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5 xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx     7 xxxx xxxxx  xxxx xxxx xxxxx   252 xxxx     5
Potent Cap.: xxxx xxxx xxxxx  1627 xxxx xxxxx  xxxx xxxx xxxxx   741 xxxx  1084
Move Cap.:   xxxx xxxx xxxxx  1627 xxxx xxxxx  xxxx xxxx xxxxx   699 xxxx  1084
Volume/Cap:  xxxx xxxx  xxxx  0.07 xxxx  xxxx  xxxx xxxx  xxxx  0.00 xxxx  0.05
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx   0.2 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   0.2
Control Del:xxxxx xxxx xxxxx   7.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   8.5
LOS by Move:    *    *     *     A    *     *     *    *     *     *    *     A
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx              8.5
ApproachLOS:         *                *                *                A
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                          Existing (2013) Conditions
                                 PM Peak Hour
-------------------------------------------------------------------------------
                       Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #7 Webster Avenue / Harley Knox Boulevard
*******************************************************************************
Average Delay (sec/veh):      0.1       Worst Case Level Of Service: C[ 17.1]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  1  0  0    1  0  0  1  0    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       2    0     1     0    1     0     1  434     0     2  338     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    2    0     1     0    1     0     1  434     0     2  338     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.91 0.91  0.91  0.91 0.91  0.91  0.91 0.91  0.91  0.91 0.91  0.91
PHF Volume:     2    0     1     0    1     0     1  475     0     2  370     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    2    0     1     0    1     0     1  475     0     2  370     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  7.1  6.5   6.2 xxxxx  6.5 xxxxx   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx  4.0 xxxxx   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  852  851   475  xxxx  851 xxxxx   370 xxxx xxxxx   475 xxxx xxxxx
Potent Cap.:  282  299   594  xxxx  299 xxxxx  1200 xxxx xxxxx  1098 xxxx xxxxx
Move Cap.:    281  298   594  xxxx  298 xxxxx  1200 xxxx xxxxx  1098 xxxx xxxxx
Volume/Cap:  0.01 0.00  0.00  xxxx 0.00  xxxx  0.00 xxxx  xxxx  0.00 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx  0.0 xxxxx   0.0 xxxx xxxxx   0.0 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx 17.1 xxxxx   8.0 xxxx xxxxx   8.3 xxxx xxxxx
LOS by Move:    *    *     *     *    C     *     A    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  340 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.0 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 15.7 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    C     *     *    *     *     *    *     *     *    *     *
ApproachDel:      15.7             17.1           xxxxxx           xxxxxx
ApproachLOS:         C                C                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Existing (2013) Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #10 Indian Street / Nandina Avenue

Cycle (sec): 90 Critical Vol./Cap.(X): 0.131
Loss Time (sec): 16 Average Delay (sec/veh): 22.9
Optimal Cycle: OPTIMIZED Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Ovl			Include		
Min. Green:	10	27	27	10	27	27	10	28	28	10	28	28
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0 1	1 0		1 0 1	1 0		1 0 1	0 1		1 0 1	0 1	
Volume Module:												
Base Vol:	39	104	38	0	78	0	2	38	138	67	10	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	39	104	38	0	78	0	2	38	138	67	10	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	42	112	41	0	84	0	2	41	148	72	11	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	42	112	41	0	84	0	2	41	148	72	11	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	42	112	41	0	84	0	2	41	148	72	11	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	0.91	1.00	0.95	0.95	0.95	1.00	0.85	0.95	1.00	1.00
Lanes:	1.00	1.46	0.54	1.00	2.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1805	2538	927	1900	3610	0	1805	1900	1615	1805	1900	1900
Capacity Analysis Module:												
Vol/Sat:	0.02	0.04	0.04	0.00	0.02	0.00	0.00	0.02	0.09	0.04	0.01	0.00
Crit Moves:	****				****			****		****		
Green/Cycle:	0.11	0.41	0.41	0.00	0.30	0.00	0.11	0.31	0.42	0.11	0.31	0.00
Volume/Cap:	0.21	0.11	0.11	0.00	0.08	0.00	0.01	0.07	0.22	0.36	0.02	0.00
Delay/Veh:	37.4	16.8	16.8	0.0	23.1	0.0	36.1	22.3	17.2	38.7	21.9	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.4	16.8	16.8	0.0	23.1	0.0	36.1	22.3	17.2	38.7	21.9	0.0
LOS by Move:	D	B	B	A	C	A	D	C	B	D	C	A
HCM2kAvgQ:	1	1	1	0	1	0	0	1	3	2	0	0

Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                          Existing (2013) Conditions
                                 PM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #12 Indian Street / Driveway 5/Waste Management Driveway
*******************************************************************************
Average Delay (sec/veh):      1.7       Worst Case Level Of Service: B[ 13.7]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  1  0  1    1  0  1  0  0    0  0  0  0  0    1  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  183    65    34  248     0     0    0     0    55    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  183    65    34  248     0     0    0     0    55    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.87 0.87  0.87  0.87 0.87  0.87  0.87 0.87  0.87  0.87 0.87  0.87
PHF Volume:     0  209    74    39  284     0     0    0     0    63    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0  209    74    39  284     0     0    0     0    63    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4 xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx   2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx   284 xxxx xxxxx  xxxx xxxx xxxxx   571 xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx  1290 xxxx xxxxx  xxxx xxxx xxxxx   486 xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx  1290 xxxx xxxxx  xxxx xxxx xxxxx   475 xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  0.03 xxxx  xxxx  xxxx xxxx  xxxx  0.13 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx   0.1 xxxx xxxxx  xxxx xxxx xxxxx   0.5 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx   7.9 xxxx xxxxx xxxxx xxxx xxxxx  13.7 xxxx xxxxx
LOS by Move:    *    *     *     A    *     *     *    *     *     B    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             13.7
ApproachLOS:         *                *                *                B
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```

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```
-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                          Existing (2013) Conditions
                                 PM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #14 Indian Street / Grove View Road
*******************************************************************************
Average Delay (sec/veh):      2.3       Worst Case Level Of Service: C[ 16.0]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  1  0    1  0  1  0  0    0  0  0  0  0    1  0  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  241    45     5  298     0     0    0     0    90    0     6
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  241    45     5  298     0     0    0     0    90    0     6
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.85 0.85  0.85  0.85 0.85  0.85  0.85 0.85  0.85  0.85 0.85  0.85
PHF Volume:     0  285    53     6  352     0     0    0     0   106    0     7
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0  285    53     6  352     0     0    0     0   106    0     7
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4 xxxx   6.2
FollowUpTim:xxxxx xxxx xxxxx   2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5 xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx   338 xxxx xxxxx  xxxx xxxx xxxxx   675 xxxx   311
Potent Cap.: xxxx xxxx xxxxx  1233 xxxx xxxxx  xxxx xxxx xxxxx   423 xxxx   734
Move Cap.:   xxxx xxxx xxxxx  1233 xxxx xxxxx  xxxx xxxx xxxxx   421 xxxx   734
Volume/Cap:  xxxx xxxx  xxxx  0.00 xxxx  xxxx  xxxx xxxx  xxxx  0.25 xxxx  0.01
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx   0.0 xxxx xxxxx  xxxx xxxx xxxxx   1.0 xxxx   0.0
Control Del:xxxxx xxxx xxxxx   7.9 xxxx xxxxx xxxxx xxxx xxxxx  16.4 xxxx  10.0
LOS by Move:    *    *     *     A    *     *     *    *     *     C    *     A
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             16.0
ApproachLOS:         *                *                *                C
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```

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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Existing (2013) Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #15 Indian Street / Harley Knox Boulevard

Cycle (sec): 120 Critical Vol./Cap.(X): 0.299
Loss Time (sec): 16 Average Delay (sec/veh): 31.7
Optimal Cycle: OPTIMIZED Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	10	39	39	10	39	39	10	34	34	10	34	34
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	1 0	1 1	0	1 0	1 0	1	2 0	1 1	0
Volume Module:												
Base Vol:	36	71	6	18	159	175	161	284	87	8	137	21
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	36	71	6	18	159	175	161	284	87	8	137	21
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	39	77	6	19	172	189	174	307	94	9	148	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	39	77	6	19	172	189	174	307	94	9	148	23
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	39	77	6	19	172	189	174	307	94	9	148	23
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.85	0.95	0.87	0.87	0.95	1.00	0.85	0.92	0.93	0.93
Lanes:	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.73	0.27
Final Sat.:	3502	3610	1615	1805	1662	1662	1805	1900	1615	3502	3068	470
Capacity Analysis Module:												
Vol/Sat:	0.01	0.02	0.00	0.01	0.10	0.11	0.10	0.16	0.06	0.00	0.05	0.05
Crit Moves:	****				****		****				****	
Green/Cycle:	0.08	0.33	0.33	0.08	0.33	0.50	0.18	0.35	0.35	0.10	0.28	0.28
Volume/Cap:	0.13	0.07	0.01	0.13	0.32	0.23	0.55	0.46	0.16	0.02	0.17	0.17
Delay/Veh:	51.2	28.0	27.5	51.4	30.6	17.0	47.3	30.3	26.7	48.3	32.5	32.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.2	28.0	27.5	51.4	30.6	17.0	47.3	30.3	26.7	48.3	32.5	32.5
LOS by Move:	D	C	C	D	C	B	D	C	C	D	C	C
HCM2kAvgQ:	1	1	0	1	5	4	6	8	2	0	2	2

Note: Queue reported is the number of cars per lane.

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APPENDIX 3.3

Existing (2013) Conditions
Traffic Signal Warrant Analysis Worksheets

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

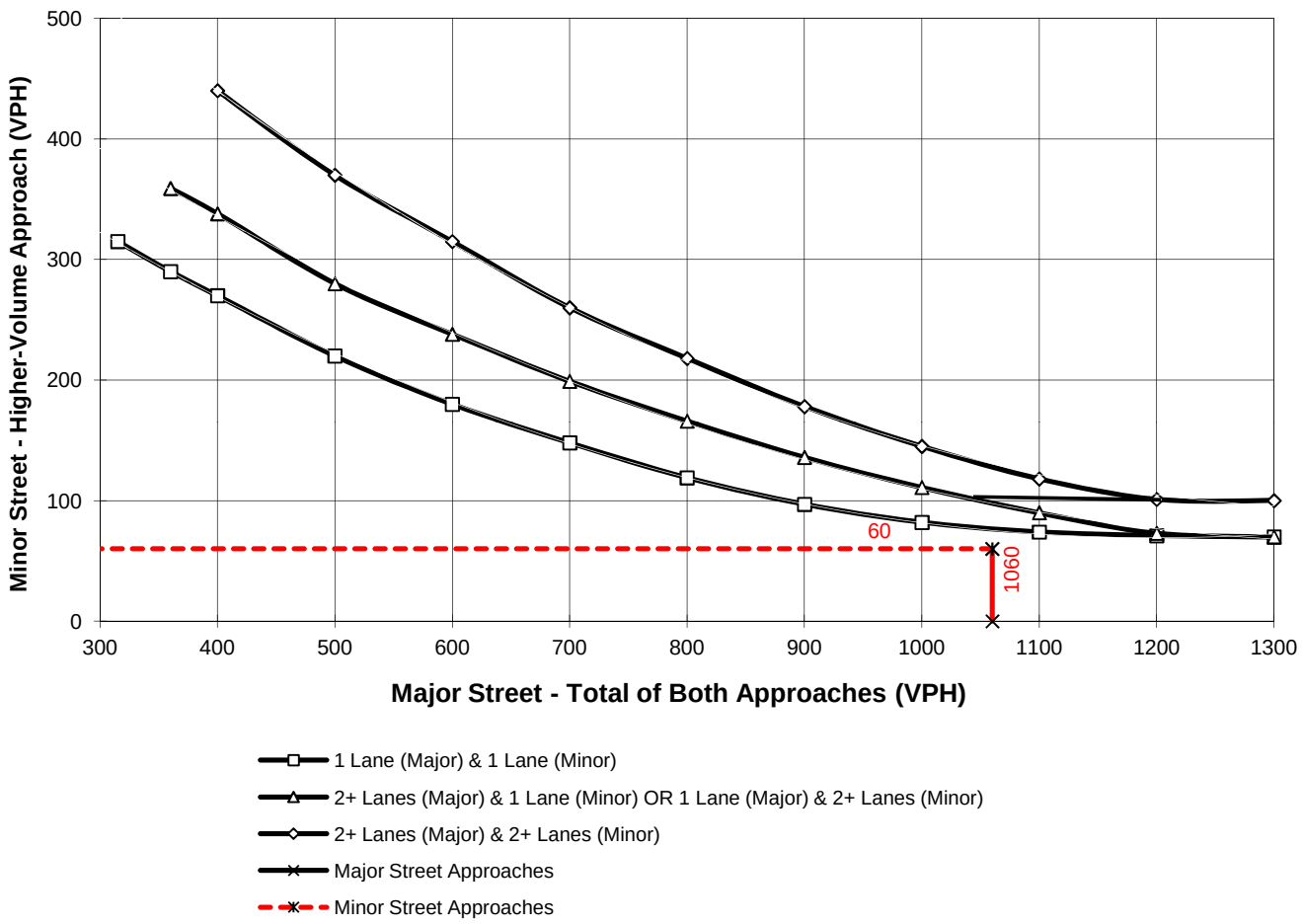
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing (2013) Conditions - Weekday PM Peak Hour**

Major Street Name = **Harley Knox Bl.**
Total of Both Approaches (VPH) = **1060**
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Western Wy.**
High Volume Approach (VPH) = **60**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

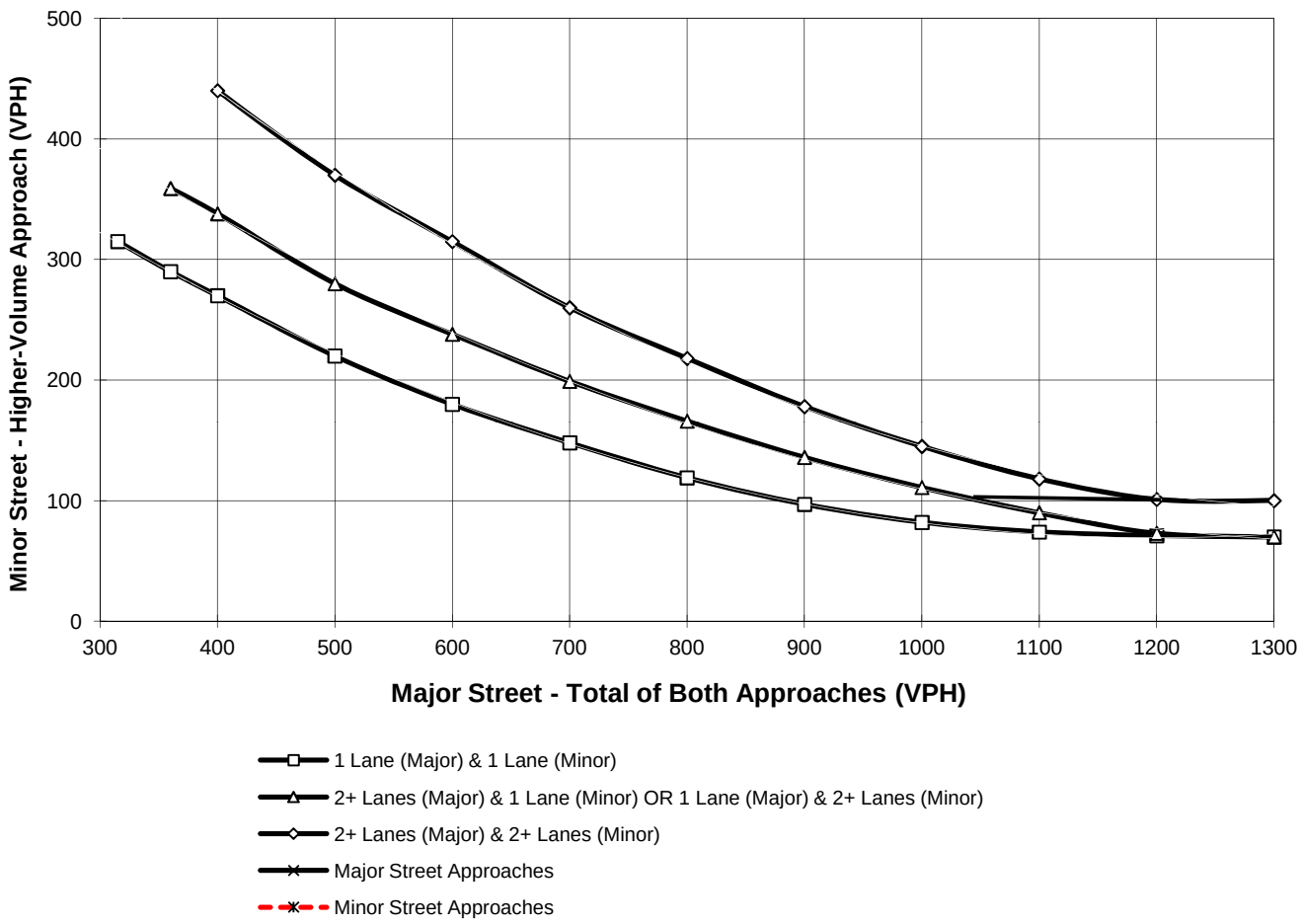
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing (2013) Conditions - Weekday AM Peak Hour**

Major Street Name = **Heacock Street**
Total of Both Approaches (VPH) = **67**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Nandina Av.**
High Volume Approach (VPH) = **69**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

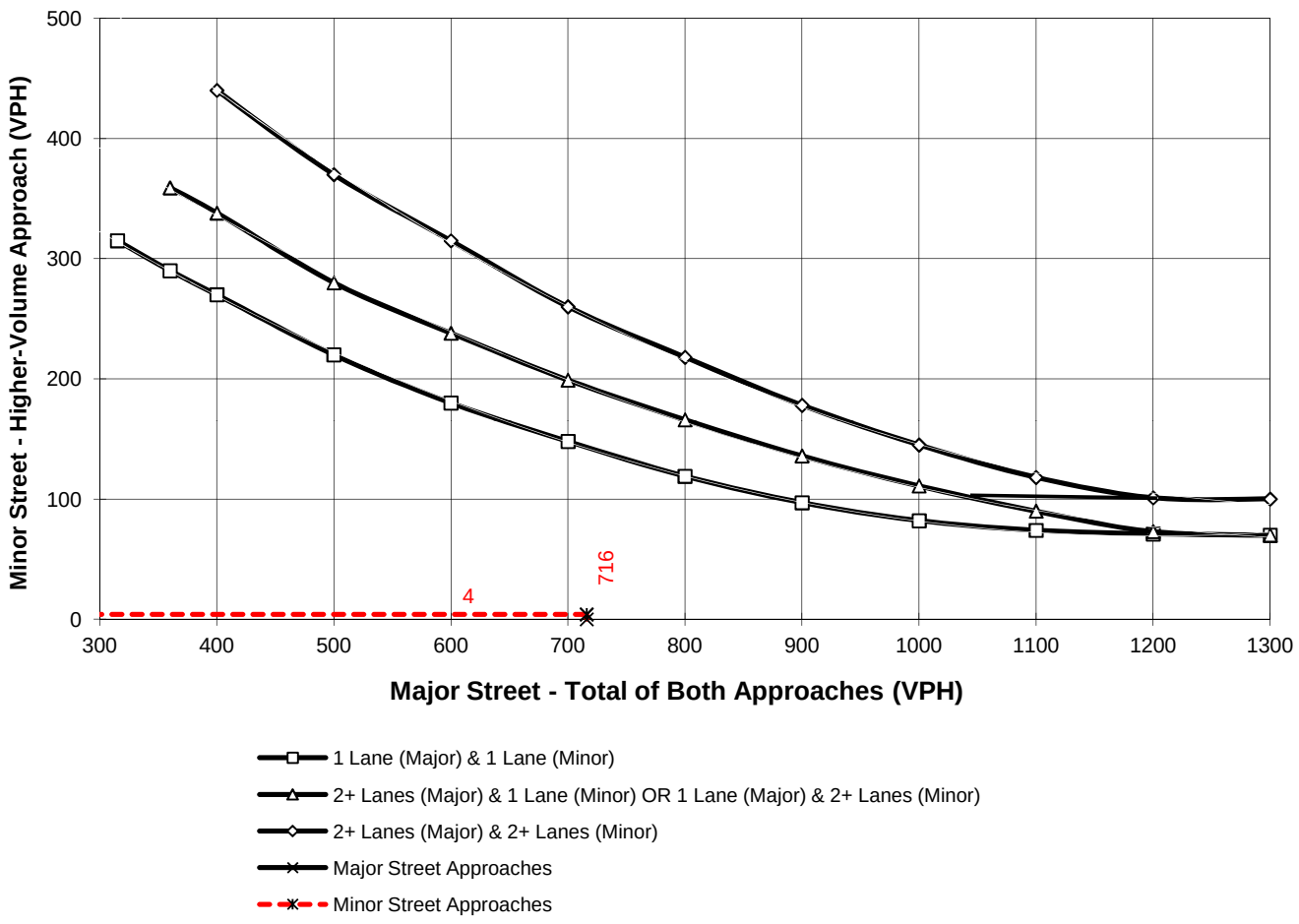
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing (2013) Conditions - Weekday AM Peak Hour**

Major Street Name = **Harley Knox Bl.**
Total of Both Approaches (VPH) = **716**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Webster Av.**
High Volume Approach (VPH) = **4**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

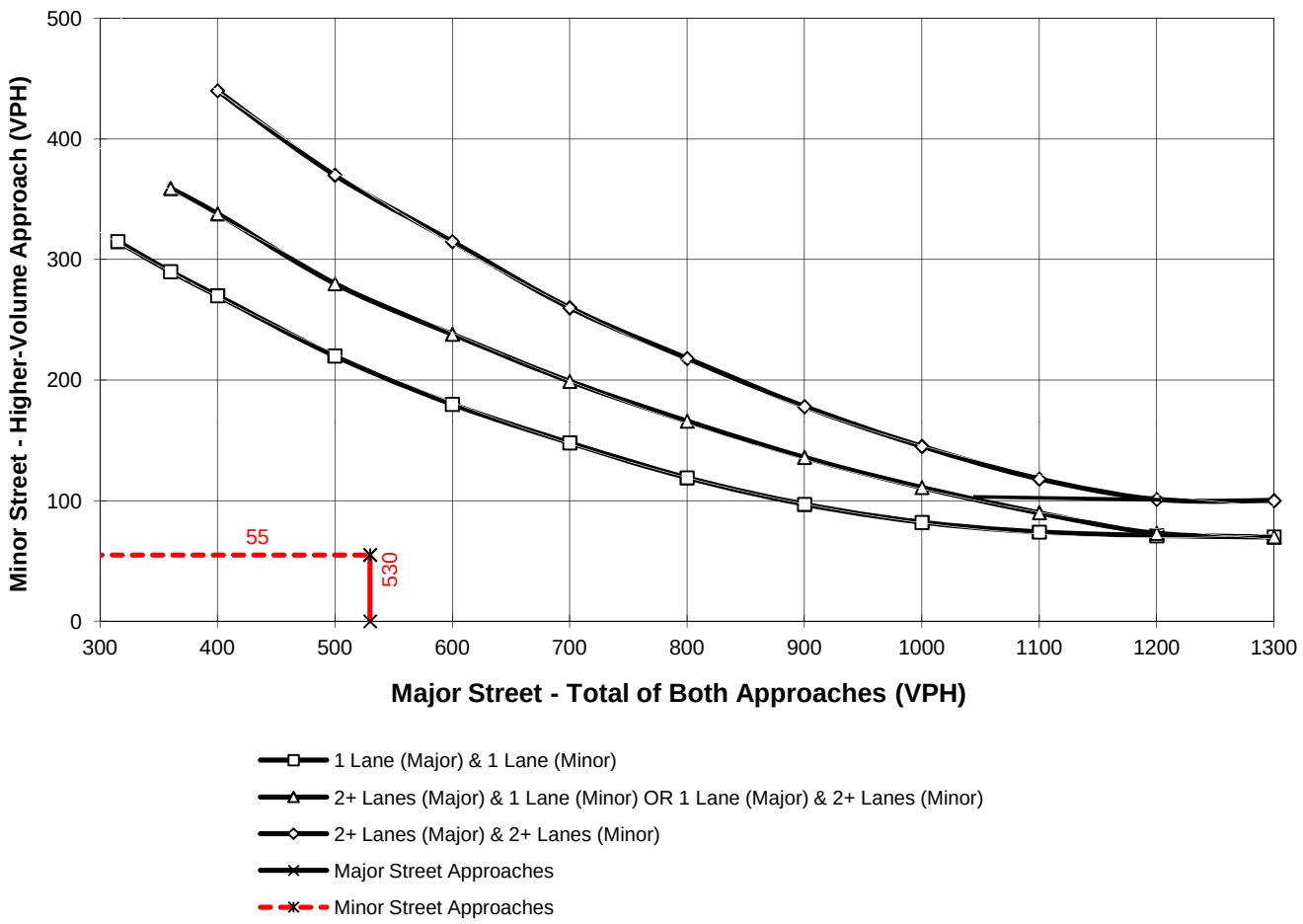
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing (2013) Conditions - Weekday PM Peak Hour**

Major Street Name = **Indian Street** Total of Both Approaches (VPH) = **530**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Driveway 5 / N. WM Dwy.** High Volume Approach (VPH) = **55**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

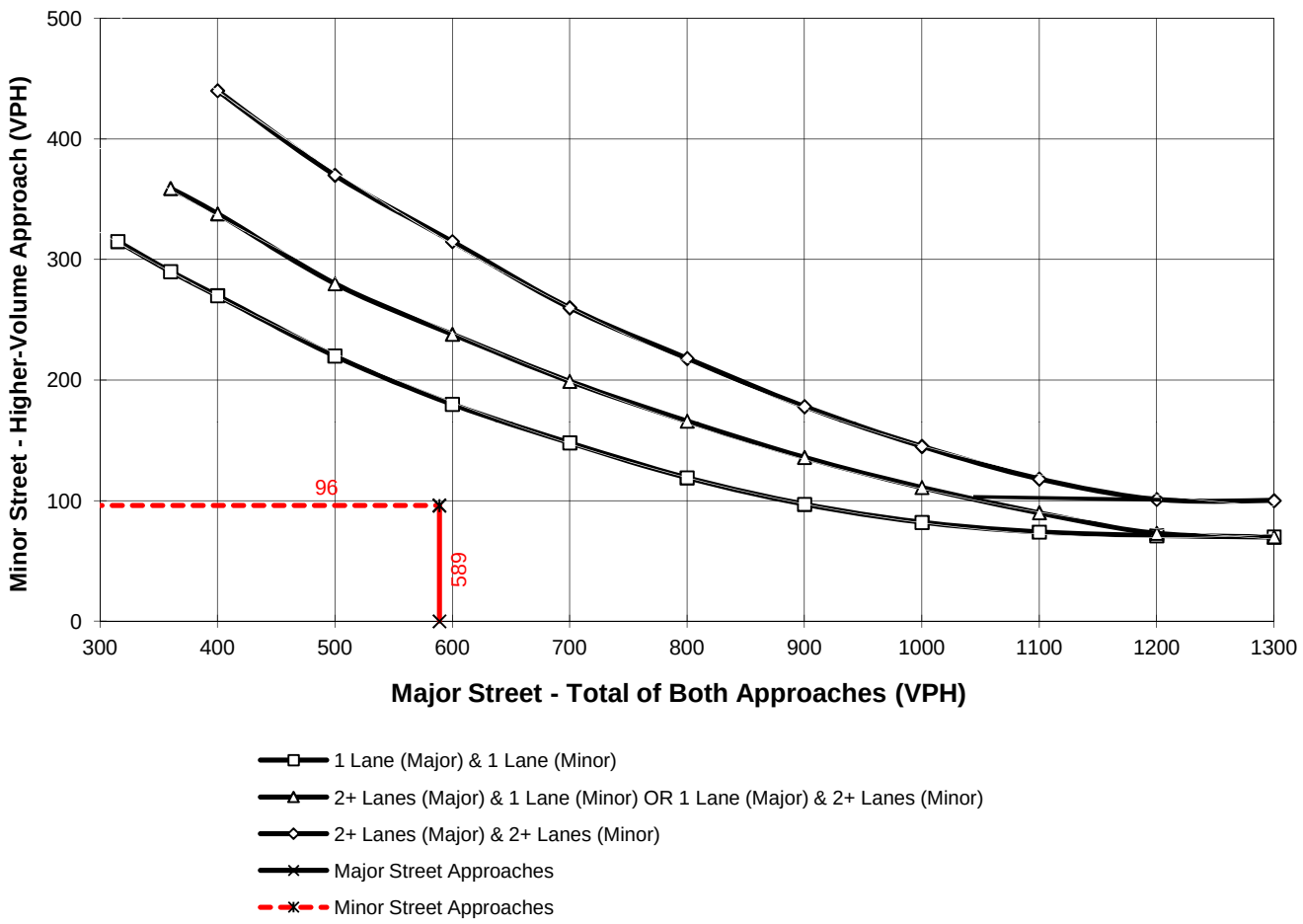
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing (2013) Conditions - Weekday PM Peak Hour**

Major Street Name = **Indian Street**
Total of Both Approaches (VPH) = **589**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Grove View Road**
High Volume Approach (VPH) = **96**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

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APPENDIX 3.4

Existing (2013) Conditions
Ramp Queuing Analysis Worksheets

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	383	4	147	218	401	103
v/c Ratio	0.23	0.01	0.67	0.10	0.91	0.22
Control Delay	13.8	0.0	48.1	6.0	56.9	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.8	0.0	48.1	6.0	56.9	6.8
Queue Length 50th (ft)	60	0	70	20	193	0
Queue Length 95th (ft)	90	0	128	33	#352	36
Internal Link Dist (ft)	836			256	1109	
Turn Bay Length (ft)			80			270
Base Capacity (vph)	1679	769	259	2280	452	473
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.01	0.57	0.10	0.89	0.22

Intersection Summary

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

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	180	597	352	474	20	117
v/c Ratio	0.69	0.26	0.22	0.49	0.04	0.23
Control Delay	51.5	8.1	17.2	3.8	26.5	6.6
Queue Delay	0.0	0.6	0.0	0.0	0.0	0.0
Total Delay	51.5	8.7	17.2	3.8	26.5	6.6
Queue Length 50th (ft)	104	75	66	0	9	0
Queue Length 95th (ft)	163	102	106	60	27	41
Internal Link Dist (ft)		256	594		929	
Turn Bay Length (ft)	60					265
Base Capacity (vph)	408	2280	1621	963	482	503
Starvation Cap Reductn	0	1244	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.58	0.22	0.49	0.04	0.23

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	279	8	152	126	389	202
v/c Ratio	0.17	0.01	0.68	0.06	0.89	0.38
Control Delay	13.4	0.0	48.9	5.9	53.9	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.4	0.0	48.9	5.9	53.9	6.2
Queue Length 50th (ft)	42	0	73	11	186	0
Queue Length 95th (ft)	66	0	130	21	#331	48
Internal Link Dist (ft)	836			256	1109	
Turn Bay Length (ft)			80			270
Base Capacity (vph)	1682	770	259	2288	452	548
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.01	0.59	0.06	0.86	0.37

Intersection Summary

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

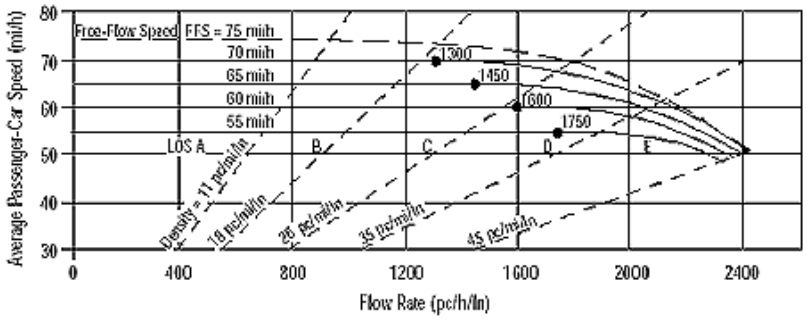
Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	183	443	253	349	14	131
v/c Ratio	0.69	0.19	0.16	0.39	0.03	0.25
Control Delay	51.4	7.6	16.8	3.6	26.4	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.4	7.6	16.8	3.6	26.4	6.5
Queue Length 50th (ft)	106	53	46	0	6	0
Queue Length 95th (ft)	166	74	78	53	21	43
Internal Link Dist (ft)		256	594		929	
Turn Bay Length (ft)	60					265
Base Capacity (vph)	408	2280	1615	892	482	514
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.19	0.16	0.39	0.03	0.25

Intersection Summary

APPENDIX 3.5

Existing (2013) Conditions
Basic Freeway Segment HCS+ Analysis Worksheets

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*SR-60 Westbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*West of I-215 Freeway*
Date Performed	*10/2/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing 2013*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6435*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*11*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.948*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1845*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*67.3*	mi/h	S	mi/h
D = v_p / S	*27.4*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*D*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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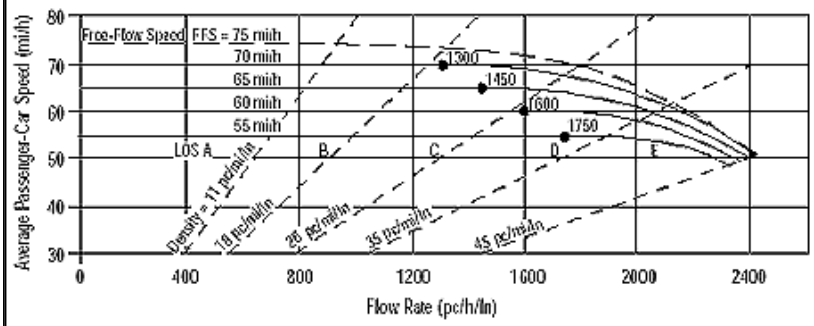
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*SR-60 Eastbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*West of I-215 Freeway*
Date Performed	*10/2/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing 2013*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*3861*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*11*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.948*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*5*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*886*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*12.7*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*B*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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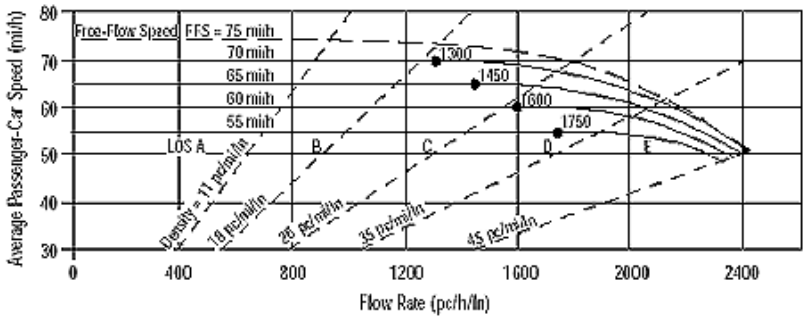

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Southbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of SR-60 Freeway*
Date Performed	*10/2/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing 2013*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6376*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*15*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.930*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*5*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1490*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*69.8*	mi/h	S		mi/h
D = v_p / S	*21.3*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*C*		Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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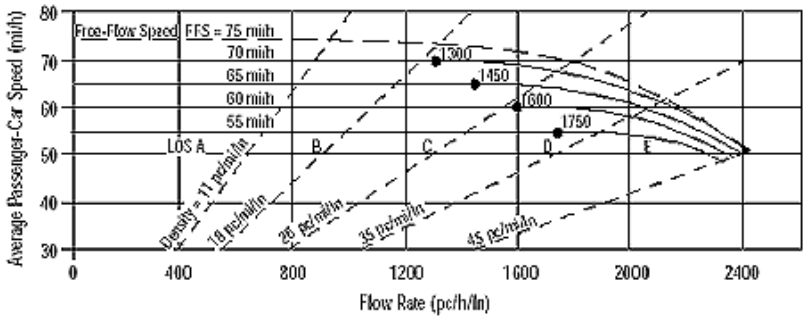

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Southbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*North of Harley Knox Bl.*
Date Performed	*10/2/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing (2013)*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4728*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*3*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.5*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.985*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1739*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*68.5*	mi/h	S	mi/h
D = v_p / S	*25.4*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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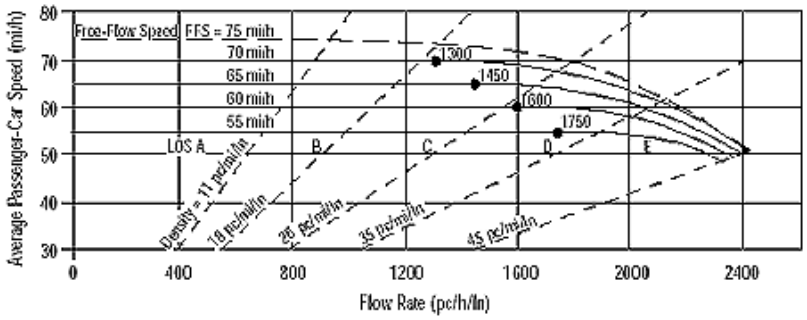

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Southbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of Harley Knox Bl.*
Date Performed	*10/2/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing (2013)*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4480*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*2*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.990*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1639*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*69.2*	mi/h	S		mi/h
D = v_p / S	*23.7*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*C*		Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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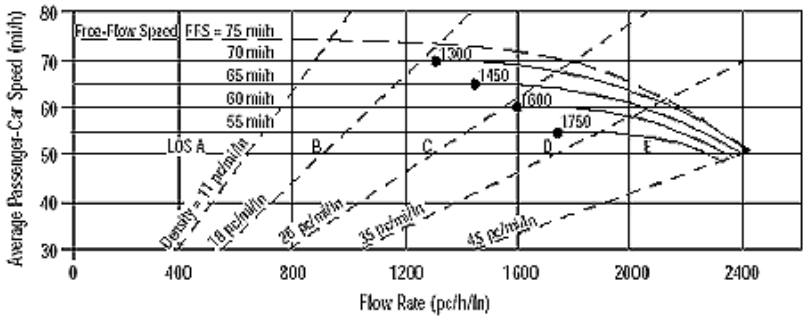

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Northbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of SR-60 Freeway*
Date Performed	*10/2/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing 2013*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*3526*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*15*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.930*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1373*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*19.6*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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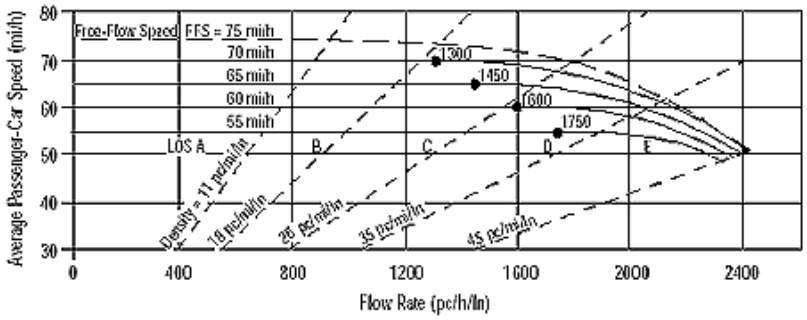

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Northbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*North of Harley Knox Bl.*
Date Performed	*10/2/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing (2013)*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*3217*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1189*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*17.0*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*B*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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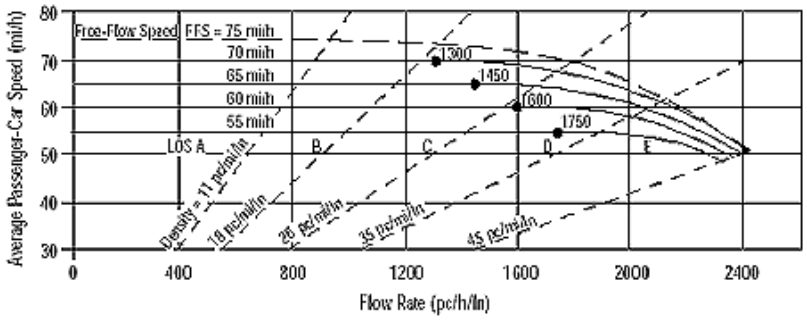

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*I-215 Northbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of Harley Knox Bl.*
Date Performed	*10/2/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing (2013)*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*2813*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*3*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.985*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1034*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*14.8*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*B*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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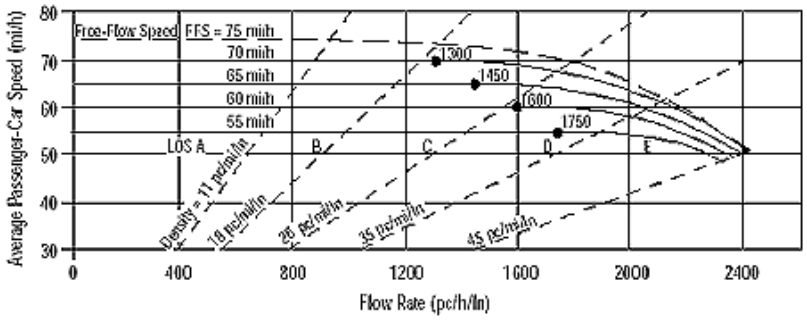
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*SR-60 Westbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*West of I-215 Freeway*
Date Performed	*10/2/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Existing 2013*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6327*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*11*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.948*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
			Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1814*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*67.7*	mi/h	S	mi/h
D = v_p / S	*26.8*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*D*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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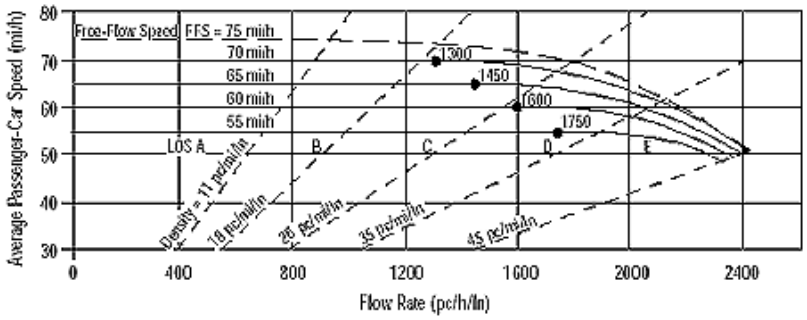
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*SR-60 Eastbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*West of I-215 Freeway*
Date Performed	*10/2/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Existing 2013*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6061*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*11*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.948*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*5*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1390*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*70.0*	mi/h	S		mi/h
D = v_p / S	*19.9*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*C*		Required Number of Lanes, N		

Glossary / Factor Location

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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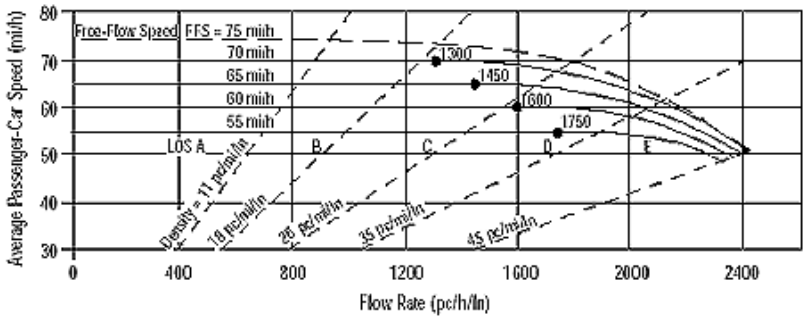
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Southbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of SR-60 Freeway*
Date Performed	*10/2/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Existing 2013*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*6535*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*15*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.930*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*5*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1527*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.7*	mi/h	S	mi/h
D = v_p / S	*21.9*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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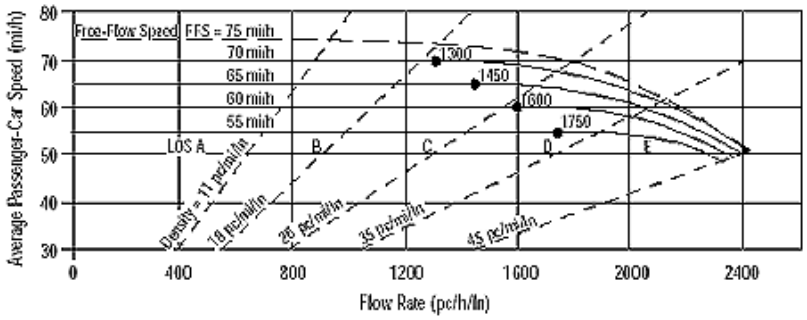

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Southbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*North of Harley Knox Bl.*
Date Performed	*10/2/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Existing 2013*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5541*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2048*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*63.9*	mi/h	S	mi/h
D = v_p / S	*32.1*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*D*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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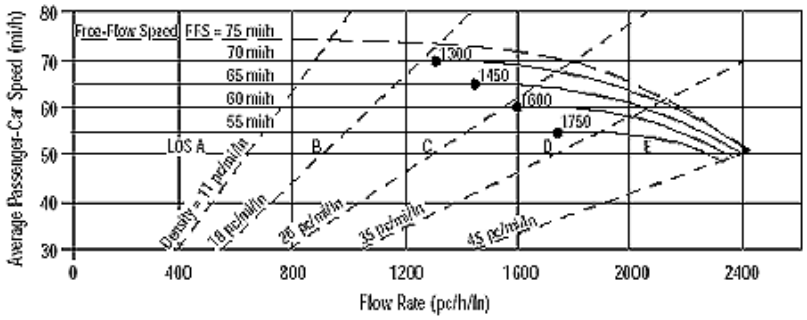
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*I-215 Southbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of Harley Knox Bl.*
Date Performed	*10/2/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Existing 2013*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5211*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
			Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1926*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*66.2*	mi/h	S	mi/h
D = v_p / S	*29.1*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*D*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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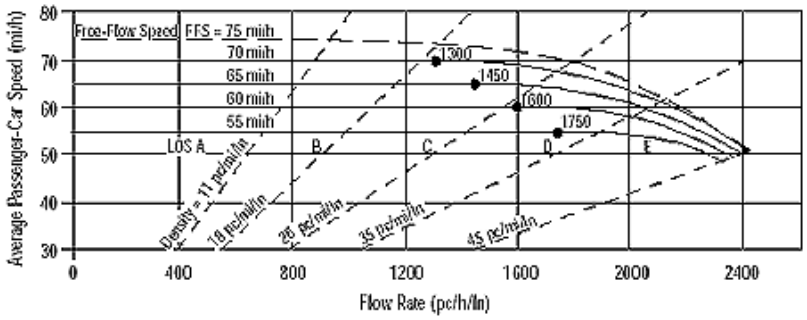

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Northbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of SR-60 Freeway*
Date Performed	*10/2/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Existing 2013*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*3906*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*15*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.930*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1521*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.7*	mi/h	S	mi/h
D = v_p / S	*21.8*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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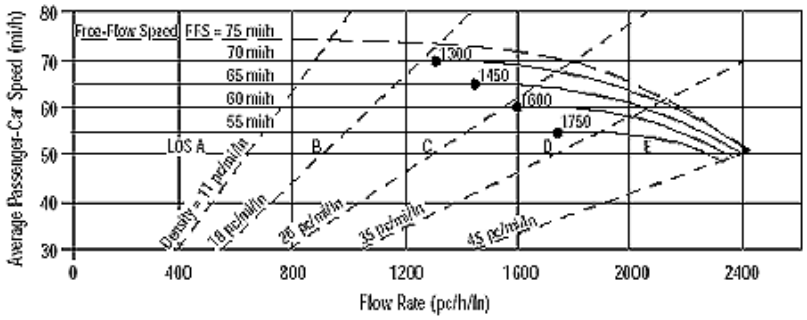

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*I-215 Northbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*North of Harley Knox Bl.*
Date Performed	*10/2/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Existing 2013*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4169*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
			Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1541*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.7*	mi/h	S	mi/h
D = v_p / S	*22.1*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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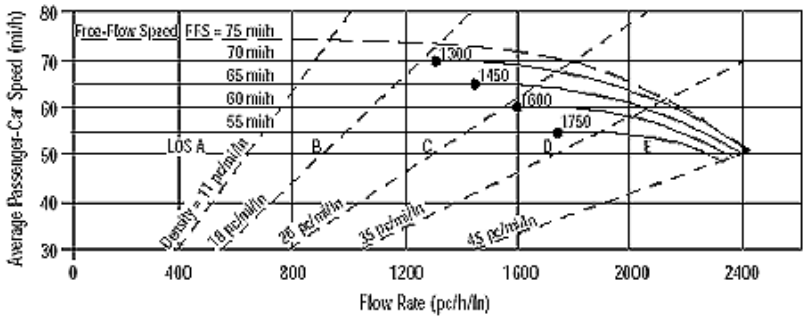
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*I-215 Northbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of Harley Knox Bl.*
Date Performed	*10/2/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Existing 2013*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*3765*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*3*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.985*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1385*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*19.8*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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APPENDIX 3.6

Existing (2013) Conditions
Freeway Ramp Junction (Merge/Diverge) HCS+ Analysis Worksheets

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Southbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox Off-Ramp
Date Performed	10/2/2013	Jurisdiction	CALTRANS
Analysis Time Period	AM Peak Hour	Analysis Year	Existing 2013

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☑ Yes ☑ On

☐ No ☐ Off

L_{down} = 1420 ft

V_D = 129 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4728	0.92	Level	3	0	0.985	1.00	5216
Ramp	377	0.92	Level	19	0	0.913	1.00	449
UpStream								
DownStream	129	0.92	Level	19	0	0.913	1.00	154

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Determination

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.609 using Equation (Exhibit 25-12)

V_{12} = 3352 pc/h

V_3 or V_{av34} 1864 pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	5216	Exhibit 25-14	7200	No
$V_{FO} = V_F - V_R$	4767	Exhibit 25-14	7200	No
V_R	449	Exhibit 25-3	2100	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3352	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 31.3 (pc/mi/ln)

LOS = D (Exhibit 25-4)

Speed Determination

D_s = 0.338 (Exhibit 25-19)

S_R= 60.5 mph (Exhibit 25-19)

S_0= 73.4 mph (Exhibit 25-19)

S = 64.6 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Southbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox On-Ramp
Date Performed	10/2/2013	Jurisdiction	CALTRANS
Analysis Time Period	AM Peak Hour	Analysis Year	Existing 2013

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp

☑ Yes ☐ On

☐ No ☑ Off

L_{up} = 1420 ft

V_u = 377 veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4351	0.92	Level	2	0	0.990	1.00	4777
Ramp	129	0.92	Level	19	0	0.913	1.00	154
UpStream	377	0.92	Level	19	0	0.913	1.00	449
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = 1121.19 (Equation 25-2 or 25-3)

P_{FM} = 0.585 using Equation (Exhibit 25-5)

V_{12} = 2793 pc/h

V_3 or V_{av34} 1984 pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4931	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2947	Exhibit 25-7	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 26.8 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Determination

M_S = 0.372 (Exibit 25-19)

S_R= 59.6 mph (Exhibit 25-19)

S_0= 64.7 mph (Exhibit 25-19)

S = 61.5 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-12)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		
V_R		Exhibit 25-3		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Determination

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Northbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox On-Ramp
Date Performed	10/2/2013	Jurisdiction	CALTRANS
Analysis Time Period	AM Peak Hour	Analysis Year	Existing 2013

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp

☑ Yes ☐ On

☐ No ☑ Off

L_{up} = 1393 ft

V_u = 120 veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2693	0.92	Level	2	0	0.990	1.00	2956
Ramp	524	0.92	Level	12	0	0.943	1.00	604
UpStream	120	0.92	Level	6	0	0.971	1.00	134
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = 846.44 (Equation 25-2 or 25-3)

P_{FM} = 0.586 using Equation (Exhibit 25-5)

V_{12} = 1732 pc/h

V_3 or V_{av34} 1224 pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	3560	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2336	Exhibit 25-7	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 21.5 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Determination

M_S = 0.334 (Exibit 25-19)

S_R= 60.6 mph (Exhibit 25-19)

S_0= 67.4 mph (Exhibit 25-19)

S = 62.8 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-12)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		
V_R		Exhibit 25-3		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Determination

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Northbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox Off-Ramp
Date Performed	10/2/2013	Jurisdiction	CALTRANS
Analysis Time Period	AM Peak Hour	Analysis Year	Existing 2013

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp
☑ Yes ☑ On
☐ No ☐ Off
L_{down} = 1393 ft
V_D = 524 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2813	0.92	Level	3	0	0.985	1.00	3103
Ramp	120	0.92	Level	6	0	0.971	1.00	134
UpStream								
DownStream	524	0.92	Level	12	0	0.943	1.00	604

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = using Equation (Exhibit 25-5)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)
LOS = (Exhibit 25-4)

Speed Determination

M_S = (Exibit 25-19)
S_R= mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)
S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = 0.676 using Equation (Exhibit 25-12)
V_{12} = 2142 pc/h
V_3 or V_{av34} 961 pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3103	Exhibit 25-14	7200	No
$V_{FO} = V_F - V_R$	2969	Exhibit 25-14	7200	No
V_R	134	Exhibit 25-3	2100	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2142	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 20.1 (pc/mi/ln)
LOS = C (Exhibit 25-4)

Speed Determination

D_s = 0.310 (Exhibit 25-19)
S_R= 61.3 mph (Exhibit 25-19)
S_0= 76.8 mph (Exhibit 25-19)
S = 65.4 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Southbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox Off-Ramp
Date Performed	10/2/2013	Jurisdiction	CALTRANS
Analysis Time Period	PM Peak Hour	Analysis Year	Existing 2013

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp
☑ Yes ☑ On
☐ No ☐ Off
L_{down} = 1420 ft
V_D = 131 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5541	0.92	Level	4	0	0.980	1.00	6143
Ramp	461	0.92	Level	11	0	0.948	1.00	529
UpStream								
DownStream	131	0.92	Level	9	0	0.957	1.00	149

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = using Equation (Exhibit 25-5)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)
LOS = (Exhibit 25-4)

Speed Determination

M_S = (Exibit 25-19)
S_R= mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)
S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = 0.582 using Equation (Exhibit 25-12)
V_{12} = 3797 pc/h
V_3 or V_{av34} 2346 pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6143	Exhibit 25-14	7200	No
$V_{FO} = V_F - V_R$	5614	Exhibit 25-14	7200	No
V_R	529	Exhibit 25-3	2100	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3797	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 35.2 (pc/mi/ln)
LOS = E (Exhibit 25-4)

Speed Determination

D_s = 0.346 (Exhibit 25-19)
S_R= 60.3 mph (Exhibit 25-19)
S_0= 71.5 mph (Exhibit 25-19)
S = 64.2 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Southbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox On-Ramp
Date Performed	10/2/2013	Jurisdiction	CALTRANS
Analysis Time Period	PM Peak Hour	Analysis Year	Existing 2013

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp

☑ Yes ☐ On

☐ No ☑ Off

L_{up} = 1420 ft

V_u = 461 veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5080	0.92	Level	3	0	0.985	1.00	5605
Ramp	131	0.92	Level	9	0	0.957	1.00	149
UpStream	461	0.92	Level	11	0	0.948	1.00	529
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = 1297.31 (Equation 25-2 or 25-3)

P_{FM} = 0.585 using Equation (Exhibit 25-5)

V_{12} = 3277 pc/h

V_3 or V_{av34} 2328 pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5754	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3426	Exhibit 25-7	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 30.5 (pc/mi/ln)

LOS = D (Exhibit 25-4)

Speed Determination

M_S = 0.418 (Exibit 25-19)

S_R= 58.3 mph (Exhibit 25-19)

S_0= 63.3 mph (Exhibit 25-19)

S = 60.2 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-12)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		
V_R		Exhibit 25-3		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Determination

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Northbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox On-Ramp
Date Performed	10/2/2013	Jurisdiction	CALTRANS
Analysis Time Period	PM Peak Hour	Analysis Year	Existing 2013

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp

☑ Yes ☐ On

☐ No ☑ Off

L_{up} = 1393 ft

V_u = 120 veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3645	0.92	Level	3	0	0.985	1.00	4021
Ramp	524	0.92	Level	8	0	0.962	1.00	592
UpStream	120	0.92	Level	8	0	0.962	1.00	136
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = 1071.78 (Equation 25-2 or 25-3)

P_{FM} = 0.586 using Equation (Exhibit 25-5)

V_{12} = 2356 pc/h

V_3 or V_{av34} 1665 pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4613	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2948	Exhibit 25-7	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 26.3 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Determination

M_S = 0.368 (Exibit 25-19)

S_R= 59.7 mph (Exhibit 25-19)

S_0= 65.8 mph (Exhibit 25-19)

S = 61.8 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-12)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		
V_R		Exhibit 25-3		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Determination

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Northbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox Off-Ramp
Date Performed	10/2/2013	Jurisdiction	CALTRANS
Analysis Time Period	PM Peak Hour	Analysis Year	Existing 2013

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp
☑ Yes ☑ On
☐ No ☐ Off
L_{down} = 1393 ft
V_D = 524 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3765	0.92	Level	3	0	0.985	1.00	4154
Ramp	120	0.92	Level	8	0	0.962	1.00	136
UpStream								
DownStream	524	0.92	Level	8	0	0.962	1.00	592

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = using Equation (Exhibit 25-5)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
V_{R12}		Exhibit 25-7	

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)
LOS = (Exhibit 25-4)

Speed Determination

M_S = (Exibit 25-19)
S_R= mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)
S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = 0.650 using Equation (Exhibit 25-12)
V_{12} = 2747 pc/h
V_3 or V_{av34} 1407 pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4154	Exhibit 25-14	7200	No
$V_{FO} = V_F - V_R$	4018	Exhibit 25-14	7200	No
V_R	136	Exhibit 25-3	2100	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2747	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 25.3 (pc/mi/ln)
LOS = C (Exhibit 25-4)

Speed Determination

D_s = 0.310 (Exhibit 25-19)
S_R= 61.3 mph (Exhibit 25-19)
S_0= 75.2 mph (Exhibit 25-19)
S = 65.4 mph (Exhibit 25-15)

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APPENDIX 5.1

Existing plus Project Conditions
Intersection Operations Analysis Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	356	4	146	203	0	0	0	0	442	8	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	3.5	5.0						5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95						1.00	1.00
Frpb, ped/bikes		1.00	0.97	1.00	1.00						1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		3610	1567	1805	3610						1811	1586
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		3610	1567	1805	3610						1811	1586
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	383	4	157	218	0	0	0	0	475	9	103
RTOR Reduction (vph)	0	0	2	0	0	0	0	0	0	0	0	77
Lane Group Flow (vph)	0	383	2	157	218	0	0	0	0	0	484	26
Confl. Peds. (#/hr)			5									5
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		36.4	36.4	10.1	50.0						20.0	20.0
Effective Green, g (s)		36.4	36.4	10.1	50.0						20.0	20.0
Actuated g/C Ratio		0.45	0.45	0.13	0.62						0.25	0.25
Clearance Time (s)		5.0	5.0	3.5	5.0						5.0	5.0
Vehicle Extension (s)		2.0	2.0	2.0	2.0						3.0	3.0
Lane Grp Cap (vph)		1642	712	227	2256						452	396
v/s Ratio Prot		c0.11		c0.09	0.06						c0.27	
v/s Ratio Perm			0.00									0.02
v/c Ratio		0.23	0.00	0.69	0.10						1.07	0.07
Uniform Delay, d1		13.3	11.9	33.5	6.0						30.0	22.9
Progression Factor		1.00	1.00	1.00	1.00						1.00	1.00
Incremental Delay, d2		0.3	0.0	7.1	0.1						62.5	0.1
Delay (s)		13.6	11.9	40.6	6.1						92.5	22.9
Level of Service		B	B	D	A						F	C
Approach Delay (s)		13.6			20.5			0.0			80.3	
Approach LOS		B			C			A			F	

Intersection Summary			
HCM 2000 Control Delay	44.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	167	632	0	0	336	464	14	5	118	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0			5.0	5.0		5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00		1.00	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.97		1.00	0.98			
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.96	1.00			
Satd. Flow (prot)	1805	3610			3610	1563		1831	1587			
Flt Permitted	0.95	1.00			1.00	1.00		0.96	1.00			
Satd. Flow (perm)	1805	3610			3610	1563		1831	1587			
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	180	680	0	0	361	499	15	5	127	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	275	0	0	94	0	0	0
Lane Group Flow (vph)	180	680	0	0	361	224	0	20	33	0	0	0
Confl. Peds. (#/hr)						5			5			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Actuated Green, G (s)	13.8	60.0			42.7	42.7		25.0	25.0			
Effective Green, g (s)	13.8	60.0			42.7	42.7		25.0	25.0			
Actuated g/C Ratio	0.15	0.63			0.45	0.45		0.26	0.26			
Clearance Time (s)	3.5	5.0			5.0	5.0		5.0	5.0			
Vehicle Extension (s)	2.0	2.0			2.0	2.0		3.0	3.0			
Lane Grp Cap (vph)	262	2280			1622	702		481	417			
v/s Ratio Prot	c0.10	0.19			0.10			0.01				
v/s Ratio Perm						c0.14			c0.02			
v/c Ratio	0.69	0.30			0.22	0.32		0.04	0.08			
Uniform Delay, d1	38.5	7.9			16.0	16.8		26.1	26.3			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	5.8	0.3			0.3	1.2		0.2	0.4			
Delay (s)	44.4	8.3			16.3	18.0		26.2	26.7			
Level of Service	D	A			B	B		C	C			
Approach Delay (s)		15.8			17.3			26.7			0.0	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

```
-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                        Existing Plus Project Conditions
                                  AM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #3 Western Way / Harley Knox Boulevard
*******************************************************************************
Average Delay (sec/veh):      0.9       Worst Case Level Of Service: C[ 17.3]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  0    0  0  1! 0  0    0  1  1  0  0    0  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0     8    0    31    68  596     0     0  736    27
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0     8    0    31    68  596     0     0  736    27
Added Vol:      0    0     0     0    0     0     0   85     0     0   32     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0     0     8    0    31    68  681     0     0  768    27
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:     0    0     0     9    0    34    75  754     0     0  850    30
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0     0     9    0    34    75  754     0     0  850    30
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   6.8  6.5   6.9   4.1 xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx   3.5  4.0   3.3   2.2 xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  1378 1755   425   880 xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx   138   86   583   776 xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx   128   77   583   776 xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  0.07 0.00  0.06  0.10 xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.3 xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx  10.1 xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     B    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx  336 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx  0.4 xxxxx   0.3 xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx 17.3 xxxxx  10.1 xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    C     *     B    *     *     *    *     *
ApproachDel:    xxxxxx             17.3           xxxxxx           xxxxxx
ApproachLOS:         *               C                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************


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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Existing Plus Project Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Patterson Avenue / Harley Knox Boulevard

Cycle (sec): 120 Critical Vol./Cap.(X): 0.534
Loss Time (sec): 12 Average Delay (sec/veh): 21.2
Optimal Cycle: OPTIMIZED Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	27	27	27	27	27	27	10	18	18	10	18	18
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	1	0	0	1	1	0	1
Volume Module:												
Base Vol:	138	2	1	0	2	11	9	556	31	3	582	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	138	2	1	0	2	11	9	556	31	3	582	1
Added Vol:	0	0	4	0	0	0	0	85	0	2	32	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	138	2	5	0	2	11	9	641	31	5	614	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	149	2	5	0	2	12	10	691	33	5	662	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	149	2	5	0	2	12	10	691	33	5	662	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	149	2	5	0	2	12	10	691	33	5	662	1
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.72	0.72	0.72	1.00	1.00	0.85	0.95	1.00	0.85	0.95	1.00	1.00
Lanes:	0.96	0.01	0.03	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.01
Final Sat.:	1301	19	47	0	1900	1615	1805	1900	1615	1805	1897	3
Capacity Analysis Module:												
Vol/Sat:	0.11	0.11	0.11	0.00	0.00	0.01	0.01	0.36	0.02	0.00	0.35	0.35
Crit Moves:		****						****		****		
Green/Cycle:	0.23	0.23	0.23	0.00	0.23	0.23	0.13	0.59	0.59	0.08	0.54	0.54
Volume/Cap:	0.51	0.51	0.51	0.00	0.01	0.03	0.04	0.61	0.03	0.04	0.64	0.64
Delay/Veh:	42.1	42.1	42.1	0.0	36.1	36.3	45.7	16.7	10.2	50.7	20.5	20.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.1	42.1	42.1	0.0	36.1	36.3	45.7	16.7	10.2	50.7	20.5	20.5
LOS by Move:	D	D	D	A	D	D	D	B	B	D	C	C
HCM2kAvgQ:	6	6	6	0	0	0	0	16	0	0	17	17

Note: Queue reported is the number of cars per lane.

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```
-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                        Existing Plus Project Conditions
                                  AM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #5 Heacock Street / Nandina Avenue
*******************************************************************************
Average Delay (sec/veh):      7.8       Worst Case Level Of Service: A[  8.6]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  1  0  0    1  0  1  0  0    0  0  0  0  0    1  0  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    1     0    65    1     0     0    0     0     2    0    67
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    1     0    65    1     0     0    0     0     2    0    67
Added Vol:      0    0     0    21    0     0     0    0     0     0    0     8
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    1     0    86    1     0     0    0     0     2    0    75
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:     0    1     0    91    1     0     0    0     0     2    0    79
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    1     0    91    1     0     0    0     0     2    0    79
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4 xxxx   6.2
FollowUpTim:xxxxx xxxx xxxxx   2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5 xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx     1 xxxx xxxxx  xxxx xxxx xxxxx   183 xxxx     1
Potent Cap.: xxxx xxxx xxxxx  1635 xxxx xxxxx  xxxx xxxx xxxxx   811 xxxx  1089
Move Cap.:   xxxx xxxx xxxxx  1635 xxxx xxxxx  xxxx xxxx xxxxx   776 xxxx  1089
Volume/Cap:  xxxx xxxx  xxxx  0.06 xxxx  xxxx  xxxx xxxx  xxxx  0.00 xxxx  0.07
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx   0.2 xxxx xxxxx  xxxx xxxx xxxxx   0.0 xxxx   0.2
Control Del:xxxxx xxxx xxxxx   7.3 xxxx xxxxx xxxxx xxxx xxxxx   9.7 xxxx   8.6
LOS by Move:    *    *     *     A    *     *     *    *     *     A    *     A
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx              8.6
ApproachLOS:         *                *                *                A
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************


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```

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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                        Existing Plus Project Conditions
                                  AM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #6 Heacock Street / Grove View Road
*******************************************************************************
Average Delay (sec/veh):      0.0       Worst Case Level Of Service: A[  0.0]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  1  0  0    0  0  1  0  0    0  0  0  0  0    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    1     0     0    3     0     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    1     0     0    3     0     0    0     0     0    0     0
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    1     0     0    3     0     0    0     0     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    1     0     0    3     0     0    0     0     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    1     0     0    3     0     0    0     0     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   6.4  6.5   6.2
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx     4    4     1
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1023  895  1089
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1023  895  1089
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.00 0.00  0.00
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx    0 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         *                *                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************


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```

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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                        Existing Plus Project Conditions
                                  AM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #7 Webster Avenue / Harley Knox Boulevard
*******************************************************************************
Average Delay (sec/veh):      0.1       Worst Case Level Of Service: C[ 19.1]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  0  1  0    1  0  0  1  0    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       1    2     1     0    1     1     0  358     1     0  357     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    1    2     1     0    1     1     0  358     1     0  357     0
Added Vol:      0    0     0     0    0     0     0   90     0     0   33     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    1    2     1     0    1     1     0  448     1     0  390     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.80 0.80  0.80  0.80 0.80  0.80  0.80 0.80  0.80  0.80 0.80  0.80
PHF Volume:     1    2     1     0    1     1     0  559     1     0  486     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    1    2     1     0    1     1     0  559     1     0  486     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  7.1  6.5   6.2 xxxxx  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1047 1046   559  xxxx 1046   486  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.:  208  230   532  xxxx  230   585  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:    207  230   532  xxxx  230   585  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  0.01 0.01  0.00  xxxx 0.01  0.00  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  260 xxxxx  xxxx xxxx   330  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.1 xxxxx xxxxx xxxx   0.0 xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 19.1 xxxxx xxxxx xxxx  16.0 xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    C     *     *    *     C     *    *     *     *    *     *
ApproachDel:      19.1             16.0           xxxxxx           xxxxxx
ApproachLOS:         C                C                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************


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```

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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                        Existing Plus Project Conditions
                                  AM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #8 Driveway 2 / Nandina Avenue
*******************************************************************************
Average Delay (sec/veh):      2.7       Worst Case Level Of Service: B[ 10.4]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  0  1  0    1  0  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0     0    0     0     0   70     0     0   67     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0     0    0     0     0   70     0     0   67     0
Added Vol:      5    0     2     0    0     0     0    4    17    76    3     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    5    0     2     0    0     0     0   74    17    76   70     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.83 0.83  0.83  0.83 0.83  0.83  0.83 0.83  0.83  0.83 0.83  0.83
PHF Volume:     6    0     2     0    0     0     0   89    20    91   84     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    6    0     2     0    0     0     0   89    20    91   84     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  366  366    99  xxxx xxxx xxxxx  xxxx xxxx xxxxx   109 xxxx xxxxx
Potent Cap.:  638  566   962  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1494 xxxx xxxxx
Move Cap.:    608  531   962  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1494 xxxx xxxxx
Volume/Cap:  0.01 0.00  0.00  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.06 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.2 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.6 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  680 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.0 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 10.4 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    B     *     *    *     *     *    *     *     *    *     *
ApproachDel:      10.4           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************


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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                        Existing Plus Project Conditions
                                  AM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #9 Driveway 3 / Nandina Avenue
*******************************************************************************
Average Delay (sec/veh):      0.1       Worst Case Level Of Service: A[  9.3]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  1  0  0    1  0  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0     0    0     0     0   70     0     0   67     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0     0    0     0     0   70     0     0   67     0
Added Vol:      1    0     1     0    0     0     0    6     0     0   78     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    1    0     1     0    0     0     0   76     0     0  145     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.83 0.83  0.83  0.83 0.83  0.83  0.83 0.83  0.83  0.83 0.83  0.83
PHF Volume:     1    0     1     0    0     0     0   91     0     0  174     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    1    0     1     0    0     0     0   91     0     0  174     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  265  265    91  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.:  728  644   972  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:    728  644   972  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  0.00 0.00  0.00  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  833 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.0 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx  9.3 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    A     *     *    *     *     *    *     *     *    *     *
ApproachDel:       9.3           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         A                *                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************


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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Existing Plus Project Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Indian Street / Nandina Avenue

Cycle (sec): 95 Critical Vol./Cap.(X): 0.188
Loss Time (sec): 16 Average Delay (sec/veh): 26.1
Optimal Cycle: OPTIMIZED Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T	- R		L - T	- R		L - T	- R		L - T	- R	
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Ovl			Include		
Min. Green:	10	27	27	10	27	27	10	28	28	10	28	28
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	0 1	1 0	1	0 1
Volume Module:												
Base Vol:	58	167	48	0	89	2	1	8	46	55	20	2
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	58	167	48	0	89	2	1	8	46	55	20	2
Added Vol:	69	0	8	0	0	0	0	3	4	22	8	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	127	167	56	0	89	2	1	11	50	77	28	2
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	138	181	61	0	97	2	1	12	54	84	30	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	138	181	61	0	97	2	1	12	54	84	30	2
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	138	181	61	0	97	2	1	12	54	84	30	2
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	0.91	1.00	0.95	0.95	0.95	1.00	0.85	0.95	1.00	0.85
Lanes:	1.00	1.50	0.50	1.00	1.96	0.04	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1805	2601	872	1900	3520	79	1805	1900	1615	1805	1900	1615
Capacity Analysis Module:												
Vol/Sat:	0.08	0.07	0.07	0.00	0.03	0.03	0.00	0.01	0.03	0.05	0.02	0.00
Crit Moves:	****				****			****		****		
Green/Cycle:	0.15	0.43	0.43	0.00	0.28	0.28	0.11	0.29	0.44	0.11	0.29	0.29
Volume/Cap:	0.52	0.16	0.16	0.00	0.10	0.10	0.01	0.02	0.08	0.44	0.05	0.00
Delay/Veh:	39.2	16.5	16.5	0.0	25.1	25.1	38.1	23.8	15.3	41.5	24.1	23.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.2	16.5	16.5	0.0	25.1	25.1	38.1	23.8	15.3	41.5	24.1	23.7
LOS by Move:	D	B	B	A	C	C	D	C	B	D	C	C
HCM2kAvgQ:	4	2	2	0	1	1	0	0	1	3	1	0

Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                        Existing Plus Project Conditions
                                  AM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #11 Indian Street / Driveway 4
*******************************************************************************
Average Delay (sec/veh):      0.2       Worst Case Level Of Service: A[  9.6]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  1  0  0    0  0  0  1  0    0  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  274     0     0  191     0     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  274     0     0  191     0     0    0     0     0    0     0
Added Vol:      0   78     0     0   22     4     0    0    13     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0  352     0     0  213     4     0    0    13     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.89 0.89  0.89  0.89 0.89  0.89  0.89 0.89  0.89  0.89 0.89  0.89
PHF Volume:     0  398     0     0  241     5     0    0    15     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0  398     0     0  241     5     0    0    15     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.2 xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   243  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   801  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   801  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  0.02  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   0.1  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   9.6 xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     A     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx              9.6           xxxxxx
ApproachLOS:         *                *                A                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************


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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                        Existing Plus Project Conditions
                                  AM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #12 Indian Street / Driveway 5/Waste Management Driveway
*******************************************************************************
Average Delay (sec/veh):      2.0       Worst Case Level Of Service: C[ 16.0]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        1  0  1  0  1    1  0  0  1  0    0  0  1! 0  0    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  262    15    12  180     0     0    0     0    31    0    12
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  262    15    12  180     0     0    0     0    31    0    12
Added Vol:     44   68     0     0   26     9    10    0     5     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   44  330    15    12  206     9    10    0     5    31    0    12
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.89 0.89  0.89  0.89 0.89  0.89  0.89 0.89  0.89  0.89 0.89  0.89
PHF Volume:    50  373    17    14  233    10    11    0     6    35    0    14
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:   50  373    17    14  233    10    11    0     6    35    0    14
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.1  6.5   6.2   7.1  6.5   6.2
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  243 xxxx xxxxx   390 xxxx xxxxx   753  754   238   740  742   373
Potent Cap.: 1335 xxxx xxxxx  1180 xxxx xxxxx   329  341   806   335  346   678
Move Cap.:   1335 xxxx xxxxx  1180 xxxx xxxxx   310  324   806   321  329   678
Volume/Cap:  0.04 xxxx  xxxx  0.01 xxxx  xxxx  0.04 0.00  0.01  0.11 0.00  0.02
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:    0.1 xxxx xxxxx   0.0 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:  7.8 xxxx xxxxx   8.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  390 xxxxx  xxxx  376 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  0.1 xxxxx xxxxx  0.4 xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 14.6 xxxxx xxxxx 16.0 xxxxx
Shared LOS:     *    *     *     *    *     *     *    B     *     *    C     *
ApproachDel:    xxxxxx           xxxxxx             14.6             16.0
ApproachLOS:         *                *               B                C
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************


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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                        Existing Plus Project Conditions
                                  AM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #13 Indian Street / Driveway 6
*******************************************************************************
Average Delay (sec/veh):      0.3       Worst Case Level Of Service: A[  9.8]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  1  0  0    0  0  0  1  0    0  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  277     0     0  210     0     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  277     0     0  210     0     0    0     0     0    0     0
Added Vol:      0  112     0     0   18    13     0    0    23     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0  389     0     0  228    13     0    0    23     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.89 0.89  0.89  0.89 0.89  0.89  0.89 0.89  0.89  0.89 0.89  0.89
PHF Volume:     0  440     0     0  258    15     0    0    26     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0  440     0     0  258    15     0    0    26     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.2 xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   265  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   779  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   779  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  0.03  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   0.1  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   9.8 xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     A     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx              9.8           xxxxxx
ApproachLOS:         *                *                A                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************


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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                        Existing Plus Project Conditions
                                  AM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #14 Indian Street / Grove View Road
*******************************************************************************
Average Delay (sec/veh):      1.7       Worst Case Level Of Service: B[ 14.9]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  1  0    1  0  1  0  0    0  0  0  0  0    1  0  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  273    27     2  208     0     0    0     0    66    0     4
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  273    27     2  208     0     0    0     0    66    0     4
Added Vol:      0  103     0     3   38     0     0    0     0     0    0     9
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0  376    27     5  246     0     0    0     0    66    0    13
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0  407    29     5  267     0     0    0     0    72    0    14
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0  407    29     5  267     0     0    0     0    72    0    14
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4 xxxx   6.2
FollowUpTim:xxxxx xxxx xxxxx   2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5 xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx   437 xxxx xxxxx  xxxx xxxx xxxxx   699 xxxx   422
Potent Cap.: xxxx xxxx xxxxx  1134 xxxx xxxxx  xxxx xxxx xxxxx   409 xxxx   636
Move Cap.:   xxxx xxxx xxxxx  1134 xxxx xxxxx  xxxx xxxx xxxxx   407 xxxx   636
Volume/Cap:  xxxx xxxx  xxxx  0.00 xxxx  xxxx  xxxx xxxx  xxxx  0.18 xxxx  0.02
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx   0.0 xxxx xxxxx  xxxx xxxx xxxxx   0.6 xxxx   0.1
Control Del:xxxxx xxxx xxxxx   8.2 xxxx xxxxx xxxxx xxxx xxxxx  15.7 xxxx  10.8
LOS by Move:    *    *     *     A    *     *     *    *     *     C    *     B
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             14.9
ApproachLOS:         *                *                *                B
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************


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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Existing Plus Project Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 Indian Street / Harley Knox Boulevard

Cycle (sec): 120 Critical Vol./Cap.(X): 0.326
Loss Time (sec): 16 Average Delay (sec/veh): 39.0
Optimal Cycle: OPTIMIZED Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	10	39	39	10	39	39	10	34	34	10	34	34
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	1 0	1 1	0	1 0	1 0	1	2 0	1 1	0
Volume Module:												
Base Vol:	48	91	16	8	54	187	171	211	21	11	222	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	48	91	16	8	54	187	171	211	21	11	222	8
Added Vol:	0	9	0	2	3	33	90	0	0	0	0	4
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	48	100	16	10	57	220	261	211	21	11	222	12
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	52	109	17	11	62	240	284	230	23	12	242	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	52	109	17	11	62	240	284	230	23	12	242	13
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	52	109	17	11	62	240	284	230	23	12	242	13
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.85	0.95	0.84	0.84	0.95	1.00	0.85	0.92	0.94	0.94
Lanes:	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.90	0.10
Final Sat.:	3502	3610	1615	1805	1590	1590	1805	1900	1615	3502	3397	184
Capacity Analysis Module:												
Vol/Sat:	0.01	0.03	0.01	0.01	0.04	0.15	0.16	0.12	0.01	0.00	0.07	0.07
Crit Moves:	****				****		****				****	
Green/Cycle:	0.08	0.33	0.33	0.08	0.33	0.50	0.18	0.35	0.35	0.10	0.28	0.28
Volume/Cap:	0.18	0.09	0.03	0.07	0.12	0.30	0.90	0.34	0.04	0.03	0.25	0.25
Delay/Veh:	51.5	28.2	27.7	50.9	28.5	17.8	75.4	28.8	25.4	48.4	33.3	33.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.5	28.2	27.7	50.9	28.5	17.8	75.4	28.8	25.4	48.4	33.3	33.3
LOS by Move:	D	C	C	D	C	B	E	C	C	D	C	C
HCM2kAvgQ:	1	1	0	0	2	5	11	6	1	0	4	4

Note: Queue reported is the number of cars per lane.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	248	7	159	112	0	0	0	0	377	7	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	3.5	5.0						5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95						1.00	1.00
Frpb, ped/bikes		1.00	0.97	1.00	1.00						1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		3610	1567	1805	3610						1811	1586
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		3610	1567	1805	3610						1811	1586
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	279	8	179	126	0	0	0	0	424	8	202
RTOR Reduction (vph)	0	0	4	0	0	0	0	0	0	0	0	152
Lane Group Flow (vph)	0	279	4	179	126	0	0	0	0	0	432	51
Confl. Peds. (#/hr)			5									5
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		36.0	36.0	10.5	50.0						20.0	20.0
Effective Green, g (s)		36.0	36.0	10.5	50.0						20.0	20.0
Actuated g/C Ratio		0.45	0.45	0.13	0.62						0.25	0.25
Clearance Time (s)		5.0	5.0	3.5	5.0						5.0	5.0
Vehicle Extension (s)		2.0	2.0	2.0	2.0						3.0	3.0
Lane Grp Cap (vph)		1624	705	236	2256						452	396
v/s Ratio Prot		c0.08		c0.10	0.03						c0.24	
v/s Ratio Perm			0.00									0.03
v/c Ratio		0.17	0.01	0.76	0.06						0.96	0.13
Uniform Delay, d1		13.1	12.1	33.5	5.8						29.6	23.2
Progression Factor		1.00	1.00	1.00	1.00						1.00	1.00
Incremental Delay, d2		0.2	0.0	11.7	0.0						31.0	0.1
Delay (s)		13.3	12.1	45.2	5.9						60.5	23.4
Level of Service		B	B	D	A						E	C
Approach Delay (s)		13.3			29.0			0.0			48.7	
Approach LOS		B			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	35.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	172	454	0	0	262	389	9	4	127	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0			5.0	5.0		5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00		1.00	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.97		1.00	0.98			
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.97	1.00			
Satd. Flow (prot)	1805	3610			3610	1563		1834	1587			
Flt Permitted	0.95	1.00			1.00	1.00		0.97	1.00			
Satd. Flow (perm)	1805	3610			3610	1563		1834	1587			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	183	483	0	0	279	414	10	4	135	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	229	0	0	99	0	0	0
Lane Group Flow (vph)	183	483	0	0	279	185	0	14	36	0	0	0
Confl. Peds. (#/hr)						5			5			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Actuated Green, G (s)	14.0	60.0			42.5	42.5		25.0	25.0			
Effective Green, g (s)	14.0	60.0			42.5	42.5		25.0	25.0			
Actuated g/C Ratio	0.15	0.63			0.45	0.45		0.26	0.26			
Clearance Time (s)	3.5	5.0			5.0	5.0		5.0	5.0			
Vehicle Extension (s)	2.0	2.0			2.0	2.0		3.0	3.0			
Lane Grp Cap (vph)	266	2280			1615	699		482	417			
v/s Ratio Prot	c0.10	0.13			0.08			0.01				
v/s Ratio Perm						c0.12			c0.02			
v/c Ratio	0.69	0.21			0.17	0.26		0.03	0.09			
Uniform Delay, d1	38.4	7.4			15.7	16.5		26.0	26.4			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	5.8	0.2			0.2	0.9		0.1	0.4			
Delay (s)	44.2	7.7			16.0	17.4		26.1	26.8			
Level of Service	D	A			B	B		C	C			
Approach Delay (s)		17.7			16.8			26.7			0.0	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	18.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

```
-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                        Existing Plus Project Conditions
                                  PM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #3 Western Way / Harley Knox Boulevard
*******************************************************************************
Average Delay (sec/veh):      0.7       Worst Case Level Of Service: B[ 12.7]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  0    0  0  1! 0  0    0  1  1  0  0    0  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0    10    0    50    12  527     0     0  516     5
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0    10    0    50    12  527     0     0  516     5
Added Vol:      0    0     0     0    0     0     0   42     0     0   85     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0     0    10    0    50    12  569     0     0  601     5
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.94 0.94  0.94  0.94 0.94  0.94  0.94 0.94  0.94  0.94 0.94  0.94
PHF Volume:     0    0     0    11    0    53    13  606     0     0  640     5
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0     0    11    0    53    13  606     0     0  640     5
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   6.8  6.5   6.9   4.1 xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx   3.5  4.0   3.3   2.2 xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx   969 1272   320   645 xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx   255  169   682   950 xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx   252  167   682   950 xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  0.04 0.00  0.08  0.01 xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.0 xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.8 xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     A    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx  531 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx  0.4 xxxxx   0.0 xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx 12.7 xxxxx   8.8 xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    B     *     A    *     *     *    *     *
ApproachDel:    xxxxxx             12.7           xxxxxx           xxxxxx
ApproachLOS:         *               B                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************


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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Existing Plus Project Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Patterson Avenue / Harley Knox Boulevard

Cycle (sec): 120 Critical Vol./Cap.(X): 0.390
Loss Time (sec): 12 Average Delay (sec/veh): 18.6
Optimal Cycle: OPTIMIZED Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	27	27	27	27	27	27	10	18	18	10	18	18
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1! 0	0	0 1	0 0	1	1 0	1 0	1	1 0	0 1	0
Volume Module:												
Base Vol:	63	1	4	4	3	8	5	474	46	0	418	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	63	1	4	4	3	8	5	474	46	0	418	0
Added Vol:	0	0	2	0	0	0	0	42	0	4	85	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	63	1	6	4	3	8	5	516	46	4	503	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	68	1	7	4	3	9	5	561	50	4	547	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	68	1	7	4	3	9	5	561	50	4	547	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	68	1	7	4	3	9	5	561	50	4	547	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.74	0.74	0.74	0.92	0.92	0.85	0.95	1.00	0.85	0.95	1.00	1.00
Lanes:	0.90	0.01	0.09	0.57	0.43	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1272	20	121	1001	751	1615	1805	1900	1615	1805	1900	0
Capacity Analysis Module:												
Vol/Sat:	0.05	0.05	0.05	0.00	0.00	0.01	0.00	0.30	0.03	0.00	0.29	0.00
Crit Moves:		****						****		****		
Green/Cycle:	0.23	0.23	0.23	0.23	0.23	0.23	0.15	0.59	0.59	0.08	0.52	0.00
Volume/Cap:	0.24	0.24	0.24	0.02	0.02	0.02	0.02	0.50	0.05	0.03	0.55	0.00
Delay/Veh:	38.5	38.5	38.5	36.2	36.2	36.3	43.3	14.5	10.3	50.6	19.8	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.5	38.5	38.5	36.2	36.2	36.3	43.3	14.5	10.3	50.6	19.8	0.0
LOS by Move:	D	D	D	D	D	D	D	B	B	D	B	A
HCM2kAvgQ:	2	2	2	0	0	0	0	12	1	0	13	0

Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                        Existing Plus Project Conditions
                                  PM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #5 Heacock Street / Nandina Avenue
*******************************************************************************
Average Delay (sec/veh):      7.4       Worst Case Level Of Service: A[  8.6]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  1  0    1  0  1  0  0    0  0  0  0  0    1  0  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    3     3   104    6     0     0    0     0     0    0    47
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    3     3   104    6     0     0    0     0     0    0    47
Added Vol:      0    0     0    11    0     0     0    0     0     0    0    21
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    3     3   115    6     0     0    0     0     0    0    68
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.87 0.87  0.87  0.87 0.87  0.87  0.87 0.87  0.87  0.87 0.87  0.87
PHF Volume:     0    3     3   133    7     0     0    0     0     0    0    79
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    3     3   133    7     0     0    0     0     0    0    79
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4 xxxx   6.2
FollowUpTim:xxxxx xxxx xxxxx   2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5 xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx     7 xxxx xxxxx  xxxx xxxx xxxxx   278 xxxx     5
Potent Cap.: xxxx xxxx xxxxx  1627 xxxx xxxxx  xxxx xxxx xxxxx   716 xxxx  1084
Move Cap.:   xxxx xxxx xxxxx  1627 xxxx xxxxx  xxxx xxxx xxxxx   672 xxxx  1084
Volume/Cap:  xxxx xxxx  xxxx  0.08 xxxx  xxxx  xxxx xxxx  xxxx  0.00 xxxx  0.07
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx   0.3 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   0.2
Control Del:xxxxx xxxx xxxxx   7.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   8.6
LOS by Move:    *    *     *     A    *     *     *    *     *     *    *     A
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx              8.6
ApproachLOS:         *                *                *                A
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************


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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                        Existing Plus Project Conditions
                                  PM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #6 Heacock Street / Grove View Road
*******************************************************************************
Average Delay (sec/veh):      0.0       Worst Case Level Of Service: A[  0.0]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  1  0  0    0  0  1  0  0    0  0  0  0  0    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    6     0     0    6     0     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    6     0     0    6     0     0    0     0     0    0     0
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    6     0     0    6     0     0    0     0     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    7     0     0    7     0     0    0     0     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    7     0     0    7     0     0    0     0     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   6.4  6.5   6.2
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx    13   13     7
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1011  885  1082
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1011  885  1082
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.00 0.00  0.00
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx    0 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         *                *                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************


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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                        Existing Plus Project Conditions
                                  PM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #7 Webster Avenue / Harley Knox Boulevard
*******************************************************************************
Average Delay (sec/veh):      0.1       Worst Case Level Of Service: C[ 19.8]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  1  0  0    1  0  0  1  0    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       2    0     1     0    1     0     1  434     0     2  338     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    2    0     1     0    1     0     1  434     0     2  338     0
Added Vol:      0    0     0     0    0     0     0   44     0     0   90     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    2    0     1     0    1     0     1  478     0     2  428     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.91 0.91  0.91  0.91 0.91  0.91  0.91 0.91  0.91  0.91 0.91  0.91
PHF Volume:     2    0     1     0    1     0     1  523     0     2  468     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    2    0     1     0    1     0     1  523     0     2  468     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  7.1  6.5   6.2 xxxxx  6.5 xxxxx   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx  4.0 xxxxx   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  998  998   523  xxxx  998 xxxxx   468 xxxx xxxxx   523 xxxx xxxxx
Potent Cap.:  224  246   558  xxxx  246 xxxxx  1104 xxxx xxxxx  1054 xxxx xxxxx
Move Cap.:    223  245   558  xxxx  245 xxxxx  1104 xxxx xxxxx  1054 xxxx xxxxx
Volume/Cap:  0.01 0.00  0.00  xxxx 0.00  xxxx  0.00 xxxx  xxxx  0.00 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx  0.0 xxxxx   0.0 xxxx xxxxx   0.0 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx 19.8 xxxxx   8.3 xxxx xxxxx   8.4 xxxx xxxxx
LOS by Move:    *    *     *     *    C     *     A    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  279 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.0 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 18.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    C     *     *    *     *     *    *     *     *    *     *
ApproachDel:      18.1             19.8           xxxxxx           xxxxxx
ApproachLOS:         C                C                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************


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```

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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                        Existing Plus Project Conditions
                                  PM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #8 Driveway 2 / Nandina Avenue
*******************************************************************************
Average Delay (sec/veh):      2.1       Worst Case Level Of Service: B[ 10.1]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  0  1  0    1  0  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0     0    0     0     0  104     0     0   45     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0     0    0     0     0  104     0     0   45     0
Added Vol:     13    0     4     0    0     0     0    2     8    38    8     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   13    0     4     0    0     0     0  106     8    38   53     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.81 0.81  0.81  0.81 0.81  0.81  0.81 0.81  0.81  0.81 0.81  0.81
PHF Volume:    16    0     5     0    0     0     0  131    10    47   65     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:   16    0     5     0    0     0     0  131    10    47   65     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  295  295   136  xxxx xxxx xxxxx  xxxx xxxx xxxxx   141 xxxx xxxxx
Potent Cap.:  700  620   918  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1455 xxxx xxxxx
Move Cap.:    683  600   918  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1455 xxxx xxxxx
Volume/Cap:  0.02 0.00  0.01  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.03 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.1 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.6 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  727 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 10.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    B     *     *    *     *     *    *     *     *    *     *
ApproachDel:      10.1           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************


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```

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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                        Existing Plus Project Conditions
                                PM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #9 Driveway 3 / Nandina Avenue
*******************************************************************************
Average Delay (sec/veh):      0.4       Worst Case Level Of Service: A[  9.4]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  1  0  0    1  0  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0     0    0     0     0  104     0     0   45     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0     0    0     0     0  104     0     0   45     0
Added Vol:      4    0     4     0    0     0     0    7     0     0   42     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    4    0     4     0    0     0     0  111     0     0   87     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.81 0.81  0.81  0.81 0.81  0.81  0.81 0.81  0.81  0.81 0.81  0.81
PHF Volume:     5    0     5     0    0     0     0  137     0     0  107     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    5    0     5     0    0     0     0  137     0     0  107     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  244  244   137  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.:  748  661   917  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:    748  661   917  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  0.01 0.00  0.01  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  824 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.0 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx  9.4 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    A     *     *    *     *     *    *     *     *    *     *
ApproachDel:       9.4           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         A                *                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************


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```

First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Existing Plus Project Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Indian Street / Nandina Avenue

Cycle (sec): 90 Critical Vol./Cap.(X): 0.172
Loss Time (sec): 16 Average Delay (sec/veh): 24.2
Optimal Cycle: OPTIMIZED Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Ovl			Include		
Min. Green:	10	27	27	10	27	27	10	28	28	10	28	28
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0 1	1 0		1 0 1	1 0		1 0 1	0 1		1 0 1	0 1	
Volume Module:												
Base Vol:	39	104	38	0	78	0	2	38	138	67	10	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	39	104	38	0	78	0	2	38	138	67	10	0
Added Vol:	38	0	22	0	0	0	0	8	2	11	4	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	77	104	60	0	78	0	2	46	140	78	14	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	83	112	65	0	84	0	2	49	151	84	15	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	83	112	65	0	84	0	2	49	151	84	15	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	83	112	65	0	84	0	2	49	151	84	15	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.90	0.90	1.00	0.95	0.95	0.95	1.00	0.85	0.95	1.00	1.00
Lanes:	1.00	1.27	0.73	1.00	2.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1805	2163	1248	1900	3610	0	1805	1900	1615	1805	1900	1900
Capacity Analysis Module:												
Vol/Sat:	0.05	0.05	0.05	0.00	0.02	0.00	0.00	0.03	0.09	0.05	0.01	0.00
Crit Moves:	****				****			****		****		
Green/Cycle:	0.11	0.41	0.41	0.00	0.30	0.00	0.11	0.31	0.42	0.11	0.31	0.00
Volume/Cap:	0.42	0.13	0.13	0.00	0.08	0.00	0.01	0.08	0.22	0.42	0.03	0.00
Delay/Veh:	39.2	16.9	16.9	0.0	23.1	0.0	36.1	22.5	17.2	39.3	22.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.2	16.9	16.9	0.0	23.1	0.0	36.1	22.5	17.2	39.3	22.0	0.0
LOS by Move:	D	B	B	A	C	A	D	C	B	D	C	A
HCM2kAvgQ:	2	2	2	0	1	0	0	1	3	3	0	0

Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                        Existing Plus Project Conditions
                                  PM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #11 Indian Street / Driveway 4
*******************************************************************************
Average Delay (sec/veh):      0.7       Worst Case Level Of Service: B[ 10.4]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  1  0  0    0  0  0  1  0    0  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  183     0     0  282     0     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  183     0     0  282     0     0    0     0     0    0     0
Added Vol:      0   60     0     0   11     2     0    0    36     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0  243     0     0  293     2     0    0    36     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.87 0.87  0.87  0.87 0.87  0.87  0.87 0.87  0.87  0.87 0.87  0.87
PHF Volume:     0  278     0     0  335     2     0    0    41     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0  278     0     0  335     2     0    0    41     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.2 xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   336  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   710  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   710  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  0.06  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   0.2  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  10.4 xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     B     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx             10.4           xxxxxx
ApproachLOS:         *                *                B                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************


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```

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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                        Existing Plus Project Conditions
                                PM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #12 Indian Street / Driveway 5/Waste Management Driveway
*******************************************************************************
Average Delay (sec/veh):      2.9       Worst Case Level Of Service: C[ 18.6]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        1  0  1  0  1    1  0  0  1  0    0  0  1! 0  0    1  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  183    65    34  248     0     0    0     0    55    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  183    65    34  248     0     0    0     0    55    0     0
Added Vol:     22   33     0     0   42     4    26    0    13     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   22  216    65    34  290     4    26    0    13    55    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.87 0.87  0.87  0.87 0.87  0.87  0.87 0.87  0.87  0.87 0.87  0.87
PHF Volume:    25  247    74    39  332     5    30    0    15    63    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:   25  247    74    39  332     5    30    0    15    63    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.1  6.5   6.2   7.1 xxxx xxxxx
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  336 xxxx xxxxx   322 xxxx xxxxx   747  784   334   717 xxxx xxxxx
Potent Cap.: 1234 xxxx xxxxx  1250 xxxx xxxxx   332  327   712   347 xxxx xxxxx
Move Cap.:   1234 xxxx xxxxx  1250 xxxx xxxxx   319  311   712   327 xxxx xxxxx
Volume/Cap:  0.02 xxxx  xxxx  0.03 xxxx  xxxx  0.09 0.00  0.02  0.19 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:    0.1 xxxx xxxxx   0.1 xxxx xxxxx  xxxx xxxx xxxxx   0.7 xxxx xxxxx
Control Del:  8.0 xxxx xxxxx   8.0 xxxx xxxxx xxxxx xxxx xxxxx  18.6 xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     *    *     *     C    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  391 xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  0.4 xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 15.4 xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    C     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx             15.4             18.6
ApproachLOS:         *                *                C                C
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************


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```

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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                        Existing Plus Project Conditions
                                  PM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #13 Indian Street / Driveway 6
*******************************************************************************
Average Delay (sec/veh):      1.0       Worst Case Level Of Service: B[ 11.2]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  1  0  0    0  0  0  1  0    0  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  247     0     0  303     0     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  247     0     0  303     0     0    0     0     0    0     0
Added Vol:      0   55     0     0   49     7     0    0    63     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0  302     0     0  352     7     0    0    63     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.87 0.87  0.87  0.87 0.87  0.87  0.87 0.87  0.87  0.87 0.87  0.87
PHF Volume:     0  346     0     0  403     8     0    0    72     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0  346     0     0  403     8     0    0    72     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.2 xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   407  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   649  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   649  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  0.11  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   0.4  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  11.2 xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     B     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx             11.2           xxxxxx
ApproachLOS:         *                *                B                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************


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```

```
-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                        Existing Plus Project Conditions
                                PM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #14 Indian Street / Grove View Road
*******************************************************************************
Average Delay (sec/veh):      2.6       Worst Case Level Of Service: C[ 20.8]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  1  0    1  0  1  0  0    0  0  0  0  0    1  0  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  241    45     5  298     0     0    0     0    90    0     6
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  241    45     5  298     0     0    0     0    90    0     6
Added Vol:      0   51     0     9  103     0     0    0     0     0    0     4
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0  292    45    14  401     0     0    0     0    90    0    10
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.85 0.85  0.85  0.85 0.85  0.85  0.85 0.85  0.85  0.85 0.85  0.85
PHF Volume:     0  345    53    17  473     0     0    0     0   106    0    12
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0  345    53    17  473     0     0    0     0   106    0    12
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4 xxxx   6.2
FollowUpTim:xxxxx xxxx xxxxx   2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5 xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx   398 xxxx xxxxx  xxxx xxxx xxxxx   878 xxxx   371
Potent Cap.: xxxx xxxx xxxxx  1172 xxxx xxxxx  xxxx xxxx xxxxx   321 xxxx   679
Move Cap.:   xxxx xxxx xxxxx  1172 xxxx xxxxx  xxxx xxxx xxxxx   318 xxxx   679
Volume/Cap:  xxxx xxxx  xxxx  0.01 xxxx  xxxx  xxxx xxxx  xxxx  0.33 xxxx  0.02
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx   0.0 xxxx xxxxx  xxxx xxxx xxxxx   1.4 xxxx   0.1
Control Del:xxxxx xxxx xxxxx   8.1 xxxx xxxxx xxxxx xxxx xxxxx  21.9 xxxx  10.4
LOS by Move:    *    *     *     A    *     *     *    *     *     C    *     B
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             20.8
ApproachLOS:         *                *                *                C
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************


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```

First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Existing Plus Project Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 Indian Street / Harley Knox Boulevard

Cycle (sec): 120 Critical Vol./Cap.(X): 0.339
Loss Time (sec): 16 Average Delay (sec/veh): 32.5
Optimal Cycle: OPTIMIZED Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	10	39	39	10	39	39	10	34	34	10	34	34
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	1 0	1 1	0	1 0	1 0	1	2 0	1 1	0
Volume Module:												
Base Vol:	36	71	6	18	159	175	161	284	87	8	137	21
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	36	71	6	18	159	175	161	284	87	8	137	21
Added Vol:	0	4	0	4	9	90	44	0	0	0	0	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	36	75	6	22	168	265	205	284	87	8	137	23
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	39	81	6	24	181	286	221	307	94	9	148	25
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	39	81	6	24	181	286	221	307	94	9	148	25
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	39	81	6	24	181	286	221	307	94	9	148	25
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.85	0.95	0.86	0.86	0.95	1.00	0.85	0.92	0.93	0.93
Lanes:	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.71	0.29
Final Sat.:	3502	3610	1615	1805	1639	1639	1805	1900	1615	3502	3023	508
Capacity Analysis Module:												
Vol/Sat:	0.01	0.02	0.00	0.01	0.11	0.17	0.12	0.16	0.06	0.00	0.05	0.05
Crit Moves:	****				****		****				****	
Green/Cycle:	0.08	0.33	0.33	0.08	0.33	0.50	0.18	0.35	0.35	0.10	0.28	0.28
Volume/Cap:	0.13	0.07	0.01	0.16	0.34	0.35	0.70	0.46	0.16	0.02	0.17	0.17
Delay/Veh:	51.2	28.0	27.5	51.6	30.9	18.3	53.4	30.3	26.7	48.3	32.5	32.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.2	28.0	27.5	51.6	30.9	18.3	53.4	30.3	26.7	48.3	32.5	32.5
LOS by Move:	D	C	C	D	C	B	D	C	C	D	C	C
HCM2kAvgQ:	1	1	0	1	5	6	8	8	2	0	2	2

Note: Queue reported is the number of cars per lane.

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APPENDIX 5.2

Existing plus Project Conditions
Traffic Signal Warrant Analysis Worksheets

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

___	___	___	___		TRAFFIC CONDITIONS		**E+P**
DIST	CO	RTE	PM	CALC	CS	DATE	10/10/13
Jurisdiction:	**City of Moreno Valley**			CHK	CS	DATE	10/10/13
Major Street:	**Harley Knox Boulevard**				Critical Approach Speed (Major)		45 mph
Minor Street:	**Western Way**				Critical Approach Speed (Minor)		25 mph

Major Street Approach Lanes = **2** lane Minor Street Approach Lanes **1** lane

Major Street Future ADT = **14,800** vpd Minor Street Future ADT = **450** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); …….. [√]

or **RURAL (R)**

In built up area of isolated community of < 10,000 population …… [ ]

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements EADT			
	XX				
CONDITION A - Minimum Vehicular Volume					
Satisfied	Not Satisfied				
	XX				
Number of lanes for moving traffic on each approach		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Major Street	Minor Street	Urban	Rural	Urban	Rural
1	*1*	8,000	5,600	2,400	1,680
2 + **14,800**	*1* **450**	9,600	6,720 *	2,400	1,680
2 +	*2 +*	9,600	6,720	3,200	2,240
1	*2 +*	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic					
Satisfied	Not Satisfied				
	XX				
Number of lanes for moving traffic on each approach		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Major Street	Minor Street	Urban	Rural	Urban	Rural
1	*1*	12,000	8,400	1,200	850
2 +	*1* **450**	14,400	10,080	1,200	850
2 +	*2 +*	14,400	10,080	1,600	1,120
1	*2 +*	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied				
	XX	2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** / **B**				
	27% / 53%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM

TRAFFIC CONDITIONS **E+P**

CALC CS DATE 10/10/13

CHK CS DATE 10/10/13

Jurisdiction: **City of Moreno Valley**

Major Street: **Heacock Street**

Minor Street: **Nandina Avenue**

Critical Approach Speed (Major) 50 mph

Critical Approach Speed (Minor) 45 mph

Major Street Approach Lanes = **1** lane

Minor Street Approach Lanes **1** lane

Major Street Future ADT = **1,250** vpd

Minor Street Future ADT = **1,150** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); …….. √

or

In built up area of isolated community of < 10,000 population ……

RURAL (R)

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements EADT			
	XX				
CONDITION A - Minimum Vehicular Volume					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **1,250**	*1* **1,150**	8,000	5,600	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2 +*	9,600	6,720	3,200	2,240
1	*2 +*	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **1,250**	*1* **1,150**	12,000	8,400	1,200	850 *
2 +	*1*	14,400	10,080	1,200	850
2 +	*2 +*	14,400	10,080	1,600	1,120
1	*2 +*	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied	2 CONDITIONS 80%		2 CONDITIONS 80%	
	XX				
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** 22% / **B** 15%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

___	___	___	___		TRAFFIC CONDITIONS		**E+P**
DIST	CO	RTE	PM	CALC	CS	DATE	10/10/13
Jurisdiction:	**City of Moreno Valley**			CHK	CS	DATE	10/10/13
Major Street:	**Harley Knox Boulevard**				Critical Approach Speed (Major)		45 mph
Minor Street:	**Webster Avenue**				Critical Approach Speed (Minor)		25 mph

Major Street Approach Lanes = **1** lane Minor Street Approach Lanes **1** lane

Major Street Future ADT = **11,200** vpd Minor Street Future ADT = **50** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); …….. [√]

or **RURAL (R)**

In built up area of isolated community of < 10,000 population …… [ ]

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements EADT			
	XX				
CONDITION A - Minimum Vehicular Volume					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **11,200**	*1* **50**	8,000	5,600 *	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2 +*	9,600	6,720	3,200	2,240
1	*2 +*	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **11,200**	*1* **50**	12,000	8,400 *	1,200	850
2 +	*1*	14,400	10,080	1,200	850
2 +	*2 +*	14,400	10,080	1,600	1,120
1	*2 +*	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied	2 CONDITIONS 80%		2 CONDITIONS 80%	
	XX				
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** / **B**				
	3% / 6%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

___	___	___	___		TRAFFIC CONDITIONS		**E+P**
DIST	CO	RTE	PM	CALC	CS	DATE	10/10/13
Jurisdiction:	**City of Moreno Valley**			CHK	CS	DATE	10/10/13
Major Street:	**Nandina Avenue**				Critical Approach Speed (Major)		45 mph
Minor Street:	**Driveway 2**				Critical Approach Speed (Minor)		15 mph

Major Street Approach Lanes = **1** lane Minor Street Approach Lanes **1** lane

Major Street Future ADT = **2,550** vpd Minor Street Future ADT = **600** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); …….. [√]

or **RURAL (R)**

In built up area of isolated community of < 10,000 population …… [ ]

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements EADT			
	XX				
CONDITION A - Minimum Vehicular Volume					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **2,550**	*1* **600**	8,000	5,600	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2 +*	9,600	6,720	3,200	2,240
1	*2 +*	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **2,550**	*1* **600**	12,000	8,400	1,200	850
2 +	*1*	14,400	10,080	1,200	850
2 +	*2 +*	14,400	10,080	1,600	1,120
1	*2 +*	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied	2 CONDITIONS 80%		2 CONDITIONS 80%	
	XX				
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** 36% / **B** 30%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

___	___	___	___		TRAFFIC CONDITIONS		**E+P**
DIST	CO	RTE	PM	CALC	CS	DATE	10/10/13
Jurisdiction:	**City of Moreno Valley**			CHK	CS	DATE	10/10/13
Major Street:	**Nandina Avenue**				Critical Approach Speed (Major)		45 mph
Minor Street:	**Driveway 3**				Critical Approach Speed (Minor)		15 mph

Major Street Approach Lanes = **1** lane Minor Street Approach Lanes **1** lane

Major Street Future ADT = **2,800** vpd Minor Street Future ADT = **50** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); …….. [√]

or **RURAL (R)**

In built up area of isolated community of < 10,000 population …… [ ]

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements EADT			
	XX				
CONDITION A - Minimum Vehicular Volume					
Satisfied	Not Satisfied				
	XX				
Number of lanes for moving traffic on each approach		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **2,800**	*1* **50**	8,000	5,600	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2 +*	9,600	6,720	3,200	2,240
1	*2 +*	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic					
Satisfied	Not Satisfied				
	XX				
Number of lanes for moving traffic on each approach		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **2,800**	*1* **50**	12,000	8,400	1,200	850
2 +	*1*	14,400	10,080	1,200	850
2 +	*2 +*	14,400	10,080	1,600	1,120
1	*2 +*	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied				
	XX	2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** / **B**				
	3% / 6%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM

TRAFFIC CONDITIONS **E+P**

CALC CS DATE 10/10/13

CHK CS DATE 10/10/13

Jurisdiction: **City of Moreno Valley**

Major Street: **Indian Street**

Minor Street: **Grove View Road**

Critical Approach Speed (Major) 50 mph

Critical Approach Speed (Minor) 30 mph

Major Street Approach Lanes = **1** lane

Minor Street Approach Lanes **1** lane

Major Street Future ADT = **9,600** vpd

Minor Street Future ADT = **950** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); …….. √

or

In built up area of isolated community of < 10,000 population ……

RURAL (R)

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements EADT			
	XX				
CONDITION A - Minimum Vehicular Volume					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **9,600**	*1* **950**	8,000	5,600 *	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2 +*	9,600	6,720	3,200	2,240
1	*2 +*	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
XX					
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **9,600**	*1* **950**	12,000	8,400 *	1,200	850 *
2 +	*1*	14,400	10,080	1,200	850
2 +	*2 +*	14,400	10,080	1,600	1,120
1	*2 +*	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied	2 CONDITIONS 80%		2 CONDITIONS 80%	
	XX				
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** 57% / **B** 100%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

APPENDIX 5.3

Existing plus Project Conditions
Ramp Queuing Analysis Worksheets

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	383	4	157	218	484	103
v/c Ratio	0.23	0.01	0.69	0.10	1.07	0.22
Control Delay	14.1	0.0	49.7	6.1	94.2	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.1	0.0	49.7	6.1	94.2	6.7
Queue Length 50th (ft)	61	0	75	20	~272	0
Queue Length 95th (ft)	90	0	#139	33	#452	36
Internal Link Dist (ft)	836			256	1109	
Turn Bay Length (ft)			80			270
Base Capacity (vph)	1644	754	259	2256	452	473
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.01	0.61	0.10	1.07	0.22

Intersection Summary

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

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

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	180	680	361	499	20	127
v/c Ratio	0.69	0.30	0.22	0.51	0.04	0.25
Control Delay	51.5	8.4	17.3	3.9	26.5	6.5
Queue Delay	0.0	0.8	0.0	0.0	0.0	0.0
Total Delay	51.5	9.1	17.3	3.9	26.5	6.5
Queue Length 50th (ft)	104	88	67	0	9	0
Queue Length 95th (ft)	163	117	109	61	27	42
Internal Link Dist (ft)		256	594		929	
Turn Bay Length (ft)	60					265
Base Capacity (vph)	408	2280	1621	976	482	511
Starvation Cap Reductn	0	1207	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.63	0.22	0.51	0.04	0.25

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	279	8	179	126	432	202
v/c Ratio	0.17	0.01	0.76	0.06	0.96	0.37
Control Delay	13.8	0.0	54.4	5.9	64.7	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.8	0.0	54.4	5.9	64.7	6.0
Queue Length 50th (ft)	43	0	86	11	213	0
Queue Length 95th (ft)	66	0	#170	21	#382	48
Internal Link Dist (ft)	836			256	1109	
Turn Bay Length (ft)			80			270
Base Capacity (vph)	1623	745	259	2256	452	548
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.01	0.69	0.06	0.96	0.37

Intersection Summary

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

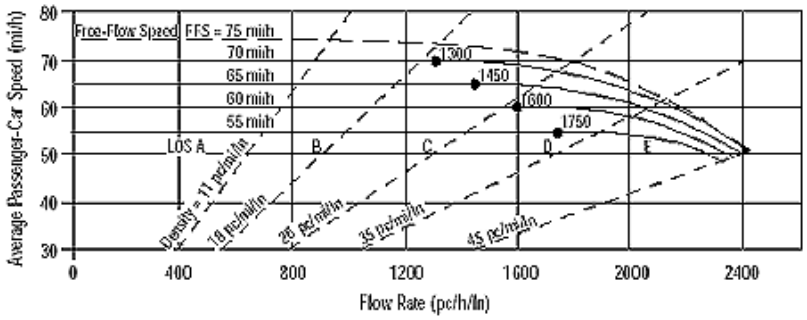
Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	183	483	279	414	14	135
v/c Ratio	0.69	0.21	0.17	0.45	0.03	0.26
Control Delay	51.4	7.7	17.0	3.7	26.4	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.4	7.7	17.0	3.7	26.4	6.5
Queue Length 50th (ft)	106	59	51	0	6	0
Queue Length 95th (ft)	166	81	86	57	21	44
Internal Link Dist (ft)		256	594		929	
Turn Bay Length (ft)	60					265
Base Capacity (vph)	408	2280	1615	928	482	517
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.21	0.17	0.45	0.03	0.26

Intersection Summary

APPENDIX 5.4

Existing plus Project Conditions
Basic Freeway Segment HCS+ Analysis Worksheets

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*SR-60 Westbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*West of I-215 Freeway*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*E+P*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6451*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*11*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.948*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
			Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1849*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*67.3*	mi/h	S	mi/h
D = v_p / S	*27.5*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*D*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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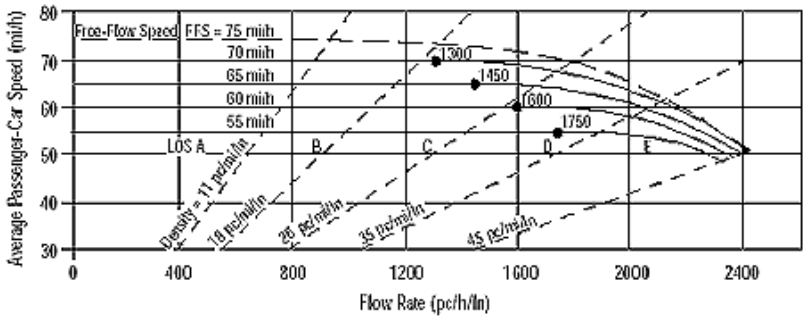
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*SR-60 Eastbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*West of I-215 Freeway*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*E+P*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*3915*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*12*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.943*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*5*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*902*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*12.9*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*B*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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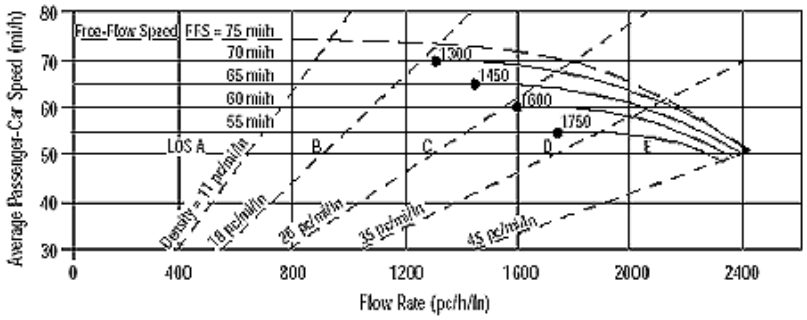
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Southbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of SR-60 Freeway*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*E+P*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6453*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*15*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.930*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*5*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1508*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*69.8*	mi/h	S		mi/h
D = v_p / S	*21.6*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*C*		Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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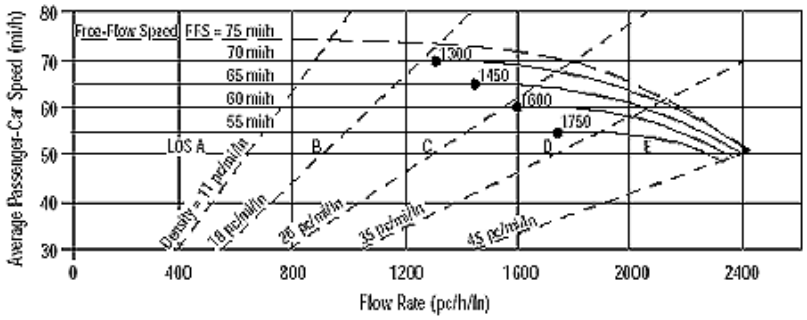
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Southbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*North of Harley Knox Bl.*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*E+P*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4805*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.5*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1776*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*68.1*	mi/h	S	mi/h
D = v_p / S	*26.1*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*D*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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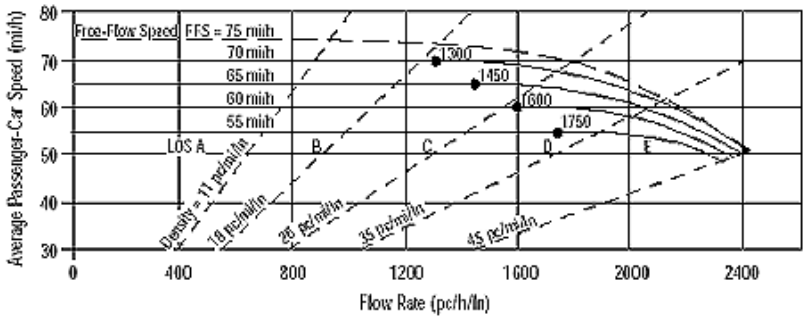
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Southbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of Harley Knox Bl.*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*E+P*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4489*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*2*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.990*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1643*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.2*	mi/h	S	mi/h
D = v_p / S	*23.7*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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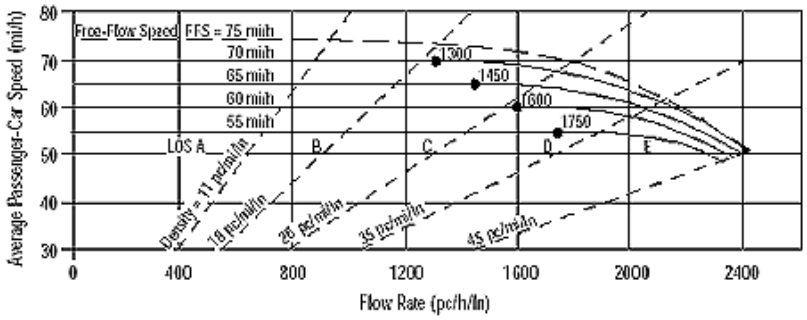
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*I-215 Northbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of SR-60 Freeway*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*E+P*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*3549*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*15*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.930*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
			Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1382*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*19.7*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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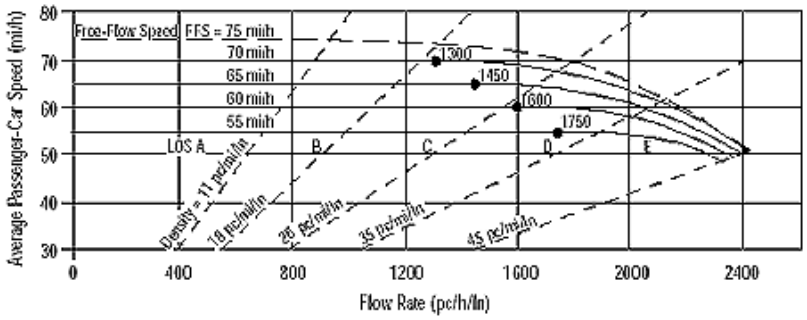
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*I-215 Northbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*North of Harley Knox Bl.*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*E+P*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*3240*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*5*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.976*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
			Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1203*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*17.2*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*B*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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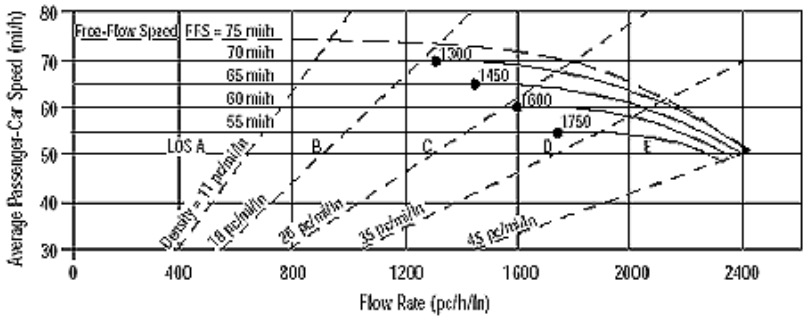

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*I-215 Northbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of Harley Knox Bl.*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*E+P*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*2822*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*3*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.985*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1038*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*70.0*	mi/h	S		mi/h
D = v_p / S	*14.8*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*B*		Required Number of Lanes, N		

Glossary / Factor Location

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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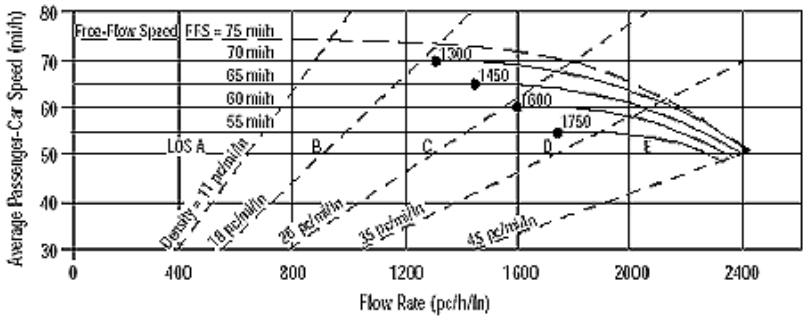

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*SR-60 Westbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*West of I-215 Freeway*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*E+P*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6370*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*11*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.948*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
			Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1826*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*67.6*	mi/h	S	mi/h
D = v_p / S	*27.0*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*D*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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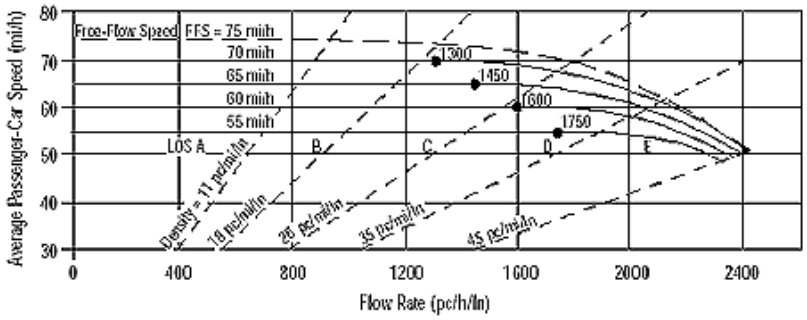

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*SR-60 Eastbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*West of I-215 Freeway*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*E+P*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6088*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*11*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.948*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*5*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
			Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1396*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*20.0*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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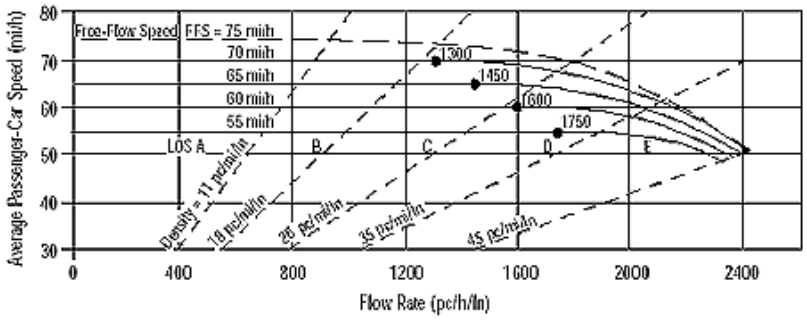

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*I-215 Southbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of SR-60 Freeway*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*E+P*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6573*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*15*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.930*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*5*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1536*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.7*	mi/h	S	mi/h
D = v_p / S	*22.0*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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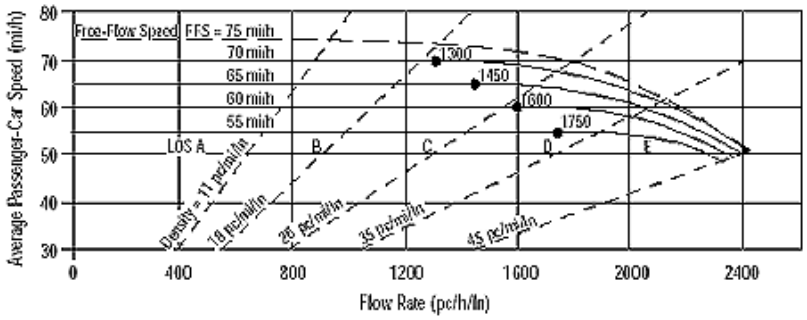

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*I-215 Southbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*North of Harley Knox Bl.*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*E+P*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5579*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*5*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.976*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2072*	pc/h/ln	Design LOS	
S	*63.4*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
D = v_p / S	*32.7*	pc/mi/ln	S	mi/h
LOS	*D*		D = v_p / S	pc/mi/ln
			Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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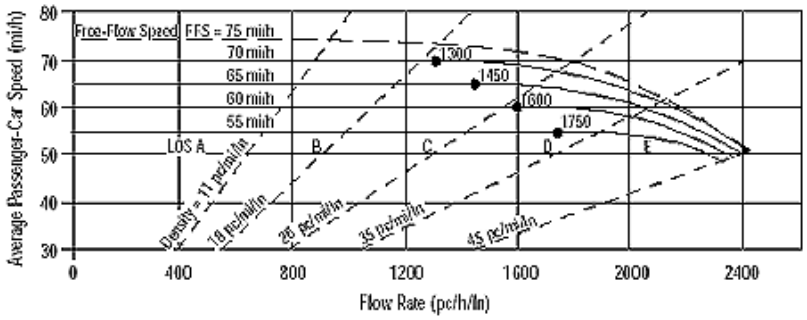
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*I-215 Southbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of Harley Knox Bl.*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*E+P*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5235*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
			Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1935*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*66.0*	mi/h	S	mi/h
D = v_p / S	*29.3*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*D*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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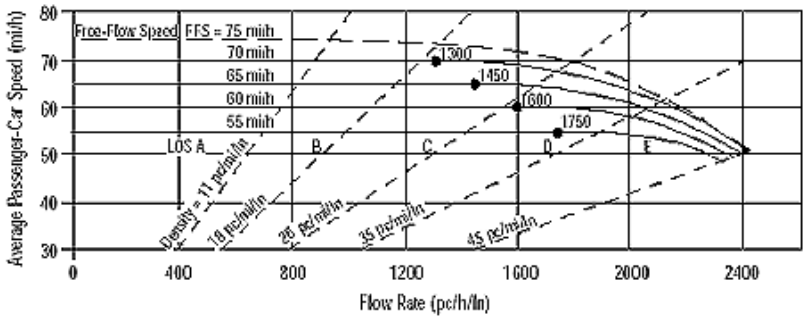
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*I-215 Northbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of SR-60 Freeway*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*E+P*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*3967*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*16*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.926*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
			Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1552*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.6*	mi/h	S	mi/h
D = v_p / S	*22.3*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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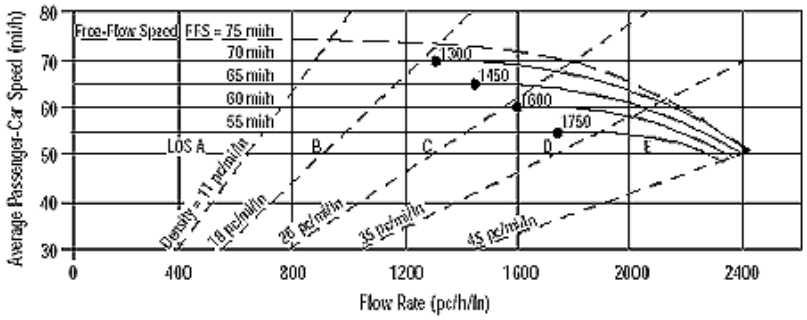
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*I-215 Northbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*North of Harley Knox Bl.*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*E+P*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4230*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*5*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.976*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1571*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.6*	mi/h	S	mi/h
D = v_p / S	*22.6*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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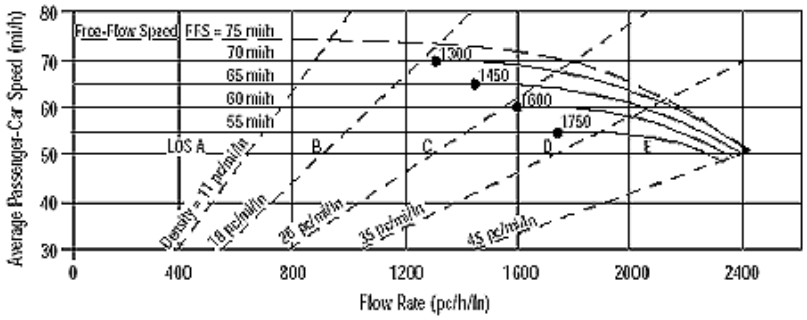
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*I-215 Northbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of Harley Knox Bl.*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*E+P*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*3769*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*3*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.985*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
			Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1386*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*19.8*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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APPENDIX 5.5

Existing plus Project Conditions
Freeway Ramp Junction (Merge/Diverge) HCS+ Analysis Worksheets

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Southbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox Off-Ramp
Date Performed	10/10/2013	Jurisdiction	CALTRANS
Analysis Time Period	AM Peak Hour	Analysis Year	E+P

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☑ Yes ☑ On

☐ No ☐ Off

L_{down} = 1420 ft

V_D = 138 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4805	0.92	Level	4	0	0.980	1.00	5327
Ramp	454	0.92	Level	25	6	0.866	1.00	570
UpStream								
DownStream	138	0.92	Level	22	0	0.901	1.00	166

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Determination

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.601 using Equation (Exhibit 25-12)

V_{12} = 3427 pc/h

V_3 or V_{av34} 1900 pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	5327	Exhibit 25-14	7200	No
$V_{FO} = V_F - V_R$	4757	Exhibit 25-14	7200	No
V_R	570	Exhibit 25-3	2100	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3427	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 32.0 (pc/mi/ln)

LOS = D (Exhibit 25-4)

Speed Determination

D_s = 0.349 (Exhibit 25-19)

S_R= 60.2 mph (Exhibit 25-19)

S_0= 73.3 mph (Exhibit 25-19)

S = 64.3 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Southbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox On-Ramp
Date Performed	10/10/2013	Jurisdiction	CALTRANS
Analysis Time Period	AM Peak Hour	Analysis Year	E+P

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp

☑ Yes ☐ On

☐ No ☑ Off

L_{up} = 1420 ft

V_u = 454 veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4351	0.92	Level	2	0	0.990	1.00	4777
Ramp	138	0.92	Level	22	0	0.901	1.00	166
UpStream	454	0.92	Level	25	6	0.866	1.00	570
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = 1123.75 (Equation 25-2 or 25-3)

P_{FM} = 0.585 using Equation (Exhibit 25-5)

V_{12} = 2793 pc/h

V_3 or V_{av34} 1984 pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4943	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2959	Exhibit 25-7	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 26.9 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Determination

M_S = 0.373 (Exibit 25-19)

S_R= 59.6 mph (Exhibit 25-19)

S_0= 64.7 mph (Exhibit 25-19)

S = 61.5 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-12)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		
V_R		Exhibit 25-3		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Determination

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Northbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox On-Ramp
Date Performed	10/10/2013	Jurisdiction	CALTRANS
Analysis Time Period	AM Peak Hour	Analysis Year	E+P

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp
☑ Yes ☐ On
☐ No ☑ Off
L_{up} = 1393 ft
V_u = 129 veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2693	0.92	Level	2	0	0.990	1.00	2956
Ramp	547	0.92	Level	16	0	0.926	1.00	642
UpStream	129	0.92	Level	5	0	0.976	1.00	144
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = 854.57 (Equation 25-2 or 25-3)
P_{FM} = 0.586 using Equation (Exhibit 25-5)
V_{12} = 1732 pc/h
V_3 or V_{av34} 1224 pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	3598	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2374	Exhibit 25-7	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 21.8 (pc/mi/ln)
LOS = C (Exhibit 25-4)

Speed Determination

M_S = 0.336 (Exibit 25-19)
S_R= 60.6 mph (Exhibit 25-19)
S_0= 67.4 mph (Exhibit 25-19)
S = 62.7 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = using Equation (Exhibit 25-12)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		
V_R		Exhibit 25-3		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)
LOS = (Exhibit 25-4)

Speed Determination

D_s = (Exhibit 25-19)
S_R= mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)
S = mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Northbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox Off-Ramp
Date Performed	10/10/2013	Jurisdiction	CALTRANS
Analysis Time Period	AM Peak Hour	Analysis Year	E+P

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp
☑ Yes ☑ On
☐ No ☐ Off
L_{down} = 1393 ft
V_D = 547 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	2822	0.92	Level	3	0	0.985	1.00	3113
Ramp	129	0.92	Level	5	0	0.976	1.00	144
UpStream								
DownStream	547	0.92	Level	16	0	0.926	1.00	642

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = using Equation (Exhibit 25-5)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
V_{R12}		Exhibit 25-7	

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)
LOS = (Exhibit 25-4)

Speed Determination

M_S = (Exibit 25-19)
S_R= mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)
S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = 0.676 using Equation (Exhibit 25-12)
V_{12} = 2150 pc/h
V_3 or V_{av34} 963 pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3113	Exhibit 25-14	7200	No
$V_{FO} = V_F - V_R$	2969	Exhibit 25-14	7200	No
V_R	144	Exhibit 25-3	2100	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2150	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 20.2 (pc/mi/ln)
LOS = C (Exhibit 25-4)

Speed Determination

D_s = 0.311 (Exhibit 25-19)
S_R= 61.3 mph (Exhibit 25-19)
S_0= 76.8 mph (Exhibit 25-19)
S = 65.4 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Southbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox Off-Ramp
Date Performed	10/10/2013	Jurisdiction	CALTRANS
Analysis Time Period	PM Peak Hour	Analysis Year	E+P

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp
☑ Yes ☑ On
☐ No ☐ Off
L_{down} = 1420 ft
V_D = 155 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5579	0.92	Level	5	0	0.976	1.00	6216
Ramp	499	0.92	Level	16	0	0.926	1.00	586
UpStream								
DownStream	155	0.92	Level	17	0	0.922	1.00	183

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = using Equation (Exhibit 25-5)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)
LOS = (Exhibit 25-4)

Speed Determination

M_S = (Exibit 25-19)
S_R= mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)
S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = 0.578 using Equation (Exhibit 25-12)
V_{12} = 3838 pc/h
V_3 or V_{av34} 2378 pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6216	Exhibit 25-14	7200	No
$V_{FO} = V_F - V_R$	5630	Exhibit 25-14	7200	No
V_R	586	Exhibit 25-3	2100	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3838	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 35.5 (pc/mi/ln)
LOS = E (Exhibit 25-4)

Speed Determination

D_s = 0.351 (Exhibit 25-19)
S_R= 60.2 mph (Exhibit 25-19)
S_0= 71.4 mph (Exhibit 25-19)
S = 64.0 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Southbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox On-Ramp
Date Performed	10/10/2013	Jurisdiction	CALTRANS
Analysis Time Period	PM Peak Hour	Analysis Year	E+P

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp

☑ Yes ☐ On

☐ No ☑ Off

L_{up} = 1420 ft

V_u = 499 veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5080	0.92	Level	3	0	0.985	1.00	5605
Ramp	155	0.92	Level	17	0	0.922	1.00	183
UpStream	499	0.92	Level	16	0	0.926	1.00	586
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = 1304.58 (Equation 25-2 or 25-3)

P_{FM} = 0.585 using Equation (Exhibit 25-5)

V_{12} = 3277 pc/h

V_3 or V_{av34} 2328 pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5788	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3460	Exhibit 25-7	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 30.8 (pc/mi/ln)

LOS = D (Exhibit 25-4)

Speed Determination

M_S = 0.422 (Exibit 25-19)

S_R= 58.2 mph (Exhibit 25-19)

S_0= 63.3 mph (Exhibit 25-19)

S = 60.1 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-12)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		
V_R		Exhibit 25-3		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Determination

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Northbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox On-Ramp
Date Performed	10/10/2013	Jurisdiction	CALTRANS
Analysis Time Period	PM Peak Hour	Analysis Year	E+P

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp

☑ Yes ☐ On

☐ No ☑ Off

L_{up} = 1393 ft

V_u = 124 veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3645	0.92	Level	3	0	0.985	1.00	4021
Ramp	585	0.92	Level	17	0	0.922	1.00	690
UpStream	124	0.92	Level	7	0	0.966	1.00	139
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = 1092.75 (Equation 25-2 or 25-3)

P_{FM} = 0.586 using Equation (Exhibit 25-5)

V_{12} = 2356 pc/h

V_3 or V_{av34} 1665 pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4711	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3046	Exhibit 25-7	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 27.0 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Determination

M_S = 0.376 (Exibit 25-19)

S_R= 59.5 mph (Exhibit 25-19)

S_0= 65.8 mph (Exhibit 25-19)

S = 61.6 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-12)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		
V_R		Exhibit 25-3		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Determination

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Northbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox Off-Ramp
Date Performed	10/10/2013	Jurisdiction	CALTRANS
Analysis Time Period	PM Peak Hour	Analysis Year	E+P

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp
☑ Yes ☑ On
☐ No ☐ Off
L_{down} = 1393 ft
V_D = 585 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3769	0.92	Level	3	0	0.985	1.00	4158
Ramp	124	0.92	Level	7	0	0.966	1.00	139
UpStream								
DownStream	585	0.92	Level	17	0	0.922	1.00	690

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = using Equation (Exhibit 25-5)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)
LOS = (Exhibit 25-4)

Speed Determination

M_S = (Exibit 25-19)
S_R= mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)
S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = 0.650 using Equation (Exhibit 25-12)
V_{12} = 2750 pc/h
V_3 or V_{av34} 1408 pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4158	Exhibit 25-14	7200	No
$V_{FO} = V_F - V_R$	4019	Exhibit 25-14	7200	No
V_R	139	Exhibit 25-3	2100	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2750	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 25.4 (pc/mi/ln)
LOS = C (Exhibit 25-4)

Speed Determination

D_s = 0.311 (Exhibit 25-19)
S_R= 61.3 mph (Exhibit 25-19)
S_0= 75.2 mph (Exhibit 25-19)
S = 65.4 mph (Exhibit 25-15)

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APPENDIX 6.1

Opening Year Cumulative (2018) Without Project Conditions
Intersection Operations Analysis Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	441	56	280	295	0	0	0	0	958	6	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	3.5	5.0						5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95						1.00	1.00
Frpb, ped/bikes		1.00	0.97	1.00	1.00						1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		3610	1567	1805	3610						1810	1586
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		3610	1567	1805	3610						1810	1586
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	474	60	301	317	0	0	0	0	1030	6	280
RTOR Reduction (vph)	0	0	34	0	0	0	0	0	0	0	0	143
Lane Group Flow (vph)	0	474	26	301	317	0	0	0	0	0	1036	137
Confl. Peds. (#/hr)			5									5
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		35.0	35.0	11.5	50.0						20.0	20.0
Effective Green, g (s)		35.0	35.0	11.5	50.0						20.0	20.0
Actuated g/C Ratio		0.44	0.44	0.14	0.62						0.25	0.25
Clearance Time (s)		5.0	5.0	3.5	5.0						5.0	5.0
Vehicle Extension (s)		2.0	2.0	2.0	2.0						3.0	3.0
Lane Grp Cap (vph)		1579	685	259	2256						452	396
v/s Ratio Prot		c0.13		c0.17	0.09						c0.57	
v/s Ratio Perm			0.02									0.09
v/c Ratio		0.30	0.04	1.16	0.14						2.29	0.35
Uniform Delay, d1		14.6	12.9	34.2	6.2						30.0	24.6
Progression Factor		1.00	1.00	1.00	1.00						1.00	1.00
Incremental Delay, d2		0.5	0.1	107.0	0.1						588.4	0.5
Delay (s)		15.1	13.0	141.2	6.3						618.4	25.2
Level of Service		B	B	F	A						F	C
Approach Delay (s)		14.8			72.0			0.0			492.2	
Approach LOS		B			E			A			F	

Intersection Summary			
HCM 2000 Control Delay	283.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	138.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	239	1161	0	0	453	467	122	5	484	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0			5.0	5.0		5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00		1.00	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.97		1.00	0.98			
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1805	3610			3610	1563		1813	1587			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1805	3610			3610	1563		1813	1587			
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	257	1248	0	0	487	502	131	5	520	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	294	0	0	58	0	0	0
Lane Group Flow (vph)	257	1248	0	0	487	208	0	136	462	0	0	0
Confl. Peds. (#/hr)						5			5			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Actuated Green, G (s)	17.2	60.0			39.3	39.3		25.0	25.0			
Effective Green, g (s)	17.2	60.0			39.3	39.3		25.0	25.0			
Actuated g/C Ratio	0.18	0.63			0.41	0.41		0.26	0.26			
Clearance Time (s)	3.5	5.0			5.0	5.0		5.0	5.0			
Vehicle Extension (s)	2.0	2.0			2.0	2.0		3.0	3.0			
Lane Grp Cap (vph)	326	2280			1493	646		477	417			
v/s Ratio Prot	c0.14	c0.35			0.13			0.08				
v/s Ratio Perm						0.13			c0.29			
v/c Ratio	0.79	0.55			0.33	0.32		0.29	1.11			
Uniform Delay, d1	37.2	9.9			18.9	18.8		27.9	35.0			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	11.1	1.0			0.6	1.3		1.5	76.5			
Delay (s)	48.2	10.8			19.5	20.1		29.4	111.5			
Level of Service	D	B			B	C		C	F			
Approach Delay (s)		17.2			19.8			94.4			0.0	
Approach LOS		B			B			F			A	

Intersection Summary			
HCM 2000 Control Delay	34.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	138.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                Opening Year (2018) Without Project Conditions
                                AM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #3 Western Way / Harley Knox Boulevard
*******************************************************************************
Average Delay (sec/veh):      1.2       Worst Case Level Of Service: F[ 52.1]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  0    0  0  1! 0  0    0  1  1  0  0    0  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0    10    0    35    78 1591     0     0 1071    31
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0    10    0    35    78 1591     0     0 1071    31
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0     0    11    0    38    85 1729     0     0 1164    34
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0     0    11    0    38    85 1729     0     0 1164    34
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   6.8  6.5   6.9   4.1 xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx   3.5  4.0   3.3   2.2 xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  2198 3063   582  1198 xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx    39   13   461   590 xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx    35   11   461   590 xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  0.31 0.00  0.08  0.14 xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.5 xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx  12.1 xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     B    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx  123 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx  1.7 xxxxx   0.5 xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx 52.1 xxxxx  12.1 xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    F     *     B    *     *     *    *     *
ApproachDel:    xxxxxx             52.1           xxxxxx           xxxxxx
ApproachLOS:         *               F                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) Without Project Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #4 Patterson Avenue / Harley Knox Boulevard

Cycle (sec):	120	Critical Vol./Cap.(X):	1.149
Loss Time (sec):	12	Average Delay (sec/veh):	166.2
Optimal Cycle: OPTIMIZED		Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	27	27	27	27	27	27	10	18	18	10	18	18
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1! 0	0	0 1	0 0	1	1 0	1 0	1	1 0	0 1	0
Volume Module:												
Base Vol:	158	3	14	1	3	13	11	1574	35	7	1075	4
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	158	3	14	1	3	13	11	1574	35	7	1075	4
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	170	3	15	1	3	14	12	1696	38	8	1158	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	170	3	15	1	3	14	12	1696	38	8	1158	4
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	170	3	15	1	3	14	12	1696	38	8	1158	4
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.72	0.72	0.72	0.97	0.97	0.85	0.95	1.00	0.85	0.95	1.00	1.00
Lanes:	0.90	0.02	0.08	0.25	0.75	1.00	1.00	1.00	1.00	1.00	0.99	0.01
Final Sat.:	1242	24	110	459	1378	1615	1805	1900	1615	1805	1891	7
Capacity Analysis Module:												
Vol/Sat:	0.14	0.14	0.14	0.00	0.00	0.01	0.01	0.89	0.02	0.00	0.61	0.61
Crit Moves:		****						****		****		
Green/Cycle:	0.23	0.23	0.23	0.23	0.23	0.23	0.08	0.59	0.59	0.08	0.59	0.59
Volume/Cap:	0.61	0.61	0.61	0.01	0.01	0.04	0.08	1.51	0.04	0.05	1.04	1.04
Delay/Veh:	45.3	45.3	45.3	36.1	36.1	36.4	51.0	258	10.3	50.8	60.9	60.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.3	45.3	45.3	36.1	36.1	36.4	51.0	258	10.3	50.8	60.9	60.9
LOS by Move:	D	D	D	D	D	D	D	F	B	D	E	E
HCM2kAvgQ:	7	7	7	0	0	0	0	130	1	0	52	52

Note: Queue reported is the number of cars per lane.

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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) Without Project Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Heacock Street / Nandina Avenue

Average Delay (sec/veh): 7.3 Worst Case Level Of Service: A[8.6]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1	0 0		1 0 1	0 0		0 0 0	0 0		1 0 0	0 1	
Volume Module:												
Base Vol:	0	3	0	82	8	0	0	0	0	3	0	63
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	3	0	82	8	0	0	0	0	3	0	63
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	3	0	86	8	0	0	0	0	3	0	66
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	3	0	86	8	0	0	0	0	3	0	66
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	3	xxxx	xxxxx	xxxx	xxxx	xxxxx	184	xxxx	3
Potent Cap.:	xxxx	xxxx	xxxxx	1632	xxxx	xxxxx	xxxx	xxxx	xxxxx	809	xxxx	1087
Move Cap.:	xxxx	xxxx	xxxxx	1632	xxxx	xxxxx	xxxx	xxxx	xxxxx	777	xxxx	1087
Volume/Cap:	xxxx	xxxx	xxxx	0.05	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	xxxx	0.06
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	0.2
Control Del:	xxxxx	xxxx	xxxxx	7.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.7	xxxx	8.5
LOS by Move:	*	*	*	A	*	*	*	*	*	A	*	A
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			8.6		
ApproachLOS:	*			*			*			A		

Note: Queue reported is the number of cars per lane.

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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) Without Project Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7 Webster Avenue / Harley Knox Boulevard

Average Delay (sec/veh): 1.7 Worst Case Level Of Service: F[58.6]

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Stop Sign						Stop Sign						Uncontrolled						Uncontrolled					
Rights:	Include						Include						Include						Include					
Lanes:	0	0	1!	0	0		0	0	0	1	0		1	0	0	1	0		1	0	0	1	0	
Volume Module:																								
Base Vol:	32		0		9		0		1		1		0		892		54		6		487		0	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	32		0		9		0		1		1		0		892		54		6		487		0	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	35		0		10		0		1		1		0		970		59		7		529		0	
Reduct Vol:	0		0		0		0		0		0		0		0		0		0		0		0	
FinalVolume:	35		0		10		0		1		1		0		970		59		7		529		0	
Critical Gap Module:																								
Critical Gp:	7.1	6.5	6.2	xxxxx	6.5	6.2	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx												
FollowUpTim:	3.5	4.0	3.3	xxxxx	4.0	3.3	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx												
Capacity Module:																								
Cnflict Vol:	1542	1541	999	xxxx	1571	529	xxxx	xxxx	xxxxx	1028	xxxx	xxxxx												
Potent Cap.:	95	116	298	xxxx	112	553	xxxx	xxxx	xxxxx	683	xxxx	xxxxx												
Move Cap.:	93	115	298	xxxx	111	553	xxxx	xxxx	xxxxx	683	xxxx	xxxxx												
Volume/Cap:	0.37	0.00	0.03	xxxx	0.01	0.00	xxxx	xxxx	xxxx	0.01	xxxx	xxxx												
Level Of Service Module:																								
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx												
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	10.3	xxxx	xxxxx												
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	*												
Movement:	LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT	
Shared Cap.:	xxxx	110	xxxxx	xxxx	xxxx	184	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx												
SharedQueue:	xxxxx	1.7	xxxxx	xxxxx	xxxx	0.0	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx												
Shrd ConDel:	xxxxx	58.6	xxxxx	xxxxx	xxxx	24.8	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx												
Shared LOS:	*	F	*	*	*	C	*	*	*	*	*	*												
ApproachDel:	58.6				24.8		xxxxxx			xxxxxx														
ApproachLOS:	F				C		*			*														

Note: Queue reported is the number of cars per lane.

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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) Without Project Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #10 Indian Street / Nandina Avenue

Cycle (sec): 120 Critical Vol./Cap.(X): 0.447
Loss Time (sec): 16 Average Delay (sec/veh): 28.4
Optimal Cycle: OPTIMIZED Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Ovl			Include		
Min. Green:	10	27	27	10	27	27	10	28	28	10	28	28
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	0 1	1 0	1	0 1
Volume Module:												
Base Vol:	106	883	93	6	376	26	5	41	106	41	146	2
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	106	883	93	6	376	26	5	41	106	41	146	2
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	115	959	101	7	408	28	5	45	115	45	159	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	115	959	101	7	408	28	5	45	115	45	159	2
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	115	959	101	7	408	28	5	45	115	45	159	2
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.94	0.94	0.95	0.94	0.94	0.95	1.00	0.85	0.95	1.00	0.85
Lanes:	1.00	1.81	0.19	1.00	1.87	0.13	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1805	3220	339	1805	3343	231	1805	1900	1615	1805	1900	1615
Capacity Analysis Module:												
Vol/Sat:	0.06	0.30	0.30	0.00	0.12	0.12	0.00	0.02	0.07	0.02	0.08	0.00
Crit Moves:		****		****			****				****	
Green/Cycle:	0.15	0.47	0.47	0.08	0.40	0.40	0.08	0.23	0.38	0.08	0.23	0.23
Volume/Cap:	0.43	0.64	0.64	0.04	0.30	0.30	0.04	0.10	0.19	0.30	0.36	0.01
Delay/Veh:	47.6	25.1	25.1	50.7	24.6	24.6	50.7	36.2	24.8	52.8	39.0	35.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.6	25.1	25.1	50.7	24.6	24.6	50.7	36.2	24.8	52.8	39.0	35.3
LOS by Move:	D	C	C	D	C	C	D	D	C	D	D	D
HCM2kAvgQ:	4	15	15	0	6	6	0	1	3	2	5	0

Note: Queue reported is the number of cars per lane.

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Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	34	13	1069	16	13	510
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	0	-	-	100	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	37	14	1162	17	14	554

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1476	590	0	0	1179	0
Stage 1	1171	-	-	-	-	-
Stage 2	305	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	*375	*645	-	-	*969	-
Stage 1	*609	-	-	-	-	-
Stage 2	*828	-	-	-	-	-
Platoon blocked, %	1	1	-	-	1	-
Mov Cap-1 Maneuver	*369	*645	-	-	*969	-
Mov Cap-2 Maneuver	*542	-	-	-	-	-
Stage 1	*609	-	-	-	-	-
Stage 2	*816	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.7	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	542	645	* 969	-
HCM Lane V/C Ratio	-	-	0.068	0.022	0.015	-
HCM Control Delay (s)	-	-	12.1	10.7	8.8	-
HCM Lane LOS	-	-	B	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0.1	0	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) Without Project Conditions - WITH HEACOCK EXTENSION
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #12 Indian Street / Driveway 5/Waste Management Driveway

Average Delay (sec/veh): 1.2 Worst Case Level Of Service: B[12.6]

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	1	0	1	0	1	1	0	0	1	0	0	0	1!	0	0	0	0	1!	0	0
Volume Module:																				
Base Vol:	0	327		16		13	170		0		0		0		0	34		0		13
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
Initial Bse:	0	327		16		13	170		0		0		0		0	34		0		13
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
PHF Adj:	0.92	0.92		0.92		0.92	0.92		0.92		0.92		0.92		0.92	0.92		0.92		0.92
PHF Volume:	0	355		17		14	185		0		0		0		0	37		0		14
Reduct Vol:	0	0		0		0	0		0		0		0		0	0		0		0
FinalVolume:	0	355		17		14	185		0		0		0		0	37		0		14
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx		xxxxx		4.1	xxxx		xxxxx		7.1		6.5		6.2	6.4		6.5		6.2
FollowUpTim:	xxxxx	xxxx		xxxxx		2.2	xxxx		xxxxx		3.5		4.0		3.3	3.5		4.0		3.3
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx		xxxxx		373	xxxx		xxxxx		584		586		185	568		568		355
Potent Cap.:	xxxx	xxxx		xxxxx		1197	xxxx		xxxxx		426		425		863	487		435		693
Move Cap.:	xxxx	xxxx		xxxxx		1197	xxxx		xxxxx		413		420		863	483		430		693
Volume/Cap:	xxxx	xxxx		xxxx		0.01	xxxx		xxxx		0.00		0.00		0.00	0.08		0.00		0.02
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx		xxxxx		0.0	xxxx		xxxxx		xxxx		xxxx		xxxxx	xxxx		xxxx		xxxxx
Control Del:	xxxxx	xxxx		xxxxx		8.0	xxxx		xxxxx		xxxxx		xxxx		xxxxx	xxxxx		xxxx		xxxxx
LOS by Move:	*	*		*		A	*		*		*		*		*	*		*		*
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		0		xxxxx	xxxx		527		xxxxx
SharedQueue:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx		xxxxx	xxxxx		0.3		xxxxx
Shrd ConDel:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx		xxxxx	xxxxx		12.6		xxxxx
Shared LOS:	*	*		*		*	*		*		*		*		*	*		B		*
ApproachDel:	xxxxxx					xxxxxx					xxxxxx							12.6		
ApproachLOS:	*					*					*							B		

Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                Opening Year (2018) Without Project Conditions
                                AM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #14 Indian Street / Grove View Road
*******************************************************************************
Average Delay (sec/veh):      5.8       Worst Case Level Of Service: F[132.1]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  1  0    1  0  1  0  0    0  0  0  0  0    1  0  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0 1080    30     2  541     0     0    0     0    72    0     4
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0 1080    30     2  541     0     0    0     0    72    0     4
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0 1170    33     2  586     0     0    0     0    78    0     4
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0 1170    33     2  586     0     0    0     0    78    0     4
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4 xxxx   6.2
FollowUpTim:xxxxx xxxx xxxxx   2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5 xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  1203 xxxx xxxxx  xxxx xxxx xxxxx  1777 xxxx  1186
Potent Cap.: xxxx xxxx xxxxx   587 xxxx xxxxx  xxxx xxxx xxxxx    92 xxxx   232
Move Cap.:   xxxx xxxx xxxxx   587 xxxx xxxxx  xxxx xxxx xxxxx    92 xxxx   232
Volume/Cap:  xxxx xxxx  xxxx  0.00 xxxx  xxxx  xxxx xxxx  xxxx  0.85 xxxx  0.02
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx   0.0 xxxx xxxxx  xxxx xxxx xxxxx   4.6 xxxx   0.1
Control Del:xxxxx xxxx xxxxx  11.2 xxxx xxxxx xxxxx xxxx xxxxx 138.3 xxxx  20.8
LOS by Move:    *    *     *     B    *     *     *    *     *     F    *     C
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx            132.1
ApproachLOS:         *                *                *                F
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) Without Project Conditions - WITH HEACOCK EXTENSION
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #14 Indian Street / Grove View Road

Average Delay (sec/veh): 1.7 Worst Case Level Of Service: B[13.4]

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	1
Volume Module:																				
Base Vol:	0	323		30		2	168		0		0		0		0	72		0		4
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
Initial Bse:	0	323		30		2	168		0		0		0		0	72		0		4
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
PHF Adj:	0.92	0.92		0.92		0.92	0.92		0.92		0.92		0.92		0.92	0.92		0.92		0.92
PHF Volume:	0	350		33		2	182		0		0		0		0	78		0		4
Reduct Vol:	0	0		0		0	0		0		0		0		0	0		0		0
FinalVolume:	0	350		33		2	182		0		0		0		0	78		0		4
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx		xxxxx		4.1	xxxx		xxxxx		xxxxx		xxxx		xxxxx	6.4		xxxx		6.2
FollowUpTim:	xxxxx	xxxx		xxxxx		2.2	xxxx		xxxxx		xxxxx		xxxx		xxxxx	3.5		xxxx		3.3
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx		xxxxx		382	xxxx		xxxxx		xxxx		xxxx		xxxxx	553		xxxx		366
Potent Cap.:	xxxx	xxxx		xxxxx		1187	xxxx		xxxxx		xxxx		xxxx		xxxxx	498		xxxx		684
Move Cap.:	xxxx	xxxx		xxxxx		1187	xxxx		xxxxx		xxxx		xxxx		xxxxx	497		xxxx		684
Volume/Cap:	xxxx	xxxx		xxxx		0.00	xxxx		xxxx		xxxx		xxxx		xxxx	0.16		xxxx		0.01
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx		xxxxx		0.0	xxxx		xxxxx		xxxx		xxxx		xxxxx	0.6		xxxx		0.0
Control Del:	xxxxx	xxxx		xxxxx		8.0	xxxx		xxxxx		xxxxx		xxxx		xxxxx	13.6		xxxx		10.3
LOS by Move:	*	*		*		A	*		*		*		*		*	B		*		B
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx		xxxxx	xxxx		xxxx		xxxxx
SharedQueue:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx		xxxxx	xxxxx		xxxx		xxxxx
Shrd ConDel:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx		xxxxx	xxxxx		xxxx		xxxxx
Shared LOS:	*	*		*		*	*		*		*		*		*	*		*		*
ApproachDel:	xxxxxx					xxxxxx					xxxxxx							13.4		
ApproachLOS:	*					*					*							B		

Note: Queue reported is the number of cars per lane.

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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) Without Project Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #15 Indian Street / Harley Knox Boulevard

Cycle (sec): 120 Critical Vol./Cap.(X): 0.860
Loss Time (sec): 16 Average Delay (sec/veh): 329.3
Optimal Cycle: OPTIMIZED Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	10	39	39	10	39	39	10	34	34	10	34	34
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	1 0	1 1	0	1 0	1 0	1	2 0	1 1	0
Volume Module:												
Base Vol:	118	114	22	16	66	320	874	511	240	19	408	42
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	118	114	22	16	66	320	874	511	240	19	408	42
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	128	124	24	17	72	348	950	555	261	21	443	46
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	128	124	24	17	72	348	950	555	261	21	443	46
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	128	124	24	17	72	348	950	555	261	21	443	46
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.85	0.95	0.83	0.83	0.95	1.00	0.85	0.92	0.94	0.94
Lanes:	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.81	0.19
Final Sat.:	3502	3610	1615	1805	1581	1581	1805	1900	1615	3502	3227	332
Capacity Analysis Module:												
Vol/Sat:	0.04	0.03	0.01	0.01	0.05	0.22	0.53	0.29	0.16	0.01	0.14	0.14
Crit Moves:	****				****		****				****	
Green/Cycle:	0.08	0.33	0.33	0.08	0.33	0.50	0.18	0.36	0.36	0.10	0.28	0.28
Volume/Cap:	0.44	0.11	0.05	0.12	0.14	0.44	3.01	0.82	0.45	0.06	0.49	0.49
Delay/Veh:	53.4	28.3	27.8	51.3	28.7	19.6	961.3	42.9	30.2	48.8	36.1	36.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.4	28.3	27.8	51.3	28.7	19.6	961.3	42.9	30.2	48.8	36.1	36.1
LOS by Move:	D	C	C	D	C	B	F	D	C	D	D	D
HCM2kAvgQ:	3	2	1	1	2	8	111	17	7	0	8	8

Note: Queue reported is the number of cars per lane.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	423	109	572	155	0	0	0	0	658	7	335
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	3.5	5.0						5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95						1.00	1.00
Frpb, ped/bikes		1.00	0.97	1.00	1.00						1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		3610	1567	1805	3610						1810	1586
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		3610	1567	1805	3610						1810	1586
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	460	118	622	168	0	0	0	0	715	8	364
RTOR Reduction (vph)	0	0	66	0	0	0	0	0	0	0	0	267
Lane Group Flow (vph)	0	460	52	622	168	0	0	0	0	0	723	97
Confl. Peds. (#/hr)			5									5
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		35.0	35.0	11.5	50.0						20.0	20.0
Effective Green, g (s)		35.0	35.0	11.5	50.0						20.0	20.0
Actuated g/C Ratio		0.44	0.44	0.14	0.62						0.25	0.25
Clearance Time (s)		5.0	5.0	3.5	5.0						5.0	5.0
Vehicle Extension (s)		2.0	2.0	2.0	2.0						3.0	3.0
Lane Grp Cap (vph)		1579	685	259	2256						452	396
v/s Ratio Prot		c0.13		c0.34	0.05						c0.40	
v/s Ratio Perm			0.03									0.06
v/c Ratio		0.29	0.08	2.40	0.07						1.60	0.24
Uniform Delay, d1		14.5	13.1	34.2	5.9						30.0	24.0
Progression Factor		1.00	1.00	1.00	1.00						1.00	1.00
Incremental Delay, d2		0.5	0.2	642.4	0.1						280.0	0.3
Delay (s)		15.0	13.3	676.6	6.0						310.0	24.3
Level of Service		B	B	F	A						F	C
Approach Delay (s)		14.6			534.0			0.0			214.4	
Approach LOS		B			F			A			F	

Intersection Summary			
HCM 2000 Control Delay	270.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	136.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	350	731	0	0	680	947	47	4	246	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0			5.0	5.0		5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00		1.00	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.97		1.00	0.98			
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.96	1.00			
Satd. Flow (prot)	1805	3610			3610	1563		1816	1587			
Flt Permitted	0.95	1.00			1.00	1.00		0.96	1.00			
Satd. Flow (perm)	1805	3610			3610	1563		1816	1587			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	372	778	0	0	723	1007	50	4	262	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	379	0	0	161	0	0	0
Lane Group Flow (vph)	372	778	0	0	723	628	0	54	101	0	0	0
Confl. Peds. (#/hr)						5			5			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Actuated Green, G (s)	20.9	60.0			35.6	35.6		25.0	25.0			
Effective Green, g (s)	20.9	60.0			35.6	35.6		25.0	25.0			
Actuated g/C Ratio	0.22	0.63			0.37	0.37		0.26	0.26			
Clearance Time (s)	3.5	5.0			5.0	5.0		5.0	5.0			
Vehicle Extension (s)	2.0	2.0			2.0	2.0		3.0	3.0			
Lane Grp Cap (vph)	397	2280			1352	585		477	417			
v/s Ratio Prot	c0.21	0.22			0.20			0.03				
v/s Ratio Perm						c0.40			c0.06			
v/c Ratio	0.94	0.34			0.53	1.07		0.11	0.24			
Uniform Delay, d1	36.4	8.2			23.2	29.7		26.6	27.6			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	29.1	0.4			1.5	58.5		0.5	1.4			
Delay (s)	65.5	8.6			24.7	88.2		27.1	28.9			
Level of Service	E	A			C	F		C	C			
Approach Delay (s)		27.0			61.7			28.6			0.0	
Approach LOS		C			E			C			A	

Intersection Summary			
HCM 2000 Control Delay	46.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	136.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

```
-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                Opening Year (2018) Without Project Conditions
                                PM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #3 Western Way / Harley Knox Boulevard
*******************************************************************************
Average Delay (sec/veh):      2.4       Worst Case Level Of Service: F[ 88.9]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  0    0  0  1! 0  0    0  1  1  0  0    0  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0    12    0    58    39 1075     0     0 1618     7
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0    12    0    58    39 1075     0     0 1618     7
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.94 0.94  0.94  0.94 0.94  0.94  0.94 0.94  0.94  0.94 0.94  0.94
PHF Volume:     0    0     0    13    0    62    42 1145     0     0 1723     7
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0     0    13    0    62    42 1145     0     0 1723     7
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   6.8  6.5   6.9   4.1 xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx   3.5  4.0   3.3   2.2 xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  2379 2951   862  1731 xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx    30   15   303   369 xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx    27   13   303   369 xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  0.47 0.00  0.20  0.11 xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.4 xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx  16.0 xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     C    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx  110 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx  3.5 xxxxx   0.4 xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx 88.9 xxxxx  16.0 xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    F     *     C    *     *     *    *     *
ApproachDel:    xxxxxx             88.9           xxxxxx           xxxxxx
ApproachLOS:         *               F                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```

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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) Without Project Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #4 Patterson Avenue / Harley Knox Boulevard

Cycle (sec): 120 Critical Vol./Cap.(X): 1.085
Loss Time (sec): 12 Average Delay (sec/veh): 175.0
Optimal Cycle: OPTIMIZED Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	27	27	27	27	27	27	10	18	18	10	18	18
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1! 0	0	0 1	0 0	1	1 0	1 0	1	1 0	0 1	0
Volume Module:												
Base Vol:	72	2	8	5	4	7	6	1035	56	9	1589	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	72	2	8	5	4	7	6	1035	56	9	1589	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	78	2	9	5	4	8	7	1125	61	10	1727	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	78	2	9	5	4	8	7	1125	61	10	1727	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	78	2	9	5	4	8	7	1125	61	10	1727	1
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.74	0.74	0.74	0.91	0.91	0.85	0.95	1.00	0.85	0.95	1.00	1.00
Lanes:	0.88	0.02	0.10	0.56	0.44	1.00	1.00	1.00	1.00	1.00	0.99	0.01
Final Sat.:	1232	34	137	964	771	1615	1805	1900	1615	1805	1899	1
Capacity Analysis Module:												
Vol/Sat:	0.06	0.06	0.06	0.01	0.01	0.00	0.00	0.59	0.04	0.01	0.91	0.91
Crit Moves:		****					****				****	
Green/Cycle:	0.23	0.23	0.23	0.23	0.23	0.23	0.08	0.59	0.59	0.08	0.59	0.59
Volume/Cap:	0.28	0.28	0.28	0.03	0.03	0.02	0.04	1.00	0.06	0.07	1.54	1.54
Delay/Veh:	39.0	39.0	39.0	36.3	36.3	36.2	50.7	51.5	10.4	50.9	271	270.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.0	39.0	39.0	36.3	36.3	36.2	50.7	51.5	10.4	50.9	271	270.8
LOS by Move:	D	D	D	D	D	D	D	D	B	D	F	F
HCM2kAvgQ:	3	3	3	0	0	0	0	48	1	0	135	135

Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                Opening Year (2018) Without Project Conditions
                                PM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #5 Heacock Street / Nandina Avenue
*******************************************************************************
Average Delay (sec/veh):      6.5       Worst Case Level Of Service: A[  8.5]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  1  0    1  0  1  0  0    0  0  0  0  0    1  0  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    7     4   108   13     0     0    0     0     0    0    32
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    7     4   108   13     0     0    0     0     0    0    32
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.87 0.87  0.87  0.87 0.87  0.87  0.87 0.87  0.87  0.87 0.87  0.87
PHF Volume:     0    8     5   125   15     0     0    0     0     0    0    37
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    8     5   125   15     0     0    0     0     0    0    37
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4 xxxx   6.2
FollowUpTim:xxxxx xxxx xxxxx   2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5 xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx    13 xxxx xxxxx  xxxx xxxx xxxxx   275 xxxx    10
Potent Cap.: xxxx xxxx xxxxx  1619 xxxx xxxxx  xxxx xxxx xxxxx   719 xxxx  1077
Move Cap.:   xxxx xxxx xxxxx  1619 xxxx xxxxx  xxxx xxxx xxxxx   677 xxxx  1077
Volume/Cap:  xxxx xxxx  xxxx  0.08 xxxx  xxxx  xxxx xxxx  xxxx  0.00 xxxx  0.03
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx   0.3 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   0.1
Control Del:xxxxx xxxx xxxxx   7.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   8.5
LOS by Move:    *    *     *     A    *     *     *    *     *     *    *     A
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx              8.5
ApproachLOS:         *                *                *                A
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```

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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                Opening Year (2018) Without Project Conditions
                                PM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #7 Webster Avenue / Harley Knox Boulevard
*******************************************************************************
Average Delay (sec/veh):      9.6       Worst Case Level Of Service: F[198.7]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  1  0  0    1  0  0  1  0    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      65    0    14     0    1     0     1  564    32    17  958     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   65    0    14     0    1     0     1  564    32    17  958     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:    71    0    15     0    1     0     1  613    35    18 1041     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:   71    0    15     0    1     0     1  613    35    18 1041     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  7.1  6.5   6.2 xxxxx  6.5 xxxxx   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx  4.0 xxxxx   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1711 1711   630  xxxx 1728 xxxxx  1041 xxxx xxxxx   648 xxxx xxxxx
Potent Cap.:   72   92   485  xxxx   89 xxxxx   676 xxxx xxxxx   948 xxxx xxxxx
Move Cap.:     70   90   485  xxxx   87 xxxxx   676 xxxx xxxxx   948 xxxx xxxxx
Volume/Cap:  1.00 0.00  0.03  xxxx 0.01  xxxx  0.00 xxxx  xxxx  0.02 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx  0.0 xxxxx   0.0 xxxx xxxxx   0.1 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx 46.7 xxxxx  10.3 xxxx xxxxx   8.9 xxxx xxxxx
LOS by Move:    *    *     *     *    E     *     B    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx   83 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  5.9 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx  199 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    F     *     *    *     *     *    *     *     *    *     *
ApproachDel:     198.7             46.7           xxxxxx           xxxxxx
ApproachLOS:         F                E                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```

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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) Without Project Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #10 Indian Street / Nandina Avenue

Cycle (sec): 105 Critical Vol./Cap.(X): 0.581
Loss Time (sec): 16 Average Delay (sec/veh): 32.0
Optimal Cycle: OPTIMIZED Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T	- R		L - T	- R		L - T	- R		L - T	- R	
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Ovl			Include		
Min. Green:	10	27	27	10	27	27	10	28	28	10	28	28
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	0 1	1 0	1	0 1
Volume Module:												
Base Vol:	42	472	68	0	836	9	27	166	219	204	66	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	42	472	68	0	836	9	27	166	219	204	66	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	45	508	73	0	899	10	29	178	235	219	71	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	45	508	73	0	899	10	29	178	235	219	71	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	45	508	73	0	899	10	29	178	235	219	71	1
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.93	0.93	1.00	0.95	0.95	0.95	1.00	0.85	0.95	1.00	0.85
Lanes:	1.00	1.75	0.25	1.00	1.98	0.02	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1805	3095	446	1900	3564	38	1805	1900	1615	1805	1900	1615
Capacity Analysis Module:												
Vol/Sat:	0.03	0.16	0.16	0.00	0.25	0.25	0.02	0.09	0.15	0.12	0.04	0.00
Crit Moves:	****				****			****		****		
Green/Cycle:	0.10	0.42	0.42	0.00	0.33	0.33	0.11	0.27	0.36	0.16	0.31	0.31
Volume/Cap:	0.26	0.39	0.39	0.00	0.77	0.77	0.14	0.35	0.40	0.77	0.12	0.00
Delay/Veh:	44.9	21.1	21.1	0.0	34.9	34.9	42.4	31.6	25.5	54.4	25.8	24.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.9	21.1	21.1	0.0	34.9	34.9	42.4	31.6	25.5	54.4	25.8	24.8
LOS by Move:	D	C	C	A	C	C	D	C	C	D	C	C
HCM2kAvgQ:	1	7	7	0	15	15	1	5	6	9	2	0

Note: Queue reported is the number of cars per lane.

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Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	60	0	581	71	38	1222
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	0	-	-	100	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	65	0	632	77	41	1328

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1417	354	0	0	709	0
Stage 1	670	-	-	-	-	-
Stage 2	747	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	*336	*852	-	-	1206	-
Stage 1	*785	-	-	-	-	-
Stage 2	*560	-	-	-	-	-
Platoon blocked, %	1	1	-	-	1	-
Mov Cap-1 Maneuver	*325	*852	-	-	1206	-
Mov Cap-2 Maneuver	*487	-	-	-	-	-
Stage 1	*785	-	-	-	-	-
Stage 2	*541	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.5	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	487	-	1206	-
HCM Lane V/C Ratio	-	-	0.134	-	0.034	-
HCM Control Delay (s)	-	-	13.5	0	8.1	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.5	-	0.1	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) Without Project Conditions - WITH HEACOCK EXTENSION
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #12 Indian Street / Driveway 5/Waste Management Driveway

Average Delay (sec/veh): 1.6 Worst Case Level Of Service: C[18.1]

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	1	0	1	0	1	1	0	0	1	0	0	0	1!	0	0	1	0	0	0	0
Volume Module:																				
Base Vol:	0	196		71		38	481		0		0		0		0	60		0		0
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
Initial Bse:	0	196		71		38	481		0		0		0		0	60		0		0
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
PHF Adj:	0.92	0.92		0.92		0.92	0.92		0.92		0.92		0.92		0.92	0.92		0.92		0.92
PHF Volume:	0	213		77		41	523		0		0		0		0	65		0		0
Reduct Vol:	0	0		0		0	0		0		0		0		0	0		0		0
FinalVolume:	0	213		77		41	523		0		0		0		0	65		0		0
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx			4.1	xxxx	xxxxx			7.1		6.5		6.2	6.4	xxxx	xxxxx		
FollowUpTim:	xxxxx	xxxx	xxxxx			2.2	xxxx	xxxxx			3.5		4.0		3.3	3.5	xxxx	xxxxx		
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx			290	xxxx	xxxxx			857		896		523	818	xxxx	xxxxx		
Potent Cap.:	xxxx	xxxx	xxxxx			1283	xxxx	xxxxx			280		282		558	348	xxxx	xxxxx		
Move Cap.:	xxxx	xxxx	xxxxx			1283	xxxx	xxxxx			273		273		558	340	xxxx	xxxxx		
Volume/Cap:	xxxx	xxxx	xxxx			0.03	xxxx	xxxx			0.00		0.00		0.00	0.19	xxxx	xxxx		
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx			0.1	xxxx	xxxxx			xxxx	xxxx	xxxxx			0.7	xxxx	xxxxx		
Control Del:	xxxxx	xxxx	xxxxx			7.9	xxxx	xxxxx			xxxxx	xxxx	xxxxx			18.1	xxxx	xxxxx		
LOS by Move:	*	*	*			A	*	*			*	*	*			C	*	*		
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx		0	xxxxx		xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shrd ConDel:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shared LOS:	*	*	*			*	*	*			*	*	*			*	*	*		
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					18.1				
ApproachLOS:	*					*					*					C				

Note: Queue reported is the number of cars per lane.

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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) Without Project Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #14 Indian Street / Grove View Road

Average Delay (sec/veh): 28.8 Worst Case Level Of Service: F[566.7]

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	1
Volume Module:																				
Base Vol:	0	646		50		5	1277		0		0		0		0	99		0		7
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
Initial Bse:	0	646		50		5	1277		0		0		0		0	99		0		7
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
PHF Adj:	0.92	0.92		0.92		0.92	0.92		0.92		0.92		0.92		0.92	0.92		0.92		0.92
PHF Volume:	0	702		54		5	1388		0		0		0		0	108		0		8
Reduct Vol:	0	0		0		0	0		0		0		0		0	0		0		0
FinalVolume:	0	702		54		5	1388		0		0		0		0	108		0		8
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx		xxxxx		4.1	xxxx		xxxxx		xxxxx		xxxx		xxxxx	6.4		xxxx		6.2
FollowUpTim:	xxxxx	xxxx		xxxxx		2.2	xxxx		xxxxx		xxxxx		xxxx		xxxxx	3.5		xxxx		3.3
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx		xxxxx		757	xxxx		xxxxx		xxxx		xxxx		xxxxx	2128		xxxx		729
Potent Cap.:	xxxx	xxxx		xxxxx		863	xxxx		xxxxx		xxxx		xxxx		xxxxx	55		xxxx		426
Move Cap.:	xxxx	xxxx		xxxxx		863	xxxx		xxxxx		xxxx		xxxx		xxxxx	55		xxxx		426
Volume/Cap:	xxxx	xxxx		xxxx		0.01	xxxx		xxxx		xxxx		xxxx		xxxx	1.95		xxxx		0.02
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx		xxxxx		0.0	xxxx		xxxxx		xxxx		xxxx		xxxxx	10.4		xxxx		0.1
Control Del:	xxxxx	xxxx		xxxxx		9.2	xxxx		xxxxx		xxxxx		xxxx		xxxxx	605.8		xxxx		13.6
LOS by Move:	*	*		*		A	*		*		*		*		*	F		*		B
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx	
SharedQueue:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx	
Shrd ConDel:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx	
Shared LOS:	*	*		*		*	*		*		*	*		*		*	*		*	
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					566.7				
ApproachLOS:	*					*					*					F				

Note: Queue reported is the number of cars per lane.

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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) Without Project Conditions - WITH HEACOCK EXTENSION
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #14 Indian Street / Grove View Road

Average Delay (sec/veh): 2.5 Worst Case Level Of Service: C[21.9]

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	1
Volume Module:																				
Base Vol:	0	260		50		5	536		0		0		0		0	99		0		7
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
Initial Bse:	0	260		50		5	536		0		0		0		0	99		0		7
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
PHF Adj:	0.92	0.92		0.92		0.92	0.92		0.92		0.92		0.92		0.92	0.92		0.92		0.92
PHF Volume:	0	283		54		5	583		0		0		0		0	108		0		8
Reduct Vol:	0	0		0		0	0		0		0		0		0	0		0		0
FinalVolume:	0	283		54		5	583		0		0		0		0	108		0		8
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx		xxxxx		4.1	xxxx		xxxxx		xxxxx		xxxx		xxxxx	6.4		xxxx		6.2
FollowUpTim:	xxxxx	xxxx		xxxxx		2.2	xxxx		xxxxx		xxxxx		xxxx		xxxxx	3.5		xxxx		3.3
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx		xxxxx		337	xxxx		xxxxx		xxxx		xxxx		xxxxx	903		xxxx		310
Potent Cap.:	xxxx	xxxx		xxxxx		1234	xxxx		xxxxx		xxxx		xxxx		xxxxx	310		xxxx		735
Move Cap.:	xxxx	xxxx		xxxxx		1234	xxxx		xxxxx		xxxx		xxxx		xxxxx	309		xxxx		735
Volume/Cap:	xxxx	xxxx		xxxx		0.00	xxxx		xxxx		xxxx		xxxx		xxxx	0.35		xxxx		0.01
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx		xxxxx		0.0	xxxx		xxxxx		xxxx		xxxx		xxxxx	1.5		xxxx		0.0
Control Del:	xxxxx	xxxx		xxxxx		7.9	xxxx		xxxxx		xxxxx		xxxx		xxxxx	22.7		xxxx		9.9
LOS by Move:	*	*		*		A	*		*		*		*		*	C		*		A
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx		xxxxx	xxxx		xxxx		xxxxx
SharedQueue:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx		xxxxx	xxxxx		xxxx		xxxxx
Shrd ConDel:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx		xxxxx	xxxxx		xxxx		xxxxx
Shared LOS:	*	*		*		*	*		*		*		*		*	*		*		*
ApproachDel:	xxxxxx					xxxxxx					xxxxxx							21.9		
ApproachLOS:	*					*					*							C		

Note: Queue reported is the number of cars per lane.

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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) Without Project Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #15 Indian Street / Harley Knox Boulevard

Cycle (sec): 120 Critical Vol./Cap.(X): 0.792
Loss Time (sec): 16 Average Delay (sec/veh): 68.3
Optimal Cycle: OPTIMIZED Level Of Service: E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	10	39	39	10	39	39	10	34	34	10	34	34
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	1 0	1 1	0	1 0	1 0	1	2 0	1 1	0
Volume Module:												
Base Vol:	269	102	11	71	312	728	385	480	140	18	529	18
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	269	102	11	71	312	728	385	480	140	18	529	18
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	290	110	12	77	337	786	416	518	151	19	571	19
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	290	110	12	77	337	786	416	518	151	19	571	19
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	290	110	12	77	337	786	416	518	151	19	571	19
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.85	0.95	0.85	0.85	0.95	1.00	0.85	0.92	0.95	0.95
Lanes:	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.93	0.07
Final Sat.:	3502	3610	1615	1805	1615	1615	1805	1900	1615	3502	3474	118
Capacity Analysis Module:												
Vol/Sat:	0.08	0.03	0.01	0.04	0.21	0.49	0.23	0.27	0.09	0.01	0.16	0.16
Crit Moves:	****				****		****				****	
Green/Cycle:	0.08	0.33	0.33	0.08	0.33	0.50	0.18	0.35	0.35	0.10	0.28	0.28
Volume/Cap:	1.00	0.09	0.02	0.51	0.64	0.97	1.32	0.77	0.26	0.05	0.58	0.58
Delay/Veh:	106.4	28.2	27.6	55.5	35.4	49.5	212.5	39.9	27.9	48.5	37.7	37.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	106.4	28.2	27.6	55.5	35.4	49.5	212.5	39.9	27.9	48.5	37.7	37.7
LOS by Move:	F	C	C	E	D	D	F	D	C	D	D	D
HCM2kAvgQ:	9	1	0	3	11	32	26	16	4	0	10	10

Note: Queue reported is the number of cars per lane.

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APPENDIX 6.2

Opening Year Cumulative (2018) With Project Conditions
Intersection Operations Analysis Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	441	56	289	295	0	0	0	0	1035	6	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	3.5	5.0						5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95						1.00	1.00
Frpb, ped/bikes		1.00	0.97	1.00	1.00						1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		3610	1567	1805	3610						1810	1586
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		3610	1567	1805	3610						1810	1586
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	474	60	311	317	0	0	0	0	1113	6	280
RTOR Reduction (vph)	0	0	34	0	0	0	0	0	0	0	0	133
Lane Group Flow (vph)	0	474	26	311	317	0	0	0	0	0	1119	147
Confl. Peds. (#/hr)			5									5
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		35.0	35.0	11.5	50.0						20.0	20.0
Effective Green, g (s)		35.0	35.0	11.5	50.0						20.0	20.0
Actuated g/C Ratio		0.44	0.44	0.14	0.62						0.25	0.25
Clearance Time (s)		5.0	5.0	3.5	5.0						5.0	5.0
Vehicle Extension (s)		2.0	2.0	2.0	2.0						3.0	3.0
Lane Grp Cap (vph)		1579	685	259	2256						452	396
v/s Ratio Prot		c0.13		c0.17	0.09						c0.62	
v/s Ratio Perm			0.02									0.09
v/c Ratio		0.30	0.04	1.20	0.14						2.48	0.37
Uniform Delay, d1		14.6	12.9	34.2	6.2						30.0	24.8
Progression Factor		1.00	1.00	1.00	1.00						1.00	1.00
Incremental Delay, d2		0.5	0.1	121.3	0.1						670.7	0.6
Delay (s)		15.1	13.0	155.6	6.3						700.7	25.4
Level of Service		B	B	F	A						F	C
Approach Delay (s)		14.8			80.2			0.0			565.5	
Approach LOS		B			F			A			F	

Intersection Summary			
HCM 2000 Control Delay	331.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	144.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	239	1238	0	0	462	490	122	5	493	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0			5.0	5.0		5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00		1.00	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.97		1.00	0.98			
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1805	3610			3610	1563		1813	1587			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1805	3610			3610	1563		1813	1587			
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	257	1331	0	0	497	527	131	5	530	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	309	0	0	48	0	0	0
Lane Group Flow (vph)	257	1331	0	0	497	218	0	136	482	0	0	0
Confl. Peds. (#/hr)						5			5			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Actuated Green, G (s)	17.2	60.0			39.3	39.3		25.0	25.0			
Effective Green, g (s)	17.2	60.0			39.3	39.3		25.0	25.0			
Actuated g/C Ratio	0.18	0.63			0.41	0.41		0.26	0.26			
Clearance Time (s)	3.5	5.0			5.0	5.0		5.0	5.0			
Vehicle Extension (s)	2.0	2.0			2.0	2.0		3.0	3.0			
Lane Grp Cap (vph)	326	2280			1493	646		477	417			
v/s Ratio Prot	c0.14	c0.37			0.14			0.08				
v/s Ratio Perm						0.14			c0.30			
v/c Ratio	0.79	0.58			0.33	0.34		0.29	1.16			
Uniform Delay, d1	37.2	10.2			18.9	19.0		27.9	35.0			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	11.1	1.1			0.6	1.4		1.5	94.1			
Delay (s)	48.2	11.3			19.5	20.4		29.4	129.1			
Level of Service	D	B			B	C		C	F			
Approach Delay (s)		17.3			20.0			108.8			0.0	
Approach LOS		B			B			F			A	

Intersection Summary			
HCM 2000 Control Delay	36.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	144.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                  Opening Year (2018) With Project Conditions
                                AM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #3 Western Way / Harley Knox Boulevard
*******************************************************************************
Average Delay (sec/veh):      1.3       Worst Case Level Of Service: F[ 61.1]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  0    0  0  1! 0  0    0  1  1  0  0    0  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0    10    0    35    78 1591     0     0 1071    31
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0    10    0    35    78 1591     0     0 1071    31
Added Vol:      0    0     0     0    0     0     0   85     0     0   32     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0     0    10    0    35    78 1676     0     0 1103    31
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0     0    11    0    38    85 1822     0     0 1199    34
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0     0    11    0    38    85 1822     0     0 1199    34
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   6.8  6.5   6.9   4.1 xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx   3.5  4.0   3.3   2.2 xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  2279 3190   599  1233 xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx    35   10   449   572 xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx    30    9   449   572 xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  0.36 0.00  0.08  0.15 xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.5 xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx  12.4 xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     B    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx  111 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx  1.9 xxxxx   0.5 xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx 61.1 xxxxx  12.4 xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    F     *     B    *     *     *    *     *
ApproachDel:    xxxxxx             61.1           xxxxxx           xxxxxx
ApproachLOS:         *               F                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************


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```

First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) With Project Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Patterson Avenue / Harley Knox Boulevard

Cycle (sec): 120 Critical Vol./Cap.(X): 1.207
Loss Time (sec): 12 Average Delay (sec/veh): 191.1
Optimal Cycle: OPTIMIZED Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	27	27	27	27	27	27	10	18	18	10	18	18
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1! 0	0	0 1	0 0	1	1 0	1 0	1	1 0	0 1	0
Volume Module:												
Base Vol:	158	3	14	1	3	13	11	1574	35	7	1075	4
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	158	3	14	1	3	13	11	1574	35	7	1075	4
Added Vol:	0	0	4	0	0	0	0	85	0	2	32	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	158	3	18	1	3	13	11	1659	35	9	1107	4
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	170	3	19	1	3	14	12	1788	38	10	1193	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	170	3	19	1	3	14	12	1788	38	10	1193	4
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	170	3	19	1	3	14	12	1788	38	10	1193	4
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.73	0.73	0.73	0.97	0.97	0.85	0.95	1.00	0.85	0.95	1.00	1.00
Lanes:	0.88	0.02	0.10	0.25	0.75	1.00	1.00	1.00	1.00	1.00	0.99	0.01
Final Sat.:	1219	23	139	459	1378	1615	1805	1900	1615	1805	1891	7
Capacity Analysis Module:												
Vol/Sat:	0.14	0.14	0.14	0.00	0.00	0.01	0.01	0.94	0.02	0.01	0.63	0.63
Crit Moves:		****						****		****		
Green/Cycle:	0.23	0.23	0.23	0.23	0.23	0.23	0.08	0.59	0.59	0.08	0.59	0.59
Volume/Cap:	0.62	0.62	0.62	0.01	0.01	0.04	0.08	1.59	0.04	0.06	1.07	1.07
Delay/Veh:	45.7	45.7	45.7	36.1	36.1	36.4	51.0	294	10.3	50.9	70.8	70.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.7	45.7	45.7	36.1	36.1	36.4	51.0	294	10.3	50.9	70.8	70.8
LOS by Move:	D	D	D	D	D	D	D	F	B	D	E	E
HCM2kAvgQ:	7	7	7	0	0	0	0	144	1	0	56	56

Note: Queue reported is the number of cars per lane.

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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) With Project Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Heacock Street / Nandina Avenue

Average Delay (sec/veh): 7.4 Worst Case Level Of Service: A[8.6]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1	0 0		1 0 1	0 0		0 0 0	0 0		1 0 0	0 1	
Volume Module:												
Base Vol:	0	3	0	82	8	0	0	0	0	3	0	63
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	3	0	82	8	0	0	0	0	3	0	63
Added Vol:	0	0	0	21	0	0	0	0	0	0	0	8
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	3	0	103	8	0	0	0	0	3	0	71
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	3	0	109	8	0	0	0	0	3	0	75
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	3	0	109	8	0	0	0	0	3	0	75
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	3	xxxx	xxxxx	xxxx	xxxx	xxxxx	229	xxxx	3
Potent Cap.:	xxxx	xxxx	xxxxx	1632	xxxx	xxxxx	xxxx	xxxx	xxxxx	764	xxxx	1087
Move Cap.:	xxxx	xxxx	xxxxx	1632	xxxx	xxxxx	xxxx	xxxx	xxxxx	725	xxxx	1087
Volume/Cap:	xxxx	xxxx	xxxx	0.07	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	xxxx	0.07
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	0.2
Control Del:	xxxxx	xxxx	xxxxx	7.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	10.0	xxxx	8.6
LOS by Move:	*	*	*	A	*	*	*	*	*	A	*	A
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			8.6		
ApproachLOS:	*			*			*			A		

Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                  Opening Year (2018) With Project Conditions
                                AM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #6 Heacock Street / Grove View Road
*******************************************************************************
Average Delay (sec/veh):      0.0       Worst Case Level Of Service: A[  0.0]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  1  0  0    0  0  1  0  0    0  0  0  0  0    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    3     0     0   11     0     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    3     0     0   11     0     0    0     0     0    0     0
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    3     0     0   11     0     0    0     0     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    3     0     0   12     0     0    0     0     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    3     0     0   12     0     0    0     0     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   6.4  6.5   6.2
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx    15   15     3
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1009  883  1086
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1009  883  1086
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.00 0.00  0.00
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx    0 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         *                *                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************


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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) With Project Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Webster Avenue / Harley Knox Boulevard

Average Delay (sec/veh): 2.1 Worst Case Level Of Service: F[80.6]

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Stop Sign						Stop Sign						Uncontrolled						Uncontrolled					
Rights:	Include						Include						Include						Include					
Lanes:	0	0	1!	0	0		0	0	0	1	0		1	0	0	1	0		1	0	0	1	0	
Volume Module:																								
Base Vol:	32		0		9		0		1		1		0		892		54		6		487		0	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	32		0		9		0		1		1		0		892		54		6		487		0	
Added Vol:	0		0		0		0		0		0		0		90		0		0		33		0	
PasserByVol:	0		0		0		0		0		0		0		0		0		0		0		0	
Initial Fut:	32		0		9		0		1		1		0		982		54		6		520		0	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	35		0		10		0		1		1		0		1067		59		7		565		0	
Reduct Vol:	0		0		0		0		0		0		0		0		0		0		0		0	
FinalVolume:	35		0		10		0		1		1		0		1067		59		7		565		0	
Critical Gap Module:																								
Critical Gp:	7.1	6.5		6.2	xxxxx		6.5		6.2	xxxxx	xxxx	xxxxx			4.1	xxxx	xxxxx							
FollowUpTim:	3.5	4.0		3.3	xxxxx		4.0		3.3	xxxxx	xxxx	xxxxx			2.2	xxxx	xxxxx							
Capacity Module:																								
Cnflict Vol:	1676	1675		1097	xxxx		1704		565	xxxx	xxxx	xxxxx			1126	xxxx	xxxxx							
Potent Cap.:	76	96		262	xxxx		92		528	xxxx	xxxx	xxxxx			628	xxxx	xxxxx							
Move Cap.:	75	95		262	xxxx		91		528	xxxx	xxxx	xxxxx			628	xxxx	xxxxx							
Volume/Cap:	0.46	0.00		0.04	xxxx		0.01		0.00	xxxx	xxxx	xxxx			0.01	xxxx	xxxx							
Level Of Service Module:																								
2Way95thQ:	xxxx	xxxx		xxxxx	xxxx		xxxx		xxxxx	xxxx	xxxx	xxxxx			0.0	xxxx	xxxxx							
Control Del:	xxxxx	xxxx		xxxxx	xxxxx		xxxx		xxxxx	xxxxx	xxxx	xxxxx			10.8	xxxx	xxxxx							
LOS by Move:	*	*		*	*		*		*	*	*				B	*	*							
Movement:	LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT	
Shared Cap.:	xxxx		89		xxxxx		xxxx		xxxx		156		xxxx		xxxx		xxxxx		xxxx		xxxx		xxxxx	
SharedQueue:	xxxxx		2.2		xxxxx		xxxxx		xxxx		0.0		xxxxx		xxxx		xxxxx		xxxxx		xxxx		xxxxx	
Shrd ConDel:	xxxxx		80.6		xxxxx		xxxxx		xxxx		28.4		xxxxx		xxxx		xxxxx		xxxxx		xxxx		xxxxx	
Shared LOS:	*		F		*		*		*		D		*		*		*		*		*		*	
ApproachDel:			80.6						28.4				xxxxxx						xxxxxx					
ApproachLOS:			F						D				*						*					

Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                  Opening Year (2018) With Project Conditions
                                AM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #8 Driveway 2 / Nandina Avenue
*******************************************************************************
Average Delay (sec/veh):      2.6       Worst Case Level Of Service: B[ 10.5]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  0  1  0    1  0  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0     0    0     0     0   82     0     0   66     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0     0    0     0     0   82     0     0   66     0
Added Vol:      5    0     2     0    0     0     0    4    17    76    3     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    5    0     2     0    0     0     0   86    17    76   69     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.83 0.83  0.83  0.83 0.83  0.83  0.83 0.83  0.83  0.83 0.83  0.83
PHF Volume:     6    0     2     0    0     0     0  103    20    91   83     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    6    0     2     0    0     0     0  103    20    91   83     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  379  379   113  xxxx xxxx xxxxx  xxxx xxxx xxxxx   124 xxxx xxxxx
Potent Cap.:  627  556   945  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1476 xxxx xxxxx
Move Cap.:    597  522   945  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1476 xxxx xxxxx
Volume/Cap:  0.01 0.00  0.00  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.06 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.2 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.6 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  668 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.0 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 10.5 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    B     *     *    *     *     *    *     *     *    *     *
ApproachDel:      10.5           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************


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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                  Opening Year (2018) With Project Conditions
                                AM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #9 Driveway 3 / Nandina Avenue
*******************************************************************************
Average Delay (sec/veh):      0.0       Worst Case Level Of Service: B[ 11.1]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  1  0  0    1  0  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0     0    0     0     0  153     0     0  278     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0     0    0     0     0  153     0     0  278     0
Added Vol:      1    0     1     0    0     0     0    6     0     0   78     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    1    0     1     0    0     0     0  159     0     0  356     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.83 0.83  0.83  0.83 0.83  0.83  0.83 0.83  0.83  0.83 0.83  0.83
PHF Volume:     1    0     1     0    0     0     0  191     0     0  427     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    1    0     1     0    0     0     0  191     0     0  427     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  618  618   191  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.:  456  407   856  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:    456  407   856  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  0.00 0.00  0.00  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  595 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.0 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 11.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    B     *     *    *     *     *    *     *     *    *     *
ApproachDel:      11.1           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************


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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) With Project Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Indian Street / Nandina Avenue

Cycle (sec): 120 Critical Vol./Cap.(X): 0.456
Loss Time (sec): 16 Average Delay (sec/veh): 30.0
Optimal Cycle: OPTIMIZED Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Ovl			Include		
Min. Green:	10	27	27	10	27	27	10	28	28	10	28	28
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0 1	1 0		1 0 1	1 0		1 0 1	0 1		1 0 1	0 1	
Volume Module:												
Base Vol:	106	883	93	6	376	26	5	41	106	41	146	2
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	106	883	93	6	376	26	5	41	106	41	146	2
Added Vol:	69	0	8	0	0	0	0	3	4	22	8	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	175	883	101	6	376	26	5	44	110	63	154	2
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	190	959	110	7	408	28	5	48	119	68	167	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	190	959	110	7	408	28	5	48	119	68	167	2
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	190	959	110	7	408	28	5	48	119	68	167	2
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.94	0.94	0.95	0.94	0.94	0.95	1.00	0.85	0.95	1.00	0.85
Lanes:	1.00	1.79	0.21	1.00	1.87	0.13	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1805	3191	365	1805	3343	231	1805	1900	1615	1805	1900	1615
Capacity Analysis Module:												
Vol/Sat:	0.11	0.30	0.30	0.00	0.12	0.12	0.00	0.03	0.07	0.04	0.09	0.00
Crit Moves:		****		****			****				****	
Green/Cycle:	0.18	0.47	0.47	0.08	0.37	0.37	0.08	0.23	0.41	0.08	0.23	0.23
Volume/Cap:	0.60	0.64	0.64	0.04	0.33	0.33	0.04	0.11	0.18	0.45	0.38	0.01
Delay/Veh:	48.8	25.3	25.3	50.7	26.9	26.9	50.7	36.3	22.8	54.6	39.2	35.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.8	25.3	25.3	50.7	26.9	26.9	50.7	36.3	22.8	54.6	39.2	35.3
LOS by Move:	D	C	C	D	C	C	D	D	C	D	D	D
HCM2kAvgQ:	6	16	16	0	6	6	0	1	3	3	5	0

Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                  Opening Year (2018) With Project Conditions
                                AM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #11 Indian Street / Driveway 4
*******************************************************************************
Average Delay (sec/veh):      0.1       Worst Case Level Of Service: A[  9.9]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  1  0  0    0  0  1  1  0    0  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0 1081     0     0  522     0     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0 1081     0     0  522     0     0    0     0     0    0     0
Added Vol:      0   78     0     0   22     4     0    0    13     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0 1159     0     0  544     4     0    0    13     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0 1260     0     0  591     4     0    0    14     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0 1260     0     0  591     4     0    0    14     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.2 xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   298  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   746  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   746  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  0.02  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   0.1  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   9.9 xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     A     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx              9.9           xxxxxx
ApproachLOS:         *                *                A                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************


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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) With Project Conditions - WITH HEACOCK EXTENSION
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #11 Indian Street / Driveway 4

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: A[9.5]

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
Volume Module:																				
Base Vol:	0	340		0		0	183		0		0		0		0	0		0		0
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
Initial Bse:	0	340		0		0	183		0		0		0		0	0		0		0
Added Vol:	0	78		0		0	22		4		0		0		13	0		0		0
PasserByVol:	0	0		0		0	0		0		0		0		0	0		0		0
Initial Fut:	0	418		0		0	205		4		0		0		13	0		0		0
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
PHF Adj:	0.92	0.92		0.92		0.92	0.92		0.92		0.92		0.92		0.92	0.92		0.92		0.92
PHF Volume:	0	454		0		0	223		4		0		0		14	0		0		0
Reduct Vol:	0	0		0		0	0		0		0		0		0	0		0		0
FinalVolume:	0	454		0		0	223		4		0		0		14	0		0		0
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx		6.2	xxxxx		xxxx		xxxxx
FollowUpTim:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx		3.3	xxxxx		xxxx		xxxxx
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx		225	xxxx		xxxx		xxxxx
Potent Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx		819	xxxx		xxxx		xxxxx
Move Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx		819	xxxx		xxxx		xxxxx
Volume/Cap:	xxxx	xxxx		xxxx		xxxx	xxxx		xxxx		xxxx		xxxx		0.02	xxxx		xxxx		xxxx
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx		0.1	xxxx		xxxx		xxxxx
Control Del:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx		9.5	xxxxx		xxxx		xxxxx
LOS by Move:	*	*		*		*	*		*		*		*		A	*		*		*
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx		xxxxx	xxxx		xxxx		xxxxx
SharedQueue:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx		xxxxx	xxxxx		xxxx		xxxxx
Shrd ConDel:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx		xxxxx	xxxxx		xxxx		xxxxx
Shared LOS:	*	*		*		*	*		*		*		*		*	*		*		*
ApproachDel:	xxxxxx					xxxxxx					9.5					xxxxxx				
ApproachLOS:	*					*					A					*				

Note: Queue reported is the number of cars per lane.

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Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	10	0	5	34	0	13	44	1137	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	0	0	-	0	100	-	-
Veh in Median Storage, #	-	2	-	-	2	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0
Mvmt Flow	11	0	5	37	0	14	48	1236	17

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	1330	1965	296	1660	1961	627	592	0	0
Stage 1	616	616	-	1340	1340	-	-	-	-
Stage 2	714	1349	-	320	621	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	6.9	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-
Pot Cap-1 Maneuver	*534	109	*878	*208	111	*619	1305	-	-
Stage 1	*784	696	-	*525	473	-	-	-	-
Stage 2	*584	465	-	*828	692	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	1	-	-
Mov Cap-1 Maneuver	*502	104	*878	*198	105	*619	1305	-	-
Mov Cap-2 Maneuver	*508	359	-	*433	362	-	-	-	-
Stage 1	*755	686	-	*506	455	-	-	-	-
Stage 2	*550	448	-	*810	681	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	11.2	13.2	0.3
HCM LOS	B	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1305	-	-	508	878	433	619	* 930	-	-
HCM Lane V/C Ratio	0.037	-	-	0.021	0.006	0.085	0.023	0.015	-	-
HCM Control Delay (s)	7.9	-	-	12.2	9.1	14.1	11	8.9	-	-
HCM Lane LOS	A	-	-	B	A	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0	0.3	0.1	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) With Project Conditions - WITH HEACOCK EXTENSION
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 Indian Street / Driveway 5/Waste Management Driveway

Average Delay (sec/veh): 2.0 Worst Case Level Of Service: C[16.8]

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	1	0	1	0	1	1	0	0	1	0	0	0	1!	0	0	0	0	1!	0	0
Volume Module:																				
Base Vol:	0	327		16		13	170		0		0		0		0	34		0		13
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
Initial Bse:	0	327		16		13	170		0		0		0		0	34		0		13
Added Vol:	44	68		0		0	26		9		10		0		5	0		0		0
PasserByVol:	0	0		0		0	0		0		0		0		0	0		0		0
Initial Fut:	44	395		16		13	196		9		10		0		5	34		0		13
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
PHF Adj:	0.92	0.92		0.92		0.92	0.92		0.92		0.92		0.92		0.92	0.92		0.92		0.92
PHF Volume:	48	429		17		14	213		10		11		0		5	37		0		14
Reduct Vol:	0	0		0		0	0		0		0		0		0	0		0		0
FinalVolume:	48	429		17		14	213		10		11		0		5	37		0		14
Critical Gap Module:																				
Critical Gp:	4.1	xxxx	xxxxx			4.1	xxxx	xxxxx			7.1		6.5		6.2	7.1		6.5		6.2
FollowUpTim:	2.2	xxxx	xxxxx			2.2	xxxx	xxxxx			3.5		4.0		3.3	3.5		4.0		3.3
Capacity Module:																				
Cnflict Vol:	223	xxxx	xxxxx			447	xxxx	xxxxx			787		789		218	774		776		429
Potent Cap.:	1358	xxxx	xxxxx			1124	xxxx	xxxxx			312		325		827	318		331		630
Move Cap.:	1358	xxxx	xxxxx			1124	xxxx	xxxxx			294		310		827	305		315		630
Volume/Cap:	0.04	xxxx	xxxx			0.01	xxxx	xxxx			0.04		0.00		0.01	0.12		0.00		0.02
Level Of Service Module:																				
2Way95thQ:	0.1	xxxx	xxxxx			0.0	xxxx	xxxxx			xxxx		xxxx		xxxxx	xxxx		xxxx		xxxxx
Control Del:	7.7	xxxx	xxxxx			8.2	xxxx	xxxxx			xxxxx		xxxx		xxxxx	xxxxx		xxxx		xxxxx
LOS by Move:	A	*		*		A	*		*		*		*		*	*		*		*
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx		374		xxxxx	xxxx		355		xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx		0.1		xxxxx	xxxxx		0.5		xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx		15.1		xxxxx	xxxxx		16.8		xxxxx
Shared LOS:	*	*		*		*	*		*		*		C		*	*		C		*
ApproachDel:	xxxxxx					xxxxxx					15.1					16.8				
ApproachLOS:	*					*					C					C				

Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                  Opening Year (2018) With Project Conditions
                                AM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #13 Indian Street / Driveway 6
*******************************************************************************
Average Delay (sec/veh):      0.1       Worst Case Level Of Service: B[ 10.1]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  1  0  0    0  0  1  1  0    0  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0 1085     0     0  543     0     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0 1085     0     0  543     0     0    0     0     0    0     0
Added Vol:      0  112     0     0   18    13     0    0    23     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0 1197     0     0  561    13     0    0    23     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0 1301     0     0  610    14     0    0    25     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0 1301     0     0  610    14     0    0    25     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.2 xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   312  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   733  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   733  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  0.03  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   0.1  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  10.1 xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     B     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx             10.1           xxxxxx
ApproachLOS:         *                *                B                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************


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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) With Project Conditions - WITH HEACOCK EXTENSION
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 Indian Street / Driveway 6

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: A[9.5]

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
Volume Module:																				
Base Vol:	0	327		0		0	170		0		0		0		0	0		0		0
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
Initial Bse:	0	327		0		0	170		0		0		0		0	0		0		0
Added Vol:	0	112		0		0	18		13		0		0		23	0		0		0
PasserByVol:	0	0		0		0	0		0		0		0		0	0		0		0
Initial Fut:	0	439		0		0	188		13		0		0		23	0		0		0
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
PHF Adj:	0.92	0.92		0.92		0.92	0.92		0.92		0.92		0.92		0.92	0.92		0.92		0.92
PHF Volume:	0	477		0		0	204		14		0		0		25	0		0		0
Reduct Vol:	0	0		0		0	0		0		0		0		0	0		0		0
FinalVolume:	0	477		0		0	204		14		0		0		25	0		0		0
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx		6.2	xxxxx		xxxx		xxxxx
FollowUpTim:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx		3.3	xxxxx		xxxx		xxxxx
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx		211	xxxx		xxxx		xxxxx
Potent Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx		834	xxxx		xxxx		xxxxx
Move Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx		834	xxxx		xxxx		xxxxx
Volume/Cap:	xxxx	xxxx		xxxx		xxxx	xxxx		xxxx		xxxx		xxxx		0.03	xxxx		xxxx		xxxx
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx		0.1	xxxx		xxxx		xxxxx
Control Del:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx		9.5	xxxxx		xxxx		xxxxx
LOS by Move:	*	*		*		*	*		*		*		*		A	*		*		*
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx		xxxxx	xxxx		xxxx		xxxxx
SharedQueue:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx		xxxxx	xxxxx		xxxx		xxxxx
Shrd ConDel:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx		xxxxx	xxxxx		xxxx		xxxxx
Shared LOS:	*	*		*		*	*		*		*		*		*	*		*		*
ApproachDel:	xxxxxx					xxxxxx					9.5					xxxxxx				
ApproachLOS:	*					*					A					*				

Note: Queue reported is the number of cars per lane.

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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) With Project Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #14 Indian Street / Grove View Road

Average Delay (sec/veh): 8.9 Worst Case Level Of Service: F[196.5]

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	1
Volume Module:																				
Base Vol:	0	1080		30		2	541		0		0		0		0	72		0		4
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
Initial Bse:	0	1080		30		2	541		0		0		0		0	72		0		4
Added Vol:	0	103		0		3	38		0		0		0		0	0		0		9
PasserByVol:	0	0		0		0	0		0		0		0		0	0		0		0
Initial Fut:	0	1183		30		5	579		0		0		0		0	72		0		13
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
PHF Adj:	0.92	0.92		0.92		0.92	0.92		0.92		0.92		0.92		0.92	0.92		0.92		0.92
PHF Volume:	0	1282		33		5	627		0		0		0		0	78		0		14
Reduct Vol:	0	0		0		0	0		0		0		0		0	0		0		0
FinalVolume:	0	1282		33		5	627		0		0		0		0	78		0		14
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx		xxxxx		4.1	xxxx		xxxxx		xxxxx		xxxx		xxxxx	6.4		xxxx		6.2
FollowUpTim:	xxxxx	xxxx		xxxxx		2.2	xxxx		xxxxx		xxxxx		xxxx		xxxxx	3.5		xxxx		3.3
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx		xxxxx		1314	xxxx		xxxxx		xxxx		xxxx		xxxxx	1936		xxxx		1298
Potent Cap.:	xxxx	xxxx		xxxxx		533	xxxx		xxxxx		xxxx		xxxx		xxxxx	73		xxxx		200
Move Cap.:	xxxx	xxxx		xxxxx		533	xxxx		xxxxx		xxxx		xxxx		xxxxx	73		xxxx		200
Volume/Cap:	xxxx	xxxx		xxxx		0.01	xxxx		xxxx		xxxx		xxxx		xxxx	1.08		xxxx		0.07
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx		xxxxx		0.0	xxxx		xxxxx		xxxx		xxxx		xxxxx	5.8		xxxx		0.2
Control Del:	xxxxx	xxxx		xxxxx		11.8	xxxx		xxxxx		xxxxx		xxxx		xxxxx	227.6		xxxx		24.4
LOS by Move:	*	*		*		B	*		*		*		*		*	F		*		C
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx		xxxxx	xxxx		xxxx		xxxxx
SharedQueue:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx		xxxxx	xxxxx		xxxx		xxxxx
Shrd ConDel:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx		xxxxx	xxxxx		xxxx		xxxxx
Shared LOS:	*	*		*		*	*		*		*		*		*	*		*		*
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					196.5				
ApproachLOS:	*					*					*					F				

Note: Queue reported is the number of cars per lane.

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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) With Project Conditions - WITH HEACOCK EXTENSION
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #14 Indian Street / Grove View Road

Average Delay (sec/veh): 1.8 Worst Case Level Of Service: C[15.4]

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	1
Volume Module:																				
Base Vol:	0	323	30			2	168				0	0	0			72	0	4		
Growth Adj:	1.00	1.00	1.00			1.00	1.00				1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	0	323	30			2	168				0	0	0			72	0	4		
Added Vol:	0	103	0			3	38				0	0	0			0	0	9		
PasserByVol:	0	0	0			0	0				0	0	0			0	0	0		
Initial Fut:	0	426	30			5	206				0	0	0			72	0	13		
User Adj:	1.00	1.00	1.00			1.00	1.00				1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	0.92	0.92	0.92			0.92	0.92				0.92	0.92	0.92			0.92	0.92	0.92		
PHF Volume:	0	462	33			5	223				0	0	0			78	0	14		
Reduct Vol:	0	0	0			0	0				0	0	0			0	0	0		
FinalVolume:	0	462	33			5	223				0	0	0			78	0	14		
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx			4.1	xxxx	xxxxx			xxxxx	xxxx	xxxxx			6.4	xxxx	6.2		
FollowUpTim:	xxxxx	xxxx	xxxxx			2.2	xxxx	xxxxx			xxxxx	xxxx	xxxxx			3.5	xxxx	3.3		
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx			494	xxxx	xxxxx			xxxx	xxxx	xxxxx			712	xxxx	478		
Potent Cap.:	xxxx	xxxx	xxxxx			1080	xxxx	xxxxx			xxxx	xxxx	xxxxx			402	xxxx	592		
Move Cap.:	xxxx	xxxx	xxxxx			1080	xxxx	xxxxx			xxxx	xxxx	xxxxx			401	xxxx	592		
Volume/Cap:	xxxx	xxxx	xxxx			0.01	xxxx	xxxx			xxxx	xxxx	xxxx			0.19	xxxx	0.02		
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx			0.0	xxxx	xxxxx			xxxx	xxxx	xxxxx			0.7	xxxx	0.1		
Control Del:	xxxxx	xxxx	xxxxx			8.4	xxxx	xxxxx			xxxxx	xxxx	xxxxx			16.1	xxxx	11.2		
LOS by Move:	*	*	*			A	*	*			*	*	*			C	*	B		
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shrd ConDel:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shared LOS:	*	*	*			*	*	*			*	*	*			*	*	*		
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					15.4				
ApproachLOS:	*					*					*					C				

Note: Queue reported is the number of cars per lane.

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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) With Project Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 Indian Street / Harley Knox Boulevard

Cycle (sec): 120 Critical Vol./Cap.(X): 0.927
Loss Time (sec): 16 Average Delay (sec/veh): 390.1
Optimal Cycle: OPTIMIZED Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	10	39	39	10	39	39	10	34	34	10	34	34
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	1 0	1 1	0	1 0	1 0	1	2 0	1 1	0
Volume Module:												
Base Vol:	118	114	22	16	66	320	874	511	240	19	408	42
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	118	114	22	16	66	320	874	511	240	19	408	42
Added Vol:	0	9	0	2	3	33	90	0	0	0	0	4
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	118	123	22	18	69	353	964	511	240	19	408	46
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	128	134	24	20	75	384	1048	555	261	21	443	50
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	128	134	24	20	75	384	1048	555	261	21	443	50
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	128	134	24	20	75	384	1048	555	261	21	443	50
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.85	0.95	0.83	0.83	0.95	1.00	0.85	0.92	0.94	0.94
Lanes:	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.80	0.20
Final Sat.:	3502	3610	1615	1805	1579	1579	1805	1900	1615	3502	3196	360
Capacity Analysis Module:												
Vol/Sat:	0.04	0.04	0.01	0.01	0.05	0.24	0.58	0.29	0.16	0.01	0.14	0.14
Crit Moves:	****				****		****				****	
Green/Cycle:	0.08	0.33	0.33	0.08	0.33	0.50	0.18	0.36	0.36	0.10	0.28	0.28
Volume/Cap:	0.44	0.11	0.05	0.13	0.15	0.49	3.32	0.82	0.45	0.06	0.49	0.49
Delay/Veh:	53.4	28.4	27.8	51.4	28.7	20.2	1100	42.9	30.2	48.8	36.2	36.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.4	28.4	27.8	51.4	28.7	20.2	1100	42.9	30.2	48.8	36.2	36.2
LOS by Move:	D	C	C	D	C	C	F	D	C	D	D	D
HCM2kAvgQ:	3	2	1	1	2	10	126	17	7	0	8	8

Note: Queue reported is the number of cars per lane.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	423	109	596	155	0	0	0	0	696	7	335
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	3.5	5.0						5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95						1.00	1.00
Frpb, ped/bikes		1.00	0.97	1.00	1.00						1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		3610	1567	1805	3610						1810	1586
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		3610	1567	1805	3610						1810	1586
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	460	118	648	168	0	0	0	0	757	8	364
RTOR Reduction (vph)	0	0	66	0	0	0	0	0	0	0	0	253
Lane Group Flow (vph)	0	460	52	648	168	0	0	0	0	0	765	111
Confl. Peds. (#/hr)			5									5
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		35.0	35.0	11.5	50.0						20.0	20.0
Effective Green, g (s)		35.0	35.0	11.5	50.0						20.0	20.0
Actuated g/C Ratio		0.44	0.44	0.14	0.62						0.25	0.25
Clearance Time (s)		5.0	5.0	3.5	5.0						5.0	5.0
Vehicle Extension (s)		2.0	2.0	2.0	2.0						3.0	3.0
Lane Grp Cap (vph)		1579	685	259	2256						452	396
v/s Ratio Prot		c0.13		c0.36	0.05						c0.42	
v/s Ratio Perm			0.03									0.07
v/c Ratio		0.29	0.08	2.50	0.07						1.69	0.28
Uniform Delay, d1		14.5	13.1	34.2	5.9						30.0	24.2
Progression Factor		1.00	1.00	1.00	1.00						1.00	1.00
Incremental Delay, d2		0.5	0.2	687.3	0.1						321.1	0.4
Delay (s)		15.0	13.3	721.5	6.0						351.1	24.6
Level of Service		B	B	F	A						F	C
Approach Delay (s)		14.6			574.2			0.0			245.8	
Approach LOS		B			F			A			F	

Intersection Summary			
HCM 2000 Control Delay	299.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	142.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	350	769	0	0	704	1008	47	4	250	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0			5.0	5.0		5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00		1.00	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.97		1.00	0.98			
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.96	1.00			
Satd. Flow (prot)	1805	3610			3610	1563		1816	1587			
Flt Permitted	0.95	1.00			1.00	1.00		0.96	1.00			
Satd. Flow (perm)	1805	3610			3610	1563		1816	1587			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	372	818	0	0	749	1072	50	4	266	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	379	0	0	147	0	0	0
Lane Group Flow (vph)	372	818	0	0	749	693	0	54	119	0	0	0
Confl. Peds. (#/hr)						5			5			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Actuated Green, G (s)	20.9	60.0			35.6	35.6		25.0	25.0			
Effective Green, g (s)	20.9	60.0			35.6	35.6		25.0	25.0			
Actuated g/C Ratio	0.22	0.63			0.37	0.37		0.26	0.26			
Clearance Time (s)	3.5	5.0			5.0	5.0		5.0	5.0			
Vehicle Extension (s)	2.0	2.0			2.0	2.0		3.0	3.0			
Lane Grp Cap (vph)	397	2280			1352	585		477	417			
v/s Ratio Prot	c0.21	0.23			0.21			0.03				
v/s Ratio Perm						c0.44			c0.07			
v/c Ratio	0.94	0.36			0.55	1.18		0.11	0.28			
Uniform Delay, d1	36.4	8.3			23.4	29.7		26.6	27.9			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	29.1	0.4			1.6	99.6		0.5	1.7			
Delay (s)	65.5	8.8			25.1	129.3		27.1	29.6			
Level of Service	E	A			C	F		C	C			
Approach Delay (s)		26.5			86.4			29.2			0.0	
Approach LOS		C			F			C			A	

Intersection Summary			
HCM 2000 Control Delay	59.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	142.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) With Project Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3 Western Way / Harley Knox Boulevard

Average Delay (sec/veh): 3.1 Worst Case Level Of Service: F[121.7]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0 0	0	0 0	1! 0	0	0 1	1 0	0	0 0	2 0	1
Volume Module:												
Base Vol:	0	0	0	12	0	58	39	1075	0	0	1618	7
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	12	0	58	39	1075	0	0	1618	7
Added Vol:	0	0	0	0	0	0	0	42	0	0	85	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	12	0	58	39	1117	0	0	1703	7
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	0	0	0	13	0	62	42	1190	0	0	1814	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	13	0	62	42	1190	0	0	1814	7
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	6.5	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	2491	3086	907	1821	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	25	12	283	341	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	22	11	283	341	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.57	0.00	0.22	0.12	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.4	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	17.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	C	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	94	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	4.2	xxxxx	0.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	122	xxxxx	17.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	F	*	C	*	*	*	*	*
ApproachDel:	xxxxxx			121.7			xxxxxx			xxxxxx		
ApproachLOS:	*			F			*			*		

Note: Queue reported is the number of cars per lane.

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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) With Project Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Patterson Avenue / Harley Knox Boulevard

Cycle (sec): 120 Critical Vol./Cap.(X): 1.141
Loss Time (sec): 12 Average Delay (sec/veh): 200.9
Optimal Cycle: OPTIMIZED Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	27	27	27	27	27	27	10	18	18	10	18	18
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1! 0	0	0 1	0 0	1	1 0	1 0	1	1 0	0 1	0
Volume Module:												
Base Vol:	72	2	8	5	4	7	6	1035	56	9	1589	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	72	2	8	5	4	7	6	1035	56	9	1589	1
Added Vol:	0	0	2	0	0	0	0	42	0	4	85	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	72	2	10	5	4	7	6	1077	56	13	1674	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	78	2	11	5	4	8	7	1171	61	14	1820	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	78	2	11	5	4	8	7	1171	61	14	1820	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	78	2	11	5	4	8	7	1171	61	14	1820	1
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.74	0.74	0.74	0.91	0.91	0.85	0.95	1.00	0.85	0.95	1.00	1.00
Lanes:	0.86	0.02	0.12	0.56	0.44	1.00	1.00	1.00	1.00	1.00	0.99	0.01
Final Sat.:	1207	34	168	964	771	1615	1805	1900	1615	1805	1899	1
Capacity Analysis Module:												
Vol/Sat:	0.06	0.06	0.06	0.01	0.01	0.00	0.00	0.62	0.04	0.01	0.96	0.96
Crit Moves:		****					****				****	
Green/Cycle:	0.23	0.23	0.23	0.23	0.23	0.23	0.08	0.59	0.59	0.08	0.59	0.59
Volume/Cap:	0.29	0.29	0.29	0.03	0.03	0.02	0.04	1.04	0.06	0.09	1.62	1.62
Delay/Veh:	39.0	39.0	39.0	36.3	36.3	36.2	50.7	62.7	10.4	51.1	307	307.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.0	39.0	39.0	36.3	36.3	36.2	50.7	62.7	10.4	51.1	307	307.4
LOS by Move:	D	D	D	D	D	D	D	E	B	D	F	F
HCM2kAvgQ:	3	3	3	0	0	0	0	53	1	0	150	150

Note: Queue reported is the number of cars per lane.

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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) With Project Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Heacock Street / Nandina Avenue

Average Delay (sec/veh): 6.8 Worst Case Level Of Service: A[8.5]

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	1
Volume Module:																				
Base Vol:	0	7	4	108	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	7	4	108	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32
Added Vol:	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	7	4	119	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
PHF Volume:	0	8	5	137	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	61
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	8	5	137	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	61
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2								
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3								
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx	13	xxxx	xxxxx	xxxx	xxxx	xxxxx	300	xxxx	10								
Potent Cap.:	xxxx	xxxx	xxxxx	1619	xxxx	xxxxx	xxxx	xxxx	xxxxx	695	xxxx	1077								
Move Cap.:	xxxx	xxxx	xxxxx	1619	xxxx	xxxxx	xxxx	xxxx	xxxxx	650	xxxx	1077								
Volume/Cap:	xxxx	xxxx	xxxx	0.08	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	xxxx	0.06								
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx	0.3	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.2								
Control Del:	xxxxx	xxxx	xxxxx	7.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	8.5								
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	A								
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*								
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			8.5										
ApproachLOS:	*			*			*			A										

Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                  Opening Year (2018) With Project Conditions
                                PM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #6 Heacock Street / Grove View Road
*******************************************************************************
Average Delay (sec/veh):      0.0       Worst Case Level Of Service: A[  0.0]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  1  0  0    0  0  1  0  0    0  0  0  0  0    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0   11     0     0   13     0     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0   11     0     0   13     0     0    0     0     0    0     0
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0   11     0     0   13     0     0    0     0     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0   12     0     0   14     0     0    0     0     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0   12     0     0   14     0     0    0     0     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   6.4  6.5   6.2
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx    26   26    12
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   994  871  1075
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   994  871  1075
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.00 0.00  0.00
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx    0 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         *                *                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************


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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                  Opening Year (2018) With Project Conditions
                                PM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #7 Webster Avenue / Harley Knox Boulevard
*******************************************************************************
Average Delay (sec/veh):     14.4       Worst Case Level Of Service: F[321.7]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  1  0  0    1  0  0  1  0    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      65    0    14     0    1     0     1  564    32    17  958     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   65    0    14     0    1     0     1  564    32    17  958     0
Added Vol:      0    0     0     0    0     0     0   44     0     0   90     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   65    0    14     0    1     0     1  608    32    17 1048     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:    71    0    15     0    1     0     1  661    35    18 1139     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:   71    0    15     0    1     0     1  661    35    18 1139     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  7.1  6.5   6.2 xxxxx  6.5 xxxxx   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx  4.0 xxxxx   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1857 1857   678  xxxx 1874 xxxxx  1139 xxxx xxxxx   696 xxxx xxxxx
Potent Cap.:   57   74   456  xxxx   73 xxxxx   621 xxxx xxxxx   910 xxxx xxxxx
Move Cap.:     55   73   456  xxxx   71 xxxxx   621 xxxx xxxxx   910 xxxx xxxxx
Volume/Cap:  1.27 0.00  0.03  xxxx 0.02  xxxx  0.00 xxxx  xxxx  0.02 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx  0.0 xxxxx   0.0 xxxx xxxxx   0.1 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx 56.5 xxxxx  10.8 xxxx xxxxx   9.0 xxxx xxxxx
LOS by Move:    *    *     *     *    F     *     B    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx   66 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  7.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx  322 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    F     *     *    *     *     *    *     *     *    *     *
ApproachDel:     321.7             56.5           xxxxxx           xxxxxx
ApproachLOS:         F                F                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************


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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) With Project Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #8 Driveway 2 / Nandina Avenue

Average Delay (sec/veh): 2.1 Worst Case Level Of Service: B[10.1]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 0 0 0			0 0 0 1 0			1 0 1 0 0		
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	112	0	0	32	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	112	0	0	32	0
Added Vol:	13	0	4	0	0	0	0	2	8	38	8	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	13	0	4	0	0	0	0	114	8	38	40	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
PHF Volume:	16	0	5	0	0	0	0	141	10	47	49	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	16	0	5	0	0	0	0	141	10	47	49	0
Critical Gap Module:												
Critical Gp:	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	289	289	146	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	151	xxxx	xxxxx
Potent Cap.:	706	625	907	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1443	xxxx	xxxxx
Move Cap.:	688	604	907	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1443	xxxx	xxxxx
Volume/Cap:	0.02	0.00	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.03	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	730	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	10.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	*	*	*
ApproachDel:	10.1			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	B			*			*			*		

Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                  Opening Year (2018) With Project Conditions
                                PM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #9 Driveway 3 / Nandina Avenue
*******************************************************************************
Average Delay (sec/veh):      0.2       Worst Case Level Of Service: B[ 12.9]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  1  0  0    1  0  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0     0    0     0     0  412     0     0  117     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0     0    0     0     0  412     0     0  117     0
Added Vol:      4    0     4     0    0     0     0    7     0     0   42     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    4    0     4     0    0     0     0  419     0     0  159     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.81 0.81  0.81  0.81 0.81  0.81  0.81 0.81  0.81  0.81 0.81  0.81
PHF Volume:     5    0     5     0    0     0     0  517     0     0  196     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    5    0     5     0    0     0     0  517     0     0  196     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  714  714   517  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.:  401  359   562  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:    401  359   562  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  0.01 0.00  0.01  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  468 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 12.9 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    B     *     *    *     *     *    *     *     *    *     *
ApproachDel:      12.9           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************


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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) With Project Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Indian Street / Nandina Avenue

Cycle (sec): 105 Critical Vol./Cap.(X): 0.621
Loss Time (sec): 16 Average Delay (sec/veh): 32.9
Optimal Cycle: OPTIMIZED Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T	- R		L - T	- R		L - T	- R		L - T	- R	
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Ovl			Include		
Min. Green:	10	27	27	10	27	27	10	28	28	10	28	28
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	0 1	1 0	1	0 1
Volume Module:												
Base Vol:	42	472	68	0	836	9	27	166	219	204	66	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	42	472	68	0	836	9	27	166	219	204	66	1
Added Vol:	38	0	22	0	0	0	0	8	2	11	4	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	80	472	90	0	836	9	27	174	221	215	70	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	86	508	97	0	899	10	29	187	238	231	75	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	86	508	97	0	899	10	29	187	238	231	75	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	86	508	97	0	899	10	29	187	238	231	75	1
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.93	0.93	1.00	0.95	0.95	0.95	1.00	0.85	0.95	1.00	0.85
Lanes:	1.00	1.68	0.32	1.00	1.98	0.02	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1805	2959	564	1900	3564	38	1805	1900	1615	1805	1900	1615
Capacity Analysis Module:												
Vol/Sat:	0.05	0.17	0.17	0.00	0.25	0.25	0.02	0.10	0.15	0.13	0.04	0.00
Crit Moves:	****				****			****		****		
Green/Cycle:	0.10	0.42	0.42	0.00	0.32	0.32	0.11	0.27	0.36	0.16	0.32	0.32
Volume/Cap:	0.50	0.41	0.41	0.00	0.78	0.78	0.14	0.37	0.41	0.78	0.12	0.00
Delay/Veh:	47.4	21.7	21.7	0.0	35.8	35.8	42.3	31.8	25.5	54.9	25.6	24.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.4	21.7	21.7	0.0	35.8	35.8	42.3	31.8	25.5	54.9	25.6	24.5
LOS by Move:	D	C	C	A	D	D	D	C	C	D	C	C
HCM2kAvgQ:	3	7	7	0	16	16	1	5	6	9	2	0

Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                  Opening Year (2018) With Project Conditions
                                PM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #11 Indian Street / Driveway 4
*******************************************************************************
Average Delay (sec/veh):      0.3       Worst Case Level Of Service: B[ 13.8]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  1  0  0    0  0  1  1  0    0  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  581     0     0 1260     0     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  581     0     0 1260     0     0    0     0     0    0     0
Added Vol:      0   60     0     0   11     2     0    0    36     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0  641     0     0 1271     2     0    0    36     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0  697     0     0 1382     2     0    0    39     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0  697     0     0 1382     2     0    0    39     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.2 xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   692  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   447  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   447  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  0.09  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   0.3  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  13.8 xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     B     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx             13.8           xxxxxx
ApproachLOS:         *                *                B                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************


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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) With Project Conditions - WITH HEACOCK EXTENSION
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #11 Indian Street / Driveway 4

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B[12.5]

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
Volume Module:																				
Base Vol:	0	196		0		0	519		0		0		0		0	0		0		0
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
Initial Bse:	0	196		0		0	519		0		0		0		0	0		0		0
Added Vol:	0	60		0		0	11		2		0		0		36	0		0		0
PasserByVol:	0	0		0		0	0		0		0		0		0	0		0		0
Initial Fut:	0	256		0		0	530		2		0		0		36	0		0		0
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
PHF Adj:	0.92	0.92		0.92		0.92	0.92		0.92		0.92		0.92		0.92	0.92		0.92		0.92
PHF Volume:	0	278		0		0	576		2		0		0		39	0		0		0
Reduct Vol:	0	0		0		0	0		0		0		0		0	0		0		0
FinalVolume:	0	278		0		0	576		2		0		0		39	0		0		0
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx		6.2	xxxxx		xxxx		xxxxx
FollowUpTim:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx		3.3	xxxxx		xxxx		xxxxx
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx		577	xxxx		xxxx		xxxxx
Potent Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx		520	xxxx		xxxx		xxxxx
Move Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx		520	xxxx		xxxx		xxxxx
Volume/Cap:	xxxx	xxxx		xxxx		xxxx	xxxx		xxxx		xxxx		xxxx		0.08	xxxx		xxxx		xxxx
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx		0.2	xxxx		xxxx		xxxxx
Control Del:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx		12.5	xxxxx		xxxx		xxxxx
LOS by Move:	*	*		*		*	*		*		*		*		B	*		*		*
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx		xxxxx	xxxx		xxxx		xxxxx
SharedQueue:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx		xxxxx	xxxxx		xxxx		xxxxx
Shrd ConDel:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx		xxxxx	xxxxx		xxxx		xxxxx
Shared LOS:	*	*		*		*	*		*		*		*		*	*		*		*
ApproachDel:	xxxxxx					xxxxxx					12.5					xxxxxx				
ApproachLOS:	*					*					B					*				

Note: Queue reported is the number of cars per lane.

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Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	26	0	13	60	0	0	22	614	71	38	1264	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	0	0	-	0	100	-	-	100	-	-
Veh in Median Storage, #	-	2	-	-	2	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	28	0	14	65	0	0	24	667	77	41	1374	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1841	2251	689	1524	2215	372	1378	0	0	745	0	0
Stage 1	1459	1459	-	754	754	-	-	-	-	-	-	-
Stage 2	382	792	-	770	1461	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	6.9	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	*312	138	*568	*312	161	*852	*852	-	-	1160	-	-
Stage 1	*506	449	-	*678	620	-	-	-	-	-	-	-
Stage 2	*803	591	-	*535	448	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	1	-	-	1	-	-
Mov Cap-1 Maneuver	*297	130	*568	*290	151	*852	*852	-	-	1160	-	-
Mov Cap-2 Maneuver	*445	341	-	*429	346	-	-	-	-	-	-	-
Stage 1	*492	434	-	*659	603	-	-	-	-	-	-	-
Stage 2	*781	575	-	*504	432	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.9	14.9	0.3	0.2
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	* 852	-	-	445	568	429	-	1160	-	-
HCM Lane V/C Ratio	0.028	-	-	0.064	0.025	0.152	-	0.036	-	-
HCM Control Delay (s)	9.3	-	-	13.6	11.5	14.9	0	8.2	-	-
HCM Lane LOS	A	-	-	B	B	B	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.1	0.5	-	0.1	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) With Project Conditions - WITH HEACOCK EXTENSION
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 Indian Street / Driveway 5/Waste Management Driveway

Average Delay (sec/veh): 3.0 Worst Case Level Of Service: D[27.7]

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	1	0	1	0	1	1	0	0	1	0	0	0	1!	0	0	1	0	0	0	0
Volume Module:																				
Base Vol:	0	196		71		38	481		0		0		0		0	60		0		0
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
Initial Bse:	0	196		71		38	481		0		0		0		0	60		0		0
Added Vol:	22	33		0		0	42		4		26		0		13	0		0		0
PasserByVol:	0	0		0		0	0		0		0		0		0	0		0		0
Initial Fut:	22	229		71		38	523		4		26		0		13	60		0		0
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
PHF Adj:	0.92	0.92		0.92		0.92	0.92		0.92		0.92		0.92		0.92	0.92		0.92		0.92
PHF Volume:	24	249		77		41	568		4		28		0		14	65		0		0
Reduct Vol:	0	0		0		0	0		0		0		0		0	0		0		0
FinalVolume:	24	249		77		41	568		4		28		0		14	65		0		0
Critical Gap Module:																				
Critical Gp:	4.1	xxxx	xxxxx			4.1	xxxx	xxxxx			7.1		6.5		6.2	7.1	xxxx	xxxxx		
FollowUpTim:	2.2	xxxx	xxxxx			2.2	xxxx	xxxxx			3.5		4.0		3.3	3.5	xxxx	xxxxx		
Capacity Module:																				
Cnflict Vol:	573	xxxx	xxxxx			326	xxxx	xxxxx			989		1027		571	957	xxxx	xxxxx		
Potent Cap.:	1010	xxxx	xxxxx			1245	xxxx	xxxxx			228		236		524	239	xxxx	xxxxx		
Move Cap.:	1010	xxxx	xxxxx			1245	xxxx	xxxxx			218		223		524	223	xxxx	xxxxx		
Volume/Cap:	0.02	xxxx	xxxx			0.03	xxxx	xxxx			0.13		0.00		0.03	0.29	xxxx	xxxx		
Level Of Service Module:																				
2Way95thQ:	0.1	xxxx	xxxxx			0.1	xxxx	xxxxx			xxxx		xxxx		xxxxx	1.2	xxxx	xxxxx		
Control Del:	8.7	xxxx	xxxxx			8.0	xxxx	xxxxx			xxxxx		xxxx		xxxxx	27.7	xxxx	xxxxx		
LOS by Move:	A	*		*		A	*		*		*		*		*	D	*		*	
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx		271		xxxxx	xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx		0.5		xxxxx	xxxxx	xxxx	xxxxx		
Shrd ConDel:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx		20.7		xxxxx	xxxxx	xxxx	xxxxx		
Shared LOS:	*	*		*		*	*		*		*		C		*	*	*		*	
ApproachDel:	xxxxxx					xxxxxx					20.7					27.7				
ApproachLOS:	*					*					C					D				

Note: Queue reported is the number of cars per lane.

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-------------------------------------------------------------------------------
       First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
                  Opening Year (2018) With Project Conditions
                                PM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #13 Indian Street / Driveway 6
*******************************************************************************
Average Delay (sec/veh):      0.4       Worst Case Level Of Service: C[ 15.0]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  1  0  0    0  0  1  1  0    0  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  653     0     0 1282     0     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  653     0     0 1282     0     0    0     0     0    0     0
Added Vol:      0   55     0     0   49     7     0    0    63     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0  708     0     0 1331     7     0    0    63     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0  770     0     0 1447     8     0    0    68     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0  770     0     0 1447     8     0    0    68     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.2 xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   727  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   427  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   427  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  0.16  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   0.6  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  15.0 xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     C     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx             15.0           xxxxxx
ApproachLOS:         *                *                C                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************


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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) With Project Conditions - WITH HEACOCK EXTENSION
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 Indian Street / Driveway 6

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: B[13.8]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0 0 1 0 0				0 0 0 1 0				0 0 0 0 1				0 0 0 0 0			
Volume Module:																
Base Vol:	0	267	0	0	541	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	267	0	0	541	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	55	0	0	49	7	0	0	63	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	322	0	0	590	7	0	0	63	0	0	0	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	350	0	0	641	8	0	0	68	0	0	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	350	0	0	641	8	0	0	68	0	0	0	0	0	0	0
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.2	xxxxx	xxxx	xxxxx				
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	645	xxxx	xxxx	xxxxx				
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	476	xxxx	xxxx	xxxxx				
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	476	xxxx	xxxx	xxxxx				
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.14	xxxx	xxxx	xxxx				
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.5	xxxx	xxxx	xxxxx				
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	13.8	xxxxx	xxxx	xxxxx				
LOS by Move:	*	*	*	*	*	*	*	*	B	*	*	*				
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT				
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*				
ApproachDel:	xxxxxx			xxxxxx			13.8			xxxxxx						
ApproachLOS:	*			*			B			*						

Note: Queue reported is the number of cars per lane.

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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) With Project Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #14 Indian Street / Grove View Road

Average Delay (sec/veh): 40.8 Worst Case Level Of Service: F[834.7]

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	1
Volume Module:																				
Base Vol:	0	646		50		5	1277		0		0		0		0	99		0		7
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
Initial Bse:	0	646		50		5	1277		0		0		0		0	99		0		7
Added Vol:	0	51		0		9	103		0		0		0		0	0		0		4
PasserByVol:	0	0		0		0	0		0		0		0		0	0		0		0
Initial Fut:	0	697		50		14	1380		0		0		0		0	99		0		11
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
PHF Adj:	0.92	0.92		0.92		0.92	0.92		0.92		0.92		0.92		0.92	0.92		0.92		0.92
PHF Volume:	0	758		54		15	1500		0		0		0		0	108		0		12
Reduct Vol:	0	0		0		0	0		0		0		0		0	0		0		0
FinalVolume:	0	758		54		15	1500		0		0		0		0	108		0		12
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx		xxxxx		4.1	xxxx		xxxxx		xxxxx		xxxx		xxxxx	6.4		xxxx		6.2
FollowUpTim:	xxxxx	xxxx		xxxxx		2.2	xxxx		xxxxx		xxxxx		xxxx		xxxxx	3.5		xxxx		3.3
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx		xxxxx		812	xxxx		xxxxx		xxxx		xxxx		xxxxx	2315		xxxx		785
Potent Cap.:	xxxx	xxxx		xxxxx		823	xxxx		xxxxx		xxxx		xxxx		xxxxx	42		xxxx		396
Move Cap.:	xxxx	xxxx		xxxxx		823	xxxx		xxxxx		xxxx		xxxx		xxxxx	42		xxxx		396
Volume/Cap:	xxxx	xxxx		xxxx		0.02	xxxx		xxxx		xxxx		xxxx		xxxx	2.59		xxxx		0.03
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx		xxxxx		0.1	xxxx		xxxxx		xxxx		xxxx		xxxxx	11.7		xxxx		0.1
Control Del:	xxxxx	xxxx		xxxxx		9.5	xxxx		xxxxx		xxxxx		xxxx		xxxxx	925.9		xxxx		14.4
LOS by Move:	*	*		*		A	*		*		*		*		*	F		*		B
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx	
SharedQueue:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx	
Shrd ConDel:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx	
Shared LOS:	*	*		*		*	*		*		*	*		*		*	*		*	
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					834.7				
ApproachLOS:	*					*					*					F				

Note: Queue reported is the number of cars per lane.

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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) With Project Conditions - WITH HEACOCK EXTENSION
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #14 Indian Street / Grove View Road

Average Delay (sec/veh): 3.0 Worst Case Level Of Service: D[29.9]

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	1
Volume Module:																				
Base Vol:	0	260		50		5	536		0		0		0		0	99		0		7
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
Initial Bse:	0	260		50		5	536		0		0		0		0	99		0		7
Added Vol:	0	51		0		9	103		0		0		0		0	0		0		4
PasserByVol:	0	0		0		0	0		0		0		0		0	0		0		0
Initial Fut:	0	311		50		14	639		0		0		0		0	99		0		11
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
PHF Adj:	0.92	0.92		0.92		0.92	0.92		0.92		0.92		0.92		0.92	0.92		0.92		0.92
PHF Volume:	0	338		54		15	695		0		0		0		0	108		0		12
Reduct Vol:	0	0		0		0	0		0		0		0		0	0		0		0
FinalVolume:	0	338		54		15	695		0		0		0		0	108		0		12
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx		xxxxx		4.1	xxxx		xxxxx		xxxxx		xxxx		xxxxx	6.4		xxxx		6.2
FollowUpTim:	xxxxx	xxxx		xxxxx		2.2	xxxx		xxxxx		xxxxx		xxxx		xxxxx	3.5		xxxx		3.3
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx		xxxxx		392	xxxx		xxxxx		xxxx		xxxx		xxxxx	1090		xxxx		365
Potent Cap.:	xxxx	xxxx		xxxxx		1177	xxxx		xxxxx		xxxx		xxxx		xxxxx	240		xxxx		684
Move Cap.:	xxxx	xxxx		xxxxx		1177	xxxx		xxxxx		xxxx		xxxx		xxxxx	238		xxxx		684
Volume/Cap:	xxxx	xxxx		xxxx		0.01	xxxx		xxxx		xxxx		xxxx		xxxx	0.45		xxxx		0.02
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx		xxxxx		0.0	xxxx		xxxxx		xxxx		xxxx		xxxxx	2.2		xxxx		0.1
Control Del:	xxxxx	xxxx		xxxxx		8.1	xxxx		xxxxx		xxxxx		xxxx		xxxxx	32.1		xxxx		10.4
LOS by Move:	*	*		*		A	*		*		*		*		*	D		*		B
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx		xxxxx	xxxx		xxxx		xxxxx
SharedQueue:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx		xxxxx	xxxxx		xxxx		xxxxx
Shrd ConDel:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx		xxxxx	xxxxx		xxxx		xxxxx
Shared LOS:	*	*		*		*	*		*		*		*		*	*		*		*
ApproachDel:	xxxxxx					xxxxxx					xxxxxx							29.9		
ApproachLOS:	*					*					*							D		

Note: Queue reported is the number of cars per lane.

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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) With Project Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 Indian Street / Harley Knox Boulevard

Cycle (sec): 120 Critical Vol./Cap.(X): 0.831
Loss Time (sec): 16 Average Delay (sec/veh): 87.8
Optimal Cycle: OPTIMIZED Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	10	39	39	10	39	39	10	34	34	10	34	34
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	1 0	1 1	0	1 0	1 0	1	2 0	1 1	0
Volume Module:												
Base Vol:	269	102	11	71	312	728	385	480	140	18	529	18
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	269	102	11	71	312	728	385	480	140	18	529	18
Added Vol:	0	4	0	4	9	90	44	0	0	0	0	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	269	106	11	75	321	818	429	480	140	18	529	20
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	290	114	12	81	347	883	463	518	151	19	571	22
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	290	114	12	81	347	883	463	518	151	19	571	22
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	290	114	12	81	347	883	463	518	151	19	571	22
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.85	0.95	0.85	0.85	0.95	1.00	0.85	0.92	0.95	0.95
Lanes:	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.93	0.07
Final Sat.:	3502	3610	1615	1805	1610	1610	1805	1900	1615	3502	3461	131
Capacity Analysis Module:												
Vol/Sat:	0.08	0.03	0.01	0.04	0.22	0.55	0.26	0.27	0.09	0.01	0.17	0.17
Crit Moves:	****				****		****				****	
Green/Cycle:	0.08	0.33	0.33	0.08	0.33	0.50	0.18	0.35	0.35	0.10	0.28	0.28
Volume/Cap:	1.00	0.10	0.02	0.54	0.66	1.10	1.47	0.77	0.26	0.05	0.58	0.58
Delay/Veh:	106.4	28.3	27.6	56.6	35.7	87.6	276.1	39.9	27.9	48.5	37.8	37.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	106.4	28.3	27.6	56.6	35.7	87.6	276.1	39.9	27.9	48.5	37.8	37.8
LOS by Move:	F	C	C	E	D	F	F	D	C	D	D	D
HCM2kAvgQ:	9	2	0	3	11	45	34	16	4	0	10	10

Note: Queue reported is the number of cars per lane.

Traffix 8.0.0715 (c) 2008 Dowling Assoc. Licensed to URBAN CROSSROADS, IRVINE

APPENDIX 6.3

Opening Year Cumulative (2018) Without Project Conditions
Traffic Signal Warrant Analysis Worksheets

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

___	___	___	___		TRAFFIC CONDITIONS		**2018 NP**
DIST	CO	RTE	PM	CALC	CS	DATE	10/10/13
Jurisdiction:	**City of Moreno Valley**			CHK	CS	DATE	10/10/13
Major Street:	**Harley Knox Boulevard**				Critical Approach Speed (Major)		45 mph
Minor Street:	**Western Way**				Critical Approach Speed (Minor)		25 mph

Major Street Approach Lanes = **2** lane Minor Street Approach Lanes **1** lane

Major Street Future ADT = **31,400** vpd Minor Street Future ADT = **700** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); …….. [√]

or **RURAL (R)**

In built up area of isolated community of < 10,000 population …… [ ]

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements EADT			
	XX				
CONDITION A - Minimum Vehicular Volume					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1	*1*	8,000	5,600	2,400	1,680
2 + **31,400**	*1* **700**	9,600	6,720 *	2,400	1,680
2 +	*2 +*	9,600	6,720	3,200	2,240
1	*2 +*	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1	*1*	12,000	8,400	1,200	850
2 +	*1* **700**	14,400	10,080	1,200	850
2 +	*2 +*	14,400	10,080	1,600	1,120
1	*2 +*	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied	2 CONDITIONS 80%		2 CONDITIONS 80%	
	XX				
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** 42% / **B** 82%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

___	___	___	___		TRAFFIC CONDITIONS		**2018 NP**
DIST	CO	RTE	PM	CALC	CS	DATE	10/10/13
Jurisdiction:	**City of Moreno Valley**			CHK	CS	DATE	10/10/13
Major Street:	**Heacock Street**				Critical Approach Speed (Major)		50 mph
Minor Street:	**Nandina Avenue**				Critical Approach Speed (Minor)		45 mph

Major Street Approach Lanes = **1** lane Minor Street Approach Lanes **1** lane

Major Street Future ADT = **1,200** vpd Minor Street Future ADT = **2,300** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); …….. [√]

or **RURAL (R)**

In built up area of isolated community of < 10,000 population …… [ ]

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements EADT			
	XX				
CONDITION A - Minimum Vehicular Volume					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **1,200**	*1* **2,300**	8,000	5,600	2,400	1,680 *
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2 +*	9,600	6,720	3,200	2,240
1	*2 +*	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **1,200**	*1* **2,300**	12,000	8,400	1,200	850 *
2 +	*1*	14,400	10,080	1,200	850
2 +	*2 +*	14,400	10,080	1,600	1,120
1	*2 +*	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied	2 CONDITIONS 80%		2 CONDITIONS 80%	
	XX				
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** 21% / **B** 14%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

___	___	___	___		TRAFFIC CONDITIONS		**2018 NP**
DIST	CO	RTE	PM	CALC	CS	DATE	10/10/13
Jurisdiction:	**City of Moreno Valley**			CHK	CS	DATE	10/10/13
Major Street:	**Harley Knox Boulevard**				Critical Approach Speed (Major)		45 mph
Minor Street:	**Webster Avenue**				Critical Approach Speed (Minor)		25 mph

Major Street Approach Lanes = **1** lane Minor Street Approach Lanes **1** lane

Major Street Future ADT = **31,450** vpd Minor Street Future ADT = **200** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); …….. [√]

or **RURAL (R)**

In built up area of isolated community of < 10,000 population …… [ ]

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements EADT			
	XX				
CONDITION A - Minimum Vehicular Volume					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **31,450**	*1* **200**	8,000	5,600 *	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2 +*	9,600	6,720	3,200	2,240
1	*2 +*	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **31,450**	*1* **200**	12,000	8,400 *	1,200	850
2 +	*1*	14,400	10,080	1,200	850
2 +	*2 +*	14,400	10,080	1,600	1,120
1	*2 +*	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied	2 CONDITIONS 80%		2 CONDITIONS 80%	
	XX				
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** 12% / **B** 24%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

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APPENDIX 6.4

Opening Year Cumulative (2018) With Project Conditions
Traffic Signal Warrant Analysis Worksheets

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

___	___	___	___		TRAFFIC CONDITIONS		**2018 WP**
DIST	CO	RTE	PM	CALC	CS	DATE	10/10/13
Jurisdiction:	**City of Moreno Valley**			CHK	CS	DATE	10/10/13
Major Street:	**Harley Knox Boulevard**				Critical Approach Speed (Major)		45 mph
Minor Street:	**Western Way**				Critical Approach Speed (Minor)		25 mph

Major Street Approach Lanes = **2** lane Minor Street Approach Lanes **1** lane

Major Street Future ADT = **33,150** vpd Minor Street Future ADT = **700** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); …….. [√]

or **RURAL (R)**

In built up area of isolated community of < 10,000 population …… [ ]

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements EADT			
	XX				
CONDITION A - Minimum Vehicular Volume					
Satisfied	Not Satisfied				
	XX				
Number of lanes for moving traffic on each approach		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Major Street	Minor Street	Urban	Rural	Urban	Rural
1	*1*	8,000	5,600	2,400	1,680
2 + **33,150**	*1* **700**	9,600	6,720 *	2,400	1,680
2 +	*2 +*	9,600	6,720	3,200	2,240
1	*2 +*	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic					
Satisfied	Not Satisfied				
	XX				
Number of lanes for moving traffic on each approach		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Major Street	Minor Street	Urban	Rural	Urban	Rural
1	*1*	12,000	8,400	1,200	850
2 +	*1* **700**	14,400	10,080	1,200	850
2 +	*2 +*	14,400	10,080	1,600	1,120
1	*2 +*	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied				
	XX	2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** 42% / **B** 82%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM

TRAFFIC CONDITIONS **2018 WP**

CALC CS DATE 10/10/13

CHK CS DATE 10/10/13

Jurisdiction: **City of Moreno Valley**

Major Street: **Heacock Street** — Critical Approach Speed (Major) 50 mph

Minor Street: **Nandina Avenue** — Critical Approach Speed (Minor) 45 mph

Major Street Approach Lanes = **1** lane — Minor Street Approach Lanes **1** lane

Major Street Future ADT = **1,450** vpd — Minor Street Future ADT = **2,500** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ……. [√]

or **RURAL (R)**

In built up area of isolated community of < 10,000 population …… [ ]

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements EADT			
	XX				
CONDITION A - Minimum Vehicular Volume					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **1,450**	*1* **2,500**	8,000	5,600	2,400	1,680 *
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2 +*	9,600	6,720	3,200	2,240
1	*2 +*	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **1,450**	*1* **2,500**	12,000	8,400	1,200	850 *
2 +	*1*	14,400	10,080	1,200	850
2 +	*2 +*	14,400	10,080	1,600	1,120
1	*2 +*	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied	2 CONDITIONS 80%		2 CONDITIONS 80%	
	XX				
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** 26% / **B** 17%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

___	___	___	___		TRAFFIC CONDITIONS		**2018 WP**
DIST	CO	RTE	PM	CALC	CS	DATE	10/10/13
Jurisdiction:	**City of Moreno Valley**			CHK	CS	DATE	10/10/13
Major Street:	**Harley Knox Boulevard**				Critical Approach Speed (Major)		45 mph
Minor Street:	**Webster Avenue**				Critical Approach Speed (Minor)		25 mph

Major Street Approach Lanes = **1** lane Minor Street Approach Lanes **1** lane

Major Street Future ADT = **33,350** vpd Minor Street Future ADT = **200** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); …….. [√]

or **RURAL (R)**

In built up area of isolated community of < 10,000 population …… [ ]

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements EADT			
	XX				
CONDITION A - Minimum Vehicular Volume					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **33,350**	*1* **200**	8,000	5,600 *	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2 +*	9,600	6,720	3,200	2,240
1	*2 +*	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **33,350**	*1* **200**	12,000	8,400 *	1,200	850
2 +	*1*	14,400	10,080	1,200	850
2 +	*2 +*	14,400	10,080	1,600	1,120
1	*2 +*	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied	2 CONDITIONS 80%		2 CONDITIONS 80%	
	XX				
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** 12% / **B** 24%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

___	___	___	___		TRAFFIC CONDITIONS		**2018 WP**
DIST	CO	RTE	PM	CALC	CS	DATE	10/10/13
Jurisdiction:	**City of Moreno Valley**			CHK	CS	DATE	10/10/13
Major Street:	**Nandina Avenue**				Critical Approach Speed (Major)		45 mph
Minor Street:	**Driveway 2**				Critical Approach Speed (Minor)		15 mph

Major Street Approach Lanes = **1** lane Minor Street Approach Lanes **1** lane

Major Street Future ADT = **5,250** vpd Minor Street Future ADT = **600** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); …….. [√]

or **RURAL (R)**

In built up area of isolated community of < 10,000 population …… [ ]

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements EADT			
	XX				
CONDITION A - Minimum Vehicular Volume					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **5,250**	*1* **600**	8,000	5,600	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2 +*	9,600	6,720	3,200	2,240
1	*2 +*	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **5,250**	*1* **600**	12,000	8,400	1,200	850
2 +	*1*	14,400	10,080	1,200	850
2 +	*2 +*	14,400	10,080	1,600	1,120
1	*2 +*	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied	2 CONDITIONS 80%		2 CONDITIONS 80%	
	XX				
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** 36% / **B** 63%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

___	___	___	___		TRAFFIC CONDITIONS		**2018 WP**
DIST	CO	RTE	PM	CALC	CS	DATE	10/10/13
Jurisdiction:	**City of Moreno Valley**			CHK	CS	DATE	10/10/13
Major Street:	**Nandina Avenue**				Critical Approach Speed (Major)		45 mph
Minor Street:	**Driveway 3**				Critical Approach Speed (Minor)		15 mph

Major Street Approach Lanes = **1** lane Minor Street Approach Lanes **1** lane

Major Street Future ADT = **5,900** vpd Minor Street Future ADT = **50** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); …….. [√]

or **RURAL (R)**

In built up area of isolated community of < 10,000 population …… [ ]

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements EADT			
	XX				
CONDITION A - Minimum Vehicular Volume					
Satisfied	Not Satisfied				
	XX				
Number of lanes for moving traffic on each approach		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **5,900**	*1* **50**	8,000	5,600 *	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2 +*	9,600	6,720	3,200	2,240
1	*2 +*	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic					
Satisfied	Not Satisfied				
	XX				
Number of lanes for moving traffic on each approach		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **5,900**	*1* **50**	12,000	8,400	1,200	850
2 +	*1*	14,400	10,080	1,200	850
2 +	*2 +*	14,400	10,080	1,600	1,120
1	*2 +*	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied				
	XX	2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** / **B**				
	3% / 6%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

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APPENDIX 6.5

Opening Year Cumulative (2018) Without Project Conditions
Ramp Queuing Analysis Worksheets

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	474	60	301	317	1036	280
v/c Ratio	0.30	0.08	1.16	0.14	2.29	0.52
Control Delay	15.2	2.9	141.1	6.4	608.9	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.2	2.9	141.1	6.4	608.9	12.7
Queue Length 50th (ft)	77	0	~181	30	~855	35
Queue Length 95th (ft)	111	16	#331	46	#1083	106
Internal Link Dist (ft)	836			256	1109	
Turn Bay Length (ft)			80			270
Base Capacity (vph)	1579	727	259	2256	452	539
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.08	1.16	0.14	2.29	0.52

Intersection Summary

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

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

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	257	1248	487	502	136	520
v/c Ratio	0.79	0.55	0.33	0.53	0.29	1.09
Control Delay	54.0	11.0	20.4	4.3	29.9	99.5
Queue Delay	0.2	5.3	0.0	0.0	0.0	0.0
Total Delay	54.2	16.3	20.4	4.3	29.9	99.5
Queue Length 50th (ft)	148	202	103	0	65	~320
Queue Length 95th (ft)	223	255	153	64	117	#521
Internal Link Dist (ft)		256	594		929	
Turn Bay Length (ft)	60					265
Base Capacity (vph)	408	2280	1493	940	477	475
Starvation Cap Reductn	8	957	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.94	0.33	0.53	0.29	1.09

Intersection Summary

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

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

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	460	118	622	168	723	364
v/c Ratio	0.29	0.16	2.40	0.07	1.60	0.55
Control Delay	15.1	3.4	662.9	6.0	305.8	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	3.4	662.9	6.0	305.8	6.8
Queue Length 50th (ft)	75	0	~520	15	~525	3
Queue Length 95th (ft)	108	28	#715	26	#731	68
Internal Link Dist (ft)	836			256	1109	
Turn Bay Length (ft)			80			270
Base Capacity (vph)	1579	751	259	2256	452	663
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.16	2.40	0.07	1.60	0.55

Intersection Summary

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

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

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	372	778	723	1007	54	262
v/c Ratio	0.94	0.34	0.53	1.04	0.11	0.45
Control Delay	69.5	8.7	25.2	55.2	27.5	9.3
Queue Delay	7.5	1.0	0.0	0.0	0.0	0.0
Total Delay	77.0	9.7	25.2	55.2	27.5	9.3
Queue Length 50th (ft)	220	105	178	~416	25	20
Queue Length 95th (ft)	#387	137	235	#659	55	85
Internal Link Dist (ft)		256	594		929	
Turn Bay Length (ft)	60					265
Base Capacity (vph)	408	2280	1352	964	477	578
Starvation Cap Reductn	23	1164	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.70	0.53	1.04	0.11	0.45

Intersection Summary

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

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

APPENDIX 6.6

Opening Year Cumulative (2018) With Project Conditions
Ramp Queuing Analysis Worksheets

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	474	60	311	317	1119	280
v/c Ratio	0.30	0.08	1.20	0.14	2.48	0.53
Control Delay	15.2	2.9	154.7	6.4	690.0	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.2	2.9	154.7	6.4	690.0	14.0
Queue Length 50th (ft)	77	0	~191	30	~943	41
Queue Length 95th (ft)	111	16	#344	46	#1175	114
Internal Link Dist (ft)	836			256	1109	
Turn Bay Length (ft)			80			270
Base Capacity (vph)	1579	727	259	2256	452	529
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.08	1.20	0.14	2.48	0.53

Intersection Summary

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

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

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	257	1331	497	527	136	530
v/c Ratio	0.79	0.58	0.33	0.55	0.29	1.14
Control Delay	54.0	11.5	20.5	4.4	29.9	116.3
Queue Delay	0.2	9.1	0.0	0.0	0.0	0.0
Total Delay	54.2	20.6	20.5	4.4	29.9	116.3
Queue Length 50th (ft)	148	224	105	0	65	~346
Queue Length 95th (ft)	223	281	156	65	117	#549
Internal Link Dist (ft)		256	594		929	
Turn Bay Length (ft)	60					265
Base Capacity (vph)	408	2280	1493	955	477	465
Starvation Cap Reductn	8	921	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.98	0.33	0.55	0.29	1.14

Intersection Summary

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

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

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	460	118	648	168	765	364
v/c Ratio	0.29	0.16	2.50	0.07	1.69	0.56
Control Delay	15.1	3.4	707.1	6.0	346.0	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	3.4	707.1	6.0	346.0	7.9
Queue Length 50th (ft)	75	0	~547	15	~569	10
Queue Length 95th (ft)	108	28	#746	26	#778	80
Internal Link Dist (ft)	836			256	1109	
Turn Bay Length (ft)			80			270
Base Capacity (vph)	1579	751	259	2256	452	649
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.16	2.50	0.07	1.69	0.56

Intersection Summary

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

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

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	372	818	749	1072	54	266
v/c Ratio	0.94	0.36	0.55	1.11	0.11	0.47
Control Delay	69.5	8.9	25.5	79.9	27.5	11.3
Queue Delay	7.5	1.1	0.0	0.0	0.0	0.0
Total Delay	77.0	10.0	25.5	79.9	27.5	11.3
Queue Length 50th (ft)	220	112	186	~500	25	31
Queue Length 95th (ft)	#387	145	245	#748	55	100
Internal Link Dist (ft)		256	594		929	
Turn Bay Length (ft)	60					265
Base Capacity (vph)	408	2280	1352	964	477	565
Starvation Cap Reductn	23	1146	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.72	0.55	1.11	0.11	0.47

Intersection Summary

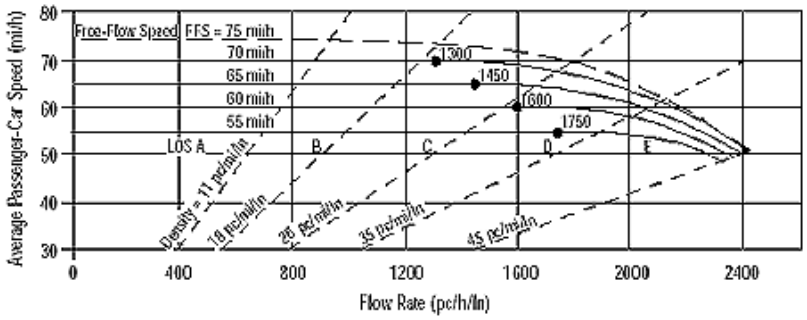
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

APPENDIX 6.7

Opening Year Cumulative (2018) Without Project Conditions
Basic Freeway Segment HCS+ Analysis Worksheets

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*CS*	Highway/Direction of Travel	*SR-60 Westbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*West of I-215 Freeway*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*2018 NP*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*7681*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*12*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.943*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2212*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*59.8*	mi/h	S	mi/h
D = v_p / S	*37.0*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*E*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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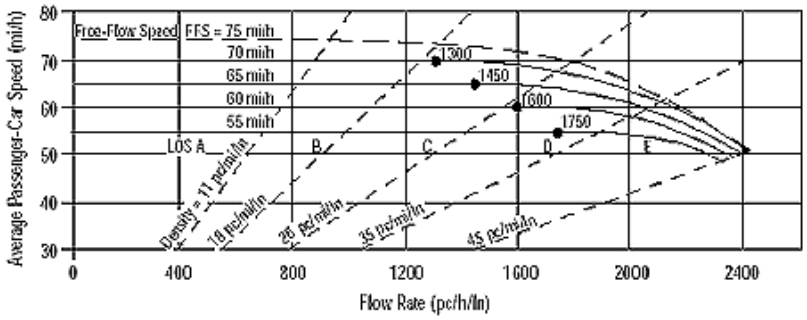
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*SR-60 Eastbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*West of I-215 Freeway*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*2018 NP*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4690*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*13*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.939*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*5*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
			Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1086*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*15.5*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*B*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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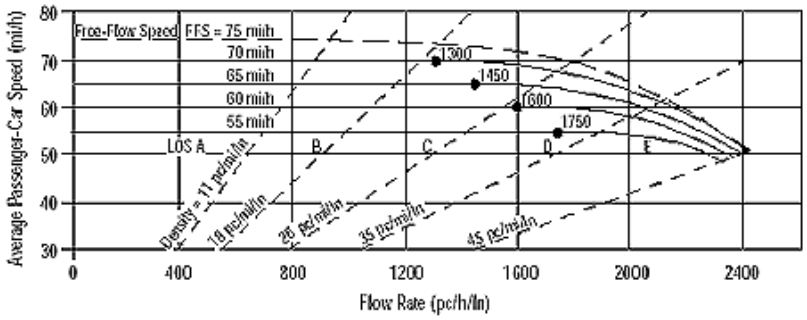
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*I-215 Southbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of SR-60 Freeway*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*2018 NP*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*8566*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*19*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.913*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*5*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2039*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*64.1*	mi/h	S		mi/h
D = v_p / S	*31.8*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*D*		Required Number of Lanes, N		

Glossary / Factor Location

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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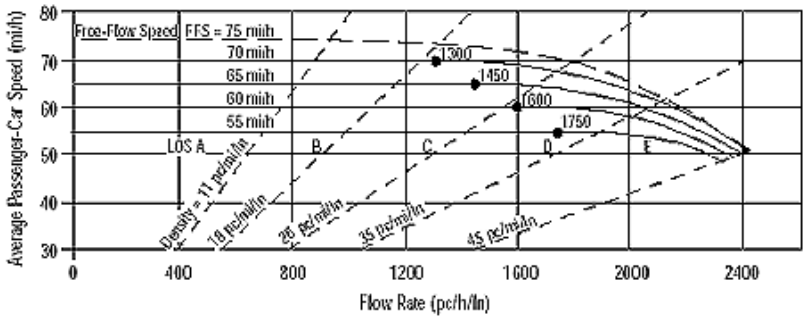

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Southbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*North of Harley Knox Bl.*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*2018 NP*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*6810*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*17*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.5*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.922*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2677*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S		mi/h	S	mi/h
D = v_p / S		pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*F*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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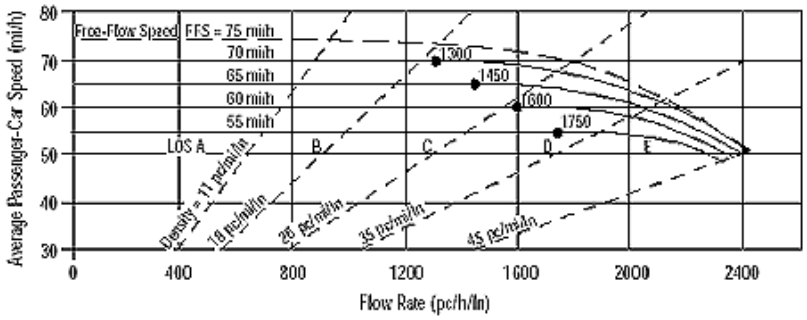
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Southbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of Harley Knox Bl.*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*2018 NP*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5940*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*12*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.943*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2281*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*57.6*	mi/h	S	mi/h
D = v_p / S	*39.6*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*E*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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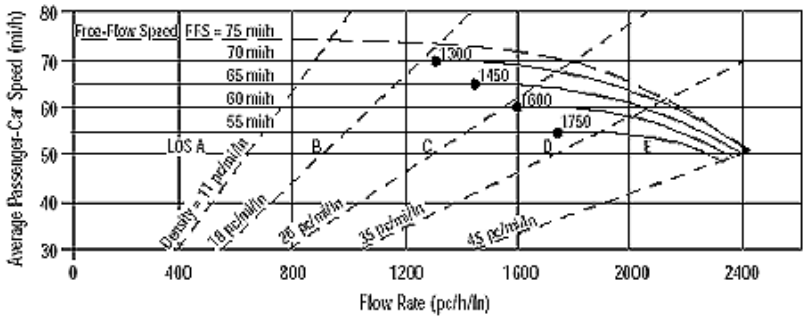
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Northbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of SR-60 Freeway*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*2018 NP*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4716*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*17*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.922*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1854*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*67.2*	mi/h	S	mi/h
D = v_p / S	*27.6*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*D*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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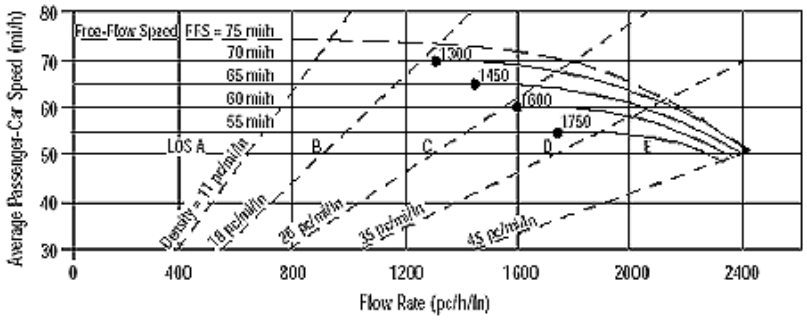

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Northbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*North of Harley Knox Bl.*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*2018 NP*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*4185*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*12*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.943*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1607*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.4*	mi/h	S	mi/h
D = v_p / S	*23.2*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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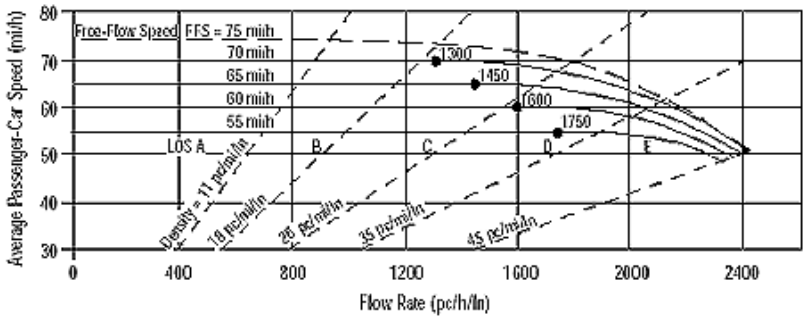

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Northbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of Harley Knox Bl.*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*2018 NP*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*3896*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*15*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.930*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1517*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.8*	mi/h	S	mi/h
D = v_p / S	*21.7*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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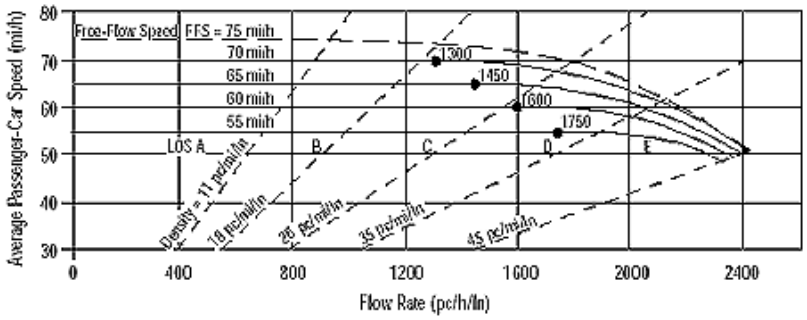

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*SR-60 Westbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*West of I-215 Freeway*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2018 NP*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*8153*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*15*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.930*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2382*	pc/h/ln	Design LOS	
S	*54.0*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
D = v_p / S	*44.1*	pc/mi/ln	S	mi/h
LOS	*E*		D = v_p / S	pc/mi/ln
			Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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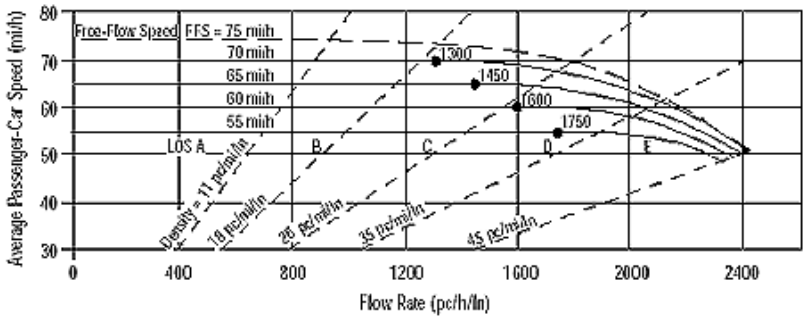

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*CS*	Highway/Direction of Travel	*SR-60 Eastbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*West of I-215 Freeway*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2018 NP*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6957*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*11*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.948*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*5*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1596*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.5*	mi/h	S	mi/h
D = v_p / S	*23.0*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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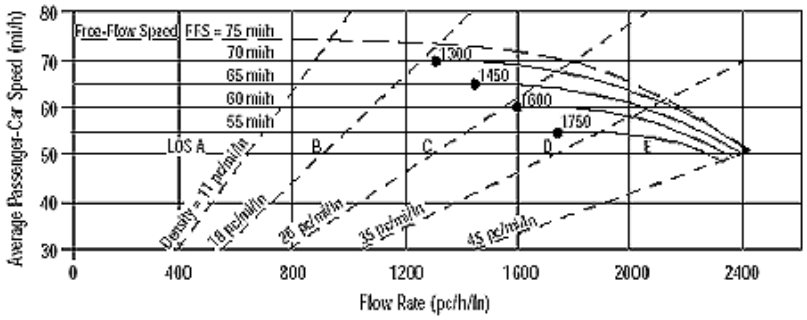

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*I-215 Southbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of SR-60 Freeway*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2018 NP*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*8150*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*16*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.926*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*5*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
			Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1913*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*66.4*	mi/h	S	mi/h
D = v_p / S	*28.8*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*D*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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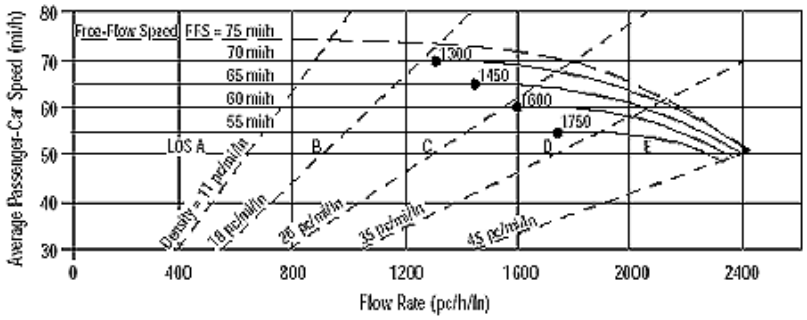

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Southbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*North of Harley Knox Bl.*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2018 NP*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*6940*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*10*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.952*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2640*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S		mi/h	S	mi/h
D = v_p / S		pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*F*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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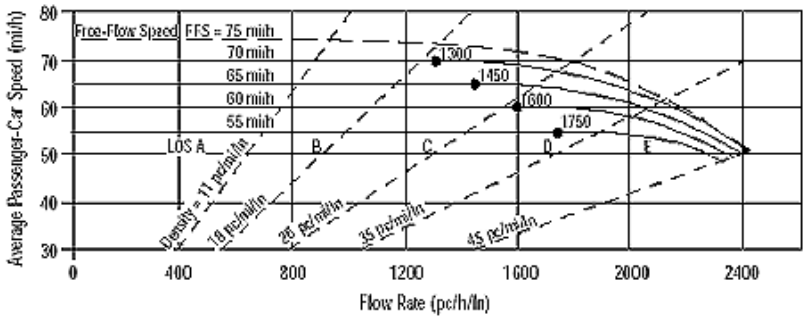
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Southbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of Harley Knox Bl.*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2018 NP*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6761*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*13*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.939*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2609*	pc/h/ln	Design LOS		
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S		mi/h	S		mi/h
D = v_p / S		pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*F*		Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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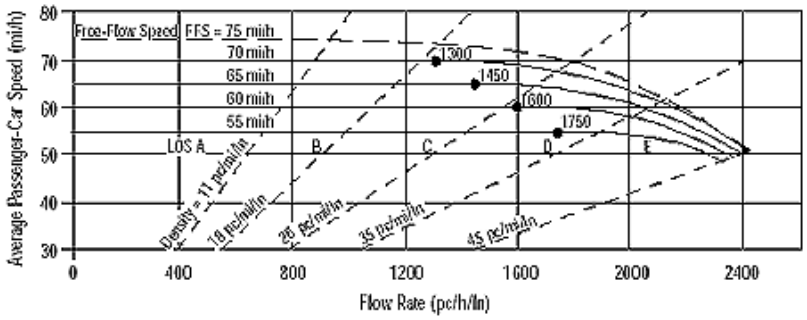

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*I-215 Northbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of SR-60 Freeway*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2018 NP*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5981*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*21*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.905*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
			Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2395*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*53.5*	mi/h	S	mi/h
D = v_p / S	*44.7*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*E*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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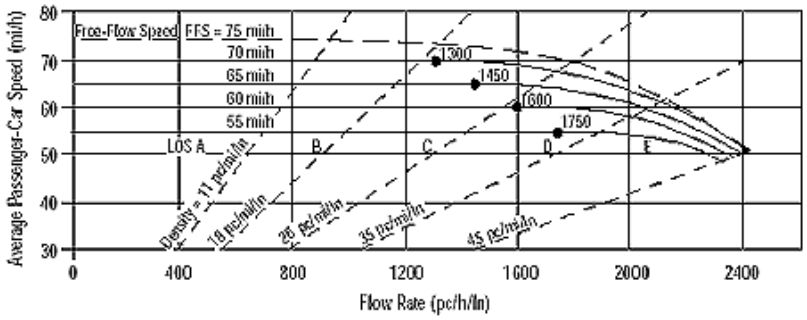
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Northbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*North of Harley Knox Bl.*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2018 NP*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*6148*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*18*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.917*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2428*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S		mi/h	S	mi/h
D = v_p / S		pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*F*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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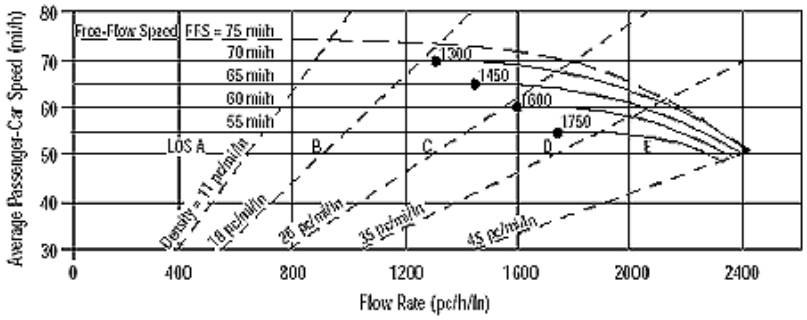
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Northbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of Harley Knox Bl.*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2018 NP*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5104*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*14*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.935*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1979*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*65.2*	mi/h	S		mi/h
D = v_p / S	*30.3*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*D*		Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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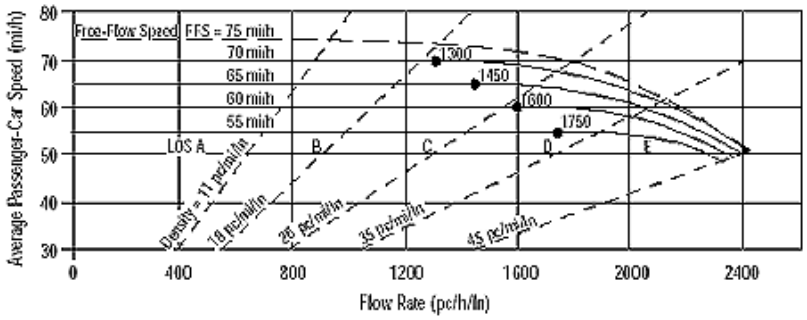
APPENDIX 6.8

Opening Year Cumulative (2018) With Project Conditions
Basic Freeway Segment HCS+ Analysis Worksheets

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*SR-60 Westbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*West of I-215 Freeway*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*2018 WP*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*7697*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*12*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.943*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2217*	pc/h/ln	Design LOS	
S	*59.6*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
D = v_p / S	*37.2*	pc/mi/ln	S	mi/h
LOS	*E*		D = v_p / S	pc/mi/ln
			Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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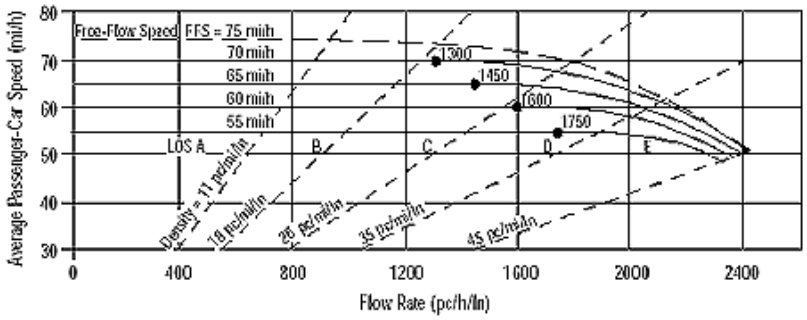
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*SR-60 Eastbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*West of I-215 Freeway*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*2018 WP*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4744*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*14*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.935*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*5*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
			Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1103*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*15.8*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*B*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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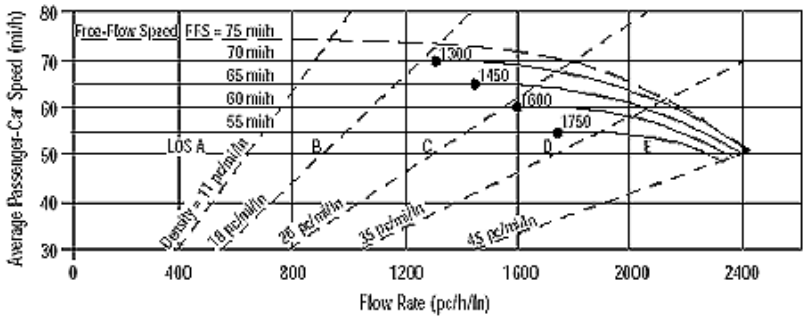
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Southbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of SR-60 Freeway*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*2018 WP*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*8643*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*19*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.913*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*5*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2057*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*63.7*	mi/h	S	mi/h
D = v_p / S	*32.3*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*D*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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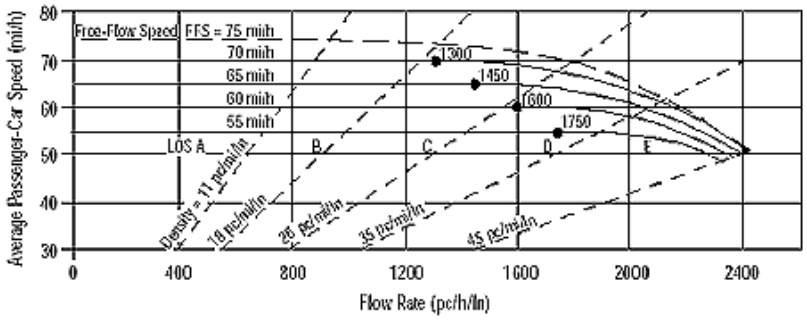

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Southbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*North of Harley Knox Bl.*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*2018 WP*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6887*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*18*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.5*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.917*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2720*	pc/h/ln	Design LOS		
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S		mi/h	S		mi/h
D = v_p / S		pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*F*		Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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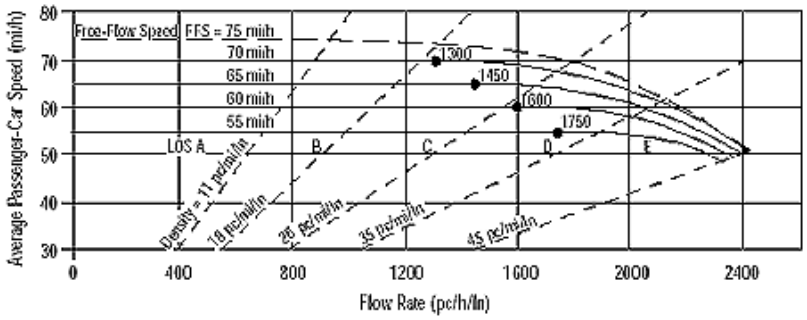

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Southbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of Harley Knox Bl.*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*2018 WP*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5949*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*12*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.943*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2285*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*57.5*	mi/h	S		mi/h
D = v_p / S	*39.7*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*E*		Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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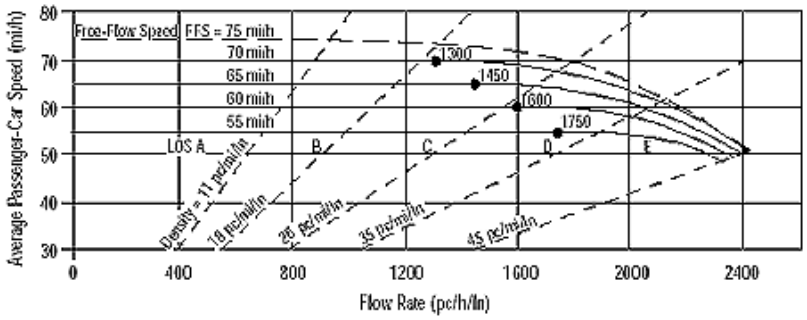

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Northbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of SR-60 Freeway*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*2018 WP*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*4739*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*18*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.917*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1872*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*67.0*	mi/h	S	mi/h
D = v_p / S	*28.0*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*D*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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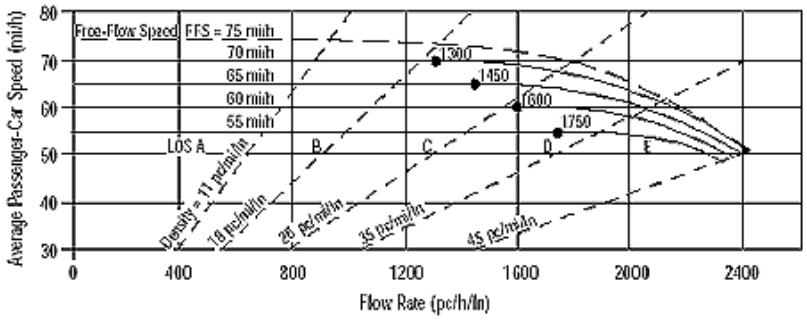

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Northbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*North of Harley Knox Bl.*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*2018 WP*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*4208*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*12*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.943*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1616*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.3*	mi/h	S	mi/h
D = v_p / S	*23.3*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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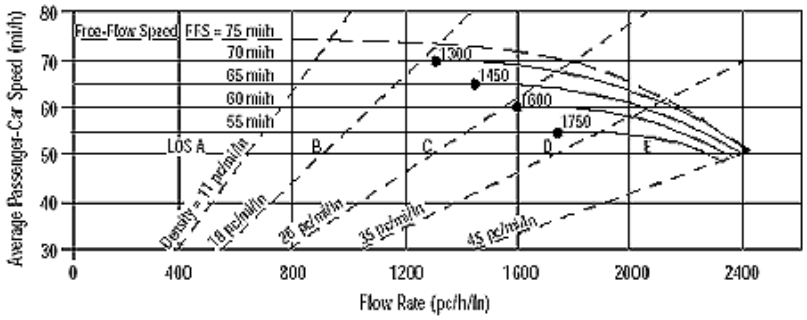

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Northbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of Harley Knox Bl.*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*2018 WP*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*3905*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*15*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.930*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1521*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.7*	mi/h	S	mi/h
D = v_p / S	*21.8*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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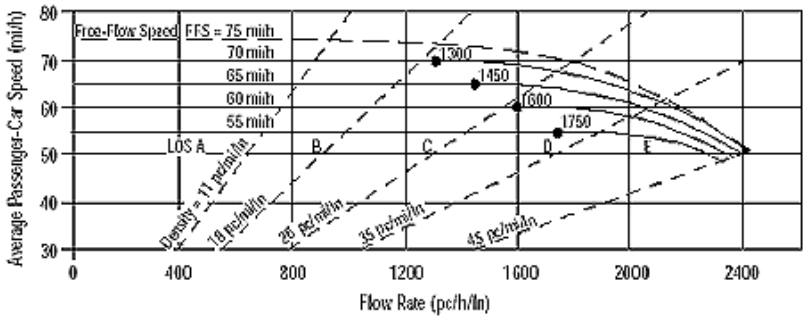

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*SR-60 Westbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*West of I-215 Freeway*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2018 WP*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*8196*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*15*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.930*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
			Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2394*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*53.6*	mi/h	S	mi/h
D = v_p / S	*44.7*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*E*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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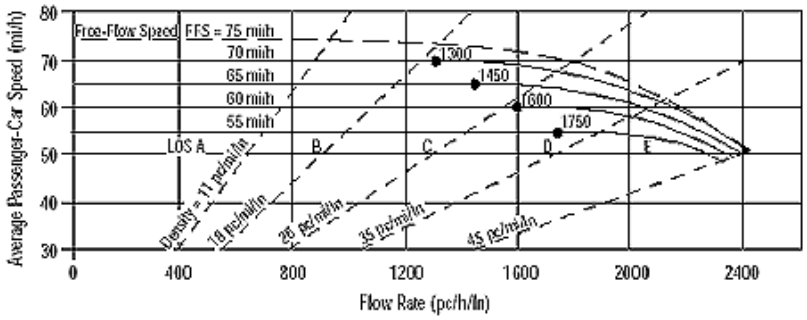
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*SR-60 Eastbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*West of I-215 Freeway*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2018 WP*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6984*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*12*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.943*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*5*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
			Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1609*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.4*	mi/h	S	mi/h
D = v_p / S	*23.2*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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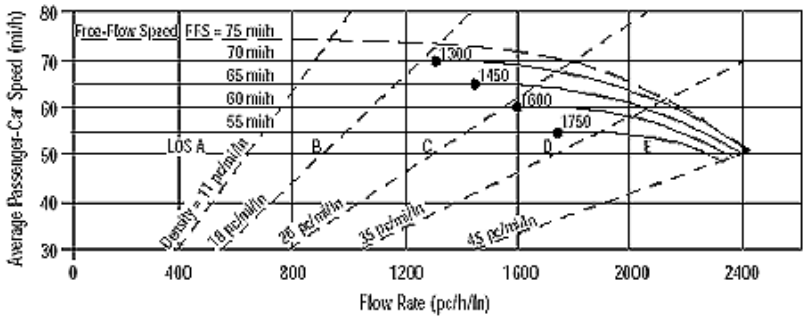

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*I-215 Southbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of SR-60 Freeway*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2018 WP*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*8188*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*16*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.926*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*5*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1922*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*66.2*	mi/h	S		mi/h
D = v_p / S	*29.0*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*D*		Required Number of Lanes, N		

Glossary / Factor Location

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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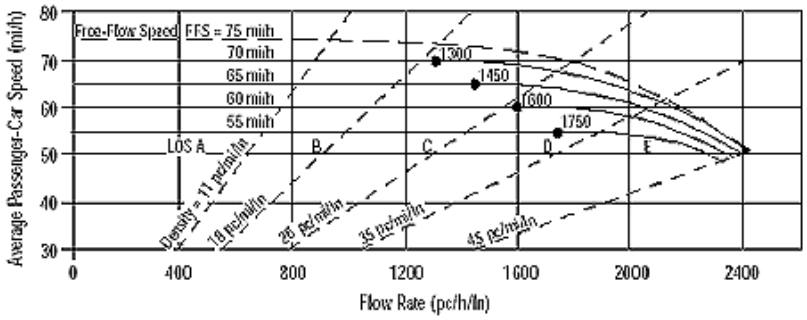

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Southbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*North of Harley Knox Bl.*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2018 WP*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6978*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*11*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.948*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2667*	pc/h/ln	Design LOS		
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S		mi/h	S		mi/h
D = v_p / S		pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*F*		Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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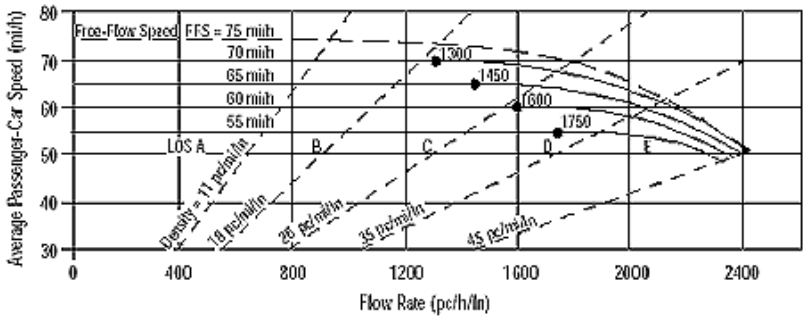

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Southbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of Harley Knox Bl.*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2018 WP*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6785*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*13*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.939*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2618*	pc/h/ln	Design LOS		
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S		mi/h	S		mi/h
D = v_p / S		pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*F*		Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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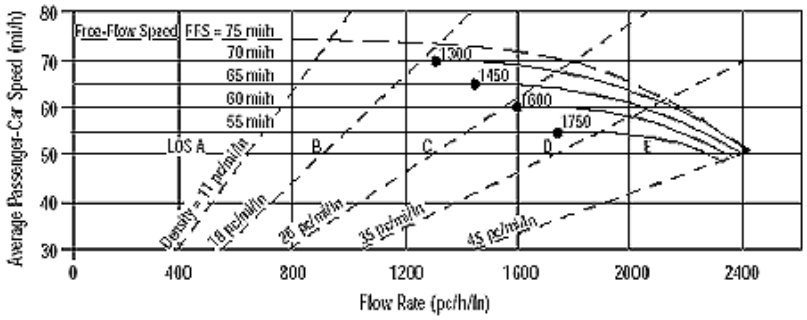

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Northbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of SR-60 Freeway*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2018 WP*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6042*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*22*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.901*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2430*	pc/h/ln	Design LOS		
S		mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
D = v_p / S		pc/mi/ln	S		mi/h
LOS	*F*		D = v_p / S		pc/mi/ln
			Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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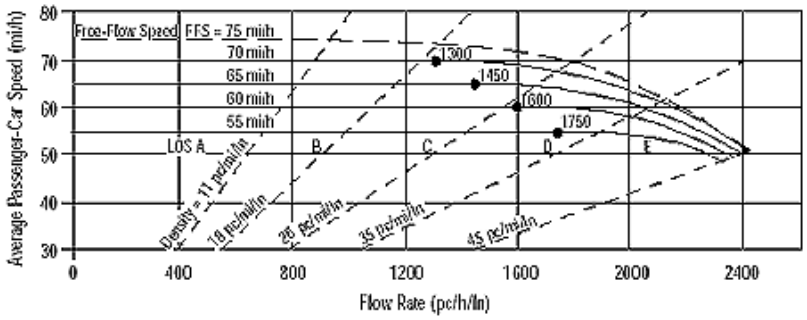

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Northbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*North of Harley Knox Bl.*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2018 WP*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*6209*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*19*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.913*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2463*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S		mi/h	S	mi/h
D = v_p / S		pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*F*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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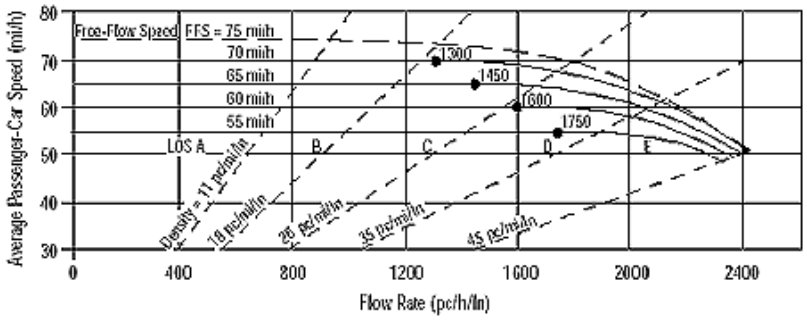
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Northbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of Harley Knox Bl.*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2018 WP*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*5108*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*14*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.935*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1980*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*65.2*	mi/h	S	mi/h
D = v_p / S	*30.4*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*D*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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APPENDIX 6.9

Opening Year Cumulative (2018) Without Project Conditions
Freeway Ramp Junction (Merge/Diverge) HCS+ Analysis Worksheets

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Southbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox Off-Ramp
Date Performed	10/10/2013	Jurisdiction	CALTRANS
Analysis Time Period	AM Peak Hour	Analysis Year	2018 NP

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☑ Yes ☑ On

☐ No ☐ Off

L_{down} = 1420 ft

V_D = 327 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	6810	0.92	Level	17	0	0.922	1.00	8031
Ramp	1197	0.92	Level	25	25	0.800	1.00	1626
UpStream								
DownStream	327	0.92	Level	25	25	0.800	1.00	444

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Determination

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.484 using Equation (Exhibit 25-12)

V_{12} = 4729 pc/h

V_3 or V_{av34} 3302 pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☑ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = 5331 pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	8031	Exhibit 25-14	7200	Yes
$V_{FO} = V_F - V_R$	6405	Exhibit 25-14	7200	No
V_R	1626	Exhibit 25-3	2100	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	4729	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 48.4 (pc/mi/ln)

LOS = F (Exhibit 25-4)

Speed Determination

D_s = 0.444 (Exhibit 25-19)

S_R= 57.6 mph (Exhibit 25-19)

S_0= 70.2 mph (Exhibit 25-19)

S = 61.3 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Southbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox On-Ramp
Date Performed	10/10/2013	Jurisdiction	CALTRANS
Analysis Time Period	AM Peak Hour	Analysis Year	2018 NP

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp

☑ Yes ☐ On

☐ No ☑ Off

L_{up} = 1420 ft

V_u = 1197 veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5613	0.92	Level	10	0	0.952	1.00	6406
Ramp	327	0.92	Level	25	25	0.800	1.00	444
UpStream	1197	0.92	Level	25	25	0.800	1.00	1626
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = 1531.85 (Equation 25-2 or 25-3)

P_{FM} = 0.578 using Equation (Exhibit 25-5)

V_{12} = 3700 pc/h

V_3 or V_{av34} 2706 pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☑ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = 3706 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6850	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	4150	Exhibit 25-7	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 36.0 (pc/mi/ln)

LOS = E (Exhibit 25-4)

Speed Determination

M_S = 0.545 (Exibit 25-19)

S_R= 54.7 mph (Exhibit 25-19)

S_0= 61.1 mph (Exhibit 25-19)

S = 57.1 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-12)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		
V_R		Exhibit 25-3		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Determination

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Northbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox On-Ramp
Date Performed	10/10/2013	Jurisdiction	CALTRANS
Analysis Time Period	AM Peak Hour	Analysis Year	2018 NP

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp

☑ Yes ☐ On

☐ No ☑ Off

L_{up} = 1393 ft

V_u = 561 veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3334	0.92	Level	7	0	0.966	1.00	3751
Ramp	851	0.92	Level	25	4	0.873	1.00	1059
UpStream	561	0.92	Level	25	25	0.800	1.00	762
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = 1113.94 (Equation 25-2 or 25-3)

P_{FM} = 0.586 using Equation (Exhibit 25-5)

V_{12} = 2198 pc/h

V_3 or V_{av34} 1553 pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4810	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3257	Exhibit 25-7	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 28.5 (pc/mi/ln)

LOS = D (Exhibit 25-4)

Speed Determination

M_S = 0.395 (Exibit 25-19)

S_R= 58.9 mph (Exhibit 25-19)

S_0= 66.2 mph (Exhibit 25-19)

S = 61.1 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-12)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		
V_R		Exhibit 25-3		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Determination

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Northbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox Off-Ramp
Date Performed	10/10/2013	Jurisdiction	CALTRANS
Analysis Time Period	AM Peak Hour	Analysis Year	2018 NP

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp
☑ Yes ☑ On
☐ No ☐ Off
L_{down} = 1393 ft
V_D = 851 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3896	0.92	Level	15	0	0.930	1.00	4552
Ramp	561	0.92	Level	25	25	0.800	1.00	762
UpStream								
DownStream	851	0.92	Level	25	4	0.873	1.00	1059

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = using Equation (Exhibit 25-5)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)
LOS = (Exhibit 25-4)

Speed Determination

M_S = (Exibit 25-19)
S_R= mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)
S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = 0.611 using Equation (Exhibit 25-12)
V_{12} = 3078 pc/h
V_3 or V_{av34} 1474 pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4552	Exhibit 25-14	7200	No
$V_{FO} = V_F - V_R$	3790	Exhibit 25-14	7200	No
V_R	762	Exhibit 25-3	2100	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3078	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 28.2 (pc/mi/ln)
LOS = D (Exhibit 25-4)

Speed Determination

D_s = 0.367 (Exhibit 25-19)
S_R= 59.7 mph (Exhibit 25-19)
S_0= 74.9 mph (Exhibit 25-19)
S = 63.9 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Southbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox Off-Ramp
Date Performed	10/10/2013	Jurisdiction	CALTRANS
Analysis Time Period	PM Peak Hour	Analysis Year	2018 NP

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp
- ☐ Yes ☐ On
- ☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp
- ☑ Yes ☑ On
- ☐ No ☐ Off

L_{down} = 1420 ft

V_D = 684 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	6940	0.92	Level	10	0	0.952	1.00	7921
Ramp	862	0.92	Level	25	9	0.855	1.00	1096
UpStream								
DownStream	684	0.92	Level	25	25	0.800	1.00	929

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Determination

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.512 using Equation (Exhibit 25-12)

V_{12} = 4587 pc/h

V_3 or V_{av34} 3334 pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☑ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = 5221 pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	7921	Exhibit 25-14	7200	Yes
$V_{FO} = V_F - V_R$	6825	Exhibit 25-14	7200	No
V_R	1096	Exhibit 25-3	2100	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	4587	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 47.4 (pc/mi/ln)

LOS = F (Exhibit 25-4)

Speed Determination

D_s = 0.397 (Exhibit 25-19)

S_R= 58.9 mph (Exhibit 25-19)

S_0= 70.2 mph (Exhibit 25-19)

S = 62.3 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Southbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox On-Ramp
Date Performed	10/10/2013	Jurisdiction	CALTRANS
Analysis Time Period	PM Peak Hour	Analysis Year	2018 NP

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp

☑ Yes ☐ On

☐ No ☑ Off

L_{up} = 1420 ft

V_u = 862 veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	6078	0.92	Level	7	0	0.966	1.00	6838
Ramp	684	0.92	Level	25	25	0.800	1.00	929
UpStream	862	0.92	Level	25	9	0.855	1.00	1096
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = 1728.09 (Equation 25-2 or 25-3)

P_{FM} = 0.565 using Equation (Exhibit 25-5)

V_{12} = 3865 pc/h

V_3 or V_{av34} 2973 pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☑ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 4138 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	7767	Exhibit 25-7		Yes

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	5067	Exhibit 25-7	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 43.0 (pc/mi/ln)

LOS = F (Exhibit 25-4)

Speed Determination

M_S = 0.917 (Exibit 25-19)

S_R= 44.3 mph (Exhibit 25-19)

S_0= 61.1 mph (Exhibit 25-19)

S = 49.0 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-12)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		
V_R		Exhibit 25-3		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Determination

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Northbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox On-Ramp
Date Performed	10/10/2013	Jurisdiction	CALTRANS
Analysis Time Period	PM Peak Hour	Analysis Year	2018 NP

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp

☑ Yes ☐ On

☐ No ☑ Off

L_{up} = 1393 ft

V_u = 307 veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4796	0.92	Level	12	0	0.943	1.00	5526
Ramp	1352	0.92	Level	25	16	0.830	1.00	1771
UpStream	307	0.92	Level	25	17	0.826	1.00	404
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = 1646.16 (Equation 25-2 or 25-3)

P_{FM} = 0.570 using Equation (Exhibit 25-5)

V_{12} = 3149 pc/h

V_3 or V_{av34} 2377 pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 3157 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	7297	Exhibit 25-7		Yes

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	4928	Exhibit 25-7	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 41.2 (pc/mi/ln)

LOS = F (Exhibit 25-4)

Speed Determination

M_S = 0.833 (Exibit 25-19)

S_R= 46.7 mph (Exhibit 25-19)

S_0= 63.1 mph (Exhibit 25-19)

S = 51.0 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-12)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		
V_R		Exhibit 25-3		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Determination

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Northbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox Off-Ramp
Date Performed	10/10/2013	Jurisdiction	CALTRANS
Analysis Time Period	PM Peak Hour	Analysis Year	2018 NP

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp
☑ Yes ☑ On
☐ No ☐ Off
L_{down} = 1393 ft
V_D = 1352 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5104	0.92	Level	14	0	0.935	1.00	5936
Ramp	307	0.92	Level	25	17	0.826	1.00	404
UpStream								
DownStream	1352	0.92	Level	25	16	0.830	1.00	1771

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = using Equation (Exhibit 25-5)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)
LOS = (Exhibit 25-4)

Speed Determination

M_S = (Exibit 25-19)
S_R= mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)
S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = 0.593 using Equation (Exhibit 25-12)
V_{12} = 3685 pc/h
V_3 or V_{av34} 2251 pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	5936	Exhibit 25-14	7200	No
$V_{FO} = V_F - V_R$	5532	Exhibit 25-14	7200	No
V_R	404	Exhibit 25-3	2100	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3685	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 33.4 (pc/mi/ln)
LOS = D (Exhibit 25-4)

Speed Determination

D_s = 0.334 (Exhibit 25-19)
S_R= 60.6 mph (Exhibit 25-19)
S_0= 71.9 mph (Exhibit 25-19)
S = 64.5 mph (Exhibit 25-15)

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APPENDIX 6.10

Opening Year Cumulative (2018) With Project Conditions
Freeway Ramp Junction (Merge/Diverge) HCS+ Analysis Worksheets

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Southbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox Off-Ramp
Date Performed	10/10/2013	Jurisdiction	CALTRANS
Analysis Time Period	AM Peak Hour	Analysis Year	2018 WP

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☑ Yes ☑ On

☐ No ☐ Off

L_{down} = 1420 ft

V_D = 336 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	6887	0.92	Level	18	0	0.917	1.00	8160
Ramp	1274	0.92	Level	25	25	0.800	1.00	1731
UpStream								
DownStream	336	0.92	Level	25	25	0.800	1.00	457

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Determination

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.476 using Equation (Exhibit 25-12)

V_{12} = 4794 pc/h

V_3 or V_{av34} 3366 pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☑ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = 5460 pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	8160	Exhibit 25-14	7200	Yes
$V_{FO} = V_F - V_R$	6429	Exhibit 25-14	7200	No
V_R	1731	Exhibit 25-3	2100	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	4794	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 49.5 (pc/mi/ln)

LOS = F (Exhibit 25-4)

Speed Determination

D_s = 0.454 (Exhibit 25-19)

S_R= 57.3 mph (Exhibit 25-19)

S_0= 70.2 mph (Exhibit 25-19)

S = 61.0 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Southbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox On-Ramp
Date Performed	10/10/2013	Jurisdiction	CALTRANS
Analysis Time Period	AM Peak Hour	Analysis Year	2018 WP

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp

☑ Yes ☐ On

☐ No ☑ Off

L_{up} = 1420 ft

V_u = 1274 veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5613	0.92	Level	10	0	0.952	1.00	6406
Ramp	336	0.92	Level	25	25	0.800	1.00	457
UpStream	1274	0.92	Level	25	25	0.800	1.00	1731
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = 1534.63 (Equation 25-2 or 25-3)

P_{FM} = 0.577 using Equation (Exhibit 25-5)

V_{12} = 3699 pc/h

V_3 or V_{av34} 2707 pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☑ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = 3706 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6863	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	4163	Exhibit 25-7	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 36.1 (pc/mi/ln)

LOS = E (Exhibit 25-4)

Speed Determination

M_S = 0.548 (Exibit 25-19)

S_R= 54.6 mph (Exhibit 25-19)

S_0= 61.1 mph (Exhibit 25-19)

S = 57.0 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-12)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		
V_R		Exhibit 25-3		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Determination

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Northbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox On-Ramp
Date Performed	10/10/2013	Jurisdiction	CALTRANS
Analysis Time Period	AM Peak Hour	Analysis Year	2018 WP

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp

☑ Yes ☐ On

☐ No ☑ Off

L_{up} = 1393 ft

V_u = 570 veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3334	0.92	Level	7	0	0.966	1.00	3751
Ramp	874	0.92	Level	25	6	0.866	1.00	1097
UpStream	570	0.92	Level	25	25	0.800	1.00	774
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = 1122.07 (Equation 25-2 or 25-3)

P_{FM} = 0.586 using Equation (Exhibit 25-5)

V_{12} = 2198 pc/h

V_3 or V_{av34} 1553 pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4848	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3295	Exhibit 25-7	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 28.8 (pc/mi/ln)

LOS = D (Exhibit 25-4)

Speed Determination

M_S = 0.399 (Exibit 25-19)

S_R= 58.8 mph (Exhibit 25-19)

S_0= 66.2 mph (Exhibit 25-19)

S = 61.0 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-12)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		
V_R		Exhibit 25-3		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Determination

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Northbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox Off-Ramp
Date Performed	10/10/2013	Jurisdiction	CALTRANS
Analysis Time Period	AM Peak Hour	Analysis Year	2018 WP

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp
☑ Yes ☑ On
☐ No ☐ Off
L_{down} = 1393 ft
V_D = 874 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3905	0.92	Level	15	0	0.930	1.00	4563
Ramp	570	0.92	Level	25	25	0.800	1.00	774
UpStream								
DownStream	874	0.92	Level	25	6	0.866	1.00	1097

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = using Equation (Exhibit 25-5)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)
LOS = (Exhibit 25-4)

Speed Determination

M_S = (Exibit 25-19)
S_R= mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)
S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = 0.610 using Equation (Exhibit 25-12)
V_{12} = 3087 pc/h
V_3 or V_{av34} 1476 pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4563	Exhibit 25-14	7200	No
$V_{FO} = V_F - V_R$	3789	Exhibit 25-14	7200	No
V_R	774	Exhibit 25-3	2100	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3087	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 28.3 (pc/mi/ln)
LOS = D (Exhibit 25-4)

Speed Determination

D_s = 0.368 (Exhibit 25-19)
S_R= 59.7 mph (Exhibit 25-19)
S_0= 74.9 mph (Exhibit 25-19)
S = 63.9 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Southbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox Off-Ramp
Date Performed	10/10/2013	Jurisdiction	CALTRANS
Analysis Time Period	PM Peak Hour	Analysis Year	2018 WP

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp
- ☐ Yes ☐ On
- ☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp
- ☑ Yes ☑ On
- ☐ No ☐ Off

L_{down} = 1420 ft

V_D = 708 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	6978	0.92	Level	11	0	0.948	1.00	8002
Ramp	900	0.92	Level	25	9	0.855	1.00	1145
UpStream								
DownStream	708	0.92	Level	25	25	0.800	1.00	962

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Determination

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.507 using Equation (Exhibit 25-12)

V_{12} = 4623 pc/h

V_3 or V_{av34} 3379 pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☑ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = 5302 pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	8002	Exhibit 25-14	7200	Yes
$V_{FO} = V_F - V_R$	6857	Exhibit 25-14	7200	No
V_R	1145	Exhibit 25-3	2100	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	4623	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 48.1 (pc/mi/ln)

LOS = F (Exhibit 25-4)

Speed Determination

D_s = 0.401 (Exhibit 25-19)

S_R= 58.8 mph (Exhibit 25-19)

S_0= 70.2 mph (Exhibit 25-19)

S = 62.2 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Southbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox On-Ramp
Date Performed	10/10/2013	Jurisdiction	CALTRANS
Analysis Time Period	PM Peak Hour	Analysis Year	2018 WP

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp

☑ Yes ☐ On

☐ No ☑ Off

L_{up} = 1420 ft

V_u = 900 veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	6078	0.92	Level	7	0	0.966	1.00	6838
Ramp	708	0.92	Level	25	25	0.800	1.00	962
UpStream	900	0.92	Level	25	9	0.855	1.00	1145
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = 1735.15 (Equation 25-2 or 25-3)

P_{FM} = 0.565 using Equation (Exhibit 25-5)

V_{12} = 3862 pc/h

V_3 or V_{av34} 2976 pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☑ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 4138 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	7800	Exhibit 25-7		Yes

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	5100	Exhibit 25-7	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 43.2 (pc/mi/ln)

LOS = F (Exhibit 25-4)

Speed Determination

M_S = 0.937 (Exibit 25-19)

S_R= 43.8 mph (Exhibit 25-19)

S_0= 61.1 mph (Exhibit 25-19)

S = 48.5 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-12)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		
V_R		Exhibit 25-3		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Determination

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Northbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox On-Ramp
Date Performed	10/10/2013	Jurisdiction	CALTRANS
Analysis Time Period	PM Peak Hour	Analysis Year	2018 WP

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp

☑ Yes ☐ On

☐ No ☑ Off

L_{up} = 1393 ft

V_u = 311 veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4796	0.92	Level	12	0	0.943	1.00	5526
Ramp	1413	0.92	Level	25	18	0.823	1.00	1866
UpStream	311	0.92	Level	25	16	0.830	1.00	407
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = 1666.49 (Equation 25-2 or 25-3)

P_{FM} = 0.569 using Equation (Exhibit 25-5)

V_{12} = 3142 pc/h

V_3 or V_{av34} 2384 pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 3157 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	7392	Exhibit 25-7		Yes

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	5023	Exhibit 25-7	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 41.9 (pc/mi/ln)

LOS = F (Exhibit 25-4)

Speed Determination

M_S = 0.886 (Exibit 25-19)

S_R= 45.2 mph (Exhibit 25-19)

S_0= 63.1 mph (Exhibit 25-19)

S = 49.7 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-12)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		
V_R		Exhibit 25-3		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Determination

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Northbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox Off-Ramp
Date Performed	10/10/2013	Jurisdiction	CALTRANS
Analysis Time Period	PM Peak Hour	Analysis Year	2018 WP

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☑ Yes ☑ On

☐ No ☐ Off

L_{down} = 1393 ft

V_D = 1413 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5108	0.92	Level	14	0	0.935	1.00	5941
Ramp	311	0.92	Level	25	16	0.830	1.00	407
UpStream								
DownStream	1413	0.92	Level	25	18	0.823	1.00	1866

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Determination

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.593 using Equation (Exhibit 25-12)

V_{12} = 3687 pc/h

V_3 or V_{av34} 2254 pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	5941	Exhibit 25-14	7200	No
$V_{FO} = V_F - V_R$	5534	Exhibit 25-14	7200	No
V_R	407	Exhibit 25-3	2100	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3687	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 33.4 (pc/mi/ln)

LOS = D (Exhibit 25-4)

Speed Determination

D_s = 0.335 (Exhibit 25-19)

S_R= 60.6 mph (Exhibit 25-19)

S_0= 71.9 mph (Exhibit 25-19)

S = 64.5 mph (Exhibit 25-15)

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APPENDIX 6.11

Opening Year Cumulative (2018) With Project Conditions
Intersection Operations Analysis Worksheets, with Improvements

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	441	56	289	295	0	0	0	0	1035	6	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	3.5	5.0					5.0	5.0	
Lane Util. Factor		0.95	1.00	0.97	0.95					0.97	1.00	
Frpb, ped/bikes		1.00	0.98	1.00	1.00					1.00	0.98	
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	
Frt		1.00	0.85	1.00	1.00					1.00	0.85	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		3610	1583	3502	3610					3502	1596	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (perm)		3610	1583	3502	3610					3502	1596	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	474	60	311	317	0	0	0	0	1113	6	280
RTOR Reduction (vph)	0	0	41	0	0	0	0	0	0	0	161	0
Lane Group Flow (vph)	0	474	19	311	317	0	0	0	0	1113	125	0
Confl. Peds. (#/hr)			5									5
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		2		1	6					4	4	
Permitted Phases			2									
Actuated Green, G (s)		35.7	35.7	14.1	53.3					46.7	46.7	
Effective Green, g (s)		35.7	35.7	14.1	53.3					46.7	46.7	
Actuated g/C Ratio		0.32	0.32	0.13	0.48					0.42	0.42	
Clearance Time (s)		5.0	5.0	3.5	5.0					5.0	5.0	
Vehicle Extension (s)		2.0	2.0	2.0	2.0					3.0	3.0	
Lane Grp Cap (vph)		1171	513	448	1749					1486	677	
v/s Ratio Prot		c0.13		c0.09	0.09					c0.32	0.08	
v/s Ratio Perm			0.01									
v/c Ratio		0.40	0.04	0.69	0.18					0.75	0.18	
Uniform Delay, d1		28.9	25.4	45.9	16.0					26.7	19.8	
Progression Factor		1.00	1.00	0.81	1.49					1.00	1.00	
Incremental Delay, d2		1.0	0.1	3.5	0.2					2.1	0.1	
Delay (s)		29.9	25.5	40.6	24.0					28.8	19.9	
Level of Service		C	C	D	C					C	B	
Approach Delay (s)		29.4			32.2			0.0			27.0	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	28.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	91.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	239	1238	0	0	462	490	122	5	493	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0			5.0	4.0		5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00		0.95	0.95			
Frpb, ped/bikes	1.00	1.00			1.00	0.99		0.99	0.98			
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		0.91	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.98	1.00			
Satd. Flow (prot)	1805	3610			3610	1593		1595	1509			
Flt Permitted	0.95	1.00			1.00	1.00		0.98	1.00			
Satd. Flow (perm)	1805	3610			3610	1593		1595	1509			
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	257	1331	0	0	497	527	131	5	530	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	32	37	0	0	0
Lane Group Flow (vph)	257	1331	0	0	497	527	0	311	287	0	0	0
Confl. Peds. (#/hr)						5			5			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA			NA	Free	Split	NA	Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						Free			8			
Actuated Green, G (s)	20.0	63.0			39.5	110.0		37.0	37.0			
Effective Green, g (s)	20.0	63.0			39.5	110.0		37.0	37.0			
Actuated g/C Ratio	0.18	0.57			0.36	1.00		0.34	0.34			
Clearance Time (s)	3.5	5.0			5.0			5.0	5.0			
Vehicle Extension (s)	2.0	2.0			2.0			3.0	3.0			
Lane Grp Cap (vph)	328	2067			1296	1593		536	507			
v/s Ratio Prot	c0.14	c0.37			0.14			c0.20				
v/s Ratio Perm						0.33			0.19			
v/c Ratio	0.78	0.64			0.38	0.33		0.58	0.57			
Uniform Delay, d1	42.9	15.9			26.2	0.0		30.1	29.9			
Progression Factor	1.32	0.41			1.00	1.00		1.00	1.00			
Incremental Delay, d2	9.2	1.3			0.9	0.6		4.5	4.5			
Delay (s)	65.9	7.9			27.1	0.6		34.6	34.4			
Level of Service	E	A			C	A		C	C			
Approach Delay (s)		17.3			13.4			34.5			0.0	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	91.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) With Project Conditions WITH IMPROVEMENTS
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Western Way / Harley Knox Boulevard

Cycle (sec): 120 Critical Vol./Cap.(X): 0.593
Loss Time (sec): 12 Average Delay (sec/veh): 28.2
Optimal Cycle: OPTIMIZED Level Of Service: C

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Split Phase						Split Phase						Protected						Permitted					
Rights:			Include						Include						Include						Include			
Min. Green:	0		0		0		21		21		21		10		10		0		0		18		18	
Y+R:	4.0		4.0		4.0		4.0		4.0		4.0		4.0		4.0		4.0		4.0		4.0		4.0	
Lanes:	0	0	0	0	0		0	0	1!	0	0		1	0	2	0	0		0	0	2	0	1	
Volume Module:																								
Base Vol:	0		0		0		10		0		35		78		1591		0		0		1071		31	
Growth Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Initial Bse:	0		0		0		10		0		35		78		1591		0		0		1071		31	
Added Vol:	0		0		0		0		0		0		0		85		0		0		32		0	
PasserByVol:	0		0		0		0		0		0		0		0		0		0		0		0	
Initial Fut:	0		0		0		10		0		35		78		1676		0		0		1103		31	
User Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
PHF Adj:	0.92		0.92		0.92		0.92		0.92		0.92		0.92		0.92		0.92		0.92		0.92		0.92	
PHF Volume:	0		0		0		11		0		38		85		1822		0		0		1199		34	
Reduct Vol:	0		0		0		0		0		0		0		0		0		0		0		0	
Reduced Vol:	0		0		0		11		0		38		85		1822		0		0		1199		34	
PCE Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
MLF Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
FinalVolume:	0		0		0		11		0		38		85		1822		0		0		1199		34	
Saturation Flow Module:																								
Sat/Lane:	1900		1900		1900		1900		1900		1900		1900		1900		1900		1900		1900		1900	
Adjustment:	1.00		1.00		1.00		0.89		1.00		0.89		0.95		0.95		1.00		1.00		0.95		0.85	
Lanes:	0.00		0.00		0.00		0.22		0.00		0.78		1.00		2.00		0.00		0.00		2.00		1.00	
Final Sat.:	0		0		0		374		0		1308		1805		3610		0		0		3610		1615	
Capacity Analysis Module:																								
Vol/Sat:	0.00		0.00		0.00		0.03		0.00		0.03		0.05		0.50		0.00		0.00		0.33		0.02	
Crit Moves:							****								****									
Green/Cycle:	0.00		0.00		0.00		0.17		0.00		0.17		0.38		0.73		0.00		0.00		0.35		0.35	
Volume/Cap:	0.00		0.00		0.00		0.17		0.00		0.17		0.12		0.70		0.00		0.00		0.96		0.06	
Delay/Veh:	0.0		0.0		0.0		42.3		0.0		42.3		24.3		10.0		0.0		0.0		55.7		26.3	
User DelAdj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
AdjDel/Veh:	0.0		0.0		0.0		42.3		0.0		42.3		24.3		10.0		0.0		0.0		55.7		26.3	
LOS by Move:	A		A		A		D		A		D		C		A		A		A		E		C	
HCM2kAvgQ:	0		0		0		2		0		2		2		19		0		0		25		1	

Note: Queue reported is the number of cars per lane.

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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) With Project Conditions WITH IMPROVEMENTS
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Patterson Avenue / Harley Knox Boulevard

Cycle (sec): 120 Critical Vol./Cap.(X): 0.711
Loss Time (sec): 12 Average Delay (sec/veh): 23.1
Optimal Cycle: OPTIMIZED Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	27	27	27	27	27	27	10	18	18	10	18	18
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1! 0	0	0 1	0 0	1	1 0	2 0	1	1 0	1 1	0
Volume Module:												
Base Vol:	158	3	14	1	3	13	11	1574	35	7	1075	4
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	158	3	14	1	3	13	11	1574	35	7	1075	4
Added Vol:	0	0	4	0	0	0	0	85	0	2	32	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	158	3	18	1	3	13	11	1659	35	9	1107	4
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	170	3	19	1	3	14	12	1788	38	10	1193	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	170	3	19	1	3	14	12	1788	38	10	1193	4
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	170	3	19	1	3	14	12	1788	38	10	1193	4
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.73	0.73	0.73	0.97	0.97	0.85	0.95	0.95	0.85	0.95	0.95	0.95
Lanes:	0.88	0.02	0.10	0.25	0.75	1.00	1.00	2.00	1.00	1.00	1.99	0.01
Final Sat.:	1219	23	139	459	1378	1615	1805	3610	1615	1805	3593	13
Capacity Analysis Module:												
Vol/Sat:	0.14	0.14	0.14	0.00	0.00	0.01	0.01	0.50	0.02	0.01	0.33	0.33
Crit Moves:		****						****		****		
Green/Cycle:	0.23	0.23	0.23	0.23	0.23	0.23	0.14	0.59	0.59	0.08	0.54	0.54
Volume/Cap:	0.62	0.62	0.62	0.01	0.01	0.04	0.05	0.84	0.04	0.06	0.62	0.62
Delay/Veh:	45.7	45.7	45.7	36.1	36.1	36.4	45.2	22.9	10.3	50.9	19.6	19.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.7	45.7	45.7	36.1	36.1	36.4	45.2	22.9	10.3	50.9	19.6	19.6
LOS by Move:	D	D	D	D	D	D	D	C	B	D	B	B
HCM2kAvgQ:	7	7	7	0	0	0	0	28	1	0	16	16

Note: Queue reported is the number of cars per lane.

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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) With Project Conditions WITH IMPROVEMENTS
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Webster Avenue / Harley Knox Boulevard

Cycle (sec):	120	Critical Vol./Cap.(X):	0.387
Loss Time (sec):	12	Average Delay (sec/veh):	10.4
Optimal Cycle: OPTIMIZED		Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Permitted				Permitted				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	21	21	21		21	21	21		10	18	18		10	18	18	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	0	0	1!	0	0	0	0	0	1	0	1	0	1	0	1	0
Volume Module:																
Base Vol:	32	0	9		0	1	1		0	892	54		6	487	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	32	0	9		0	1	1		0	892	54		6	487	0	
Added Vol:	0	0	0		0	0	0		0	90	0		0	33	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	32	0	9		0	1	1		0	982	54		6	520	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	35	0	10		0	1	1		0	1067	59		7	565	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	35	0	10		0	1	1		0	1067	59		7	565	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	35	0	10		0	1	1		0	1067	59		7	565	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.78	1.00	0.78		1.00	0.93	0.93		1.00	0.94	0.94		0.95	0.95	0.95	
Lanes:	0.78	0.00	0.22		0.00	0.50	0.50		1.00	1.90	0.10		1.00	2.00	0.00	
Final Sat.:	1162	0	327		0	886	886		1900	3394	187		1805	3610	0	
Capacity Analysis Module:																
Vol/Sat:	0.03	0.00	0.03		0.00	0.00	0.00		0.00	0.31	0.31		0.00	0.16	0.00	
Crit Moves:	****									****			****			
Green/Cycle:	0.17	0.00	0.17		0.00	0.17	0.17		0.00	0.64	0.64		0.08	0.73	0.00	
Volume/Cap:	0.17	0.00	0.17		0.00	0.01	0.01		0.00	0.49	0.49		0.04	0.22	0.00	
Delay/Veh:	42.4	0.0	42.4		0.0	40.9	40.9		0.0	11.4	11.4		50.7	5.4	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	42.4	0.0	42.4		0.0	40.9	40.9		0.0	11.4	11.4		50.7	5.4	0.0	
LOS by Move:	D	A	D		A	D	D		A	B	B		D	A	A	
HCM2kAvgQ:	1	0	1		0	0	0		0	11	11		0	3	0	

Note: Queue reported is the number of cars per lane.

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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) With Project Conditions WITH IMPROVEMENTS
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Indian Street / Grove View Road

Cycle (sec):	120	Critical Vol./Cap.(X):	0.457
Loss Time (sec):	12	Average Delay (sec/veh):	13.7
Optimal Cycle: OPTIMIZED		Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	25	25	10	10	0	0	0	0	25	0	25
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1 1	0	1 0	2 0	0	0 0	0 0	0	1 0	0 0	1
Volume Module:												
Base Vol:	0	1080	30	2	541	0	0	0	0	72	0	4
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1080	30	2	541	0	0	0	0	72	0	4
Added Vol:	0	103	0	3	38	0	0	0	0	0	0	9
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1183	30	5	579	0	0	0	0	72	0	13
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	1282	33	5	627	0	0	0	0	78	0	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1282	33	5	627	0	0	0	0	78	0	14
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1282	33	5	627	0	0	0	0	78	0	14
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.85
Lanes:	0.00	1.95	0.05	1.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	3507	89	1805	3610	0	0	0	0	1805	0	1615
Capacity Analysis Module:												
Vol/Sat:	0.00	0.37	0.37	0.00	0.17	0.00	0.00	0.00	0.00	0.04	0.00	0.01
Crit Moves:		****		****						****		
Green/Cycle:	0.00	0.61	0.61	0.08	0.69	0.00	0.00	0.00	0.00	0.21	0.00	0.21
Volume/Cap:	0.00	0.60	0.60	0.04	0.25	0.00	0.00	0.00	0.00	0.21	0.00	0.04
Delay/Veh:	0.0	15.0	15.0	50.7	7.0	0.0	0.0	0.0	0.0	39.6	0.0	38.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	15.0	15.0	50.7	7.0	0.0	0.0	0.0	0.0	39.6	0.0	38.0
LOS by Move:	A	B	B	D	A	A	A	A	A	D	A	D
HCM2kAvgQ:	0	16	16	0	4	0	0	0	0	2	0	0

Note: Queue reported is the number of cars per lane.

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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) With Project Conditions WITH IMPROVEMENTS
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 Indian Street / Harley Knox Boulevard

Cycle (sec): 120 Critical Vol./Cap.(X): 0.572
Loss Time (sec): 16 Average Delay (sec/veh): 38.5
Optimal Cycle: OPTIMIZED Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	10	30	30	10	30	30	10	25	25	10	25	25
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	1 0	2 0	1	2 0	2 0	1	2 0	1 1	0
Volume Module:												
Base Vol:	118	114	22	16	66	320	874	511	240	19	408	42
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	118	114	22	16	66	320	874	511	240	19	408	42
Added Vol:	0	9	0	2	3	33	90	0	0	0	0	4
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	118	123	22	18	69	353	964	511	240	19	408	46
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	128	134	24	20	75	384	1048	555	261	21	443	50
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	128	134	24	20	75	384	1048	555	261	21	443	50
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	128	134	24	20	75	384	1048	555	261	21	443	50
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.85	0.95	0.95	0.85	0.92	0.95	0.85	0.92	0.94	0.94
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	1.80	0.20
Final Sat.:	3502	3610	1615	1805	3610	1615	3502	3610	1615	3502	3196	360
Capacity Analysis Module:												
Vol/Sat:	0.04	0.04	0.01	0.01	0.02	0.24	0.30	0.15	0.16	0.01	0.14	0.14
Crit Moves:	****				****		****				****	
Green/Cycle:	0.08	0.25	0.25	0.08	0.25	0.58	0.33	0.38	0.38	0.15	0.21	0.21
Volume/Cap:	0.44	0.15	0.06	0.13	0.08	0.41	0.92	0.40	0.42	0.04	0.67	0.67
Delay/Veh:	53.4	35.1	34.3	51.4	34.5	14.5	51.0	27.4	27.9	43.4	46.0	46.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.4	35.1	34.3	51.4	34.5	14.5	51.0	27.4	27.9	43.4	46.0	46.0
LOS by Move:	D	D	C	D	C	B	D	C	C	D	D	D
HCM2kAvgQ:	3	2	1	1	1	8	21	8	7	0	10	10

Note: Queue reported is the number of cars per lane.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	423	109	572	155	0	0	0	0	658	7	335
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	3.5	5.0					5.0	5.0	
Lane Util. Factor		0.95	1.00	0.97	0.95					0.97	1.00	
Frpb, ped/bikes		1.00	0.98	1.00	1.00					1.00	0.98	
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	
Frt		1.00	0.85	1.00	1.00					1.00	0.85	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		3610	1585	3502	3610					3502	1594	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (perm)		3610	1585	3502	3610					3502	1594	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	460	118	622	168	0	0	0	0	715	8	364
RTOR Reduction (vph)	0	0	87	0	0	0	0	0	0	0	265	0
Lane Group Flow (vph)	0	460	31	622	168	0	0	0	0	715	107	0
Confl. Peds. (#/hr)			5									5
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		2		1	6					4	4	
Permitted Phases			2									
Actuated Green, G (s)		23.4	23.4	28.5	55.4					24.6	24.6	
Effective Green, g (s)		23.4	23.4	28.5	55.4					24.6	24.6	
Actuated g/C Ratio		0.26	0.26	0.32	0.62					0.27	0.27	
Clearance Time (s)		5.0	5.0	3.5	5.0					5.0	5.0	
Vehicle Extension (s)		2.0	2.0	2.0	2.0					3.0	3.0	
Lane Grp Cap (vph)		938	412	1108	2222					957	435	
v/s Ratio Prot		c0.13		c0.18	0.05					c0.20	0.07	
v/s Ratio Perm			0.02									
v/c Ratio		0.49	0.07	0.56	0.08					0.75	0.25	
Uniform Delay, d1		28.2	25.1	25.6	7.0					29.9	25.5	
Progression Factor		1.00	1.00	0.33	0.18					1.00	1.00	
Incremental Delay, d2		1.8	0.4	0.3	0.1					3.2	0.3	
Delay (s)		30.1	25.5	8.9	1.3					33.1	25.8	
Level of Service		C	C	A	A					C	C	
Approach Delay (s)		29.1			7.3			0.0			30.6	
Approach LOS		C			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	350	769	0	0	704	1008	47	4	246	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0			5.0	4.0		5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00		0.95	0.95			
Frpb, ped/bikes	1.00	1.00			1.00	0.99		0.99	0.98			
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		0.90	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.98	1.00			
Satd. Flow (prot)	1805	3610			3610	1593		1578	1502			
Flt Permitted	0.95	1.00			1.00	1.00		0.98	1.00			
Satd. Flow (perm)	1805	3610			3610	1593		1578	1502			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	368	809	0	0	741	1061	49	4	259	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	80	128	0	0	0
Lane Group Flow (vph)	368	809	0	0	741	1061	0	79	26	0	0	0
Confl. Peds. (#/hr)						5			5			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA			NA	Free	Split	NA	Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						Free			8			
Actuated Green, G (s)	22.6	65.0			38.9	90.0		15.0	15.0			
Effective Green, g (s)	22.6	65.0			38.9	90.0		15.0	15.0			
Actuated g/C Ratio	0.25	0.72			0.43	1.00		0.17	0.17			
Clearance Time (s)	3.5	5.0			5.0			5.0	5.0			
Vehicle Extension (s)	2.0	2.0			2.0			3.0	3.0			
Lane Grp Cap (vph)	453	2607			1560	1593		263	250			
v/s Ratio Prot	c0.20	0.22			0.21			0.05				
v/s Ratio Perm						c0.67			0.02			
v/c Ratio	0.81	0.31			0.47	0.67		0.30	0.10			
Uniform Delay, d1	31.7	4.5			18.3	0.0		32.9	31.8			
Progression Factor	0.76	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	8.2	0.2			1.0	2.2		2.9	0.8			
Delay (s)	32.4	4.7			19.3	2.2		35.8	32.6			
Level of Service	C	A			B	A		D	C			
Approach Delay (s)		13.4			9.2			34.2			0.0	
Approach LOS		B			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	13.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) With Project Conditions WITH IMPROVEMENTS
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Western Way / Harley Knox Boulevard

Cycle (sec): 120 Critical Vol./Cap.(X): 0.633
Loss Time (sec): 12 Average Delay (sec/veh): 14.4
Optimal Cycle: OPTIMIZED Level Of Service: B

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Split Phase						Split Phase						Protected						Permitted					
Rights:			Include						Include						Include						Include			
Min. Green:	0		0		0		21		21		21		10		10		0		0		18		18	
Y+R:	4.0		4.0		4.0		4.0		4.0		4.0		4.0		4.0		4.0		4.0		4.0		4.0	
Lanes:	0	0	0	0	0		0	0	1!	0	0		1	0	2	0	0		0	0	2	0	1	
Volume Module:																								
Base Vol:	0		0		0		12		0		58		39		1075		0		0		1618		7	
Growth Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Initial Bse:	0		0		0		12		0		58		39		1075		0		0		1618		7	
Added Vol:	0		0		0		0		0		0		0		42		0		0		85		0	
PasserByVol:	0		0		0		0		0		0		0		0		0		0		0		0	
Initial Fut:	0		0		0		12		0		58		39		1117		0		0		1703		7	
User Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
PHF Adj:	0.94		0.94		0.94		0.94		0.94		0.94		0.94		0.94		0.94		0.94		0.94		0.94	
PHF Volume:	0		0		0		13		0		62		42		1190		0		0		1814		7	
Reduct Vol:	0		0		0		0		0		0		0		0		0		0		0		0	
Reduced Vol:	0		0		0		13		0		62		42		1190		0		0		1814		7	
PCE Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
MLF Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
FinalVolume:	0		0		0		13		0		62		42		1190		0		0		1814		7	
Saturation Flow Module:																								
Sat/Lane:	1900		1900		1900		1900		1900		1900		1900		1900		1900		1900		1900		1900	
Adjustment:	1.00		1.00		1.00		0.88		1.00		0.88		0.95		0.95		1.00		1.00		0.95		0.85	
Lanes:	0.00		0.00		0.00		0.17		0.00		0.83		1.00		2.00		0.00		0.00		2.00		1.00	
Final Sat.:	0		0		0		287		0		1387		1805		3610		0		0		3610		1615	
Capacity Analysis Module:																								
Vol/Sat:	0.00		0.00		0.00		0.04		0.00		0.04		0.02		0.33		0.00		0.00		0.50		0.00	
Crit Moves:							****						****								****			
Green/Cycle:	0.00		0.00		0.00		0.17		0.00		0.17		0.08		0.73		0.00		0.00		0.64		0.64	
Volume/Cap:	0.00		0.00		0.00		0.25		0.00		0.25		0.28		0.45		0.00		0.00		0.78		0.01	
Delay/Veh:	0.0		0.0		0.0		43.2		0.0		43.2		52.6		6.9		0.0		0.0		17.3		7.7	
User DelAdj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
AdjDel/Veh:	0.0		0.0		0.0		43.2		0.0		43.2		52.6		6.9		0.0		0.0		17.3		7.7	
LOS by Move:	A		A		A		D		A		D		D		A		A		A		B		A	
HCM2kAvgQ:	0		0		0		2		0		2		1		9		0		0		24		0	

Note: Queue reported is the number of cars per lane.

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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) With Project Conditions WITH IMPROVEMENTS
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Patterson Avenue / Harley Knox Boulevard

Cycle (sec):	120	Critical Vol./Cap.(X):	0.636
Loss Time (sec):	12	Average Delay (sec/veh):	22.7
Optimal Cycle: OPTIMIZED		Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Permitted				Permitted				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	27	27	27		27	27	27		10	18	18		10	18	18	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	0	0	1!	0	0	0	1	0	0	1	1	0	2	0	1	1	0	1	1	0
Volume Module:																				
Base Vol:	72	2	8		5	4	7		6	1035	56		9	1589	1	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	72	2	8		5	4	7		6	1035	56		9	1589	1	
Added Vol:	0	0	2		0	0	0		0	42	0		4	85	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	72	2	10		5	4	7		6	1077	56		13	1674	1	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	78	2	11		5	4	8		7	1171	61		14	1820	1	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	78	2	11		5	4	8		7	1171	61		14	1820	1	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	78	2	11		5	4	8		7	1171	61		14	1820	1	
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.74	0.74	0.74		0.91	0.91	0.85		0.95	0.95	0.85		0.95	0.95	0.95	
Lanes:	0.86	0.02	0.12		0.56	0.44	1.00		1.00	2.00	1.00		1.00	1.99	0.01	
Final Sat.:	1207	34	168		964	771	1615		1805	3610	1615		1805	3608	2	
Capacity Analysis Module:																				
Vol/Sat:	0.06	0.06	0.06		0.01	0.01	0.00		0.00	0.32	0.04		0.01	0.50	0.50	
Crit Moves:		****							****					****		
Green/Cycle:	0.23	0.23	0.23		0.23	0.23	0.23		0.08	0.54	0.54		0.14	0.59	0.59	
Volume/Cap:	0.29	0.29	0.29		0.03	0.03	0.02		0.04	0.60	0.07		0.06	0.85	0.85	
Delay/Veh:	39.0	39.0	39.0		36.3	36.3	36.2		50.7	19.6	13.4		45.0	23.7	23.7	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	39.0	39.0	39.0		36.3	36.3	36.2		50.7	19.6	13.4		45.0	23.7	23.7	
LOS by Move:	D	D	D		D	D	D		D	B	B		D	C	C	
HCM2kAvgQ:	3	3	3		0	0	0		0	15	1		0	30	30	

Note: Queue reported is the number of cars per lane.

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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) With Project Conditions WITH IMPROVEMENTS
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Webster Avenue / Harley Knox Boulevard

Cycle (sec):	120	Critical Vol./Cap.(X):	0.419
Loss Time (sec):	12	Average Delay (sec/veh):	15.6
Optimal Cycle:	OPTIMIZED	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	21	21	21	21	21	21	10	18	18	10	18	18
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1! 0	0	0 0	1 0	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	65	0	14	0	1	0	1	564	32	17	958	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	65	0	14	0	1	0	1	564	32	17	958	0
Added Vol:	0	0	0	0	0	0	0	44	0	0	90	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	65	0	14	0	1	0	1	608	32	17	1048	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	71	0	15	0	1	0	1	661	35	18	1139	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	71	0	15	0	1	0	1	661	35	18	1139	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	71	0	15	0	1	0	1	661	35	18	1139	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.74	1.00	0.74	1.00	1.00	1.00	0.95	0.94	0.94	0.95	0.95	0.95
Lanes:	0.82	0.00	0.18	0.00	1.00	0.00	1.00	1.90	0.10	1.00	2.00	0.00
Final Sat.:	1161	0	250	0	1900	0	1805	3405	179	1805	3610	0
Capacity Analysis Module:												
Vol/Sat:	0.06	0.00	0.06	0.00	0.00	0.00	0.00	0.19	0.19	0.01	0.32	0.00
Crit Moves:	****						****				****	
Green/Cycle:	0.17	0.00	0.17	0.00	0.17	0.00	0.08	0.51	0.51	0.22	0.64	0.00
Volume/Cap:	0.35	0.00	0.35	0.00	0.00	0.00	0.01	0.38	0.38	0.05	0.49	0.00
Delay/Veh:	44.3	0.0	44.3	0.0	40.9	0.0	50.5	18.2	18.2	37.1	11.4	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.3	0.0	44.3	0.0	40.9	0.0	50.5	18.2	18.2	37.1	11.4	0.0
LOS by Move:	D	A	D	A	D	A	D	B	B	D	B	A
HCM2kAvgQ:	3	0	3	0	0	0	0	8	8	0	11	0

Note: Queue reported is the number of cars per lane.

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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) With Project Conditions WITH IMPROVEMENTS
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Indian Street / Grove View Road

Cycle (sec): 80 Critical Vol./Cap.(X): 0.347
Loss Time (sec): 12 Average Delay (sec/veh): 17.5
Optimal Cycle: OPTIMIZED Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Control:	Permitted				Protected				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	0	25	25		10	10	0		0	0	0		25	0	25	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	0	0	1	1	0	1	0	2	0	0	0	0	0	1	0	0	0	1
Volume Module:																
Base Vol:	0	646	50		5	1277	0		0	0	0		99	0	7	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	646	50		5	1277	0		0	0	0		99	0	7	
Added Vol:	0	51	0		9	103	0		0	0	0		0	0	4	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	697	50		14	1380	0		0	0	0		99	0	11	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	0	758	54		15	1500	0		0	0	0		108	0	12	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	758	54		15	1500	0		0	0	0		108	0	12	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	0	758	54		15	1500	0		0	0	0		108	0	12	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.94	0.94		0.95	0.95	1.00		1.00	1.00	1.00		0.95	1.00	0.85	
Lanes:	0.00	1.87	0.13		1.00	2.00	0.00		0.00	0.00	0.00		1.00	0.00	1.00	
Final Sat.:	0	3335	239		1805	3610	0		0	0	0		1805	0	1615	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.23	0.23		0.01	0.42	0.00		0.00	0.00	0.00		0.06	0.00	0.01	
Crit Moves:		****			****								****			
Green/Cycle:	0.00	0.41	0.41		0.13	0.54	0.00		0.00	0.00	0.00		0.31	0.00	0.31	
Volume/Cap:	0.00	0.55	0.55		0.07	0.77	0.00		0.00	0.00	0.00		0.19	0.00	0.02	
Delay/Veh:	0.0	18.3	18.3		31.0	16.6	0.0		0.0	0.0	0.0		20.3	0.0	19.1	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	18.3	18.3		31.0	16.6	0.0		0.0	0.0	0.0		20.3	0.0	19.1	
LOS by Move:	A	B	B		C	B	A		A	A	A		C	A	B	
HCM2kAvgQ:	0	8	8		0	15	0		0	0	0		2	0	0	

Note: Queue reported is the number of cars per lane.

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First Nandina Logistics Center Traffic Impact Analysis (JN 08578)
Opening Year (2018) With Project Conditions WITH IMPROVEMENTS
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 Indian Street / Harley Knox Boulevard

Cycle (sec): 120 Critical Vol./Cap.(X): 0.917
Loss Time (sec): 16 Average Delay (sec/veh): 50.8
Optimal Cycle: OPTIMIZED Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	10	30	30	10	30	30	10	25	25	10	25	25
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	1 0	2 0	1	2 0	2 0	1	2 0	1 1	0
Volume Module:												
Base Vol:	269	102	11	71	312	728	385	480	140	18	529	18
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	269	102	11	71	312	728	385	480	140	18	529	18
Added Vol:	0	4	0	4	9	90	44	0	0	0	0	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	269	106	11	75	321	818	429	480	140	18	529	20
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	290	114	12	81	347	883	463	518	151	19	571	22
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	290	114	12	81	347	883	463	518	151	19	571	22
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	290	114	12	81	347	883	463	518	151	19	571	22
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.85	0.95	0.95	0.85	0.92	0.95	0.85	0.92	0.95	0.95
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	1.93	0.07
Final Sat.:	3502	3610	1615	1805	3610	1615	3502	3610	1615	3502	3461	131
Capacity Analysis Module:												
Vol/Sat:	0.08	0.03	0.01	0.04	0.10	0.55	0.13	0.14	0.09	0.01	0.17	0.17
Crit Moves:	****					****	****				****	
Green/Cycle:	0.09	0.39	0.39	0.13	0.43	0.57	0.14	0.25	0.25	0.10	0.21	0.21
Volume/Cap:	0.96	0.08	0.02	0.35	0.22	0.96	0.96	0.58	0.38	0.06	0.79	0.79
Delay/Veh:	94.6	23.1	22.5	48.4	21.4	44.2	81.4	40.6	38.1	49.0	50.8	50.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	94.6	23.1	22.5	48.4	21.4	44.2	81.4	40.6	38.1	49.0	50.8	50.8
LOS by Move:	F	C	C	D	C	D	F	D	D	D	D	D
HCM2kAvgQ:	9	1	0	3	4	33	10	9	4	0	13	13

Note: Queue reported is the number of cars per lane.

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APPENDIX 6.12

Opening Year Cumulative (2018) With Project Conditions
Ramp Queuing Analysis Worksheets, with Improvements

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT
Lane Group Flow (vph)	474	60	311	317	1113	286
v/c Ratio	0.40	0.11	0.70	0.18	0.75	0.34
Control Delay	32.5	9.5	44.8	26.2	29.7	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.5	9.5	44.8	26.2	29.7	3.2
Queue Length 50th (ft)	137	0	113	103	331	2
Queue Length 95th (ft)	218	35	156	150	350	44
Internal Link Dist (ft)	836			256		1109
Turn Bay Length (ft)			80			
Base Capacity (vph)	1171	554	565	1748	1846	974
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	23	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.11	0.55	0.18	0.60	0.29

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	257	1331	497	527	343	323
v/c Ratio	0.79	0.64	0.38	0.33	0.60	0.59
Control Delay	70.5	8.0	28.3	0.6	31.2	30.1
Queue Delay	0.3	0.4	0.0	0.0	0.0	0.0
Total Delay	70.8	8.4	28.3	0.6	31.2	30.1
Queue Length 50th (ft)	193	162	135	0	182	164
Queue Length 95th (ft)	247	224	201	0	285	266
Internal Link Dist (ft)		256	594		929	
Turn Bay Length (ft)	60					200
Base Capacity (vph)	451	2067	1297	1593	568	544
Starvation Cap Reductn	25	275	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.74	0.38	0.33	0.60	0.59

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT
Lane Group Flow (vph)	460	118	622	168	715	372
v/c Ratio	0.49	0.24	0.56	0.08	0.75	0.53
Control Delay	31.1	7.0	10.5	1.4	35.0	6.1
Queue Delay	0.0	0.0	0.2	0.0	0.1	0.0
Total Delay	31.1	7.0	10.6	1.4	35.1	6.1
Queue Length 50th (ft)	120	0	152	2	185	3
Queue Length 95th (ft)	170	42	13	5	244	67
Internal Link Dist (ft)	836			256		1109
Turn Bay Length (ft)			80			
Base Capacity (vph)	939	499	1108	2222	1050	733
Starvation Cap Reductn	0	0	74	0	0	0
Spillback Cap Reductn	0	0	0	0	27	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.24	0.60	0.08	0.70	0.51

Intersection Summary

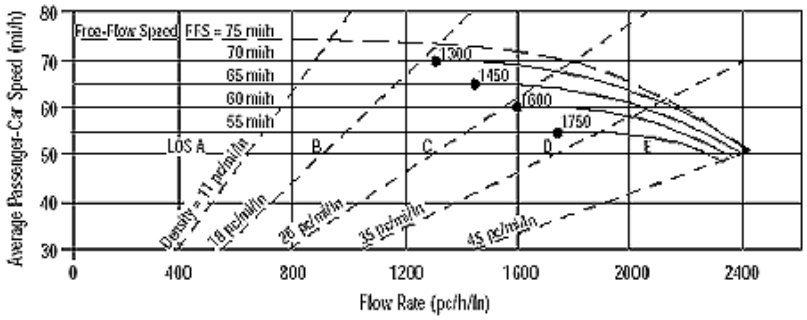
Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	368	809	741	1061	159	153
v/c Ratio	0.81	0.31	0.48	0.67	0.46	0.41
Control Delay	35.6	4.8	20.6	2.2	19.6	9.4
Queue Delay	0.6	0.5	0.0	0.0	0.0	0.0
Total Delay	36.1	5.3	20.6	2.2	19.6	9.4
Queue Length 50th (ft)	203	130	154	0	32	0
Queue Length 95th (ft)	248	112	235	0	94	54
Internal Link Dist (ft)		256	594		929	
Turn Bay Length (ft)	60					200
Base Capacity (vph)	591	2607	1559	1593	343	377
Starvation Cap Reductn	48	1232	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.59	0.48	0.67	0.46	0.41

Intersection Summary

APPENDIX 6.13

Opening Year Cumulative (2018) With Project Conditions
Basic Freeway Segment HCS+ Analysis Worksheets, with Improvements

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*SR-60 Westbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*West of I-215 Freeway*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*2018 WP - With Improvements*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6919*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*15*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.930*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
			Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2021*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*64.4*	mi/h	S	mi/h
D = v_p / S	*31.4*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*D*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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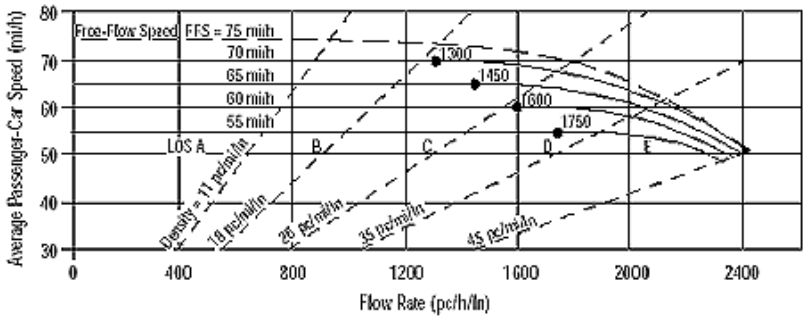
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*CS*	Highway/Direction of Travel	*SR-60 Eastbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*West of I-215 Freeway*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*2018 WP - With Improvements*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*4080*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*16*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.926*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*5*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*958*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*13.7*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*B*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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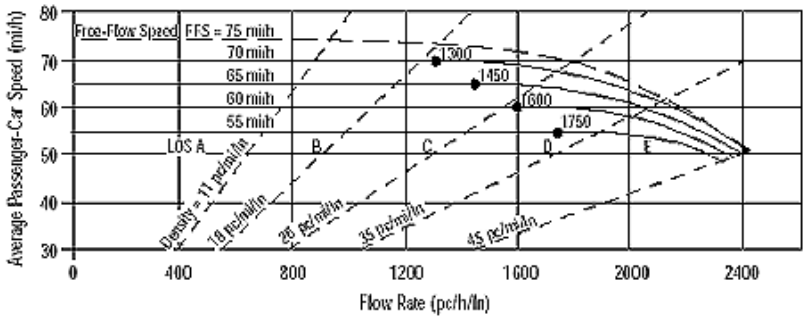
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Southbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of SR-60 Freeway*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*2018 WP - With Improvements*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*7433*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*22*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.901*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*5*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1794*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*67.9*	mi/h	S	mi/h
D = v_p / S	*26.4*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*D*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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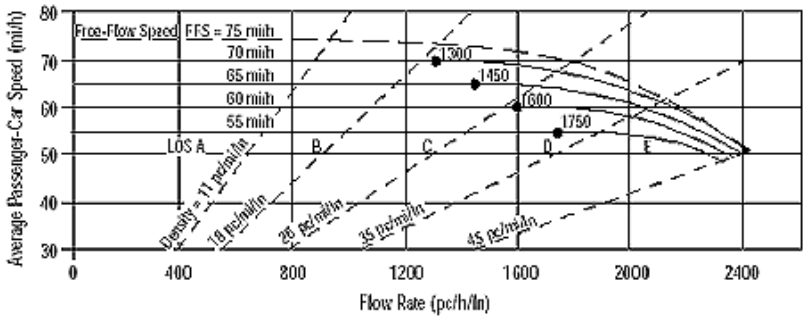
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Southbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*North of Harley Knox Bl.*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*2018 WP - With Improvements*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5923*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*21*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.5*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.905*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2371*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*54.5*	mi/h	S		mi/h
D = v_p / S	*43.5*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*E*		Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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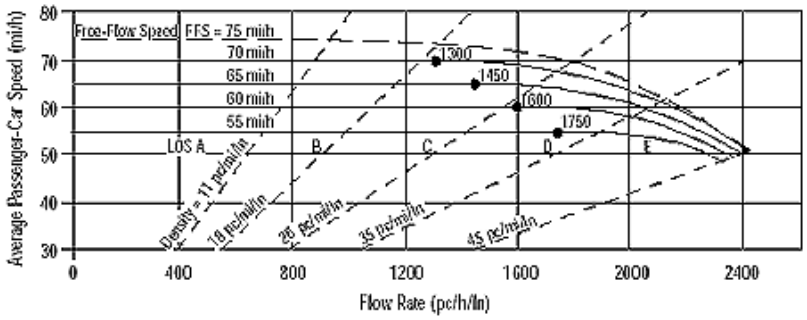

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Southbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of Harley Knox Bl.*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*2018 WP - With Improvements*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4985*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*14*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.935*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1933*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*66.0*	mi/h	S		mi/h
D = v_p / S	*29.3*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*D*		Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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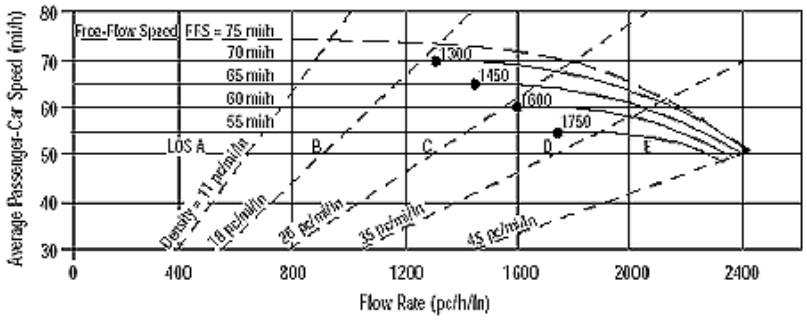

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*I-215 Northbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of SR-60 Freeway*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*2018 WP - With Improvements*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4076*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*20*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.909*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1624*	pc/h/ln	Design LOS	
S	*69.3*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
D = v_p / S	*23.4*	pc/mi/ln	S	mi/h
LOS	*C*		D = v_p / S	pc/mi/ln
			Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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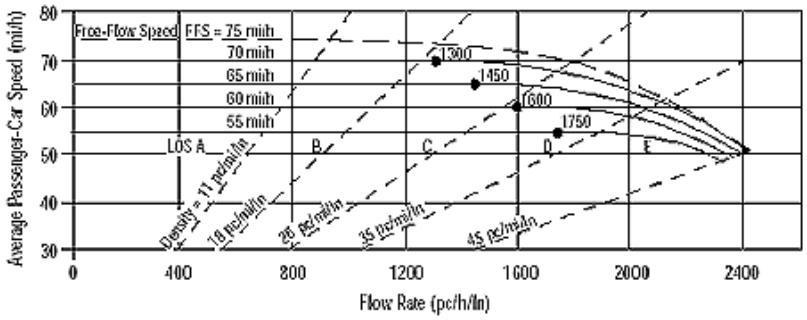

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Northbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*North of Harley Knox Bl.*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*2018 WP - With Improvements*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*3619*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*14*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.935*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1403*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*20.1*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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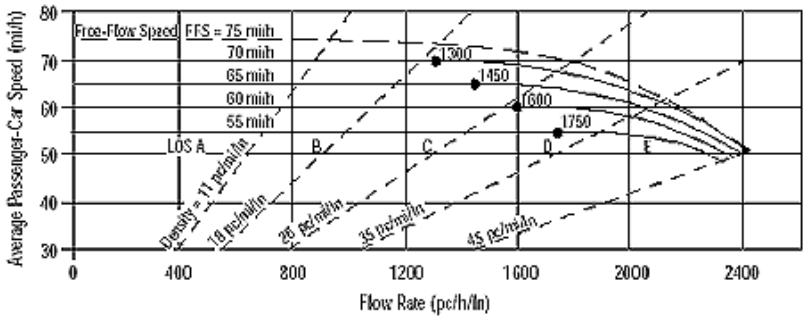

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Northbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of Harley Knox Bl.*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*2018 WP - With Improvements*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*3316*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*17*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.922*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1304*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*18.6*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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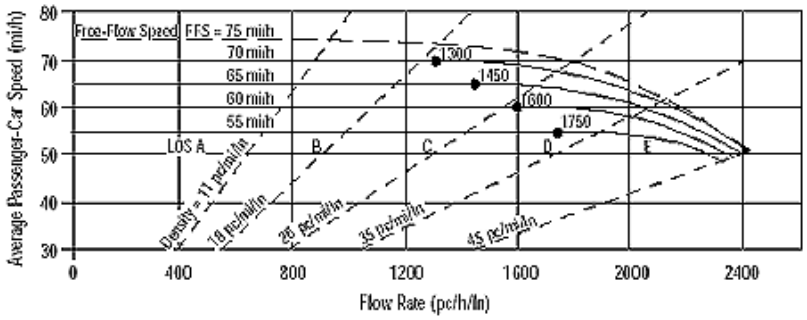

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*SR-60 Westbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*West of I-215 Freeway*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2018 WP - With Improvements*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*7048*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*18*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.917*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
			Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2088*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*63.0*	mi/h	S	mi/h
D = v_p / S	*33.1*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*D*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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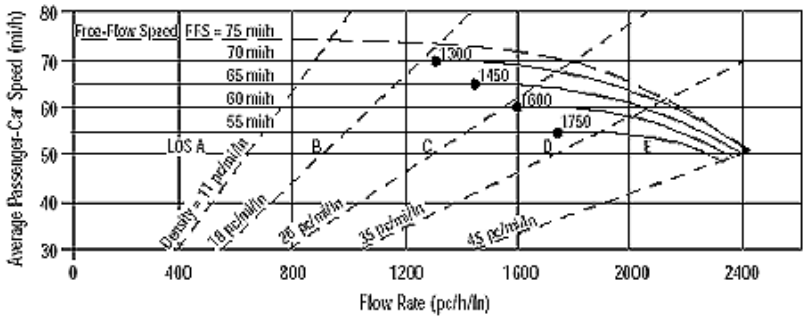

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*CS*	Highway/Direction of Travel	*SR-60 Eastbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*West of I-215 Freeway*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2018 WP - With Improvements*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6006*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*14*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.935*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*5*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1397*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*70.0*	mi/h	S		mi/h
D = v_p / S	*20.0*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*C*		Required Number of Lanes, N		

Glossary / Factor Location

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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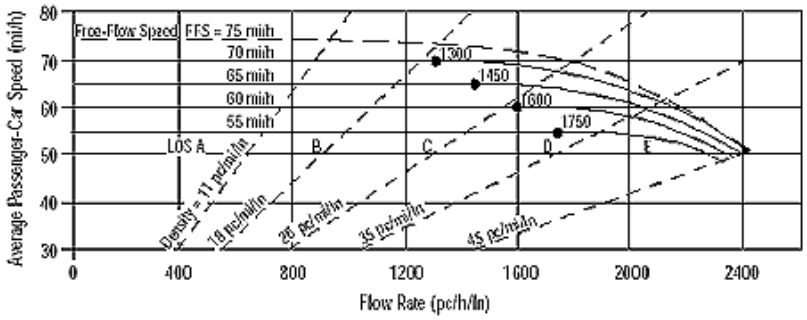
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Southbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of SR-60 Freeway*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2018 WP - With Improvements*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*7042*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*19*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.913*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*5*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1676*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*69.0*	mi/h	S		mi/h
D = v_p / S	*24.3*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*C*		Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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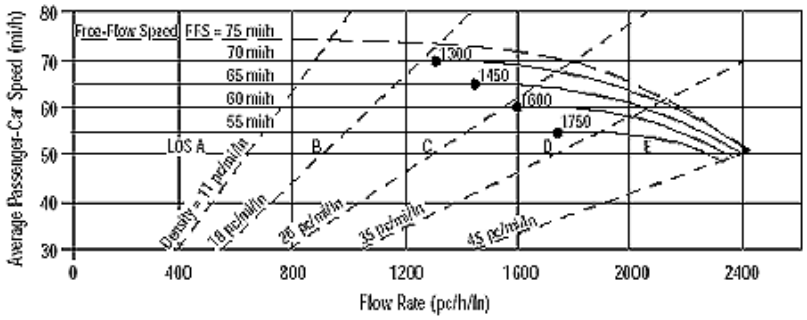

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Southbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*North of Harley Knox Bl.*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2018 WP - With Improvements*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6001*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*12*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.943*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2305*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*56.8*	mi/h	S	mi/h
D = v_p / S	*40.6*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*E*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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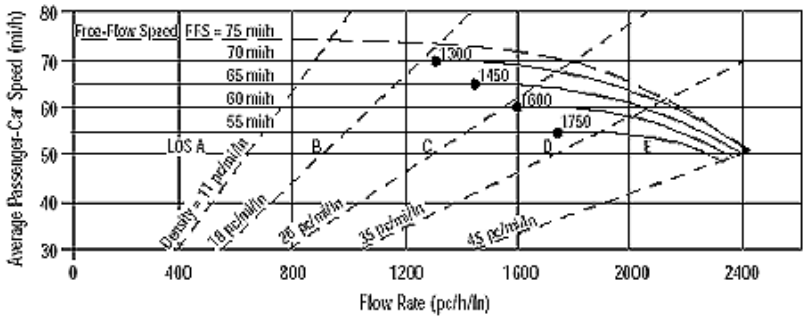

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Southbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of Harley Knox Bl.*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2018 WP - With Improvements*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5808*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*15*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.930*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2262*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*58.2*	mi/h	S		mi/h
D = v_p / S	*38.8*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*E*		Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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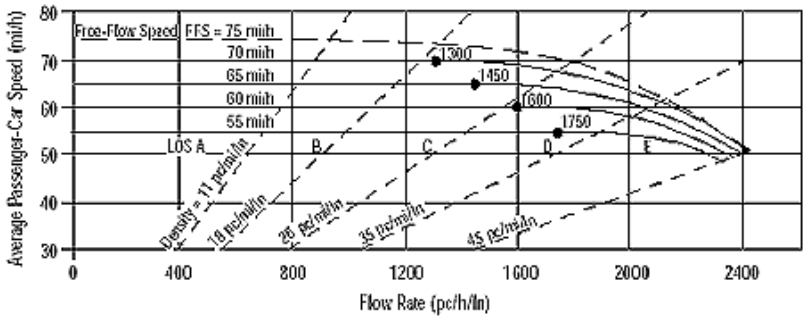

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Northbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of SR-60 Freeway*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2018 WP - With Improvements*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5196*	veh/h	Peak-Hour Factor, PHF	*0.92*	
AADT		veh/day	%Trucks and Buses, P_T	*25*	
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*	
Peak-Hr Direction Prop, D			General Terrain:	*Level*	
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*	
Driver type adjustment	*1.00*		Up/Down %		

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.889*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2118*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*62.3*	mi/h	S		mi/h
D = v_p / S	*34.0*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*D*		Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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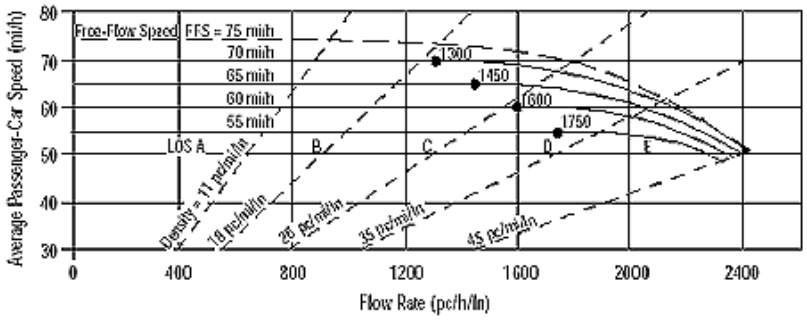

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Northbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*North of Harley Knox Bl.*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2018 WP - With Improvements*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5340*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*22*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.901*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2148*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*61.5*	mi/h	S		mi/h
D = v_p / S	*34.9*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*D*		Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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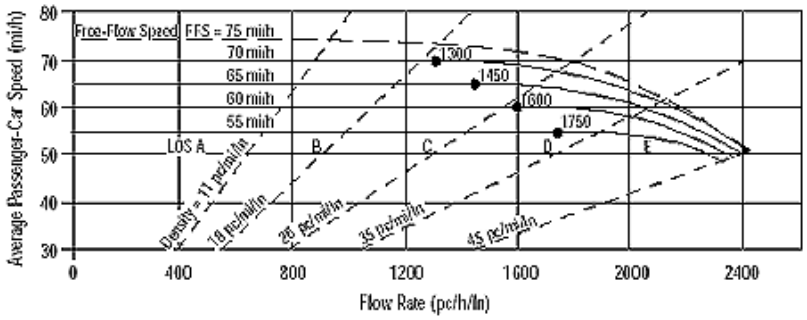

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*CS*	Highway/Direction of Travel	*I-215 Northbound*
Agency or Company	*Urban Crossroads, Inc.*	From/To	*South of Harley Knox Bl.*
Date Performed	*10/10/2013*	Jurisdiction	*Caltrans*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2018 WP - With Improvements*

Project Description First Nandina Logistics Center TIA (JN 08578)

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4239*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*17*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.922*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*3*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1666*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*69.0*	mi/h	S		mi/h
D = v_p / S	*24.1*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*C*		Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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APPENDIX 6.14

Opening Year Cumulative (2018) With Project Conditions
Freeway Ramp Junction (Merge/Diverge) HCS+ Analysis Worksheets, with Improvements

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Southbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox Off-Ramp
Date Performed	10/10/2013	Jurisdiction	CALTRANS
Analysis Time Period	AM Peak Hour	Analysis Year	2018 WP - With Improvements

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp
☑ Yes ☑ On
☐ No ☐ Off
L_{down} = 1420 ft
V_D = 336 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5923	0.92	Level	21	0	0.905	1.00	7114
Ramp	1274	0.92	Level	25	25	0.800	1.00	1731
UpStream								
DownStream	336	0.92	Level	25	25	0.800	1.00	457

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = using Equation (Exhibit 25-5)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)
LOS = (Exhibit 25-4)

Speed Determination

M_S = (Exibit 25-19)
S_R= mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)
S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = 0.503 using Equation (Exhibit 25-12)
V_{12} = 4436 pc/h
V_3 or V_{av34} 2678 pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	7114	Exhibit 25-14	7200	No
$V_{FO} = V_F - V_R$	5383	Exhibit 25-14	7200	No
V_R	1731	Exhibit 25-3	2100	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	4436	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 40.7 (pc/mi/ln)
LOS = E (Exhibit 25-4)

Speed Determination

D_s = 0.454 (Exhibit 25-19)
S_R= 57.3 mph (Exhibit 25-19)
S_0= 70.2 mph (Exhibit 25-19)
S = 61.6 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Southbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox On-Ramp
Date Performed	10/10/2013	Jurisdiction	CALTRANS
Analysis Time Period	AM Peak Hour	Analysis Year	2018 WP - With Improvements

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp

☑ Yes ☐ On

☐ No ☑ Off

L_{up} = 1420 ft

V_u = 1274 veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4649	0.92	Level	12	0	0.943	1.00	5356
Ramp	336	0.92	Level	25	25	0.800	1.00	457
UpStream	1274	0.92	Level	25	25	0.800	1.00	1731
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = 1309.93 (Equation 25-2 or 25-3)

P_{FM} = 0.585 using Equation (Exhibit 25-5)

V_{12} = 3132 pc/h

V_3 or V_{av34} 2224 pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5813	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3589	Exhibit 25-7	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 31.6 (pc/mi/ln)

LOS = D (Exhibit 25-4)

Speed Determination

M_S = 0.439 (Exibit 25-19)

S_R= 57.7 mph (Exhibit 25-19)

S_0= 63.8 mph (Exhibit 25-19)

S = 59.9 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-12)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		
V_R		Exhibit 25-3		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Determination

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Northbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox On-Ramp
Date Performed	10/10/2013	Jurisdiction	CALTRANS
Analysis Time Period	AM Peak Hour	Analysis Year	2018 WP - With Improvements

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp

☑ Yes ☐ On

☐ No ☑ Off

L_{up} = 1393 ft

V_u = 870 veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2745	0.92	Level	9	0	0.957	1.00	3118
Ramp	874	0.92	Level	25	6	0.866	1.00	1097
UpStream	870	0.92	Level	25	25	0.800	1.00	1182
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = 986.61 (Equation 25-2 or 25-3)

P_{FM} = 0.586 using Equation (Exhibit 25-5)

V_{12} = 1827 pc/h

V_3 or V_{av34} 1291 pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4215	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2924	Exhibit 25-7	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 25.9 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Determination

M_S = 0.367 (Exibit 25-19)

S_R= 59.7 mph (Exhibit 25-19)

S_0= 67.2 mph (Exhibit 25-19)

S = 61.8 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-12)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		
V_R		Exhibit 25-3		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Determination

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Northbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox Off-Ramp
Date Performed	10/10/2013	Jurisdiction	CALTRANS
Analysis Time Period	AM Peak Hour	Analysis Year	2018 WP - With Improvements

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp
☑ Yes ☑ On
☐ No ☐ Off
L_{down} = 1393 ft
V_D = 874 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3316	0.92	Level	17	0	0.922	1.00	3911
Ramp	570	0.92	Level	25	25	0.800	1.00	774
UpStream								
DownStream	874	0.92	Level	25	6	0.866	1.00	1097

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = using Equation (Exhibit 25-5)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)
LOS = (Exhibit 25-4)

Speed Determination

M_S = (Exibit 25-19)
S_R= mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)
S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = 0.627 using Equation (Exhibit 25-12)
V_{12} = 2740 pc/h
V_3 or V_{av34} 1171 pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3911	Exhibit 25-14	7200	No
$V_{FO} = V_F - V_R$	3137	Exhibit 25-14	7200	No
V_R	774	Exhibit 25-3	2100	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2740	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 25.3 (pc/mi/ln)
LOS = C (Exhibit 25-4)

Speed Determination

D_s = 0.368 (Exhibit 25-19)
S_R= 59.7 mph (Exhibit 25-19)
S_0= 76.1 mph (Exhibit 25-19)
S = 63.8 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Southbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox Off-Ramp
Date Performed	10/10/2013	Jurisdiction	CALTRANS
Analysis Time Period	PM Peak Hour	Analysis Year	2018 WP - With Improvements

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp
☑ Yes ☑ On
☐ No ☐ Off
L_{down} = 1420 ft
V_D = 708 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	6001	0.92	Level	12	0	0.943	1.00	6914
Ramp	900	0.92	Level	25	11	0.847	1.00	1154
UpStream								
DownStream	708	0.92	Level	25	25	0.800	1.00	962

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = using Equation (Exhibit 25-5)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)
LOS = (Exhibit 25-4)

Speed Determination

M_S = (Exibit 25-19)
S_R= mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)
S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = 0.534 using Equation (Exhibit 25-12)
V_{12} = 4230 pc/h
V_3 or V_{av34} 2684 pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6914	Exhibit 25-14	7200	No
$V_{FO} = V_F - V_R$	5760	Exhibit 25-14	7200	No
V_R	1154	Exhibit 25-3	2100	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	4230	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 38.9 (pc/mi/ln)
LOS = E (Exhibit 25-4)

Speed Determination

D_s = 0.402 (Exhibit 25-19)
S_R= 58.7 mph (Exhibit 25-19)
S_0= 70.2 mph (Exhibit 25-19)
S = 62.7 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Southbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox On-Ramp
Date Performed	10/10/2013	Jurisdiction	CALTRANS
Analysis Time Period	PM Peak Hour	Analysis Year	2018 WP - With Improvements

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp

☑ Yes ☐ On

☐ No ☑ Off

L_{up} = 1420 ft

V_u = 900 veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5101	0.92	Level	8	0	0.962	1.00	5766
Ramp	708	0.92	Level	25	25	0.800	1.00	962
UpStream	900	0.92	Level	25	11	0.847	1.00	1154
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = 1505.74 (Equation 25-2 or 25-3)

P_{FM} = 0.579 using Equation (Exhibit 25-5)

V_{12} = 3340 pc/h

V_3 or V_{av34} 2426 pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6728	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	4302	Exhibit 25-7	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 37.0 (pc/mi/ln)

LOS = E (Exhibit 25-4)

Speed Determination

M_S = 0.586 (Exibit 25-19)

S_R= 53.6 mph (Exhibit 25-19)

S_0= 62.7 mph (Exhibit 25-19)

S = 56.6 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-12)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		
V_R		Exhibit 25-3		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Determination

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	CS	Freeway/Dir of Travel	I-215 Northbound
Agency or Company	Urban Crossroads, Inc.	Junction	Harley Knox On-Ramp
Date Performed	10/10/2013	Jurisdiction	CALTRANS
Analysis Time Period	PM Peak Hour	Analysis Year	2018 WP - With Improvements

Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp

☑ Yes ☐ On

☐ No ☑ Off

L_{up} = 1393 ft

V_u = 311 veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3927	0.92	Level	15	0	0.930	1.00	4589
Ramp	1413	0.92	Level	25	18	0.823	1.00	1866
UpStream	311	0.92	Level	25	16	0.830	1.00	407
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = 1465.97 (Equation 25-2 or 25-3)

P_{FM} = 0.581 using Equation (Exhibit 25-5)

V_{12} = 2667 pc/h

V_3 or V_{av34} 1922 pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6455	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	4533	Exhibit 25-7	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 38.1 (pc/mi/ln)

LOS = E (Exhibit 25-4)

Speed Determination

M_S = 0.657 (Exibit 25-19)

S_R= 51.6 mph (Exhibit 25-19)

S_0= 64.9 mph (Exhibit 25-19)

S = 55.0 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-12)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		
V_R		Exhibit 25-3		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Determination

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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Project Description First Nandina Logistics Center TIA (JN 08578)

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp
☑ Yes ☑ On
☐ No ☐ Off
L_{down} = 1393 ft
V_D = 1413 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4239	0.92	Level	17	0	0.922	1.00	4999
Ramp	311	0.92	Level	25	16	0.830	1.00	407
UpStream								
DownStream	1413	0.92	Level	25	18	0.823	1.00	1866

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = using Equation (Exhibit 25-5)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes, V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)
LOS = (Exhibit 25-4)

Speed Determination

M_S = (Exibit 25-19)
S_R= mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)
S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = 0.616 using Equation (Exhibit 25-12)
V_{12} = 3237 pc/h
V_3 or V_{av34} 1762 pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes, V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4999	Exhibit 25-14	7200	No
$V_{FO} = V_F - V_R$	4592	Exhibit 25-14	7200	No
V_R	407	Exhibit 25-3	2100	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3237	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 29.6 (pc/mi/ln)
LOS = D (Exhibit 25-4)

Speed Determination

D_s = 0.335 (Exhibit 25-19)
S_R= 60.6 mph (Exhibit 25-19)
S_0= 73.8 mph (Exhibit 25-19)
S = 64.7 mph (Exhibit 25-15)

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