Appendix BB
Traffic Counts

Appendix BB-1
Traffic Counts

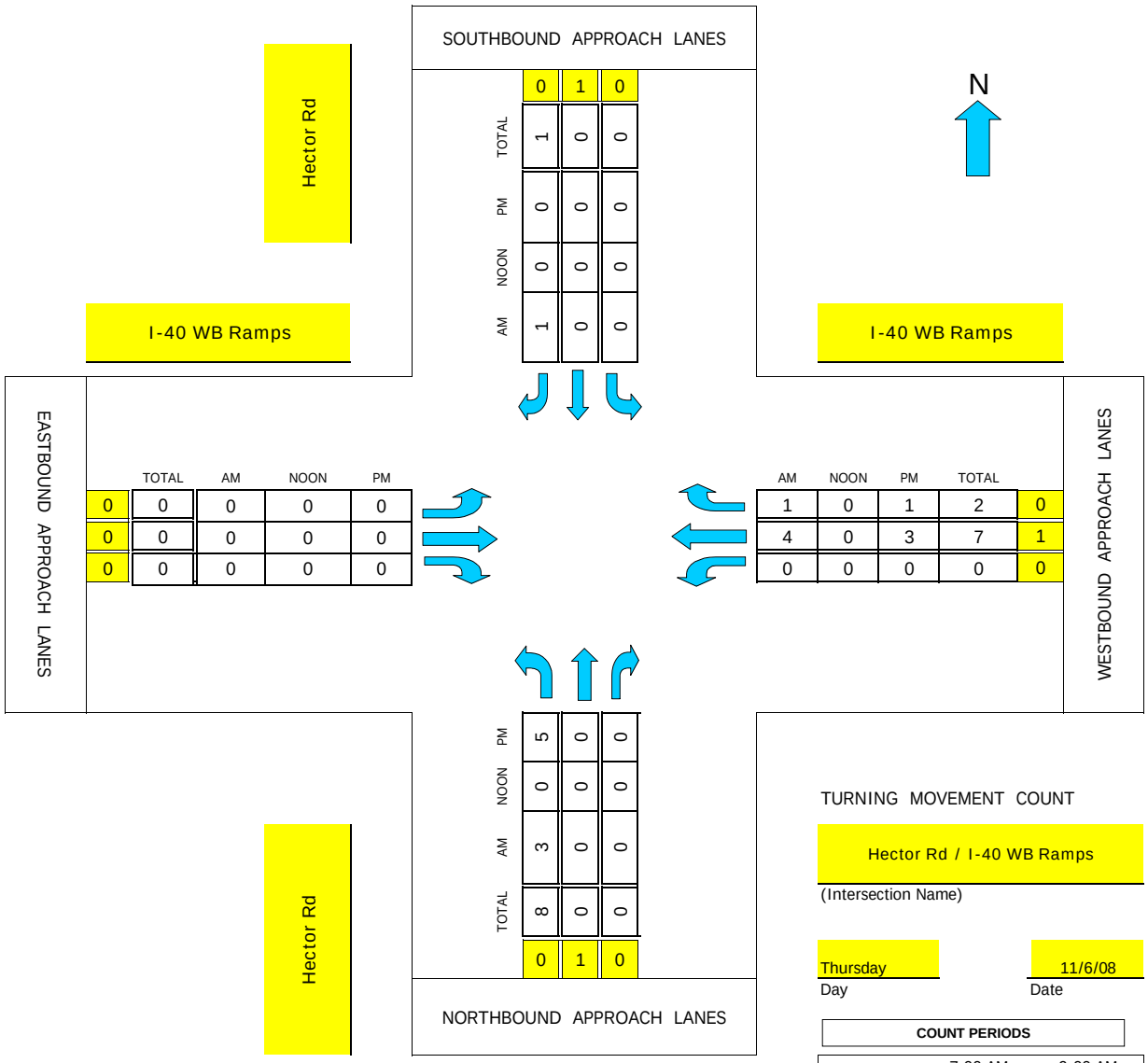
Intersection Turning Movement

Prepared by:

National Data & Surveying Services

TMC Summary of Hector Rd / I-40 WB Ramps

Project #: 08-8220-001



TOTAL	1	0	0
PM	0	0	0
NOON	0	0	0
AM	1	0	0
	0	1	0

	TOTAL	AM	NOON	PM
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

AM	NOON	PM	TOTAL	
1	0	1	2	0
4	0	3	7	1
0	0	0	0	0

PM	5	0	0
NOON	0	0	0
AM	3	0	0
TOTAL	8	0	0
	0	1	0

TURNING MOVEMENT COUNT

Hector Rd / I-40 WB Ramps

(Intersection Name)

Thursday — Day

11/6/08 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: 1 Way Stop (WB)

AM PEAK HOUR	800 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	415 PM

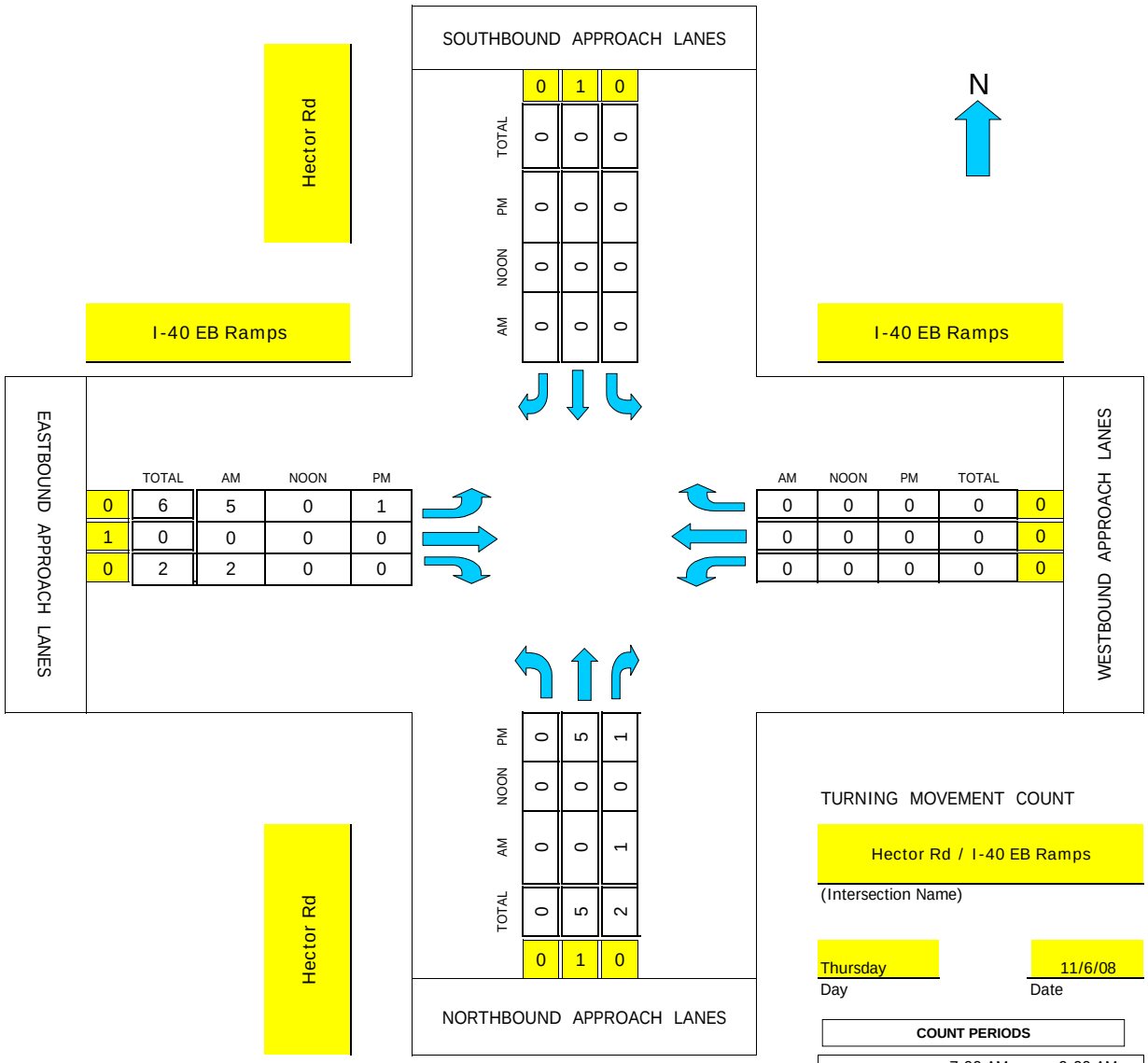
Intersection Turning Movement

Prepared by:

National Data & Surveying Services

TMC Summary of Hector Rd/I-40 EB Ramps

Project #: 08-8220-002



TURNING MOVEMENT COUNT

Hector Rd / I-40 EB Ramps

(Intersection Name)

Thursday — Day

11/6/08 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: 1 Way Stop (EB)

AM PEAK HOUR	715 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	400 PM

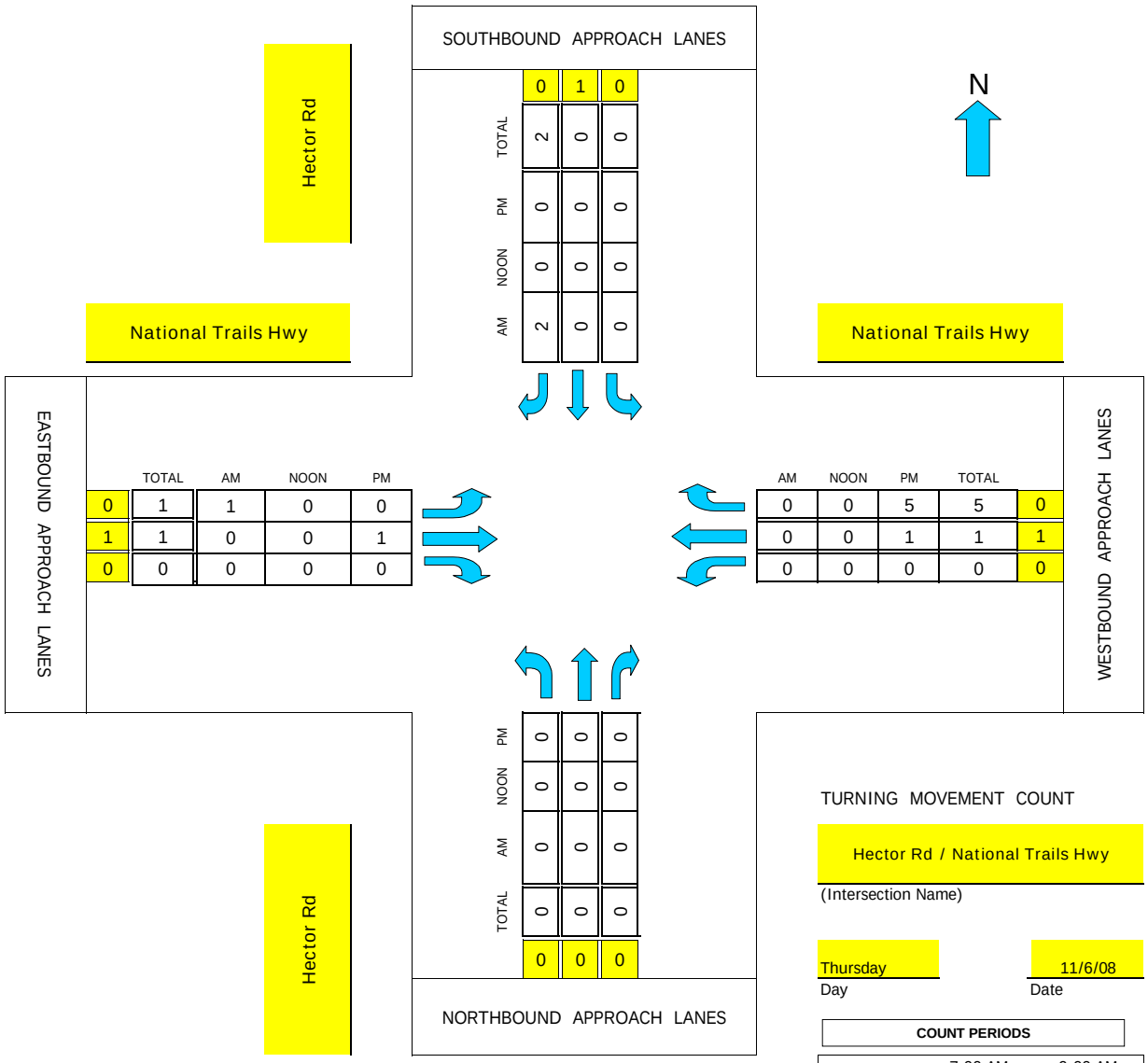
Intersection Turning Movement

Prepared by:

National Data & Surveying Services

TMC Summary of Hector Rd/National Trails Hwy

Project #: 08-8220-003



	TOTAL	AM	NOON	PM
0	1	1	0	0
1	1	0	0	1
0	0	0	0	0

	AM	NOON	PM	TOTAL	
	0	0	5	5	0
	0	0	1	1	1
	0	0	0	0	0

	0	1	0
TOTAL	2	0	0
PM	0	0	0
NOON	0	0	0
AM	2	0	0

PM	0	0	0
NOON	0	0	0
AM	0	0	0
TOTAL	0	0	0
	0	0	0

TURNING MOVEMENT COUNT

Hector Rd / National Trails Hwy

(Intersection Name)

Thursday — Day

11/6/08 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: 1 Way Stop (SB)

AM PEAK HOUR	730 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	415 PM

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Prepared by NDS/ATD

Volumes for: Thursday, November 06, 2008 City: Newberry Springs Project #: 08-8221-001

Location: Hector Rd N/o I-40 WB Ramps

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	0		0					12:00	0		0				
00:15	0		0					12:15	0		0				
00:30	0		0					12:30	0		0				
00:45	0	0	0	0				12:45	0	0	0	0			
01:00	0		0					13:00	0		0				
01:15	0		0					13:15	0		0				
01:30	0		0					13:30	0		0				
01:45	0	0	0	0				13:45	0	0	0	0			
02:00	0		0					14:00	0		0				
02:15	0		0					14:15	2		1				
02:30	0		0					14:30	0		0				
02:45	0	0	0	0				14:45	0	2	1	2			4
03:00	0		0					15:00	0		0				
03:15	0		0					15:15	0		1				
03:30	0		0					15:30	1		0				
03:45	0	0	0	0				15:45	0	1	1	2			3
04:00	0		0					16:00	0		0				
04:15	0		0					16:15	0		0				
04:30	0		0					16:30	0		0				
04:45	0	0	0	0				16:45	0	0	0	0			
05:00	0		0					17:00	1		0				
05:15	0		0					17:15	0		1				
05:30	0		0					17:30	0		0				
05:45	0	0	0	0				17:45	0	1	0	1			2
06:00	0		0					18:00	0		0				
06:15	0		0					18:15	0		0				
06:30	0		0					18:30	0		0				
06:45	0	0	0	0				18:45	0	0	0	0			
07:00	0		0					19:00	0		0				
07:15	0		0					19:15	0		0				
07:30	0		0					19:30	0		0				
07:45	0	0	0	0				19:45	0	0	0	0			
08:00	0		0					20:00	1		0				
08:15	0		0					20:15	0		0				
08:30	1		1					20:30	0		0				
08:45	0	1	0	1			2	20:45	0	1	0	0			1
09:00	0		0					21:00	0		0				
09:15	0		0					21:15	0		0				
09:30	0		0					21:30	0		0				
09:45	0	0	0	0				21:45	0	0	0	0			
10:00	0		0					22:00	0		0				
10:15	0		0					22:15	2		0				
10:30	0		0					22:30	1		0				
10:45	0	0	0	0				22:45	0	3	0	0			3
11:00	0		0					23:00	0		0				
11:15	0		0					23:15	0		0				
11:30	0		0					23:30	0		0				
11:45	0	0	0	0				23:45	0	0	0	0			
Total Vol.		1		1			2			8		5			13

Daily Totals

NB	SB	Combined	EB	WB
9	6	15		

	AM			PM		
Split %	50.0%	50.0%	13.3%	61.5%	38.5%	86.7%
Peak Hour	07:45	07:45	07:45	21:45	14:00	14:00
Volume	1	1	2	3	2	4
P.H.F.	0.25	0.25	0.25	0.50	0.50	0.33

Prepared by NDS/ATD

Volumes for: Thursday, November 06, 2008 City: Newberry Springs Project #: 08-8221-002

Location: Hector Rd btwn National Trails Hwy & I-40 EB Ramps

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	0		0					12:00	0		0				
00:15	0		0					12:15	0		0				
00:30	0		0					12:30	0		0				
00:45	0	0	0	0				12:45	0	0	0	0			
01:00	0		0					13:00	0		0				
01:15	0		0					13:15	0		0				
01:30	0		0					13:30	0		0				
01:45	0	0	0	0				13:45	1	1	0	0			1
02:00	0		0					14:00	0		0				
02:15	0		0					14:15	1		2				
02:30	0		0					14:30	1		1				
02:45	0	0	0	0				14:45	1	3	0	3			6
03:00	0		0					15:00	2		0				
03:15	0		0					15:15	0		1				
03:30	0		0					15:30	1		3				
03:45	0	0	0	0				15:45	1	4	2	6			10
04:00	0		0					16:00	2		0				
04:15	0		0					16:15	3		0				
04:30	0		0					16:30	1		0				
04:45	0	0	0	0				16:45	0	6	0	0			6
05:00	0		0					17:00	1		0				
05:15	0		0					17:15	0		0				
05:30	0		0					17:30	0		0				
05:45	0	0	0	0				17:45	0	1	0	0			1
06:00	0		0					18:00	1		0				
06:15	0		0					18:15	2		0				
06:30	0		0					18:30	0		0				
06:45	0	0	1	1			1	18:45	0	3	0	0			3
07:00	0		0					19:00	0		0				
07:15	1		0					19:15	0		0				
07:30	0		1					19:30	0		0				
07:45	0	1	0	1			2	19:45	0	0	0	0			
08:00	0		1					20:00	0		0				
08:15	1		0					20:15	0		0				
08:30	0		0					20:30	0		0				
08:45	0	1	0	1			2	20:45	0	0	0	0			
09:00	0		0					21:00	1		0				
09:15	0		0					21:15	0		0				
09:30	0		0					21:30	0		0				
09:45	0	0	0	0				21:45	0	1	0	0			1
10:00	0		0					22:00	0		1				
10:15	0		0					22:15	2		0				
10:30	0		0					22:30	0		0				
10:45	0	0	0	0				22:45	0	2	0	1			3
11:00	0		0					23:00	0		0				
11:15	0		0					23:15	0		0				
11:30	0		0					23:30	0		0				
11:45	0	0	0	0				23:45	0	0	0	0			
Total Vol.		2		3			5			21		10			31

Daily Totals

NB	SB	Combined	EB	WB
23	13	36		

	AM			PM		
Split %	40.0%	60.0%	13.9%	67.7%	32.3%	86.1%
Peak Hour	06:30	06:45	06:45	15:30	15:00	15:30
Volume	1	2	3	7	6	12
P.H.F.	0.25	0.50	0.75	0.75	0.50	0.75

Prepared by NDS/ATD

Volumes for: Thursday, November 06, 2008 City: Newberry Springs Project #: 08-8221-003

Location: National Trails Hwy W/o Hector Rd

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			0		0			12:00			0		0		
00:15			0		0			12:15			0		0		
00:30			0		0			12:30			0		0		
00:45			0	0	0	0		12:45			0	0	0	0	
01:00			0		0			13:00			0		0		
01:15			0		0			13:15			0		0		
01:30			0		0			13:30			0		3		
01:45			0	0	0	0		13:45			0	0	0	3	3
02:00			0		0			14:00			1		1		
02:15			0		0			14:15			0		0		
02:30			0		0			14:30			1		0		
02:45			0	0	0	0		14:45			0	2	0	1	3
03:00			0		0			15:00			0		0		
03:15			0		0			15:15			0		0		
03:30			0		0			15:30			1		1		
03:45			0	0	0	0		15:45			1	2	0	1	3
04:00			0		0			16:00			0		0		
04:15			0		0			16:15			0		0		
04:30			0		0			16:30			0		0		
04:45			0	0	0	0		16:45			0	0	1	1	1
05:00			0		0			17:00			1		0		
05:15			0		0			17:15			0		0		
05:30			0		0			17:30			0		0		
05:45			0	0	0	0		17:45			0	1	0	0	1
06:00			0		0			18:00			0		0		
06:15			0		0			18:15			0		0		
06:30			0		0			18:30			0		0		
06:45			1	1	0	0	1	18:45			0	0	0	0	
07:00			0		0			19:00			0		0		
07:15			1		0			19:15			0		0		
07:30			0		1			19:30			0		0		
07:45			0	1	0	1	2	19:45			0	0	0	0	
08:00			0		1			20:00			0		0		
08:15			1		0			20:15			0		0		
08:30			0		0			20:30			0		0		
08:45			0	1	0	1	2	20:45			0	0	0	0	
09:00			1		0			21:00			0		1		
09:15			0		0			21:15			0		0		
09:30			0		0			21:30			0		0		
09:45			0	1	0	0	1	21:45			0	0	1	2	2
10:00			0		0			22:00			1		1		
10:15			0		0			22:15			0		1		
10:30			0		0			22:30			0		0		
10:45			0	0	0	0		22:45			0	1	0	2	3
11:00			0		0			23:00			0		0		
11:15			0		0			23:15			0		0		
11:30			0		0			23:30			0		0		
11:45			0	0	0	0		23:45			0	0	0	0	
Total Vol.				4		2	6					6		10	16

Daily Totals

NB	SB		EB	WB
		Combined	10	12
		22		

	AM			PM		
Split %	66.7%	33.3%	27.3%	37.5%	62.5%	72.7%
Peak Hour	06:30	07:15	06:45	13:45	13:15	13:15
Volume	2	2	3	2	4	5
P.H.F.	0.50	0.50	0.75	0.50	0.33	0.42

Prepared by NDS/ATD

Volumes for: Thursday, November 06, 2008 City: Newberry Springs Project #: 08-8221-004

Location: National Trails Hwy E/o Hector Rd

AM Period	NB	SB	EB		WB		PM Period	NB	SB	EB		WB		
00:00			0		0		12:00			0		0		
00:15			0		0		12:15			0		0		
00:30			0		0		12:30			0		0		
00:45			0	0	0	0	12:45			0	0	0	0	
01:00			0		0		13:00			0		0		
01:15			0		0		13:15			0		2		
01:30			0		0		13:30			0		1		
01:45			0	0	0	0	13:45			2	2	1	4	6
02:00			0		0		14:00			0		0		
02:15			0		0		14:15			3		0		
02:30			0		0		14:30			0		2		
02:45			0	0	0	0	14:45			0	3	1	3	6
03:00			0		0		15:00			0		2		
03:15			0		0		15:15			0		1		
03:30			0		0		15:30			1		0		
03:45			0	0	0	0	15:45			0	1	0	3	4
04:00			0		0		16:00			0		2		
04:15			0		0		16:15			0		3		
04:30			0		0		16:30			0		1		
04:45			0	0	0	0	16:45			0	0	1	7	7
05:00			0		0		17:00			1		1		
05:15			0		0		17:15			0		0		
05:30			0		0		17:30			0		0		
05:45			0	0	0	0	17:45			0	1	0	1	2
06:00			0		0		18:00			0		0		
06:15			0		0		18:15			0		2		
06:30			0		0		18:30			0		0		
06:45			0	0	0	0	18:45			0	0	0	2	2
07:00			0		0		19:00			0		0		
07:15			0		0		19:15			0		0		
07:30			0		0		19:30			0		0		
07:45			0	0	0	0	19:45			0	0	0	0	
08:00			0		0		20:00			0		0		
08:15			0		0		20:15			0		0		
08:30			0		0		20:30			0		0		
08:45			0	0	0	0	20:45			0	0	0	0	
09:00			0		0		21:00			0		0		
09:15			0		0		21:15			0		0		
09:30			0		0		21:30			0		0		
09:45			0	0	0	0	21:45			1	1	0	0	1
10:00			0		0		22:00			0		0		
10:15			0		0		22:15			0		0		
10:30			0		0		22:30			0		0		
10:45			0	0	0	0	22:45			0	0	0	0	
11:00			0		0		23:00			0		0		
11:15			0		0		23:15			0		0		
11:30			0		0		23:30			0		0		
11:45			0	0	0	0	23:45			0	0	0	0	
Total Vol.				0		0					8		20	28

Daily Totals

	NB	SB	EB	WB
Combined			8	20

	AM		PM		
Split %			28.6%	71.4%	
Peak Hour			13:30	16:00	13:45
Volume			5	7	8
P.H.F.			0.42	0.58	0.67

Appendix BB-2
Level of Service Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	0	4	1	3	0	0	0	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	4	1	3	0	0	0	0	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	10	7	1	7	8	0	1			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	10	7	1	7	8	0	1			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	1001	886	1084	1011	886	1085	1622			1623		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	5	3	1
Volume Left	0	3	0
Volume Right	1	0	1
cSH	919	1622	1700
Volume to Capacity	0.01	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	8.9	7.2	0.0
Lane LOS	A	A	
Approach Delay (s)	8.9	7.2	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	7.4		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	0	2	0	0	0	0	0	1	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	0	2	0	0	0	0	0	1	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1	1	0	3	1	1	0			1		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1	1	0	3	1	1	0			1		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	100	100	100	100			100		
cM capacity (veh/h)	1022	895	1085	1017	895	1084	1623			1622		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	8	1	0
Volume Left	5	0	0
Volume Right	2	1	0
cSH	1040	1700	1700
Volume to Capacity	0.01	0.00	0.00
Queue Length 95th (ft)	1	0	0
Control Delay (s)	8.5	0.0	0.0
Lane LOS	A		
Approach Delay (s)	8.5	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	7.4		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	1	0	0	0	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	0	0	0	0	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	0				2	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0				2	0
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1623				1020	1085

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	1	0	2
Volume Left	1	0	0
Volume Right	0	0	2
cSH	1623	1700	1085
Volume to Capacity	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	7.2	0.0	8.3
Lane LOS	A		A
Approach Delay (s)	7.2	0.0	8.3
Approach LOS			A

Intersection Summary			
Average Delay	8.0		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	0	3	1	5	0	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	3	1	5	0	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	14	11	0	11	11	0	0			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	14	11	0	11	11	0	0			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	996	881	1085	1004	881	1085	1623			1623		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	4	5	0
Volume Left	0	5	0
Volume Right	1	0	0
cSH	924	1623	1700
Volume to Capacity	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	8.9	7.2	0.0
Lane LOS	A	A	
Approach Delay (s)	8.9	7.2	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	8.0		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	1	0	0	0	0	0	0	5	1	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	0	0	0	0	0	0	5	1	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	6	7	0	6	6	6	0			7		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	6	7	0	6	6	6	0			7		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	1014	889	1085	1014	889	1077	1623			1614		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	1	7	0
Volume Left	1	0	0
Volume Right	0	1	0
cSH	1014	1700	1700
Volume to Capacity	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	8.6	0.0	0.0
Lane LOS	A		
Approach Delay (s)	8.6	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	1	1	5	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1	1	5	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	7				5	4
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	7				5	4
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1614				1017	1080

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	1	7	0
Volume Left	0	0	0
Volume Right	0	5	0
cSH	1614	1700	1700
Volume to Capacity	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	5	5	5	5	5	0	0	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	5	5	5	5	5	0	0	5	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	33	24	8	24	27	5	11			5		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	33	24	8	24	27	5	11			5		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	99	99	100			100		
cM capacity (veh/h)	963	866	1074	984	863	1078	1608			1616		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	16	11	11
Volume Left	5	5	0
Volume Right	5	0	5
cSH	967	1608	1700
Volume to Capacity	0.02	0.00	0.01
Queue Length 95th (ft)	1	0	0
Control Delay (s)	8.8	3.6	0.0
Lane LOS	A	A	
Approach Delay (s)	8.8	3.6	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	14.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	5	5	0	0	0	0	5	5	5	5	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	5	5	0	0	0	0	5	5	5	5	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	24	27	5	33	24	8	5			11		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	24	27	5	33	24	8	5			11		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	99	100	100	100	100			100		
cM capacity (veh/h)	984	863	1078	963	866	1074	1616			1608		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	22	11	11
Volume Left	11	0	5
Volume Right	5	5	0
cSH	971	1700	1608
Volume to Capacity	0.02	0.01	0.00
Queue Length 95th (ft)	2	0	0
Control Delay (s)	8.8	0.0	3.6
Lane LOS	A		A
Approach Delay (s)	8.8	0.0	3.6
Approach LOS	A		

Intersection Summary			
Average Delay	5.3		
Intersection Capacity Utilization	14.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	5	5	5	5	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	5	5	5	5	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	11				24	8
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	11				24	8
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	99
cM capacity (veh/h)	1608				988	1074

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	11	11	11
Volume Left	5	0	5
Volume Right	0	5	5
cSH	1608	1700	1029
Volume to Capacity	0.00	0.01	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	3.6	0.0	8.5
Lane LOS	A		A
Approach Delay (s)	3.6	0.0	8.5
Approach LOS			A

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	14.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	5	5	5	5	5	0	0	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	5	5	5	5	5	0	0	5	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	33	24	8	24	27	5	11			5		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	33	24	8	24	27	5	11			5		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	99	99	100			100		
cM capacity (veh/h)	963	866	1074	984	863	1078	1608			1616		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	16	11	11
Volume Left	5	5	0
Volume Right	5	0	5
cSH	967	1608	1700
Volume to Capacity	0.02	0.00	0.01
Queue Length 95th (ft)	1	0	0
Control Delay (s)	8.8	3.6	0.0
Lane LOS	A	A	
Approach Delay (s)	8.8	3.6	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	14.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	5	5	0	0	0	0	10	5	5	5	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	5	5	0	0	0	0	11	5	5	5	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	30	33	5	38	30	14	5			16		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	30	33	5	38	30	14	5			16		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	99	100	100	100	100			100		
cM capacity (veh/h)	976	857	1078	955	860	1066	1616			1601		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	16	16	11
Volume Left	5	0	5
Volume Right	5	5	0
cSH	962	1700	1601
Volume to Capacity	0.02	0.01	0.00
Queue Length 95th (ft)	1	0	0
Control Delay (s)	8.8	0.0	3.6
Lane LOS	A		A
Approach Delay (s)	8.8	0.0	3.6
Approach LOS	A		

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	14.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	5	5	5	10	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	5	5	11	5	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	16				27	11
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	16				27	11
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	99
cM capacity (veh/h)	1601				985	1070

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	11	16	11
Volume Left	5	0	5
Volume Right	0	11	5
cSH	1601	1700	1026
Volume to Capacity	0.00	0.01	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	3.6	0.0	8.5
Lane LOS	A		A
Approach Delay (s)	3.6	0.0	8.5
Approach LOS			A

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	14.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	5	5	86	5	614	0	0	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	5	5	93	5	667	0	0	5	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	783	686	8	686	689	667	11			667		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	783	686	8	686	689	667	11			667		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	98	99	80	100			100		
cM capacity (veh/h)	244	369	1074	360	367	459	1608			922		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	104	673	11
Volume Left	5	5	0
Volume Right	93	0	5
cSH	446	1608	1700
Volume to Capacity	0.23	0.00	0.01
Queue Length 95th (ft)	22	0	0
Control Delay (s)	15.5	0.1	0.0
Lane LOS	C	A	
Approach Delay (s)	15.5	0.1	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	619	5	5	0	0	0	0	5	5	5	5	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	673	5	5	0	0	0	0	5	5	5	5	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	24	27	5	33	24	8	5			11		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	24	27	5	33	24	8	5			11		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	32	99	99	100	100	100	100			100		
cM capacity (veh/h)	984	863	1078	963	866	1074	1616			1608		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	684	11	11
Volume Left	673	0	5
Volume Right	5	5	0
cSH	984	1700	1608
Volume to Capacity	0.70	0.01	0.00
Queue Length 95th (ft)	148	0	0
Control Delay (s)	16.5	0.0	3.6
Lane LOS	C		A
Approach Delay (s)	16.5	0.0	3.6
Approach LOS	C		

Intersection Summary			
Average Delay	16.1		
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	5	5	5	5	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	5	5	5	5	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	11				24	8
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	11				24	8
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	99
cM capacity (veh/h)	1608				988	1074

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	11	11	11
Volume Left	5	0	5
Volume Right	0	5	5
cSH	1608	1700	1029
Volume to Capacity	0.00	0.01	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	3.6	0.0	8.5
Lane LOS	A		A
Approach Delay (s)	3.6	0.0	8.5
Approach LOS			A

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	14.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	5	5	5	5	5	0	0	168	602
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	5	5	5	5	5	0	0	183	654
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	534	526	510	526	853	5	837			5		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	534	526	510	526	853	5	837			5		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	98	99	99			100		
cM capacity (veh/h)	446	454	564	460	294	1078	797			1616		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	16	11	837
Volume Left	5	5	0
Volume Right	5	0	654
cSH	461	797	1700
Volume to Capacity	0.04	0.01	0.49
Queue Length 95th (ft)	3	1	0
Control Delay (s)	13.1	4.8	0.0
Lane LOS	B	A	
Approach Delay (s)	13.1	4.8	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	5	5	0	0	0	0	10	5	168	5	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	5	5	0	0	0	0	11	5	183	5	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	384	387	5	392	384	14	5			16		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	384	387	5	392	384	14	5			16		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	99	100	100	100	100			89		
cM capacity (veh/h)	524	485	1078	511	487	1066	1616			1601		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	16	16	188
Volume Left	5	0	183
Volume Right	5	5	0
cSH	612	1700	1601
Volume to Capacity	0.03	0.01	0.11
Queue Length 95th (ft)	2	0	10
Control Delay (s)	11.0	0.0	7.3
Lane LOS	B		A
Approach Delay (s)	11.0	0.0	7.3
Approach LOS	B		

Intersection Summary			
Average Delay	7.1		
Intersection Capacity Utilization	26.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	5	5	5	10	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	5	5	11	5	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	16				27	11
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	16				27	11
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	99
cM capacity (veh/h)	1601				985	1070

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	11	16	11
Volume Left	5	0	5
Volume Right	0	11	5
cSH	1601	1700	1026
Volume to Capacity	0.00	0.01	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	3.6	0.0	8.5
Lane LOS	A		A
Approach Delay (s)	3.6	0.0	8.5
Approach LOS			A

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	14.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	5	5	5	5	5	0	0	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	5	5	5	5	5	0	0	5	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	33	24	8	24	27	5	11			5		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	33	24	8	24	27	5	11			5		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	99	99	100			100		
cM capacity (veh/h)	963	866	1074	984	863	1078	1608			1616		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	16	11	11
Volume Left	5	5	0
Volume Right	5	0	5
cSH	967	1608	1700
Volume to Capacity	0.02	0.00	0.01
Queue Length 95th (ft)	1	0	0
Control Delay (s)	8.8	3.6	0.0
Lane LOS	A	A	
Approach Delay (s)	8.8	3.6	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	14.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	5	5	0	0	0	0	5	5	5	5	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	5	5	0	0	0	0	5	5	5	5	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	24	27	5	33	24	8	5			11		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	24	27	5	33	24	8	5			11		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	99	100	100	100	100			100		
cM capacity (veh/h)	984	863	1078	963	866	1074	1616			1608		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	22	11	11
Volume Left	11	0	5
Volume Right	5	5	0
cSH	971	1700	1608
Volume to Capacity	0.02	0.01	0.00
Queue Length 95th (ft)	2	0	0
Control Delay (s)	8.8	0.0	3.6
Lane LOS	A		A
Approach Delay (s)	8.8	0.0	3.6
Approach LOS	A		

Intersection Summary			
Average Delay	5.3		
Intersection Capacity Utilization	14.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	5	5	5	5	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	5	5	5	5	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	11				24	8
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	11				24	8
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	99
cM capacity (veh/h)	1608				988	1074

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	11	11	11
Volume Left	5	0	5
Volume Right	0	5	5
cSH	1608	1700	1029
Volume to Capacity	0.00	0.01	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	3.6	0.0	8.5
Lane LOS	A		A
Approach Delay (s)	3.6	0.0	8.5
Approach LOS			A

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	14.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	5	5	5	5	5	0	0	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	5	5	5	5	5	0	0	5	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	33	24	8	24	27	5	11			5		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	33	24	8	24	27	5	11			5		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	99	99	100			100		
cM capacity (veh/h)	963	866	1074	984	863	1078	1608			1616		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	16	11	11
Volume Left	5	5	0
Volume Right	5	0	5
cSH	967	1608	1700
Volume to Capacity	0.02	0.00	0.01
Queue Length 95th (ft)	1	0	0
Control Delay (s)	8.8	3.6	0.0
Lane LOS	A	A	
Approach Delay (s)	8.8	3.6	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	14.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	5	5	0	0	0	0	10	5	5	5	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	5	5	0	0	0	0	11	5	5	5	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	30	33	5	38	30	14	5			16		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	30	33	5	38	30	14	5			16		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	99	100	100	100	100			100		
cM capacity (veh/h)	976	857	1078	955	860	1066	1616			1601		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	16	16	11
Volume Left	5	0	5
Volume Right	5	5	0
cSH	962	1700	1601
Volume to Capacity	0.02	0.01	0.00
Queue Length 95th (ft)	1	0	0
Control Delay (s)	8.8	0.0	3.6
Lane LOS	A		A
Approach Delay (s)	8.8	0.0	3.6
Approach LOS	A		

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	14.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	5	5	5	10	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	5	5	11	5	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	16				27	11
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	16				27	11
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	99
cM capacity (veh/h)	1601				985	1070

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	11	16	11
Volume Left	5	0	5
Volume Right	0	11	5
cSH	1601	1700	1026
Volume to Capacity	0.00	0.01	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	3.6	0.0	8.5
Lane LOS	A		A
Approach Delay (s)	3.6	0.0	8.5
Approach LOS			A

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	14.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	5	5	34	5	114	0	0	8	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	5	5	37	5	124	0	0	9	14
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	190	151	16	151	158	124	23			124		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	190	151	16	151	158	124	23			124		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	99	96	100			100		
cM capacity (veh/h)	733	739	1064	815	732	927	1592			1463		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	48	129	23
Volume Left	5	5	0
Volume Right	37	0	14
cSH	886	1592	1700
Volume to Capacity	0.05	0.00	0.01
Queue Length 95th (ft)	4	0	0
Control Delay (s)	9.3	0.3	0.0
Lane LOS	A	A	
Approach Delay (s)	9.3	0.3	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	20.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	119	5	5	0	0	0	0	5	5	8	5	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	129	5	5	0	0	0	0	5	5	9	5	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	31	34	5	39	31	8	5			11		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	31	34	5	39	31	8	5			11		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	87	99	99	100	100	100	100			99		
cM capacity (veh/h)	973	854	1078	952	857	1074	1616			1608		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	140	11	14
Volume Left	129	0	9
Volume Right	5	5	0
cSH	972	1700	1608
Volume to Capacity	0.14	0.01	0.01
Queue Length 95th (ft)	13	0	0
Control Delay (s)	9.3	0.0	4.5
Lane LOS	A		A
Approach Delay (s)	9.3	0.0	4.5
Approach LOS	A		

Intersection Summary			
Average Delay	8.3		
Intersection Capacity Utilization	21.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	5	5	5	5	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	5	5	5	5	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	11				24	8
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	11				24	8
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	99
cM capacity (veh/h)	1608				988	1074

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	11	11	11
Volume Left	5	0	5
Volume Right	0	5	5
cSH	1608	1700	1029
Volume to Capacity	0.00	0.01	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	3.6	0.0	8.5
Lane LOS	A		A
Approach Delay (s)	3.6	0.0	8.5
Approach LOS			A

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	14.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	5	5	6	5	9	0	0	33	112
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	5	5	7	5	10	0	0	36	122
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	127	117	97	117	178	10	158			10		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	127	117	97	117	178	10	158			10		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	99	99	100			100		
cM capacity (veh/h)	834	770	960	856	713	1072	1422			1610		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	17	15	158
Volume Left	5	5	0
Volume Right	7	0	122
cSH	867	1422	1700
Volume to Capacity	0.02	0.00	0.09
Queue Length 95th (ft)	2	0	0
Control Delay (s)	9.2	2.7	0.0
Lane LOS	A	A	
Approach Delay (s)	9.2	2.7	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	18.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	9	5	5	0	0	0	0	10	5	33	5	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	5	5	0	0	0	0	11	5	36	5	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	91	93	5	99	91	14	5			16		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	91	93	5	99	91	14	5			16		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	99	100	100	100	100			98		
cM capacity (veh/h)	878	779	1078	859	781	1066	1616			1601		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	21	16	41
Volume Left	10	0	36
Volume Right	5	5	0
cSH	892	1700	1601
Volume to Capacity	0.02	0.01	0.02
Queue Length 95th (ft)	2	0	2
Control Delay (s)	9.1	0.0	6.4
Lane LOS	A		A
Approach Delay (s)	9.1	0.0	6.4
Approach LOS	A		

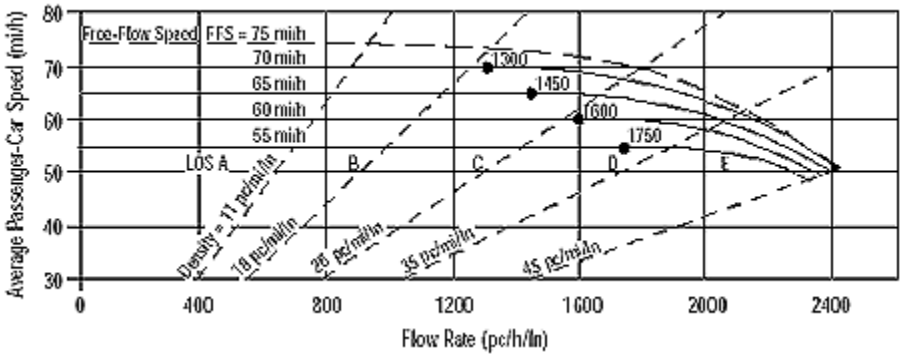
Intersection Summary			
Average Delay	5.8		
Intersection Capacity Utilization	18.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	5	5	5	10	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	5	5	11	5	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	16				27	11
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	16				27	11
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	99
cM capacity (veh/h)	1601				985	1070

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	11	16	11
Volume Left	5	0	5
Volume Right	0	11	5
cSH	1601	1700	1026
Volume to Capacity	0.00	0.01	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	3.6	0.0	8.5
Lane LOS	A		A
Approach Delay (s)	3.6	0.0	8.5
Approach LOS			A

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	14.7%	ICU Level of Service	A
Analysis Period (min)	15		

BASIC FREEWAY SEGMENTS WORKSHEET



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

General Information		***Site Information***	
Analyst	*SMA*	Highway/Direction of Travel	*I-40*
Agency or Company	*URS*	From/To	*East of Hector Ro*
Date Performed	*11/13/2008*	Jurisdiction	*San Bernardino C*
Analysis Time Period	*Existing*	Analysis Year	*2008*
Project Description	*Solar One AFC*		

Oper.(LOS) Des.(N) Planning Dat

Flow Inputs				
Volume, V	*1310*	veh/h	Peak-Hour Factor, PHF	*0.90*
AADT	*15600*	veh/day	%Trucks and Buses, P_T	*25*
Peak-Hr Prop. of AADT, K	*0.12*		%RVs, P_R	*0*
Peak-Hr Direction Prop, D	*70*		General Terrain:	*Level*
DDHV = AADT x K x D	*1310*	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**	
Lane Width	*12.0*	ft	f_{LW}	
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}	
Interchange Density	*0.50*	I/mi	f_{ID}	
Number of Lanes, N	*2*		f_N	
FFS (measured)	*70.0*	mi/h	FFS	*70.0*
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)	*819*	pc/h/ln	Design LOS
S	*70.0*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)
D = v_p / S	*11.7*	pc/mi/ln	S
LOS	*B*		D = v_p / S
			Required Number of Lanes, N

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Ex

V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exl
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exh
DDHV - Directional design hour volume			

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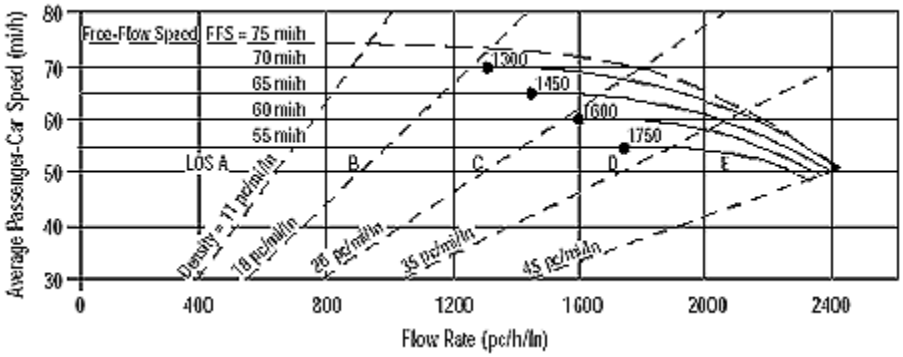

Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		***Site Information***	
Analyst	*SMA*	Highway/Direction of Travel	*I-40*
Agency or Company	*URS*	From/To	*East of Hector Ro*
Date Performed	*11/13/2008*	Jurisdiction	*San Bernardino C*
Analysis Time Period	*2011 No Proj Conditions*	Analysis Year	*2011*

Project Description *Solar One AFC*

Oper.(LOS) Des.(N) Planning Dat

Flow Inputs				
Volume, V	*1415*	veh/h	Peak-Hour Factor, PHF	*0.90*
AADT	*16850*	veh/day	%Trucks and Buses, P_T	*25*
Peak-Hr Prop. of AADT, K	*0.12*		%RVs, P_R	*0*
Peak-Hr Direction Prop, D	*70*		General Terrain:	*Level*
DDHV = AADT x K x D	*1415*	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**	
Lane Width	*12.0*	ft	f_{LW}	
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}	
Interchange Density	*0.50*	I/mi	f_{ID}	
Number of Lanes, N	*2*		f_N	
FFS (measured)	*70.0*	mi/h	FFS	*70.0*
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)	*884*	pc/h/ln	Design LOS
S	*70.0*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)
D = v_p / S	*12.6*	pc/mi/ln	S
LOS	*B*		D = v_p / S
			Required Number of Lanes, N

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Ex

V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exl
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exh
DDHV - Directional design hour volume			

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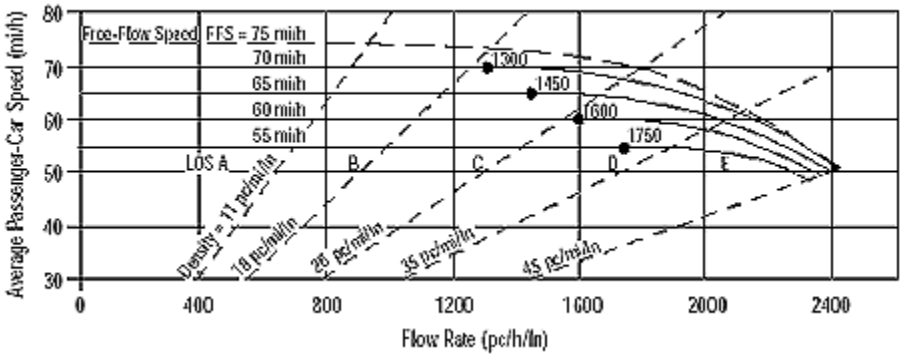

Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		***Site Information***	
Analyst	*SMA*	Highway/Direction of Travel	*I-40*
Agency or Company	*URS*	From/To	*East of Hector Ro*
Date Performed	*11/13/2008*	Jurisdiction	*San Bernardino C*
Analysis Time Period	*2011 No Proj + Proj Const Cond*	Analysis Year	*2011*
Project Description	*Solar One AFC*		

Oper.(LOS) Des.(N) Planning Dat

Flow Inputs				
Volume, V	*1449*	veh/h	Peak-Hour Factor, PHF	*0.90*
AADT	*17250*	veh/day	%Trucks and Buses, P_T	*25*
Peak-Hr Prop. of AADT, K	*0.12*		%RVs, P_R	*0*
Peak-Hr Direction Prop, D	*70*		General Terrain:	*Level*
DDHV = AADT x K x D	*1449*	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**	
Lane Width	*12.0*	ft	f_{LW}	
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}	
Interchange Density	*0.50*	I/mi	f_{ID}	
Number of Lanes, N	*2*		f_N	
FFS (measured)	*70.0*	mi/h	FFS	*70.0*
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)	*906*	pc/h/ln	Design LOS
S	*70.0*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)
D = v_p / S	*12.9*	pc/mi/ln	S
LOS	*B*		D = v_p / S
			Required Number of Lanes, N

Glossary		**Factor Location**
N - Number of lanes	S - Speed	

V - Hourly volume	D - Density	E_R - Exhibits23-8, 23-10	f_{LW} - Ex
v_p - Flow rate	FFS - Free-flow speed	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exl
LOS - Level of service	BFFS - Base free-flow speed	f_p - Page 23-12	f_N - Exh
DDHV - Directional design hour volume		LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exh

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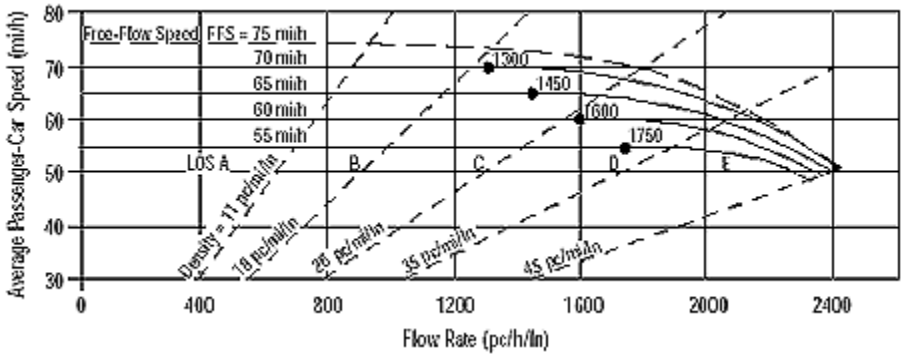

Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		***Site Information***	
Analyst	*SMA*	Highway/Direction of Travel	*I-40*
Agency or Company	*URS*	From/To	*East of Hector Ro*
Date Performed	*11/13/2008*	Jurisdiction	*San Bernardino C*
Analysis Time Period	*2014 No Proj Cond*	Analysis Year	*2014*

Project Description *Solar One AFC*

Oper.(LOS) Des.(N) Planning Dat

Flow Inputs				
Volume, V	*1507*	veh/h	Peak-Hour Factor, PHF	*0.90*
AADT	*17940*	veh/day	%Trucks and Buses, P_T	*25*
Peak-Hr Prop. of AADT, K	*0.12*		%RVs, P_R	*0*
Peak-Hr Direction Prop, D	*70*		General Terrain:	*Level*
DDHV = AADT x K x D	*1507*	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**	
Lane Width	*12.0*	ft	f_{LW}	
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}	
Interchange Density	*0.50*	I/mi	f_{ID}	
Number of Lanes, N	*2*		f_N	
FFS (measured)	*70.0*	mi/h	FFS	*70.0*
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)	*942*	pc/h/ln	Design LOS
S	*70.0*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)
D = v_p / S	*13.5*	pc/mi/ln	S
LOS	*B*		D = v_p / S
			Required Number of Lanes, N

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Ex

V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exl
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exh
DDHV - Directional design hour volume			

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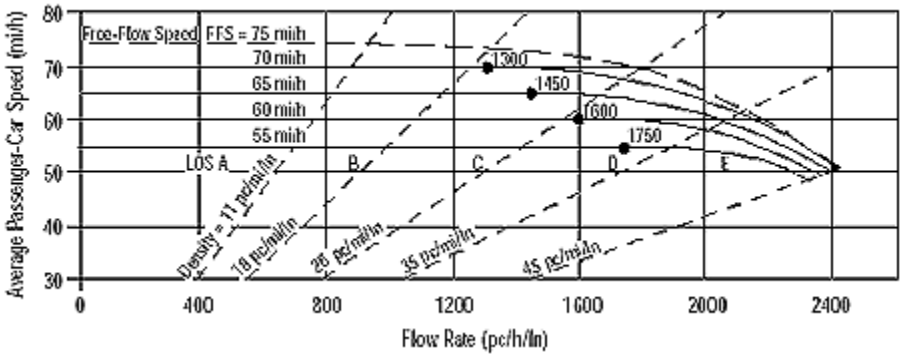

Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information / Site Information

General Information		Site Information	
Analyst	*SMA*	Highway/Direction of Travel	*I-40*
Agency or Company	*URS*	From/To	*East of Hector Ro*
Date Performed	*11/13/2008*	Jurisdiction	*San Bernardino C*
Analysis Time Period	*2014 No Proj + Proj Oprs Cond*	Analysis Year	*2014*

Project Description *Solar One AFC*

Oper.(LOS) Des.(N) Planning Dat

Flow Inputs

Volume, V	*1513*	veh/h	Peak-Hour Factor, PHF	*0.90*
AADT	*18010*	veh/day	%Trucks and Buses, P_T	*25*
Peak-Hr Prop. of AADT, K	*0.12*		%RVs, P_R	*0*
Peak-Hr Direction Prop, D	*70*		General Terrain:	*Level*
DDHV = AADT x K x D	*1513*	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}	
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}	
Interchange Density	*0.50*	I/mi	f_{ID}	
Number of Lanes, N	*2*		f_N	
FFS (measured)	*70.0*	mi/h	FFS	*70.0*
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)	*946*	pc/h/ln	Design LOS
S	*70.0*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)
D = v_p / S	*13.5*	pc/mi/ln	S
LOS	*B*		D = v_p / S
			Required Number of Lanes, N

Glossary / Factor Location

N - Number of lanes S - Speed

V - Hourly volume	D - Density	E_R - Exhibits23-8, 23-10	f_{LW} - Ex
v_p - Flow rate	FFS - Free-flow speed	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exl
LOS - Level of service	BFFS - Base free-flow speed	f_p - Page 23-12	f_N - Exh
DDHV - Directional design hour volume		LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exh

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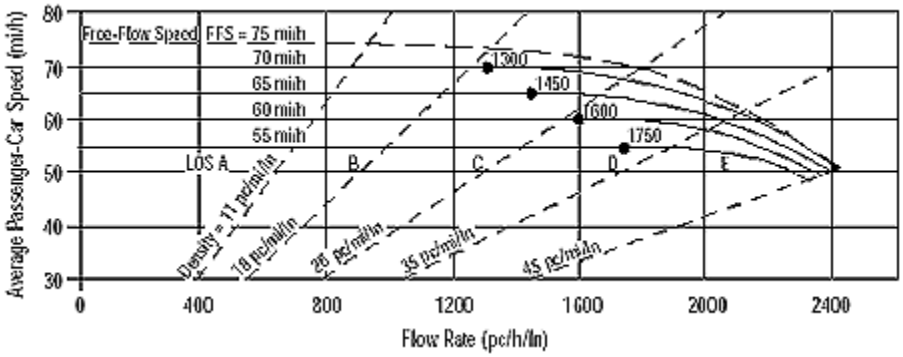

Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		***Site Information***	
Analyst	*SMA*	Highway/Direction of Travel	*I-40*
Agency or Company	*URS*	From/To	*West of Hector Rc*
Date Performed	*11/13/2008*	Jurisdiction	*San Bernardino C*
Analysis Time Period	*Existing*	Analysis Year	*2008*

Project Description *Solar One AFC*

Oper.(LOS) Des.(N) Planning Dat

Flow Inputs				
Volume, V	*1218*	veh/h	Peak-Hour Factor, PHF	*0.90*
AADT	*14500*	veh/day	%Trucks and Buses, P_T	*25*
Peak-Hr Prop. of AADT, K	*0.12*		%RVs, P_R	*0*
Peak-Hr Direction Prop, D	*70*		General Terrain:	*Level*
DDHV = AADT x K x D	*1218*	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**	
Lane Width	*12.0*	ft	f_{LW}	
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}	
Interchange Density	*0.50*	I/mi	f_{ID}	
Number of Lanes, N	*2*		f_N	
FFS (measured)	*70.0*	mi/h	FFS	*70.0*
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)	*761*	pc/h/ln	Design LOS
S	*70.0*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)
D = v_p / S	*10.9*	pc/mi/ln	S
LOS	*A*		D = v_p / S
			Required Number of Lanes, N

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Ex

V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exl
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exh
DDHV - Directional design hour volume			

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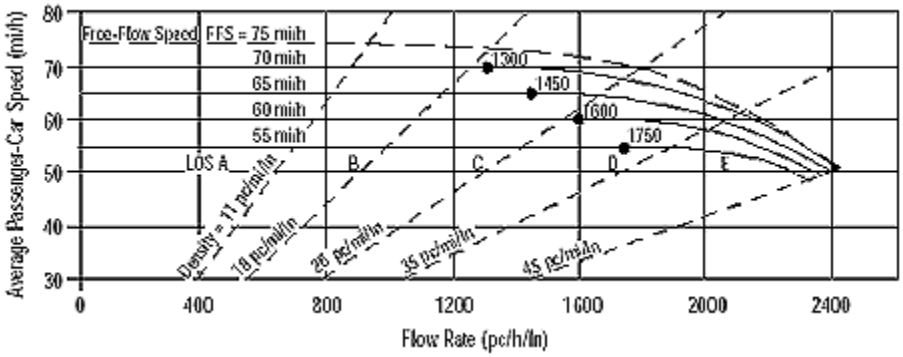
BASIC FREEWAY SEGMENTS WORKSHEET



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

General Information		***Site Information***	
Analyst	*SMA*	Highway/Direction of Travel	*I-40*
Agency or Company	*URS*	From/To	*West of Hector Rc*
Date Performed	*11/13/2008*	Jurisdiction	*San Bernardino C*
Analysis Time Period	*2011 No Proj Cond*	Analysis Year	*2011*

Project Description *Solar One AFC*

Oper.(LOS) Des.(N) Planning Dat

Flow Inputs				
Volume, V	*1315*	veh/h	Peak-Hour Factor, PHF	*0.90*
AADT	*15660*	veh/day	%Trucks and Buses, P_T	*25*
Peak-Hr Prop. of AADT, K	*0.12*		%RVs, P_R	*0*
Peak-Hr Direction Prop, D	*70*		General Terrain:	*Level*
DDHV = AADT x K x D	*1315*	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**	
Lane Width	*12.0*	ft	f_{LW}	
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}	
Interchange Density	*0.50*	I/mi	f_{ID}	
Number of Lanes, N	*2*		f_N	
FFS (measured)	*70.0*	mi/h	FFS	*70.0*
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)	*822*	pc/h/ln	Design LOS
S	*70.0*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)
D = v_p / S	*11.7*	pc/mi/ln	S
LOS	*B*		D = v_p / S
			Required Number of Lanes, N

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Ex

V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exl
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exh
DDHV - Directional design hour volume			

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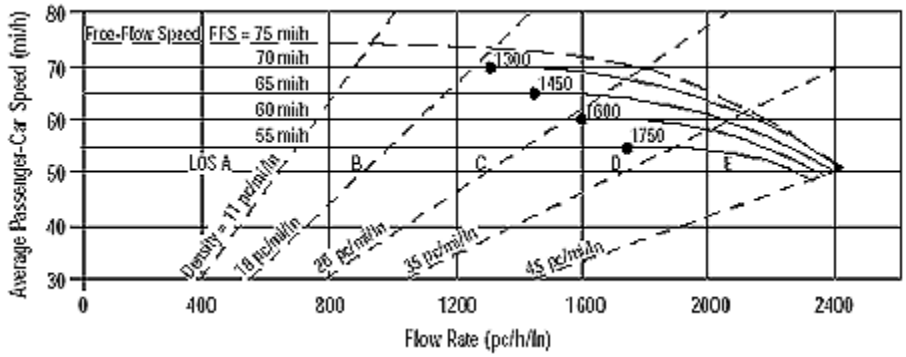

Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		***Site Information***	
Analyst	*SMA*	Highway/Direction of Travel	*I-40*
Agency or Company	*URS*	From/To	*West of Hector Rc*
Date Performed	*11/13/2008*	Jurisdiction	*San Bernardino C*
Analysis Time Period	*2011 No Proj + Proj Const Cond*	Analysis Year	*2011*

Project Description *Solar One AFC*

Oper.(LOS) Des.(N) Planning Dat

Flow Inputs				
Volume, V	*1428*	veh/h	Peak-Hour Factor, PHF	*0.90*
AADT	*17000*	veh/day	%Trucks and Buses, P_T	*25*
Peak-Hr Prop. of AADT, K	*0.12*		%RVs, P_R	*0*
Peak-Hr Direction Prop, D	*70*		General Terrain:	*Level*
DDHV = AADT x K x D	*1428*	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**	
Lane Width	*12.0*	ft	f_{LW}	
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}	
Interchange Density	*0.50*	I/mi	f_{ID}	
Number of Lanes, N	*2*		f_N	
FFS (measured)	*70.0*	mi/h	FFS	*70.0*
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)	*893*	pc/h/ln	Design LOS
S	*70.0*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)
D = v_p / S	*12.8*	pc/mi/ln	S
LOS	*B*		D = v_p / S
			Required Number of Lanes, N

Glossary		**Factor Location**
N - Number of lanes	S - Speed	

V - Hourly volume	D - Density	E_R - Exhibits23-8, 23-10	f_{LW} - Ex
v_p - Flow rate	FFS - Free-flow speed	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exl
LOS - Level of service	BFFS - Base free-flow speed	f_p - Page 23-12	f_N - Exh
DDHV - Directional design hour volume		LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exh

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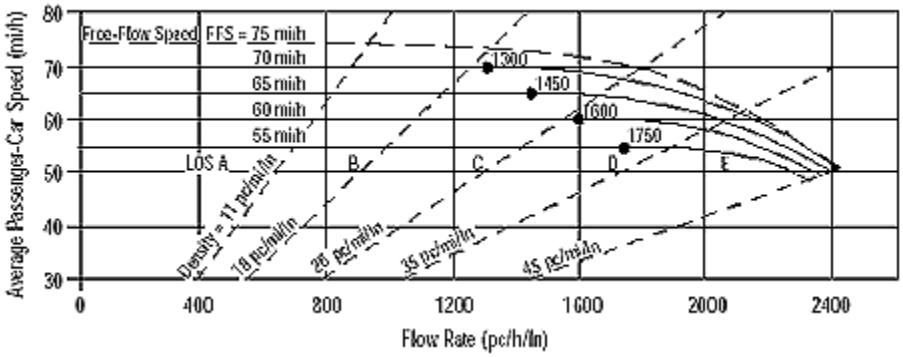

Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		***Site Information***	
Analyst	*SMA*	Highway/Direction of Travel	*I-40*
Agency or Company	*URS*	From/To	*West of Hector Rc*
Date Performed	*11/13/2008*	Jurisdiction	*San Bernardino C*
Analysis Time Period	*2014 No Proj Cond*	Analysis Year	*2014*

Project Description *Solar One AFC*

Oper.(LOS) Des.(N) Planning Dat

Flow Inputs				
Volume, V	*1401*	veh/h	Peak-Hour Factor, PHF	*0.90*
AADT	*16675*	veh/day	%Trucks and Buses, P_T	*25*
Peak-Hr Prop. of AADT, K	*0.12*		%RVs, P_R	*0*
Peak-Hr Direction Prop, D	*70*		General Terrain:	*Level*
DDHV = AADT x K x D	*1401*	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**	
Lane Width	*12.0*	ft	f_{LW}	
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}	
Interchange Density	*0.50*	I/mi	f_{ID}	
Number of Lanes, N	*2*		f_N	
FFS (measured)	*70.0*	mi/h	FFS	*70.0*
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)	*876*	pc/h/ln	Design LOS
S	*70.0*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)
D = v_p / S	*12.5*	pc/mi/ln	S
LOS	*B*		D = v_p / S
			Required Number of Lanes, N

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Ex

V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exl
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exh
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exh
DDHV - Directional design hour volume			

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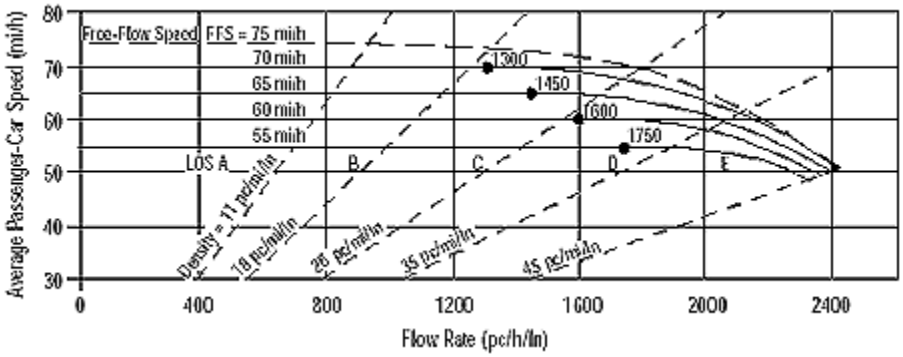

Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		***Site Information***	
Analyst	*SMA*	Highway/Direction of Travel	*I-40*
Agency or Company	*URS*	From/To	*West of Hector Rc*
Date Performed	*11/13/2008*	Jurisdiction	*San Bernardino C*
Analysis Time Period	*2014 No Proj + Proj Oprs Cond*	Analysis Year	*2014*

Project Description *Solar One AFC*

Oper.(LOS) Des.(N) Planning Dat

Flow Inputs				
Volume, V	*1421*	veh/h	Peak-Hour Factor, PHF	*0.90*
AADT	*16915*	veh/day	%Trucks and Buses, P_T	*25*
Peak-Hr Prop. of AADT, K	*0.12*		%RVs, P_R	*0*
Peak-Hr Direction Prop, D	*70*		General Terrain:	*Level*
DDHV = AADT x K x D	*1421*	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**	
Lane Width	*12.0*	ft	f_{LW}	
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}	
Interchange Density	*0.50*	I/mi	f_{ID}	
Number of Lanes, N	*2*		f_N	
FFS (measured)	*70.0*	mi/h	FFS	*70.0*
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)	*888*	pc/h/ln	Design LOS v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)
S	*70.0*	mi/h	S
D = v_p / S	*12.7*	pc/mi/ln	D = v_p / S
LOS	*B*		Required Number of Lanes, N

Glossary		**Factor Location**
N - Number of lanes	S - Speed	

V - Hourly volume	D - Density	E_R - Exhibits23-8, 23-10	f_{LW} - Ex
v_p - Flow rate	FFS - Free-flow speed	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exl
LOS - Level of service	BFFS - Base free-flow speed	f_p - Page 23-12	f_N - Exh
DDHV - Directional design hour volume		LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exh

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