

## Roundabout Analysis

- 2035 Build Alternative  
(Alt-7)



**FEET Exit 6 & 7 - Alternative 7  
NCHRP 572 Roundabout Analysis**

Eddy Rd & Exit 6 SB Off Ramp

**Input Worksheet**

Time	Approach	Raw turning volumes				PHF	Adjusted turning volumes				Roundabout volumes		
		U-turn	Left	Through	Right		U-turn	Left	Through	Right	Circ	Enter	Exit*
2035 AM	NB approach	0	0	0	0	.95	0	0	0	0	1263	0	1368
	SB approach	0	675	0	425	.95	0	711	0	447	1368	1158	421
	EB approach	0	0	525	0	.95	0	0	553	0	2079	553	447
	WB approach	0	1300	0	400	.95	0	1368	0	421	0	1789	1263
2035 PM	NB approach	0	0	0	0	.95	0	0	0	0	1005.3	0	642.1053
	SB approach	0	280	0	250	.95	0	295	0	263	1100	557.89	0
	EB approach	0	0	675	0	.95	0	0	711	0	936.84	710.53	721.0526
	WB approach	0	610	435	0	.95	0	642	458	0	0	1100	1005.263
Yr2 AM	NB approach	0	0	0	0	.95	0	0	0	0	0	0	0
	SB approach	0	0	0	0	.95	0	0	0	0	0	0	0
	EB approach	0	0	0	0	.95	0	0	0	0	0	0	0
	WB approach	0	0	0	0	.95	0	0	0	0	0	0	0
Yr2 PM	NB approach	0	0	0	0	.95	0	0	0	0	0	0	0
	SB approach	0	0	0	0	.95	0	0	0	0	0	0	0
	EB approach	0	0	0	0	.95	0	0	0	0	0	0	0
	WB approach	0	0	0	0	.95	0	0	0	0	0	0	0

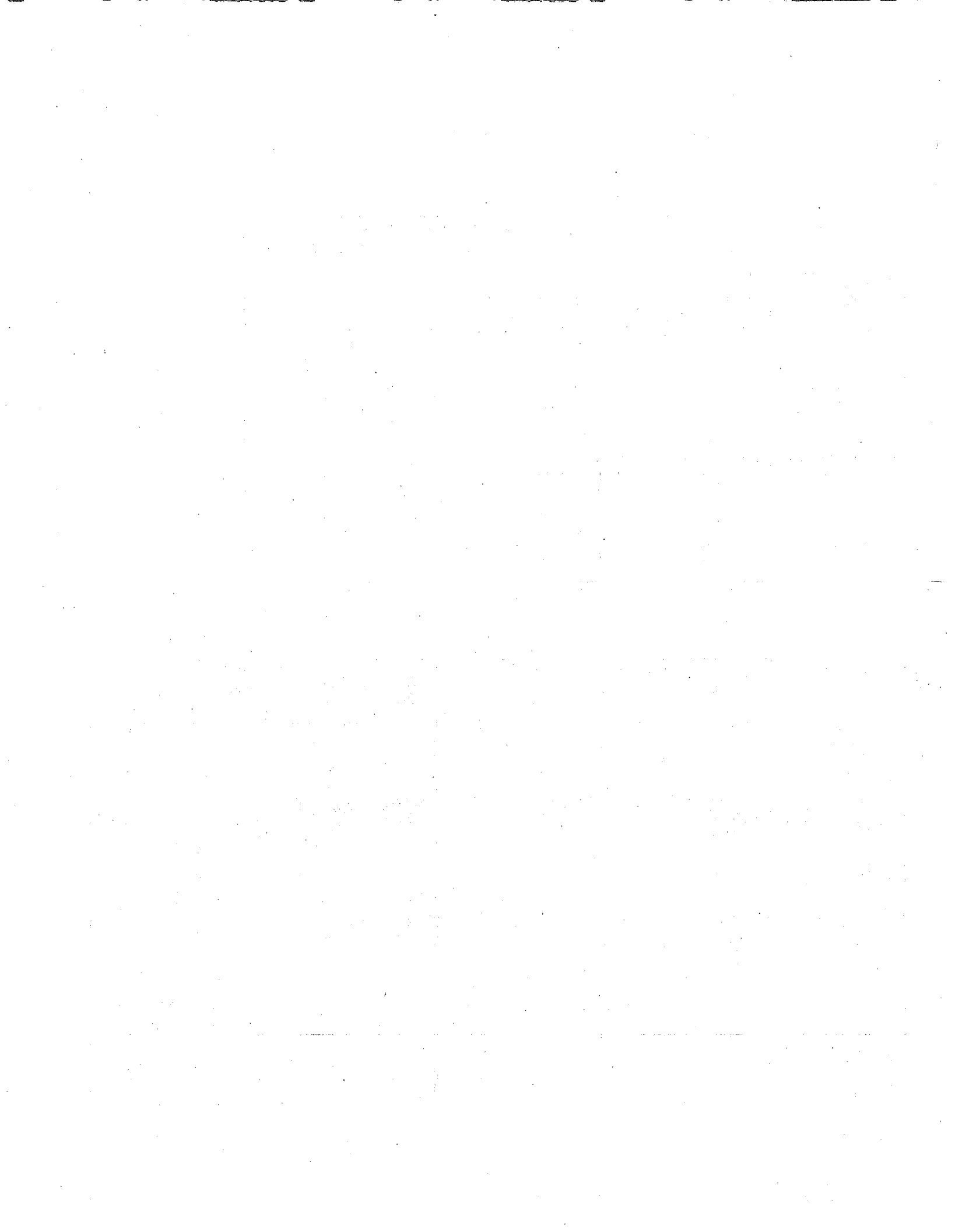
\* For information only; volume is not used in computations.

**Output Worksheet**

Time	Approach	Single lane roundabout					Double lane roundabout				
		Capacity (veh/hr) <sup>1</sup>	v/c	Control Delay (sec) <sup>2</sup>	LOS <sup>3</sup>	95th Percentile Queue (veh) <sup>4</sup>	Critical Lane Capacity (veh/hr) <sup>6</sup>	Critical Lane v/c	Control Delay (sec) <sup>2</sup>	LOS <sup>3</sup>	95th Percentile Queue (veh) <sup>4</sup>
2035 AM	NB approach	320	0.00	11	B	0.0	467	0.00	8	A	0.0
	SB approach	288	4.03	1391	F	*	434	1.64	316	F	*
	EB approach	141	3.91	1369	F	*	264	0.00	14	B	0.0
	WB approach	1130	1.58	274	F	*	1130	1.21	114	F	*
	Intersection <sup>5</sup>			816	F						
2035 PM	NB approach	414	0.00	9	A	0.0	559	0.00	6	A	0.0
	SB approach	376	1.48	253	F	*	523	0.56	15	C	3.5
	EB approach	443	1.60	300	F	*	1130	0.00	3	A	0.0
	WB approach	1130	0.97	35	E	18.5	1130	0.57	7	A	3.7
	Intersection <sup>5</sup>			166	F						
Yr2 AM	NB approach	1130	0.00	3	A	0.0	1130	0.00	3	A	0.0
	SB approach	1130	0.00	3	A	0.0	1130	0.00	3	A	0.0
	EB approach	1130	0.00	3	A	0.0	1130	0.00	3	A	0.0
	WB approach	1130	0.00	3	A	0.0	1130	0.00	3	A	0.0
	Intersection <sup>5</sup>			#DIV/0!	#####						
Yr2 PM	NB approach	1130	0.00	3	A	0.0	1130	0.00	3	A	0.0
	SB approach	1130	0.00	3	A	0.0	1130	0.00	3	A	0.0
	EB approach	1130	0.00	3	A	0.0	1130	0.00	3	A	0.0
	WB approach	1130	0.00	3	A	0.0	1130	0.00	3	A	0.0
	Intersection <sup>b</sup>			#DIV/0!	#####						

**Notes**

1. NCHRP 572, Eq. 4-3
2. HCM 2000, Equation 17-38 (recommend adding 5 sec/veh delay in saturated conditions)
3. HCM 2000, Exhibit 17-2
4. HCM 2000, Equation 17-37
5. Weighted average of approach volume and delay; for comparison only
6. NCHRP 572, Eq. 4-4



**FEET Exit 6 & 7 - Alternative 7  
NCHRP 572 Roundabout Analysis**

Amoskeag St & Exit 6 NB On Ramp

**Input Worksheet**

Time	Approach	Raw turning volumes				PHF	Adjusted turning volumes				Roundabout volumes		
		U-turn	Left	Through	Right		U-turn	Left	Through	Right	Circ	Enter	Exit*
2035 AM	NB approach	0	25	0	1175	.95	0	26	0	1237	1263	1263	0
	SB approach	0	0	0	0	.95	0	0	0	0	1789	0	158
	EB approach	0	150	1050	0	.95	0	158	1105	0	0	1263	1789
	WB approach	0	0	1675	0	.95	0	0	1763	0	184	1763	2342
2035 PM	NB approach	0	25	0	1325	.95	0	26	0	1395	1005	1421	0
	SB approach	0	0	0	0	.95	0	0	0	0	1100	0	263
	EB approach	0	250	705	0	.95	0	263	742	0	0	1005	1100
	WB approach	0	0	1020	0	.95	0	0	1074	0	289	1074	2137
Yr2 AM	NB approach	0	0	0	0	.95	0	0	0	0	0	0	0
	SB approach	0	0	0	0	.95	0	0	0	0	0	0	0
	EB approach	0	0	0	0	.95	0	0	0	0	0	0	0
	WB approach	0	0	0	0	.95	0	0	0	0	0	0	0
Yr2 PM	NB approach	0	0	0	0	.95	0	0	0	0	0	0	0
	SB approach	0	0	0	0	.95	0	0	0	0	0	0	0
	EB approach	0	0	0	0	.95	0	0	0	0	0	0	0
	WB approach	0	0	0	0	.95	0	0	0	0	0	0	0

\* For information only; volume is not used in computations.

**Output Worksheet**

Time	Approach	Single lane roundabout					Double lane roundabout				
		Capacity (veh/hr) <sup>1</sup>	v/c	Control Delay (sec) <sup>2</sup>	LOS <sup>3</sup>	95th Percentile Queue (veh) <sup>4</sup>	Critical Lane Capacity (veh/hr) <sup>6</sup>	Critical Lane v/c	Control Delay (sec) <sup>2</sup>	LOS <sup>3</sup>	95th Percentile Queue (veh) <sup>4</sup>
2035 AM	NB approach	320	3.95	1355	F	*	467	2.65	762	F	*
	SB approach	189	0.00	19	C	0.0	323	0.00	11	B	0.0
	EB approach	1130	1.12	78	F	*	1130	0.56	7	A	3.6
	WB approach	940	1.88	406	F	*	993	0.00	4	A	0.0
	Intersection <sup>5</sup>			589	F						
2035 PM	NB approach	414	3.44	1117	F	*	559	2.49	690	F	*
	SB approach	376	0.00	10	A	0.0	523	0.00	7	A	0.0
	EB approach	1130	0.89	22	C	13.1	1130	0.44	6	A	2.3
	WB approach	846	1.27	143	F	*	923	0.00	4	A	0.0
	Intersection <sup>5</sup>			504	F						
Yr2 AM	NB approach	1130	0.00	3	A	0.0	1130	0.00	3	A	0.0
	SB approach	1130	0.00	3	A	0.0	1130	0.00	3	A	0.0
	EB approach	1130	0.00	3	A	0.0	1130	0.00	3	A	0.0
	WB approach	1130	0.00	3	A	0.0	1130	0.00	3	A	0.0
	Intersection <sup>5</sup>			#DIV/0!	#####						
Yr2 PM	NB approach	1130	0.00	3	A	0.0	1130	0.00	3	A	0.0
	SB approach	1130	0.00	3	A	0.0	1130	0.00	3	A	0.0
	EB approach	1130	0.00	3	A	0.0	1130	0.00	3	A	0.0
	WB approach	1130	0.00	3	A	0.0	1130	0.00	3	A	0.0
	Intersection <sup>b</sup>			#DIV/0!	#####						

**Notes**

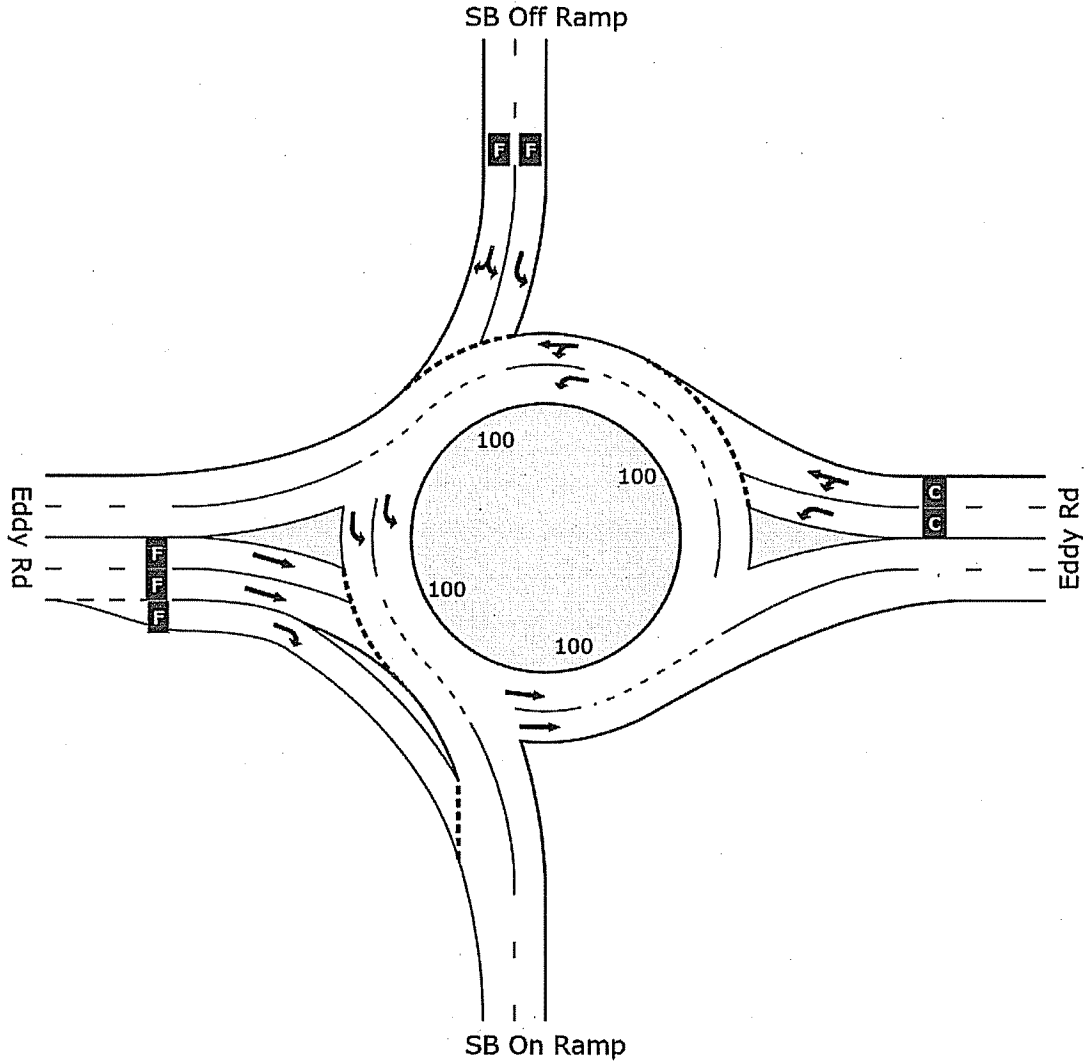
1. NCHRP 572, Eq. 4-3
2. HCM 2000, Equation 17-38 (recommend adding 5 sec/veh delay in saturated conditions)
3. HCM 2000, Exhibit 17-2
4. HCM 2000, Equation 17-37
5. Weighted average of approach volume and delay; for comparison only
6. NCHRP 572, Eq. 4-4



# LEVEL OF SERVICE SUMMARY

Site: Alt 7 Eddy Rd & SB Ramps  
AM

Eddy Rd & Exit 6 SB Ramps  
Roundabout



	South	East	North	West	Intersection
LOS	NA	C	F	F	F

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if  $v/c >$  irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).





# MOVEMENT SUMMARY

Site: Alt 7 Eddy Rd & SB Ramps  
AM

Eddy Rd & Exit 6 SB Ramps  
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
East: Eddy Rd											
1	L	1368	2.0	0.808	19.3	LOS C	0.0	0.0	0.00	0.64	21.0
6	T	421	2.0	0.808	19.3	LOS C	0.0	0.0	0.00	0.12	26.9
Approach		1789	2.0	0.808	19.3	LOS C	0.0	0.0	0.00	0.52	22.0
North: SB Off Ramp											
7	L	711	2.0	1.961	474.1	LOS F	99.5	2527.6	1.00	5.27	1.8
14	R	447	2.0	1.961	471.6	LOS F	99.5	2527.6	1.00	5.58	1.6
Approach		1158	2.0	1.961	473.1	LOS F	99.5	2527.6	1.00	5.39	1.7
West: Eddy Rd											
2	T	568	2.0	0.964	82.1	LOS F	7.1	181.1	0.98	1.60	8.1
12	R	521	2.0	1.250	158.8	LOS F	39.1	994.1	1.00	3.78	4.8
Approach		1089	2.0	1.250	118.8	LOS F	39.1	994.1	0.99	2.64	6.1
All Vehicles		4037	2.0	1.961	176.3	LOS F	99.5	2527.6	0.55	2.49	3.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Model used.

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# INPUT REPORT

Site: Alt 7 Eddy Rd & SB Ramps  
AM

Eddy Rd & Exit 6 SB Ramps

Intersection Parameters	
Title	Eddy Rd & Exit 6 SB Ramps
Intersection ID	1
Unit Time (for volumes)	60 minutes
Peak Flow Period (for performance)	15 minutes

Geometry - Approach Data						
Location	Name	Type	No. of App. Lanes	No. of Exit Lanes	Median Width ft	Extra Bunching %
South	SB On Ramp	One-way Exit	0	2	-	0.0
East	Eddy Rd	Two-way	2	2	-	0.0
North	SB Off Ramp	One-way Approach	2	0	-	0.0
West	Eddy Rd	Two-way	3	2	-	0.0

Geometry - Roundabout Data								
Location	Name	Island Diameter ft	Circ. Width ft	Circ. Lanes	Entry Radius ft	Entry Angle degrees	Env. Factor	Entry/Circ. Flow Adjust
South	SB On Ramp	-	-	2	-	-	-	None
East	Eddy Rd	-	-	2	-	-	-	None
North	SB Off Ramp	-	-	2	-	-	-	None
West	Eddy Rd	-	-	2	-	-	-	None

Geometry - Approach Lane Data							
Lane Number	Lane Type	Lane Discip.	Basic Satn. Flow tcu/h	Utilisation Ratio %	Saturation Speed mph	Capacity Adjustment %	
East Eddy Rd							
App. Lane 1	Normal	L	1900	-	-	0.0	
App. Lane 2	Normal	LT	1900	-	-	0.0	
North SB Off Ramp							
App. Lane 1	Normal	L	1900	-	-	0.0	
App. Lane 2	Normal	LR	1900	-	-	0.0	
West Eddy Rd							
App. Lane 1	Normal	T	1900	-	-	0.0	
App. Lane 2	Normal	T	1900	-	-	0.0	
App. Lane 3	Slip (Giveaway/Yield)	R	1900	-	-	0.0	

Geometry - Approach & Exit Lane Data				
Lane Number	Lane Width ft	Lane Length ft	Grade %	SL Type
South SB On Ramp				
Exit Lane 1	13.00	900.0	0.00	-
Exit Lane 2	13.00	700.0	0.00	-
East Eddy Rd				
App. Lane 1	13.00	500.0	0.00	-
App. Lane 2	13.00	500.0	0.00	-
Exit Lane 1	13.00	500.0	0.00	-
Exit Lane 2	13.00	500.0	0.00	-
North SB Off Ramp				
App. Lane 1	13.00	900.0	0.00	-
App. Lane 2	13.00	500.0	0.00	-
West Eddy Rd				
App. Lane 1	13.00	1200.0	0.00	-
App. Lane 2	13.00	1000.0	0.00	-
App. Lane 3	13.00	400.0	0.00	Turn Bay
Exit Lane 1	13.00	1200.0	0.00	-
Exit Lane 2	13.00	1000.0	0.00	-

Lanes are numbered from left to right in the direction of travel.

Geometry - Movement Definitions		
To Approach	Movement Banned	Turn Desig
From: East Eddy Rd		
East	Yes	-
South	No	L
West	No	T
From: North SB Off Ramp		
East	No	L
South	Yes	-
West	No	R
From: West Eddy Rd		
West	Yes	-
East	No	T
South	No	R

### HCM 2010 Roundabout Model Calibration

Location	Name	HCM 2010 Single Lane		HCM 2010 Multi-Lane Dominant Lane		HCM 2010 Multi-Lane Subdominant Lane	
		Para. A	Para. B	Para. A	Para. B	Para. A	Para. B
South	SB On Ramp	1130.0	0.001000	1130.0	0.000700	1130.0	0.000750
East	Eddy Rd	1130.0	0.001000	1130.0	0.000700	1130.0	0.000750
North	SB Off Ramp	1130.0	0.001000	1130.0	0.000700	1130.0	0.000750
West	Eddy Rd	1130.0	0.001000	1130.0	0.000700	1130.0	0.000750

### Volumes

To Approach	Total veh	HV %	Peak Flow Factor %	Vehicle Occupancy pers/veh	Flow Scale %	Growth Rate %/year
From: East Eddy Rd						
South	1300.0	2.00	95.0	1.20	100.00	2.00
West	400.0	2.00	95.0	1.20	100.00	2.00
From: North SB Off Ramp						
East	675.0	2.00	95.0	1.20	100.00	2.00
West	425.0	2.00	95.0	1.20	100.00	2.00
From: West Eddy Rd						
East	525.0	2.00	95.0	1.20	100.00	2.00
South	510.0	2.00	95.0	1.20	100.00	2.00

### Path Data

To Approach	App. Cruise Speed mph	Exit Cruise Speed mph	App. Trav. Distance ft	Negn Speed mph	Negn Distance ft	Downst. Distance ft	Negn Radius ft
From: East Eddy Rd							
South	30.0	25.0	500.0	-	-	-	-
West	30.0	25.0	500.0	-	-	-	-
From: North SB Off Ramp							
East	35.0	30.0	900.0	-	-	-	-
West	35.0	30.0	900.0	-	-	-	-
From: West Eddy Rd							
East	30.0	25.0	1200.0	-	-	-	-
South	30.0	25.0	1200.0	-	-	-	-

Movement Data - General									
Turn	Mov. ID	Queue Space		Vehicle Length		HVE	P/Deg Satn	Movement	
		LV ft	HV ft	LV ft	HV ft			Type	Control
East		Eddy Rd							
L	1	25.00	45.00	17.00	36.00	2.00	-	Normal	-
T	6	25.00	45.00	17.00	36.00	2.00	-	Normal	-
North		SB Off Ramp							
L	7	25.00	45.00	17.00	36.00	2.00	-	Normal	-
R	14	25.00	45.00	17.00	36.00	2.00	-	Normal	-
West		Eddy Rd							
T	2	25.00	45.00	17.00	36.00	2.00	-	Normal	-
R	12	25.00	45.00	17.00	36.00	2.00	-	Slip	Yield

Movement Type and Control parameters are set automatically from Approach Control and Lane Type data in the Geometry dialog.

Gap Acceptance				
Movement	Critical Gap sec	Follow-up Headway sec	Min. Departures veh/min	Exiting
				Flow Effect %
East		Eddy Rd		
L	-	-	2.50	0
T	-	-	2.50	0
North		SB Off Ramp		
L	-	-	2.50	0
R	-	-	2.50	0
West		Eddy Rd		
T	-	-	2.50	0
R	-	-	2.50	0

### Model Settings - Options

General Options	
Level of Service Method	Delay & v/c (HCM 2010)
Level of Service Target	LOS D
Performance Measure	Delay
Percentile Queue	95 %
Hours per Year	480 h
Gap Acceptance	
HV Method for Gap Acceptance	Include HV Effect for all percentages
Gap Acceptance Capacity	Traditional M1
HCM Delay Formula	Yes
Downstream Short Lane Model	
Minimum Downstream Utilisation Ratio	20 %
Minimum Downstream Distance	100 ft
Distance for Full Lane Utilisation	660 ft
Calibration Parameter	1.2

### Model Settings - Roundabouts

Roundabout Model Options	
Capacity Model	US HCM 2010
LOS Method	Same as Sign Control
US HCM 2010 Roundabout Model	
Include Origin-Destination Pattern Effects	No
Factor for Parameter A	1.000
Factor for Parameter B	1.000
Other Roundabout Models	
FHWA 2000	No
Use Urban Compact Roundabout	-
HCM 2000	No
German	No
NAASRA 1986	No

### Model Settings - Cost Parameters

Vehicle Operating Cost	
Cost Unit	\$
Pump Price of Fuel	3.000 \$/gal
Fuel Resource Cost Factor	0.700
Ratio of Running Cost to Fuel Cost	3.00
Vehicle Mass	
Light Vehicle Mass	3100.0 lb
Heavy Vehicle Mass	24000.0 lb
Heavy Vehicle Maximum Power	130 kW
Time Cost	
Average Income	23.00 \$/h
Time Value Factor	0.400

### Demand & Sensitivity

Analysis Method:	None
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### Site Properties

Site (Intersection) Type	Roundabout
Model Name	US HCM (Customary)
Drive Rule	Right-hand side of the road
New Zealand Rule	No
HCM Version	Yes
Units	US Customary

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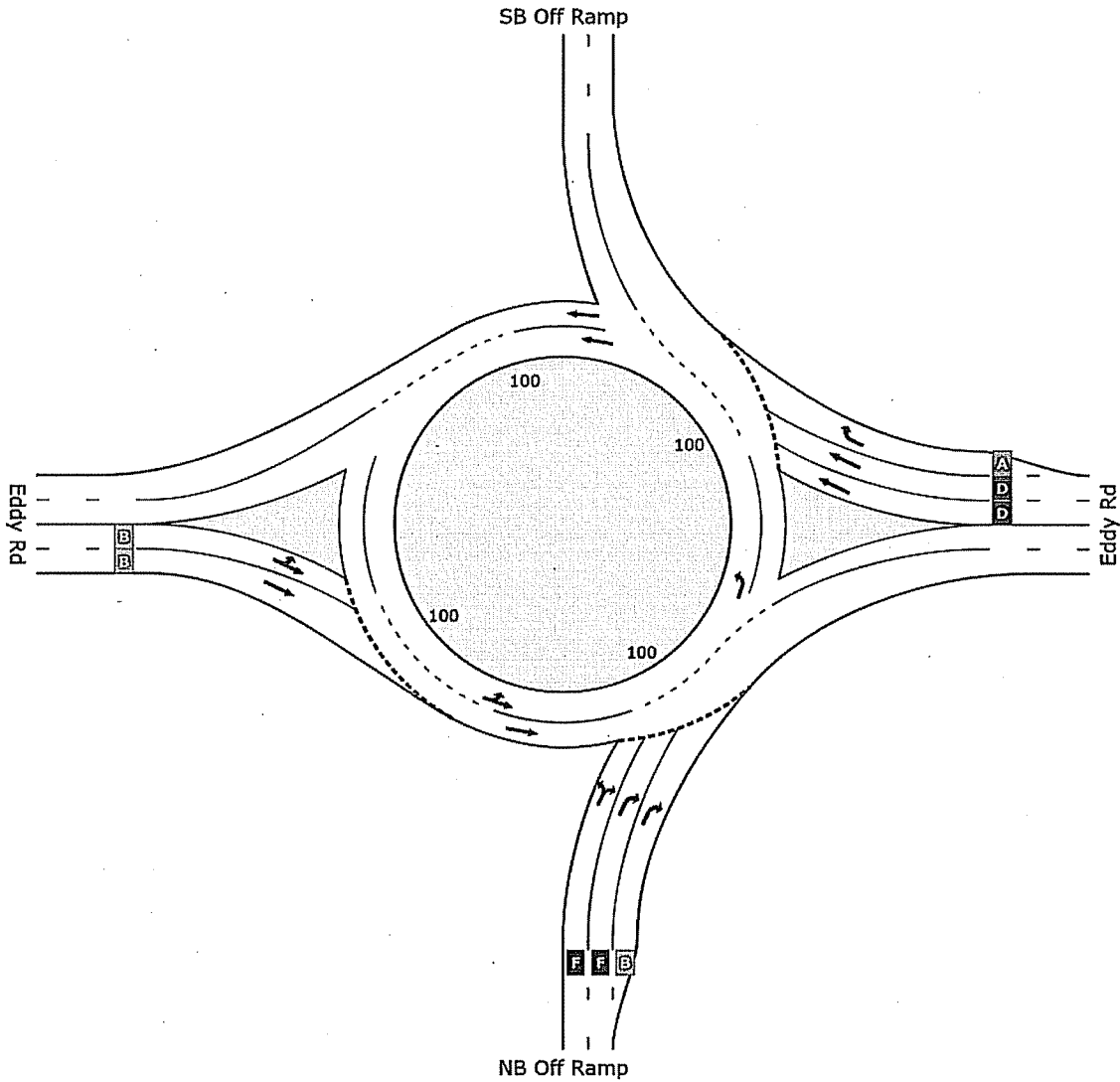
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# LEVEL OF SERVICE SUMMARY

Site: Alt 7 Amoskeag St & NB Ramps AM

Amoskeag St & Exit 6 nB Ramps Roundabout



	South	East	North	West	Intersection
LOS	F	D	NA	B	F

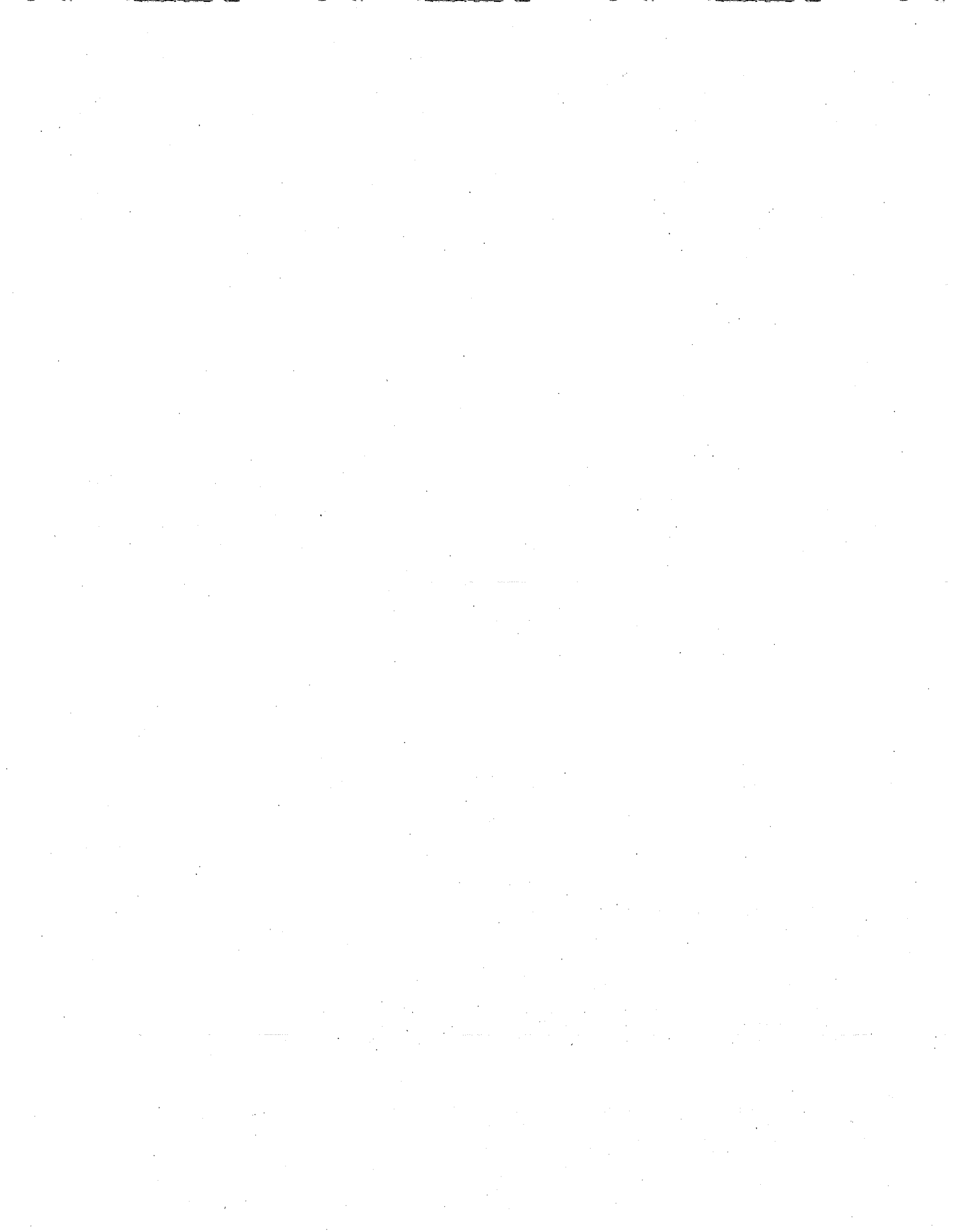
Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).



# MOVEMENT SUMMARY

Site: Alt 7 Amoskeag St & NB  
Ramps AM

Amoskeag St & Exit 6 nB Ramps  
Roundabout

Movement Performance - Vehicles											
MovID	Turn	Demand Flow veh/h	HV %	Deg Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Off Ramp											
3	L	26	2.0	1.322	187.7	LOS F	49.5	1257.5	1.00	3.89	5.8
18	R	1237	2.0	1.322	170.9	LOS F	52.2	1327.0	0.97	3.70	5.9
Approach		1263	2.0	1.322	171.3	LOS F	52.2	1327.0	0.97	3.70	5.9
East: Eddy Rd											
6	T	1763	2.0	0.908	31.6	LOS D	14.9	377.3	0.94	0.89	9.3
16	R	179	2.0	0.185	5.5	LOSA	0.6	14.0	0.25	0.43	24.5
Approach		1942	2.0	0.908	29.2	LOS D	14.9	377.3	0.87	0.85	10.8
West: Eddy Rd											
5	L	158	2.0	0.570	10.3	LOS B	0.0	0.0	0.00	0.93	25.3
2	T	1105	2.0	0.570	10.3	LOS B	0.0	0.0	0.00	0.14	28.4
Approach		1263	2.0	0.570	10.3	LOS B	0.0	0.0	0.00	0.24	27.8
All Vehicles		4468	2.0	1.322	64.0	LOS F	52.2	1327.0	0.65	1.48	9.4

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Model used.

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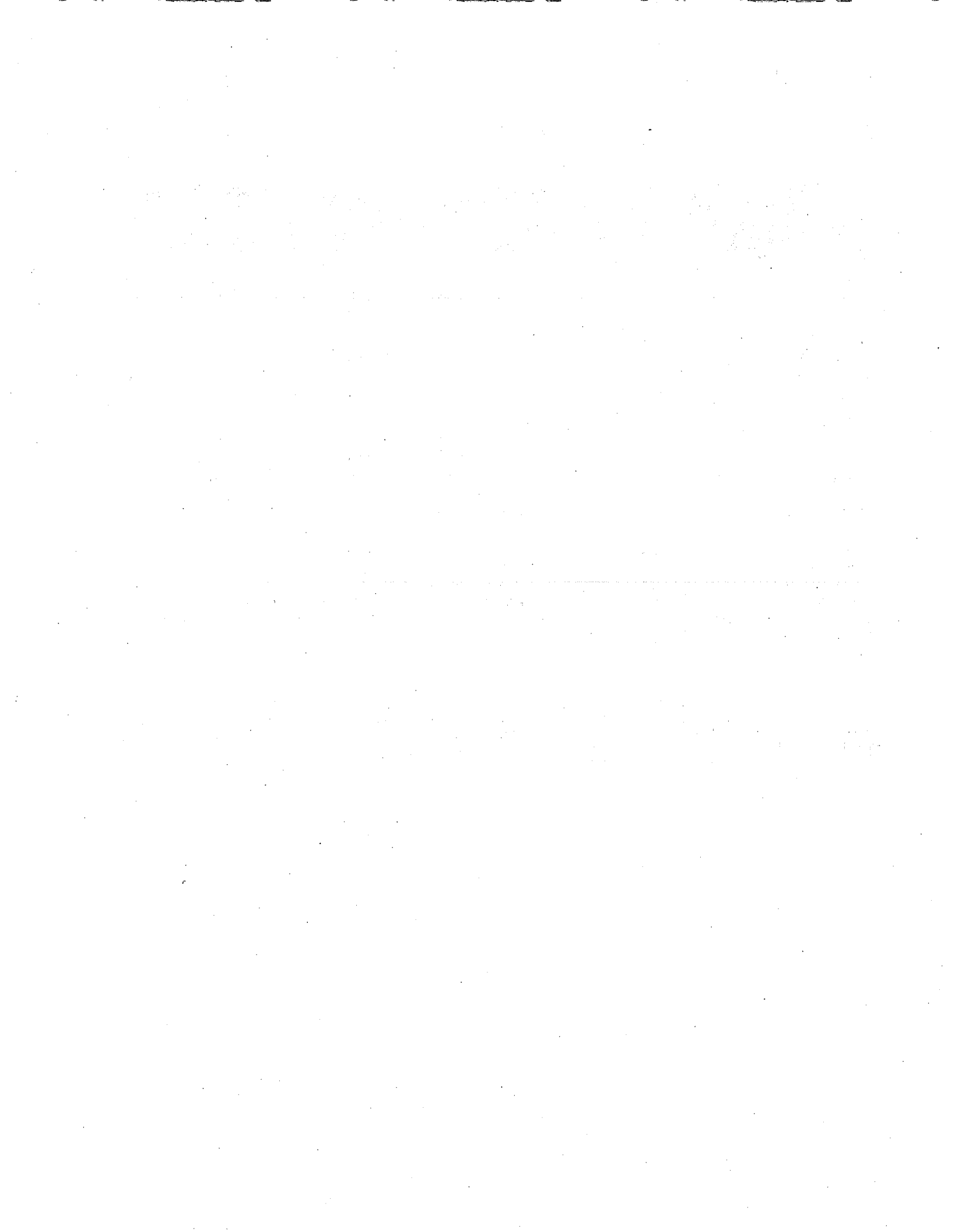
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SIDRA  
INTERSECTION



# INPUT REPORT

Site: Alt 7 Amoskeag St & NB Ramps AM

Amoskeag St & Exit 6 nB Ramps

Intersection Parameters	
Title	Amoskeag St & Exit 6 nB Ramps
Intersection ID	1
Unit Time (for volumes)	60 minutes
Peak Flow Period (for performance)	15 minutes

Geometry - Approach Data						
Location	Name	Type	No. of App. Lanes	No. of Exit Lanes	Median Width ft	Extra Bunching %
South	NB Off Ramp	One-way Approach	3	0	-	0.0
East	Eddy Rd	Two-way	3	2	-	0.0
North	SB Off Ramp	One-way Exit	0	2	-	0.0
West	Eddy Rd	Two-way	2	2	-	0.0

Geometry - Roundabout Data								
Location	Name	Island Diameter ft	Circ. Width ft	Circ. Lanes	Entry Radius ft	Entry Angle degrees	Env. Factor	Entry/Circ. Flow Adjust.
South	NB Off Ramp	-	-	2	-	-	-	None
East	Eddy Rd	-	-	2	-	-	-	None
North	SB Off Ramp	-	-	2	-	-	-	None
West	Eddy Rd	-	-	2	-	-	-	None

Geometry - Approach Lane Data							
Lane Number	Lane Type	Lane Discip.	Basic Satn Flow tcu/h	Utilisation Ratio %	Saturation Speed mph	Capacity Adjustment %	
South NB Off Ramp							
App. Lane 1	Normal	LR	1900	-	-	0.0	
App. Lane 2	Normal	R	1900	-	-	0.0	
App. Lane 3	Normal	R	1900	-	-	0.0	
East Eddy Rd							
App. Lane 1	Normal	T	1900	-	-	0.0	
App. Lane 2	Normal	T	1900	-	-	0.0	
App. Lane 3	Normal	R	1900	-	-	0.0	
West Eddy Rd							
App. Lane 1	Normal	LT	1900	-	-	0.0	
App. Lane 2	Normal	T	1900	-	-	0.0	

Geometry - Approach & Exit Lane Data				
Lane Number	Lane Width ft	Lane Length ft	Grade %	SL Type
South NB Off Ramp				
App. Lane 1	13.00	800.0	0.00	-
App. Lane 2	13.00	600.0	0.00	-
App. Lane 3	13.00	400.0	0.00	Turn Bay
East Eddy Rd				
App. Lane 1	13.00	600.0	0.00	-
App. Lane 2	13.00	600.0	0.00	-
App. Lane 3	13.00	400.0	0.00	Turn Bay
Exit Lane 1	13.00	600.0	0.00	-
Exit Lane 2	13.00	600.0	0.00	-
North SB Off Ramp				
Exit Lane 1	13.00	600.0	0.00	-
Exit Lane 2	13.00	600.0	0.00	-
West Eddy Rd				
App. Lane 1	13.00	500.0	0.00	-
App. Lane 2	13.00	500.0	0.00	-
Exit Lane 1	13.00	500.0	0.00	-
Exit Lane 2	13.00	500.0	0.00	-

Lanes are numbered from left to right in the direction of travel.

Geometry - Movement Definitions		
To Approach	Movement Banned	Turn Desig.
From: South NB Off Ramp		
West	No	L
North	Yes	-
East	No	R
From: East Eddy Rd		
East	Yes	-
West	No	T
North	No	R
From: West Eddy Rd		
West	Yes	-
North	No	L
East	No	T

### HCM 2010 Roundabout Model Calibration

Location	Name	HCM 2010 Single Lane		HCM 2010 Multi-Lane Dominant Lane		HCM 2010 Multi-Lane Subdominant Lane	
		Para. A	Para. B	Para. A	Para. B	Para. A	Para. B
South	NB Off Ramp	1130.0	0.001000	1130.0	0.000700	1130.0	0.000750
East	Eddy Rd	1130.0	0.001000	1130.0	0.000700	1130.0	0.000750
North	SB Off Ramp	1130.0	0.001000	1130.0	0.000700	1130.0	0.000750
West	Eddy Rd	1130.0	0.001000	1130.0	0.000700	1130.0	0.000750

### Volumes

To Approach	Total veh	HV %	Peak Flow Factor %	Vehicle Occupancy pers/veh	Flow Scale %	Growth Rate %/year
From: South	NB Off Ramp					
West	25.0	2.00	95.0	1.20	100.00	2.00
East	1175.0	2.00	95.0	1.20	100.00	2.00
From: East	Eddy Rd					
West	1675.0	2.00	95.0	1.20	100.00	2.00
North	170.0	2.00	95.0	1.20	100.00	2.00
From: West	Eddy Rd					
North	150.0	2.00	95.0	1.20	100.00	2.00
East	1050.0	2.00	95.0	1.20	100.00	2.00

### Path Data

To Approach	App. Cruise Speed mph	Exit Cruise Speed mph	App. Trav. Distance ft	Negn Speed mph	Negn Distance ft	Downst. Distance ft	Negn Radius ft
From: South	NB Off Ramp						
West	35.0	30.0	1600.0	-	-	-	-
East	35.0	30.0	1600.0	-	-	-	-
From: East	Eddy Rd						
West	30.0	25.0	500.0	-	-	-	-
North	30.0	25.0	1600.0	-	-	-	-
From: West	Eddy Rd						
North	30.0	25.0	1600.0	-	-	-	-
East	30.0	25.0	1200.0	-	-	-	-

Movement Data - General										
Turn	Mov ID	Queue Space		Vehicle Length		HVE	P Deg Satn	Movement		
		LV ft	HV ft	LV ft	HV ft			Type	Control	
South		NB Off Ramp								
L	3	25.00	45.00	17.00	36.00	2.00	-	Normal	-	
R	18	25.00	45.00	17.00	36.00	2.00	-	Normal	-	
East		Eddy Rd								
T	6	25.00	45.00	17.00	36.00	2.00	-	Normal	-	
R	16	25.00	45.00	17.00	36.00	2.00	-	Normal	-	
West		Eddy Rd								
L	5	25.00	45.00	17.00	36.00	2.00	-	Normal	-	
T	2	25.00	45.00	17.00	36.00	2.00	-	Normal	-	

Movement Type and Control parameters are set automatically from Approach Control and Lane Type data in the Geometry dialog.

Gap Acceptance					
Movement	Critical Gap sec	Follow-up Headway sec	Min. Departures veh/min	Exiting Flow Effect	
					%
South		NB Off Ramp			
L	-	-	2.50		0
R	-	-	2.50		0
East		Eddy Rd			
T	-	-	2.50		0
R	-	-	2.50		0
West		Eddy Rd			
L	-	-	2.50		0
T	-	-	2.50		0



### Model Settings - Options

General Options	
Level of Service Method	Delay & v/c (HCM 2010)
Level of Service Target	LOS D
Performance Measure	Delay
Percentile Queue	95 %
Hours per Year	480 h
Gap/Acceptance	
HV Method for Gap-Acceptance	Include HV Effect for all percentages
Gap-Acceptance Capacity	Traditional M1
HCM Delay Formula	Yes
Downstream Short Lane Model	
Minimum Downstream Utilisation Ratio	20 %
Minimum Downstream Distance	100 ft
Distance for Full Lane Utilisation	660 ft
Calibration Parameter	1.2

### Model Settings - Roundabouts

Roundabout Model Options	
Capacity Model	US HCM 2010
LOS Method	Same as Sign Control
US HCM 2010 Roundabout Model	
Include Origin-Destination Pattern Effects	No
Factor for Parameter A	1.000
Factor for Parameter B	1.000
Other Roundabout Models	
FHWA 2000	No
Use Urban Compact Roundabout	-
HCM 2000	No
German	No
NAASRA 1986	No

### Model Settings - Cost Parameters

Vehicle Operating Cost	
Cost Unit	\$
Pump Price of Fuel	3.000 \$/gal
Fuel Resource Cost Factor	0.700
Ratio of Running Cost to Fuel Cost	3.00
Vehicle Mass	
Light Vehicle Mass	3100.0 lb
Heavy Vehicle Mass	24000.0 lb
Heavy Vehicle Maximum Power	130 kW
Time Cost	
Average Income	23.00 \$/h
Time Value Factor	0.400

### Demand & Sensitivity

Analysis Method: None

### Site Properties

Site (Intersection) Type	Roundabout
Model Name	US HCM (Customary)
Drive Rule	Right-hand side of the road
New Zealand Rule	No
HCM Version	Yes
Units	US Customary

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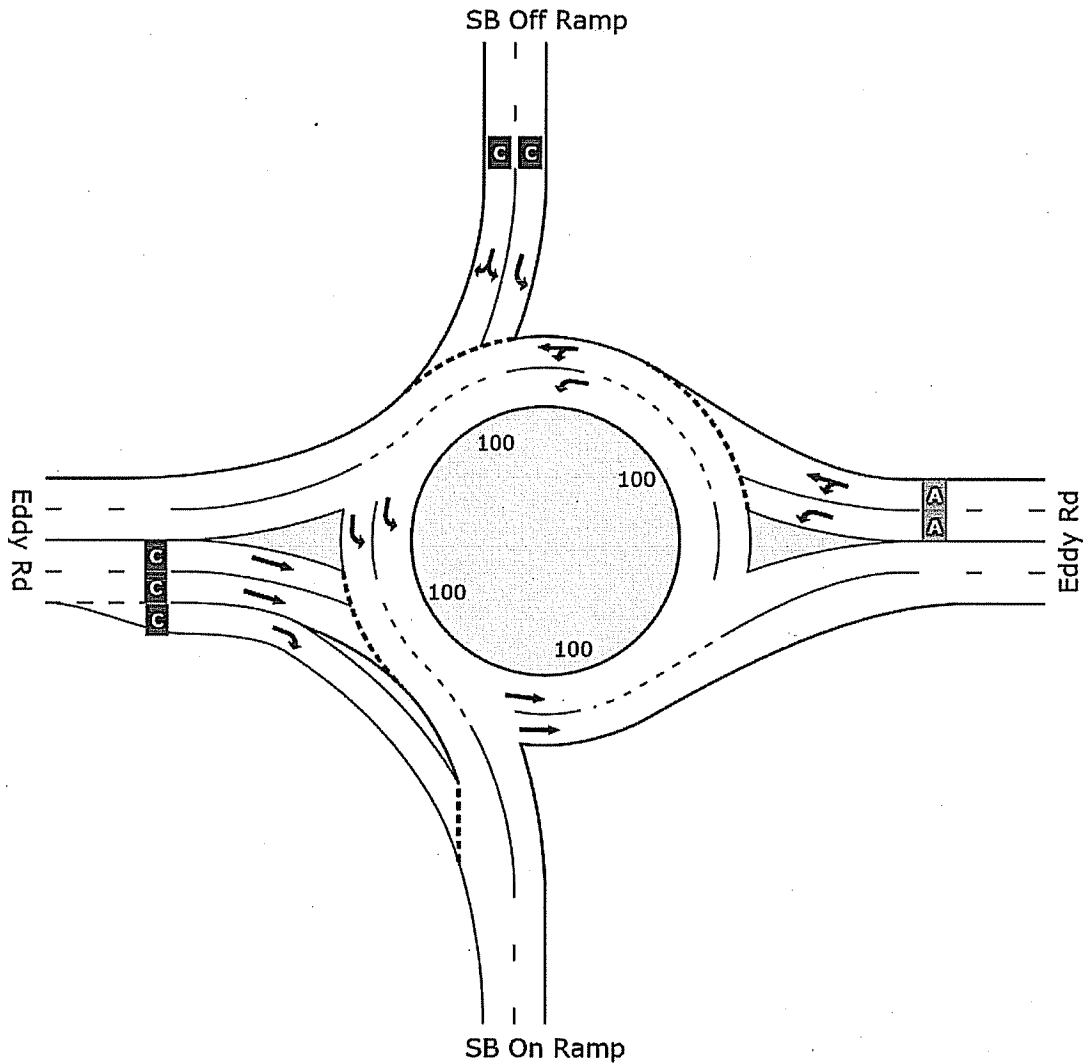
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# LEVEL OF SERVICE SUMMARY

Site: Alt 7 Eddy Rd & SB Ramps PM

Eddy Rd & Exit 6 SB Ramps  
Roundabout



	South	East	North	West	Intersection
LOS	NA	A	C	C	C

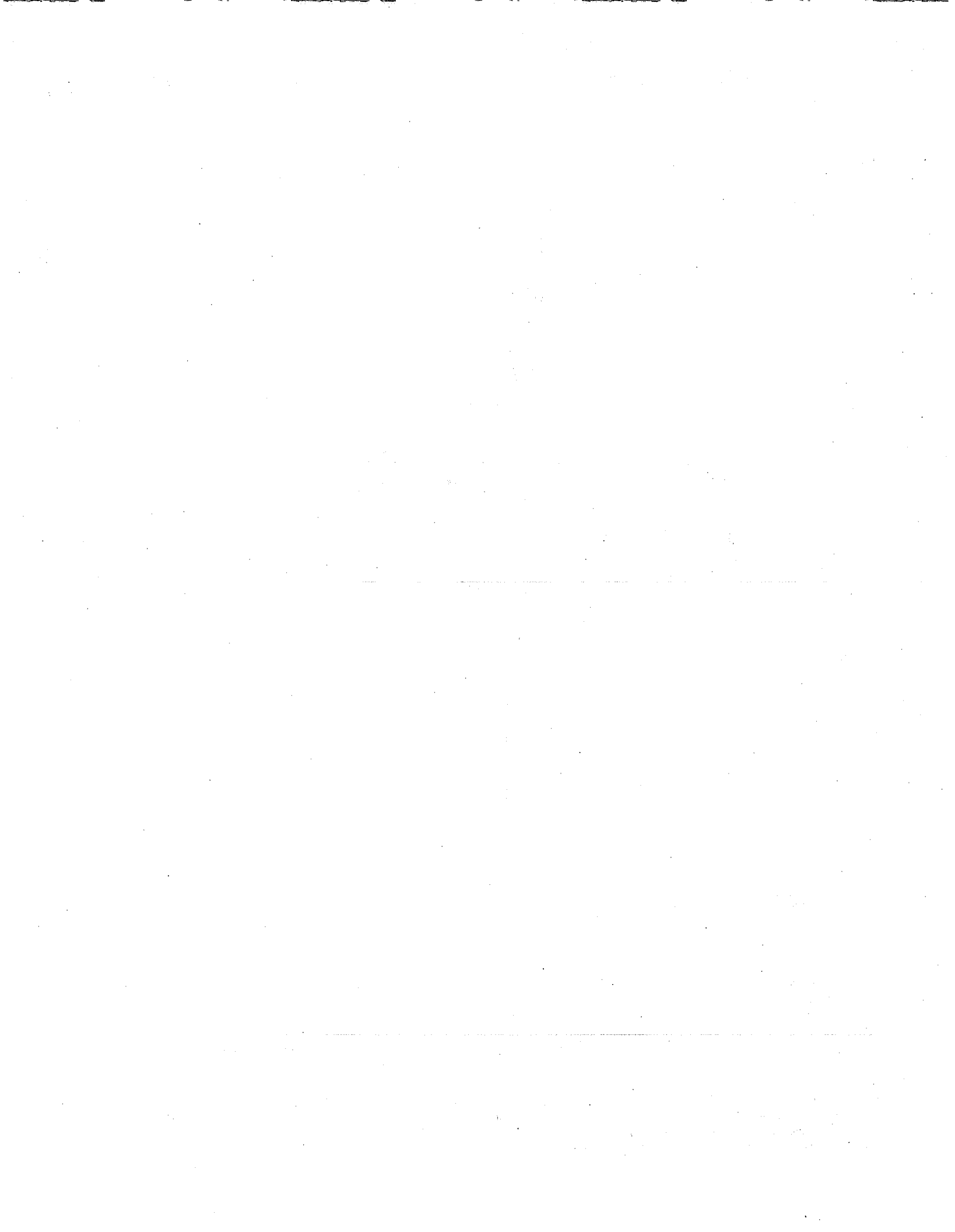
Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).



# MOVEMENT SUMMARY

Site: Alt 7 Eddy Rd & SB Ramps PM

Eddy Rd & Exit 6 SB Ramps  
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
East: Eddy Rd											
1	L	642	2.0	0.496	8.9	LOS A	0.0	0.0	0.00	0.64	21.0
6	T	458	2.0	0.496	8.9	LOS A	0.0	0.0	0.00	0.14	26.9
Approach		1100	2.0	0.496	8.9	LOS A	0.0	0.0	0.00	0.43	22.8
North: SB Off Ramp											
7	L	295	2.0	0.568	19.7	LOS C	2.2	57.1	0.75	1.00	16.1
14	R	263	2.0	0.568	18.9	LOS C	2.2	55.4	0.73	0.92	16.9
Approach		558	2.0	0.568	19.4	LOS C	2.2	57.1	0.74	0.96	16.4
West: Eddy Rd											
2	T	711	2.0	0.657	21.8	LOS C	3.1	78.3	0.75	0.91	17.1
12	R	468	2.0	0.669	18.2	LOS C	3.5	88.6	0.67	0.86	17.9
Approach		1179	2.0	0.669	20.4	LOS C	3.5	88.6	0.72	0.89	17.4
All Vehicles		2837	2.0	0.669	15.7	LOS C	3.5	88.6	0.44	0.72	18.3

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Model used.

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# INPUT REPORT

Site: Alt 7 Eddy Rd & SB Ramps PM

Eddy Rd & Exit 6 SB Ramps

Intersection Parameters	
Title	Eddy Rd & Exit 6 SB Ramps
Intersection ID	1
Unit Time (for volumes)	60 minutes
Peak Flow Period (for performance)	15 minutes

Geometry - Approach Data						
Location	Name	Type	No. of App. Lanes	No. of Exit Lanes	Median Width ft	Extra Bunching %
South	SB On Ramp	One-way Exit	0	2	-	0.0
East	Eddy Rd	Two-way	2	2	-	0.0
North	SB Off Ramp	One-way Approach	2	0	-	0.0
West	Eddy Rd	Two-way	3	2	-	0.0

Geometry - Roundabout Data								
Location	Name	Island Diameter ft	Circ Width ft	Circ Lanes	Entry Radius ft	Entry Angle degrees	Env. Factor	Entry/Circ Flow Adjust
South	SB On Ramp	-	-	2	-	-	-	None
East	Eddy Rd	-	-	2	-	-	-	None
North	SB Off Ramp	-	-	2	-	-	-	None
West	Eddy Rd	-	-	2	-	-	-	None

Geometry - Approach Lane Data							
Lane Number	Lane Type	Lane Discip	Basic Satn Flow tcu/h	Utilisation Ratio %	Saturation Speed mph	Capacity Adjustment %	
East Eddy Rd							
App. Lane 1	Normal	L	1900	-	-	0.0	
App. Lane 2	Normal	LT	1900	-	-	0.0	
North SB Off Ramp							
App. Lane 1	Normal	L	1900	-	-	0.0	
App. Lane 2	Normal	LR	1900	-	-	0.0	
West Eddy Rd							
App. Lane 1	Normal	T	1900	-	-	0.0	
App. Lane 2	Normal	T	1900	-	-	0.0	
App. Lane 3	Slip (Giveway/Yield)	R	1900	-	-	0.0	

Geometry - Approach & Exit Lane Data				
Lane Number	Lane Width ft	Lane Length ft	Grade %	SL Type
South SB On Ramp				
Exit Lane 1	13.00	900.0	0.00	-
Exit Lane 2	13.00	700.0	0.00	-
East Eddy Rd				
App. Lane 1	13.00	500.0	0.00	-
App. Lane 2	13.00	500.0	0.00	-
Exit Lane 1	13.00	500.0	0.00	-
Exit Lane 2	13.00	500.0	0.00	-
North SB Off Ramp				
App. Lane 1	13.00	900.0	0.00	-
App. Lane 2	13.00	500.0	0.00	-
West Eddy Rd				
App. Lane 1	13.00	1200.0	0.00	-
App. Lane 2	13.00	1000.0	0.00	-
App. Lane 3	13.00	400.0	0.00	Turn Bay
Exit Lane 1	13.00	1200.0	0.00	-
Exit Lane 2	13.00	1000.0	0.00	-

Lanes are numbered from left to right in the direction of travel.

Geometry - Movement Definitions			
To Approach	Movement Banned	Turn Desig	
From: East Eddy Rd			
East	Yes	-	
South	No	L	
West	No	T	
From: North SB Off Ramp			
East	No	L	
South	Yes	-	
West	No	R	
From: West Eddy Rd			
West	Yes	-	
East	No	T	
South	No	R	



### HCM 2010 Roundabout Model Calibration

Location	Name	HCM 2010 Single Lane		HCM 2010 Multi-Lane Dominant Lane		HCM 2010 Multi-Lane Subdominant Lane	
		Para. A	Para. B	Para. A	Para. B	Para. A	Para. B
South	SB On Ramp	1130.0	0.001000	1130.0	0.000700	1130.0	0.000750
East	Eddy Rd	1130.0	0.001000	1130.0	0.000700	1130.0	0.000750
North	SB Off Ramp	1130.0	0.001000	1130.0	0.000700	1130.0	0.000750
West	Eddy Rd	1130.0	0.001000	1130.0	0.000700	1130.0	0.000750

### Volumes

To Approach	Total veh	HV %	Peak Flow Factor %	Vehicle Occupancy pers/veh	Flow Scale %	Growth Rate %/year
From: East Eddy Rd						
South	610.0	2.00	95.0	1.20	100.00	2.00
West	435.0	2.00	95.0	1.20	100.00	2.00
From: North SB Off Ramp						
East	280.0	2.00	95.0	1.20	100.00	2.00
West	250.0	2.00	95.0	1.20	100.00	2.00
From: West Eddy Rd						
East	675.0	2.00	95.0	1.20	100.00	2.00
South	445.0	2.00	95.0	1.20	100.00	2.00

### Path Data

To Approach	App. Cruise Speed mph	Exit Cruise Speed mph	App. Trav. Distance ft	Negn Speed mph	Negn Distance ft	Downst Distance ft	Negn Radius ft
From: East Eddy Rd							
South	30.0	25.0	500.0	-	-	-	-
West	30.0	25.0	500.0	-	-	-	-
From: North SB Off Ramp							
East	35.0	30.0	900.0	-	-	-	-
West	35.0	30.0	900.0	-	-	-	-
From: West Eddy Rd							
East	30.0	25.0	1200.0	-	-	-	-
South	30.0	25.0	1200.0	-	-	-	-

Movement Data - General										
Turn	Mov ID	Queue Space		Vehicle Length		HVE	P/Deg Satn	Movement		
		LV ft	HV ft	LV ft	HV ft			Type	Control	
East		Eddy Rd								
L	1	25.00	45.00	17.00	36.00	2.00	-	Normal	-	
T	6	25.00	45.00	17.00	36.00	2.00	-	Normal	-	
North		SB Off Ramp								
L	7	25.00	45.00	17.00	36.00	2.00	-	Normal	-	
R	14	25.00	45.00	17.00	36.00	2.00	-	Normal	-	
West		Eddy Rd								
T	2	25.00	45.00	17.00	36.00	2.00	-	Normal	-	
R	12	25.00	45.00	17.00	36.00	2.00	-	Slip	Yield	

Movement Type and Control parameters are set automatically from Approach Control and Lane Type data in the Geometry dialog.

Gap Acceptance					
Movement	Critical Gap sec	Follow-up Headway sec	Min. Departures veh/min	Exiting Flow Effect	
				%	%
East		Eddy Rd			
L	-	-	2.50	0	0
T	-	-	2.50	0	0
North		SB Off Ramp			
L	-	-	2.50	0	0
R	-	-	2.50	0	0
West		Eddy Rd			
T	-	-	2.50	0	0
R	-	-	2.50	0	0

### Model Settings - Options

General Options	
Level of Service Method	Delay & v/c (HCM 2010)
Level of Service Target	LOS D
Performance Measure	Delay
Percentile Queue	95 %
Hours per Year	480 h
Gap Acceptance	
HV Method for Gap Acceptance	Include HV Effect for all percentages
Gap Acceptance Capacity	Traditional M1
HCM Delay Formula	Yes
Downstream Short Lane Model	
Minimum Downstream Utilisation Ratio	20 %
Minimum Downstream Distance	100 ft
Distance for Full Lane Utilisation	660 ft
Calibration Parameter	1.2

### Model Settings - Roundabouts

Roundabout Model Options	
Capacity Model	US HCM 2010
LOS Method	Same as Sign Control
US HCM 2010 Roundabout Model	
Include Origin-Destination Pattern Effects	No
Factor for Parameter A	1.000
Factor for Parameter B	1.000
Other Roundabout Models	
FHWA 2000	No
Use Urban Compact Roundabout	-
HCM 2000	No
German	No
NAASRA 1986	No

### Model Settings - Cost Parameters

Vehicle Operating Cost	
Cost Unit	\$
Pump Price of Fuel	3.000 \$/gal
Fuel Resource Cost Factor	0.700
Ratio of Running Cost to Fuel Cost	3.00
Vehicle Mass	
Light Vehicle Mass	3100.0 lb
Heavy Vehicle Mass	24000.0 lb
Heavy Vehicle Maximum Power	130 kW
Time Cost	
Average Income	23.00 \$/h
Time Value Factor	0.400

### Demand & Sensitivity

Analysis Method: None

### Site Properties

Site (Intersection) Type	Roundabout
Model Name	US HCM (Customary)
Drive Rule	Right-hand side of the road
New Zealand Rule	No
HCM Version	Yes
Units	US Customary

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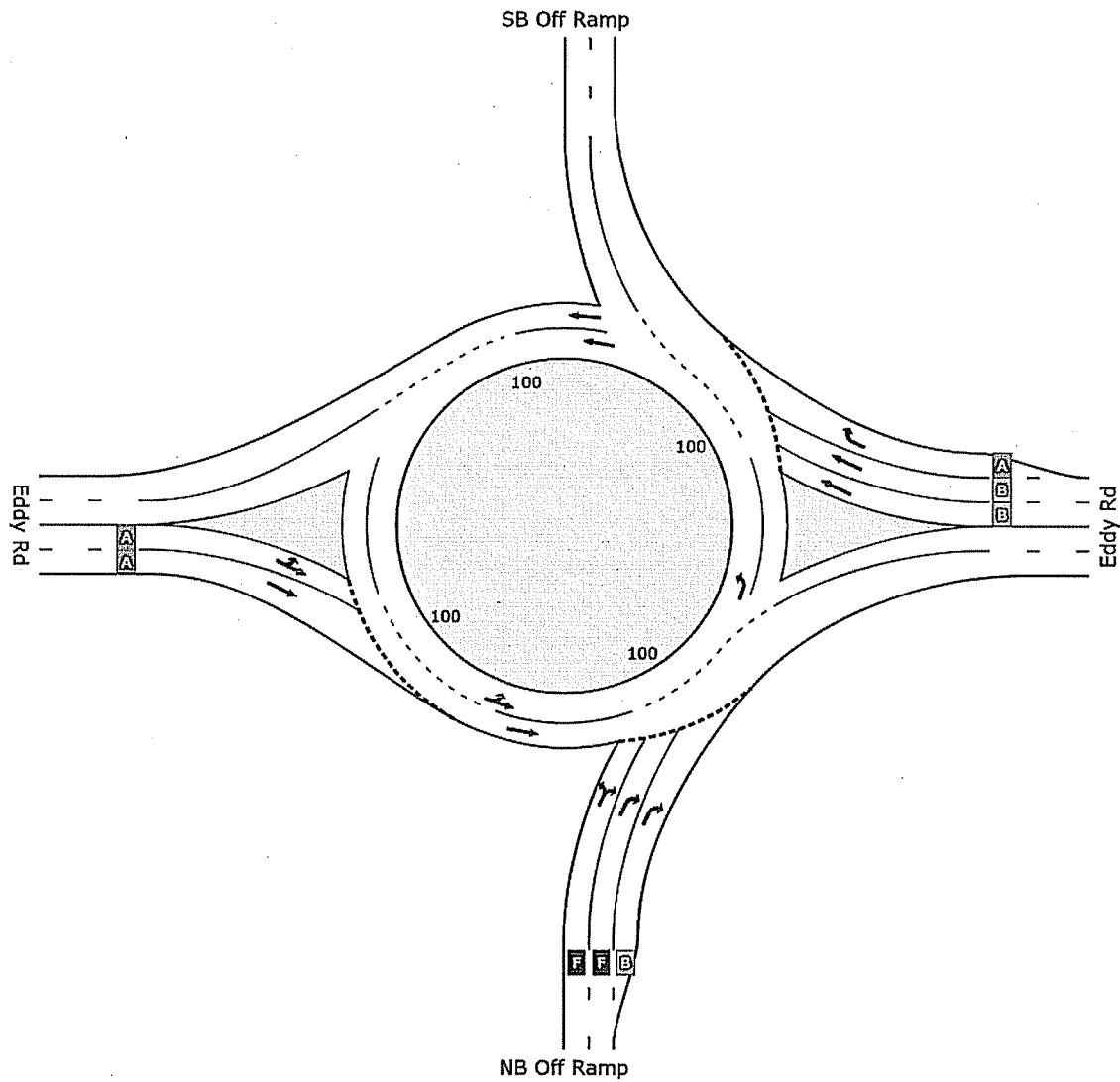
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# LEVEL OF SERVICE SUMMARY

Site: Alt 7 Amoskeag St & NB  
Ramps PM

Amoskeag St & Exit 6 nB Ramps  
Roundabout



	South	East	North	West	Intersection
LOS	F	B	NA	A	F

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if  $v/c >$  irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).



# MOVEMENT SUMMARY

Site: Alt 7 Amoskeag St & NB  
Ramps PM

Amoskeag St & Exit 6 nB Ramps  
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Off Ramp											
3	L	26	2.0	1.229	144.2	LOS F	45.0	1143.8	1.00	3.53	7.1
18	R	1395	2.0	1.229	131.4	LOS F	46.8	1189.4	0.96	3.34	7.3
Approach		1421	2.0	1.229	131.6	LOS F	46.8	1189.4	0.96	3.34	7.3
East: Eddy Rd											
6	T	1074	2.0	0.598	12.8	LOS B	3.2	82.5	0.51	0.56	15.3
16	R	300	2.0	0.337	7.8	LOSA	1.2	29.3	0.38	0.53	23.4
Approach		1374	2.0	0.598	11.7	LOS B	3.2	82.5	0.48	0.56	17.9
West: Eddy Rd											
5	L	263	2.0	0.454	8.2	LOSA	0.0	0.0	0.00	0.77	25.3
2	T	742	2.0	0.454	8.2	LOSA	0.0	0.0	0.00	0.14	28.4
Approach		1005	2.0	0.454	8.2	LOSA	0.0	0.0	0.00	0.31	27.3
All Vehicles		3800	2.0	1.229	55.6	LOS F	46.8	1189.4	0.53	1.53	11.1

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Model used.

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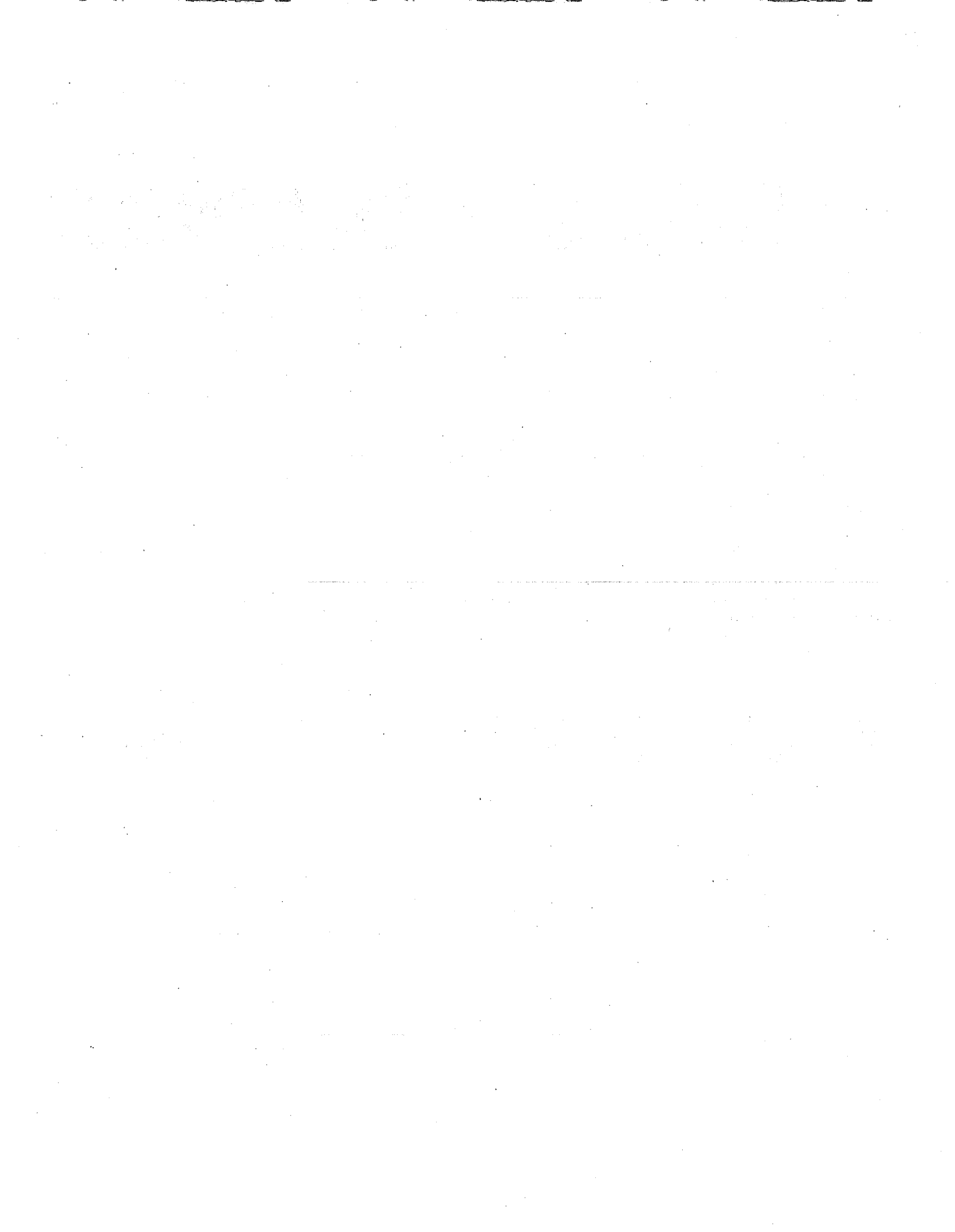
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INTERSECTION





# INPUT REPORT

Site: Alt 7 Amoskeag St & NB  
Ramps PM

Amoskeag St & Exit 6 nB Ramps

Intersection Parameters	
Title	Amoskeag St & Exit 6 nB Ramps
Intersection ID	1
Unit Time (for volumes)	60 minutes
Peak Flow Period (for performance)	15 minutes

Geometry - Approach Data						
Location	Name	Type	No. of App. Lanes	No. of Exit Lanes	Median Width ft	Extra Bunching %
South	NB Off Ramp	One-way Approach	3	0	-	0.0
East	Eddy Rd	Two-way	3	2	-	0.0
North	SB Off Ramp	One-way Exit	0	2	-	0.0
West	Eddy Rd	Two-way	2	2	-	0.0

Geometry - Roundabout Data								
Location	Name	Island Diameter ft	Circ. Width ft	Circ. Lanes	Entry Radius ft	Entry Angle degrees	Env. Factor	Entry/Circ. Flow Adjust.
South	NB Off Ramp	-	-	2	-	-	-	None
East	Eddy Rd	-	-	2	-	-	-	None
North	SB Off Ramp	-	-	2	-	-	-	None
West	Eddy Rd	-	-	2	-	-	-	None

Geometry - Approach Lane Data							
Lane Number	Lane Type	Lane Discip.	Basic Satn. Flow tcu/h	Utilisation Ratio %	Saturation Speed mph	Capacity Adjustment %	
South NB Off Ramp							
App. Lane 1	Normal	LR	1900	-	-	0.0	
App. Lane 2	Normal	R	1900	-	-	0.0	
App. Lane 3	Normal	R	1900	-	-	0.0	
East Eddy Rd							
App. Lane 1	Normal	T	1900	-	-	0.0	
App. Lane 2	Normal	T	1900	-	-	0.0	
App. Lane 3	Normal	R	1900	-	-	0.0	
West Eddy Rd							
App. Lane 1	Normal	LT	1900	-	-	0.0	
App. Lane 2	Normal	T	1900	-	-	0.0	

Geometry - Approach & Exit Lane Data				
Lane Number	Lane Width ft	Lane Length ft	Grade %	SL Type
South NB Off Ramp				
App. Lane 1	13.00	800.0	0.00	-
App. Lane 2	13.00	800.0	0.00	-
App. Lane 3	13.00	400.0	0.00	Turn Bay
East Eddy Rd				
App. Lane 1	13.00	600.0	0.00	-
App. Lane 2	13.00	600.0	0.00	-
App. Lane 3	13.00	400.0	0.00	Turn Bay
Exit Lane 1	13.00	600.0	0.00	-
Exit Lane 2	13.00	600.0	0.00	-
North SB Off Ramp				
Exit Lane 1	13.00	600.0	0.00	-
Exit Lane 2	13.00	600.0	0.00	-
West Eddy Rd				
App. Lane 1	13.00	500.0	0.00	-
App. Lane 2	13.00	500.0	0.00	-
Exit Lane 1	13.00	500.0	0.00	-
Exit Lane 2	13.00	500.0	0.00	-

Lanes are numbered from left to right in the direction of travel.

Geometry - Movement Definitions			
To Approach	Movement Banned	Turn Desig	
From: South NB Off Ramp			
West	No	L	
North	Yes	-	
East	No	R	
From: East Eddy Rd			
East	Yes	-	
West	No	T	
North	No	R	
From: West Eddy Rd			
West	Yes	-	
North	No	L	
East	No	T	

### HCM 2010 Roundabout Model Calibration

Location	Name	HCM 2010 Single Lane		HCM 2010 Multi-Lane Dominant Lane		HCM 2010 Multi-Lane Subdominant Lane	
		Para. A	Para. B	Para. A	Para. B	Para. A	Para. B
South	NB Off Ramp	1130.0	0.001000	1130.0	0.000700	1130.0	0.000750
East	Eddy Rd	1130.0	0.001000	1130.0	0.000700	1130.0	0.000750
North	SB Off Ramp	1130.0	0.001000	1130.0	0.000700	1130.0	0.000750
West	Eddy Rd	1130.0	0.001000	1130.0	0.000700	1130.0	0.000750

### Volumes

To Approach	Total veh	HV %	Peak Flow Factor %	Vehicle Occupancy pers/veh	Flow Scale %	Growth Rate %/year
From: South	NB Off Ramp					
West	25.0	2.00	95.0	1.20	100.00	2.00
East	1325.0	2.00	95.0	1.20	100.00	2.00
From: East	Eddy Rd					
West	1020.0	2.00	95.0	1.20	100.00	2.00
North	285.0	2.00	95.0	1.20	100.00	2.00
From: West	Eddy Rd					
North	250.0	2.00	95.0	1.20	100.00	2.00
East	705.0	2.00	95.0	1.20	100.00	2.00

### Path Data

To Approach	App. Cruise Speed mph	Exit Cruise Speed mph	App. Trav. Distance ft	Negn Speed mph	Negn Distance ft	Downst. Distance ft	Negn Radius ft
From: South	NB Off Ramp						
West	35.0	30.0	1600.0	-	-	-	-
East	35.0	30.0	1600.0	-	-	-	-
From: East	Eddy Rd						
West	30.0	25.0	500.0	-	-	-	-
North	30.0	25.0	1600.0	-	-	-	-
From: West	Eddy Rd						
North	30.0	25.0	1600.0	-	-	-	-
East	30.0	25.0	1200.0	-	-	-	-

Movement Data - General									
Turn	Mov. ID	Queue Space		Vehicle Length		HVE	P.Deg. Satn	Movement	
		LV ft	HV ft	LV ft	HV ft			Type	Control
South		NB Off Ramp							
L	3	25.00	45.00	17.00	36.00	2.00	-	Normal	-
R	18	25.00	45.00	17.00	36.00	2.00	-	Normal	-
East		Eddy Rd							
T	6	25.00	45.00	17.00	36.00	2.00	-	Normal	-
R	16	25.00	45.00	17.00	36.00	2.00	-	Normal	-
West		Eddy Rd							
L	5	25.00	45.00	17.00	36.00	2.00	-	Normal	-
T	2	25.00	45.00	17.00	36.00	2.00	-	Normal	-

Movement Type and Control parameters are set automatically from Approach Control and Lane Type data in the Geometry dialog.

Gap Acceptance				
Movement	Critical Gap	Follow-up Headway	Min Departures	Exiting Flow Effect
South		NB Off Ramp		
L	-	-	2.50	0
R	-	-	2.50	0
East		Eddy Rd		
T	-	-	2.50	0
R	-	-	2.50	0
West		Eddy Rd		
L	-	-	2.50	0
T	-	-	2.50	0

### Model Settings - Options

General Options	
Level of Service Method	Delay & v/c (HCM 2010)
Level of Service Target	LOS D
Performance Measure	Delay
Percentile Queue	95 %
Hours per Year	480 h
Gap Acceptance	
HV Method for Gap-Acceptance	Include HV Effect for all percentages
Gap-Acceptance Capacity	Traditional M1
HCM Delay Formula	Yes
Downstream Short Lane Model	
Minimum Downstream Utilisation Ratio	20 %
Minimum Downstream Distance	100 ft
Distance for Full Lane Utilisation	660 ft
Calibration Parameter	1.2

### Model Settings - Roundabouts

Roundabout Model Options	
Capacity Model	US HCM 2010
LOS Method	Same as Sign Control
US HCM 2010 Roundabout Model	
Include Origin-Destination Pattern Effects	No
Factor for Parameter A	1.000
Factor for Parameter B	1.000
Other Roundabout Models	
FHWA 2000	No
Use Urban Compact Roundabout	-
HCM 2000	No
German	No
NAASRA 1986	No

### Model Settings - Cost Parameters

Vehicle Operating Cost	
Cost Unit	\$
Pump Price of Fuel	3.000 \$/gal
Fuel Resource Cost Factor	0.700
Ratio of Running Cost to Fuel Cost	3.00
Vehicle Mass	
Light Vehicle Mass	3100.0 lb
Heavy Vehicle Mass	24000.0 lb
Heavy Vehicle Maximum Power	130 kW
Time Cost	
Average Income	23.00 \$/h
Time Value Factor	0.400

### Demand & Sensitivity

Analysis Method: None

### Site Properties

Site (Intersection) Type	Roundabout
Model Name	US HCM (Customary)
Drive Rule	Right-hand side of the road
New Zealand Rule	No
HCM Version	Yes
Units	US Customary

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