ATTACHMENT J | ROUNDABOUTS CONCEPT – 2040 TRAFFIC OPERATIONS WORKSHEETS

LANE SUMMARY

Site: 103 [Goerig/Lakeshore 2019]

Network: N101 [Network 2019]

Goerig/Lakeshore
Site Category: 2019 PM Peak Hour
Roundabout

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	Aver. Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist ft		ft	%	%
South: Goerig															
Lane 1[d]	456	1.0	456	1.0	1241	0.367	100	3.1	LOS A	0.9	21.9	Full	1600	0.0	0.0
Approach	456	1.0	456	1.0		0.367		3.1	LOS A	0.9	21.9				
East: Lakeshore															
Lane 1[d]	179	4.3	179	4.3	937	0.191	100	5.1	LOS A	0.4	10.9	Full	1600	0.0	0.0
Approach	179	4.3	179	4.3		0.191		5.1	LOS A	0.4	10.9				
North: Goerig															
Lane 1[d]	435	9.2	435	9.2	1290	0.337	100	3.2	LOS A	0.8	22.7	Full	320	0.0	0.0
Approach	435	9.2	435	9.2		0.337		3.2	LOS A	0.8	22.7				
West: Buckeye															
Lane 1[d]	92	1.4	92	1.4	1082	0.085	100	7.1	LOS A	0.2	4.0	Full	1600	0.0	0.0
Approach	92	1.4	92	1.4		0.085		7.1	LOS A	0.2	4.0				
Intersection	1162	4.6	1162	4.6		0.367		3.8	LOS A	0.9	22.7				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 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 6).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

LANE SUMMARY

Site: 101 [I-5 NB Ramp Terminal 2019-5 Legs]

Network: N101 [Network 2019]

I-5 NB Ramp Terminal
Site Category: 2019 PM Peak Hour
Roundabout

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	Aver. Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist ft		ft	%	%
South: I-5 NB															
Lane 1[d]	318	6.0	318	6.0	1412	0.225	100	9.0	LOS A	0.5	12.1	Full	1600	0.0	0.0
Lane 2	295	4.0	295	4.0	961	0.307	100	5.1	LOS A	0.6	15.3	Full	1600	0.0	0.0
Lane 3	126	3.0	126	3.0	1669	0.076	100	3.3	LOS A	0.1	3.8	Short	300	0.0	NA
Approach	739	4.7	739	4.7		0.307		6.5	LOS A	0.6	15.3				
SouthEast: E CC Street															
Lane 1	111	10.0	111	10.0	652	0.171	100	11.6	LOS B	0.3	7.7	Full	1600	0.0	0.0
Lane 2[d]	167	4.9	167	4.9	977	0.171	100	6.3	LOS A	0.3	8.3	Full	1600	0.0	0.0
Approach	278	7.0	278	7.0		0.171		8.4	LOS A	0.3	8.3				
East: SR 503															
Lane 1	249	5.2	249	5.2	825	0.302	100	8.9	LOS A	0.6	15.8	Full	1600	0.0	0.0
Lane 2[d]	306	7.2	306	7.2	1016	0.302	100	4.7	LOS A	0.6	17.1	Full	1600	0.0	0.0
Approach	555	6.3	555	6.3		0.302		6.6	LOS A	0.6	17.1				
North: Atlantic Ave															
Lane 1[d]	159	3.5	159	3.5	873	0.182	100	5.8	LOS A	0.3	7.9	Full	1600	0.0	0.0
Approach	159	3.5	159	3.5		0.182		5.8	LOS A	0.3	7.9				
West: SR 503															
Lane 1	318	2.7	318	2.7	1353	0.235	100	7.2	LOS A	0.6	15.3	Full	280	0.0	0.0
Lane 2[d]	398	2.4	398	2.4	1694	0.235	100	2.0	LOS A	0.6	15.9	Full	280	0.0	0.0
Approach	716	2.5	716	2.5		0.235		4.3	LOS A	0.6	15.9				
Intersection	2447	4.6	2447	4.6		0.307		6.0	LOS A	0.6	17.1				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 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 6).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

LANE SUMMARY

Site: 102 [I-5 SB Ramp Terminal 2019]

Network: N101 [Network 2019]

I-5 SB Ramp Terminal
Site Category: 2019 PM Peak Hour
Roundabout

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	Aver. Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist ft		ft	%	%
East: SR 503															
Lane 1[d]	682	5.4	682	5.4	1583	0.431	100	6.2	LOS A	1.4	36.6	Full	280	0.0	0.0
Lane 2	235	3.0	235	3.0	1231	0.191	44[5]	3.7	LOS A	0.4	11.5	Full	280	0.0	0.0
Approach	917	4.8	917	4.8		0.431		5.5	LOS A	1.4	36.6				
North: Pacific Ave															
Lane 1[d]	300	3.0	300	3.0	976	0.307	100	12.9	LOS B	0.7	18.1	Short	100	0.0	NA
Lane 2	239	4.6	239	4.6	808	0.296	100	8.0	LOS A	0.6	16.2	Full	1600	0.0	0.0
Approach	539	3.7	539	3.7		0.307		10.7	LOS B	0.7	18.1				
West: SR 503															
Lane 1	199	1.5	199	1.5	923	0.216	100	7.7	LOS A	0.4	10.4	Short	120	0.0	NA
Lane 2[d]	265	2.0	265	2.0	1224	0.216	100	5.7	LOS A	0.5	11.5	Full	320	0.0	0.0
Lane 3	212	7.0	212	7.0	1565	0.135	100	3.7	LOS A	0.0	0.0	Short	50	0.0	NA
Approach	676	3.4	676	3.4		0.216		5.7	LOS A	0.5	11.5				
Intersection	2132	4.1	2132	4.1		0.431		6.9	LOS A	1.4	36.6				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 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 6).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

5 Lane under-utilisation found by the program
d Dominant lane on roundabout approach

LANE SUMMARY

Site: 103 [Goerig/Lakeshore 2019]

Network: N101 [Network 2019]

Goerig/Lakeshore
Site Category: 2019 PM Peak Hour
Roundabout

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	Aver. Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist ft		ft	%	%
South: Goerig															
Lane 1[d]	456	1.0	456	1.0	1137	0.401	100	7.3	LOS A	1.0	24.6	Full	1600	0.0	0.0
Approach	456	1.0	456	1.0		0.401		7.3	LOS A	1.0	24.6				
East: Lakeshore															
Lane 1[d]	179	4.3	179	4.3	780	0.229	100	7.1	LOS A	0.4	10.2	Full	1600	0.0	0.0
Approach	179	4.3	179	4.3		0.229		7.1	LOS A	0.4	10.2				
North: Goerig															
Lane 1[d]	435	9.2	435	9.2	1244	0.350	100	6.2	LOS A	0.8	21.1	Full	320	0.0	0.0
Approach	435	9.2	435	9.2		0.350		6.2	LOS A	0.8	21.1				
West: Buckeye															
Lane 1[d]	92	1.4	92	1.4	908	0.101	100	4.9	LOS A	0.2	4.3	Full	1600	0.0	0.0
Approach	92	1.4	92	1.4		0.101		4.9	LOS A	0.2	4.3				
Intersection	1162	4.6	1162	4.6		0.401		6.7	LOS A	1.0	24.6				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 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 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

LANE SUMMARY

Site: 101 [I-5 NB Ramp Terminal 2019-5 Legs]

Network: N101 [Network 2019]

I-5 NB Ramp Terminal
Site Category: 2019 PM Peak Hour
Roundabout

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	Aver. Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist ft		ft	%	%
South: I-5 NB															
Lane 1[d]	318	6.0	318	6.0	634	0.502	100	13.8	LOS B	1.1	28.5	Full	1600	0.0	0.0
Lane 2	295	4.0	295	4.0	578	0.511	100	15.1	LOS B	1.1	29.2	Full	1600	0.0	0.0
Lane 3	126	3.0	126	3.0	1065	0.118	100	4.4	LOS A	0.2	4.6	Short	300	0.0	NA
Approach	739	4.7	739	4.7		0.511		12.7	LOS B	1.1	29.2				
SouthEast: E CC Street															
Lane 1	126	10.0	126	10.0	399	0.316	100	14.7	LOS B	0.4	12.0	Full	1600	0.0	0.0
Lane 2[d]	152	4.4	152	4.4	482	0.316	100	12.5	LOS B	0.5	12.2	Full	1600	0.0	0.0
Approach	278	7.0	278	7.0		0.316		13.5	LOS B	0.5	12.2				
East: SR 503															
Lane 1	265	5.3	265	5.3	623	0.426	100	12.1	LOS B	0.8	21.9	Full	1600	0.0	0.0
Lane 2[d]	290	7.2	290	7.2	680	0.426	100	11.3	LOS B	0.8	21.8	Full	1600	0.0	0.0
Approach	555	6.3	555	6.3		0.426		11.7	LOS B	0.8	21.9				
North: Atlantic Ave															
Lane 1[d]	159	3.5	159	3.5	608	0.261	100	9.3	LOS A	0.4	9.7	Full	1600	0.0	0.0
Approach	159	3.5	159	3.5		0.261		9.3	LOS A	0.4	9.7				
West: SR 503															
Lane 1	358	2.6	358	2.6	1210	0.296	100	5.7	LOS A	0.6	15.0	Full	280	0.0	0.0
Lane 2[d]	358	2.5	358	2.5	1212	0.296	100	5.7	LOS A	0.6	15.0	Full	280	0.0	0.0
Approach	716	2.5	716	2.5		0.296		5.7	LOS A	0.6	15.0				
Intersection	2447	4.6	2447	4.6		0.511		10.3	LOS B	1.1	29.2				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 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 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

LANE SUMMARY

Site: 102 [I-5 SB Ramp Terminal 2019]

Network: N101 [Network 2019]

I-5 SB Ramp Terminal
Site Category: 2019 PM Peak Hour
Roundabout

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	Aver. Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist ft		ft	%	%
East: SR 503															
Lane 1[d]	682	5.4	682	5.4	1289	0.529	100	8.5	LOS A	1.5	38.8	Full	280	0.0	0.0
Lane 2	235	3.0	235	3.0	1320	0.178	34[5]	4.2	LOS A	0.3	8.2	Full	280	0.0	0.0
Approach	917	4.8	917	4.8		0.529		7.4	LOS A	1.5	38.8				
North: Pacific Ave															
Lane 1[d]	300	3.0	300	3.0	747	0.401	100	10.0	LOS B	0.8	20.1	Short	100	0.0	NA
Lane 2	239	4.6	239	4.6	665	0.359	100	10.2	LOS B	0.6	16.5	Full	1600	0.0	0.0
Approach	539	3.7	539	3.7		0.401		10.1	LOS B	0.8	20.1				
West: SR 503															
Lane 1	220	1.6	220	1.6	621	0.354	100	10.7	LOS B	0.6	15.9	Short	120	0.0	NA
Lane 2[d]	244	2.0	244	2.0	690	0.354	100	9.8	LOS A	0.6	15.8	Full	320	0.0	0.0
Lane 3	212	7.0	212	7.0	1565	0.135	100	0.0	LOS A	0.0	0.0	Short	50	0.0	NA
Approach	676	3.4	676	3.4		0.354		7.0	LOS A	0.6	15.9				
Intersection	2132	4.1	2132	4.1		0.529		8.0	LOS A	1.5	38.8				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 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 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

5 Lane under-utilisation found by the program
d Dominant lane on roundabout approach

LANE SUMMARY

Site: 103 [Goerig/Lakeshore 2040]

Network: N101 [Network1]

Goerig/Lakeshore 2040
Site Category: 2040 PM Peak Hour
Roundabout

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	Aver. Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist ft		ft	%	%
South: Goerig															
Lane 1[d]	572	0.9	572	0.9	757	0.755	100	15.5	LOS B	4.0	100.4	Full	1600	0.0	0.0
Approach	572	0.9	572	0.9		0.755		15.5	LOS B	4.0	100.4				
East: Lakeshore															
Lane 1[d]	583	4.8	583	4.8	783	0.745	100	12.0	LOS B	3.7	96.3	Full	1600	0.0	0.0
Approach	583	4.8	583	4.8		0.745		12.0	LOS B	3.7	96.3				
North: Goerig															
Lane 1[d]	897	14.2	897	14.2	1160	0.773	100	5.8	LOS A	4.6	126.6	Full	320	0.0	4.5
Approach	897	14.2	897	14.2		0.773		5.8	LOS A	4.6	126.6				
West: Buckeye															
Lane 1[d]	262	0.7	262	0.7	630	0.416	100	10.5	LOS B	1.3	32.3	Full	1600	0.0	0.0
Approach	262	0.7	262	0.7		0.416		10.5	LOS B	1.3	32.3				
Intersection	2314	7.0	2314	7.0		0.773		10.3	LOS B	4.6	126.6				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 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 6).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

LANE SUMMARY

Site: 101 [I-5 NB Ramp Terminal 2040-5 Legs]

Network: N101 [Network1]

I-5 NB Ramp Terminal
Site Category: 2040 PM Peak Hour
Roundabout

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	Aver. Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist ft		ft	%	%
South: I-5 NB															
Lane 1[d]	479	6.0	479	6.0	1029	0.465	100	11.6	LOS B	1.3	35.3	Full	1600	-5.7[N3]	0.0
Lane 2	417	4.0	417	4.0	675	0.618	100	10.9	LOS B	1.8	47.4	Full	1600	0.0	0.0
Lane 3	179	3.0	179	3.0	1634	0.110	100	3.4	LOS A	0.2	5.9	Short	300	0.0	NA
Approach	1075	4.7	1075	4.7		0.618		10.0	LOS A	1.8	47.4				
SouthEast: E CC Street															
Lane 1	119	10.0	119	10.0	394	0.303	100	16.2	LOS B	0.5	14.6	Full	1600	-7.1[N3]	0.0
Lane 2[d]	214	5.1	214	5.1	704	0.303	100	9.4	LOS A	0.7	18.2	Full	1600	0.0	0.0
Approach	333	6.8	333	6.8		0.303		11.8	LOS B	0.7	18.2				
East: SR 503															
Lane 1	321	5.5	321	5.5	512	0.627	100	18.4	LOS B	2.0	51.3	Full	1600	-4.5[N3]	0.0
Lane 2[d]	449	7.3	449	7.3	716	0.627	100	13.2	LOS B	2.4	63.8	Full	1600	0.0	0.0
Approach	770	6.6	770	6.6		0.627		15.3	LOS B	2.4	63.8				
North: Atlantic Ave															
Lane 1[d]	467	3.5	467	3.5	708	0.660	100	10.8	LOS B	2.0	50.8	Full	1600	0.0	0.0
Approach	467	3.5	467	3.5		0.660		10.8	LOS B	2.0	50.8				
West: SR 503															
Lane 1	526	2.9	526	2.9	1267	0.415	100	9.1	LOS A	1.2	31.8	Full	280	0.0	0.0
Lane 2[d]	674	2.2	674	2.2	1623	0.415	100	2.5	LOS A	1.3	33.4	Full	280	0.0	0.0
Approach	1200	2.5	1200	2.5		0.415		5.4	LOS A	1.3	33.4				
Intersection	3845	4.4	3845	4.4		0.660		9.9	LOS A	2.4	63.8				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 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 6).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

LANE SUMMARY

Site: 102 [I-5 SB Ramp Terminal 2040]

Network: N101 [Network1]

I-5 SB Ramp Terminal
Site Category: 2040 PM Peak Hour
Roundabout

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	Aver. Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist ft		ft	%	%
East: SR 503															
Lane 1[d]	1166	5.3	1166	5.3	1517	0.769	100	5.8	LOS A	4.6	120.1	Full	280	-3.1[N3]	6.9
Lane 2	248	3.2	248	3.2	1124	0.220	29[6]	3.8	LOS A	0.6	14.3	Full	280	0.0	0.0
Approach	1414	5.0	1414	5.0		0.769		5.5	LOS A	4.6	120.1				
North: Pacific Ave															
Lane 1[d]	468	3.0	468	3.0	602	0.777	100	31.5	LOS C	4.1	105.6	Short	100	0.0	NA
Lane 2	330	4.5	330	4.5	461	0.716	100	24.8	LOS C	2.8	72.8	Full	1600	0.0	0.0
Approach	798	3.6	798	3.6		0.777		28.7	LOS C	4.1	105.6				
West: SR 503															
Lane 1	329	1.7	329	1.7	677	0.486	100	10.3	LOS B	1.3	32.9	Short	120	0.0	NA
Lane 2[d]	459	2.0	459	2.0	946	0.486	100	7.9	LOS A	1.5	38.0	Full	320	0.0	0.0
Lane 3	329	7.0	329	7.0	1565	0.210	100	3.7	LOS A	0.0	0.0	Short	50	0.0	NA
Approach	1117	3.4	1117	3.4		0.486		7.4	LOS A	1.5	38.0				
Intersection	3329	4.1	3329	4.1		0.777		11.7	LOS B	4.6	120.1				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 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 6).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

6 Lane under-utilisation due to downstream effects
d Dominant lane on roundabout approach
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

LANE SUMMARY

Site: 103 [Goerig/Lakeshore 2040]

Network: N101 [Network 2040]

Goerig/Lakeshore 2040
Site Category: 2040 PM Peak Hour
Roundabout

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	Aver. Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist ft		ft	%	%
South: Goerig															
Lane 1[d]	572	0.9	572	0.9	627	0.913	100	43.1	LOS D	6.3	159.4	Full	1600	0.0	0.0
Approach	572	0.9	572	0.9		0.913		43.1	LOS D	6.3	159.4				
East: Lakeshore															
Lane 1[d]	583	4.8	583	4.8	711	0.820	100	27.9	LOS C	4.8	125.2	Full	1600	0.0	0.0
Approach	583	4.8	583	4.8		0.820		27.9	LOS C	4.8	125.2				
North: Goerig															
Lane 1[d]	897	14.2	857	14.6	1121	0.765	100	16.6	LOS B	2.9	82.2	Full	320	0.0	0.0
Approach	897	14.2	857[N1]	14.6		0.765		16.6	LOS B	2.9	82.2				
West: Buckeye															
Lane 1[d]	262	0.7	262	0.7	569	0.461	100	13.9	LOS B	1.0	25.8	Full	1600	0.0	0.0
Approach	262	0.7	262	0.7		0.461		13.9	LOS B	1.0	25.8				
Intersection	2314	7.0	2274[N1]	7.1		0.913		25.9	LOS C	6.3	159.4				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 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 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

LANE SUMMARY

Site: 101 [I-5 NB Ramp Terminal 2040-5 Legs]

Network: N101 [Network 2040]

I-5 NB Ramp Terminal
Site Category: 2040 PM Peak Hour
Roundabout

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	Aver. Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist ft		ft	%	%
South: I-5 NB															
Lane 1[d]	479	6.0	479	6.0	375	1.278	100	174.0	LOS F	16.5	433.3	Full	1600	-4.2[N3]	0.0
Lane 2	417	4.0	417	4.0	343	1.217	100	154.5	LOS F	12.9	333.1	Full	1600	0.0	0.0
Lane 3	179	3.0	179	3.0	1039	0.172	100	5.0	LOS A	0.3	6.9	Short	300	0.0	NA
Approach	1075	4.7	1075	4.7		1.278		138.3	LOS F	16.5	433.3				
SouthEast: E CC Street															
Lane 1	143	10.0	143	10.0	206	0.693	100	51.9	LOS D	1.1	29.8	Full	1600	-5.3[N3]	0.0
Lane 2[d]	190	4.5	190	4.5	275	0.693	100	41.5	LOS D	1.3	33.3	Full	1600	0.0	0.0
Approach	333	6.8	333	6.8		0.693		45.9	LOS D	1.3	33.3				
East: SR 503															
Lane 1	356	5.6	356	5.6	431	0.826	100	41.1	LOS D	2.7	70.5	Full	1600	-3.5[N3]	0.0
Lane 2[d]	414	7.4	414	7.4	501	0.826	100	36.9	LOS D	2.9	77.8	Full	1600	0.0	0.0
Approach	770	6.6	770	6.6		0.826		38.8	LOS D	2.9	77.8				
North: Atlantic Ave															
Lane 1[d]	467	3.5	467	3.5	504	0.927	100	52.4	LOS D	4.8	122.3	Full	1600	0.0	0.0
Approach	467	3.5	467	3.5		0.927		52.4	LOS D	4.8	122.3				
West: SR 503															
Lane 1	598	2.8	598	2.8	1132	0.529	100	9.3	LOS A	1.3	34.3	Full	280	0.0	0.0
Lane 2[d]	602	2.2	602	2.2	1138	0.529	100	9.3	LOS A	1.4	34.5	Full	280	0.0	0.0
Approach	1200	2.5	1200	2.5		0.529		9.3	LOS A	1.4	34.5				
Intersection	3845	4.4	3845	4.4		1.278		59.7	LOS E	16.5	433.3				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 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 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

LANE SUMMARY

Site: 102 [I-5 SB Ramp Terminal 2040]

Network: N101 [Network 2040]

I-5 SB Ramp Terminal
Site Category: 2040 PM Peak Hour
Roundabout

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	Aver. Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist ft		ft	%	%
East: SR 503															
Lane 1[d]	1095	5.3	1035	5.4	1279	0.809	100	17.4	LOS B	4.4	113.6	Full	280	0.0	5.3
Lane 2	319	3.6	302	3.6	1301	0.232	29[6]	4.8	LOS A	0.4	11.3	Full	280	0.0	0.0
Approach	1414	5.0	1336[N1]	5.0		0.809		14.6	LOS B	4.4	113.6				
North: Pacific Ave															
Lane 1[d]	468	3.0	468	3.0	503	0.931	100	53.2	LOS D	4.8	124.0	Short	100	0.0	NA
Lane 2	330	4.5	330	4.5	434	0.761	100	34.1	LOS C	2.2	56.4	Full	1600	0.0	0.0
Approach	798	3.6	798	3.6		0.931		45.3	LOS D	4.8	124.0				
West: SR 503															
Lane 1	369	1.7	369	1.7	473	0.781	100	33.7	LOS C	2.5	63.7	Short	120	0.0	NA
Lane 2[d]	419	2.0	419	2.0	536	0.781	100	30.6	LOS C	2.6	66.7	Full	320	0.0	0.0
Lane 3	329	7.0	329	7.0	1565	0.210	100	0.0	LOS A	0.0	0.0	Short	50	0.0	NA
Approach	1117	3.4	1117	3.4		0.781		22.6	LOS C	2.6	66.7				
Intersection	3329	4.1	3251[N1]	4.2		0.931		24.9	LOS C	4.8	124.0				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 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 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

6 Lane under-utilisation due to downstream effects
d Dominant lane on roundabout approach
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

LANE SUMMARY

Site: 103 [Goerig/Lakeshore 2040]

Network: N102 [Metered]

Goerig/Lakeshore 2040
Site Category: 2040 PM Peak Hour
Roundabout

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	Aver. Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist ft		ft	%	%
South: Goerig															
Lane 1[d]	572	0.9	572	0.9	598	0.956	100	52.5	LOS D	7.4	186.8	Full	1600	-2.5[N3]	0.0
Approach	572	0.9	572	0.9		0.956		52.5	LOS D	7.4	186.8				
East: Lakeshore															
Lane 1[d]	583	4.8	583	4.8	693	0.842	100	30.6	LOS C	5.1	133.0	Full	1600	-2.6[N3]	0.0
Approach	583	4.8	583	4.8		0.842		30.6	LOS C	5.1	133.0				
North: Goerig															
Lane 1[d]	897	14.2	897	14.2	1125	0.797	100	18.4	LOS B	3.3	92.8	Full	320	0.0	0.0
Approach	897	14.2	897	14.2		0.797		18.4	LOS B	3.3	92.8				
West: Buckeye															
Lane 1[d]	262	0.7	262	0.7	543	0.483	100	15.0	LOS B	1.1	27.1	Full	1600	-1.0[N3]	0.0
Approach	262	0.7	262	0.7		0.483		15.0	LOS B	1.1	27.1				
Intersection	2314	7.0	2314	7.0		0.956		29.5	LOS C	7.4	186.8				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 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 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

LANE SUMMARY

Site: 101v [I-5 NB Ramp Terminal 2040-5 Legs - Conversion]

Network: N102 [Metered]

I-5 NB Ramp Terminal
Site Category: 2040 PM Peak Hour
Roundabout Metering

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	Aver. Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist ft		ft	%	%
South: I-5 NB															
Lane 1[d]	479	6.0	479	6.0	483	0.992	100	69.6	LOS E	8.1	212.6	Full	1600	-10.1[N3]	0.0
Lane 2	417	4.0	417	4.0	492	0.847	100	42.1	LOS D	4.6	119.7	Full	1600	0.0	0.0
Lane 3	179	3.0	179	3.0	1055	0.170	100	1.7	LOS A	0.3	7.0	Short	300	0.0	NA
Approach	1075	4.7	1075	4.7		0.992		47.6	LOS D	8.1	212.6				
SouthEast: E CC Street															
Lane 1	139	10.0	139	10.0	252	0.551	100	33.3	LOS C	0.9	24.8	Full	1600	-12.4[N3]	0.0
Lane 2[d]	194	4.6	194	4.6	353	0.551	100	23.5	LOS C	1.0	27.2	Full	1600	0.0	0.0
Approach	333	6.8	333	6.8		0.551		27.6	LOS C	1.0	27.2				
East: SR 503															
Lane 1	348	5.6	348	5.6	449	0.775	100	32.0	LOS C	2.2	56.7	Full	1600	-8.4[N3]	0.0
Lane 2[d]	422	7.4	422	7.4	545	0.775	100	25.8	LOS C	2.3	60.8	Full	1600	0.0	0.0
Approach	770	6.6	770	6.6		0.775		28.6	LOS C	2.3	60.8				
North: Atlantic Ave															
Lane 1[d]	467	3.5	467	3.5	517	0.904	100	43.7	LOS D	3.6	92.0	Full	1600	0.0	0.0
Approach	467	3.5	467	3.5		0.904		43.7	LOS D	3.6	92.0				
West: SR 503															
Lane 1	598	2.8	537	2.7	793	0.678	100	8.2	LOS A	8.6	219.2	Full	280	0.0	27.3
Lane 2[d]	602	2.2	540	2.2	797	0.678	100	8.2	LOS A	8.6	219.4	Full	280	0.0	27.4
Approach	1200	2.5	1078[N1]	2.4		0.678		8.2	LOS A	8.6	219.4				
Intersection	3845	4.4	3723[N1]	4.6		0.992		29.8	LOS C	8.6	219.4				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 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 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

LANE SUMMARY

Site: 102 [I-5 SB Ramp Terminal 2040]

Network: N102 [Metered]

I-5 SB Ramp Terminal
Site Category: 2040 PM Peak Hour
Roundabout

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	Aver. Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist ft		ft	%	%
East: SR 503															
Lane 1[d]	1095	5.3	1095	5.3	1280	0.855	100	20.8	LOS C	5.5	142.4	Full	280	0.0	12.4
Lane 2	319	3.6	319	3.6	1302	0.245	29[6]	4.9	LOS A	0.5	12.1	Full	280	0.0	0.0
Approach	1414	5.0	1414	5.0		0.855		17.2	LOS B	5.5	142.4				
North: Pacific Ave															
Lane 1[d]	468	3.0	468	3.0	345	1.357	100	206.1	LOS F	18.3	469.3	Short	100	-27.3[N3]	NA
Lane 2	330	4.5	330	4.5	407	0.811	100	41.3	LOS D	2.5	64.6	Full	1600	0.0	0.0
Approach	798	3.6	798	3.6		1.357		138.0	LOS F	18.3	469.3				
West: SR 503															
Lane 1	379	1.7	379	1.7	392	0.967	100	67.9	LOS E	4.4	112.0	Short	120	-24.2[N3]	NA
Lane 2[d]	409	2.0	409	2.0	423	0.967	100	64.8	LOS E	4.5	113.7	Full	320	-27.4[N3]	1.5
Lane 3	329	7.0	329	7.0	1565	0.210	100	0.0	LOS A	0.0	0.0	Short	50	0.0	NA
Approach	1117	3.4	1117	3.4		0.967		46.8	LOS D	4.5	113.7				
Intersection	3329	4.1	3329	4.1		1.357		56.1	LOS E	18.3	469.3				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 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 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

6 Lane under-utilisation due to downstream effects
d Dominant lane on roundabout approach
N3 Capacity Adjustment due to downstream lane blockage determined by the program.