

Appendix E
Feasibility Analysis
(Traffic Circle Analysis)

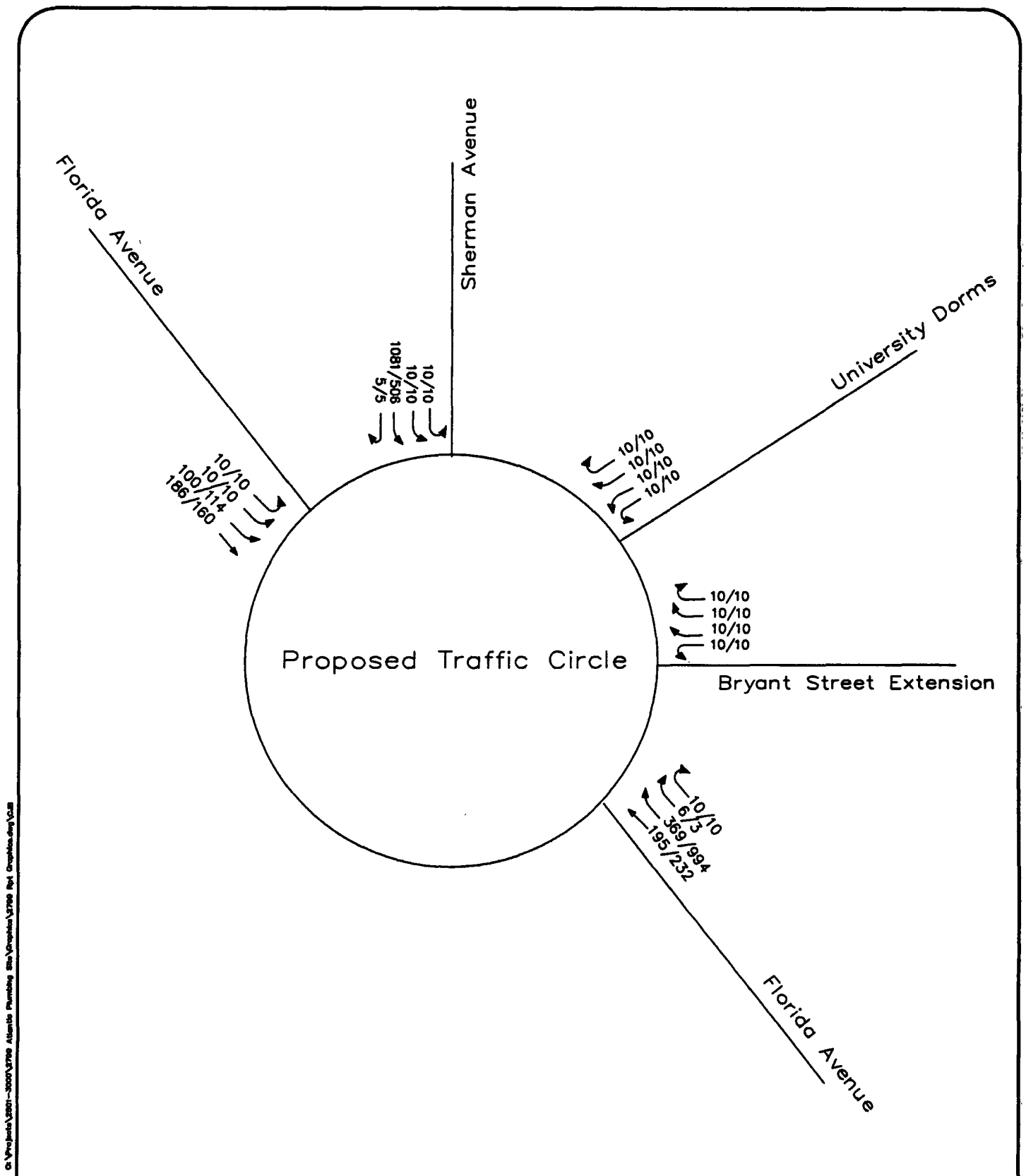


Figure E-1
Existing Re-Assigned Traffic Circle Peak Hour Volumes
(Atlantic North)



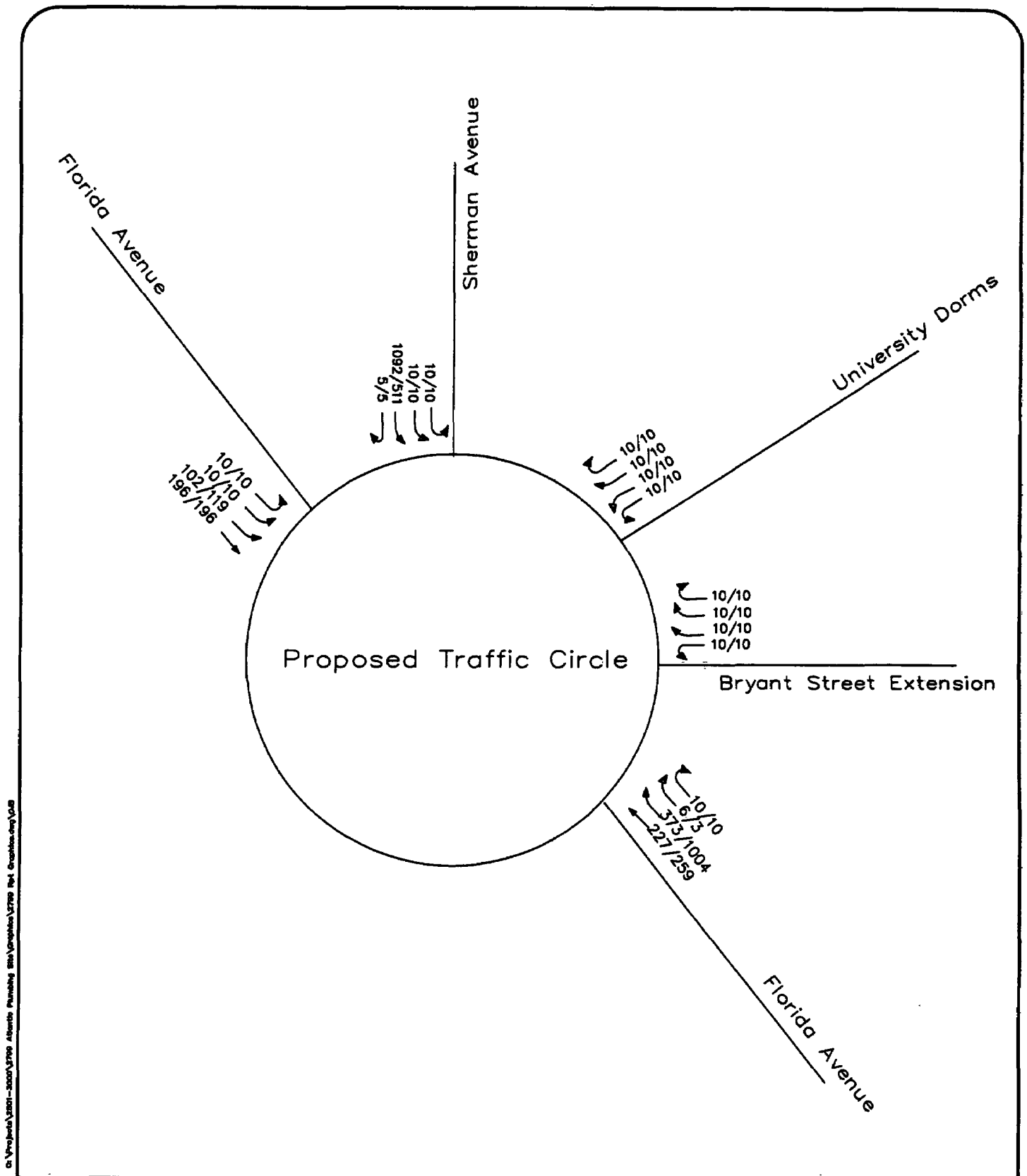


Figure E-2
Background Traffic Circle Peak Hour Volumes
(Atlantic North)



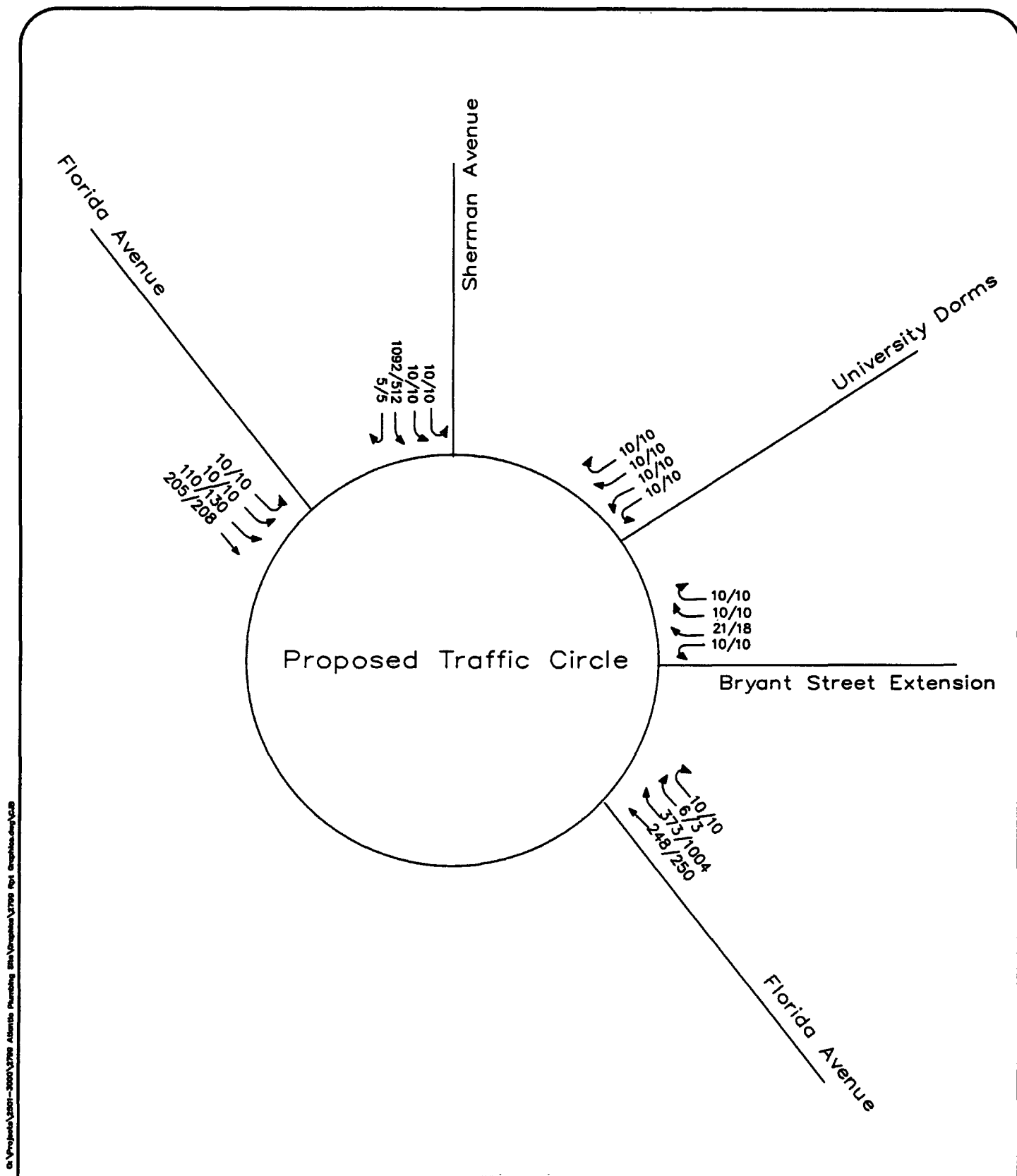


Figure E-3
Total Future Traffic Circle Peak Hour Volumes
(Atlantic South)



Wells & Associates, LLC

User ID: 38423

Licence Type: Multi Computer

Time and Date of Analysis 9:48 AM, Jan 4, 2006

Filename: C:\Documents and Settings\Catherine\Desktop\AaSidra Analysis\ExAM(1.OUT

Title

Subtitle

Intersection ID:

aaTraffic SIDRA US Highway Capacity Manual (2000) Version

RUN INFORMATION

* Basic Parameters:

Intersection Type: Roundabout

Driving on the right-hand side of the road

Input data specified in US units

Default Values File No. 11

Peak flow period (for performance): 30 minutes

Unit time (for volumes): 60 minutes (Total Flow Period)

Delay definition: Control delay

Geometric delay included

aaSIDRA Standard Delay and Queue models used

Level of Service based on: Delay (HCM method)

Queue definition: Back of queue, 95th Percentile

Title

Subtitle

Intersection ID:

Roundabout

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left		Through		Right		Flow Scale	Peak Flow Factor
	LV	HV	LV	HV	LV	HV		
VEHICLES Demand flows in veh/hour as used by the program								
SouthEast: NB Florida Avenue								
72	0	0	582	12	17	1	1.00	0.95
East: Bryant Street Extension								
22	10	1	1	1	21	1	1.00	0.95
NorthEast: University Dorms								
62	21	1	0	0	21	1	1.00	0.95
North: Sherman Avenue								
42	21	1	1012	21	10	1	1.00	0.95
NorthWest: SB Florida Avenue								
82	21	1	295	6	0	0	1.00	0.95

Based on unit time = 60 minutes.

Flow Scale and Peak Hour Factor effects included in flow values.

Title

Subtitle

Intersection ID:

Roundabout

Table R.0 - ROUNDABOUT BASIC PARAMETERS

Cent Island Diam (ft)	Circ Width (ft)	Insc Diam. (ft)	No.of Circ. Lanes	No.of Entry Lanes	Av.Ent Lane Width (ft)	Circulating/Exiting Stream					
						Flow (veh/ h)	%HV	Adjust. Flow (pcu/h)	%Exit Incl.	Cap. Constr. Effect	O-D Factor
SouthEast: NB Florida Avenue											
80	30	140	2	2	15.00	158	2.0	158	0	N	0.969
East: Bryant Street Extension											
80	30	140	2	1	15.00	632	2.0	632	0	N	0.955
NorthEast: University Dorms											
80	30	140	2	1	15.00	626	2.0	626	0	N	0.956
North: Sherman Avenue											
80	30	140	2	1	15.00	248	2.0	248	0	N	0.983
NorthWest: SB Florida Avenue											
80	30	140	2	1	15.00	1085	2.0	1085	0	N	0.642

Title

Subtitle

Intersection ID:

Roundabout

Table R.1 - ROUNDABOUT GAP ACCEPTANCE PARAMETERS

Turn	Lane No.	Lane Type	---- Circulating/Exiting Stream ---					Critical Gap		Foll-up Headway (s)
			Flow Rate (pcu/h)	Aver Speed (mph)	Aver Dist (ft)	In-Bnch Headway (s)	Prop Bunched	Hdwy (s)	Dist (ft)	
SouthEast: NB Florida Avenue										
Thru	1	Subdominant	158	14.9	499.2	2.00	0.175	3.58	78.5	2.51
	2	Dominant	158	14.9	499.2	2.00	0.175	3.35	73.4	2.35
Right	2	Dominant	158	14.9	499.2	2.00	0.175	3.38	73.9	2.36
East: Bryant Street Extension										
Left	1	Dominant	632	22.1	184.8	1.08	0.339	3.47	112.6	2.70
Thru	1	Dominant	632	22.1	184.8	1.08	0.339	4.83	156.7	3.76
Right	1	Dominant	632	22.1	184.8	1.08	0.339	3.34	108.3	2.60
NorthEast: University Dorms										
Left	1	Dominant	626	22.2	187.3	1.06	0.332	3.35	109.0	2.60
Right	1	Dominant	626	22.2	187.3	1.06	0.332	3.35	109.0	2.60
North: Sherman Avenue										
Left	1	Dominant	248	21.4	455.3	1.18	0.163	3.56	111.9	2.55
Thru	1	Dominant	248	21.4	455.3	1.18	0.163	3.55	111.7	2.54
Right	1	Dominant	248	21.4	455.3	1.18	0.163	3.70	116.3	2.65
NorthWest: SB Florida Avenue										
Left	1	Dominant	1085	14.9	72.6	2.00	0.770	2.89	63.3	2.43
Thru	1	Dominant	1085	14.9	72.6	2.00	0.770	2.89	63.2	2.42

Environment Factor: 1.00

Entry/Circulating Flow Adjustment: Medium

Priority sharing is implied for some movements (Follow-up Headway plus Intra-bunch Headway is larger than the Critical Gap). The O-D Factor (Table R.0) allows for priority sharing and priority emphasis.

Mov No.	Dem Flow (veh (h)	aaSIDRA		NAASRA 1986		Ger. Linear		Ger. GapAcc	
		Cap. (veh (h)	Deg. Satn x	Cap. (veh (h)	% Diff from aaSIDRA	Cap. (veh (h)	% Diff from aaSIDRA	Cap. (veh (h)	% Diff from aaSIDRA
SouthEast: NB Florida Avenue									
72 TR	612	2595	0.236	3154	21.5	1300	-49.9	2218	-14.5
East: Bryant Street Extension									
22 LTR	35	873	0.040	988	13.2	880	0.8	705	-19.2
NorthEast: University Dorms									
62 LR	44	924	0.048	1060	14.7	916	-0.9	753	-18.5
North: Sherman Avenue									

42 LTR 1066 1188 0.897 1461 23.0 1118 -5.9 1032 -13.1

NorthWest: SB Florida Avenue

82 LT 323 393 0.822 717 82.4 674 71.5 507 29.0

Title

Subtitle

Intersection ID:

Roundabout

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Demand Flow (veh/h)	HV (%)	Opposing Movement Flow (veh/h)	HV (%)	Adjust. Flow (pcu/h)	Total Cap. (veh/h)	Prac. Deg. xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
SouthEast: NB Florida Avenue										
72 TR	612	2.1	158	2.0	158	2595	0.85	260	100	0.236
East: Bryant Street Extension										
22 LTR	35	8.6	632	2.0	632	873	0.85	2020	100	0.040
NorthEast: University Dorns										
62 LR	44	4.5	626	2.0	626	924	0.85	1685	100	0.048
North: Sherman Avenue										
42 LTR	1066	2.2	248	2.0	248	1188	0.85	-5	100	0.897*
NorthWest: SB Florida Avenue										
82 LT	323	2.2	1085	2.0	1085	393	0.85	3	100	0.822

Title

Subtitle

Intersection ID:

Roundabout

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	B
Worst movement Level of Service	=	D
Average intersection delay (s)	=	16.7
Largest average movement delay (s)	=	37.9
Largest back of queue, 95% (ft)	=	433
Performance Index	=	52.80
Degree of saturation (highest)	=	0.897
Practical Spare Capacity (lowest)	=	-5 %
Effective intersection capacity, (veh/h)	=	2318
Total vehicle flow (veh/h)	=	2080
Total person flow (pers/h)	=	3120
Total vehicle delay (veh-h/h)	=	9.65
Total person delay (pers-h/h)	=	14.47
Total effective vehicle stops (veh/h)	=	1753
Total effective person stops (pers/h)	=	2629
Total vehicle travel (veh-mi/h)	=	889.2
Total cost (\$/h)	=	832.25
Total fuel (gal/h)	=	35.4
Total CO2 (kg/h)	=	335.37

Title

Subtitle

Intersection ID:

Roundabout

Table S.5 - MOVEMENT PERFORMANCE

Mov No.	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue 95% Back (vehs)	Queue (ft)	Perf. Index	Aver. Speed (mph)
SouthEast: NB Florida Avenue									
72 TR	1.06	1.59	6.2	0.31	0.51	1.5	38	10.11	33.2
East: Bryant Street Extension									
22 LTR	0.10	0.15	10.6	0.43	0.69	0.2	4	0.66	31.0
NorthEast: University Dorms									
62 LR	0.14	0.21	11.3	0.42	0.71	0.2	5	0.85	30.6
North: Sherman Avenue									
42 LTR	4.95	7.43	16.7	0.89	0.90	17.0	433	27.87	28.0
NorthWest: SB Florida Avenue									
82 LT	3.40	5.10	37.9	1.00	1.32	12.0	305	13.31	20.1

Title
 Subtitle
 Intersection ID:
 Roundabout

Table S.6 - INTERSECTION PERFORMANCE

Total Flow (veh/h)	Deg. Satn x	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue (ft)	Perf. Index	Aver. Speed (mph)
SouthEast: NB Florida Avenue									
612	0.236	1.06	1.59	6.2	0.31	0.51	38	10.11	33.2
East: Bryant Street Extension									
35	0.040	0.10	0.15	10.6	0.43	0.69	4	0.66	31.0
NorthEast: University Dorms									
44	0.048	0.14	0.21	11.3	0.42	0.71	5	0.85	30.6
North: Sherman Avenue									
1066	0.897	4.95	7.43	16.7	0.89	0.90	433	27.87	28.0
NorthWest: SB Florida Avenue									
323	0.822	3.40	5.10	37.9	1.00	1.32	305	13.31	20.1
ALL VEHICLES:									
2080	0.897	9.65	14.47	16.7	0.72	0.84	433	52.80	27.7
INTERSECTION (persons):									
3120	0.897		14.47	16.7	0.72	0.84		52.80	27.7

Queue values in this table are 95% back of queue (feet).

Title
 Subtitle
 Intersection ID:
 Roundabout

Table S.7 - LANE PERFORMANCE

Dem

Q u e u e

1 LR	22		22	44	5	0.048	11.3	5
	22	0	22	44	5	0.048	11.3	5

North: Sherman Avenue								
1 LTR	22	1033	11	1066	2	0.897	16.7	433
	22	1033	11	1066	2	0.897	16.7	433

NorthWest: SB Florida Avenue								
1 LT	22	301		323	2	0.822	37.9	305
	22	301	0	323	2	0.822	37.9	305
=====								
ALL VEHICLES				Total	%	Max	Aver.	Max
				Flow	HV	X	Delay	Queue
				2080	2	0.897	16.7	433
=====								

Total flow period = 60 minutes. Peak flow period = 30 minutes.

Queue values in this table are 95% back of queue (feet).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

Title
Subtitle
Intersection ID:
Roundabout

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Total Flow (veh/h)	Total Cap. (veh/h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS	Longest Queue 95% Back (vehs)	Queue (ft)

SouthEast: NB Florida Avenue								
72	TR	612	2595	0.236	6.2	A	1.5	38
		612		0.236	6.2	A	1.5	38

East: Bryant Street Extension								
22	LTR	35	873	0.040	10.6	B	0.2	4
		35		0.040	10.6	B	0.2	4

NorthEast: University Dorns								
62	LR	44	924	0.048	11.3	B	0.2	5
		44		0.048	11.3	B	0.2	5

North: Sherman Avenue								
42	LTR	1066	1188	0.897*	16.7	B	17.0	433
		1066		0.897	16.7	B	17.0	433

NorthWest: SB Florida Avenue								
82	LT	323	393	0.822	37.9	D	12.0	305
		323		0.822	37.9	D	12.0	305

ALL VEHICLES:		2080		0.897	16.7	B	17.0	433

Level of Service calculations are based on average control delay including geometric delay (HCM criteria), independent of the current delay definition used. For the criteria, refer to the "Level of Service" topic in the

Title
 Subtitle
 Intersection ID:
 Roundabout

Table D.0 - GEOMETRIC DELAY DATA

From Approach	To Approach	Negn Radius (ft)	Negn Speed (mph)	Negn Dist. (ft)	Appr. Dist. (ft)	Downstream Distance (ft)
SouthEast: NB Florida Avenue						
	East	62.7	16.0	32.8	1800	390
	NorthEast	87.1	18.2	54.5	1800	390
	North	153.9	22.5	98.5	1800	407
	NorthWest	153.9	22.5	131.4	1800	407
East: Bryant Street Extension						
	SouthEast	52.0	14.9	245.0	1800	573
	NorthEast	73.2	17.0	32.8	1800	394
	North	102.1	19.3	54.2	1800	394
	NorthWest	153.9	22.5	98.5	1800	405
NorthEast: University Dorns						
	SouthEast	52.0	14.9	204.2	1800	553
	East	52.0	14.9	245.0	1800	553
	North	73.2	17.0	32.8	1800	394
	NorthWest	102.1	19.3	54.2	1800	394
North: Sherman Avenue						
	SouthEast	52.0	14.9	163.4	1800	492
	East	52.0	14.9	204.2	1800	553
	NorthEast	52.0	14.9	245.0	1800	553
	NorthWest	73.2	17.0	32.8	1800	391
NorthWest: SB Florida Avenue						
	SouthEast	153.9	22.5	131.4	1800	443
	East	52.0	14.9	163.4	1800	443
	NorthEast	52.0	14.9	204.2	1800	553
	North	52.0	14.9	245.0	1800	553

Maximum Negotiation (Design) Speed = 50.0 mph
 Downstream Distance calculated by aaSIDRA

Downstream distance is distance travelled from the stopline until exit cruise speed is reached (includes negotiation distance). Acceleration distance is weighted for light and heavy vehicles. The same distance applies for both stopped and unstopped vehicles.

Title
 Subtitle
 Intersection ID:
 Roundabout

Table D.1 - LANE DELAYS

----- Delay (seconds/veh) -----											
Lane No.	Mov No.	Deg. Satn	Stop-line Delay			Acc. Dec.	Queuing		Stopd	Geom dig	Control dic
		x	1st d1	2nd d2	Total dSL	dn	Total dq	MvUp dqm	(Idle) di		
SouthEast: NB Florida Avenue											
1 T	72	0.236	0.5	0.0	0.5	2.0	0.0	0.0	0.0	5.7	6.2

NorthEast: University Dorms												
1 LR	0.048	0.0	0.1	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.00	
North: Sherman Avenue												
1 LTR	0.897	1.0	4.0	2.0	6.0	9.2	11.6	13.4	17.0	20.0	0.24	
NorthWest: SB Florida Avenue												
1 LT	0.822	1.5	2.6	1.5	4.1	6.6	8.3	9.5	12.0	14.0	0.17	

Values printed in this table are back of queue (vehicles).

Title
Subtitle
Intersection ID:
Roundabout

Table D.3B - LANE QUEUES (feet)

Lane No.	Deg. Satn	Ovrfl. Queue No	Average (feet)			Percentile (feet)					Queue Stor.
	x	No	Nb1	Nb2	Nb	70%	85%	90%	95%	98%	Ratio
SouthEast: NB Florida Avenue											
1 T	0.236	0	12	0	12	22	27	30	38	44	0.02
2 TR	0.236	0	12	0	12	23	27	31	38	44	0.02
East: Bryant Street Extension											
1 LTR	0.040	0	1	0	1	3	3	4	4	5	0.00
NorthEast: University Dorms											
1 LR	0.048	0	2	0	2	3	4	4	5	6	0.00
North: Sherman Avenue											
1 LTR	0.897	25	102	51	153	234	295	341	433	510	0.24
NorthWest: SB Florida Avenue											
1 LT	0.822	39	65	39	104	169	211	242	305	357	0.17

Values printed in this table are back of queue (feet).

Title
Subtitle
Intersection ID:
Roundabout

Table D.4 - MOVEMENT SPEEDS (mph)

Mov No.	App. Speeds		Exit Speeds		Queue Move-up		Av. Section Spd	
	Cruise	Negn	Negn	Cruise	1st Grn	2nd Grn	Running	Overall
SouthEast: NB Florida Avenue								
72	40.0	22.4	22.4	40.0			33.2	33.2
East: Bryant Street Extension								
22	40.0	17.2	17.2	40.0			31.0	31.0
NorthEast: University Dorms								
62	40.0	16.5	16.5	40.0			30.6	30.6
North: Sherman Avenue								
42	40.0	15.0	15.0	40.0	17.4		28.0	28.0

NorthWest: SB Florida Avenue

82 40.0 19.5 19.5 40.0 11.3 26.8 20.1

"Running Speed" is the average speed excluding stopped periods.

--- End of aaSIDRA Output ---

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Title

Subtitle

Intersection ID:

aaTraffic SIDRA US Highway Capacity Manual (2000) Version

RUN INFORMATION

* Basic Parameters:

Intersection Type: Roundabout

Driving on the right-hand side of the road

Input data specified in US units

Default Values File No. 11

Peak flow period (for performance): 30 minutes

Unit time (for volumes): 60 minutes (Total Flow Period)

Delay definition: Control delay

Geometric delay included

aaSIDRA Standard Delay and Queue models used

Level of Service based on: Delay (HCM method)

Queue definition: Back of queue, 95th Percentile

Title

Subtitle

Intersection ID:

Roundabout

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left		Through		Right		Flow Scale	Peak Flow Factor
	LV	HV	LV	HV	LV	HV		
VEHICLES Demand flows in veh/hour as used by the program								
SouthEast: NB Florida Avenue								
72	0	0	1265	26	13	1	1.00	0.95
East: Bryant Street Extension								
22	10	1	1	1	21	1	1.00	0.95
NorthEast: University Dorns								
62	21	1	0	0	21	1	1.00	0.95
North: Sherman Avenue								
42	21	1	522	11	10	1	1.00	0.95
NorthWest: SB Florida Avenue								
82	21	1	283	6	0	0	1.00	0.95

Based on unit time = 60 minutes.

Flow Scale and Peak Hour Factor effects included in flow values.

Title

Subtitle

Intersection ID:

Roundabout

Table R.0 - ROUNDABOUT BASIC PARAMETERS

Cent Island Diam (ft)	Circ Width (ft)	Insc Diam. (ft)	No.of Circ. Lanes	No.of Entry Lanes	Av.Ent Lane Width (ft)	Circulating/Exiting Stream					
						Flow (veh/ h)	%HV	Adjust. Flow (pcu/h)	%Exit Incl.	Cap. Constr. Effect	O-D Factor
SouthEast: NB Florida Avenue											
80	30	140	2	2	15.00	173	2.0	173	0	N	0.978
East: Bryant Street Extension											
80	30	140	2	1	15.00	1325	2.0	1325	0	N	0.857
NorthEast: University Dorms											
80	30	140	2	1	15.00	1323	2.0	1323	0	N	0.858
North: Sherman Avenue											
80	30	140	2	1	15.00	287	2.0	287	0	N	0.975
NorthWest: SB Florida Avenue											
80	30	140	2	1	15.00	585	2.0	585	0	N	0.925

Title

Subtitle

Intersection ID:

Roundabout

Table R.1 - ROUNDABOUT GAP ACCEPTANCE PARAMETERS

Turn	Lane No.	Lane Type	Circulating/Exiting Stream					Critical Gap		Foll-up Headway
			Flow Rate (pcu/h)	Aver Speed (mph)	Aver Dist (ft)	In-Bnch Headway (s)	Prop Bunched	Hdwy (s)	Dist (ft)	
SouthEast: NB Florida Avenue										
Thru	1	Subdominant	173	14.9	456.6	2.00	0.189	3.53	77.3	2.48
	2	Dominant	173	14.9	456.6	2.00	0.189	3.24	71.0	2.28
Right	2	Dominant	173	14.9	456.6	2.00	0.189	3.32	72.6	2.33
East: Bryant Street Extension										
Left	1	Dominant	1325	22.3	89.0	1.06	0.584	2.81	92.2	2.43
Thru	1	Dominant	1325	22.3	89.0	1.06	0.584	3.92	128.4	3.38
Right	1	Dominant	1325	22.3	89.0	1.06	0.584	2.71	88.7	2.34
NorthEast: University Dorms										
Left	1	Dominant	1323	22.4	89.3	1.05	0.581	2.71	88.9	2.34
Right	1	Dominant	1323	22.4	89.3	1.05	0.581	2.71	88.9	2.34
North: Sherman Avenue										
Left	1	Dominant	287	21.6	396.3	1.17	0.185	3.67	116.0	2.65
Thru	1	Dominant	287	21.6	396.3	1.17	0.185	3.66	115.9	2.64
Right	1	Dominant	287	21.6	396.3	1.17	0.185	3.81	120.6	2.75
NorthWest: SB Florida Avenue										
Left	1	Dominant	585	14.9	134.7	2.00	0.515	3.39	74.3	2.62
Thru	1	Dominant	585	14.9	134.7	2.00	0.515	3.39	74.2	2.61

Environment Factor: 1.00

Entry/Circulating Flow Adjustment: Medium

Priority sharing is implied for some movements (Follow-up Headway plus Intra-bunch Headway is larger than the Critical Gap). The O-D Factor (Table R.0) allows for priority sharing and priority emphasis.

Mov	Dem	aaSIDRA		NAASRA 1986		Ger. Linear		Ger. GapAcc	
No.	Flow	Cap.	Deg.	Cap.	% Diff	Cap.	% Diff	Cap.	% Diff
	(veh	(veh	Satn	(veh	from	(veh	from	(veh	from
	/h)	/h)	x	/h)	aaSIDRA	/h)	aaSIDRA	/h)	aaSIDRA
SouthEast: NB Florida Avenue									
72 TR	1305	2654	0.492	3115	17.4	1293	-51.3	2192	-17.4
East: Bryant Street Extension									
22 LTR	35	648	0.054	524	-19.1	532	-17.9	345	-46.8
NorthEast: University Dorms									
62 LR	44	691	0.064	582	-15.8	554	-19.8	379	-45.2
North: Sherman Avenue									

42 LTR	566	1101	0.514	1413	28.3	1098	-0.3	1000	-9.2

NorthWest: SB Florida Avenue									
82 LT	311	843	0.369	1100	30.5	939	11.4	782	-7.2

Title
Subtitle
Intersection ID:
Roundabout

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Demand		Opposing Movement		Adjust. Flow (pcu/h)	Total Cap. (veh /h)	Prac. Deg. xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
	Flow (veh/h)	HV (%)	Flow (veh/h)	HV (%)						

SouthEast: NB Florida Avenue										
72 TR	1305	2.1	173	2.0	173	2654	0.85	73	100	0.492

East: Bryant Street Extension										
22 LTR	35	8.6	1325	2.0	1325	648	0.85	1474	100	0.054

NorthEast: University Dorms										
62 LR	44	4.5	1323	2.0	1323	691	0.85	1235	100	0.064

North: Sherman Avenue										
42 LTR	566	2.3	287	2.0	287	1101	0.85	65	100	0.514*

NorthWest: SB Florida Avenue										
82 LT	311	2.3	585	2.0	585	843	0.85	130	100	0.369

Title
Subtitle
Intersection ID:
Roundabout

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	A
Worst movement Level of Service	=	B
Average intersection delay (s)	=	8.7
Largest average movement delay (s)	=	12.8
Largest back of queue, 95% (ft)	=	98
Performance Index	=	41.91
Degree of saturation (highest)	=	0.514
Practical Spare Capacity (lowest)	=	65 %
Effective intersection capacity, (veh/h)	=	4398
Total vehicle flow (veh/h)	=	2261
Total person flow (pers/h)	=	3392
Total vehicle delay (veh-h/h)	=	5.47
Total person delay (pers-h/h)	=	8.21
Total effective vehicle stops (veh/h)	=	1435
Total effective person stops (pers/h)	=	2152
Total vehicle travel (veh-mi/h)	=	957.0
Total cost (\$/h)	=	783.81
Total fuel (gal/h)	=	35.9
Total CO2 (kg/h)	=	339.68

Title
Subtitle
Intersection ID:
Roundabout

Table S.5 - MOVEMENT PERFORMANCE

Mov No.	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest 95% Back (vehs)	Queue (ft)	Perf. Index	Aver. Speed (mph)
SouthEast: NB Florida Avenue									
72 TR	2.34	3.51	6.4	0.39	0.54	3.8	98	22.30	32.9
East: Bryant Street Extension									
22 LTR	0.12	0.18	12.1	0.61	0.81	0.3	7	0.73	30.4
NorthEast: University Dorns									
62 LR	0.16	0.23	12.8	0.60	0.83	0.3	8	0.93	30.0
North: Sherman Avenue									
42 LTR	1.92	2.89	12.2	0.48	0.75	3.4	87	11.50	29.9
NorthWest: SB Florida Avenue									
82 LT	0.94	1.41	10.9	0.64	0.80	2.6	65	6.45	30.8

Title

Subtitle

Intersection ID:

Roundabout

Table S.6 - INTERSECTION PERFORMANCE

Total Flow (veh/h)	Deg. Satn x	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue (ft)	Perf. Index	Aver. Speed (mph)
SouthEast: NB Florida Avenue									
1305	0.492	2.34	3.51	6.4	0.39	0.54	98	22.30	32.9
East: Bryant Street Extension									
35	0.054	0.12	0.18	12.1	0.61	0.81	7	0.73	30.4
NorthEast: University Dorns									
44	0.064	0.16	0.23	12.8	0.60	0.83	8	0.93	30.0
North: Sherman Avenue									
566	0.514	1.92	2.89	12.2	0.48	0.75	87	11.50	29.9
NorthWest: SB Florida Avenue									
311	0.369	0.94	1.41	10.9	0.64	0.80	65	6.45	30.8
ALL VEHICLES:									
2261	0.514	5.47	8.21	8.7	0.46	0.63	98	41.91	31.7
INTERSECTION (persons):									
3392	0.514		8.21	8.7	0.46	0.63		41.91	31.7

Queue values in this table are 95% back of queue (feet).

Title

Subtitle

Intersection ID:

Roundabout

Table S.7 - LANE PERFORMANCE

Dem

Q u e u e

Lane No.	Mov No.	Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	95% Back (vehs)	Short Lane (ft)
SouthEast: NB Florida Avenue								
1 T	72	623	1266	0.492	6.5	0.54	3.8	96
2 TR	72	682	1388	0.492	6.4	0.53	3.8	98
East: Bryant Street Extension								
1 LTR	22	35	648	0.054	12.1	0.81	0.3	7
NorthEast: University Dorms								
1 LR	62	44	691	0.064	12.8	0.83	0.3	8
North: Sherman Avenue								
1 LTR	42	566	1101	0.514	12.2	0.75	3.4	87
NorthWest: SB Florida Avenue								
1 LT	82	311	843	0.369	10.9	0.80	2.6	65

Title
Subtitle
Intersection ID:
Roundabout

Table S.8A - LANE FLOW AND CAPACITY INFORMATION

Lane No.	Mov No.	Dem Flow (veh/h)				Min Cap (veh/h)	Tot Cap (veh/h)	Deg. Satn x	Lane Util %
		Lef	Thru	Rig	Tot				
SouthEast: NB Florida Avenue									
1 T	72	0	623	0	623	150	1266	0.492	100
2 TR	72	0	668	14	682	150	1388	0.492	100
East: Bryant Street Extension									
1 LTR	22	11	2	22	35	35	648	0.054	100
NorthEast: University Dorms									
1 LR	62	22	0	22	44	44	691	0.064	100
North: Sherman Avenue									
1 LTR	42	22	533	11	566	150	1101	0.514	100
NorthWest: SB Florida Avenue									
1 LT	82	22	289	0	311	150	843	0.369	100

For roundabouts, the capacity value for continuous movements is obtained as the basic saturation flow without any adjustments. Saturation flow scale applies if specified.

Title
Subtitle
Intersection ID:
Roundabout

Table S.12A - FUEL CONSUMPTION, EMISSIONS AND COST - TOTAL

Mov No.	Fuel Total gal/h	Cost Total \$/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h
---------	------------------	-----------------	---------------	---------------	----------------	----------------

SouthEast: NB Florida Avenue

1 LR	22		22	44	5	0.064	12.8	8
	22	0	22	44	5	0.064	12.8	8

North: Sherman Avenue								
1 LTR	22	533	11	566	2	0.514	12.2	87
	22	533	11	566	2	0.514	12.2	87

NorthWest: SB Florida Avenue								
1 LT	22	289		311	2	0.369	10.9	65
	22	289	0	311	2	0.369	10.9	65
=====								
ALL VEHICLES				Total	%	Max	Aver.	Max
				Flow	HV	X	Delay	Queue
				2261	2	0.514	8.7	98
=====								

Total flow period = 60 minutes. Peak flow period = 30 minutes.

Queue values in this table are 95% back of queue (feet).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

Title
Subtitle
Intersection ID:
Roundabout

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Total Flow (veh/h)	Total Cap. (veh/h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS	Longest Queue 95% Back (vehs)	Queue (ft)

SouthEast: NB Florida Avenue								
72 TR		1305	2654	0.492	6.4	A	3.8	98
		1305		0.492	6.4	A	3.8	98

East: Bryant Street Extension								
22 LTR		35	648	0.054	12.1	B	0.3	7
		35		0.054	12.1	B	0.3	7

NorthEast: University Dorns								
62 LR		44	691	0.064	12.8	B	0.3	8
		44		0.064	12.8	B	0.3	8

North: Sherman Avenue								
42 LTR		566	1101	0.514*	12.2	B	3.4	87
		566		0.514	12.2	B	3.4	87

NorthWest: SB Florida Avenue								
82 LT		311	843	0.369	10.9	B	2.6	65
		311		0.369	10.9	B	2.6	65

ALL VEHICLES:		2261		0.514	8.7	A	3.8	98

Level of Service calculations are based on average control delay including geometric delay (HCM criteria), independent of the current delay definition used. For the criteria, refer to the "Level of Service" topic in the

Title
 Subtitle
 Intersection ID:
 Roundabout

Table D.0 - GEOMETRIC DELAY DATA

From Approach	To Approach	Negn Radius (ft)	Negn Speed (mph)	Negn Dist. (ft)	Appr. Dist. (ft)	Downstream Distance (ft)
SouthEast: NB Florida Avenue						
	East	62.7	16.0	32.8	1800	389
	NorthEast	87.1	18.2	54.5	1800	389
	North	153.9	22.5	98.5	1800	407
	NorthWest	153.9	22.5	131.4	1800	407
East: Bryant Street Extension						
	SouthEast	52.0	14.9	245.0	1800	573
	NorthEast	73.2	17.0	32.8	1800	394
	North	102.1	19.3	54.2	1800	394
	NorthWest	153.9	22.5	98.5	1800	405
NorthEast: University Dorns						
	SouthEast	52.0	14.9	204.2	1800	553
	East	52.0	14.9	245.0	1800	553
	North	73.2	17.0	32.8	1800	394
	NorthWest	102.1	19.3	54.2	1800	394
North: Sherman Avenue						
	SouthEast	52.0	14.9	163.4	1800	492
	East	52.0	14.9	204.2	1800	553
	NorthEast	52.0	14.9	245.0	1800	553
	NorthWest	73.2	17.0	32.8	1800	391
NorthWest: SB Florida Avenue						
	SouthEast	153.9	22.5	131.4	1800	449
	East	52.0	14.9	163.4	1800	449
	NorthEast	52.0	14.9	204.2	1800	553
	North	52.0	14.9	245.0	1800	553

Maximum Negotiation (Design) Speed = 50.0 mph
 Downstream Distance calculated by aaSIDRA

Downstream distance is distance travelled from the stopline until exit cruise speed is reached (includes negotiation distance). Acceleration distance is weighted for light and heavy vehicles. The same distance applies for both stopped and unstopped vehicles.

Title
 Subtitle
 Intersection ID:
 Roundabout

Table D.1 - LANE DELAYS

----- Delay (seconds/veh) -----											
Lane No.	Mov No.	Deg.	Stop-line Delay			Acc.	Queuing		Stopd	Geom	Control
		Satn x	1st d1	2nd d2	Total dSL	Dec. dn	Total dq	MvUp dqm	(Idle) di		

SouthEast: NB Florida Avenue											
1 T	72	0.492	0.8	0.0	0.8	2.5	0.0	0.0	0.0	5.7	6.5

NorthEast: University Dorms												
1 LR	0.064	0.0	0.1	0.0	0.1	0.2	0.2	0.2	0.3	0.4	0.00	
North: Sherman Avenue												
1 LTR	0.514	0.0	1.1	0.0	1.1	2.0	2.4	2.7	3.4	3.9	0.05	
NorthWest: SB Florida Avenue												
1 LT	0.369	0.0	0.8	0.0	0.8	1.5	1.8	2.1	2.6	3.0	0.04	

Values printed in this table are back of queue (vehicles).

Title
Subtitle
Intersection ID:
Roundabout

Table D.3B - LANE QUEUES (feet)

	Deg.	Ovrfl.	Average (feet)			Percentile (feet)					Queue
Lane	Satn	Queue									Stor.
No.	x	No	Nb1	Nb2	Nb	70%	85%	90%	95%	98%	Ratio
SouthEast: NB Florida Avenue											
1 T	0.492	0	31	0	31	56	68	77	96	111	0.05
2 TR	0.492	0	31	0	31	57	69	79	98	113	0.05
East: Bryant Street Extension											
1 LTR	0.054	0	2	0	2	4	5	5	7	8	0.00
NorthEast: University Dorms											
1 LR	0.064	0	2	0	2	5	6	6	8	9	0.00
North: Sherman Avenue											
1 LTR	0.514	0	28	0	28	50	62	70	87	100	0.05
NorthWest: SB Florida Avenue											
1 LT	0.369	0	21	0	21	38	46	52	65	75	0.04

Values printed in this table are back of queue (feet).

Title
Subtitle
Intersection ID:
Roundabout

Table D.4 - MOVEMENT SPEEDS (mph)

Mov No.	App. Speeds		Exit Speeds		Queue Move-up		Av. Section Spd	
	Cruise	Negn	Negn	Cruise	1st Grn	2nd Grn	Running	Overall
SouthEast: NB Florida Avenue								
72	40.0	22.5	22.5	40.0			32.9	32.9
East: Bryant Street Extension								
22	40.0	17.2	17.2	40.0			30.4	30.4
NorthEast: University Dorms								
62	40.0	16.5	16.5	40.0			30.0	30.0
North: Sherman Avenue								
42	40.0	15.0	15.0	40.0			29.9	29.9

NorthWest: SB Florida Avenue

82 40.0 19.1 19.1 40.0

30.8 30.8

"Running Speed" is the average speed excluding stopped periods.

--- End of aaSIDRA Output ---

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Title

Subtitle

Intersection ID:

aaTraffic SIDRA US Highway Capacity Manual (2000) Version

RUN INFORMATION

* Basic Parameters:

Intersection Type: Roundabout

Driving on the right-hand side of the road

Input data specified in US units

Default Values File No. 11

Peak flow period (for performance): 30 minutes

Unit time (for volumes): 60 minutes (Total Flow Period)

Delay definition: Control delay

Geometric delay included

aaSIDRA Standard Delay and Queue models used

Level of Service based on: Delay (HCM method)

Queue definition: Back of queue, 95th Percentile

Title

Subtitle

Intersection ID:

Roundabout

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left		Through		Right		Flow Scale	Peak Flow Factor
	LV	HV	LV	HV	LV	HV		
VEHICLES Demand flows in veh/hour as used by the program								
SouthEast: NB Florida Avenue								
72	0	0	615	13	17	1	1.00	0.95
East: Bryant Street Extension								
22	10	1	1	1	21	1	1.00	0.95
NorthEast: University Dorns								
62	21	1	0	0	21	1	1.00	0.95
North: Sherman Avenue								
42	21	1	1012	21	10	1	1.00	0.95
NorthWest: SB Florida Avenue								
82	21	1	305	6	0	0	1.00	0.95

Based on unit time = 60 minutes.

Flow Scale and Peak Hour Factor effects included in flow values.

Title

Subtitle

Intersection ID:

Roundabout

Table R.0 - ROUNDABOUT BASIC PARAMETERS

Cent Island Diam (ft)	Circ Width (ft)	Insc Diam. (ft)	No.of Circ. Lanes	No.of Entry Lanes	Av.Ent Lane Width (ft)	Circulating/Exiting Stream					
						Flow	%HV	Adjust.	%Exit	Cap.	O-D
						(veh/ h)		Flow (pcu/h)	Incl. Constr. Effect	Factor	
SouthEast: NB Florida Avenue											
80	30	140	2	2	15.00	158	2.0	158	0	N	0.969
East: Bryant Street Extension											
80	30	140	2	1	15.00	665	2.0	665	0	N	0.952
NorthEast: University Dorns											
80	30	140	2	1	15.00	660	2.0	660	0	N	0.952
North: Sherman Avenue											
80	30	140	2	1	15.00	282	2.0	282	0	N	0.981
NorthWest: SB Florida Avenue											
80	30	140	2	1	15.00	1085	2.0	1085	0	N	0.614

Title

Subtitle

Intersection ID:

Roundabout

Table R.1 - ROUNDABOUT GAP ACCEPTANCE PARAMETERS

Turn	Lane No.	Lane Type	Circulating/Exiting Stream					Critical Gap		Foll-up
			Flow Rate (pcu/h)	Aver Speed (mph)	Aver Dist (ft)	In-Bnch Headway (s)	Prop Bunched	Hdwy (s)	Dist (ft)	Headway (s)
SouthEast: NB Florida Avenue										
Thru	1	Subdominant	158	14.9	499.2	2.00	0.175	3.58	78.4	2.51
	2	Dominant	158	14.9	499.2	2.00	0.175	3.34	73.2	2.34
Right	2	Dominant	158	14.9	499.2	2.00	0.175	3.37	73.8	2.36
East: Bryant Street Extension										
Left	1	Dominant	665	22.1	175.6	1.08	0.353	3.43	111.4	2.69
Thru	1	Dominant	665	22.1	175.6	1.08	0.353	4.78	155.1	3.74
Right	1	Dominant	665	22.1	175.6	1.08	0.353	3.30	107.1	2.59
NorthEast: University Dorns										
Left	1	Dominant	660	22.2	177.8	1.06	0.346	3.31	107.9	2.59
Right	1	Dominant	660	22.2	177.8	1.06	0.346	3.31	107.9	2.59
North: Sherman Avenue										
Left	1	Dominant	282	21.6	403.4	1.16	0.180	3.54	112.1	2.56
Thru	1	Dominant	282	21.6	403.4	1.16	0.180	3.54	111.9	2.55
Right	1	Dominant	282	21.6	403.4	1.16	0.180	3.68	116.5	2.66
NorthWest: SB Florida Avenue										
Left	1	Dominant	1085	14.9	72.6	2.00	0.770	2.89	63.3	2.43
Thru	1	Dominant	1085	14.9	72.6	2.00	0.770	2.89	63.2	2.42

Environment Factor: 1.00

Entry/Circulating Flow Adjustment: Medium

Priority sharing is implied for some movements (Follow-up Headway plus Intra-bunch Headway is larger than the Critical Gap). The O-D Factor (Table R.0) allows for priority sharing and priority emphasis.

42 LTR	1066	1158	0.921	1420	22.6	1100	-5.0	1005	-13.2
--------	------	------	-------	------	------	------	------	------	-------

NorthWest: SB Florida Avenue

82 LT	333	375	0.888	717	91.2	674	79.7	520	38.7
-------	-----	-----	-------	-----	------	-----	------	-----	------

Title
Subtitle
Intersection ID:
Roundabout

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Demand Flow (veh/h)	HV (%)	Opposing Movement Flow (veh/h)	HV (%)	Adjust. Flow (pcu/h)	Total Cap. (veh/h)	Prac. Deg. xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
---------	---------------------	--------	--------------------------------	--------	----------------------	--------------------	---------------	----------------------	---------------	-------------

SouthEast: NB Florida Avenue

72 TR	646	2.2	158	2.0	158	2600	0.85	242	100	0.248
-------	-----	-----	-----	-----	-----	------	------	-----	-----	-------

East: Bryant Street Extension

22 LTR	35	8.6	665	2.0	665	861	0.85	1991	100	0.041
--------	----	-----	-----	-----	-----	-----	------	------	-----	-------

NorthEast: University Dorns

62 LR	44	4.5	660	2.0	660	912	0.85	1662	100	0.048
-------	----	-----	-----	-----	-----	-----	------	------	-----	-------

North: Sherman Avenue

42 LTR	1066	2.2	282	2.0	282	1158	0.85	-8	100	0.921*
--------	------	-----	-----	-----	-----	------	------	----	-----	--------

NorthWest: SB Florida Avenue

82 LT	333	2.1	1085	2.0	1085	375	0.85	-4	100	0.888
-------	-----	-----	------	-----	------	-----	------	----	-----	-------

Title
Subtitle
Intersection ID:
Roundabout

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	B
Worst movement Level of Service	=	D
Average intersection delay (s)	=	19.3
Largest average movement delay (s)	=	48.7
Largest back of queue, 95% (ft)	=	493
Performance Index	=	58.05
Degree of saturation (highest)	=	0.921
Practical Spare Capacity (lowest)	=	-8 %
Effective intersection capacity, (veh/h)	=	2307
Total vehicle flow (veh/h)	=	2124
Total person flow (pers/h)	=	3186
Total vehicle delay (veh-h/h)	=	11.38
Total person delay (pers-h/h)	=	17.06
Total effective vehicle stops (veh/h)	=	1932
Total effective person stops (pers/h)	=	2898
Total vehicle travel (veh-mi/h)	=	907.6
Total cost (\$/h)	=	889.29
Total fuel (gal/h)	=	36.8
Total CO2 (kg/h)	=	348.66

Title
Subtitle
Intersection ID:
Roundabout

Table S.5 - MOVEMENT PERFORMANCE

Mov No.	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue 95% Back (vehs)	Queue (ft)	Perf. Index	Aver. Speed (mph)
SouthEast: NB Florida Avenue									
72 TR	1.12	1.68	6.2	0.31	0.51	1.6	41	10.69	33.2
East: Bryant Street Extension									
22 LTR	0.10	0.16	10.6	0.44	0.70	0.2	5	0.67	30.9
NorthEast: University Dorms									
62 LR	0.14	0.21	11.4	0.43	0.72	0.2	5	0.85	30.5
North: Sherman Avenue									
42 LTR	5.51	8.26	18.6	0.96	1.00	19.4	493	29.95	27.1
NorthWest: SB Florida Avenue									
82 LT	4.51	6.76	48.7	1.00	1.43	14.9	378	15.89	17.6

Title

Subtitle

Intersection ID:

Roundabout

Table S.6 - INTERSECTION PERFORMANCE

Total Flow (veh/h)	Deg. Satn x	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue (ft)	Perf. Index	Aver. Speed (mph)
SouthEast: NB Florida Avenue									
646	0.248	1.12	1.68	6.2	0.31	0.51	41	10.69	33.2
East: Bryant Street Extension									
35	0.041	0.10	0.16	10.6	0.44	0.70	5	0.67	30.9
NorthEast: University Dorms									
44	0.048	0.14	0.21	11.4	0.43	0.72	5	0.85	30.5
North: Sherman Avenue									
1066	0.921	5.51	8.26	18.6	0.96	1.00	493	29.95	27.1
NorthWest: SB Florida Avenue									
333	0.888	4.51	6.76	48.7	1.00	1.43	378	15.89	17.6
ALL VEHICLES:									
2124	0.921	11.38	17.06	19.3	0.75	0.91	493	58.05	26.4
INTERSECTION (persons):									
3186	0.921		17.06	19.3	0.75	0.91		58.05	26.4

Queue values in this table are 95% back of queue (feet).

Title

Subtitle

Intersection ID:

Roundabout

Table S.7 - LANE PERFORMANCE

Dem

Q u e u e

Lane No.	Mov No.	Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	95% Back (vehs)	Short Lane (ft)
SouthEast: NB Florida Avenue								
1 T	72	311	1252	0.248	6.2	0.51	1.6	40
2 TR	72	335	1348	0.248	6.2	0.51	1.6	41
East: Bryant Street Extension								
1 LTR	22	35	861	0.041	10.6	0.70	0.2	5
NorthEast: University Dorms								
1 LR	62	44	912	0.048	11.4	0.72	0.2	5
North: Sherman Avenue								
1 LTR	42	1066	1158	0.921	18.6	1.00	19.4	493
NorthWest: SB Florida Avenue								
1 LT	82	333	375	0.887	48.7	1.43	14.9	378

Title
Subtitle
Intersection ID:
Roundabout

Table S.8A - LANE FLOW AND CAPACITY INFORMATION

Lane No.	Mov No.	Dem Flow (veh/h)				Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
		Lef	Thru	Rig	Tot				
SouthEast: NB Florida Avenue									
1 T	72	0	311	0	311	150	1252	0.248	100
2 TR	72	0	317	18	335	150	1348	0.248	100
East: Bryant Street Extension									
1 LTR	22	11	2	22	35	35	861	0.041	100
NorthEast: University Dorms									
1 LR	62	22	0	22	44	44	912	0.048	100
North: Sherman Avenue									
1 LTR	42	22	1033	11	1066	150	1158	0.921	100
NorthWest: SB Florida Avenue									
1 LT	82	22	311	0	333	150	375	0.887	100

For roundabouts, the capacity value for continuous movements is obtained as the basic saturation flow without any adjustments. Saturation flow scale applies if specified.

Title
Subtitle
Intersection ID:
Roundabout

Table S.12A - FUEL CONSUMPTION, EMISSIONS AND COST - TOTAL

Mov No.	Fuel Total gal/h	Cost Total \$/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h
---------	------------------	-----------------	---------------	---------------	----------------	----------------

SouthEast: NB Florida Avenue

1 LR	22		22	44	5	0.048	11.4	5
	22	0	22	44	5	0.048	11.4	5

North: Sherman Avenue								
1 LTR	22	1033	11	1066	2	0.921	18.6	493
	22	1033	11	1066	2	0.921	18.6	493

NorthWest: SB Florida Avenue								
1 LT	22	311		333	2	0.887	48.7	378
	22	311	0	333	2	0.887	48.7	378
=====								
ALL VEHICLES				Total	%	Max	Aver.	Max
				Flow	HV	X	Delay	Queue
				2124	2	0.921	19.3	493
=====								

Total flow period = 60 minutes. Peak flow period = 30 minutes.

Queue values in this table are 95% back of queue (feet).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

Title
Subtitle
Intersection ID:
Roundabout

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS	Longest Queue 95% Back (vehs) (ft)

SouthEast: NB Florida Avenue							
72 TR		646	2600	0.248	6.2	A	1.6 41
		646		0.248	6.2	A	1.6 41

East: Bryant Street Extension							
22 LTR		35	861	0.041	10.6	B	0.2 5
		35		0.041	10.6	B	0.2 5

NorthEast: University Dorns							
62 LR		44	912	0.048	11.4	B	0.2 5
		44		0.048	11.4	B	0.2 5

North: Sherman Avenue							
42 LTR		1066	1158	0.921*	18.6	B	19.4 493
		1066		0.921	18.6	B	19.4 493

NorthWest: SB Florida Avenue							
82 LT		333	375	0.888	48.7	D	14.9 378
		333		0.888	48.7	D	14.9 378

ALL VEHICLES:		2124		0.921	19.3	B	19.4 493

Level of Service calculations are based on average control delay including geometric delay (HCM criteria), independent of the current delay definition used.
For the criteria, refer to the "Level of Service" topic in the

Title
 Subtitle
 Intersection ID:
 Roundabout

Table D.0 - GEOMETRIC DELAY DATA

From Approach	To Approach	Negn Radius (ft)	Negn Speed (mph)	Negn Dist. (ft)	Appr. Dist. (ft)	Downstream Distance (ft)
SouthEast: NB Florida Avenue						
	East	62.7	16.0	32.8	1800	390
	NorthEast	87.1	18.2	54.5	1800	390
	North	153.9	22.5	98.5	1800	407
	NorthWest	153.9	22.5	131.4	1800	407
East: Bryant Street Extension						
	SouthEast	52.0	14.9	245.0	1800	573
	NorthEast	73.2	17.0	32.8	1800	394
	North	102.1	19.3	54.2	1800	394
	NorthWest	153.9	22.5	98.5	1800	405
NorthEast: University Dorms						
	SouthEast	52.0	14.9	204.2	1800	553
	East	52.0	14.9	245.0	1800	553
	North	73.2	17.0	32.8	1800	394
	NorthWest	102.1	19.3	54.2	1800	394
North: Sherman Avenue						
	SouthEast	52.0	14.9	163.4	1800	492
	East	52.0	14.9	204.2	1800	553
	NorthEast	52.0	14.9	245.0	1800	553
	NorthWest	73.2	17.0	32.8	1800	391
NorthWest: SB Florida Avenue						
	SouthEast	153.9	22.5	131.4	1800	442
	East	52.0	14.9	163.4	1800	442
	NorthEast	52.0	14.9	204.2	1800	553
	North	52.0	14.9	245.0	1800	553

Maximum Negotiation (Design) Speed = 50.0 mph
 Downstream Distance calculated by aaSIDRA

Downstream distance is distance travelled from the stopline until exit cruise speed is reached (includes negotiation distance). Acceleration distance is weighted for light and heavy vehicles. The same distance applies for both stopped and unstopped vehicles.

Title
 Subtitle
 Intersection ID:
 Roundabout

Table D.1 - LANE DELAYS

----- Delay (seconds/veh) -----											
Lane No.	Mov No.	Deg. Satn x	Stop-line Delay			Acc. Dec. dn	Queuing		Stopd (Idle) di	Geom dig	Control dic
		1st d1	2nd d2	Total dSL	Total dq	MvUp dqm					
SouthEast: NB Florida Avenue											
1 T	72	0.248	0.5	0.0	0.5	2.0	0.0	0.0	0.0	5.7	6.2

NorthEast: University Dorms											
1 LR	0.048	0.0	0.1	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.00
North: Sherman Avenue											
1 LTR	0.921	1.4	4.1	2.8	6.9	10.4	13.1	15.2	19.4	22.9	0.27
NorthWest: SB Florida Avenue											
1 LT	0.887	2.3	2.8	2.3	5.2	8.1	10.2	11.8	14.9	17.5	0.21

Values printed in this table are back of queue (vehicles).

Title
Subtitle
Intersection ID:
Roundabout

Table D.3B - LANE QUEUES (feet)

	Deg.	Ovrfl.	Average (feet)			Percentile (feet)					Queue
Lane	Satn	Queue									Stor.
No.	x	No	Nb1	Nb2	Nb	70%	85%	90%	95%	98%	Ratio
SouthEast: NB Florida Avenue											
1 T	0.248	0	13	0	13	24	29	32	40	46	0.02
2 TR	0.248	0	13	0	13	24	29	33	41	47	0.02
East: Bryant Street Extension											
1 LTR	0.041	0	1	0	1	3	3	4	5	5	0.00
NorthEast: University Dorms											
1 LR	0.048	0	2	0	2	3	4	4	5	6	0.00
North: Sherman Avenue											
1 LTR	0.921	37	105	71	176	264	334	387	493	581	0.27
NorthWest: SB Florida Avenue											
1 LT	0.887	59	72	60	132	207	259	299	378	444	0.21

Values printed in this table are back of queue (feet).

Title
Subtitle
Intersection ID:
Roundabout

Table D.4 - MOVEMENT SPEEDS (mph)

Mov No.	App. Speeds		Exit Speeds		Queue Move-up		Av. Section Spd	
	Cruise	Negn	Negn	Cruise	1st Grn	2nd Grn	Running	Overall
SouthEast: NB Florida Avenue								
72	40.0	22.4	22.4	40.0			33.2	33.2
East: Bryant Street Extension								
22	40.0	17.2	17.2	40.0			30.9	30.9
NorthEast: University Dorms								
62	40.0	16.5	16.5	40.0			30.5	30.5
North: Sherman Avenue								
42	40.0	15.0	15.0	40.0	16.5		27.2	27.1

NorthWest: SB Florida Avenue

82	40.0	19.6	19.6	40.0	11.3	25.8	17.6
----	------	------	------	------	------	------	------

"Running Speed" is the average speed excluding stopped periods.

--- End of aaSIDRA Output ---

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Title

Subtitle

Intersection ID:

aaTraffic SIDRA US Highway Capacity Manual (2000) Version

RUN INFORMATION

* Basic Parameters:

Intersection Type: Roundabout

Driving on the right-hand side of the road

Input data specified in US units

Default Values File No. 11

Peak flow period (for performance): 30 minutes

Unit time (for volumes): 60 minutes (Total Flow Period)

Delay definition: Control delay

Geometric delay included

aaSIDRA Standard Delay and Queue models used

Level of Service based on: Delay (HCM method)

Queue definition: Back of queue, 95th Percentile

Title

Subtitle

Intersection ID:

Roundabout

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left		Through		Right		Flow Scale	Peak Flow Factor
	LV	HV	LV	HV	LV	HV		
VEHICLES Demand flows in veh/hour as used by the program								
SouthEast: NB Florida Avenue								
72	0	0	1293	26	13	1	1.00	0.95
East: Bryant Street Extension								
22	10	1	10	1	21	1	1.00	0.95
NorthEast: University Dorms								
62	21	1	0	0	21	1	1.00	0.95
North: Sherman Avenue								
42	21	1	522	11	10	1	1.00	0.95
NorthWest: SB Florida Avenue								
82	21	1	320	7	0	0	1.00	0.95

Based on unit time = 60 minutes.

Flow Scale and Peak Hour Factor effects included in flow values.

Title

Subtitle

Intersection ID:

Roundabout

Table R.0 - ROUNDABOUT BASIC PARAMETERS

Cent Island Diam (ft)	Circ Width (ft)	Insc Diam. (ft)	No.of Circ. Lanes	No.of Entry Lanes	Av.Ent Lane Width (ft)	Circulating/Exiting Stream					
						Flow (veh/ h)	%HV	Adjust. Flow (pcu/h)	%Exit Incl.	Cap. Constr. Effect	O-D Factor
SouthEast: NB Florida Avenue											
80	30	140	2	2	15.00	173	2.0	173	0	N	0.978
East: Bryant Street Extension											
80	30	140	2	1	15.00	1354	2.0	1354	0	N	0.851
NorthEast: University Dorms											
80	30	140	2	1	15.00	1361	2.0	1361	0	N	0.851
North: Sherman Avenue											
80	30	140	2	1	15.00	325	2.0	325	0	N	0.973
NorthWest: SB Florida Avenue											
80	30	140	2	1	15.00	585	2.0	585	0	N	0.920

Title

Subtitle

Intersection ID:

Roundabout

Table R.1 - ROUNDABOUT GAP ACCEPTANCE PARAMETERS

Turn	Lane No.	Lane Type	Flow Rate (pcu/h)	Circulating/Exiting Aver Speed (mph)	Stream Dist (ft)	In-Bnch Headway (s)	Prop Bunched	Critical Gap Hdwy (s) Dist (ft)		Foll-up Headway (s)
SouthEast: NB Florida Avenue										
Thru	1	Subdominant	173	14.9	456.6	2.00	0.189	3.53	77.2	2.48
	2	Dominant	173	14.9	456.6	2.00	0.189	3.24	71.0	2.28
Right	2	Dominant	173	14.9	456.6	2.00	0.189	3.31	72.6	2.33
East: Bryant Street Extension										
Left	1	Dominant	1354	22.3	87.1	1.06	0.593	2.79	91.5	2.42
Thru	1	Dominant	1354	22.3	87.1	1.06	0.593	2.79	91.5	2.42
Right	1	Dominant	1354	22.3	87.1	1.06	0.593	2.69	88.0	2.33
NorthEast: University Dorms										
Left	1	Dominant	1361	22.4	86.8	1.06	0.595	2.68	88.0	2.32
Right	1	Dominant	1361	22.4	86.8	1.06	0.595	2.68	88.0	2.32
North: Sherman Avenue										
Left	1	Dominant	325	21.7	352.0	1.19	0.209	3.64	115.9	2.66
Thru	1	Dominant	325	21.7	352.0	1.19	0.209	3.64	115.7	2.65
Right	1	Dominant	325	21.7	352.0	1.19	0.209	3.79	120.5	2.76
NorthWest: SB Florida Avenue										
Left	1	Dominant	585	14.9	134.7	2.00	0.515	3.39	74.3	2.62
Thru	1	Dominant	585	14.9	134.7	2.00	0.515	3.39	74.2	2.61

Environment Factor: 1.00

Entry/Circulating Flow Adjustment: Medium

Priority sharing is implied for some movements (Follow-up Headway plus Intra-bunch Headway is larger than the Critical Gap). The O-D Factor (Table R.0) allows for priority sharing and priority emphasis.

42 LTR	566	1071	0.528	1369	27.8	1081	0.9	970	-9.4
--------	-----	------	-------	------	------	------	-----	-----	------

NorthWest: SB Florida Avenue

82 LT	349	839	0.416	1100	31.1	939	11.9	782	-6.8
-------	-----	-----	-------	------	------	-----	------	-----	------

Title
Subtitle
Intersection ID:
Roundabout

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Demand Flow (veh/h)	HV (%)	Opposing Movement Flow (veh/h)	HV (%)	Adjust. Flow (pcu/h)	Total Cap. (veh/h)	Prac. Deg. xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
SouthEast: NB Florida Avenue										
72 TR	1333	2.0	173	2.0	173	2654	0.85	69	100	0.502
East: Bryant Street Extension										
22 LTR	44	6.8	1354	2.0	1354	660	0.85	1175	100	0.067
NorthEast: University Dorns										
62 LR	44	4.5	1361	2.0	1361	678	0.85	1210	100	0.065
North: Sherman Avenue										
42 LTR	566	2.3	325	2.0	325	1071	0.85	61	100	0.528*
NorthWest: SB Florida Avenue										
82 LT	349	2.3	585	2.0	585	839	0.85	104	100	0.416

Title
Subtitle
Intersection ID:
Roundabout

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	A
Worst movement Level of Service	=	B
Average intersection delay (s)	=	8.8
Largest average movement delay (s)	=	12.9
Largest back of queue, 95% (ft)	=	101
Performance Index	=	43.72
Degree of saturation (highest)	=	0.528
Practical Spare Capacity (lowest)	=	61 %
Effective intersection capacity, (veh/h)	=	4420
Total vehicle flow (veh/h)	=	2336
Total person flow (pers/h)	=	3504
Total vehicle delay (veh-h/h)	=	5.71
Total person delay (pers-h/h)	=	8.57
Total effective vehicle stops (veh/h)	=	1511
Total effective person stops (pers/h)	=	2267
Total vehicle travel (veh-mi/h)	=	988.3
Total cost (\$/h)	=	810.45
Total fuel (gal/h)	=	37.1
Total CO2 (kg/h)	=	351.16

Title
Subtitle
Intersection ID:
Roundabout

Table S.5 - MOVEMENT PERFORMANCE

Mov No.	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest 95% Back Queue (vehs)	Queue (ft)	Perf. Index	Aver. Speed (mph)
SouthEast: NB Florida Avenue									
72 TR	2.39	3.59	6.5	0.40	0.54	4.0	101	22.84	32.8
East: Bryant Street Extension									
22 LTR	0.14	0.21	11.4	0.61	0.81	0.3	8	0.90	30.7
NorthEast: University Dorns									
62 LR	0.16	0.24	12.9	0.61	0.84	0.3	8	0.93	30.0
North: Sherman Avenue									
42 LTR	1.98	2.96	12.6	0.51	0.78	3.6	93	11.73	29.8
NorthWest: SB Florida Avenue									
82 LT	1.05	1.57	10.8	0.67	0.81	3.0	77	7.31	30.8

Title

Subtitle

Intersection ID:

Roundabout

Table S.6 - INTERSECTION PERFORMANCE

Total Flow (veh/h)	Deg. Satn x	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue (ft)	Perf. Index	Aver. Speed (mph)
SouthEast: NB Florida Avenue									
1333	0.502	2.39	3.59	6.5	0.40	0.54	101	22.84	32.8
East: Bryant Street Extension									
44	0.067	0.14	0.21	11.4	0.61	0.81	8	0.90	30.7
NorthEast: University Dorns									
44	0.065	0.16	0.24	12.9	0.61	0.84	8	0.93	30.0
North: Sherman Avenue									
566	0.528	1.98	2.96	12.6	0.51	0.78	93	11.73	29.8
NorthWest: SB Florida Avenue									
349	0.416	1.05	1.57	10.8	0.67	0.81	77	7.31	30.8
ALL VEHICLES:									
2336	0.528	5.71	8.57	8.8	0.47	0.65	101	43.72	31.6
INTERSECTION (persons):									
3504	0.528		8.57	8.8	0.47	0.65		43.72	31.6

Queue values in this table are 95% back of queue (feet).

Title

Subtitle

Intersection ID:

Roundabout

Table S.7 - LANE PERFORMANCE

Dem

Q u e u e

Lane No.	Mov No.	Flow (veh/h)	Cap (veh/h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	95% Back (vehs)	Short Lane (ft)
SouthEast: NB Florida Avenue								
1 T	72	636	1266	0.502	6.5	0.54	3.9	100
2 TR	72	697	1388	0.502	6.4	0.53	4.0	101
East: Bryant Street Extension								
1 LTR	22	44	660	0.067	11.4	0.81	0.3	8
NorthEast: University Dorms								
1 LR	62	44	678	0.065	12.9	0.84	0.3	8
North: Sherman Avenue								
1 LTR	42	566	1071	0.529	12.6	0.78	3.6	93
NorthWest: SB Florida Avenue								
1 LT	82	349	839	0.416	10.8	0.81	3.0	77

Title
Subtitle
Intersection ID:
Roundabout

Table S.8A - LANE FLOW AND CAPACITY INFORMATION

Lane No.	Mov No.	Dem Flow (veh/h)				Min Cap (veh/h)	Tot Cap (veh/h)	Deg. Satn x	Lane Util %
		Lef	Thru	Rig	Tot				
SouthEast: NB Florida Avenue									
1 T	72	0	636	0	636	150	1266	0.502	100
2 TR	72	0	683	14	697	150	1388	0.502	100
East: Bryant Street Extension									
1 LTR	22	11	11	22	44	44	660	0.067	100
NorthEast: University Dorms									
1 LR	62	22	0	22	44	44	678	0.065	100
North: Sherman Avenue									
1 LTR	42	22	533	11	566	150	1071	0.529	100
NorthWest: SB Florida Avenue									
1 LT	82	22	327	0	349	150	839	0.416	100

For roundabouts, the capacity value for continuous movements is obtained as the basic saturation flow without any adjustments. Saturation flow scale applies if specified.

Title
Subtitle
Intersection ID:
Roundabout

Table S.12A - FUEL CONSUMPTION, EMISSIONS AND COST - TOTAL

Mov No.	Fuel Total gal/h	Cost Total \$/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h
---------	------------------	-----------------	---------------	---------------	----------------	----------------

SouthEast: NB Florida Avenue

1 LR	22		22	44	5	0.065	12.9	8
	22	0	22	44	5	0.065	12.9	8

North: Sherman Avenue								
1 LTR	22	533	11	566	2	0.529	12.6	93
	22	533	11	566	2	0.529	12.6	93

NorthWest: SB Florida Avenue								
1 LT	22	327		349	2	0.416	10.8	77
	22	327	0	349	2	0.416	10.8	77
=====								
ALL VEHICLES				Total	%	Max	Aver.	Max
				Flow	HV	X	Delay	Queue
				2336	2	0.528	8.8	101

Total flow period = 60 minutes. Peak flow period = 30 minutes.

Queue values in this table are 95% back of queue (feet).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

Title
Subtitle
Intersection ID:
Roundabout

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Total Flow (veh/h)	Total Cap. (veh/h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS	Longest Queue 95% Back (vehs)	Queue (ft)
SouthEast: NB Florida Avenue								
72	TR	1333	2654	0.502	6.5	A	4.0	101
		1333		0.502	6.5	A	4.0	101
East: Bryant Street Extension								
22	LTR	44	660	0.067	11.4	B	0.3	8
		44		0.067	11.4	B	0.3	8
NorthEast: University Dorns								
62	LR	44	678	0.065	12.9	B	0.3	8
		44		0.065	12.9	B	0.3	8
North: Sherman Avenue								
42	LTR	566	1071	0.528*	12.6	B	3.6	93
		566		0.528	12.6	B	3.6	93
NorthWest: SB Florida Avenue								
82	LT	349	839	0.416	10.8	B	3.0	77
		349		0.416	10.8	B	3.0	77
ALL VEHICLES:		2336		0.528	8.8	A	4.0	101

Level of Service calculations are based on average control delay including geometric delay (HCM criteria), independent of the current delay definition used. For the criteria, refer to the "Level of Service" topic in the

Title
 Subtitle
 Intersection ID:
 Roundabout

Table D.0 - GEOMETRIC DELAY DATA

From Approach	To Approach	Negn Radius (ft)	Negn Speed (mph)	Negn Dist. (ft)	Appr. Dist. (ft)	Downstream Distance (ft)
SouthEast: NB Florida Avenue						
	East	62.7	16.0	32.8	1800	389
	NorthEast	87.1	18.2	54.5	1800	389
	North	153.9	22.5	98.5	1800	407
	NorthWest	153.9	22.5	131.4	1800	407
East: Bryant Street Extension						
	SouthEast	52.0	14.9	245.0	1800	573
	NorthEast	73.2	17.0	32.8	1800	394
	North	102.1	19.3	54.2	1800	394
	NorthWest	153.9	22.5	98.5	1800	407
NorthEast: University Dorns						
	SouthEast	52.0	14.9	204.2	1800	553
	East	52.0	14.9	245.0	1800	553
	North	73.2	17.0	32.8	1800	394
	NorthWest	102.1	19.3	54.2	1800	394
North: Sherman Avenue						
	SouthEast	52.0	14.9	163.4	1800	492
	East	52.0	14.9	204.2	1800	553
	NorthEast	52.0	14.9	245.0	1800	553
	NorthWest	73.2	17.0	32.8	1800	391
NorthWest: SB Florida Avenue						
	SouthEast	153.9	22.5	131.4	1800	445
	East	52.0	14.9	163.4	1800	445
	NorthEast	52.0	14.9	204.2	1800	553
	North	52.0	14.9	245.0	1800	553

Maximum Negotiation (Design) Speed = 50.0 mph
 Downstream Distance calculated by aaSIDRA

Downstream distance is distance travelled from the stopline until exit cruise speed is reached (includes negotiation distance). Acceleration distance is weighted for light and heavy vehicles. The same distance applies for both stopped and unstopped vehicles.

Title
 Subtitle
 Intersection ID:
 Roundabout

Table D.1 - LANE DELAYS

Delay (seconds/veh)											
Lane No.	Mov No.	Deg. Satn x	Stop-line Delay			Acc. Dec. dn	Queuing		Stopd (Idle) di	Geom dig	Control dic
			1st d1	2nd d2	Total dSL		Total dq	MvUp dqm			
SouthEast: NB Florida Avenue											
1 T	72	0.502	0.8	0.0	0.8	2.6	0.0	0.0	0.0	5.7	6.5

2 TR	72	0.502	0.7	0.0	0.7	2.5	0.0	0.0	0.0	5.7	6.4

East: Bryant Street Extension											
1 LTR	22	0.067	3.1	0.0	3.1	3.3	0.1	0.0	0.1	8.2	11.4

NorthEast: University Dorms											
1 LR	62	0.065	3.0	0.0	3.0	3.1	0.1	0.0	0.1	9.9	12.9

North: Sherman Avenue											
1 LTR	42	0.529	1.5	0.1	1.6	2.4	0.0	0.0	0.0	11.0	12.6

NorthWest: SB Florida Avenue											
1 LT	82	0.416	3.1	0.1	3.2	3.8	0.0	0.0	0.0	7.7	10.8

dn is average stop-start delay for all vehicles queued and unqueued											

Title
Subtitle
Intersection ID:
Roundabout

Table D.2 - LANE STOPS

							Queue
Lane	Deg.	-- Effective	Stop	Rate --		Prop.	Move-up
No.	Satn		Geom.	Overall		Queued	Rate
	x	he1	he2	hig	h	pq	hqm

SouthEast: NB Florida Avenue							
1 T	0.502	0.26	0.00	0.28	0.54	0.407	0.00
2 TR	0.502	0.25	0.00	0.29	0.53	0.395	0.00

East: Bryant Street Extension							
1 LTR	0.067	0.58	0.00	0.23	0.81	0.614	0.00

NorthEast: University Dorms							
1 LR	0.065	0.59	0.00	0.25	0.84	0.614	0.00

North: Sherman Avenue							
1 LTR	0.529	0.42	0.01	0.35	0.78	0.506	0.02

NorthWest: SB Florida Avenue							
1 LT	0.416	0.62	0.01	0.19	0.81	0.668	0.01

hig is the average value for all movements in a shared lane
hqm is average queue move-up rate for all vehicles queued and unqueued

Title
Subtitle
Intersection ID:
Roundabout

Table D.3A - LANE QUEUES (veh)

Lane No.	Deg. Satn	Ovrfl. Queue	Average (veh)			Percentile (veh)					Queue Stor. Ratio
	x	No	Nb1	Nb2	Nb	70%	85%	90%	95%	98%	
SouthEast: NB Florida Avenue											
1 T	0.502	0.0	1.3	0.0	1.3	2.3	2.8	3.2	3.9	4.6	0.06
2 TR	0.502	0.0	1.3	0.0	1.3	2.3	2.8	3.2	4.0	4.6	0.06
East: Bryant Street Extension											
1 LTR	0.067	0.0	0.1	0.0	0.1	0.2	0.2	0.3	0.3	0.4	0.00

NorthEast: University Dorms												
1 LR	0.065	0.0	0.1	0.0	0.1	0.2	0.2	0.3	0.3	0.4	0.00	
North: Sherman Avenue												
1 LTR	0.529	0.0	1.1	0.1	1.2	2.1	2.6	2.9	3.6	4.2	0.05	
NorthWest: SB Florida Avenue												
1 LT	0.416	0.0	1.0	0.0	1.0	1.8	2.2	2.5	3.0	3.5	0.04	

Values printed in this table are back of queue (vehicles).

Title
Subtitle
Intersection ID:
Roundabout

Table D.3B - LANE QUEUES (feet)

	Deg.	Ovrfl.	Average (feet)			Percentile (feet)					Queue
Lane	Satn	Queue									Stor.
No.	x	No	Nb1	Nb2	Nb	70%	85%	90%	95%	98%	Ratio
SouthEast: NB Florida Avenue											
1 T	0.502	0	32	0	32	58	71	80	100	116	0.06
2 TR	0.502	0	33	0	33	59	72	82	101	118	0.06
East: Bryant Street Extension											
1 LTR	0.067	0	3	0	3	5	6	7	8	10	0.00
NorthEast: University Dorms											
1 LR	0.065	0	3	0	3	5	6	7	8	9	0.00
North: Sherman Avenue											
1 LTR	0.529	1	29	1	30	54	66	75	93	108	0.05
NorthWest: SB Florida Avenue											
1 LT	0.416	0	24	0	25	45	55	62	77	90	0.04

Values printed in this table are back of queue (feet).

Title
Subtitle
Intersection ID:
Roundabout

Table D.4 - MOVEMENT SPEEDS (mph)

Mov No.	App. Speeds		Exit Speeds		Queue Move-up		Av. Section Spd	
	Cruise	Negn	Negn	Cruise	1st Grn	2nd Grn	Running	Overall
SouthEast: NB Florida Avenue								
72	40.0	22.5	22.5	40.0			32.8	32.8
East: Bryant Street Extension								
22	40.0	18.4	18.4	40.0			30.7	30.7
NorthEast: University Dorms								
62	40.0	16.5	16.5	40.0			30.0	30.0
North: Sherman Avenue								
42	40.0	15.0	15.0	40.0	15.3		29.8	29.8

NorthWest: SB Florida Avenue

82	40.0	19.4	19.4	40.0	13.0	30.8	30.8
----	------	------	------	------	------	------	------

"Running Speed" is the average speed excluding stopped periods.

--- End of aaSIDRA Output ---

C:\Documents and Settings\Catherine\Desktop\AaSidra Analysis\BgPMN.OUT

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Title

Subtitle

Intersection ID:

aaTraffic SIDRA US Highway Capacity Manual (2000) Version

RUN INFORMATION

* Basic Parameters:

Intersection Type: Roundabout

Driving on the right-hand side of the road

Input data specified in US units

Default Values File No. 11

Peak flow period (for performance): 30 minutes

Unit time (for volumes): 60 minutes (Total Flow Period)

Delay definition: Control delay

Geometric delay included

aaSIDRA Standard Delay and Queue models used

Level of Service based on: Delay (HCM method)

Queue definition: Back of queue, 95th Percentile

Title

Subtitle

Intersection ID:

Roundabout

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left		Through		Right		Flow Scale	Peak Flow Factor
	LV	HV	LV	HV	LV	HV		
VEHICLES Demand flows in veh/hour as used by the program								
SouthEast: NB Florida Avenue 72	0	0	641	13	17	1	1.00	0.95
East: Bryant Street Extension 22	10	1	22	1	21	1	1.00	0.95
NorthEast: University Dorms 62	21	1	0	0	21	1	1.00	0.95
North: Sherman Avenue 42	21	1	1023	21	10	1	1.00	0.95
NorthWest: SB Florida Avenue 82	21	1	325	7	0	0	1.00	0.95

Based on unit time = 60 minutes.

Flow Scale and Peak Hour Factor effects included in flow values.

Title

Subtitle

Intersection ID:

Roundabout

Table R.0 - ROUNDABOUT BASIC PARAMETERS

Cent Island Diam (ft)	Circ Width (ft)	Insc Diam. (ft)	No.of Circ. Lanes	No.of Entry Lanes	Av.Ent Lane Width (ft)	Circulating/Exiting Stream					
						Flow (veh/ h)	%HV	Adjust. Flow (pcu/h)	%Exit Incl.	Cap. Constr. Effect	O-D Factor
SouthEast: NB Florida Avenue											
80	30	140	2	2	15.00	168	2.0	168	0	N	0.967
East: Bryant Street Extension											
80	30	140	2	1	15.00	692	2.0	692	0	N	0.947
NorthEast: University Dorms											
80	30	140	2	1	15.00	707	2.0	707	0	N	0.947
North: Sherman Avenue											
80	30	140	2	1	15.00	325	2.0	325	0	N	0.979
NorthWest: SB Florida Avenue											
80	30	140	2	1	15.00	1097	2.0	1097	0	N	0.591

Title

Subtitle

Intersection ID:

Roundabout

Table R.1 - ROUNDABOUT GAP ACCEPTANCE PARAMETERS

Turn	Lane No.	Lane Type	Circulating/Exiting Stream					Critical Gap		Foll-up Headway (s)
			Flow Rate (pcu/h)	Aver Speed (mph)	Aver Dist (ft)	In-Bnch Headway (s)	Prop Bunched	Hdwy (s)	Dist (ft)	
SouthEast: NB Florida Avenue										
Thru	1	Subdominant	168	14.9	468.0	2.00	0.185	3.57	78.2	2.51
	2	Dominant	168	14.9	468.0	2.00	0.185	3.33	73.0	2.34
Right	2	Dominant	168	14.9	468.0	2.00	0.185	3.36	73.5	2.36
East: Bryant Street Extension										
Left	1	Dominant	692	22.1	169.0	1.07	0.364	3.40	110.5	2.68
Thru	1	Dominant	692	22.1	169.0	1.07	0.364	3.27	106.2	2.57
Right	1	Dominant	692	22.1	169.0	1.07	0.364	3.27	106.3	2.58
NorthEast: University Dorms										
Left	1	Dominant	707	22.3	166.1	1.08	0.373	3.25	106.2	2.57
Right	1	Dominant	707	22.3	166.1	1.08	0.373	3.25	106.2	2.57
North: Sherman Avenue										
Left	1	Dominant	325	21.7	352.0	1.20	0.212	3.52	111.9	2.56
Thru	1	Dominant	325	21.7	352.0	1.20	0.212	3.51	111.7	2.56
Right	1	Dominant	325	21.7	352.0	1.20	0.212	3.66	116.3	2.66
NorthWest: SB Florida Avenue										
Left	1	Dominant	1097	14.9	71.9	2.00	0.774	2.88	63.1	2.42
Thru	1	Dominant	1097	14.9	71.9	2.00	0.774	2.88	63.0	2.42

Environment Factor: 1.00

Entry/Circulating Flow Adjustment: Medium

Priority sharing is implied for some movements (Follow-up Headway plus Intra-bunch Headway is larger than the Critical Gap). The O-D Factor (Table R.0) allows for priority sharing and priority emphasis.

42 LTR	1077	1124	0.958	1370	21.9	1077	-4.2	971	-13.6
--------	------	------	-------	------	------	------	------	-----	-------

NorthWest: SB Florida Avenue

82 LT	354	357	0.992	710	98.9	668	87.1	538	50.7
-------	-----	-----	-------	-----	------	-----	------	-----	------

Title
Subtitle
Intersection ID:
Roundabout

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Demand Flow (veh/h)	HV (%)	Opposing Movement Flow (veh/h)	HV (%)	Adjust. Flow (pcu/h)	Total Cap. (veh/h)	Prac. Deg. xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
SouthEast: NB Florida Avenue										
72 TR	672	2.1	168	2.0	168	2577	0.85	226	100	0.261
East: Bryant Street Extension										
22 LTR	56	5.4	692	2.0	692	888	0.85	1248	100	0.063
NorthEast: University Dorns										
62 LR	44	4.5	707	2.0	707	893	0.85	1625	100	0.049
North: Sherman Avenue										
42 LTR	1077	2.1	325	2.0	325	1124	0.85	-11	100	0.958
NorthWest: SB Florida Avenue										
82 LT	354	2.3	1097	2.0	1097	357	0.85	-14	100	0.992*

Title
Subtitle
Intersection ID:
Roundabout

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	C
Worst movement Level of Service	=	F
Average intersection delay (s)	=	27.7
Largest average movement delay (s)	=	85.4
Largest back of queue, 95% (ft)	=	645
Performance Index	=	72.92
Degree of saturation (highest)	=	0.992
Practical Spare Capacity (lowest)	=	-14 %
Effective intersection capacity, (veh/h)	=	2222
Total vehicle flow (veh/h)	=	2203
Total person flow (pers/h)	=	3305
Total vehicle delay (veh-h/h)	=	16.93
Total person delay (pers-h/h)	=	25.39
Total effective vehicle stops (veh/h)	=	2363
Total effective person stops (pers/h)	=	3545
Total vehicle travel (veh-mi/h)	=	941.0
Total cost (\$/h)	=	1053.74
Total fuel (gal/h)	=	40.3
Total CO2 (kg/h)	=	381.47

Title
Subtitle
Intersection ID:
Roundabout

Table S.5 - MOVEMENT PERFORMANCE

Mov No.	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue 95% Back (vehs)	Queue (ft)	Perf. Index	Aver. Speed (mph)
SouthEast: NB Florida Avenue									
72 TR	1.17	1.76	6.3	0.33	0.51	1.7	44	11.18	33.2
East: Bryant Street Extension									
22 LTR	0.15	0.22	9.3	0.45	0.68	0.3	7	1.03	31.5
NorthEast: University Dorms									
62 LR	0.14	0.21	11.5	0.45	0.73	0.2	5	0.86	30.5
North: Sherman Avenue									
42 LTR	7.07	10.61	23.6	1.00	1.21	25.4	645	35.33	24.9
NorthWest: SB Florida Avenue									
82 LT	8.40	12.60	85.4	1.00	1.81	24.0	611	24.52	12.4

Title

Subtitle

Intersection ID:

Roundabout

Table S.6 - INTERSECTION PERFORMANCE

Total Flow (veh/h)	Deg. Satn x	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue (ft)	Perf. Index	Aver. Speed (mph)
SouthEast: NB Florida Avenue									
672	0.261	1.17	1.76	6.3	0.33	0.51	44	11.18	33.2
East: Bryant Street Extension									
56	0.063	0.15	0.22	9.3	0.45	0.68	7	1.03	31.5
NorthEast: University Dorms									
44	0.049	0.14	0.21	11.5	0.45	0.73	5	0.86	30.5
North: Sherman Avenue									
1077	0.958	7.07	10.61	23.6	1.00	1.21	645	35.33	24.9
NorthWest: SB Florida Avenue									
354	0.992	8.40	12.60	85.4	1.00	1.81	611	24.52	12.4
ALL VEHICLES:									
2203	0.992	16.93	25.39	27.7	0.77	1.07	645	72.92	23.1
INTERSECTION (persons):									
3305	0.992		25.39	27.7	0.77	1.07		72.92	23.1

Queue values in this table are 95% back of queue (feet).

Title

Subtitle

Intersection ID:

Roundabout

Table S.7 - LANE PERFORMANCE

Dem

Q u e u e

Lane No.	Mov No.	Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	95% Back (veh/s) (ft)	Short Lane (ft)
SouthEast: NB Florida Avenue								
1 T	72	323	1240	0.261	6.3	0.52	1.7	43
2 TR	72	349	1337	0.261	6.3	0.51	1.7	44
East: Bryant Street Extension								
1 LTR	22	56	888	0.063	9.3	0.68	0.3	7
NorthEast: University Dorms								
1 LR	62	44	893	0.049	11.5	0.73	0.2	5
North: Sherman Avenue								
1 LTR	42	1077	1124	0.958	23.6	1.21	25.4	645
NorthWest: SB Florida Avenue								
1 LT	82	354	357	0.992	85.4	1.81	24.0	611

Title
Subtitle
Intersection ID:
Roundabout

Table S.8A - LANE FLOW AND CAPACITY INFORMATION

Lane No.	Mov No.	Dem Flow (veh/h)				Min Cap (veh/h)	Tot Cap (veh/h)	Deg. Satn x	Lane Util %
		Lef	Thru	Rig	Tot				
SouthEast: NB Florida Avenue									
1 T	72	0	323	0	323	150	1240	0.261	100
2 TR	72	0	331	18	349	150	1337	0.261	100
East: Bryant Street Extension									
1 LTR	22	11	23	22	56	56	888	0.063	100
NorthEast: University Dorms									
1 LR	62	22	0	22	44	44	893	0.049	100
North: Sherman Avenue									
1 LTR	42	22	1044	11	1077	150	1124	0.958	100
NorthWest: SB Florida Avenue									
1 LT	82	22	332	0	354	150	357	0.992	100

For roundabouts, the capacity value for continuous movements is obtained as the basic saturation flow without any adjustments. Saturation flow scale applies if specified.

Title
Subtitle
Intersection ID:
Roundabout

Table S.12A - FUEL CONSUMPTION, EMISSIONS AND COST - TOTAL

Mov No.	Fuel Total gal/h	Cost Total \$/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h
---------	------------------	-----------------	---------------	---------------	----------------	----------------

SouthEast: NB Florida Avenue

1 LR	22		22	44	5	0.049	11.5	5
	22	0	22	44	5	0.049	11.5	5

North: Sherman Avenue								
1 LTR	22	1044	11	1077	2	0.958	23.6	645
	22	1044	11	1077	2	0.958	23.6	645

NorthWest: SB Florida Avenue								
1 LT	22	332		354	2	0.992	85.4	611
	22	332	0	354	2	0.992	85.4	611
=====								
ALL VEHICLES				Total	%	Max	Aver.	Max
				Flow	HV	X	Delay	Queue
				2203	2	0.992	27.7	645

=====
Total flow period = 60 minutes. Peak flow period = 30 minutes.

Queue values in this table are 95% back of queue (feet).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

Title
Subtitle
Intersection ID:
Roundabout

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS	Longest Queue 95% Back (vehs)	Queue (ft)
SouthEast: NB Florida Avenue								
72 TR		672	2577	0.261	6.3	A	1.7	44
		672		0.261	6.3	A	1.7	44
East: Bryant Street Extension								
22 LTR		56	888	0.063	9.3	A	0.3	7
		56		0.063	9.3	A	0.3	7
NorthEast: University Dorns								
62 LR		44	893	0.049	11.5	B	0.2	5
		44		0.049	11.5	B	0.2	5
North: Sherman Avenue								
42 LTR		1077	1124	0.958	23.6	C	25.4	645
		1077		0.958	23.6	C	25.4	645
NorthWest: SB Florida Avenue								
82 LT		354	357	0.992*	85.4	F	24.0	611
		354		0.992	85.4	F	24.0	611
ALL VEHICLES:		2203		0.992	27.7	C	25.4	645

Level of Service calculations are based on average control delay including geometric delay (HCM criteria), independent of the current delay definition used.
For the criteria, refer to the "Level of Service" topic in the

Title
 Subtitle
 Intersection ID:
 Roundabout

Table D.0 - GEOMETRIC DELAY DATA

From Approach	To Approach	Negn Radius (ft)	Negn Speed (mph)	Negn Dist. (ft)	Appr. Dist. (ft)	Downstream Distance (ft)
SouthEast: NB Florida Avenue						
	East	62.7	16.0	32.8	1800	390
	NorthEast	87.1	18.2	54.5	1800	390
	North	153.9	22.5	98.5	1800	407
	NorthWest	153.9	22.5	131.4	1800	407
East: Bryant Street Extension						
	SouthEast	52.0	14.9	245.0	1800	573
	NorthEast	73.2	17.0	32.8	1800	394
	North	102.1	19.3	54.2	1800	394
	NorthWest	153.9	22.5	98.5	1800	407
NorthEast: University Dorns						
	SouthEast	52.0	14.9	204.2	1800	553
	East	52.0	14.9	245.0	1800	553
	North	73.2	17.0	32.8	1800	394
	NorthWest	102.1	19.3	54.2	1800	394
North: Sherman Avenue						
	SouthEast	52.0	14.9	163.4	1800	492
	East	52.0	14.9	204.2	1800	553
	NorthEast	52.0	14.9	245.0	1800	553
	NorthWest	73.2	17.0	32.8	1800	391
NorthWest: SB Florida Avenue						
	SouthEast	153.9	22.5	131.4	1800	443
	East	52.0	14.9	163.4	1800	443
	NorthEast	52.0	14.9	204.2	1800	553
	North	52.0	14.9	245.0	1800	553
Maximum Negotiation (Design) Speed = 50.0 mph						
Downstream Distance calculated by aaSIDRA						

Downstream distance is distance travelled from the stopline until exit cruise speed is reached (includes negotiation distance). Acceleration distance is weighted for light and heavy vehicles. The same distance applies for both stopped and unstopped vehicles.

Title
 Subtitle
 Intersection ID:
 Roundabout

Table D.1 - LANE DELAYS

			Delay (seconds/veh)								
			Stop-line Delay			Acc. Delay			Queueing Delay		
Lane	Mov	Deg.	1st	2nd	Total	Dec.	Total	MvUp	(Idle)	Geom	Control
No.	No.	Satn	d1	d2	dSL	dn	dq	dqm	di	dig	dic

SouthEast: NB Florida Avenue											
1	T	72	0.261	0.6	0.0	0.6	2.1	0.0	0.0	0.0	5.7 6.3

NorthEast: University Dorms
 1 LR 0.049 0.0 0.1 0.0 0.1 0.1 0.2 0.2 0.2 0.2 0.00

North: Sherman Avenue
 1 LTR 0.958 2.8 4.5 4.8 9.3 13.2 17.0 19.8 25.4 30.0 0.36

NorthWest: SB Florida Avenue
 1 LT 0.992 5.4 3.3 5.5 8.8 12.6 16.1 18.7 24.0 28.4 0.34

Values printed in this table are back of queue (vehicles).

Title
 Subtitle
 Intersection ID:
 Roundabout

Table D.3B - LANE QUEUES (feet)

	Deg.	Ovrfl.	Average (feet)			Percentile (feet)					Queue
Lane	Satn	Queue									Stor.
No.	x	No	Nb1	Nb2	Nb	70%	85%	90%	95%	98%	Ratio
SouthEast: NB Florida Avenue											
1 T	0.261	0	14	0	14	25	30	35	43	49	0.02
2 TR	0.261	0	14	0	14	26	31	35	44	51	0.02
East: Bryant Street Extension											
1 LTR	0.063	0	2	0	2	4	5	6	7	8	0.00
NorthEast: University Dorms											
1 LR	0.049	0	2	0	2	3	4	4	5	6	0.00
North: Sherman Avenue											
1 LTR	0.958	71	114	123	237	336	431	502	645	763	0.36
NorthWest: SB Florida Avenue											
1 LT	0.992	138	83	140	224	320	410	477	611	723	0.34

Values printed in this table are back of queue (feet).

Title
 Subtitle
 Intersection ID:
 Roundabout

Table D.4 - MOVEMENT SPEEDS (mph)

Mov No.	App. Speeds		Exit Speeds		Queue Move-up		Av. Section Spd	
	Cruise	Negn	Negn	Cruise	1st Grn	2nd Grn	Running	Overall
SouthEast: NB Florida Avenue								
72	40.0	22.4	22.4	40.0			33.2	33.2
East: Bryant Street Extension								
22	40.0	19.3	19.3	40.0			31.5	31.5
NorthEast: University Dorms								
62	40.0	16.5	16.5	40.0			30.5	30.5
North: Sherman Avenue								
42	40.0	15.0	15.0	40.0	15.6		25.9	24.9

NorthWest: SB Florida Avenue

82 40.0 19.6 19.6 40.0 11.3 23.2 12.4

"Running Speed" is the average speed excluding stopped periods.

--- End of aaSIDRA Output ---

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Title

Subtitle

Intersection ID:

aaTraffic SIDRA US Highway Capacity Manual (2000) Version

RUN INFORMATION

* Basic Parameters:

Intersection Type: Roundabout

Driving on the right-hand side of the road

Input data specified in US units

Default Values File No. 11

Peak flow period (for performance): 30 minutes

Unit time (for volumes): 60 minutes (Total Flow Period)

Delay definition: Control delay

Geometric delay included

aaSIDRA Standard Delay and Queue models used

Level of Service based on: Delay (HCM method)

Queue definition: Back of queue, 95th Percentile

Title

Subtitle

Intersection ID:

Roundabout

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left		Through		Right		Flow Scale	Peak Flow Factor
	LV	HV	LV	HV	LV	HV		
VEHICLES Demand flows in veh/hour as used by the program								
SouthEast: NB Florida Avenue								
72	0	0	1294	26	13	1	1.00	0.95
East: Bryant Street Extension								
22	10	1	19	1	21	1	1.00	0.95
NorthEast: University Dorms								
62	21	1	0	0	21	1	1.00	0.95
North: Sherman Avenue								
42	21	1	528	11	10	1	1.00	0.95
NorthWest: SB Florida Avenue								
82	21	1	349	7	0	0	1.00	0.95

Based on unit time = 60 minutes.

Flow Scale and Peak Hour Factor effects included in flow values.

Title

Subtitle

Intersection ID:

Roundabout

Table R.0 - ROUNDABOUT BASIC PARAMETERS

Cent Island Diam (ft)	Circ Width (ft)	Insc Diam. (ft)	No.of Circ. Lanes	No.Of Entry Lanes	Av.Ent Lane Width (ft)	Circulating/Exiting Stream					
						Flow (veh/ h)	%HV	Adjust. Flow (pcu/h)	%Exit Incl.	Cap. Constr. Effect	O-D Factor
SouthEast: NB Florida Avenue											
80	30	140	2	2	15.00	189	2.0	190	0	N	0.974
East: Bryant Street Extension											
80	30	140	2	1	15.00	1355	2.0	1355	0	N	0.841
NorthEast: University Dorms											
80	30	140	2	1	15.00	1371	2.0	1371	0	N	0.841
North: Sherman Avenue											
80	30	140	2	1	15.00	324	2.0	324	0	N	0.972
NorthWest: SB Florida Avenue											
80	30	140	2	1	15.00	592	2.0	592	0	N	0.918

Title

Subtitle

Intersection ID:

Roundabout

Table R.1 - ROUNDABOUT GAP ACCEPTANCE PARAMETERS

Turn	Lane No.	Lane Type	Circulating/Exiting Stream					Critical Gap		Foll-up
			Flow Rate (pcu/h)	Aver Speed (mph)	Aver Dist (ft)	In-Bnch Headway (s)	Prop Bunched	Hdwy (s)	Dist (ft)	Headway (s)
SouthEast: NB Florida Avenue										
Thru	1	Subdominant	190	14.9	416.0	2.00	0.206	3.52	77.0	2.48
	2	Dominant	190	14.9	416.0	2.00	0.206	3.23	70.8	2.28
Right	2	Dominant	190	14.9	416.0	2.00	0.206	3.31	72.4	2.33
East: Bryant Street Extension										
Left	1	Dominant	1355	22.3	87.1	1.06	0.593	2.79	91.5	2.42
Thru	1	Dominant	1355	22.3	87.1	1.06	0.593	2.69	88.2	2.33
Right	1	Dominant	1355	22.3	87.1	1.06	0.593	2.69	88.0	2.33
NorthEast: University Dorms										
Left	1	Dominant	1371	22.4	86.2	1.06	0.600	2.68	87.8	2.32
Right	1	Dominant	1371	22.4	86.2	1.06	0.600	2.68	87.8	2.32
North: Sherman Avenue										
Left	1	Dominant	324	21.7	353.1	1.21	0.212	3.64	115.9	2.65
Thru	1	Dominant	324	21.7	353.1	1.21	0.212	3.64	115.7	2.65
Right	1	Dominant	324	21.7	353.1	1.21	0.212	3.79	120.4	2.76
NorthWest: SB Florida Avenue										
Left	1	Dominant	592	14.9	133.2	2.00	0.519	3.39	74.1	2.61
Thru	1	Dominant	592	14.9	133.2	2.00	0.519	3.38	74.0	2.61

Environment Factor: 1.00

Entry/Circulating Flow Adjustment: Medium

Priority sharing is implied for some movements (Follow-up Headway plus Intra-bunch Headway is larger than the Critical Gap). The O-D Factor (Table R.0) allows for priority sharing and priority emphasis.

Mov No.	Dem Flow (veh /h)	aaSIDRA		NAASRA 1986		Ger. Linear		Ger. GapAcc	
		Cap. (veh /h)	Deg. Satn x	Cap. (veh /h)	% Diff from aaSIDRA	Cap. (veh /h)	% Diff from aaSIDRA	Cap. (veh /h)	% Diff from aaSIDRA

SouthEast: NB Florida Avenue									
72 TR	1334	2613	0.511	3071	17.5	1285	-50.8	2163	-17.2

East: Bryant Street Extension									
22 LTR	53	662	0.080	555	-16.2	552	-16.6	360	-45.6

NorthEast: University Dorms									
62 LR	44	666	0.066	559	-16.1	548	-17.7	360	-45.9

North: Sherman Avenue									

42 LTR 572 1071 0.534 1370 27.9 1082 1.0 971 -9.3

NorthWest: SB Florida Avenue

82 LT 378 833 0.454 1094 31.3 936 12.4 778 -6.6

Title

Subtitle

Intersection ID:

Roundabout

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Demand Flow (veh/h)	HV (%)	Opposing Movement Flow (veh/h)	HV (%)	Adjust. Flow (pcu/h)	Total Cap. (veh/h)	Prac. Deg. xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
SouthEast: NB Florida Avenue										
72 TR	1334	2.0	189	2.0	190	2613	0.85	66	100	0.511
East: Bryant Street Extension										
22 LTR	53	5.7	1355	2.0	1355	662	0.85	962	100	0.080
NorthEast: University Dorns										
62 LR	44	4.5	1371	2.0	1371	666	0.85	1187	100	0.066
North: Sherman Avenue										
42 LTR	572	2.3	324	2.0	324	1071	0.85	59	100	0.534*
NorthWest: SB Florida Avenue										
82 LT	378	2.1	592	2.0	592	833	0.85	87	100	0.454

Title

Subtitle

Intersection ID:

Roundabout

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	A
Worst movement Level of Service	=	B
Average intersection delay (s)	=	9.0
Largest average movement delay (s)	=	12.9
Largest back of queue, 95% (ft)	=	105
Performance Index	=	45.04
Degree of saturation (highest)	=	0.534
Practical Spare Capacity (lowest)	=	59 %
Effective intersection capacity, (veh/h)	=	4458
Total vehicle flow (veh/h)	=	2381
Total person flow (pers/h)	=	3572
Total vehicle delay (veh-h/h)	=	5.93
Total person delay (pers-h/h)	=	8.89
Total effective vehicle stops (veh/h)	=	1569
Total effective person stops (pers/h)	=	2353
Total vehicle travel (veh-mi/h)	=	1007.5
Total cost (\$/h)	=	828.70
Total fuel (gal/h)	=	37.9
Total CO2 (kg/h)	=	358.79

Title

Subtitle

Intersection ID:

Roundabout

Table S.5 - MOVEMENT PERFORMANCE

Mov No.	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue 95% Back (vehs)	Queue (ft)	Perf. Index	Aver. Speed (mph)
SouthEast: NB Florida Avenue									
72 TR	2.43	3.64	6.5	0.43	0.54	4.1	105	23.03	32.7
East: Bryant Street Extension									
22 LTR	0.16	0.24	10.9	0.62	0.80	0.4	10	1.08	30.8
NorthEast: University Dorms									
62 LR	0.16	0.24	12.9	0.62	0.84	0.3	8	0.94	29.9
North: Sherman Avenue									
42 LTR	2.00	3.00	12.6	0.51	0.78	3.7	95	11.88	29.8
NorthWest: SB Florida Avenue									
82 LT	1.18	1.77	11.3	0.69	0.84	3.5	90	8.12	30.7

Title

Subtitle

Intersection ID:

Roundabout

Table S.6 - INTERSECTION PERFORMANCE

Total Flow (veh/h)	Deg. Satn x	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue (ft)	Perf. Index	Aver. Speed (mph)
SouthEast: NB Florida Avenue									
1334	0.511	2.43	3.64	6.5	0.43	0.54	105	23.03	32.7
East: Bryant Street Extension									
53	0.080	0.16	0.24	10.9	0.62	0.80	10	1.08	30.8
NorthEast: University Dorms									
44	0.066	0.16	0.24	12.9	0.62	0.84	8	0.94	29.9
North: Sherman Avenue									
572	0.534	2.00	3.00	12.6	0.51	0.78	95	11.88	29.8
NorthWest: SB Florida Avenue									
378	0.454	1.18	1.77	11.3	0.69	0.84	90	8.12	30.7
ALL VEHICLES:									
2381	0.534	5.93	8.89	9.0	0.50	0.66	105	45.04	31.5
INTERSECTION (persons):									
3572	0.534		8.89	9.0	0.50	0.66		45.04	31.5

Queue values in this table are 95% back of queue (feet).

Title

Subtitle

Intersection ID:

Roundabout

Table S.7 - LANE PERFORMANCE

Dem

Q u e u e

Lane No.	Mov No.	Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	95% Back (veh/s)	Back (ft)	Short Lane (ft)
SouthEast: NB Florida Avenue									
1	T	72	636	1247 0.510	6.6	0.55	4.0	103	
2	TR	72	698	1366 0.510	6.5	0.54	4.1	105	
East: Bryant Street Extension									
1	LTR	22	53	662 0.080	10.9	0.80	0.4	10	
NorthEast: University Dorms									
1	LR	62	44	666 0.066	12.9	0.84	0.3	8	
North: Sherman Avenue									
1	LTR	42	572	1071 0.534	12.6	0.78	3.7	95	
NorthWest: SB Florida Avenue									
1	LT	82	378	833 0.454	11.3	0.84	3.5	90	

Title
Subtitle
Intersection ID:
Roundabout

Table S.8A - LANE FLOW AND CAPACITY INFORMATION

Lane No.	Mov No.	Dem Flow (veh/h)				Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %	
		Lef	Thru	Rig	Tot					
SouthEast: NB Florida Avenue										
1	T	72	0	636	0	636	150	1247	0.510	100
2	TR	72	0	684	14	698	150	1366	0.510	100
East: Bryant Street Extension										
1	LTR	22	11	20	22	53	53	662	0.080	100
NorthEast: University Dorms										
1	LR	62	22	0	22	44	44	666	0.066	100
North: Sherman Avenue										
1	LTR	42	22	539	11	572	150	1071	0.534	100
NorthWest: SB Florida Avenue										
1	LT	82	22	356	0	378	150	833	0.454	100

For roundabouts, the capacity value for continuous movements is obtained as the basic saturation flow without any adjustments. Saturation flow scale applies if specified.

Title
Subtitle
Intersection ID:
Roundabout

Table S.12A - FUEL CONSUMPTION, EMISSIONS AND COST - TOTAL

Mov No.	Fuel Total gal/h	Cost Total \$/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h
---------	------------------	-----------------	---------------	---------------	----------------	----------------

SouthEast: NB Florida Avenue

1 LR	22		22	44	5		0.066	12.9	8
	22	0	22	44	5		0.066	12.9	8
North: Sherman Avenue									
1 LTR	22	539	11	572	2		0.534	12.6	95
	22	539	11	572	2		0.534	12.6	95
NorthWest: SB Florida Avenue									
1 LT	22	356		378	2		0.454	11.3	90
	22	356	0	378	2		0.454	11.3	90

ALL VEHICLES	Total Flow	% HV	Max X	Aver. Delay	Max Queue
	2381	2	0.534	9.0	105

Total flow period = 60 minutes. Peak flow period = 30 minutes.

Queue values in this table are 95% back of queue (feet).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

Title
Subtitle
Intersection ID:
Roundabout

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Total Flow (veh/h)	Total Cap. (veh/h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS	Longest Queue 95% Back (vehs)	Queue (ft)
SouthEast: NB Florida Avenue								
72 TR		1334	2613	0.511	6.5	A	4.1	105
		1334		0.511	6.5	A	4.1	105
East: Bryant Street Extension								
22 LTR		53	662	0.080	10.9	B	0.4	10
		53		0.080	10.9	B	0.4	10
NorthEast: University Dorns								
62 LR		44	666	0.066	12.9	B	0.3	8
		44		0.066	12.9	B	0.3	8
North: Sherman Avenue								
42 LTR		572	1071	0.534*	12.6	B	3.7	95
		572		0.534	12.6	B	3.7	95
NorthWest: SB Florida Avenue								
82 LT		378	833	0.454	11.3	B	3.5	90
		378		0.454	11.3	B	3.5	90
ALL VEHICLES:		2381		0.534	9.0	A	4.1	105

Level of Service calculations are based on average control delay including geometric delay (HCM criteria), independent of the current delay definition used. For the criteria, refer to the "Level of Service" topic in the

Title
 Subtitle
 Intersection ID:
 Roundabout

Table D.0 - GEOMETRIC DELAY DATA

From Approach	To Approach	Negn Radius (ft)	Negn Speed (mph)	Negn Dist. (ft)	Appr. Dist. (ft)	Downstream Distance (ft)
SouthEast: NB Florida Avenue						
	East	62.7	16.0	32.8	1800	389
	NorthEast	87.1	18.2	54.5	1800	389
	North	153.9	22.5	98.5	1800	407
	NorthWest	153.9	22.5	131.4	1800	407
East: Bryant Street Extension						
	SouthEast	52.0	14.9	245.0	1800	573
	NorthEast	73.2	17.0	32.8	1800	394
	North	102.1	19.3	54.2	1800	394
	NorthWest	153.9	22.5	98.5	1800	407
NorthEast: University Dorms						
	SouthEast	52.0	14.9	204.2	1800	553
	East	52.0	14.9	245.0	1800	553
	North	73.2	17.0	32.8	1800	394
	NorthWest	102.1	19.3	54.2	1800	394
North: Sherman Avenue						
	SouthEast	52.0	14.9	163.4	1800	492
	East	52.0	14.9	204.2	1800	553
	NorthEast	52.0	14.9	245.0	1800	553
	NorthWest	73.2	17.0	32.8	1800	391
NorthWest: SB Florida Avenue						
	SouthEast	153.9	22.5	131.4	1800	446
	East	52.0	14.9	163.4	1800	446
	NorthEast	52.0	14.9	204.2	1800	553
	North	52.0	14.9	245.0	1800	553

Maximum Negotiation (Design) Speed = 50.0 mph
 Downstream Distance calculated by aaSIDRA

Downstream distance is distance travelled from the stopline until exit cruise speed is reached (includes negotiation distance). Acceleration distance is weighted for light and heavy vehicles. The same distance applies for both stopped and unstopped vehicles.

Title
 Subtitle
 Intersection ID:
 Roundabout

Table D.1 - LANE DELAYS

Delay (seconds/veh)											
Lane No.	Mov No.	Deg. Satn x	Stop-line 1st d1	Stop-line 2nd d2	Delay Total dSL	Acc. Dec. dn	Queuing Total dq	MvUp dqm	Stopd (Idle) di	Geom dig	Control dic
SouthEast: NB Florida Avenue											
1 T	72	0.510	0.9	0.0	0.9	2.7	0.0	0.0	0.0	5.7	6.6

NorthEast: University Dorms												
1 LR	0.066	0.0	0.1	0.0	0.1	0.2	0.2	0.3	0.3	0.4	0.00	
North: Sherman Avenue												
1 LTR	0.534	0.0	1.2	0.1	1.2	2.2	2.7	3.0	3.7	4.3	0.05	
NorthWest: SB Florida Avenue												
1 LT	0.454	0.1	1.1	0.1	1.1	2.1	2.5	2.9	3.5	4.1	0.05	

Values printed in this table are back of queue (vehicles).

Title
Subtitle
Intersection ID:
Roundabout

Table D.3B - LANE QUEUES (feet)

	Deg.	Ovrfl.	Average (feet)			Percentile (feet)					Queue
Lane	Satn	Queue									Stor.
No.	x	No	Nb1	Nb2	Nb	70%	85%	90%	95%	98%	Ratio
SouthEast: NB Florida Avenue											
1 T	0.510	0	33	0	33	60	73	83	103	119	0.06
2 TR	0.510	0	34	0	34	61	74	84	105	122	0.06
East: Bryant Street Extension											
1 LTR	0.080	0	3	0	3	6	7	8	10	12	0.01
NorthEast: University Dorms											
1 LR	0.066	0	3	0	3	5	6	7	8	10	0.00
North: Sherman Avenue											
1 LTR	0.534	1	29	1	31	55	68	77	95	111	0.05
NorthWest: SB Florida Avenue											
1 LT	0.454	1	27	2	29	52	64	73	90	104	0.05

Values printed in this table are back of queue (feet).

Title
Subtitle
Intersection ID:
Roundabout

Table D.4 - MOVEMENT SPEEDS (mph)

Mov No.	App. Speeds		Exit Speeds		Queue Move-up		Av. Section Spd	
	Cruise	Negn	Negn	Cruise	1st Grn	2nd Grn	Running	Overall
SouthEast: NB Florida Avenue								
72	40.0	22.5	22.5	40.0			32.7	32.7
East: Bryant Street Extension								
22	40.0	19.1	19.1	40.0			30.9	30.8
NorthEast: University Dorms								
62	40.0	16.5	16.5	40.0			30.0	29.9
North: Sherman Avenue								
42	40.0	15.0	15.0	40.0	15.4		29.8	29.8

NorthWest: SB Florida Avenue

82	40.0	19.3	19.3	40.0	13.0	30.7	30.7
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"Running Speed" is the average speed excluding stopped periods.

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