


















Lanes, Volumes, Timings  
Intersectia 1: Drumul Cetatii & Str. Tarpiului

Pasaj denivelat - Municipiul Bistrita

Anexa 1

												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	16	138	147	122	124	4	183	571	124	11	585	38
Future Volume (vph)	16	138	147	122	124	4	183	571	124	11	585	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.934				0.850		0.981			0.992	
Flt Protected		0.997			0.976			0.990			0.999	
Satd. Flow (prot)	0	1572	0	0	1616	1566	0	1593	0	0	1632	0
Flt Permitted		0.997			0.976			0.990			0.999	
Satd. Flow (perm)	0	1572	0	0	1616	1566	0	1593	0	0	1632	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		27.6			212.4			227.3			512.4	
Travel Time (s)		2.1			15.9			17.0			38.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	14%	10%	12%	15%	2%	18%	14%	12%	11%	14%	16%
Adj. Flow (vph)	17	150	160	133	135	4	199	621	135	12	636	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	327	0	0	268	4	0	955	0	0	689	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary

















Area Type: Other

Control Type: Roundabout

Intersection Capacity Utilization 125.2%

ICU Level of Service H

Analysis Period (min) 15

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	110	247	158	198	192	36	21	581	128	140	461	70
Future Volume (vph)	110	247	158	198	192	36	21	581	128	140	461	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.959			0.989			0.976			0.986	
Flt Protected		0.989			0.977			0.999			0.990	
Satd. Flow (prot)	0	1728	0	0	1742	0	0	1646	0	0	1624	0
Flt Permitted		0.989			0.977			0.999			0.990	
Satd. Flow (perm)	0	1728	0	0	1742	0	0	1646	0	0	1624	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		213.1			90.2			512.4			171.4	
Travel Time (s)		16.0			6.8			38.4			12.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	4%	4%	6%	2%	6%	5%	12%	9%	4%	17%	4%
Adj. Flow (vph)	120	268	172	215	209	39	23	632	139	152	501	76
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	560	0	0	463	0	0	794	0	0	729	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Yield			Yield			Yield			Yield	

#### Intersection Summary

Area Type: Other

Control Type: Roundabout

Intersection Capacity Utilization 131.4%

ICU Level of Service H

Analysis Period (min) 15



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	205	567	439	101	264	112
Future Volume (vph)	205	567	439	101	264	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0			0.0	0.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt			0.997	0.850		0.850
Flt Protected	0.950	0.998			0.950	
Satd. Flow (prot)	1662	1746	1745	1487	1750	1566
Flt Permitted	0.950	0.998			0.950	
Satd. Flow (perm)	1662	1746	1745	1487	1750	1566
Link Speed (k/h)		48	48		48	
Link Distance (m)		39.3	94.4		116.4	
Travel Time (s)		2.9	7.1		8.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	223	616	477	110	287	122
Shared Lane Traffic (%)	10%			10%		
Lane Group Flow (vph)	201	638	488	99	287	122
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.5	0.0		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		1.6	1.6		1.6	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24			14	24	14
Sign Control		Yield	Yield		Yield	

#### Intersection Summary

Area Type: Other




















Control Type: Roundabout

Intersection Capacity Utilization 79.6%

ICU Level of Service D

Analysis Period (min) 15



												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	309	360	55	55	319	126	85	201	25	307	195	260
Future Volume (vph)	309	360	55	55	319	126	85	201	25	307	195	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		30.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt			0.850			0.850		0.988			0.949	
Flt Protected		0.977			0.993			0.987			0.980	
Satd. Flow (prot)	0	1800	1566	0	1829	1566	0	3413	0	0	3255	0
Flt Permitted		0.977			0.993			0.987			0.980	
Satd. Flow (perm)	0	1800	1566	0	1829	1566	0	3413	0	0	3255	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		65.6			127.3			123.6			160.2	
Travel Time (s)		4.9			9.5			9.3			12.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	336	391	60	60	347	137	92	218	27	334	212	283
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	727	60	0	407	137	0	337	0	0	829	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Yield			Yield			Yield			Yield	

**Intersection Summary**

Area Type: Other












Control Type: Roundabout

Intersection Capacity Utilization 100.7%

ICU Level of Service G

Analysis Period (min) 15



						
Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	322	353	378	611	788	250
Future Volume (vph)	322	353	378	611	788	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0			20.0	0.0	30.0
Storage Lanes	0			1	2	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	0.95	0.95	0.95	1.00	0.97	1.00
Frt				0.850		0.850
Flt Protected		0.977			0.950	
Satd. Flow (prot)	0	3419	3500	1566	3395	1566
Flt Permitted		0.977			0.950	
Satd. Flow (perm)	0	3419	3500	1566	3395	1566
Link Speed (k/h)		48	48		48	
Link Distance (m)		94.4	56.2		107.8	
Travel Time (s)		7.1	4.2		8.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	350	384	411	664	857	272
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	734	411	664	857	272
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		10.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		1.6	1.6		1.6	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24			14	24	14
Sign Control		Yield	Yield		Yield	

#### Intersection Summary


















Area Type: Other

Control Type: Roundabout

Intersection Capacity Utilization 63.6%

ICU Level of Service B

Analysis Period (min) 15

												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	206	243	32	179	216	68	243	681	50	161	549	27
Future Volume (vph)	206	243	32	179	216	68	243	681	50	161	549	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		20.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.991				0.850		0.992			0.995	
Flt Protected		0.979			0.978			0.988			0.989	
Satd. Flow (prot)	0	1787	0	0	1802	1566	0	3430	0	0	3444	0
Flt Permitted		0.979			0.978			0.988			0.989	
Satd. Flow (perm)	0	1787	0	0	1802	1566	0	3430	0	0	3444	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		127.3			63.6			111.7			124.0	
Travel Time (s)		9.5			4.8			8.4			9.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	224	264	35	195	235	74	264	740	54	175	597	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	523	0	0	430	74	0	1058	0	0	801	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			4.0			1.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Yield			Yield			Yield			Yield	

**Intersection Summary**












Area Type: Other

Control Type: Roundabout

Intersection Capacity Utilization 108.9%

ICU Level of Service G

Analysis Period (min) 15










						
Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations				 	 	
Traffic Volume (vph)	0	65	0	933	875	0
Future Volume (vph)	0	65	0	933	875	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Fr <sub>t</sub>		0.865				
Flt Protected						
Satd. Flow (prot)	0	1593	0	3500	3500	0
Flt Permitted						
Satd. Flow (perm)	0	1593	0	3500	3500	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	100.4			107.8	76.7	
Travel Time (s)	7.5			8.1	5.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	71	0	1014	951	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	71	0	1014	951	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			4.0	4.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24	14	24			14
Sign Control	Yield			Free	Free	

#### Intersection Summary

Area Type: Other  
Control Type: Unsignalized  
Intersection Capacity Utilization 34.9% ICU Level of Service A  
Analysis Period (min) 15



Intersection			
Intersection Delay, s/veh	12.0		
Intersection LOS	B		
Approach	SE	NE	SW
Entry Lanes	0	2	2
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	0	1014	956
Demand Flow Rate, veh/h	0	1034	976
Vehicles Circulating, veh/h	948	0	16
Vehicles Exiting, veh/h	44	948	1018
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	0.0	12.8	11.1
Approach LOS	-	B	B
Lane	Left	Left	Right
Designated Moves	LT	LT	R
Assumed Moves	LT	LT	R
RT Channelized			
Lane Util	1.000	0.971	0.029
Follow-Up Headway, s	2.535	2.535	2.535
Critical Headway, s	4.544	4.544	4.544
Entry Flow, veh/h	1034	948	28
Cap Entry Lane, veh/h	1420	1400	1400
Entry HV Adj Factor	0.981	0.980	0.964
Flow Entry, veh/h	1014	929	27
Cap Entry, veh/h	1393	1372	1350
V/C Ratio	0.728	0.677	0.020
Control Delay, s/veh	12.8	11.3	2.8
LOS	B	B	A
95th %tile Queue, veh	7	6	0

						
Lane Group	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	10	5	250	45	0	410
Future Volume (vph)	10	5	250	45	0	410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.958		0.977			
Flt Protected	0.967					
Satd. Flow (prot)	1706	0	3419	0	0	3500
Flt Permitted	0.967					
Satd. Flow (perm)	1706	0	3419	0	0	3500
Link Speed (k/h)	48		48			48
Link Distance (m)	100.4		116.4			80.6
Travel Time (s)	7.5		8.7			6.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	5	272	49	0	446
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	0	321	0	0	446
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24	14		14	24	
Sign Control	Yield		Free			Free

#### Intersection Summary



















Area Type: Other

Control Type: Unsignalized

















Intersection Capacity Utilization 21.3%

ICU Level of Service A

Analysis Period (min) 15

												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	110	25	87	0	0	0	85	189	25	0	395	37
Future Volume (vph)	110	25	87	0	0	0	85	189	25	0	395	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	10.0		20.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		0	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95	0.95
Frt			0.850					0.987			0.987	
Flt Protected	0.950							0.986				
Satd. Flow (prot)	1750	1842	1566	0	0	0	0	3406	0	0	3454	0
Flt Permitted	0.950							0.754				
Satd. Flow (perm)	1750	1842	1566	0	0	0	0	2605	0	0	3454	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			95					25			26	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		73.5			111.2			82.5			123.6	
Travel Time (s)		5.5			8.3			6.2			9.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	27	95	0	0	0	92	205	27	0	429	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	27	95	0	0	0	0	324	0	0	469	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Turn Type	Perm	NA	Perm				Perm	NA			NA	
Protected Phases		6						4			8	
Permitted Phases	6		6				4					
Minimum Split (s)	22.5	22.5	22.5				22.5	22.5			22.5	
Total Split (s)	22.5	22.5	22.5				22.5	22.5			22.5	
Total Split (%)	50.0%	50.0%	50.0%				50.0%	50.0%			50.0%	
Maximum Green (s)	18.0	18.0	18.0				18.0	18.0			18.0	
Yellow Time (s)	3.5	3.5	3.5				3.5	3.5			3.5	
All-Red Time (s)	1.0	1.0	1.0				1.0	1.0			1.0	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0			0.0	
Total Lost Time (s)	4.5	4.5	4.5					4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0	7.0				7.0	7.0			7.0	
Flash Dont Walk (s)	11.0	11.0	11.0				11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0	0				0	0			0	
Act Effct Green (s)	18.0	18.0	18.0					18.0			18.0	
Actuated g/C Ratio	0.40	0.40	0.40					0.40			0.40	
v/c Ratio	0.17	0.04	0.14					0.31			0.34	
Control Delay	9.6	8.5	3.2					9.5			9.6	
Queue Delay	0.0	0.0	0.0					0.0			0.0	
Total Delay	9.6	8.5	3.2					9.5			9.6	
LOS	A	A	A					A			A	



												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	210	152	145	120	120	20	185	75	35	10	185	3
Future Volume (vph)	210	152	145	120	120	20	185	75	35	10	185	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.961			0.989			0.984			0.998	
Flt Protected		0.980			0.977			0.970			0.997	
Satd. Flow (prot)	0	1735	0	0	1780	0	0	1758	0	0	1833	0
Flt Permitted		0.980			0.977			0.970			0.997	
Satd. Flow (perm)	0	1735	0	0	1780	0	0	1758	0	0	1833	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		111.0			73.5			286.7			122.5	
Travel Time (s)		8.3			5.5			21.5			9.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	228	165	158	130	130	22	201	82	38	11	201	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	551	0	0	282	0	0	321	0	0	215	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Yield			Free			Free			Yield	

#### Intersection Summary

















Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 71.5%

ICU Level of Service C

Analysis Period (min) 15

												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	5	241	214	15	400	55	100	5	201	20	20	5
Future Volume (vph)	5	241	214	15	400	55	100	5	201	20	20	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.937			0.984			0.911			0.986	
Flt Protected					0.998			0.984			0.978	
Satd. Flow (prot)	0	1726	0	0	1809	0	0	1651	0	0	1776	0
Flt Permitted					0.998			0.984			0.978	
Satd. Flow (perm)	0	1726	0	0	1809	0	0	1651	0	0	1776	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		213.1			112.3			127.2			98.0	
Travel Time (s)		16.0			8.4			9.5			7.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	262	233	16	435	60	109	5	218	22	22	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	500	0	0	511	0	0	332	0	0	49	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Yield			Yield	

**Intersection Summary**

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 61.5%

ICU Level of Service B

Analysis Period (min) 15

Intersection								
Intersection Delay, s/veh	12.9							
Intersection LOS	B							
Approach	SE		NW		NE		SW	
Entry Lanes	2		2		3		2	
Conflicting Circle Lanes	2		2		2		2	
Adj Approach Flow, veh/h	1218		549		0		264	
Demand Flow Rate, veh/h	1242		560		0		269	
Vehicles Circulating, veh/h	441		676		666		1236	
Vehicles Exiting, veh/h	1064		899		1017		0	
Ped Vol Crossing Leg, #/h	0		0		0		0	
Ped Cap Adj	1.000		1.000		1.000		1.000	
Approach Delay, s/veh	14.5		9.4		0.0		12.5	
Approach LOS	B		A		-		B	
Lane	Left	Right	Left	Right	Left	Right	Left	Right
Designated Moves	LT	R	LT	TR			LT	TR
Assumed Moves	LT	R	LT	TR			LT	TR
RT Channelized								
Lane Util	0.469	0.531	0.470	0.530			0.468	0.532
Follow-Up Headway, s	2.667	2.535	2.667	2.535			2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328			4.645	4.328
Entry Flow, veh/h	582	660	263	297			126	143
Cap Entry Lane, veh/h	900	976	725	799			433	497
Entry HV Adj Factor	0.980	0.980	0.980	0.979			0.983	0.977
Flow Entry, veh/h	571	647	258	291			124	140
Cap Entry, veh/h	882	957	711	783			426	485
V/C Ratio	0.647	0.676	0.363	0.372			0.291	0.288
Control Delay, s/veh	14.5	14.6	9.7	9.2			13.3	11.8
LOS	B	B	A	A			B	B
95th %tile Queue, veh	5	5	2	2			1	1



### 1: Drumul Cetatii & Str. Tarpiului Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.0	0.4	21.0	0.1	9.4
Total Del/Veh (s)	3.4	9.0	44.7	14.5	24.8
Stop Del/Veh (s)	2.5	5.0	43.9	7.2	21.6
Stop/Veh	0.41	0.63	0.53	0.82	0.61
Avg Speed (kph)	11	29	12	33	20
HC Emissions (g)	0	8	30	38	75
CO Emissions (g)	7	145	471	767	1391
NOx Emissions (g)	1	19	43	102	165

### 2: Drumul Cetatii & Str. Subcetate Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.0	3.2	4.1	4.3	3.0
Total Del/Veh (s)	45.6	20.2	99.6	55.4	59.6
Stop Del/Veh (s)	44.4	17.9	102.2	56.4	59.9
Stop/Veh	0.91	0.67	0.96	0.82	0.86
Avg Speed (kph)	11	9	10	8	10
HC Emissions (g)	2	2	36	17	57
CO Emissions (g)	81	44	721	291	1137
NOx Emissions (g)	7	4	80	27	118

### 3: Str. Garii & Bd. Decebal Performance by approach

Approach	SE	NW	SW	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.1
Total Del/Veh (s)	2.3	4.9	3.9	3.5
Stop Del/Veh (s)	1.2	1.5	1.6	1.4
Stop/Veh	0.18	0.29	0.29	0.24
Avg Speed (kph)	16	23	29	23
HC Emissions (g)	1	4	0	5
CO Emissions (g)	31	115	17	163
NOx Emissions (g)	5	14	2	22

### 4: Bd. Decebal/Str. Andrei Muresan & Str. Crinilor/Str. Ion Slavici Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	21.1	0.1	0.0	0.3	6.7
Total Del/Veh (s)	25.9	17.5	7.4	19.1	19.2
Stop Del/Veh (s)	27.2	11.8	3.4	15.6	16.6
Stop/Veh	0.43	1.21	0.50	0.67	0.68
Avg Speed (kph)	6	16	24	17	14
HC Emissions (g)	1	5	1	4	12
CO Emissions (g)	45	141	72	179	437
NOx Emissions (g)	4	18	6	15	43

9: Bd. Republicii & Str. Ursului Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.4	3.1	6.7	4.6
Stop Del/Veh (s)	0.4	0.0	1.3	0.6
Stop/Veh	0.11	0.01	0.26	0.12
Avg Speed (kph)	26	29	25	26
HC Emissions (g)	0	6	11	17
CO Emissions (g)	12	199	289	500
NOx Emissions (g)	1	23	38	62

10: Bd. Decebal & Str. Lalelelor Performance by approach

Approach	NW	NE	SW	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	4.6	0.4	0.1	0.3
Stop Del/Veh (s)	2.7	0.0	0.0	0.1
Stop/Veh	1.00	0.00	0.00	0.02
Avg Speed (kph)	16	36	46	40
HC Emissions (g)	0	1	1	2
CO Emissions (g)	0	93	20	113
NOx Emissions (g)	0	6	2	8

11: Bd. Decebal & Str. Zimbrului Performance by approach

Approach	NW	NE	SW	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	1.8	0.2	1.2	0.9
Stop Del/Veh (s)	0.6	0.0	0.2	0.2
Stop/Veh	0.30	0.00	0.00	0.02
Avg Speed (kph)	25	47	39	40
HC Emissions (g)	0	0	2	2
CO Emissions (g)	5	9	95	109
NOx Emissions (g)	0	1	8	9

12: Bd. Decebal & Str. Ursului/Str. Cuza Voda Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.1	0.0	0.1	0.1
Total Del/Veh (s)	5.8	9.1	8.4	8.1
Stop Del/Veh (s)	3.5	6.9	5.4	5.5
Stop/Veh	0.44	0.65	0.57	0.57
Avg Speed (kph)	18	18	21	20
HC Emissions (g)	0	0	2	3
CO Emissions (g)	22	20	125	167
NOx Emissions (g)	3	1	9	13

17: Str. Rodnei & Str. Garii Performance by approach

Approach	SE	NW	NE	All
Denied Del/Veh (s)	0.0	0.0	0.5	0.2
Total Del/Veh (s)	24.2	1.0	2.9	7.8
Stop Del/Veh (s)	23.3	0.3	0.4	6.3
Stop/Veh	0.42	0.09	0.10	0.18
Avg Speed (kph)	3	26	28	16
HC Emissions (g)	1	2	1	4
CO Emissions (g)	20	54	64	138
NOx Emissions (g)	2	7	5	14

Total Network Performance

Denied Del/Veh (s)	8.7
Total Del/Veh (s)	50.9
Stop Del/Veh (s)	41.9
Stop/Veh	1.52
Avg Speed (kph)	19
HC Emissions (g)	426
CO Emissions (g)	11721
NOx Emissions (g)	1252



Intersection: 4: Bd. Decebal/Str. Andrei Muresan & Str. Crinilor/Str. Ion Slavici

Movement	SE	SE	NW	NW	NE	NE	SW	SW
Directions Served	LT	R	LT	R	LT	TR	LT	TR
Maximum Queue (m)	51.1	32.5	40.4	32.4	16.6	11.4	70.8	56.2
Average Queue (m)	50.2	25.9	30.8	12.9	11.9	8.4	48.9	28.5
95th Queue (m)	51.7	47.3	43.9	39.1	17.4	15.4	72.8	59.0
Link Distance (m)	47.4		99.0		104.8	104.8	148.8	148.8
Upstream Blk Time (%)	28							
Queuing Penalty (veh)	185							
Storage Bay Dist (m)		30.0		30.0				
Storage Blk Time (%)	93	2	5	0				
Queuing Penalty (veh)	51	13	6	2				

Intersection: 5: Str. Garii & Bd. Republicii

Movement	SE	SE	NW	NW	NW	SW	SW
Directions Served	LT	T	T	T	R	L	L
Maximum Queue (m)	65.2	13.4	20.1	15.7	17.0	20.7	16.0
Average Queue (m)	41.5	9.3	11.1	3.1	9.5	16.7	13.8
95th Queue (m)	66.8	13.5	18.5	13.5	22.3	21.7	18.9
Link Distance (m)	59.6	59.6	26.4	26.4		84.1	84.1
Upstream Blk Time (%)	1						
Queuing Penalty (veh)	5						
Storage Bay Dist (m)					20.0		
Storage Blk Time (%)				0	1		
Queuing Penalty (veh)				1	1		

Intersection: 6: Bd. Republicii/Str. 1 Decembrie & Str. Bistricioarei/Str. Crinilor

Movement	SE	NW	NW	NE	NE	SW	SW
Directions Served	LTR	LT	R	LT	TR	LT	TR
Maximum Queue (m)	74.6	67.7	22.5	28.5	26.5	115.3	77.0
Average Queue (m)	44.3	52.3	15.4	22.6	15.4	92.0	62.0
95th Queue (m)	74.8	83.1	30.5	29.0	25.7	134.8	81.2
Link Distance (m)	99.0	48.4		97.7	97.7	110.7	110.7
Upstream Blk Time (%)		72				4	
Queuing Penalty (veh)		0				0	
Storage Bay Dist (m)			20.0				
Storage Blk Time (%)		72	2				
Queuing Penalty (veh)		49	10				

Intersection: 10: Bd. Decebal & Str. Lalelelor

Movement	NW
Directions Served	LR
Maximum Queue (m)	9.0
Average Queue (m)	3.6
95th Queue (m)	10.9
Link Distance (m)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 11: Bd. Decebal & Str. Zimbrului

Movement	NW
Directions Served	L
Maximum Queue (m)	8.5
Average Queue (m)	5.0
95th Queue (m)	11.6
Link Distance (m)	83.7
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 12: Bd. Decebal & Str. Ursului/Str. Cuza Voda

Movement	SE	SE	SE	NE	NE	SW	SW
Directions Served	L	T	R	LT	TR	T	TR
Maximum Queue (m)	11.2	22.5	16.4	27.2	20.7	19.8	15.0
Average Queue (m)	9.2	11.8	8.4	11.0	11.3	13.2	8.8
95th Queue (m)	10.8	25.8	20.5	24.5	23.0	22.3	20.8
Link Distance (m)		58.5		66.3	66.3	104.8	104.8
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)	10.0		20.0				
Storage Blk Time (%)	11	1	0				
Queuing Penalty (veh)	12	1	0				

Intersection: 16: Bd. Independentei/Str. Gh. Sincai & Str. Alex. Odobescu/Str. Garii

Movement	SE	SE	NW	NW	NE	NE	NE	SW	SW
Directions Served	T	R	LT	T	L	L	R	LT	TR
Maximum Queue (m)	41.1	13.4	26.8	22.5	15.6	29.1	29.6	40.4	13.9
Average Queue (m)	30.7	4.5	15.4	11.0	10.5	20.4	16.6	20.6	8.2
95th Queue (m)	50.0	13.9	26.0	23.1	16.0	33.3	27.3	38.6	16.1
Link Distance (m)	26.4	26.4	54.1	54.1	68.8	68.8		127.9	127.9
Upstream Blk Time (%)	36								
Queuing Penalty (veh)	205								
Storage Bay Dist (m)							30.0		
Storage Blk Time (%)						1	0		
Queuing Penalty (veh)						2	1		

Intersection: 17: Str. Rodnei & Str. Garii

Movement	SE	B34	NW	NE
Directions Served	TR	T	LT	LR
Maximum Queue (m)	32.4	80.8	20.9	29.9
Average Queue (m)	27.9	46.5	6.9	12.2
95th Queue (m)	31.6	82.4	19.5	30.8
Link Distance (m)	9.9	274.7	19.6	107.4
Upstream Blk Time (%)	75		0	
Queuing Penalty (veh)	338		2	
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary


















Network wide Queuing Penalty: 926



Lanes, Volumes, Timings  
Intersectia 1: Drumul Cetatii & Str. Tarpiului

Pasaj denivelat - Municipiul Bistrita

Anexa 2

												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	16	138	147	185	124	341	183	571	244	190	585	38
Future Volume (vph)	16	138	147	185	124	341	183	571	244	190	585	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.934				0.850		0.967			0.994	
Flt Protected		0.997			0.971			0.991			0.988	
Satd. Flow (prot)	0	1572	0	0	1612	1566	0	1576	0	0	1627	0
Flt Permitted		0.997			0.971			0.991			0.988	
Satd. Flow (perm)	0	1572	0	0	1612	1566	0	1576	0	0	1627	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		27.6			209.8			227.3			512.4	
Travel Time (s)		2.1			15.7			17.0			38.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	14%	10%	12%	15%	2%	18%	14%	12%	11%	14%	16%
Adj. Flow (vph)	17	150	160	201	135	371	199	621	265	207	636	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	327	0	0	336	371	0	1085	0	0	884	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary

Area Type: Other

Control Type: Roundabout

















Intersection Capacity Utilization 112.4%

ICU Level of Service H

Analysis Period (min) 15

Lanes, Volumes, Timings  
Intersectia 2: Drumul Cetatii & Str. Subcetate

Pasaj denivelat - Municipiul Bistrita  
Anexa 2

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	110	16	58	198	192	36	21	751	100	100	461	70
Future Volume (vph)	110	16	58	198	192	36	21	751	100	100	461	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.957			0.989			0.984			0.985	
Flt Protected		0.971			0.977			0.999			0.992	
Satd. Flow (prot)	0	1718	0	0	1742	0	0	1657	0	0	1618	0
Flt Permitted		0.971			0.977			0.999			0.992	
Satd. Flow (perm)	0	1718	0	0	1742	0	0	1657	0	0	1618	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		213.1			90.2			512.4			171.4	
Travel Time (s)		16.0			6.8			38.4			12.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	4%	4%	6%	2%	6%	5%	12%	9%	4%	17%	4%
Adj. Flow (vph)	120	17	63	215	209	39	23	816	109	109	501	76
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	200	0	0	463	0	0	948	0	0	686	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary















Area Type: Other

Control Type: Roundabout

Intersection Capacity Utilization 114.5%

ICU Level of Service H

Analysis Period (min) 15

									
Lane Group	SBL	SBR	SEL	SET	NWT	NWR	NWR2	SWL	SWR
Lane Configurations									
Traffic Volume (vph)	0	0	205	537	539	50	101	264	112
Future Volume (vph)	0	0	205	537	539	50	101	264	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	0.0			0.0		0.0	30.0
Storage Lanes	0	0	0			1		2	0
Taper Length (m)	2.5		2.5					2.5	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00	1.00	0.97	0.95
Frt						0.850		0.955	
Flt Protected				0.986				0.966	
Satd. Flow (prot)	0	0	0	3451	1842	1566	0	3297	0
Flt Permitted				0.986				0.966	
Satd. Flow (perm)	0	0	0	3451	1842	1566	0	3297	0
Link Speed (k/h)	48			48	48			48	
Link Distance (m)	36.5			41.5	85.1			114.3	
Travel Time (s)	2.7			3.1	6.4			8.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	223	584	586	54	110	287	122
Shared Lane Traffic (%)									
Lane Group Flow (vph)	0	0	0	807	586	164	0	409	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Right	Left	Right
Median Width(m)	0.0			0.0	0.0			7.0	
Link Offset(m)	0.0			0.0	0.0			0.0	
Crosswalk Width(m)	1.6			1.6	1.6			1.6	
Two way Left Turn Lane									
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24	14	24			14	14	24	14
Sign Control	Yield			Yield	Yield			Yield	

#### Intersection Summary

Area Type: Other




















Control Type: Roundabout

Intersection Capacity Utilization 70.2%

ICU Level of Service C

Analysis Period (min) 15



												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	309	360	55	55	119	126	85	201	25	307	195	260
Future Volume (vph)	309	360	55	55	119	126	85	201	25	307	195	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		30.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt			0.850			0.850		0.988			0.949	
Flt Protected		0.977			0.984			0.987			0.980	
Satd. Flow (prot)	0	1800	1566	0	1813	1566	0	3413	0	0	3255	0
Flt Permitted		0.977			0.984			0.987			0.980	
Satd. Flow (perm)	0	1800	1566	0	1813	1566	0	3413	0	0	3255	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		65.6			127.3			123.6			160.2	
Travel Time (s)		4.9			9.5			9.3			12.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	336	391	60	60	129	137	92	218	27	334	212	283
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	727	60	0	189	137	0	337	0	0	829	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Yield			Yield			Yield			Yield	

**Intersection Summary**












Area Type: Other

Control Type: Roundabout

Intersection Capacity Utilization 90.2%

ICU Level of Service E

Analysis Period (min) 15

						
Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	322	479	378	611	788	350
Future Volume (vph)	322	479	378	611	788	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0			20.0	0.0	30.0
Storage Lanes	0			1	2	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	0.95	0.95	0.95	1.00	0.97	1.00
Frt				0.850		0.850
Flt Protected		0.980			0.950	
Satd. Flow (prot)	0	3430	3500	1566	3395	1566
Flt Permitted		0.980			0.950	
Satd. Flow (perm)	0	3430	3500	1566	3395	1566
Link Speed (k/h)		48	48		48	
Link Distance (m)		85.1	56.2		107.8	
Travel Time (s)		6.4	4.2		8.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	350	521	411	664	857	380
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	871	411	664	857	380
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Right
Median Width(m)		0.0	0.0		10.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		1.6	1.6		1.6	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24			14	24	14
Sign Control		Yield	Yield		Yield	

#### Intersection Summary


















Area Type: Other

Control Type: Roundabout

Intersection Capacity Utilization 67.1%

ICU Level of Service C

Analysis Period (min) 15

												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	206	243	32	279	116	68	143	681	50	161	549	27
Future Volume (vph)	206	243	32	279	116	68	143	681	50	161	549	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		20.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.991				0.850		0.991			0.995	
Flt Protected		0.979			0.966			0.992			0.989	
Satd. Flow (prot)	0	1787	0	0	1779	1566	0	3441	0	0	3444	0
Flt Permitted		0.979			0.966			0.992			0.989	
Satd. Flow (perm)	0	1787	0	0	1779	1566	0	3441	0	0	3444	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		127.3			63.6			111.7			124.0	
Travel Time (s)		9.5			4.8			8.4			9.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	224	264	35	303	126	74	155	740	54	175	597	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	523	0	0	429	74	0	949	0	0	801	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Right	Right	Right
Median Width(m)		0.0			0.0			4.0			1.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Yield			Yield			Yield			Yield	

**Intersection Summary**

Area Type: Other












Control Type: Roundabout

Intersection Capacity Utilization 90.3%

ICU Level of Service E

Analysis Period (min) 15



						
Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations				 	 	
Traffic Volume (vph)	0	65	0	933	975	0
Future Volume (vph)	0	65	0	933	975	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Fr <sub>t</sub>		0.865				
Flt Protected						
Satd. Flow (prot)	0	1593	0	3500	3500	0
Flt Permitted						
Satd. Flow (perm)	0	1593	0	3500	3500	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	105.0			107.8	76.7	
Travel Time (s)	7.9			8.1	5.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	71	0	1014	1060	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	71	0	1014	1060	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Right
Median Width(m)	0.0			4.0	4.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24	14	24			14
Sign Control	Yield			Free	Free	

#### Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 37.6%

ICU Level of Service A










Analysis Period (min) 15

Intersection

Intersection Delay, s/veh 13.0  
Intersection LOS B

Approach	SE	NE	SW
Entry Lanes	0	2	2
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	0	1014	1065
Demand Flow Rate, veh/h	0	1034	1087
Vehicles Circulating, veh/h	1059	0	16
Vehicles Exiting, veh/h	44	1059	1018
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	0.0	12.3	13.7
Approach LOS	-	B	B

Lane	Left	Right	Left	Right
Designated Moves	L	TR	LT	R
Assumed Moves	L	TR	LT	R
RT Channelized				
Lane Util	0.015	0.985	0.974	0.026
Follow-Up Headway, s	2.535	2.535	2.535	2.535
Critical Headway, s	4.544	4.544	4.544	4.544
Entry Flow, veh/h	16	1018	1059	28
Cap Entry Lane, veh/h	1420	1420	1400	1400
Entry HV Adj Factor	1.000	0.980	0.980	0.964
Flow Entry, veh/h	16	998	1038	27
Cap Entry, veh/h	1420	1392	1372	1350
V/C Ratio	0.011	0.717	0.757	0.020
Control Delay, s/veh	2.6	12.4	14.0	2.8
LOS	A	B	B	A
95th %tile Queue, veh	0	7	8	0

						
Lane Group	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	10	5	250	45	0	410
Future Volume (vph)	10	5	250	45	0	410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.958		0.977			
Flt Protected	0.967					
Satd. Flow (prot)	1706	0	3419	0	0	3500
Flt Permitted	0.967					
Satd. Flow (perm)	1706	0	3419	0	0	3500
Link Speed (k/h)	48		48			48
Link Distance (m)	105.0		114.3			85.5
Travel Time (s)	7.9		8.6			6.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	5	272	49	0	446
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	0	321	0	0	446
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24	14		14	24	
Sign Control	Yield		Free			Free

#### Intersection Summary


















Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 21.3% ICU Level of Service A

Analysis Period (min) 15



















												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	110	25	87	0	0	0	85	189	25	0	395	37
Future Volume (vph)	110	25	87	0	0	0	85	189	25	0	395	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	10.0		20.0	0.0			0.0	0.0	0.0	0.0		0.0
Storage Lanes	0		1	0			0	0	0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95	0.95
Frt			0.850					0.987			0.987	
Flt Protected		0.961						0.986				
Satd. Flow (prot)	0	1770	1566	0	0	0	0	3406	0	0	3454	0
Flt Permitted		0.961						0.754				
Satd. Flow (perm)	0	1770	1566	0	0	0	0	2605	0	0	3454	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			95					25			26	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		73.5			111.2			79.8			123.6	
Travel Time (s)		5.5			8.3			6.0			9.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	27	95	0	0	0	92	205	27	0	429	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	147	95	0	0	0	0	324	0	0	469	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Turn Type	Perm	NA	Perm				Perm	NA			NA	
Protected Phases		6						4			8	
Permitted Phases	6		6				4					
Minimum Split (s)	22.5	22.5	22.5				22.5	22.5			22.5	
Total Split (s)	22.5	22.5	22.5				22.5	22.5			22.5	
Total Split (%)	50.0%	50.0%	50.0%				50.0%	50.0%			50.0%	
Maximum Green (s)	18.0	18.0	18.0				18.0	18.0			18.0	
Yellow Time (s)	3.5	3.5	3.5				3.5	3.5			3.5	
All-Red Time (s)	1.0	1.0	1.0				1.0	1.0			1.0	
Lost Time Adjust (s)		0.0	0.0					0.0			0.0	
Total Lost Time (s)		4.5	4.5					4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0	7.0				7.0	7.0			7.0	
Flash Dont Walk (s)	11.0	11.0	11.0				11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0	0				0	0			0	
Act Effct Green (s)		18.0	18.0					18.0			18.0	
Actuated g/C Ratio		0.40	0.40					0.40			0.40	
v/c Ratio		0.21	0.14					0.31			0.34	
Control Delay		9.9	3.2					9.5			9.6	
Queue Delay		0.0	0.0					0.0			0.0	
Total Delay		9.9	3.2					9.5			9.6	
LOS		A	A					A			A	

Lanes, Volumes, Timings  
Intersectia 13: Str Artarilor & Str. Cuza Voda

Pasaj denivelat - Municipiul Bistrita

Anexa 2

												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	210	152	45	120	120	20	85	75	35	10	185	3
Future Volume (vph)	210	152	45	120	120	20	85	75	35	10	185	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.985			0.989			0.976			0.998	
Flt Protected		0.975			0.977			0.979			0.997	
Satd. Flow (prot)	0	1769	0	0	1780	0	0	1760	0	0	1833	0
Flt Permitted		0.975			0.977			0.979			0.997	
Satd. Flow (perm)	0	1769	0	0	1780	0	0	1760	0	0	1833	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		111.0			73.5			271.2			122.5	
Travel Time (s)		8.3			5.5			20.3			9.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	228	165	49	130	130	22	92	82	38	11	201	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	442	0	0	282	0	0	212	0	0	215	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Yield			Free			Free			Yield	

Intersection Summary

Area Type: Other

















Control Type: Unsignalized

Intersection Capacity Utilization 60.8%

ICU Level of Service B

Analysis Period (min) 15



												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	5	141	214	15	200	55	15	5	201	20	20	5
Future Volume (vph)	5	141	214	15	200	55	15	5	201	20	20	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.920			0.972			0.877			0.986	
Flt Protected		0.999			0.997			0.997			0.978	
Satd. Flow (prot)	0	1693	0	0	1785	0	0	1611	0	0	1776	0
Flt Permitted		0.999			0.997			0.997			0.978	
Satd. Flow (perm)	0	1693	0	0	1785	0	0	1611	0	0	1776	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		213.1			112.3			127.2			98.0	
Travel Time (s)		16.0			8.4			9.5			7.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	153	233	16	217	60	16	5	218	22	22	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	391	0	0	293	0	0	239	0	0	49	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Yield			Yield	

**Intersection Summary**

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 43.2%

ICU Level of Service A

Analysis Period (min) 15











## Intersection

Intersection Delay, s/veh 16.6

Intersection LOS C

Approach	SE	NW	NE	SW
Entry Lanes	2	2	3	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	1378	549	0	264
Demand Flow Rate, veh/h	1405	560	0	269
Vehicles Circulating, veh/h	441	676	666	1236
Vehicles Exiting, veh/h	1064	899	1180	0
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	20.3	9.4	0.0	12.5
Approach LOS	C	A	-	B

Lane	Left	Right	Left	Right	Left	Right
Designated Moves	LT	R	LT	TR	LT	TR
Assumed Moves	LT	R	LT	TR	LT	TR
RT Channelized						
Lane Util	0.414	0.586	0.470	0.530	0.468	0.532
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	582	823	263	297	126	143
Cap Entry Lane, veh/h	900	976	725	799	433	497
Entry HV Adj Factor	0.980	0.981	0.980	0.979	0.983	0.977
Flow Entry, veh/h	571	807	258	291	124	140
Cap Entry, veh/h	882	957	711	783	426	485
V/C Ratio	0.647	0.843	0.363	0.372	0.291	0.288
Control Delay, s/veh	14.5	24.4	9.7	9.2	13.3	11.8
LOS	B	C	A	A	B	B
95th %tile Queue, veh	5	10	2	2	1	1

						
Lane Group	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	0	50	0	0	0	310
Future Volume (vph)	0	50	0	0	0	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1593	0	0	0	1842
Flt Permitted						
Satd. Flow (perm)	0	1593	0	0	0	1842
Link Speed (k/h)	48		48			48
Link Distance (m)	34.5		29.4			271.2
Travel Time (s)	2.6		2.2			20.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	54	0	0	0	337
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	54	0	0	0	337
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	0.0		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24	14		14	24	
Sign Control	Free		Stop			Free

#### Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 19.6%

ICU Level of Service A

Analysis Period (min) 15

### 1: Drumul Cetatii & Str. Tarpiului Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	76.7	0.2	28.2
Total Del/Veh (s)	4.2	5.9	90.0	47.4	44.4
Stop Del/Veh (s)	3.6	1.9	98.1	42.8	44.4
Stop/Veh	0.43	0.39	0.26	0.99	0.54
Avg Speed (kph)	9	33	6	18	13
HC Emissions (g)	0	3	30	31	65
CO Emissions (g)	9	71	495	653	1227
NOx Emissions (g)	1	11	31	78	121

### 2: Drumul Cetatii & Str. Subcetate Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.0	0.3	0.0	0.5	0.2
Total Del/Veh (s)	5.8	7.0	52.9	6.8	25.6
Stop Del/Veh (s)	3.1	3.1	50.1	1.6	21.9
Stop/Veh	0.59	0.55	0.92	0.24	0.61
Avg Speed (kph)	32	21	18	29	21
HC Emissions (g)	1	1	37	9	48
CO Emissions (g)	24	38	772	207	1040
NOx Emissions (g)	2	4	95	24	126

### 3: Str. Garii & Bd. Decebal Performance by approach

Approach	SE	NW	SW	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.1	5.9	3.6	4.2
Stop Del/Veh (s)	0.3	3.0	1.3	1.7
Stop/Veh	0.08	0.41	0.27	0.27
Avg Speed (kph)	20	20	29	23
HC Emissions (g)	1	4	1	6
CO Emissions (g)	21	126	29	176
NOx Emissions (g)	4	17	4	24

### 4: Bd. Decebal/Str. Andrei Muresan & Str. Crinilor/Str. Ion Slavici Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	11.2	0.0	0.0	0.3	4.1
Total Del/Veh (s)	24.1	7.5	5.4	6.4	12.7
Stop Del/Veh (s)	24.8	2.6	1.5	2.3	10.2
Stop/Veh	0.43	0.57	0.33	0.30	0.38
Avg Speed (kph)	6	24	28	29	18
HC Emissions (g)	1	4	3	5	12
CO Emissions (g)	44	116	95	175	430
NOx Emissions (g)	4	13	9	17	43



9: Bd. Republicii & Str. Ursului Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.8	3.2	7.4	5.1
Stop Del/Veh (s)	0.3	0.0	1.6	0.8
Stop/Veh	0.11	0.01	0.39	0.19
Avg Speed (kph)	27	28	24	26
HC Emissions (g)	0	7	9	17
CO Emissions (g)	20	219	281	520
NOx Emissions (g)	2	27	37	66

10: Bd. Decebal & Str. Lalelelor Performance by approach

Approach	NW	NE	SW	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	2.9	0.5	0.2	0.4
Stop Del/Veh (s)	1.5	0.1	0.0	0.1
Stop/Veh	0.20	0.02	0.00	0.01
Avg Speed (kph)	20	36	46	40
HC Emissions (g)	0	2	2	3
CO Emissions (g)	1	103	38	142
NOx Emissions (g)	0	7	5	12

11: Bd. Decebal & Str. Zimbrului Performance by approach

Approach	NW	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.0	0.1	1.6	1.1
Stop Del/Veh (s)	1.9	0.0	0.3	0.3
Stop/Veh	0.50	0.00	0.00	0.02
Avg Speed (kph)	25	47	36	38
HC Emissions (g)	0	0	4	5
CO Emissions (g)	7	10	165	182
NOx Emissions (g)	0	1	17	18

12: Bd. Decebal & Str. Ursului/Str. Cuza Voda Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.3	0.0	0.1	0.1
Total Del/Veh (s)	8.4	8.3	10.3	9.2
Stop Del/Veh (s)	6.2	6.5	6.5	6.4
Stop/Veh	0.62	0.54	0.69	0.63
Avg Speed (kph)	15	18	19	18
HC Emissions (g)	1	0	4	6
CO Emissions (g)	40	15	130	185
NOx Emissions (g)	5	1	14	20

### 17: Performance by approach

Approach	EB	SE	NW	All
Denied Del/Veh (s)	0.0	0.1	0.0	0.0
Total Del/Veh (s)	1.5	0.8	1.1	1.0
Stop Del/Veh (s)	1.5	0.0	0.3	0.3
Stop/Veh	0.22	0.02	0.06	0.06
Avg Speed (kph)	12	30	28	27
HC Emissions (g)	0	1	3	4
CO Emissions (g)	1	21	151	174
NOx Emissions (g)	0	3	14	17

### 34: Str Artarilor Performance by approach

Approach	NW	SW	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	0.1	1.0	0.8
Stop Del/Veh (s)	0.0	0.1	0.1
Stop/Veh	0.00	0.00	0.00
Avg Speed (kph)	25	42	41
HC Emissions (g)	0	2	2
CO Emissions (g)	0	105	105
NOx Emissions (g)	0	8	8

### 36: Performance by approach

Approach	SB	NE	All
Denied Del/Veh (s)	0.0	0.1	0.0
Total Del/Veh (s)	1.0	0.3	0.8
Stop Del/Veh (s)	0.6	0.0	0.5
Stop/Veh	0.05	0.00	0.04
Avg Speed (kph)	19	32	24
HC Emissions (g)	0	0	0
CO Emissions (g)	3	2	5
NOx Emissions (g)	0	0	1

### Total Network Performance

Denied Del/Veh (s)	14.9
Total Del/Veh (s)	51.3
Stop Del/Veh (s)	40.9
Stop/Veh	1.48
Avg Speed (kph)	20
HC Emissions (g)	396
CO Emissions (g)	11244
NOx Emissions (g)	1194

Intersection: 4: Bd. Decebal/Str. Andrei Muresan & Str. Crinilor/Str. Ion Slavici

Movement	SE	SE	NW	NE	NE	SW	SW
Directions Served	LT	R	LT	LT	TR	LT	TR
Maximum Queue (m)	50.6	32.5	8.4	14.9	10.7	28.0	11.5
Average Queue (m)	49.5	25.9	5.0	10.3	4.0	23.5	2.3
95th Queue (m)	51.3	47.3	11.7	14.1	12.1	30.4	9.9
Link Distance (m)	47.4		99.0	106.4	106.4	148.8	148.8
Upstream Blk Time (%)	24						
Queuing Penalty (veh)	158						
Storage Bay Dist (m)		30.0					
Storage Blk Time (%)	92	2					
Queuing Penalty (veh)	50	12					

Intersection: 5: Str. Garii & Bd. Republicii

Movement	SE	SE	NW	NW	NW	SW	SW	SW
Directions Served	LT	T	T	T	R	L	L	R
Maximum Queue (m)	65.0	31.0	28.0	22.0	17.8	19.9	48.2	32.5
Average Queue (m)	43.8	13.9	16.8	7.6	10.2	12.3	25.8	13.0
95th Queue (m)	71.0	29.3	29.5	20.8	24.0	20.3	49.3	39.2
Link Distance (m)	50.3	50.3	26.4	26.4		83.8	83.8	
Upstream Blk Time (%)	13		1	0				
Queuing Penalty (veh)	54		6	0				
Storage Bay Dist (m)					20.0			30.0
Storage Blk Time (%)				0	0		6	2
Queuing Penalty (veh)				1	1		23	8

Intersection: 6: Bd. Republicii/Str. 1 Decembrie & Str. Bistricioarei/Str. Crinilor

Movement	SE	NW	NW	NE	NE	SW	SW
Directions Served	LTR	LT	R	LT	TR	LT	TR
Maximum Queue (m)	57.3	58.8	23.3	34.2	36.3	66.5	48.8
Average Queue (m)	39.5	54.2	22.6	20.7	19.0	49.6	19.4
95th Queue (m)	59.3	58.0	23.2	37.6	33.7	71.6	58.7
Link Distance (m)	99.0	48.4		97.7	97.7	110.7	110.7
Upstream Blk Time (%)		90					
Queuing Penalty (veh)		0					
Storage Bay Dist (m)			20.0				
Storage Blk Time (%)		81	5				
Queuing Penalty (veh)		55	20				



Intersection: 10: Bd. Decebal & Str. Lalelelor

Movement	NW
Directions Served	LR
Maximum Queue (m)	8.2
Average Queue (m)	1.6
95th Queue (m)	7.1
Link Distance (m)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 11: Bd. Decebal & Str. Zimbrului

Movement	NW	NW
Directions Served	L	R
Maximum Queue (m)	8.5	8.7
Average Queue (m)	3.4	1.7
95th Queue (m)	10.2	7.5
Link Distance (m)	86.8	86.8
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 12: Bd. Decebal & Str. Ursului/Str. Cuza Voda

Movement	SE	SE	NE	NE	SW	SW
Directions Served	LT	R	LT	TR	T	TR
Maximum Queue (m)	29.6	22.4	13.9	19.6	61.0	35.1
Average Queue (m)	18.2	10.7	10.2	10.4	26.2	21.3
95th Queue (m)	27.6	22.7	15.0	21.4	56.8	40.3
Link Distance (m)	58.7		64.8	64.8	106.4	106.4
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)		20.0				
Storage Blk Time (%)	2	0				
Queuing Penalty (veh)	1	0				

Intersection: 16: Bd. Independentei/Str. Gh. Sincai & Str. Alex. Odobescu/Str. Garii


















Movement	SE	SE	NW	NW	NE	NE	NE	SW	SW
Directions Served	T	R	LT	T	L	L	R	LT	TR
Maximum Queue (m)	41.8	41.5	50.0	20.8	15.0	73.4	32.4	44.1	17.2
Average Queue (m)	25.9	24.2	31.3	15.5	10.5	34.2	26.3	26.1	10.0
95th Queue (m)	47.7	50.3	50.9	21.8	16.0	70.3	38.8	48.9	19.9
Link Distance (m)	26.4	26.4	54.1	54.1	68.8	68.8		127.9	127.9
Upstream Blk Time (%)	24	23	0			1			
Queuing Penalty (veh)	149	144	0			0			
Storage Bay Dist (m)							30.0		
Storage Blk Time (%)						7	2		
Queuing Penalty (veh)						16	7		

Intersection: 17:

Movement	EB	SE
Directions Served	R	T
Maximum Queue (m)	8.4	8.5
Average Queue (m)	6.4	3.3
95th Queue (m)	11.7	9.9
Link Distance (m)	8.4	9.8
Upstream Blk Time (%)	5	0
Queuing Penalty (veh)	9	2
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 34: Str Artarilor

Movement
Directions Served
Maximum Queue (m)
Average Queue (m)
95th Queue (m)
Link Distance (m)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (m)
Storage Blk Time (%)
Queuing Penalty (veh)

												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	16	138	147	185	124	341	183	571	244	190	585	38
Future Volume (vph)	16	138	147	185	124	341	183	571	244	190	585	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.934				0.850		0.967			0.994	
Flt Protected		0.997			0.971			0.991			0.988	
Satd. Flow (prot)	0	1572	0	0	1612	1566	0	1576	0	0	1627	0
Flt Permitted		0.997			0.971			0.991			0.988	
Satd. Flow (perm)	0	1572	0	0	1612	1566	0	1576	0	0	1627	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		27.6			209.8			227.3			512.4	
Travel Time (s)		2.1			15.7			17.0			38.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	112%	112%	112%	112%	112%	112%	112%	112%	112%	112%	112%	112%
Heavy Vehicles (%)	0%	14%	10%	12%	15%	2%	18%	14%	12%	11%	14%	16%
Adj. Flow (vph)	19	168	179	225	151	415	223	695	297	231	712	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	366	0	0	376	415	0	1215	0	0	989	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Yield			Yield			Yield			Yield	

#### Intersection Summary

Area Type: Other

Control Type: Roundabout

Intersection Capacity Utilization 124.6%

ICU Level of Service H

















Analysis Period (min) 15



Lanes, Volumes, Timings  
Intersectia 2: Drumul Cetatii & Str. Subcetate

Pasaj denivelat - Municipiul Bistrita

Anexa 3

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	110	16	58	198	192	36	21	751	100	100	461	70
Future Volume (vph)	110	16	58	198	192	36	21	751	100	100	461	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.957			0.989			0.984			0.985	
Flt Protected		0.971			0.977			0.999			0.992	
Satd. Flow (prot)	0	1718	0	0	1742	0	0	1657	0	0	1618	0
Flt Permitted		0.971			0.977			0.999			0.992	
Satd. Flow (perm)	0	1718	0	0	1742	0	0	1657	0	0	1618	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		213.1			90.2			512.4			171.4	
Travel Time (s)		16.0			6.8			38.4			12.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	112%	112%	112%	112%	112%	112%	112%	112%	112%	112%	112%	112%
Heavy Vehicles (%)	0%	4%	4%	6%	2%	6%	5%	12%	9%	4%	17%	4%
Adj. Flow (vph)	134	19	71	241	234	44	26	914	122	122	561	85
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	224	0	0	519	0	0	1062	0	0	768	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary














Area Type: Other

Control Type: Roundabout

Intersection Capacity Utilization 127.5%




















ICU Level of Service H

Analysis Period (min) 15

									
Lane Group	SBL	SBR	SEL	SET	NWT	NWR	NWR2	SWL	SWR
Lane Configurations									
Traffic Volume (vph)	0	0	205	537	539	50	101	264	112
Future Volume (vph)	0	0	205	537	539	50	101	264	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	0.0			0.0		0.0	30.0
Storage Lanes	0	0	0			1		2	0
Taper Length (m)	2.5		2.5					2.5	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00	1.00	0.97	0.95
Frt						0.850		0.955	
Flt Protected				0.986				0.966	
Satd. Flow (prot)	0	0	0	3451	1842	1566	0	3297	0
Flt Permitted				0.986				0.966	
Satd. Flow (perm)	0	0	0	3451	1842	1566	0	3297	0
Link Speed (k/h)	48			48	48			48	
Link Distance (m)	36.5			41.5	85.1			114.3	
Travel Time (s)	2.7			3.1	6.4			8.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	112%	112%	112%	112%	112%	112%	112%	112%	112%
Adj. Flow (vph)	0	0	250	654	656	61	123	321	136
Shared Lane Traffic (%)									
Lane Group Flow (vph)	0	0	0	904	656	184	0	457	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Right	Left	Right
Median Width(m)	0.0			0.0	0.0			7.0	
Link Offset(m)	0.0			0.0	0.0			0.0	
Crosswalk Width(m)	1.6			1.6	1.6			1.6	
Two way Left Turn Lane									
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24	14	24			14	14	24	14
Sign Control	Yield			Yield	Yield			Yield	

#### Intersection Summary

Area Type: Other  
Control Type: Roundabout  
Intersection Capacity Utilization 77.4%  
Analysis Period (min) 15  
ICU Level of Service D

												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	309	360	55	55	119	126	85	201	25	307	195	260
Future Volume (vph)	309	360	55	55	119	126	85	201	25	307	195	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		30.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt			0.850			0.850		0.988			0.949	
Flt Protected		0.977			0.984			0.987			0.980	
Satd. Flow (prot)	0	1800	1566	0	1813	1566	0	3413	0	0	3255	0
Flt Permitted		0.977			0.984			0.987			0.980	
Satd. Flow (perm)	0	1800	1566	0	1813	1566	0	3413	0	0	3255	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		65.6			127.3			123.6			160.2	
Travel Time (s)		4.9			9.5			9.3			12.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	112%	112%	112%	112%	112%	112%	112%	112%	112%	112%	112%	112%
Adj. Flow (vph)	376	438	67	67	145	153	103	245	30	374	237	317
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	814	67	0	212	153	0	378	0	0	928	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Yield			Yield			Yield			Yield	

## Intersection Summary

Area Type: Other












Control Type: Roundabout

Intersection Capacity Utilization 99.4%

ICU Level of Service F

Analysis Period (min) 15



						
Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	322	479	378	611	788	350
Future Volume (vph)	322	479	378	611	788	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0			20.0	0.0	30.0
Storage Lanes	0			1	2	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	0.95	0.95	0.95	1.00	0.97	1.00
Frt				0.850		0.850
Flt Protected		0.980			0.950	
Satd. Flow (prot)	0	3430	3500	1566	3395	1566
Flt Permitted		0.980			0.950	
Satd. Flow (perm)	0	3430	3500	1566	3395	1566
Link Speed (k/h)		48	48		48	
Link Distance (m)		85.1	56.2		107.8	
Travel Time (s)		6.4	4.2		8.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	112%	112%	112%	112%	112%	112%
Adj. Flow (vph)	392	583	460	744	959	426
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	975	460	744	959	426
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Right
Median Width(m)		0.0	0.0		10.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		1.6	1.6		1.6	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24			14	24	14
Sign Control		Yield	Yield		Yield	

#### Intersection Summary


















Area Type: Other

Control Type: Roundabout

Intersection Capacity Utilization 74.3%

ICU Level of Service D

Analysis Period (min) 15

												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	206	243	32	279	116	68	143	681	50	161	549	27
Future Volume (vph)	206	243	32	279	116	68	143	681	50	161	549	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		20.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.991				0.850		0.991			0.994	
Flt Protected		0.979			0.966			0.992			0.989	
Satd. Flow (prot)	0	1787	0	0	1779	1566	0	3441	0	0	3441	0
Flt Permitted		0.979			0.966			0.992			0.989	
Satd. Flow (perm)	0	1787	0	0	1779	1566	0	3441	0	0	3441	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		127.3			63.6			111.7			124.0	
Travel Time (s)		9.5			4.8			8.4			9.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	112%	112%	112%	112%	112%	112%	112%	112%	112%	112%	112%	112%
Adj. Flow (vph)	251	296	39	340	141	83	174	829	61	196	668	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	586	0	0	481	83	0	1064	0	0	897	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Right	Right	Right
Median Width(m)		0.0			0.0			4.0			1.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Yield			Yield			Yield			Yield	

## Intersection Summary












Area Type: Other

Control Type: Roundabout

Intersection Capacity Utilization 117.5%

ICU Level of Service H

Analysis Period (min) 15










						
Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations				 	 	
Traffic Volume (vph)	0	65	0	933	975	0
Future Volume (vph)	0	65	0	933	975	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1593	0	3500	3500	0
Flt Permitted						
Satd. Flow (perm)	0	1593	0	3500	3500	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	105.0			107.8	76.7	
Travel Time (s)	7.9			8.1	5.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	112%	112%	112%	112%	112%	112%
Adj. Flow (vph)	0	79	0	1136	1187	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	79	0	1136	1187	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Right
Median Width(m)	0.0			4.0	4.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24	14	24			14
Sign Control	Yield			Free	Free	

















#### Intersection Summary

Area Type: Other  
Control Type: Unsignalized  
Intersection Capacity Utilization 41.4% ICU Level of Service A  
Analysis Period (min) 15



Intersection				
Intersection Delay, s/veh	17.5			
Intersection LOS	C			
Approach	SE	NE	SW	
Entry Lanes	0	2	2	
Conflicting Circle Lanes	1	1	1	
Adj Approach Flow, veh/h	0	1136	1193	
Demand Flow Rate, veh/h	0	1158	1217	
Vehicles Circulating, veh/h	1186	0	18	
Vehicles Exiting, veh/h	49	1186	1140	
Ped Vol Crossing Leg, #/h	0	0	0	
Ped Cap Adj	1.000	1.000	1.000	
Approach Delay, s/veh	0.0	15.9	18.9	
Approach LOS	-	C	C	
Lane	Left	Right	Left	Right
Designated Moves	L	TR	LT	R
Assumed Moves	L	TR	LT	R
RT Channelized				
Lane Util	0.016	0.984	0.975	0.025
Follow-Up Headway, s	2.535	2.535	2.535	2.535
Critical Headway, s	4.544	4.544	4.544	4.544
Entry Flow, veh/h	18	1140	1186	31
Cap Entry Lane, veh/h	1420	1420	1397	1397
Entry HV Adj Factor	1.000	0.980	0.980	0.968
Flow Entry, veh/h	18	1118	1163	30
Cap Entry, veh/h	1420	1392	1370	1352
V/C Ratio	0.013	0.803	0.849	0.022
Control Delay, s/veh	2.6	16.1	19.4	2.8
LOS	A	C	C	A
95th %tile Queue, veh	0	10	12	0

















						
Lane Group	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	10	5	250	45	0	410
Future Volume (vph)	10	5	250	45	0	410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.955		0.977			
Flt Protected	0.968					
Satd. Flow (prot)	1703	0	3419	0	0	3500
Flt Permitted	0.968					
Satd. Flow (perm)	1703	0	3419	0	0	3500
Link Speed (k/h)	48		48			48
Link Distance (m)	105.0		114.3			85.5
Travel Time (s)	7.9		8.6			6.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	112%	112%	112%	112%	112%	112%
Adj. Flow (vph)	12	6	304	55	0	499
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	0	359	0	0	499
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24	14		14	24	
Sign Control	Yield		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	22.7%			ICU Level of Service A		
Analysis Period (min)	15					

												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	110	25	87	0	0	0	85	189	25	0	395	37
Future Volume (vph)	110	25	87	0	0	0	85	189	25	0	395	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	10.0		20.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95	0.95
Frt			0.850					0.988			0.987	
Flt Protected		0.961						0.986				
Satd. Flow (prot)	0	1770	1566	0	0	0	0	3409	0	0	3454	0
Flt Permitted		0.961						0.732				
Satd. Flow (perm)	0	1770	1566	0	0	0	0	2531	0	0	3454	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			106					25			26	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		73.5			111.2			79.8			123.6	
Travel Time (s)		5.5			8.3			6.0			9.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	112%	112%	112%	112%	112%	112%	112%	112%	112%	112%	112%	112%
Adj. Flow (vph)	134	30	106	0	0	0	103	230	30	0	481	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	164	106	0	0	0	0	363	0	0	526	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Turn Type	Perm	NA	Perm				Perm	NA			NA	
Protected Phases		6						4			8	
Permitted Phases	6		6				4					
Minimum Split (s)	22.5	22.5	22.5				22.5	22.5			22.5	
Total Split (s)	22.5	22.5	22.5				22.5	22.5			22.5	
Total Split (%)	50.0%	50.0%	50.0%				50.0%	50.0%			50.0%	
Maximum Green (s)	18.0	18.0	18.0				18.0	18.0			18.0	
Yellow Time (s)	3.5	3.5	3.5				3.5	3.5			3.5	
All-Red Time (s)	1.0	1.0	1.0				1.0	1.0			1.0	
Lost Time Adjust (s)		0.0	0.0					0.0			0.0	
Total Lost Time (s)		4.5	4.5					4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0	7.0				7.0	7.0			7.0	
Flash Dont Walk (s)	11.0	11.0	11.0				11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0	0				0	0			0	
Act Effct Green (s)		18.0	18.0					18.0			18.0	
Actuated g/C Ratio		0.40	0.40					0.40			0.40	
v/c Ratio		0.23	0.15					0.35			0.38	
Control Delay		10.1	3.1					10.0			10.0	
Queue Delay		0.0	0.0					0.0			0.0	
Total Delay		10.1	3.1					10.0			10.0	



Lanes, Volumes, Timings  
Intersectia 13: Str Artarilor & Str. Cuza Voda

Pasaj denivelat - Municipiul Bistrita  
Anexa 3

												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	210	152	45	120	120	20	85	75	35	10	185	3
Future Volume (vph)	210	152	45	120	120	20	85	75	35	10	185	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.985			0.990			0.976			0.998	
Flt Protected		0.975			0.977			0.979			0.998	
Satd. Flow (prot)	0	1769	0	0	1782	0	0	1760	0	0	1835	0
Flt Permitted		0.975			0.977			0.979			0.998	
Satd. Flow (perm)	0	1769	0	0	1782	0	0	1760	0	0	1835	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		111.0			73.5			271.2			122.5	
Travel Time (s)		8.3			5.5			20.3			9.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	112%	112%	112%	112%	112%	112%	112%	112%	112%	112%	112%	112%
Adj. Flow (vph)	256	185	55	146	146	24	103	91	43	12	225	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	496	0	0	316	0	0	237	0	0	241	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Yield			Free			Free			Yield	

Intersection Summary

















Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 66.9%

ICU Level of Service C

Analysis Period (min) 15

												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	5	141	214	15	200	55	15	5	201	20	20	5
Future Volume (vph)	5	141	214	15	200	55	15	5	201	20	20	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.920			0.972			0.877			0.985	
Flt Protected		0.999			0.997			0.997			0.978	
Satd. Flow (prot)	0	1693	0	0	1785	0	0	1611	0	0	1775	0
Flt Permitted		0.999			0.997			0.997			0.978	
Satd. Flow (perm)	0	1693	0	0	1785	0	0	1611	0	0	1775	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		213.1			112.3			127.2			98.0	
Travel Time (s)		16.0			8.4			9.5			7.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	112%	112%	112%	112%	112%	112%	112%	112%	112%	112%	112%	112%
Adj. Flow (vph)	6	172	261	18	243	67	18	6	245	24	24	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	439	0	0	328	0	0	269	0	0	54	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Yield			Yield	

**Intersection Summary**

Area Type: Other

Control Type: Unsignalized









Intersection Capacity Utilization 47.6%

ICU Level of Service A

Analysis Period (min) 15

Intersection						
Intersection Delay, s/veh	27.6					
Intersection LOS	D					
Approach	SE		NW		NE	
Entry Lanes	2		2		3	
Conflicting Circle Lanes	2		2		2	
Adj Approach Flow, veh/h	1542		615		0	
Demand Flow Rate, veh/h	1573		627		0	
Vehicles Circulating, veh/h	493		758		745	
Vehicles Exiting, veh/h	1192		1006		1321	
Ped Vol Crossing Leg, #/h	0		0		0	
Ped Cap Adj	1.000		1.000		1.000	
Approach Delay, s/veh	36.3		11.4		0.0	
Approach LOS	E		B		-	
Lane	Left	Right	Left	Right	Left	Right
Designated Moves	LT	R	LT	TR	LT	TR
Assumed Moves	LT	R	LT	TR	LT	TR
RT Channelized						
Lane Util	0.414	0.586	0.470	0.530	0.470	0.530
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	652	921	295	332	141	159
Cap Entry Lane, veh/h	858	934	672	746	378	437
Entry HV Adj Factor	0.980	0.980	0.980	0.981	0.981	0.981
Flow Entry, veh/h	639	903	289	326	138	156
Cap Entry, veh/h	841	916	658	732	370	429
V/C Ratio	0.760	0.986	0.439	0.445	0.373	0.363
Control Delay, s/veh	20.3	47.6	11.9	11.0	17.3	14.9
LOS	C	E	B	B	C	B
95th %tile Queue, veh	7	18	2	2	2	2



						
Lane Group	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	0	50	0	0	0	310
Future Volume (vph)	0	50	0	0	0	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1593	0	0	0	1842
Flt Permitted						
Satd. Flow (perm)	0	1593	0	0	0	1842
Link Speed (k/h)	48		48			48
Link Distance (m)	34.5		29.4			271.2
Travel Time (s)	2.6		2.2			20.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	112%	112%	112%	112%	112%	112%
Adj. Flow (vph)	0	61	0	0	0	377
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	61	0	0	0	377
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	0.0		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24	14		14	24	
Sign Control	Free		Stop			Free

#### Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 21.6%

ICU Level of Service A

Analysis Period (min) 15

### 1: Drumul Cetatii & Str. Tarpiului Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.0	0.1	63.4	12.4	26.9
Total Del/Veh (s)	3.4	13.8	90.9	112.2	64.3
Stop Del/Veh (s)	2.4	8.9	99.7	115.2	66.3
Stop/Veh	0.45	0.67	0.21	1.26	0.68
Avg Speed (kph)	11	23	6	10	10
HC Emissions (g)	1	9	43	46	99
CO Emissions (g)	19	150	641	905	1715
NOx Emissions (g)	3	20	42	96	161

### 2: Drumul Cetatii & Str. Subcetate Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.0	3.9	0.1	44.0	16.8
Total Del/Veh (s)	4.0	47.5	20.5	72.9	43.4
Stop Del/Veh (s)	1.7	49.2	14.3	79.4	43.6
Stop/Veh	0.38	0.43	0.84	0.22	0.50
Avg Speed (kph)	35	5	28	6	13
HC Emissions (g)	0	2	60	23	85
CO Emissions (g)	13	50	1117	357	1537
NOx Emissions (g)	1	4	152	23	181

### 3: Str. Garii & Bd. Decebal Performance by approach

Approach	SE	NW	SW	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	14.0	15.8	7.0	13.2
Stop Del/Veh (s)	12.2	13.5	4.3	10.9
Stop/Veh	0.34	0.78	0.33	0.55
Avg Speed (kph)	6	12	23	13
HC Emissions (g)	1	5	1	7
CO Emissions (g)	19	136	31	185
NOx Emissions (g)	3	17	4	24

### 4: Bd. Decebal/Str. Andrei Muresan & Str. Crinilor/Str. Ion Slavici Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	28.4	0.0	0.0	0.2	10.6
Total Del/Veh (s)	26.2	7.7	5.6	3.9	12.5
Stop Del/Veh (s)	27.1	3.0	2.1	0.5	10.4
Stop/Veh	0.44	0.64	0.29	0.14	0.32
Avg Speed (kph)	6	23	26	33	18
HC Emissions (g)	0	1	1	5	7
CO Emissions (g)	42	60	51	169	322
NOx Emissions (g)	3	6	5	17	31



9: Bd. Republicii & Str. Ursului Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.2	0.0	0.1	0.0
Total Del/Veh (s)	1.2	3.1	8.9	6.1
Stop Del/Veh (s)	0.4	0.0	2.1	1.2
Stop/Veh	0.19	0.01	0.45	0.26
Avg Speed (kph)	26	28	22	24
HC Emissions (g)	0	2	7	10
CO Emissions (g)	10	114	233	358
NOx Emissions (g)	1	12	32	46

10: Bd. Decebal & Str. Lalelelor Performance by approach

Approach	NW	NE	SW	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	1.6	4.4	0.1	1.6
Stop Del/Veh (s)	0.0	3.7	0.0	1.3
Stop/Veh	0.00	0.10	0.00	0.04
Avg Speed (kph)	26	27	46	35
HC Emissions (g)	0	1	3	4
CO Emissions (g)	1	84	52	137
NOx Emissions (g)	0	6	7	13

11: Bd. Decebal & Str. Zimbrului Performance by approach

Approach	NW	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.1	0.1	1.4	1.0
Stop Del/Veh (s)	0.0	0.0	0.3	0.2
Stop/Veh	0.00	0.00	0.00	0.00
Avg Speed (kph)	30	48	36	39
HC Emissions (g)	0	0	4	4
CO Emissions (g)	5	10	136	151
NOx Emissions (g)	0	1	13	15

12: Bd. Decebal & Str. Ursului/Str. Cuza Voda Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.1	0.0	0.1	0.0
Total Del/Veh (s)	8.6	9.4	8.9	9.0
Stop Del/Veh (s)	6.5	7.5	6.3	6.7
Stop/Veh	0.70	0.68	0.57	0.62
Avg Speed (kph)	15	17	21	19
HC Emissions (g)	1	0	2	4
CO Emissions (g)	33	7	111	152
NOx Emissions (g)	4	1	9	14



#### 17: Performance by approach

Approach	EB	SE	NW	All
Denied Del/Veh (s)	0.0	9.0	0.0	3.5
Total Del/Veh (s)	44.6	9.9	2.8	6.9
Stop Del/Veh (s)	45.0	9.1	1.4	5.8
Stop/Veh	0.57	0.14	0.13	0.15
Avg Speed (kph)	1	6	22	13
HC Emissions (g)	0	2	5	7
CO Emissions (g)	1	32	164	197
NOx Emissions (g)	0	3	19	21

#### 34: Str Artarilor Performance by approach

Approach	NW	SW	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	0.1	36.4	29.8
Stop Del/Veh (s)	0.0	33.8	27.6
Stop/Veh	0.00	0.41	0.33
Avg Speed (kph)	25	15	15
HC Emissions (g)	0	2	2
CO Emissions (g)	0	124	124
NOx Emissions (g)	0	9	9

#### 36: Performance by approach

Approach	SB	NE	All
Denied Del/Veh (s)	0.0	0.2	0.1
Total Del/Veh (s)	50.0	93.4	65.8
Stop Del/Veh (s)	49.6	91.3	64.8
Stop/Veh	0.19	0.67	0.36
Avg Speed (kph)	1	3	2
HC Emissions (g)	0	1	1
CO Emissions (g)	4	19	24
NOx Emissions (g)	0	2	2

#### Total Network Performance

Denied Del/Veh (s)	20.2
Total Del/Veh (s)	84.8
Stop Del/Veh (s)	77.4
Stop/Veh	1.68
Avg Speed (kph)	14
HC Emissions (g)	457
CO Emissions (g)	11789
NOx Emissions (g)	1248

Intersection: 4: Bd. Decebal/Str. Andrei Muresan & Str. Crinilor/Str. Ion Slavici

Movement	SE	SE	NW	NW	NE	NE	SW	SW
Directions Served	LT	R	LT	R	LT	TR	LT	TR
Maximum Queue (m)	51.4	32.5	8.4	7.5	22.9	11.3	16.2	15.6
Average Queue (m)	50.5	26.0	6.7	1.5	9.9	6.1	10.6	7.1
95th Queue (m)	52.2	47.4	12.2	6.5	22.1	14.4	15.2	17.3
Link Distance (m)	47.4		99.0		106.4	106.4	148.8	148.8
Upstream Blk Time (%)	27							
Queuing Penalty (veh)	200							
Storage Bay Dist (m)		30.0		30.0				
Storage Blk Time (%)	94	2						
Queuing Penalty (veh)	58	18						

Intersection: 5: Str. Garii & Bd. Republicii

Movement	SE	SE	NW	NW	NW	SW	SW	SW
Directions Served	LT	T	T	T	R	L	L	R
Maximum Queue (m)	64.9	29.4	41.2	30.7	18.0	79.8	91.1	32.5
Average Queue (m)	56.5	14.6	25.6	14.7	10.3	50.3	88.0	32.5
95th Queue (m)	81.4	27.6	47.3	31.3	24.1	89.6	92.4	32.5
Link Distance (m)	50.3	50.3	26.4	26.4		83.8	83.8	
Upstream Blk Time (%)	66		21	1		0	21	
Queuing Penalty (veh)	294		112	5		1	124	
Storage Bay Dist (m)					20.0			30.0
Storage Blk Time (%)				1	0		59	9
Queuing Penalty (veh)				4	1		231	42

Intersection: 6: Bd. Republicii/Str. 1 Decembrie & Str. Bistricioarei/Str. Crinilor

Movement	SE	NW	NW	NE	NE	SW	SW
Directions Served	LTR	LT	R	LT	TR	LT	TR
Maximum Queue (m)	112.2	53.0	22.5	21.7	15.7	117.7	115.3
Average Queue (m)	99.9	53.0	22.5	11.7	9.7	113.6	97.6
95th Queue (m)	119.6	53.0	22.5	19.9	18.9	121.4	128.7
Link Distance (m)	99.0	48.4		97.7	97.7	110.7	110.7
Upstream Blk Time (%)	14	53				43	3
Queuing Penalty (veh)	110	0				0	0
Storage Bay Dist (m)			20.0				
Storage Blk Time (%)		88	4				
Queuing Penalty (veh)		67	19				

Intersection: 10: Bd. Decebal & Str. Lalelelor

Movement

Directions Served  
Maximum Queue (m)  
Average Queue (m)  
95th Queue (m)  
Link Distance (m)  
Upstream Blk Time (%)  
Queuing Penalty (veh)  
Storage Bay Dist (m)  
Storage Blk Time (%)  
Queuing Penalty (veh)

Intersection: 11: Bd. Decebal & Str. Zimbrului

Movement

Directions Served  
Maximum Queue (m)  
Average Queue (m)  
95th Queue (m)  
Link Distance (m)  
Upstream Blk Time (%)  
Queuing Penalty (veh)  
Storage Bay Dist (m)  
Storage Blk Time (%)  
Queuing Penalty (veh)

Intersection: 12: Bd. Decebal & Str. Ursului/Str. Cuza Voda

Movement	SE	SE	NE	NE	SW	SW
Directions Served	LT	R	LT	TR	T	TR
Maximum Queue (m)	16.2	21.2	19.6	14.2	23.8	34.4
Average Queue (m)	14.1	9.3	10.8	10.6	16.1	25.5
95th Queue (m)	18.3	20.5	21.8	16.0	25.2	38.1
Link Distance (m)	58.7		64.8	64.8	106.4	106.4
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)		20.0				
Storage Blk Time (%)	0	0				
Queuing Penalty (veh)	0	0				



Intersection: 16: Bd. Independentei/Str. Gh. Sincai & Str. Alex. Odobescu/Str. Garii

Movement	SE	SE	NW	NW	NE	NE	NE	SW	SW
Directions Served	T	R	LT	T	L	L	R	LT	TR
Maximum Queue (m)	22.8	49.7	64.5	17.7	20.2	43.3	32.5	94.5	78.3
Average Queue (m)	16.7	34.4	32.1	13.7	16.1	32.5	22.0	46.8	33.7
95th Queue (m)	22.1	63.4	64.1	19.1	19.6	47.8	42.8	98.3	84.9
Link Distance (m)	26.4	26.4	54.1	54.1	68.8	68.8		127.9	127.9
Upstream Blk Time (%)	0	49	11						
Queuing Penalty (veh)	3	346	0						
Storage Bay Dist (m)							30.0		
Storage Blk Time (%)						7	1		
Queuing Penalty (veh)						16	4		

Intersection: 17:

Movement	EB	SE	B40	B41	B42
Directions Served	R	T	T	T	T
Maximum Queue (m)	8.4	32.4	48.7	36.3	92.1
Average Queue (m)	6.6	18.6	26.3	18.5	33.6
95th Queue (m)	12.1	37.7	62.0	43.9	102.0
Link Distance (m)	8.4	9.8	26.2	14.1	187.4
Upstream Blk Time (%)	52	44	42	38	
Queuing Penalty (veh)	100	281	266	241	
Storage Bay Dist (m)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 34: Str Artarilor

Movement	SW
Directions Served	T
Maximum Queue (m)	140.5
Average Queue (m)	36.9
95th Queue (m)	126.9
Link Distance (m)	260.5
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	