Appendix N

Study Preferred Alternative
Analysis Results

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Appendix N-1

Study Preferred Alternative
Analysis Results

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SR 303 Corridor Study
Study Preferred Alternative Analysis Results

Alternative	Safety	Non-Motorized	Traffic Operations	Transit	Right of Way	Economic Vitality	TOTAL
No Build	○	○	◕	◔	●	○	○
Traffic Management	◐	◔	●	◕	◕	◔	◐
Multi-modal	◔	◐	◐	●	◐	◐	◔
Boulevard	◕	◕	●	●	◔	●	●
Preferred	●	●	◕	◐	○	◕	◕

SR 303 Corridor Study
Study Preferred Alternative Analysis Results

Segment	Alternative	Cost	Safety		Non-Motorized			Traffic Operations			Transit		ROW		Economic Vitality		TOTAL	
			Total Crash Frequency	Crash Severity	Gaps	Obstructions	Walkability	Segment Delay	Person Mobility	Freight Access	Accessibility	Person Mobility	Property Impacts	Property Acquisitions	Adjacent Property Values	Access to Business	Rank Total	Rating
			Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank Total	Rating
1: Burwell to 16th	No Build		5	5	1	5	2	5	5	1	3	5	1	1	5	1	45	5
	Traffic Management	$	1	3	1	4	2	2	2	1	3	1	3	1	4	1	29	2
	Multi-modal	$$	4	4	1	2	1	4	4	1	1	4	2	3	2	1	34	4
	Boulevard	$$$	3	2	1	3	1	3	3	1	2	2	4	1	3	1	30	3
	Preferred		2	1	1	1	1	1	1	1	1	3	5	2	1	1	22	1
2: 16th to Sheridan	No Build		5	3	3	2	3	3	3	1	4	4	1	1	5	1	39	5
	Traffic Management	$	4	3	2	2	2	1	1	1	4	1	1	1	4	1	28	3
	Multi-modal	$$	3	4	1	1	1	5	5	1	2	3	2	1	3	1	33	4
	Boulevard	$$$	2	1	1	1	1	2	2	1	3	2	3	2	1	1	23	1
	Preferred		1	2	1	1	1	4	4	1	1	5	2	1	2	1	27	2
3: Sheridan to Riddell	No Build		5	5	1	3	4	3	3	1	3	5	1	1	5	2	42	4
	Traffic Management	$	4	4	1	3	4	2	2	1	3	3	2	1	4	2	36	3
	Multi-modal	$$	3	3	1	2	3	5	5	2	1	1	3	3	1	1	34	2
	Boulevard	$$$	2	1	1	1	2	1	1	2	2	2	5	2	2	1	25	1
	Preferred		1	2	1	2	1	4	4	2	1	4	4	4	3	1	34	2
4: Riddell to McWilliams	No Build		5	4	2	2	1	4	4	1	2	4	1	1	5	2	38	5
	Traffic Management	$	4	3	2	2	1	3	3	1	2	3	1	1	4	2	32	4
	Multi-modal	$$	3	3	1	1	1	2	2	1	1	2	1	1	3	2	24	2
	Boulevard	$$$	2	1	1	1	1	1	1	2	1	1	1	1	1	1	16	1
	Preferred		1	2	1	1	1	5	5	2	1	5	1	1	2	1	29	3
TOTAL	No Build		5	5	3	5	5	4	3	1	4	4	1	1	5	3	49	5
	Traffic Management	$	4	4	2	4	4	2	2	1	4	2	2	1	4	3	39	3
	Multi-modal	$$	3	3	1	2	3	5	5	2	2	3	3	3	3	2	40	4
	Boulevard	$$$	2	1	1	3	2	1	1	3	3	1	5	2	1	1	27	1
	Preferred		1	2	1	1	1	3	4	3	1	5	4	4	2	1	33	2

SR 303 Corridor Study
Study Preferred Alternative Analysis Results

Segment	Alternative	Cost	Safety		Non-Motorized			Traffic Operations			Transit		ROW		Economic Vitality		TOTAL	
			Total Crash Frequency	Crash Severity	Gaps	Obstructions	Walkability	Segment Delay	Person Mobility	Freight Access	Accessibility	Person Mobility	Property Impacts	Property Acquisitions	Adjacent Property Values	Access to Business		
			Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rating	Rating
1: Burwell to 16th	No Build		○	○	●	○	◑	○	○	●	◑	○	●	●	○	●	5	○
	Traffic Management	$	●	◑	●	◔	◑	◑	◑	●	◑	●	◑	●	◔	●	2	◑
	Multi-modal	$$	◕	◕	●	◕	●	◕	◕	●	●	◕	◔	◑	◔	●	4	◔
	Boulevard	$$$	◑	◕	●	◑	●	◑	◕	●	◕	◕	◔	●	◔	●	3	◑
	Preferred		◕	●	●	◑	●	●	●	●	●	◑	○	◕	●	●	1	●
2: 16th to Sheridan	No Build		○	◑	◑	◕	◑	◑	◑	●	◔	◕	●	●	○	●	5	○
	Traffic Management	$	◔	◑	◕	◕	◕	●	●	●	◔	●	●	●	◔	●	3	◑
	Multi-modal	$$	◑	◕	●	●	●	○	○	●	◑	◕	◕	●	◑	●	4	◔
	Boulevard	$$$	◕	◑	●	●	●	◕	●	●	●	◕	◕	●	◕	●	1	●
	Preferred		●	◑	●	●	●	◔	◔	●	●	○	◕	●	◕	●	2	◕
3: Sheridan to Riddell	No Build		○	○	●	◑	◔	◑	◑	●	◑	○	●	●	○	◕	4	◔
	Traffic Management	$	◔	◔	●	◑	◔	◕	◕	●	◑	◑	●	●	◔	◕	3	◑
	Multi-modal	$$	◑	◑	●	●	◑	○	○	◕	●	●	◑	◑	●	●	2	◕
	Boulevard	$$$	◕	●	●	●	◕	◕	◕	●	◕	◕	○	◕	◑	●	1	●
	Preferred		●	◕	●	●	◕	◔	◔	●	●	◕	◔	◔	◑	●	2	◕
4: Riddell to McWilliams	No Build		○	◕	◕	◕	●	◔	◔	●	◑	◕	●	●	○	◕	5	○
	Traffic Management	$	◔	◑	◕	◕	●	◑	◑	●	◑	◑	●	●	◕	◕	4	◔
	Multi-modal	$$	◑	◑	●	●	●	◕	◕	●	●	◕	●	●	◔	◕	2	◕
	Boulevard	$$$	◕	◕	●	●	●	●	◕	●	●	●	●	●	●	●	1	●
	Preferred		●	◕	●	●	●	○	○	◕	●	○	●	●	●	●	3	◑
TOTAL	No Build		○	○	◑	○	○	◔	◑	●	◔	◔	●	●	○	◑	5	○
	Traffic Management	$	◔	◔	◕	◔	◔	◕	◕	●	◔	◕	◕	●	◔	◑	3	◑
	Multi-modal	$$	◑	◑	●	◕	◑	○	○	◕	◕	◑	◑	◑	◑	◕	4	◔
	Boulevard	$$$	◕	●	●	◑	◑	●	●	◑	◔	●	○	◕	●	●	1	●
	Preferred		●	◕	●	●	●	◑	◔	◑	●	○	◔	◔	◕	●	2	◕

SR 303 Corridor Study
Study Preferred Alternative Analysis Results

Segment	Alternative	ID #	Improvement Description	Safety		Non-Motorized			Traffic Operations			Transit		ROW		Economic Vitality	
				Total Crash Frequency	Crash Severity	Gaps	Obstructions	Walkability	Segment Delay	Person Mobility	Freight Access	Accessibility	Person Mobility	Property Impacts	Property Acquisitions	Adjacent Property Values	Access to Business
1	Preferred		Full Corridor: Transit Signal Priority	-	-	0	0	0	-	-	0	0	-	0	0	5	0
			Full Corridor: Underground utilities (except for lighting)	-	-	0	-40	0	-	-	0	0	-	0	0	2.5	0
			Full Corridor: Install ped lighting	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
			Full Corridor: Improve wayfinding and placemaking	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
			Burwell Street: Convert northbound approach to RIRO	-	-	0	0	0	-	-	0	0	-	0	0	2	0
			5th to 6th: Remove center median	-	-	0	0	0	-	-	0	0	-	74	0	0	0
			6th to 11th: Install new pedestrian crossing with ped button	-	-	0	0	1	-	-	0	1	-	0	0	0	0
			6th to 11th: Reduce gaps in transit stops	-	-	0	0	0	-	-	0	1	-	0	0	5	0
			11th: Convert signal to roundabout	-	-	0	-9	0	-	-	0	0	-	0	2,702	4.5	0
			13th to 16th: Widen sidewalks to 10' on west side	-	-	0	0	0	-	-	0	1	-	415	0	0	0
			13th to 16th: Relocate bus stops to intersections	-	-	0	0	0	-	-	0	1	-	0	0	5	0
			16th: Extend northbound left turn lane pocket	-	-	0	0	0	-	-	0	0	-	159	0	0	0
			TOTAL	-9.2	-5.7	0	-49	1	-101	10.3	0	4	0.4	648	2,702	29	0

Segment	Alternative	ID #	Improvement Description	Safety		Non-Motorized			Traffic Operations			Transit		ROW		Economic Vitality	
				Total Crash Frequency	Crash Severity	Gaps	Obstructions	Walkability	Segment Delay	Person Mobility	Freight Access	Accessibility	Person Mobility	Property Impacts	Property Acquisitions	Adjacent Property Values	Access to Business
2	Preferred		Full Corridor: Transit Signal Priority	-	-	0	0	0	-	-	0	0	-	0	0	5	0
			Full Corridor: Underground utilities (except for lighting)	-	-	0	-1	0	-	-	0	0	-	0	0	2.5	0
			Full Corridor: Install ped lighting	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
			Full Corridor: Improve wayfinding and placemaking	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
			18th Street: Install shared-use path along new tunnel undercrossing	-	-	0	0	0	-	-	0	0	-	0	0	0	0
			Warren Ave Bridge: Improve non-motorized connection off of Warren Ave Bridge to 18th	-	-	-50	0	0	-	-	0	0	-	0	0	0	0
			Warren Ave Bridge: Install cycle track on both sides	-	-	0	0	0	-	-	0	0	-	0	0	0	0
			Warren Ave Bridge: Install viewpoint on both sides	-	-	0	0	0	-	-	0	0	-	0	0	0	0
			Warren Ave Bridge: Install Type 2 center barrier	-	-	0	0	0	-	-	0	0	-	0	0	0	0
			Callahan Drive: Widen and complete sidewalks near intersection (with buffer)	-	-	0	-11	0	-	-	0	1	-	147	0	0	0
			Callahan Drive: Convert interchange to roundabout	-	-	0	0	2	-	-	0	1	-	0	0	4.5	0
			Callahan Drive: Install shared-use path along tunnel undercrossing	-	-	-1,650	0	1	-	-	0	0	-	0	0	0	0
			Callahan to Fuson: Complete bicycle connection to Almira Dr	-	-	0	0	0	-	-	0	0	-	0	0	0	0
			Callahan to Hollis: Add northbound BAT lane	-	-	0	0	0	-	-	0	1	-	0	0	5	0
			Callahan to Sheridan: median control	-	-	0	0	0	-	-	0	0	-	0	0	1.5	0
			Sheridan Road: Install southbound u-turn	-	-	0	0	0	-	-	0	0	-	0	0	0	0
			TOTAL	**-3.4**	**-3.0**	**-1,700**	**-12**	**3**	**57**	**11.5**	**0**	**3**	**0.6**	**147**	**0**	**24**	**0**

Segment	Alternative	ID #	Improvement Description	Safety		Non-Motorized			Traffic Operations			Transit		ROW		Economic Vitality	
				Total Crash Frequency	Crash Severity	Gaps	Obstructions	Walkability	Segment Delay	Person Mobility	Freight Access	Accessibility	Person Mobility	Property Impacts	Property Acquisitions	Adjacent Property Values	Access to Business
3	Preferred		Full Corridor: Transit Signal Priority	-	-	0	0	0	-	-	0	0	-	0	0	5	0
			Full Corridor: Underground utilities (except for lighting)	-	-	0	-12	0	-	-	0	0	-	0	0	2.5	0
			Full Corridor: Install ped lighting	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
			Full Corridor: Improve wayfinding and placemaking	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
			North End: Widen sidewalks to 10' on both sides (with buffer)	-	-	0	-10	0	-	-	0	1	-	1,084	6,891	0	0
			North End: Median control along blocks	-	-	0	0	0	-	-	3	0	-	0	0	1.5	1
			Sheridan to Hollis: Add northbound BAT lane, replace TWLTL with median	-	-	0	0	0	-	-	0	1	-	0	0	5	0
			Sheridan to Sylvan: Improve pedestrian connectivity from neighborhoods to transit	-	-	0	0	0	-	-	0	1	-	0	0	5	0
			Dibb Street: Install new ped crossing with ped button	-	-	0	0	2	-	-	0	1	-	0	0	0	0
			Sylvan Way: Install northbound and southbound u-turns	-	-	0	0	0	-	-	0	0	-	91	0	0	0
			Sylvan to NE Riddell: Improve pedestrian connectivity from neighborhoods to transit	-	-	0	0	0	-	-	0	1	-	0	0	5	0
			Pearl Street: Install new ped crossing with ped button	-	-	0	0	2	-	-	0	1	-	0	0	0	0
			E Broad Street: Improve pedestrian connectivity from neighborhoods to Wheaton Way TC	-	-	0	0	0	-	-	0	1	-	604	0	0	0
			Hollis Street: Install northbound and southbound u-turns	-	-	0	0	0	-	-	0	0	-	99	0	2	0
			Hollis to NE Riddell: Install new ped crossing with ped button	-	-	0	0	2	-	-	0	1	-	0	0	0	0
			NE Riddell Road: Convert signal to roundabout	-	-	0	0	0	-	-	0	1	-	536	0	4.5	0
			TOTAL	-44.0	-14.2	0	-22	6	3	9.2	3	9	0.2	2,414	6,891	36	1
4	Preferred		Full Corridor: Transit Signal Priority	-	-	0	0	0	-	-	0	0	-	0	0	5	0
			Full Corridor: Underground utilities (except for lighting)	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
			Full Corridor: Install ped lighting	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
			Full Corridor: Improve wayfinding and placemaking	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
			North End: Widen sidewalks to 10' on both sides (with buffer)	-	-	0	-1	0	-	-	0	1	-	0	0	0	0
			North End: Median control along blocks	-	-	0	0	0	-	-	1	0	-	0	0	1.5	1
			Riddell to McWilliams: Complete sidewalks on east and west sides	-	-	-5,000	0	0	-	-	0	0	-	0	0	0	0
			NE Furneys Ln: install northbound and southbound u-turns	-	-	0	0	0	-	-	0	0	-	0	0	2	0
			NE Fuson Rd: install northbound and southbound u-turns	-	-	0	0	0	-	-	0	0	-	0	0	2	0
			Designate Almira Dr and NE Fuson Rd as bicycle routes	-	-	0	0	0	-	-	0	0	-	0	0	2	0
			Designate Pine Rd NE as bicycle route	-	-	0	0	0	-	-	0	0	-	0	0	0	0
			TOTAL	-24.4	-7.0	-5,000	-1	0	19	9.1	1	1	0.4	0	0	20	1

Segment	Alternative	Intersection	Improvement Description	Safety															
				Total Crash Frequency								**Crash Severity**							
				No Build Crash Rate (KABCO)	HSM Rate	CMF 1	CMF 2	Notes	Build Crash Rate	Change	Rounded	No Build Crash Rate (KABC)	HSM Rate	CMF 1	CMF 2	Notes	Build Crash Rate (KABC)	Change	Rounded
1	Preferred	Burwell (SR 304)	Burwell Street: Convert northbound approach to RIRO, TSP	**5.4**	**3.9**	**0.87**	**1.00**	*#9664 (Implement TSP)*	**3.4**	**-2.0**		**1.9**	**1.3**	**0.95**	**1.00**	*#9820 (Implement TSP)*	**1.2**	**-0.7**	
			remove center median between 5th and 6th, underground utilties	1.3	1.0	1.00	1.00		1.0	-0.3		0.4	0.3	1.00	1.00		0.3	-0.1	
		6th Street	TSP	**5.9**	**5.9**	**0.87**	**1.00**	*#9664 (Implement TSP)*	**5.1**	**-0.8**		**2.1**	**2.1**	**0.95**	**1.00**	*#9820 (Implement TSP)*	**2.0**	**-0.1**	
			new ped crossing, new bus stops, underground utilties	5.7	4.0	1.00	1.00		4.0	-1.7		1.9	1.3	1.00	1.00		1.3	-0.6	
		11th Street	11th: Convert signal to roundabout	**13.3**	**13.4**	**1.00**	**1.00**	*#4252 (Sig to RAB) - use 1.0 for AADT>18,000*	**13.4**	**0.1**		**4.9**	**5.0**	**0.34**	**1.00**	*#4253 (Sig to RAB)*	**1.7**	**-3.2**	
			widen and complete sidewalks on west side, underground utilties	2.9	2.4	1.00	1.00		2.4	-0.5		0.9	0.7	1.00	1.00		0.7	-0.2	
		13th Street	TSP	**15.9**	**15.9**	**0.87**	**1.00**	*#9664 (Implement TSP)*	**13.8**	**-2.1**		**6.0**	**6.0**	**0.95**	**1.00**	*#9820 (Implement TSP)*	**5.7**	**-0.3**	
			relocate bus stops, underground utilties	6.0	5.1	1.00	1.00		5.1	-0.9		2.0	1.6	1.00	1.00		1.6	-0.4	
		16th Street	TSP	**8.4**	**8.4**	**0.87**	**1.00**	*#9664 (Implement TSP)*	**7.3**	**-1.1**		**2.7**	**2.7**	**0.95**	**1.00**	*#9820 (Implement TSP)*	**2.6**	**-0.1**	
			TOTAL	64.8					55.6	-9.2	-9	22.8					17.1	-5.7	-6
2	Preferred		widen and complete sidewalks, underground utilities	10.4	10.4	0.89	0.80	*#2375 (Install curb and gutter) #351 (RIRO)*	7.4	-3.0		2.8	2.9	0.64	1.00	*#353 (RIRO)*	1.9	-0.9	
		Callahan Drive	Callahan Drive: Roundabout	7.4	**8.9**	**1.00**	**1.00**	*#4252 (Sig to RAB) - use 1.0 for AADT>18,000*	**8.9**	**1.5**		**2.7**	**3.3**	**0.34**	**1.00**	*#4253 (Sig to RAB)*	**1.1**	**-1.6**	
			widen and complete sidewalks, median, BAT lane, underground utilties	3.0	2.9	0.89	0.80	*#2375 (Install curb and gutter) #351 (RIRO)*	2.1	-0.9		0.9	0.8	0.64	1.00	*#353 (RIRO)*	0.5	-0.4	
		Sheridan Road	Sheridan Road: Install southbound u-turn	**8.3**	**8.4**	**0.87**	**1.00**	*#9664 (Implement TSP)*	**7.3**	**-1.0**		**3.1**	**3.2**	**0.95**	**1.00**	*#9820 (Implement TSP)*	**3.0**	**-0.1**	
			TOTAL	29.1					25.7	-3.4	-3	9.5					6.5	-3.0	-3

Segment	Alternative	Intersection	Improvement Description	Total Crash Frequency								Crash Severity							
				No Build Crash Rate (KABCO)	HSM Rate	CMF 1	CMF 2	Notes	Build Crash Rate	Change	Rounded	No Build Crash Rate (KABC)	HSM Rate	CMF 1	CMF 2	Notes	Build Crash Rate (KABC)	Change	Rounded
3	Preferred		BAT lane, new ped crossing at Dibb, median, widen sidewalks, underground utilties	21.4	8.8	0.80	1.00	*#351 (RIRO)*	7.0	-14.4		6.7	2.8	0.64	1.00	*#353 (RIRO)*	1.8	-4.9	
		Sylvan Road	Sylvan Way: Install northbound and southbound u-turns, TSP with BAT lane	**8.1**	**8.9**	**0.87**	**1.00**	**#9664 (Implement TSP)**	**7.7**	**-0.4**		**3.1**	**3.4**	**0.95**	**1.00**	**#9820 (Implement TSP)**	**3.2**	**0.1**	
			BAT lane, new crossing at Pearl, median, widen sidewalks, underground utilties	20.7	7.3	0.80	1.00	*#351 (RIRO)*	5.8	-14.9		6.5	2.3	0.64	1.00	*#353 (RIRO)*	1.5	-5.0	
		E Broad Street	TSP with BAT lane	**7.8**	**8.4**	**0.87**	**1.00**	**#9664 (Implement TSP)**	**7.3**	**-0.5**		**2.9**	**3.2**	**0.95**	**1.00**	**#9820 (Implement TSP)**	**3.0**	**0.1**	
			BAT lane, widen sidewalks, underground utilities	5.0	2.4	0.80	1.00	*#351 (RIRO)*	1.9	-3.1		1.6	0.8	0.64	1.00	*#353 (RIRO)*	0.5	-1.1	
		Hollis Street	Hollis Street: Install northbound and southbound u-turns, TSP	**4.5**	**4.7**	**0.87**	**1.00**	**#9664 (Implement TSP)**	**4.1**	**-0.4**		**1.6**	**1.6**	**0.95**	**1.00**	**#9820 (Implement TSP)**	**1.5**	**-0.1**	
			new crossing, median, widen sidewalks, underground utilties	13.4	4.9	0.80	1.00	*#351 (RIRO)*	3.9	-9.5		4.2	1.5	0.64	1.00	*#353 (RIRO)*	1.0	-3.2	
		NE Riddell Road	NE Riddell Road: Convert signal to roundabout	**7.3**	**7.3**	**0.87**	**1.00**	**#9664 (Implement TSP)**	**6.4**	**-0.9**		**2.7**	**2.7**	**0.95**	**1.00**	**#9820 (Implement TSP)**	**2.6**	**-0.1**	
			TOTAL	**88.2**					**44.2**	**-44.0**	**-44**	**29.3**					**15.1**	**-14.2**	**-14**
4	Preferred		median, widen and complete sidewalks (add curb), underground utilties	9.2	3.7	0.89	0.80	*#2375 (Install curb and gutter) #351 (RIRO)*	2.6	-6.6		2.9	1.2	0.64	1.00	*#353 (RIRO)*	0.8	-2.1	
		NE Furneys Lane	NE Furneys Ln: install northbound and southbound u-turns, TSP	**7.8**	**7.8**	**0.87**	**1.00**	**#9664 (Implement TSP)**	**6.8**	**-1.0**		**2.9**	**2.9**	**0.95**	**1.00**	**#9820 (Implement TSP)**	**2.8**	**-0.1**	
			median, widen and complete sidewalks (add curb), underground utilties	8.2	3.6	0.89	0.80	*#2375 (Install curb and gutter) #351 (RIRO)*	2.6	-5.6		2.3	1.0	0.64	1.00	*#353 (RIRO)*	0.6	-1.7	
		NE Fuson Road	NE Fuson Rd: install northbound and southbound u-turns, TSP	**7.8**	**7.8**	**0.87**	**1.00**	**#9664 (Implement TSP)**	**6.8**	**-1.0**		**2.9**	**2.9**	**0.95**	**1.00**	**#9820 (Implement TSP)**	**2.8**	**-0.1**	
			median, widen and complete sidewalks (add curb), underground utilties	14.0	6.7	0.89	0.80	*#2375 (Install curb and gutter) #351 (RIRO)*	4.8	-9.2		3.9	1.8	0.64	1.00	*#353 (RIRO)*	1.2	-2.7	
		NE McWilliams Road	NE McWilliams Road: install northbound and southbound u-turns, TSP	**7.5**	**7.5**	**0.87**	**1.00**	**#9664 (Implement TSP)**	**6.5**	**-1.0**		**2.9**	**2.9**	**0.95**	**1.00**	**#9820 (Implement TSP)**	**2.8**	**-0.1**	
			TOTAL	**54.5**					**30.1**	**-24.4**	**-24**	**17.8**					**10.8**	**-7.0**	**-7**

SR 303 Corridor Study
Study Preferred Alternative Analysis Results - Non-Motorized Metrics

Segment	Alternative	ID #	Improvement Description	Non-Motorized						
				Gaps		Obstructions			Walkability	
				Reduction in NB/SB Gap (ft)	Notes	Reduction in # of Obstructions	Notes	Rounded	Change in # of crossings across SR 303	Notes
1	Preferred		Full Corridor: Transit Signal Priority	0		0			0	
			Full Corridor: Underground utilities (except for lighting)	0		-40	utility poles, guy wires		0	
			Full Corridor: Install ped lighting	0		0			0	
			Full Corridor: Improve wayfinding and placemaking	0		0			0	
			Burwell Street: Convert northbound approach to RIRO	0		0			0	
			5th to 6th: Remove center median	0		0			0	
			6th to 11th: Install new pedestrian crossing with ped button	0		0			1	1 new crossing
			6th to 11th: Reduce gaps in transit stops	0		0			0	
			11th: Convert signal to roundabout	0		-9			0	
			13th to 16th: Widen sidewalks to 10' on west side	0		0			0	
			13th to 16th: Relocate bus stops to intersections	0		0			0	
			16th: Extend northbound left turn lane pocket	0		0			0	
			TOTAL	**0**		**-49**		**-50**	**1**	

SR 303 Corridor Study
Study Preferred Alternative Analysis Results - Non-Motorized Metrics

Segment	Alternative	ID #	Improvement Description	Non-Motorized						
				Gaps		Obstructions			Walkability	
				Reduction in NB/SB Gap (ft)	Notes	Reduction in # of Obstructions	Notes	Rounded	Change in # of crossings across SR 303	Notes
2	Preferred		Full Corridor: Transit Signal Priority	0		0			0	
			Full Corridor: Underground utilities (except for lighting)	0		-1	utility poles, guy wires		0	
			Full Corridor: Install ped lighting	0		0			0	
			Full Corridor: Improve wayfinding and placemaking	0		0			0	
			18th Street: Install shared-use path along new tunnel undercrossing	0		0			0	
			Warren Ave Bridge: Improve non-motorized connection off of Warren Ave Bridge to 18th	-50		0			0	
			Warren Ave Bridge: Install cycle track on both sides	0		0			0	
			Warren Ave Bridge: Install viewpoint on both sides	0		0			0	
			Warren Ave Bridge: Install Type 2 center barrier	0		0			0	
			Callahan Drive: Widen and complete sidewalks near intersection (with buffer)	0		-11	remove sidewalk obstructions		0	
			Callahan Drive: Convert interchange to roundabout	0		0			2	2 new legs
			Callahan Drive: Install shared-use path along tunnel undercrossing	-1,650		0			1	1 new crossing
			Callahan to Fuson: Complete bicycle connection to Almira Dr	0		0			0	
			Callahan to Hollis: Add northbound BAT lane	0		0			0	
			Callahan to Sheridan: median control	0		0			0	
			Sheridan Road: Install southbound u-turn	0		0			0	
			TOTAL	**-1,700**		**-12**		**-10**	**3**	

Segment	Alternative	ID #	Improvement Description	Non-Motorized						
				Gaps		Obstructions			Walkability	
				Reduction in NB/SB Gap (ft)	Notes	Reduction in # of Obstructions	Notes	Rounded	Change in # of crossings across SR 303	Notes
3	Preferred		Full Corridor: Transit Signal Priority	0		0			0	
			Full Corridor: Underground utilities (except for lighting)	0		-12	utility poles, guy wires		0	
			Full Corridor: Install ped lighting	0		0			0	
			Full Corridor: Improve wayfinding and placemaking	0		0			0	
			North End: Widen sidewalks to 10' on both sides (with buffer)	0		-10	remove all but signals		0	
			North End: Median control along blocks	0		0			0	
			Sheridan to Hollis: Add northbound BAT lane, replace TWLTL with median	0		0			0	
			Sheridan to Sylvan: Improve pedestrian connectivity from neighborhoods to transit	0		0			0	
			Dibb Street: Install new ped crossing with ped button	0		0			2	2 new crossings
			Sylvan Way: Install northbound and southbound u-turns	0		0			0	
			Sylvan to NE Riddell: Improve pedestrian connectivity from neighborhoods to transit	0		0			0	
			Pearl Street: Install new ped crossing with ped button	0		0			2	2 new crossings
			E Broad Street: Improve pedestrian connectivity from neighborhoods to Wheaton Way TC	0		0			0	
			Hollis Street: Install northbound and southbound u-turns	0		0			0	
			Hollis to NE Riddell: Install new ped crossing with ped button	0		0			2	2 new crossings
			NE Riddell Road: Convert signal to roundabout	0		0			0	
			TOTAL	**0**		**-22**		**-20**	**6**	
4	Preferred		Full Corridor: Transit Signal Priority	0		0			0	
			Full Corridor: Underground utilities (except for lighting)	0		0			0	
			Full Corridor: Install ped lighting	0		0			0	
			Full Corridor: Improve wayfinding and placemaking	0		0			0	
			North End: Widen sidewalks to 10' on both sides (with buffer)	0		-1	remove all but signals		0	
			North End: Median control along blocks	0		0			0	
			Riddell to McWilliams: Complete sidewalks on east and west sides	-5,000		0			0	
			NE Furneys Ln: install northbound and southbound u-turns	0		0			0	
			NE Fuson Rd: install northbound and southbound u-turns	0		0			0	
			NE McWilliams Road: install northbound and southbound u-turns							
			Designate Almira Dr and NE Fuson Rd as bicycle routes	0		0			0	
			Designate Pine Rd NE as bicycle route	0		0			0	
			TOTAL	**-5,000**		**-1**		**0**	**0**	

Segment	Alternative	Intersection	Improvement Description	Traffic Operations						Transit					
				Segment Delay (GP)						Transit Delay					
				No Build Travel Time (s)	Ops Travel Time (s)	Build Travel Time (s)	Rounded	Change in Travel Time (s)	Rounded	No Build Transit Travel Time (s)	Ops Transit Travel Time (s)	Build Transit Travel Time (s)	Rounded	Change in Travel Time (s)	Rounded
1	Preferred	Burwell (SR 304)	Burwell Street: Convert northbound approach to RIRO, TSP	85	55	51		-34		85		51		-34	
				22		22		0		52		52		0	
		6th Street	TSP	25	26	24		-1		25		24		-1	
			new ped crossing, new bus stop	33		33		0		33		63		30	
		11th Street	11th: Convert signal to roundabout	118	34	34		-84		118		34		-84	
				17		17		0		17		17		0	
		13th Street	TSP	67	87	80		13		67		80		13	
				26		26		0		56		56		0	
		16th Street	TSP	9	16	15		6		9		15		6	
			TOTAL	402		301	300	-101	-100	462		391	390	-71	-70
2	Preferred			75		75		0		75		75		0	
		Callahan Drive	Callahan Drive: Roundabout	0	7	7		7		0		7		7	
				24		24		0		24		24		0	
		Sheridan Road	Sheridan Road: Install southbound u-turn, TSP	93	155	143		50		93		143		50	
			TOTAL	192		249	250	57	60	192		249	250	57	60

Segment	Alternative	Intersection	Improvement Description	Traffic Operations						Transit					
				Segment Delay (GP)						Transit Delay					
				No Build Travel Time (s)	Ops Travel Time (s)	Build Travel Time (s)	Rounded	Change in Travel Time (s)	Rounded	No Build Transit Travel Time (s)	Ops Transit Travel Time (s)	Build Transit Travel Time (s)	Rounded	Change in Travel Time (s)	Rounded
3	Preferred		BAT lane	64		64		0		124		124		0	
		Sylvan Road	Sylvan Way: Install northbound and southbound u-turns, TSP with BAT lane	16	51	47		31		16		47		31	
			BAT lane	50		50		0		80		80		0	
		E Broad Street	TSP with BAT lane	9	48	44		35		243	189.2	249		6	
			BAT lane	13		13		0		13		13		0	
		Hollis Street	Hollis Street: Install northbound and southbound u-turns, TSP	4	7	6		2		4		6		2	
				38		38		0		68		68		0	
		NE Riddell Road	NE Riddell Road: Convert signal to roundabout	79	13	13		-66		79		13		-66	
			TOTAL	**273**		**276**	**280**	**3**	**0**	**627**		**601**	**600**	**-26**	**-30**
4	Preferred			28		28		0		58		58		0	
		NE Furneys Lane	NE Furneys Ln: install northbound and southbound u-turns, TSP	52	83	76		24		52		76		24	
				29		29		0		29		29		0	
		NE Fuson Road	NE Fuson Rd: install northbound and southbound u-turns, TSP	13	10	9		-4		13		9		-4	
				47		47		0		77		77		0	
		NE McWilliams Road	NE McWilliams Road: install northbound and southbound u-turns, TSP	71	76	70		-1		71		70		-1	
			TOTAL	**240**		**259**	**260**	**19**	**20**	**300**		**319**	**320**	**19**	**20**

SR 303 Corridor Study
Study Preferred Alternative Analysis Results - Traffic Operations and Transit Metrics

Segment	Alternative	Improvement Description	Total Corridor Vehicle Trips	% by Mode		AVO		People by Mode		Travel Time by Mode (sec)		Person Mobility (person/sec)		Traffic Operations Person Mobility	Transit Person Mobility
				GP	Transit	GP	Transit	GP	Transit	GP	Transit	GP	Transit	GP	Transit
1	Preferred	TSP, RAB	2,765	99.6%	0.4%	1.13	15.00	3,112	166	301	391	10.3	0.42	10	0.40
2	Preferred	TSP, RAB	2,530	99.6%	0.4%	1.13	15.00	2,847	152	249	249	11.5	0.61	11	0.60
3	Preferred	TSP, RAB	2,240	99.6%	0.4%	1.13	15.00	2,521	134	276	601	9.2	0.22	9	0.20
4	Preferred	TSP	2,095	99.6%	0.4%	1.13	15.00	2,358	126	259	319	9.1	0.39	9	0.40

Segment	Alternative	ID #	Improvement Description	Traffic Operations		
				Freight Access		
					Notes	
1	Preferred		Full Corridor: Transit Signal Priority			0
			Full Corridor: Underground utilities (except for lighting)			0
			Full Corridor: Install ped lighting			0
			Full Corridor: Improve wayfinding and placemaking			0
			Burwell Street: Convert northbound approach to RIRO			0
			5th to 6th: Remove center median			0
			6th to 11th: Install new pedestrian crossing with ped button			0
			6th to 11th: Reduce gaps in transit stops			0
			11th: Convert signal to roundabout			0
			13th to 16th: Widen sidewalks to 10' on west side			0
			13th to 16th: Relocate bus stops to intersections			0
			16th: Extend northbound left turn lane pocket			0
			TOTAL	**0**		**0**

Segment	Alternative	ID #	Improvement Description	Traffic Operations		
				Freight Access		
					Notes	
2	Preferred		Full Corridor: Transit Signal Priority			0
			Full Corridor: Underground utilities (except for lighting)			0
			Full Corridor: Install ped lighting			0
			Full Corridor: Improve wayfinding and placemaking			0
			18th Street: Install shared-use path along new tunnel undercrossing			0
			Warren Ave Bridge: Improve non-motorized connection off of Warren Ave Bridge to 18th			0
			Warren Ave Bridge: Install cycle track on both sides			0
			Warren Ave Bridge: Install viewpoint on both sides			0
			Warren Ave Bridge: Install Type 2 center barrier			0
			Callahan Drive: Widen and complete sidewalks near intersection (with buffer)			0
			Callahan Drive: Convert interchange to roundabout		*Potential benefit for freight*	0
			Callahan Drive: Install shared-use path along tunnel undercrossing			0
			Callahan to Fuson: Complete bicycle connection to Almira Dr			0
			Callahan to Hollis: Add northbound BAT lane			0
			Callahan to Sheridan: median control			0
			Sheridan Road: Install southbound u-turn			0
			TOTAL	**0**		**0**

Segment	Alternative	ID #	Improvement Description	Traffic Operations		
				Freight Access		
					Notes	
3	Preferred		Full Corridor: Transit Signal Priority			0
			Full Corridor: Underground utilities (except for lighting)			0
			Full Corridor: Install ped lighting			0
			Full Corridor: Improve wayfinding and placemaking			0
			North End: Widen sidewalks to 10' on both sides (with buffer)			0
			North End: Median control along blocks	3	Ent/exits at Saar's, Pearl, Harrison Support	3
			Sheridan to Hollis: Add northbound BAT lane, replace TWLTL with median			0
			Sheridan to Sylvan: Improve pedestrian connectivity from neighborhoods to transit			0
			Dibb Street: Install new ped crossing with ped button			0
			Sylvan Way: Install northbound and southbound u-turns			0
			Sylvan to NE Riddell: Improve pedestrian connectivity from neighborhoods to transit			0
			Pearl Street: Install new ped crossing with ped button			0
			E Broad Street: Improve pedestrian connectivity from neighborhoods to Wheaton Way TC			0
			Hollis Street: Install northbound and southbound u-turns			0
			Hollis to NE Riddell: Install new ped crossing with ped button			0
			NE Riddell Road: Convert signal to roundabout			0
			TOTAL	**3**		**3**
4	Preferred		Full Corridor: Transit Signal Priority			0
			Full Corridor: Underground utilities (except for lighting)			0
			Full Corridor: Install ped lighting			0
			Full Corridor: Improve wayfinding and placemaking			0
			North End: Widen sidewalks to 10' on both sides (with buffer)			0
			North End: Median control along blocks	1	Ent/exits at Lowe's	1
			Riddell to McWilliams: Complete sidewalks on east and west sides			0
			NE Furneys Ln: install northbound and southbound u-turns			0
			NE Fuson Rd: install northbound and southbound u-turns			0
			NE McWilliams Road: install northbound and southbound u-turns			
			Designate Almira Dr and NE Fuson Rd as bicycle routes			0
			Designate Pine Rd NE as bicycle route			0
			TOTAL	**1**		**1**

SR 303 Corridor Study
Second Level Screening - Transit Metric

Segment	Alternative	ID #	Improvement Description	Transit		
				Accessibility		
					Notes	
1	Preferred		Full Corridor: Transit Signal Priority			0
			Full Corridor: Underground utilities (except for lighting)			0
			Full Corridor: Install ped lighting			0
			Full Corridor: Improve wayfinding and placemaking			0
			Burwell Street: Convert northbound approach to RIRO			0
			5th to 6th: Remove center median			0
			6th to 11th: Install new pedestrian crossing with ped button	1	Benefits transit accessibility	1
			6th to 11th: Reduce gaps in transit stops	1	Benefits transit accessibility	1
			11th: Convert signal to roundabout			0
			11th to 13th: Widen sidewalks to 10' on west side	1	Benefits transit accessibility	1
			13th to 16th: Relocate bus stops to intersections	1	Benefits transit accessibility	1
			16th: Extend northbound left turn lane pocket			0
			TOTAL	**0**		**4**

Segment	Alternative	ID #	Improvement Description	Transit		
				Accessibility		
					Notes	
2	Preferred		Full Corridor: Transit Signal Priority			0
			Full Corridor: Underground utilities (except for lighting)			0
			Full Corridor: Install ped lighting			0
			Full Corridor: Improve wayfinding and placemaking			0
			18th Street: Install shared-use path along new tunnel undercrossing			0
			Warren Ave Bridge: Improve non-motorized connection off of Warren Ave Bridge to 18th			0
			Warren Ave Bridge: Install cycle track on both sides			0
			Warren Ave Bridge: Install viewpoint on both sides			0
			Warren Ave Bridge: Install Type 2 center barrier			0
			Callahan Drive: Widen and complete sidewalks near intersection (with buffer)	1	*Benefits transit accessibility*	1
			Callahan Drive: Convert interchange to roundabout	1	*Benefits transit accessibility*	1
			Callahan Drive: Install shared-use path along tunnel undercrossing			0
			Callahan to Fuson: Complete bicycle connection to Almira Dr			0
			Callahan to Hollis: Add northbound BAT lane	1	*Benefits transit accessibility*	1
			Callahan to Sheridan: median control			0
			Sheridan Road: Install southbound u-turn			0
			TOTAL			**3**

Segment	Alternative	ID #	Improvement Description	Transit		
				Accessibility		
					Notes	
3	Preferred		Full Corridor: Transit Signal Priority			0
			Full Corridor: Underground utilities (except for lighting)			0
			Full Corridor: Install ped lighting			0
			Full Corridor: Improve wayfinding and placemaking			0
			North End: Widen sidewalks to 10' on both sides (with buffer)	1	Benefits transit accessibility	1
			North End: Median control along blocks			0
			Sheridan to Hollis: Add northbound BAT lane, replace TWLTL with median	1	Benefits transit accessibility	1
			Sheridan to Sylvan: Improve pedestrian connectivity from neighborhoods to transit	1	Benefits transit accessibility	1
			Dibb Street: Install new ped crossing with ped button	1	Benefits transit accessibility	1
			Sylvan Way: Install northbound and southbound u-turns			0
			Sylvan to NE Riddell: Improve pedestrian connectivity from neighborhoods to transit	1	Benefits transit accessibility	1
			Pearl Street: Install new ped crossing with ped button	1	Benefits transit accessibility	1
			E Broad Street: Improve pedestrian connectivity from neighborhoods to Wheaton Way TC	1	Benefits transit accessibility	1
			Hollis Street: Install northbound and southbound u-turns			0
			Hollis to NE Riddell: Install new ped crossing with ped button	1	Benefits transit accessibility	1
			NE Riddell Road: Convert signal to roundabout	1	Benefits transit accessibility	1
			TOTAL			**9**
4	Preferred		Full Corridor: Transit Signal Priority			0
			Full Corridor: Underground utilities (except for lighting)			0
			Full Corridor: Install ped lighting			0
			Full Corridor: Improve wayfinding and placemaking			0
			North End: Widen sidewalks to 10' on both sides (with buffer)	1	Benefits transit accessibility	1
			North End: Median control along blocks			0
			Riddell to McWilliams: Complete sidewalks on east and west sides			0
			NE Furneys Ln: install northbound and southbound u-turns			0
			NE Fuson Rd: install northbound and southbound u-turns			0
			NE McWilliams Road: install northbound and southbound u-turns			
			Designate Almira Dr and NE Fuson Rd as bicycle routes			0
			Designate Pine Rd NE as bicycle route			0
			TOTAL			**1**

Segment	Alternative	ID #	Improvement Description	ROW					
				Property Impacts			Property Acquisitions		
				$K	Notes	Rounded	$K	Notes	Rounded
1	Preferred		Full Corridor: Transit Signal Priority			$ -			$ -
			Full Corridor: Underground utilities (except for lighting)			$ -			$ -
			Full Corridor: Install ped lighting			$ -			$ -
			Full Corridor: Improve wayfinding and placemaking			$ -			$ -
			Burwell Street: Convert northbound approach to RIRO			$ -			$ -
			5th to 6th: Remove center median	$ 74		$ 74			$ -
			6th to 11th: Install new pedestrian crossing with ped button			$ -			$ -
			6th to 11th: Reduce gaps in transit stops			$ -			$ -
			11th: Convert signal to roundabout			$ -	$ 2,702		$ 2,702
			11th to 13th: Widen sidewalks to 10' on west side	$ 415		$ 415			$ -
			13th to 16th: Relocate bus stops to intersections			$ -			$ -
			16th: Extend northbound left turn lane pocket	$ 159		$ 159			$ -
			TOTAL	$ 648		$ 648	$ 2,702		$ 2,700

Segment	Alternative	ID #	Improvement Description	ROW					
				Property Impacts			Property Acquisitions		
				$K	Notes	Rounded	$K	Notes	Rounded
2	Preferred		Full Corridor: Transit Signal Priority			$ -			$ -
			Full Corridor: Underground utilities (except for lighting)			$ -			$ -
			Full Corridor: Install ped lighting			$ -			$ -
			Full Corridor: Improve wayfinding and placemaking			$ -			$ -
			18th Street: Install shared-use path along new tunnel undercrossing			$ -			$ -
			Warren Ave Bridge: Improve non-motorized connection off of Warren Ave Bridge to 18th			$ -			$ -
			Warren Ave Bridge: Install cycle track on both sides			$ -			$ -
			Warren Ave Bridge: Install viewpoint on both sides			$ -			$ -
			Warren Ave Bridge: Install Type 2 center barrier			$ -			$ -
			Callahan Drive: Widen and complete sidewalks near intersection (with buffer)	$ 147		$ 147			$ -
			Callahan Drive: Convert interchange to roundabout			$ -			$ -
			Callahan Drive: Install shared-use path along tunnel undercrossing			$ -			$ -
			Callahan to Fuson: Complete bicycle connection to Almira Dr			$ -			$ -
			Callahan to Hollis: Add northbound BAT lane			$ -			$ -
			Callahan to Sheridan: median control			$ -			$ -
			Sheridan Road: Install southbound u-turn			$ -			$ -
			TOTAL	$ 147		$ 100	$ -		$ -

Segment	Alternative	ID #	Improvement Description	ROW					
				Property Impacts			Property Acquisitions		
				$K	Notes	Rounded	$K	Notes	Rounded
3	Preferred		Full Corridor: Transit Signal Priority			$ -			$ -
			Full Corridor: Underground utilities (except for lighting)			$ -			$ -
			Full Corridor: Install ped lighting			$ -			$ -
			Full Corridor: Improve wayfinding and placemaking			$ -			$ -
			North End: Widen sidewalks to 10' on both sides (with buffer)	$ 1,084		$ 1,084	$ 6,891		$ 6,891
			North End: Median control along blocks			$ -			$ -
			Sheridan to Hollis: Add northbound BAT lane, replace TWLTL with median			$ -			$ -
			Sheridan to Sylvan: Improve pedestrian connectivity from neighborhoods to transit			$ -			$ -
			Dibb Street: Install new ped crossing with ped button			$ -			$ -
			Sylvan Way: Install northbound and southbound u-turns	$ 91		$ 91			$ -
			Sylvan to NE Riddell: Improve pedestrian connectivity from neighborhoods to transit			$ -			$ -
			Pearl Street: Install new ped crossing with ped button			$ -			$ -
			E Broad Street: Improve pedestrian connectivity from neighborhoods to Wheaton Way TC	$ 604		$ 604			$ -
			Hollis Street: Install northbound and southbound u-turns	$ 99		$ 99			$ -
			Hollis to NE Riddell: Install new ped crossing with ped button			$ -			$ -
			NE Riddell Road: Convert signal to roundabout	$ 536		$ 536			$ -
			TOTAL	$ 2,414		$ 2,400	$ 6,891		$ 6,900
4	Preferred		Full Corridor: Transit Signal Priority			$ -			$ -
			Full Corridor: Underground utilities (except for lighting)			$ -			$ -
			Full Corridor: Install ped lighting			$ -			$ -
			Full Corridor: Improve wayfinding and placemaking			$ -			$ -
			North End: Widen sidewalks to 10' on both sides (with buffer)			$ -			$ -
			North End: Median control along blocks			$ -			$ -
			Riddell to McWilliams: Complete sidewalks on east and west sides			$ -			$ -
			NE Furneys Ln: install northbound and southbound u-turns			$ -			$ -
			NE Fuson Rd: install northbound and southbound u-turns			$ -			$ -
			NE McWilliams Road: install northbound and southbound u-turns						
			Designate Almira Dr and NE Fuson Rd as bicycle routes			$ -			$ -
			Designate Pine Rd NE as bicycle route			$ -			$ -
			TOTAL	$ -		$ -	$ -		$ -

Segment	Alternative	ID #	Improvement Description	Economic Vitality				
				Adjacent Property Values			Access to Business	
					Notes	Rounded		Notes
1	Preferred		Full Corridor: Transit Signal Priority	5		5			0
			Full Corridor: Underground utilities (except for lighting)	2.5		2.5			0
			Full Corridor: Install ped lighting	2.5		2.5			0
			Full Corridor: Improve wayfinding and placemaking	2.5		2.5			0
			Burwell Street: Convert northbound approach to RIRO	2		2			0
			5th to 6th: Remove center median	0		0			0
			6th to 11th: Install new pedestrian crossing with ped button	0		0			0
			6th to 11th: Reduce gaps in transit stops	5		5			0
			11th: Convert signal to roundabout	4.5		4.5			0
			11th to 13th: Widen sidewalks to 10' on both sides	0		0			0
			13th to 16th: Relocate bus stops to intersections	5		5			0
			16th: Extend northbound left turn lane pocket	0		0			0
			TOTAL	**0**		**29**			**0**

Segment	Alternative	ID #	Improvement Description	Economic Vitality				
				Adjacent Property Values			Access to Business	
					Notes	Rounded	Notes	
2	Preferred		Full Corridor: Transit Signal Priority	5		5		0
			Full Corridor: Underground utilities (except for lighting)	2.5		2.5		0
			Full Corridor: Install ped lighting	2.5		2.5		0
			Full Corridor: Improve wayfinding and placemaking	2.5		2.5		0
			18th Street: Install shared-use path along new tunnel undercrossing	0		0		0
			Warren Ave Bridge: Improve non-motorized connection off of Warren Ave Bridge to 18th	0		0		0
			Warren Ave Bridge: Install cycle track on both sides	0		0		0
			Warren Ave Bridge: Install viewpoint on both sides	0		0		0
			Warren Ave Bridge: Install Type 2 center barrier	0		0		0
			Callahan Drive: Widen and complete sidewalks near intersection (with buffer)	0		0		0
			Callahan Drive: Convert interchange to roundabout	4.5		4.5		0
			Callahan Drive: Install shared-use path along tunnel undercrossing	0		0		0
			Callahan to Fuson: Complete bicycle connection to Almira Dr	0		0		0
			Callahan to Hollis: Add northbound BAT lane	5		5		0
			Callahan to Sheridan: median control	1.5		1.5	Median present, but no business	0
			Sheridan Road: Install southbound u-turn	0		0		0
			TOTAL	**23.5**		**25**		**0**

Segment	Alternative	ID #	Improvement Description	Economic Vitality					
				Adjacent Property Values			Access to Business		
					Notes	Rounded		*Notes*	
3	Preferred		Full Corridor: Transit Signal Priority	5		5			0
			Full Corridor: Underground utilities (except for lighting)	2.5		2.5			0
			Full Corridor: Install ped lighting	2.5		2.5			0
			Full Corridor: Improve wayfinding and placemaking	2.5		2.5			0
			North End: Widen sidewalks to 10' on both sides (with buffer)	0		0			0
			North End: Median control along blocks	1.5		1.5	1	*Benefit to access to business*	1
			Sheridan to Hollis: Add northbound BAT lane, replace TWLTL with median	5		5			0
			Sheridan to Sylvan: Improve pedestrian connectivity from neighborhoods to transit	5		5			0
			Dibb Street: Install new ped crossing with ped button	0		0			0
			Sylvan Way: Install northbound and southbound u-turns	0		0			0
			Sylvan to NE Riddell: Improve pedestrian connectivity from neighborhoods to transit	5		5			0
			Pearl Street: Install new ped crossing with ped button	0		0			0
			E Broad Street: Improve pedestrian connectivity from neighborhoods to Wheaton Way TC	0		0			0
			Hollis Street: Install northbound and southbound u-turns	2		2			0
			Hollis to NE Riddell: Install new ped crossing with ped button	0		0			0
			NE Riddell Road: Convert signal to roundabout	4.5		4.5			0
		TOTAL		35.5		35			1
4	Preferred		Full Corridor: Transit Signal Priority	5		5			0
			Full Corridor: Underground utilities (except for lighting)	2.5		2.5			0
			Full Corridor: Install ped lighting	2.5		2.5			0
			Full Corridor: Improve wayfinding and placemaking	2.5		2.5			0
			North End: Widen sidewalks to 10' on both sides (with buffer)	0		0			0
			North End: Median control along blocks	1.5		1.5	1	*Benefit to access to business*	1
			Riddell to McWilliams: Complete sidewalks on east and west sides	0		0			0
			NE Furneys Ln: install northbound and southbound u-turns	2		2			0
			NE Fuson Rd: install northbound and southbound u-turns	2		2			0
			NE McWilliams Road: install northbound and southbound u-turns	2		2			0
			Designate Almira Dr and NE Fuson Rd as bicycle routes	0		0			0
			Designate Pine Rd NE as bicycle route	0		0			0
		TOTAL		20		20			1

Appendix N-2

Study Preferred Alternative HSM
Predicted Analysis Results

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HSM Part C Training Tool: HSM1 Extended Spreadsheet for Part C Chapter 12 (v.9, 2016)

Calculates the predicted safety performance for urban and suburban arterials

HSM Part C Training Tool Instructions

Overview

This series of spreadsheets has been developed to assist in the application of the predictive methods contained in the Highway Safety Manual (HSM), 1st Edition for analyzing: urban and suburban arterials, rural multilane roads, and rural two lane roads.

Data Color Guidelines

	Required user input data
	Required user input data restricted to dropdown values
	Automatically updated information based on previous user input data
	User work space (notes, comments, etc.)

Upon Opening the File

1. Ensure that macros are enabled in Excel. (Refer to Microsoft Help for more information about enabling macros.)
2. Read the terms of use and follow the directions on the prompts.
3. If analyzing a new project, follow the prompts to save as a new file.
4. Read all instructions before proceeding.

General Steps for Project Safety Performance Analysis

1. Navigate to the "Project Information" tab.
2. Using the color guidelines above, populate the required information under General Information.
3. Push the "Update Element Table" button to set up the element table. *Note: Elements cannot be added to the analysis once this button has been pushed.
4. Fill in the Route, Location Description, and Jurisdiction for each element. For intersections, also select whether or not the intersection is signalized. And where applicable, select divided or undivided for each segment.
5. Once all of the information has been entered, push the "Proceed to 1st Element" button.
6. On the current tab (either "Segment 1" or "Intersection 1"), enter all of the required information (refer to color guidelines).
7. Ensure that all necessary information has been entered, then push the "Next Element" button.
8. Repeat steps 6 and 7 for all project elements.
9. On the tab for the final project element, push the "Generate Report" button to run the analysis and redirect to the "Report" page, giving a summary of the analysis results.
10. At this time, any of the input information on the element tabs can be altered if desired. The results will update automatically.

General Steps for a Multi-Year Project Safety Performance Analysis

1. Complete all steps for the Project Safety Performance Analysis first.
2. Navigate to the "Multi-Year Analysis Inputs" tab.
3. Enter the required information (Input Data*). Refer to color guidelines as necessary. *Note: the Traffic Growth Rate is a linear growth rate per year (i.e. the volume increases by the same number of vehicles each year) and should be entered as a percent, not as a decimal.
4. Once all of the information is complete, push the "Run Multi-Year Analysis" button to perform the analysis.
5. The "Multi-Year Summary Report" tab provides a summary table of the multi-year analysis, with the expected average crash frequency, the potential for safety improvement, and a discussion of the results for the analysis period.

PROJECT SAFETY PERFORMANCE ANALYSIS INPUT SHEET

General Information

Project Name	SR 303 Corridor Study	Contact Email	ewelter@parametrix.com
Project Description	Burwell to McWilliams	Contact Phone	(206) 838-3975
Reference Number	Preferred Alternative	Date Performed	09/03/20
Analyst	Emily Welter	Analysis Year	2040
Agency/Company	Parametrix		
# of Segments in Analysis	13	This spreadsheet calculates the predicted average crash frequency	
# of Intersections in Analysis	14		

INDIVIDUAL PROJECT ELEMENTS	LOCATION INFORMATION		JURISDICTION	INTERSECTIONS ONLY
	Route	Location Description		Signalized or Unsignalized?
SEGMENTS				
Segment 1	SR 303	Burwell to 6th	City of Bremerton	-
Segment 2	SR 303	6th to 11th	City of Bremerton	-
Segment 3	SR 303	11th to 13th	City of Bremerton	-
Segment 4	SR 303	13th to 16th	City of Bremerton	-
Segment 5	SR 303	16th to Callahan	City of Bremerton	-
Segment 6	SR 303	Callahan to Sheridan	City of Bremerton	-
Segment 7	SR 303	Sheridan to Sylvan	City of Bremerton	-
Segment 8	SR 303	Sylvan to E Broad	City of Bremerton	-
Segment 9	SR 303	E Broad to Hollis	City of Bremerton	-
Segment 10	SR 303	Hollis to NE Riddell	City of Bremerton	-
Segment 11	SR 303	NE Riddell to NE Furneys	Kitsap County	-
Segment 12	SR 303	NE Furneys to NE Fuson	Kitsap County	-
Segment 13	SR 303	NE Fuson to NE McWilliams	Kitsap County	-
INTERSECTIONS				
Intersection 1	SR 303	Burwell Street	City of Bremerton	Signalized
Intersection 2	SR 303	6th Street	City of Bremerton	Signalized
Intersection 3	SR 303	11th Street	City of Bremerton	Signalized
Intersection 4	SR 303	13th Street	City of Bremerton	Signalized
Intersection 5	SR 303	16th Street	City of Bremerton	Signalized
Intersection 6	SR 303	Callahan Drive	City of Bremerton	Signalized
Intersection 7	SR 303	Sheridan Road	City of Bremerton	Signalized
Intersection 8	SR 303	Sylvan Road	City of Bremerton	Signalized
Intersection 9	SR 303	E Broad Street	City of Bremerton	Signalized
Intersection 10	SR 303	Hollis Street	City of Bremerton	Signalized
Intersection 11	SR 303	NE Riddell Road	City of Bremerton	Signalized
Intersection 12	SR 303	NE Furneys Lane	Kitsap County	Signalized
Intersection 13	SR 303	NE Fuson Road	Kitsap County	Signalized
Intersection 14	SR 303	NE McWilliams Road	Kitsap County	Signalized

PROJECT SAFETY PERFORMANCE SUMMARY REPORT

General Information

Project Name	SR 303 Corridor Study
Project Description	Burwell to McWilliams
Reference Number	Preferred Alternative
Analyst	Emily Welter
Agency/Company	Parametrix
Contact Email	ewelter@parametrix.com
Contact Phone	(206) 838-3975
Date Completed	09/03/20

PROJECT SUMMARY

Summary of Anticipated Safety Performance of the Project (average crashes/yr)
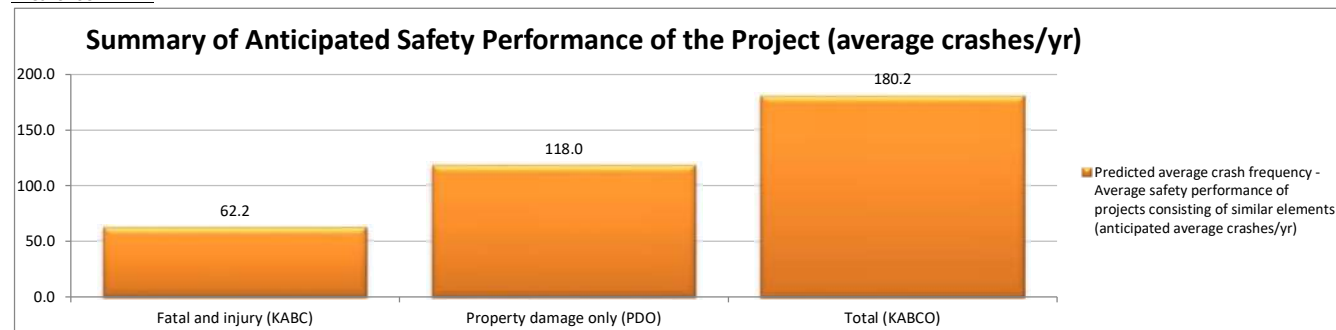
Project Element	Total Crashes/yr (KABCO) Predicted average crash frequency $N_{predicted (KABCO)}$	Fatal and Injury Crashes/yr (KABC) Predicted average crash frequency $N_{predicted (KABC)}$	Property Damage Only Crashes/yr (PDO) Predicted average crash frequency $N_{predicted (O)}$
INDIVIDUAL SEGMENTS			
Segment 1	1.0	0.3	0.7
Segment 2	4.0	1.3	2.6
Segment 3	2.4	0.7	1.6
Segment 4	5.1	1.6	3.4
Segment 5	10.4	2.9	7.6
Segment 6	2.9	0.8	2.1
Segment 7	8.8	2.8	6.0
Segment 8	7.3	2.3	5.0
Segment 9	2.4	0.8	1.6
Segment 10	4.9	1.5	3.3
Segment 11	3.7	1.2	2.5
Segment 12	3.6	1.0	2.6
Segment 13	6.7	1.8	4.8
INDIVIDUAL INTERSECTIONS			
Intersection 1	3.9	1.3	2.6
Intersection 2	5.9	2.1	3.8
Intersection 3	13.4	5.0	8.4
Intersection 4	15.9	6.0	9.9
Intersection 5	8.4	2.7	5.7
Intersection 6	8.9	3.3	5.6
Intersection 7	8.4	3.2	5.3
Intersection 8	8.9	3.4	5.5
Intersection 9	8.4	3.2	5.2
Intersection 10	4.7	1.6	3.1
Intersection 11	7.3	2.7	4.5
Intersection 12	7.8	2.9	4.9
Intersection 13	7.8	2.9	4.9
Intersection 14	7.5	2.9	4.6
COMBINED (sum of column)	180.2	62.2	118.0

PROJECT SUMMARY -- Site-Specific EB Method Summary Results for Urban and Suburban Arterial Project

Crash severity level	$N_{predicted(PROJECT)}$ Predicted average crash frequency - Average safety performance of projects consisting of similar elements (anticipated average crashes/yr)
Fatal and injury (KABC)	62.2
Property damage only (PDO)	118.0
Total (KABCO)	180.2

HSM1 Extended Spreadsheet for Part C Chapter 12 v.9

Discussion of Results
Given the potential effects of project characteristics on safety performance, results indicate that:

Federal law 23 USC § 409 prohibits the discovery or admission into evidence of "reports, surveys, schedules, lists, or data" compiled or collected for the purpose of highway safety improvement projects that might qualify for federal safety improvement funding.

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Appendix N-3

Study Preferred Alternative
Traffic Operations Results

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱			↑	↗			↱	↱		↗
Traffic Volume (vph)	540	365	15	0	450	265	0	0	15	115	0	500
Future Volume (vph)	540	365	15	0	450	265	0	0	15	115	0	500
Confl. Peds. (#/hr)	14		23	23		14	1		12	12		1
Confl. Bikes (#/hr)			2			1						
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	0%	0%	0%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Turn Type	Split	NA			NA	Perm			Prot	Prot		Perm
Protected Phases	3	3			2				2	1		
Permitted Phases						2						1
Detector Phase	3	3			2	2			2	1		1
Switch Phase												
Minimum Initial (s)	6.0	6.0			6.0	6.0			6.0	6.0		6.0
Minimum Split (s)	26.0	26.0			26.0	26.0			26.0	11.0		11.0
Total Split (s)	75.0	75.0			59.0	59.0			59.0	31.0		31.0
Total Split (%)	45.5%	45.5%			35.8%	35.8%			35.8%	18.8%		18.8%
Yellow Time (s)	3.5	3.5			3.5	3.5			3.5	3.5		3.5
All-Red Time (s)	1.5	1.5			1.5	1.5			1.5	1.5		1.5
Lost Time Adjust (s)	0.0	0.0			0.0	0.0			0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0			5.0	5.0			5.0	5.0		5.0
Lead/Lag					Lag	Lag			Lag	Lead		Lead
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min			None	None			None	None		None
Act Effct Green (s)	73.7	73.7			55.9	55.9			55.9	20.5		20.5
Actuated g/C Ratio	0.45	0.45			0.34	0.34			0.34	0.12		0.12
v/c Ratio	0.86	0.58			0.89	0.51			0.03	0.66		0.85
Control Delay	54.8	38.6			69.2	18.0			0.1	57.9		28.8
Queue Delay	0.0	0.0			0.0	0.0			0.0	0.0		9.7
Total Delay	54.8	38.6			69.2	18.0			0.1	57.9		38.5
LOS	D	D			E	B			A	E		D
Approach Delay		48.1			50.2			0.1			42.1	
Approach LOS		D			D			A			D	

Intersection Summary

Cycle Length: 165

Actuated Cycle Length: 165

Offset: 119 (72%), Referenced to phase 3:EBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 46.8   Intersection LOS: D

Intersection Capacity Utilization 72.5%   ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: Driveway/Warren Avenue (SR 303) & Burwell Street (SR 304)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↔↳		↰	↔↳		↰	↑↑↳		↰	↑↑↳	
Traffic Volume (vph)	435	365	35	100	780	100	325	580	20	85	530	180
Future Volume (vph)	435	365	35	100	780	100	325	580	20	85	530	180
Confl. Peds. (#/hr)	21		9	9		21	43		11	11		43
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)	37%			10%								
Turn Type	Split	NA		Split	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases							6			2		
Detector Phase	3	3		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		10.5	22.5		10.5	22.5	
Total Split (s)	36.7	36.7		51.7	51.7		34.0	64.0		12.6	42.6	
Total Split (%)	22.2%	22.2%		31.3%	31.3%		20.6%	38.8%		7.6%	25.8%	
Yellow Time (s)	3.5	3.5		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		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lead		Lag	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Act Effct Green (s)	32.0	32.0		47.4	47.4		72.1	59.6		46.4	38.4	
Actuated g/C Ratio	0.19	0.19		0.29	0.29		0.44	0.36		0.28	0.23	
v/c Ratio	0.94	0.93		0.21	0.99		0.97	0.50		0.34	0.95	
Control Delay	101.4	85.9		46.2	84.6		87.1	25.7		33.8	81.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	101.4	85.9		46.2	84.6		87.1	25.7		33.8	81.5	
LOS	F	F		D	F		F	C		C	F	
Approach Delay		91.0			81.1			47.2			76.5	
Approach LOS		F			F			D			E	

Intersection Summary

Cycle Length: 165

Actuated Cycle Length: 165

Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay: 73.5   Intersection LOS: E

Intersection Capacity Utilization 92.4%   ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 2: Warren Avenue (SR 303) & 6th Street

Ø1	Ø2 (R)	Ø3	Ø4
34 s	42.6 s	36.7 s	51.7 s

Ø5	Ø6 (R)		
12.6 s	64 s		

MOVEMENT SUMMARY

▽ **Site: 3 [11th Street RAB]**

SR 303/11th Street
2040 PM Peak Build
Site Category: (None)
Roundabout

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Warren Avenue (SR 303)												
3	L2	85	3.0	0.969	40.8	LOS E	12.2	313.0	1.00	1.46	2.43	25.1
8	T1	1015	3.0	0.969	34.4	LOS E	17.2	439.5	1.00	1.53	2.53	25.3
18	R2	20	3.0	0.015	4.8	LOS A	0.1	1.9	0.48	0.51	0.48	35.6
Approach		1120	3.0	0.969	34.4	LOS C	17.2	439.5	0.99	1.50	2.48	25.4
East: 11th Street												
1	L2	10	3.0	0.641	26.0	LOS C	4.5	115.0	0.93	1.11	1.44	30.3
6	T1	685	3.0	0.641	20.2	LOS C	6.6	169.6	0.97	1.17	1.53	30.1
16	R2	265	3.0	0.393	11.7	LOS B	3.0	77.1	1.00	1.03	1.09	32.7
Approach		960	3.0	0.641	17.9	LOS B	6.6	169.6	0.98	1.13	1.41	30.8
North: Warren Avenue (SR 303)												
7	L2	100	3.0	0.406	12.2	LOS B	2.2	57.1	0.70	0.69	0.73	35.2
4	T1	755	3.0	0.406	5.7	LOS A	2.4	62.3	0.69	0.57	0.70	35.4
14	R2	860	3.0	0.529	3.8	LOS A	0.0	0.0	0.00	0.44	0.00	37.1
Approach		1715	3.0	0.529	5.1	LOS A	2.4	62.3	0.34	0.51	0.35	36.2
West: 11th Street												
5	L2	1205	3.0	0.955	26.9	LOS E	16.7	427.3	1.00	1.46	2.28	28.4
2	T1	385	3.0	0.955	19.2	LOS E	16.7	427.3	1.00	1.45	2.23	29.5
12	R2	40	3.0	0.955	19.3	LOS E	16.7	427.3	1.00	1.45	2.23	28.6
Approach		1630	3.0	0.955	24.9	LOS C	16.7	427.3	1.00	1.46	2.27	28.6
All Vehicles		5425	3.0	0.969	19.4	LOS B	17.2	439.5	0.79	1.11	1.55	30.2

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⬧			⬧			↑↑⬧			↑↑⬧	
Traffic Volume (vph)	275	35	35	5	25	20	0	2475	5	0	1665	245
Future Volume (vph)	275	35	35	5	25	20	0	2475	5	0	1665	245
Confl. Peds. (#/hr)	1		14	14		1	11		8	8		11
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	3%	15%	15%	15%	3%	3%	3%	4%	4%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA			NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8			2			6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Minimum Split (s)	19.5	19.5		26.5	26.5			19.5			17.5	
Total Split (s)	45.0	45.0		45.0	45.0			120.0			120.0	
Total Split (%)	27.3%	27.3%		27.3%	27.3%			72.7%			72.7%	
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?												
Recall Mode	None	None		None	None			C-Min			C-Min	
Act Effct Green (s)		40.5			40.5			115.5			115.5	
Actuated g/C Ratio		0.25			0.25			0.70			0.70	
v/c Ratio		1.18			0.15			1.12			0.90	
Control Delay		159.0			46.6			87.2			9.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		159.0			46.6			87.2			9.4	
LOS		F			D			F			A	
Approach Delay		159.0			46.6			87.2			9.4	
Approach LOS		F			D			F			A	

Intersection Summary	
Cycle Length: 165	
Actuated Cycle Length: 165	
Offset: 16 (10%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 60.9	Intersection LOS: E
Intersection Capacity Utilization 102.1%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 4: Warren Avenue (SR 303) & 13th Street

Ø2 (R)		Ø4
120 s		45 s

Ø6 (R)		Ø8
120 s		45 s

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↱	↱	↱	↑↑	↑↑	↱
Traffic Volume (vph)	150	70	155	2615	1835	220
Future Volume (vph)	150	70	155	2615	1835	220
Confl. Peds. (#/hr)		22	6			6
Confl. Bikes (#/hr)						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	3%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	2		3	8	4	
Permitted Phases		2				4
Detector Phase	2	2	3	8	4	4
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	19.5	19.5	10.5	10.5	19.5	19.5
Total Split (s)	23.0	23.0	29.2	142.0	112.8	112.8
Total Split (%)	13.9%	13.9%	17.7%	86.1%	68.4%	68.4%
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	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?						
Recall Mode	Min	Min	None	C-Min	C-Min	C-Min
Act Effct Green (s)	17.5	17.5	20.2	138.5	113.8	113.8
Actuated g/C Ratio	0.11	0.11	0.12	0.84	0.69	0.69
v/c Ratio	0.83	0.33	0.75	0.93	0.79	0.21
Control Delay	103.6	17.2	57.7	13.6	21.5	2.7
Queue Delay	0.0	0.0	0.0	2.5	0.0	0.0
Total Delay	103.6	17.2	57.7	16.1	21.5	2.7
LOS	F	B	E	B	C	A
Approach Delay	76.1			18.5	19.5	
Approach LOS	E			B	B	

Intersection Summary	
Cycle Length: 165	
Actuated Cycle Length: 165	
Offset: 164 (99%), Referenced to phase 4:SBT and 8:NBT, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 21.4	Intersection LOS: C
Intersection Capacity Utilization 90.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 5: Warren Avenue (SR 303) & 16th Street

Ø2	Ø3	Ø4 (R)
23 s	29.2 s	112.8 s

	Ø8 (R)	
	142 s	

MOVEMENT SUMMARY

▽ Site: 15 [Callahan Drive RAB]

SR 303/Callahan Drive
2040 PM Peak Build
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Wheaton Way (SR 303)												
3	L2	50	3.0	0.915	13.9	LOS D	15.9	407.0	0.83	0.69	0.95	32.9
8	T1	2505	3.0	0.915	7.0	LOS D	15.9	407.0	0.77	0.63	0.85	36.6
18	R2	300	3.0	0.188	4.2	LOS A	0.9	21.8	0.20	0.45	0.20	36.9
Approach		2855	3.0	0.915	6.8	LOS A	15.9	407.0	0.71	0.61	0.78	36.6
East: Callahan Drive												
1	L2	175	3.0	0.681	46.1	LOS D	5.9	151.7	1.00	1.22	1.67	24.4
6	T1	25	3.0	0.681	40.7	LOS D	5.9	151.7	1.00	1.21	1.66	10.6
16	R2	125	3.0	0.681	44.9	LOS D	4.4	113.3	0.97	1.16	1.55	16.2
Approach		325	3.0	0.681	45.2	LOS D	5.9	151.7	0.99	1.19	1.62	21.1
North: Wheaton Way (SR 303)												
7	L2	35	3.0	0.864	15.5	LOS D	12.9	330.8	0.87	0.84	1.08	16.0
4	T1	1875	3.0	0.864	9.0	LOS D	13.0	332.1	0.86	0.81	1.05	36.4
14	R2	35	3.0	0.864	8.7	LOS D	13.0	332.1	0.85	0.79	1.02	30.4
Approach		1945	3.0	0.864	9.2	LOS A	13.0	332.1	0.86	0.81	1.05	36.0
West: Callahan Drive												
5	L2	75	3.0	0.255	17.7	LOS B	1.2	31.8	0.86	0.95	0.86	27.2
2	T1	50	3.0	0.255	10.2	LOS B	1.5	38.2	0.90	0.95	0.90	9.8
12	R2	75	3.0	0.255	10.0	LOS B	1.5	38.2	0.91	0.95	0.91	34.4
Approach		200	3.0	0.255	12.9	LOS B	1.5	38.2	0.89	0.95	0.89	26.1
All Vehicles		5325	3.0	0.915	10.2	LOS B	15.9	407.0	0.79	0.73	0.93	35.1

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations	↱	↑	↱	↱	↤	↱	↰	↑↑↳			↳	↑↳
Traffic Volume (vph)	85	50	180	235	50	215	200	2230	275	200	220	1530
Future Volume (vph)	85	50	180	235	50	215	200	2230	275	200	220	1530
Confl. Peds. (#/hr)	7					7	6		5		5	
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	5%	5%	5%	4%	4%	4%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)				40%								
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA			Prot	NA
Protected Phases	4	4		3	3		5	2		1	1	6
Permitted Phases			4			3						
Detector Phase	4	4	4	3	3	3	5	2		1	1	6
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Minimum Split (s)	22.0	22.0	22.0	24.0	24.0	24.0	11.0	20.0		11.0	11.0	20.0
Total Split (s)	22.0	22.0	22.0	24.0	24.0	24.0	34.0	108.0		46.0	46.0	120.0
Total Split (%)	11.0%	11.0%	11.0%	12.0%	12.0%	12.0%	17.0%	54.0%		23.0%	23.0%	60.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0			5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag		Lead	Lead	Lag
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	None	C-Min		None	None	C-Min
Act Effct Green (s)	14.3	14.3	14.3	19.0	19.0	19.0	27.2	103.0			43.7	119.4
Actuated g/C Ratio	0.07	0.07	0.07	0.10	0.10	0.10	0.14	0.52			0.22	0.60
v/c Ratio	0.70	0.39	0.65	0.94	0.94	0.99	0.87	1.24			1.15	0.78
Control Delay	117.6	96.4	20.8	143.4	144.4	105.8	116.8	154.7			135.0	46.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	117.6	96.4	20.8	143.4	144.4	105.8	116.8	154.7			135.0	46.4
LOS	F	F	C	F	F	F	F	F			F	D
Approach Delay		59.0			127.5			151.9				65.3
Approach LOS		E			F			F				E

Intersection Summary

Cycle Length: 200

Actuated Cycle Length: 200

Offset: 147 (74%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.24

Intersection Signal Delay: 112.8   Intersection LOS: F

Intersection Capacity Utilization 108.6%   ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 6: Wheaton Way (SR 303) & Sheridan Road

Ø1	Ø2 (R)		Ø3	Ø4
46 s	108 s		24 s	22 s

Ø5	Ø6 (R)	
34 s	120 s	

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	60
Future Volume (vph)	60
Confl. Peds. (#/hr)	6
Confl. Bikes (#/hr)	
Peak Hour Factor	0.97
Growth Factor	100%
Heavy Vehicles (%)	2%
Bus Blockages (#/hr)	0
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations	↱	↑	↰	↱	↑	↰		↰	↑↑↱			↰
Traffic Volume (vph)	125	110	155	155	130	195	200	170	2115	170	150	165
Future Volume (vph)	125	110	155	155	130	195	200	170	2115	170	150	165
Confl. Peds. (#/hr)	15		9	9		15		8		2		2
Confl. Bikes (#/hr)												
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.92	0.99	0.99	0.99	0.92	0.99
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	6%	6%	3%	3%	3%	2%	3%	3%	3%	2%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%				0%			
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	Prot	NA		Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases			4			8						
Detector Phase	7	4	4	3	8	8	5	5	2		1	1
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0
Minimum Split (s)	11.0	24.0	24.0	11.0	21.0	21.0	11.0	11.0	20.0		11.0	11.0
Total Split (s)	20.0	24.0	24.0	22.0	26.0	26.0	51.0	51.0	114.0		40.0	40.0
Total Split (%)	10.0%	12.0%	12.0%	11.0%	13.0%	13.0%	25.5%	25.5%	57.0%		20.0%	20.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0			5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag		Lead	Lead
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	None	None	C-Min		None	None
Act Effct Green (s)	15.0	16.8	16.8	17.0	18.8	18.8		46.1	109.0			37.2
Actuated g/C Ratio	0.08	0.08	0.08	0.08	0.09	0.09		0.23	0.54			0.19
v/c Ratio	0.99	0.74	0.74	1.06	0.76	0.89		0.96	1.08			1.01
Control Delay	165.3	117.1	55.7	172.1	114.8	83.5		109.0	51.4			107.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0
Total Delay	165.3	117.1	55.7	172.1	114.8	83.5		109.0	51.4			107.0
LOS	F	F	E	F	F	F		F	D			F
Approach Delay		108.0			120.6				59.7			
Approach LOS		F			F				E			

Intersection Summary

Cycle Length: 200

Actuated Cycle Length: 200

Offset: 12 (6%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.08

Intersection Signal Delay: 70.3   Intersection LOS: E

Intersection Capacity Utilization 102.1%   ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 7: Wheaton Way (SR 303) & Sylvan Way

↰ Ø1	↑ Ø2 (R)	↙ Ø3	→Ø4
40 s	114 s	22 s	24 s
↰ Ø5	↓ Ø6 (R)	↗ Ø7	← Ø8
51 s	103 s	20 s	26 s

Lane Group	SBT	SBR
Lane Configurations	↑↑↱	
Traffic Volume (vph)	1490	100
Future Volume (vph)	1490	100
Confl. Peds. (#/hr)		8
Confl. Bikes (#/hr)		
Peak Hour Factor	0.99	0.99
Growth Factor	100%	100%
Heavy Vehicles (%)	3%	3%
Bus Blockages (#/hr)	0	0
Parking (#/hr)		
Mid-Block Traffic (%)	0%	
Shared Lane Traffic (%)		
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Detector Phase	6	
Switch Phase		
Minimum Initial (s)	6.0	
Minimum Split (s)	20.0	
Total Split (s)	103.0	
Total Split (%)	51.5%	
Yellow Time (s)	3.5	
All-Red Time (s)	1.5	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	5.0	
Lead/Lag	Lag	
Lead-Lag Optimize?		
Recall Mode	C-Min	
Act Effct Green (s)	100.1	
Actuated g/C Ratio	0.50	
v/c Ratio	0.93	
Control Delay	56.1	
Queue Delay	0.0	
Total Delay	56.1	
LOS	E	
Approach Delay	64.8	
Approach LOS	E	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations				↰		↱		↰	↑↑	↱		↰
Traffic Volume (vph)	0	0	0	80	0	50	150	5	2195	70	100	40
Future Volume (vph)	0	0	0	80	0	50	150	5	2195	70	100	40
Confl. Peds. (#/hr)	6		1	1		6		15		6		6
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.97	0.97	0.97	0.92	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	9%	9%	9%	2%	4%	4%	4%	2%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%				0%			
Shared Lane Traffic (%)												
Turn Type				Prot		Perm	Prot	Prot	NA	Perm	Prot	Prot
Protected Phases				8			5	5	2		1	1
Permitted Phases						8				2		
Detector Phase				8		8	5	5	2	2	1	1
Switch Phase												
Minimum Initial (s)				6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)				19.0		19.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)				21.0		21.0	34.0	34.0	151.0	151.0	28.0	28.0
Total Split (%)				10.5%		10.5%	17.0%	17.0%	75.5%	75.5%	14.0%	14.0%
Yellow Time (s)				3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)				1.5		1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)				0.0		0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)				5.0		5.0		5.0	5.0	5.0		5.0
Lead/Lag						Lead	Lead	Lead	Lag	Lag	Lead	Lead
Lead-Lag Optimize?												
Recall Mode				None		None	None	None	C-Min	C-Min	None	None
Act Effct Green (s)				14.4		14.4		24.3	149.4	149.4		21.1
Actuated g/C Ratio				0.07		0.07		0.12	0.75	0.75		0.11
v/c Ratio				0.69		0.32		0.78	0.87	0.06		0.81
Control Delay				118.4		14.7		111.1	5.9	0.3		116.9
Queue Delay				0.0		0.0		0.0	1.2	0.0		0.0
Total Delay				118.4		14.7		111.1	7.2	0.3		116.9
LOS				F		B		F	A	A		F
Approach Delay				78.2					13.9			
Approach LOS				E					B			

Intersection Summary

Cycle Length: 200

Actuated Cycle Length: 200

Offset: 33 (17%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 20.7   Intersection LOS: C

Intersection Capacity Utilization 87.1%   ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 8: Wheaton Way (SR 303) & Hollis Street

			Ø1			Ø2 (R)									Ø8
28 s				151 s										
		Ø5				Ø6 (R)								
34 s				145 s									21 s	
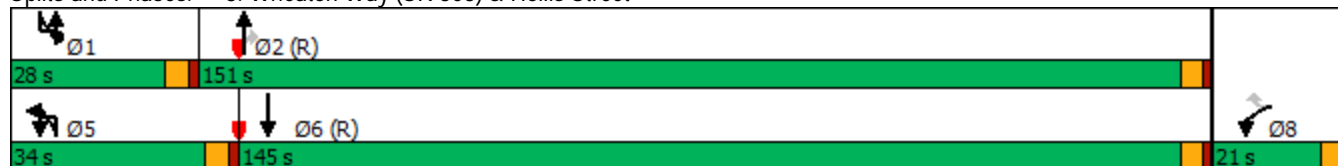
Lane Group	SBT	SBR
Lane Configurations	↑↑↱	
Traffic Volume (vph)	1760	5
Future Volume (vph)	1760	5
Confl. Peds. (#/hr)		15
Confl. Bikes (#/hr)		
Peak Hour Factor	0.97	0.97
Growth Factor	100%	100%
Heavy Vehicles (%)	3%	3%
Bus Blockages (#/hr)	0	0
Parking (#/hr)		
Mid-Block Traffic (%)	0%	
Shared Lane Traffic (%)		
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Detector Phase	6	
Switch Phase		
Minimum Initial (s)	6.0	
Minimum Split (s)	19.0	
Total Split (s)	145.0	
Total Split (%)	72.5%	
Yellow Time (s)	3.5	
All-Red Time (s)	1.5	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	5.0	
Lead/Lag	Lag	
Lead-Lag Optimize?		
Recall Mode	C-Min	
Act Effct Green (s)	146.2	
Actuated g/C Ratio	0.73	
v/c Ratio	0.71	
Control Delay	17.8	
Queue Delay	0.1	
Total Delay	17.9	
LOS	B	
Approach Delay	25.4	
Approach LOS	C	

Intersection Summary

MOVEMENT SUMMARY

▽ Site: 9 [NE Riddell Road RAB]

SR 303/NE Riddell Road
2040 PM Peak Build
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Wheaton Way (SR 303)												
3u	U	100	3.0	0.914	22.7	LOS D	14.8	379.4	0.96	1.23	1.64	32.0
3	L2	175	3.0	0.914	20.2	LOS D	14.8	379.4	0.96	1.23	1.64	22.2
8	T1	1885	3.0	0.914	12.5	LOS D	15.9	406.7	0.92	1.13	1.51	31.6
18	R2	50	3.0	0.034	4.4	LOS A	0.1	3.4	0.31	0.49	0.31	35.0
Approach		2210	3.0	0.914	13.4	LOS B	15.9	406.7	0.91	1.13	1.49	30.9
East: NE Riddell Road												
1	L2	110	3.0	0.705	35.6	LOS D	4.5	114.6	0.96	1.13	1.47	24.1
6	T1	165	3.0	0.705	27.3	LOS C	5.8	148.7	0.98	1.17	1.53	21.4
16	R2	155	3.0	0.705	26.0	LOS C	5.8	148.7	1.00	1.18	1.57	23.9
Approach		430	3.0	0.705	28.9	LOS C	5.8	148.7	0.98	1.16	1.53	23.1
North: Wheaton Way (SR 303)												
7u	U	50	3.0	0.944	27.5	LOS D	17.3	443.1	1.00	1.40	1.99	27.7
7	L2	150	3.0	0.944	25.0	LOS D	17.3	443.1	1.00	1.40	1.99	27.3
4	T1	1450	3.0	0.944	18.0	LOS D	18.3	469.1	0.99	1.36	1.94	29.0
14	R2	215	3.0	0.944	17.1	LOS D	18.3	469.1	0.99	1.34	1.90	24.7
Approach		1865	3.0	0.944	18.7	LOS B	18.3	469.1	0.99	1.36	1.94	28.5
West: NE Riddell Road												
5	L2	200	3.0	0.668	25.6	LOS C	4.3	110.4	0.93	1.09	1.31	22.5
2	T1	135	3.0	0.668	16.9	LOS B	5.2	133.9	0.98	1.11	1.35	26.2
12	R2	190	3.0	0.668	16.6	LOS B	5.2	133.9	0.98	1.12	1.36	26.8
Approach		525	3.0	0.668	20.1	LOS C	5.2	133.9	0.96	1.11	1.34	24.9
All Vehicles		5030	3.0	0.944	17.4	LOS B	18.3	469.1	0.95	1.22	1.65	28.7

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations		↔	↱		↔	↱		↰	↑↑	↱		↰
Traffic Volume (vph)	35	5	85	200	5	90	50	35	1930	210	50	215
Future Volume (vph)	35	5	85	200	5	90	50	35	1930	210	50	215
Confl. Peds. (#/hr)			19	19					10		2	2
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.95	0.92	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	10%	10%	10%	4%	4%	4%	2%	3%	3%	3%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%				0%			
Shared Lane Traffic (%)												
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	4	4		3	3		5	5	2		1	1
Permitted Phases			4			3				2		
Detector Phase	4	4	4	3	3	3	5	5	2	2	1	1
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	24.0	24.0	24.0	27.0	27.0	27.0	11.0	11.0	26.0	26.0	11.0	11.0
Total Split (s)	24.0	24.0	24.0	28.0	28.0	28.0	23.0	23.0	114.0	114.0	34.0	34.0
Total Split (%)	12.0%	12.0%	12.0%	14.0%	14.0%	14.0%	11.5%	11.5%	57.0%	57.0%	17.0%	17.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0		5.0	5.0	5.0		5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lead
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	None	None	C-Min	C-Min	None	None
Act Effct Green (s)		14.4	14.4		23.0	23.0		14.9	109.0	109.0		33.6
Actuated g/C Ratio		0.07	0.07		0.12	0.12		0.07	0.54	0.54		0.17
v/c Ratio		0.35	0.48		1.08	0.36		0.69	1.06	0.25		0.94
Control Delay		94.5	21.0		164.0	16.6		116.0	83.2	14.1		123.5
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0
Total Delay		94.5	21.0		164.0	16.6		116.0	83.2	14.1		123.5
LOS		F	C		F	B		F	F	B		F
Approach Delay		44.5			118.9				78.0			
Approach LOS		D			F				E			

Intersection Summary	
Cycle Length: 200	
Actuated Cycle Length: 200	
Offset: 190 (95%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 60.7	Intersection LOS: E
Intersection Capacity Utilization 100.4%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 10: SR 303 & NE Furneys Lane

Ø1	Ø2 (R)		Ø3	Ø4
34 s	114 s		28 s	24 s

Ø5	Ø6 (R)	
23 s	125 s	

Lane Group	SBT	SBR
Lane Configurations	↟↟	↗
Traffic Volume (vph)	1560	50
Future Volume (vph)	1560	50
Confl. Peds. (#/hr)		10
Confl. Bikes (#/hr)		
Peak Hour Factor	0.95	0.95
Growth Factor	100%	100%
Heavy Vehicles (%)	2%	2%
Bus Blockages (#/hr)	0	0
Parking (#/hr)		
Mid-Block Traffic (%)	0%	
Shared Lane Traffic (%)		
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Detector Phase	6	6
Switch Phase		
Minimum Initial (s)	6.0	6.0
Minimum Split (s)	19.0	19.0
Total Split (s)	125.0	125.0
Total Split (%)	62.5%	62.5%
Yellow Time (s)	3.5	3.5
All-Red Time (s)	1.5	1.5
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	5.0	5.0
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Recall Mode	C-Min	C-Min
Act Effct Green (s)	127.6	127.6
Actuated g/C Ratio	0.64	0.64
v/c Ratio	0.73	0.06
Control Delay	17.5	0.9
Queue Delay	0.0	0.0
Total Delay	17.5	0.9
LOS	B	A
Approach Delay	32.1	
Approach LOS	C	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations	↱	↱		↱	↱			↱	↑↑	↱		↱
Traffic Volume (vph)	15	5	5	100	5	285	50	15	2030	15	25	195
Future Volume (vph)	15	5	5	100	5	285	50	15	2030	15	25	195
Confl. Peds. (#/hr)			5	5				3		3		3
Confl. Bikes (#/hr)						2						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.95	0.92	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	7%	7%	7%	2%	4%	4%	4%	2%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%				0%			
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		Prot	Prot	NA	Perm	Prot	Prot
Protected Phases		8			4		1	1	6		5	5
Permitted Phases	8			4						6		
Detector Phase	8	8		4	4		1	1	6	6	5	5
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	38.6	38.6		10.6	10.6		10.6	10.6	30.9	30.9	10.6	10.6
Total Split (s)	38.6	38.6		38.6	38.6		20.1	20.1	129.3	129.3	32.1	32.1
Total Split (%)	19.3%	19.3%		19.3%	19.3%		10.1%	10.1%	64.7%	64.7%	16.1%	16.1%
Yellow Time (s)	3.6	3.6		3.6	3.6		3.6	3.6	3.9	3.9	3.6	3.6
All-Red Time (s)	1.0	1.0		1.0	1.0		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	0.0	0.0		0.0
Total Lost Time (s)	4.6	4.6		4.6	4.6			4.6	4.9	4.9		4.6
Lead/Lag							Lead	Lead	Lag	Lag	Lead	Lead
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None	None	C-Min	C-Min	None	None
Act Effct Green (s)	28.6	28.6		28.6	28.6			12.3	128.4	128.4		28.9
Actuated g/C Ratio	0.14	0.14		0.14	0.14			0.06	0.64	0.64		0.14
v/c Ratio	0.42	0.04		0.56	0.94			0.65	0.96	0.02		0.92
Control Delay	109.6	48.1		90.2	81.8			103.5	9.9	0.0		120.2
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.2	0.0		0.0
Total Delay	109.6	48.1		90.2	81.8			103.5	10.1	0.0		120.2
LOS	F	D		F	F			F	B	A		F
Approach Delay		85.9			84.0				13.0			
Approach LOS		F			F				B			

Intersection Summary

Cycle Length: 200

Actuated Cycle Length: 200

Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 26.8   Intersection LOS: C

Intersection Capacity Utilization 98.0%   ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 11: SR 303 & NE Fuson Road

	Ø1	Ø2 (R)		Ø4	
	20.1 s	141.3 s		38.6 s	
	Ø5	Ø6 (R)		Ø8	
	32.1 s	129.3 s		38.6 s	

Lane Group	SBT	SBR
Lane Configurations	↑↑	↗
Traffic Volume (vph)	1660	25
Future Volume (vph)	1660	25
Confl. Peds. (#/hr)		3
Confl. Bikes (#/hr)		1
Peak Hour Factor	0.95	0.95
Growth Factor	100%	100%
Heavy Vehicles (%)	3%	3%
Bus Blockages (#/hr)	0	0
Parking (#/hr)		
Mid-Block Traffic (%)	0%	
Shared Lane Traffic (%)		
Turn Type	NA	Perm
Protected Phases	2	
Permitted Phases		2
Detector Phase	2	2
Switch Phase		
Minimum Initial (s)	6.0	6.0
Minimum Split (s)	34.9	34.9
Total Split (s)	141.3	141.3
Total Split (%)	70.7%	70.7%
Yellow Time (s)	3.9	3.9
All-Red Time (s)	1.0	1.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	4.9	4.9
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Recall Mode	C-Min	C-Min
Act Effct Green (s)	145.0	145.0
Actuated g/C Ratio	0.72	0.72
v/c Ratio	0.69	0.02
Control Delay	18.0	1.8
Queue Delay	0.0	0.0
Total Delay	18.0	1.8
LOS	B	A
Approach Delay	29.7	
Approach LOS	C	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	230	165	180	220	110	150	100	280	1715	320	25	230
Future Volume (vph)	230	165	180	220	110	150	100	280	1715	320	25	230
Confl. Peds. (#/hr)	1		4	4		1		2		19		19
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.92	0.98	0.98	0.98	0.92	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	2%	5%	5%	5%	2%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%				0%			
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	3	8		7	4		1	1	6		5	5
Permitted Phases			8			4				6		
Detector Phase	3	8	8	7	4	4	1	1	6	6	5	5
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	10.0	10.0	6.0	6.0
Minimum Split (s)	10.6	39.6	39.6	10.6	39.6	39.6	10.6	10.6	38.0	38.0	10.6	10.6
Total Split (s)	30.0	39.7	39.7	29.9	39.6	39.6	46.6	46.6	97.9	97.9	32.5	32.5
Total Split (%)	15.0%	19.9%	19.9%	15.0%	19.8%	19.8%	23.3%	23.3%	49.0%	49.0%	16.3%	16.3%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	4.0	4.0	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	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	0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6		4.6	5.0	5.0		4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lead
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	None	None	Min	Min	None	None
Act Effct Green (s)	25.4	23.3	23.3	25.3	23.2	23.2		42.1	93.0	93.0		27.9
Actuated g/C Ratio	0.13	0.12	0.12	0.13	0.12	0.12		0.22	0.49	0.49		0.15
v/c Ratio	1.00	0.75	0.60	0.95	0.50	0.49		1.02	1.03	0.44		1.01
Control Delay	137.9	99.4	28.9	126.3	84.2	18.9		120.8	76.0	24.1		134.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	137.9	99.4	28.9	126.3	84.2	18.9		120.8	76.0	24.1		134.7
LOS	F	F	C	F	F	B		F	E	C		F
Approach Delay		92.7			83.1				76.3			
Approach LOS		F			F				E			

Intersection Summary

Cycle Length: 200

Actuated Cycle Length: 188.4

Natural Cycle: 145

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.03

Intersection Signal Delay: 79.8	Intersection LOS: E
Intersection Capacity Utilization 102.9%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 12: SR 303 & NE McWilliams Road

Ø1	Ø2	Ø3	Ø4
46.6 s	83.8 s	30 s	39.6 s

Ø5	Ø6	Ø7	Ø8
32.5 s	97.9 s	29.9 s	39.7 s

Lane Group	SBT	SBR
Lane Configurations	↑↑	↗
Traffic Volume (vph)	1455	240
Future Volume (vph)	1455	240
Confl. Peds. (#/hr)		2
Confl. Bikes (#/hr)		
Peak Hour Factor	0.98	0.98
Growth Factor	100%	100%
Heavy Vehicles (%)	3%	3%
Bus Blockages (#/hr)	0	0
Parking (#/hr)		
Mid-Block Traffic (%)	0%	
Shared Lane Traffic (%)		
Turn Type	NA	Perm
Protected Phases	2	
Permitted Phases		2
Detector Phase	2	2
Switch Phase		
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	40.0	40.0
Total Split (s)	83.8	83.8
Total Split (%)	41.9%	41.9%
Yellow Time (s)	4.0	4.0
All-Red Time (s)	1.0	1.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	5.0	5.0
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Recall Mode	Min	Min
Act Effct Green (s)	78.9	78.9
Actuated g/C Ratio	0.42	0.42
v/c Ratio	1.01	0.35
Control Delay	79.4	21.3
Queue Delay	0.0	0.0
Total Delay	79.4	21.3
LOS	E	C
Approach Delay	79.5	
Approach LOS	E	

Intersection Summary

Intersection

Int Delay, s/veh	0.6										

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗		↑↱			↑↱	
Traffic Vol, veh/h	0	0	5	0	0	60	0	790	15	0	610	35
Future Vol, veh/h	0	0	5	0	0	60	0	790	15	0	610	35
Conflicting Peds, #/hr	16	0	11	11	0	16	2	0	1	1	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	0	0	0	0	0	0	4	4	4	3	3	3
Mvmt Flow	0	0	6	0	0	75	0	988	19	0	763	44

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	417	-	-	521	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.9	-	-	6.9	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.3	-	-	3.3	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	590	0	0	505	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	583	-	-	497	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.2	13.5	0	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	583	497	-	-
HCM Lane V/C Ratio	-	-	0.011	0.151	-	-
HCM Control Delay (s)	-	-	11.2	13.5	-	-
HCM Lane LOS	-	-	B	B	-	-
HCM 95th %tile Q(veh)	-	-	0	0.5	-	-

Intersection

Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗		↑↱			↑↱	
Traffic Vol, veh/h	0	0	5	0	0	80	0	845	5	0	640	25
Future Vol, veh/h	0	0	5	0	0	80	0	845	5	0	640	25
Conflicting Peds, #/hr	13	0	17	17	0	13	7	0	7	7	0	7
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	0	0	0	0	0	0	4	4	4	3	3	3
Mvmt Flow	0	0	6	0	0	100	0	1056	6	0	800	31

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	440	-	-	551	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.9	-	-	6.9	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.3	-	-	3.3	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	570	0	0	483	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-		-	-	
Mov Cap-1 Maneuver	-	-	557	-	-	474	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.5	14.6	0	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	557	474	-	-
HCM Lane V/C Ratio	-	-	0.011	0.211	-	-
HCM Control Delay (s)	-	-	11.5	14.6	-	-
HCM Lane LOS	-	-	B	B	-	-
HCM 95th %tile Q(veh)	-	-	0	0.8	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↱	↟		↱	↟		↱	↟↟↟		↱	↟↟	
Traffic Volume (vph)	40	5	130	25	5	55	90	2365	35	20	1925	60
Future Volume (vph)	40	5	130	25	5	55	90	2365	35	20	1925	60
Confl. Peds. (#/hr)				55								
Confl. Bikes (#/hr)												
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	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases				8			2			6		
Detector Phase	7	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	11.0	29.0		29.0	29.0		11.0	23.0		11.0	23.0	
Total Split (s)	11.0	40.0		29.0	29.0		16.0	149.0		11.0	144.0	
Total Split (%)	5.5%	20.0%		14.5%	14.5%		8.0%	74.5%		5.5%	72.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Act Effct Green (s)	7.0	26.5		14.5	14.5		163.5	156.9		154.4	148.4	
Actuated g/C Ratio	0.04	0.13		0.07	0.07		0.82	0.78		0.77	0.74	
v/c Ratio	0.69	0.55		0.34	0.39		0.69	0.88		0.24	0.83	
Control Delay	139.3	52.9		96.0	27.9		49.9	8.8		17.6	13.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	139.3	52.9		96.0	27.9		49.9	8.8		17.6	13.2	
LOS	F	D		F	C		D	A		B	B	
Approach Delay		72.5			47.9			10.3			13.3	
Approach LOS		E			D			B			B	

Intersection Summary

Cycle Length: 200

Actuated Cycle Length: 200

Offset: 24 (12%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 14.5   Intersection LOS: B

Intersection Capacity Utilization 90.1%   ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 17: Wheaton Way (SR 303) & E Broad Street

Ø1	Ø2 (R)
11 s	149 s

	Ø4
	40 s

Ø5	Ø6 (R)
16 s	144 s

Ø7	Ø8
11 s	29 s

MOVEMENT SUMMARY

▽ Site: 18 [NE Bentley Drive RAB]

SR 303/NE Bentley Drive
2040 PM Peak Build
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Wheaton Way (SR 303)												
3u	U	25	3.0	0.941	23.8	LOS D	17.8	455.7	0.99	1.19	1.64	32.3
3	L2	360	3.0	0.941	21.3	LOS D	17.8	455.7	0.99	1.19	1.64	21.8
8	T1	1595	3.0	0.941	14.3	LOS D	18.2	466.9	0.98	1.14	1.58	33.2
18	R2	35	3.0	0.941	13.8	LOS D	18.2	466.9	0.97	1.12	1.54	29.7
Approach		2015	3.0	0.941	15.7	LOS B	18.2	466.9	0.98	1.15	1.59	31.2
East: NE Bentley Drive												
1	L2	45	3.0	0.188	19.1	LOS B	1.0	25.1	0.89	0.96	0.89	29.1
6	T1	5	3.0	0.188	13.1	LOS B	1.0	25.1	0.89	0.96	0.89	23.8
16	R2	5	3.0	0.188	13.0	LOS B	1.0	25.1	0.89	0.96	0.89	29.2
Approach		55	3.0	0.188	18.0	LOS B	1.0	25.1	0.89	0.96	0.89	28.8
North: Wheaton Way (SR 303)												
7u	U	25	3.0	0.917	25.8	LOS D	17.3	443.2	1.00	1.23	1.70	33.4
7	L2	60	3.0	0.917	23.3	LOS D	17.3	443.2	1.00	1.23	1.70	30.0
4	T1	1455	3.0	0.917	16.6	LOS D	18.3	467.9	1.00	1.20	1.67	32.4
14	R2	230	3.0	0.917	15.9	LOS D	18.3	467.9	1.00	1.18	1.64	29.5
Approach		1770	3.0	0.917	16.9	LOS B	18.3	467.9	1.00	1.20	1.67	32.0
West: NE Bentley Drive												
5	L2	265	3.0	0.501	16.9	LOS B	3.3	85.4	0.93	1.02	1.07	30.6
2	T1	15	3.0	0.228	10.2	LOS B	1.1	29.0	0.84	0.91	0.84	28.4
12	R2	70	3.0	0.228	10.3	LOS B	1.1	29.0	0.84	0.91	0.84	31.2
Approach		350	3.0	0.501	15.3	LOS B	3.3	85.4	0.90	1.00	1.01	30.6
All Vehicles		4190	3.0	0.941	16.2	LOS B	18.3	467.9	0.98	1.16	1.56	31.5

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

▽ Site: 19 [NE Fairgrounds Road RAB]

SR 303/NE Fairgrounds Road
2040 PM Peak Build
Site Category: (None)
Roundabout

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
Movement Performance - Vehicles												
South: Wheaton Way (SR 303)												
3u	U	25	3.0	0.848	22.2	LOS C	14.0	357.9	0.96	1.07	1.42	34.0
3	L2	340	3.0	0.848	19.7	LOS B	14.0	357.9	0.96	1.07	1.42	31.2
8	T1	1455	3.0	0.848	12.0	LOS B	14.6	373.8	0.93	0.99	1.33	36.5
18	R2	90	3.0	0.848	11.4	LOS B	14.6	373.8	0.92	0.96	1.28	33.6
Approach		1910	3.0	0.848	13.5	LOS B	14.6	373.8	0.94	1.01	1.34	35.9
East: NE John Carlson Road												
1	L2	85	3.0	0.718	24.5	LOS C	4.8	121.9	0.93	1.10	1.36	30.8
6	T1	90	3.0	0.718	18.7	LOS B	4.8	121.9	0.93	1.10	1.36	27.5
16	R2	85	3.0	0.718	18.4	LOS B	4.8	121.9	0.93	1.10	1.36	33.6
Approach		260	3.0	0.718	20.5	LOS C	4.8	121.9	0.93	1.10	1.36	31.3
North: Wheaton Way (SR 303)												
7	L2	175	3.0	0.857	21.6	LOS D	12.8	326.6	0.98	1.21	1.58	35.1
4	T1	1275	3.0	0.857	15.1	LOS D	13.6	348.0	0.98	1.18	1.56	35.7
14	R2	90	3.0	0.857	14.6	LOS D	13.6	348.0	0.98	1.16	1.54	34.5
Approach		1540	3.0	0.857	15.8	LOS B	13.6	348.0	0.98	1.18	1.56	35.6
West: NE Fairgrounds Road												
5	L2	130	3.0	0.559	18.3	LOS B	3.3	83.8	0.88	1.01	1.09	35.2
2	T1	100	3.0	0.559	12.1	LOS B	3.3	83.8	0.88	1.01	1.09	30.3
12	R2	320	3.0	0.557	10.6	LOS B	3.8	96.4	0.92	1.02	1.10	32.7
Approach		550	3.0	0.559	12.7	LOS B	3.8	96.4	0.90	1.01	1.09	33.2
All Vehicles		4260	3.0	0.857	14.6	LOS B	14.6	373.8	0.95	1.08	1.39	35.3

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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