



St. James Mini-Roundabouts

Zak, Joe, and Rick

October 24, 2019



Hwy 4 in St. James



Highlights – Preconstruction

- Mostly original 1951 Concrete
- Sidewalk obstacle course
- 4" Watermain? More like 2"



Background

- Preconstruction



City resolution

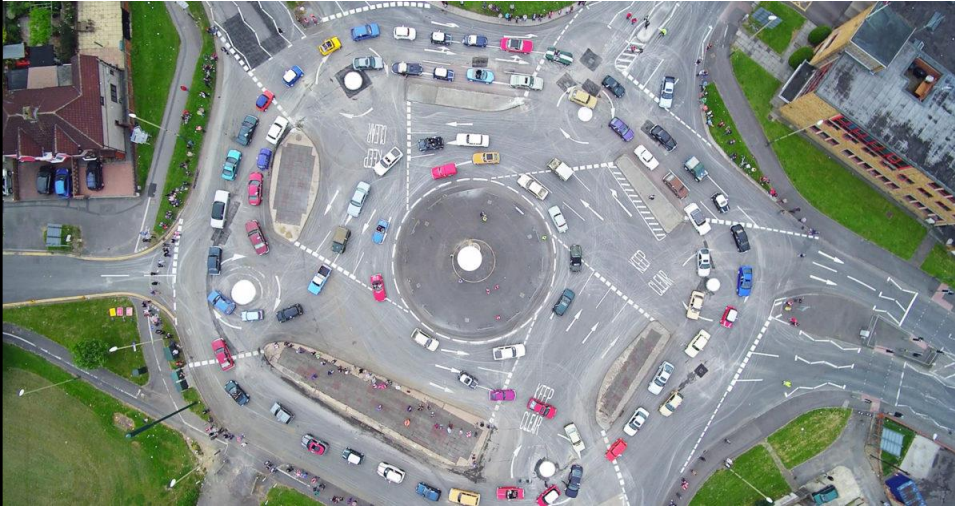
December 3, 2013

WHEREAS, the City is concerned about the number of parking stalls which would be eliminated in the business district if mini-roundabouts are installed at the intersections of First Avenue South and Armstrong Boulevard South and First Avenue South and Seventh Street South;

NOW, THEREFORE, be it resolved that the City Council of the City of St. James, respectfully requests that the option of signal lights be installed at the intersections of First Avenue South and Armstrong Blvd. South and First Avenue South and Seventh Street South rather than installing mini-roundabouts.



The concern



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Option 1-Signals w/turn lanes



11/1/2019

Optional Tagline Goes Here | mndot.gov/

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Option 2-Mini-roundabout w/ parallel parking



Option 3-Mini-roundabout w/back-in-angle parking



Construction Costs

Options	MnDOT	City	County
Signal	\$1.2M-\$1.4M	\$25,000-\$35,000	\$10,000-\$20,000
Mini w/ parallel	\$0.4M-\$0.6M	\$5,000-\$15,000	\$5,000-\$15,000
Mini w/ Diagonal	\$0.5M-\$0.7M	\$5,000-\$15,000	\$5,000-\$15,000

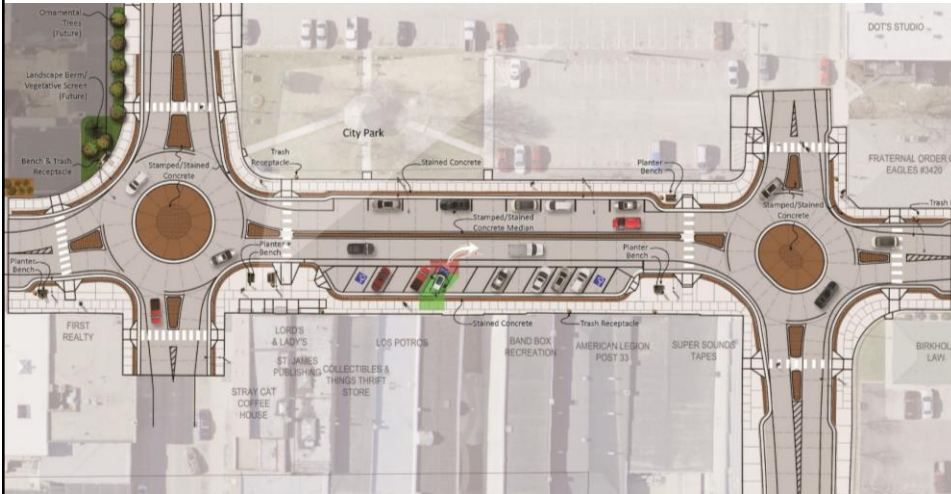
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Demonstration at GM Runge



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The plan



Informational Learning

This informational learning collage features several graphics detailing the benefits of roundabouts. Key statistics include:

- 89%** reduction in FATAL crashes
- 75%** reduction in INJURY crashes
- 40%** reduction in all crashes
- 15-20** mph average speeds
- 83%** of vehicles yield
- 1/2** the pedestrian crossing distance
- 1/3** less stopping and starting time
- 2** stage crossing
- 8** conflict points
- 32%** less stopping and starting time
- 7%** less idling time
- 1/2** the pedestrian crossing distance
- 1/3** less stopping and starting time
- 2** stage crossing
- 83%** of vehicles yield

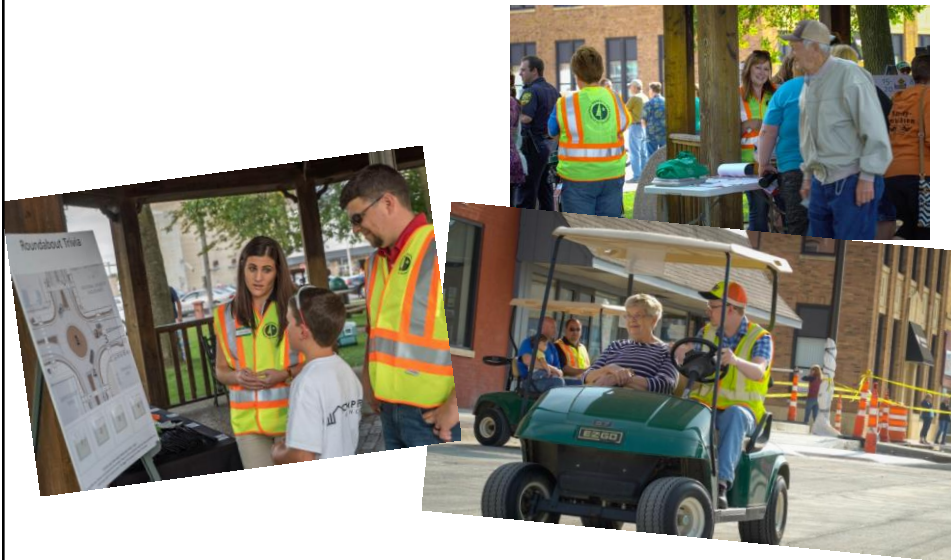
The graphics also mention 'Very Characteristics of a Roundabout', 'Downtown Reconstruction Fact Sheet', 'Back-in Angle Parking', and 'QUICK FACTS: Roundabouts tend to not have their parallel parking stalls close and park are more available than other intersectionality of traffic, especially when having the right-of-way'. Logos for 'BOLTON & HENK' and 'm' are visible.

Public Involvement Preconstruction

- September 5 2013 – Public Information Meeting
- April 24 2014 – Mini-roundabouts Demonstration
- May 28 2014 – Public Information Meeting
- August 8 2014 – Public Information Meeting
- November 18 2014 – Public Hearing and City Council Meeting
- December 2 2014 – City Council Meeting and Municipal Consent Resolution
- April 1 2015 – Agency Design Coordination Meeting
- May 13 2015 – Public Information Meeting
- May 20 2015 – Construction Staging Workshop
- May 20 2015 – Aesthetics Advisory Committee Meeting
- June 16 2015 – St. James ‘Hot Dog Days’ Public Information Booth
- June 17 2015 – Aesthetics Advisory Committee Meeting
- June 17 2015 – Agency Design Coordination Meeting
- June 27 2015 – ‘Railroad Days’ Public Information Booth
- July 18 – July 19 2015 – Watonwan County Fair Public Information Booth
- August 12 2015 – Agency Design Coordination Meeting
- September 30 2015 – Construction Staging Workshop
- October 22 2015 – Agency Design Coordination Meeting
- <http://www.dot.state.mn.us/d7/projects/hwy4stjames/>

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Roundabout Rodeo



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Roundabout Rodeo



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Truck – Left Turn



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Truck – Right Turn



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Snow, snow, snow



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Questions

Zak – Zachary.tess@state.mn.us – Project Manager

Joe – joe.mccabe@ci.stjames.mn.us – City Manager

Rick – Rick.eisfeld@ci.stjames.mn.us – Chief of Police

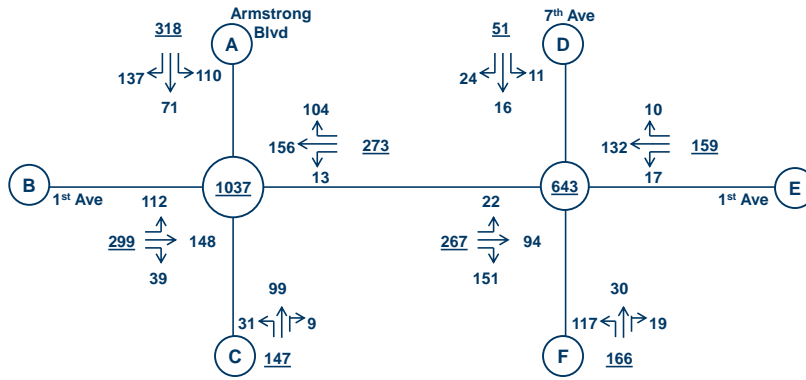
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Background Engineering Gibberish

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Existing PM Peak Hourly Volumes

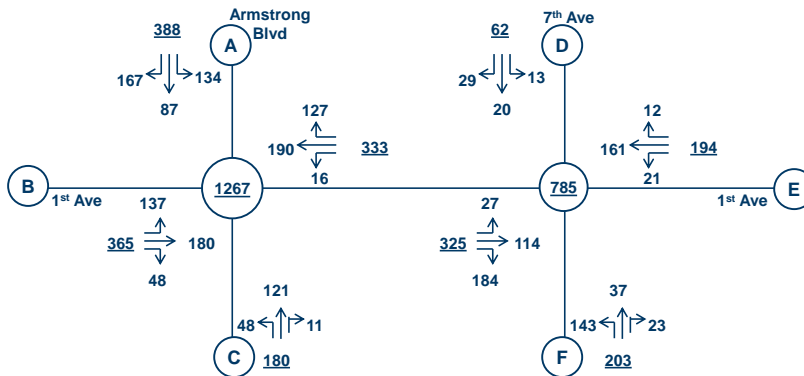
Existing PM Peak Hourly Volume
4:00 – 5:00 PM



Forecasted PM Peak Hourly Volumes

Forecasted PM Peak Hourly Volume
4:00 – 5:00 PM

Growth Rate = 22%



Operational Performances (Existing PM Peak Period)

Signalized Intersections (80-sec signal cycle)

PM Peak Classification

Approach	Queue Length (ft)		# Stops	Throughput (veh/hr)	Average Stop per vehicle	Approach Delay (sec)	Approach LOS	Intersection Delay (sec)	Intersection LOS	
	Average	95-percent								
ARMSTRONG BLVD	EB	34	294	198	124 / 153 / 28	0.7	18	B	15.5	B
	WB	7	132	107	6 / 146 / 97	0.4	7	A		
	NB	12	136	81	27 / 76 / 18	0.7	17	B		
	SB	36	246	156	69 / 95 / 147	0.7	19	B		
7 th AVENUE	EB	18	255	148	7 / 109 / 126	0.5	12	B	10.2	B
	WB	1	71	10	10 / 98 / 2	0.1	2	A		
	NB	14	179	90	142 / 9 / 20	0.5	13	B		
	SB	1	56	10	4 / 5 / 9	0.7	8	A		

Mini-Roundabouts

Approach	Queue Length (ft)		# Stops	Throughput (veh/hr)	Average Stop per vehicle	Approach Delay (sec)	Approach LOS	Intersection Delay (sec)	Intersection LOS	
	Average	95-percent								
ARMSTRONG BLVD	EB	5	159	98	110 / 150 / 38	0.2	5	A	5.8	A
	WB	8	176	125	11 / 158 / 104	0.3	6	A		
	NB	5	118	74	39 / 100 / 9	0.4	6	A		
	SB	8	247	112	113 / 71 / 138	0.2	5	A		
7 th AVENUE	EB	1	81	32	22 / 98 / 153	0.0	2	A	2.0	A
	WB	1	69	26	16 / 131 / 10	0.1	2	A		
	NB	1	79	30	118 / 31 / 18	0.1	2	A		
	SB	1	57	17	12 / 16 / 25	0.2	3	A		

Operational Performances (Forecasted PM Peak Period)

Signalized Intersections (80-sec signal cycle)

PM Peak Classification

Approach	Queue Length (ft)		# Stops	Throughput (veh/hr)	Average Stop per vehicle	Approach Delay (sec)	Approach LOS	Intersection Delay (sec)	Intersection LOS	
	Average	95-percent								
ARMSTRONG BLVD	EB	69	504	314	137 / 180 / 47	0.9	25.5	C	27.0	C
	WB	12	172	155	15 / 184 / 125	0.5	8.6	A		
	NB	25	218	140	45 / 124 / 11	0.9	23.6	C		
	SB	119	278	364	134 / 81 / 164	1.4	45.8	D		
7 th AVENUE	EB	30	387	229	24 / 118 / 185	0.7	14.3	B	11.3	B
	WB	3	144	27	20 / 160 / 13	0.2	3.3	A		
	NB	18	214	111	133 / 43 / 23	0.5	14.6	B		
	SB	3	87	34	14 / 17 / 31	0.6	9.6	A		

Mini-Roundabouts

Approach	Queue Length (ft)		# Stops	Throughput (veh/hr)	Average Stop per vehicle	Approach Delay (sec)	Approach LOS	Intersection Delay (sec)	Intersection LOS	
	Average	95-percent								
ARMSTRONG BLVD	EB	19	281	213	135 / 182 / 47	0.4	10	B	11.4	B
	WB	27	327	251	14 / 190 / 125	0.6	12	B		
	NB	16	184	143	45 / 125 / 11	0.8	14	B		
	SB	28	431	244	138 / 82 / 168	0.4	11	B		
7 th AVENUE	EB	2	103	48	26 / 118 / 188	0.1	2	A	3.0	A
	WB	2	85	49	20 / 159 / 11	0.2	3	A		
	NB	1	82	43	142 / 40 / 23	0.1	3	A		
	SB	1	68	28	14 / 19 / 30	0.4	5	A		

