


# St Francis City Council – Work Session

TH 47 in St. Francis  
September 26, 2022

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## Agenda

1. Activities since May
2. Study goals/vision
3. Concept development and discussion
4. Evaluation criteria
5. Concept evaluation and discussion
6. Moving forward

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## Study/Project Update



### Activities Since May

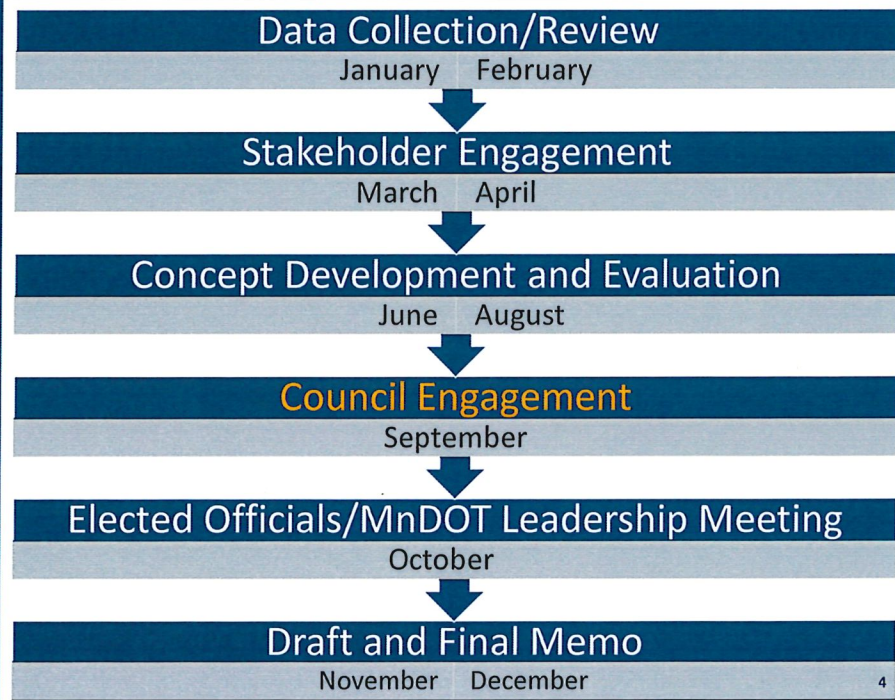
- Design charrette
- Concept development and revisions
- Development of evaluation criteria
- Technical evaluation of alternatives

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## Schedule



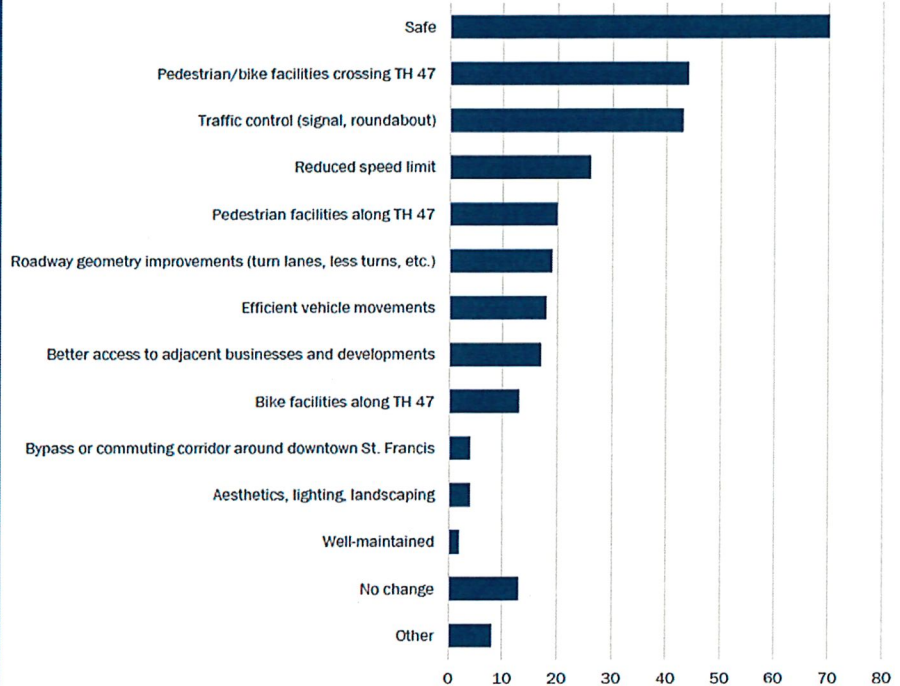
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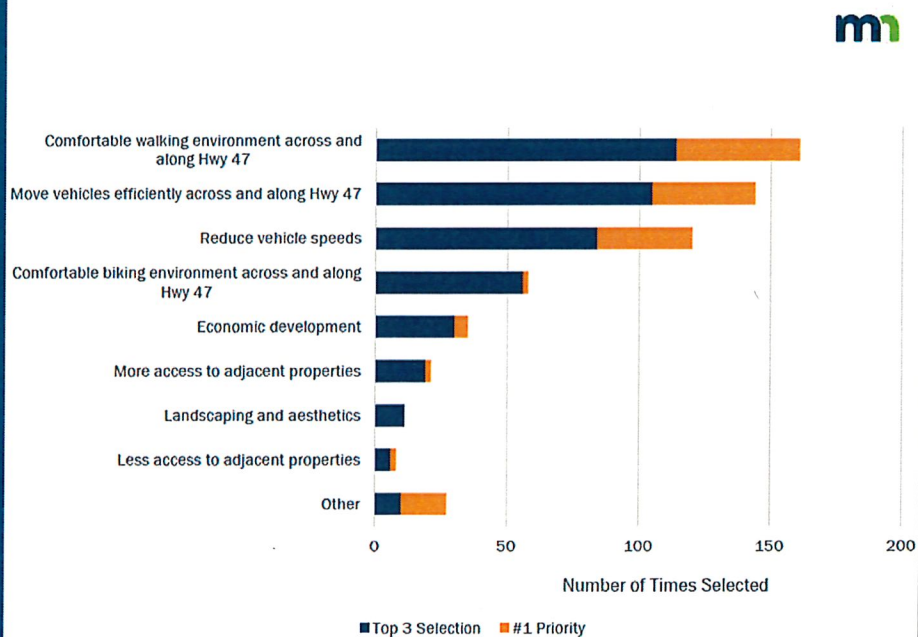


## Previous Efforts - Vision



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## Previous Efforts - Priorities



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## Previous Efforts - Priorities

### What we heard

#### Top Priorities:

- Safety
- Pedestrian/bicycles crossing Hwy 47
- Intersection Controls
- Reduced Speeds

#### Open House #1

- April 23, 2019 Listening Session
- Online Survey

#### Business Open House

- May 22, 2019
- Met with businesses

#### Community Events

- Bike Rodeo
- Pioneer Days
- School Engagement
- Senior Lunch

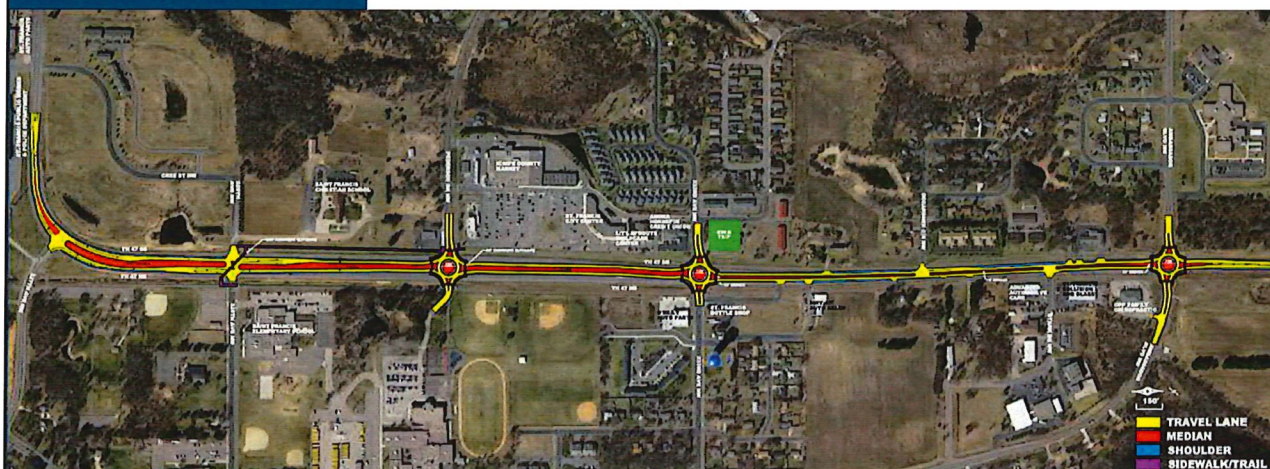


HWY 47 ST. FRANCIS PLANNING STUDY

m DEPARTMENT OF TRANSPORTATION

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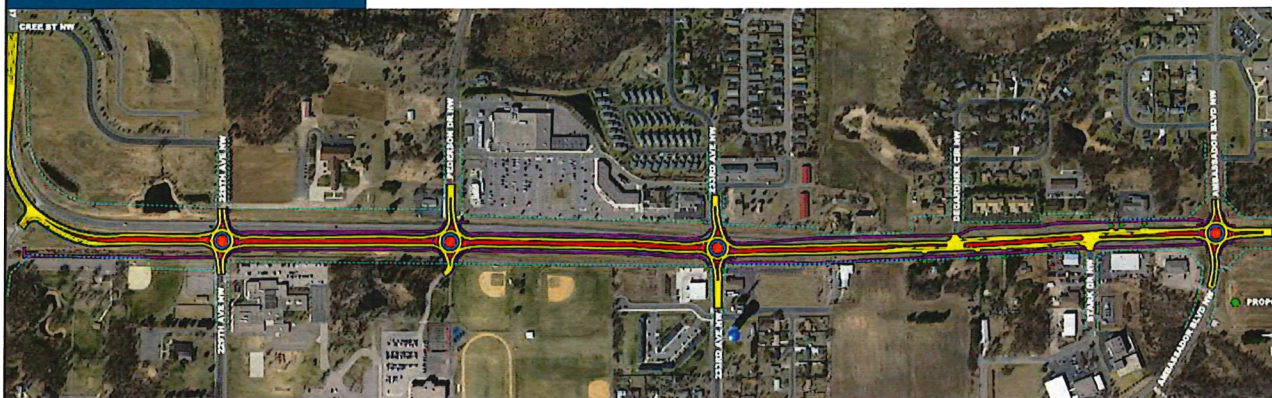


### Concept B – Referred to as Concept 1

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## Concept C – Referred to as Concept 2

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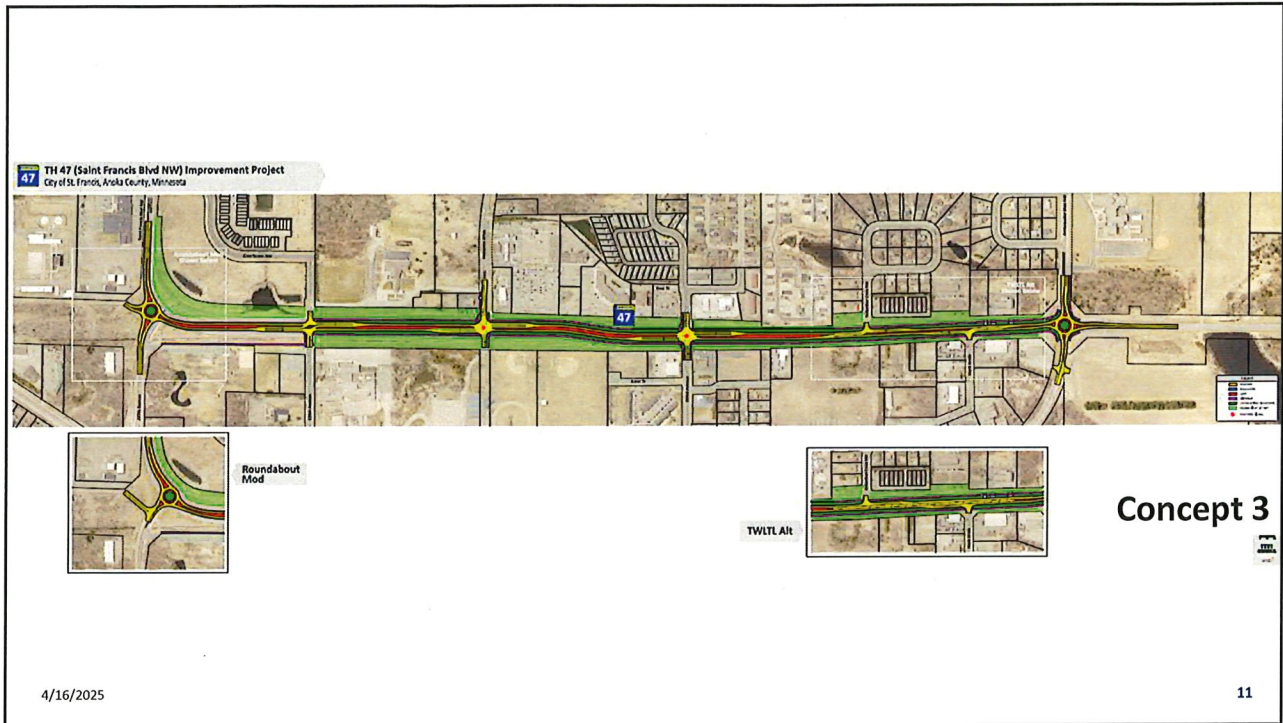
## New Concept Development

### Charrette

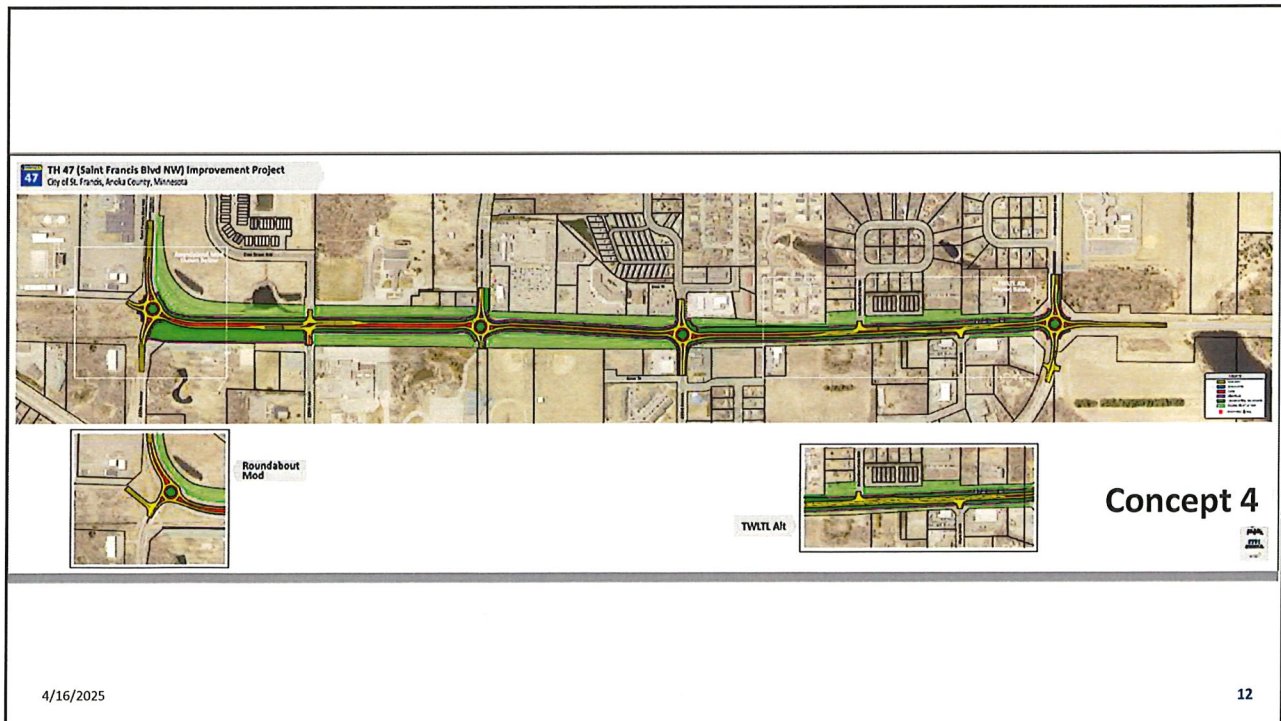
- Half-day working group
- Representatives from city, county, MnDOT
- Reviewed vision and goals
- Discussed current safety and traffic problems and future traffic conditions
- Highlighted council and stakeholder feedback on issues/problems and interests in improvements
- Drew up several ideas and considerations – alternatives and sub-alternatives from ideas generated by the larger group and small break-out groups

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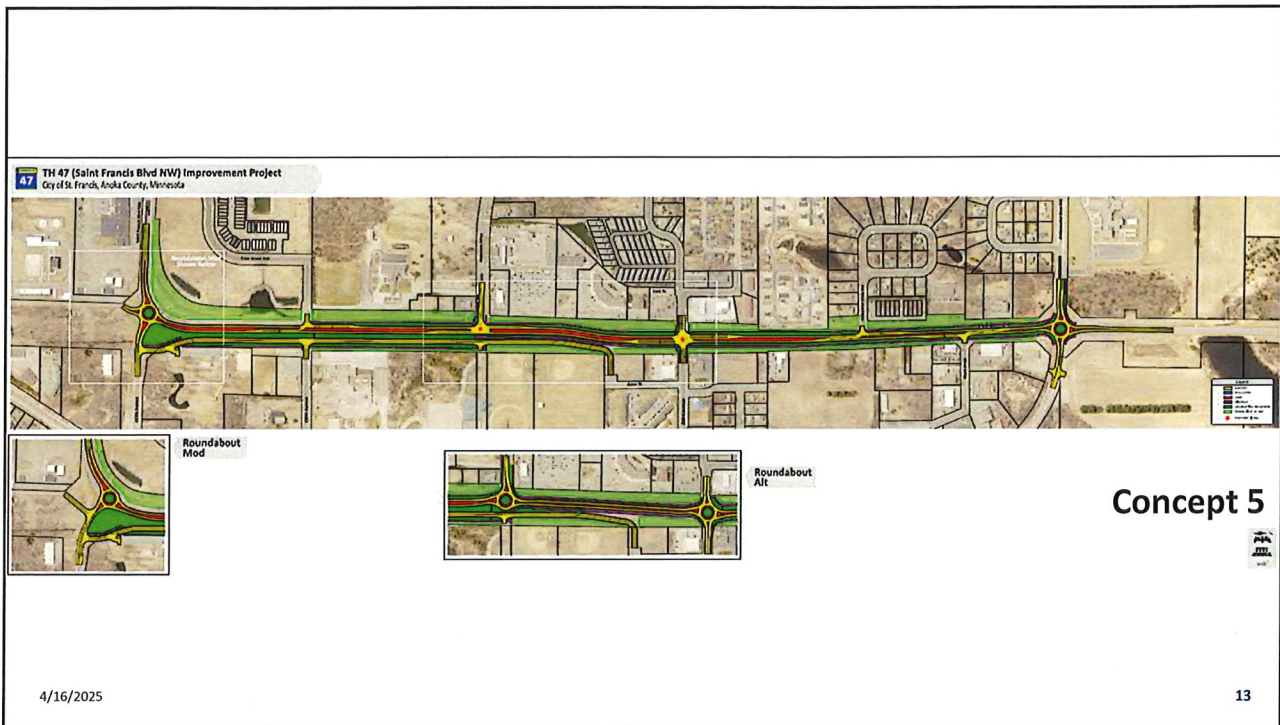


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## Evaluation Criteria

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### Evaluation Criteria

- Based upon previous efforts / conversations
- Some adjustments to provide better clarification

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## Evaluation Criteria

### Evaluation Criteria

- Safety
  - Slows traffic
  - Reduces conflict points
  - Reduces crash severity
- Mobility
  - Side street delay (average per vehicle)
  - Ease/flexibility of access



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## Evaluation Criteria

### Evaluation Criteria

- Walkability/bikability
  - Improves ability of pedestrians and bicyclists to cross the corridor (# of crossings/crossing distance)
  - Number of lanes crossed
  - Improves travel along TH 47



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## Evaluation Criteria

### Evaluation Criteria

- City vision
  - Creates business friendly environment/downtown feel
  - Accommodates streetscape enhancement
- Infrastructure condition
  - Addresses pavement condition



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## Evaluation Criteria

### Evaluation Criteria

- Remnant right of way
  - Potential for left over right of way – will vary with landscaping treatments/space dedication
- Cost (construction)
  - Estimated construction cost
  - Maintenance acknowledged – will vary with landscaping treatments



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## Concept Evaluation

### Safety –Slow Traffic

Alternative	Ability to Slow Traffic
1 ●	Roundabouts slow travel speeds between intersections more than traffic signals
2 ●	Roundabouts slow travel speeds between intersections more than traffic signals
3 ●	Some higher speeds could result compared to roundabout alternatives, but travel speed will be lower than current conditions
4 ●	Roundabouts slow travel speeds between intersections more than traffic signals
5 ●	Roundabouts slow travel speeds between intersections more than traffic signals
No Build ●	Existing conditions of high speed/passing continue

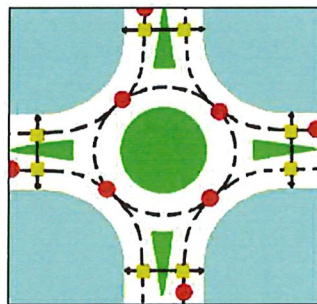
All build alternatives will reduce travel speeds due to removing a travel lane. Roundabouts will provide additional slowing between intersections over traffic signals

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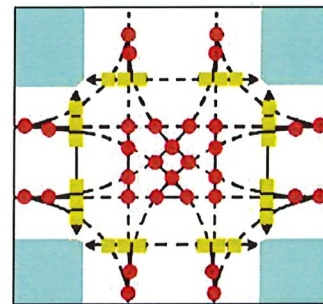
## Concept Evaluation – Conflict Points

### Roundabout



● 8 Vehicle conflicts  
■ 8 Pedestrian conflicts

### Intersection



● 32 Vehicle conflicts  
■ 24 Pedestrian conflicts

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## Concept Evaluation

### Safety –Reduce Conflict Points



Alternative	Conflict Points/Reduction	Reduction
1	43 / 73	Better
2	41 / 75	Better
3	90 / 46	OK
3 – Sub (location of roundabout at 227 <sup>th</sup> )	88 / 47	OK
3 – Sub (center left-turn lane)	90 / 46	OK
4	42 / 75	Better
4 – Sub (location of roundabout at 227 <sup>th</sup> )	40 / 76	Better
4 – Sub (center left-turn lane)	42 / 75	Better
5	62 / 63	Good*
5 – Sub (location of roundabout at 227 <sup>th</sup> )	60 / 64	Good*
5 – Sub (roundabouts at Pederson and 233 <sup>rd</sup> )	35 / 79	Best*
No Build	167	Worst

\*Does not include conflict points on frontage road. If include frontage road, rating would decrease. Frontage road adds up to 86 conflict points. Then would fall into "worst" category

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## Concept Evaluation

### Safety –Reduce Severity of Crashes









Alternative	Severity Score/Reduction	Ability to Reduce Crash Severity
1	99 / 69	Good
2	99 / 69	Good
3	151 / 53	Good
3 – Sub (location of roundabout at 227 <sup>th</sup> )	Same as alt 3	
3 – Sub (center left-turn lane)	Same as alt 3	
4	48 / 85	Best
4 – Sub (location of roundabout at 227 <sup>th</sup> )	Same as alt 4	
4 – Sub (center left-turn lane)	Same as alt 4	
5	85 / 74	Better*
5 – Sub (location of roundabout at 227 <sup>th</sup> )	Same as alt 5	Better*
5 – Sub (roundabouts at Pederson and 233 <sup>rd</sup> )	48 / 85	Best*
No Build	322	Worst

\* Does not take into consideration new crashes that could occur on the frontage road – benefit is only to TH 47 and its intersections.

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Concept Evaluation	Mobility – Delay		m
	Alternative	Alternative Has Acceptable Level of Service	
	1	Yes 	
	2	Yes 	
	3	Yes 	
	3 – Sub (location of roundabout at 227 <sup>th</sup> )		
	3 – Sub (center left-turn lane)		
	4	Yes 	
	4 – Sub (location of roundabout at 227 <sup>th</sup> )		
	4 – Sub (center left-turn lane)		
	5	Yes - some longer delays and additional travel 	
	5 – Sub (location of roundabout at 227 <sup>th</sup> )		
	5 – Sub (roundabouts at Pederson and 233 <sup>rd</sup> )		
	No Build	Yes – longer delays in most locations than the build alternatives 	

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Concept Evaluation	Mobility – Flexibility/Ease of Access		m
	Alternative	Ease of Access	
	1	Minor restrictions 	
	2	Minimal restrictions 	
	3	Moderate restrictions 	
	3 – Sub (location of roundabout at 227 <sup>th</sup> )	Same as alt 3 	
	3 – Sub (center left-turn lane)	Minimal restrictions 	
	4	Moderate restrictions 	
	4 – Sub (location of roundabout at 227 <sup>th</sup> )	Same as alt 4 	
	4 – Sub (center left-turn lane)	Minimal restrictions 	
	5	Most restrictive 	
	5 – Sub (location of roundabout at 227 <sup>th</sup> )	Same as alt 5	
	5 – Sub (roundabouts at Pederson and 233 <sup>rd</sup> )	Same as alt 5	
	No Build	No change 	

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## Concept Evaluation



### Pedestrian Safety

- Studies indicate pedestrian safety is improved with the presence of roundabouts vs. traffic signals due to:
  - Slower speeds
  - Number of travel lanes to cross
  - Fewer conflict points
  - Ability to stage the crossing (one lane at a time)

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## Concept Evaluation



### Walkability – Improves Crossing - # of Crossings and Distance

Alternative	Number of Crossings	Distances	
1	5	60 – 200 ft each	●
2	5	60 ft each for all	●
3	5	56 – 105 ft each	● ●
3 – Sub (location of roundabout at 227 <sup>th</sup> )	5	Same as alt 3	
3 – Sub (center left-turn lane)	5	Same as alt 3	
4	5	56 – 105 ft each	●
4 – Sub (location of roundabout at 227 <sup>th</sup> )	5	Same as alt 4	
4 – Sub (center left-turn lane)	5	Same as alt 4	
5	5 – 7	56 – 94 ft each	●
5 – Sub (location of roundabout at 227 <sup>th</sup> )	5 – 7	Same as alt 5	
5 – Sub (roundabouts at Pederson and 233 <sup>rd</sup> )	5 – 7	Same as alt 5	
No Build	1 – Pederson	150 ft	●

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## Concept Evaluation

### Walkability – Number of Lanes Crossed



Alternative	Number of Lanes Crossed	
1	2 – Ped, 233 <sup>rd</sup> , Ambassador; 4 – 227 <sup>th</sup> , 229 <sup>th</sup>	●
2	2 – all except 227 <sup>th</sup> ; 3 – 227 <sup>th</sup>	●
3	2 – 227 <sup>th</sup> and Ambassador; 4 – 229 <sup>th</sup> , Ped, 233 <sup>rd</sup>	●
3 – Sub (location of roundabout at 227 <sup>th</sup> )	Same as alt 3	
3 – Sub (center left-turn lane)	Same as alt 3	
4	2 – all except 229 <sup>th</sup> 4 – 229 <sup>th</sup>	●
4 – Sub (location of roundabout at 227 <sup>th</sup> )	Same as alt 4	
4 – Sub (center left-turn lane)	Same as alt 4	

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## Concept Evaluation

### Walkability – Number of Lanes Crossed



Alternative	Number of Lanes Crossed	
5	2 – 227 <sup>th</sup> , Ambassador 4 – 233 <sup>rd</sup> 3-5 – 229 <sup>th</sup> & Pederson	●
5 – Sub (location of roundabout at 227 <sup>th</sup> )	Same as alt 4	
5 – Sub (roundabouts at Pederson and 233 <sup>rd</sup> )	2 – 227 <sup>th</sup> , 233 <sup>rd</sup> , Ambassador 2-4 – Pederson 2-5 – 229 <sup>th</sup>	● ●
No Build	6	●

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## Concept Evaluation

### Walkability – Improves Travel Along TH 47



Alternative	Along TH 47	
1	Yes	●
2	Yes	●
3	Yes	●
3 – Sub (location of roundabout at 227 <sup>th</sup> )	Same as alt 3	
3 – Sub (center left-turn lane)	Same as alt 3	
4	Yes	●
4 – Sub (location of roundabout at 227 <sup>th</sup> )	Same as alt 4	
4 – Sub (center left-turn lane)	Same as alt 4	
5	Yes	●
5 – Sub (location of roundabout at 227 <sup>th</sup> )	Same as alt 5	
5 – Sub (roundabouts at Pederson and 233 <sup>rd</sup> )	Same as alt 5	
No Build	No	●

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## Concept Evaluation

### Infrastructure Condition – Improves Condition



Alternative	Improves Condition	
1	Yes	●
2	Yes	●
3	Yes	●
3 – Sub (location of roundabout at 227 <sup>th</sup> )	Same as alt 3	
3 – Sub (center left-turn lane)	Same as alt 3	
4	Yes	●
4 – Sub (location of roundabout at 227 <sup>th</sup> )	Same as alt 4	
4 – Sub (center left-turn lane)	Same as alt 4	
5	Yes	●
5 – Sub (location of roundabout at 227 <sup>th</sup> )	Same as alt 5	
5 – Sub (roundabouts at Pederson and 233 <sup>rd</sup> )	Same as alt 5	
No Build	No	●

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## Concept Evaluation

### Supports Vision – Business Friendly Environment



Alternative	Business Friendly Environment
1	Yes
2	Yes
3	Yes
3 – Sub (location of roundabout at 227 <sup>th</sup> )	Same as alt 3
3 – Sub (center left-turn lane)	Same as alt 3
4	Yes
4 – Sub (location of roundabout at 227 <sup>th</sup> )	Same as alt 4
4 – Sub (center left-turn lane)	Same as alt 4
5	Yes*
5 – Sub (location of roundabout at 227 <sup>th</sup> )	Same as alt 5
5 – Sub (roundabouts at Pederson and 233 <sup>rd</sup> )	Same as alt 5
No Build	

\*separates out school traffic at peak times, so may provide a bit of extra business friendliness

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## Concept Evaluation

### Supports Vision – Accommodates Streetscaping



Alternative	Accommodates Streetscaping
1	Yes
2	Yes
3	Yes
3 – Sub (location of roundabout at 227 <sup>th</sup> )	Same as alt 3
3 – Sub (center left-turn lane)	Same as alt 3
4	Yes
4 – Sub (location of roundabout at 227 <sup>th</sup> )	Same as alt 4
4 – Sub (center left-turn lane)	Same as alt 4
5	Less space due to frontage road
5 – Sub (location of roundabout at 227 <sup>th</sup> )	Same as alt 5
5 – Sub (roundabouts at Pederson and 233 <sup>rd</sup> )	Same as alt 5
No Build	Limited

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## Concept Evaluation



### Remnant Right of Way

- All alternatives will result in remnant right of way (see light green on images)
- The amount of remnant right of way is very similar for all alternatives, other than Alternative 5, which includes a frontage road. Remnant right of way is less on this alternative and its sub-alternatives.

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## Concept Evaluation



### Right of Way – Remnant Right of Way

Alternative	Remnant Right of Way
1	●
2	●
3	●
3 – Sub (location of roundabout at 227 <sup>th</sup> )	
3 – Sub (center left-turn lane)	
4	●
4 – Sub (location of roundabout at 227 <sup>th</sup> )	
4 – Sub (center left-turn lane)	
5	●
5 – Sub (location of roundabout at 227 <sup>th</sup> )	
5 – Sub (roundabouts at Pederson and 233 <sup>rd</sup> )	
No Build	●

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## Concept Evaluation

### Cost – Construction Cost



Alternative	Cost	
1	\$15 – 18 million	●
2	\$15 – 18 million	●
3	\$15 - \$18 million	●
3 – Sub (location of roundabout at 227 <sup>th</sup> )		
3 – Sub (center left-turn lane)		
4	\$15 - \$18 million	●
4 – Sub (location of roundabout at 227 <sup>th</sup> )		
4 – Sub (center left-turn lane)		
5	\$18 - \$20 million	●
5 – Sub (location of roundabout at 227 <sup>th</sup> )		
5 – Sub (roundabouts at Pederson and 233 <sup>rd</sup> )		
No Build	\$0	●

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## Concept Evaluation

### City Maintenance Costs

- Frontage road would have the highest maintenance costs in terms of alternatives
- Costs will vary depending upon the extent of landscaping
- Traffic signals have more maintenance costs than roundabouts (landscaping may vary this a little bit)



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	Slow Traffic	Conflict Points	Crash Severity	Mobility - Delay	Ease of Access	Crossing Distance	Number of Lanes to Cross	Travel Along TH 47	Infrastructure Condition	Business Friendly	Streetscape	ROW	Cost
1	●	●	●	●	●	●	●	●	●	●	●	●	●
2	●	●	●	●	●	●	●	●	●	●	●	●	●
3	●	●	●	●	●	●	●	●	●	●	●	●	●
3-sub 1					●								
3-sub 2					●								
4	●	●	●	●	●	●	●	●	●	●	●	●	●
4-sub 1					●								
4-sub 2					●								
5	●	●	●	●	●	●	●	●	●	●	●	●	●
5-sub 1		●											
5-sub 2		●					●						
No build	●	●	●	●	●	●	●	●	●	●	●	●	●

\* Does not include frontage road – which adds up to 86 conflict points & has the potential to add crashes, including potentially severe ones

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## Moving Forward



### Moving Forward

- Document council feedback/thoughts
- Set up a meeting with elected officials and MnDOT leadership to discuss analysis/summary

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## Next Steps

### Next Steps

- Draft and final memo/report documenting process, evaluation results, and conclusions from meeting

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