



- Project Approach
- Corridor Issues and Constraints
- Alternatives Assessment and Refinement
- Next Steps



Project Approach

Needs and Opportunity Assessment

Alternative Brainstorming with SRC Alternative Screening with SRC Vet Issues and
Assess
Alternatives
with Public

Identify
Improvement
Strategy with
SRC and Local
Leadership

> SRC = Study Review Committee







Discarded Alternatives

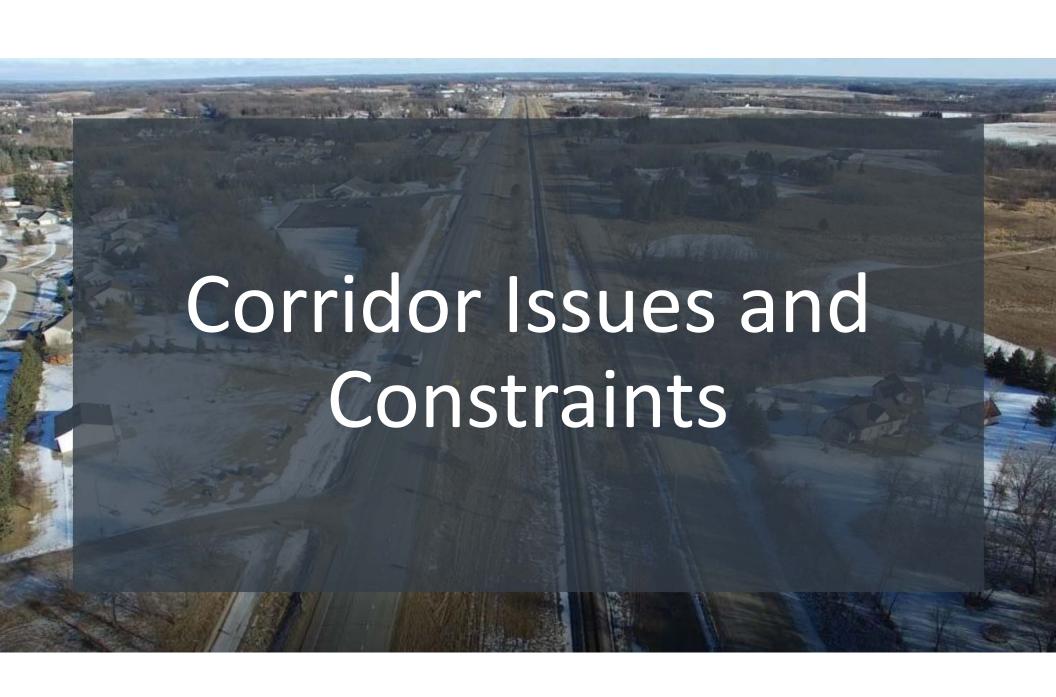


Alternative Scoring

Scoring Category	Category Weight		Category Score	Weighted Score		
Vehicle Efficiency and Safety	43		43		••••••	
Bicycle and Pedestrian Connectivity and Safety		24	••••••			
Property and Environmental Impacts		18	•••••			
Cost		16	•••••			

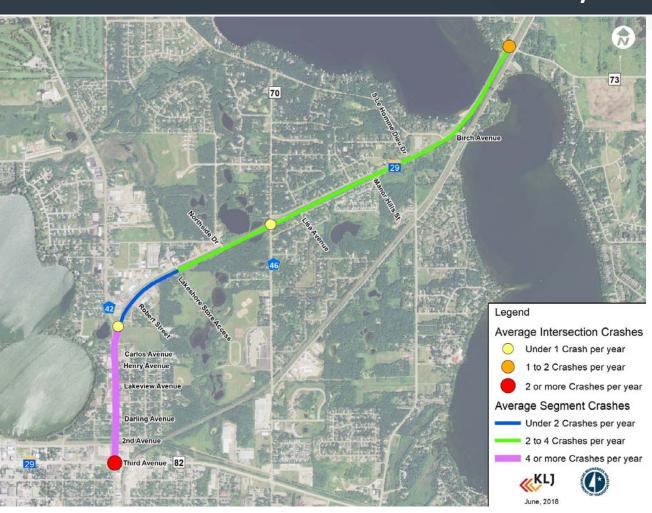
- > Alternative Scoring
 - > Technical Analysis
 - > Engineering Judgment
- > Scores <u>ARE</u> Comparative
- Scores <u>ARE NOT</u> Recommendations





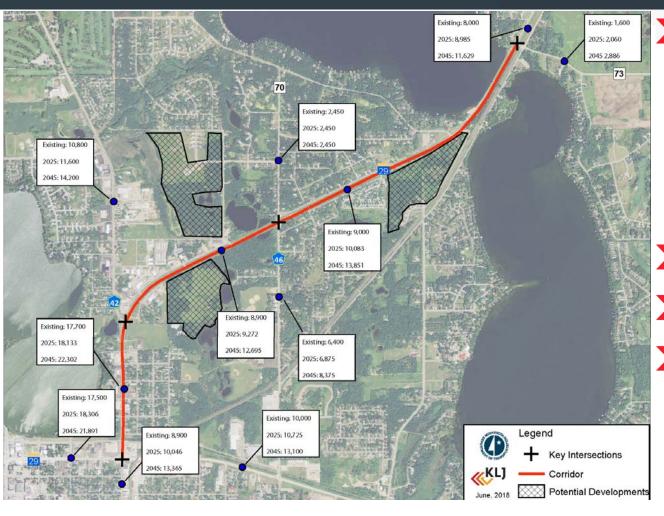


Crash History



- > 14 Crashes/Year
- > 31% at 4 key intersections
- > 37% resulting in injuries
- Corridor above Expected Crash Rate

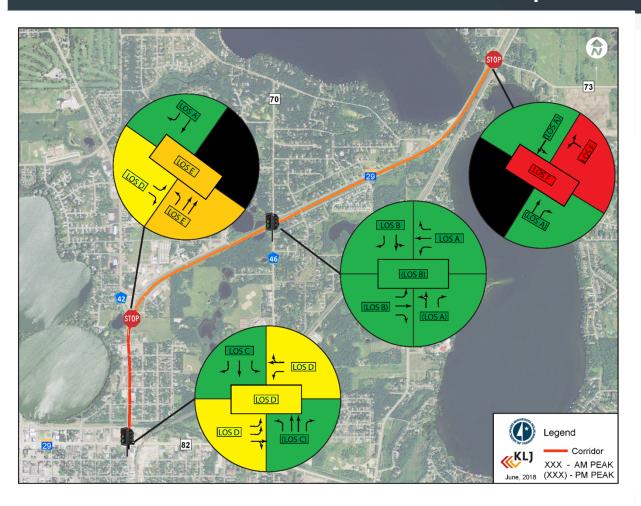
Traffic Projections



- Traffic Forecasts Consider;
 - > Local Growth Areas
 - > Regional Growth
 - > Route Selection
- **>** 2018: 8,000 17,700
- **>** 2025: 9,000 − 18,100
- **>** 2045: 11,600 22,300

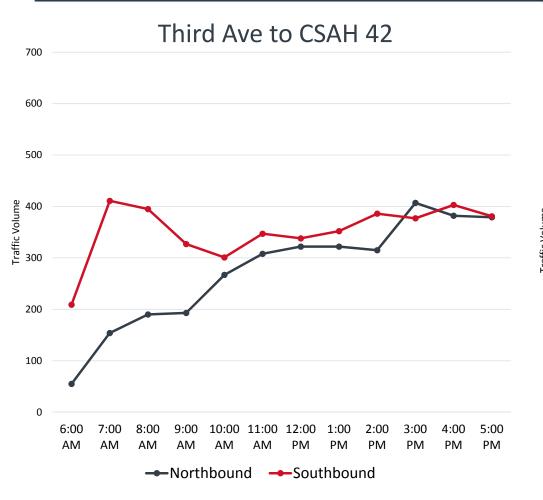
CAPACITY	TRAFFIC FLOW	DESCRIPTION	
		FREE FLOW Low volumes and no delays.	> LOS A
Under		STABLE FLOW Low volumes and speeds dictated by travel conditions.	> LOS B
		STABLE FLOW Speeds and maneuverability closely controlled due to higher volumes.	> LOS C
Approaching		RESTRICTED FLOW Higher density traffic restricts maneuverability and volumes approaching capacity.	> LOS D
At		UNSTABLE FLOW Low speeds, considerable delays, and volumes at or slightly over capacity.	
Over		FORCED FLOW Very low speeds, volumes exceed capacity, and long delays with stop-and-go traffic.	→ LOS F

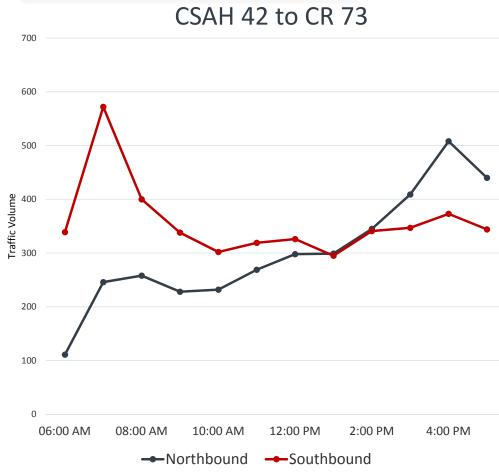
2045 Traffic Operations



- Deficient Corridor Operations in 2018 south of Nokomis
- Corridor Operations worse than Intersections
- Queueing Issues;
 - > 3rd Avenue
 - > Nokomis Street
 - County Road 73

Traffic Flow

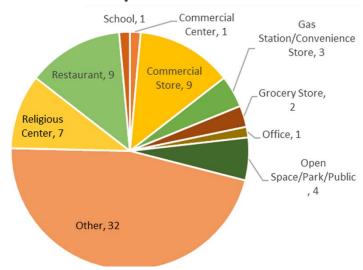




Pedestrian/Bicycle



- ▶ 69 Generators Along Corridor
- Minimal Activity Along the Corridor
- 2 Underpasses



Affected Environment

- Social/Economic
- Pedestrian/Bicycle
- Water Resources
- Parks, Recreation Areas, Refuges
- Regulated Materials/Hazardous Waste
- Environmental Justice
- Noise
- Historic and Archaeological Preservation
- Wildlife and Vegetation



Purpose and Need







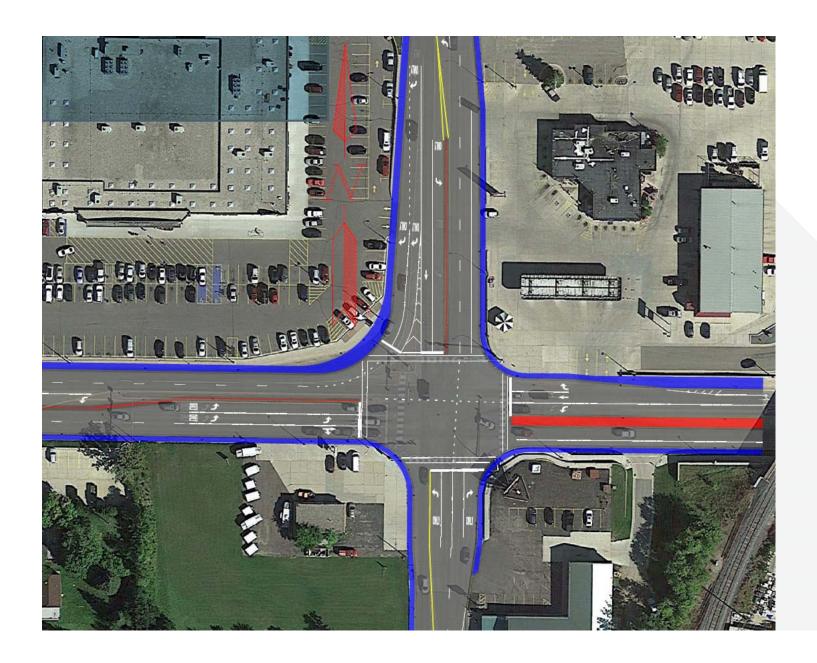


3rd Avenue (CSAH 82) Intersection



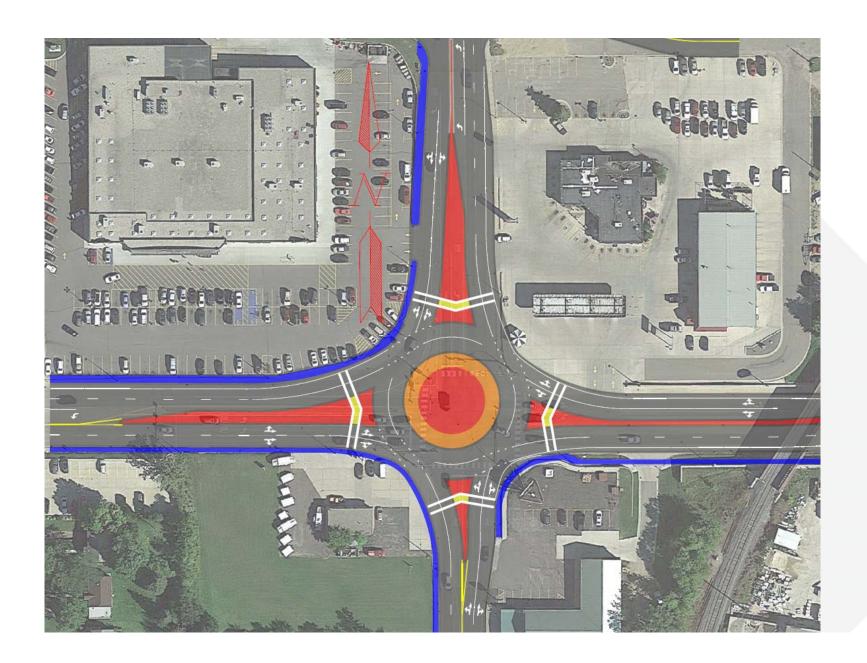
XXX AADT (Represents Year 2018) XXX AADT (Represents Year 2045)

- > 2045 LOS D/E
- Queues Block Driveways on Each Approach
 - > Worst WB and SB
- Dense Access Spacing
- Channelized Right-Turn Lane Challenging for Ped/Bike



Major Intersection Improvements

Concept Drawing	Scoring Category	Category Weight Category Score		Notes	Weighted Score
	Vehicle Efficiency and Safety	43		Minor traffic flow improvements expected. Peak hour queuing still present, but minor improvements expected. Medians reduce the number of conflict points from nearby business accesses.	
	Bicycle and Pedestrian Connectivity and Safety	24		Removal of free southbound right turn movements improves nonmotorized crossing safety. Access management via medians reduces the amount of conflicts between vehicles and pedestrians.	••••••
	Property and Environmental Impacts	18	••••••	Fits within existing intersection footprint.	(8.1)
	Cost	16	••••••	Estimated project cost: \$200-250k	

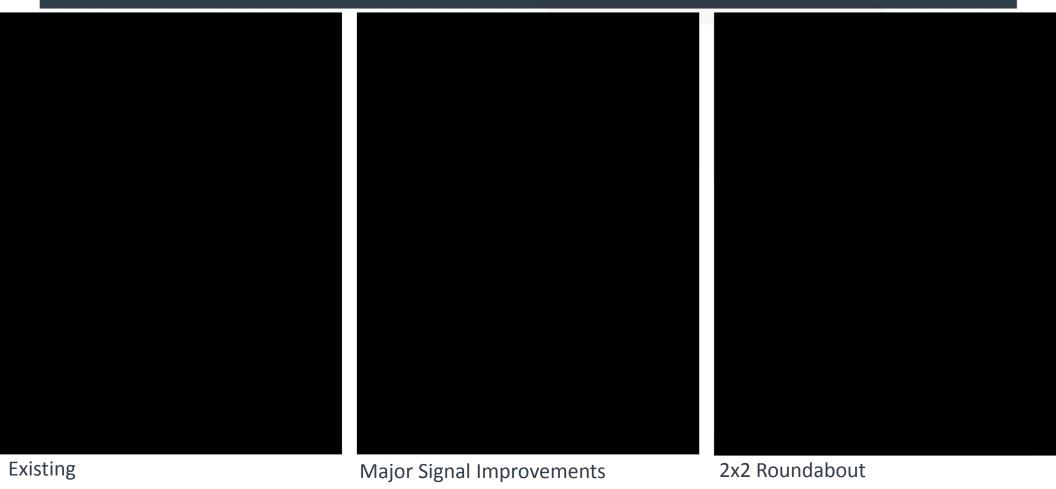


2x2 Roundabout

Concept Drawing	Scoring Category	Category Weight Category Score Notes		Notes	Weighted Score
Belletton	Vehicle Efficiency and Safety	43	•••••	Significant traffic flow improvement with delays reduced by over 50%. Potential increase in crash frequency, but reduction in serious injury crashes. Splitter islands likely to reduce the nuber of conflict points on nearby accesses	
E COLDER EUR	Bicycle and Pedestrian Connectivity and Safety	24	••••••	Removes pedestrian signal phases, but reduces entering vehicle speeds. Splitter islands allow pedestrians to cross one direction of traffic at a time. Access management via medians reduces the amount of conflicts between vehicles and nonmotorized users.	••••••
	Property and Environmental Impacts	18	••••••	Minor impacts to intersection corners likely.	(7.4)
	Cost	16	000000000	Estimated project cost: \$1.4-1.6 million	

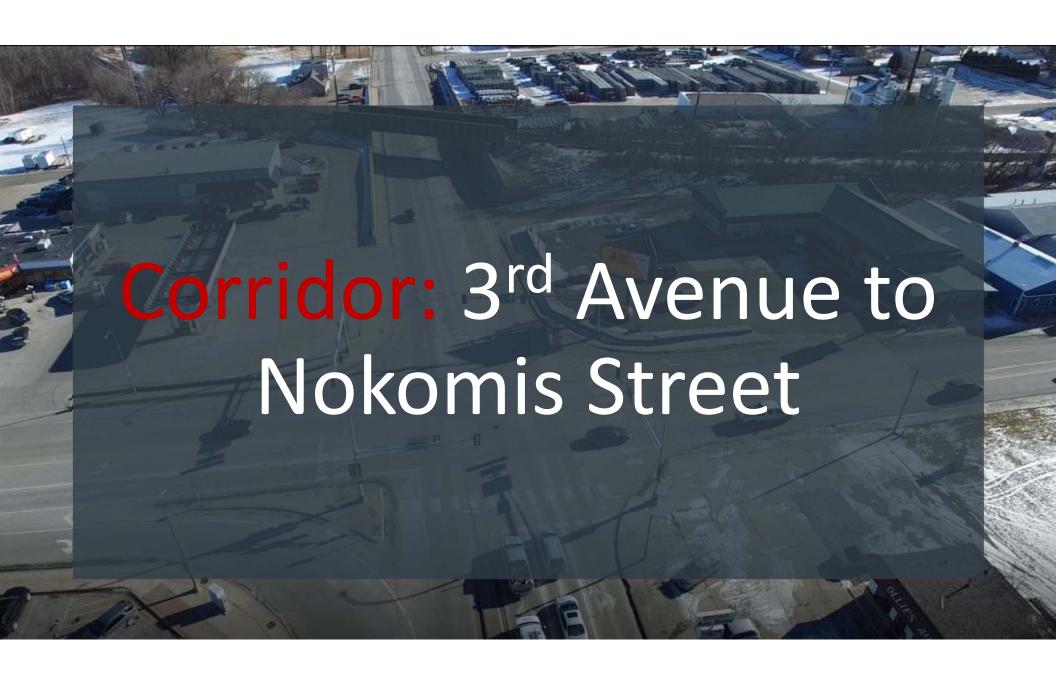


2045 AM Peak Hour Operations



Summary

Alternative	Scoring Category	Category Weight	Category Score	Weighted Score
	Vehicle Efficiency and Safety	43	•••••	
Do Nothing (Traffic Signal)	Bicycle and Pedestrian Connectivity and Safety	24	•••••	
Do Nothing (Tranic Signal)	Property and Environmental Impacts	18	•••••	(7.4)
	Cost	16	•••••	
	Vehicle Efficiency and Safety	43	•••••	
Major Intersection	Bicycle and Pedestrian Connectivity and Safety	24	••••••	
Geometry Improvements	Property and Environmental Impacts	18	••••••	(8.1)
	Cost	16	••••••	
	Vehicle Efficiency and Safety	43	•••••	
2x2 Roundabout	Bicycle and Pedestrian Connectivity and Safety	24	••••••	
	Property and Environmental Impacts	18	••••••	(7.4)
	Cost	16	000000000	



Operations and Limitations



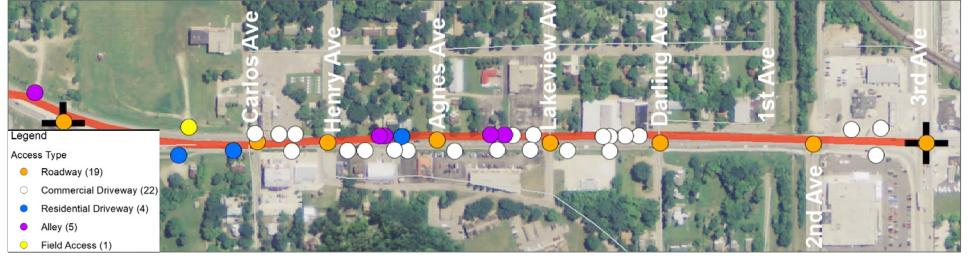
- > LOS E Currently, LOS F in 2045
- > 3rd Ave Nokomis: 66-80 Feet

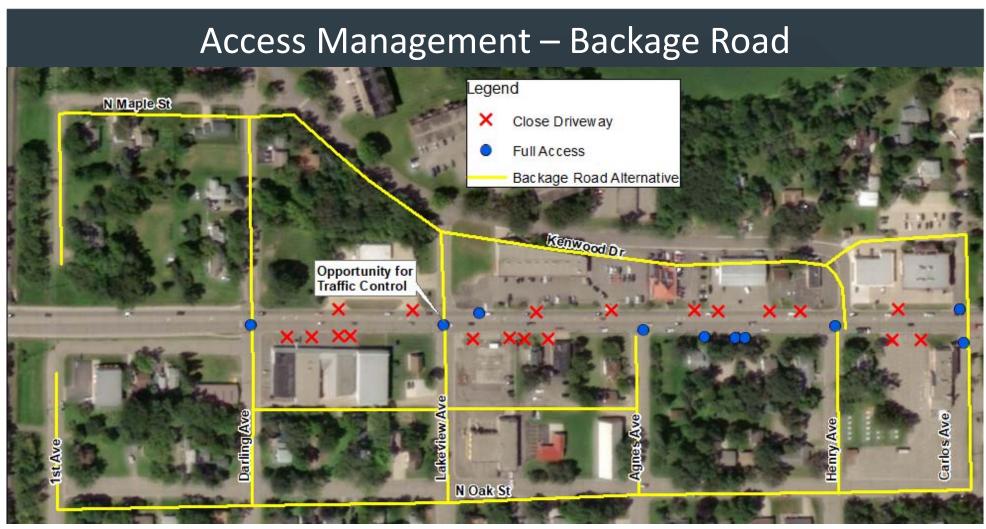


XXX AADT (Represents Year 2018) XXX AADT (Represents Year 2045)

3rd Avenue to CSAH 42

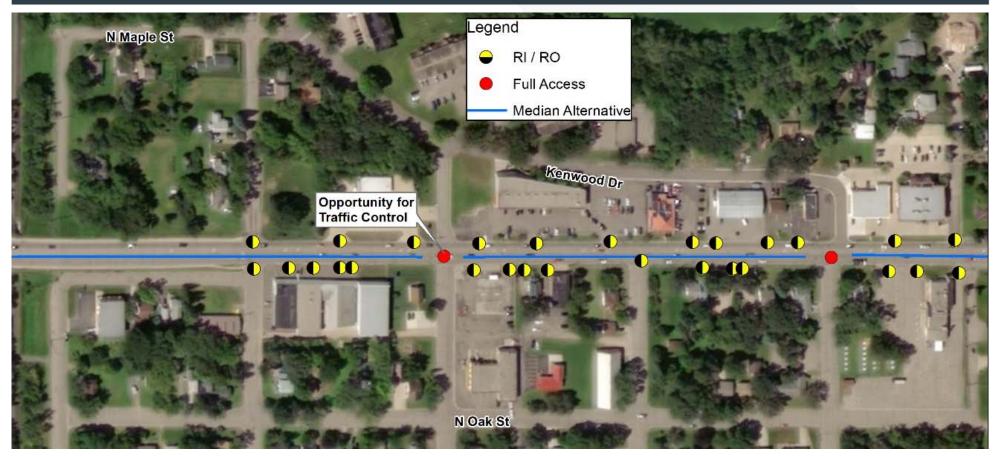
- > 69 accesses per mile
- > 5 times MnDOT standards
- +50% crash potential v. MnDOT access standards
- Above statewide average
- > 21 crashes
- > +50% crash potential v. MnDOT > Caused by intersections/driveway
 - > 52% Directly
 - > 29% Indirectly





Conflict points reduced by 47%

Access Management – Raised Median



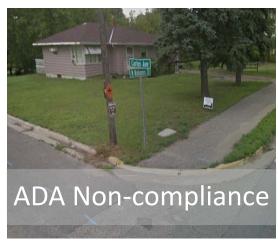
> Conflict points reduced by 55%

Barriers

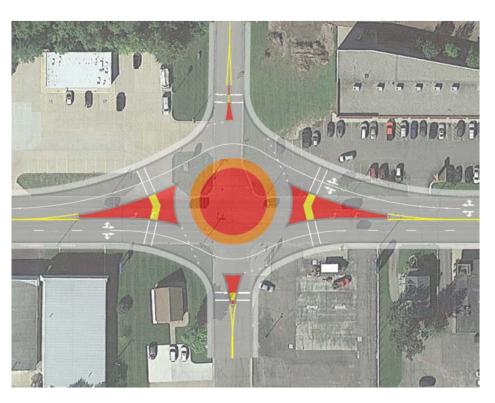








Lakeview Avenue

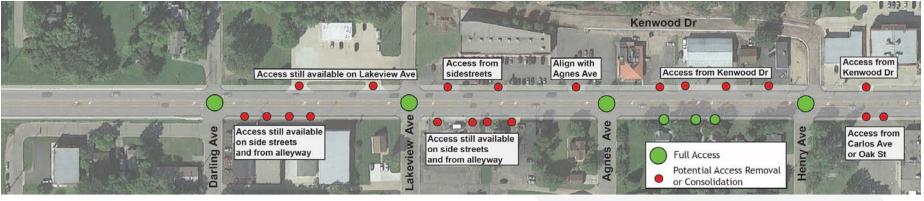


Traffic Control Opportunity

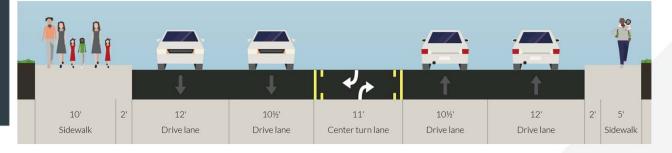
- > ½ Between 3rd and Nokomis
- > Ped/Bike Crosssing Need
- Improved Access to TH 29 from Sidestreets
- Opportunity for Signal or Roundabout

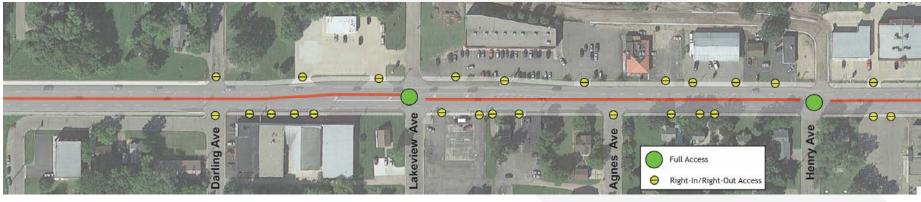
Expanded Bike Network





Scoring Category	Category Weight Category Score		Category Score	Notes	Weighted Score
Vehicle Efficiency and Safety		43	••••••	Increased capacity improves traffic flow and improves gap selection for side street vehicles. Consolidation of redundant accesses will reduce the number of conflict points and improve traffic operations and safety.	
Bicycle and Pedestrian Connectivity and Safety	24		••••••	Adds sidewalks and bicycle facilities (north side shared use path). Access management reduces number of conflicts between cars and pedestrians/bikes.	•••••
Property and Environmental Impacts	18 00		000000000	75' typical roadway width would impact business parking on the west side of the corridor and residential yards on the east side of the corridor.	(5.8)
Cost		16	•••0000000	Estimated project cost: \$715k	



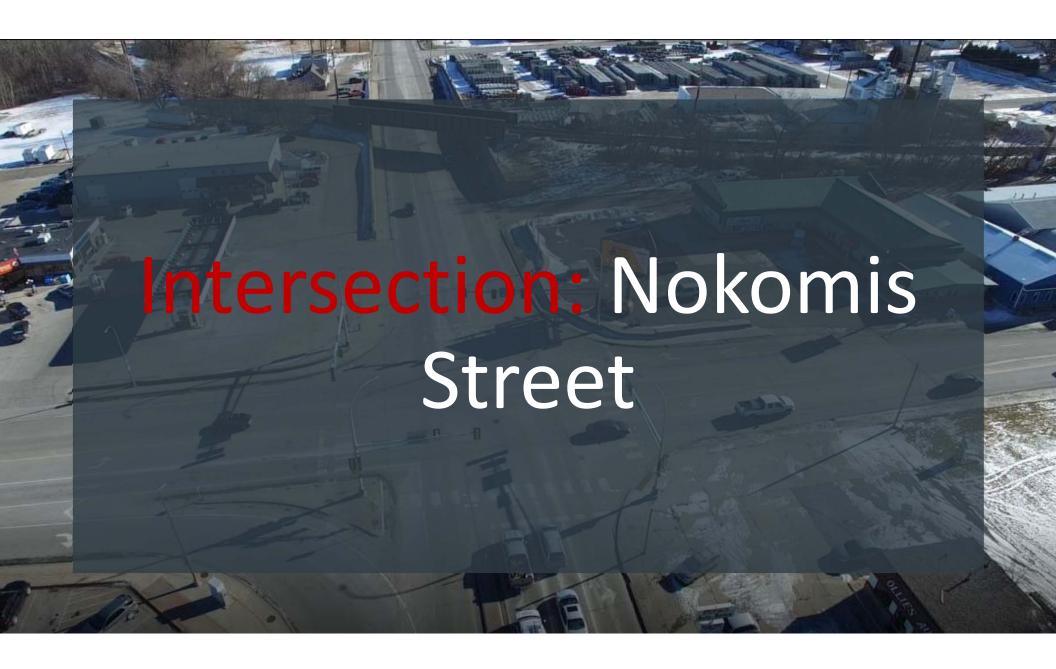


Scoring Category	Category Weight Category Score		Category Score	Notes	Weighted Score
Vehicle Efficiency and Safety		43	••••••	Increased capacity improves traffic flow and improves gap selection for side street vehicles. Consolidation of redundant accesses will reduce the number of conflict points and improve traffic operations and safety.	
Bicycle and Pedestrian Connectivity and Safety	24		••••••	Adds sidewalks and bicycle facilities (north side shared use path). Access management reduces number of conflicts between cars and pedestrians/bikes.	•••••
Property and Environmental Impacts				70' typical roadway width would impact business parking on the west side of the corridor and residential yards on the east side of the corridor.	(6.3)
Cost		16	•••0000000	Estimated project cost: \$660k	



Summary

Alternative	Scoring Category	Category Weight	Category Score	Weighted Score
	Vehicle Efficiency and Safety	43	000000000	
Do Nothing	Bicycle and Pedestrian Connectivity and Safety	24	000000000	•••0000000
Do Nothing	Property and Environmental Impacts	18	•••••	(3.4)
	Cost	16	•••••	
Five-Lane Section with Access	Vehicle Efficiency and Safety	43	•••••	
	Bicycle and Pedestrian Connectivity and Safety	24	•••••	••••••
Management	Property and Environmental Impacts	18	000000000	(5.8)
	Cost	16	•••0000000	
	Vehicle Efficiency and Safety	43	•••••	
Four/Five-Lane Section With Median	Bicycle and Pedestrian Connectivity and Safety	24	•••••	•••••
	Property and Environmental Impacts	18	0000000000	(6.3)
	Cost	16	•••0000000	



Nokomis Street (CSAH 42) Intersection

XXX AADT (Represents Year 2045)

Critical Crash Area

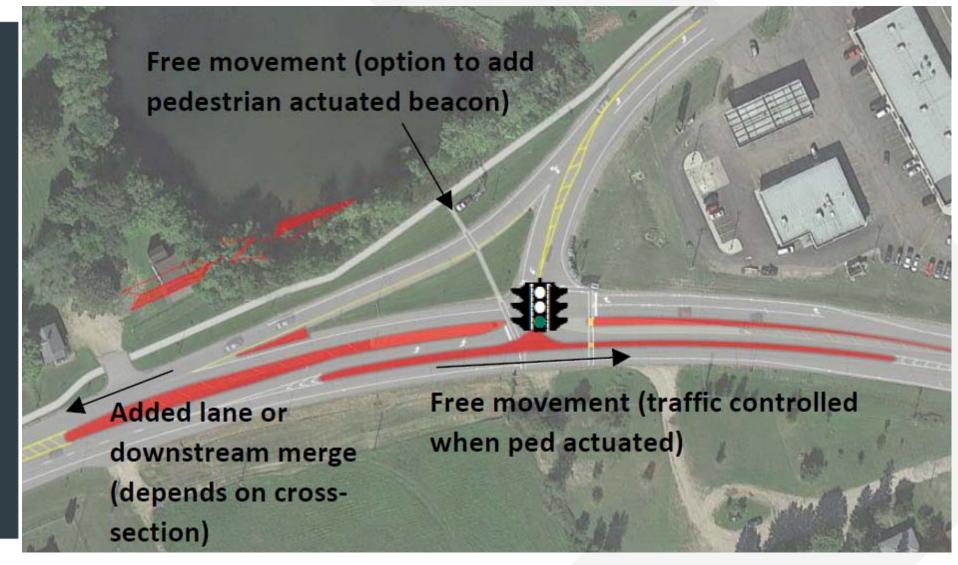
> Speed Differentials

Sharp Angled at Merge

> Future Operations — LOS E

> Future NB and EB Queuing

➤ Signal Warrants Met ~2035

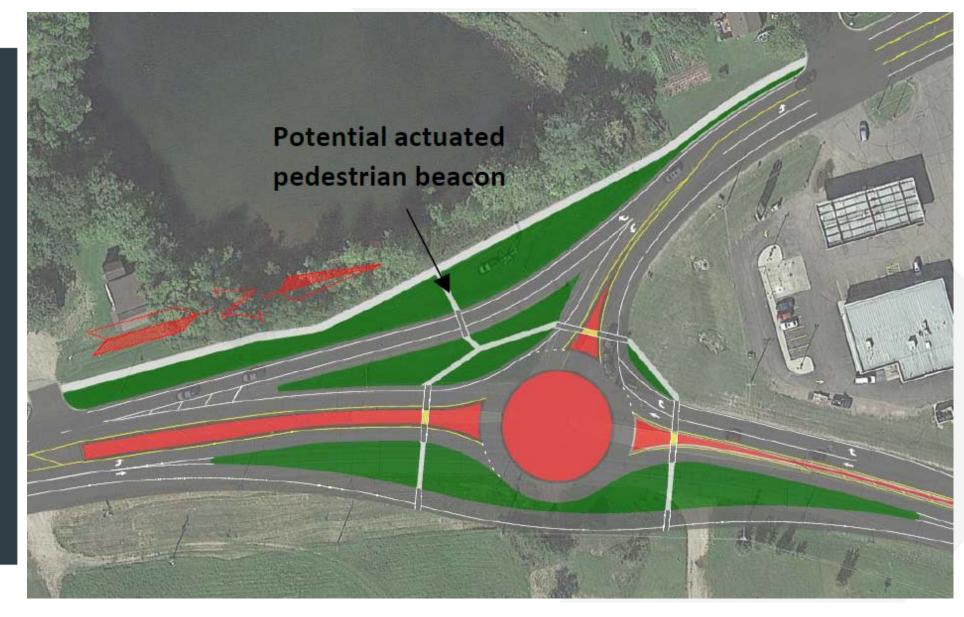


Green T-Intersection

https://www.youtube.com/watch?v=Tp9cXTApg1o

Green T-Intersection

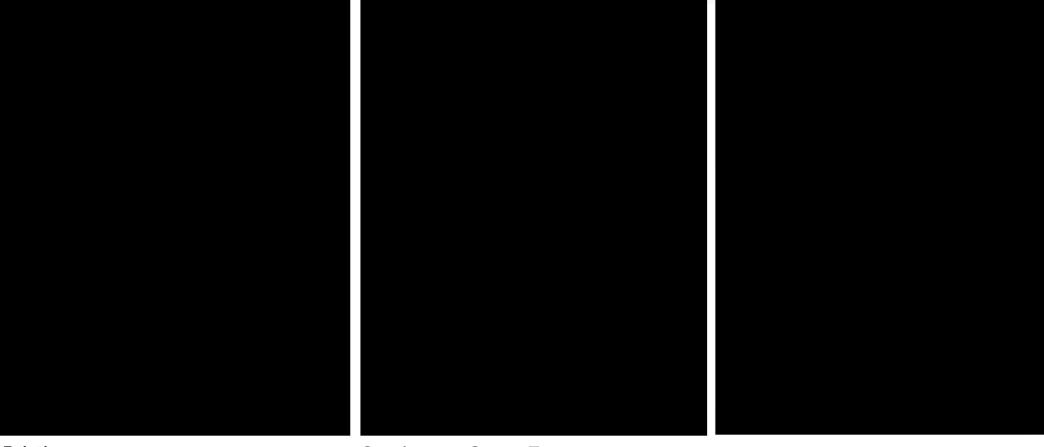
Concept Drawing	Scoring Category	Category Weight		Category Weight Ca		Category Score	Notes	Weighted Score
	Vehicle Efficiency and Safety	43		••••••	Significantly improved traffic flow, crash potential reduction.	•••••		
	Bicycle and Pedestrian Connectivity and Safety		26	••••••	Adds pedestrian signal control and refuge islands. Remaining conflicts associated with free flow minor approach right turn movement can be mitigated with pedestrian beacon.			
	Property and Environmental Impacts		17	•••••	Fits within existing roadway footprint.	(8.7)		
	Cost		15	••••••	Estimated project cost: \$350-400k			



Continuous Roundabout

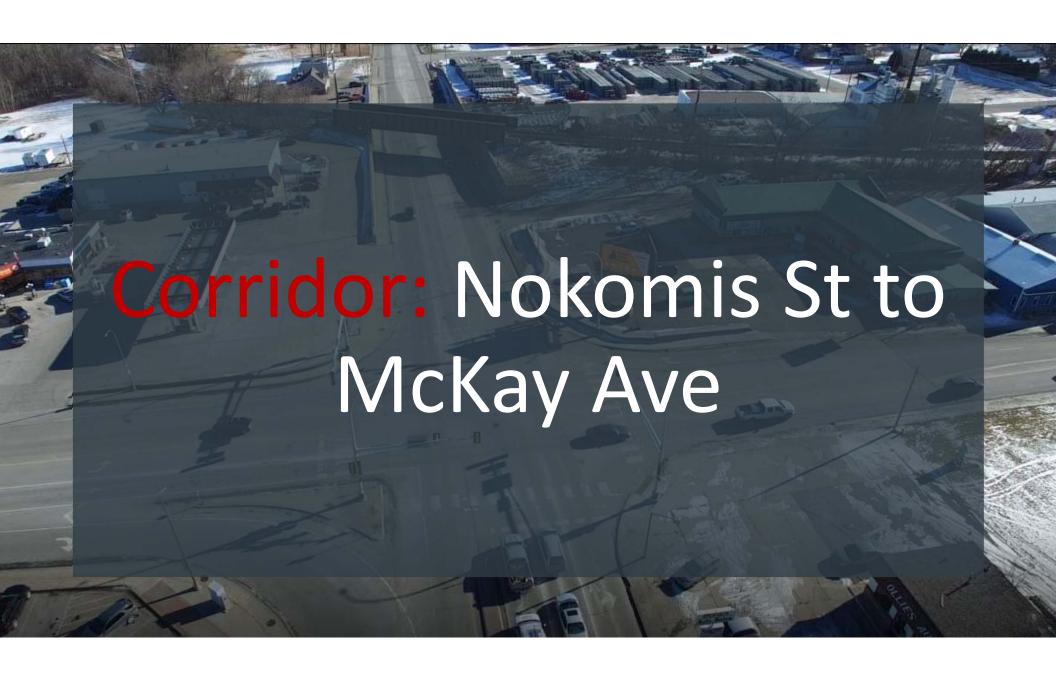
Concept Drawing	Scoring Category	Category Weight		Category Score	Notes	Weighted Score
STATE OF THE PROPERTY OF THE P	Vehicle Efficiency and Safety	43		•••••	Significantly improved traffic flow and reduced crash potential.	
	Bicycle and Pedestrian Connectivity and Safety		26	▲▲	Northbound through movement and eastbound right turning movement present pedestrian crossing challenges without supplemental beacons.	••••••
	Property and Environmental Impacts		17	••••••	Minor right-of-way acquisition needed, but no building impacts.	(6.6)
	Cost		15	•00000000	Estimated project cost: \$1 million.	

2045 PM Peak Hour Operations



Existing Continuous Green-T Continuous Roundabout

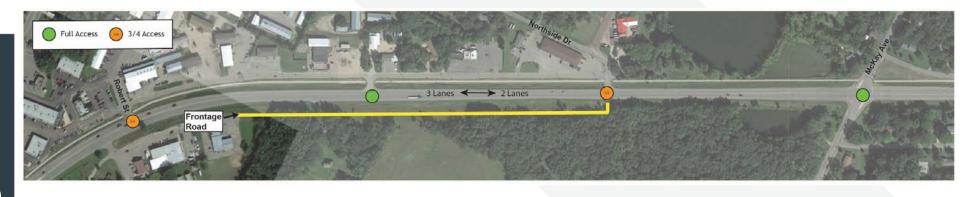
Alternative	Scoring Category	Category Weight	Category Score	Weighted Score
	Vehicle Efficiency and Safety	43	•••000000	
Do Nothing (Minor	Bicycle and Pedestrian Connectivity and Safety	26	•00000000	•••••00000
Approach Stop Control)	Property and Environmental Impacts	17	•••••	(4.7)
	Cost	15	•••••	
	Vehicle Efficiency and Safety	43	•••••	
	Bicycle and Pedestrian Connectivity and Safety	26	••••••	
Continuous Green-T	Property and Environmental Impacts	17	•••••	(8.7)
	Cost	15	••••••	
	Vehicle Efficiency and Safety	43	•••••	
Continuous Roundabout	Bicycle and Pedestrian Connectivity and Safety	26	•••000000	
	Property and Environmental Impacts	17	••••••	(6.6)
	Cost	15	•00000000	



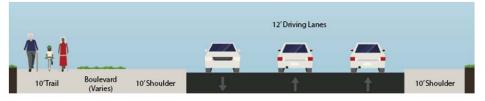




- Future Growth Area
- > Rural Assessment;
 - **>** LOS D/E in 2018
 - **LOS F in 2045**
- Urban Assessment;
 - **>** LOS B in 2045
 - **>** LOS F at Sidestreets
- Opportunity for turn lanes
- Minimal Ped/Bike Facilities



Scoring Category	Category Weight		Category Weight		Category Weight		Category Weight		Category Score	Notes	Weighted Score
Vehicle Efficiency and Safety		43	••••000000	Access Management improvements to improve traffic operations and safety.							
Bicycle and Pedestrian Connectivity and Safety	24		24		••••••	Low stress pedestrian and bicycle facility	••••••				
Property and Environmental Impacts	18		••••••	No impacts to curb lines, but added trails may have some minor property impacts.	(5.2)						
Cost		16	••0000000	Estimated project cost: \$775K							







Scoring Category	Category Weight	Category Score	Notes	Weighted Score
Vehicle Efficiency and Safety	43	•••••	Lane add coupled with access management improvements will improve traffic operations and safety.	
Bicycle and Pedestrian Connectivity and Safety	24		Low stress pedestrian and bicycle facility	••••••
Property and Environmental Impacts	18		Fits within existing ROW, but will require roadway widening with the potential for some minor impacts.	(7.1)
Cost	16	000000000	Estimated project cost: \$3.2M	

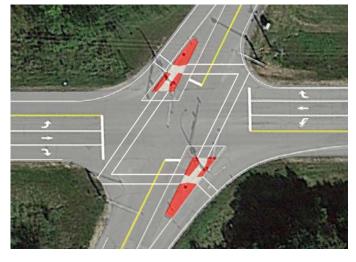


Alternative	Scoring Category	Category Weight	Category Score	Weighted Score
	Vehicle Efficiency and Safety	43	••0000000	
Do Nothing	Bicycle and Pedestrian Connectivity and Safety	24	00000000	••••000000
-	Property and Environmental Impacts	18	•••••	(4.3)
	Cost	16	•••••	
	Vehicle Efficiency and Safety	43	••••00000	
Frontage Roads and Trails	Bicycle and Pedestrian Connectivity and Safety	24	••••••	••••••
Frontage roads and Trails	Property and Environmental Impacts	18	••••••	(5.2)
	Cost	16	••0000000	
	Vehicle Efficiency and Safety	43	•••••	
Four-Lane Section, Frontage Roads and Trails	Bicycle and Pedestrian Connectivity and Safety	24	•••••	••••••
	Property and Environmental Impacts	18	•••••	(7.1)
	Cost	16	000000000	

McKay Avenue (CSAH 46) Intersection



- Acceptable Operations
- **>** Low Crash Rate
- Pedestrian/Bicycle Crossing Opportunity
- > Traffic Control Consistency





McKay Avenue to CR 73

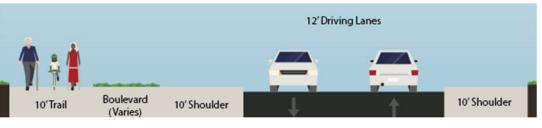


XXX AADT (Represents Year 2018) XXX AADT (Represents Year 2045)

- Above Statewide Crash Rate
- Crash History Primarily Rearends and Sideswipes
- Mix of no turn lanes, turn lanes and bypass lanes
- > Rural Assessment;
 - **>** LOS D in 2018
 - **>** LOS F in 2045
- Urban Assessment;
 - **>** LOS B in 2045
 - **>** LOS F at Sidestreets
- Sporadic Ped/Bike Facilities



Scoring Category	Category Weight		Category Weight		Category Weight		Category Weight		Category Weight		Category Weight		Category Score	Notes	Weighted Score
Vehicle Efficiency and Safety		43	••••000000	Access Management improvements to improve traffic operations and safety.											
Bicycle and Pedestrian Connectivity and Safety		24	••••••	Low stress pedestrian and bicycle facility	•••••										
Property and Environmental Impacts		18	••••••	No impacts to curb lines, but added trails may have some minor property impacts.	(6)										
Cost		16	••••••	Estimated project cost: \$125-250K											

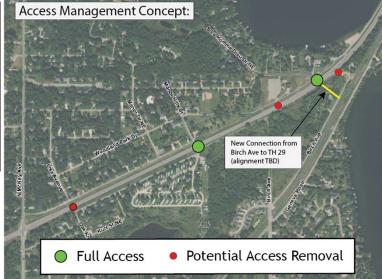






Scoring Category	Catego	ory Weight	Category Score	gory Score Notes	
Vehicle Efficiency and Safety		43	••••••	Lane add coupled with access management improvements will improve traffic operations and safety.	
Bicycle and Pedestrian Connectivity and Safety	24		••••••	Low stress pedestrian and bicycle facility	•••••
Property and Environmental Impacts	18		•••••00000	Fits within existing ROW, but will require roadway widening with the potential for some minor impacts.	(6.3)
Cost		16	000000000	Estimated project cost: \$4M	





Alternative	Scoring Category	Category Weight	Category Score	Weighted Score
	Vehicle Efficiency and Safety	43	••0000000	
Do Nothing	Bicycle and Pedestrian Connectivity and Safety	24	00000000	••••00000
20.1019	Property and Environmental Impacts	18	•••••	(4.3)
	Cost	16	•••••	
	Vehicle Efficiency and Safety	43	••••	
Access Management and	Bicycle and Pedestrian Connectivity and Safety	24	•••••	•••••
Trails	Property and Environmental Impacts	18	•••••	(6.0)
	Cost	16	••••••	
	Vehicle Efficiency and Safety	43	••••••	
Four-Lane Section, Access Management and Trails	Bicycle and Pedestrian Connectivity and Safety	24	••••••	•••••
	Property and Environmental Impacts	18	•••••	(6.3)
	Cost	16	000000000	



CR 73

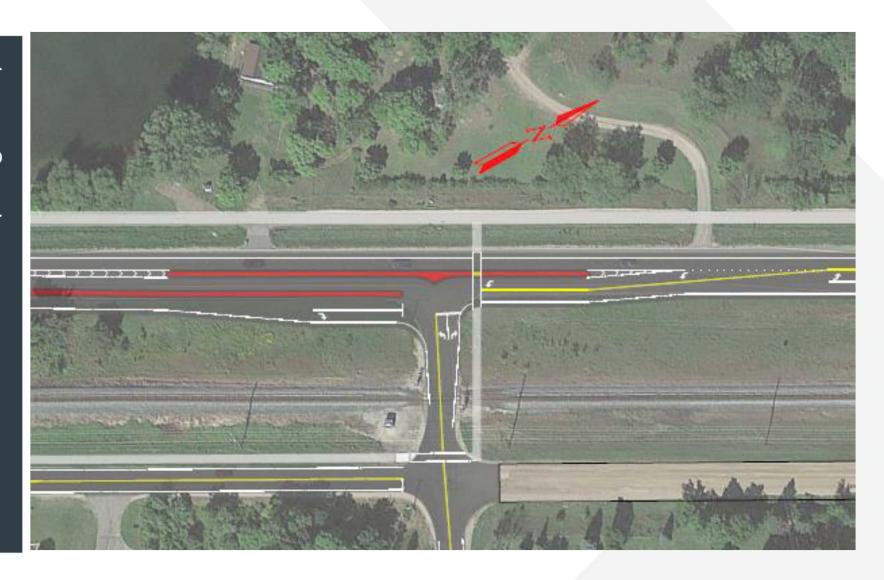
- Sideswipe and rearends at consecutive bypass lanes
- Above statewide average
- > 1 crash per year
- Ped/Bike Crossing Challenges
- Minor Approach LOS "F" by 2045



Railroad Crossing

- ForecastedQueueing IssuesAcross Tracks by2045
- ➤ 6 Trains or More/Day
- Meets Warrant 9 requirements
- No vehicular/train crashes reported

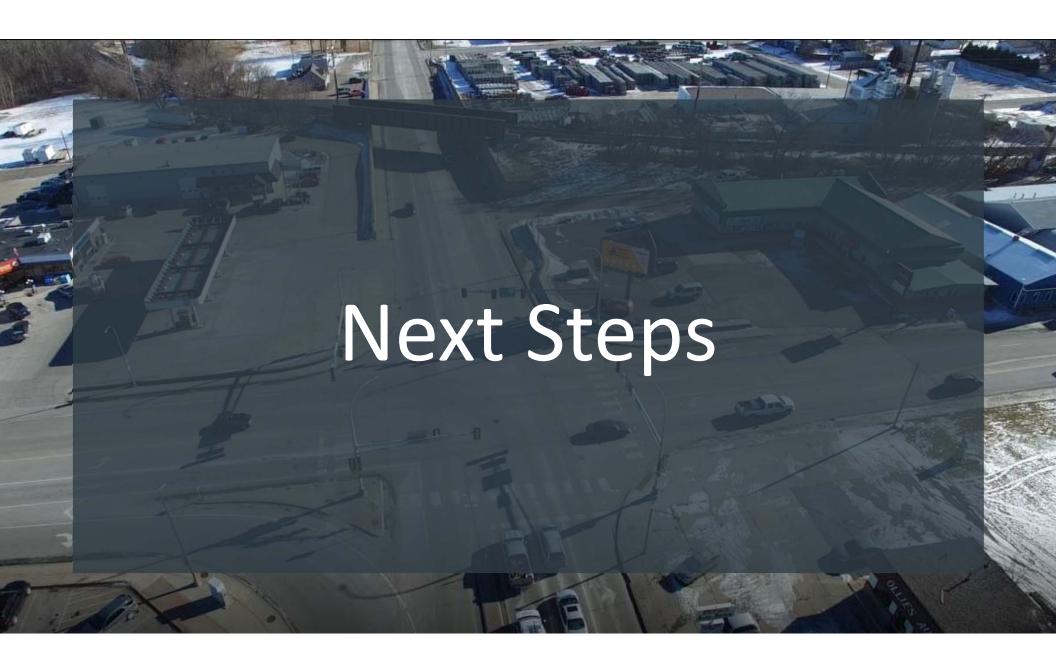




Continuous T-Intersection (Unsignalized)

Concept Drawing	Category Category Weight C		Category Score	ategory Score Notes	
	Vehicle Efficiency and Safety	46	•••••	Significant delay improvement for side street vehicles, however potential conflicts with railroad crossing remain due to minor approach stop control.	
	Bicycle and Pedestrian Connectivity and Safety	28	•••••	Medians provide refuge island for crossing non-motorized users.	•••••
	Property and Environmental Impacts	11	•••••	Larger roadway footprint, but no property or right-of-way impacts.	(6.4)
	Cost	14	•••••	Estimated project cost: \$400k	

Alternative	Scoring Category	Category Weight		Category Score	Weighted Score	
	Vehicle Efficiency and Safety		46		•00000000	
Do Nothing (Minor Approach Stop	Bicycle and Pedestrian Connectivity and Safety		28		000000000	•••000000
Control)	Property and Environmental Impacts		11		•••••	(3.0)
	Cost		14		•••••	
	Vehicle Efficiency and Safety		46		••••••	
Continuous T Intersection	Bicycle and Pedestrian Connectivity and Safety		28		●●●●○○○○○	
(Unsignalized)	Property and Environmental Impacts		11		••••••	(6.4)
	Cost		14		••••••	



Next Steps

February: Review and Process Public Comments

April: Summarize
Findings and Present to
City Council and County
Commission







March: Review Comments with MnDOT, City and County

How to Provide Feedback

- > Informally at the Meeting
- > Formally via Comment Card
- Comment Boards
- E-mail:
 Mike.Bittner@kljeng.com



Hwy 29 Alexandria

Corridor Study

Project Home ADA Contacts

Study Summary

The Minnesota Department of Transportation is currently conducting a corridor study on Highway 29 in Alexandria. Highway 29 is an important roadway for residents in north Alexandria and also serves as the primary entry point on the north side of the city.

The purpose of this study is to establish a vision for the corridor and to identify future roadway improvements to better serve all travel types (i.e. local versus regional traffic) and travel modes (i.e. cars, bikes, pedestrians).

Get involved

Public Meeting - Feb. 6, 2019

- Where: Douglas County Public Works Building, 526
 Willow Drive, Alexandria
- When: Open forum from 4 to 7 p.m. with formal presentation at 5:30 p.m.

Can't attend the public meeting? We still would like to hear from you. Send written comments by February 22 to:

Mike Bittner, Project Manager

