

# City Council / County Board Work Session #3



Thursday, September 7, 2017

CH 21 Downtown Prior Lake Reconstruction





# Tonight's Meeting - Agenda

Overall Purpose to Inform on:

**Part 1: Corridor Visioning Concepts**  
**+ Part 2: TH 13 / CH 21 Intersection Control Alternatives**  

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**CH 21 Downtown Prior Lake Reconstruction Project**  
**Alternatives for 2019**

We are NOT asking for Input or Decisions...yet.

CH 21 Downtown Prior Lake Reconstruction





# Where We've Been

City Council / County Board Work Session #1 – February 27, 2017

City Council / County Board Work Session #2 – April 3, 2017

Corridor Visioning Workshop #1 – June 7, 2017

Open House #1 – June 29, 2017

Pop Ups – Farmer's Market, Lunds & Byerly's, Rib Fest, Lakefront Days

Corridor Visioning Workshop #2 – August 29, 2017

SpeakUp! Forum

**CH 21 Downtown Prior Lake Reconstruction**





# What We've Learned

- CH 21 is a road TO downtown, not just through downtown
- Maintain and enrich character of Prior Lake
- Support the downtown business district – current and future
- Ready for change
- Walkable, permeable downtown
- Safety is priority, especially for pedestrians
- There are alternatives to consider

CH 21 Downtown Prior Lake Reconstruction





# Where are We Going?

Prior Lake EDA/EDAC – September 11, 2017

Prior Lake Rotary – September 13, 2017

(Pop-Up) VFW Farmer's Market Table – September 14, 2017

(Pop-Up) Prior Lake Fall Fest – September 18, 2017

Corridor Visioning Workshop #3 – September 20, 2017

Individual/Small Group Meetings – Sept. 12-Oct. 27, 2017

**Open House #2 – October 10, 2017**

Pop-Ups – Farmer's Market, Charlie's on Prior

City Council – November 2017





# Project Goals

Preserve and enrich the **character** of Downtown Prior Lake

Enhance **mobility** on CH21 transportation corridor

Maintain and enhance **local** roadways system

Provide a comprehensive **non-motorized transportation** network

Provide infrastructure improvements compatible with the **natural and human environment**

Develop **financially responsible** plan

**Safely** accommodate all users

CH 21 Downtown Prior Lake Reconstruction





# Input We've Received

How do you feel about the 13/21 reconstruction project's goals and priorities? (30 survey responses)



56.7% of survey participants rank the following project goals as “very important”

- Enhance **mobility** on CH21 transportation corridor
- **Safely** accommodate all users

50.0% of survey participants rank the following project goals as “very important”

- Develop **financially responsible** plan
- Preserve and enrich the **character** of Downtown Prior Lake





# Input We've Received

How do you use, get to, and move through the 13-21 corridor.  
(215 responses, 68 registered survey responses)



If you were able to choose only one, which of the following should be the top priority for improvements to the 13/21 intersection?

		Response Percent	Response Count
Moving vehicles through the intersection more quickly and efficiently.	<div></div>	44.1%	30
Creating a safe and comfortable environment for walkers and bikers.	<div></div>	10.3%	7
Providing convenient access to local businesses and other local destinations.	<div></div>	27.9%	19
Developing a cost effective infrastructure improvement plan.	<div></div>	8.8%	6
Other	<div></div>	8.8%	6





# Input We've Received

How do you use, get to, and move through the 13-21 corridor.  
(215 responses, 68 registered survey responses)



**If you do travel through the 13/21 intersection, why? (Select up to three.)**

		Response Percent	Response Count
I travel through it to get to work or school.	<div></div>	38.2%	26
I use it to access downtown Prior Lake businesses.	<div></div>	63.2%	43
I use it to access County Road 21.	<div></div>	63.2%	43
I use it to access Highway 13.	<div></div>	54.4%	37
Other	<div></div>	13.2%	9

64.7% of survey participants live in Prior Lake,  
outside of downtown  
(22.1% in another Scott County Community)

57.4% of survey participants travel through the 13-21  
intersection daily  
(27.9 travel through the corridor weekly)



# CH21 Corridor Visioning Concepts

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Part 1

# CH 21 Corridor Vision







# Primary Intersection (Full Access)



Traffic Signal



Roundabout



All-way Stop  
Thru-stop



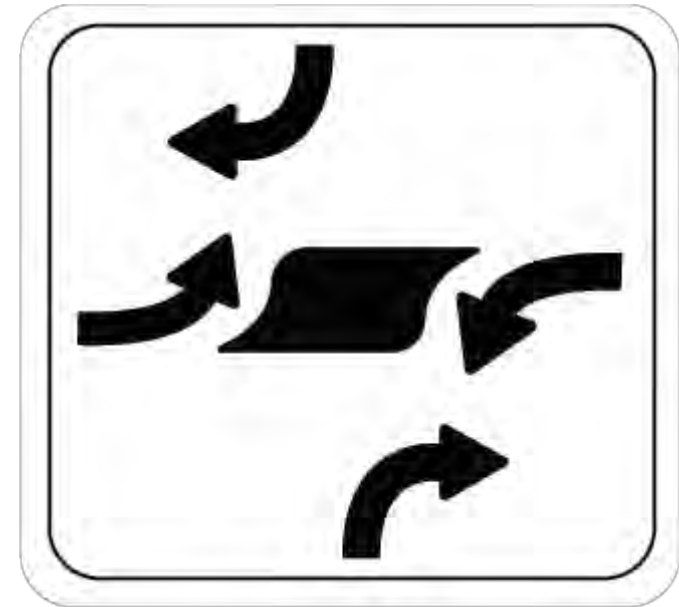
# Secondary Intersection



Thru-stop



Right-in/Right-out



$\frac{3}{4}$  Access



# Concept A

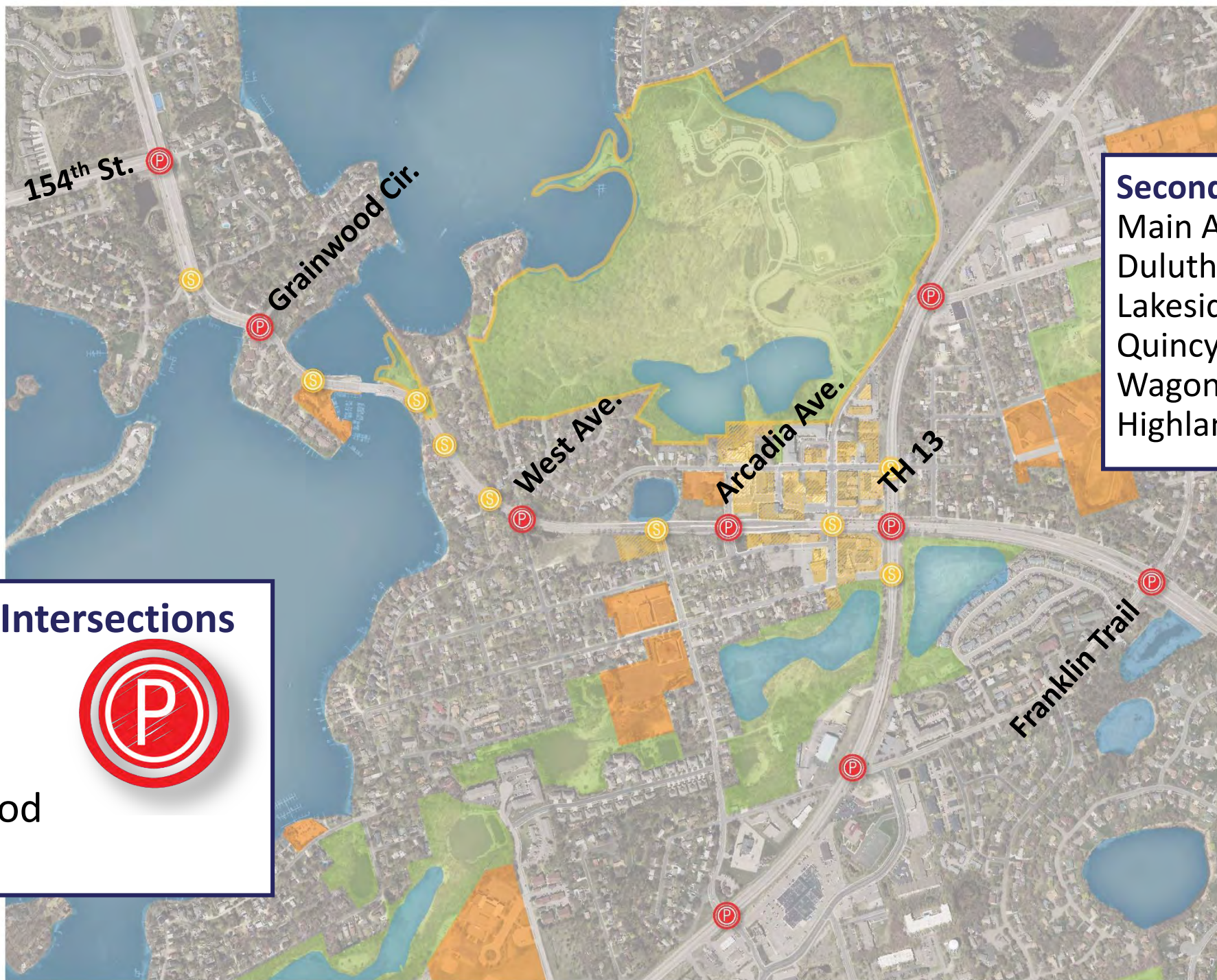
## Primary Intersections

TH 13  
Arcadia  
West  
Grainwood  
154th



## Secondary Intersections

Main Ave  
Duluth  
Lakeside  
Quincy  
Wagon Bridge Circle  
Highland/Eau Claire

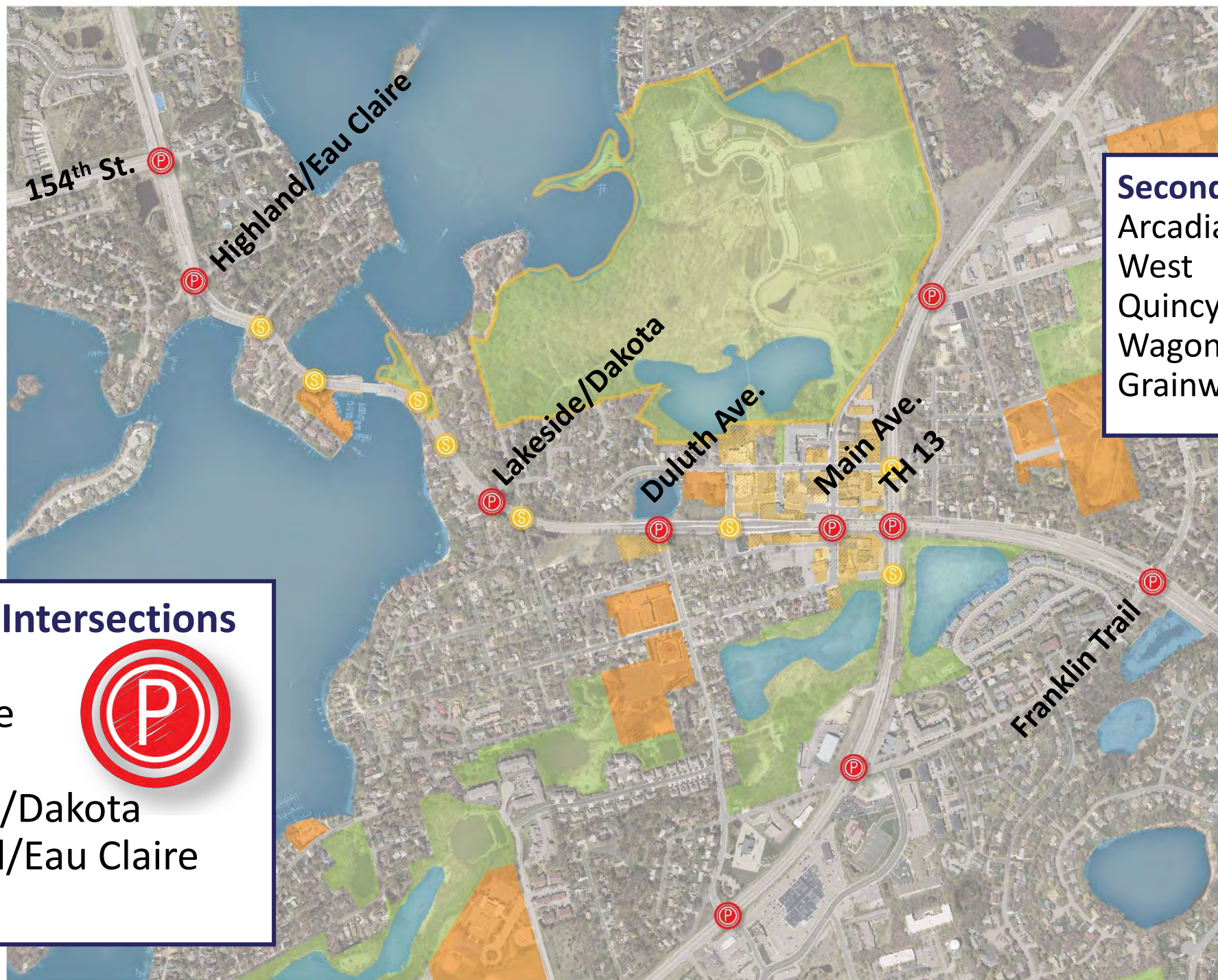




# Concept B

## Primary Intersections

TH 13  
Main Ave  
Duluth  
Lakeside/Dakota  
Highland/Eau Claire  
154th

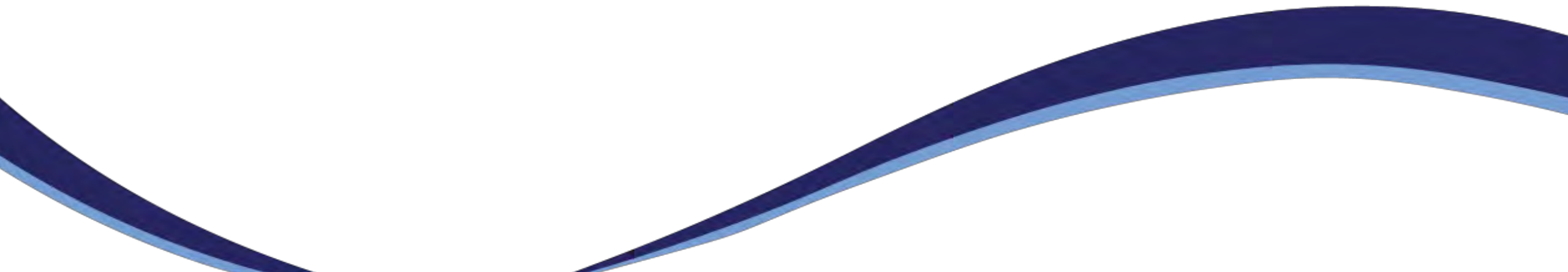


## Secondary Intersections

Arcadia  
West  
Quincy  
Wagon Bridge Circle  
Grainwood



**How do these function?**  
**How does the entire system work?**



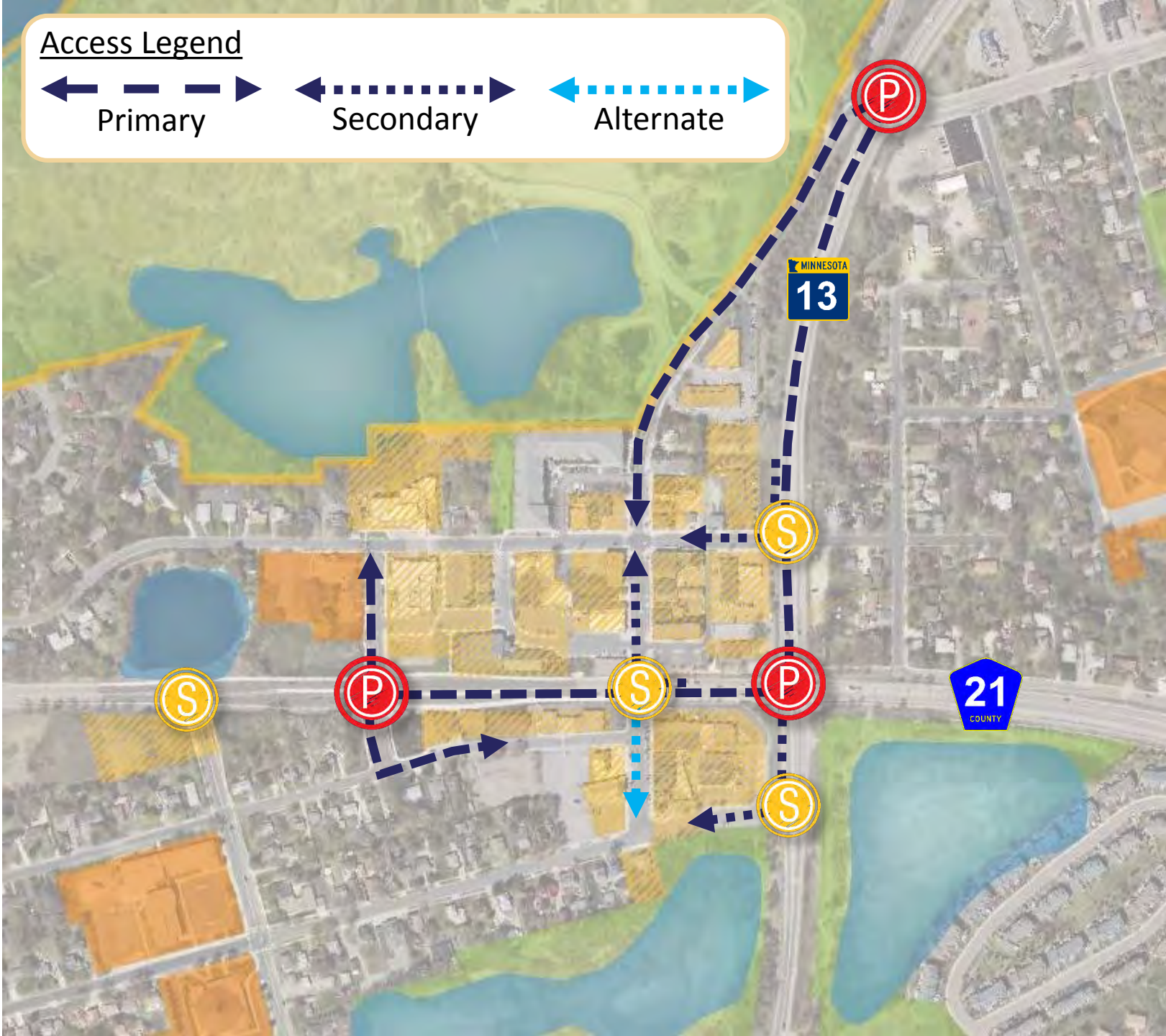


# Concept A





# Concept A - Downtown



From the North





# Concept A - Downtown



From the South





# Concept A - Downtown



From the East



# Concept A - Downtown



## From the West



# Concept A - Downtown



# Across CH 21



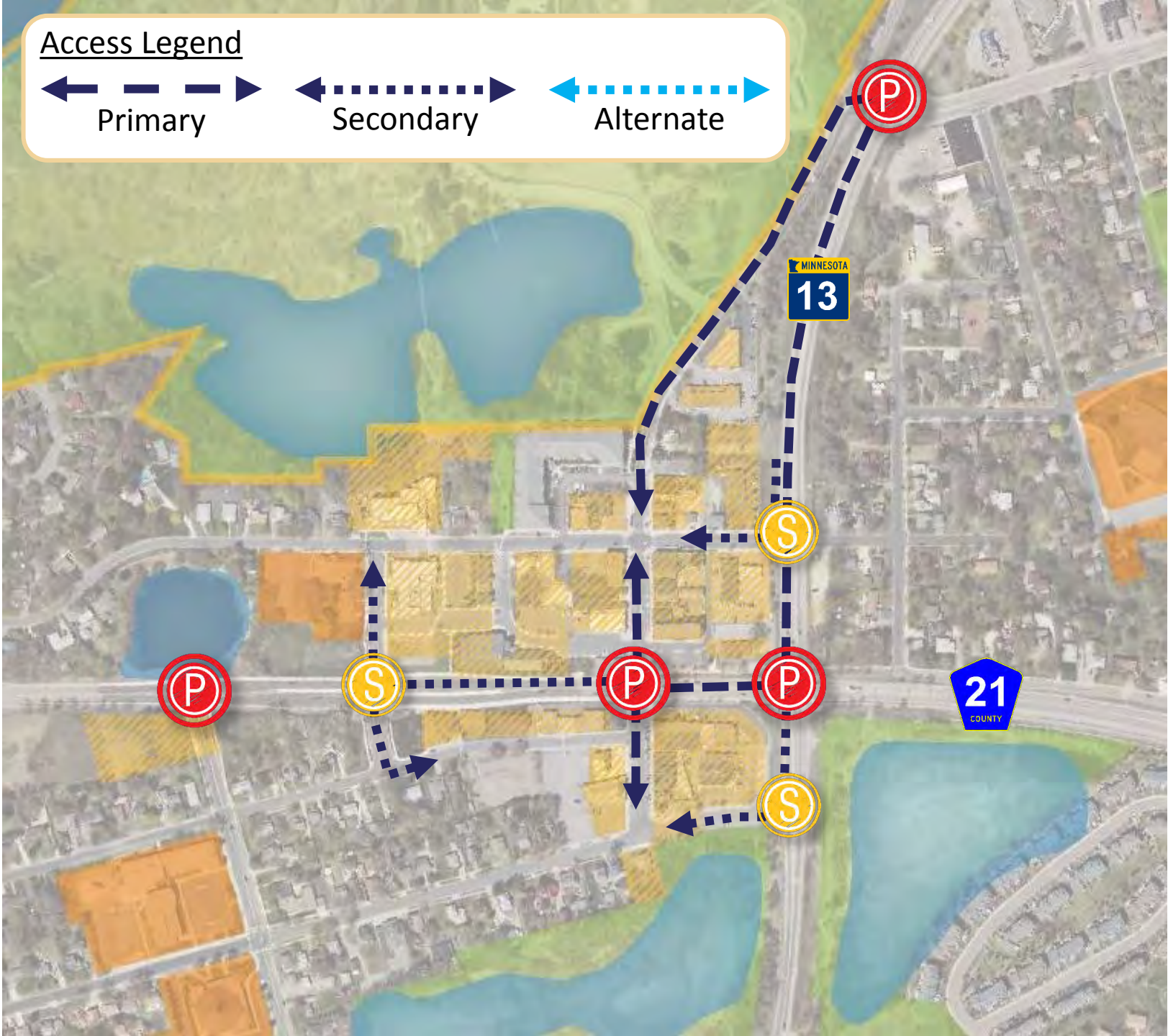


# Concept B





# Concept B - Downtown



From the North





# Concept B - Downtown



From the South





# Concept B - Downtown



From the East



# Concept B - Downtown



## From the West



# Concept B - Downtown



# Across CH 21





# CH 21 Corridor Visioning Alternatives – Downtown Access

## Two Corridor Concepts to Consider

- 1) Primary Intersection at Arcadia Avenue
  - Secondary intersections at Duluth & Main Ave
- 2) Primary Intersections at Duluth & Main Ave
  - Secondary intersection at Arcadia Ave

**Part 1 in the 2019 Project Alternatives**



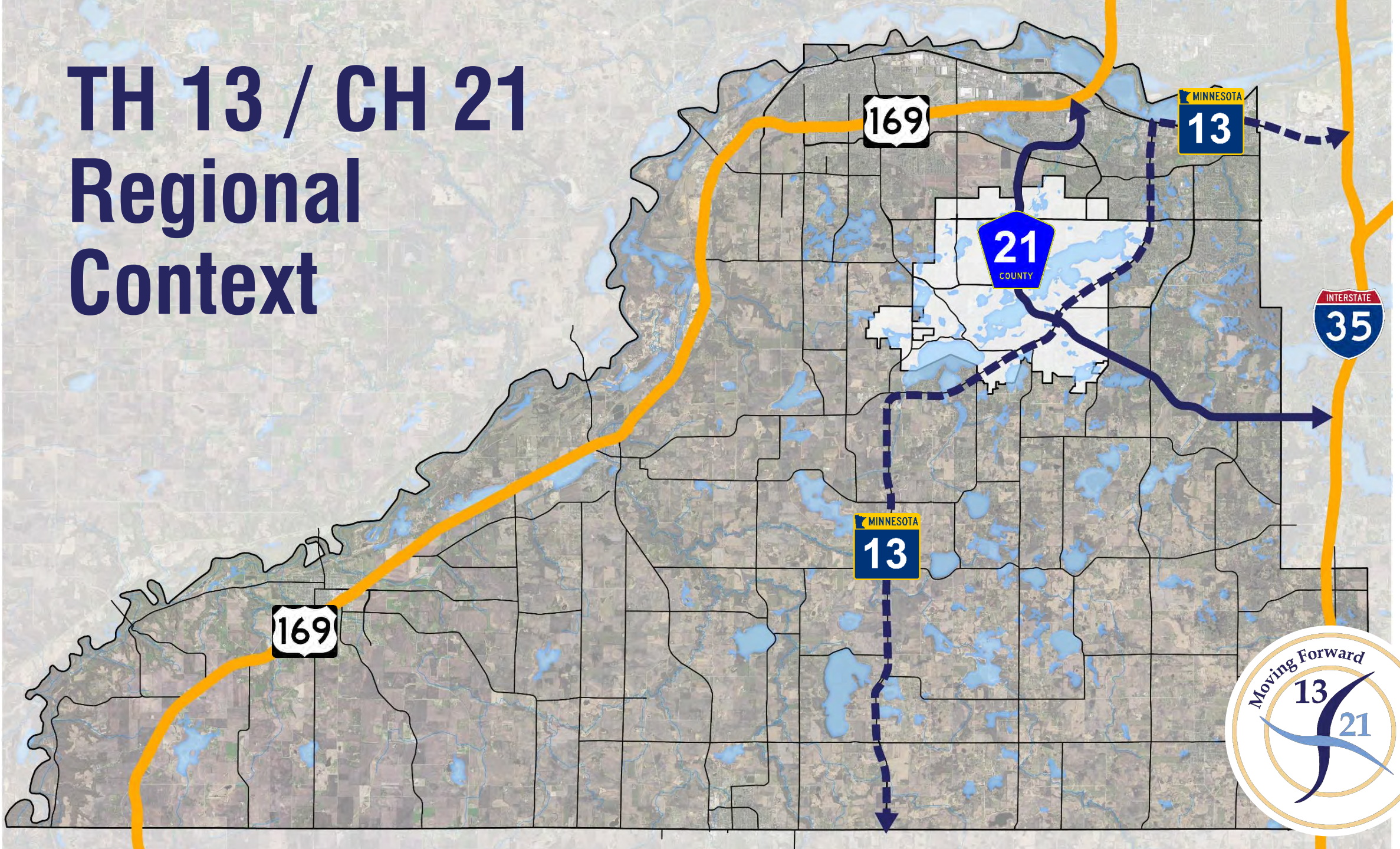
# TH13/CH21 Intersection Control

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Part 2



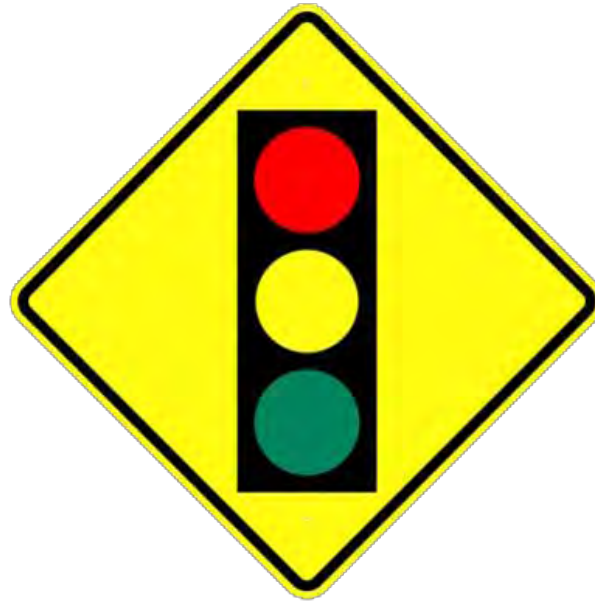
# TH 13 / CH 21 Regional Context







# Intersection Control Alternatives



Traffic Signal



Roundabout





# Intersection Control Alternatives



Traffic Signal



Roundabout



# Intersection Control Alternatives

## Traffic Operations

### Traffic Signal

#### Traffic Operations (2017)

- Intersection LOS D (40-54 sec/veh.)

#### Traffic Operations (2040)

- Intersection LOS E (55-79 sec/veh.)
- 2-3 hours of overall intersection operating at LOS E or worse

### Roundabout

#### Traffic Operations (2017)

- Intersection LOS A (0-10 sec/veh.)

#### Traffic Operations (2040)

- Intersection LOS D (25-34 sec/veh.) – AM
- Intersection LOS B (10-14 sec/veh.) – PM
- 0 hours of overall intersection operating at LOS E or worse

The roundabout alternative is expected to better accommodate both local and regional trips at the CH 21 at TH 13 intersection.





# Intersection Control Alternatives

## Driver/Pedestrian Safety

### Traffic Signal

#### Driver Safety

- 0.7 crashes per MEV
- .97 fatal/serious injury crashes per 100 MEV

#### Pedestrian Safety

- Driver compliance rate near 100%
- Approximately 60-90 second wait time to cross either CH 21 or TH 13

### Roundabout

#### Driver Safety

- 1.4 crashes per MEV
- .39 fatal/serious injury crashes per 100 MEV

#### Pedestrian Safety

- Driver compliance rate near 45%
- Approximately 10 second wait time to cross either CH 21 or TH 13



# TH 13/CH 21 Intersection Control Alternatives

## Two Intersection Control Types to Consider

- 1) Traffic Signal
- 2) Multilane Roundabout

Part 2 in the 2019 Project Alternatives





# CH21 Downtown Prior Lake Reconstruction Project Alternatives

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Part 3

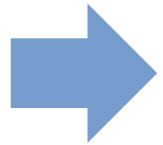


# 2019 Project Alternatives

**Part 1: Corridor Visioning Concepts (Downtown Access)**

**+ Part 2: TH 13 / CH 21 Intersection Control Alternatives**

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**CH 21 Downtown Prior Lake Reconstruction Project  
Alternatives for 2019**





# **2019 Project Alternatives**

**A-1 – Arcadia w/ Traffic Signal at TH 13**

**A-2 – Arcadia w/ Roundabout at TH 13**

**B-1 – Main w/ Traffic Signal at TH 13**

**B-2 – Main w/ Roundabout at TH 13**



# A-1 Arcadia w/ Traffic Signal at TH 13







# A-2 Arcadia w/ Roundabout TH 13







# B-1 Main w/ Traffic Signal at TH 13







# B-2 Main w/ Roundabout at TH 13





# **Performance 2019 Project Alternatives**

**A-1 – Arcadia w/ Traffic Signal at TH 13**

**A-2 – Arcadia w/ Roundabout at TH 13**

**B-1 – Main w/ Traffic Signal at TH 13**

**B-2 – Main w/ Roundabout at TH 13**





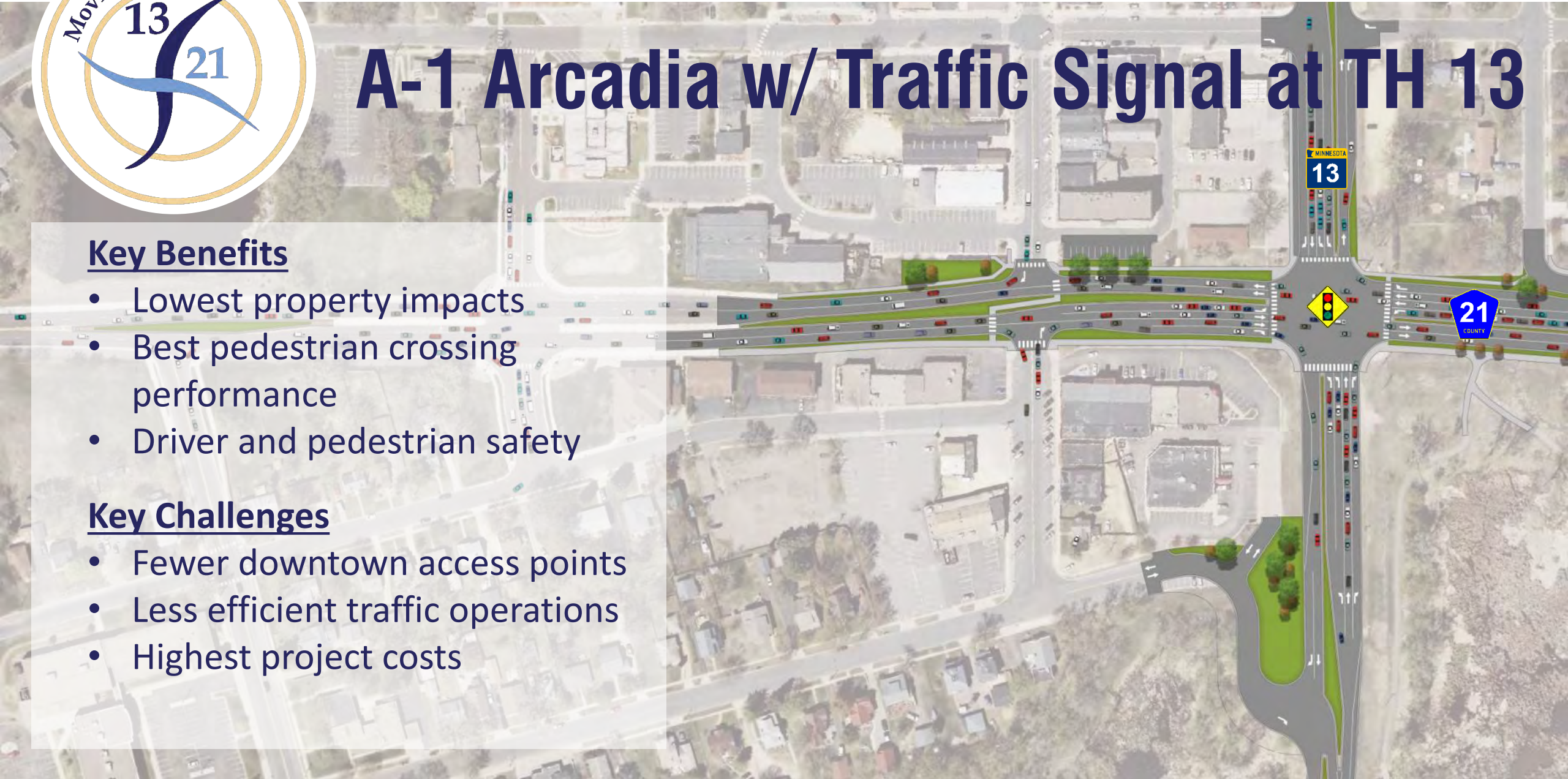
# A-1 Arcadia w/ Traffic Signal at TH 13

## Key Benefits

- Lowest property impacts
- Best pedestrian crossing performance
- Driver and pedestrian safety

## Key Challenges

- Fewer downtown access points
- Less efficient traffic operations
- Highest project costs

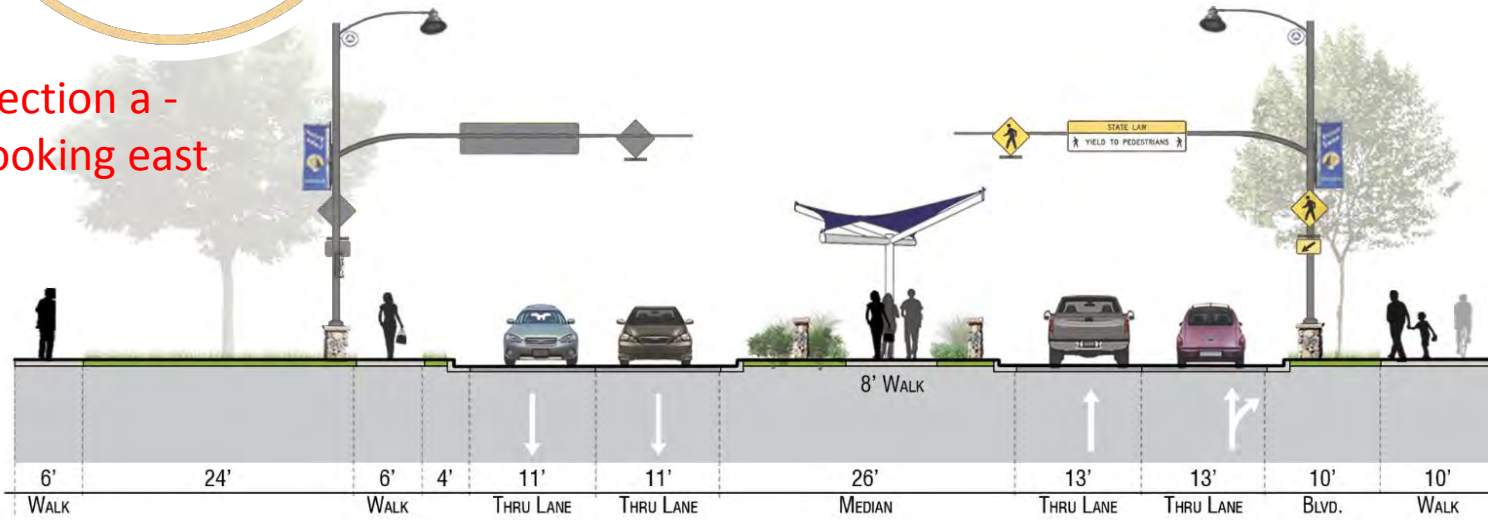




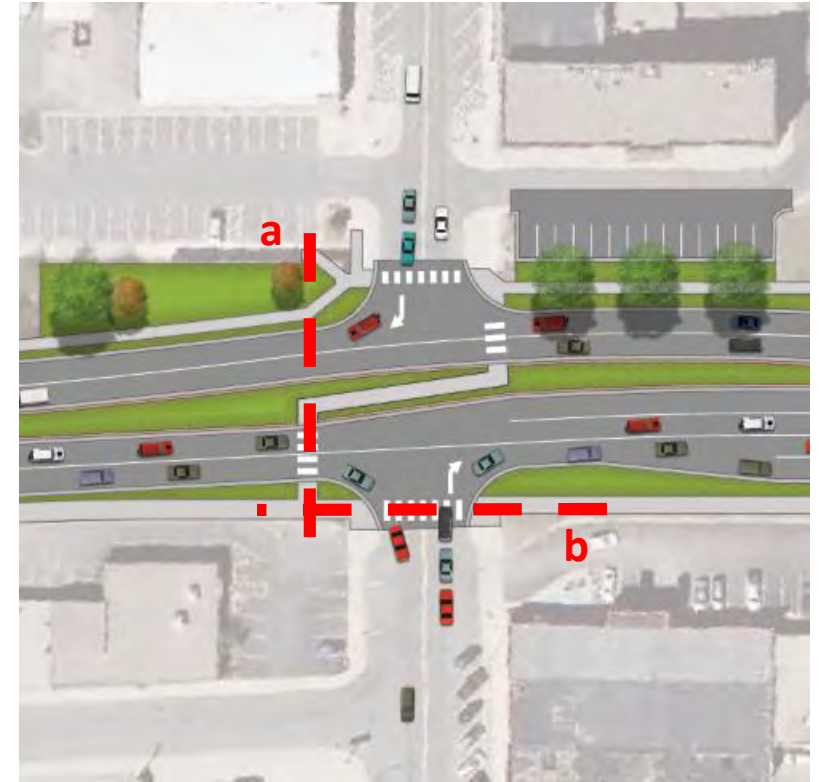
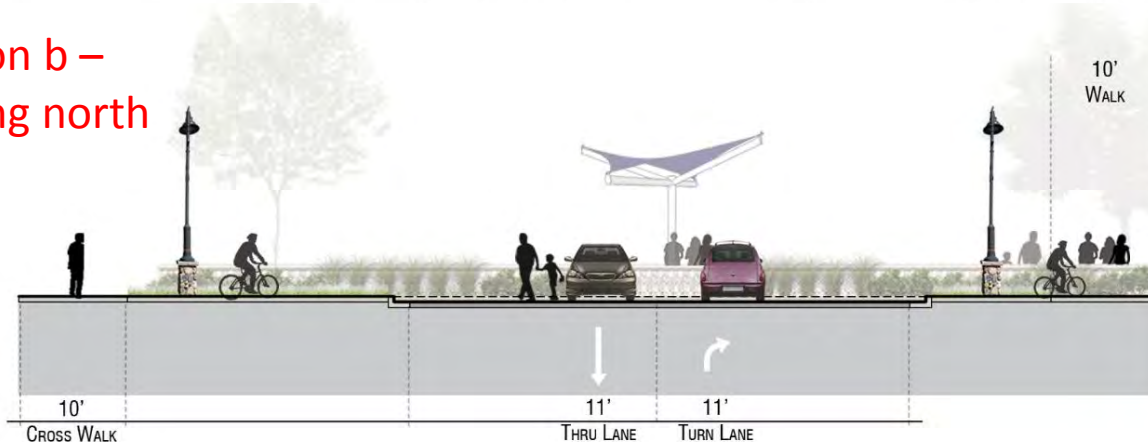


# A-1 Pedestrian Crossing at Main Ave.

Section a -  
looking east



Section b -  
looking north







# A-1 Arcadia w/ Traffic Signal at TH 13

## Estimated Project Costs:

\$4.9M for CH 21/TH 13

\$1.3M for Arcadia Extension

\$2.5M (+) for Pleasant Soils Correction

\$1.2M (+/-) for TH 13 Soils Correction

\$300K for Property Acquisition

\$10.2M Preliminary Estimated Cost





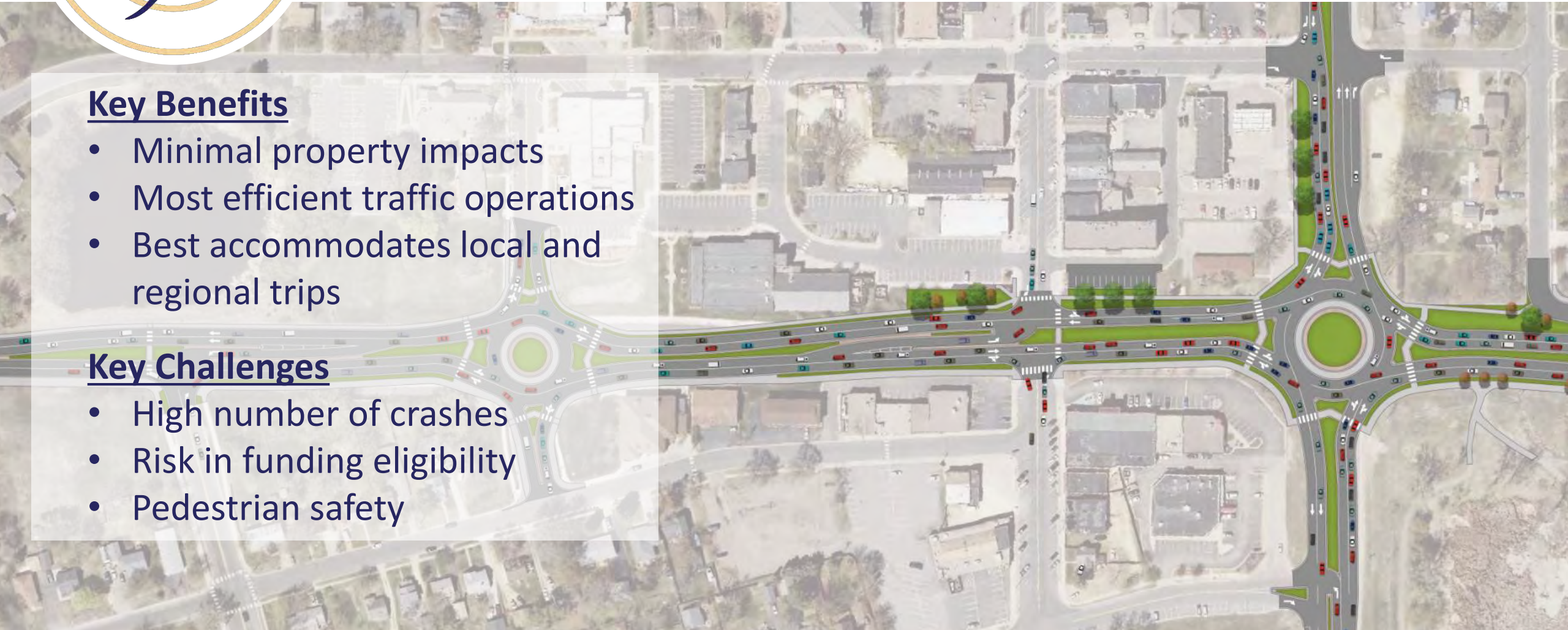
# A-2 Arcadia w/ Roundabout TH 13

## Key Benefits

- Minimal property impacts
- Most efficient traffic operations
- Best accommodates local and regional trips

## Key Challenges

- High number of crashes
- Risk in funding eligibility
- Pedestrian safety

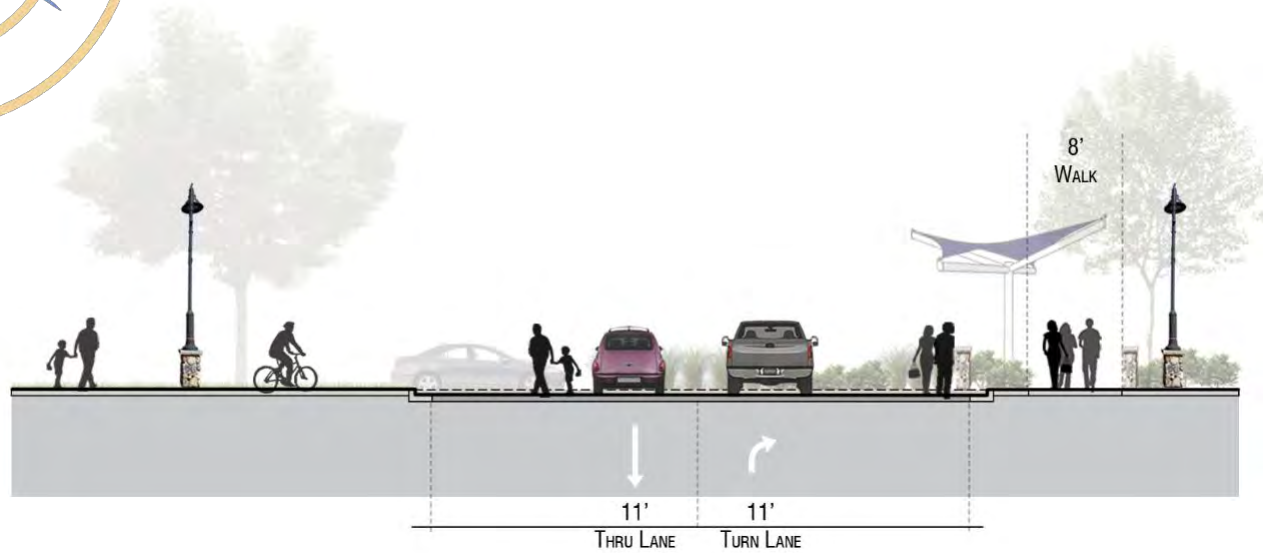




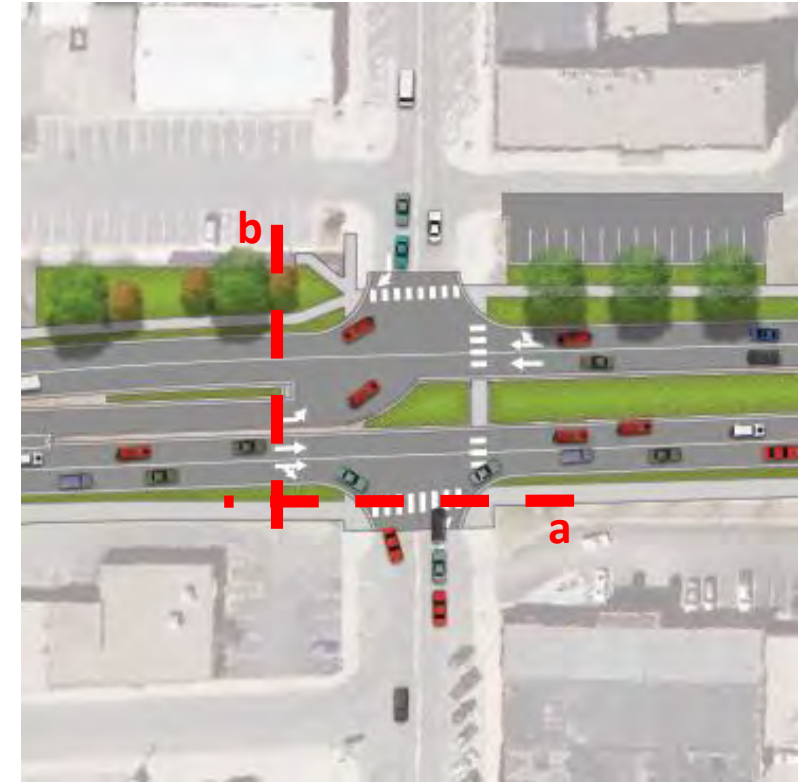
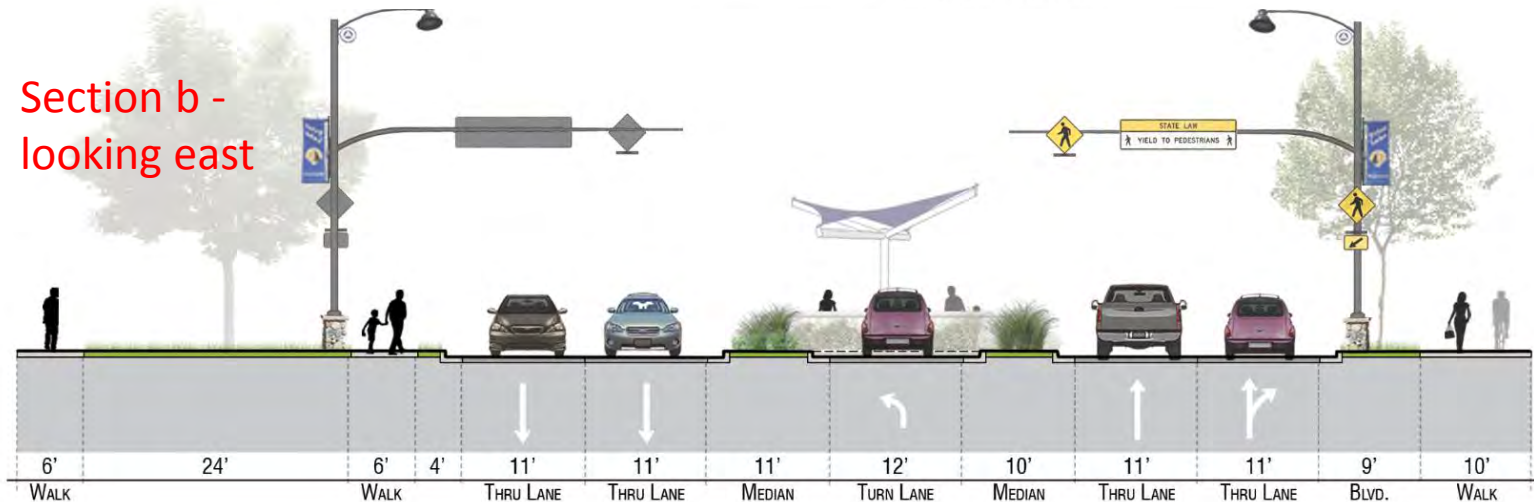


# A-2 Pedestrian Crossing at Main Ave.

Section a -  
looking north



Section b -  
looking east





# A-2 Arcadia w/ Roundabout TH 13

## Estimated Project Costs:

\$5.7M for CH 21/TH 13

\$1.1M (+/-) for TH 13 Soils Correction

\$500K for Property Acquisition

\$7.3M Preliminary Estimated Cost







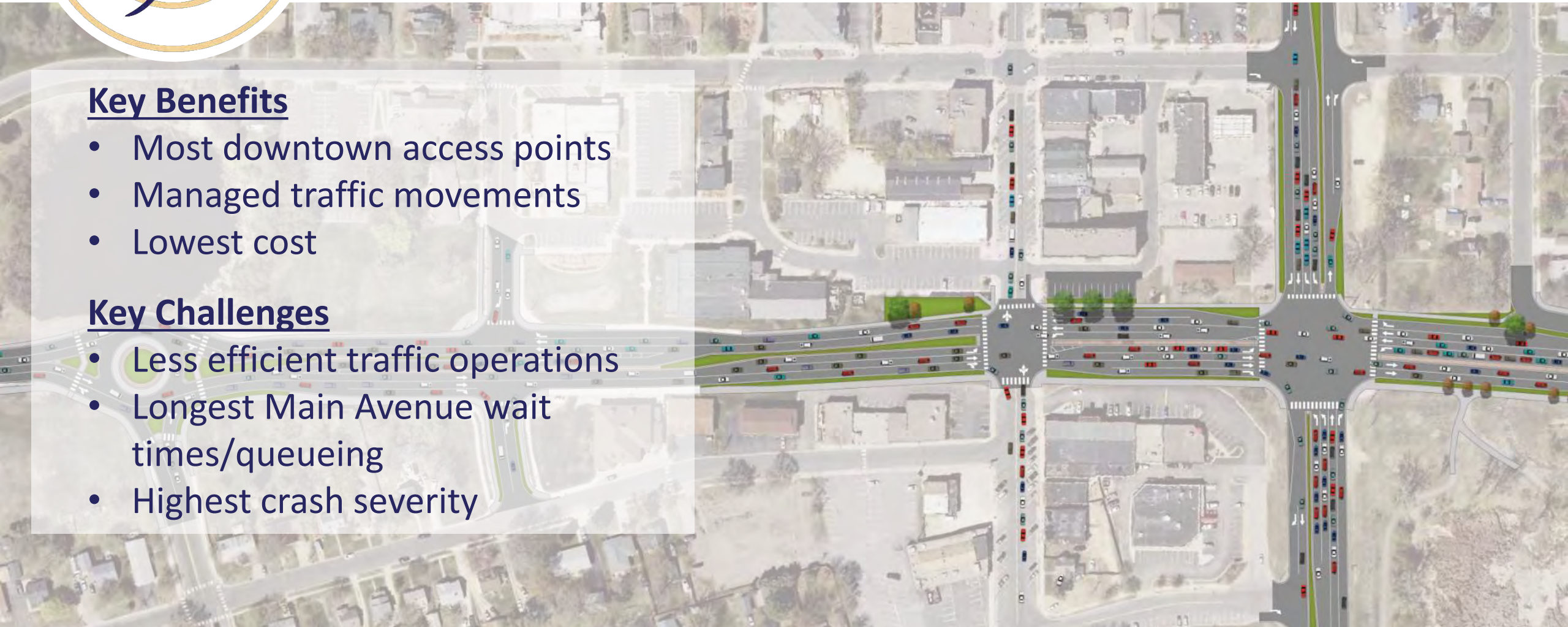
# B-1 Main w/ Traffic Signal at TH 13

## Key Benefits

- Most downtown access points
- Managed traffic movements
- Lowest cost

## Key Challenges

- Less efficient traffic operations
- Longest Main Avenue wait times/queueing
- Highest crash severity





# B-1 Main w/ Traffic Signal at TH 13

## Estimated Project Costs:

\$5.5M for CH 21/TH 13

\$1.2M (+/-) for TH 13 Soils Correction

\$500K for Property Acquisition

\$7.2 M Preliminary Estimated Cost







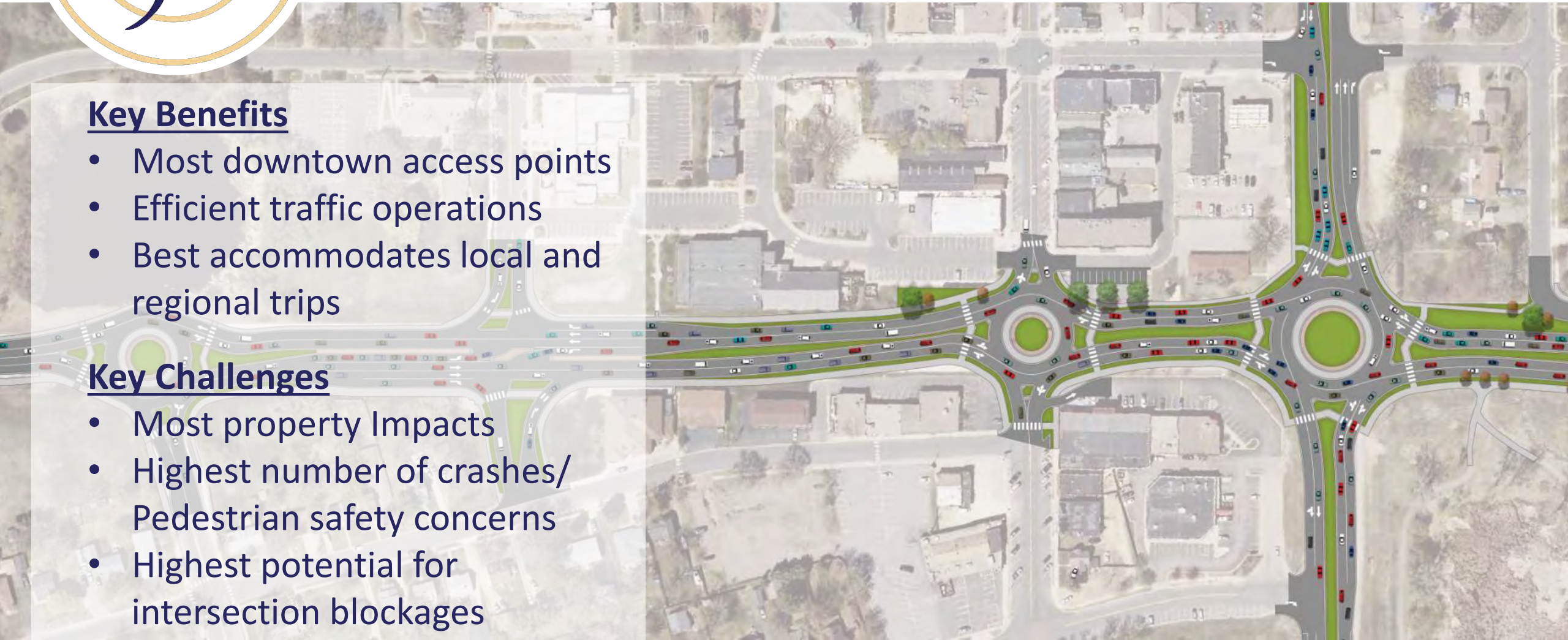
# B-2 Main w/ Roundabout at TH 13

## Key Benefits

- Most downtown access points
- Efficient traffic operations
- Best accommodates local and regional trips

## Key Challenges

- Most property Impacts
- Highest number of crashes/  
Pedestrian safety concerns
- Highest potential for  
intersection blockages





# B-2 Main w/ Roundabout at TH 13

## Estimated Project Costs:

\$5.5M for CH 21/TH 13

\$1.1M(+/-) for TH 13 Soils Correction

\$750K for Property Acquisition

\$7.35M Preliminary Estimated Cost







# 2019 Project Alternatives Under Consideration



**A-1 Arcadia with Traffic Signal at TH 13**



**B-1 Main with Traffic Signal at TH 13**



**A-2 Arcadia with Roundabout at TH 13**



**B-2 Main with Roundabout at TH 13**



# Next Steps?

- 1) Public Input on Alternatives – September 8<sup>th</sup> – October 27<sup>th</sup>
  - [www.movingforward13-21.com](http://www.movingforward13-21.com)
  - October 10th Public Open House
- 2) City, County, State, and Consultant Staff – Continues Evaluation
- 3) City Council Preferred Alternative – November 2017
  - Initiate Municipal Consent Process
  - Initiate Property Acquisition Process

CH 21 Downtown Prior Lake Reconstruction







# Municipal Consent

Required for Highway Projects that:



Alter Access



Increase or reduces traffic capacity



Requires acquisition of permanent right of way

## Process:

- Road authority submits layout to the City
- City holds public hearing
- City passes resolution to approve/disapprove layout
  - If approved -> proceed with project
  - If disapproved -> road authority may:
    - Meet changes requested
    - Appeal
    - Stop the project

## Timeline:

1. Official Request
2. Public Hearing within 60 days
3. Council Resolution within 90 days of Hearing

CH 21 Downtown Prior Lake Reconstruction





# Thank you!

Check out the website!

[www.movingforward13-21.com](http://www.movingforward13-21.com)

Find us on 

**Share your input!**  
We want to hear from you!



**Join us at the second Public Open House**

Tuesday October 10, 2017

4:30-7:30pm

Prior Lake City Hall

CH 21 Downtown Prior Lake Reconstruction

