

# Highway 16 Planning Study: Hwy 779 to AHD

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## Welcome!

Alberta Transportation and Economic Corridors is undertaking a study for Highway 16.

The study will identify and recommend long-term improvements to 22.5 KM of Highway 16, from Highway 779 to Anthony Henday Drive, that aim to maintain the efficient movement of traffic along the highway and at interchanges.

In the second round of engagement for the study, you will be able to:

- Learn about the study, proposed options being considered, process, and timelines; and
- Provide your feedback about the proposed options.

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## Project Overview

As part of the national highway system, Highway 16 is a critical link within the Alberta Capital Region and a key part of the east-west inter provincial trade corridor.

To accommodate increasing traffic and operational requirements of the Highway 16 corridor west of Edmonton, Alberta Transportation and Economic Corridors is considering expanding the highway from two to four lanes in each direction.

This study will consider:

- operational constraints and capacities, access control, interchange types and configurations, and new land acquisition requirements;
- operational capacity and long-term requirements of the existing interchanges;
- input from multiple stakeholders; and
- the accesses at Range Road 261 and 270 for safety improvements in the near term and access closure in the long term.

The study is planned to finish in 2024. Detailed design and construction timelines have not been established at this time.



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## Study Area Map

### West Segment



### East Segment





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## What We Heard in Round 1 of Engagement

The first round of engagement occurred online between November 2 and 16, 2021. A total of 483 participants responded to the survey and four emails were submitted. Below are the key themes shared by participants.

### Key Themes:

- Concerns with safety and functionality of the current at-grade accesses and interchanges in the study area
- Concerns about high traffic volumes, traffic flow, congestion and traffic backing-up along the highway, especially at peak travel times
- Concerns about length of exit and merge lanes as they are not long enough to allow drivers to exit and enter the highway safely and efficiently
- Concerns about the number of lanes on Highway 16 and suggestions for widening and additional lanes
- Some participants noted concerns about the environment, noise, property impacts, construction and cost associated with highway and interchange improvements
- Some participants suggested improved signage, lighting, road maintenance (snow removal and potholes) to improve safety and travel in the study area

For more details, view the Round 1 Engagement Summary on the project website:

<https://www.alberta.ca/highway-planning-studies.aspx>

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## Access Management Recommendations

### Why is Access Management needed?

Highway 16 is designated as a future freeway, which means that all at-grade intersections will be closed, and access will only be provided on/off Highway 16 at interchanges. This will affect the at-grade intersections of:

- Range Road 261/231 Street, and
- Range Road 270.

Closures will occur when:

- operational and/or safety issues are identified, or
- widening to the outside occurs to avoid reconstruction of turn bays / acceleration lanes that will later need to be removed.

### Comments from Open House #1:

#### Concerns

- Safety of left turns
- Exit and entrance lanes do not allow drivers enough time to adjust their speeds
- These accesses are important

#### Suggestions

- Close left turn
- Improve turn lanes on highway
- Provide alternate access

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## Access Management Recommendations: RR 270

### Short-term Recommendations

- Center median and north leg should be closed. Alternate access to the north will be provided via Twp Road 532A.
- Eastbound right-in/right-out permitted until safety and/or operational issues develop, or Highway 16 is widened to 6-lanes (3-lanes in each direction). U-turns will be required at the Century Road or Highway 44 interchanges to accommodate westbound traffic.

### Long-term Recommendations

- At-grade access at Range Road 270 and Highway 16 will be closed. Alternate access will be provided via Highway 16A. The need for intersection improvements will be reviewed.
- As part of adjacent municipal projects, a secondary access may develop off of Grove Drive.

Options for providing service roads from Century Road and/or Highway 44 were explored, but ultimately rejected due their impacts to the Pioneer Lands development and the Wager Natural Area.



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## Access Management Recommendations: RR 261/231 St

### Short-term Recommendations

- Westbound and eastbound right-in/right-out permitted until safety and/or operational issues develop, or Highway 16 is widened to 6-lanes (3-lanes in each direction).

### Long-term Recommendations

- At-grade access at Range Road 261/231 Street and Highway 16 will be closed. Access to the north will be provided via existing service roads (connecting to Highway 60 and Winterburn Road), or a new municipal east/west road.
- Access to the south will be provided via Twp Rd 531A/114 Avenue.

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## How the Options were Developed

For each location traffic analysis software was used to quantify the operation levels of typical interchange configurations as well as options developed by the project team.

The interchange options were screened using a Multiple Accounts Evaluation (MAE) process to narrow the options for each location, and the best ranked options were carried forward to Open House #2 for feedback from the public. All options include widening on Highway 16.

The MAE criteria and weightings on the following boards were developed by representatives from Alberta Transportation and Economic Corridors, the project team, the City of Edmonton, the City of Spruce Grove, Parkland County, and the Town of Stony Plain at the start of the project. These were used to evaluate the preliminary options developed for the study area.



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## How the Options were assessed



**Financial:** quantifies construction costs, land acquisition costs, user benefits and associated benefits



**Environmental:** quantifies system-wide and macro-level environmental impacts



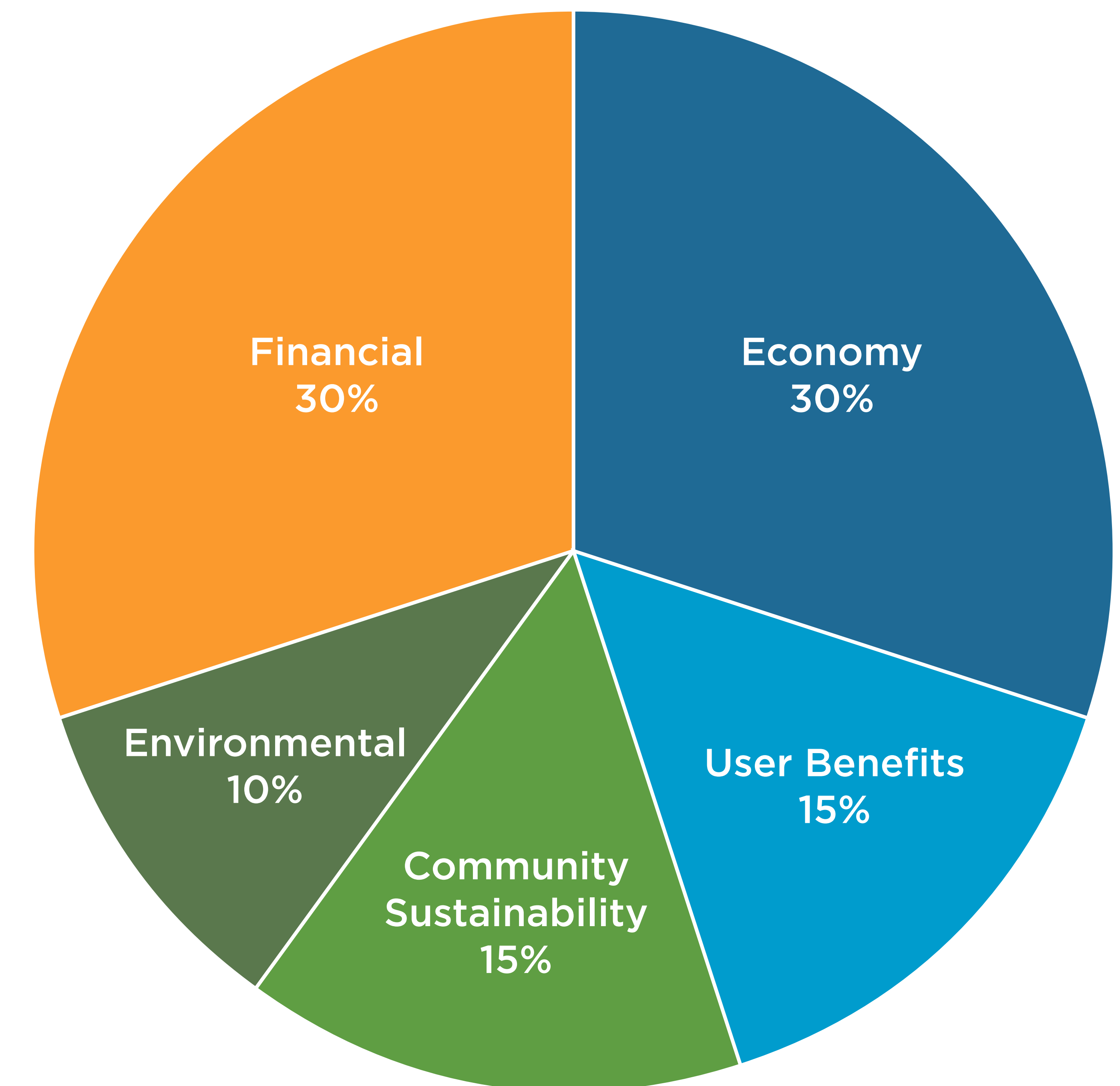
**Community Sustainability:** summarizes impacts on local communities



**Economy:** quantifies how the different options will affect the economy



**User Benefits:** summarizes the benefit that transportation network users (road users and customers) expect from each option





# Highway 16 Planning Study: Hwy 779 to AHD

## Comments from Open House 1 Concerns

- High volumes create bottlenecks
- Proximity of Henday interchange and short sections that create negative enter/exit weave conditions
- Exit ramps queue on the main highway

## Suggestions

- Improve/modify interchange configuration and ramps
- Prioritize this location to improve safety

## Winterburn Road Initial Options

These options were REJECTED because they do not meet the long-term operational objectives for the project.

### Option A

#### Advantages

- Removes both weave conditions on Highway 16 between Winterburn Road and Anthony Henday Drive
- Good operation levels in the long-term
- Safely accommodates pedestrians and cyclists
- Ramp geometry upgraded to meet current standards

#### Disadvantages

- Significant right-of-way impacts
- High potential for impacts to wetlands and wildlife habitat
- High construction costs

### Option B

#### Advantages

- Removes negative weave conditions created as cars enter/exit on Highway 16 mainline in the eastbound direction
- Smallest need for new land acquisition
- Safely accommodates pedestrians and cyclists
- Ramp geometry upgraded to meet current standards
- Lowest environmental impact option
- Lowest cost option

#### Disadvantages

- Does not remove negative weave conditions created as cars enter/exit on Highway 16 mainline in the westbound direction
- Poor operation levels in the long term

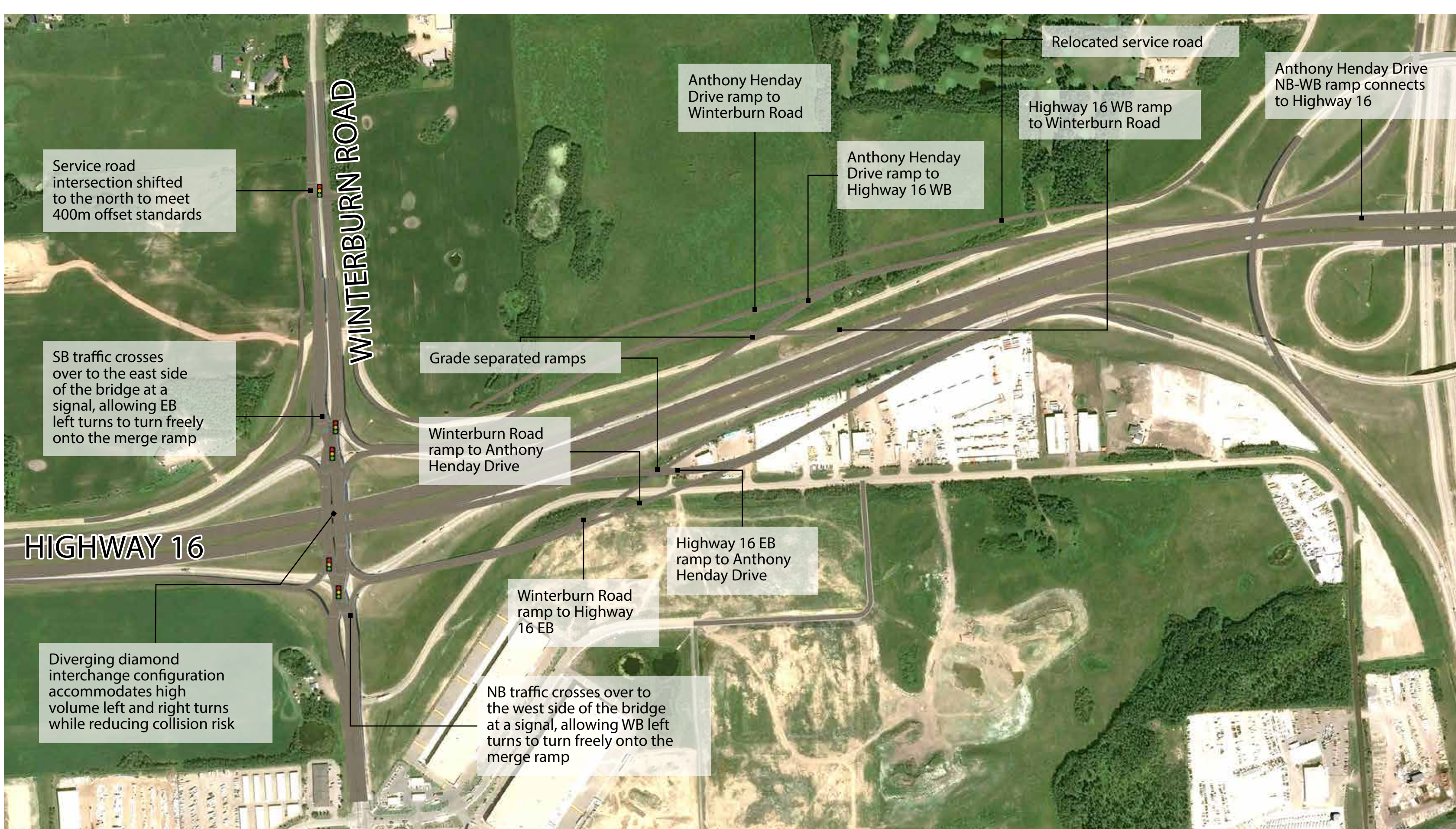
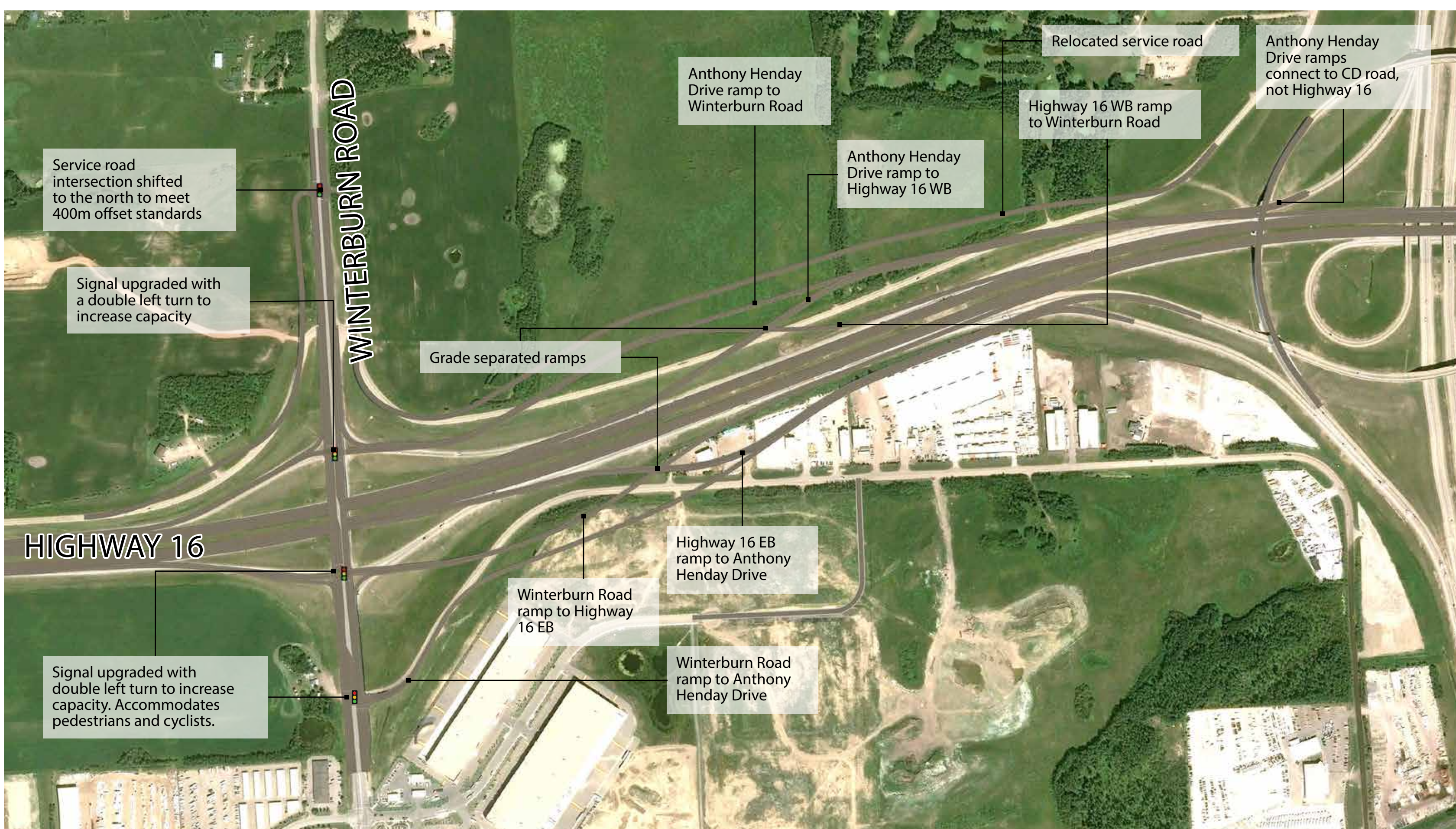
### Option C

#### Advantages

- Removes negative weave conditions created as cars enter/exit on Highway 16 mainline in the eastbound direction
- Safely accommodates pedestrians and cyclists in the long term
- Ramp geometry upgraded to meet current standards

#### Disadvantages

- Does not remove negative weave conditions created as cars enter/exit on Highway 16 mainline in the westbound direction
- Poor operation levels in the long term
- Significant new land acquisition
- High potential for impacts to wetlands and wildlife habitat
- High construction costs





# Highway 16 Planning Study: Hwy 779 to AHD

## Winterburn Road Preferred Option: Hybrid A/C



### Advantages

- Removes negative weave conditions as cars enter and exit on Highway 16 between Winterburn Road and Anthony Henday Drive
- Superior operation levels in the long-term compared to other options
- Safety accommodates pedestrians and cyclists
- Ramp geometry upgraded to meet current standards

### Disadvantages

- Significant new land acquisition
- High potential for impacts to wetlands and wildlife habitat
- High construction costs



# Highway 16 Planning Study: Hwy 779 to AHD

## Comments from Open House 1

### Concerns

- Merge lanes are too short to properly merge
- Long delays at intersections
- High truck volumes, acceleration issues
- Queues on Hwy 60 due to at-grade train crossing

### Suggestions

- Lengthen the ramps
- Hwy 60 at-grade rail crossing needs to be separated
- Add signals and turn lanes

## Highway 60

### Option A - Parclo B4 with a larger loop

#### Advantages

- Good operations levels in the long-term
- Loop ramps reduce conflict points and improve travel times
- Ramp geometry updated to improve acceleration and deceleration
- Requires minimal additional land acquisition

#### Disadvantages

- Does not improve intersection spacing issues on RR 263
- Pedestrians and cyclists cross free flow ramps
- Requires the reconstruction of some ramps and some local service roads
- Some environmental impacts

### Option B - Parclo AB

#### Advantages

- Good operations levels in the long-term
- Loop ramps reduce conflict points and improve travel times
- Ramp geometry updated to improve acceleration and deceleration
- Requires minimal right-of-way

#### Disadvantages

- Does not improve intersection spacing issues on RR 263
- Pedestrians and cyclists cross free flow ramps
- Requires the reconstruction of some ramps and some local service roads
- Some environmental impacts

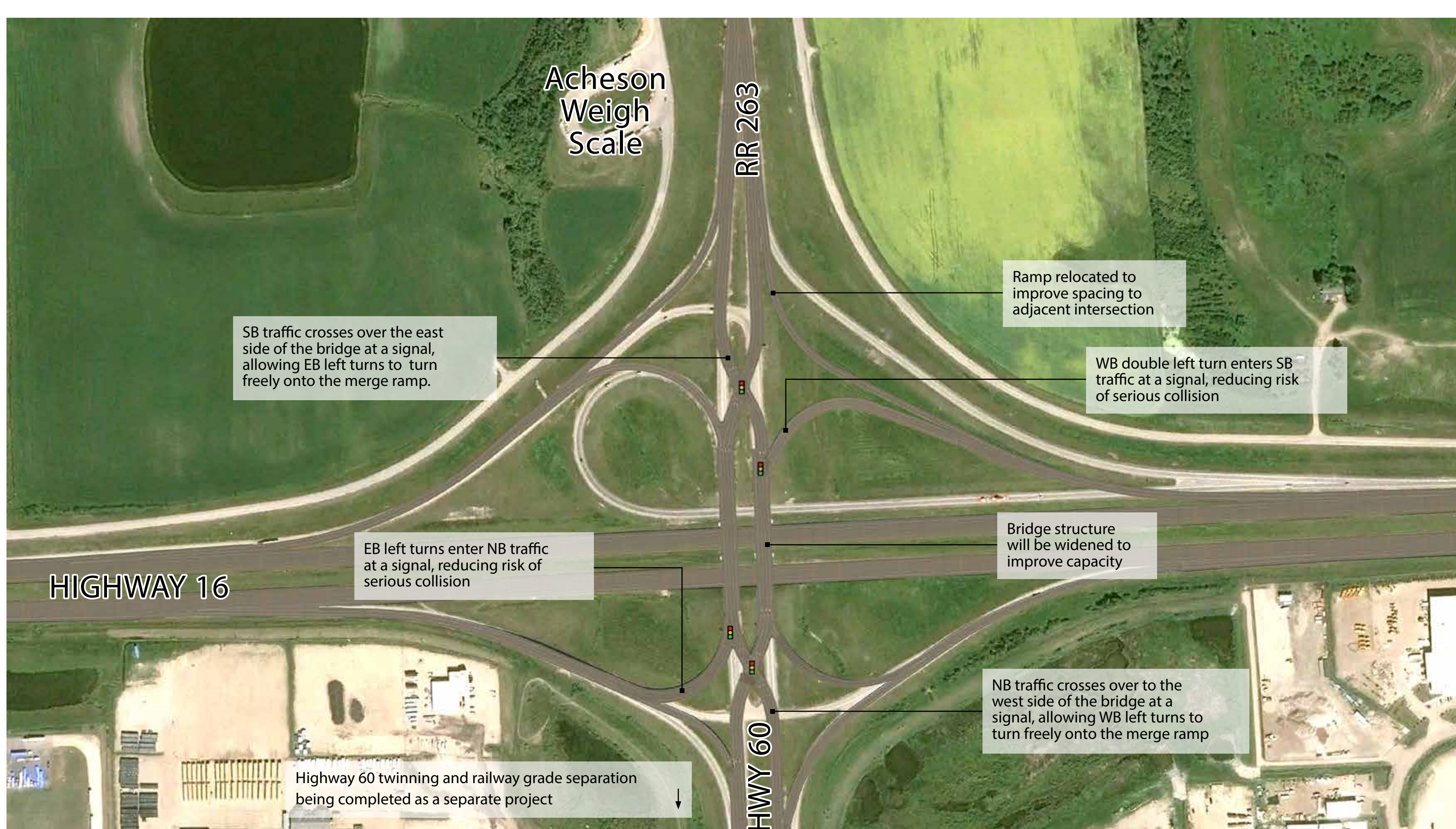
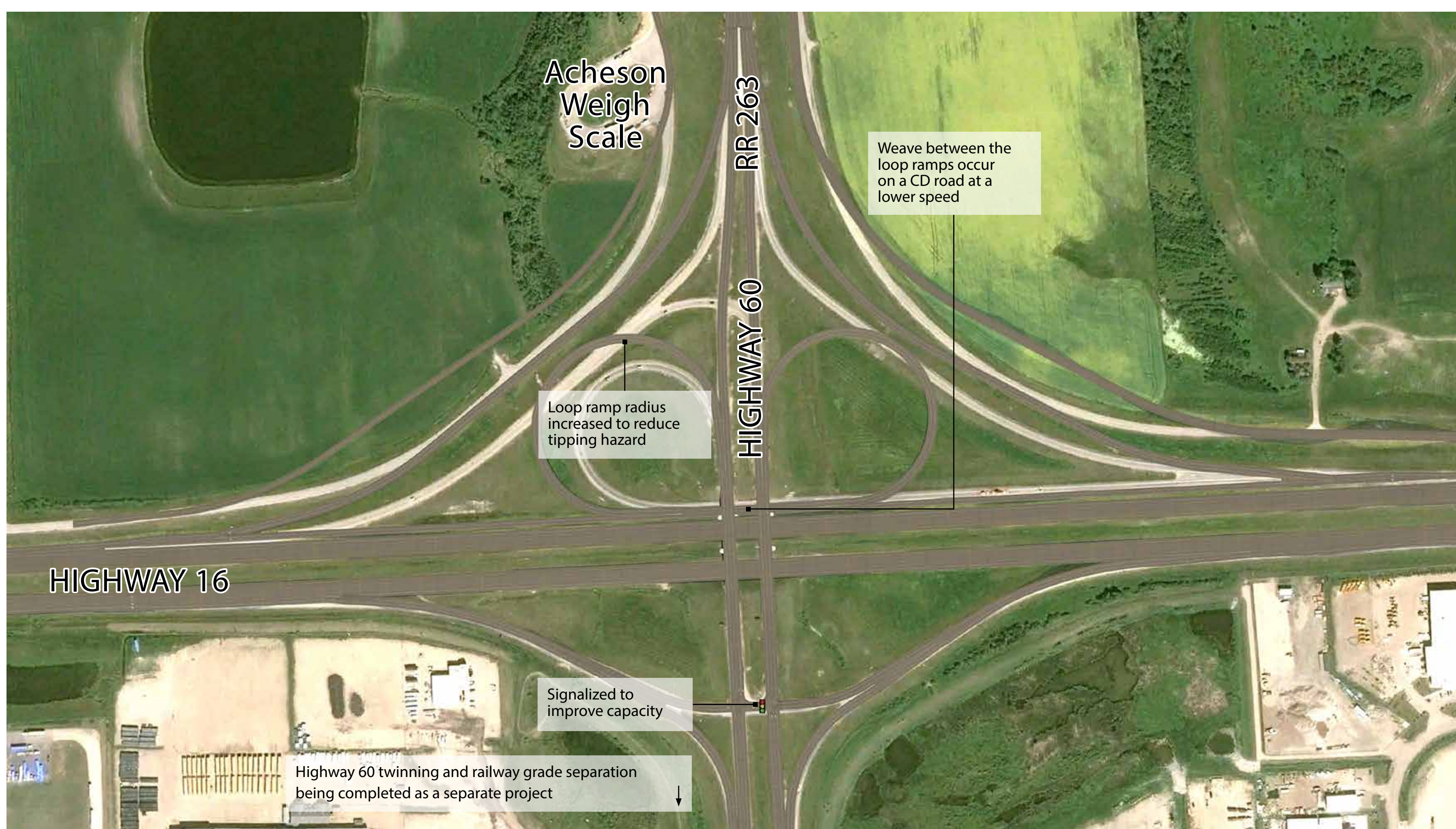
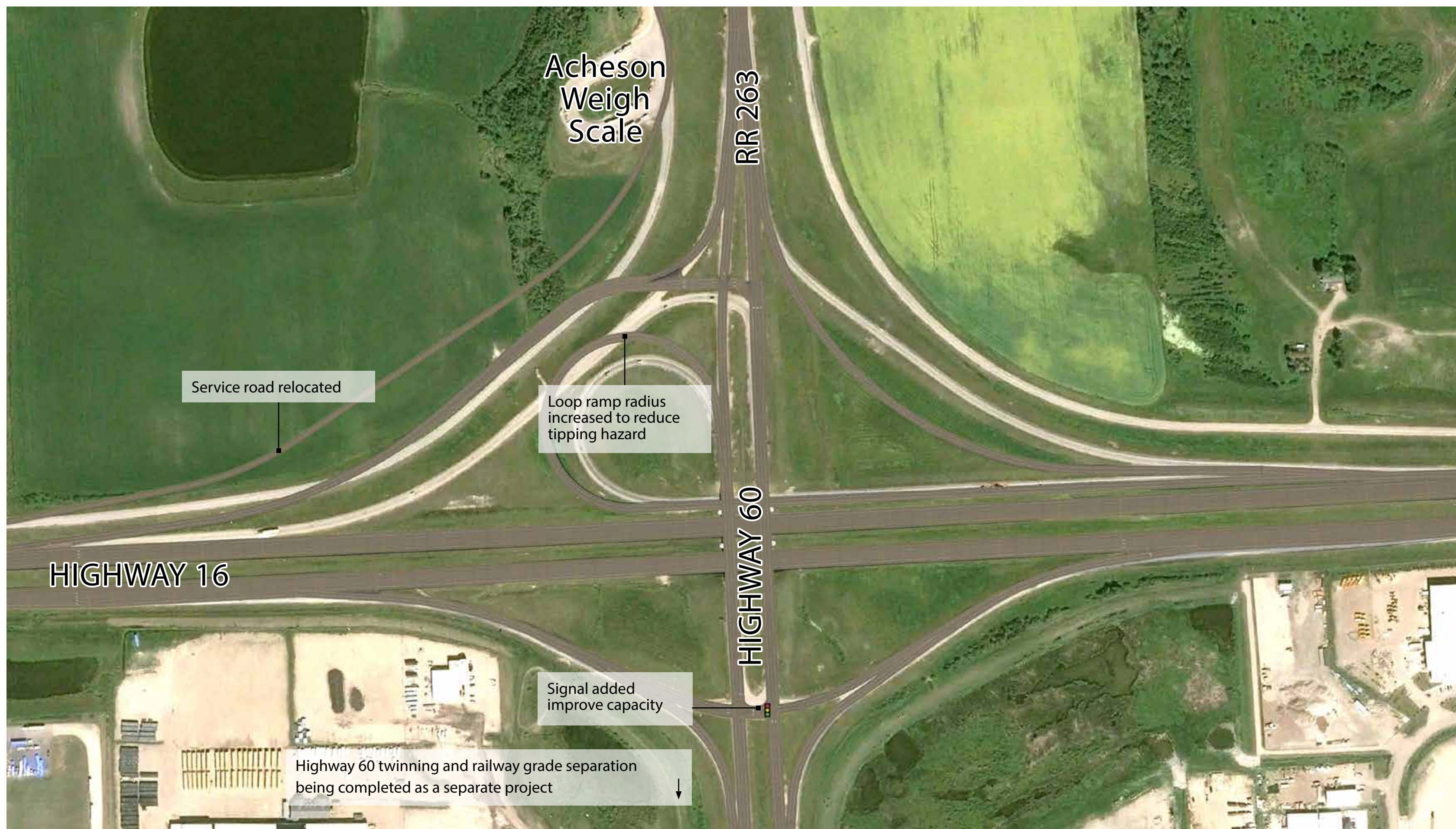
### Option C - Diverging Diamond

#### Advantages

- Good operations levels in the long-term
- Safely accommodates pedestrians and cyclists
- Ramp geometry updated to improve acceleration and deceleration
- Requires minimal new land acquisition
- Minimal environmental impacts

#### Disadvantages

- Requires the reconstruction of some ramps and some local service roads





# Highway 16 Planning Study: Hwy 779 to AHD

## Highway 44

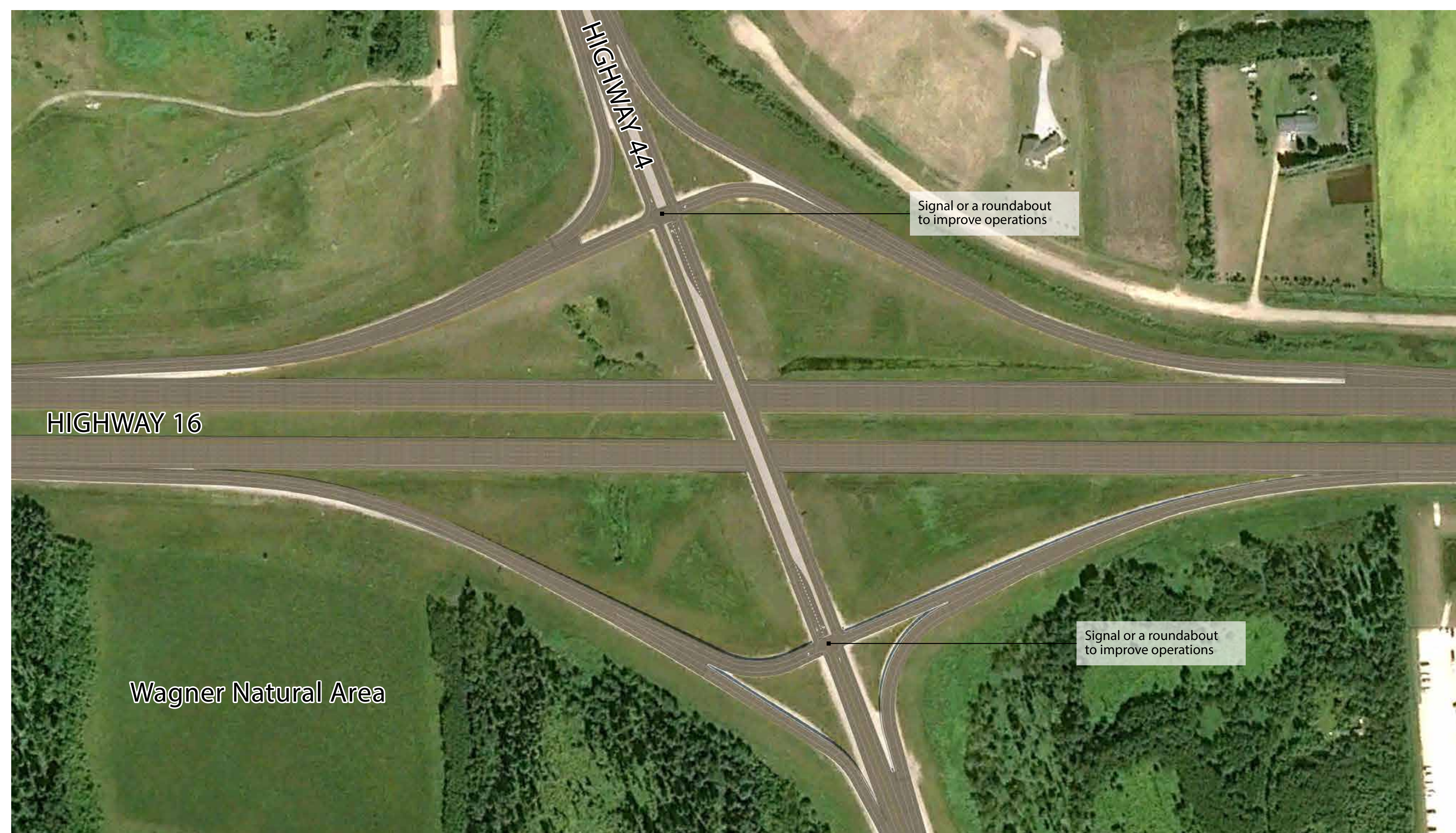
### Comments from Open House 1

#### Concerns

- Merge lanes are too short to properly merge
- Long delays at intersection
- High truck volumes, acceleration issues

#### Suggestions

- Lengthen the ramps
- Add signals and turn lanes



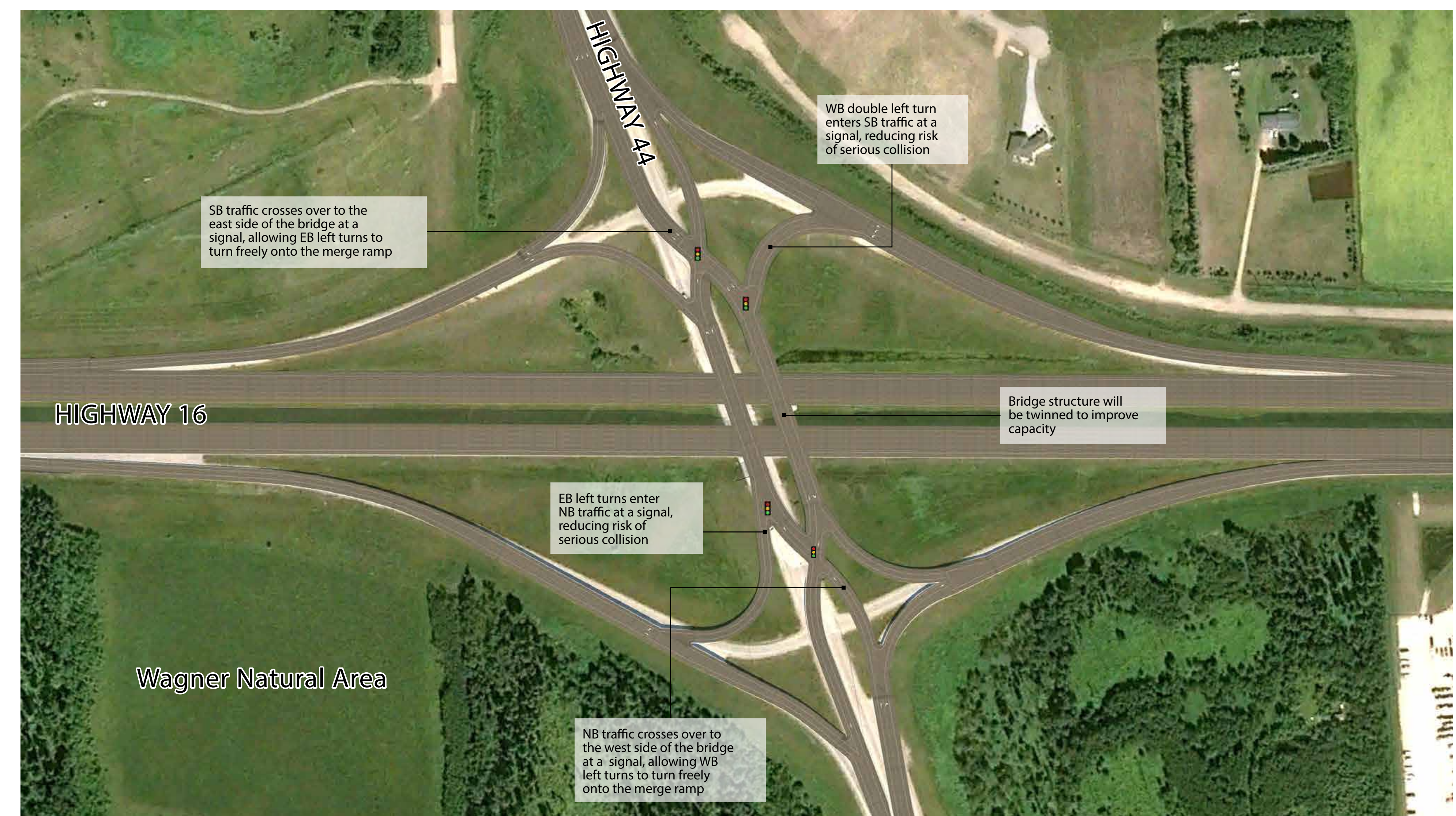
### Option A - Upgraded Diamond

#### Advantages

- Good operations levels in the long-term
- Could safely accommodate pedestrians and cyclists
- Ramp geometry updated to improve acceleration and deceleration
- Minimal environmental impacts, does not encroach onto the Wagner Natural Area

#### Disadvantages

- Does not improve travel times



### Option B - Diverging Diamond

#### Advantages

- Good operations levels in the long-term
- Could safely accommodate pedestrians and cyclists
- Does not require additional land acquisition
- Ramp geometry updated to improve acceleration and deceleration
- Minimal environmental impacts, does not encroach onto the Wagner Natural Area

#### Disadvantages

- Does not improve travel times



# Highway 16 Planning Study: Hwy 779 to AHD

## Comments from Open House 1

### Concerns

- High volumes, causes congestion, hard to get on the highway
- Ramps queue onto the main highway, more capacity needed at intersections
- Noise from the highway

### Suggestions

- Improve/modify interchange configuration or lengthen the ramps
- Increase highway capacity
- Auxiliary lanes
- Improve signals

## Century Road

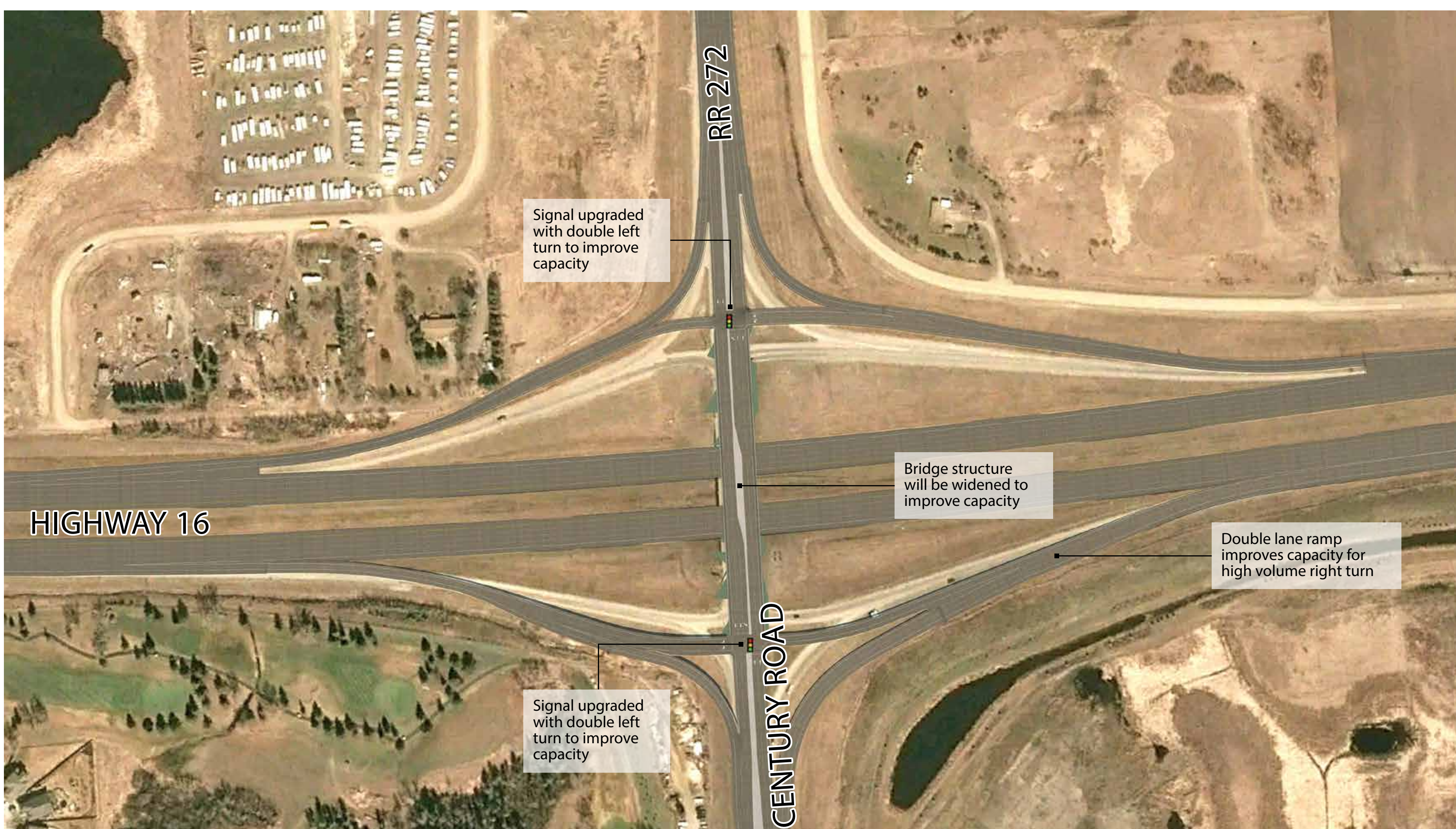
### Option A - Upgraded Diamond

#### Advantages

- Safely accommodates pedestrians and cyclists
- Ramp geometry updated to improve acceleration and deceleration
- Requires minimal new land acquisition
- Minimal environmental impacts

#### Disadvantages

- Reasonable operation levels in the long-term, does not improve travel times



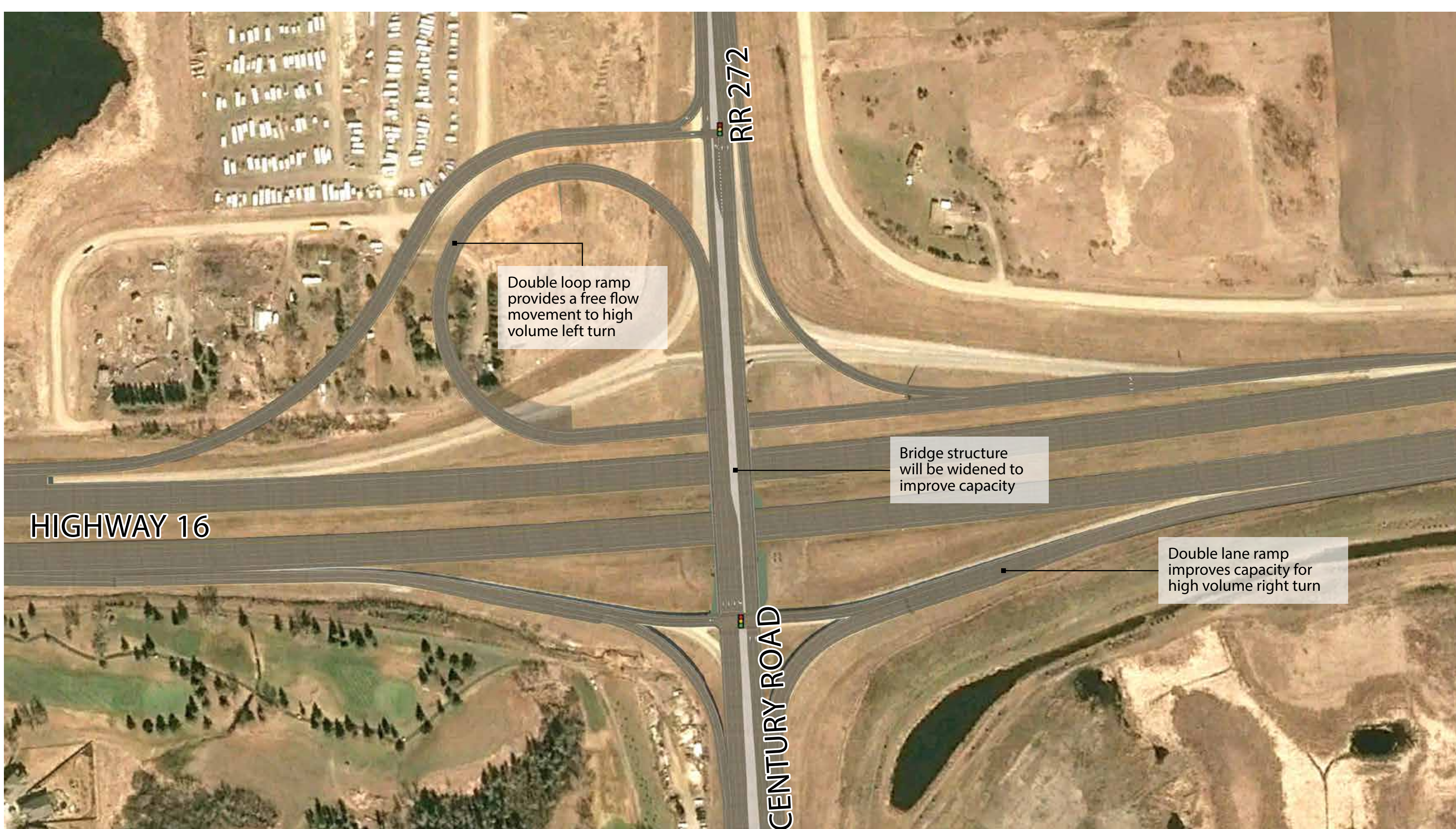
### Option B - Half Diamond / Half Parclo B4

#### Advantages

- Good operations levels in the long-term, loop ramp improves travel time for high volume WB left turn
- Safely accommodates pedestrians and cyclists
- Ramp geometry updated to improve acceleration and deceleration
- Minimal environmental impacts

#### Disadvantages

- Requires significant new land acquisition. Impacts active development in NW quadrant
- Requires the reconstruction of most ramps and most local service roads. May impact regional sanitary pipe



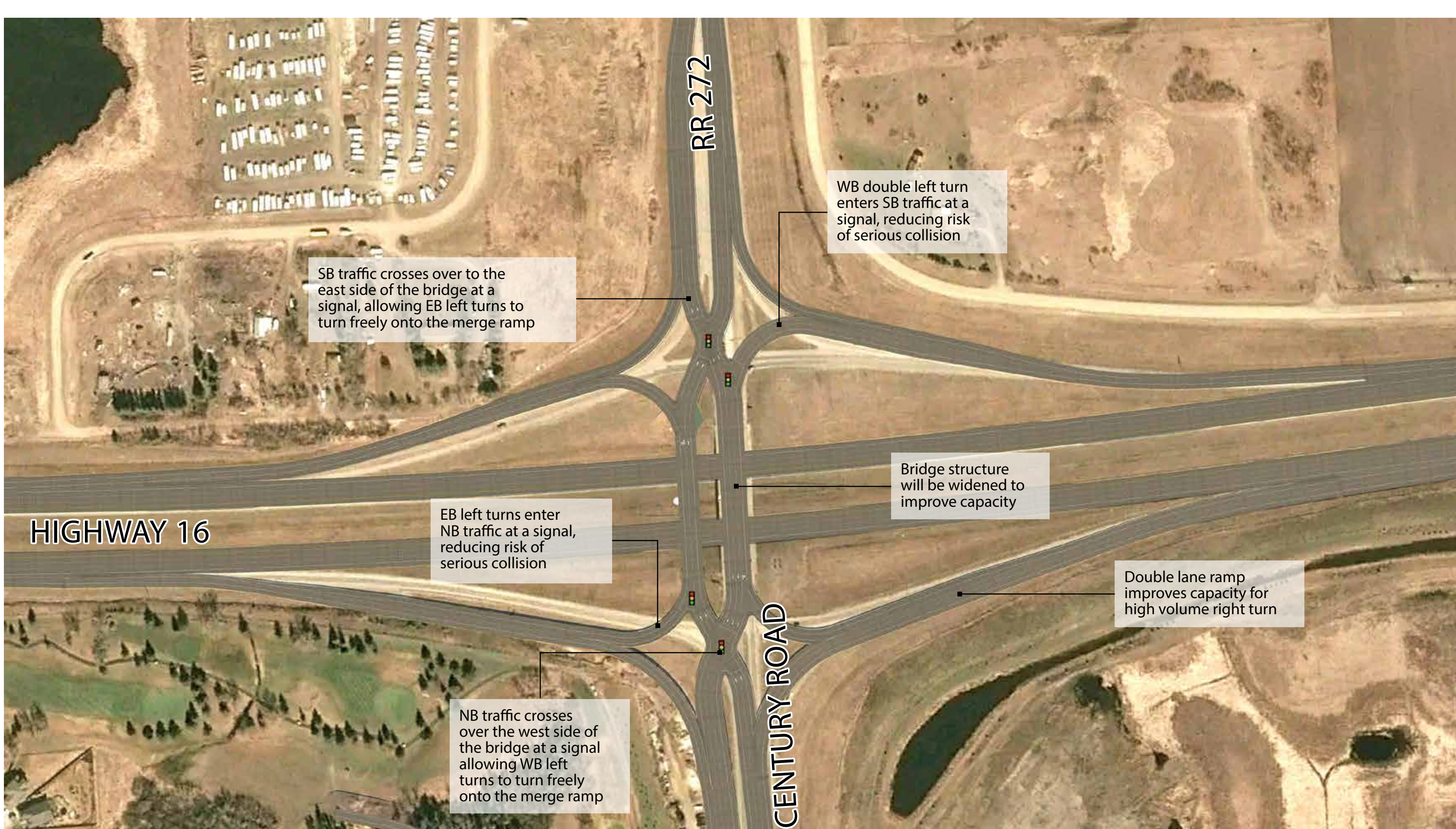
### Option C - Diverging Diamond

#### Advantages

- Good operations levels in the long-term
- Safely accommodates pedestrians and cyclists
- Ramp geometry updated to improve acceleration and deceleration
- Requires minimal new land acquisition
- Minimal environmental impacts

#### Disadvantages

- Configuration is uncommon in Alberta, will require driver education





# Highway 16 Planning Study: Hwy 779 to AHD

## Comments from Open House 1

### Concerns

- High volumes, causes congestion, hard to get on the highway
- Ramps queue onto the main highway, more capacity needed at intersections
- Noise from the highway

### Suggestions

- Improve/modify interchange configuration or lengthen the ramps
- Increase highway capacity
- Auxiliary lanes
- Improve signals

## Campsite Road/Jennifer Heil Way

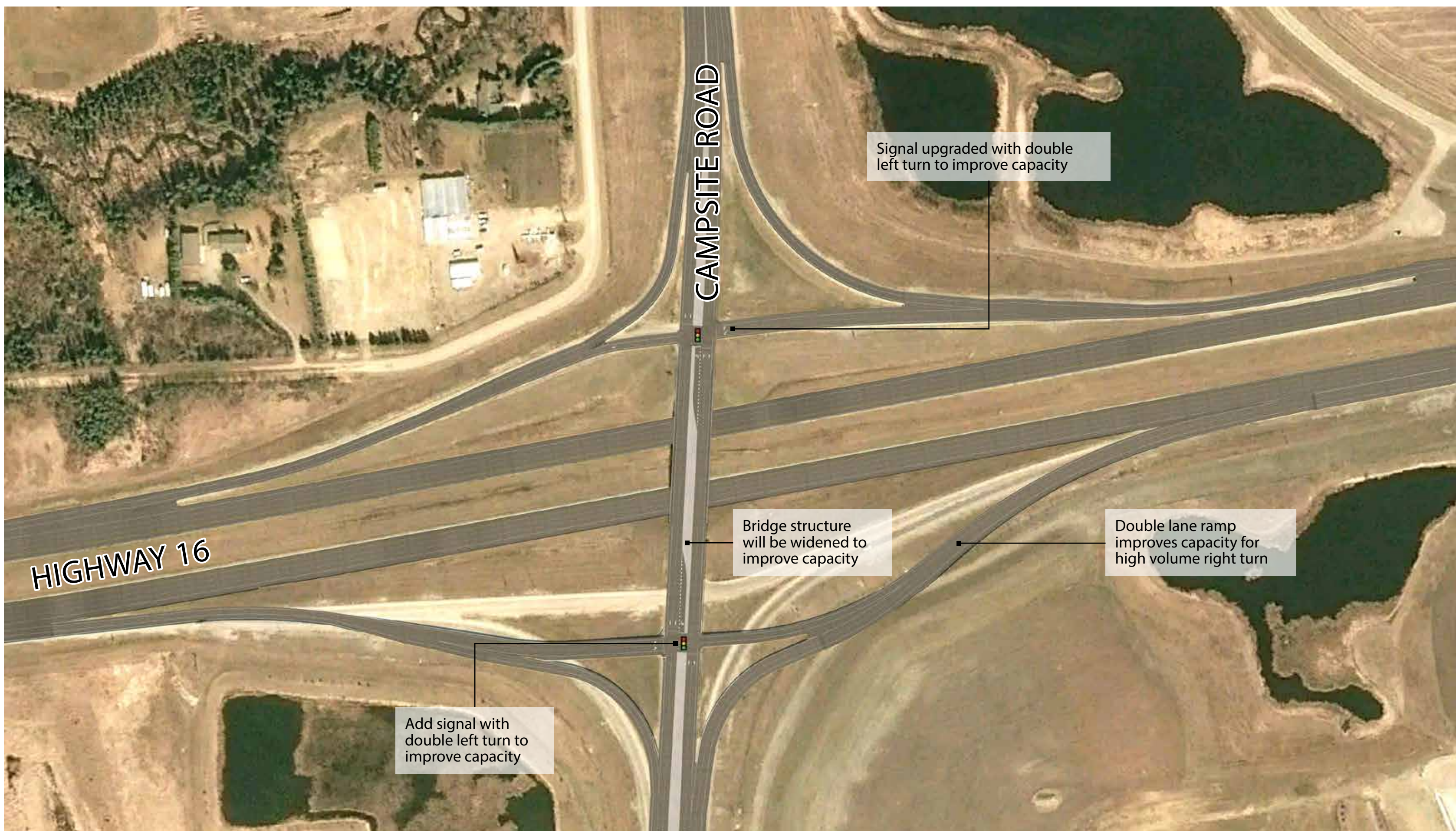
### Option A - Upgraded Diamond

#### Advantages

- Safely accommodates pedestrians and cyclists
- Ramp geometry updated to improve acceleration and deceleration
- Requires minimal new land acquisition
- Minimal environmental impacts

#### Disadvantages

- Reasonable operation levels in the long-term, does not improve travel times



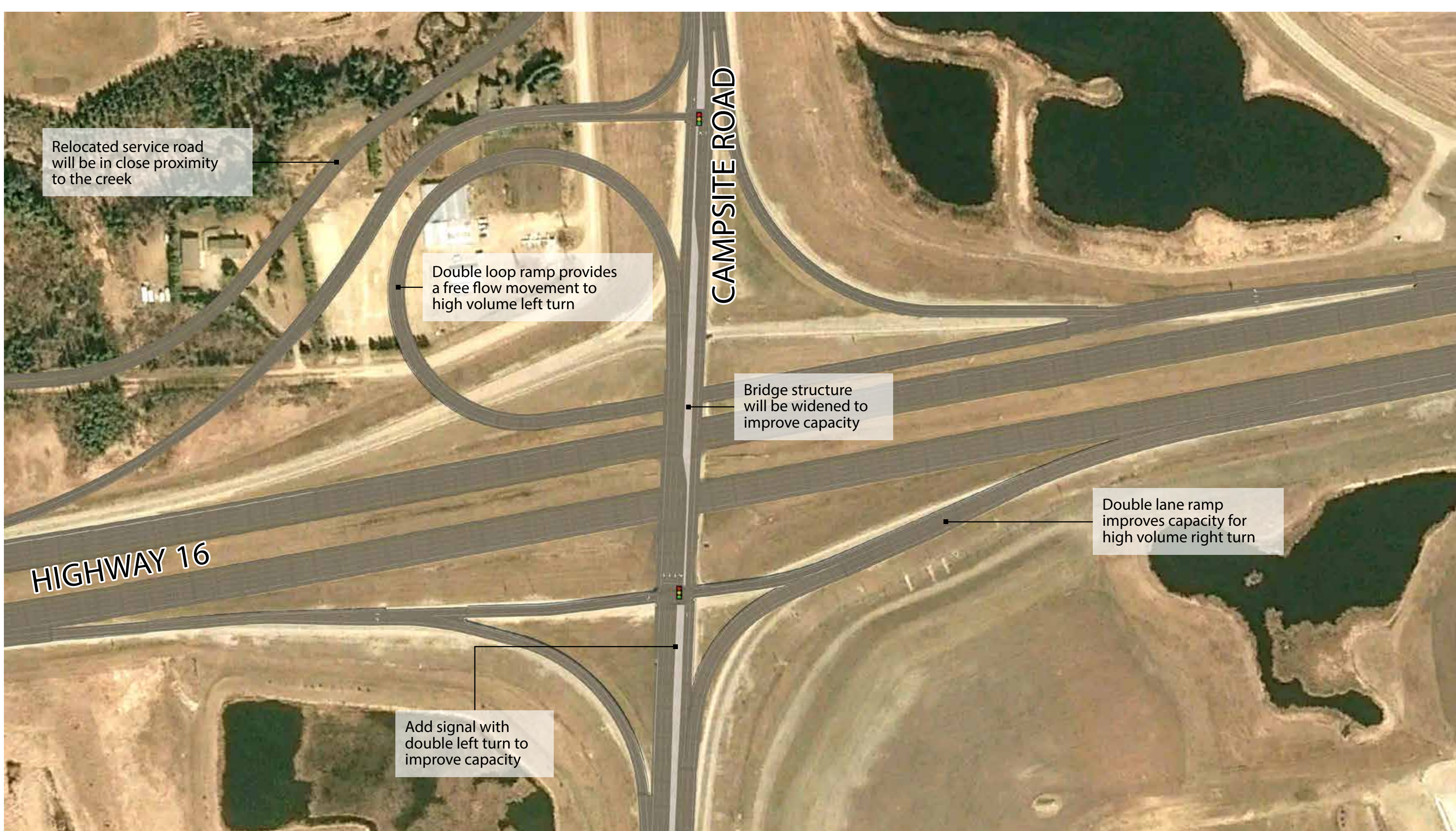
### Option B - Half Diamond / Half Parclo

#### Advantages

- Good operations levels in the long-term, loop ramp improves travel time for high volume WB left turn
- Safely accommodates pedestrians and cyclists
- Ramp geometry updated to improve acceleration and deceleration

#### Disadvantages

- Requires significant new land acquisition. Impacts existing residence and business
- Requires the reconstruction of most ramps and most local service roads. May impact regional sanitary pipe
- Service road relocation will be in close proximity to the creek



### Option C - Diverging Diamond

#### Advantages

- Good operations levels in the long-term
- Safely accommodates pedestrians and cyclists
- Ramp geometry updated to improve acceleration and deceleration
- Requires minimal new land acquisition
- Minimal environmental impacts

#### Disadvantages

- Requires some new land acquisition, including an existing residence and business
- Configuration is uncommon in Alberta, will require driver education





# Highway 16 Planning Study: Hwy 779 to AHD

## Comments from Open House 1

### Concerns

- High speed traffic hard to merge into
- Ramps queue up on the highway
- Visibility/lighting issues

### Suggestions

- Improve interchange configuration, or lengthen ramps
- Install signals
- Better signage and lighting

## Highway 779

### Option A - Parclo B4

#### Advantages

- Avoids impacts to the church and cemetery in the NW quadrant
- Loop ramps improve travel time for NB and SB left turns
- Good operation levels in the long-term
- Ramp geometry updated to improve acceleration and deceleration
- Minimal environmental impacts

#### Disadvantages

- Loop ramps accommodate low volume left turn movements, not high ones
- Requires significant additional land acquisition, impacting future industrial lands
- Requires the reconstruction of all ramps and most local service roads
- Free flow ramps are a safety concern for pedestrians and cyclists

### Option B - Upgraded Diamond

#### Advantages

- Generally fits within the existing required land
- Good operations levels in the long-term
- Safely accommodates pedestrians and cyclists
- Avoids impacts to the church and cemetery in the NW quadrant
- Ramp geometry updated to improve acceleration and deceleration
- Minimal environmental impacts

#### Disadvantages

- Does not improve travel times as much as other options

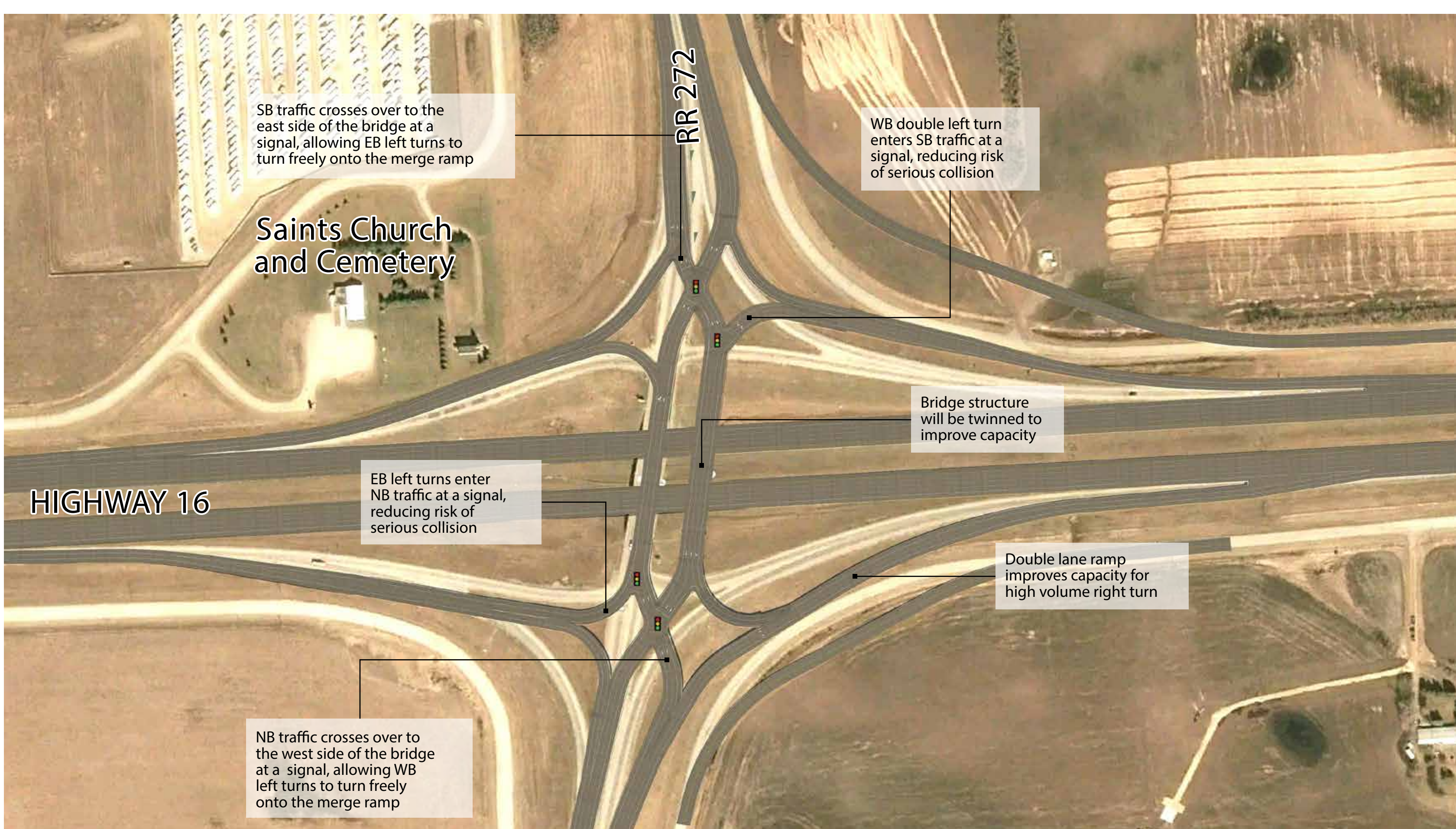
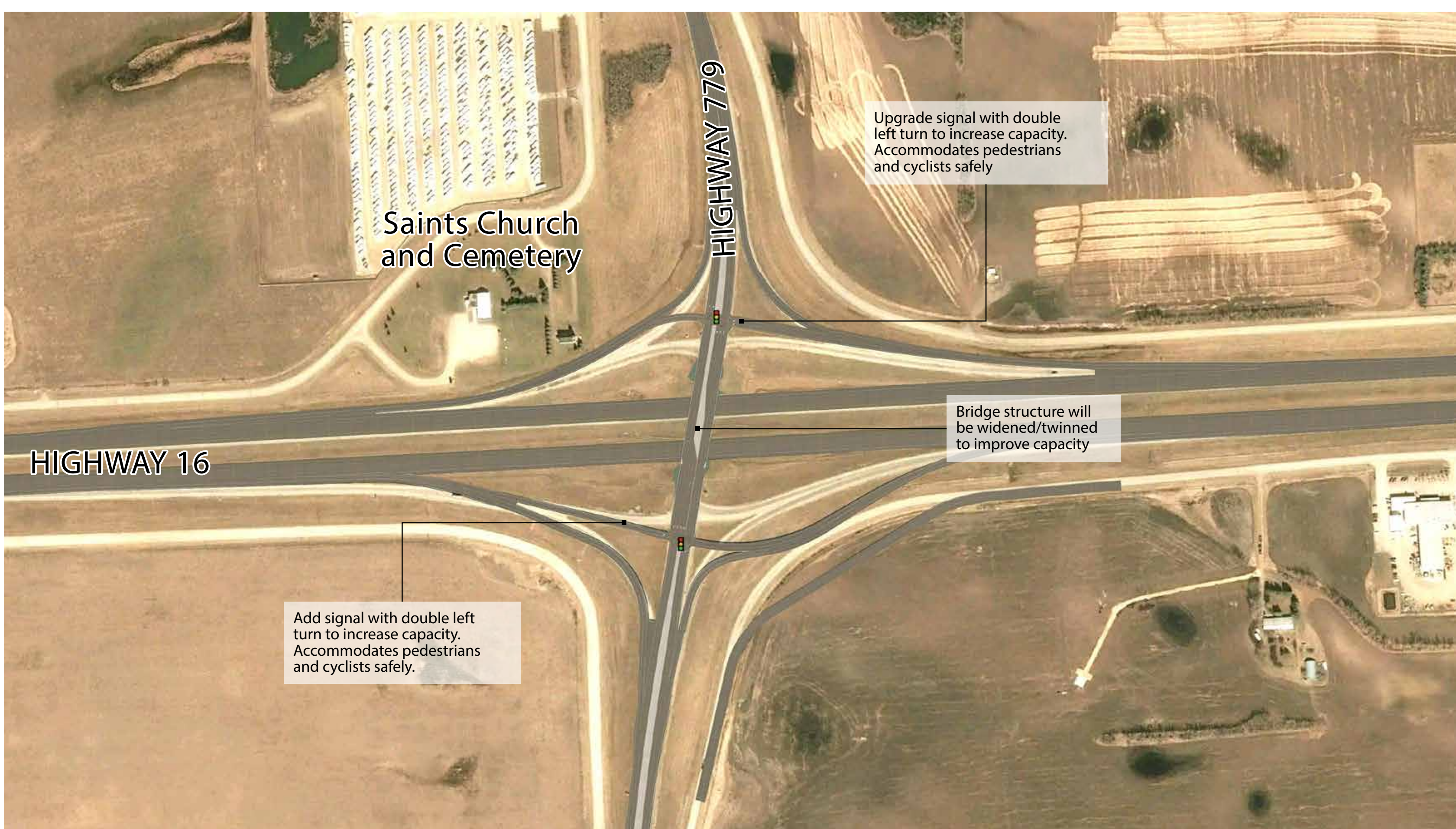
### Option C - Diverging Diamond

#### Advantages

- Good operations levels in the long-term
- Safely accommodates pedestrians and cyclists
- Avoids impacts to the church and cemetery in the NW quadrant
- Ramp geometry updated to improve acceleration and deceleration
- Minimal environmental impacts
- Does not require additional land to be acquired for new service roads

#### Disadvantages

- Configuration is uncommon in Alberta, will require driver education





# Highway 16 Planning Study: Hwy 779 to AHD

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## Engagement purpose and opportunities

Your input, along with technical expertise, will help inform the recommended plan for the study area. Please complete the online survey using the link below to provide feedback on:

- The access management recommendations;
- Interchange options; and
- Additional feedback about the study area.

## Engagement Timelines



**Thank you for your interest and participation in the study!**

For more information, please visit:

<https://www.alberta.ca/highway-planning-studies.aspx>