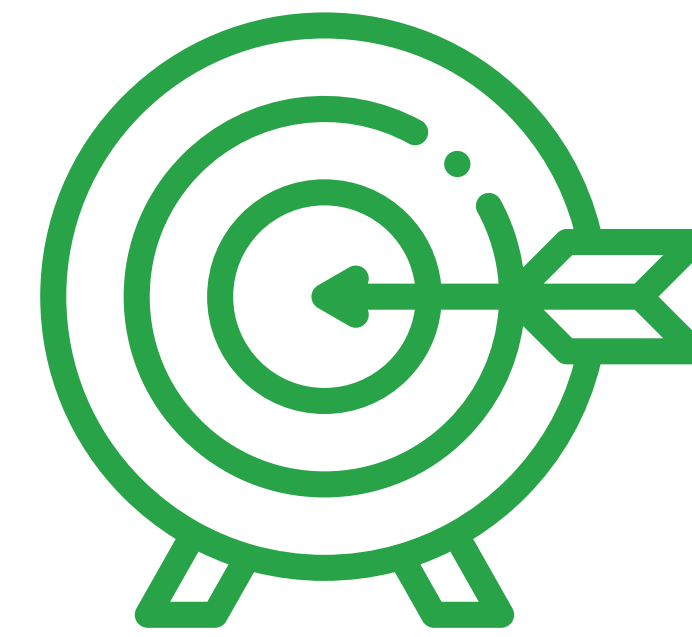


# THE North Perimeter (PTH 101) Highway Design Study

## Phase 2 Engagement

Fall 2023



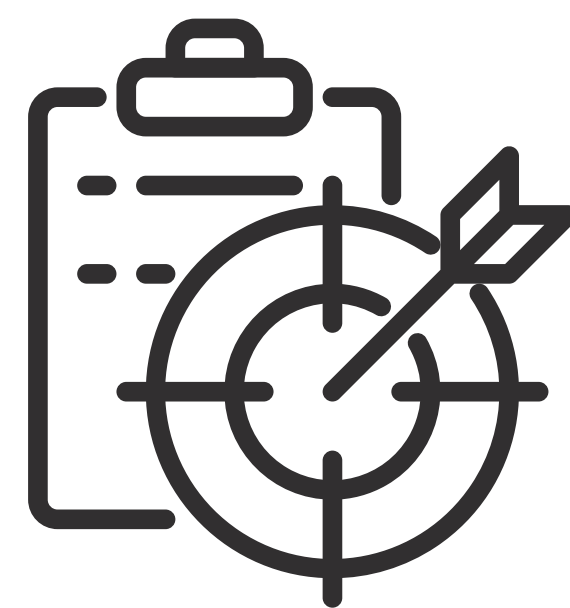


## Purpose

To develop a plan that will accommodate the future development of the North Perimeter Highway into a **fully access-controlled, grade-separated freeway that can ultimately accommodate six lanes.**



## The **intent** of phase 2 engagement is to:



Inform you of the  
**purpose and scope**  
of the study for PTH 101.

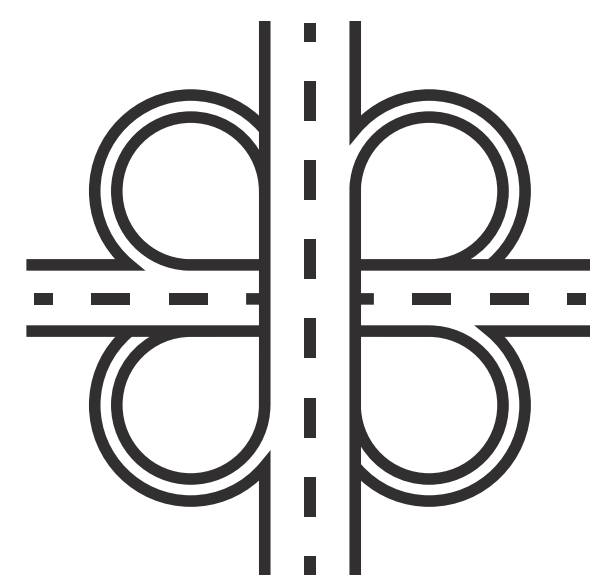


Present **highway and interchange options** for  
PTH 101.



Offer an opportunity for you  
to **provide feedback** on the  
options and **ask questions** of  
the design team.

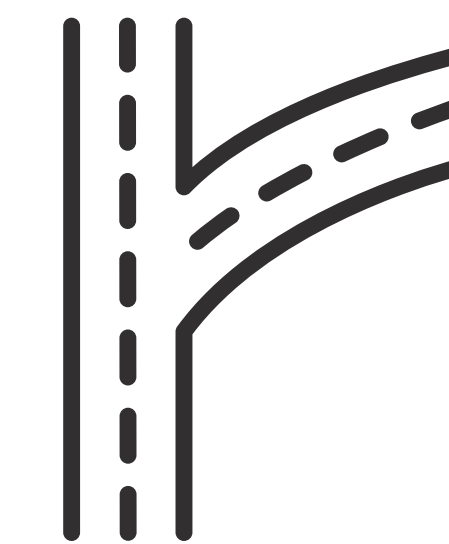
**WSP Canada Inc. (WSP), a planning and engineering firm, was engaged by the Manitoba government to develop a design for the reconstruction of the North Perimeter Highway (PTH 101).**



The PTH 101 redesign, once constructed, will create a **modern freeway facility**.



The study was initiated due to **existing highway safety, operations, and condition issues**.

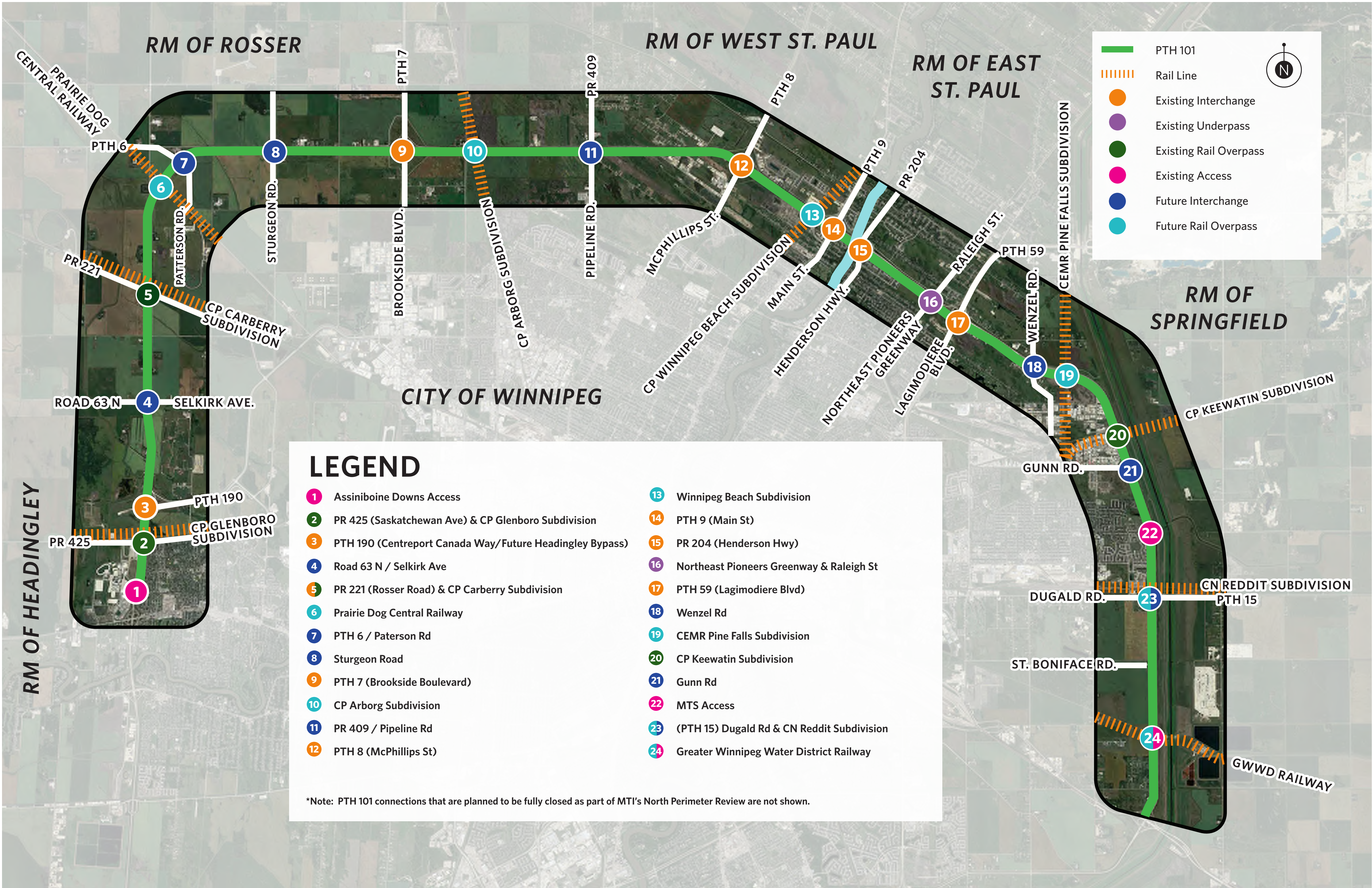


The final design will provide **highway access via grade separated interchanges** with service roads at certain locations to accommodate access to fronting developments.



# Study Area

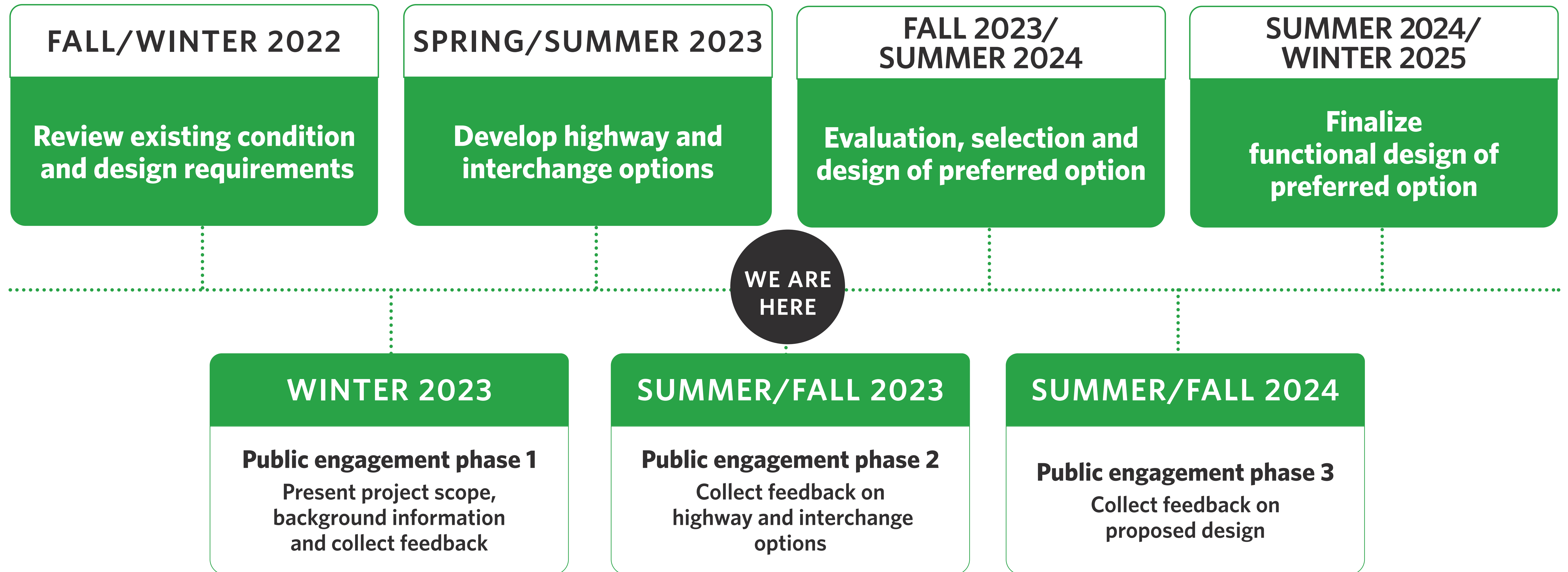
# The North Perimeter (PTH 101) Highway Design Study





# Timeline

## The North Perimeter (PTH 101) Highway Design Study



**The functional design study will take approximately two years to complete.**

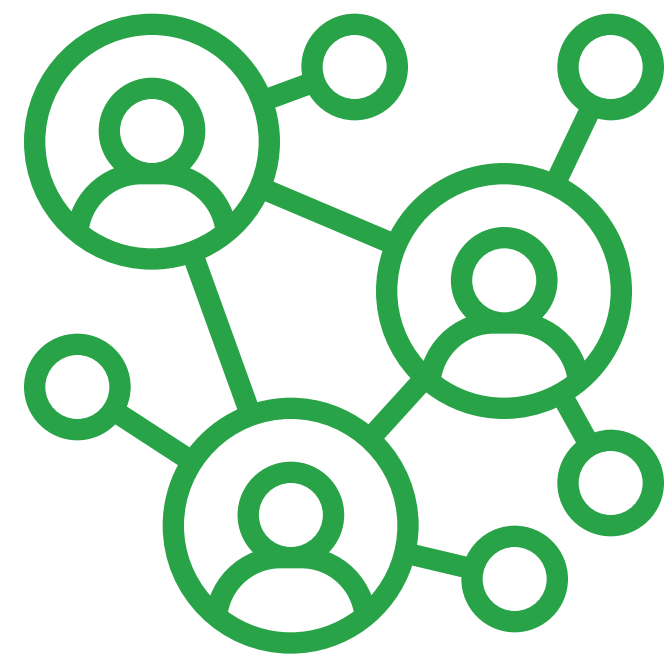
A functional design study is an early phase of the design process in which the road right-of-way and roadway layout are established based on projected travel patterns and demand. Functional designs are informed by both technical studies and public input and feedback throughout the process.

# What We Heard

## The North Perimeter (PTH 101) Highway Design Study

During Phase 1 Engagement, the **project team met with Indigenous Rights Holders, municipalities and stakeholders** to introduce the project, communicate the project's scope and timing and gather initial feedback.

The engagement activities facilitated during Phase 1 of public engagement included:



Stakeholder meetings with **associated municipalities** (six meetings in total).



Meetings with a **variety of stakeholders** (six meetings in total) and meetings with Indigenous Rights Holders.



**Virtual engagement** on MTI's website.



A project **newsletter** distributed to landowners in the vicinity of the study area.

Overall, the feedback collected during Phase 1 from the stakeholders was **positive**.

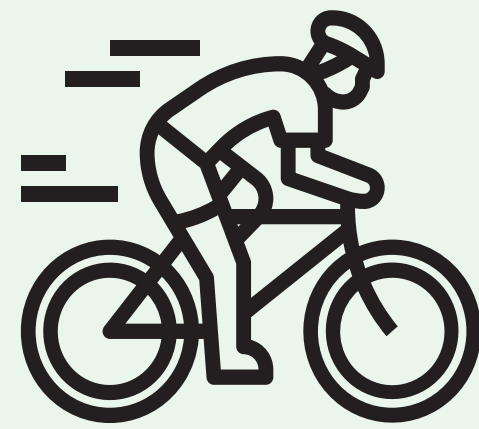




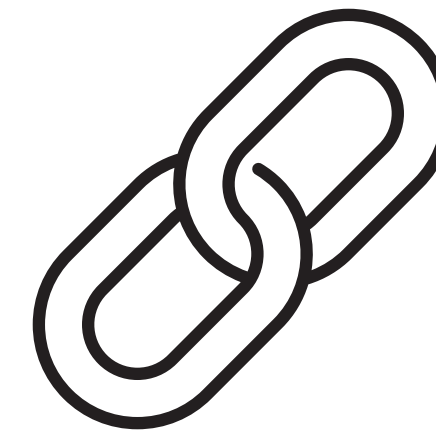
# What We Heard

## The North Perimeter (PTH 101) Highway Design Study

Specific themes based on the feedback received include:



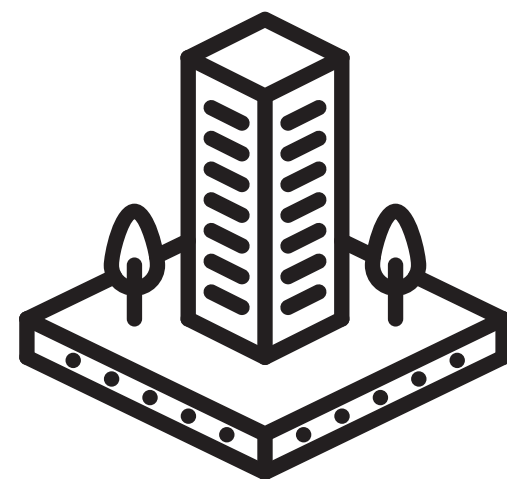
That active transportation be considered in the design of PTH 101 at strategic locations.



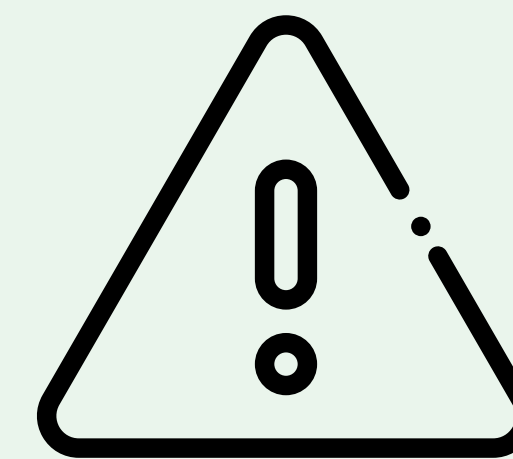
That coordination occur between this study and other potential future projects in the area.



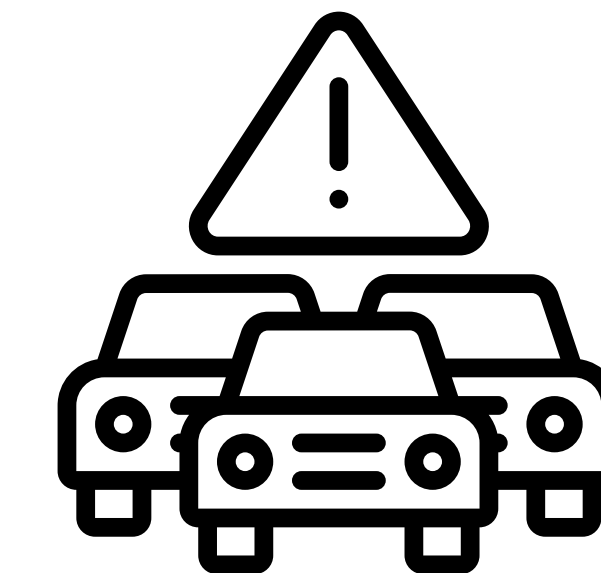
That noise mitigation measures be considered where warranted, based on technical analysis.



That alternative access options be considered for businesses located on the highway.



That interchanges on PTH 101 be prioritized at various locations, such as at Pipeline Road, due to safety concerns.



That traffic impacts from CentrePort be incorporated into the design.

# Noise Attenuation

## The North Perimeter (PTH 101) Highway Design Study

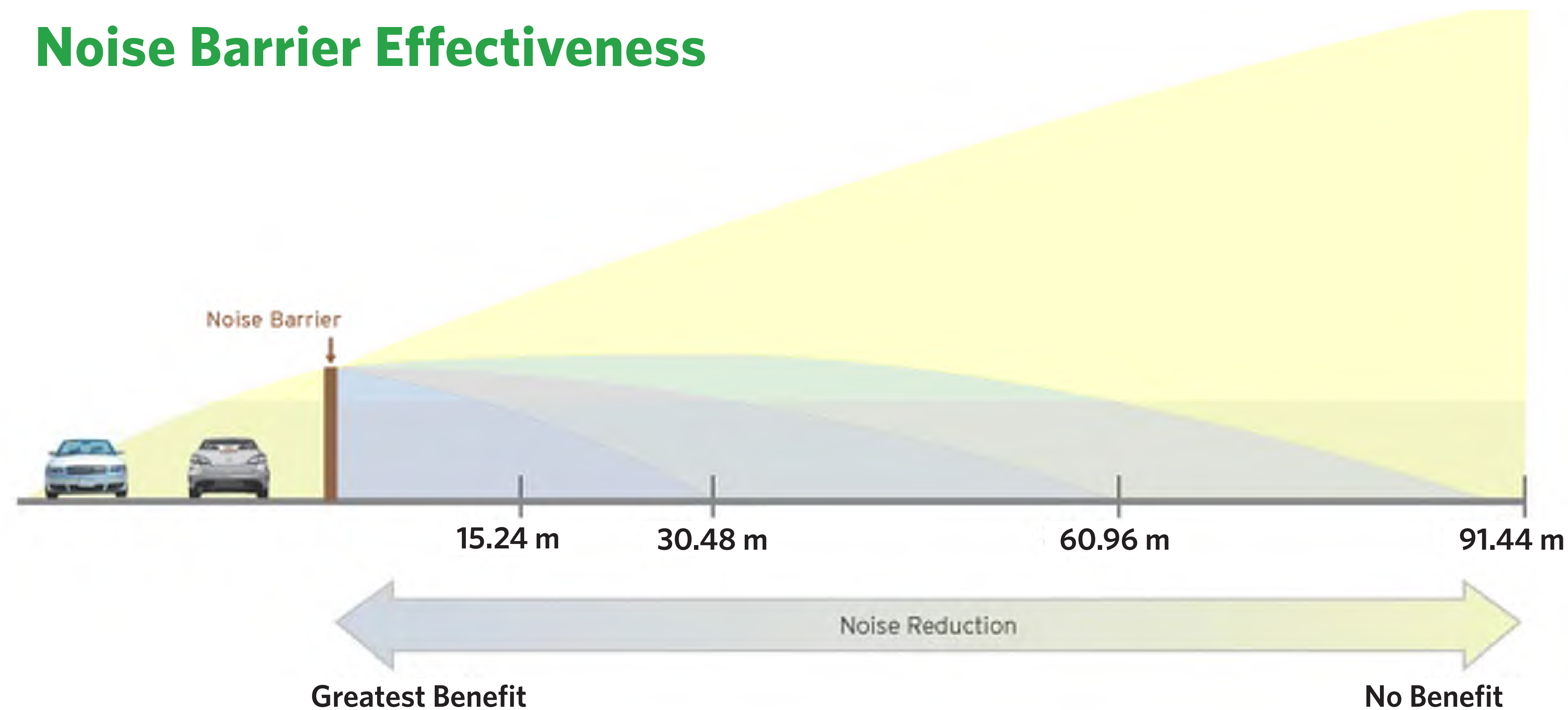
In Phase 1 Engagement **we heard that it was important to incorporate noise attenuation to reduce noise experienced by nearby developments** as a result of any future changes to the Perimeter.



Specifically, **noise was raised as an existing concern at PTH 59/PTH 101.**

The interchange at PTH 59/PTH 101 was recently completed and is now considered an existing component of infrastructure. Therefore, noise at PTH 59/PTH 101, is outside the scope of the study. The Manitoba government is aware of noise concerns in the area and is reviewing current practices to identify potential improvements.

### Noise Barrier Effectiveness

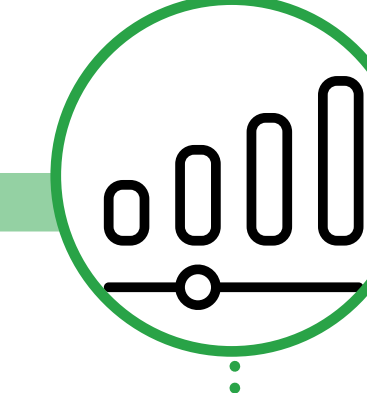
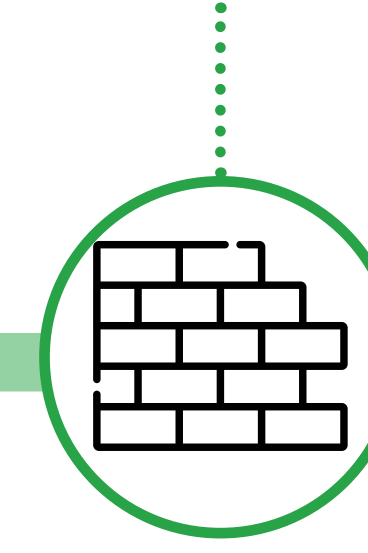
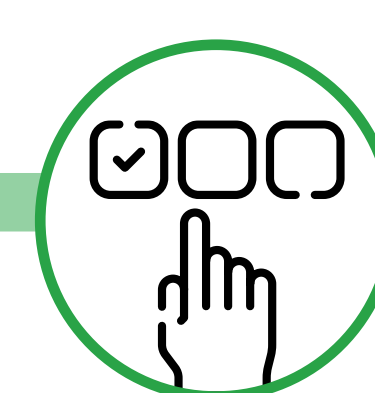
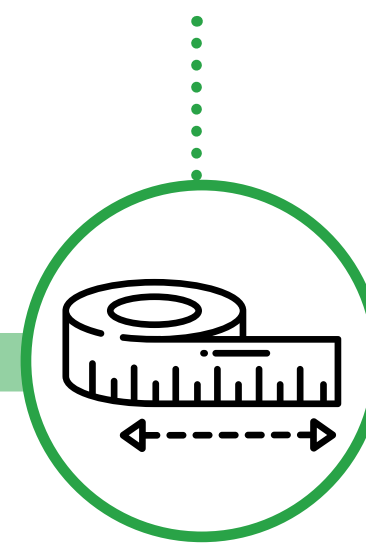


## How a noise study works

As part of this study, a **baseline noise assessment has been conducted** to create a sound model of the study area. The noise model is created from the geography of the land and the buildings that are situated near the transportation route.

**Field measurements** were then taken adjacent to the roads in order to **verify the accuracy of the model created**. Some other land noise sources like trains were also measured and incorporated into the model to improve the accuracy of the model.

Mitigation methods like **berms or sound walls** are then investigated for their ability to reduce increased noises.



That information is used with the measured traffic volumes of the transportation routes **to predict the noise coming from the transportation route**.

Once a **preferred option** for the roadway and interchanges is identified, the **future state model will then be created** from the new traffic route geometry and the predicted changes in traffic volumes will be added to the model. The **model simulation will determine potential target areas** for noise abatement.

The **future noise levels with potential noise abatement options will be reviewed** to determine the preferred noise abatement option with the goal of reducing noise levels to desired levels identified in either municipal guidelines or City of Winnipeg Noise Guidelines.



## PTH 101 – Freeway Conditions

Access will be **limited to interchanges at major cross-roads**, with no at-grade intersections, railway crossings or property access connections.

## Other Roads

**Access control for all other roads shall be based on the standards of the traffic authority for the road** (Manitoba Transportation and Infrastructure for provincial highways; City of Winnipeg and rural municipalities for roads in their respective jurisdictions).



Traffic analysis was completed for the 10-year (2034), 20-year (2044) and 30-year (2054) horizons for existing/ upgraded conditions **to determine when an interchange or upgrades to existing interchanges will be required at each intersection.**

**Significant development growth is anticipated** adjacent to PTH 101 over the next 30 years, which will result in a significant increase in traffic volumes on PTH 101.

**Assumed build out of CentrePort will add a significant amount of new traffic,** especially at the PTH 7 (Brookside Boulevard) interchange.



# 2022 Traffic Volumes

## The North Perimeter (PTH 101) Highway Design Study





# 2054 Traffic Volumes

## The North Perimeter (PTH 101) Highway Design Study





The project team will design and evaluate interchange and highway options based on the following criteria:



## Engineering and Transportation

### CRITERIA

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- Safety (private vehicles, trucks and pedestrians/cyclists)
- Geometry
- Utilities
- Ease of construction and staging
- Traffic operations



## Community/Social Economic Impacts

### CRITERIA

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- Minimize land acquisition/severance
- Access impacts (businesses and other properties)
- Pedestrian/cycling accommodation
- Community impacts



## Cost Factors

### CRITERIA

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- Cost of construction
- Right-of-way acquisition cost



## Environmental Impacts

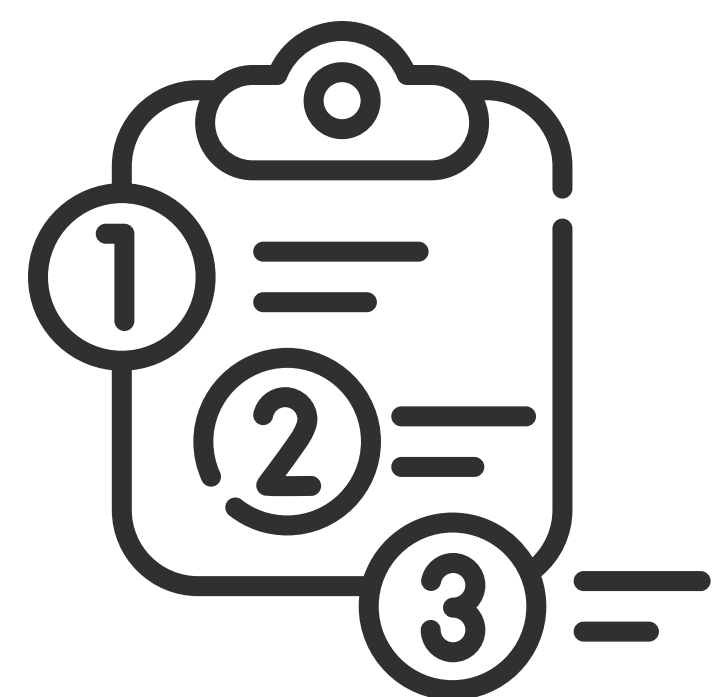
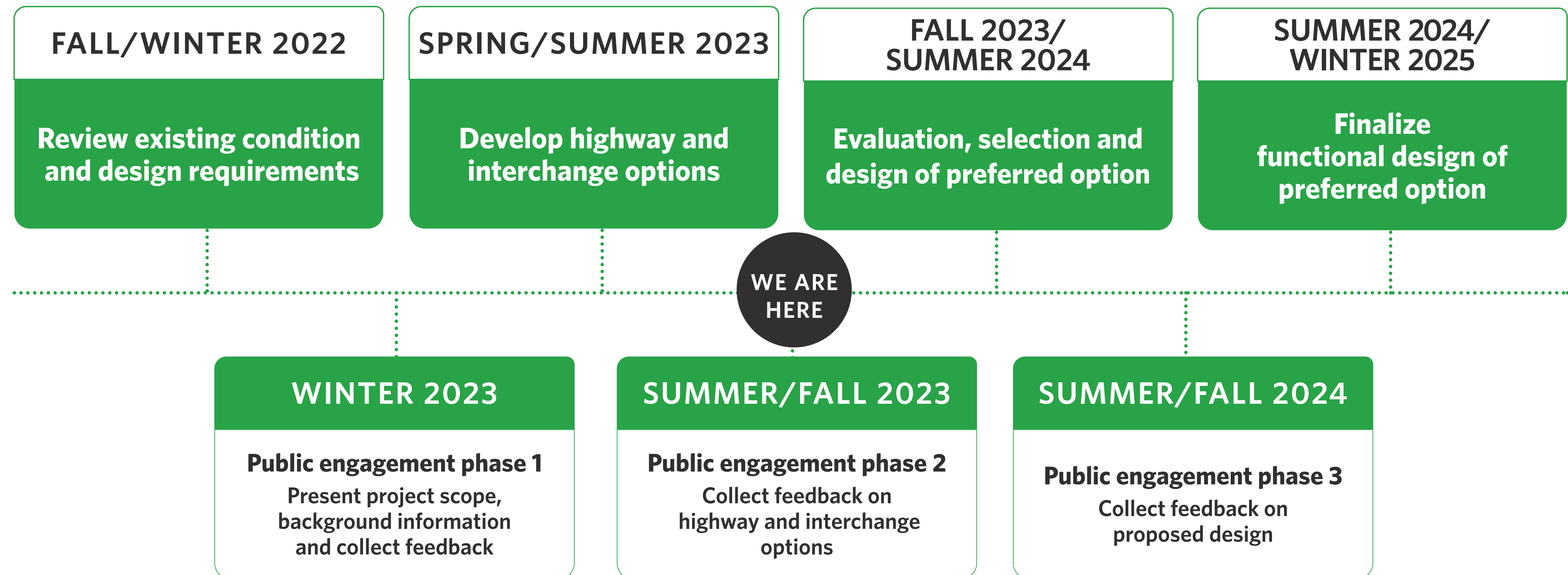
### CRITERIA

---

- Noise impacts
- Natural environment
- Habitat impact
- Heritage resources impact

# Next Steps

## The North Perimeter (PTH 101) Highway Design Study



**After completion of phase 2 engagement**, the project team will focus on evaluating and selecting the preferred roadway and interchange options.

**Phase 3 engagement** will include presentation of the proposed design.

# Thank you for attending

**For additional information, please contact:**

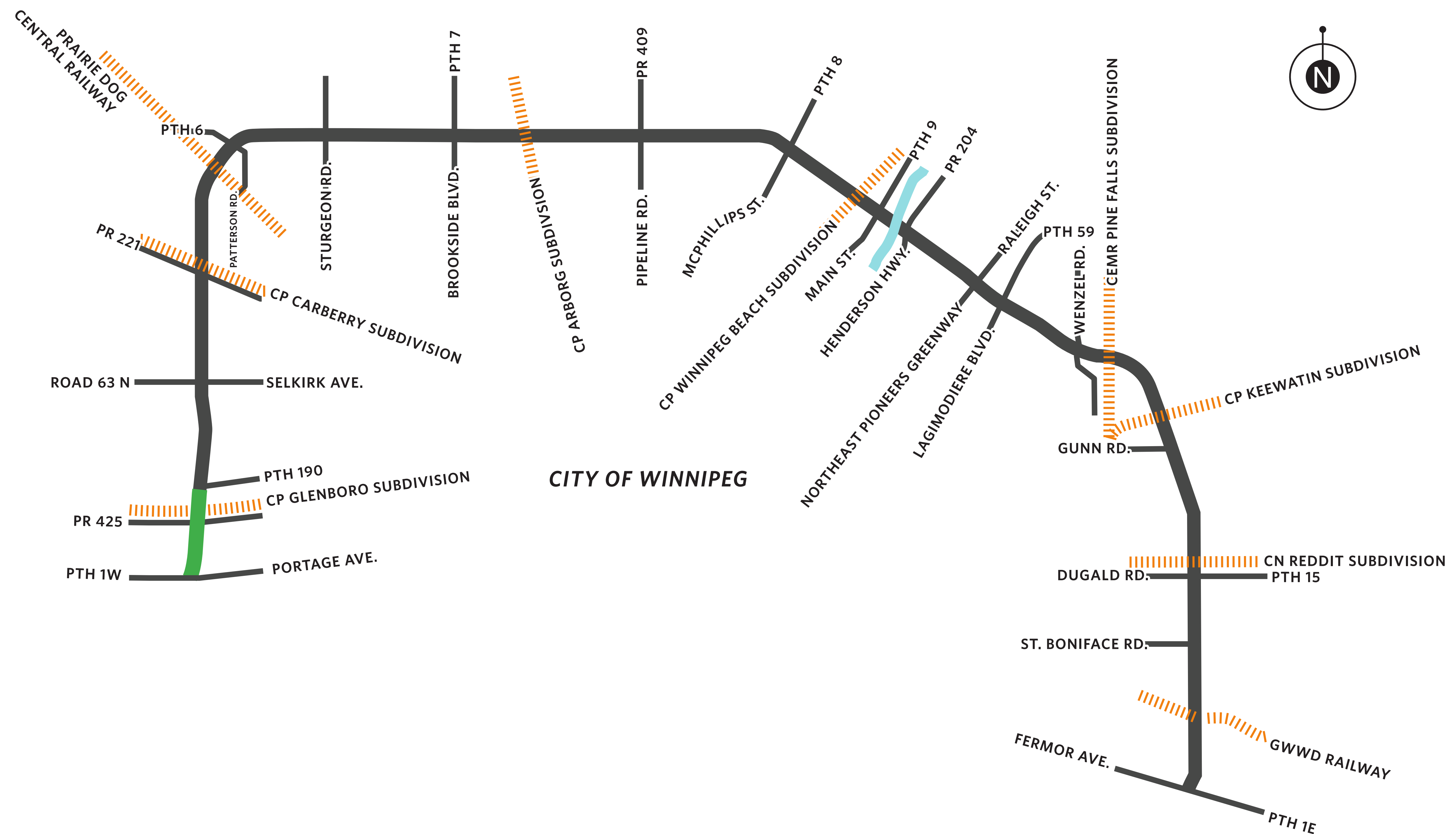
Meagan Boles, Engagement Lead

E: [PTH101@wsp.com](mailto:PTH101@wsp.com)

T: 204-477-6650



# SEGMENT 1



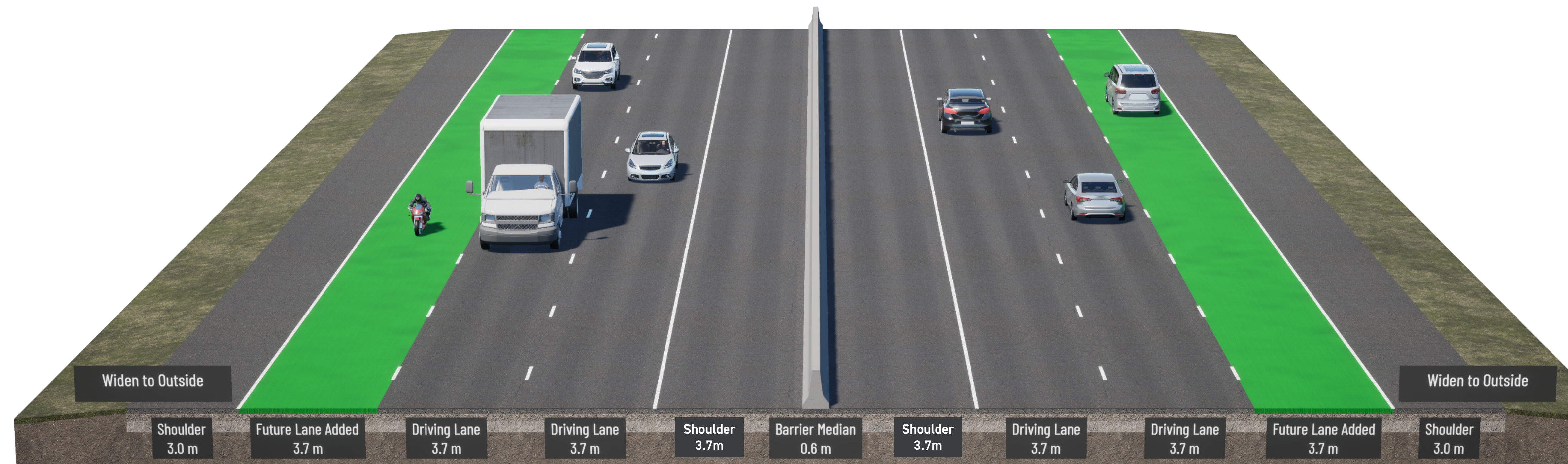
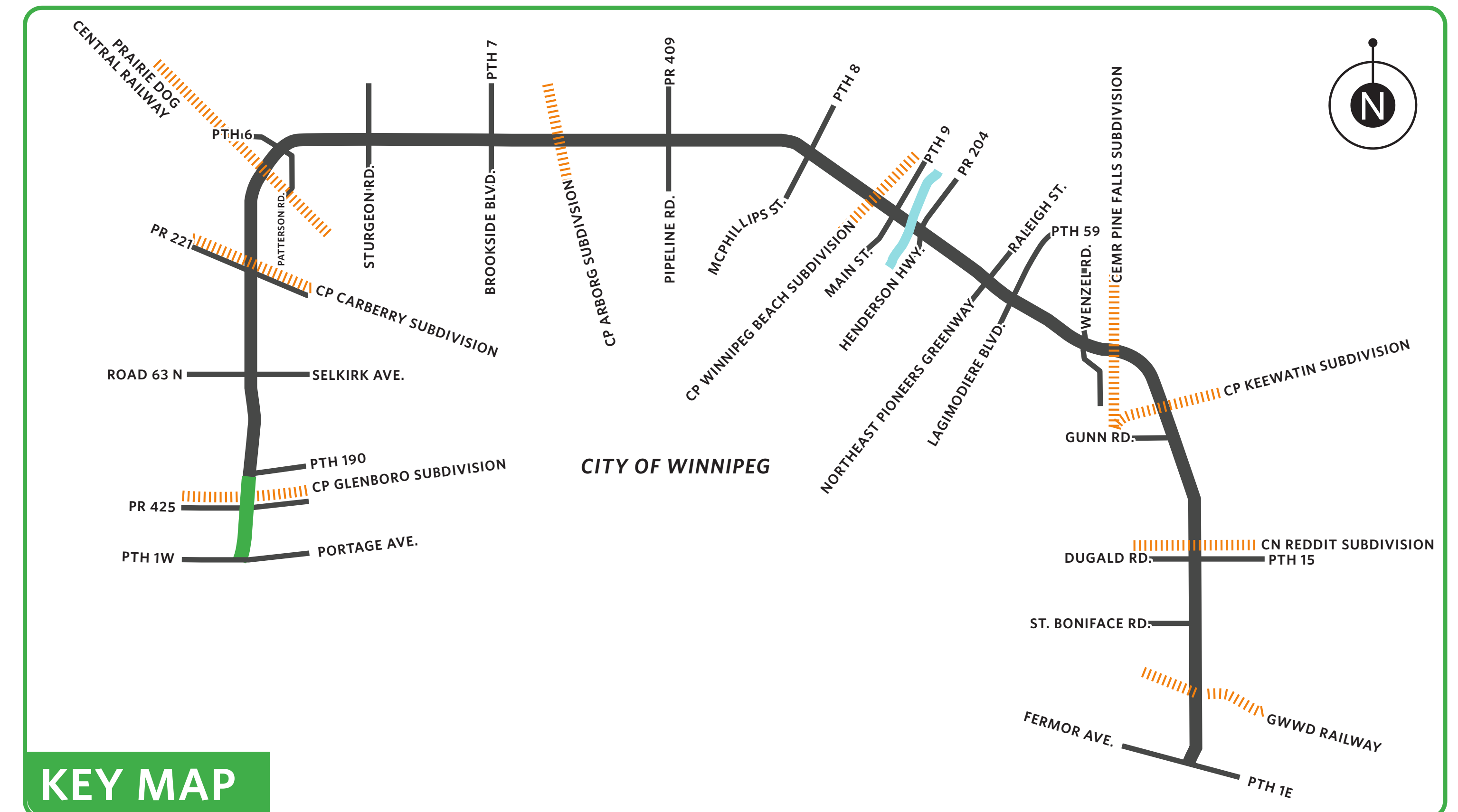


# PTH 101 Alignment

## The North Perimeter (PTH 101) Highway Design Study

### PTH 1 West (Portage Avenue) to PTH 190 (CentrePort Canada Way)

Expressway section (future lanes added to  
the outside)

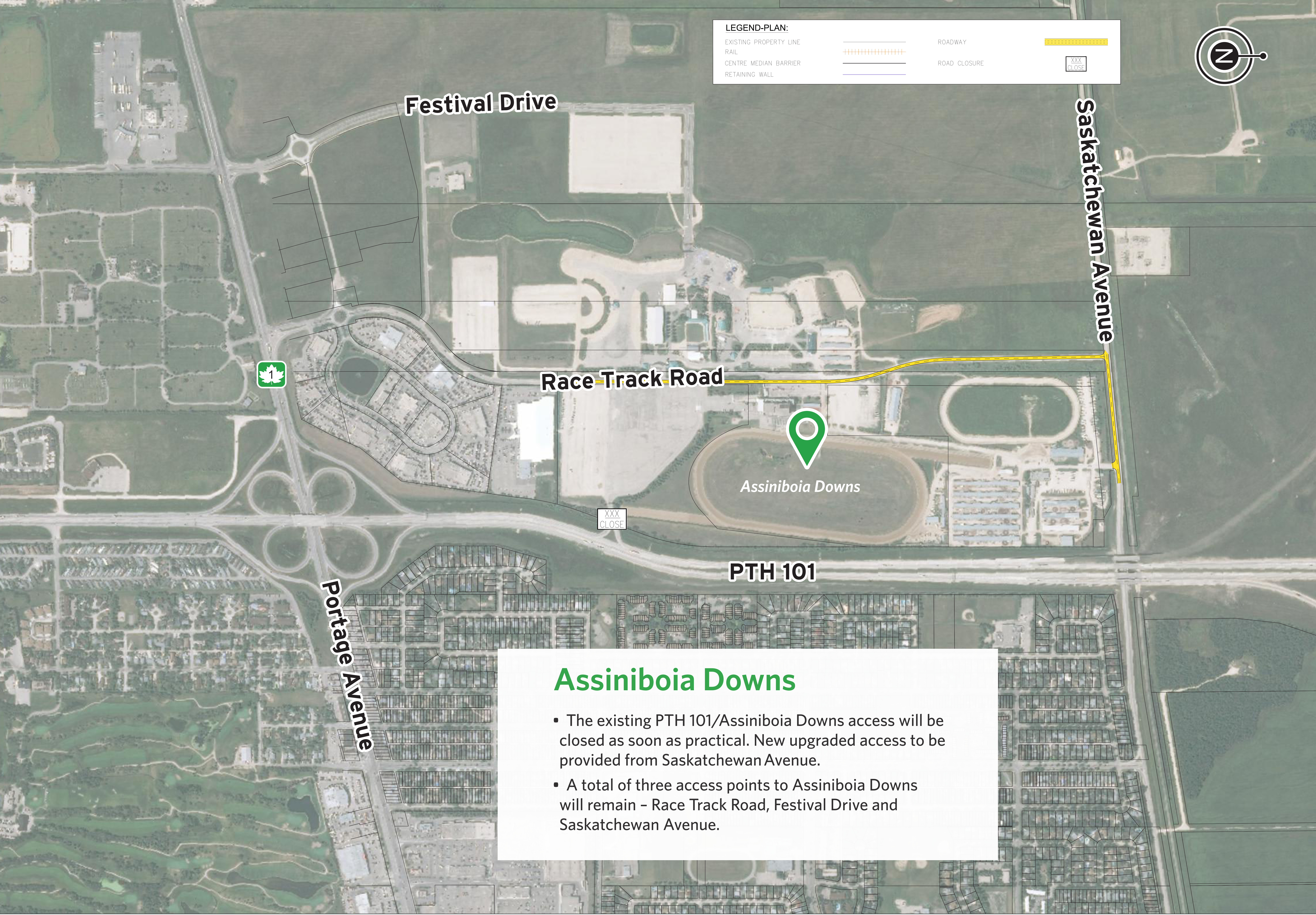


Southbound PTH 101

Typical PTH 101 six-lane cross-section (future lanes added to the outside)

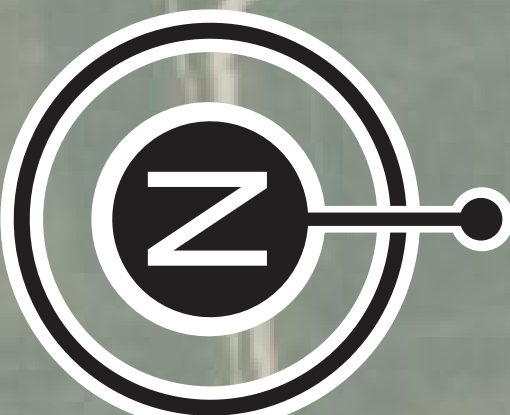
Northbound PTH 101





**LEGEND-PLAN:**

EXISTING PROPERTY LINE		ROADWAY	
RAIL		ROAD CLOSURE	
CENTRE MEDIAN BARRIER			
RETAINING WALL			



**Festival Drive**

**Saskatchewan Avenue**

**Race Track Road**

*Assiniboia Downs*

**PTH 101**

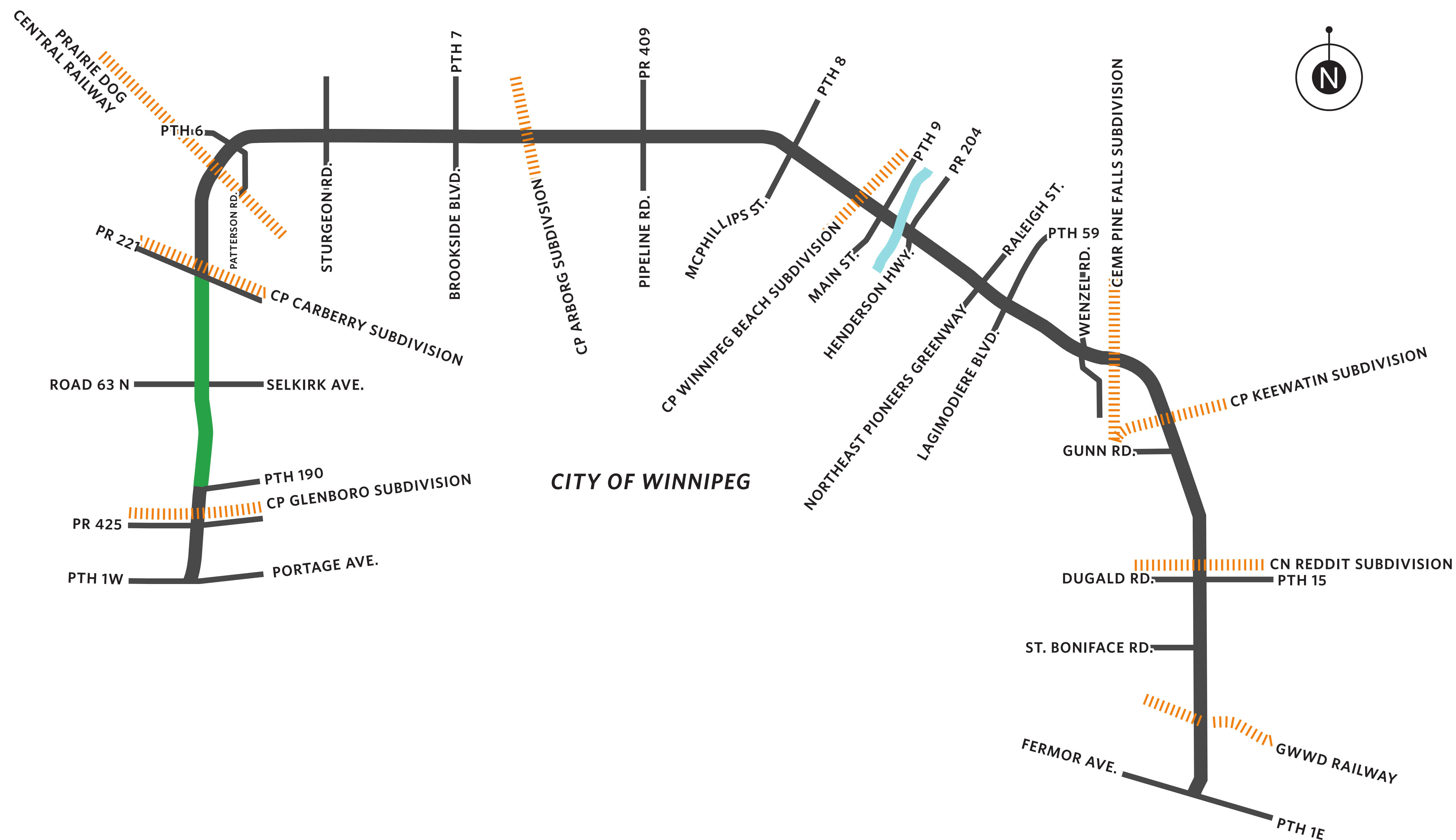
**Portage Avenue**

## Assiniboia Downs

- The existing PTH 101/Assiniboia Downs access will be closed as soon as practical. New upgraded access to be provided from Saskatchewan Avenue.
- A total of three access points to Assiniboia Downs will remain – Race Track Road, Festival Drive and Saskatchewan Avenue.



# PTH 190 (CentrePort Canada Way) to PR 221 (Rosser Road)



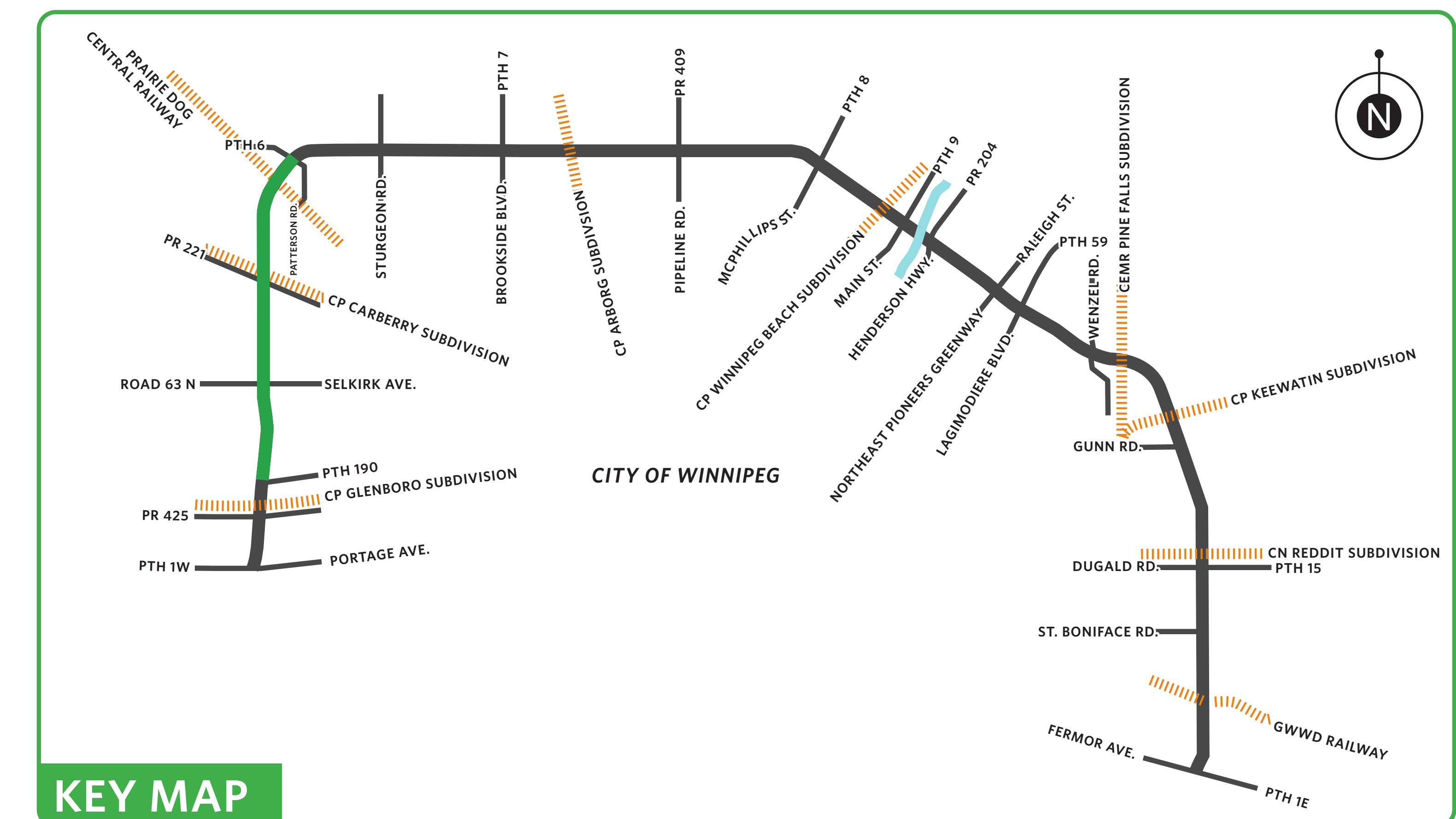


### PTH 190 (CentrePort Canada Way) to PTH 6

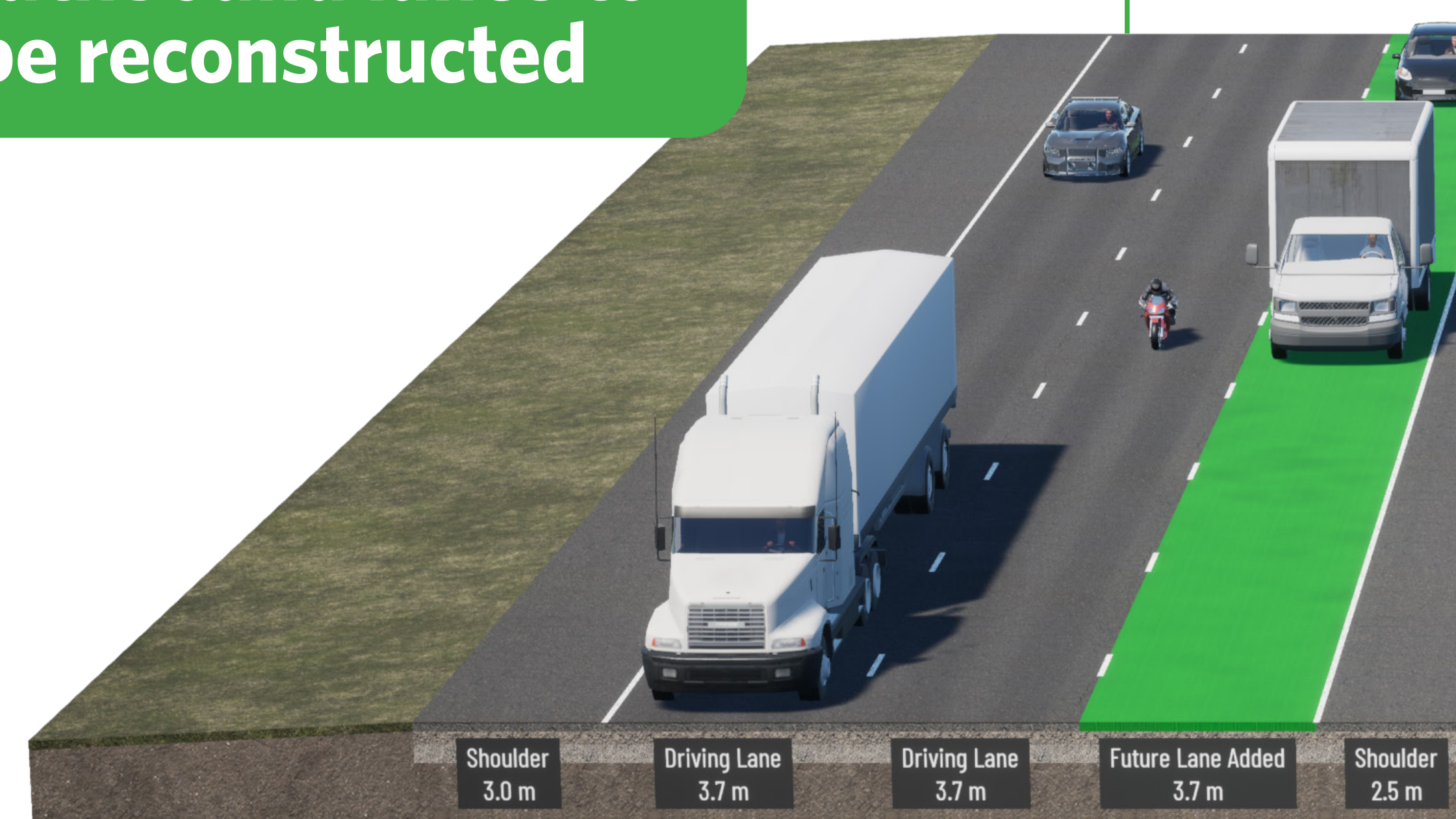
**Expressway section with two alignment options and service roads provided on both sides.**

- 1) New northbound lanes constructed west of existing northbound lanes (road alignment shifted west)
- 2) New southbound lanes constructed east of existing southbound lanes (road alignment shifted east)

Property and environmental impacts are similar for both options with utility impacts favouring Option 1.



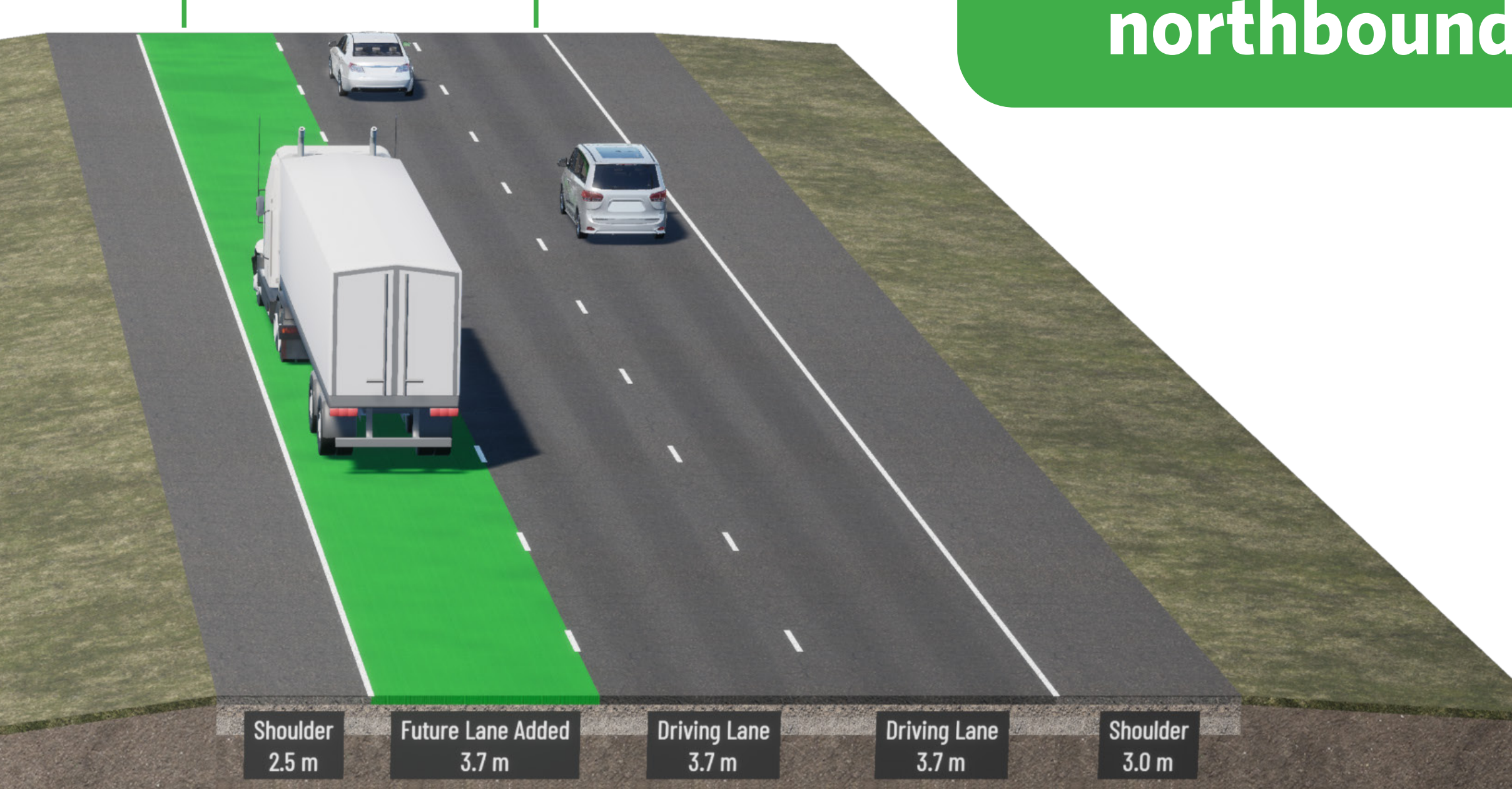
**Southbound lanes to be reconstructed**



Southbound PTH 101

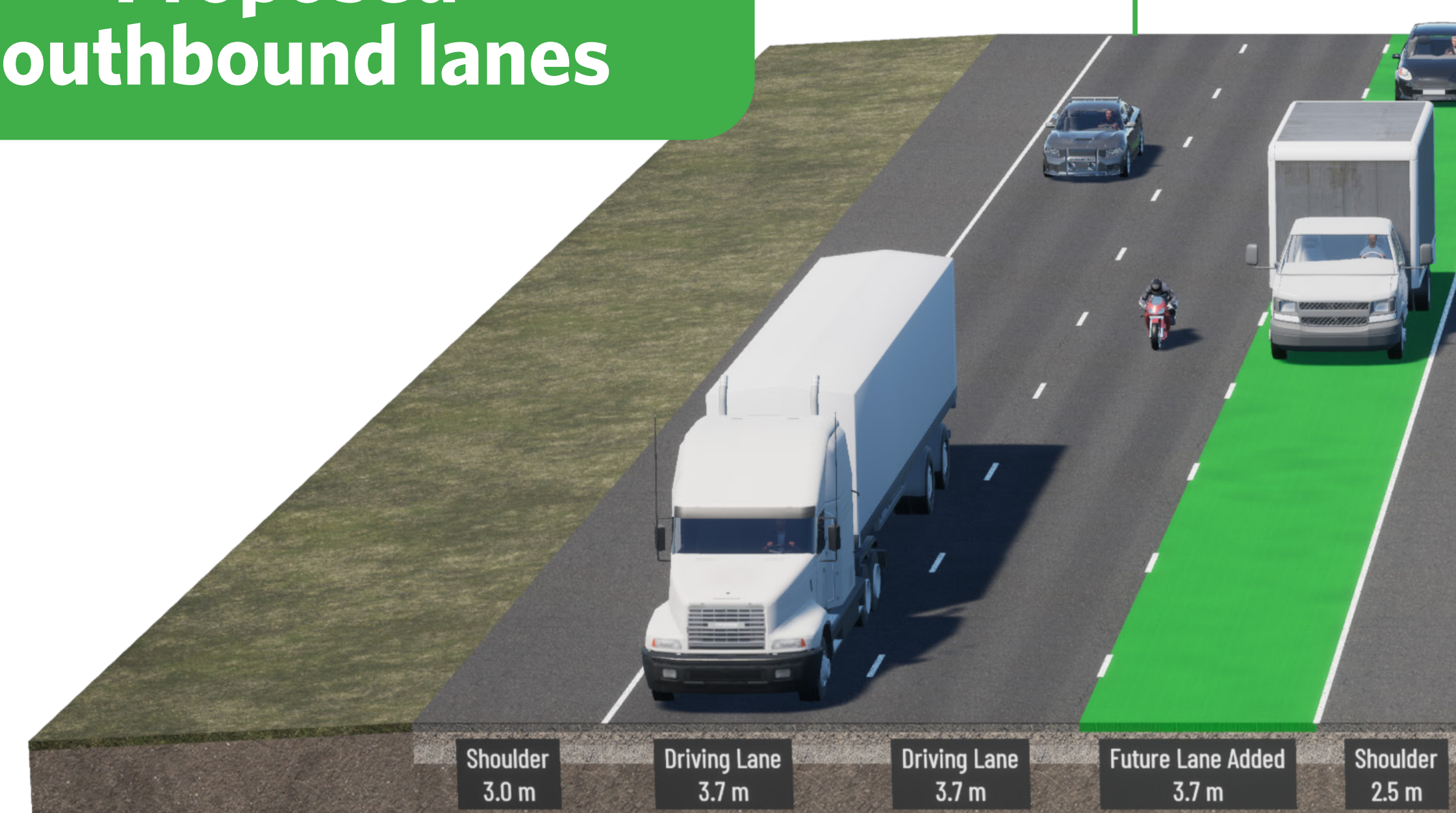
**Option 1: New northbound lanes constructed east**

**Proposed northbound lanes**



Northbound PTH 101

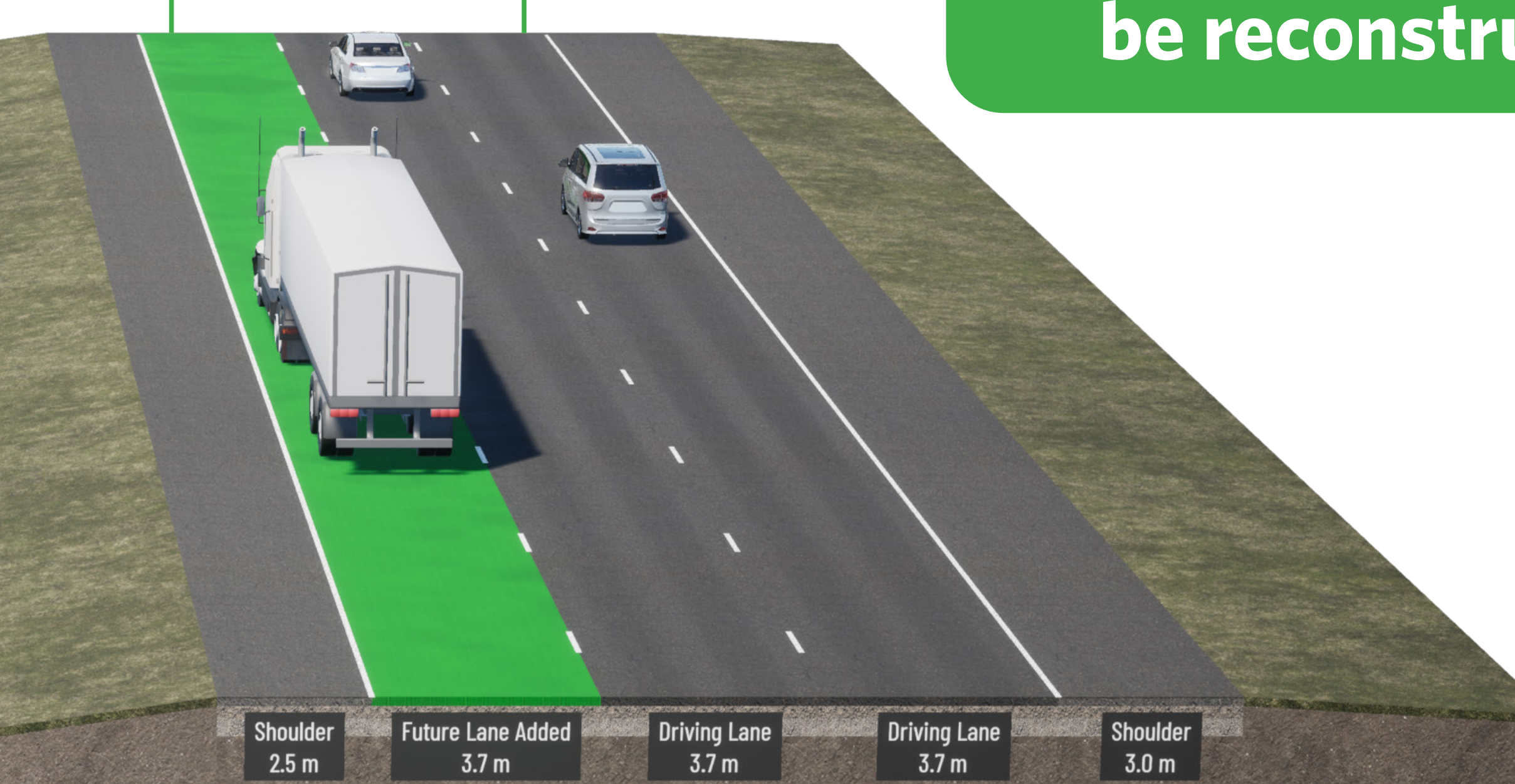
**Proposed southbound lanes**



Southbound PTH 101

**Option 2: New southbound lanes constructed west**

**Northbound lanes to be reconstructed**



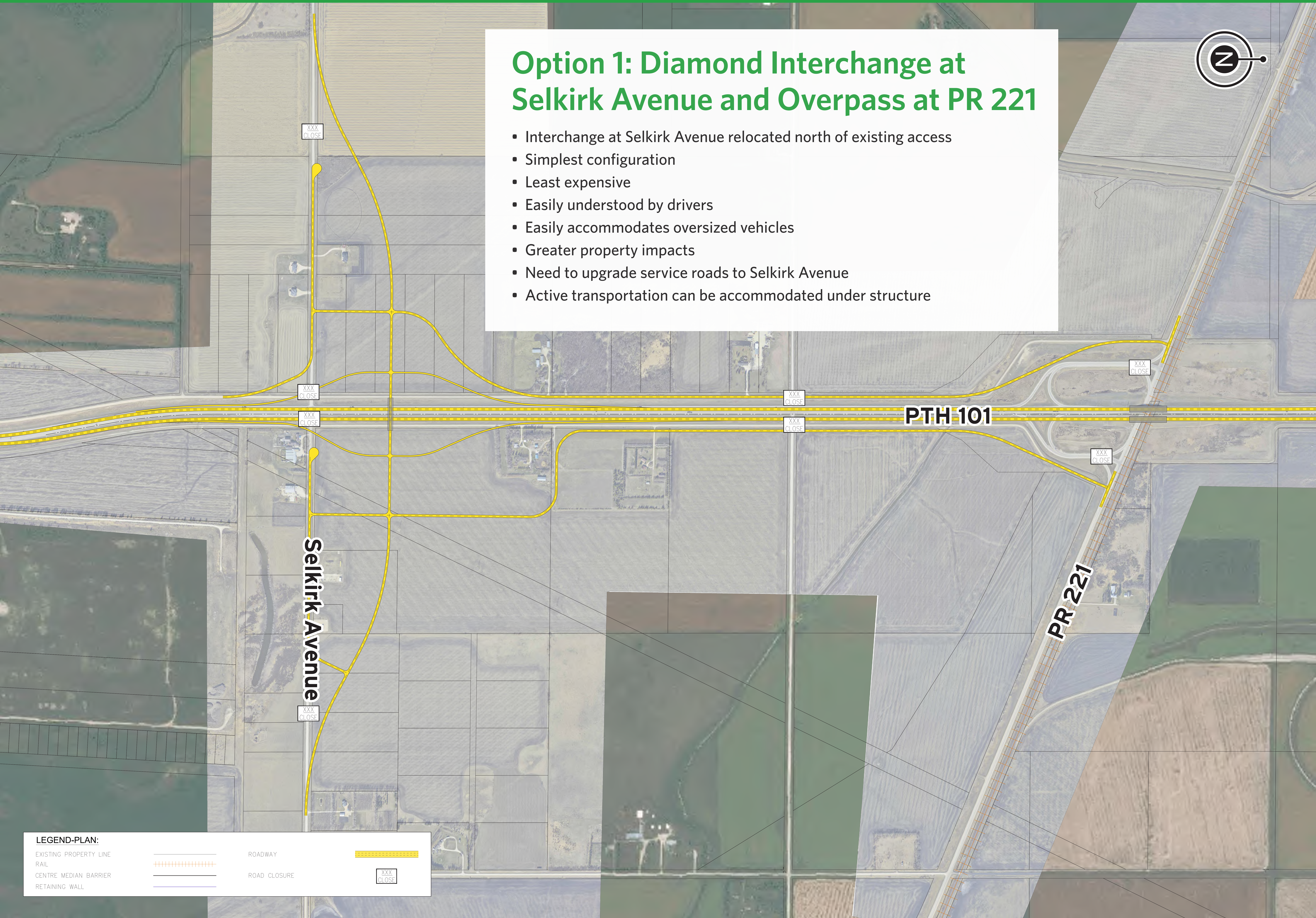
Northbound PTH 101





## Option 1: Diamond Interchange at Selkirk Avenue and Overpass at PR 221

- Interchange at Selkirk Avenue relocated north of existing access
- Simplest configuration
- Least expensive
- Easily understood by drivers
- Easily accommodates oversized vehicles
- Greater property impacts
- Need to upgrade service roads to Selkirk Avenue
- Active transportation can be accommodated under structure



**LEGEND-PLAN:**

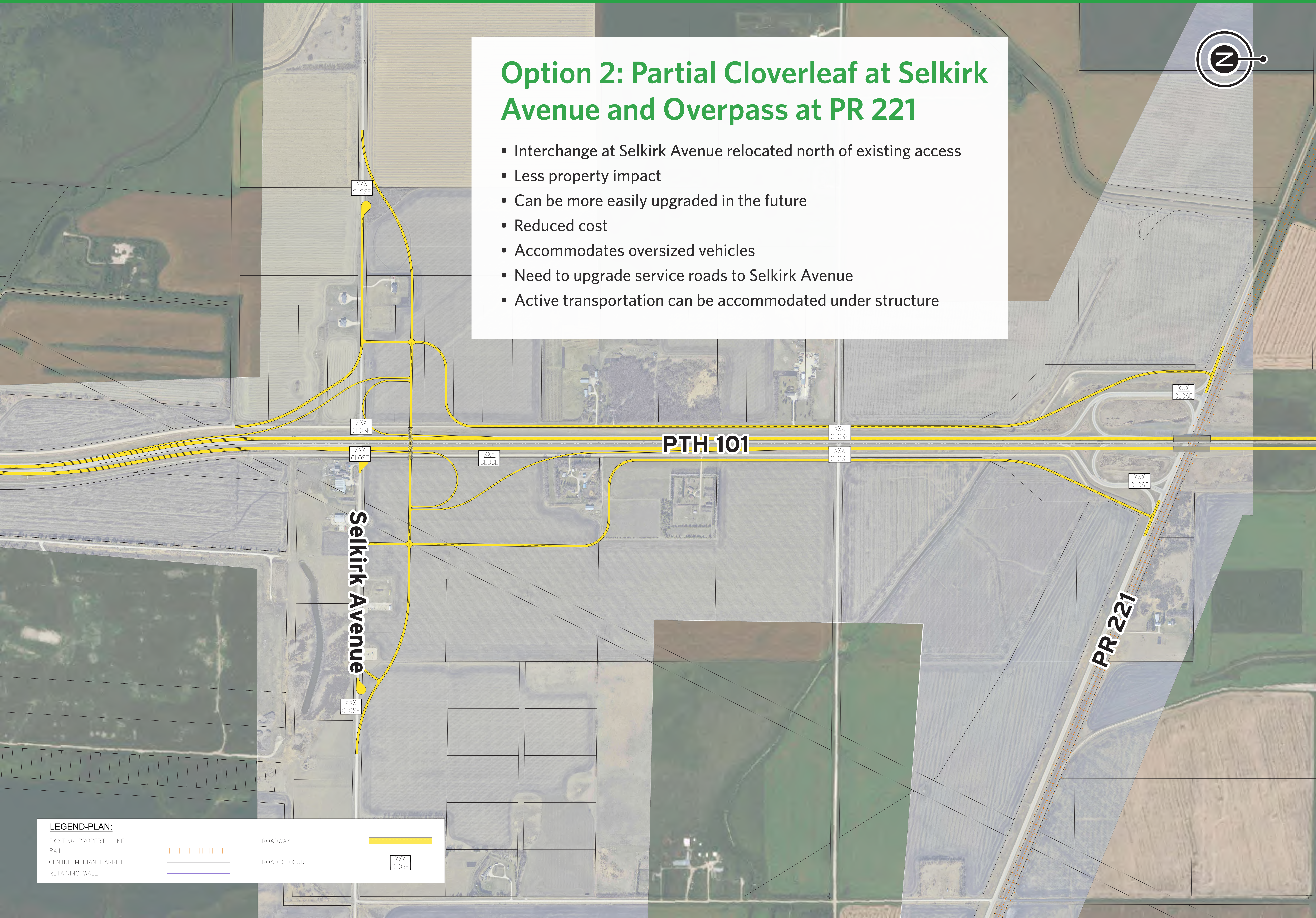
EXISTING PROPERTY LINE		ROADWAY	
RAIL		ROAD CLOSURE	
CENTRE MEDIAN BARRIER			
RETAINING WALL			





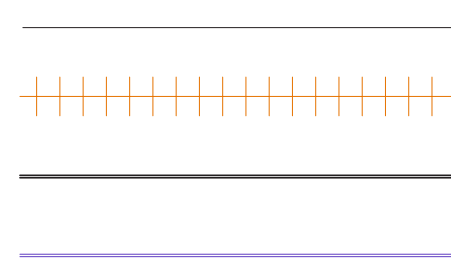
## Option 2: Partial Cloverleaf at Selkirk Avenue and Overpass at PR 221

- Interchange at Selkirk Avenue relocated north of existing access
- Less property impact
- Can be more easily upgraded in the future
- Reduced cost
- Accommodates oversized vehicles
- Need to upgrade service roads to Selkirk Avenue
- Active transportation can be accommodated under structure

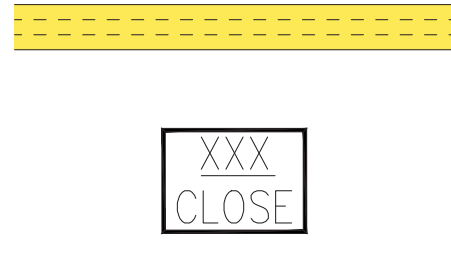


### LEGEND-PLAN:

EXISTING PROPERTY LINE  
RAIL  
CENTRE MEDIAN BARRIER  
RETAINING WALL



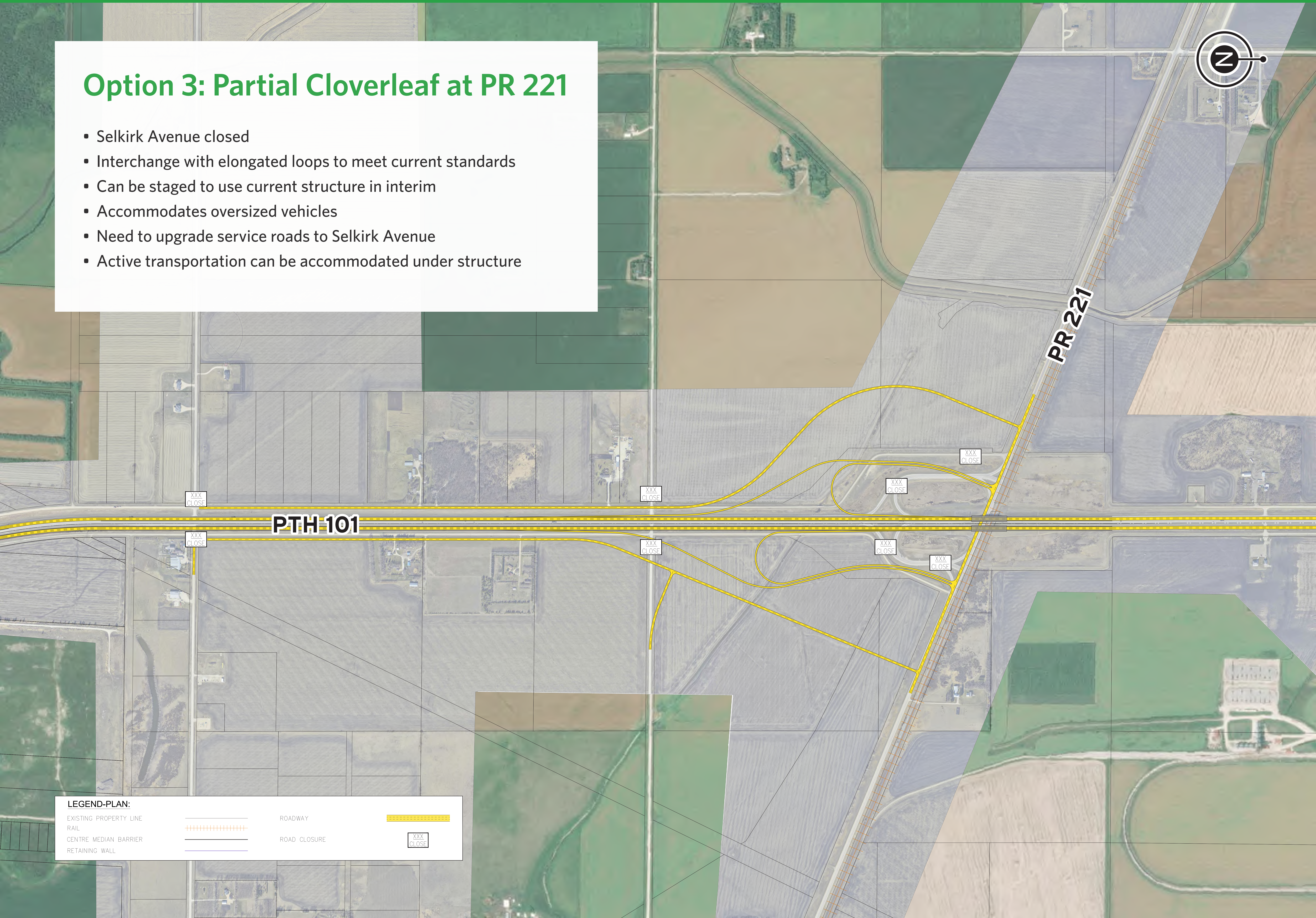
ROADWAY  
ROAD CLOSURE





Option 3: Partial Cloverleaf at PR 221

- Selkirk Avenue closed
- Interchange with elongated loops to meet current standards
- Can be staged to use current structure in interim
- Accommodates oversized vehicles
- Need to upgrade service roads to Selkirk Avenue
- Active transportation can be accommodated under structure

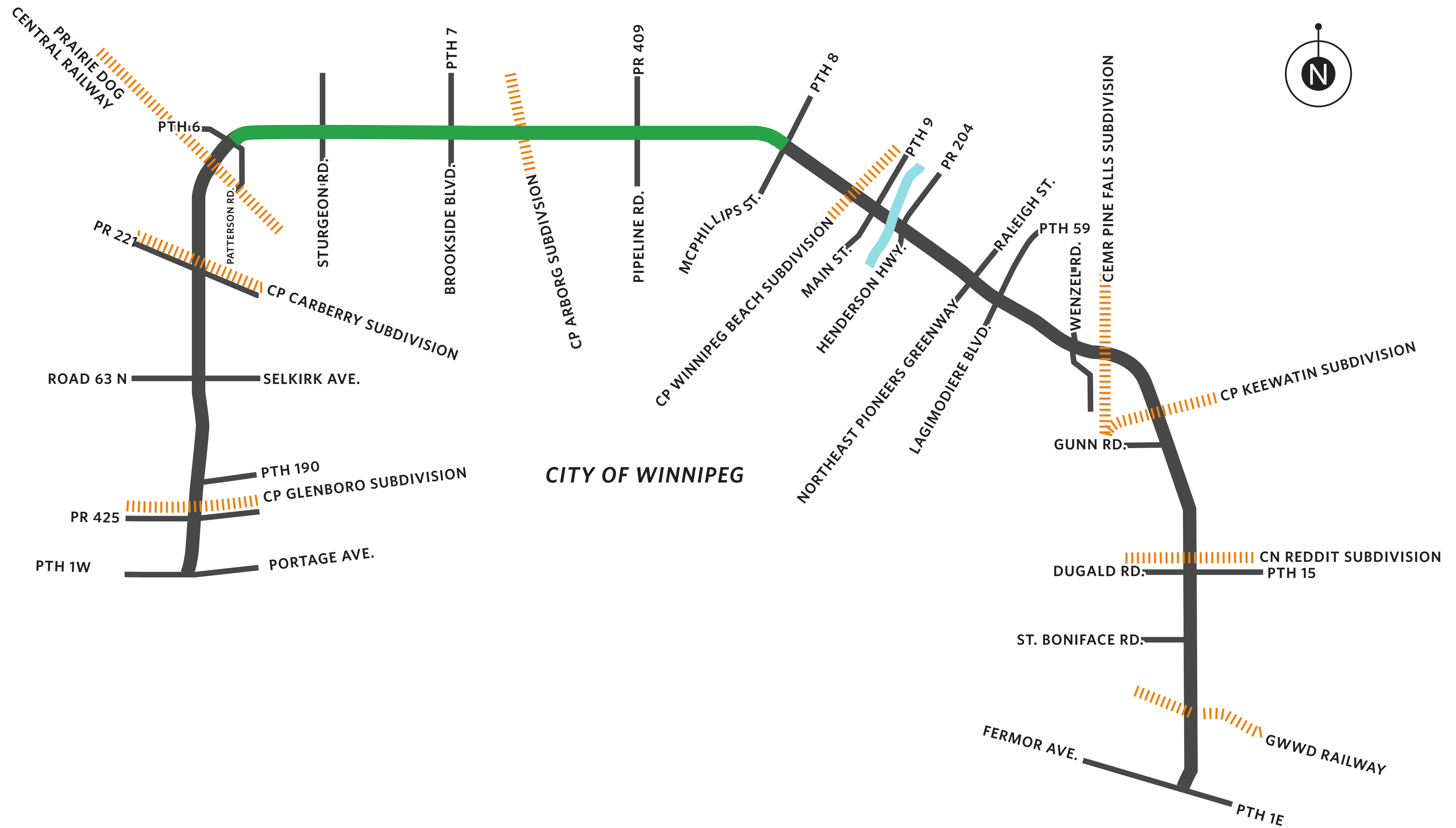


**LEGEND-PLAN:**

EXISTING PROPERTY LINE		ROADWAY	
RAIL		ROAD CLOSURE	
CENTRE MEDIAN BARRIER			
RETAINING WALL			



# PTH 6 to PR 409 (Pipeline Road)





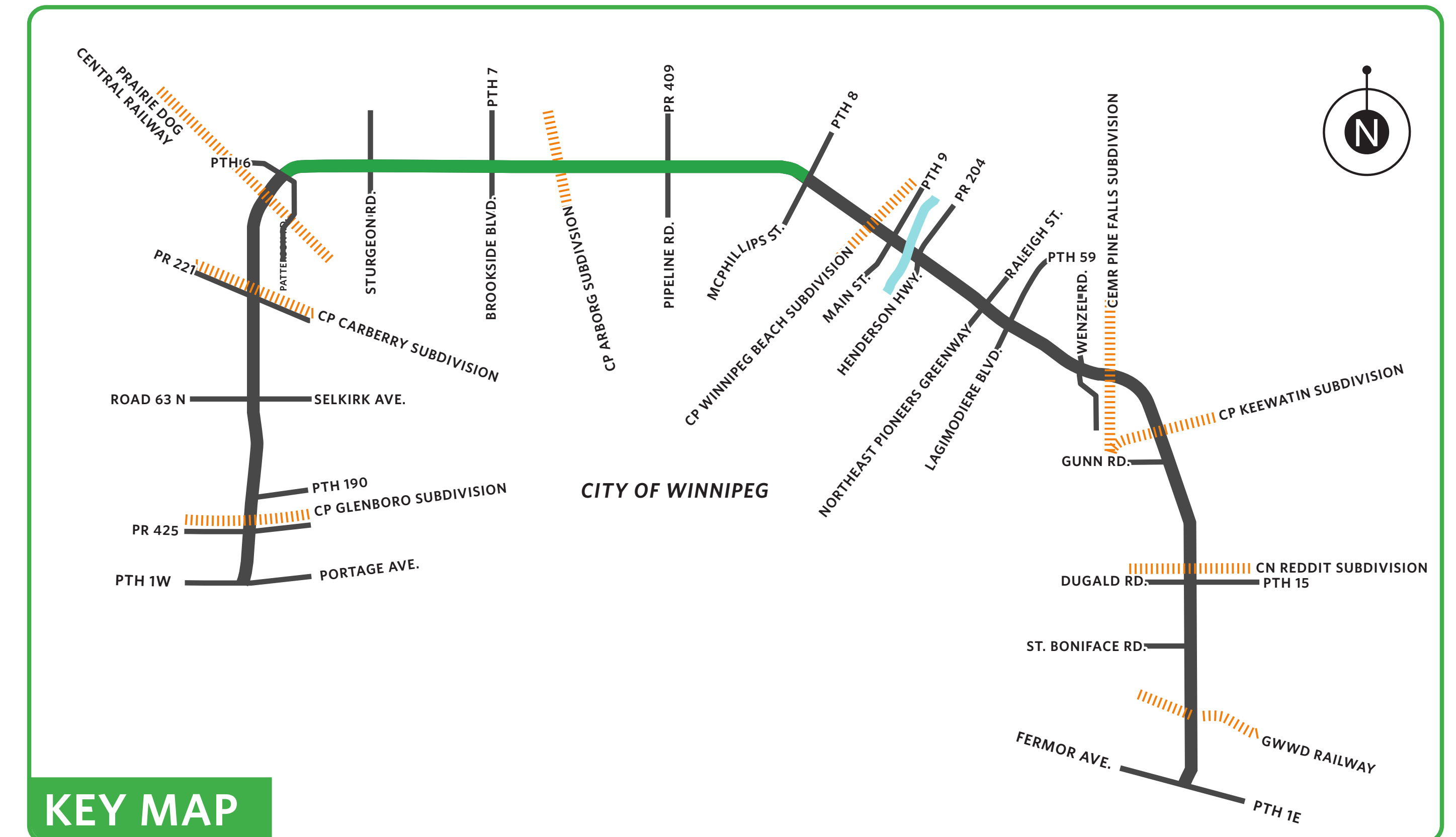
# PTH 101 Alignment

## The North Perimeter (PTH 101) Highway Design Study

### PTH 6 to PTH 8 (McPhillips Street)

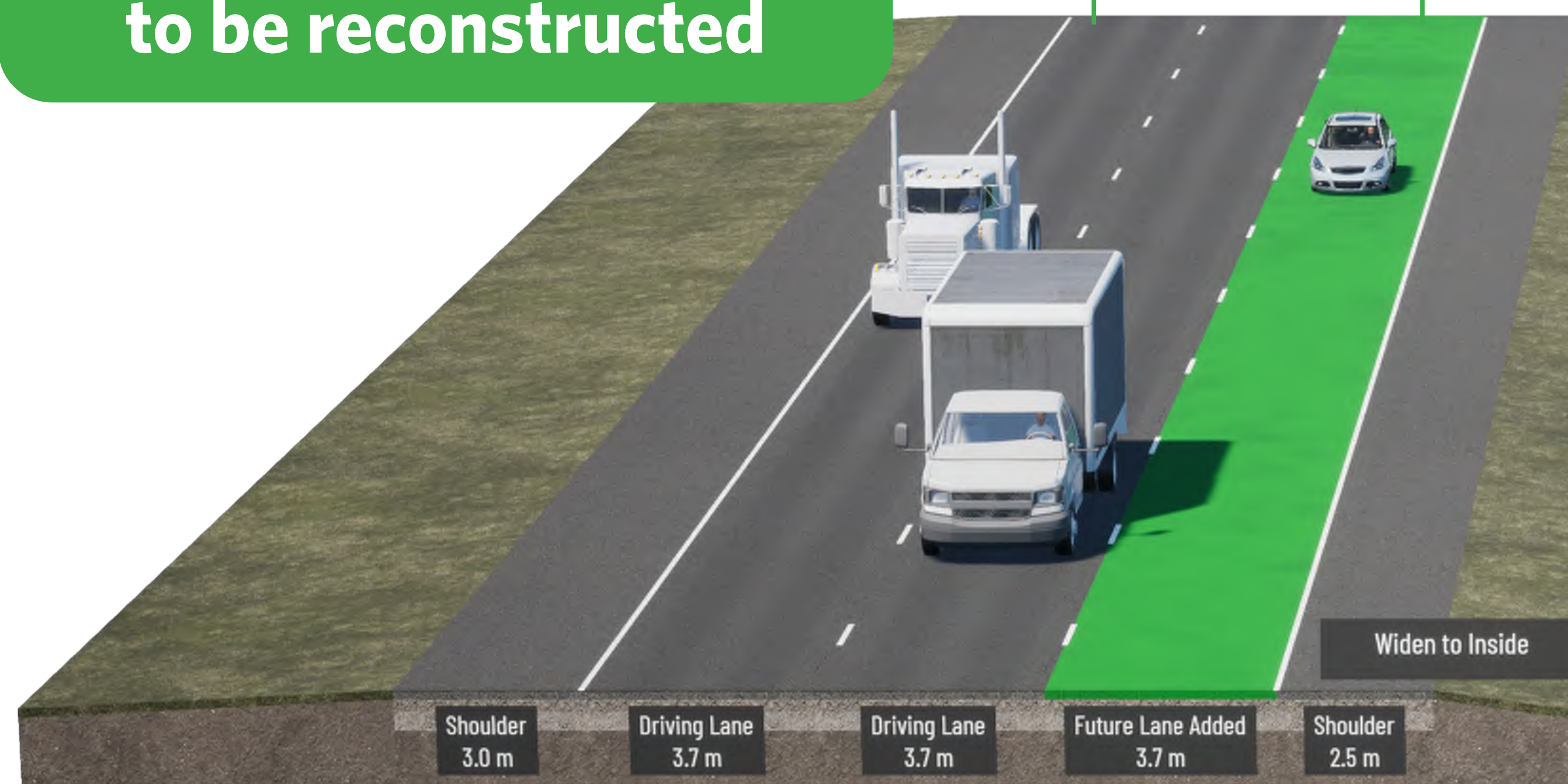
**Expressway section with service roads provided on each side.**

- Recommend constructing new eastbound lanes south of existing eastbound lanes (alignment shifted south)
- Property and utility impacts would be more significant if widening occurred to the north, with environmental impacts similar in both options



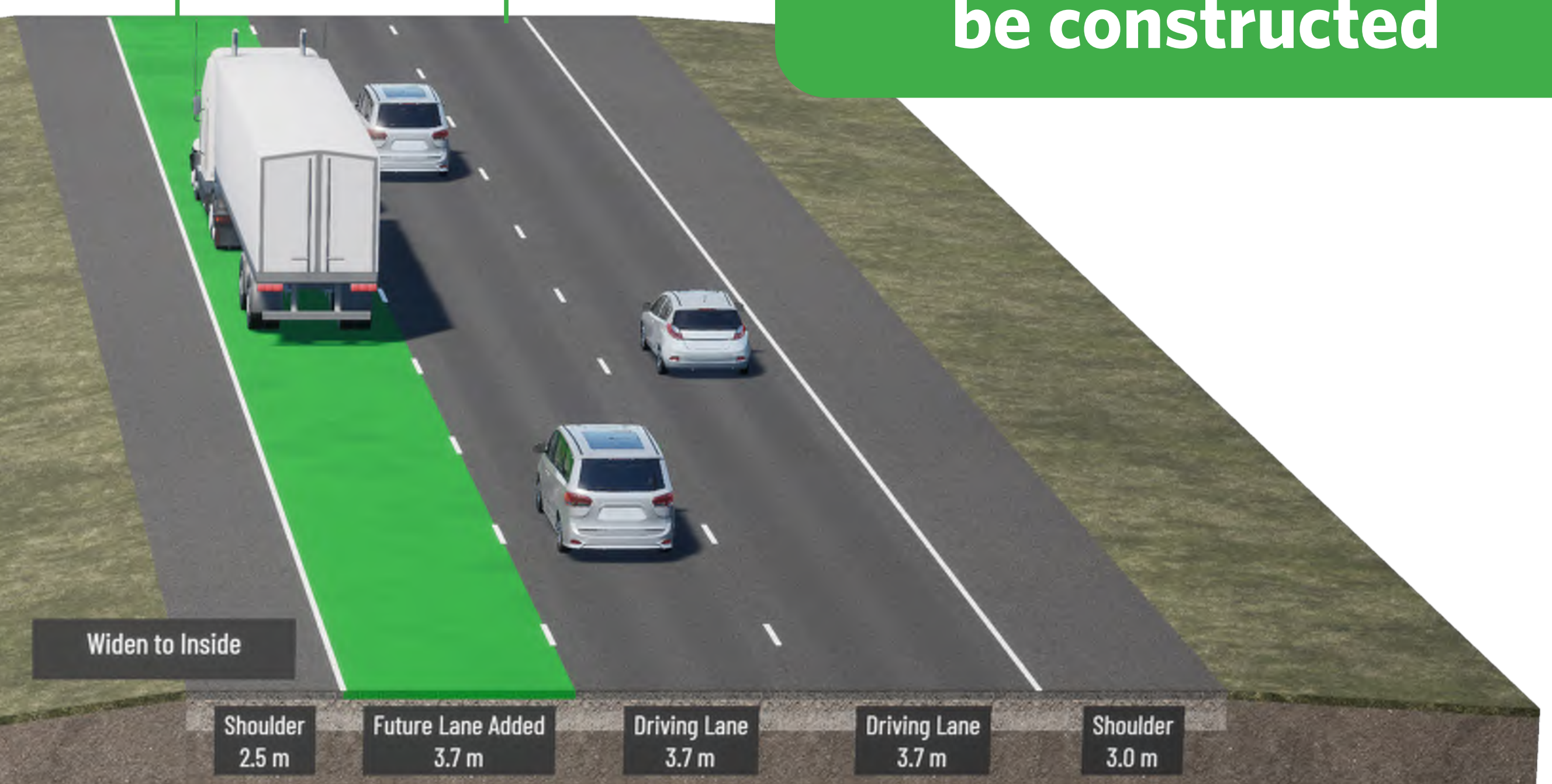
KEY MAP

**Existing westbound lanes to be reconstructed**



Westbound PTH 101

**New eastbound lanes to be constructed**



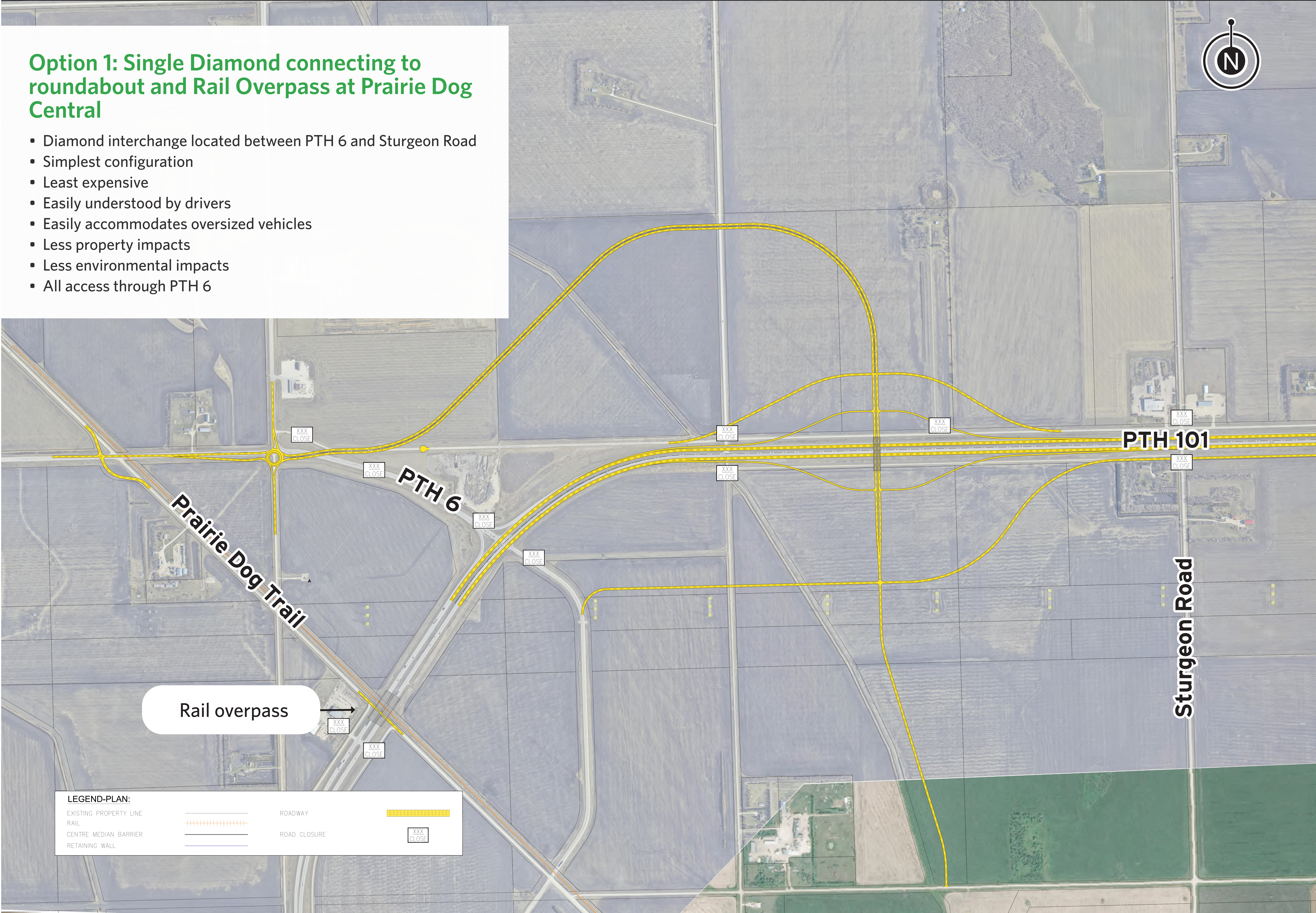
Eastbound PTH 101

Typical PTH 101 six-lane cross-section



## Option 1: Single Diamond connecting to roundabout and Rail Overpass at Prairie Dog Central

- Diamond interchange located between PTH 6 and Sturgeon Road
- Simplest configuration
- Least expensive
- Easily understood by drivers
- Easily accommodates oversized vehicles
- Less property impacts
- Less environmental impacts
- All access through PTH 6



Rail overpass

### LEGEND-PLAN:

EXISTING PROPERTY LINE  
RAIL  
CENTRE MEDIAN BARRIER  
RETAINING WALL

ROADWAY  
ROAD CLOSURE

ROADWAY  
ROAD CLOSURE

ROADWAY  
ROAD CLOSURE



Inset Map:  
Sturgeon Road  
access alternative

## Option 2: Diamond Interchange west of Sturgeon Road and Partial Cloverleaf/Rail Overpass south of PTH 6

- Most expensive
- Easily understood by drivers
- Accommodates oversized vehicles
- Difficult to construct
- More environmental impacts

See inset map for  
Sturgeon Road  
access alternative

Rail overpass

LEGEND-PLAN:

EXISTING PROPERTY LINE

RAIL

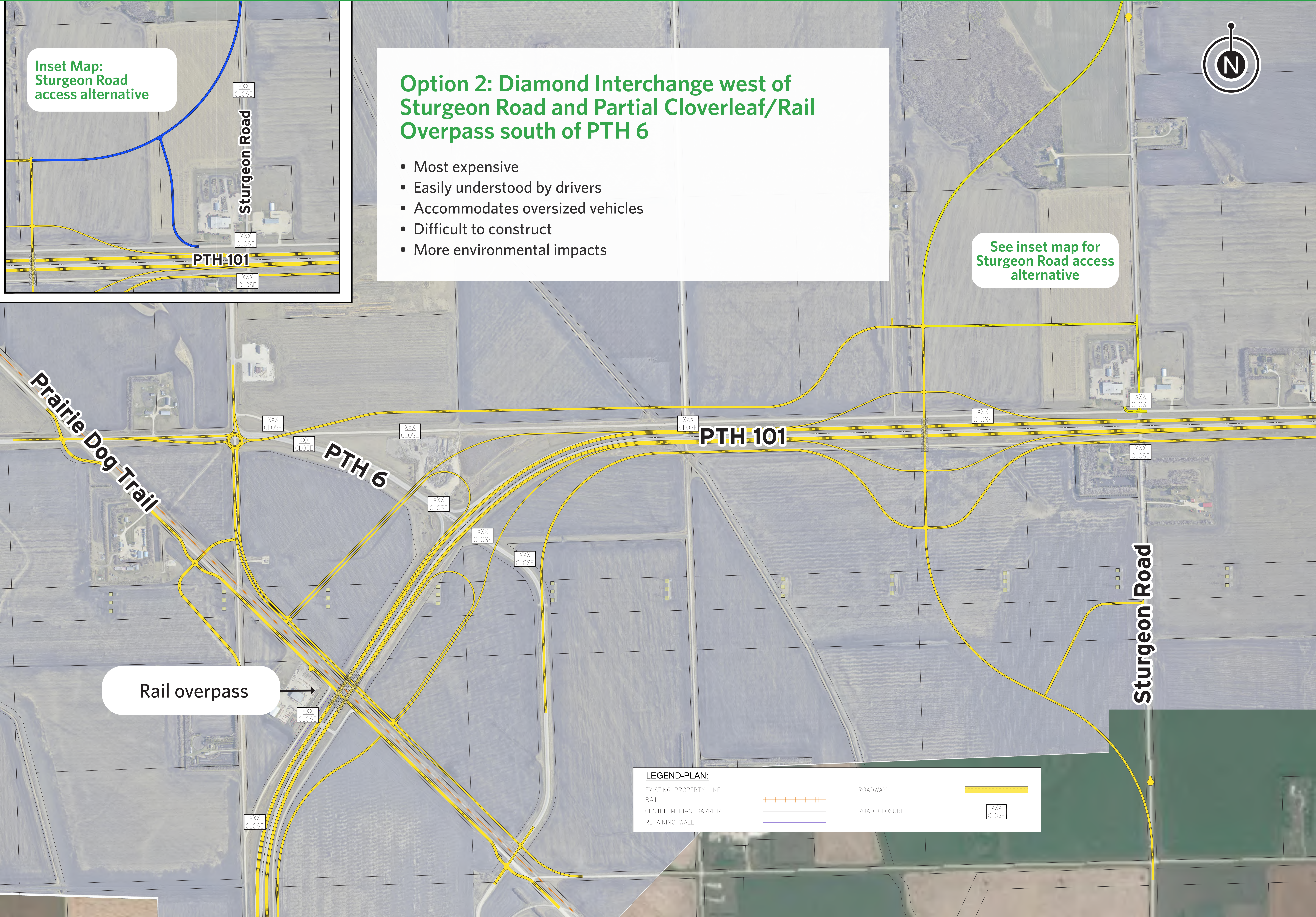
CENTRE MEDIAN BARRIER

RETAINING WALL

ROADWAY

ROAD CLOSURE

XXX  
CLOSE





Inset Map:  
Sturgeon Road  
access alternative

## Option 3: Partial Cloverleaf west of Sturgeon Road and Partial Cloverleaf/Rail Overpass south of PTH 6

- Most expensive
- Easily understood by drivers
- Difficult to construct
- More environmental impacts

See inset map for  
Sturgeon Road access  
alternative



Prairie Dog Trail

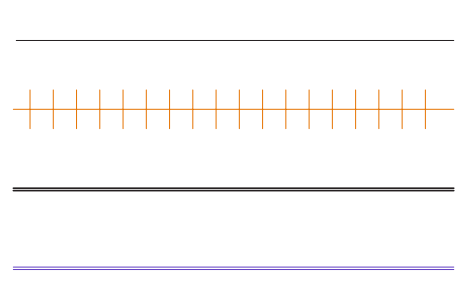
PTH 6

PTH 101

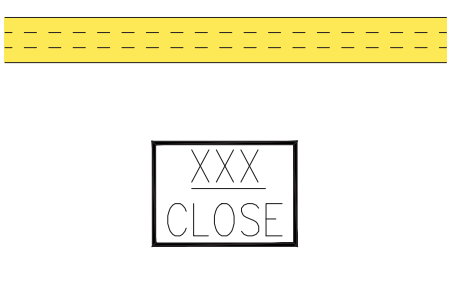
Rail overpass

### LEGEND-PLAN:

EXISTING PROPERTY LINE  
RAIL  
CENTRE MEDIAN BARRIER  
RETAINING WALL



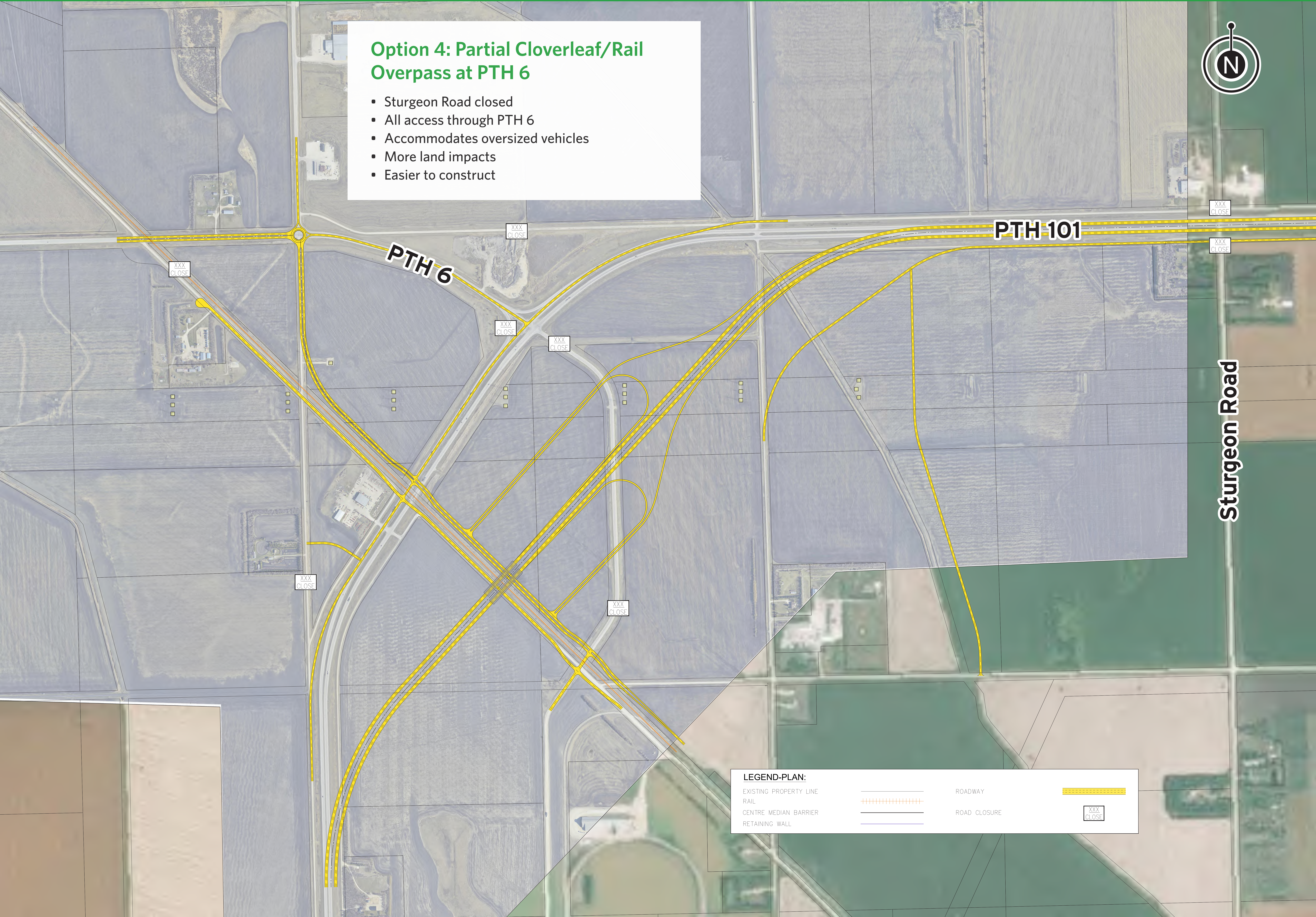
ROADWAY  
ROAD CLOSURE





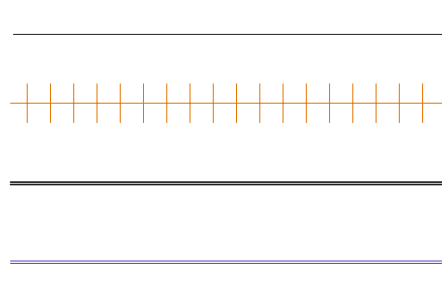
## Option 4: Partial Cloverleaf/Rail Overpass at PTH 6

- Sturgeon Road closed
- All access through PTH 6
- Accommodates oversized vehicles
- More land impacts
- Easier to construct

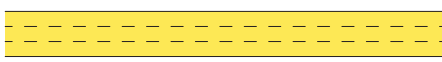


### LEGEND-PLAN:

EXISTING PROPERTY LINE  
RAIL  
CENTRE MEDIAN BARRIER  
RETAINING WALL



ROADWAY



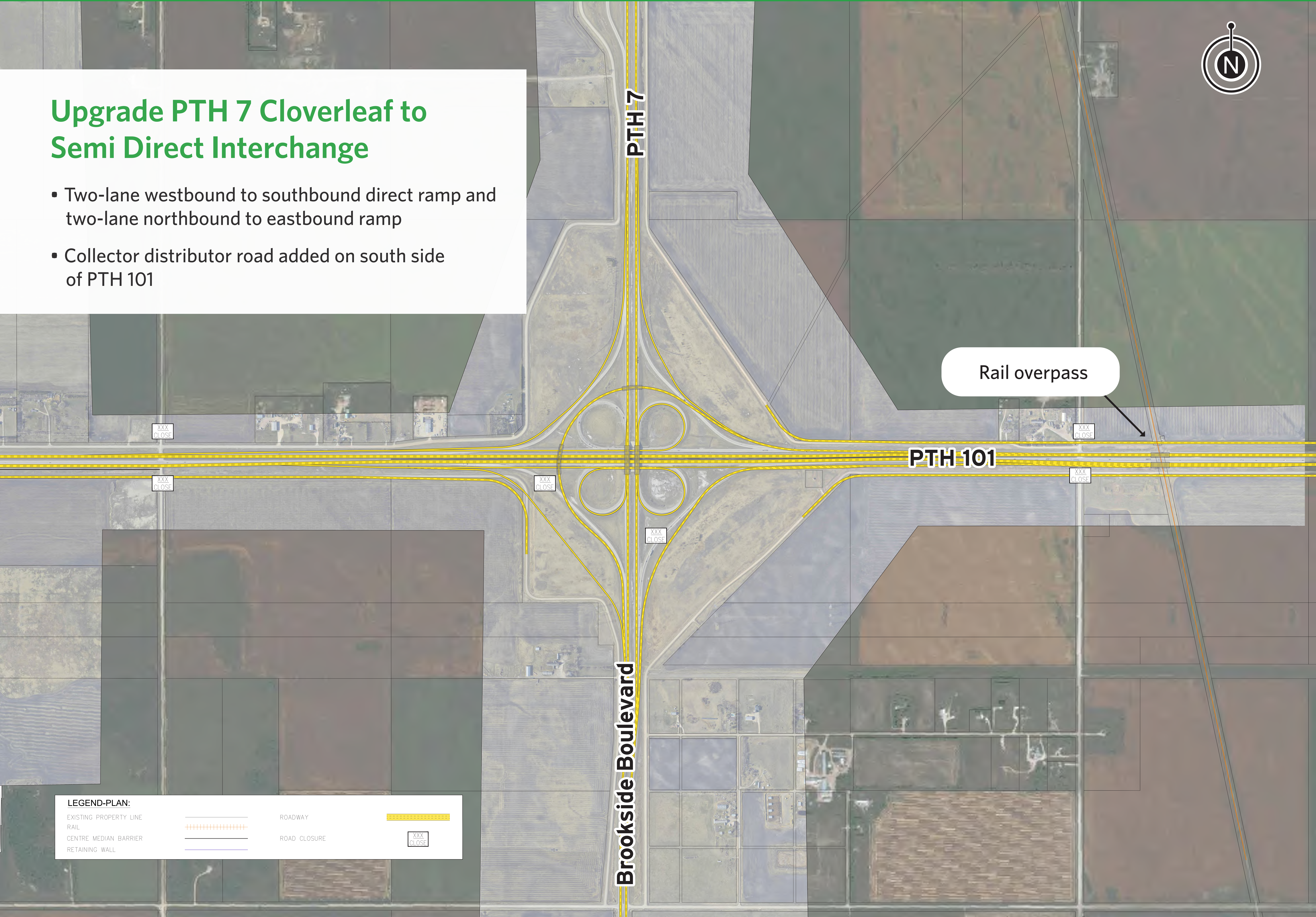
ROAD CLOSURE





## Upgrade PTH 7 Cloverleaf to Semi Direct Interchange

- Two-lane westbound to southbound direct ramp and two-lane northbound to eastbound ramp
- Collector distributor road added on south side of PTH 101



LEGEND-PLAN:

EXISTING PROPERTY LINE

RAIL

CENTRE MEDIAN BARRIER

RETAINING WALL

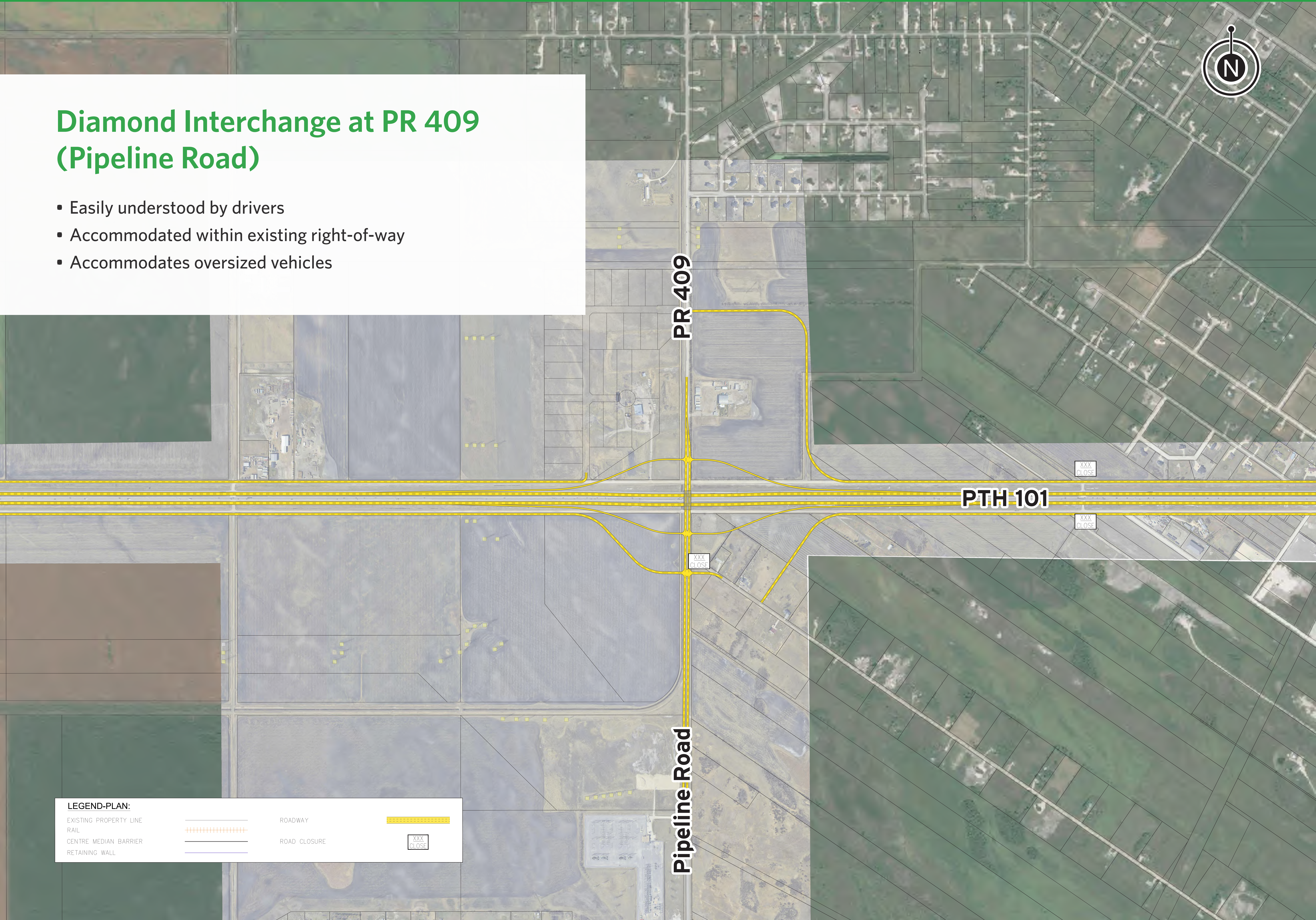
ROADWAY

ROAD CLOSURE



## Diamond Interchange at PR 409 (Pipeline Road)

- Easily understood by drivers
- Accommodated within existing right-of-way
- Accommodates oversized vehicles

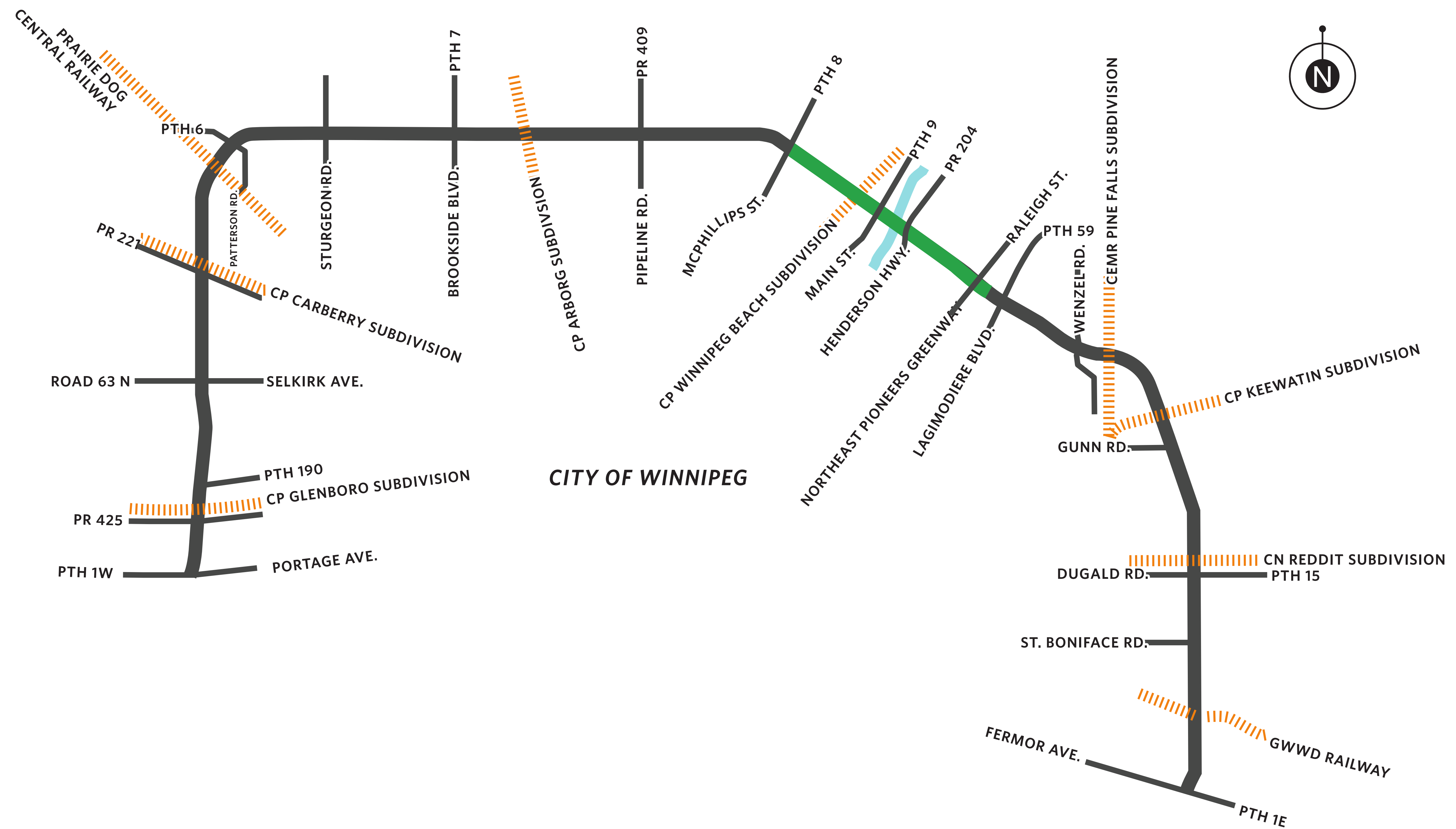


**LEGEND-PLAN:**

EXISTING PROPERTY LINE		ROADWAY	
RAIL		ROAD CLOSURE	
CENTRE MEDIAN BARRIER			
RETAINING WALL			



## PTH 8 (McPhillips Street) to PTH 59 (Lagimodiere Boulevard)





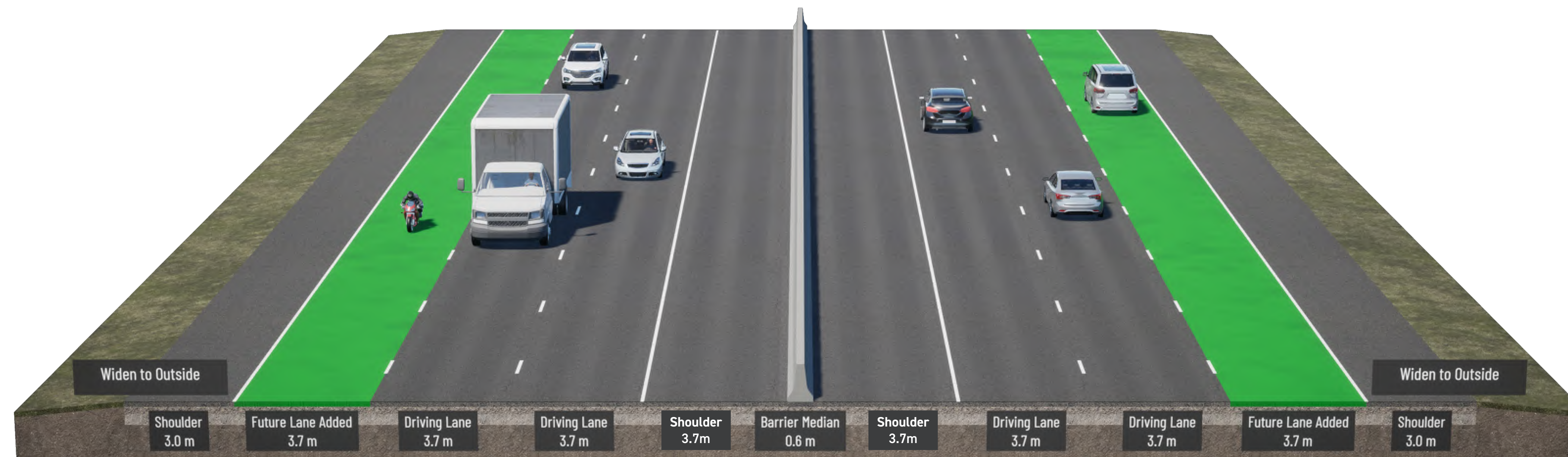
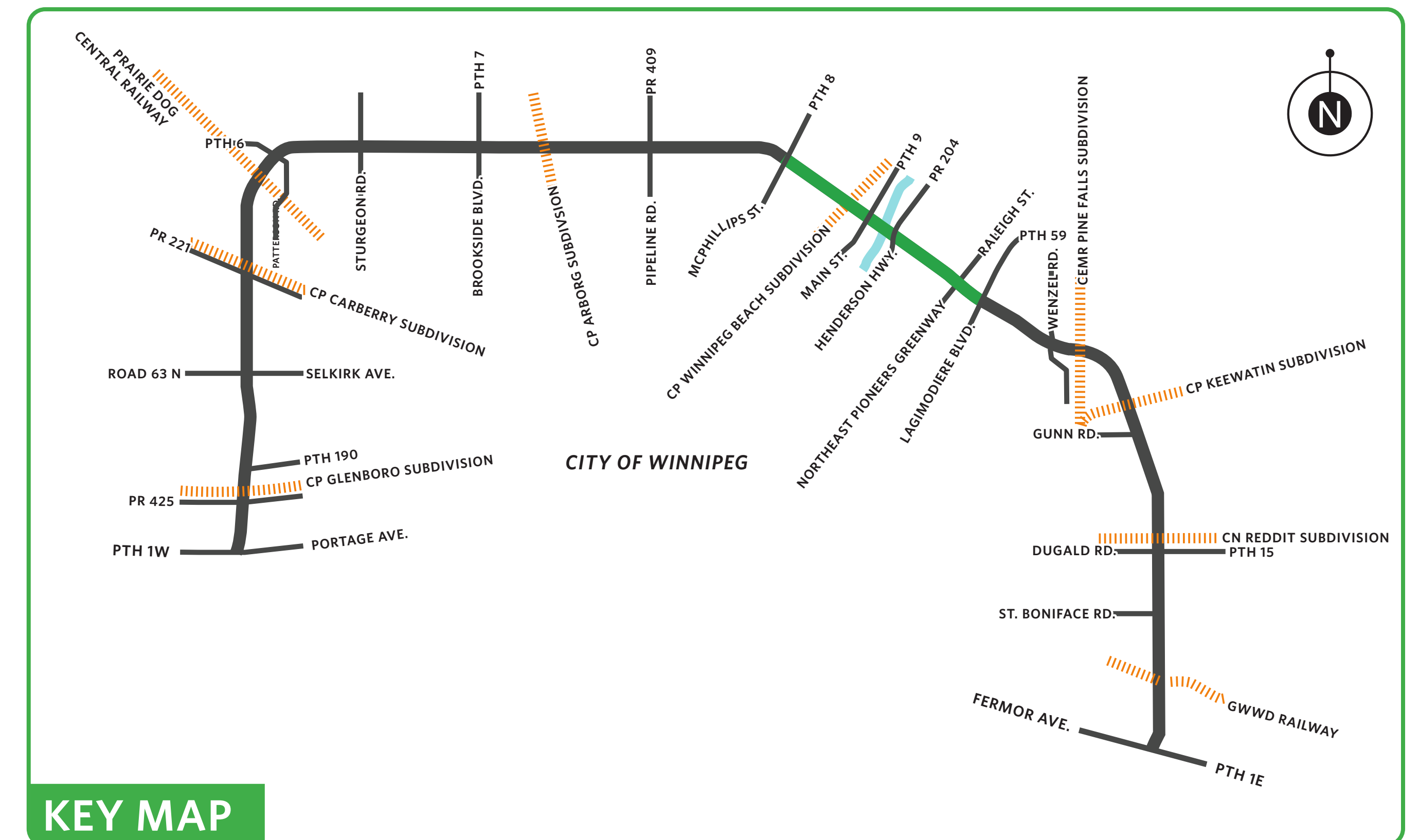
# PTH 101 Alignment

## The North Perimeter (PTH 101) Highway Design Study

### PTH 8 (McPhillips Street) to PTH 59 (Lagimodiere Boulevard)

**Expressway section with median barrier and service roads provided on both sides.**

- Recommend staying on existing alignment
- Allows opportunity to utilize the existing structures at PTH 8, PR 204 and PTH 59
- Minimizes impacts to property, utilities and the environment



Westbound PTH 101

Typical PTH 101 six-lane cross-section

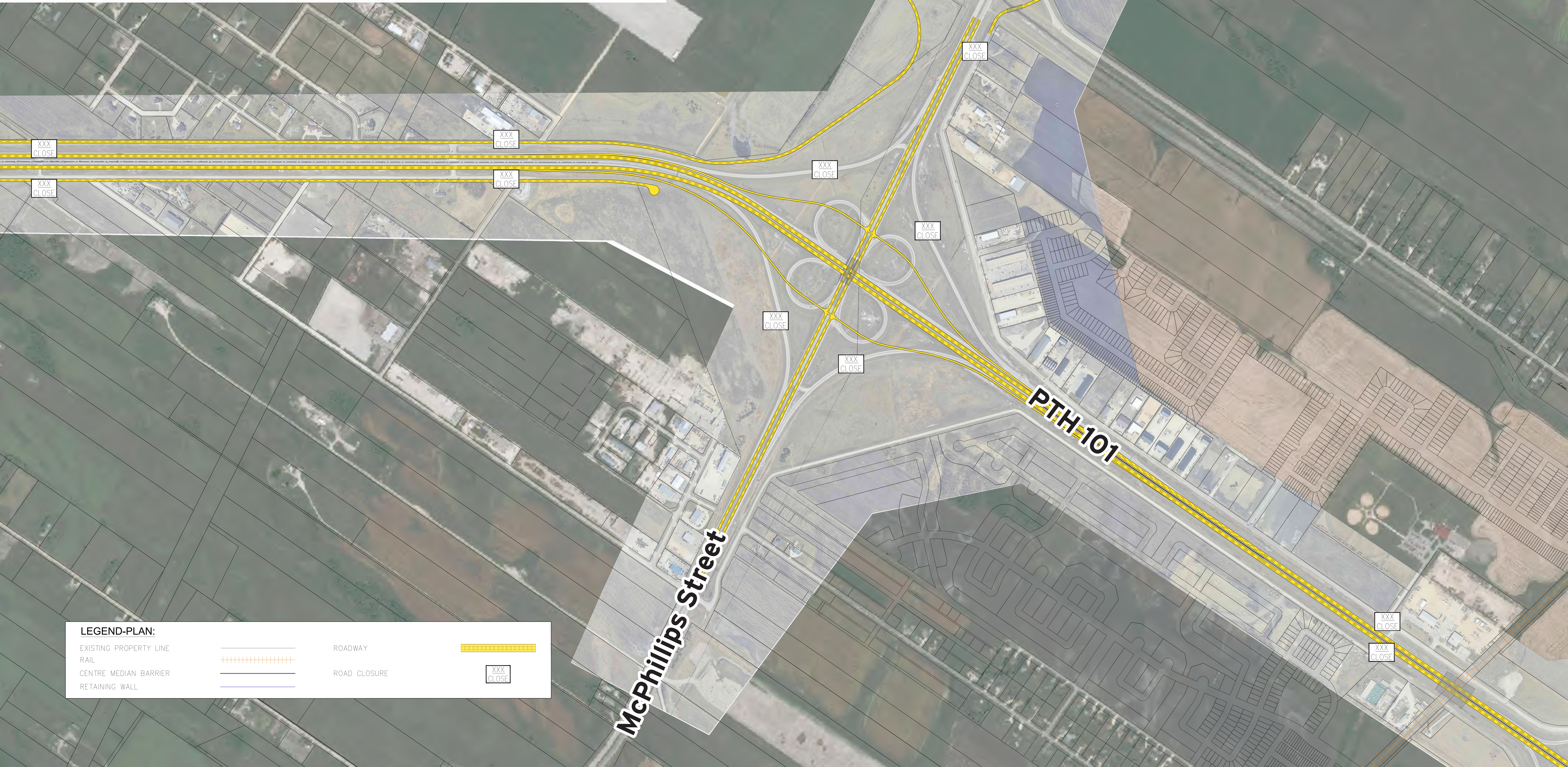
Eastbound PTH 101





## Option 1: Reconfigure Cloverleaf to Diamond Interchange

- Least expensive
- Easily understood by drivers
- Accommodates oversized vehicles
- Longer delays for PTH 8 traffic at ramp intersections



**LEGEND-PLAN:**

EXISTING PROPERTY LINE

RAIL

CENTRE MEDIAN BARRIER

RETAINING WALL

ROADWAY

ROAD CLOSURE

XXX CLOSE





## Option 2: Reconfigure Cloverleaf to Partial Cloverleaf

- Shorter delays for PTH 8 traffic at ramp intersections
- More difficult to accommodate oversized vehicles
- More expensive



**LEGEND-PLAN:**

EXISTING PROPERTY LINE		ROADWAY	
RAIL		ROAD CLOSURE	
CENTRE MEDIAN BARRIER			
RETAINING WALL			





## Option 3: Reconfigure Cloverleaf to Diverging Diamond

- Shorter delays for PTH 8 traffic at ramp intersections
- Eliminates turns against opposing traffic
- Difficult to construct
- Most expensive
- Unfamiliar configuration for drivers



LEGEND-PLAN:

EXISTING PROPERTY LINE

RAIL

CENTRE MEDIAN BARRIER

RETAINING WALL

ROADWAY

ROAD CLOSURE





## Option 1: Cloverleaf at PTH 9 and Elongated Partial Cloverleaf at PR 204

- Use existing right-of-way at PTH 9
- PTH 9 changed from overpass to underpass
- Property impacts on northeast side of PR 204
- Difficult to accommodate pedestrians and cyclists on PTH 9

Rail overpass

**LEGEND-PLAN:**

EXISTING PROPERTY LINE

RAIL

CENTRE MEDIAN BARRIER

RETAINING WALL

ROADWAY

ROAD CLOSURE

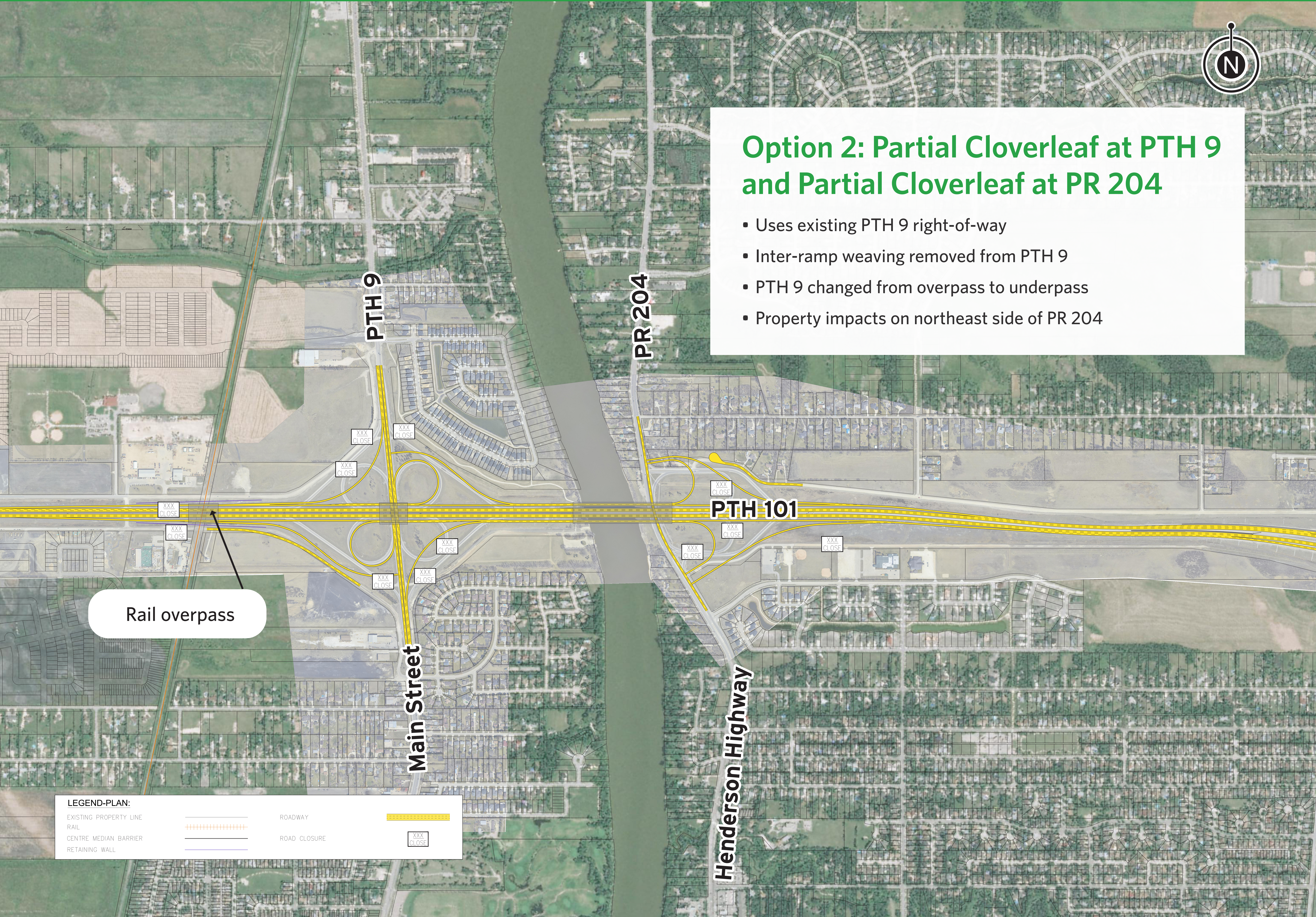
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CLOSE





## Option 2: Partial Cloverleaf at PTH 9 and Partial Cloverleaf at PR 204

- Uses existing PTH 9 right-of-way
- Inter-ramp weaving removed from PTH 9
- PTH 9 changed from overpass to underpass
- Property impacts on northeast side of PR 204



Rail overpass

**LEGEND-PLAN:**

EXISTING PROPERTY LINE

RAIL

CENTRE MEDIAN BARRIER

RETAINING WALL

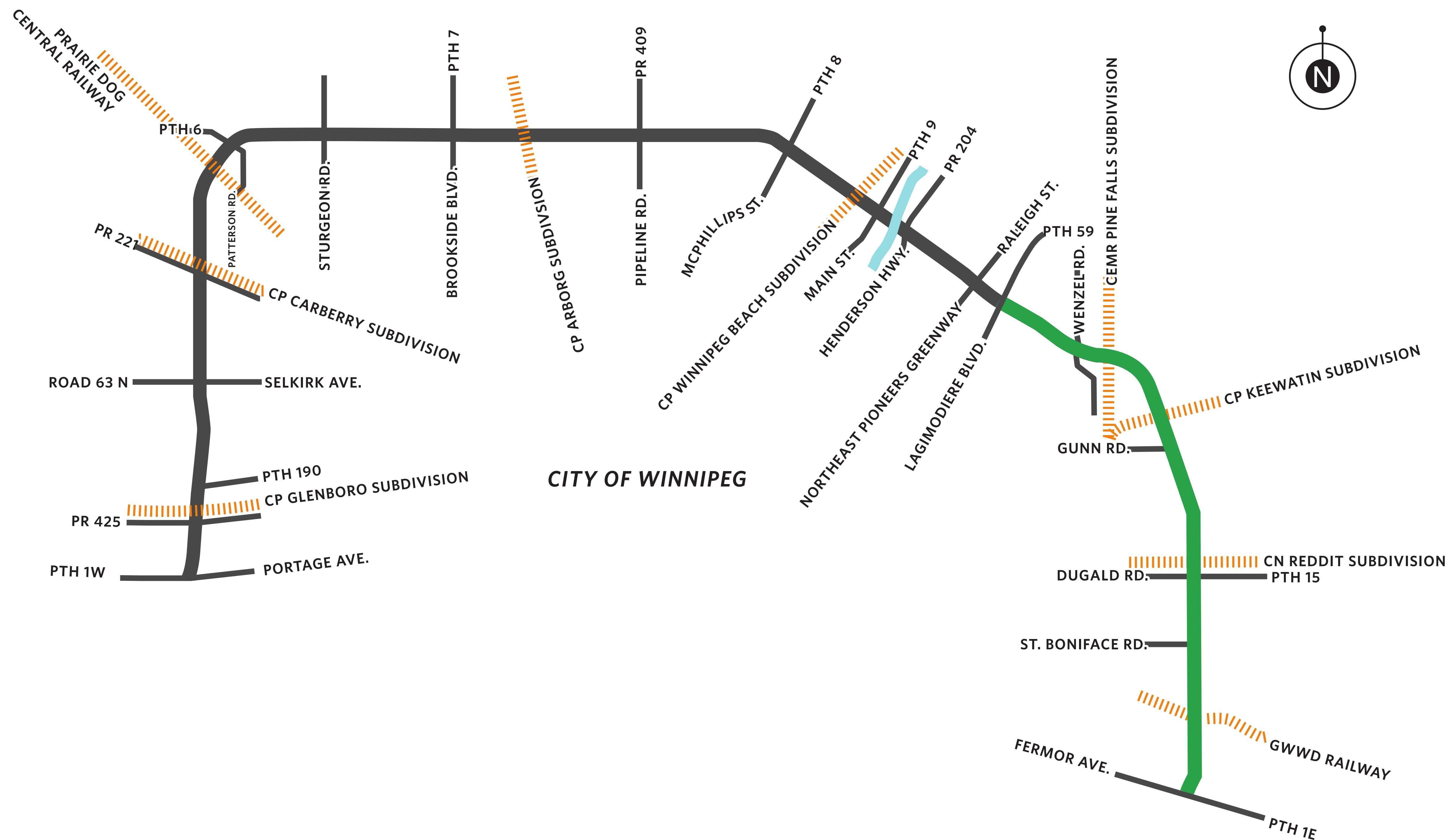
ROADWAY

ROAD CLOSURE



# SEGMENT 5

## PTH 59 (Lagimodiere Boulevard) to PTH 1E (Fermor Avenue)





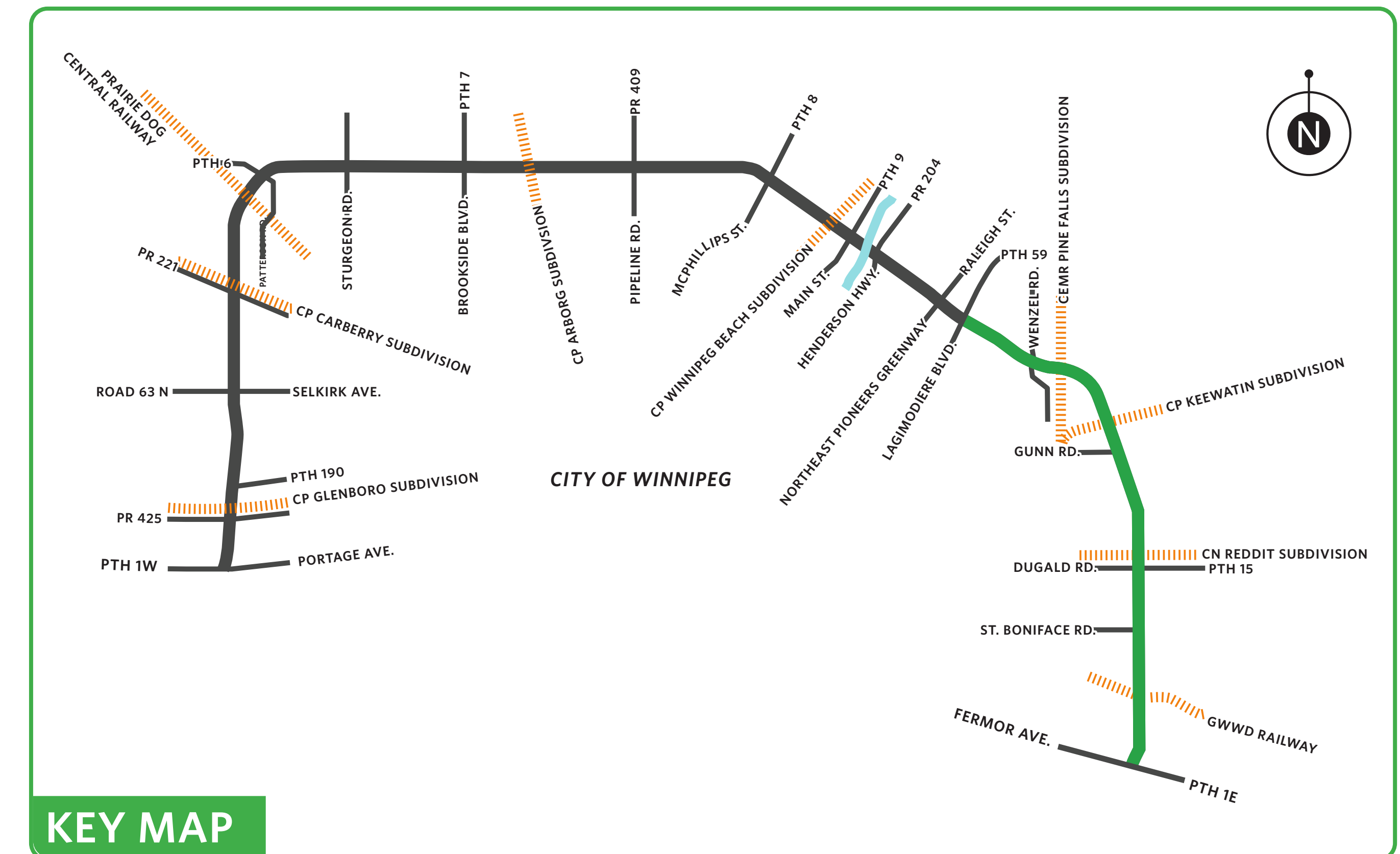
# PTH 101 Alignment

## The North Perimeter (PTH 101) Highway Design Study

### PTH 59 (Lagimodiere Boulevard) to PTH 1E (Fermor Avenue)

**Expressway section with service roads provided  
on each side.**

- PTH 101 stays on the existing alignment utilizing the depressed median
- The existing depressed median meets the ultimate design cross-section as future widening to six lanes will be to the outside
- Minimizes impacts to property, utilities and the environment



Northbound PTH 101

Typical PTH 101 six-lane cross-section

Southbound PTH 101





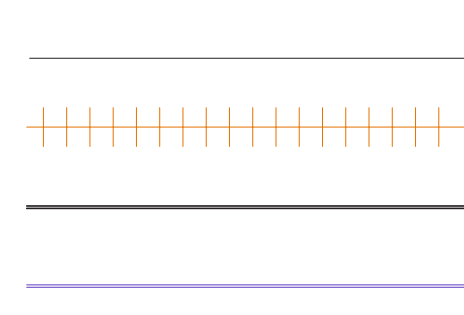
## Option 1: Diamond Interchange

- Separate rail overpass approximately 800m east
- Simplest configuration
- Least expensive
- Easily understood by drivers
- Accommodates oversized vehicles



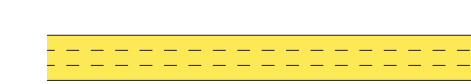
### LEGEND-PLAN:

EXISTING PROPERTY LINE  
RAIL  
CENTRE MEDIAN BARRIER  
RETAINING WALL



ROADWAY

ROAD CLOSURE

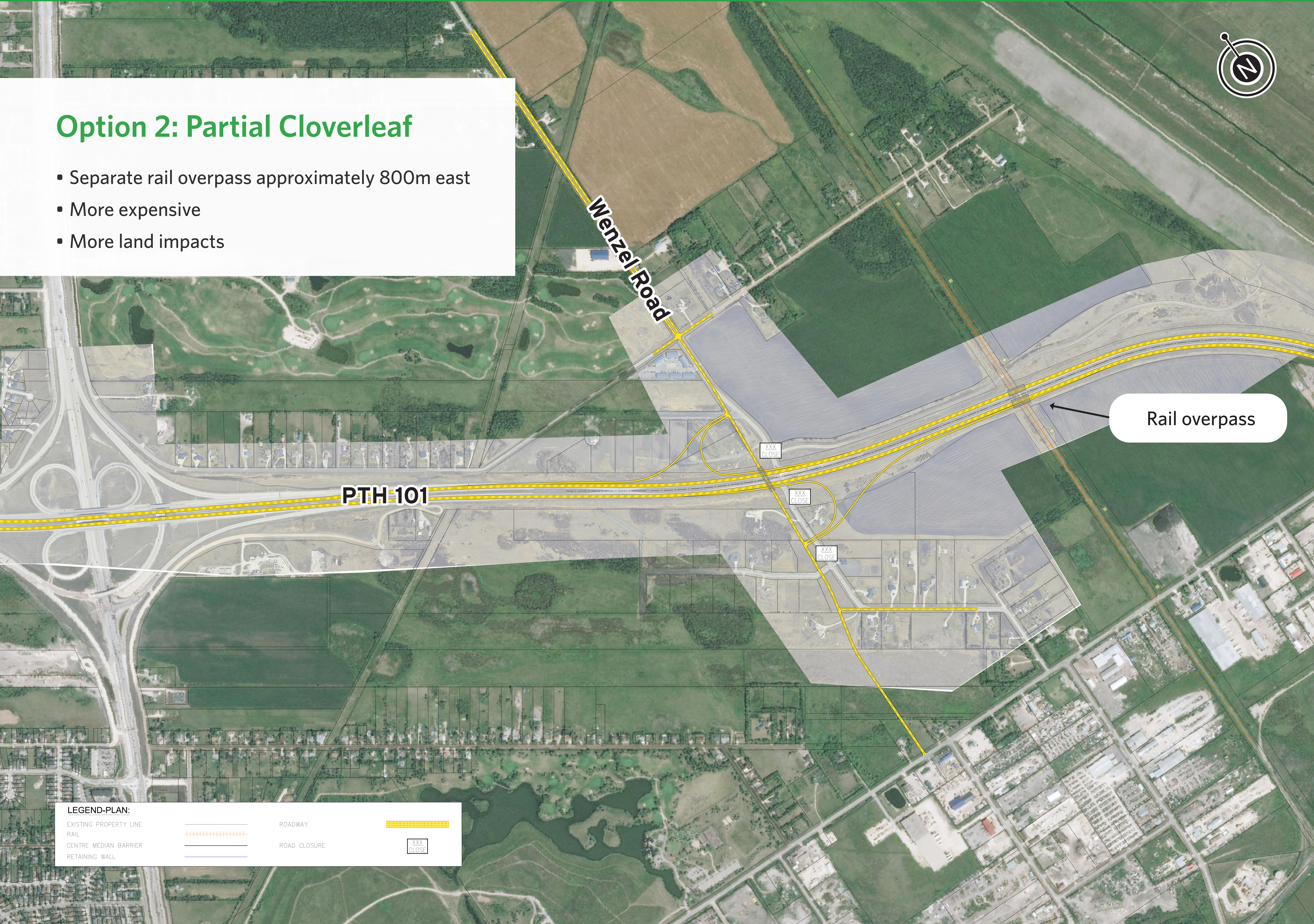






## Option 2: Partial Cloverleaf

- Separate rail overpass approximately 800m east
- More expensive
- More land impacts



Rail overpass

**LEGEND-PLAN:**

EXISTING PROPERTY LINE

RAIL

CENTRE MEDIAN BARRIER

RETAINING WALL

ROADWAY

ROAD CLOSURE



## Option 1: Diamond Interchange connected to Winnipeg-Oakbank Corridor

- Less expensive
- Easily understood by drivers
- Accommodates oversized vehicles
- Closure of trail parking lot required



**LEGEND-PLAN:**

EXISTING PROPERTY LINE		ROADWAY	
RAIL		ROAD CLOSURE	
CENTRE MEDIAN BARRIER			
RETAINING WALL			



## Option 2: Partial Cloverleaf connected to Winnipeg - Oakbank Corridor

- Accommodated within right-of-way
- Trail parking lot remains open
- Most expensive



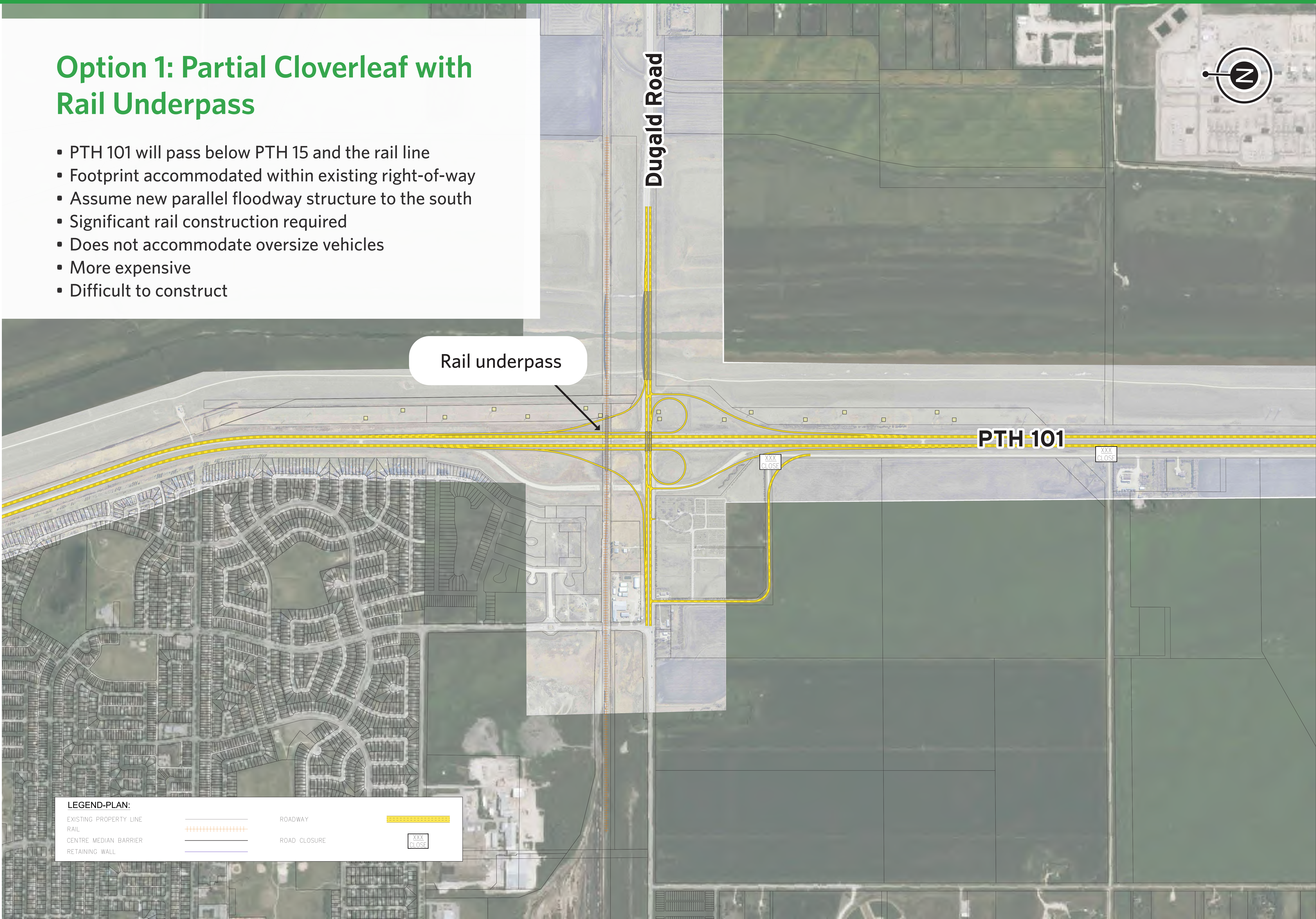
**LEGEND-PLAN:**

EXISTING PROPERTY LINE	RAIL	CENTRE MEDIAN BARRIER	RETAINING WALL	ROADWAY	ROAD CLOSURE



### Option 1: Partial Cloverleaf with Rail Underpass

- PTH 101 will pass below PTH 15 and the rail line
- Footprint accommodated within existing right-of-way
- Assume new parallel floodway structure to the south
- Significant rail construction required
- Does not accommodate oversize vehicles
- More expensive
- Difficult to construct



#### LEGEND-PLAN:

EXISTING PROPERTY LINE

RAIL

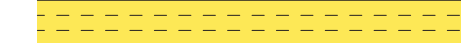
CENTRE MEDIAN BARRIER

RETAINING WALL



ROADWAY

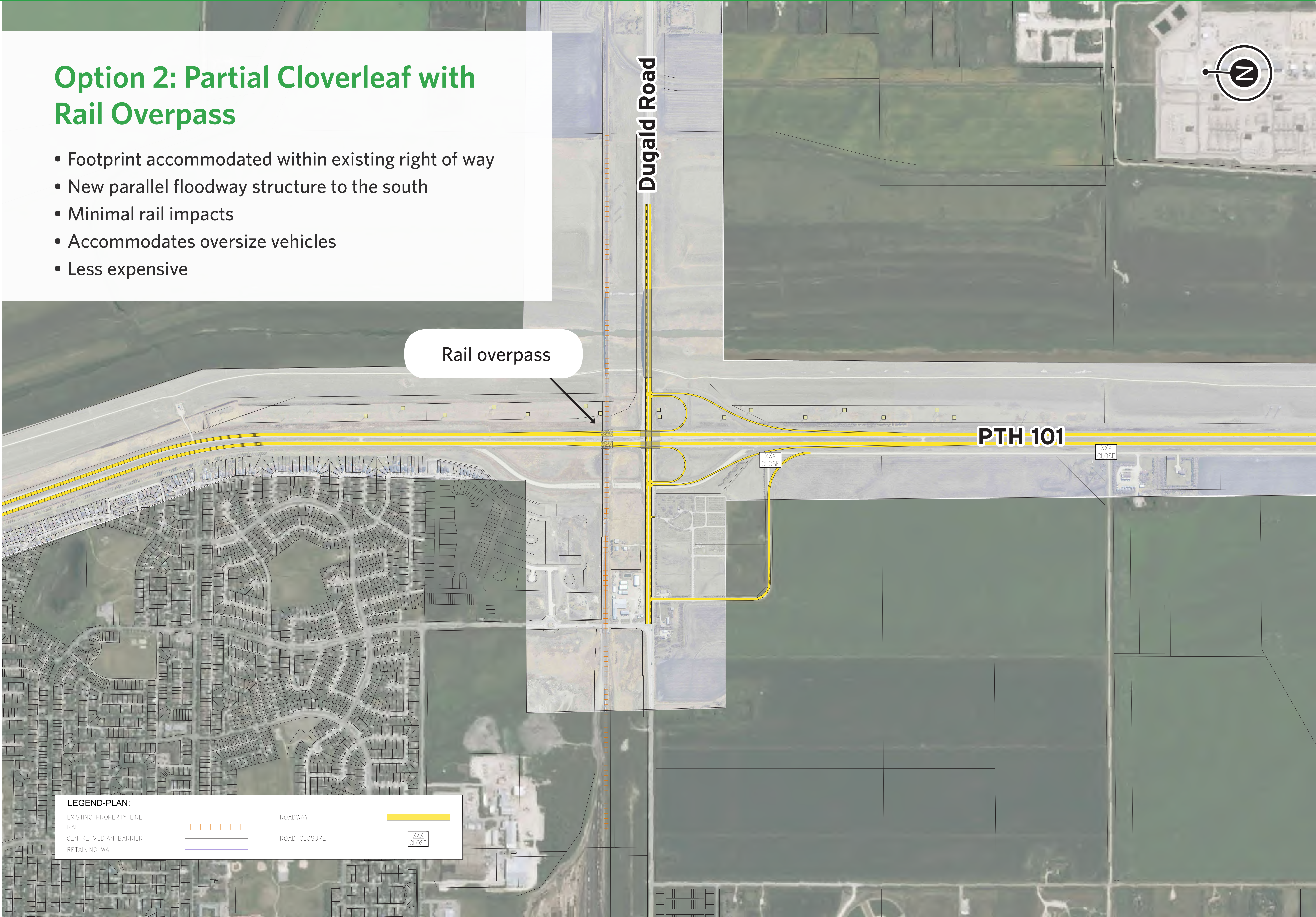
ROAD CLOSURE





## Option 2: Partial Cloverleaf with Rail Overpass

- Footprint accommodated within existing right of way
- New parallel floodway structure to the south
- Minimal rail impacts
- Accommodates oversize vehicles
- Less expensive





## Option 3: Diamond Interchange south of Dugald Road and Rail Overpass

- Easily understood by drivers
- Accommodates oversized vehicles
- New four-lane floodway bridge required
- Significant new road construction required
- Separate rail overpass



Rail overpass

### LEGEND-PLAN:

EXISTING PROPERTY LINE  
RAIL  
CENTRE MEDIAN BARRIER  
RETAINING WALL

ROADWAY  
ROAD CLOSURE

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CLOSE