

Separated Cycling Network Improvements and Expansions in the Cities of Waterloo and Kitchener

Public Consultation Centre
September 14, 2022



Region of Waterloo

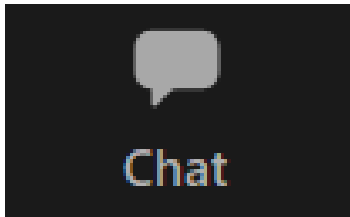
Agenda

- 1 Introductions
- 2 Project Overview
- 3 Project Timeline
- 4 Connections to the Existing and Future Cycling Network
- 5 Evaluation Criteria
- 6 Proposed Design Alternatives
- 7 Question and Answer Session
- 8 Conclusion and Next Steps

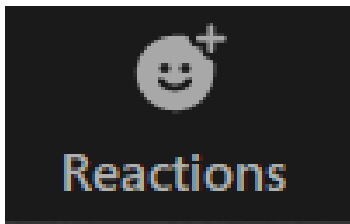
Zoom How-To



Cameras will automatically be turned off during the meeting.



Use the **Chat** button to type a comment or question to the group, or private message a member of the project team.



If you would like to speak, please use the **Reactions** button to “**Raise your hand**”. A member of the project team will unmute you.

Introductions

Introductions – Region of Waterloo

Kornel Mucsi, Transportation Planning Manager – Active Transportation

Alberto Martinez, Project Manager



Introductions – WSP

Dave McLaughlin, Project Manager

James Schofield, Complete Streets Design

Justin Jones, Consultation Lead

Erica Stone, Planning and Consultation

Brittany Chung, Traffic Specialist

Project Overview

Why is the Region Focused on Separated Cycling Facilities?



- Most streets (including those in this study) were designed to focus on car travel
- Cycling on these streets is undesirable due to collision risk between motorists and cyclists
- Few cyclists (3-5%) are willing to cycle in mixed lanes; most are using sidewalks
- Motorists are concerned about colliding with cyclists on the road
- A significant percentage of short trips (trips under 8 km) are currently being taken by car
- Physically separating cyclists from motor vehicles is the **most effective tool to increase safety and cycling volumes**
- 50-70% of population is interested in cycling if they are separated from cars
- Separated cycling facilities decrease the pressure on the roads as more people move into the area
- A network of separated cycling facilities, if maintained appropriately, also allows for safe winter cycling

Project Background

Separated Cycling Facility Pilot Project

- 5 sections of road in the City of Waterloo and Region of Waterloo in 2019
- Active for 18 months, including 2 winter seasons
- **57% increase in overall cycling ridership**, including over **100% increase** during morning and peak periods on some corridors
- Public feedback showed a preference for flexible bollards on concrete curbs



Based on the results of the pilot, **Regional Council decided to convert the temporary facilities that were part of the regional network to permanent facilities and expand the network in some locations**



Project Scope

Conversion

Study will be looking at the conversion of the existing temporary designs to **permanent designs**

- King Street from University Avenue to Columbia Street
- University Avenue from Albert Street to Seagram Drive
- Erb Street from Caroline Street North to Peppler Street

Expansion

A **feasibility study** to examine temporary and permanent facility alternatives is being undertaken for:

- King Street from Columbia Street to Weber Street
- University Avenue from Seagram Drive to Westmount Road
- Erb Street from Peppler Street to Bridgeport Road
- Bridgeport Road from Albert Street to Riverbend Drive
- Caroline Street from Albert Street to Erb Street

Existing Regional Policy Direction

Moving Forward 2018 Transportation Master Plan

“Waterloo Region will be a prosperous, sustainable, and healthy community, with viable transportation choices for people of all ages and abilities, and for the goods supporting our economy.”

- Strategy 1: Build a transportation network that supports all modes of travel
- Strategy 2: Promote a healthy community
 - Create and / or upgrade active transportation facilities
 - Upgrade facilities to improve separation from traffic
 - Identify opportunities for, and implement, crossings of major barriers
 - Enhance network connections
 - Enhance walk and bike access to transit



Moving Forward

2018 Transportation Master Plan

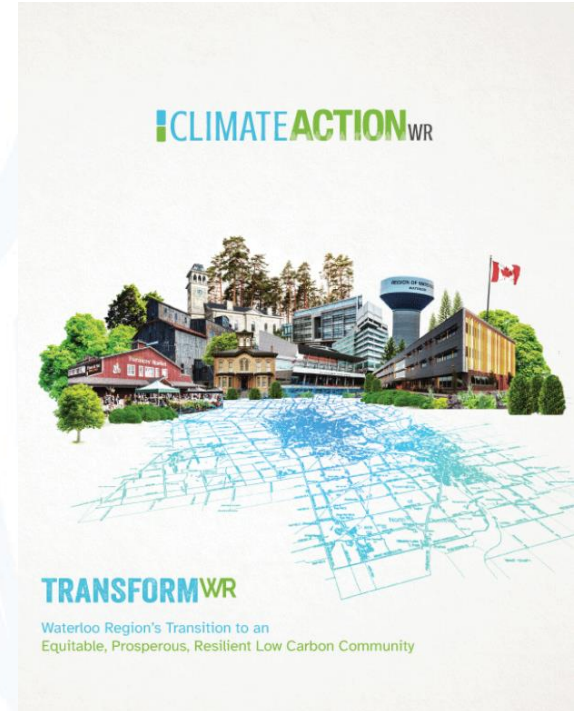
June 2019

Existing Regional Policy Direction

Transform Waterloo Region – Climate Action Strategy

“Our region is a leader in climate action in Canada. And people across the community take pride in this.”

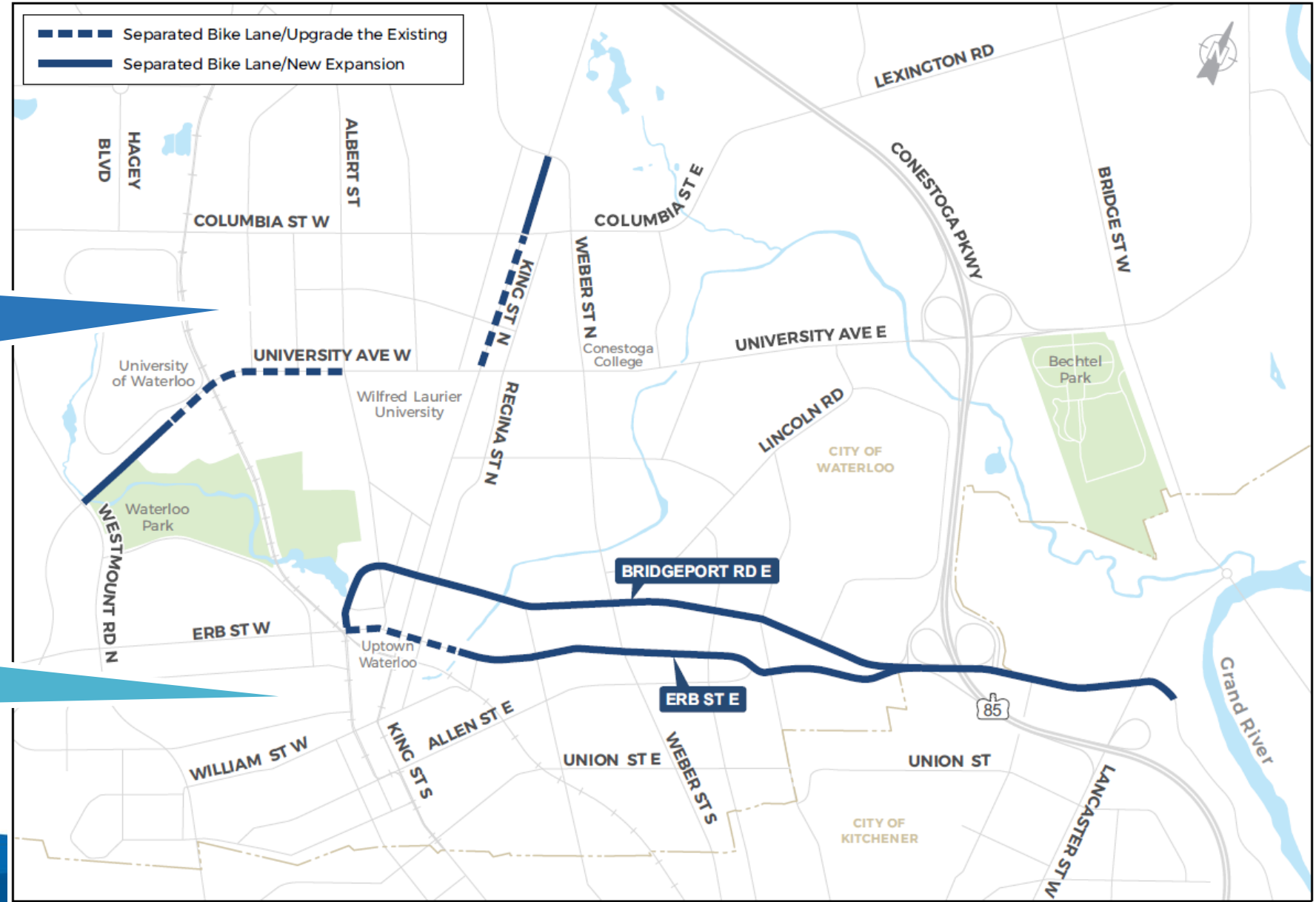
- By 2050, most trips are taken using active transportation, with the support of a robust public transit system
 - Redesign, rebuild, and maintain our transportation system to prioritize active transportation
 - Plan a network of major active transportation corridors that will provide priority travel for walking, cycling, and rolling to key destinations
 - Build neighbourhood connections to the active transportation network
 - Design and maintain active transportation infrastructure to ensure year-round access, safety, and comfort for people of all ages and abilities



Study Area

Separated cycle tracks on King Street and University Avenue produce few design challenges and options.

Bridgeport Road and Erb Street corridors present multiple design options.



Project Timelines

Key Project Milestones



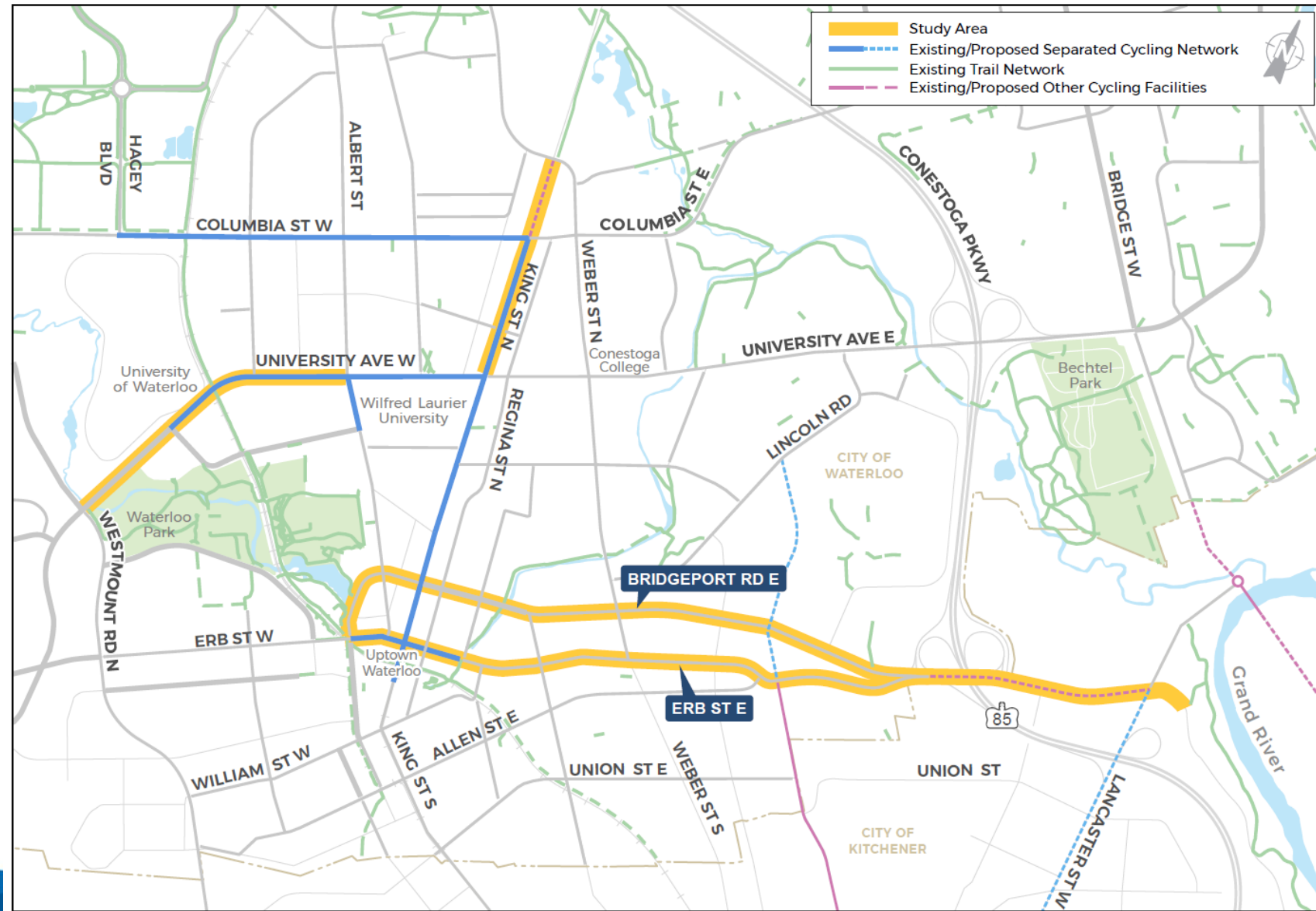
*Project Website
and Notice
Published
[www.engagewr.ca/
cycling](http://www.engagewr.ca/cycling)

*MTO Meeting
July 21, 2022
Project Team
Meeting
July 27, 2022

Connections to the Existing and Future Cycling Network

Key Connections

- Laurel Trail / Grand River Trail
- King Street
- Margaret Avenue
- University Avenue
- Columbia Street
- Lancaster Street



Key Considerations



Evaluation Criteria

Evaluation Process

Step 1

Determine the **facility type** for each corridor

Step 2

Assess whether the cycling facilities will be **bidirectional or unidirectional**

Step 3

Assess whether the cycling facilities will be on the **north side, south side or both sides** of each corridor

Step 4

Identify and assess the location of any **connecting facilities** between the cycling corridors

Step 5

Identify and **mitigate potential impacts** of each design alternative

Unidirectional vs. Bidirectional Facilities

	Unidirectional Facilities	Bidirectional Facilities
Pros	• Reduces risk of cyclist/motor vehicle collisions at intersections and driveways	• Provides additional mobility options
Cons	• Reduces mobility options • Increases risk of people cycling the wrong way on a corridor • Requires more space/construction, leading to higher costs and disruption	• Increases risk of cyclist/motor vehicle collisions at intersections and driveways, requiring more complex design countermeasures

Separated Facility Types

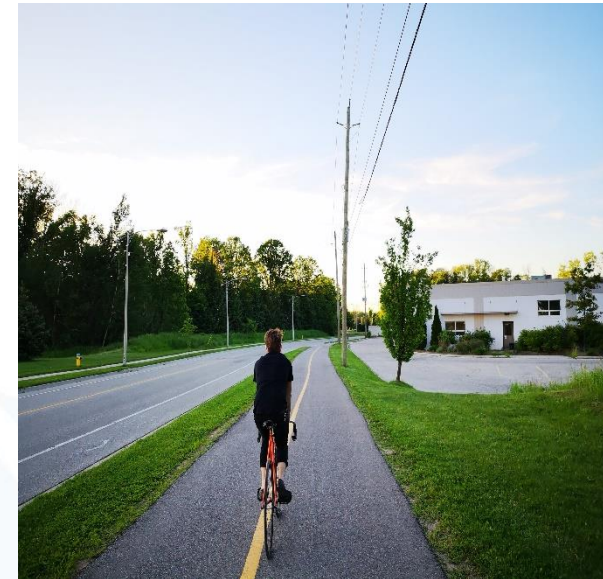
Separated facilities are **physically separated** from motor vehicle travel lanes by horizontal and/or vertical elements



Separated bike lanes
(within the roadway)



Cycle tracks
(above the curb,
exclusive for cyclists)



Multi-use paths
(above the curb, shared with
pedestrians)

Evaluation Criteria

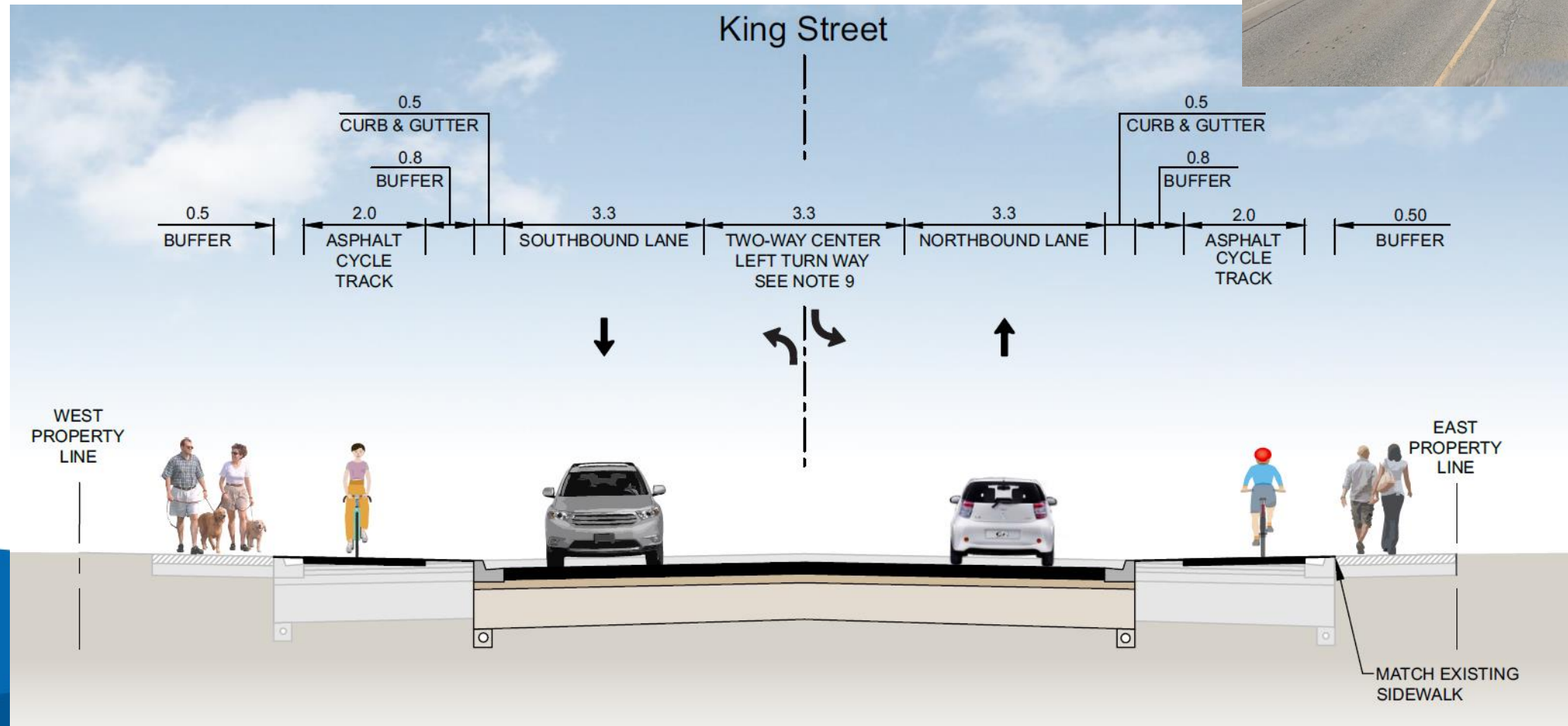
Each segment of each corridor was assessed using the following criteria:

Criteria	Description / Considerations
Traffic and Transportation	• Cycling mode share and shifts in long-term travel behaviour • Motor vehicle delays and queues • Cycling network • Noise and air quality
Safety / Conflict Mitigation	• Conflicts between cyclists and vehicles (and mitigations) • Conflicts between cyclists and transit (and mitigations) • Conflicts at interchange crossings (and mitigations)
Utilities	• Utility impacts
Constructability	• Level of effort • Complexity of implementation
Cost (only includes cycle features)	• Cost to implement facility (excludes costs for utility and tree relocations) • Cost to operate and maintain facility

Proposed Design Alternatives

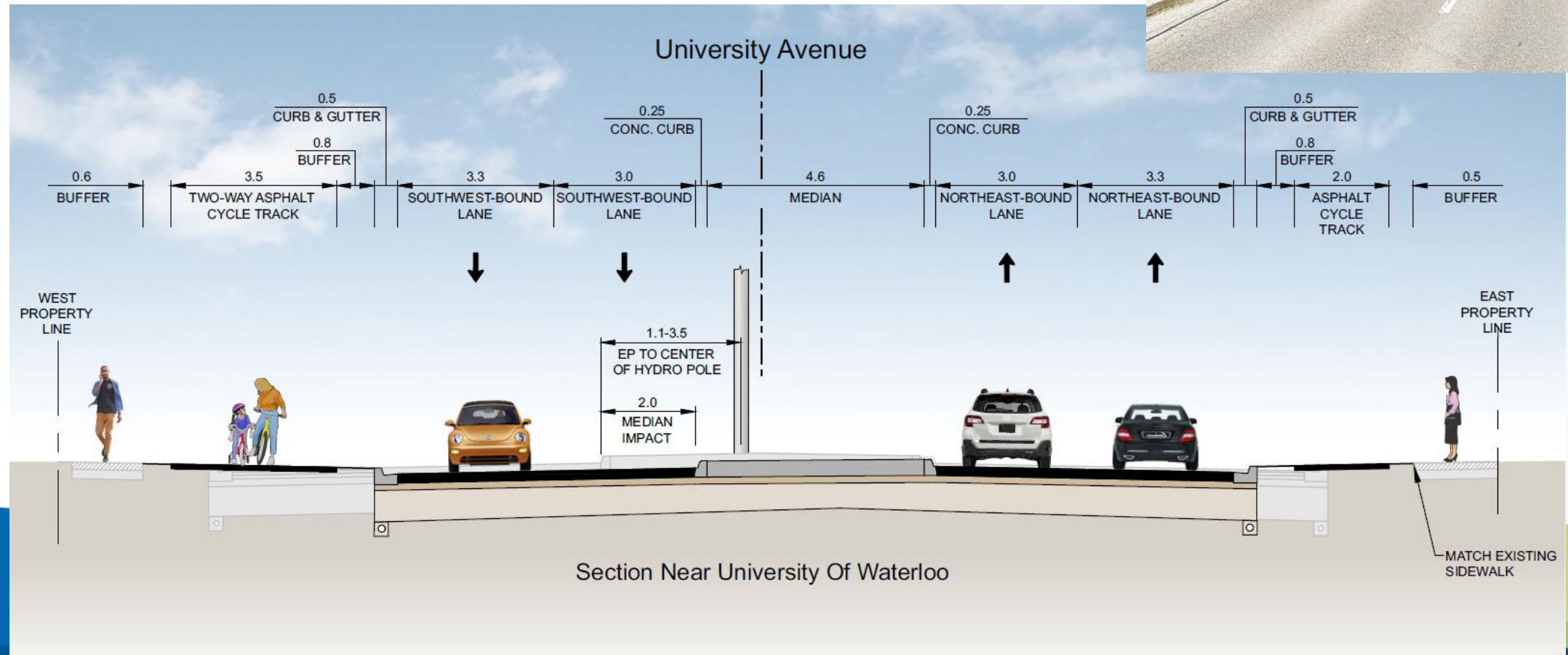
King Street

- Unidirectional facilities on the east and west side (continuation of the existing facility)



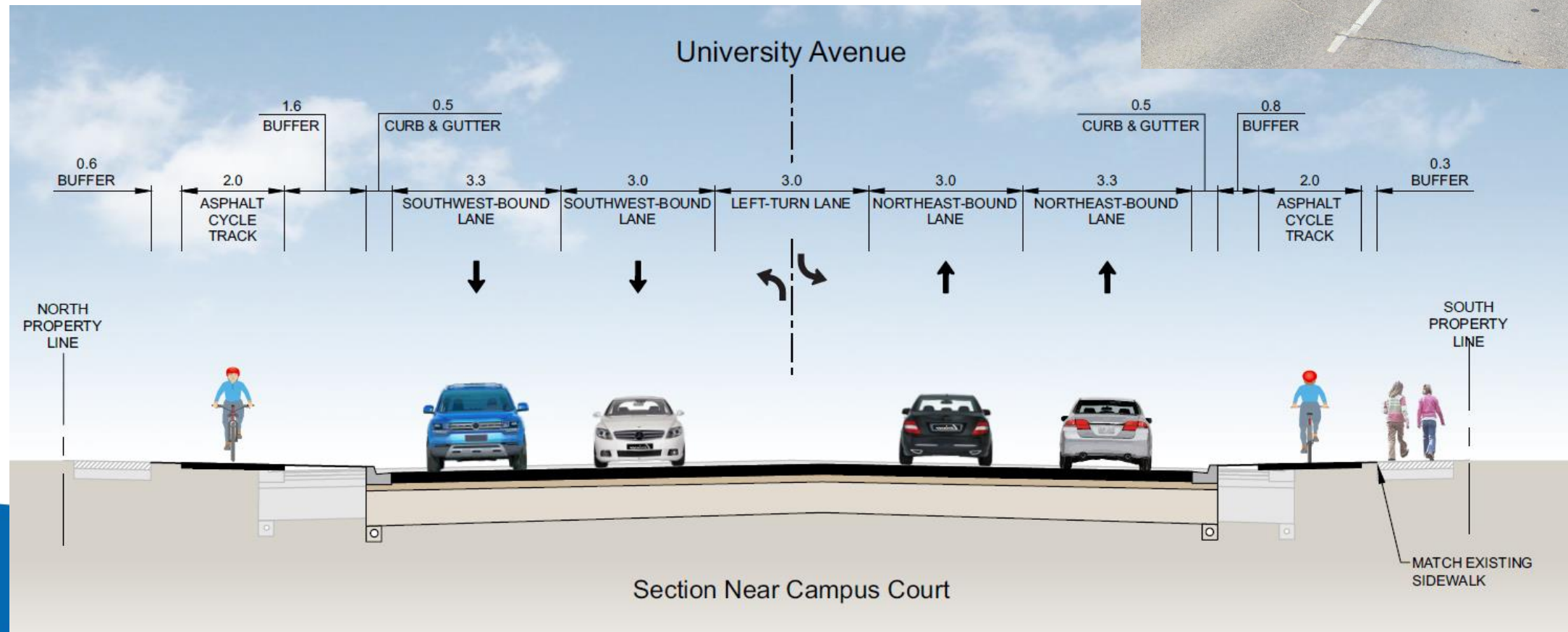
University Avenue

- Unidirectional facility on the south side and bidirectional facility on the north side

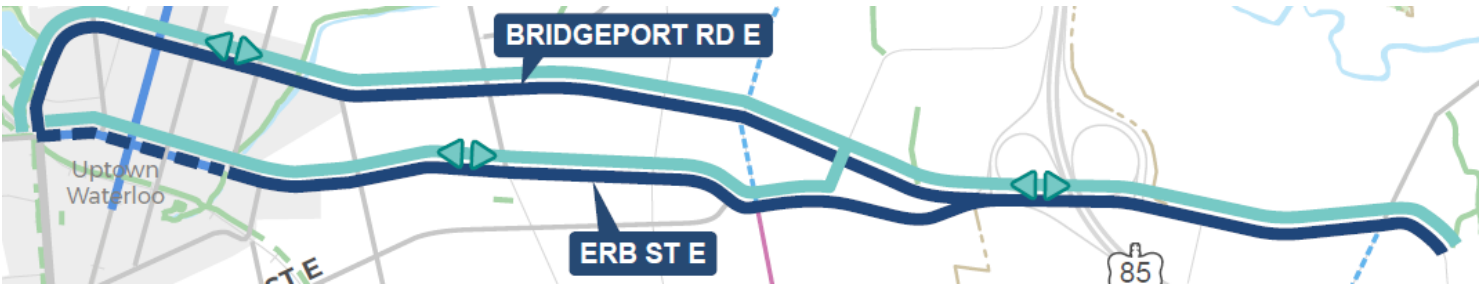


University Avenue

- Unidirectional facilities on the north and south side (continuation of the existing facility)



1



Corridor Option 1: Bidirectional Facilities on Erb and Bridgeport (north side of Bridgeport east of interchange)

2



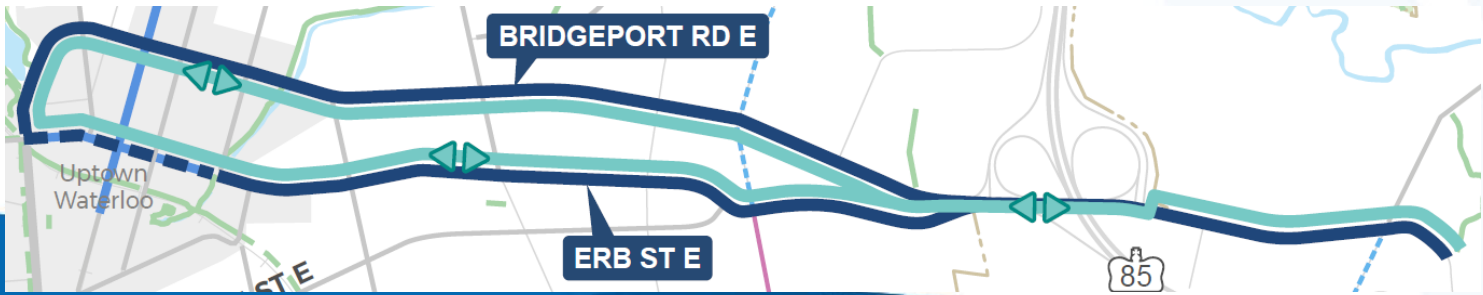
Corridor Option 2: Bidirectional Facilities on Erb and Bridgeport (south side of Bridgeport east of interchange)

3

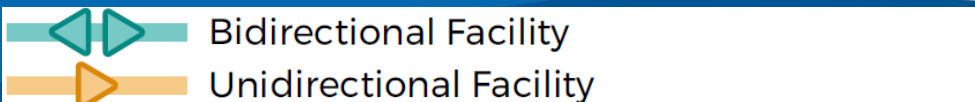


Corridor Option 3: Unidirectional Facilities on Erb and Bridgeport

4

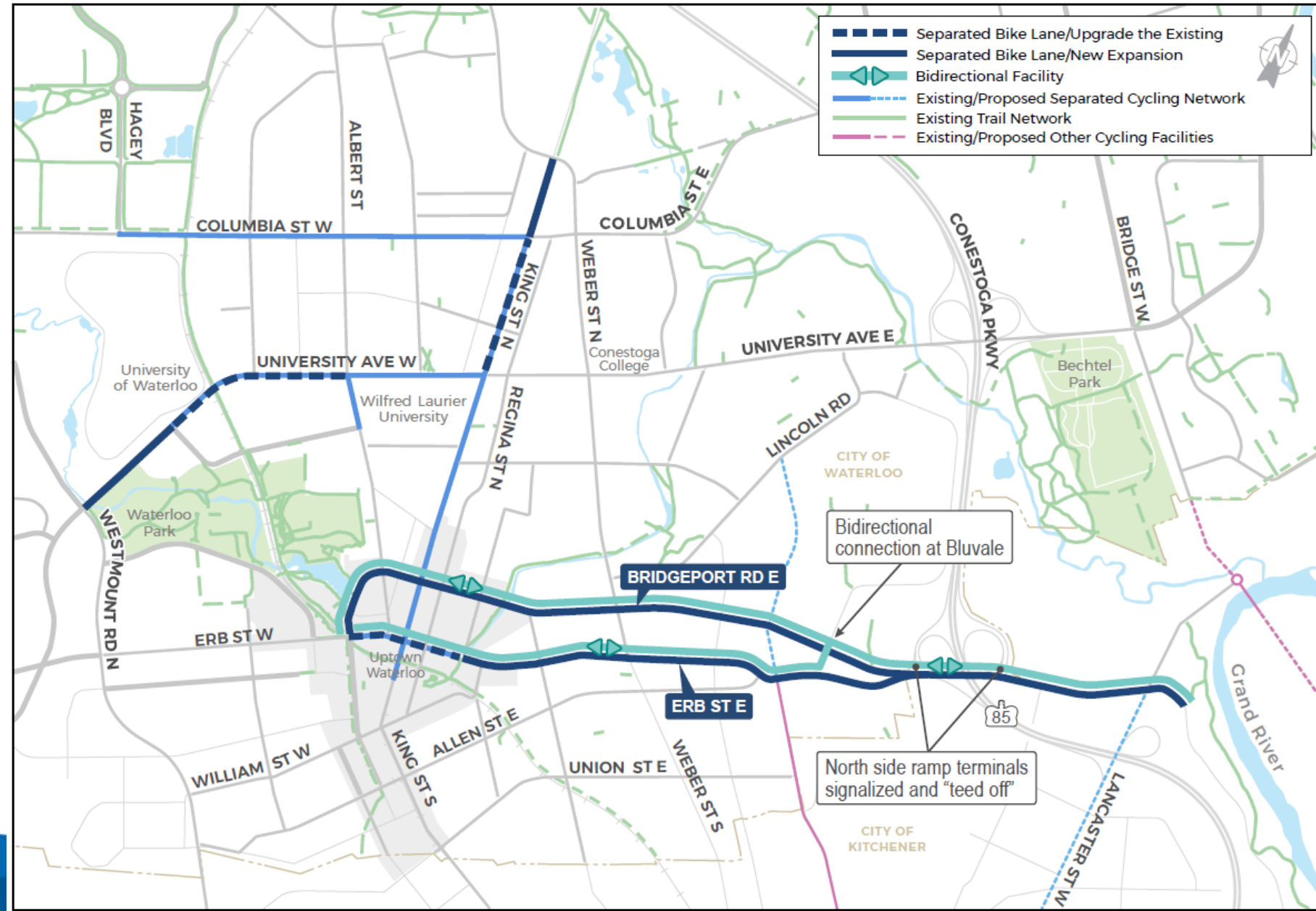


Corridor Option 4: Centre Running Cycling Facility through Interchange



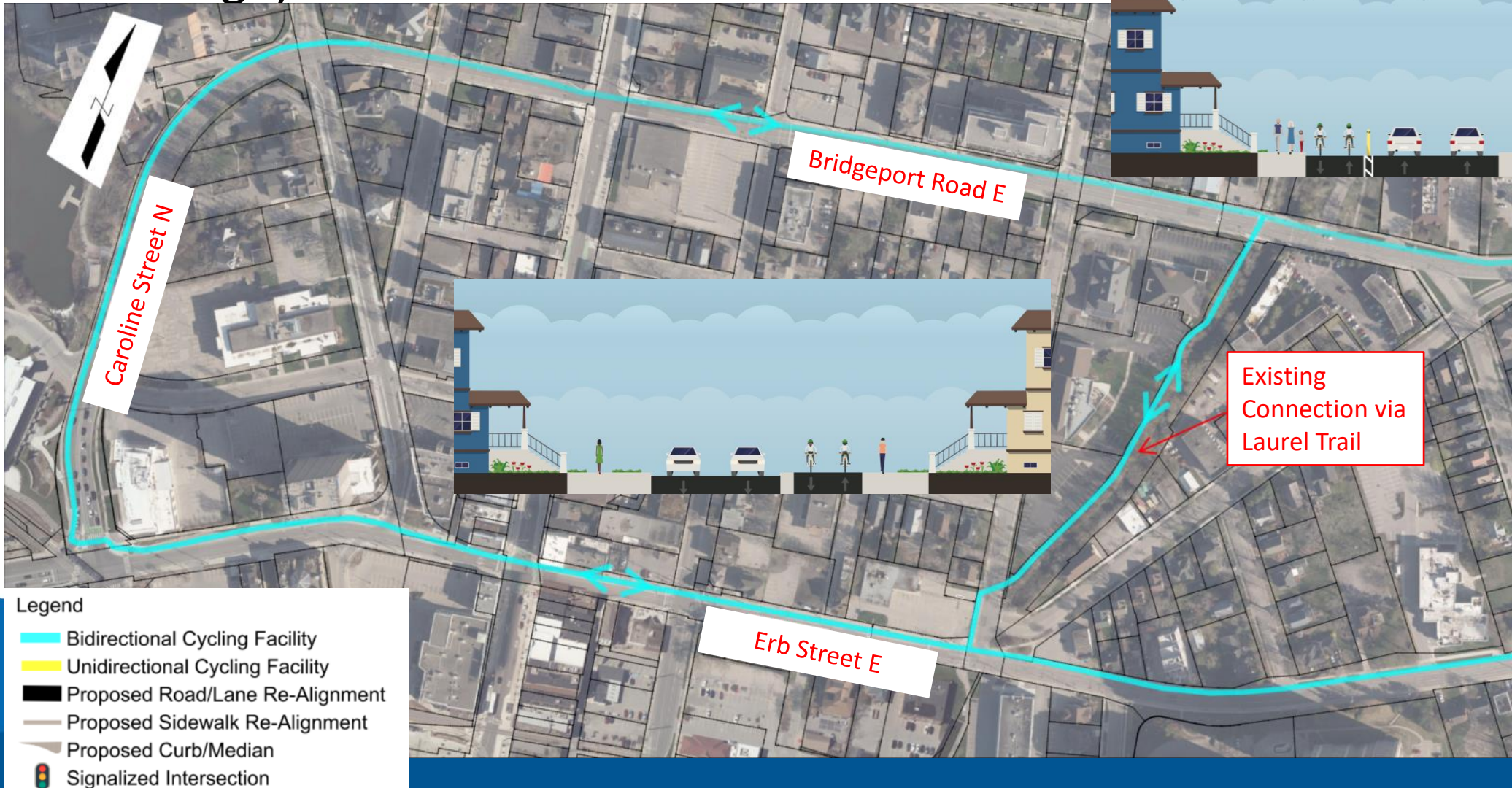
Corridor Option 1

Bidirectional
Facilities on Erb
and Bridgeport
(north side of
Bridgeport east
of interchange)



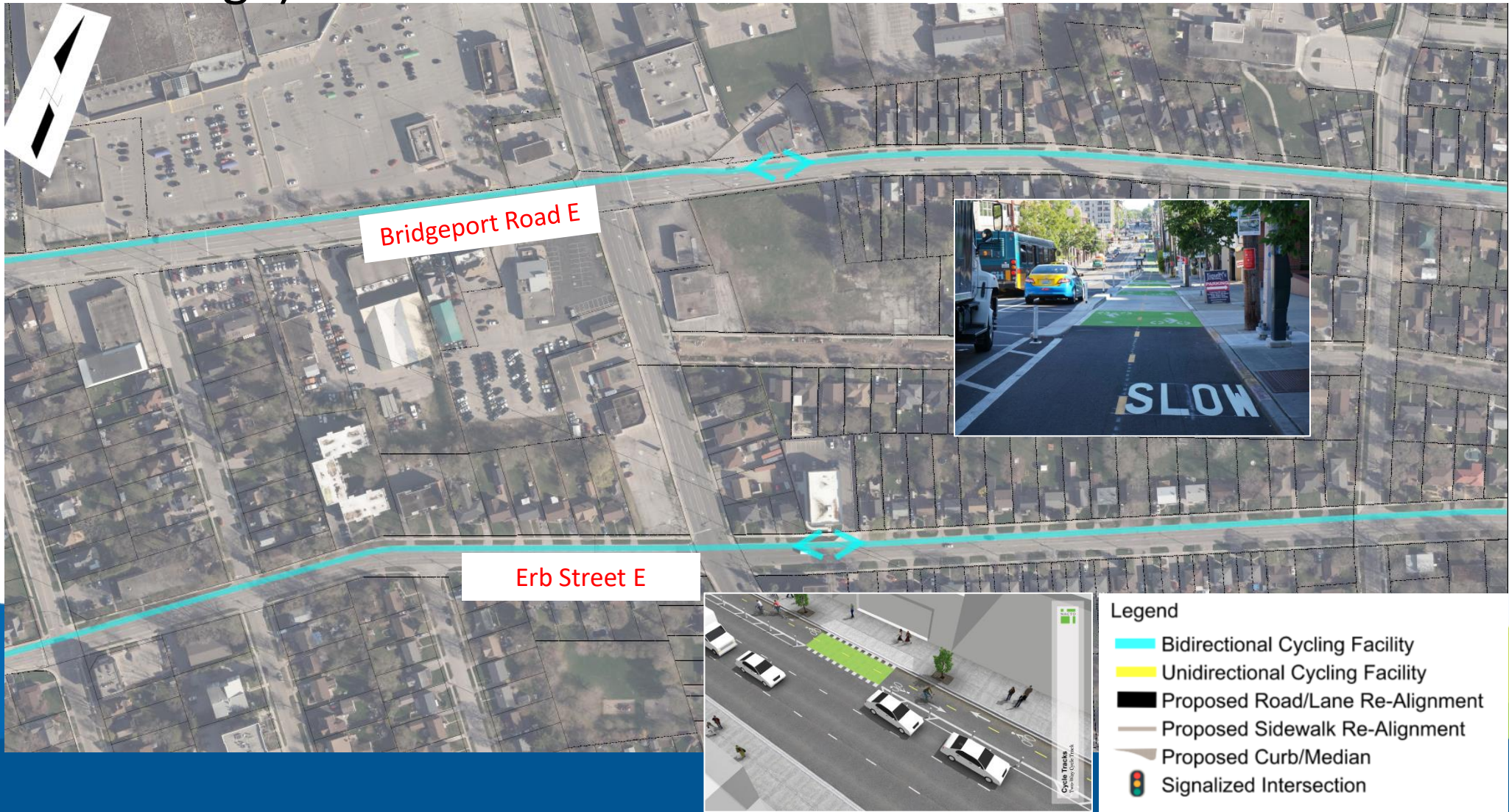
Corridor Option 1

Bidirectional Facilities on Erb and Bridgeport (north side east of interchange)



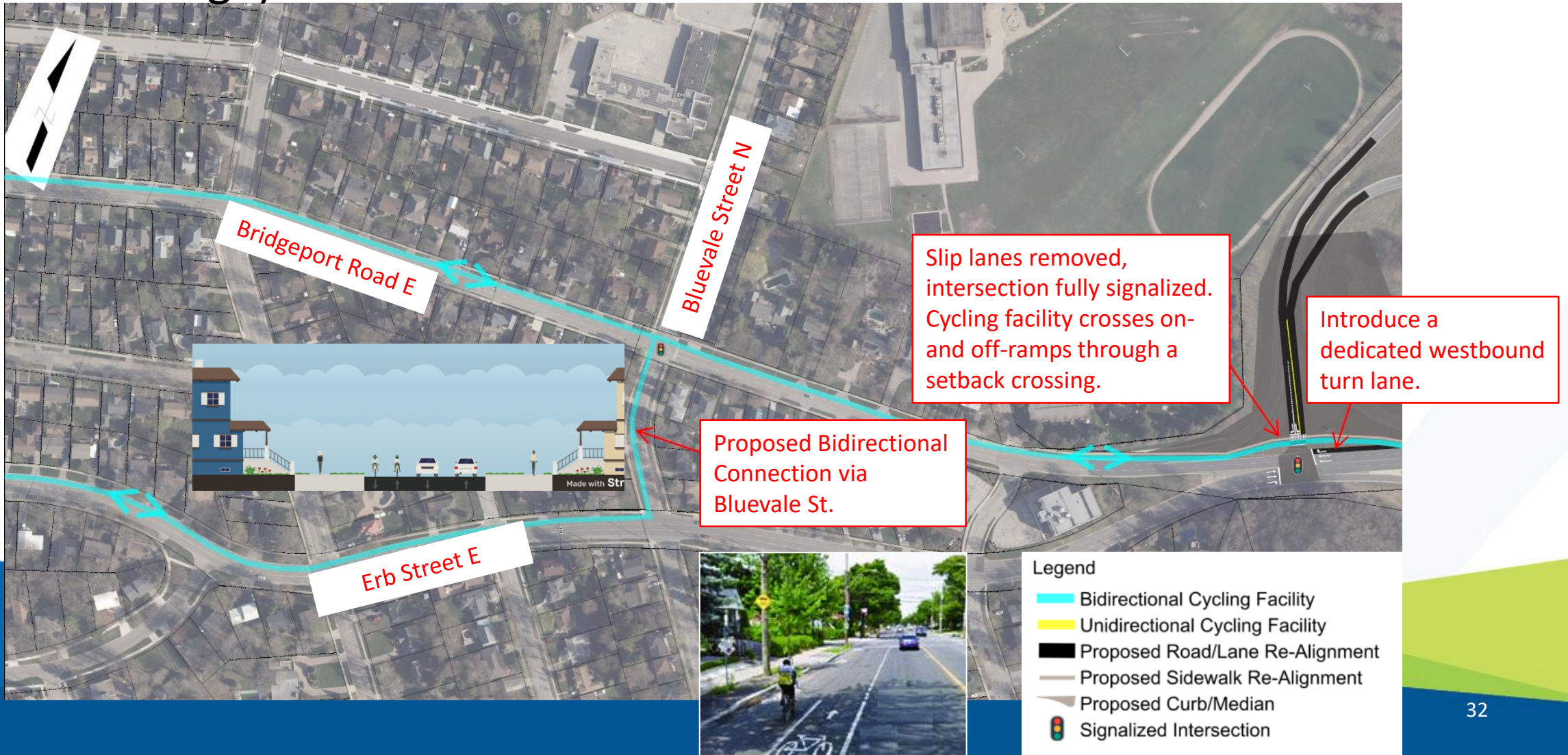
Corridor Option 1

Bidirectional Facilities on Erb and Bridgeport (north side east of interchange)



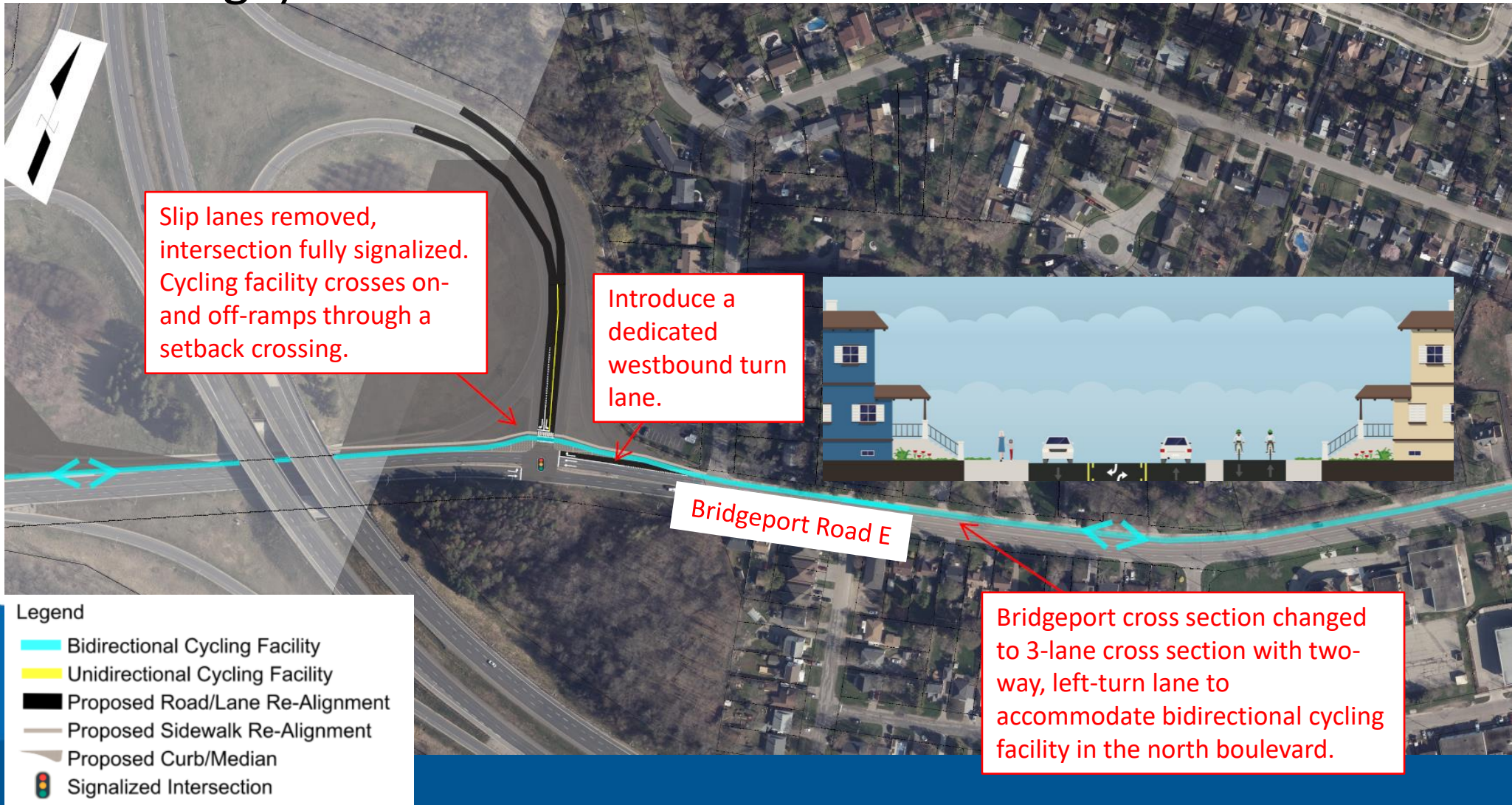
Corridor Option 1

Bidirectional Facilities on Erb and Bridgeport (north side east of interchange)



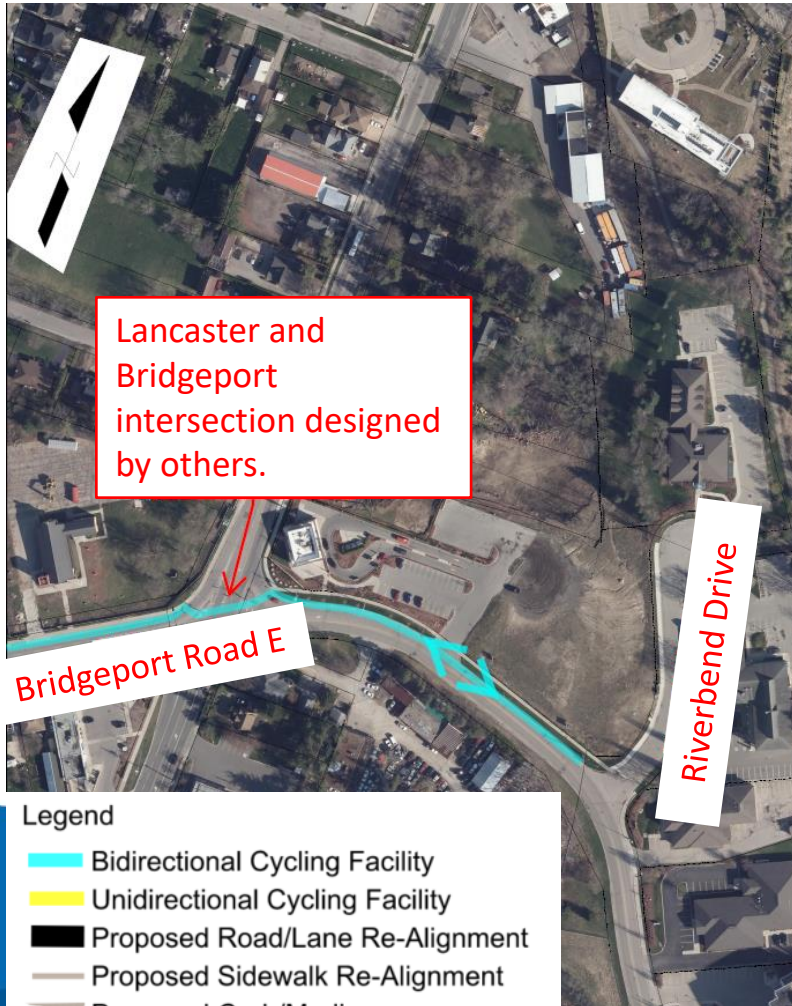
Corridor Option 1

Bidirectional Facilities on Erb and Bridgeport (north side east of interchange)



Corridor Option 1

Bidirectional Facilities on Erb and Bridgeport (north side east of interchange)



Corridor Option 1

Bidirectional Facilities on Erb and Bridgeport (north side east of interchange)

Pros



- Complete Streets approach
- East-west cycling connection
- Intersection operation
- Cyclist safety due to physical separation
- **Cost**
- No impacts to the natural or cultural heritage environment or utilities

Cons

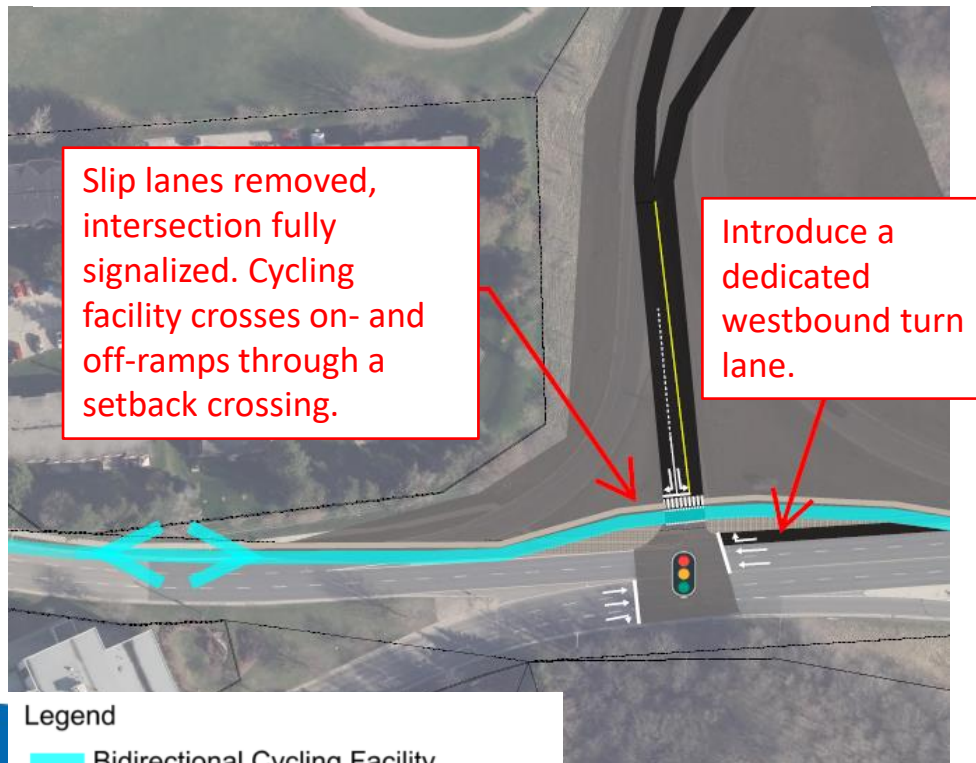


- Potential conflicts between transit and cyclists along Bridgeport
- Risk for cyclist/motor vehicle collisions at intersections and driveways, requiring more complex design countermeasures
- Delay for motor vehicles

Corridor Option 1

North Side Highway 85 Crossings

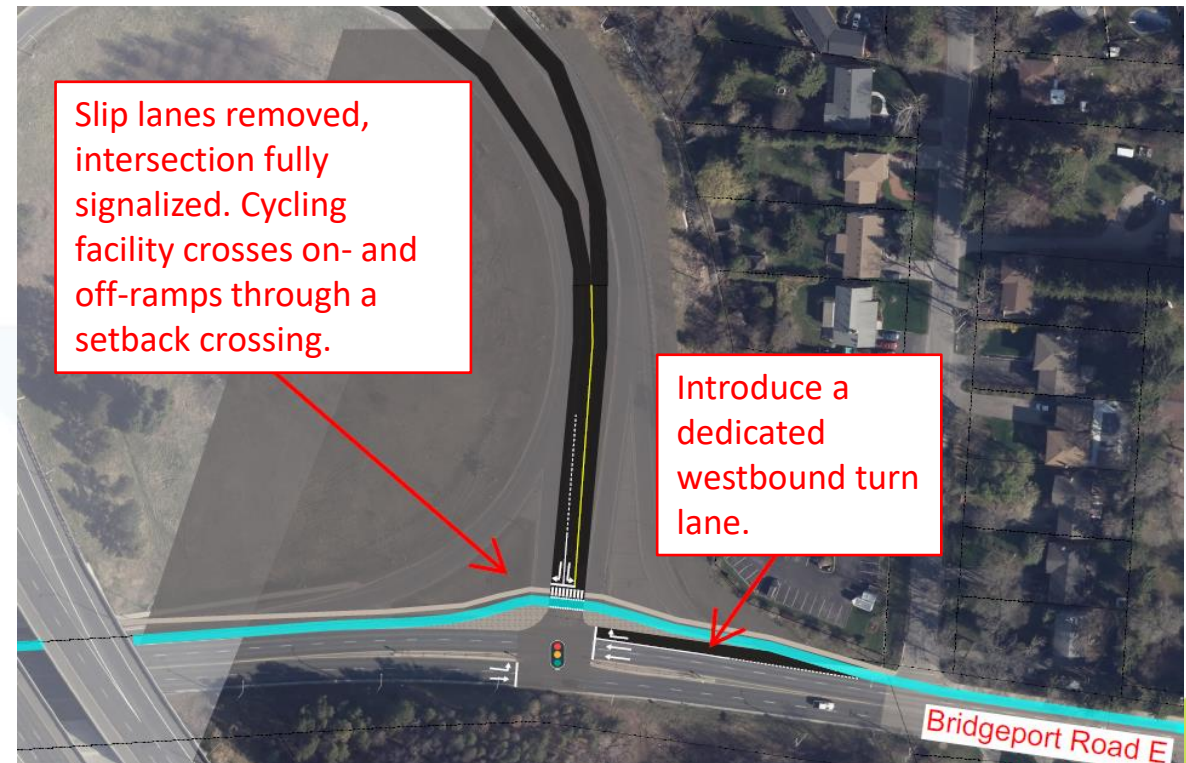
Highway 85 West Interchange



Legend

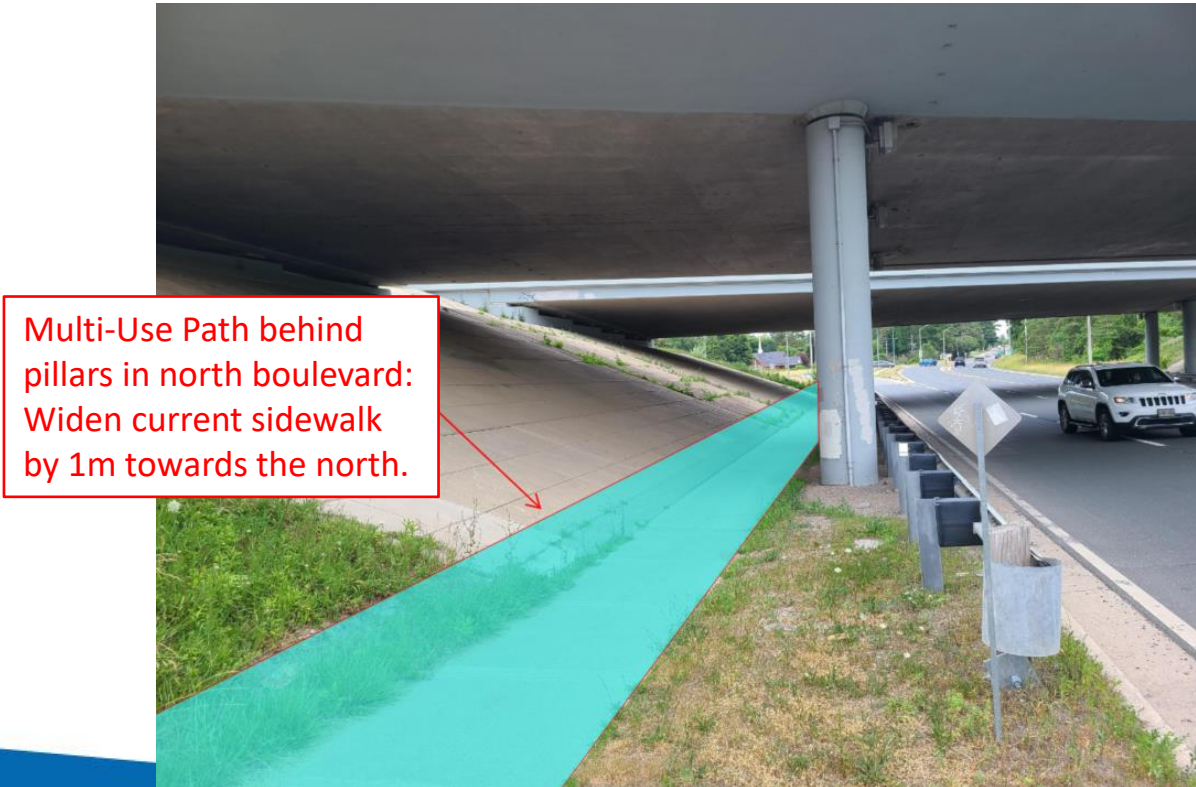
-  Bidirectional Cycling Facility
-  Unidirectional Cycling Facility
-  Proposed Road/Lane Re-Alignment
-  Proposed Sidewalk Re-Alignment
-  Proposed Curb/Median
-  Signalized Intersection

Highway 85 East Interchange



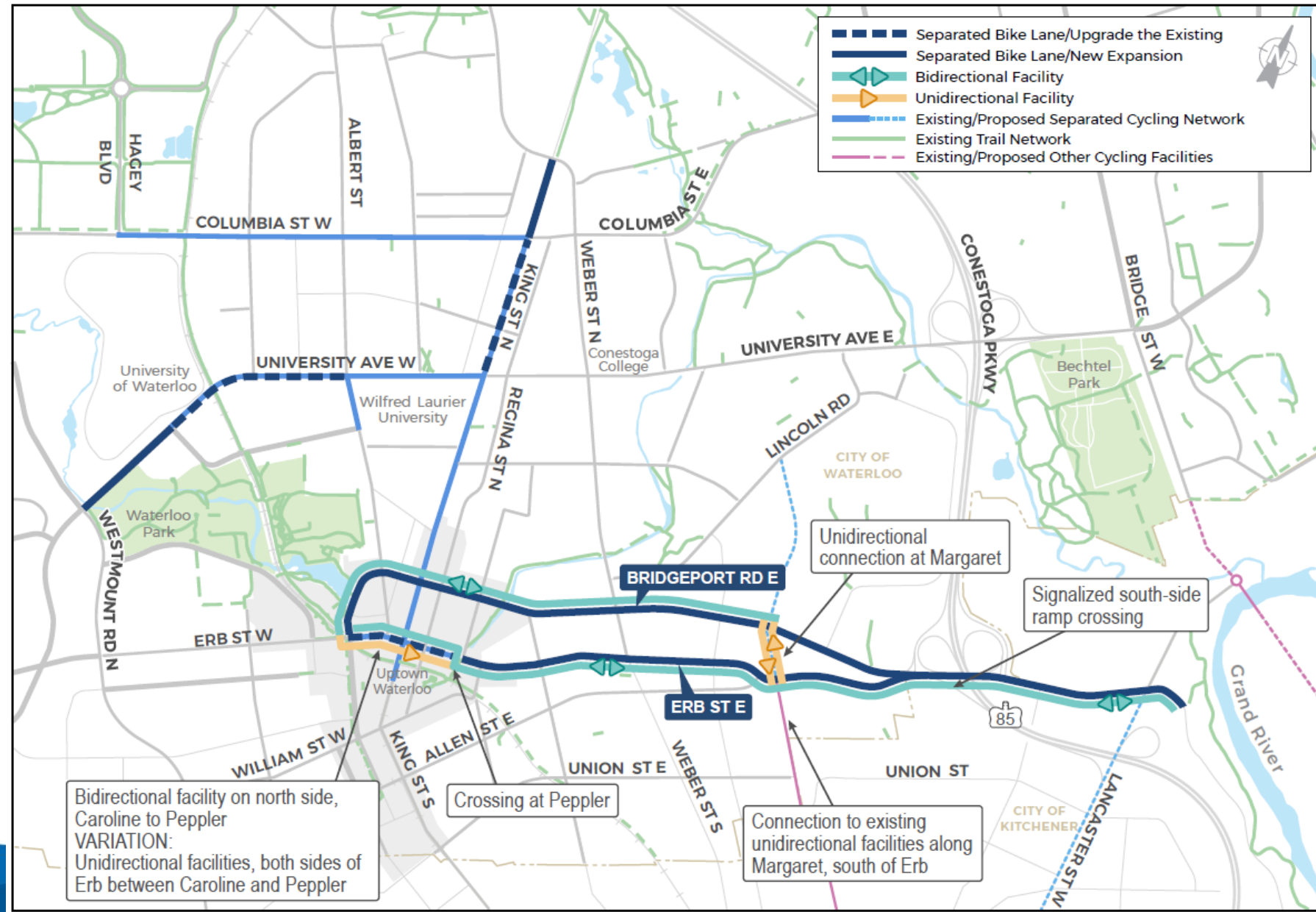
Corridor Option 1

Options under Bridge Structures



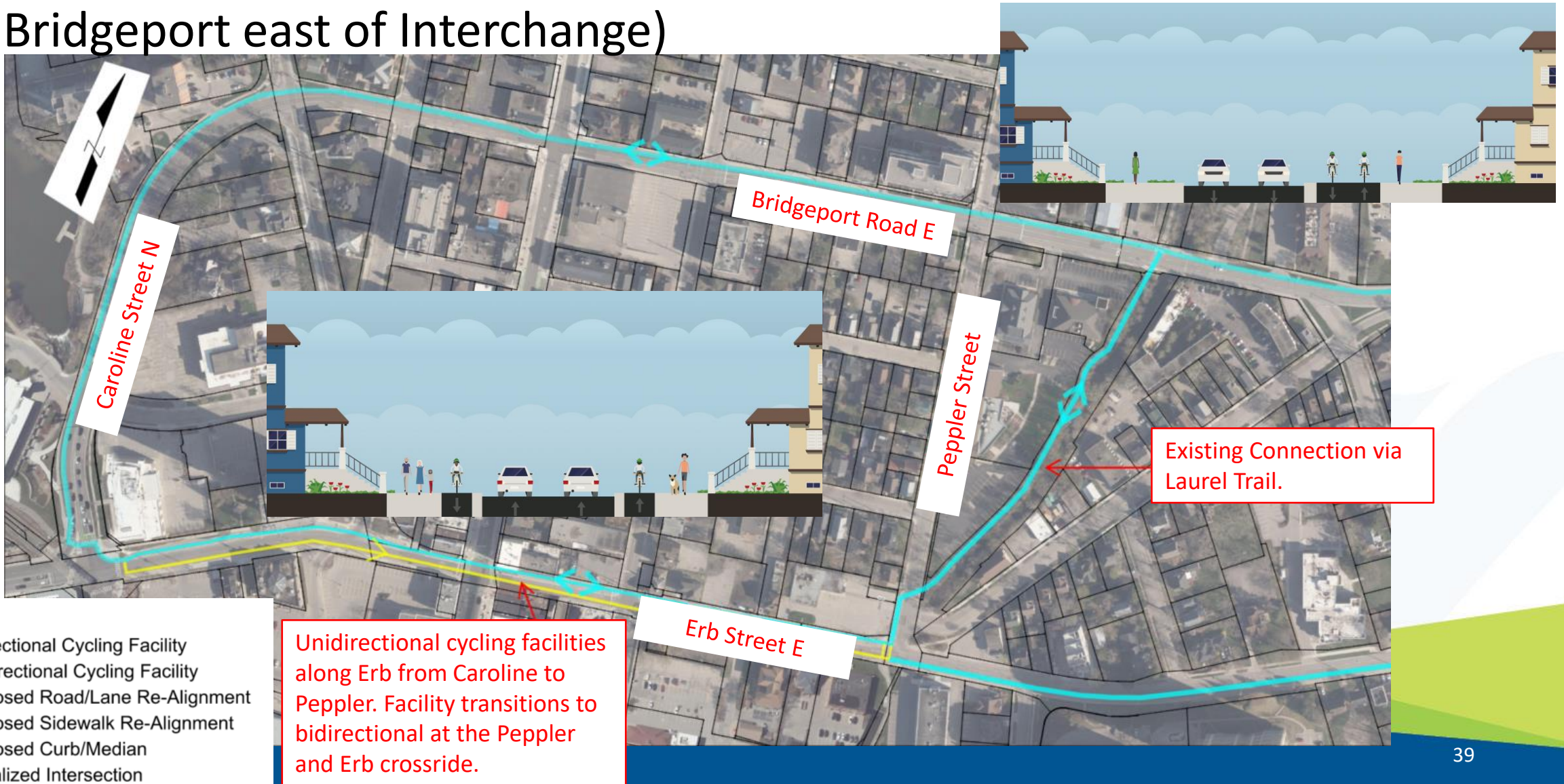
Corridor Option 2

Bidirectional
Facilities on Erb
and Bridgeport,
south side of
Bridgeport east
of interchange



Corridor Option 2

Bidirectional Facilities on Erb and Bridgeport (south side of Bridgeport east of Interchange)



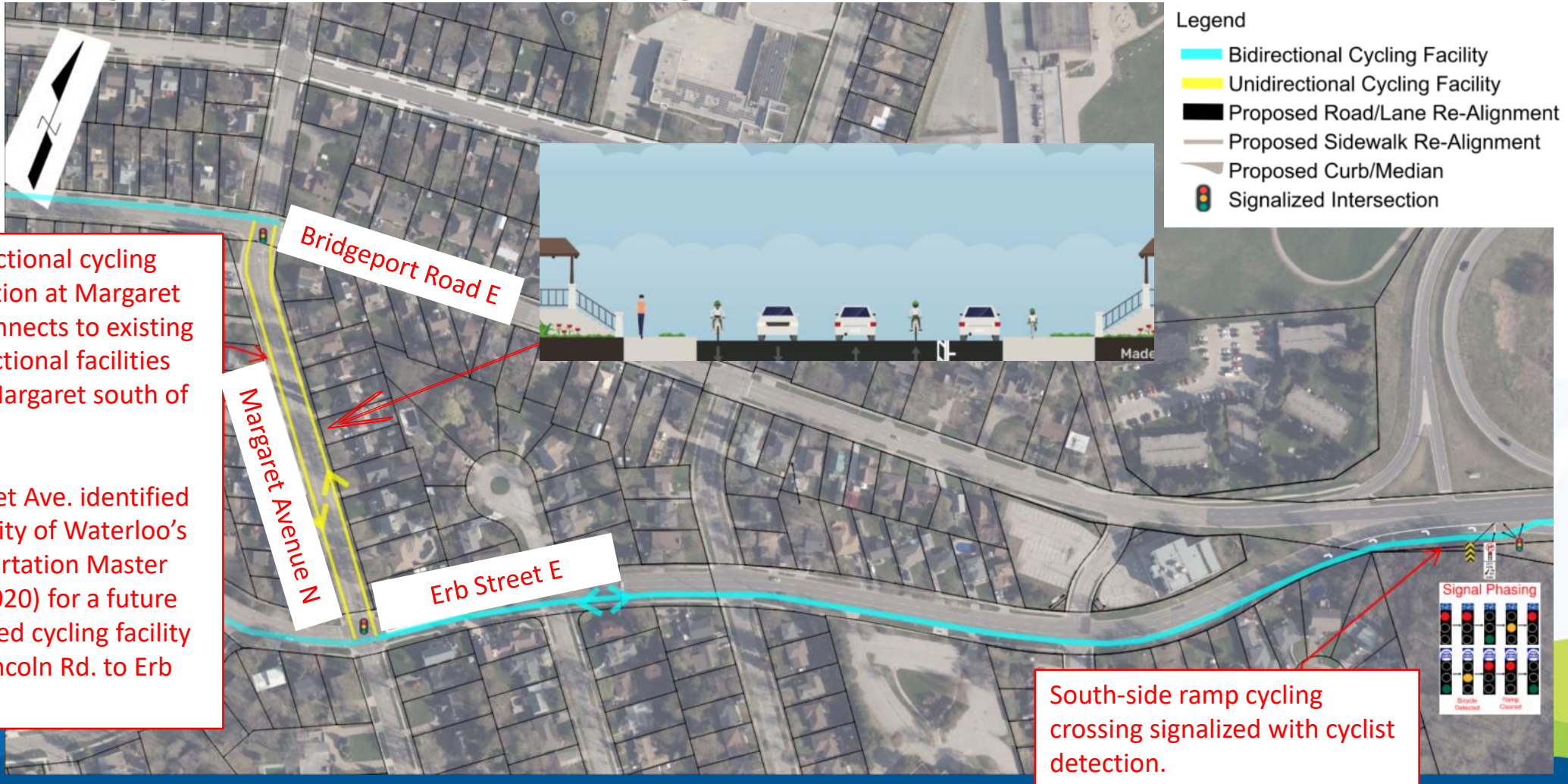
Corridor Option 2

Bidirectional Facilities on Erb and Bridgeport (south side of Bridgeport east of Interchange)



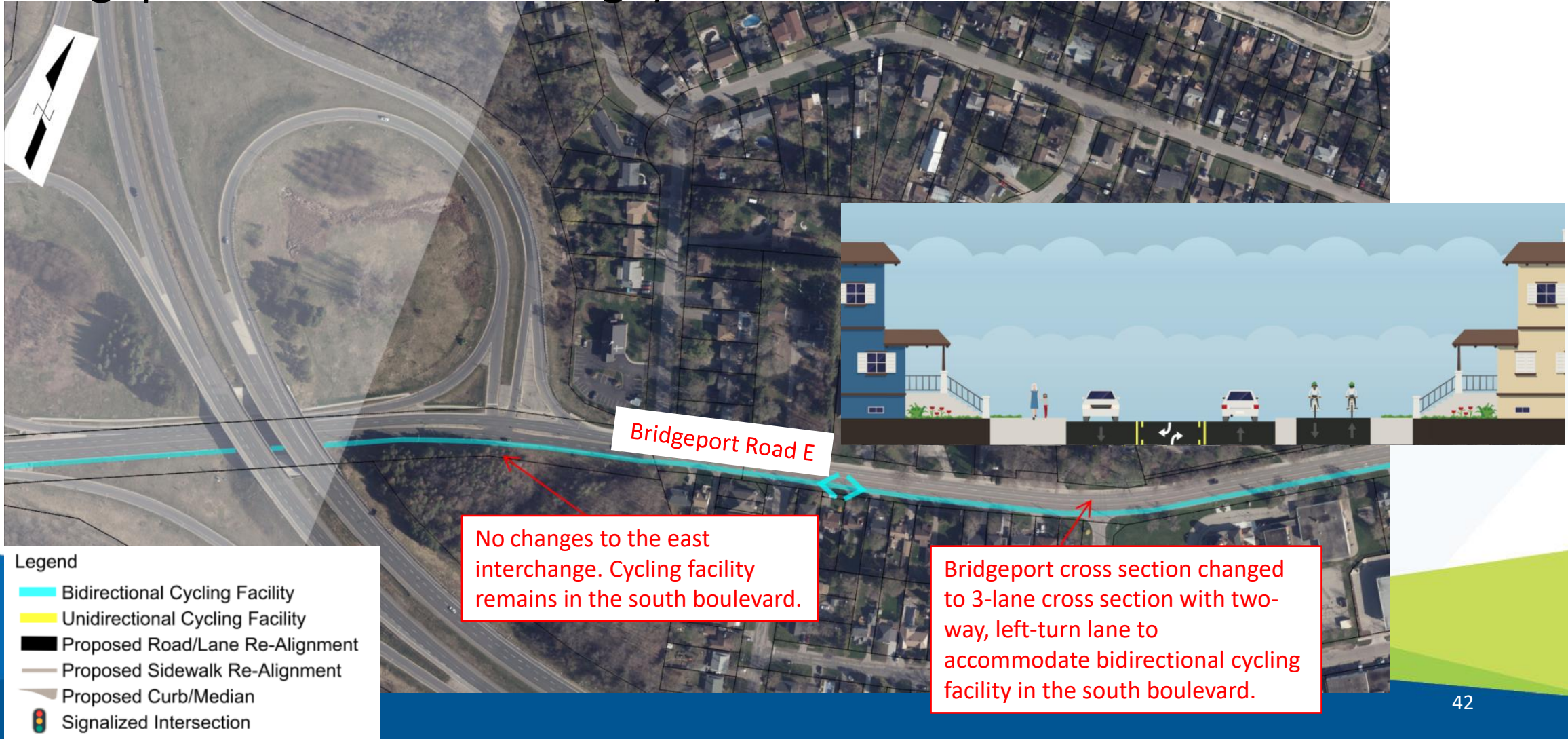
Corridor Option 2

Bidirectional Facilities on Erb and Bridgeport (south side of Bridgeport east of Interchange)



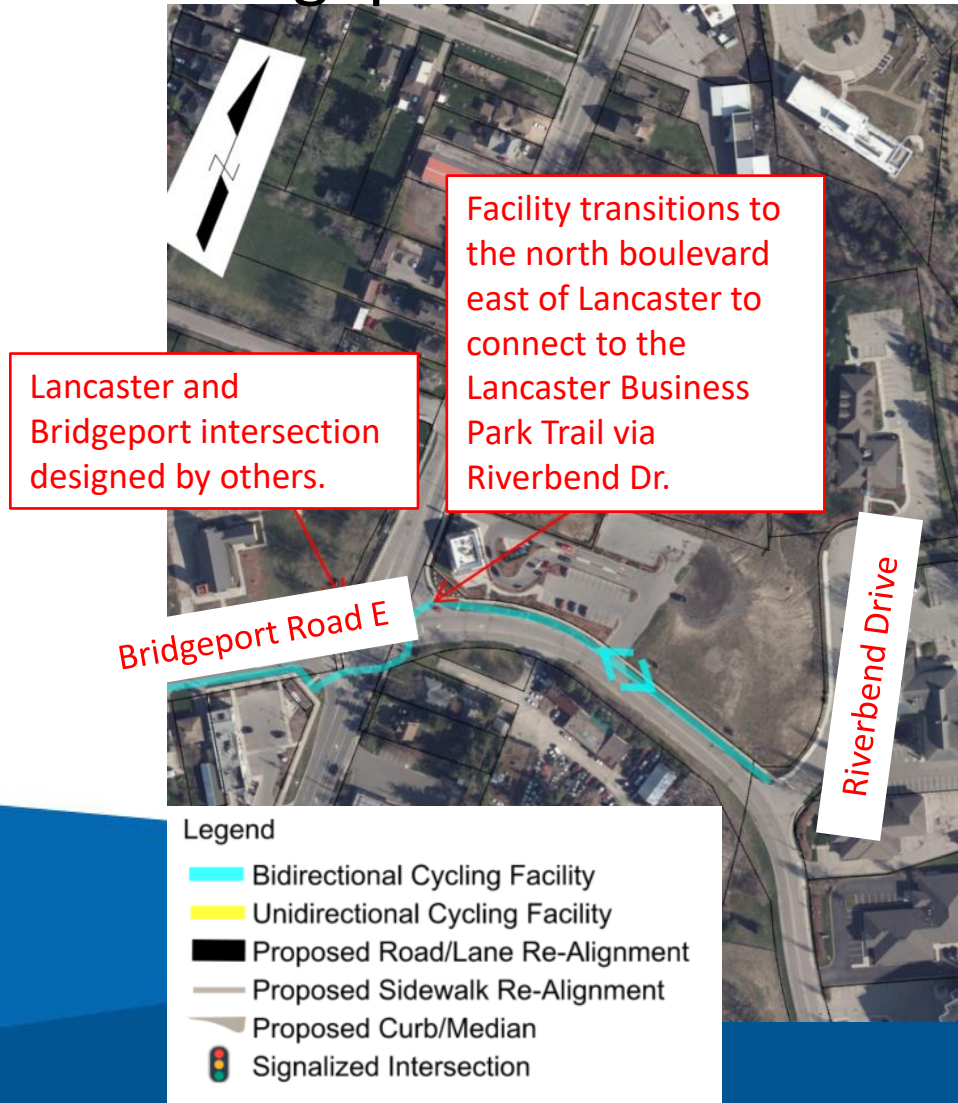
Corridor Option 2

Bidirectional Facilities on Erb and Bridgeport (south side of Bridgeport east of Interchange)



Corridor Option 2

Bidirectional Facilities on Erb and Bridgeport (south side of Bridgeport east of Interchange)



Corridor Option 2

Bidirectional Facilities on Erb and Bridgeport (south side of Bridgeport east of Interchange)

Pros



- Complete Streets approach
- East-west cycling connection
- Intersection operation
- Cyclist safety due to physical separation
- No impacts to the natural or cultural heritage environment or utilities
- **Right-side cycling facility may be safer, compared to left-side**

Cons

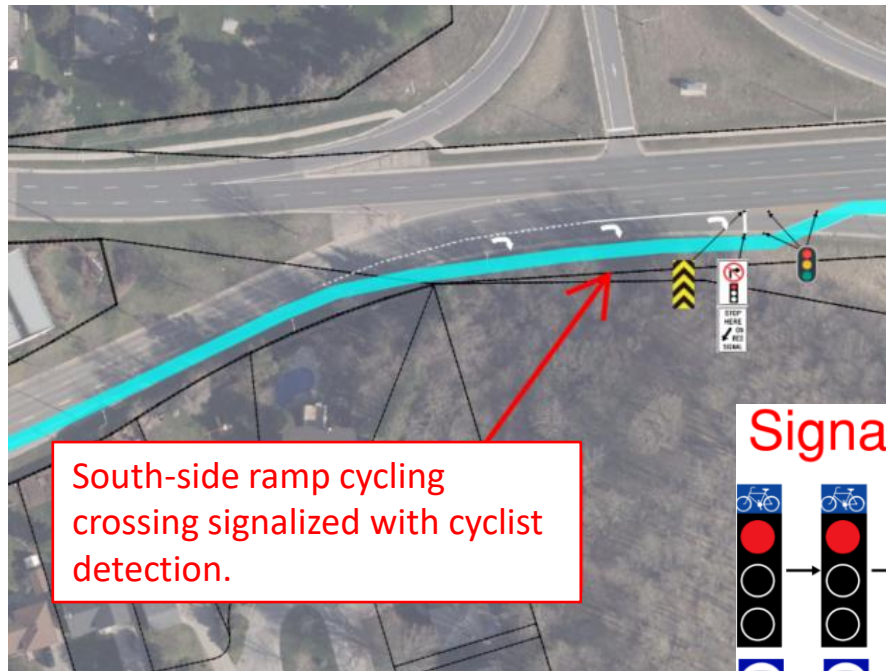


- Potential conflicts between transit users and cyclists
- Risk for cyclist/motor vehicle collisions at intersections and driveways, requiring more complex design countermeasures
- Delay for motor vehicles
- **Potential for “wrong-way” cycling on different corridors due to uni-directional facility**

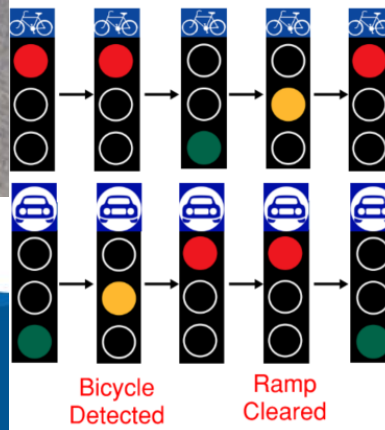
Corridor Option 2

South Side Highway 85 Crossings

Highway 85 West Interchange



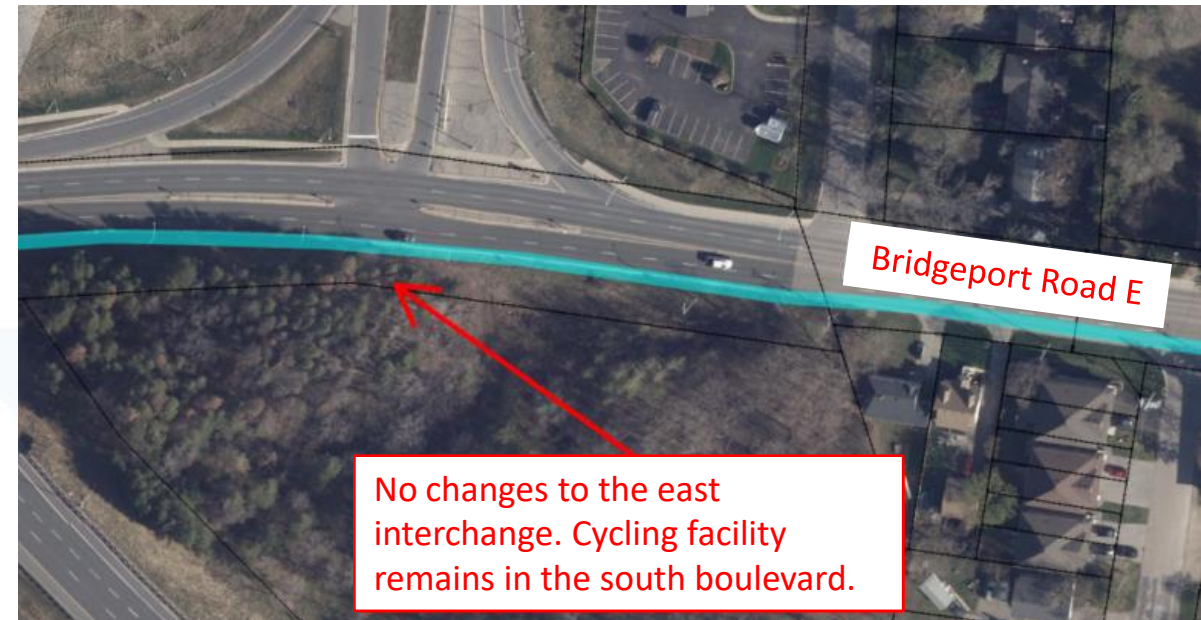
Signal Phasing



Legend

- Bidirectional Cycling Facility
- Unidirectional Cycling Facility
- Proposed Road/Lane Re-Alignment
- Proposed Sidewalk Re-Alignment
- Proposed Curb/Median
- Signalized Intersection

Highway 85 East Interchange

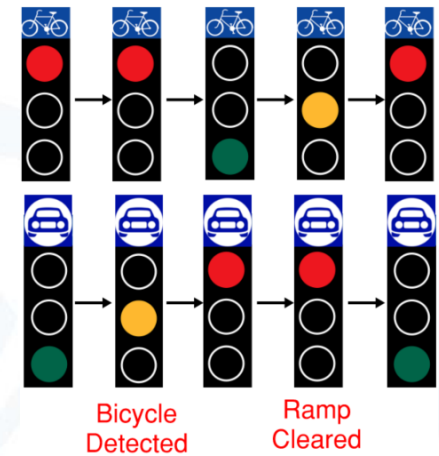


Corridor Option 2

Signalized On-Ramp Example: Danforth and DVP On-Ramp (Toronto)

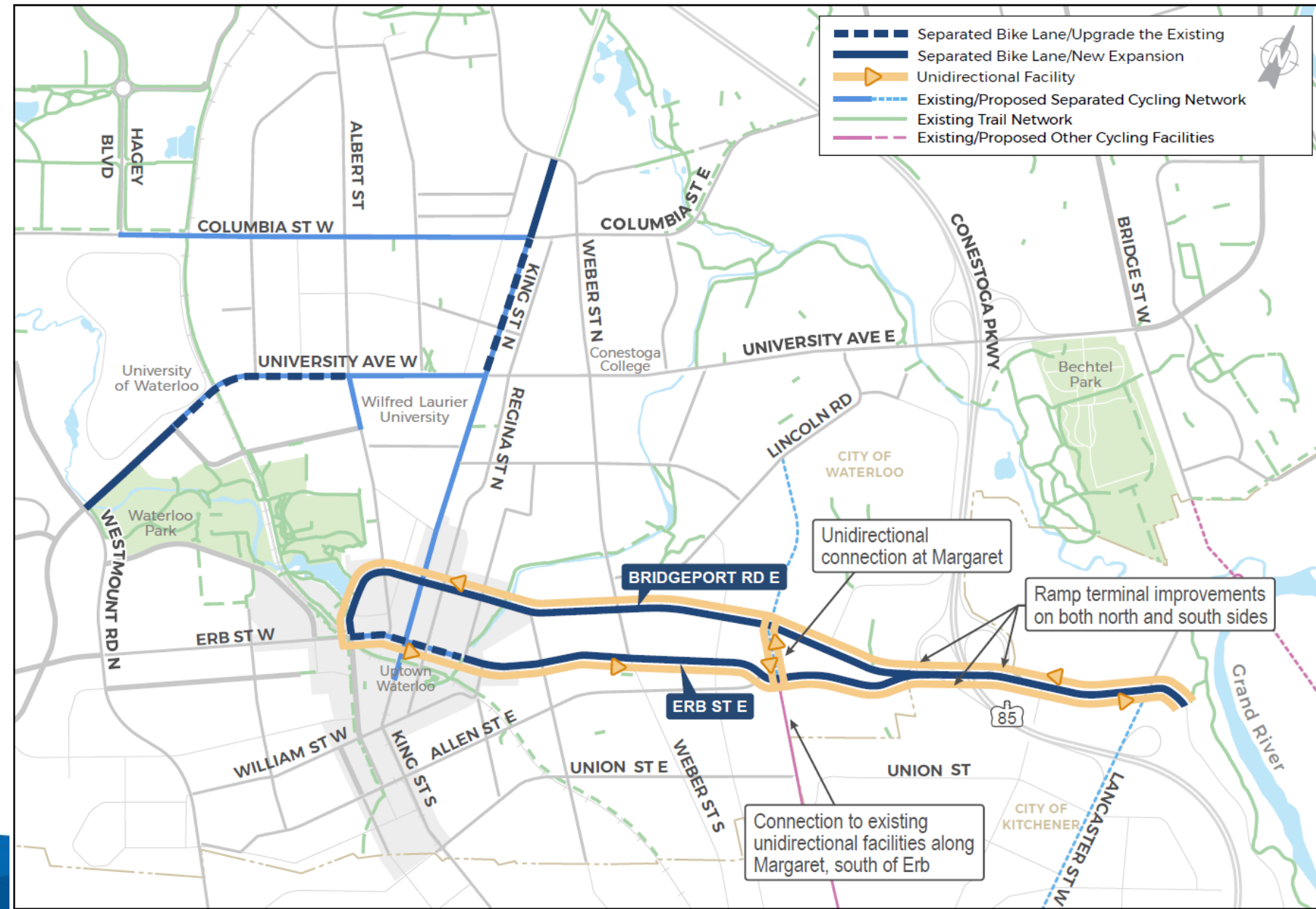


Signal Phasing



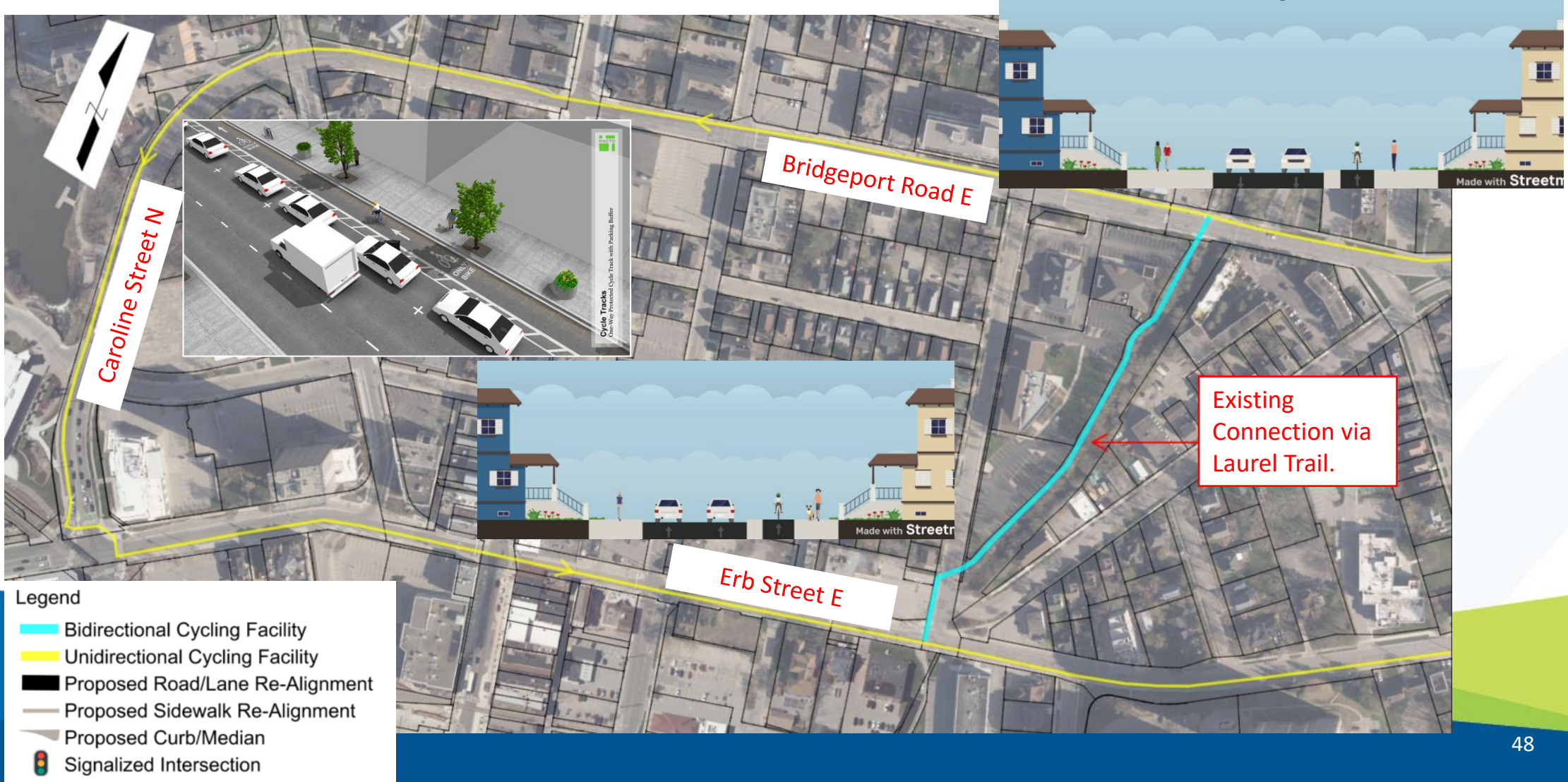
Corridor Option 3

Unidirectional Facilities on Erb and Bridgeport



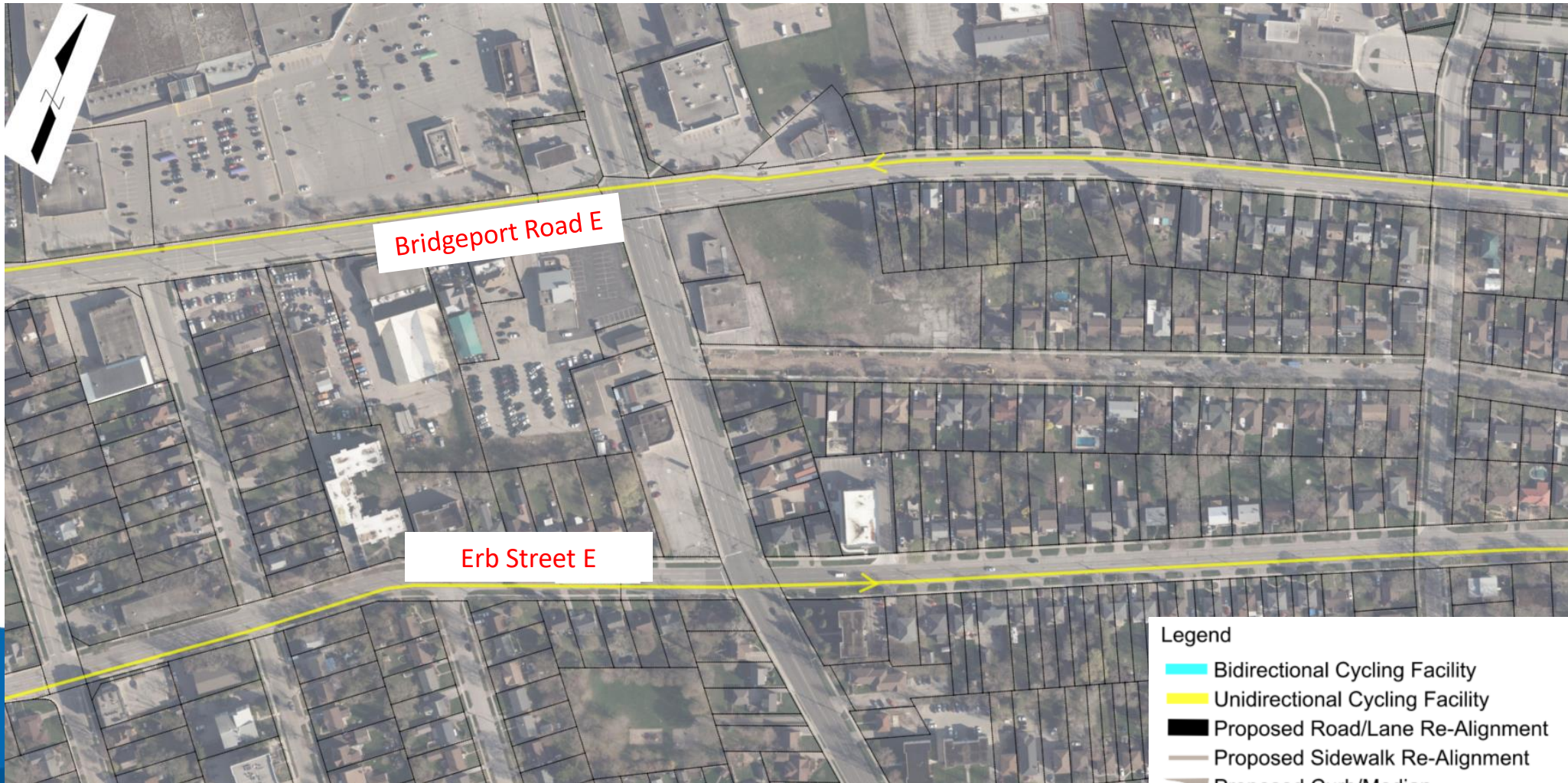
Corridor Option 3

Unidirectional Facilities on Erb and Bridgeport



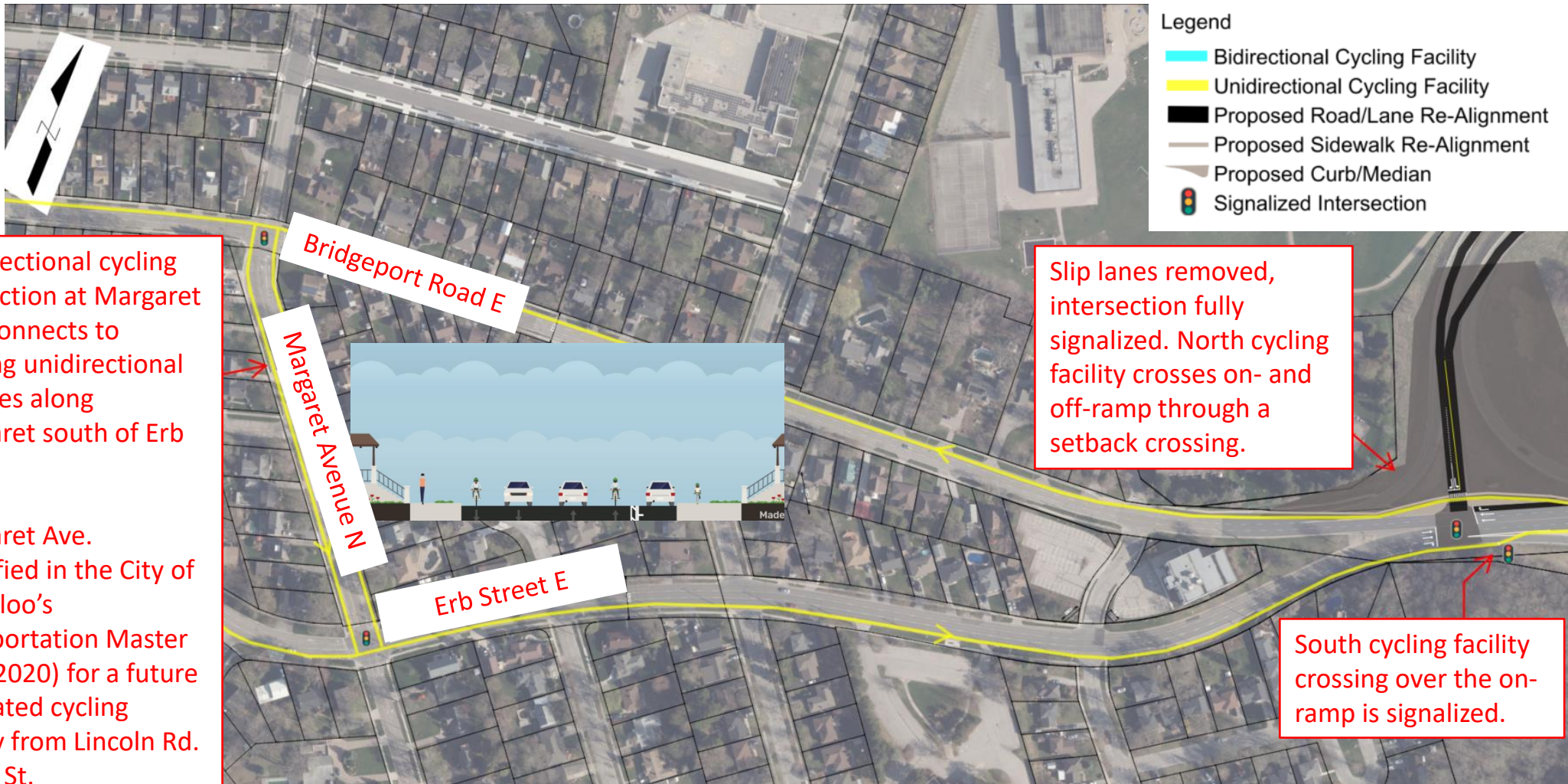
Corridor Option 3

Unidirectional Facilities on Erb and Bridgeport



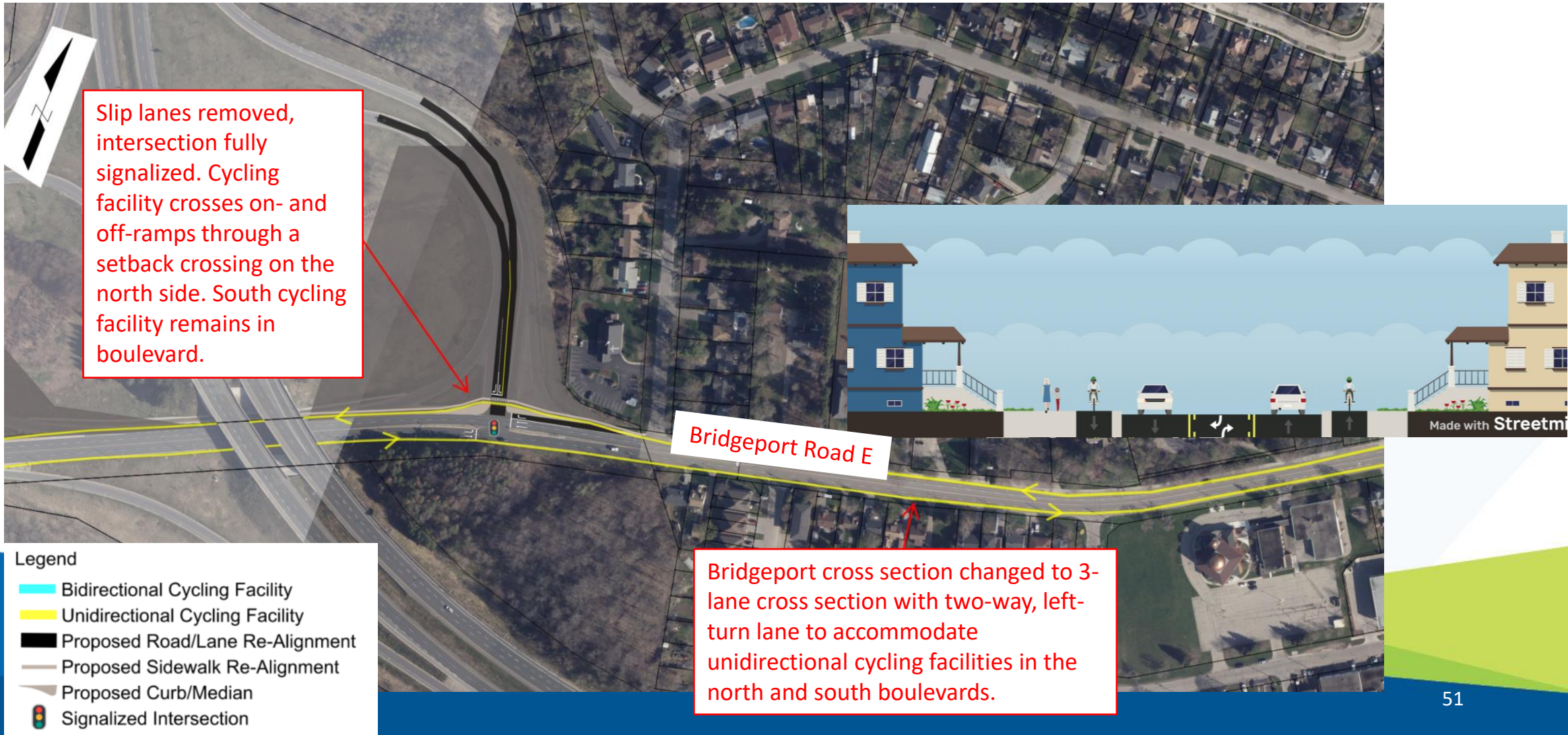
Corridor Option 3

Unidirectional Facilities on Erb and Bridgeport



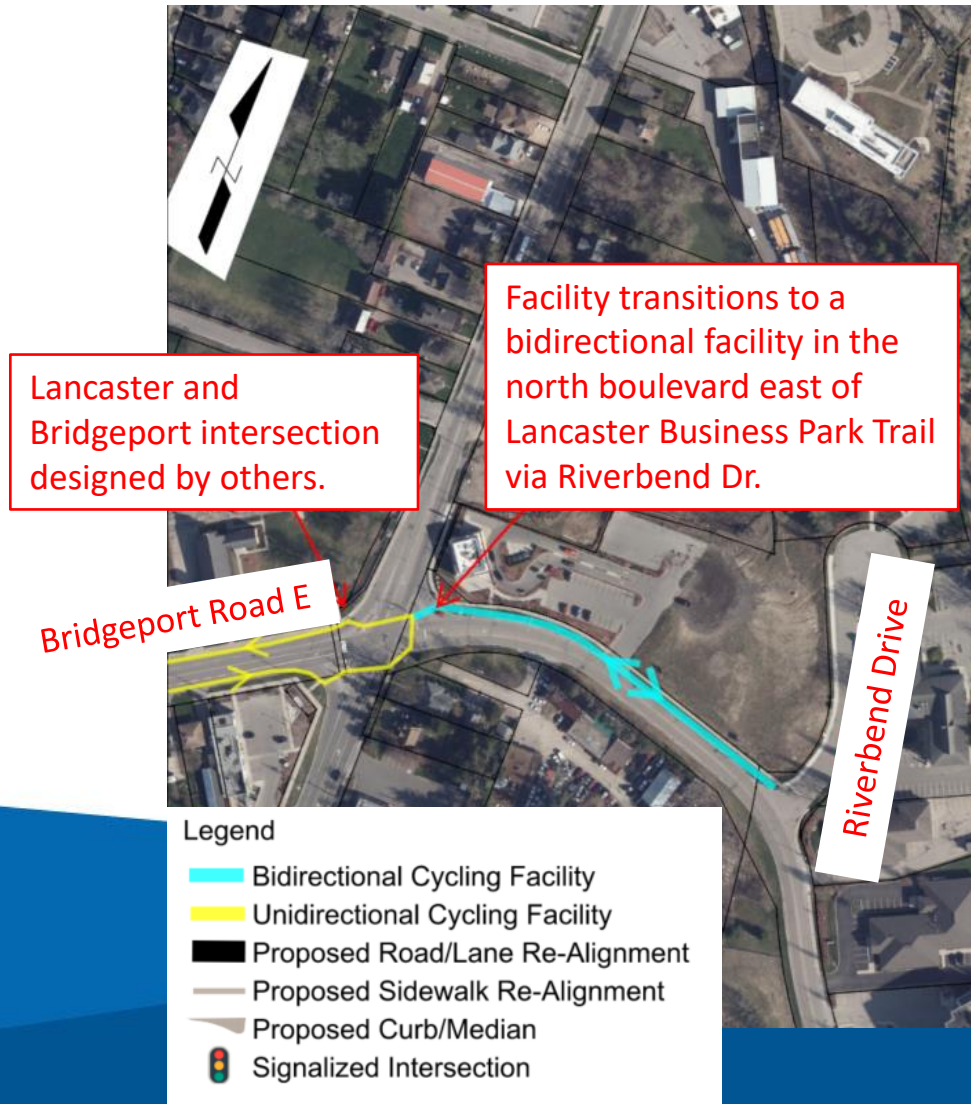
Corridor Option 3

Unidirectional Facilities on Erb and Bridgeport



Corridor Option 3

Unidirectional Facilities on Erb and Bridgeport



Corridor Option 3

Unidirectional Facilities on Erb and Bridgeport

Pros



- Complete Streets approach
- East-west cycling connection
- Intersection operation
- Cyclist safety due to physical separation
- No impacts to the natural or cultural heritage environment
- **Conflict mitigation at driveways compared to bidirectional facilities**

Cons

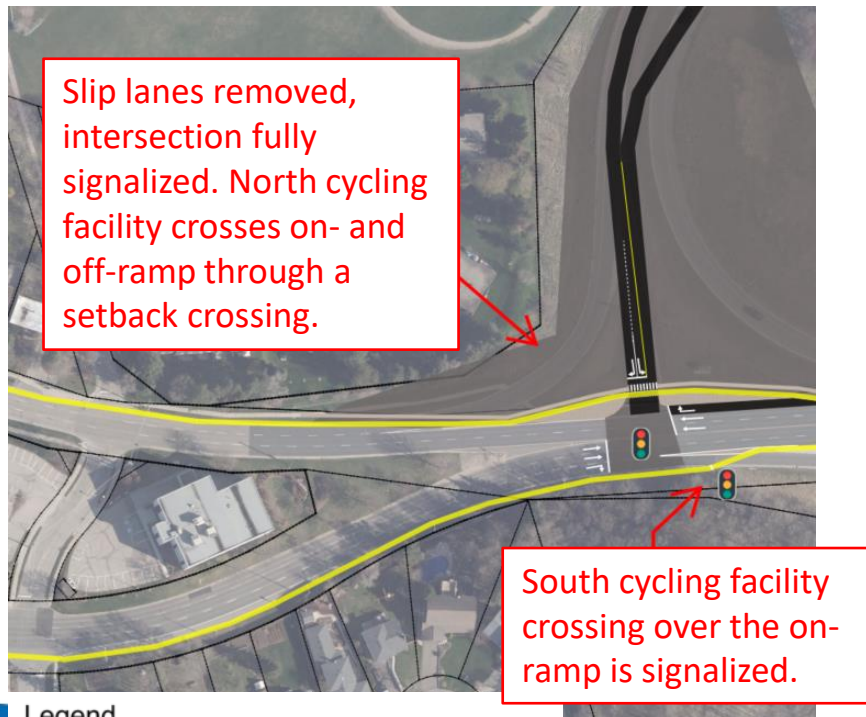


- Potential conflicts between transit users and cyclists on the north side
- Reduced safety for cyclists at interchanges
- Delay for motor vehicles
- **Potential for “wrong-way” cycling on different corridors due to uni-directional facilities**
- **More space required and more construction = higher costs and longer disruption periods**

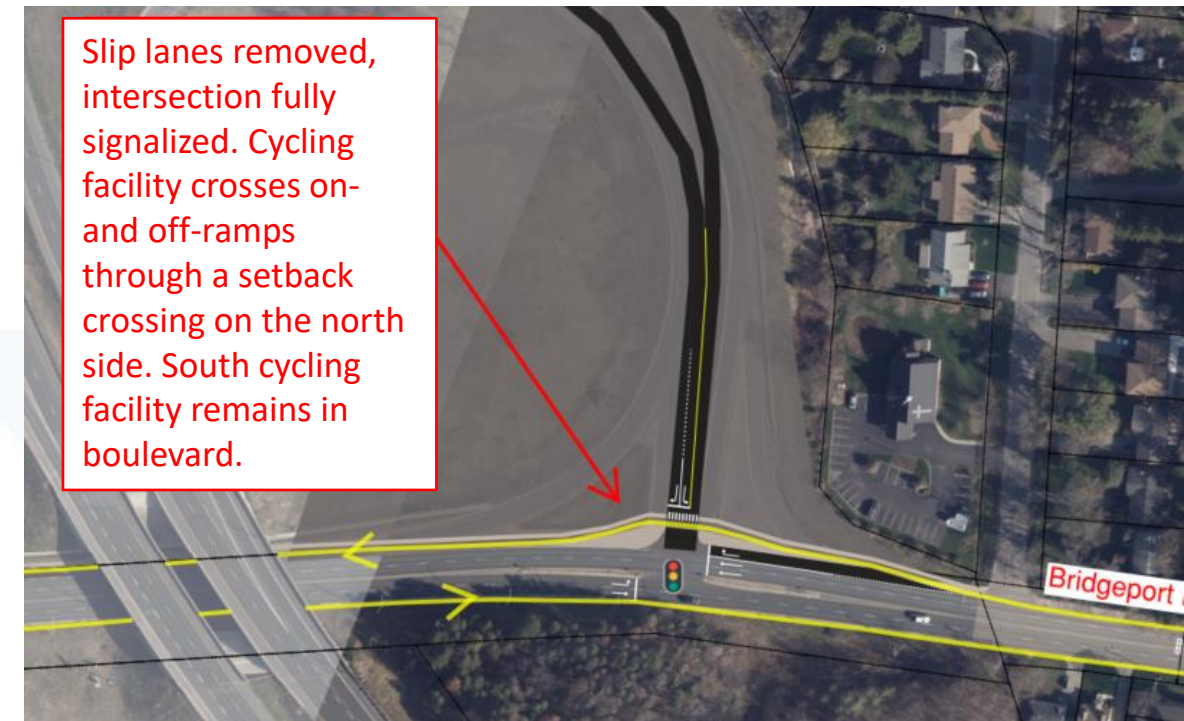
Corridor Option 3

Highway 85 Crossings

Highway 85 West Interchange

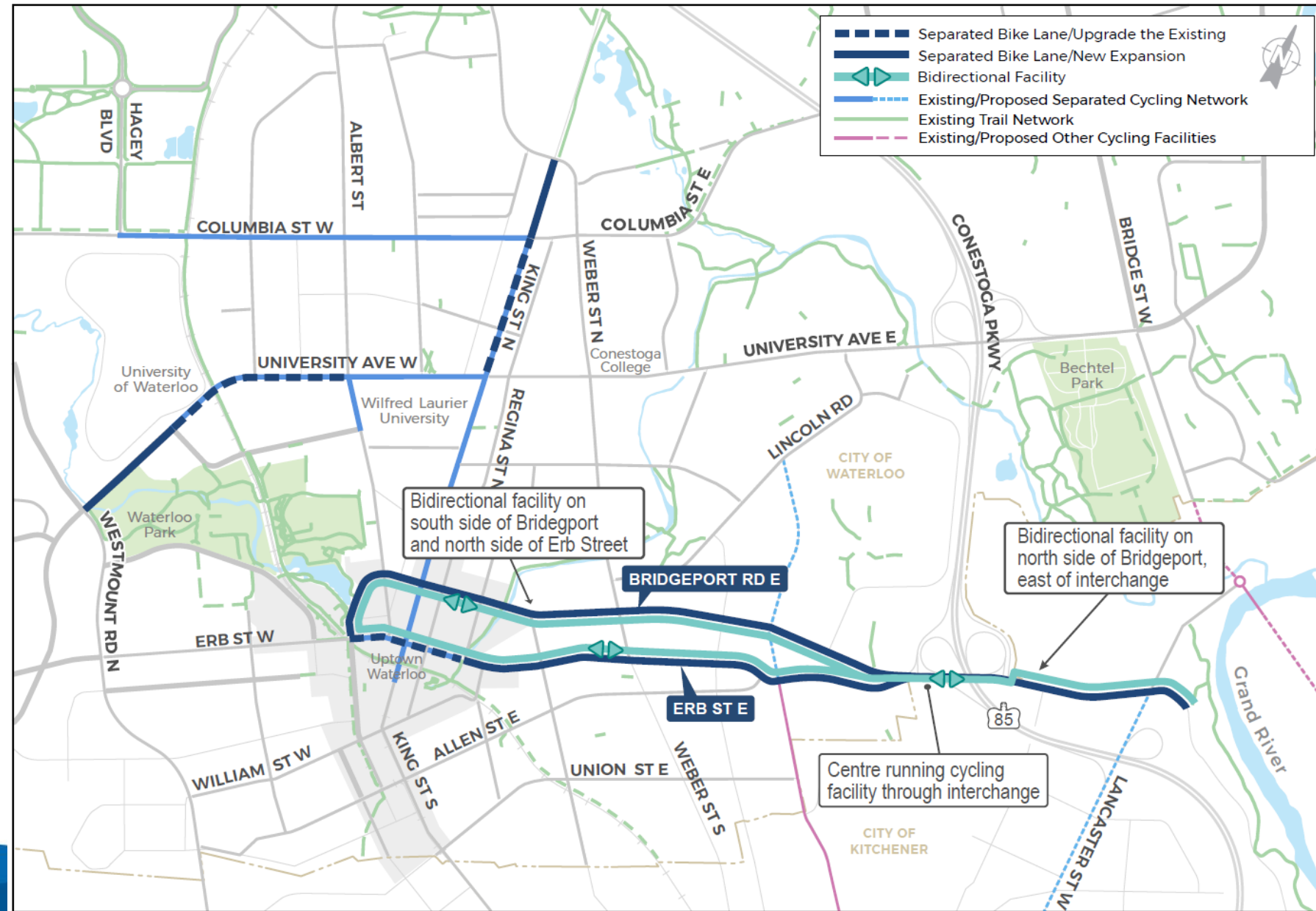


Highway 85 East Interchange



Corridor Option 4

Centre
Running
Cycling Facility
through
Interchange



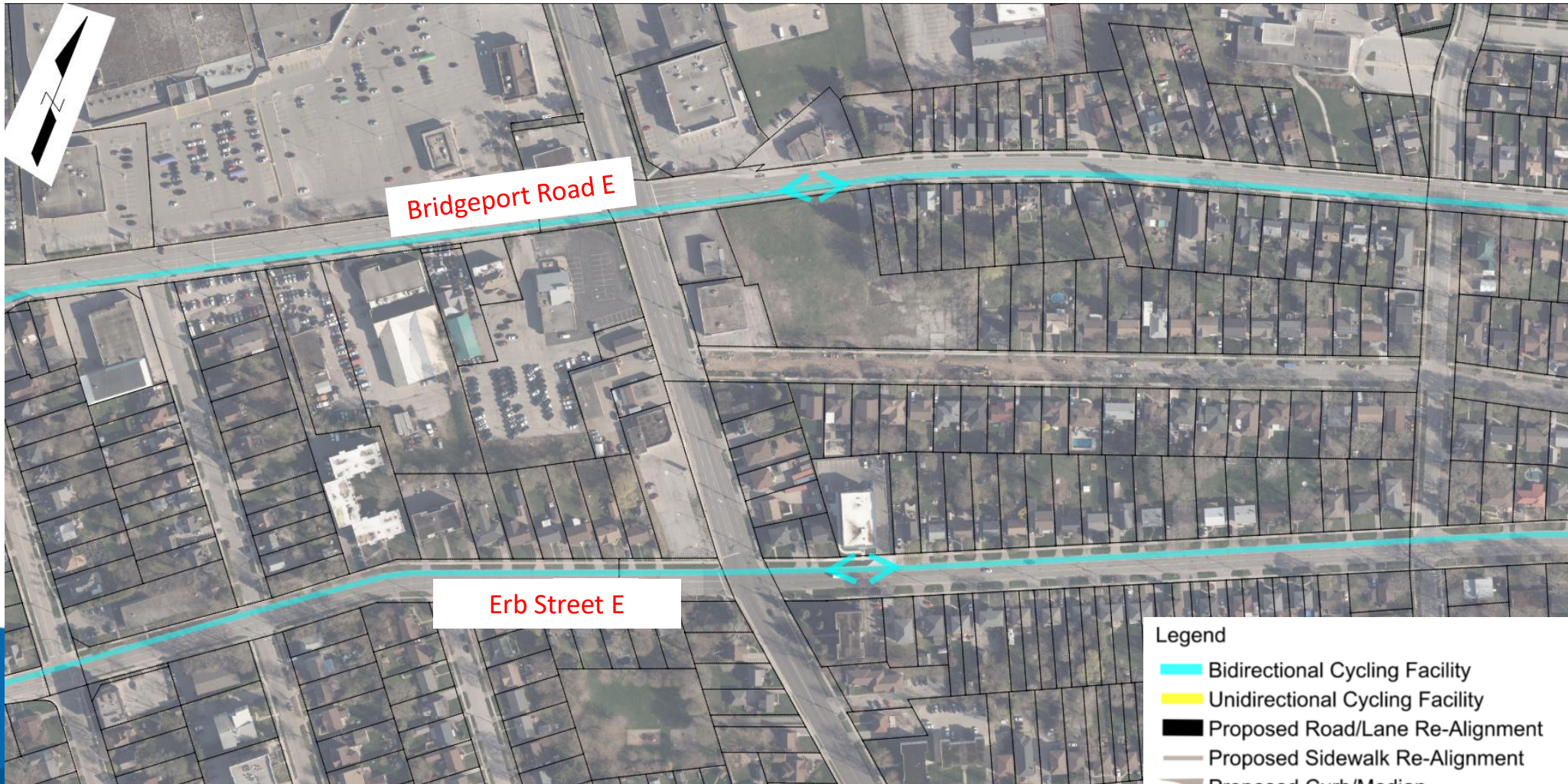
Corridor Option 4

Centre Running Cycling Facility through Interchange



Corridor Option 4

Centre Running Cycling Facility through Interchange



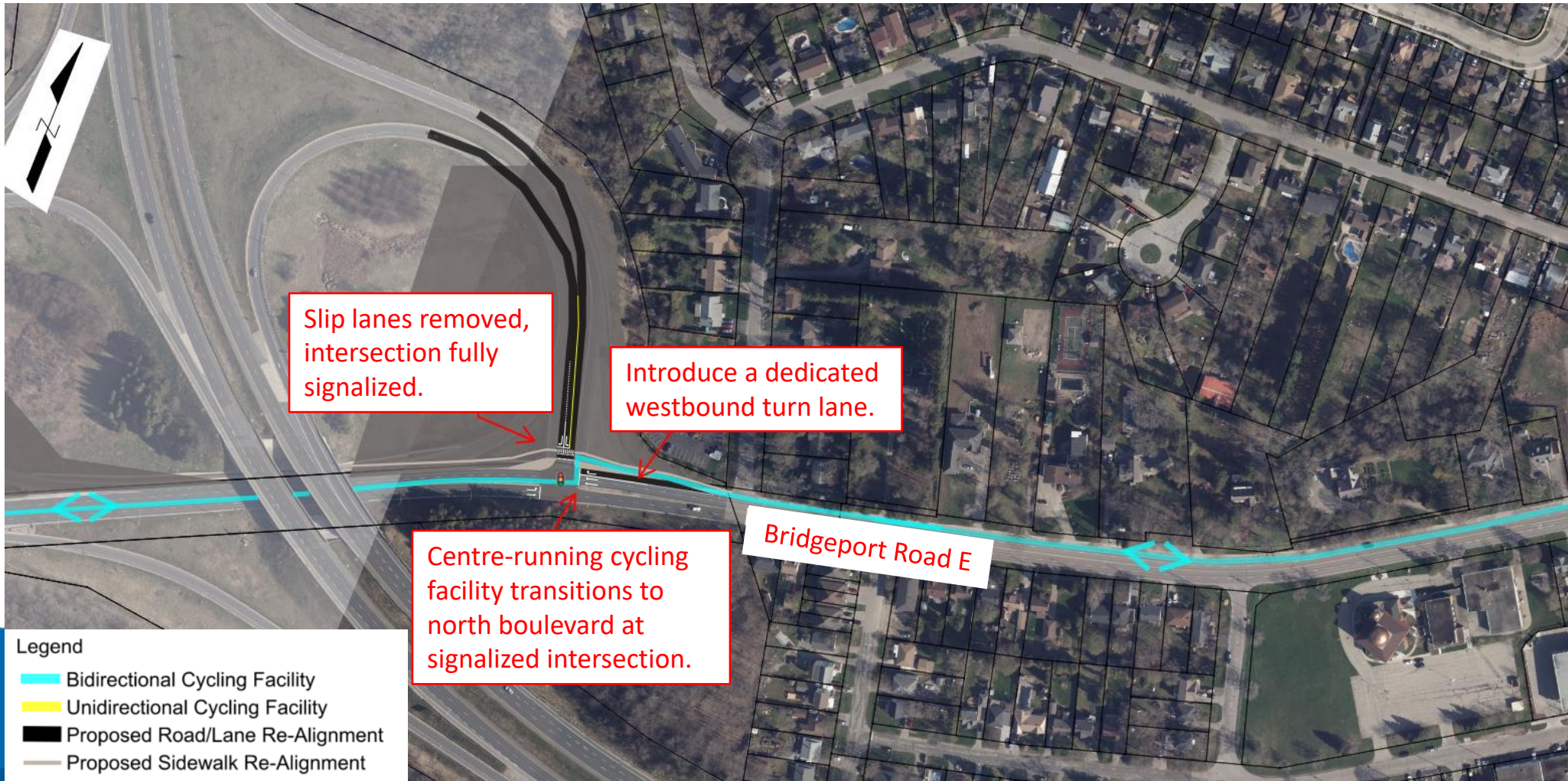
Corridor Option 4

Centre Running Cycling Facility through Interchange



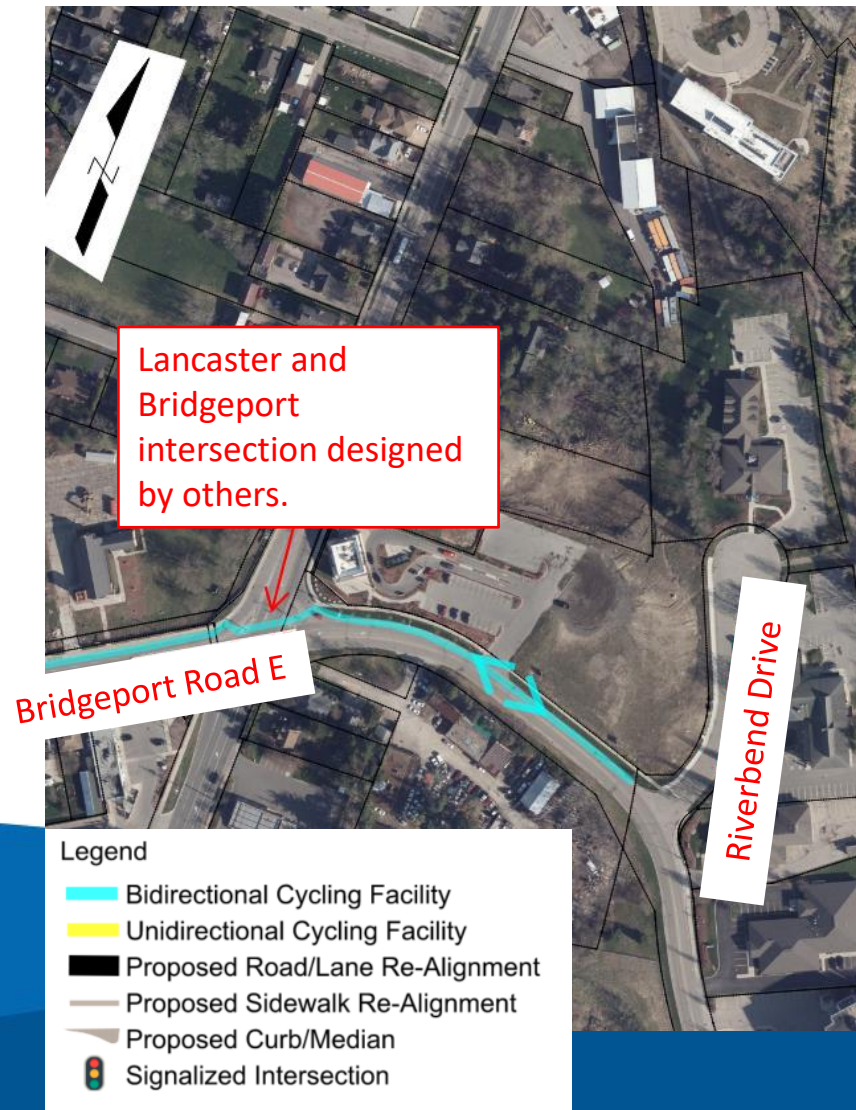
Corridor Option 4

Centre Running Cycling Facility through Interchange



Corridor Option 4

Centre Running Cycling Facility through Interchange



Corridor Option 4

Bidirectional Facilities on Erb and Bridgeport

Pros



- Complete Streets approach
- East-west cycling connection
- Intersection operation
- Cyclist safety due to physical separation
- No impacts to the natural or cultural heritage environment or utilities

Cons

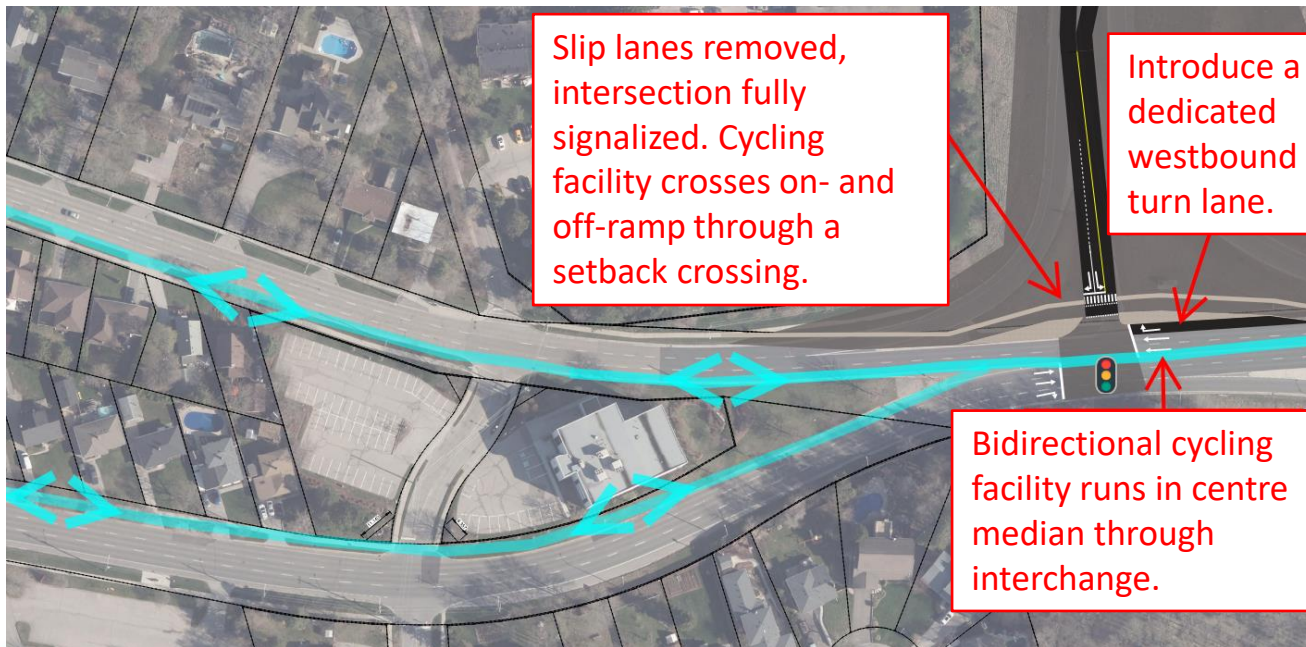


- Risk for cyclist/motor vehicle collisions at intersections and driveways, requiring more complex design countermeasures
- Delay for motor vehicles
- **Less comfortable environment for cyclists**
- **Significant construction required = high costs and disruption periods**

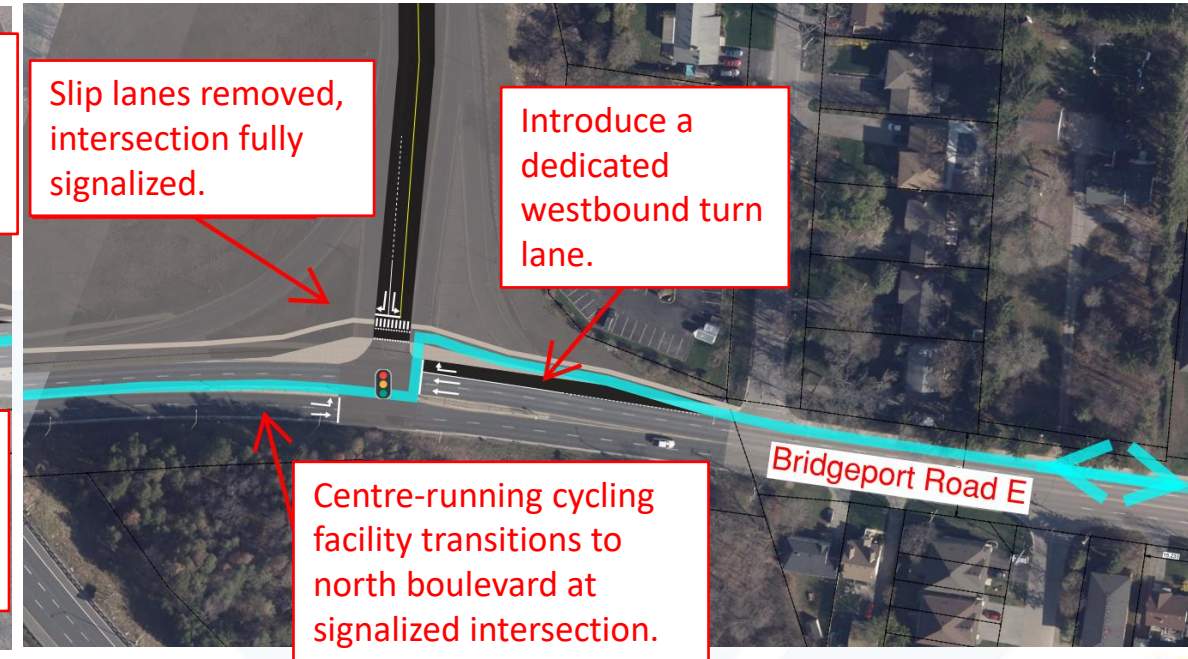
Corridor Option 4:

Centre Running Cycling Facility through Interchange

Highway 85 West Interchange



Highway 85 East Interchange



Corridor Option 4:

Centre Running Cycling Facility Example: Highway 7 at Highway 400 (Vaughan)



Summary of Design Alternatives

Corridor **Options 1 and 2** score the highest and are recommended to be carried forward

Corridor Option	Alignment with Vision	Natural / Cultural Environment	Traffic / Transportation	Conflict Mitigation	Utilities	Constructability / Cost	Carry Forward?
1	● 4	● 4	● 3	● 3	● 3	● 3	✓
2	● 4	● 4	● 3	● 3	● 3	● 3	✓
3	● 4	● 4	○ 2	○ 2	● 3	○ 2	✗
4	● 4	● 4	● 3	● 3	● 3	○ 2	✗

Conclusion and Next Steps

Engagement Opportunities & Next Steps



Post comments on the project website to provide feedback on the proposed design alternatives



Watch a recording of this meeting on the project website



Subscribe to the project website to receive project updates and information about future opportunities to participate



The project team will use findings from the technical work completed and community feedback received to **select a preferred alternative**

Thank you!

Please visit the project website - www.engagewr.ca/cycling - or contact a member of the project team if you have additional questions:

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905-882-7306
James.Lee.Schofield@wsp.com

Question and Answer Session

Question & Answer

Do you have any **questions or comments** about the study? Please...



Raise your hand

and / or



Type them in the
chat box