

# Welcome

Thank you for attending the Public Information Centre (PIC) for the  
**Thorndale Bridge Improvements Municipal Class Environmental Assessment**

## THE PURPOSE OF TONIGHT’S PIC:

The purpose of the PIC is to review and obtain public input on the **problem being addressed, background** information and the preliminary assessment of **alternative solutions** being considered.  
Anyone with an interest in the study is invited to attend and participate.

## WE NEED YOUR INPUT ON:

- The **problem/opportunity statement**
- The **alternative solutions** and **evaluation criteria** used to assess the potential impacts
- The **recommended alternative solution**
- Any **additional information** you would like us to consider and/or incorporate into the study

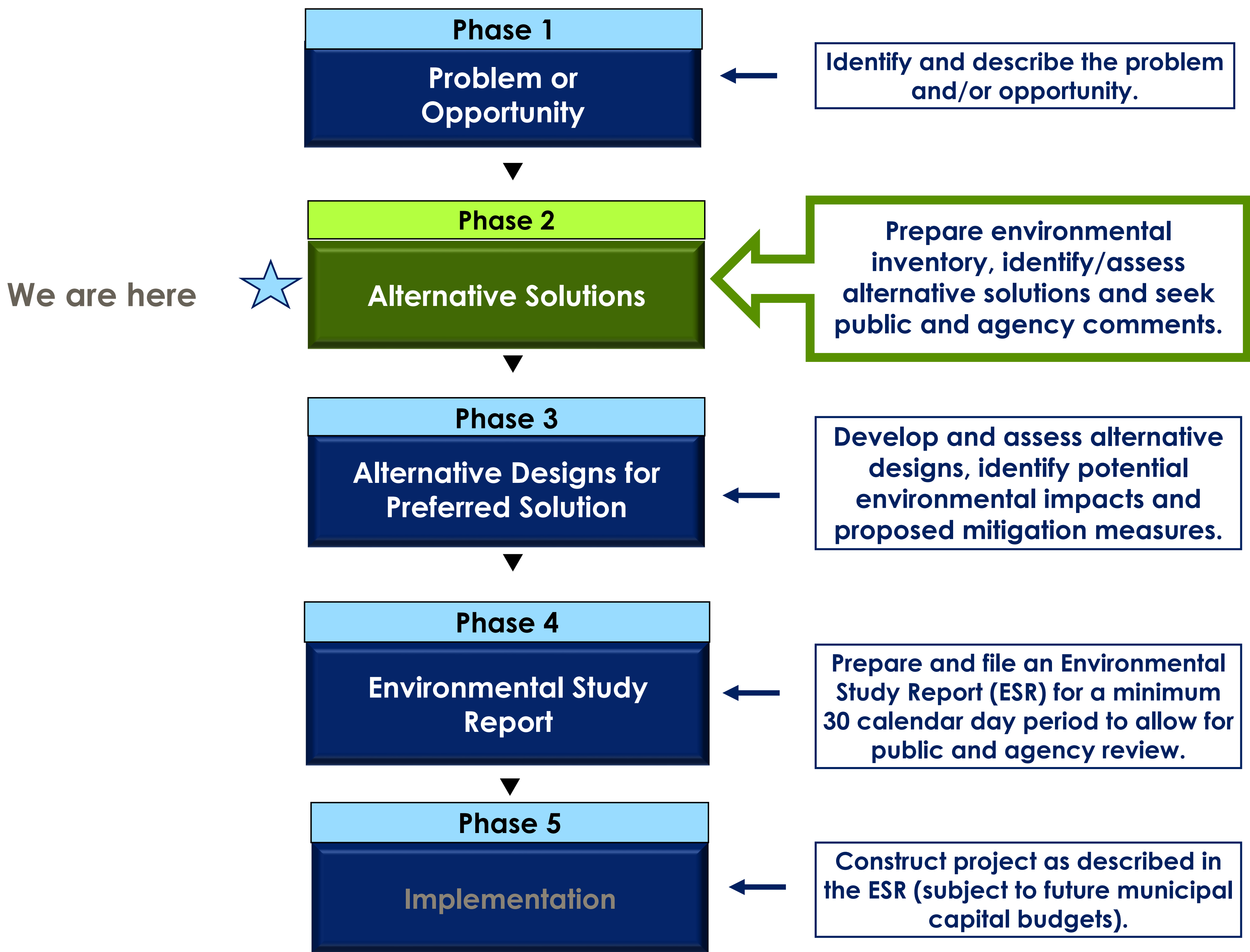


## What Is The EA Process?

The Municipal Class EA is an approved process under the Ontario Environmental Assessment Act which municipalities follow for the planning and design of municipal infrastructure projects. The process:

- Identifies needs, problems and opportunities
- Considers a range of reasonable solutions
- Requires public, agency, and Indigenous community consultation
- Documents the decision-making process in a clear and transparent manner.

This study is being planned as a Schedule ‘C’ project, which involves the completion of Phases 1 through 4 of the planning process.





# Thorndale Bridge Improvements

Municipal Class Environmental Assessment



## Study Area



### Study Area

- The study area includes the Thorndale Road bridge, located on Thorndale Road (County Road 28), east of Valleyview Road, west of Rebecca Road and approximately 120 m north and south of the bridge.
- Thorndale Road is an east-west arterial road that provides connectivity between the communities of Thorndale, Ballymonte and Arva.





# Thorndale Bridge Improvements

Municipal Class Environmental Assessment

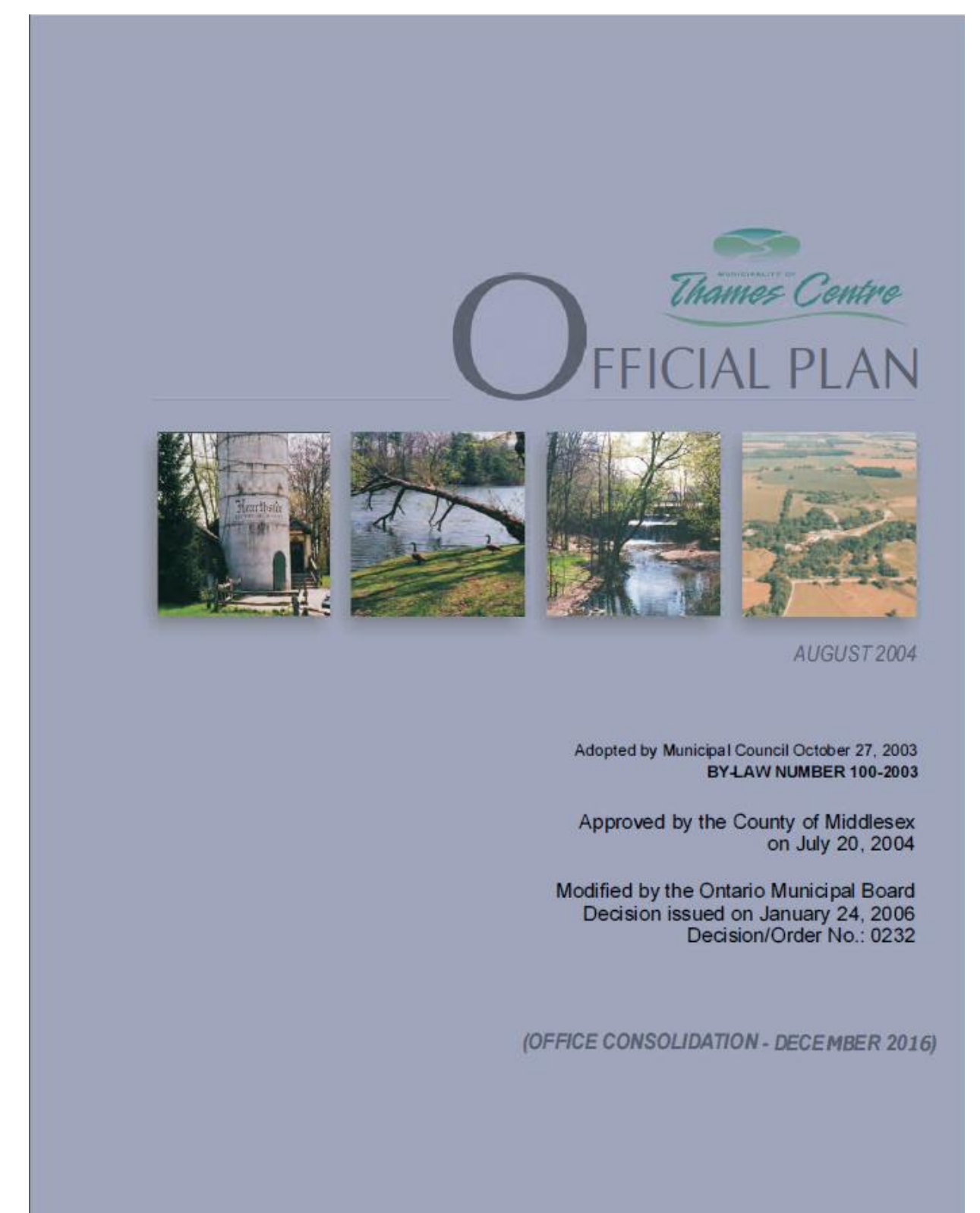


## Background Information and Related Studies

A number of documents and studies have been reviewed to gain an understanding of the existing conditions for the study area, including:

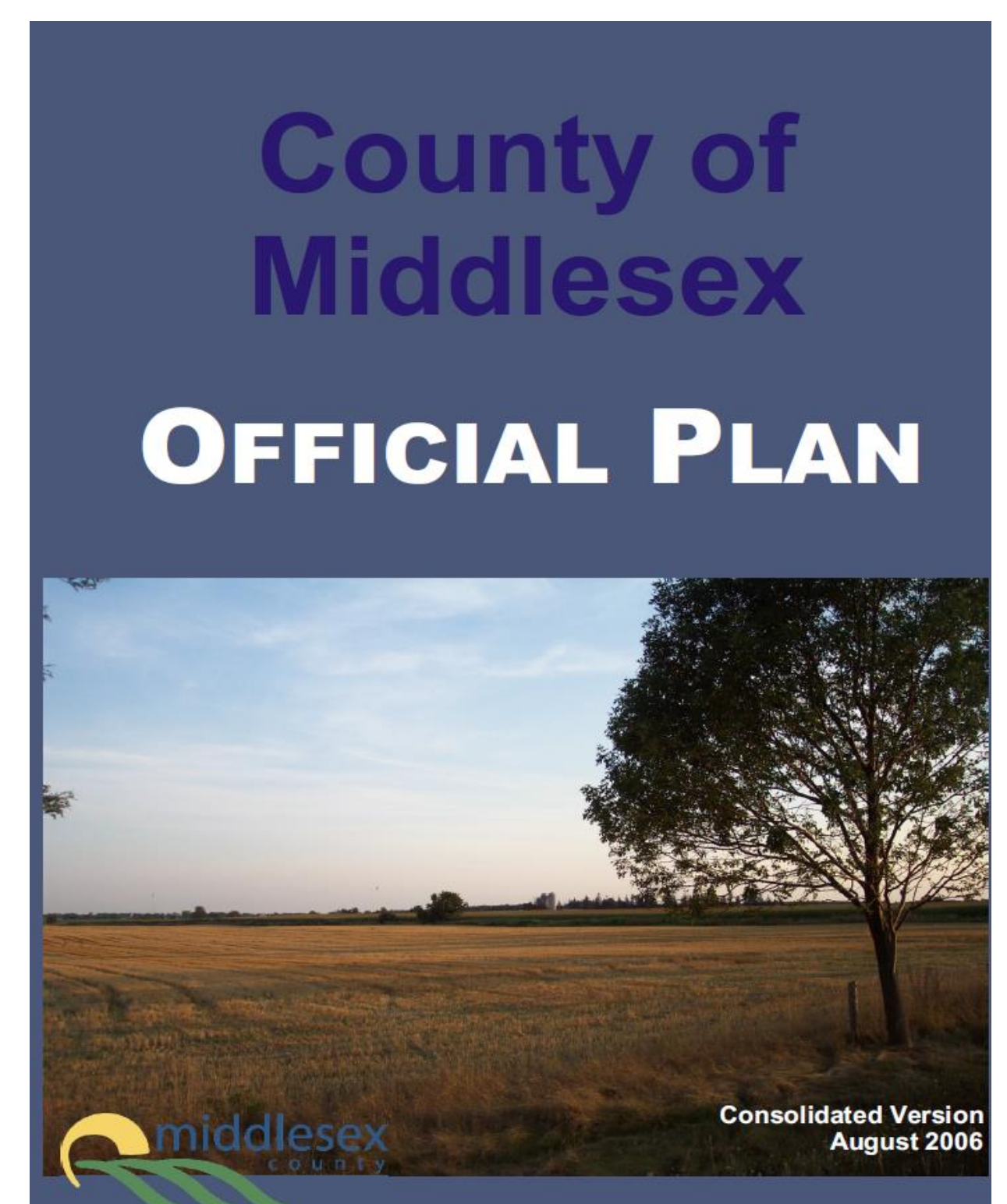
### Municipality of Thames Centre Official Plan (2004)

- Promotes safe, convenient, and attractive transportation options for pedestrians and cyclists within, and where feasible between settlement areas.
- Upholds County policies with respect to design and right of way widths, as well as limited property access.
- The bridge is immediately west of the Thorndale Urban Settlement Area – one of two growth areas in the municipality.
- Promotes preserving natural heritage features, such as the Thames River.



### County of Middlesex Official Plan (2006)

- Thorndale Road is a County Arterial Road (County Road). County roads provide for the efficient movement of traffic between provincial freeways/highways and local roads.
- Provides direction on County road widths and features.
- Discourages development which would inhibit traffic movement, while encouraging a safe and efficient road network.
- Provides standards for county arterial roads such as right of way widths. Desired right of way widths are 36 m.



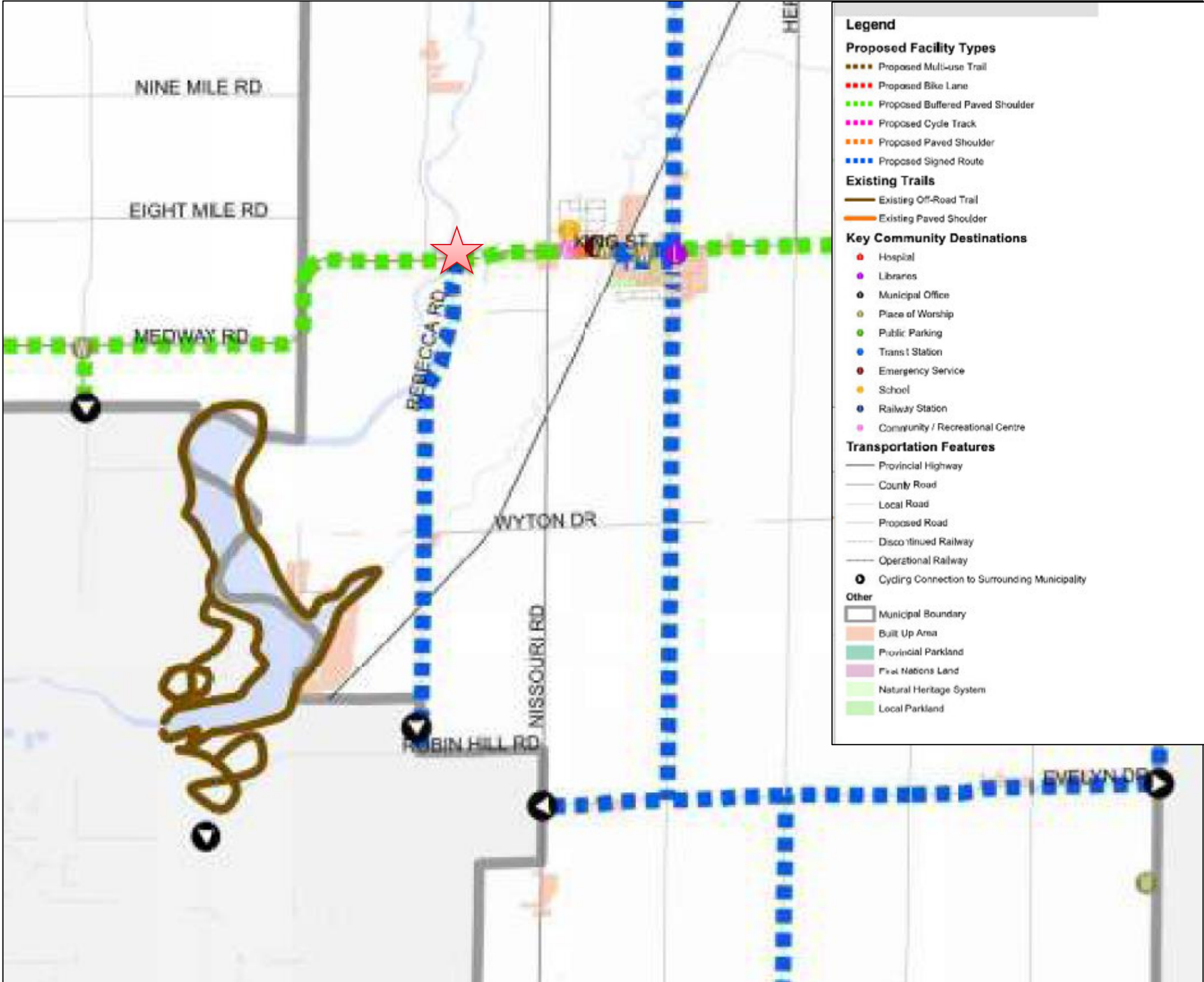


# Cycling and Trails

## Middlesex County Cycling Strategy (2018)



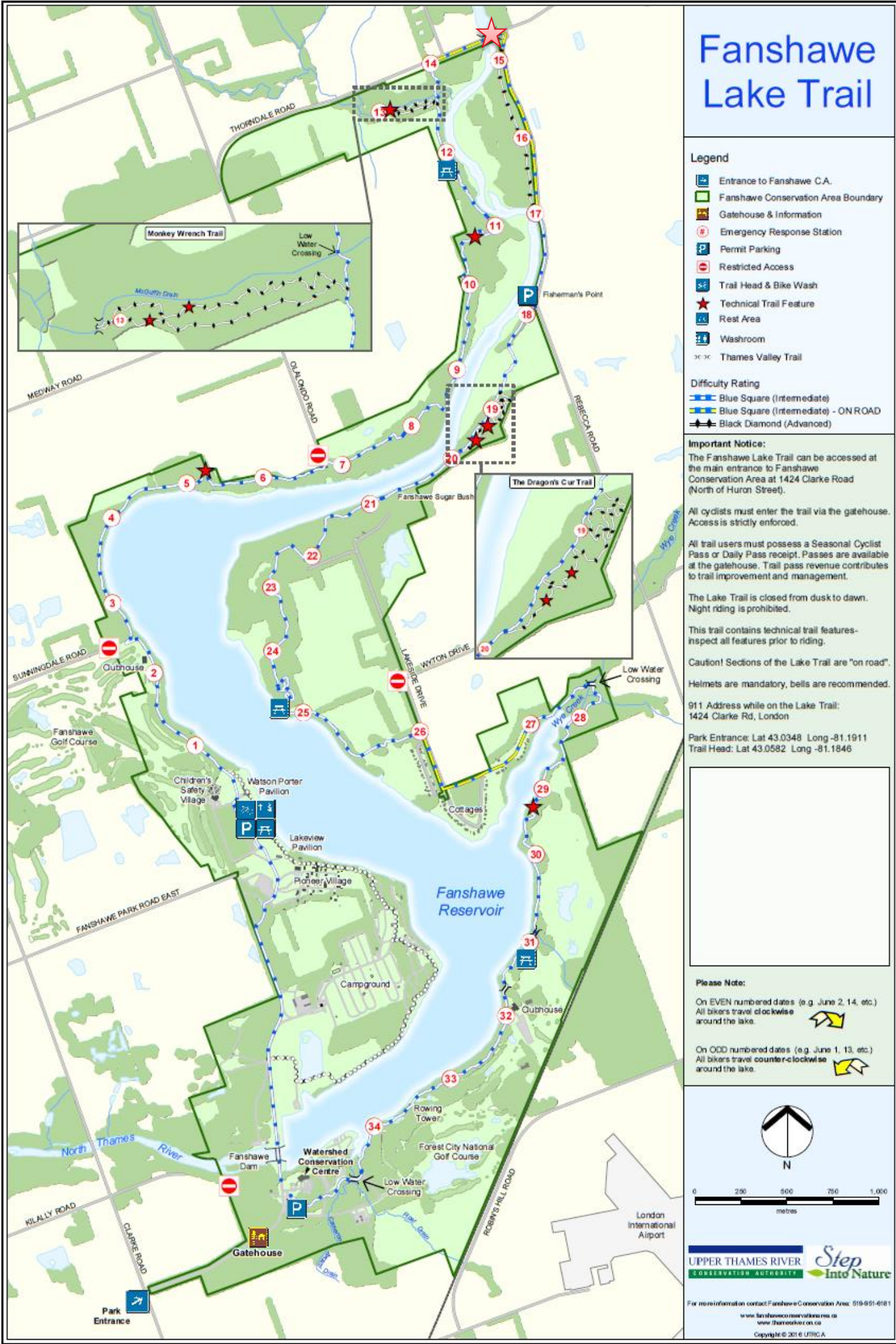
- Identifies cycling routes within the proposed network.
- Buffered paved shoulder (Thorndale Road).
- Proposed signed route (Rebecca Road).
- The Thorndale Bridge is included in the “long-term” network.



Excerpt, Draft Cycling Network Types, (Map 3-5) – Middlesex County Cycling Strategy (2018)

## Upper Thames River Conservation Authority Trails

- The Thorndale Bridge is included on the Fanshawe Lake Trail and provides the crossing point over the Thames River for the loop trail.



Fanshawe Lake Trail Map (UTRCA, 2019)

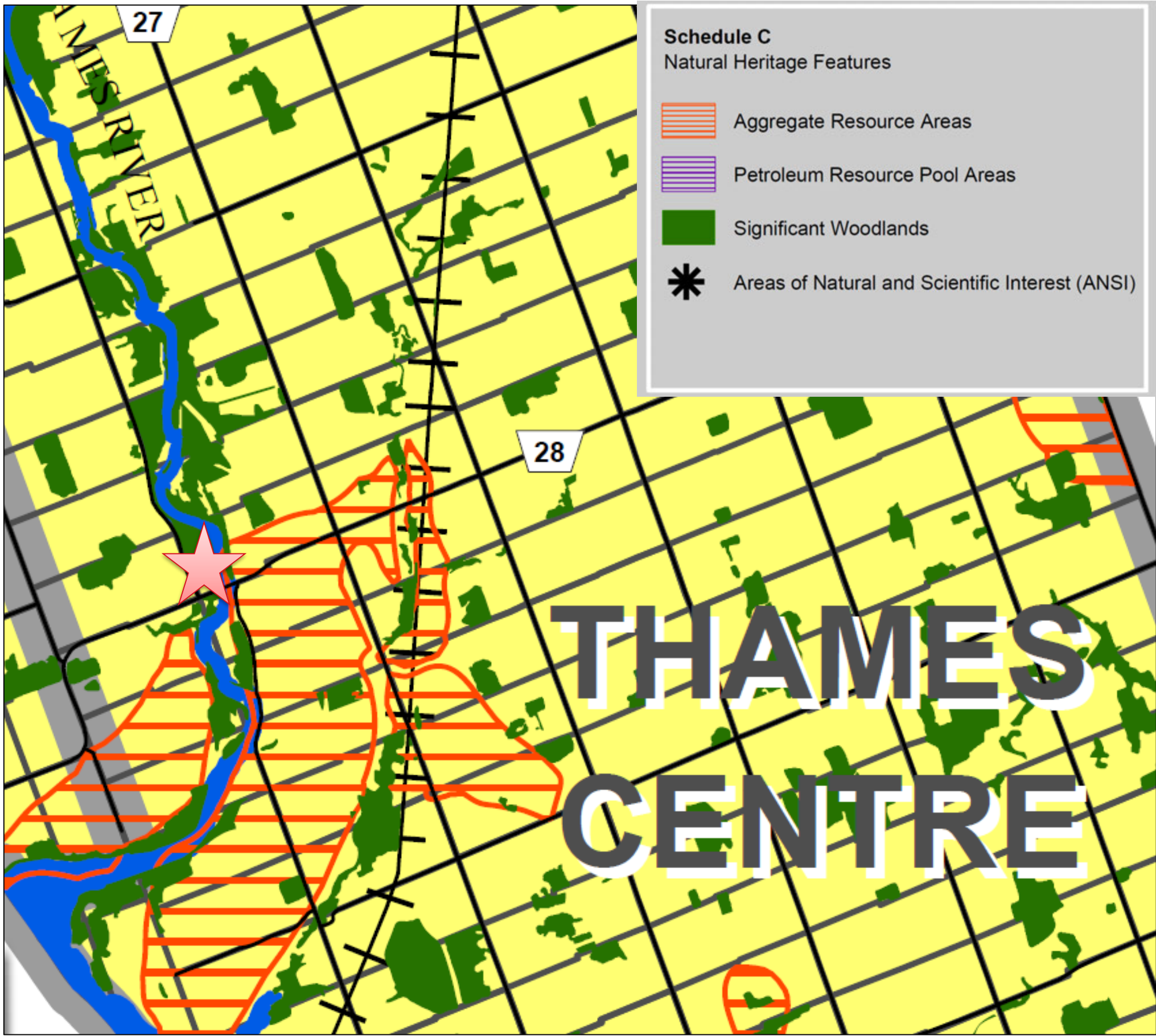
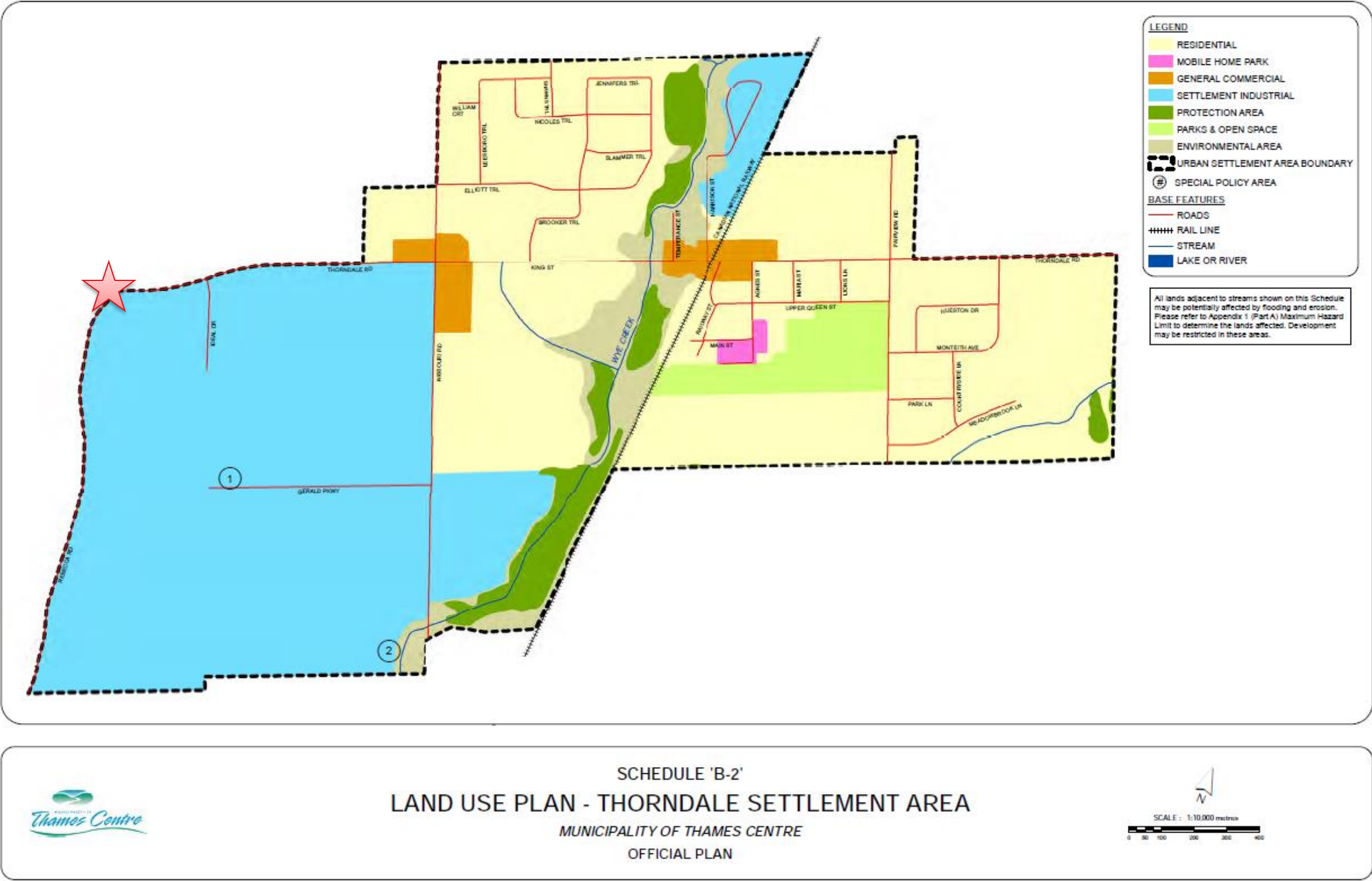




## Existing Conditions: Socio-Economic Environment

- Thames River is designated as a Canadian Heritage River and a visual landscape corridor.
- Fanshawe Loop Trail uses the bridge to cross the Thames River.
- Thorndale Road (County Road 28) is an identified truck haul route.
- The bridge is west of the Thorndale Urban Settlement Area.
- Local land use near the site includes natural and protected areas (significant woodland), an abandoned landfill site, and aggregate resource areas.

(see Municipality of Thames Centre, Schedule “A” land use excerpt and Schedule C, Middlesex County Official Plan Natural Heritage Features excerpt)





Existing Conditions:

Natural Environment

Environmental Impact Study

An Environmental Impact Study (EIS) is being completed to characterize existing natural environmental conditions within the study area. This information will be used to assist with the development and assessment of alternatives, understand potential impacts and the need for mitigation measures.

Terrestrial Ecosystems

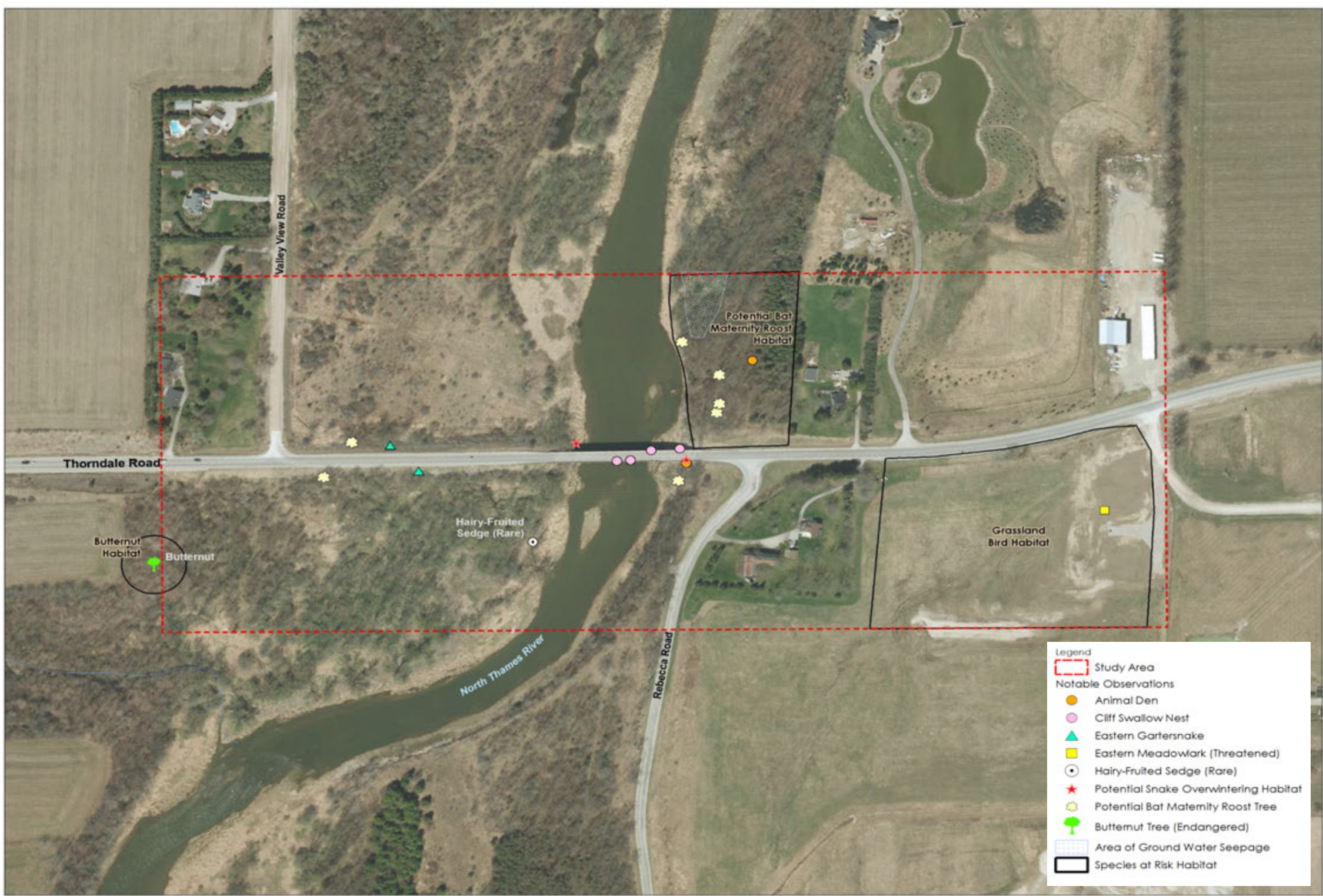
- A Tree Inventory & Preservation Plan will be completed
- Significant Wildlife Habitats include:
  - Rare Plants
  - Bat maternity roost habitat
  - Seeps
  - Snake Hibernacula

Fish and Fish Habitat

- Rayed Bean (provincially and federally endangered)
- Wavy-rayed Lampmussel (provincially threatened, federally endangered)
- Rainbow (provincially special concern, federally endangered)

Species at Risk

- Potential habitat for bats (endangered)
- Confirmed habitat for Eastern Meadowlark (threatened) and habitat for Mussels (listed above)
- Confirmed Butternut (endangered) adjacent to study area





# Thorndale Bridge Improvements

Municipal Class Environmental Assessment



## Existing Conditions: Cultural Environment

### Archaeological Resources

- A Stage 1 Archaeological Assessment has been undertaken within the study area to identify areas of archaeological potential and impacts of the bridge improvements.
  - It was determined that much of the study area retains potential for the identification and documentation of archaeological resources.
  - A Stage 2 Archaeological Assessment is required for any portion of the project 's anticipated construction which impacts an area of archaeological potential.

### Built Cultural Heritage Resources and Landscapes

- A Cultural Heritage Evaluation Report was completed for the study area to identify potential built cultural heritage resources, and cultural heritage landscapes.
- The Thorndale Bridge is a four-span cast-in-place concrete two-cell box girder structure and was identified as a potential cultural heritage resource (over 40 years old).
- The bridge was determined to have Cultural Heritage Value of Interest (CHVI) specifically for the design/ physical value relating to the box girder structure.
- While this was a common bridge type in the 1950s and 1960s, there are not a lot of bridges remaining in the province.
- Overall, the Thorndale Bridge was determined not to be provincially important and worthy of inclusion on the *Ontario Heritage Bridge List*.



Thorndale Bridge under construction August 28, 1953  
(Archives and Special Collections, Western Libraries,  
Western University 1953)



Thorndale Bridge June 19, 1954  
(Archives and Special Collections, Western Libraries,  
Western University 1954)





# Thorndale Bridge Improvements

Municipal Class Environmental Assessment



## Existing Conditions: Transportation

### Thorndale Road (County Road 28) over the Thames River

Thorndale Road within the study area is a **two-lane Arterial Road** with a posted speed limit of **80 km/hr** and serves as a through traffic route with nearly 6,000 vehicles per day.

- Thorndale Bridge was constructed in 1953. Past rehabilitation efforts have extended the life of the structure to a limited degree
- The bridge has four spans over the Thames River, with a current road width of 7.5 m and deck width of 9.5 m.
- Thorndale bridge is noted to have capacity concerns specifically relating to pedestrians/ cyclists and the trail connection around Fanshawe Lake.
- Steep embankments on the approaches are protected by steel beam guiderail.
- Adjacent Hydro One and telecommunication utilities (aerial). No utilities within the structure.
- The intersection of Thorndale Road and Rebecca Road is approximately 40 m from the east end of the structure.





# Problem/Opportunity Statement

Based on the review of the existing conditions, municipal priorities, planning and policy documents, and future development, the following summarizes the problems and opportunities within the study area:

### Active Transportation

Need to improve active transportation facilities within the study area (buffered paved shoulder identified in Cycling Master Plan) and provide connections to the Fanshawe Lake Trail System.

### Bridge Condition

The existing bridge is 67 years old and the County has identified the need for its replacement within the next 10 years.

**This study will consider alternatives for replacement or enhancement of the existing structure resulting in improvements for all users. The bridge will provide sufficient road capacity, while safely and efficiently accommodating active transportation.**





# Thorndale Bridge Improvements

Municipal Class Environmental Assessment



## Alternative Solutions

Improvements to the Thorndale Bridge are required to address the existing bridge condition and to address the opportunity to improve active transportation facilities and connections to the Fanshawe Lake Trail System. The following alternative solutions have been considered:

- 1 Do Nothing**  
No proposed changes to the bridge. This alternative is included to provide a base to which other alternatives can be compared.
- 2 Rehabilitation of Existing Bridge**  
Maintain existing bridge and repair sections as required
- 3 Replace Superstructure and Detour**  
Strengthen existing piers and rebuild the walls and a wider bridge deck to include standard shoulders or sidewalk. Traffic rerouted around bridge construction on detour.
- 4 Replace Superstructure and Temporary Modular Bridge (TMB)**  
Strengthen existing piers, rebuild the walls and a wider bridge deck to include standard shoulders or sidewalk. Traffic rerouted over TMB on new alignment next to existing bridge
- 5 New Bridge and Detour**  
Replace the whole bridge on the existing alignment. Traffic rerouted around bridge construction on detour.
- 6 New Bridge and Temporary Modular Bridge (TMB)**  
Replace the whole bridge on the existing alignment. Traffic rerouted over TMB on new alignment next to existing bridge.
- 7 New Bridge on New Alignment**  
Replace the whole bridge on a new alignment adjacent to the existing bridge. Traffic maintained on existing bridge during construction.





# Alternative Solutions

- 1

### Do Nothing

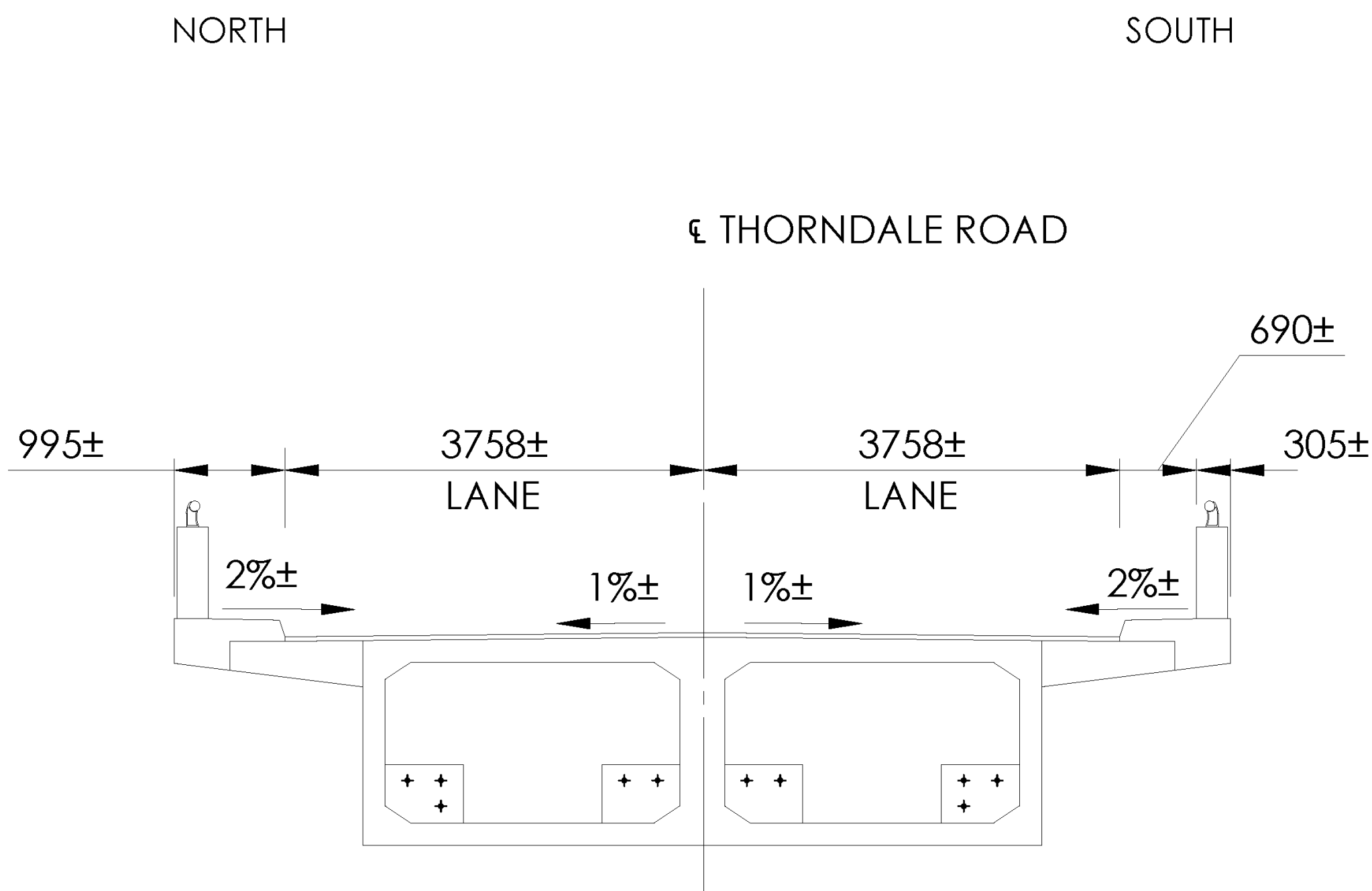
No proposed changes to the bridge. This alternative is included to provide a base to which other alternatives can be compared.
- 2

### Rehabilitation of the Existing Bridge

Maintain existing bridge and repair sections as required.



EXISTING BRIDGE CROSS SECTION



- Pros:**

  - Lower construction cost in the short term as compared to building new superstructure or bridge
  - Low potential impact to wildlife, wildlife habitat and vegetation communities with construction limited to existing structure
  - No property impact
- Con:**

  - Increase chance of structure failure and emergency closure of bridge forcing detour route until repairs completed
  - Eventual permanent structure closure
  - Does not accommodate active transportation facilities with standard shoulders or sidewalk



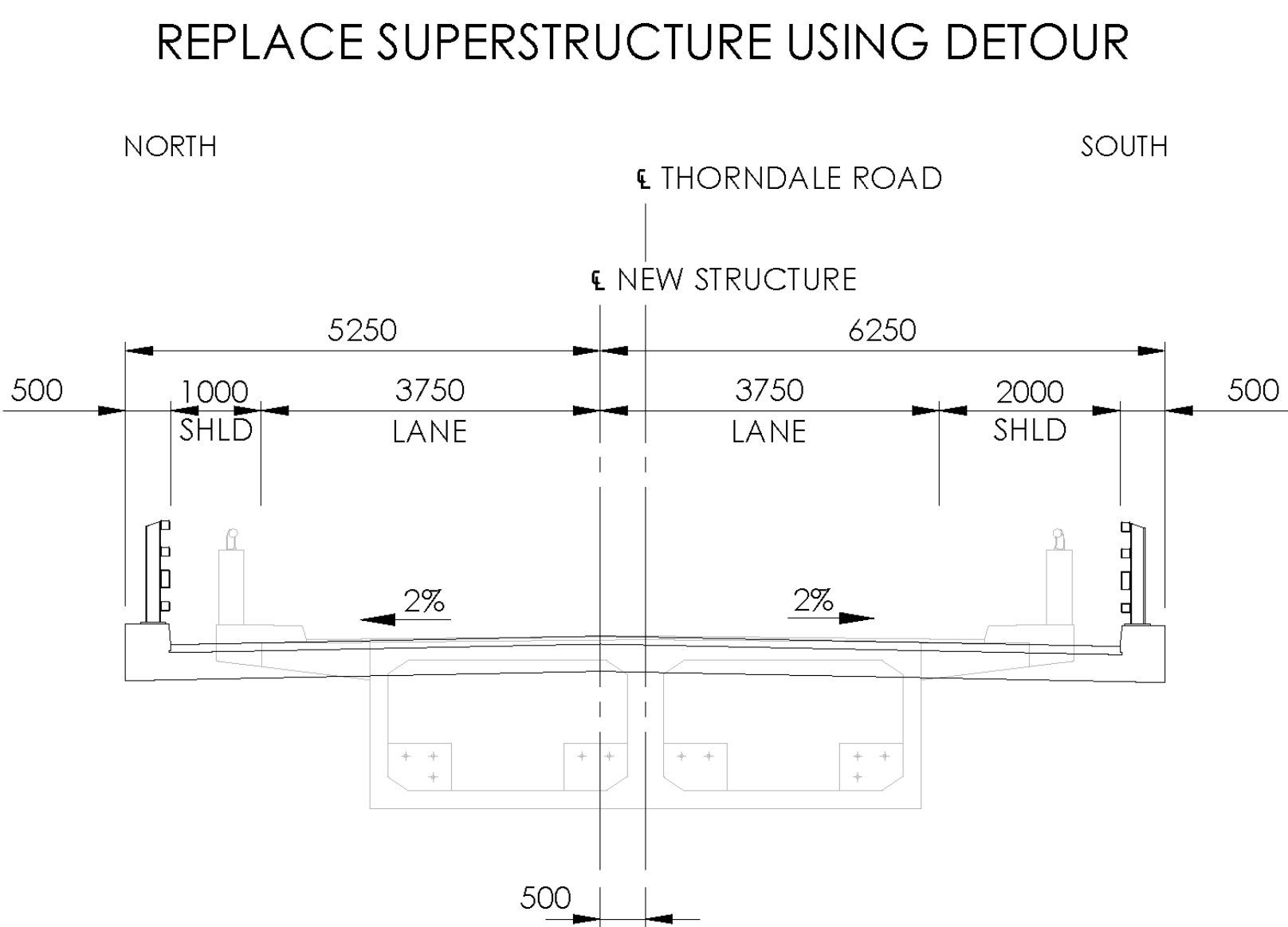
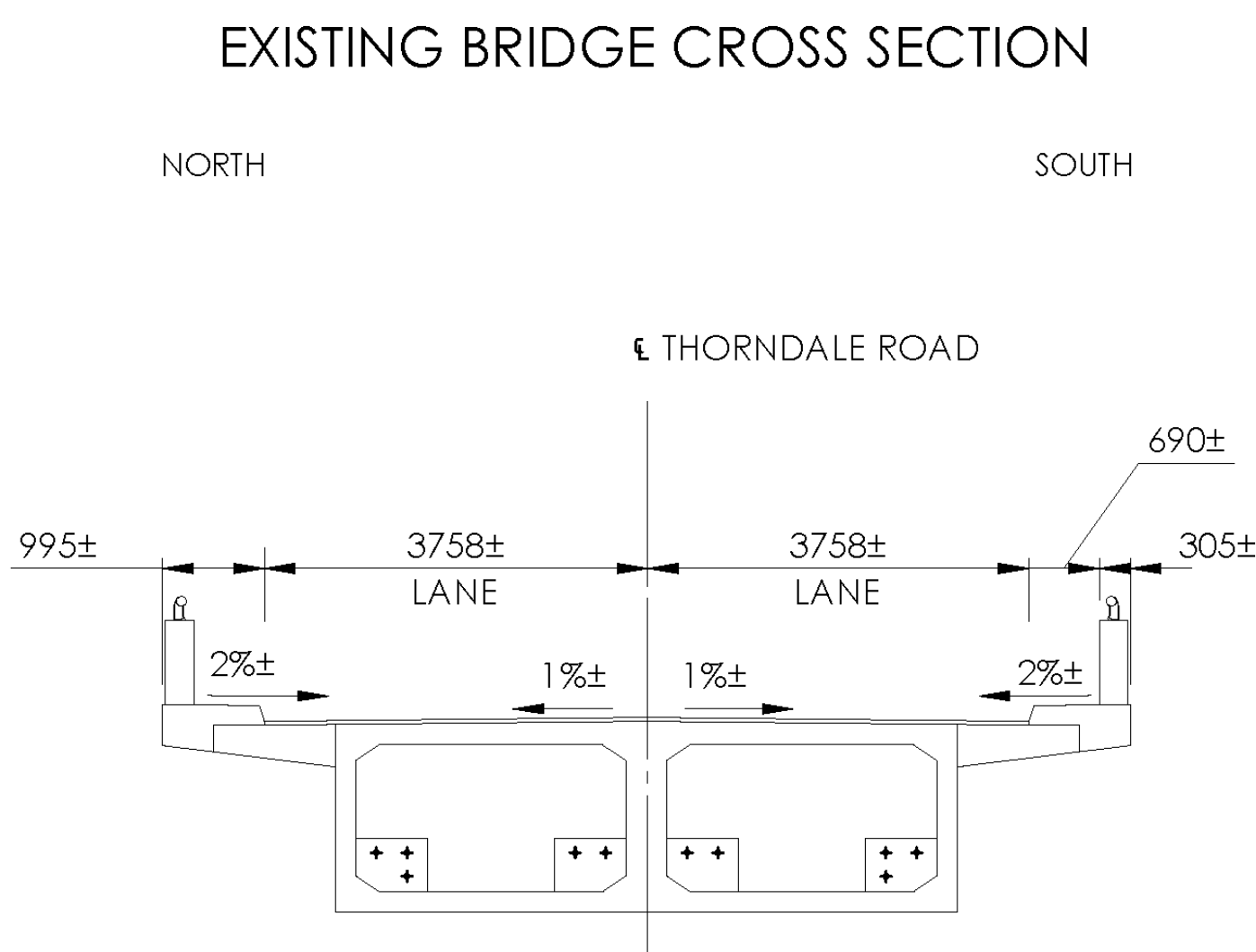


# Alternative Solutions

- 3

### Replace Superstructure and Detour

Strengthen existing piers and rebuild the walls and a wider bridge deck to include standard shoulders or sidewalk. Traffic rerouted around bridge construction on detour.



- Pros:**

  - Accommodate active transportation facilities with standard shoulders or sidewalk
  - Lower construction and temporary costs due to use of existing piers, and roads for detour
  - Relatively lower impact to wildlife, wildlife habitat and vegetation communities (smaller overall impact area)
- Con:**

  - Remaining life of existing piers is shorter than the rest of the structure; pier strengthening required
  - Temporary impacts to existing traffic, EMS and trail users for one construction season





# Alternative Solutions

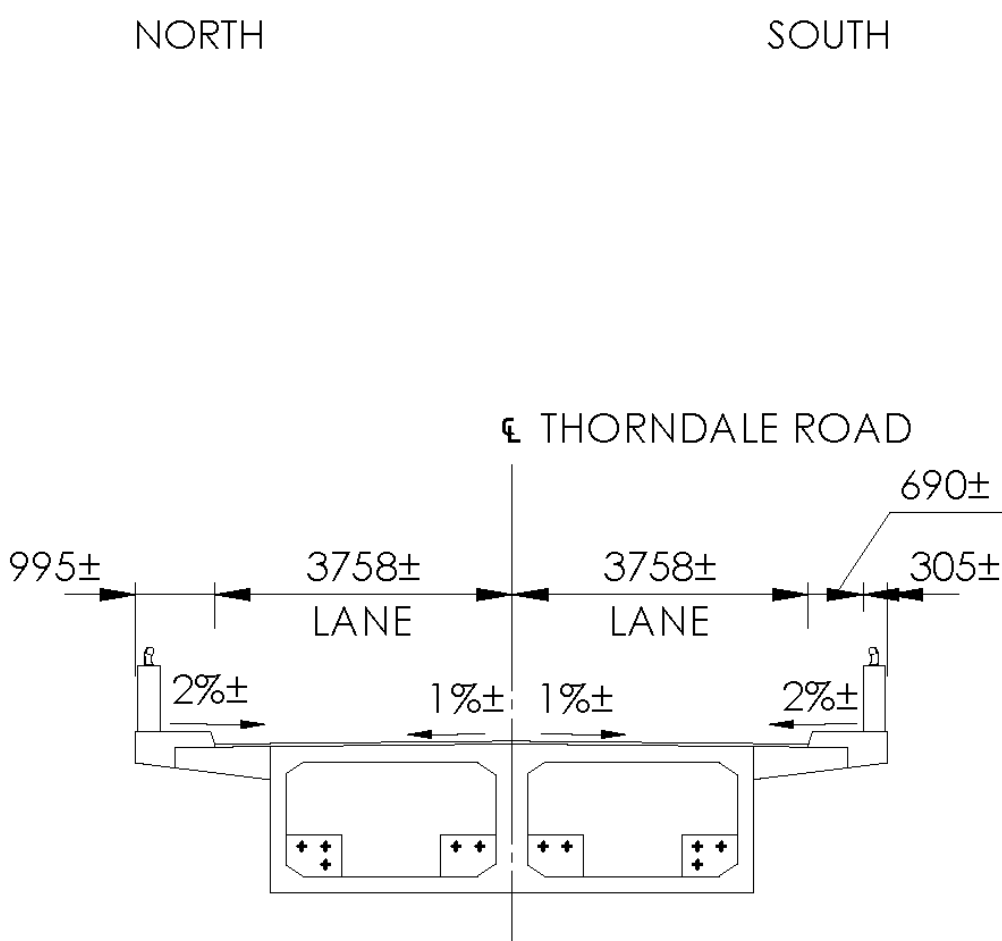
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### Replace Superstructure and Temporary Modular Bridge (TMB)

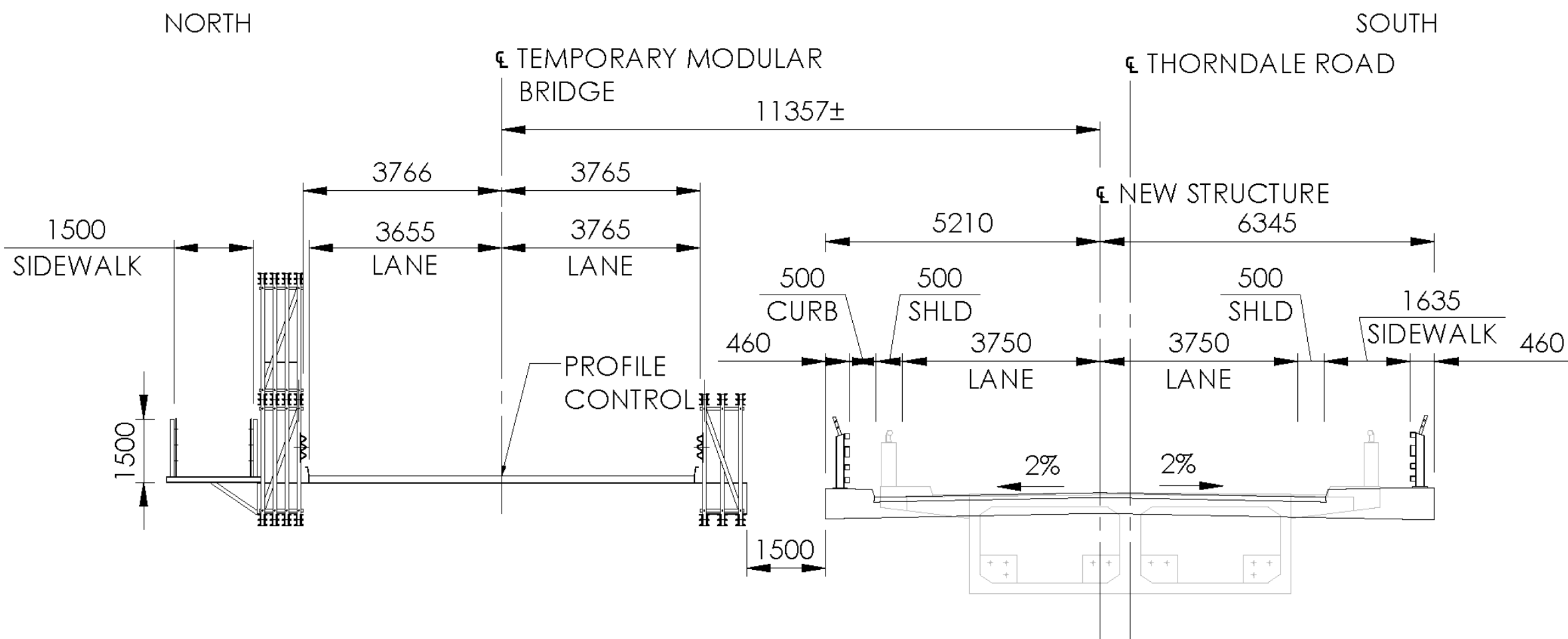
Strengthen existing piers, rebuild the walls and a wider bridge deck to include standard shoulders or sidewalk. Traffic rerouted over TMB on new alignment next to existing bridge.



EXISTING BRIDGE CROSS SECTION



REPLACE SUPERSTRUCTURE USING TMB



- Pros:**
- Accommodates active transportation facilities with standard shoulders or sidewalk
  - Minimal impact to existing traffic, EMS and trail users due to TMB
  - Lower construction cost as compared to building a new bridge

- Con:**
- Remaining life of existing piers will be shorter than the rest of the structure; pier strengthening required
  - High cost for temporary modular bridge as compared to detour route using existing roads
  - Higher impact to wildlife, wildlife habitat and vegetation due to TMB and in-water work (larger overall impact area)
  - Potential to impact SAR species due to in-water work and embankment alterations
  - Temporary property impact due to TMB



## Alternative Solutions

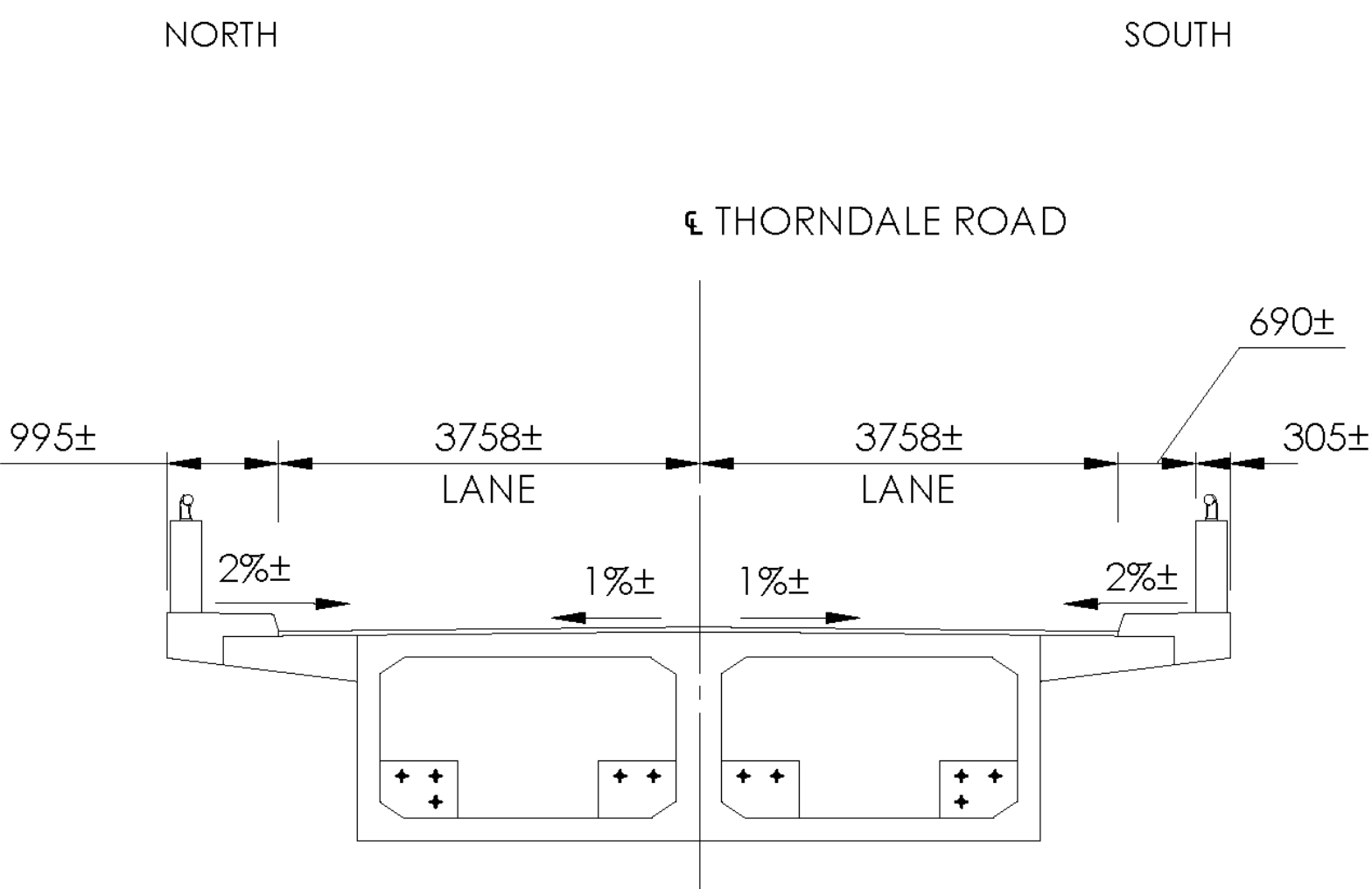
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### New Bridge and Detour

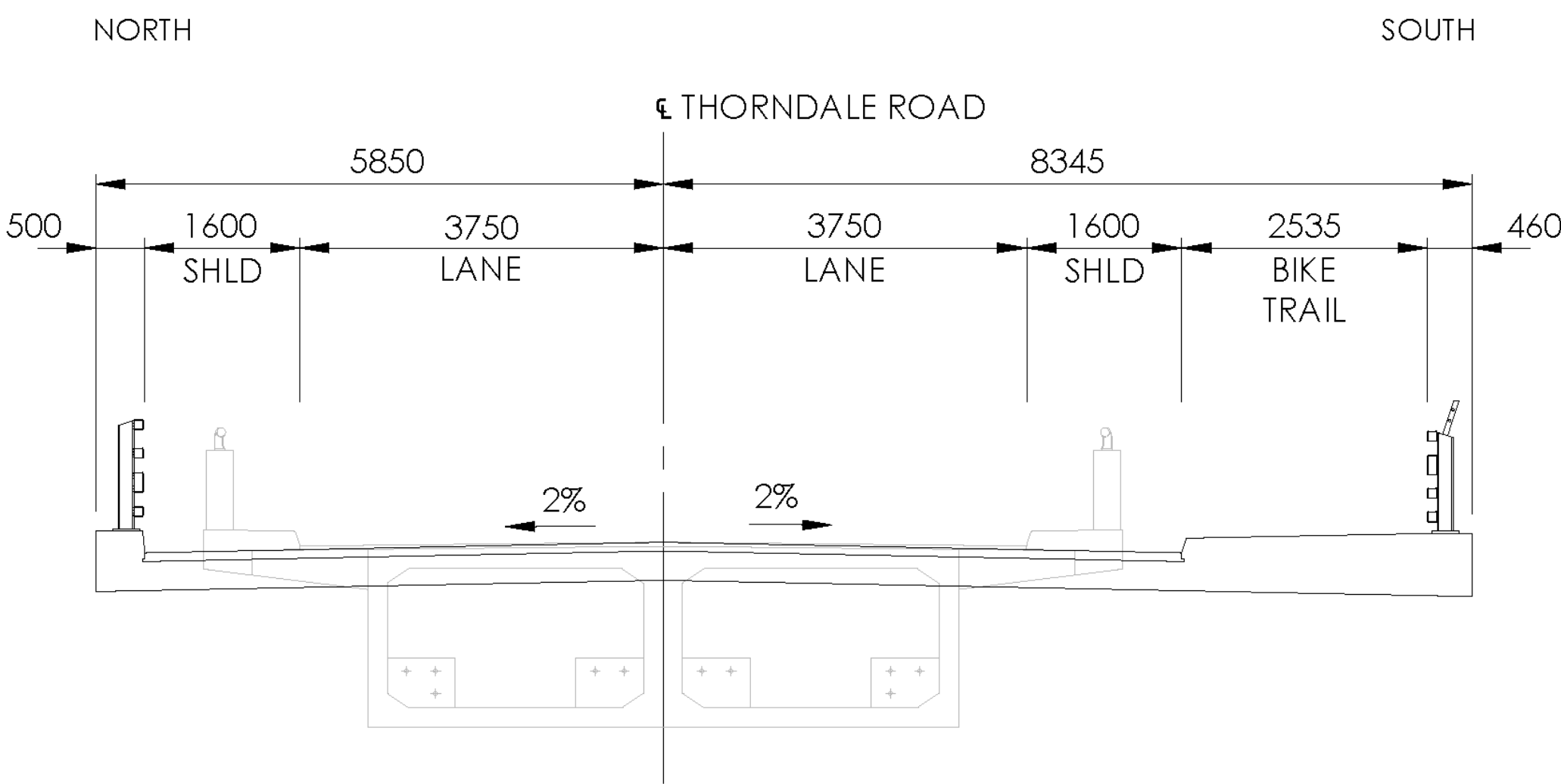
Replace the whole bridge on the existing alignment. Traffic rerouted around bridge construction on detour.



EXISTING BRIDGE CROSS SECTION



NEW BRIDGE USING DETOUR



- Pros:**
- Accommodates active transportation facilities with standard shoulders and raised trail connection on bridge
  - New bridge will be designed for 75-year design life
  - Less impact to wildlife, wildlife habitat and vegetation communities due to smaller area of impact compared to options with TMB or new alignment

- Con:**
- Temporary impact to existing traffic, EMS and trail users for one construction season
  - Higher cost for new piers and bridge abutments compared to superstructure replacement
  - Potential to impact SAR species due to in-water work and embankment alterations





## Alternative Solutions

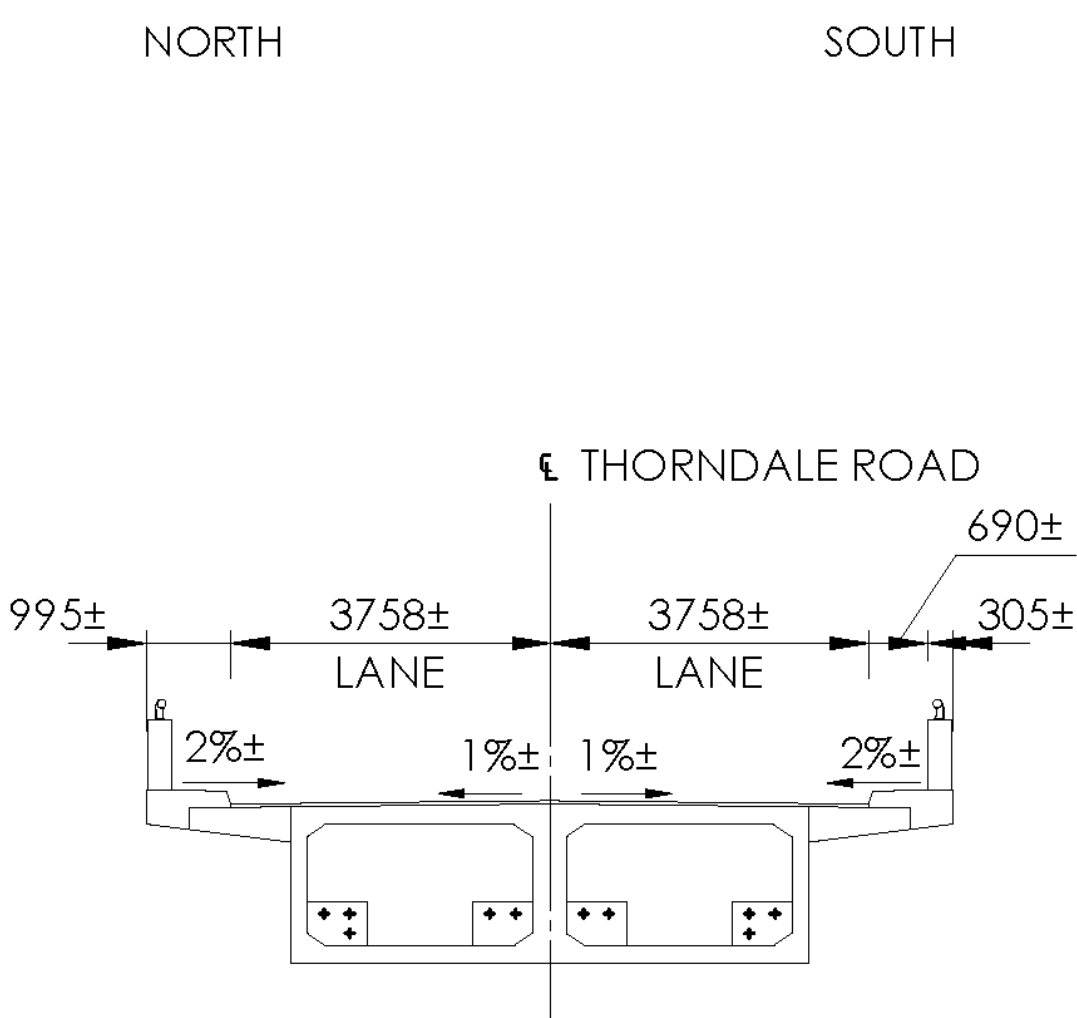
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### New Bridge and Temporary Modular Bridge (TMB)

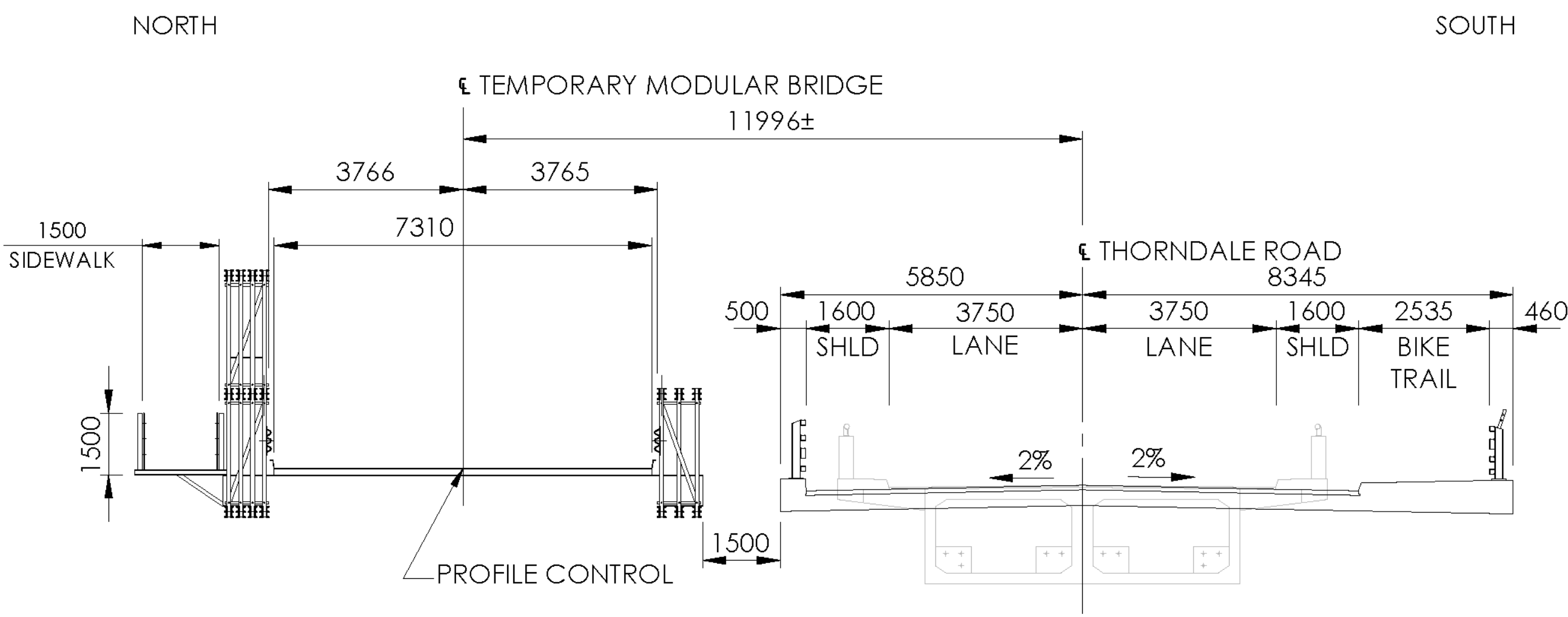
Replace the whole bridge on the existing alignment. Traffic rerouted over TMB on new alignment next to existing bridge.



EXISTING BRIDGE CROSS SECTION



NEW BRIDGE USING TMB



- Pros:**
- Accommodate active transportation facilities with standard shoulders and raised trail connection on bridge
  - New bridge will be designed for 75-year design life
  - Minimal impact to existing traffic, EMS and trail users due to TMB

- Con:**
- High cost for temporary modular bridge
  - Higher impact to wildlife, wildlife habitat and vegetation due to TMB and in-water work
  - Potential to impact SAR species due to in-water work and embankment alterations
  - Impact UTRCA property due to TMB

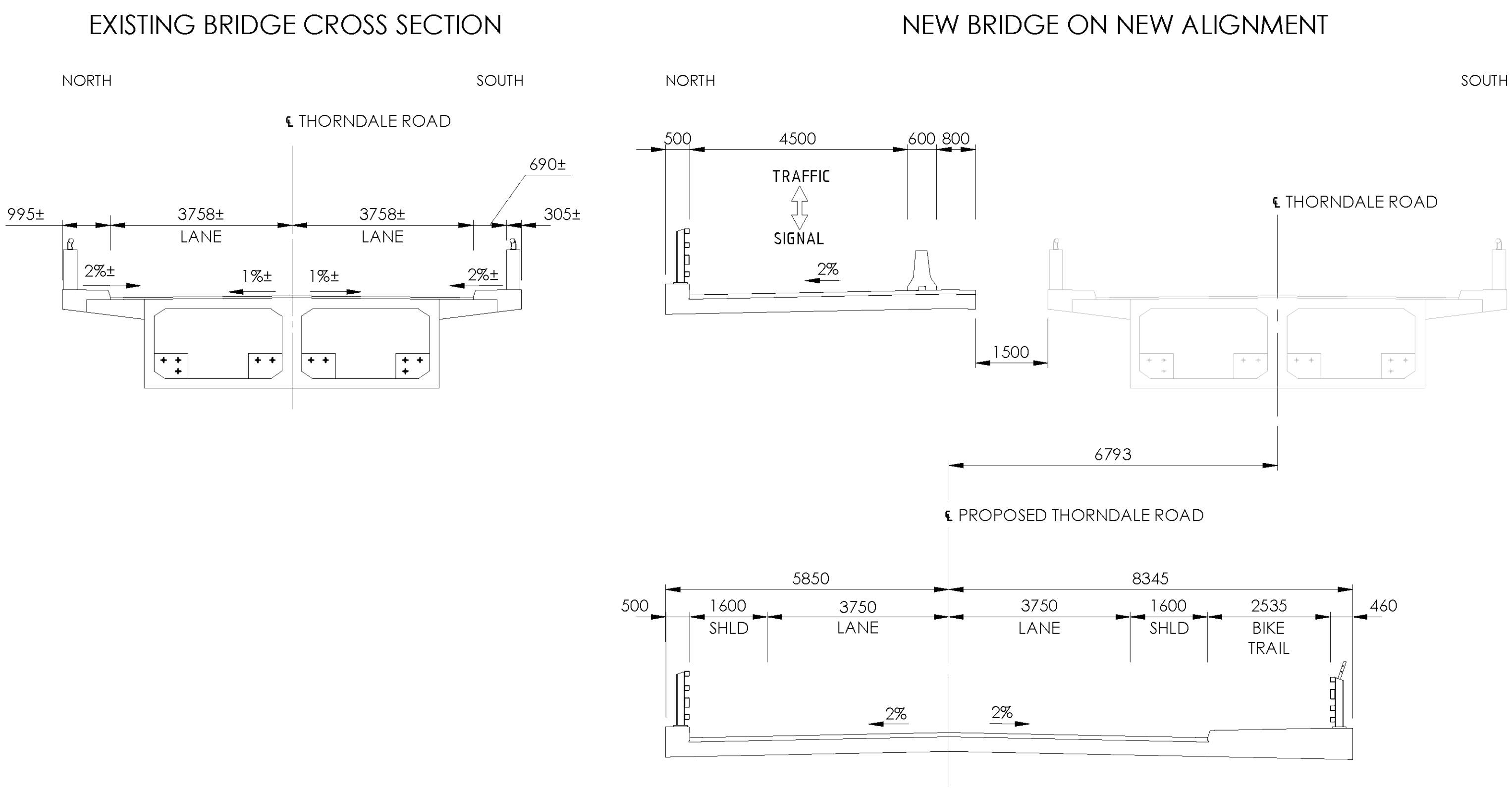
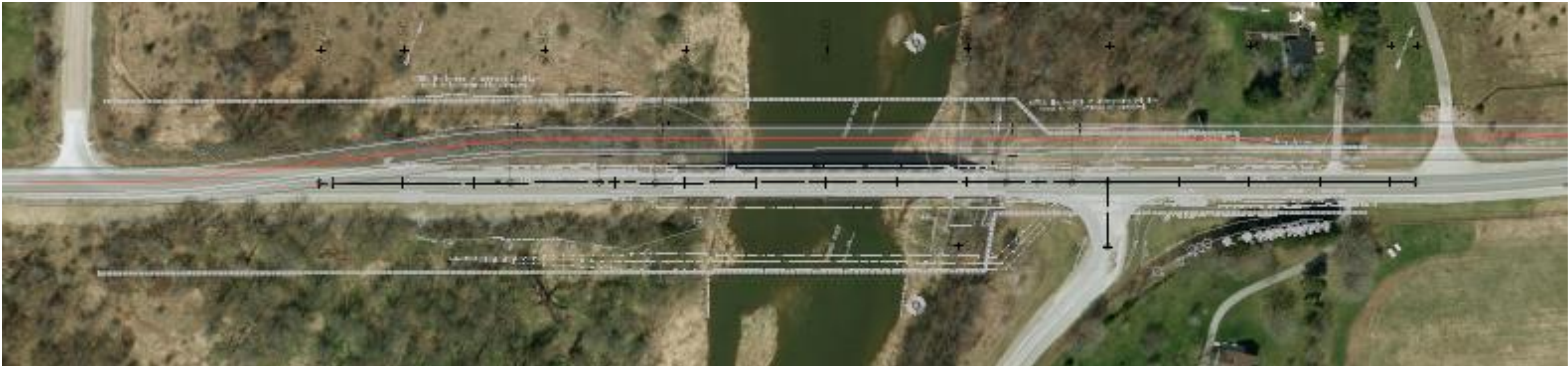


# Alternative Solutions

- 7

### New Bridge on New Alignment

Replace the whole bridge on a new alignment adjacent to the existing bridge. Traffic maintained on existing bridge during construction.



- Pros:

  - Accommodates active transportation facilities with standard shoulders and raised trail connection on bridge
  - New bridge will be designed for 75-year design life
  - Potential to mitigate impacts to existing traffic, EMS and trail users with off-line construction on new alignment
- Con:

  - High impact to wildlife, wildlife habitat and vegetation due new area of impact with new alignment
  - Highest property impact due to permanent new alignment
  - Highest overall cost due to new alignment, new piers, bridge abutments and bridge superstructure

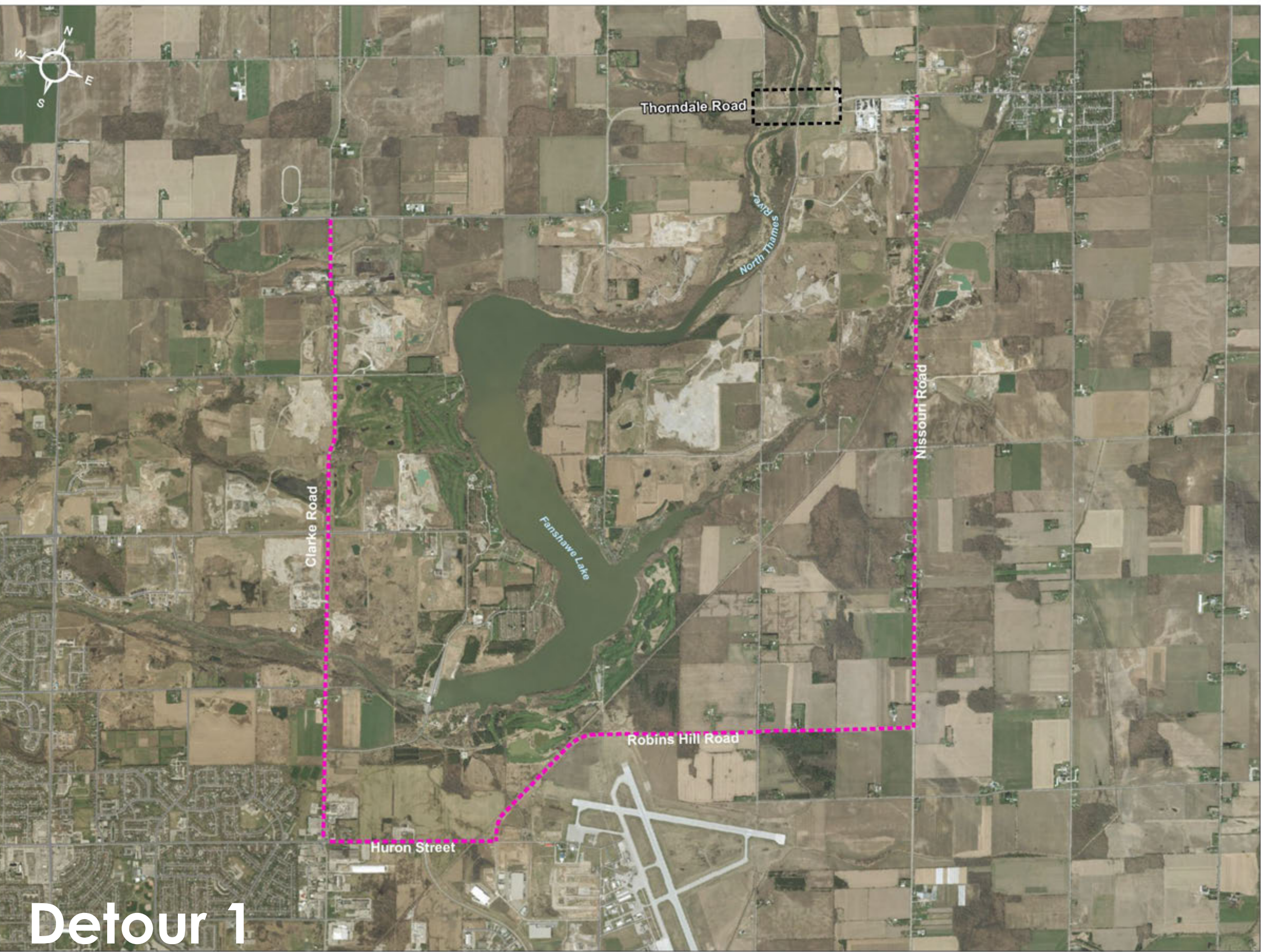




## Proposed Detour Routes

Proposed detour routes were developed to support Alternative Solution 5 (New Bridge and Detour), based on the following criteria:

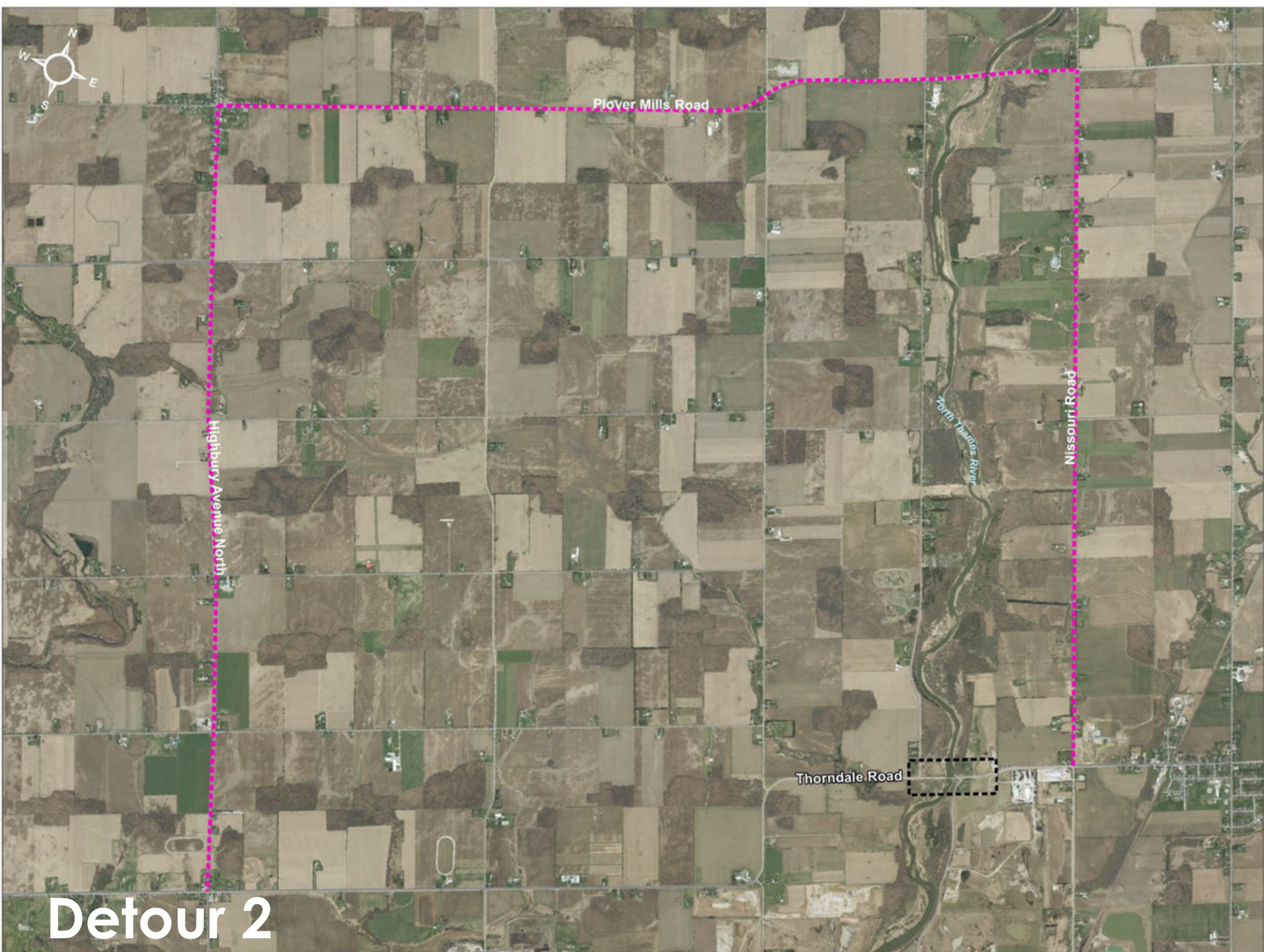
- Use of County/ City of London roads
- Road must be paved (not gravel)
- Road must be able to accommodate truck/ agricultural traffic



**Proposed Detour 1**  
Approximately 16.8 km

**Proposed Detour 2**  
Approximately 20.8 km

----- DETOUR  
----- CLOSURE





Evaluation Criteria

Alternative Designs will be developed to implement the recommended solutions, and will be evaluated against the following criteria:

Socio-Economic Environment



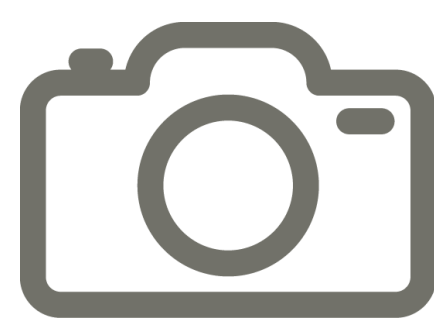
- Property impacts
- Existing/future land uses
- Industrial uses
- Recreational uses
- Business and Agricultural uses
- Property access
- Noise levels
- Accommodation of pedestrians and cyclists
- Air quality

Natural Environment



- Wildlife and wildlife habitat
- Fish and fish habitat
- Vegetation
- Species at Risk
- Drinking water source protection

Cultural Environment



- Built cultural heritage resources
- Archaeological resources
- Cultural heritage landscapes

Transportation



- Traffic operations
- Fire and emergency medical services
- Property accessibility
- Active transportation
- Detours (during construction)

Engineering Considerations



- Structural requirements (Thorndale Bridge)
- Construction staging
- Municipal services/utilities
- Hydraulic capacity/climate change
- Construction costs





# Assessment of Alternative Solutions

Alternative	Evaluation Summary	Recommendation
Alternative 1 - Do Nothing	Does not address problems and opportunities identified in the study area.	Not recommended for further consideration
Alternative 2 – Rehabilitate the Existing Bridge	Meets requirements for a two lane cross section. Does address County of Middlesex active transportation objectives (buffered paved shoulder) but does not improve connectivity of the Fanshawe Lake Loop trail. Does not address long-term structural needs at the bridge.	Not recommended for further consideration.
Alternative 3 – Replace Superstructure and Detour	Two lane cross section maintained, and ability to accommodate additional active transportation if superstructure widening occurs with standard shoulders. Temporary impacts to existing traffic and trail users due to detour. Remaining service life on existing piers will be shorter than remainder of new structure. Pier strengthening required.	Not recommended for further consideration.
Alternative 4 – Replace Superstructure and Temporary Modular Bridge (TMB)	Same as Alternative 3, although a TMB accommodates traffic adjacent to the existing structure. Minimal impacts to traffic during construction due to TMB. Remaining service life on existing piers will be shorter than remainder of new structure. Pier strengthening required. Some additional natural heritage impacts due to the TMB.	Not recommended for further consideration.
Alternative 5 – New Bridge and Detour	Two lane cross section maintained, and ability to accommodate active transportation. High potential for temporary impacts to existing traffic and trail users due to detour. High potential for Emergency Medical Services(EMS) delays due to detour route. Designed for a 75-year lifespan.	Carry forward for further consideration ✓
Alternative 6 – New Bridge and Temporary Modular Bridge (TMB)	Same as Alternative 5, although detours are not needed due to TMB. Minimal impact to traffic, EMS, and trail users during construction due to TMB. Designed for a 75-year lifespan. Some additional natural heritage/ property impacts due to the TMB footprint.	Carry forward for further consideration ✓
Alternative 7 – New Bridge and New Alignment	Two lane cross section with new structure and ability to accommodate active transportation. Minimal impact to traffic during construction due to construction offline. Designed for a 75-year lifespan. Higher natural heritage/property impacts due to new alignment.	Carry forward for further consideration ✓





## Next Steps



Thank you for attending Public Information Centre No. 1.  
Please provide comments by Wednesday October 16, 2019.

Comment sheets are available to fill in this evening or you may provide your comments directly to:

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Please feel free to contact us with any questions or comments.

