

**Context Sensitive Design
an Urban Example:
St. John's Sideroad and McKenzie Marsh**



Project Overview

- Project of Transportation and Works, Regional Municipality of York
- EA for Regional road widening and reconstruction in urban context
- Provincially Significant Wetland
- Lots of public concern including road-kills, some ecological issues
- Municipal desire to get it right
- Diverse stakeholder group



100 0 200 400
metres



Newmarket
Aurora

Tributary to East Branch of
Holland River

Yonge Street

Hadley Crange

McKenzie
Marsh
(North Wetland)

Canadian National Railway

St. John's Sideroad

(South Wetland)

Atkinson
Park

Old Yonge Street

Industrial Parkway



McKENZIE MARSH

WETLANDS FOR WILDLIFE

IMPROVED BY OWNERS & FEDERAL GOVERNMENT - 1973
CLASSIFIED REGIONALLY SIGNIFICANT BY ONT. GOVT.
PROTECTED HABITAT VIEW FROM ROADWAY

SKI OR SKATE AT OWN RISK
NO OTHER TRESPASSING PRIVATE PROPERTY













Stop Log Dam

Newmarket
Aurora

Yonge Street

Tributary to East Branch of
Holland River

McKenzie
Marsh
(North Wetland)

Canadian National Railway

Pre-existing 0.6 m Culvert

St. John's Sideroad

(South Wetland)

Old Yonge Street

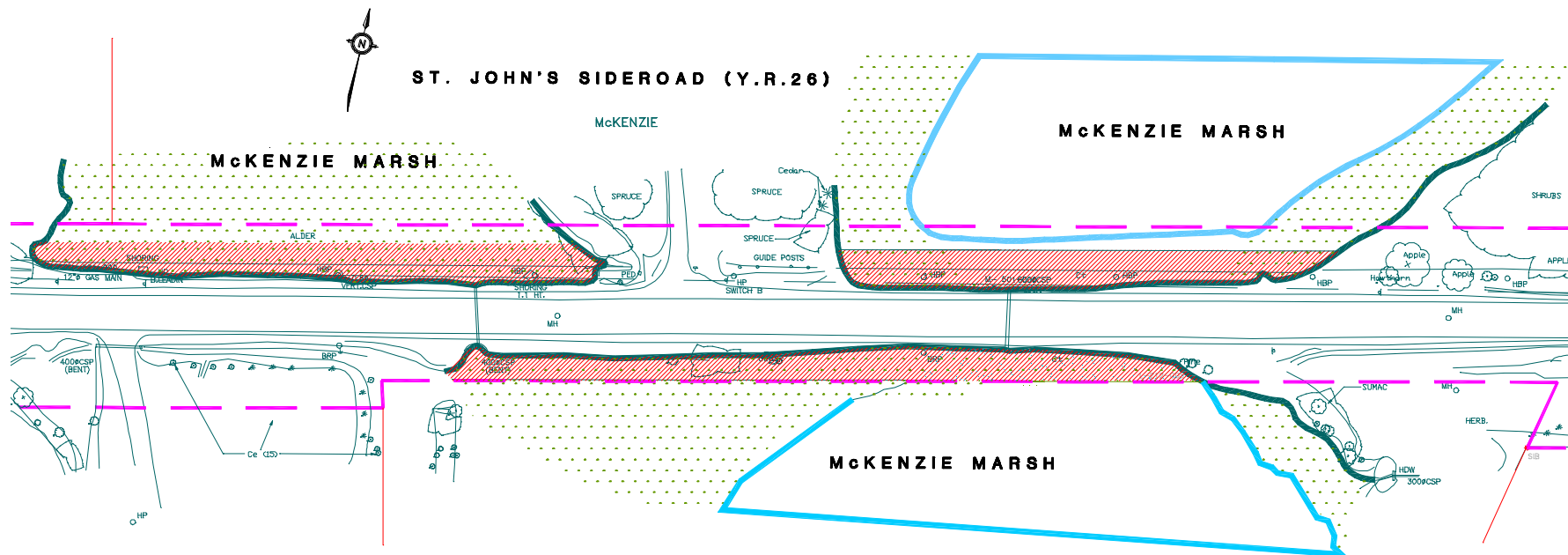
Industrial Parkway





Issues

- **Loss of wetland**
- Road-kills
- Water quality
- Human access



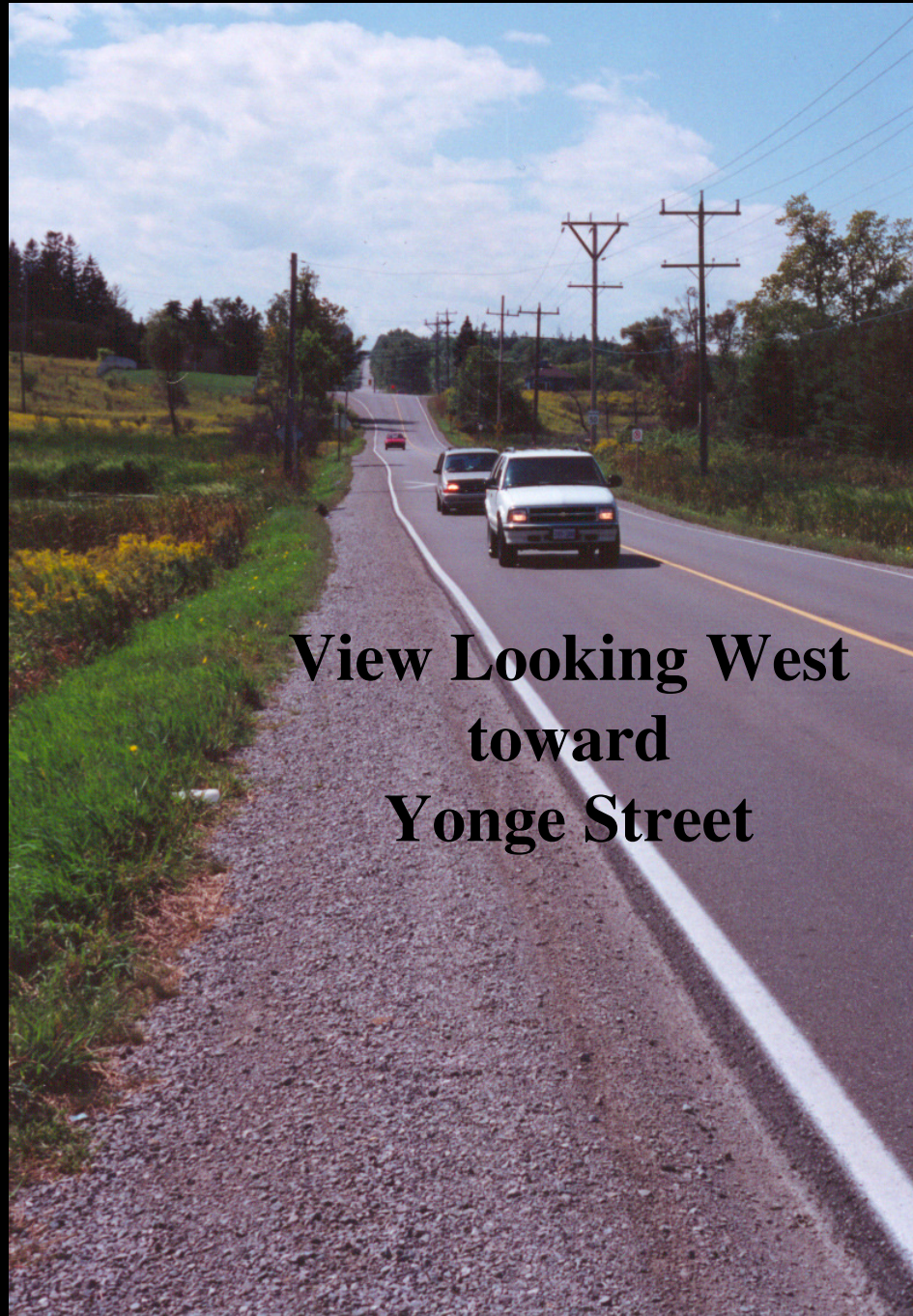
**Total Area of Wetland
Encroachment =
0.22 ha**

Issues

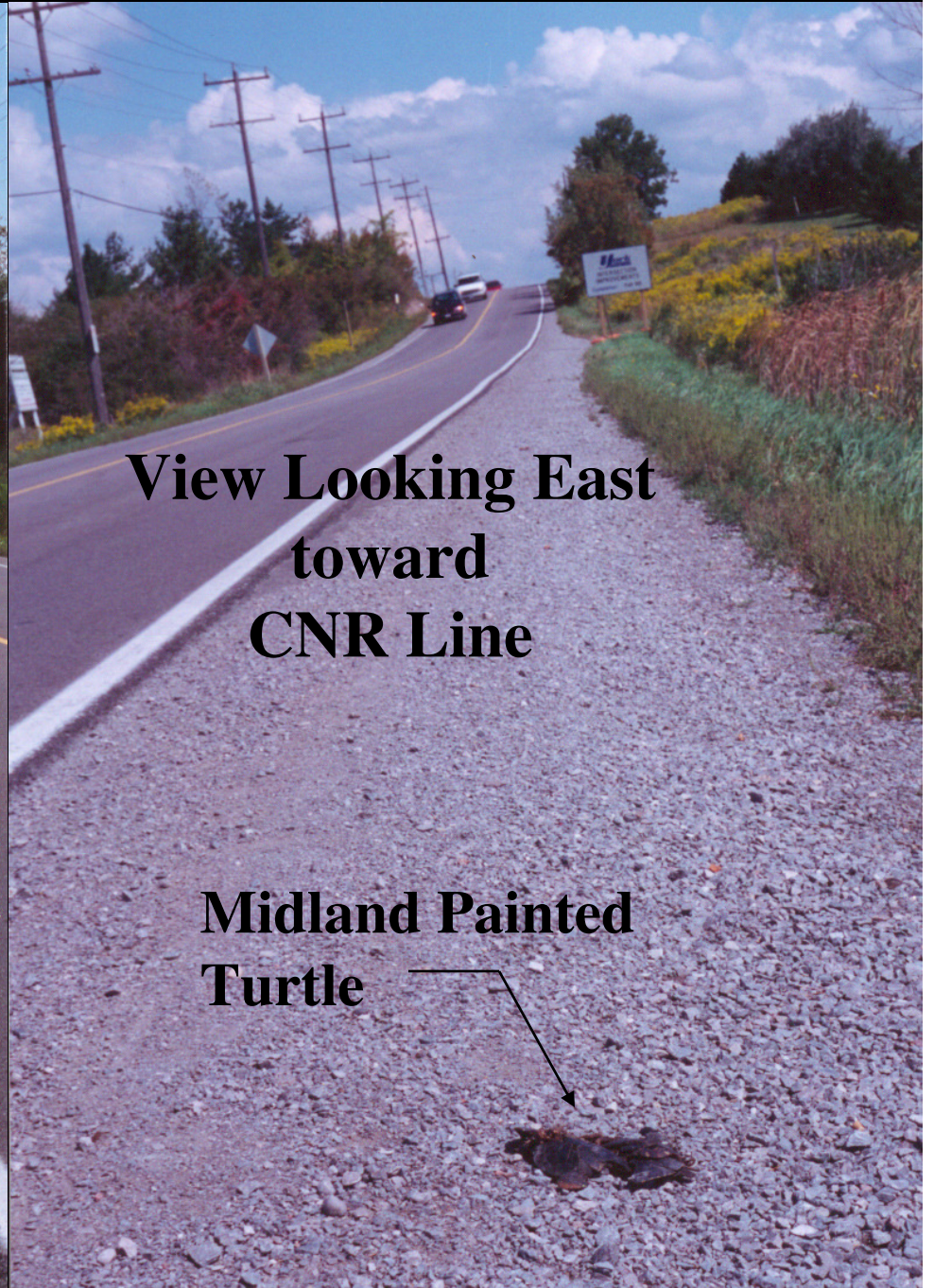
- Loss of wetland
- **Road-kills**
- Water quality
- Human access





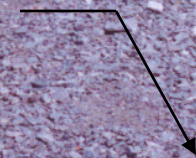


**View Looking West
toward
Yonge Street**



**View Looking East
toward
CNR Line**

**Midland Painted
Turtle**



Issues

- Loss of wetland
- Road-kill
- **Water quality**
- Human access



McKenzie
Marsh

(North Wetland)

St. John's Sideroad

Yonge Street

Old Yonge Street

Gabion Wall

(South Wetland)

Stormwater Management
Pond

Canadian National Railway





Issues

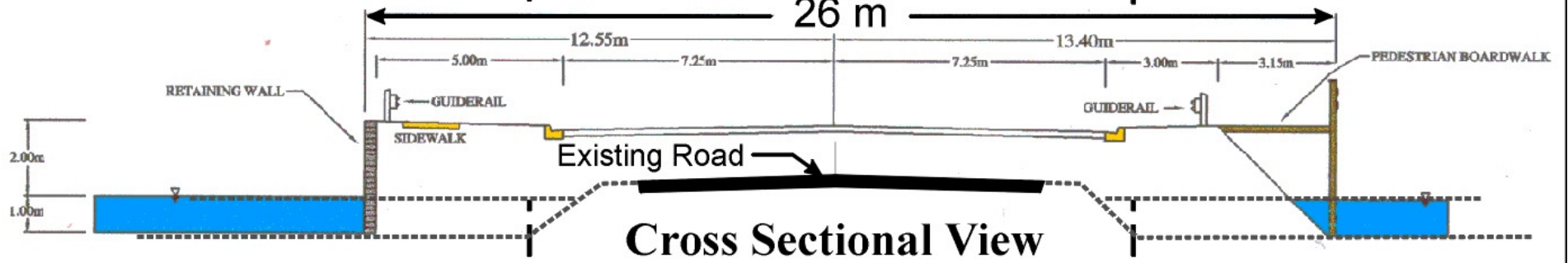
- Loss of wetland
- Road-kill
- Water quality
- **Human access**

Solutions

- **Minimize road footprint**
- **Reduce wildlife access**
- Facilitate wildlife passage
- Habitat improvements
- Focus pedestrian use
- Manage water levels

Existing Road Footprint

C/L
26 m



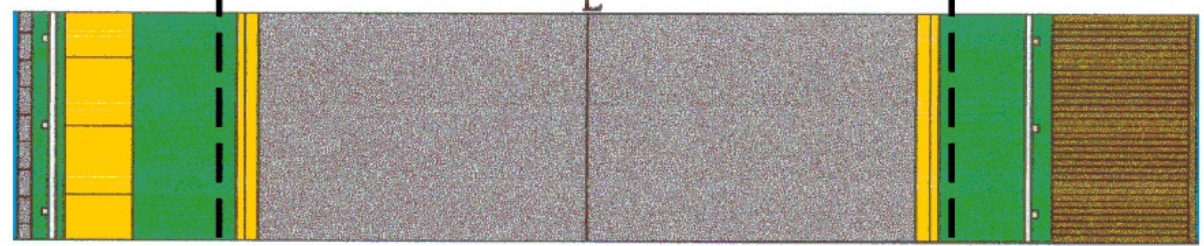
Cross Sectional View

16 m

South Wetland

North Wetland

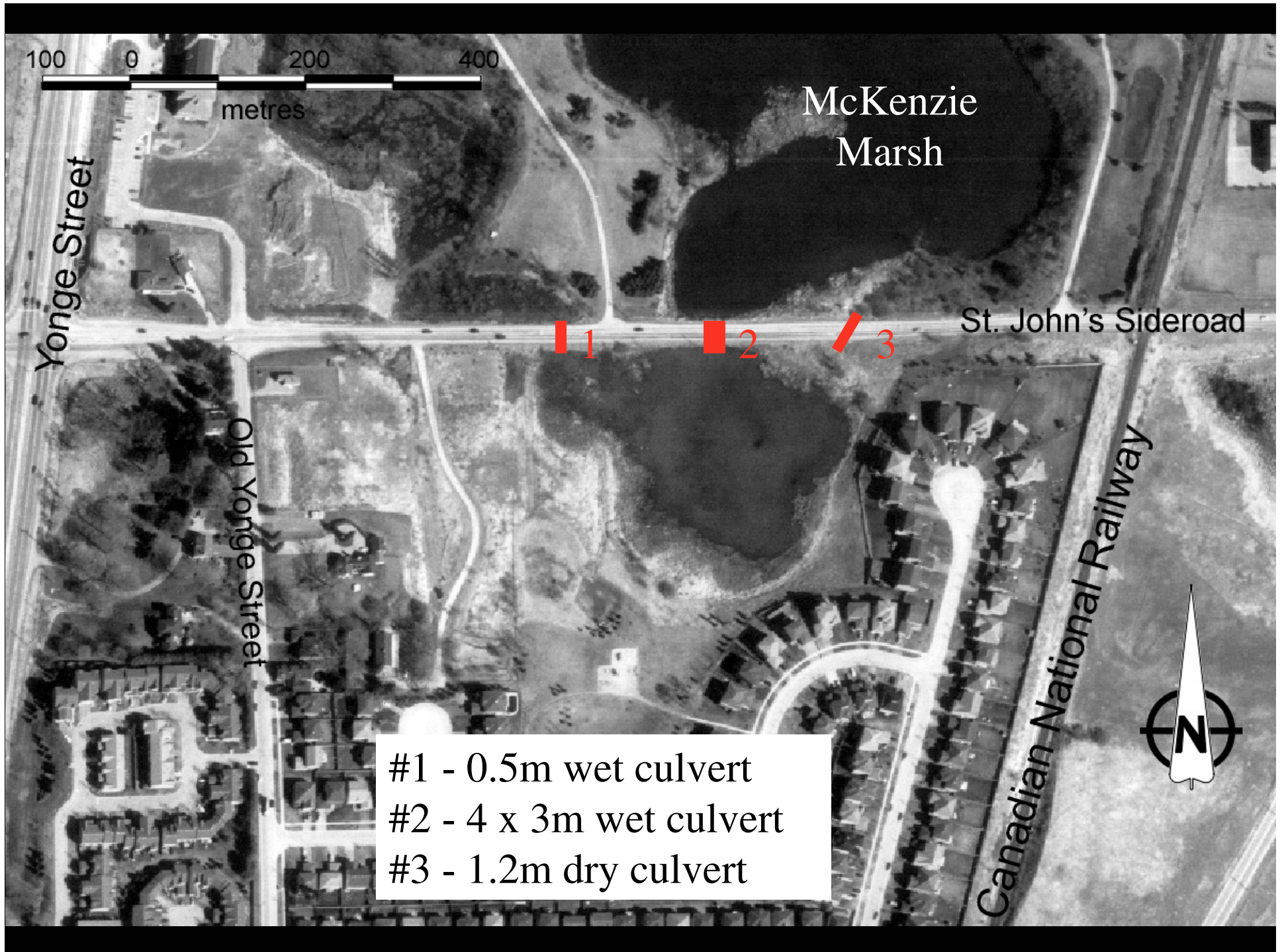
Plan View





Solutions

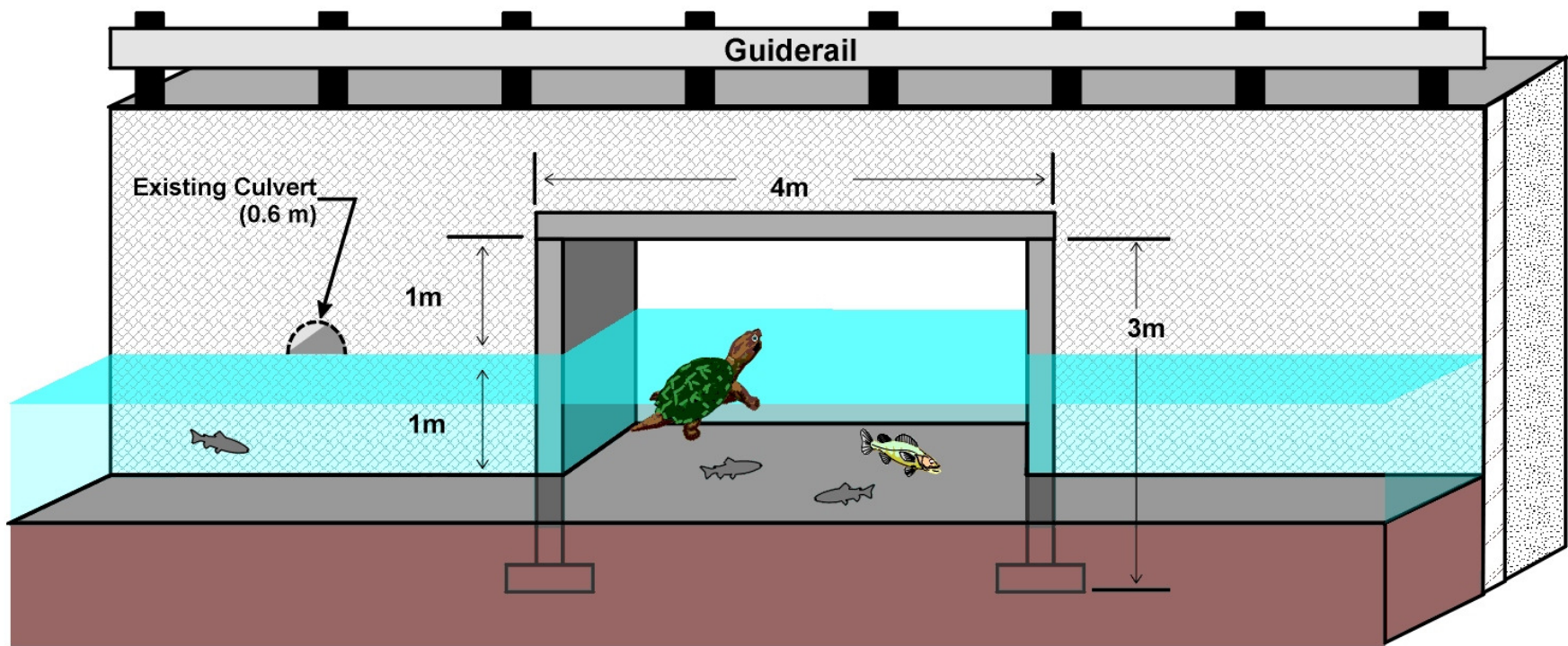
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Wet Culvert

West

East





Solutions

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Solutions

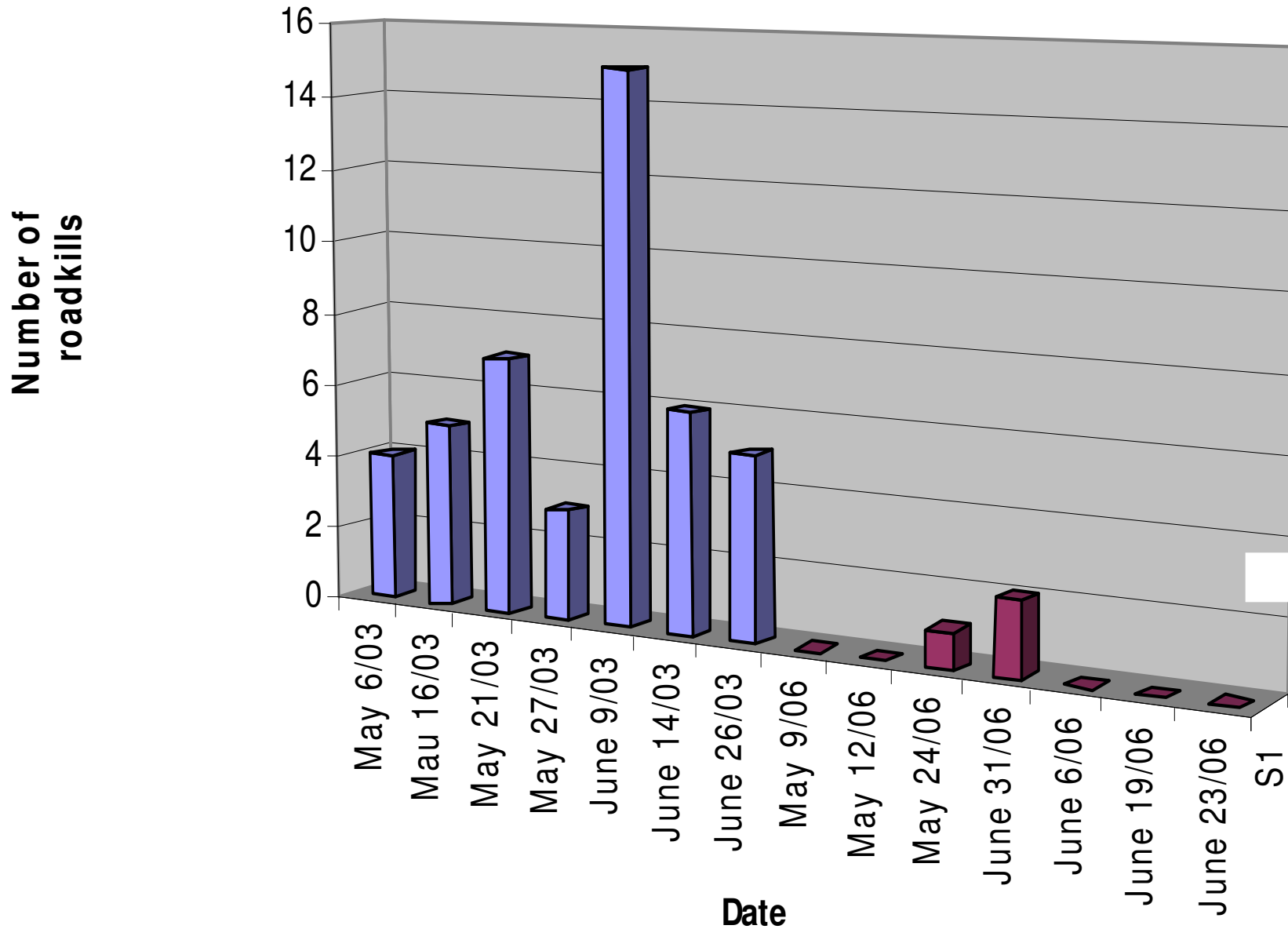
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Design, Mitigation, Monitoring

- | | | |
|---|--|---|
| <ul style="list-style-type: none">■ Road designed to minimize encroachment■ Vertical retaining wall■ Removal of gravel shoulders■ Oversized culvert for fauna passage■ Wet and dry culverts | <ul style="list-style-type: none">■ Remove road side turtle nesting habitat■ Boardwalk and trail■ Focus pedestrian access with plantings, controlled observation points■ Plantings around south wetland | <ul style="list-style-type: none">■ Suggested retrofit of Town's storm water pond to south■ Suggested alternative turtle nesting habitat■ Suggested managing water levels■ 2 yr monitoring program |
|---|--|---|

Comparison of number of roadkills pre- and post-construction for select comparable dates in 2003 and 2006





2006/09/01
12:02:52



2006/08/30
15:39:12



2006/08/24
01:34:53



2006/09/06
17:00:39



2006/08/15
23:37:24



Questions?

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