# 2135 - Stouffville GO Grade Separation - Highway 7 west of Kennedy Road

## Project Description

<table>
<thead>
<tr>
<th>Location</th>
<th>Stouffville GO Grade Separation</th>
<th>Project ID</th>
<th>2135</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipality</td>
<td>Markham</td>
<td>Road Segment ID</td>
<td>07-34</td>
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<tr>
<td>Project Limits</td>
<td>Highway 7 west of Kennedy Road</td>
<td></td>
<td></td>
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<tr>
<td>Project Type</td>
<td>Rail grade separation</td>
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<td></td>
</tr>
</tbody>
</table>

## Map

[Map Image]

## Existing Conditions

### Physical and Transportation Conditions

**OP Designated ROW**

Up to 43 metres

### Description


## Natural and Built Environment

### Natural Environment

Observations: Existing development in the immediate area.

### Land Use and Built Environment

Long-term care facility in the northwest quadrant. Retail commercial on the remaining quadrants.

## Problem or Opportunity Statement

- Capacity improvements needed to address existing congestion.
- Capacity improvements needed to accommodate future travel demands.
- Corridor improvements needed to support walking, cycling and transit.

## Alternatives Considered

1. Do Nothing - Does not address Problem or Opportunity Statement.
2. Improve grade crossing safety - Potential to improve walking and cycling facilities and address any safety concerns.
3. Transportation improvements to adjacent/parallel corridor - Potential to divert travel demand to other corridor. No improvement to walking and cycling. No improvement to transit.
Recommended Improvement and Justification

**Recommendation**
Construct rail grade separation structure.

**Justification**
Existing traffic and train volumes exceed exposure warrants for grade separation. Grade separation improves pedestrian and cyclist safety and reduces delay to transit and traffic along the corridor. Grade separation needed to support proposed GO Rail service improvements.

**TMP Phase**
2022 to 2026

Alignment with TMP Objectives

<table>
<thead>
<tr>
<th>Support Transit</th>
<th>Support Road Network</th>
<th>Support Active Transportation</th>
<th>Support Goods Movement</th>
<th>Support Last Mile</th>
</tr>
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<tbody>
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<td>☐</td>
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<td>☐</td>
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</table>

**Costs**

- **Capital Cost**
  $ 50,972,200
- **Incremental Annual Road Operating Cost**
  $ -
- **Incremental Road Maintenance and Rehabilitation Cost**
  $ -

Related Projects

<table>
<thead>
<tr>
<th>Name</th>
<th>Project ID</th>
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</thead>
<tbody>
<tr>
<td>Highway 7 - Town Centre Boulevard to Kennedy Road - RT Corridor</td>
<td>1009</td>
</tr>
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</table>
2136 - Barrie GO Grade Separation - Langstaff Road east of Keele Street

**Project Description**

<table>
<thead>
<tr>
<th>Location</th>
<th>Barrie GO Grade Separation</th>
<th>Project ID</th>
<th>2136</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipality</td>
<td>Vaughan</td>
<td>Road Segment ID</td>
<td>72-20</td>
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<tr>
<td>Project Limits</td>
<td>Langstaff Road east of Keele Street</td>
<td></td>
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</tr>
<tr>
<td>Project Type</td>
<td>Rail grade separation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Map**

![Map of Barrie GO Grade Separation - Langstaff Road east of Keele Street](image)

**Existing Conditions**

**Physical and Transportation Conditions**

**OP Designated ROW**  Up to 36 metres

**Description**

Existing 2 general purpose lanes on Langstaff Road. Sidewalk on south side. Railway crossing warning system with gates. No dedicated cycling facilities. Curbside transit service.

**Natural and Built Environment**

**Natural Environment**

Observations: Langstaff Eco Park, part of Regional Greenlands System, on south side of Langstaff Road west of the railway.

**Land Use and Built Environment**

Employment lands to the north and southeast of the at-grade crossing.

**Problem or Opportunity Statement**

- Capacity improvements needed to address existing congestion.
- Capacity improvements needed to accommodate future travel demands.
- Corridor improvements needed to support walking, cycling and transit.

**Alternatives Considered**

1. Do Nothing - Does not address Problem or Opportunity Statement.
2. Improve grade crossing safety - Potential to improve walking and cycling facilities and address any safety concerns.
3. Transportation improvements to adjacent/parallel corridor - Potential to divert travel demand to other corridor. No improvement to walking and cycling. No improvement to transit.
2136 - Barrie GO Grade Separation - Langstaff Road east of Keele Street (continued)

**Recommended Improvement and Justification**

**Recommendation**
Construct rail grade separation structure.

**Justification**
Traffic and train volumes are expected to exceed exposure warrants for grade separation by 2021. Grade separation improves pedestrian and cyclist safety and reduces delay to transit and traffic along the corridor. Grade separation needed to support planned RER service improvements.

**TMP Phase**
2022 to 2026

### Alignment with TMP Objectives

<table>
<thead>
<tr>
<th>Support Transit</th>
<th>Support Road Network</th>
<th>Support Active Transportation</th>
<th>Support Goods Movement</th>
<th>Support Last Mile</th>
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<tr>
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<td>![Icon]</td>
<td>![Icon]</td>
<td>![Icon]</td>
<td>![Icon]</td>
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</table>

### Costs

- **Capital Cost** $19,633,600
- **Incremental Annual Road Operating Cost** $-
- **Incremental Road Maintenance and Rehabilitation Cost** $-

### Related Projects

<table>
<thead>
<tr>
<th>Name</th>
<th>Project ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Langstaff Road - Keele Street to Dufferin Street - Widen to 6 lanes</td>
<td>2081</td>
</tr>
</tbody>
</table>

### Key Intersections and Constraints

**Barrie GO at Langstaff Road**

![Image]
# 2137 - Stouffville GO Grade Separation - Kennedy Road north of Highway 7

## Project Description

<table>
<thead>
<tr>
<th>Location</th>
<th>Stouffville GO Grade Separation</th>
<th>Project ID</th>
<th>2137</th>
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<tbody>
<tr>
<td>Municipality</td>
<td>Markham</td>
<td>Road Segment ID</td>
<td>03-06</td>
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<tr>
<td>Project Limits</td>
<td>Kennedy Road north of Highway 7</td>
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<tr>
<td>Project Type</td>
<td>Rail grade separation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Map

![Map of the project area](image)

## Existing Conditions

### Physical and Transportation Conditions

**OP Designated ROW**

- Up to 43 metres

**Description**

Existing 2 general purpose lanes on Kennedy Road. Sidewalks on both sides. Railway crossing warning system with gates. No dedicated cycling facilities. Curbside transit service.

### Natural and Built Environment

**Natural Environment**

- Observations: Existing development in the immediate area.

**Land Use and Built Environment**

- Historical Main Street Unionville area to the north. Residential to the south.

## Problem or Opportunity Statement

- Capacity improvements needed to address existing congestion.
- Capacity improvements needed to accommodate future travel demands.
- Corridor improvements needed to support walking, cycling and transit.

## Alternatives Considered

1. Do Nothing - Does not address Problem or Opportunity Statement.
2. Improve grade crossing safety - Potential to improve walking and cycling facilities and address any safety concerns.
3. Transportation improvements to adjacent/parallel corridor - Potential to divert travel demand to other corridor. No improvement to walking and cycling. No improvement to transit.

October 2016
2137 - Stouffville GO Grade Separation - Kennedy Road north of Highway 7 (continued)

Recommended Improvement and Justification

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Construct rail grade separation structure.</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Justification</th>
<th>Existing traffic and train volumes exceed exposure warrants for grade separation. Grade separation improves pedestrian and cyclist safety and reduces delay to transit and traffic along the corridor. Grade separation needed to support proposed GO Rail service improvements.</th>
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TMP Phase

<table>
<thead>
<tr>
<th>2022 to 2026</th>
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</table>

Alignment with TMP Objectives

<table>
<thead>
<tr>
<th>Support Transit</th>
<th>Support Road Network</th>
<th>Support Active Transportation</th>
<th>Support Goods Movement</th>
<th>Support Last Mile</th>
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<td>🌂</td>
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</table>

Costs

| Capital Cost          | $ 45,901,900 |
| Incremental Annual Road Operating Cost | $ -          |
| Incremental Road Maintenance and Rehabilitation Cost | $ -          |

Related Projects

<table>
<thead>
<tr>
<th>Name</th>
<th>Project ID</th>
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<tbody>
<tr>
<td>Kennedy Road - Highway 7 to Major Mackenzie Drive - Widen to 6 lanes</td>
<td>2002</td>
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</table>

Key Intersections and Constraints

Stouffville GO at Kennedy Road (north of Highway 7)
2138 - Stouffville GO Grade Separation - McCowan Road north of Highway 7

Project Description

Location: Stouffville GO Grade Separation
Municipality: Markham
Project Limits: McCowan Road north of Highway 7
Project Type: Rail grade separation

Map

Existing Conditions

Physical and Transportation Conditions
OP Designated ROW: Up to 43 metres

Description
Existing 4 general purpose lanes on McCowan Road. Sidewalks on both sides. Railway crossing warning system with gates. No dedicated cycling facilities. Curbside transit service.

Natural and Built Environment
Natural Environment: Observations: Existing development in the immediate area.

Land Use and Built Environment: Residential communities north of the railway. Community Centre and commercial developments south of the railway.

Problem or Opportunity Statement
• Capacity improvements needed to address existing congestion.
• Capacity improvements needed to accommodate future travel demands.
• Corridor improvements needed to support walking, cycling and transit.

Alternatives Considered
1. Do Nothing - Does not address Problem or Opportunity Statement.
2. Improve grade crossing safety - Potential to improve walking and cycling facilities and address any safety concerns.
3. Transportation improvements to adjacent/parallel corridor - Potential to divert travel demand to other corridor. No improvement to walking and cycling. No improvement to transit.
Recommended Improvement and Justification

**Recommendation**
Construct rail grade separation structure.

**Justification**
Existing traffic and train volumes exceed exposure warrants for grade separation. Grade separation improves pedestrian and cyclist safety and reduces delay to transit and traffic along the corridor. Grade separation needed to support proposed GO Rail service improvements.

**TMP Phase**
2022 to 2026

**Alignment with TMP Objectives**

<table>
<thead>
<tr>
<th>Support Transit</th>
<th>Support Road Network</th>
<th>Support Active Transportation</th>
<th>Support Goods Movement</th>
<th>Support Last Mile</th>
</tr>
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<tr>
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**Costs**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Capital Cost</td>
<td>$46,206,900</td>
</tr>
<tr>
<td>Incremental Annual Road Operating Cost</td>
<td>$-</td>
</tr>
<tr>
<td>Incremental Road Maintenance and Rehabilitation Cost</td>
<td>$-</td>
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</table>

**Related Projects**

<table>
<thead>
<tr>
<th>Name</th>
<th>Project ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>McCowan Road - Steeles Avenue to Major Mackenzie Drive - Widen to 6 lanes</td>
<td>2074</td>
</tr>
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</table>

**Key Intersections and Constraints**

**Stouffville GO at McCowan Road**
2139 - Richmond Hill GO Grade Separation - Elgin Mills Road east of Yonge Street

**Project Description**

<table>
<thead>
<tr>
<th>Location</th>
<th>Richmond Hill GO Grade Separation</th>
<th>Project ID</th>
<th>2139</th>
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</thead>
<tbody>
<tr>
<td>Municipality</td>
<td>Richmond Hill</td>
<td>Road Segment ID</td>
<td>49-26</td>
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<tr>
<td>Project Limits</td>
<td>Elgin Mills Road east of Yonge Street</td>
<td></td>
<td></td>
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<tr>
<td>Project Type</td>
<td>Rail grade separation</td>
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</table>

**Map**

![Map Image]

**Existing Conditions**

**Physical and Transportation Conditions**

**OP Designated ROW** Up to 36 metres

**Description**

Existing 4 general purpose lanes on Elgin Mills Road. Sidewalks on both sides. Railway crossing warning system with gates. No dedicated cycling facilities. Curbside transit service.

**Natural and Built Environment**

**Natural Environment** Observations: Existing development in the immediate area.

**Land Use and Built Environment**

Residential community northwest of rail crossing. Employment lands with mix of industrial and commercial developments to the south and northeast.

**Problem or Opportunity Statement**

- Capacity improvements needed to address existing congestion.
- Capacity improvements needed to accommodate future travel demands.
- Corridor improvements needed to support walking, cycling and transit.

**Alternatives Considered**

1. Do Nothing - Does not address Problem or Opportunity Statement.
2. Improve grade crossing safety - Potential to improve walking and cycling facilities and address any safety concerns.
3. Transportation improvements to adjacent/parallel corridor - Potential to divert travel demand to other corridor. No improvement to walking and cycling. No improvement to transit.
Recommended Improvement and Justification

**Recommendation**
Construct rail grade separation structure.

**Justification**
Traffic and train volumes are expected to exceed exposure warrants for grade separation by 2021. Grade separation improves pedestrian and cyclist safety and reduces delay to transit and traffic along the corridor.

**TMP Phase**
2022 to 2026

**Alignment with TMP Objectives**

<table>
<thead>
<tr>
<th>Support Transit</th>
<th>Support Road Network</th>
<th>Support Active Transportation</th>
<th>Support Goods Movement</th>
<th>Support Last Mile</th>
</tr>
</thead>
<tbody>
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**Costs**

<table>
<thead>
<tr>
<th>Cost Description</th>
<th>Amount</th>
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<tbody>
<tr>
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<tr>
<td>Incremental Annual Road Operating Cost</td>
<td>$ -</td>
</tr>
<tr>
<td>Incremental Road Maintenance and Rehabilitation Cost</td>
<td>$ -</td>
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**Related Projects**

<table>
<thead>
<tr>
<th>Name</th>
<th>Project ID</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A-462</td>
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</table>

**Key Intersections and Constraints**

**Richmond Hill GO at Elgin Mills Road**
2140 - Barrie GO Grade Separation - Green Lane east of 2nd Concession

**Project Description**

<table>
<thead>
<tr>
<th>Location</th>
<th>Barrie GO Grade Separation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipality</td>
<td>East Gwillimbury</td>
</tr>
<tr>
<td>Project Limits</td>
<td>Green Lane east of 2nd Concession</td>
</tr>
<tr>
<td>Project Type</td>
<td>Rail grade separation</td>
</tr>
</tbody>
</table>

**Map**

![Map of Barrie GO Grade Separation]

**Existing Conditions**

**Physical and Transportation Conditions**

**OP Designated ROW**

Up to 45 metres

**Description**

Existing 4 general purpose lanes on Green Lane. Multi-use path on the south side. Railway crossing warning system with gates. Shared roadway (unsigned route). Curbside transit service.

**Natural and Built Environment**

**Natural Environment**

Observations: Regional Greenlands System, East Holland River and Nokiidaa bike trail run parallel to railway on the east side.

Source Water Protection Areas: Source Water Protection area north of Green Lane.

**Land Use and Built Environment**

East Gwillimbury GO station located to the southwest of the crossing.

**Problem or Opportunity Statement**

- Capacity improvements needed to address existing congestion.
- Capacity improvements needed to accommodate future travel demands.
- Corridor improvements needed to support walking, cycling and transit.

**Alternatives Considered**

1. Do Nothing - Does not address Problem or Opportunity Statement.
2. Improve grade crossing safety - Potential to improve walking and cycling facilities and address any safety concerns.
3. Transportation improvements to adjacent/parallel corridor - Potential to divert travel demand to other corridor. No improvement to walking and cycling. No improvement to transit.
Recommended Improvement and Justification

**Recommendation**
Construct rail grade separation structure.

**Justification**
Existing traffic and train volumes exceed exposure warrants for grade separation. Grade separation improves pedestrian and cyclist safety and reduces delay to transit and traffic along the corridor.

**TMP Phase**
2022 to 2026

---

**Alignment with TMP Objectives**

<table>
<thead>
<tr>
<th>Support Transit</th>
<th>Support Road Network</th>
<th>Support Active Transportation</th>
<th>Support Goods Movement</th>
<th>Support Last Mile</th>
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</table>

**Costs**

- **Capital Cost**
  - $37,062,400
- **Incremental Annual Road Operating Cost**
  - $-
- **Incremental Road Maintenance and Rehabilitation Cost**
  - $-

**Related Projects**

<table>
<thead>
<tr>
<th>Name</th>
<th>Project ID</th>
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<tbody>
<tr>
<td>Green Lane - Yonge Street to GO Station - RT Corridor</td>
<td>1021</td>
</tr>
<tr>
<td>Green Lane - 2nd Concession to Highway 404 - Widen to 6 lanes</td>
<td>2023</td>
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</table>

**Key Intersections and Constraints**

**Barrie GO at Green Lane**
### Project Description

**Location**  
CP MacTier Grade Separation

**Municipality**  
Vaughan

**Project Limits**  
Major Mackenzie Drive west of Highway 27

**Project Type**  
Rail grade separation

### Map

![Map of CP MacTier Grade Separation](image)

### Existing Conditions

#### Physical and Transportation Conditions

**OP Designated ROW**  
Up to 43 metres

**Description**  
Existing 2 general purpose lanes on Major Mackenzie Drive. No sidewalk on either side. Railway crossing warning system with gates. No dedicated cycling facilities. No transit services.

#### Natural and Built Environment

**Natural Environment**  

**Land Use and Built Environment**  
Developing residential area north of Major Mackenzie Drive on both sides of rail. Designated employment lands south of Major Mackenzie Drive - currently used for agriculture.

### Problem or Opportunity Statement

- Capacity improvements needed to address existing congestion.
- Capacity improvements needed to accommodate future travel demands.
- Corridor improvements needed to support walking, cycling and transit.

### Alternatives Considered

1. Do Nothing - Does not address Problem or Opportunity Statement.
2. Improve grade crossing safety - Potential to improve walking and cycling facilities and address any safety concerns.
3. Transportation improvements to adjacent/parallel corridor - Potential to divert travel demand to other corridor. No improvement to walking and cycling. No improvement to transit.
Recommended Improvement and Justification

Recommendation: Construct rail grade separation structure.

Justification: Traffic and train volumes exceed exposure warrants for grade separation. Grade separation improves pedestrian and cyclist safety and reduces delay to transit and traffic along the corridor.

TMP Phase: 2017 to 2021

Alignment with TMP Objectives

<table>
<thead>
<tr>
<th>Support Transit</th>
<th>Support Road Network</th>
<th>Support Active Transportation</th>
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<th>Support Last Mile</th>
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<tbody>
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</tbody>
</table>

Costs

- Capital Cost: $20,135,600
- Incremental Annual Road Operating Cost: $-
- Incremental Road Maintenance and Rehabilitation Cost: $-

Related Projects

<table>
<thead>
<tr>
<th>Name</th>
<th>Project ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Mackenzie Drive - Highway 50 to Highway 27 - Widen to 6 lanes</td>
<td>2026</td>
</tr>
</tbody>
</table>

Key Intersections and Constraints

CP MacTier at Major Mackenzie Drive
2142 - Barrie GO Grade Separation - King Vaughan Road west of Keele Street

**Project Description**

<table>
<thead>
<tr>
<th>Location</th>
<th>Barrie GO Grade Separation</th>
<th>Project ID</th>
<th>2142</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipality</td>
<td>Vaughan</td>
<td>Road Segment ID</td>
<td>14-18</td>
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<tr>
<td>Project Limits</td>
<td>King Vaughan Road west of Keele Street</td>
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<tr>
<td>Project Type</td>
<td>Rail grade separation</td>
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<td></td>
</tr>
</tbody>
</table>

**Map**

![Map of King Vaughan Road west of Keele Street]

**Existing Conditions**

**Physical and Transportation Conditions**

<table>
<thead>
<tr>
<th>OP Designated ROW</th>
<th>N/A</th>
</tr>
</thead>
</table>

**Description**

Existing 2 general purpose lanes on King Vaughan Road. No sidewalk on either side. Railway crossing warning system with gates. No dedicated cycling facilities. No transit services.

**Natural and Built Environment**

**Natural Environment**

Observations: Crossing is located within the Regional Greenlands System with significant forests and within the Oak Ridges Moraine designated area.

Environmentally Sensitive Areas: Designated Environmentally Sensitive Area to the north of south of the crossing.

**Land Use and Built Environment**

Single family homes fronting on to the north side of King Vaughan Road. Industrial uses to the southeast of the crossing.

**Problem or Opportunity Statement**

- Capacity improvements needed to address existing congestion.
- Capacity improvements needed to accommodate future travel demands.
- Corridor improvements needed to support walking, cycling and transit.

**Alternatives Considered**

1. Do Nothing - Does not address Problem or Opportunity Statement.
2. Improve grade crossing safety - Potential to improve walking and cycling facilities and address any safety concerns.
3. Transportation improvements to adjacent/parallel corridor - Potential to divert travel demand to other corridor. No improvement to walking and cycling. No improvement to transit.

October 2016
2142 - Barrie GO Grade Separation - King Vaughan Road west of Keele Street (continued)

Recommended Improvement and Justification

**Recommendation**
Construct rail grade separation structure.

**Justification**
Traffic and train volumes are expected to exceed exposure warrants for grade separation by 2025. Grade separation improves pedestrian and cyclist safety and reduces delay to transit and traffic along the corridor. Grade separation needed to support planned RER service improvements.

**TMP Phase**
2032 to 2041

Alignment with TMP Objectives

<table>
<thead>
<tr>
<th>Support Transit</th>
<th>Support Road Network</th>
<th>Support Active Transportation</th>
<th>Support Goods Movement</th>
<th>Support Last Mile</th>
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<td><img src="https://example.com/bar.png" alt="Bar" /></td>
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</table>

**Costs**

- **Capital Cost**: $23,584,100
- **Incremental Annual Road Operating Cost**: $-
- **Incremental Road Maintenance and Rehabilitation Cost**: $-

**Related Projects**

<table>
<thead>
<tr>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>King Vaughan Road - Pine Valley Drive to Bathurst Street - Widen to 4 lanes</td>
</tr>
</tbody>
</table>

**Project ID**: 2018

Key Intersections and Constraints

**Barrie GO at King Vaughan Road**
2143 - Barrie GO Grade Separation - St John's Sideroad east of Yonge Street

Project Description

Location: Barrie GO Grade Separation
Municipality: Aurora
Project Limits: St John's Sideroad east of Yonge Street
Project Type: Rail grade separation

Existing Conditions

Physical and Transportation Conditions
OP Designated ROW: Up to 36 metres

Description

Natural and Built Environment

Natural Environment
Observations: Regional Greenlands System to the east and west of the railway. Park with large pond and trails on the east.
Source Water Protection Areas: Crossing is within Source Water Protection area.

Land Use and Built Environment
Parklands and golf course north of St. John's Sideroad. Parklands and residential south of St. John's Sideroad.

Problem or Opportunity Statement
• Capacity improvements needed to address existing congestion.
• Capacity improvements needed to accommodate future travel demands.
• Corridor improvements needed to support walking, cycling and transit.

Alternatives Considered
1. Do Nothing - Does not address Problem or Opportunity Statement.
2. Improve grade crossing safety - Potential to improve walking and cycling facilities and address any safety concerns.
3. Transportation improvements to adjacent/parallel corridor - Potential to divert travel demand to other corridor. No improvement to walking and cycling. No improvement to transit.
Recommended Improvement and Justification

**Recommendation:** Construct rail grade separation structure.

**Justification:** Existing traffic and train volumes exceed exposure warrants for grade separation. Grade separation improves pedestrian and cyclist safety and reduces delay to transit and traffic along the corridor. Grade separation needed to support proposed GO Rail service improvements.

**TMP Phase:** 2027 to 2031

### Alignment with TMP Objectives

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<thead>
<tr>
<th>Support Transit</th>
<th>Support Road Network</th>
<th>Support Active Transportation</th>
<th>Support Goods Movement</th>
<th>Support Last Mile</th>
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### Costs

- **Capital Cost:** $63,678,700
- **Incremental Annual Road Operating Cost:** $-
- **Incremental Road Maintenance and Rehabilitation Cost:** $-

### Related Projects

<table>
<thead>
<tr>
<th>Name</th>
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### Key Intersections and Constraints

**Barrie GO at St John's Sideroad**
2144 - CP MacTier Grade Separation - Rutherford Road west of Highway 27

**Project Description**

<table>
<thead>
<tr>
<th>Location</th>
<th>CP MacTier Grade Separation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipality</td>
<td>Vaughan</td>
</tr>
<tr>
<td>Road Segment ID</td>
<td>73-08</td>
</tr>
<tr>
<td>Project ID</td>
<td>2144</td>
</tr>
<tr>
<td>Project Limits</td>
<td>Rutherford Road west of Highway 27</td>
</tr>
<tr>
<td>Project Type</td>
<td>Rail grade separation</td>
</tr>
</tbody>
</table>

**Map**

![Map Image]  

**Existing Conditions**

**Physical and Transportation Conditions**

- **OP Designated ROW**: Up to 43 metres

**Description**

Existing 4 general purpose lanes on Rutherford Road. No sidewalks on either side. Railway crossing warning system with gates. No dedicated cycling facilities. No transit services.

**Natural and Built Environment**

**Natural Environment**

Observations: Crossing is located between two Regional Greenslands System areas. Designated employment lands to the north and south which is currently used for agriculture.

**Land Use and Built Environment**

Primarily agricultural uses. Small residential (Elder Station) community southeast of crossing.

**Problem or Opportunity Statement**

Capacity improvements needed to address existing congestion.  
Capacity improvements needed to accommodate future travel demands.  
Transportation corridor improvements to support expansion of multimodal network.

**Alternatives Considered**

1. Do Nothing - Does not address Problem or Opportunity Statement.  
2. Improve grade crossing safety - Potential to improve walking and cycling facilities and address any safety concerns.  
3. Transportation improvements to adjacent/parallel corridor - Potential to divert travel demand to other corridor. No improvement to walking and cycling. No improvement to transit.  
Recommended Improvement and Justification

**Recommendation**: Construct rail grade separation structure.

**Justification**: Traffic and train volumes exceed exposure warrants for grade separation. Grade separation improves pedestrian and cyclist safety and reduces delay to transit and traffic along the corridor.

**TMP Phase**: 2032 to 2041

Alignment with TMP Objectives

<table>
<thead>
<tr>
<th>Support Transit</th>
<th>Support Road Network</th>
<th>Support Active Transportation</th>
<th>Support Goods Movement</th>
<th>Support Last Mile</th>
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<tbody>
<tr>
<td></td>
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**Costs**

- **Capital Cost**: $27,068,100
- Incremental Annual Road Operating Cost: $-
- Incremental Road Maintenance and Rehabilitation Cost: $-

Related Projects

<table>
<thead>
<tr>
<th>Name</th>
<th>Project ID</th>
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<tbody>
<tr>
<td>Rutherford Road - Highway 50 to Weston Road - Widen to 6 lanes</td>
<td>2082</td>
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Key Intersections and Constraints

**CP MacTier at Rutherford Road**
2145 - Barrie GO Grade Separation - Dufferin Street north of King Road

Project Description

<table>
<thead>
<tr>
<th>Location</th>
<th>Barrie GO Grade Separation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipality</td>
<td>King</td>
</tr>
<tr>
<td>Project Limits</td>
<td>Dufferin Street north of King Road</td>
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<tr>
<td>Project Type</td>
<td>Rail grade separation</td>
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</table>

Map

Existing Conditions

Physical and Transportation Conditions

OP Designated ROW | Up to 36 metres

Description

Existing 2 general purpose lanes on Dufferin Street. No sidewalks on either side. Railway crossing warning system with gates. Shared roadway (unsigned route). No transit services.

Natural and Built Environment

Natural Environment

Observations: Lands to the northwest and east of crossing are part of the Regional Greenlands System with significant forests. Crossing located within the Oak Ridges Moraine designated area.

Land Use and Built Environment

Employment lands southwest of crossing. West of Dufferin Street is within future urban area. Primarily agricultural uses.

Problem or Opportunity Statement

• Capacity improvements needed to address existing congestion.
• Capacity improvements needed to accommodate future travel demands.
• Corridor improvements needed to support walking, cycling and transit.

Alternatives Considered

1. Do Nothing - Does not address Problem or Opportunity Statement.
2. Improve grade crossing safety - Potential to improve walking and cycling facilities and address any safety concerns.
3. Transportation improvements to adjacent/parallel corridor - Potential to divert travel demand to other corridor. No improvement to walking and cycling. No improvement to transit.
Recommended Improvement and Justification

**Recommendation**: Construct rail grade separation structure.

**Justification**: Traffic and train volumes are expected to exceed exposure warrants for grade separation by 2021. Grade separation improves pedestrian and cyclist safety and reduces delay to transit and traffic along the corridor. Grade separation needed to support planned RER service improvements.

**TMP Phase**: 2032 to 2041

### Alignment with TMP Objectives

<table>
<thead>
<tr>
<th>Support Transit</th>
<th>Support Road Network</th>
<th>Support Active Transportation</th>
<th>Support Goods Movement</th>
<th>Support Last Mile</th>
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### Costs

- **Capital Cost**: $25,749,400
- **Incremental Annual Road Operating Cost**: $-
- **Incremental Road Maintenance and Rehabilitation Cost**: $-

### Related Projects

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<tr>
<th>Name</th>
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<tr>
<td>Dufferin Street - Major Mackenzie Drive to 15th Sideroad - Widen to 4 lanes</td>
<td>2064</td>
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### Key Intersections and Constraints

**Barrie GO at Dufferin Street**
2146 - Barrie GO Grade Separation - Teston Road east of Keele Street

Project Description

Location: Barrie GO Grade Separation
Municipality: Vaughan
Project Limits: Teston Road east of Keele Street
Project Type: Rail grade separation

Map

Existing Conditions

Physical and Transportation Conditions
OP Designated ROW: Up to 36 metres

Description
Existing 2 general purpose lanes on Teston Road. No sidewalks on either side. Railway crossing warning system with gates. No dedicated cycling facilities. No transit services.

Natural and Built Environment
Natural Environment: Observations: Existing development in the immediate area. Crossing located adjacent to the Oak Ridges Moraine designated area.

Land Use and Built Environment
Employment lands on the south side of Teston Road. Industrial uses on the north side.

Problem or Opportunity Statement
- Capacity improvements needed to address existing congestion.
- Capacity improvements needed to accommodate future travel demands.
- Corridor improvements needed to support walking, cycling and transit.

Alternatives Considered
1. Do Nothing - Does not address Problem or Opportunity Statement.
2. Improve grade crossing safety - Potential to improve walking and cycling facilities and address any safety concerns.
3. Transportation improvements to adjacent/parallel corridor - Potential to divert travel demand to other corridor. No improvement to walking and cycling. No improvement to transit.
Recommended Improvement and Justification

Recommendation: Construct rail grade separation structure.

Justification: Traffic and train volumes are expected to exceed exposure warrants for grade separation by 2025. Grade separation improves pedestrian and cyclist safety and reduces delay to transit and traffic along the corridor. Grade separation needed to support planned RER service improvements.

TMP Phase: 2022 to 2026

Alignment with TMP Objectives

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Costs

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<td>Incremental Road Maintenance and Rehabilitation Cost</td>
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Related Projects

<table>
<thead>
<tr>
<th>Name</th>
<th>Project ID</th>
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</thead>
<tbody>
<tr>
<td>Teston Road - Keele Street to Dufferin Street - Missing Link</td>
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</table>

Key Intersections and Constraints

Barrie GO at Teston Road
2147 - Barrie GO Grade Separation - Kirby Road west of Keele Street

<table>
<thead>
<tr>
<th>Project Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Location</strong></td>
<td>Barrie GO Grade Separation</td>
</tr>
<tr>
<td><strong>Municipality</strong></td>
<td>Vaughan</td>
</tr>
<tr>
<td><strong>Project Limits</strong></td>
<td>Kirby Road west of Keele Street</td>
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<td><strong>Project Type</strong></td>
<td>Rail grade separation</td>
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<tr>
<td><strong>Project ID</strong></td>
<td>2147</td>
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<tr>
<td><strong>Road Segment ID</strong></td>
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</tr>
</tbody>
</table>

### Map

![Map of Kirby Road west of Keele Street](image)

### Existing Conditions

#### Physical and Transportation Conditions

| **OP Designated ROW** | N/A |

#### Description

Existing 2 general purpose lanes on Kirby Road. No sidewalks on either side. Railway crossing warning system with gates. Shared roadway (unsigned route). No transit services.

### Natural and Built Environment

#### Natural Environment

Observations: Agricultural fields on three quadrants. Existing development on fourth quadrant.

#### Land Use and Built Environment

Lands south of Kirby Road are within the urban area currently used for agriculture. Industrial uses northeast of crossing. Agricultural uses northwest of crossing.

### Problem or Opportunity Statement

- Capacity improvements needed to address existing congestion.
- Capacity improvements needed to accommodate future travel demands.
- Corridor improvements needed to support walking, cycling and transit.

### Alternatives Considered

1. Do Nothing - Does not address Problem or Opportunity Statement.
2. Improve grade crossing safety - Potential to improve walking and cycling facilities and address any safety concerns.
3. Transportation improvements to adjacent/parallel corridor - Potential to divert travel demand to other corridor. No improvement to walking and cycling. No improvement to transit.
Recommended Improvement and Justification

Recommendation
Construct rail grade separation structure.

Justification
Traffic and train volumes are expected to exceed exposure warrants for grade separation by 2025. Grade separation improves pedestrian and cyclist safety and reduces delay to transit and traffic along the corridor. Grade separation needed to support planned RER service improvements.

TMP Phase
2027 to 2031

Alignment with TMP Objectives

<table>
<thead>
<tr>
<th>Support Transit</th>
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Costs

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Related Projects

<table>
<thead>
<tr>
<th>Name</th>
<th>Project ID</th>
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</thead>
<tbody>
<tr>
<td>Kirby Road - Pine Valley Drive to Dufferin Street - Widen to 4 lanes</td>
<td>2034</td>
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</table>

Key Intersections and Constraints

Barrie GO at Kirby Road
2148 - Richmond Hill GO Grade Separation - Leslie Street south of Stouffville Road

**Project Description**

**Location** | Richmond Hill GO Grade Separation
---|---
**Municipality** | Richmond Hill
**Project Limits** | Leslie Street south of Stouffville Road
**Project Type** | Rail grade separation

**Map**

![Map of Richmond Hill GO Grade Separation - Leslie Street south of Stouffville Road](image)

**Existing Conditions**

**Physical and Transportation Conditions**

**OP Designated ROW** | Up to 36 metres
---|---

**Description**

Existing 2 general purpose lanes on Leslie Street. No sidewalks on either side. Railway crossing warning system with gates. No dedicated cycling facilities. No transit services.

**Natural and Built Environment**

**Natural Environment**

Observations: Regional Greenlands System and Rouge River crosses Leslie Street just south of rail crossing and crosses the railway just west of Leslie Street. Crossing located within the Oak Ridges Moraine designated area.

**Land Use and Built Environment**

Primarily agricultural uses with a few single family homes fronting Leslie Street south of the crossing.

**Problem or Opportunity Statement**

- Capacity improvements needed to address existing congestion.
- Capacity improvements needed to accommodate future travel demands.
- Corridor improvements needed to support walking, cycling and transit.

**Alternatives Considered**

1. Do Nothing - Does not address Problem or Opportunity Statement.
2. Improve grade crossing safety - Potential to improve walking and cycling facilities and address any safety concerns.
3. Transportation improvements to adjacent/parallel corridor - Potential to divert travel demand to other corridor. No improvement to walking and cycling. No improvement to transit.
Recommended Improvement and Justification

Recommendation: Construct rail grade separation structure.

Justification: Traffic and train volumes are expected to exceed exposure warrants for grade separation by 2025. Grade separation improves pedestrian and cyclist safety and reduces delay to transit and traffic along the corridor.

TMP Phase: 2027 to 2031

Alignment with TMP Objectives

Support Transit: Support Road Network
Support Active Transportation: Support Goods Movement
Support Last Mile: Support Road Network

Costs

<table>
<thead>
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<th>Description</th>
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<tbody>
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<td>Capital Cost</td>
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<td>Incremental Road Maintenance and Rehabilitation Cost</td>
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</table>

Related Projects

Name: Leslie Street - 19th Avenue to Wellington Street - Widen to 4 lanes
Project ID: 2014

Key Intersections and Constraints

Richmond Hill GO at Leslie Street
**Project Description**

- **Location**: CP MacTier Grade Separation
- **Municipality**: Vaughan
- **Project Limits**: Islington Avenue north of Steeles Avenue
- **Project Type**: Rail grade separation

**Map**

![Map Image]

**Existing Conditions**

- **Physical and Transportation Conditions**
  - **OP Designated ROW**: Up to 36 metres

**Description**

Existing 4 general purpose lanes on Islington Avenue. Sidewalk on east side. Railway crossing warning system with gates. No dedicated cycling facilities. Curbside transit service.

**Natural and Built Environment**

- **Natural Environment**: Observations: Regional Greenlands System and Humber River on the west side of Islington Avenue.
- **Land Use and Built Environment**: Employment lands on the east side of Islington Avenue. Humber River valley on the west side of Islington Avenue.

**Problem or Opportunity Statement**

- Capacity improvements needed to address existing congestion.
- Capacity improvements needed to accommodate future travel demands.
- Corridor improvements needed to support walking, cycling and transit.

**Alternatives Considered**

1. Do Nothing - Does not address Problem or Opportunity Statement.
2. Improve grade crossing safety - Potential to improve walking and cycling facilities and address any safety concerns.
3. Transportation improvements to adjacent/parallel corridor - Potential to divert travel demand to other corridor. No improvement to walking and cycling. No improvement to transit.
2149 - CP MacTier Grade Separation - Islington Avenue north of Steeles Avenue (continued)

**Recommended Improvement and Justification**

**Recommendation**
Construct rail grade separation structure.

**Justification**
Traffic and train volumes exceed exposure warrants for grade separation. Grade separation improves pedestrian and cyclist safety and reduces delay to transit and traffic along the corridor.

**TMP Phase**
2032 to 2041

**Alignment with TMP Objectives**

<table>
<thead>
<tr>
<th>Support Transit</th>
<th>Support Road Network</th>
<th>Support Active Transportation</th>
<th>Support Goods Movement</th>
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**Costs**

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<tbody>
<tr>
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<td>Incremental Road Maintenance and Rehabilitation Cost</td>
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**Related Projects**

<table>
<thead>
<tr>
<th>Name</th>
<th>Project ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP MacTier at Islington Avenue</td>
<td>A-482</td>
</tr>
</tbody>
</table>

**Key Intersections and Constraints**

CP MacTier at Islington Avenue
2150 - Richmond Hill GO Grade Separation - 19th Avenue west of Bayview Avenue

### Project Description

**Location**  
Richmond Hill GO Grade Separation

**Municipality**  
Richmond Hill

**Project Limits**  
19th Avenue west of Bayview Avenue

**Project Type**  
Rail grade separation

### Map

![Map of the project area]

### Existing Conditions

**Physical and Transportation Conditions**

**OP Designated ROW**  
Up to 43 metres

**Description**  
Existing 2 general purpose lanes on 19th Avenue. No sidewalk on either side. Railway crossing warning system with gates. No dedicated cycling facilities. No transit services.

### Natural and Built Environment

**Natural Environment**  
Observations: Regional Greenlands System adjacent to the railway on the east side.

**Land Use and Built Environment**  
Residential area to the west. Parklands to the north and east.

### Problem or Opportunity Statement

- Capacity improvements needed to address existing congestion.
- Capacity improvements needed to accommodate future travel demands.
- Corridor improvements needed to support walking, cycling and transit.

### Alternatives Considered

1. Do Nothing - Does not address Problem or Opportunity Statement.
2. Improve grade crossing safety - Potential to improve walking and cycling facilities and address any safety concerns.
3. Transportation improvements to adjacent/parallel corridor - Potential to divert travel demand to other corridor. No improvement to walking and cycling. No improvement to transit.
2150 - Richmond Hill GO Grade Separation - 19th Avenue west of Bayview Avenue (continued)

**Recommended Improvement and Justification**

**Recommendation**
Construct rail grade separation structure.

**Justification**
Traffic and train volumes are expected to exceed exposure warrants for grade separation by 2025. Grade separation improves pedestrian and cyclist safety and reduces delay to transit and traffic along the corridor.

**TMP Phase**
2027 to 2031

**Alignment with TMP Objectives**

<table>
<thead>
<tr>
<th>Support Transit</th>
<th>Support Road Network</th>
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<th>Support Goods Movement</th>
<th>Support Last Mile</th>
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<td>![Active Transportation Icon]</td>
<td>![Goods Movement Icon]</td>
<td>![Last Mile Icon]</td>
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**Costs**

- **Capital Cost**: $25,518,700
- **Incremental Annual Road Operating Cost**: $-
- **Incremental Road Maintenance and Rehabilitation Cost**: $-

**Related Projects**

<table>
<thead>
<tr>
<th>Name</th>
<th>Project ID</th>
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<tbody>
<tr>
<td>19th Avenue - Jefferson Forest Drive to Bayview Avenue - Widen to 4 lanes</td>
<td>2036</td>
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</table>

**Key Intersections and Constraints**

**Richmond Hill GO at 19th Avenue**
2151 - Barrie GO Grade Separation - Davis Drive east of Main Street

**Project Description**

**Location**  Barrie GO Grade Separation  
**Municipality**  Newmarket  
**Project Limits**  Davis Drive east of Main Street  
**Project Type**  Rail grade separation

**Map**

- **Location**  Barrie GO Grade Separation  
  **Municipality**  Newmarket  
  **Road Segment ID**  31-26

**Existing Conditions**

**Physical and Transportation Conditions**

**OP Designated ROW**  Up to 40 metres

**Description**

Existing 4 general purpose lanes on Davis Drive. Sidewalks on both sides. Railway crossing warning system with gates. No dedicated cycling facilities. Rapidway and curbside transit service.

**Natural and Built Environment**

**Natural Environment**  Observations: Crossing and GO Station are within Regional Greenlands System.  
Source Water Protection Areas: Within SWP zone

**Land Use and Built Environment**  Newmarket GO station on the northeast quadrant. Primarily industrial uses in other three quadrants.

**Problem or Opportunity Statement**

- Capacity improvements needed to address existing congestion.
- Capacity improvements needed to accommodate future travel demands.
- Corridor improvements needed to support walking, cycling and transit.

**Alternatives Considered**

1. Do Nothing - Does not address Problem or Opportunity Statement.
2. Improve grade crossing safety - Potential to improve walking and cycling facilities and address any safety concerns.
3. Transportation improvements to adjacent/parallel corridor - Potential to divert travel demand to other corridor. No improvement to walking and cycling. No improvement to transit.
Recommended Improvement and Justification

**Recommendation**
Construct rail grade separation structure.

**Justification**
Existing traffic and train volumes exceed exposure warrants for grade separation. Grade separation improves pedestrian and cyclist safety and reduces delay to transit and traffic along the corridor. Grade separation needed to support proposed GO Rail service improvements.

**TMP Phase**
2027 to 2031

**Alignment with TMP Objectives**

<table>
<thead>
<tr>
<th>Support Transit</th>
<th>Support Road Network</th>
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**Costs**

- Capital Cost: $49,443,100
- Incremental Annual Road Operating Cost: $-
- Incremental Road Maintenance and Rehabilitation Cost: $-

**Related Projects**

<table>
<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Barrie GO at Davis Drive</td>
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**Key Intersections and Constraints**

Barrie GO at Davis Drive
2152 - Barrie GO Grade Separation - 15th Sideroad west of Bathurst Street

Project Description

<table>
<thead>
<tr>
<th>Location</th>
<th>Barrie GO Grade Separation</th>
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</thead>
<tbody>
<tr>
<td>Municipality</td>
<td>King</td>
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<tr>
<td>Project Limits</td>
<td>15th Sideroad west of Bathurst Street</td>
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<tr>
<td>Project Type</td>
<td>Rail grade separation</td>
</tr>
</tbody>
</table>

Map

Existing Conditions

Physical and Transportation Conditions

| OP Designated ROW | Up to 36 metres |

Description


Natural and Built Environment

Natural Environment
Observations: Crossing and surrounding areas are part of the Regional Greenlands System. Forested area abuts the rail and 15th Sideroad to the south and east. Crossing located within the Oak Ridges Moraine designated area.

Land Use and Built Environment
Single family homes fronting on to 15th Sideroad west of the crossing. Some agricultural uses to the north.

Problem or Opportunity Statement

• Capacity improvements needed to address existing congestion.
• Capacity improvements needed to accommodate future travel demands.
• Corridor improvements needed to support walking, cycling and transit.

Alternatives Considered

1. Do Nothing - Does not address Problem or Opportunity Statement.
2. Improve grade crossing safety - Potential to improve walking and cycling facilities and address any safety concerns.
3. Transportation improvements to adjacent/parallel corridor - Potential to divert travel demand to other corridor. No improvement to walking and cycling. No improvement to transit.
Recommended Improvement and Justification

**Recommendation**
Construct rail grade separation structure.

**Justification**
Traffic and train volumes are expected to exceed exposure warrants for grade separation by 2021. Grade separation improves pedestrian and cyclist safety and reduces delay to transit and traffic along the corridor. Grade separation needed to support planned RER service improvements.

**TMP Phase**
2032 to 2041

### Alignment with TMP Objectives

<table>
<thead>
<tr>
<th>Support Transit</th>
<th>Support Road Network</th>
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### Costs

- **Capital Cost**
  - $27,010,200
- **Incremental Annual Road Operating Cost**
  - $-
- **Incremental Road Maintenance and Rehabilitation Cost**
  - $-

### Related Projects

<table>
<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>15th Sideroad - Keele Street to Bathurst Street - Widen to 4 lanes</td>
<td>2051</td>
</tr>
</tbody>
</table>

### Key Intersections and Constraints

**Barrie GO at 15th Sideroad**
2153 - Stouffville GO Grade Separation - 16th Avenue east of Highway 48

**Project Description**

<table>
<thead>
<tr>
<th>Location</th>
<th>Stouffville GO Grade Separation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipality</td>
<td>Markham</td>
</tr>
<tr>
<td>Project Limits</td>
<td>16th Avenue east of Highway 48</td>
</tr>
<tr>
<td>Project Type</td>
<td>Rail grade separation</td>
</tr>
<tr>
<td>Project ID</td>
<td>2153</td>
</tr>
<tr>
<td>Road Segment ID</td>
<td>73-40</td>
</tr>
</tbody>
</table>

**Map**

![Map of Stouffville GO Grade Separation](image)

**Existing Conditions**

**Physical and Transportation Conditions**

**OP Designated ROW**

Up to 43 metres

**Description**

Existing 4 general purpose lanes on 16th Avenue. Sidewalks on both sides. Railway crossing warning system with gates. No dedicated cycling facilities. Curbside transit service.

**Natural and Built Environment**

**Natural Environment**

Observations: Lake and parklands on the northeast quadrant

**Land Use and Built Environment**

Residential area south of 16th Avenue. Retail commercial plaza on the northwest quadrant. Mt Joy Lake and Community Centre on the northeast quadrant.

**Problem or Opportunity Statement**

- Capacity improvements needed to address existing congestion.
- Capacity improvements needed to accommodate future travel demands.
- Corridor improvements needed to support walking, cycling and transit.

**Alternatives Considered**

1. **Do Nothing** - Does not address Problem or Opportunity Statement.
2. **Improve grade crossing safety** - Potential to improve walking and cycling facilities and address any safety concerns.
3. **Transportation improvements to adjacent/parallel corridor** - Potential to divert travel demand to other corridor. No improvement to walking and cycling. No improvement to transit.
4. **Construct rail grade separation structure** - Addresses travel demand within corridor. Opportunity to improve walking and cycling infrastructure. Opportunity to improve transit service.
**Recommended Improvement and Justification**

**Recommendation**  
Construct rail grade separation structure.

**Justification**  
Existing traffic and train volumes exceed exposure warrants for grade separation. Grade separation improves pedestrian and cyclist safety and reduces delay to transit and traffic along the corridor. Grade separation needed to support proposed GO Rail service improvements.

**TMP Phase**  
2032 to 2041

### Alignment with TMP Objectives

- **Support Transit**
- **Support Road Network**
- **Support Active Transportation**
- **Support Goods Movement**
- **Support Last Mile**

### Costs

- **Capital Cost**  
  $48,292,600
- **Incremental Annual Road Operating Cost**  
  $
- **Incremental Road Maintenance and Rehabilitation Cost**  
  $

### Related Projects

<table>
<thead>
<tr>
<th>Name</th>
<th>Project ID</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Key Intersections and Constraints

**Stouffville GO at 16th Avenue**
2154 - CN Bala Grade Separation - Aurora Road east of Woodbine Avenue

**Project Description**

<table>
<thead>
<tr>
<th>Location</th>
<th>CN Bala Grade Separation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipality</td>
<td>Whitchurch-Stouffville</td>
</tr>
<tr>
<td>Project Limits</td>
<td>Aurora Road east of Woodbine Avenue</td>
</tr>
<tr>
<td>Project Type</td>
<td>Rail grade separation</td>
</tr>
</tbody>
</table>

**Map**

![Map Image](image)

**Existing Conditions**

**Physical and Transportation Conditions**

**OP Designated ROW**  Up to 36 metres

**Description**

Existing 2 general purpose lanes on Aurora Road. No sidewalks on either side. Railway crossing warning system with gates. Paved shoulder. No transit services.

**Natural and Built Environment**

**Natural Environment**

Observations: Crossing is within the Regional Greenlands System with significant forests. Crossing located adjacent to the Oak Ridges Moraine designated area.

Environmentally Sensitive Areas: Rail crossing is within designated ESA.

**Land Use and Built Environment**

Industrial uses in the southwest quadrant. Forested areas on remaining three quadrants.

**Problem or Opportunity Statement**

- Capacity improvements needed to address existing congestion.
- Capacity improvements needed to accommodate future travel demands.
- Corridor improvements needed to support walking, cycling and transit.

**Alternatives Considered**

1. Do Nothing - Does not address Problem or Opportunity Statement.
2. Improve grade crossing safety - Potential to improve walking and cycling facilities and address any safety concerns.
3. Transportation improvements to adjacent/parallel corridor - Potential to divert travel demand to other corridor. No improvement to walking and cycling. No improvement to transit.
Recommended Improvement and Justification

Recommendation: Construct rail grade separation structure.

Justification: Traffic and train volumes exceed exposure warrants for grade separation. Grade separation improves pedestrian and cyclist safety and reduces delay to transit and traffic along the corridor.

TMP Phase: 2032 to 2041

Alignment with TMP Objectives

Support Transit | Support Road Network | Support Active Transportation | Support Goods Movement | Support Last Mile
--- | --- | --- | --- | ---
| | | | | |

Costs

- Capital Cost: $20,651,200
- Incremental Annual Road Operating Cost: $-
- Incremental Road Maintenance and Rehabilitation Cost: $-

Related Projects

<table>
<thead>
<tr>
<th>Name</th>
<th>Project ID</th>
</tr>
</thead>
</table>

Key Intersections and Constraints

CN Bala at Aurora Road
2155 - CP Havelock Grade Separation - 14th Avenue east of Donald Cousens Parkway

Project Description

<table>
<thead>
<tr>
<th>Location</th>
<th>CP Havelock Grade Separation</th>
<th>Project ID</th>
<th>2155</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipality</td>
<td>Markham</td>
<td>Road Segment ID</td>
<td>71-42 to 71-43</td>
</tr>
<tr>
<td>Project Limits</td>
<td>14th Avenue east of Donald Cousens Parkway</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project Type</td>
<td>Rail grade separation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Map

Existing Conditions

Physical and Transportation Conditions

OP Designated ROW | Up to 36 metres

Description

Existing 2 general purpose lanes on 14th Avenue. Sidewalks on both sides, connecting to a multi-use path leading to Bob Hunter Memorial Park to the east. There are no cycling facilities on the road. No transit service. Rail crossing warning system with gates.

Natural and Built Environment

Natural Environment

Observations: Regional Greenlands System and Rouge National Urban Park to the east including Bob Hunter Memorial Park.

Land Use and Built Environment

Rail is immediately adjacent to Donald Cousens Parkway (Box Grove Collector Road) on the west. Rouge National Urban Park (Bob Hunter Memorial Park portion) on the east side. Bob Hunter Memorial Park is an important venue for ecological restoration, loop trails (and related connections to City of Markham trails west of the park), public programming and education.

Problem or Opportunity Statement

- Capacity improvements needed to address existing congestion.
- Capacity improvements needed to accommodate future travel demands.
- Corridor improvements needed to support walking, cycling and transit.

Alternatives Considered

1. Do Nothing - Does not address Problem or Opportunity Statement.
2. Improve grade crossing safety - Potential to improve walking and cycling facilities and address any safety concerns.
3. Transportation improvements to adjacent/parallel corridor - Potential to divert travel demand to other corridor. No improvement to walking and cycling. No improvement to transit.
2155 - CP Havelock Grade Separation - 14th Avenue east of Donald Cousens Parkway (continued)

**Recommended Improvement and Justification**

**Recommendation**
Construct rail grade separation structure.

**Justification**
Traffic and train volumes exceed exposure warrants for grade separation. Grade separation improves pedestrian and cyclist safety and reduces delay to transit and traffic along the corridor. The impacts of grade separation on Bob Hunter Memorial Park in terms of scale and visual impacts, visitor access and programming need to be considered.

**TMP Phase**
2032 to 2041

**Alignment with TMP Objectives**

<table>
<thead>
<tr>
<th>Support Transit</th>
<th>Support Road Network</th>
<th>Support Active Transportation</th>
<th>Support Goods Movement</th>
<th>Support Last Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Costs**

- **Capital Cost** $19,587,000
- **Incremental Annual Road Operating Cost** $-
- **Incremental Road Maintenance and Rehabilitation Cost** $-

**Related Projects**

<table>
<thead>
<tr>
<th>Name</th>
<th>Project ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>14th Avenue - Markham Road to York/Durham Line - Widen to 4 lanes</td>
<td>2078</td>
</tr>
</tbody>
</table>

**Key Intersections and Constraints**

**CP Havelock at 14th Avenue**

October 2016
2156 - Baseline Road - McCowan Road to Dalton Road

**Project Description**

<table>
<thead>
<tr>
<th>Location</th>
<th>Baseline Road</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipality</td>
<td>Georgina</td>
</tr>
<tr>
<td>Project Limits</td>
<td>McCowan Road to Dalton Road</td>
</tr>
<tr>
<td>Project Type</td>
<td>Widen to 4 lanes</td>
</tr>
</tbody>
</table>

**Project ID** 2156  
**Road Segment ID** 88-38  
**Length** 2,000 m

**Map**

**Existing Conditions**

**Physical and Transportation Conditions**

<table>
<thead>
<tr>
<th>OP Designated ROW</th>
<th>Up to 36 metres</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model Forecast</strong></td>
<td></td>
</tr>
<tr>
<td>2011 Existing</td>
<td></td>
</tr>
<tr>
<td>Daily truck volume</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Peak Hour Auto Volume</strong></th>
<th><strong>Peak Hour V/C Ratio</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum</td>
<td>Average</td>
</tr>
<tr>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>0.37</td>
<td>0.37</td>
</tr>
</tbody>
</table>

**Description**

Existing 2 general purpose lanes, with turning lane into John Link Way. Sidewalk on the north side from John Link Way to Dalton Road and on the south side from Sutton Public School to Dalton Road. Paved shoulders for cycling.

**Natural and Built Environment**

| Natural Environment | Observations: Forested areas on south side of Baseline Road are part of Regional Greenlands System. Agricultural fields north of Baseline Road. |

**Land Use and Built Environment**

Lands on both sides of Baseline Road are within future urban area. Three subdivision developments on the north side. Sutton Public School on the south side of Baseline Road west of Dalton Road.

**Future Transportation Conditions**

<table>
<thead>
<tr>
<th><strong>Peak Hour Auto Volume</strong></th>
<th><strong>Peak Hour V/C Ratio</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum</td>
<td>Average</td>
</tr>
<tr>
<td>2041 Do Nothing</td>
<td>570</td>
</tr>
<tr>
<td></td>
<td>0.71</td>
</tr>
<tr>
<td>2041 Proposed Network</td>
<td>210</td>
</tr>
<tr>
<td></td>
<td>0.13</td>
</tr>
</tbody>
</table>
2156 - Baseline Road - McCowan Road to Dalton Road (continued)

Problem or Opportunity Statement

- Transportation network improvements are needed to accommodate expansion of the Designated Urban Area.
- Capacity improvements needed to accommodate future travel demands.
- Corridor improvements needed to support walking and cycling.

Alternatives Considered

1. Do Nothing - Does not address Problem or Opportunity Statement.
2. Optimize existing facility with intersection improvements only - Minor improvement for corridor traffic flow. Does not address overall traffic congestion.
3. Urbanize corridor but maintain 2-lane cross-section - Does not address traffic congestion. Opportunity to improve walking and cycling facilities.
4. Widen corridor to 4 lanes and construct to urban arterial standard - Addresses traffic capacity. Opportunity to improve walking and cycling facilities.
5. Widen parallel/adjacent corridor - Potential to divert some traffic to other corridors. Does not address corridor congestion and provides no improvements to walking and cycling facilities.

Recommended Improvement and Justification

Recommendation

Widen to 4 lanes and construct to urban arterial standard.

Justification

Widening and urbanization supports development growth in Sutton. Provides improved walking and cycling with continuous sidewalks and dedicated cycling facilities.

TMP Phase

2032 to 2041

Alignment with TMP Objectives

<table>
<thead>
<tr>
<th>Support Transit</th>
<th>Support Road Network</th>
<th>Support Active Transportation</th>
<th>Support Goods Movement</th>
<th>Support Last Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>○</td>
<td>×</td>
<td>○</td>
<td>×</td>
<td>○</td>
</tr>
</tbody>
</table>

Costs

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Cost</td>
<td>$ 14,601,500</td>
</tr>
<tr>
<td>Incremental Annual Road Operating Cost</td>
<td>$ 100,000</td>
</tr>
<tr>
<td>Incremental Road Maintenance and Rehabilitation Cost</td>
<td>$ 37,700</td>
</tr>
</tbody>
</table>

Related Projects

<table>
<thead>
<tr>
<th>Name</th>
<th>Project ID</th>
</tr>
</thead>
</table>
2156 - Baseline Road - McCowan Road to Dalton Road (continued)

Key Intersections and Constraints

Baseline Road at Dalton Road
2157 - Barrie GO Grade Separation - Mulock Drive west of Bayview Avenue

**Project Description**

<table>
<thead>
<tr>
<th>Location</th>
<th>Barrie GO Grade Separation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipality</td>
<td>Newmarket</td>
</tr>
<tr>
<td>Project Limits</td>
<td>Mulock Drive west of Bayview Avenue</td>
</tr>
<tr>
<td>Project Type</td>
<td>Rail grade separation</td>
</tr>
</tbody>
</table>

**Map**

![Map of the project area](image)

**Existing Conditions**

**Physical and Transportation Conditions**

**OP Designated ROW**

Up to 36 metres

**Description**

Existing 4 general purpose lanes. Sidewalk on both sides. No cycling facilities. Railway crossing warning system with gates. Curbside transit service.

**Natural and Built Environment**

**Natural Environment**

Observations: Crossing is within Regional Greenlands System. Bailey Ecological Park and Nokiiida Trail to the west. Source Water Protection Areas: Within SWP zone

**Land Use and Built Environment**

Employment lands on the east side. Newmarket Town Hall in the northwest quadrant.

**Problem or Opportunity Statement**

- Capacity improvements needed to address existing congestion.
- Capacity improvements needed to accommodate future travel demands.
- Corridor improvements needed to support walking, cycling and transit.

**Alternatives Considered**

1. Do Nothing - Does not address Problem or Opportunity Statement.
2. Improve grade crossing safety - Potential to improve walking and cycling facilities and address any safety concerns.
3. Transportation improvements to adjacent/parallel corridor - Potential to divert travel demand to other corridor. No improvement to walking and cycling. No improvement to transit.
2157 - Barrie GO Grade Separation - Mulock Drive west of Bayview Avenue (continued)

Recommended Improvement and Justification

**Recommendation**
Construct rail grade separation structure.

**Justification**
Existing traffic and train volumes exceed exposure warrants for grade separation. Grade separation improves pedestrian and cyclist safety and reduces delay to transit and traffic along the corridor. Grade separation needed to support proposed GO Rail service improvements.

**TMP Phase**
2022 to 2026

**Alignment with TMP Objectives**

<table>
<thead>
<tr>
<th>Support Transit</th>
<th>Support Road Network</th>
<th>Support Active Transportation</th>
<th>Support Goods Movement</th>
<th>Support Last Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Transit" /></td>
<td><img src="image2" alt="Road Network" /></td>
<td><img src="image3" alt="Active Transportation" /></td>
<td><img src="image4" alt="Goods Movement" /></td>
<td><img src="image5" alt="Last Mile" /></td>
</tr>
</tbody>
</table>

**Costs**

- **Capital Cost**
  - $53,963,900
- **Incremental Annual Road Operating Cost**
  - $-
- **Incremental Road Maintenance and Rehabilitation Cost**
  - $-

**Related Projects**

<table>
<thead>
<tr>
<th>Name</th>
<th>Project ID</th>
</tr>
</thead>
</table>

**Key Intersections and Constraints**

**Barrie GO at Mulock Drive**

[Image of Barrie GO at Mulock Drive]
2158 - Highway 400 New Interchange - at Kirby Road

Project Description

<table>
<thead>
<tr>
<th>Location</th>
<th>Highway 400 New Interchange</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipality</td>
<td>Vaughan</td>
</tr>
<tr>
<td>Project Limits</td>
<td>at Kirby Road</td>
</tr>
<tr>
<td>Project Type</td>
<td>New Interchange</td>
</tr>
</tbody>
</table>

Map

Existing Conditions

Physical and Transportation Conditions

| OP Designated ROW | N/A |

Description

Existing overpass of Highway 400 over 2 general purpose lanes on Kirby Road. No sidewalks nor cycling facilities.

Natural and Built Environment

Natural Environment

Observations: Regional Greenlands System on the west side of Highway 400.

Land Use and Built Environment

Agricultural uses to the northwest, northeast and southeast. Communications tower in the southwest quadrant.

Problem or Opportunity Statement

• Improved network connectivity needed to move people and goods.
• Network improvements needed to accommodate expansion of the Designated Urban Area.
• Capacity improvements needed to accommodate future travel demands.

Alternatives Considered

1. Do Nothing - Does not address Problem or Opportunity Statement.
2. Interchange improvements at adjacent interchange - Potential to divert travel demand to other corridors. Does not address travel demand in corridor.
3. New partial interchange - Improves access to highway, but only to/from select directions.
4. New full interchange - Addresses travel demand and improves highway access to/from all directions.
Recommended Improvement and Justification

**Recommendation**
Construct new interchange.

**Justification**
Interchange required for growth in north Vaughan. Interchange provides connection to Highway 400 and also to GTA West. Interchange feasibility to be confirmed through GTA West EA. York Region working with MTO and Vaughan through the GTA West EA to confirm final interchange configuration in the area of the future GTA West / Highway 400 freeway to freeway interchange. Approval required from MTO.

**TMP Phase**
2027 to 2031

Alignment with TMP Objectives

<table>
<thead>
<tr>
<th>Support Transit</th>
<th>Support Road Network</th>
<th>Support Active Transportation</th>
<th>Support Goods Movement</th>
<th>Support Last Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>☒</td>
<td>◯</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
</tbody>
</table>

**Costs**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Cost</td>
<td>$ 40,250,000</td>
</tr>
<tr>
<td>Incremental Annual Road Operating Cost</td>
<td>$ -</td>
</tr>
<tr>
<td>Incremental Road Maintenance and Rehabilitation Cost</td>
<td>$ -</td>
</tr>
</tbody>
</table>

**Related Projects**

<table>
<thead>
<tr>
<th>Name</th>
<th>Project ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kirby Road - Pine Valley Drive to Dufferin Street - Widen to 4 lanes</td>
<td>2034</td>
</tr>
</tbody>
</table>

**Key Intersections and Constraints**

**Highway 400 at Kirby Road**
2159 - Woodbine Avenue - Pollock Road to Old Homestead Road

Project Description

<table>
<thead>
<tr>
<th>Location</th>
<th>Woodbine Avenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipality</td>
<td>Georgina</td>
</tr>
<tr>
<td>Project Limits</td>
<td>Pollock Road to Old Homestead Road</td>
</tr>
<tr>
<td>Project Type</td>
<td>Widen to 4 lanes</td>
</tr>
<tr>
<td>Project ID</td>
<td>2159</td>
</tr>
<tr>
<td>Road Segment ID</td>
<td>08-48</td>
</tr>
<tr>
<td>Length</td>
<td>1,900 m</td>
</tr>
</tbody>
</table>

Map

Existing Conditions

Physical and Transportation Conditions

OP Designated ROW Up to 36 metres

<table>
<thead>
<tr>
<th>Model Forecast</th>
<th>Peak Hour Auto Volume</th>
<th>Peak Hour V/C Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011 Existing</td>
<td>Maximum 210</td>
<td>Average 210</td>
</tr>
<tr>
<td>Daily truck volume</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description

Existing 2 general purpose lanes with turn lanes at intersections, widens to 4 general purpose lanes and turn lanes at approach to Pollock Road. Sidewalk on the west side from Pollock Road to Dunnville Road. Curbside transit service.

Natural and Built Environment

Natural Environment

Observations: Developed area to the west, agricultural land uses to the east. Environmentally Sensitive Areas: Corridor is fully within designated ESA (hydrological).

Land Use and Built Environment

Mix of single family residential backing onto Woodbine Avenue and community centre on the west side. Primarily agricultural uses on the east side.

Future Transportation Conditions

<table>
<thead>
<tr>
<th>Peak Hour Auto Volume</th>
<th>Peak Hour V/C Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Maximum  Average</td>
</tr>
<tr>
<td>2041 Do Nothing</td>
<td>880 880</td>
</tr>
<tr>
<td>2041 Proposed Network</td>
<td>330 330</td>
</tr>
<tr>
<td></td>
<td>Maximum  Average</td>
</tr>
<tr>
<td></td>
<td>0.55 0.55</td>
</tr>
<tr>
<td></td>
<td>0.20 0.20</td>
</tr>
</tbody>
</table>

October 2016
Problem or Opportunity Statement

- Transportation network improvements are needed to accommodate expansion of the Designated Urban Area.
- Capacity improvements needed to accommodate future travel demands.
- Corridor improvements needed to support walking and cycling.

Alternatives Considered

1. Do Nothing - Does not address Problem or Opportunity Statement.
2. Optimize existing facility with intersection improvements only - Minor improvement for corridor traffic flow. Does not address overall traffic congestion.
3. Urbanize corridor but maintain 2-lane cross-section - Does not address traffic congestion. Opportunity to improve walking and cycling facilities.
4. Widen corridor to 4 lanes and construct to urban arterial standard - Addresses traffic capacity. Opportunity to improve walking and cycling facilities.
5. Widen parallel/adjacent corridor - Potential to divert some traffic to other corridors. Does not address corridor congestion and provides no improvements to walking and cycling facilities.

Recommended Improvement and Justification

**Recommendation**  
Widen to 4 lanes and construct to urban arterial standard.

**Justification**  
Widening and urbanization supports development growth in Keswick. Provides improved walking and cycling with continuous sidewalks and dedicated cycling facilities.

**TMP Phase**  
2032 to 2041

Alignment with TMP Objectives

<table>
<thead>
<tr>
<th>Support Transit</th>
<th>Support Road Network</th>
<th>Support Active Transportation</th>
<th>Support Goods Movement</th>
<th>Support Last Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Support Transit" /></td>
<td><img src="image" alt="Support Road Network" /></td>
<td><img src="image" alt="Support Active Transportation" /></td>
<td><img src="image" alt="Support Goods Movement" /></td>
<td><img src="image" alt="Support Last Mile" /></td>
</tr>
</tbody>
</table>

**Costs**

- **Capital Cost**  
  $14,616,400
- **Incremental Annual Road Operating Cost**  
  $95,000
- **Incremental Road Maintenance and Rehabilitation Cost**  
  $35,800

**Related Projects**

<table>
<thead>
<tr>
<th>Name</th>
<th>Project ID</th>
</tr>
</thead>
</table>
### Key Intersections and Constraints

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Constraints</th>
</tr>
</thead>
<tbody>
<tr>
<td>Woodbine Avenue at Pollock Road/Morton Avenue</td>
<td>TRUE</td>
</tr>
<tr>
<td>Woodbine Avenue at Old Homestead Road</td>
<td>TRUE</td>
</tr>
</tbody>
</table>

![Woodbine Avenue at Pollock Road/Morton Avenue](image1)

![Woodbine Avenue at Old Homestead Road](image2)
2160 - Jane Street - Highway 7 to Major Mackenzie Drive

**Project Description**

- **Location**: Jane Street
- **Municipality**: Vaughan
- **Project Limits**: Highway 7 to Major Mackenzie Drive
- **Project Type**: Widen to 6 lanes

**Map**

- **Road Segment ID**: 55-04 to 55-08
- **Length**: 6,230 m

**Existing Conditions**

**Physical and Transportation Conditions**

- **OP Designated ROW**: Up to 45 metres

<table>
<thead>
<tr>
<th>Model Forecast</th>
<th>Peak Hour Auto Volume</th>
<th>Peak Hour V/C Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011 Existing</td>
<td>Maximum: 2,210</td>
<td>Maximum: 1.23</td>
</tr>
<tr>
<td></td>
<td>Average: 1,720</td>
<td>Average: 0.95</td>
</tr>
<tr>
<td>Daily truck volume</td>
<td>1,070 /day</td>
<td></td>
</tr>
<tr>
<td></td>
<td>870 /day</td>
<td></td>
</tr>
</tbody>
</table>

**Description**

Existing 4 general purpose lanes with median lane and turn lanes at intersections. No sidewalks between Highway 7 and Pippen Road. Sidewalk on east side between Pippen Road and Langstaff Road. Sidewalks on both sides between Langstaff Road and Major Mackenzie Drive. No dedicated cycling facilities. Curbside transit service.

**Natural and Built Environment**

**Natural Environment**

- Observations: Watercourse crossing south of Mackintosh Blvd and north of Rutherford Road.

**Land Use and Built Environment**


**Future Transportation Conditions**

<table>
<thead>
<tr>
<th>Year</th>
<th>Peak Hour Auto Volume</th>
<th>Peak Hour V/C Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>2041 Do Nothing</td>
<td>Maximum: 3,010</td>
<td>Maximum: 1.67</td>
</tr>
<tr>
<td></td>
<td>Average: 2,260</td>
<td>Average: 1.25</td>
</tr>
<tr>
<td>2041 Proposed Network</td>
<td>Maximum: 2,180</td>
<td>Maximum: 1.21</td>
</tr>
<tr>
<td></td>
<td>Average: 1,750</td>
<td>Average: 0.97</td>
</tr>
</tbody>
</table>

October 2016
Problem or Opportunity Statement

• Capacity improvements needed to address existing congestion.
• Capacity improvements needed to accommodate future travel demands.
• Corridor improvements needed to support walking and cycling.
• Corridor improvements needed to support transit and HOV.

Alternatives Considered

1. Do Nothing - Does not address Problem or Opportunity Statement.
2. Optimize existing facility with intersection improvements only - Minor improvement for corridor traffic flow. Does not address overall traffic congestion. Does not improve transit/HOV and active modes.
3. Widen corridor to 6 lanes for general purpose capacity improvements - Improves traffic flow and reduces congestion. Opportunity to improve walking and cycling facilities. Does not support shift to transit/HOV. Not consistent with Council policy to widen to 6 lanes for transit/HOV lanes only.
4. Widen corridor to 6 lanes to implement transit/HOV lanes - Addresses traffic capacity. Opportunity to improve walking and cycling facilities. Potential to improve transit travel time and encourage shift to transit/HOV.
5. Widen corridor to implement rapid transit - Does not address traffic congestion. Transit ridership does not meet RT threshold.
6. Widen parallel/adjacent corridor - Potential to divert some traffic to other corridors. Does not address corridor congestion and travel demand, no improvements to walking and cycling facilities, does not encourage shift to transit/HOV.

Recommended Improvement and Justification

Recommendation

Interim widening to 6 lanes to implement transit/HOV lanes.

Justification

Meets volume threshold for 6 lanes. Meets criteria for HOV lane. Interim widening to 6 lanes with transit/HOV lane prior to implementation of rapidway. Provides continuous 6-lane corridor with transit/HOV lane. Opportunity to improve walking and cycling facilities.

TMP Phase

2022 to 2026

Alignment with TMP Objectives

Support Transit       Support Road Network       Support Active Transportation       Support Goods Movement       Support Last Mile

Costs

Capital Cost       $ 55,921,000
Incremental Annual Road Operating Cost       $ 311,400
Incremental Road Maintenance and Rehabilitation Cost       $ 117,400

Related Projects

Name

Jane Street - Highway 7 to Rutherford Road - RT Corridor
Jane Street - Rutherford Road to Major Mackenzie Drive - RT Corridor

Project ID

1017
1018
Key Intersections and Constraints

Jane Street at Highway 7

Jane Street at Langstaff Road

Jane Street at Rutherford Road

Jane Street at Major Mackenzie Drive

October 2016
2160 - Jane Street - Highway 7 to Major Mackenzie Drive (continued)

**Key Intersections and Constraints**

Cemetery on the east side of Jane Street north of Highway 7.
## Project Description

**Location**
CP Havelock Grade Separation

**Municipality**
Markham, Toronto

**Project Limits**
Steeles Avenue east of Tapscott Road

**Project Type**
Rail grade separation

<table>
<thead>
<tr>
<th>Map</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Map of CP Havelock Grade Separation" /></td>
</tr>
</tbody>
</table>

## Existing Conditions

### Physical and Transportation Conditions

**OP Designated ROW**
Up to 36 metres

### Description
Existing 2 general purpose lanes on Steeles Avenue. No sidewalks, no dedicated cycling facilities. Rail crossing warning system (lights only, no gates).

### Natural and Built Environment

**Natural Environment**
Observations: Site surrounded by developed residential subdivision, farmlands and golf course.

**Land Use and Built Environment**
Residential to the southeast. Golf course and agricultural to the north.

## Problem or Opportunity Statement

- Capacity improvements needed to address existing congestion. 
- Capacity improvements needed to accommodate future travel demands.
- Corridor improvements needed to support walking, cycling and transit.

## Alternatives Considered

1. **Do Nothing** - Does not address Problem or Opportunity Statement.
2. **Improve grade crossing safety** - Potential to improve walking and cycling facilities and address any safety concerns.
3. **Transportation improvements to adjacent/parallel corridor** - Potential to divert travel demand to other corridor. No improvement to walking and cycling. No improvement to transit.
4. **Construct rail grade separation structure** - Addresses travel demand within corridor. Opportunity to improve walking and cycling infrastructure. Opportunity to improve transit service.
Recommended Improvement and Justification

**Recommendation**
Construct rail grade separation structure.

**Justification**
Traffic and train volumes exceed exposure warrants for grade separation. Grade separation improves pedestrian and cyclist safety and reduces delay to transit and traffic along the corridor.

**TMP Phase**
2032 to 2041

**Alignment with TMP Objectives**

<table>
<thead>
<tr>
<th>Support Transit</th>
<th>Support Road Network</th>
<th>Support Active Transportation</th>
<th>Support Goods Movement</th>
<th>Support Last Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Icon]</td>
<td>![Icon]</td>
<td>![Icon]</td>
<td>![Icon]</td>
<td>![Icon]</td>
</tr>
</tbody>
</table>

**Costs**

- **Capital Cost**: $21,686,200
- **Incremental Annual Road Operating Cost**: $-
- **Incremental Road Maintenance and Rehabilitation Cost**: $-

**Related Projects**

- **Name**: Steeles Avenue - Kennedy Road to Markham Road - Steeles (Widen to 6 lanes)
  **Project ID**: 2121
- **Name**: Steeles Avenue - Markham Road to 11th Concession - Steeles (Widen to 6 lanes)
  **Project ID**: 2122

**Key Intersections and Constraints**

**CP Havelock at Steeles Avenue**
# 2162 - Stouffville GO Grade Separation - Ninth Line north of Elgin Mills

## Project Description

<table>
<thead>
<tr>
<th>Location</th>
<th>Stouffville GO Grade Separation</th>
<th>Project ID</th>
<th>2162</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipality</td>
<td>Markham</td>
<td>Road Segment ID</td>
<td>69-12</td>
</tr>
<tr>
<td>Project Limits</td>
<td>Ninth Line north of Elgin Mills</td>
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<td></td>
</tr>
<tr>
<td>Project Type</td>
<td>Rail grade separation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Existing Conditions

### Physical and Transportation Conditions

**OP Designated ROW**
- Up to 43 metres

### Description

Existing 4 general purpose lanes (recently widened). No sidewalks. Paved shoulder for cyclists. Railway crossing warning system with gates. Railway crosses at a skewed angle to the roadway.

### Natural and Built Environment

**Natural Environment**
- Observations: Agricultural fields. Ninth Line and Stouffville GO Line traverse the Rouge National Urban Park. Recent channel restoration undertaken on both sides of Ninth Line in association with the 4-lane widening; other restoration work undertaken by Parks Canada south of the crossing between Ninth Line and Stouffville GO Line.

**Land Use and Built Environment**
- Farmland and associated buildings adjacent to crossing location. Ninth Line and Stouffville GO Line traverse the Rouge National Urban Park.

## Problem or Opportunity Statement

- Capacity improvements needed to accommodate future travel demands.
- Corridor improvements needed to support walking, cycling and transit.

## Alternatives Considered

1. **Do Nothing** - Does not address Problem or Opportunity Statement.
2. **Improve grade crossing safety** - Potential to improve walking and cycling facilities and address any safety concerns.
3. **Transportation improvements to adjacent/parallel corridor** - Potential to divert travel demand to other corridor. No improvement to walking and cycling. No improvement to transit.
4. **Construct rail grade separation structure** - Addresses travel demand within corridor. Opportunity to improve walking and cycling infrastructure. Opportunity to improve transit service.
### Recommended Improvement and Justification

**Recommendation**
Construct rail grade separation structure.

**Justification**
Traffic and train volumes are expected to exceed exposure warrants for grade separation by 2031. Grade separation improves pedestrian and cyclist safety and reduces delay to transit and traffic along the corridor.

### TMP Phase
2032 to 2041

### Alignment with TMP Objectives

<table>
<thead>
<tr>
<th>Support Transit</th>
<th>Support Road Network</th>
<th>Support Active Transportation</th>
<th>Support Goods Movement</th>
<th>Support Last Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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</tr>
</tbody>
</table>

### Costs

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Cost</td>
<td>$18,839,100</td>
</tr>
<tr>
<td>Incremental Annual Road Operating Cost</td>
<td>$-</td>
</tr>
<tr>
<td>Incremental Road Maintenance and Rehabilitation Cost</td>
<td>$-</td>
</tr>
</tbody>
</table>

### Related Projects

<table>
<thead>
<tr>
<th>Name</th>
<th>Project ID</th>
</tr>
</thead>
</table>

### Key Intersections and Constraints

**Stouffville GO at Ninth Line**
2163 - Stouffville GO Grade Separation - Major Mackenzie east of Highway 48

Project Description

<table>
<thead>
<tr>
<th>Location</th>
<th>Stouffville GO Grade Separation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipality</td>
<td>Markham</td>
</tr>
<tr>
<td>Project Limits</td>
<td>Major Mackenzie east of Highway 48</td>
</tr>
<tr>
<td>Project Type</td>
<td>Rail grade separation</td>
</tr>
</tbody>
</table>

Map

Existing Conditions

Physical and Transportation Conditions

OP Designated ROW

Up to 45 metres

Description

Existing 4 general purpose lanes. Shared Pathway in boulevard on south side. Railway crossing warning system with gates.

Natural and Built Environment

Natural Environment

Observations: Farmland and woodlots to the north, some greenspace to the south adjacent to developed residential uses.

Land Use and Built Environment

Low density residential to the south.

Problem or Opportunity Statement

• Capacity improvements needed to accommodate future travel demands.
• Corridor improvements needed to support walking, cycling and transit.

Alternatives Considered

1. Do Nothing - Does not address Problem or Opportunity Statement.
2. Improve grade crossing safety - Potential to improve walking and cycling facilities and address any safety concerns.
3. Transportation improvements to adjacent/parallel corridor - Potential to divert travel demand to other corridor. No improvement to walking and cycling. No improvement to transit.
Recommended Improvement and Justification

Recommendation
Construct rail grade separation structure.

Justification
Traffic and train volumes are expected to exceed exposure warrants for grade separation by 2025. Grade separation improves pedestrian and cyclist safety and reduces delay to transit and traffic along the corridor. Grade separation needed to support proposed GO Rail service improvements.

TMP Phase
2032 to 2041

Alignment with TMP Objectives

Support Transit | Support Road Network | Support Active Transportation | Support Goods Movement | Support Last Mile
--- | --- | --- | --- | ---

Costs

- Capital Cost: $19,344,600
- Incremental Annual Road Operating Cost: $-
- Incremental Road Maintenance and Rehabilitation Cost: $-

Related Projects

<table>
<thead>
<tr>
<th>Name</th>
<th>Project ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Mackenzie Drive - Leslie Street to Donald Cousens Parkway - RT Corridor</td>
<td>1014</td>
</tr>
<tr>
<td>Major Mackenzie Drive - Leslie Street to Kennedy Road - Widen to 6 lanes</td>
<td>2125</td>
</tr>
</tbody>
</table>

Key Intersections and Constraints

Stouffville GO at Major Mackenzie Drive
2164 - Highway 400 Interchange Improvements - at Steeles Avenue

Project Description

Location: Highway 400 Interchange Improvements
Municipality: Vaughan
Project Limits: at Steeles Avenue
Project Type: Interchange Improvements

Map

Existing Conditions

Physical and Transportation Conditions
OP Designated ROW: Up to 36 metres

Description
Existing partial interchange provides access to/from the south only. Ramps to Highway 407 flyover both of the Steeles Ave on/off ramps. Railway corridor parallel to Steeles Avenue immediately north of the existing interchange.

Natural and Built Environment

Natural Environment: Observations: Developed industrial areas adjacent to the site.

Land Use and Built Environment: Industrial uses to the south, existing ramps with large amounts of unused greenspace to the north.

Problem or Opportunity Statement

- Improved network connectivity needed to move people and goods.
- Capacity improvements needed to address existing congestion.
- Capacity improvements needed to accommodate future travel demands.

Alternatives Considered

1. Do Nothing - Does not address Problem or Opportunity Statement.
2. Interchange improvements at adjacent interchange - Potential to divert travel demand to adjacent corridor. Does not address travel demand in corridor.
3. Interchange improvements - Addresses travel demand and improves access to/from highway.
2164 - Highway 400 Interchange Improvements - at Steeles Avenue (continued)

**Recommended Improvement and Justification**

**Recommendation**
Interchange improvements.

**Justification**
Interchange improvements identified in the 2009 TMP. Existing partial interchange does not provide access to/from the north. Interchange improvements provide improved highway connectivity for goods movement and serves employment lands in the area. Implementation of new ramp(s) will be constrained by proximity to Highway 400-Highway 407 freeway to freeway interchange. Approval required from MTO.

**TMP Phase**
2032 to 2041

**Alignment with TMP Objectives**

<table>
<thead>
<tr>
<th>Support Transit</th>
<th>Support Road Network</th>
<th>Support Active Transportation</th>
<th>Support Goods Movement</th>
<th>Support Last Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Costs**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Cost</td>
<td>$20,750,000</td>
</tr>
<tr>
<td>Incremental Annual Road Operating Cost</td>
<td>$-</td>
</tr>
<tr>
<td>Incremental Road Maintenance and Rehabilitation Cost</td>
<td>$-</td>
</tr>
</tbody>
</table>

**Related Projects**

<table>
<thead>
<tr>
<th>Name</th>
<th>Project ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steeles Avenue - Pine Valley Drive to Jane Street - Steeles (Widen to 6 lanes)</td>
<td>2117</td>
</tr>
</tbody>
</table>

**Key Intersections and Constraints**

**Highway 400 at Steeles Avenue**

[Map Image]