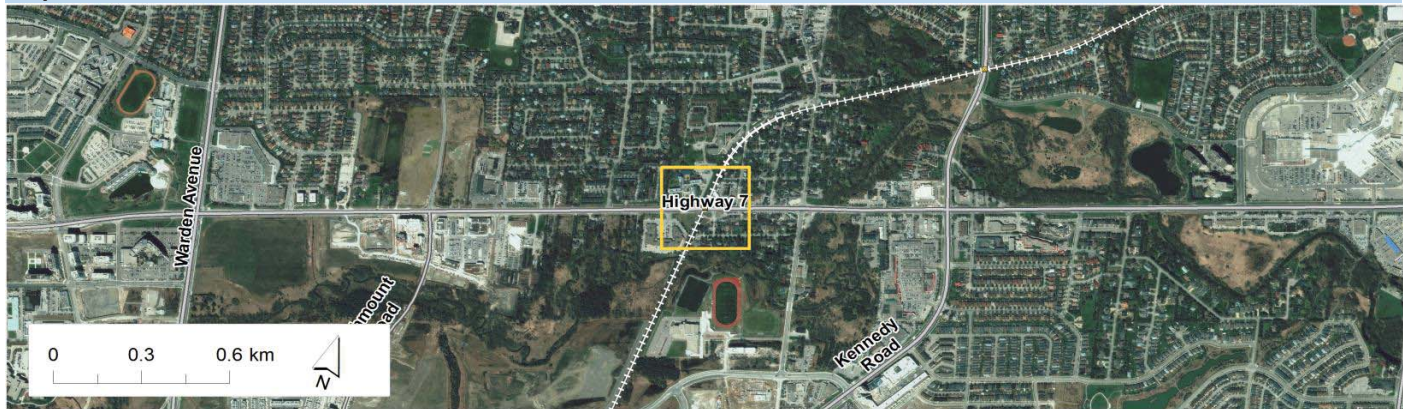


2135 - Stouffville GO Grade Separation - Highway 7 west of Kennedy Road

Project Description

Location	Stouffville GO Grade Separation	Project ID	2135
Municipality	Markham	Road Segment ID	07-34
Project Limits	Highway 7 west of Kennedy Road		
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 Highway 7. Sidewalks on north side. Railway crossing warning system with gates. No dedicated cycling facilities. Curbside Viva transit service.

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.
4. Construct rail grade separation structure - Addresses travel demand within corridor. Opportunity to improve walking and cycling infrastructure. Opportunity to improve transit service.

2135 - Stouffville GO Grade Separation - Highway 7 west of Kennedy Road (continued)

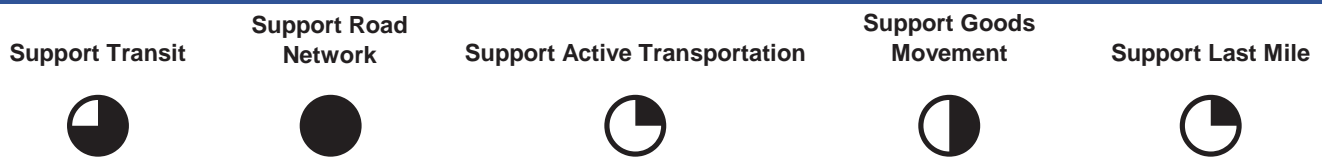
Recommended Improvement and Justification

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



Costs

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

Related Projects

Name	Project ID
Highway 7 - Town Centre Boulevard to Kennedy Road - RT Corridor	1009

Key Intersections and Constraints

Stouffville GO at Highway 7

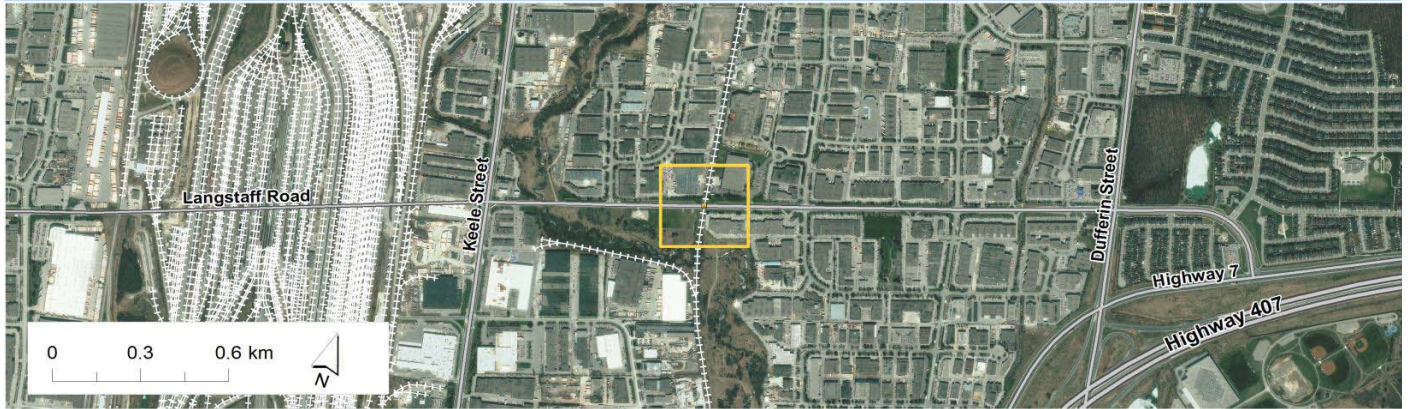


2136 - Barrie GO Grade Separation - Langstaff Road east of Keele Street

Project Description

Location	Barrie GO Grade Separation	Project ID	2136
Municipality	Vaughan	Road Segment ID	72-20
Project Limits	Langstaff 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 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.
4. Construct rail grade separation structure - Addresses travel demand within corridor. Opportunity to improve walking and cycling infrastructure. Opportunity to improve transit service.

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



Costs

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

Related Projects

Name	Project ID
Langstaff Road - Keele Street to Dufferin Street - Widen to 6 lanes	2081

Key Intersections and Constraints

Barrie GO at Langstaff Road

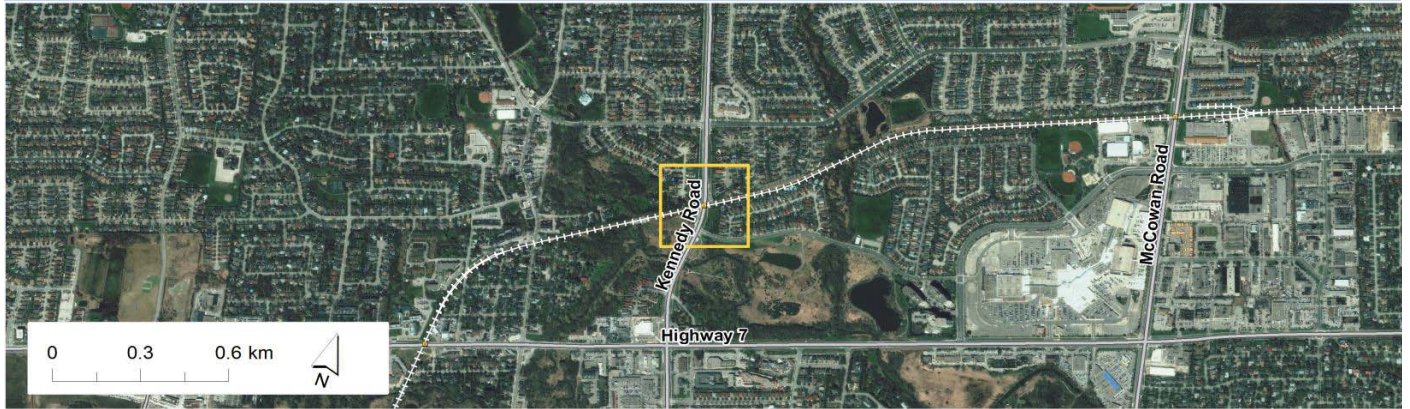


2137 - Stouffville GO Grade Separation - Kennedy Road north of Highway 7

Project Description

Location	Stouffville GO Grade Separation	Project ID	2137
Municipality	Markham	Road Segment ID	03-06
Project Limits	Kennedy 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 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.
4. Construct rail grade separation structure - Addresses travel demand within corridor. Opportunity to improve walking and cycling infrastructure. Opportunity to improve transit service.

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

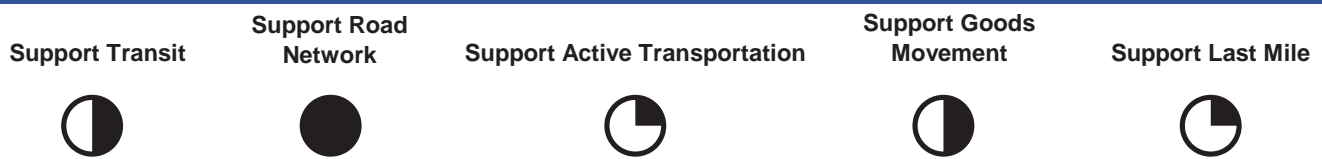
Recommended Improvement and Justification

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



Costs

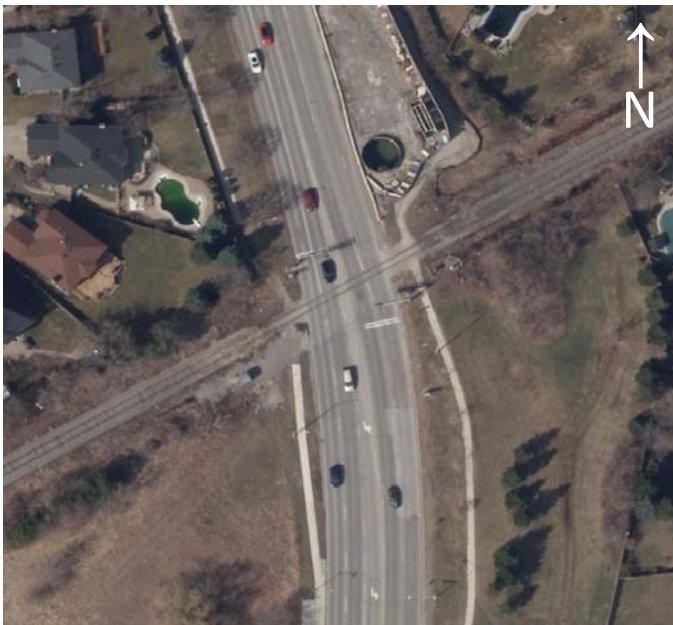
Capital Cost	\$	45,901,900
Incremental Annual Road Operating Cost	\$	-
Incremental Road Maintenance and Rehabilitation Cost	\$	-

Related Projects

Name	Project ID
Kennedy Road - Highway 7 to Major Mackenzie Drive - Widen to 6 lanes	2002

Key Intersections and Constraints

Stouffville GO at Kennedy Road (north of Highway 7)

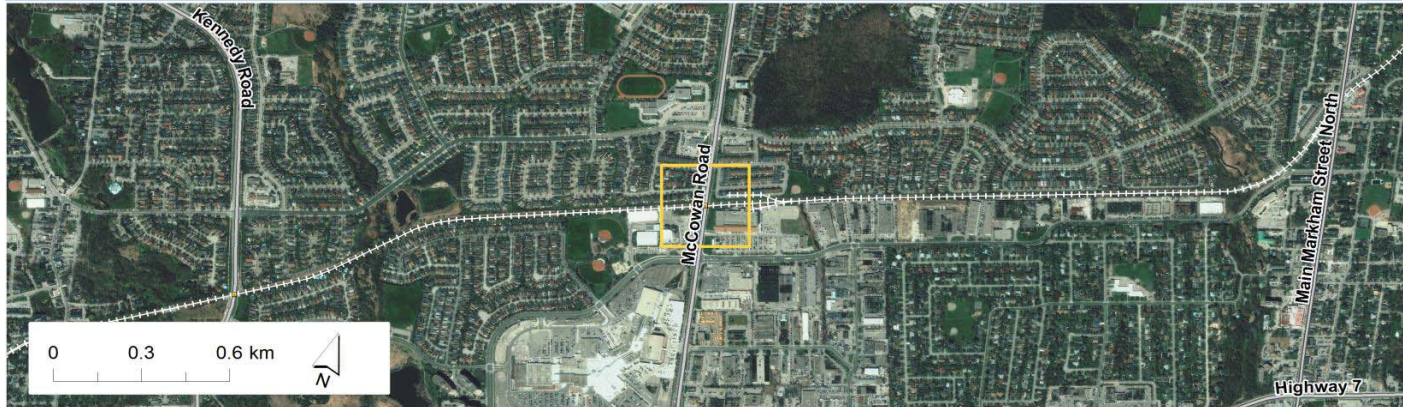


2138 - Stouffville GO Grade Separation - McCowan Road north of Highway 7

Project Description

Location	Stouffville GO Grade Separation	Project ID	2138
Municipality	Markham	Road Segment ID	67-06
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.
4. Construct rail grade separation structure - Addresses travel demand within corridor. Opportunity to improve walking and cycling infrastructure. Opportunity to improve transit service.

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

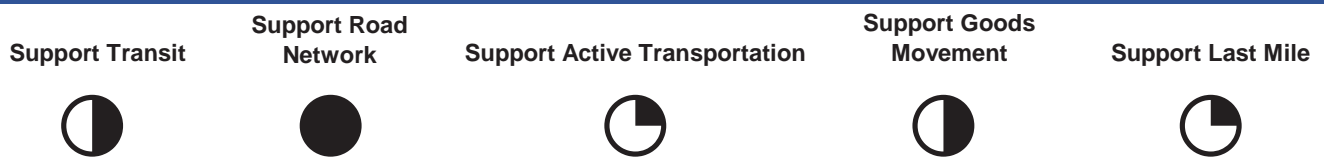
Recommended Improvement and Justification

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



Costs

Capital Cost	\$	46,206,900
Incremental Annual Road Operating Cost	\$	-
Incremental Road Maintenance and Rehabilitation Cost	\$	-

Related Projects

Name	Project ID
McCowan Road - Steeles Avenue to Major Mackenzie Drive - Widen to 6 lanes	2074

Key Intersections and Constraints

Stouffville GO at McCowan Road

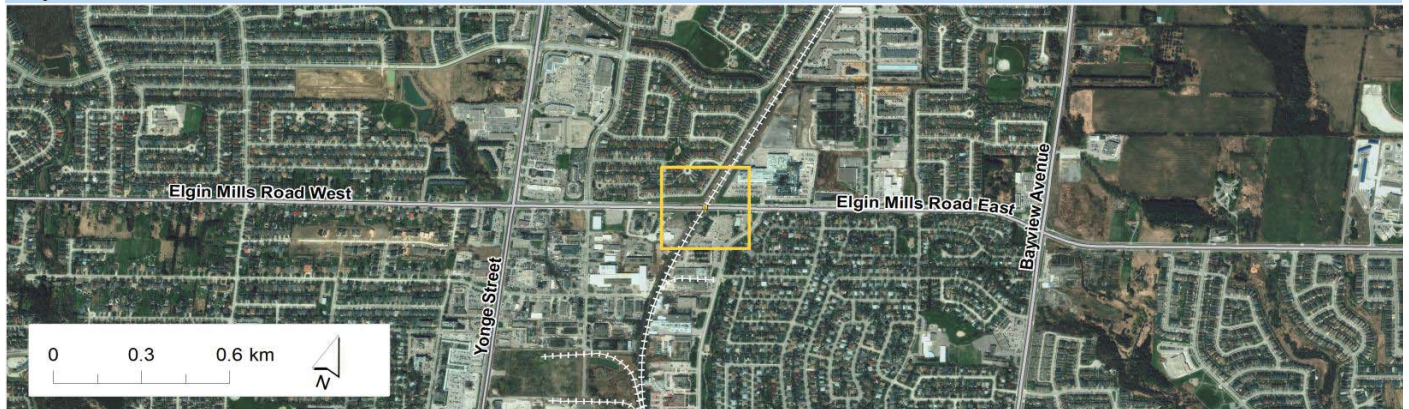


2139 - Richmond Hill GO Grade Separation - Elgin Mills Road east of Yonge Street

Project Description

Location	Richmond Hill GO Grade Separation	Project ID	2139
Municipality	Richmond Hill	Road Segment ID	49-26
Project Limits	Elgin Mills Road east of Yonge Street		
Project Type	Rail grade separation		

Map



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.
4. Construct rail grade separation structure - Addresses travel demand within corridor. Opportunity to improve walking and cycling infrastructure. Opportunity to improve transit service.

2139 - Richmond Hill GO Grade Separation - Elgin Mills Road east of Yonge Street (continued)

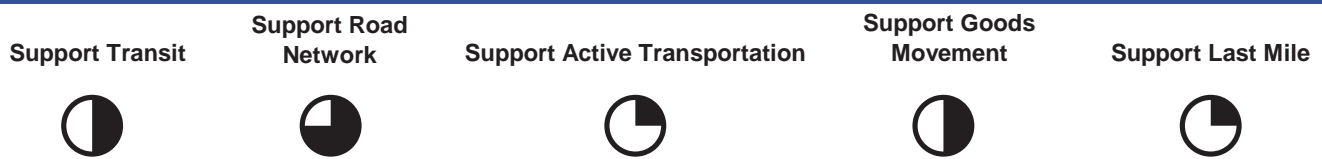
Recommended Improvement and Justification

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.

TMP Phase 2022 to 2026

Alignment with TMP Objectives



Costs

Capital Cost	\$ 51,427,600
Incremental Annual Road Operating Cost	\$ -
Incremental Road Maintenance and Rehabilitation Cost	\$ -

Related Projects

Name	Project ID
------	------------

Key Intersections and Constraints

Richmond Hill GO at Elgin Mills Road



2140 - Barrie GO Grade Separation - Green Lane east of 2nd Concession

Project Description

Location	Barrie GO Grade Separation	Project ID	2140
Municipality	East Gwillimbury	Road Segment ID	19-28
Project Limits	Green Lane east of 2nd Concession		
Project Type	Rail grade separation		

Map



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.
4. Construct rail grade separation structure - Addresses travel demand within corridor. Opportunity to improve walking and cycling infrastructure. Opportunity to improve transit service.

2140 - Barrie GO Grade Separation - Green Lane east of 2nd Concession (continued)

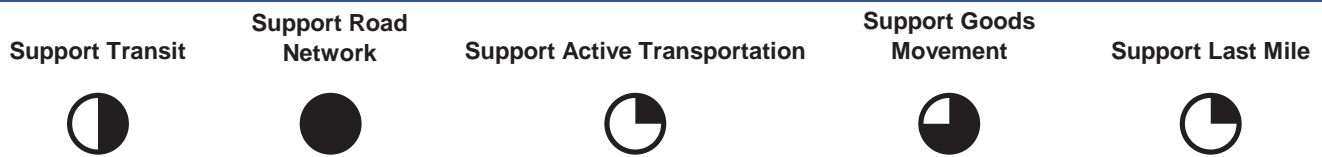
Recommended Improvement and Justification

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.

TMP Phase 2022 to 2026

Alignment with TMP Objectives



Costs

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

Related Projects

Name	Project ID
Green Lane - Yonge Street to GO Station - RT Corridor	1021
Green Lane - 2nd Concession to Highway 404 - Widen to 6 lanes	2023

Key Intersections and Constraints

Barrie GO at Green Lane



2141 - CP MacTier Grade Separation - Major Mackenzie Drive west of Highway 27

Project Description

Location	CP MacTier Grade Separation	Project ID	2141
Municipality	Vaughan	Road Segment ID	25-08
Project Limits	Major Mackenzie Drive west of Highway 27		
Project Type	Rail grade separation		

Map



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 Observations: Agricultural lands on south side. Residential subdivision construction on north side.

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.
4. Construct rail grade separation structure - Addresses travel demand within corridor. Opportunity to improve walking and cycling infrastructure. Opportunity to improve transit service.

2141 - CP MacTier Grade Separation - Major Mackenzie Drive west of Highway 27 (continued)

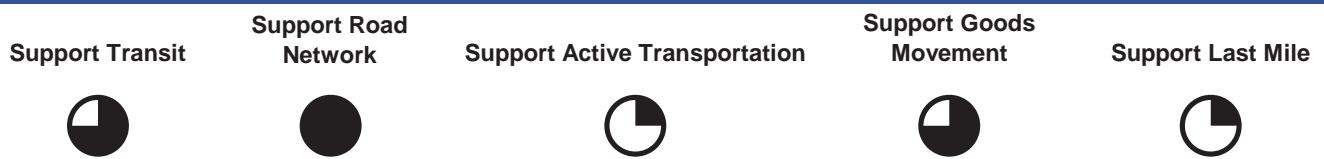
Recommended Improvement and Justification

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 2017 to 2021

Alignment with TMP Objectives



Costs

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

Related Projects

Name	Major Mackenzie Drive - Highway 50 to Highway 27 - Widen to 6 lanes	Project ID	2026
-------------	---	-------------------	------

Key Intersections and Constraints

CP MacTier at Major Mackenzie Drive



2142 - Barrie GO Grade Separation - King Vaughan Road west of Keele Street

Project Description

Location	Barrie GO Grade Separation	Project ID	2142
Municipality	Vaughan	Road Segment ID	14-18
Project Limits	King Vaughan Road west of Keele Street		
Project Type	Rail grade separation		

Map



Existing Conditions

Physical and Transportation Conditions

OP Designated ROW N/A

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.
4. Construct rail grade separation structure - Addresses travel demand within corridor. Opportunity to improve walking and cycling infrastructure. Opportunity to improve transit service.

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

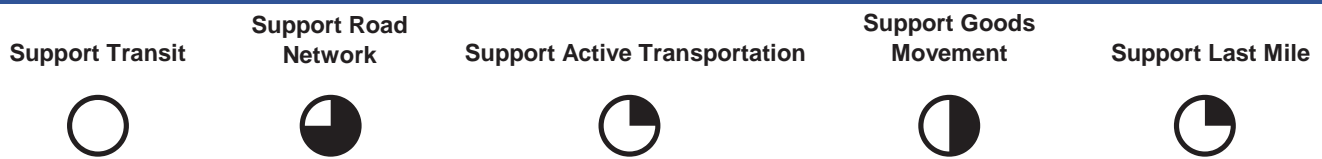
Recommended Improvement and Justification

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



Costs

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

Related Projects

Name	Project ID
King Vaughan Road - Pine Valley Drive to Bathurst Street - Widen to 4 lanes	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	Project ID	2143
Municipality	Aurora	Road Segment ID	26-26
Project Limits	St John's Sideroad east of Yonge Street		
Project Type	Rail grade separation		

Map



Existing Conditions

Physical and Transportation Conditions

OP Designated ROW Up to 36 metres

Description

Existing 4 general purpose lanes on St. John's Sideroad. Sidewalks on both sides. Railway crossing warning system with gates. Shared pathway (in-boulevard). Curbside transit service.

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.
4. Construct rail grade separation structure - Addresses travel demand within corridor. Opportunity to improve walking and cycling infrastructure. Opportunity to improve transit service.

2143 - Barrie GO Grade Separation - St John's Sideroad east of Yonge Street (continued)

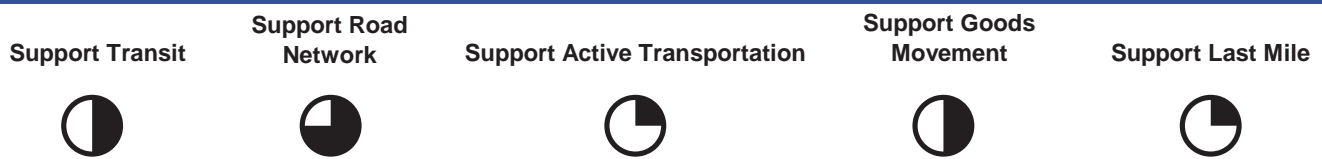
Recommended Improvement and Justification

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 2027 to 2031

Alignment with TMP Objectives



Costs

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

Related Projects

Name	Project ID
------	------------

Key Intersections and Constraints

Barrie GO at St John's Sideroad



2144 - CP MacTier Grade Separation - Rutherford Road west of Highway 27

Project Description

Location	CP MacTier Grade Separation	Project ID	2144
Municipality	Vaughan	Road Segment ID	73-08
Project Limits	Rutherford Road west of Highway 27		
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 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 Greenlands 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.
4. Construct rail grade separation structure - Addresses travel demand within corridor. Opportunity to improve walking and cycling infrastructure. Opportunity to improve transit service.

2144 - CP MacTier Grade Separation - Rutherford Road west of Highway 27 (continued)

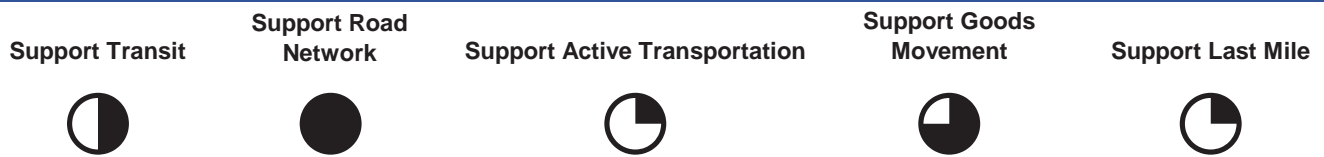
Recommended Improvement and Justification

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



Costs

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

Related Projects

Name	Project ID
Rutherford Road - Highway 50 to Weston Road - Widen to 6 lanes	2082

Key Intersections and Constraints

CP MacTier at Rutherford Road



2145 - Barrie GO Grade Separation - Dufferin Street north of King Road

Project Description

Location	Barrie GO Grade Separation	Project ID	2145
Municipality	King	Road Segment ID	53-18
Project Limits	Dufferin Street north of King Road		
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 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.
4. Construct rail grade separation structure - Addresses travel demand within corridor. Opportunity to improve walking and cycling infrastructure. Opportunity to improve transit service.

2145 - Barrie GO Grade Separation - Dufferin Street north of King Road (continued)

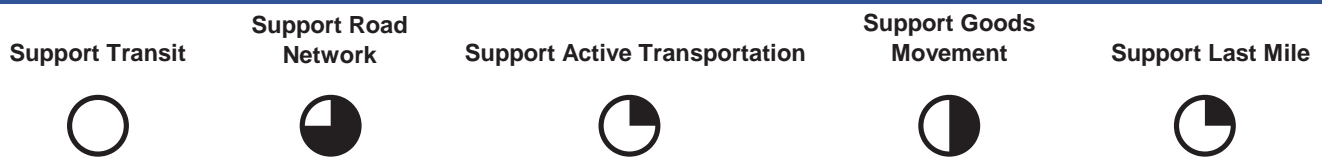
Recommended Improvement and Justification

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 2032 to 2041

Alignment with TMP Objectives



Costs

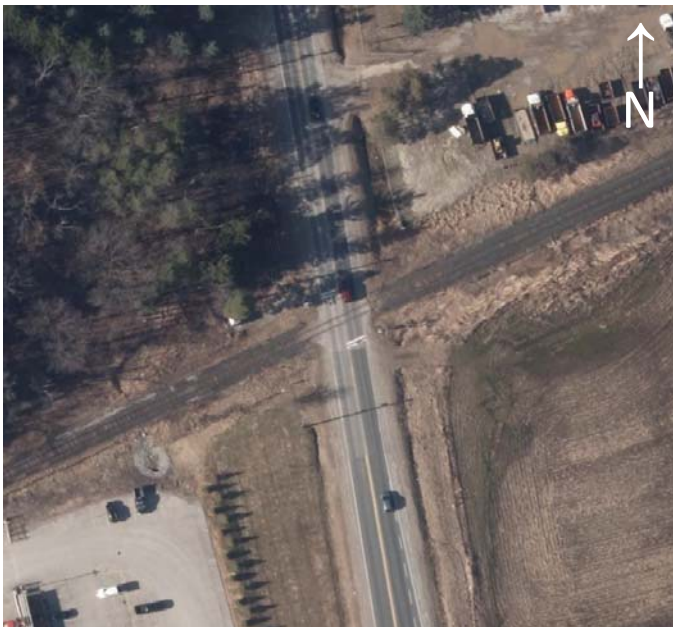
Capital Cost	\$ 25,749,400
Incremental Annual Road Operating Cost	\$ -
Incremental Road Maintenance and Rehabilitation Cost	\$ -

Related Projects

Name	Dufferin Street - Major Mackenzie Drive to 15th Sideroad - Widen to 4 lanes	Project ID	2064
-------------	---	-------------------	------

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	Project ID	2146
Municipality	Vaughan	Road Segment ID	49-20
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.
4. Construct rail grade separation structure - Addresses travel demand within corridor. Opportunity to improve walking and cycling infrastructure. Opportunity to improve transit service.

2146 - Barrie GO Grade Separation - Teston Road east of Keele Street (continued)

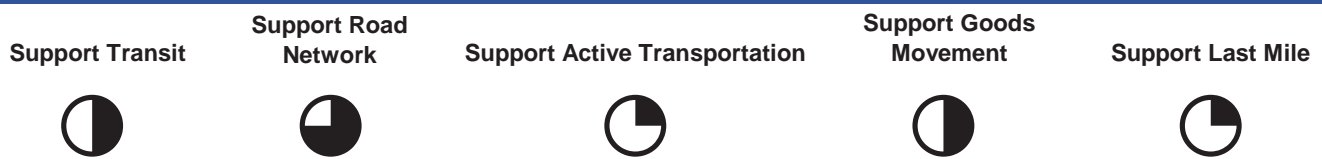
Recommended Improvement and Justification

Recommendation Construct rail grade separation structure.

Justification Traffic and train volumes are expected to exceed exposure warrants for grade separation by 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



Costs

Capital Cost	\$ 26,094,700
Incremental Annual Road Operating Cost	\$ -
Incremental Road Maintenance and Rehabilitation Cost	\$ -

Related Projects

Name	Project ID
Teston Road - Keele Street to Dufferin Street - Missing Link	2058

Key Intersections and Constraints

Barrie GO at Teston Road



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

Project Description

Location	Barrie GO Grade Separation	Project ID	2147
Municipality	Vaughan	Road Segment ID	29-18
Project Limits	Kirby Road west of Keele Street		
Project Type	Rail grade separation		

Map



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.
4. Construct rail grade separation structure - Addresses travel demand within corridor. Opportunity to improve walking and cycling infrastructure. Opportunity to improve transit service.

2147 - Barrie GO Grade Separation - Kirby Road west of Keele Street (continued)

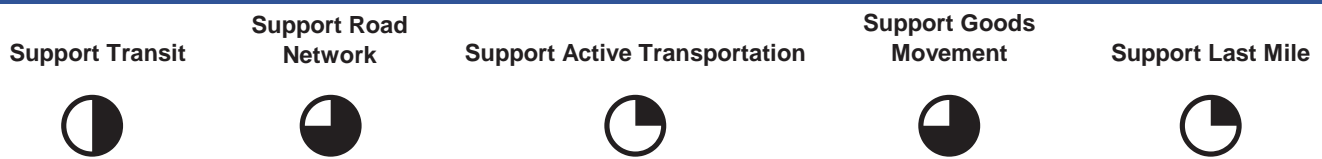
Recommended Improvement and Justification

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 2027 to 2031

Alignment with TMP Objectives



Costs

Capital Cost	\$ 22,505,900
Incremental Annual Road Operating Cost	\$ -
Incremental Road Maintenance and Rehabilitation Cost	\$ -

Related Projects

Name	Project ID
Kirby Road - Pine Valley Drive to Dufferin Street - Widen to 4 lanes	2034

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	Project ID	2148
Municipality	Richmond Hill	Road Segment ID	12-14
Project Limits	Leslie Street south of Stouffville Road		
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 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.
4. Construct rail grade separation structure - Addresses travel demand within corridor. Opportunity to improve walking and cycling infrastructure. Opportunity to improve transit service.

2148 - Richmond Hill GO Grade Separation - Leslie Street south of Stouffville Road (continued)

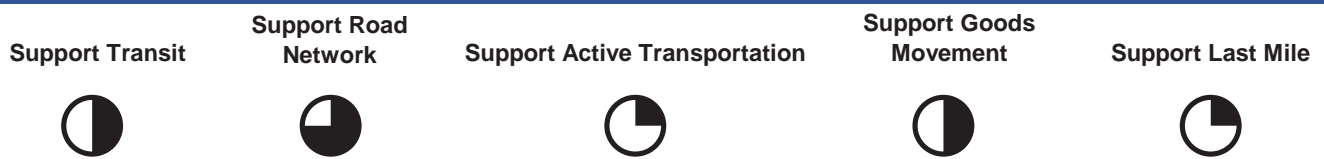
Recommended Improvement and Justification

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



Costs

Capital Cost	\$ 25,086,800
Incremental Annual Road Operating Cost	\$ -
Incremental Road Maintenance and Rehabilitation Cost	\$ -

Related Projects

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

Key Intersections and Constraints

Richmond Hill GO at Leslie Street



2149 - CP MacTier Grade Separation - Islington Avenue north of Steeles Avenue

Project Description

Location	CP MacTier Grade Separation	Project ID	2149
Municipality	Vaughan	Road Segment ID	17-01
Project Limits	Islington Avenue north of Steeles Avenue		
Project Type	Rail grade separation		

Map



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.
4. Construct rail grade separation structure - Addresses travel demand within corridor. Opportunity to improve walking and cycling infrastructure. Opportunity to improve transit service.

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



Costs

Capital Cost	\$ 46,131,200
Incremental Annual Road Operating Cost	\$ -
Incremental Road Maintenance and Rehabilitation Cost	\$ -

Related Projects

Name	Project ID
------	------------

Key Intersections and Constraints

CP MacTier at Islington Avenue

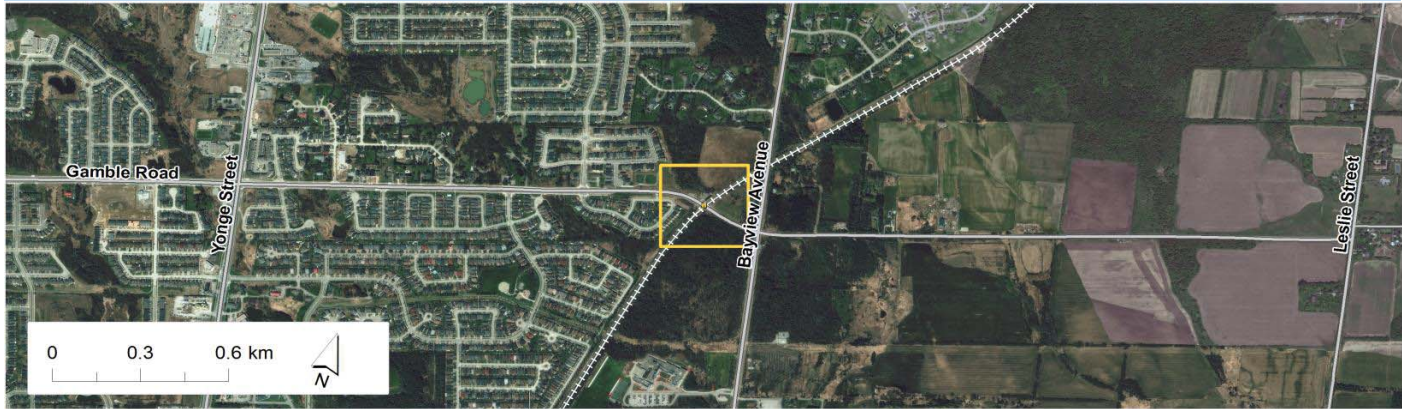


2150 - Richmond Hill GO Grade Separation - 19th Avenue west of Bayview Avenue

Project Description

Location	Richmond Hill GO Grade Separation	Project ID	2150
Municipality	Richmond Hill	Road Segment ID	29-26
Project Limits	19th Avenue west of Bayview Avenue		
Project Type	Rail grade separation		

Map



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.
4. Construct rail grade separation structure - Addresses travel demand within corridor. Opportunity to improve walking and cycling infrastructure. Opportunity to improve transit service.

2150 - Richmond Hill GO Grade Separation - 19th Avenue west of Bayview Avenue (continued)

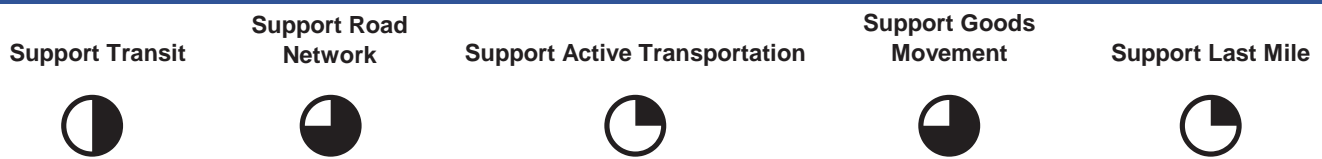
Recommended Improvement and Justification

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



Costs

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

Related Projects

Name	19th Avenue - Jefferson Forest Drive to Bayview Avenue - Widen to 4 lanes	Project ID	2036
-------------	---	-------------------	------

Key Intersections and Constraints

Richmond Hill GO at 19th Avenue

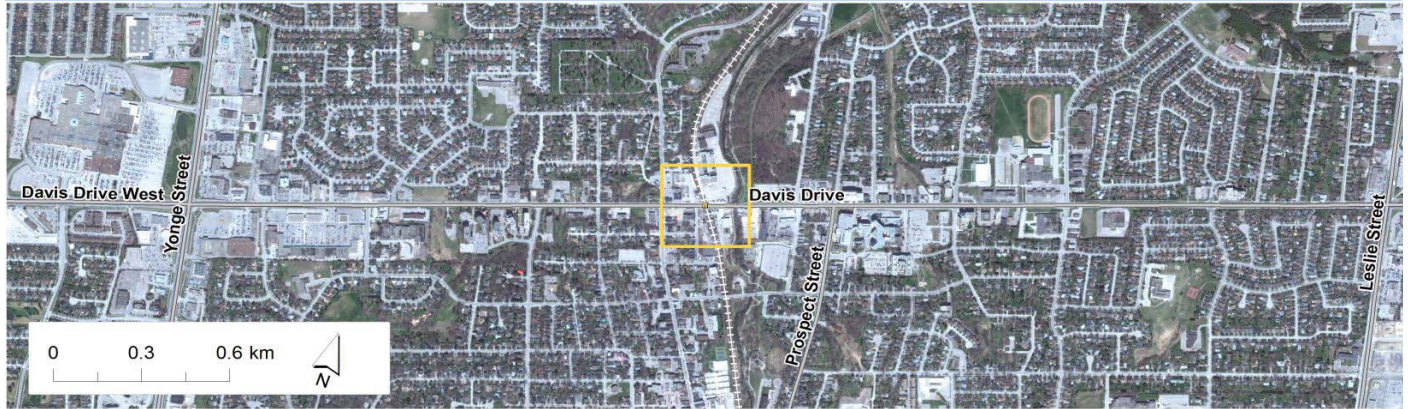


2151 - Barrie GO Grade Separation - Davis Drive east of Main Street

Project Description

Location	Barrie GO Grade Separation	Project ID	2151
Municipality	Newmarket	Road Segment ID	31-26
Project Limits	Davis Drive east of Main Street		
Project Type	Rail grade separation		

Map



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.
4. Construct rail grade separation structure - Addresses travel demand within corridor. Opportunity to improve walking and cycling infrastructure. Opportunity to improve transit service.

2151 - Barrie GO Grade Separation - Davis Drive east of Main Street (continued)

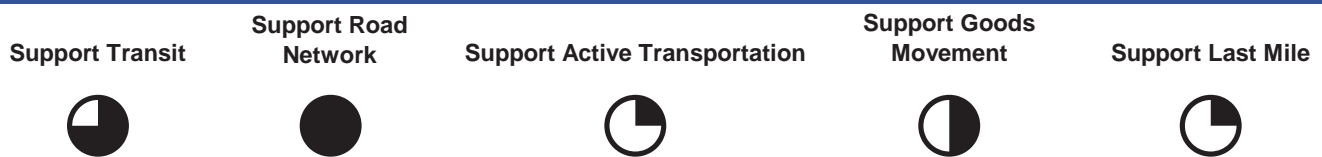
Recommended Improvement and Justification

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 2027 to 2031

Alignment with TMP Objectives



Costs

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

Related Projects

Name	Project ID

Key Intersections and Constraints

Barrie GO at Davis Drive



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

Project Description

Location	Barrie GO Grade Separation	Project ID	2152
Municipality	King	Road Segment ID	40-22
Project Limits	15th Sideroad west of Bathurst 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 15th Sideroad. No sidewalks on either side. Railway crossing warning system with gates. Paved shoulder. Curbside transit service.

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.
4. Construct rail grade separation structure - Addresses travel demand within corridor. Opportunity to improve walking and cycling infrastructure. Opportunity to improve transit service.

2152 - Barrie GO Grade Separation - 15th Sideroad west of Bathurst Street (continued)

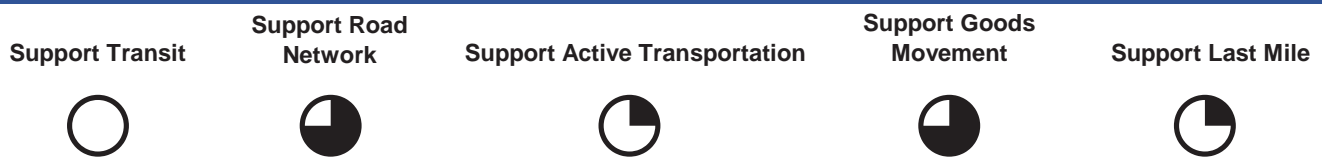
Recommended Improvement and Justification

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 2032 to 2041

Alignment with TMP Objectives



Costs

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

Related Projects

Name	Project ID
15th Sideroad - Keele Street to Bathurst Street - Widen to 4 lanes	2051

Key Intersections and Constraints

Barrie GO at 15th Sideroad

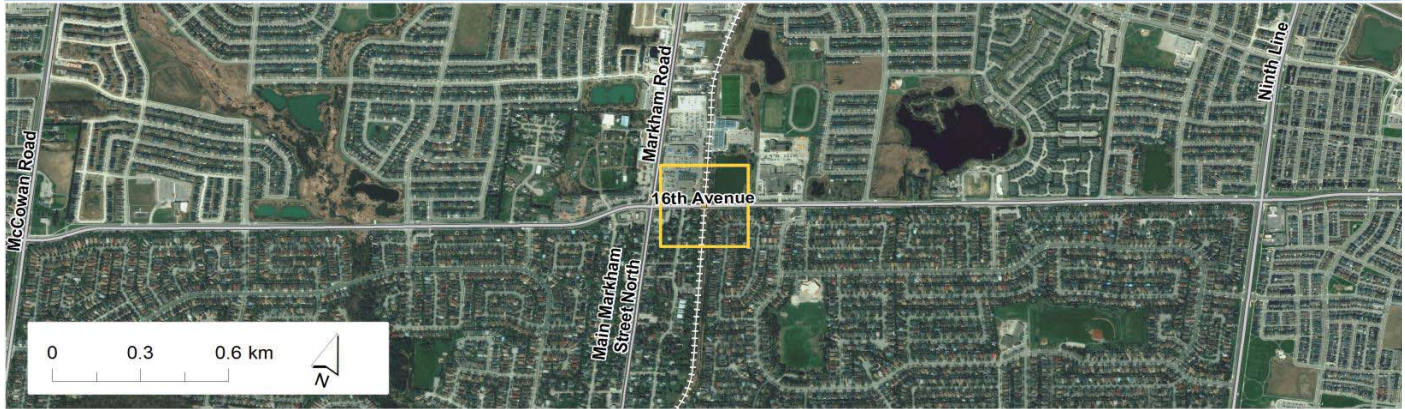


2153 - Stouffville GO Grade Separation - 16th Avenue east of Highway 48

Project Description

Location	Stouffville GO Grade Separation	Project ID	2153
Municipality	Markham	Road Segment ID	73-40
Project Limits	16th Avenue east of Highway 48		
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 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.

2153 - Stouffville GO Grade Separation - 16th Avenue east of Highway 48 (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 2032 to 2041

Alignment with TMP Objectives



Costs

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

Related Projects

Name	Project ID
------	------------

Key Intersections and Constraints

Stouffville GO at 16th Avenue



2154 - CN Bala Grade Separation - Aurora Road east of Woodbine Avenue

Project Description

Location	CN Bala Grade Separation	Project ID	2154
Municipality	Whitchurch-Stouffville	Road Segment ID	15-32
Project Limits	Aurora Road east of Woodbine Avenue		
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 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.
4. Construct rail grade separation structure - Addresses travel demand within corridor. Opportunity to improve walking and cycling infrastructure. Opportunity to improve transit service.

2154 - CN Bala Grade Separation - Aurora Road east of Woodbine Avenue (continued)

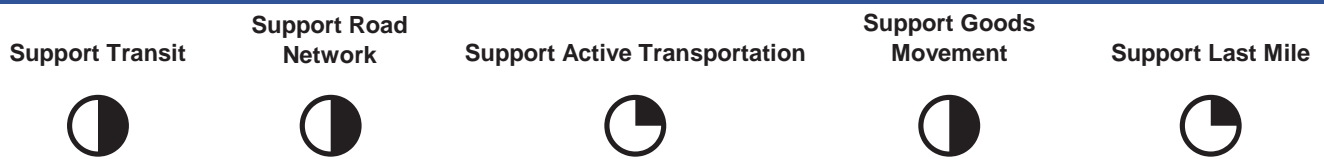
Recommended Improvement and Justification

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



Costs

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

Related Projects

Name	Project ID
------	------------

Key Intersections and Constraints

CN Bala at Aurora Road



2155 - CP Havelock Grade Separation - 14th Avenue east of Donald Cousens Parkway

Project Description

Location	CP Havelock Grade Separation	Project ID	2155
Municipality	Markham	Road Segment ID	71-42 to 71-43
Project Limits	14th Avenue east of Donald Cousens Parkway		
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 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.
4. Construct rail grade separation structure - Addresses travel demand within corridor. Opportunity to improve walking and cycling infrastructure. Opportunity to improve transit service.

2155 - CP Havelock Grade Separation - 14th Avenue east of Donald Cousens Parkway (continued)

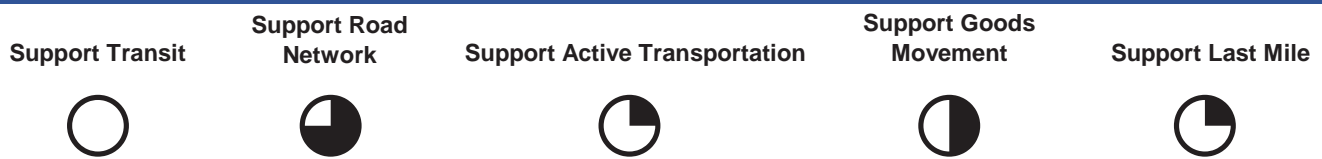
Recommended Improvement and Justification

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



Costs

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

Related Projects

Name	Project ID
14th Avenue - Markham Road to York/Durham Line - Widen to 4 lanes	2078

Key Intersections and Constraints

CP Havelock at 14th Avenue



2156 - Baseline Road - McCowan Road to Dalton Road

Project Description

Location	Baseline Road	Project ID	2156
Municipality	Georgina	Road Segment ID	88-38
Project Limits	McCowan Road to Dalton Road	Length	2,000 m
Project Type	Widen to 4 lanes		

Map



Existing Conditions

Physical and Transportation Conditions

OP Designated ROW Up to 36 metres

Model Forecast	Peak Hour Auto Volume		Peak Hour V/C Ratio	
	<u>Maximum</u>	<u>Average</u>	<u>Maximum</u>	<u>Average</u>
2011 Existing	300	300	0.37	0.37
Daily truck volume	N/A	N/A		

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

	Peak Hour Auto Volume		Peak Hour V/C Ratio	
	<u>Maximum</u>	<u>Average</u>	<u>Maximum</u>	<u>Average</u>
2041 Do Nothing	570	570	0.71	0.71
2041 Proposed Network	210	210	0.13	0.13

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

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

Costs

Capital Cost	\$ 14,601,500
Incremental Annual Road Operating Cost	\$ 100,000
Incremental Road Maintenance and Rehabilitation Cost	\$ 37,700

Related Projects

Name **Project ID**

2156 - Baseline Road - McCowan Road to Dalton Road (continued)

Key Intersections and Constraints

Baseline Road at Dalton Road

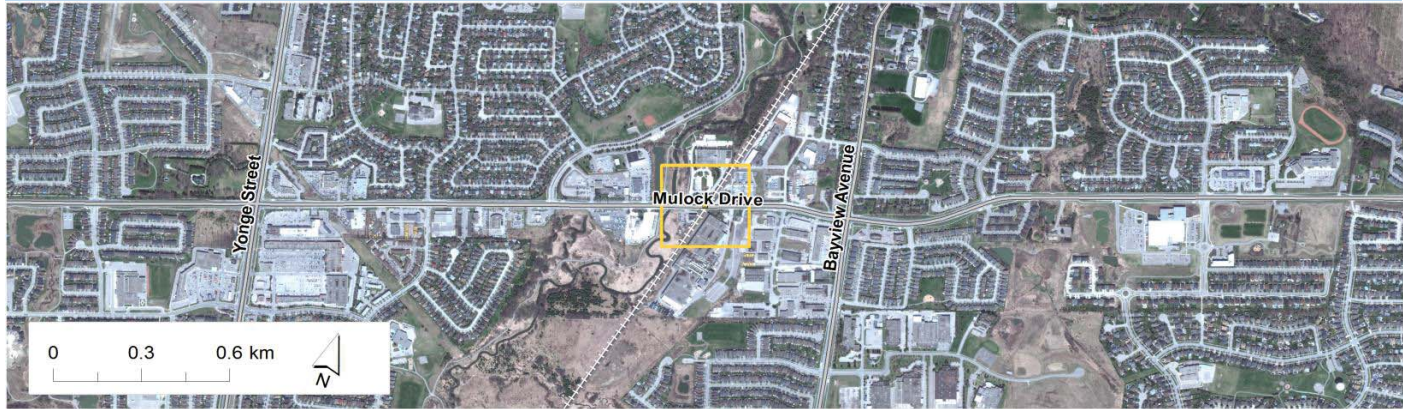


2157 - Barrie GO Grade Separation - Mullock Drive west of Bayview Avenue

Project Description

Location	Barrie GO Grade Separation	Project ID	2157
Municipality	Newmarket	Road Segment ID	74-26
Project Limits	Mullock Drive west of Bayview Avenue		
Project Type	Rail grade separation		

Map



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 Nokiidaa 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.
4. Construct rail grade separation structure - Addresses travel demand within corridor. Opportunity to improve walking and cycling infrastructure. Opportunity to improve transit service.

2157 - Barrie GO Grade Separation - Mullock 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



Costs

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

Related Projects

Name	Project ID
------	------------

Key Intersections and Constraints

Barrie GO at Mullock Drive



2158 - Highway 400 New Interchange - at Kirby Road

Project Description

Location	Highway 400 New Interchange	Project ID	2158
Municipality	Vaughan	Road Segment ID	29-15 to 29-16
Project Limits	at Kirby Road		
Project Type	New Interchange		

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.

2158 - Highway 400 New Interchange - at Kirby Road (continued)

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

Support Transit	Support Road Network	Support Active Transportation	Support Goods Movement	Support Last Mile
○	●	○	◐	◐

Costs

Capital Cost	\$ 40,250,000
Incremental Annual Road Operating Cost	\$ -
Incremental Road Maintenance and Rehabilitation Cost	\$ -

Related Projects

Name	Project ID
Kirby Road - Pine Valley Drive to Dufferin Street - Widen to 4 lanes	2034

Key Intersections and Constraints

Highway 400 at Kirby Road



2159 - Woodbine Avenue - Pollock Road to Old Homestead Road

Project Description

Location	Woodbine Avenue	Project ID	2159
Municipality	Georgina	Road Segment ID	08-48
Project Limits	Pollock Road to Old Homestead Road	Length	1,900 m
Project Type	Widen to 4 lanes		

Map



Existing Conditions

Physical and Transportation Conditions

OP Designated ROW Up to 36 metres

Model Forecast	Peak Hour Auto Volume		Peak Hour V/C Ratio	
	<u>Maximum</u>	<u>Average</u>	<u>Maximum</u>	<u>Average</u>
2011 Existing	210	210	0.26	0.26
Daily truck volume	N/A	N/A		

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

	Peak Hour Auto Volume		Peak Hour V/C Ratio	
	<u>Maximum</u>	<u>Average</u>	<u>Maximum</u>	<u>Average</u>
2041 Do Nothing	880	880	0.55	0.55
2041 Proposed Network	330	330	0.20	0.20

2159 - Woodbine Avenue - Pollock Road to Old Homestead 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.

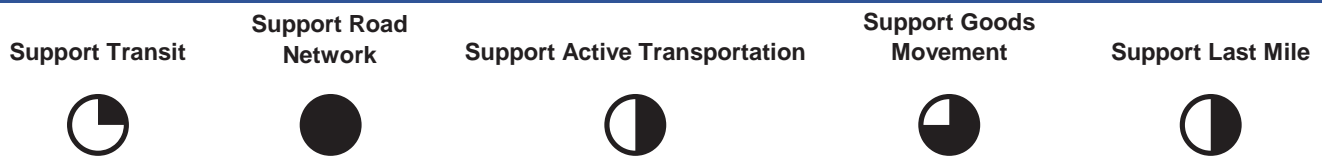
Recommended Improvement and Justification

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

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

TMP Phase 2032 to 2041

Alignment with TMP Objectives



Costs

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

Related Projects

Name	Project ID
------	------------

2159 - Woodbine Avenue - Pollock Road to Old Homestead Road (continued)

Key Intersections and Constraints

Woodbine Avenue at Pollock Road/Morton Avenue



Woodbine Avenue at Old Homestead Road

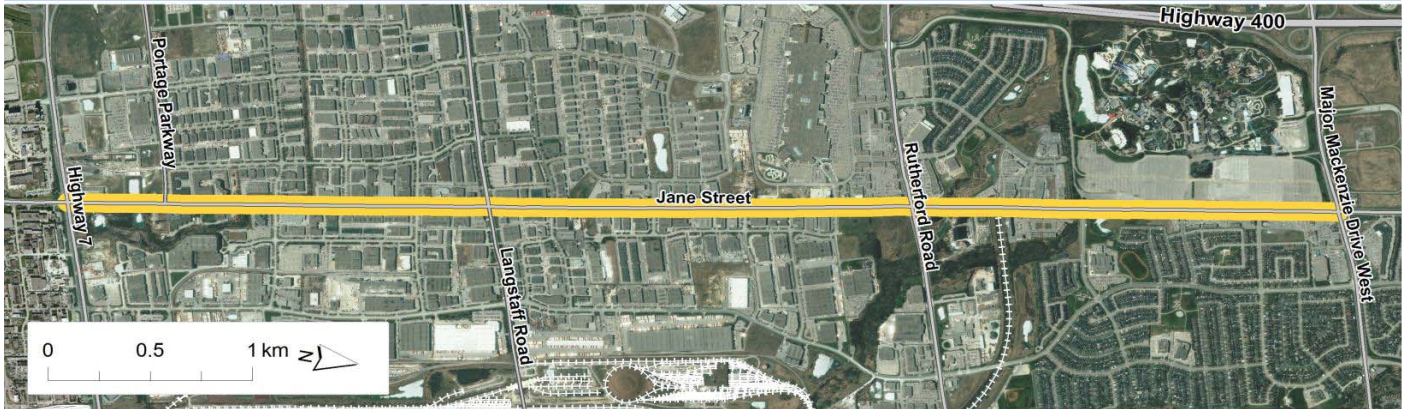


2160 - Jane Street - Highway 7 to Major Mackenzie Drive

Project Description

Location	Jane Street	Project ID	2160
Municipality	Vaughan	Road Segment ID	55-04 to 55-08
Project Limits	Highway 7 to Major Mackenzie Drive	Length	6,230 m
Project Type	Widen to 6 lanes		

Map



Existing Conditions

Physical and Transportation Conditions

OP Designated ROW Up to 45 metres

	Peak Hour Auto Volume		Peak Hour V/C Ratio	
	Maximum	Average	Maximum	Average
Model Forecast				
2011 Existing	2,210	1,720	1.23	0.95
Daily truck volume	1,070 /day	870 /day		

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 Edgeley cemetery on east side north of Portage Parkway. Mostly office/industrial land uses south of Rutherford Road. Regional shopping centre at southwest quadrant of Rutherford Road. Mixed use developments on the east side north of Rutherford Road. Canada's Wonderland on the west side south of Major Mackenzie Drive.

Future Transportation Conditions

	Peak Hour Auto Volume		Peak Hour V/C Ratio	
	Maximum	Average	Maximum	Average
2041 Do Nothing	3,010	2,260	1.67	1.25
2041 Proposed Network	2,180	1,750	1.21	0.97

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

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	Project ID
Jane Street - Highway 7 to Rutherford Road - RT Corridor	1017
Jane Street - Rutherford Road to Major Mackenzie Drive - RT Corridor	1018

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

Key Intersections and Constraints

Jane Street at Highway 7



Jane Street at Langstaff Road



Jane Street at Rutherford Road



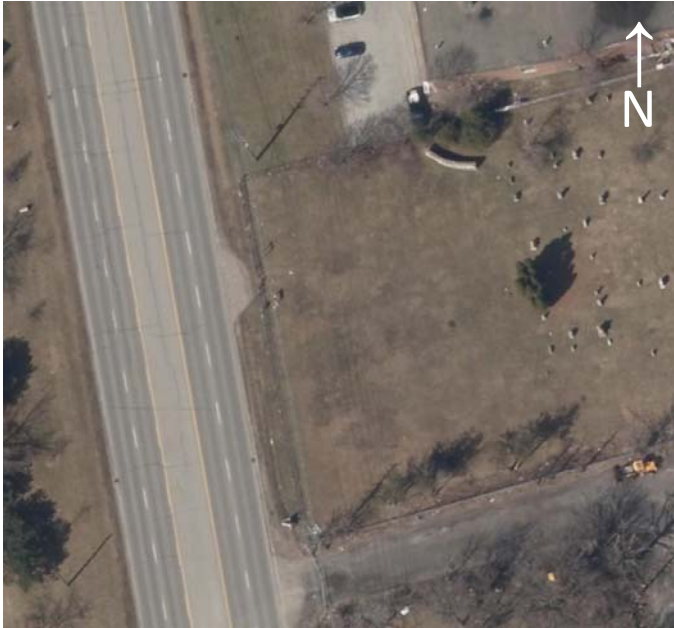
Jane Street at Major Mackenzie Drive



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.



2161 - CP Havelock Grade Separation - Steeles Avenue east of Tapscott Road

Project Description

Location	CP Havelock Grade Separation	Project ID	2161
Municipality	Markham, Toronto	Road Segment ID	95-40
Project Limits	Steeles Avenue east of Tapscott Road		
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 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.

2161 - CP Havelock Grade Separation - Steeles Avenue east of Tapscott Road (continued)

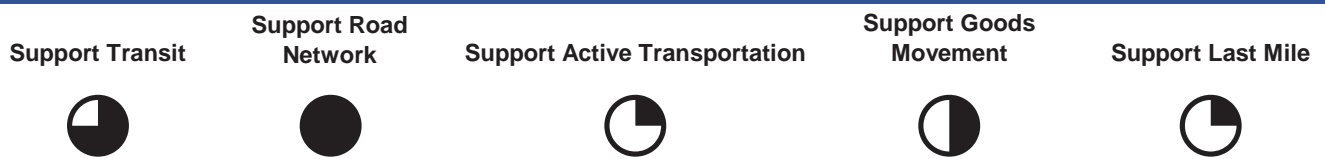
Recommended Improvement and Justification

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



Costs

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

Related Projects

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

Key Intersections and Constraints

CP Havelock at Steeles Avenue



2162 - Stouffville GO Grade Separation - Ninth Line north of Elgin Mills

Project Description

Location	Stouffville GO Grade Separation	Project ID	2162
Municipality	Markham	Road Segment ID	69-12
Project Limits	Ninth Line north of Elgin Mills		
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 (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.

2162 - Stouffville GO Grade Separation - Ninth Line north of Elgin Mills (continued)

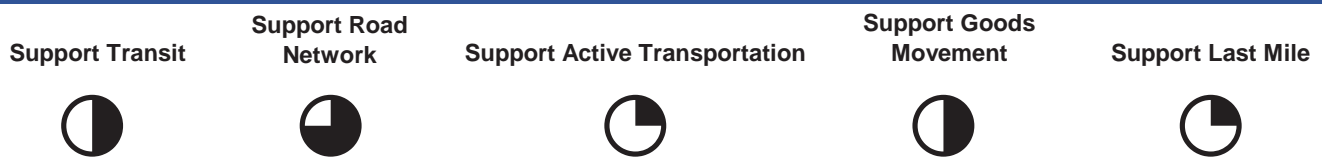
Recommended Improvement and Justification

Recommendation Construct rail grade separation structure.

Justification Traffic and train volumes are expected to exceed exposure warrants for grade separation by 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



Costs

Capital Cost	\$ 18,839,100
Incremental Annual Road Operating Cost	\$ -
Incremental Road Maintenance and Rehabilitation Cost	\$ -

Related Projects

Name	Project ID
------	------------

Key Intersections and Constraints

Stouffville GO at Ninth Line



2163 - Stouffville GO Grade Separation - Major Mackenzie east of Highway 48

Project Description

Location	Stouffville GO Grade Separation	Project ID	2163
Municipality	Markham	Road Segment ID	25-40
Project Limits	Major Mackenzie east of Highway 48		
Project Type	Rail grade separation		

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.
4. Construct rail grade separation structure - Addresses travel demand within corridor. Opportunity to improve walking and cycling infrastructure. Opportunity to improve transit service.

2163 - Stouffville GO Grade Separation - Major Mackenzie east of Highway 48 (continued)

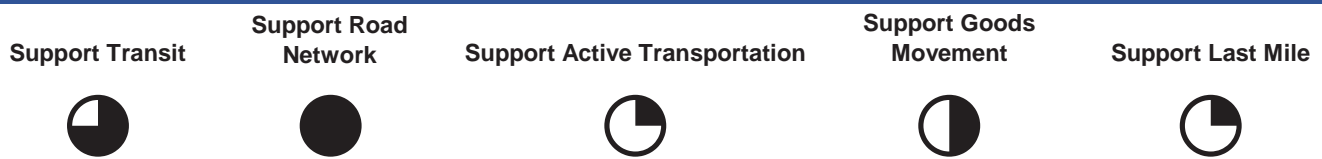
Recommended Improvement and Justification

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 proposed GO Rail service improvements.

TMP Phase 2032 to 2041

Alignment with TMP Objectives



Costs

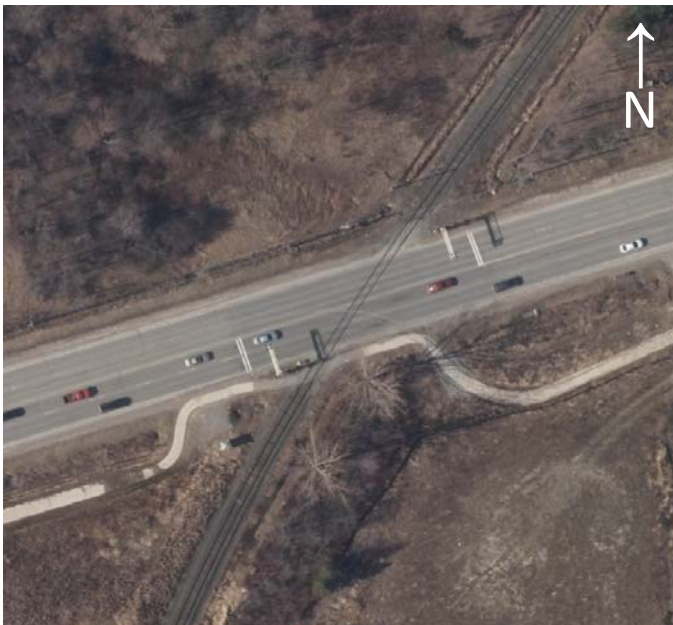
Capital Cost	\$ 19,344,600
Incremental Annual Road Operating Cost	\$ -
Incremental Road Maintenance and Rehabilitation Cost	\$ -

Related Projects

Name	Project ID
Major Mackenzie Drive - Leslie Street to Donald Cousens Parkway - RT Corridor	1014
Major Mackenzie Drive - Leslie Street to Kennedy Road - Widen to 6 lanes	2125

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	Project ID	2164
Municipality	Vaughan	Road Segment ID	95-15 to 95-16
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

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

Costs

Capital Cost	\$ 20,750,000
Incremental Annual Road Operating Cost	\$ -
Incremental Road Maintenance and Rehabilitation Cost	\$ -

Related Projects

Name	Project ID
Steeles Avenue - Pine Valley Drive to Jane Street - Steeles (Widen to 6 lanes)	2117

Key Intersections and Constraints

Highway 400 at Steeles Avenue

