Transportation Master Plan Update

Appendix C – Detailing of the Preferred Scenario

Town of East Gwillimbury
Final Report

East Gwillimbury

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Detailing of the Preferred Scenario

The multimodal transportation vision for the 2051 horizon includes a detailed strategy and justification for all improvements. The key opportunities of Scenario 4 include:

- Constructing key road connections to connect the community areas within East Gwillimbury;
- Supporting the development of Whitebelt lands and increase the overall connectivity across the surrounding communities within East Gwillimbury;
- Maintaining consistency with the latest planning context;
- Providing opportunities to connect with future transportation links such as the Bradford Bypass;
- Connecting the gaps in the sidewalk network to promote walking as the first choice for short trips;
- Implementing cycling infrastructure throughout East Gwillimbury, building on the Town's Active Transportation and Trails Master Plan;
- Implementing an EcoMobility Hub pilot program as a way to encourage shared mobility and to facilitate first and last mile connections;
- Implementing a bike share pilot program to increase cycling mode share; and
- Encourage York Region Transit (YRT) maintain On-Demand Service within East Gwillimbury.

Additional network considerations for the 2051 horizon not considered when identifying the preferred scenario for the 2041 horizon include the following:

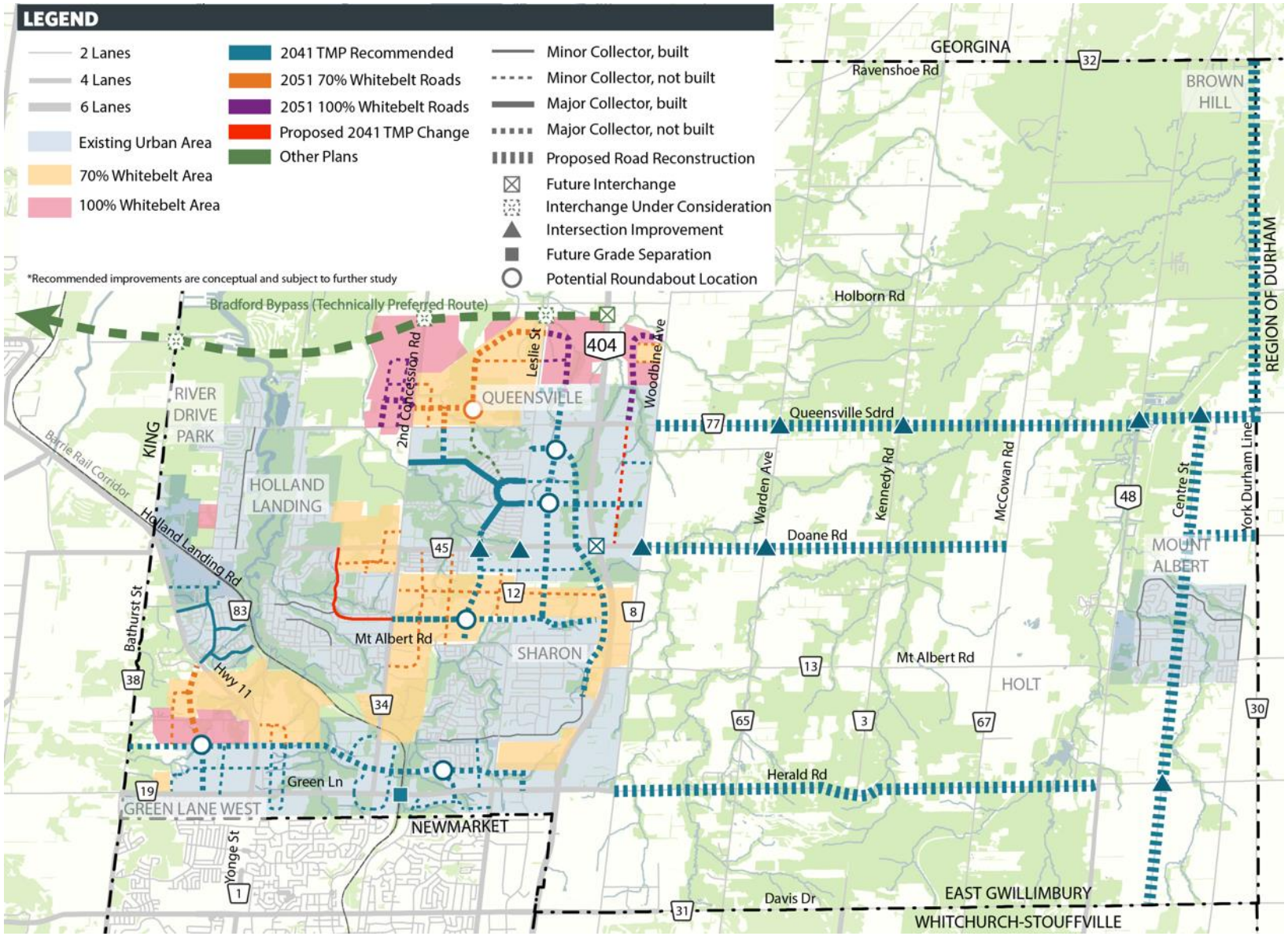
- New urban areas (70% and 100% Whitebelt lands);
- New regional and inter-regional projects identified in the 2022 York Region TMP (such as the Bradford Bypass); and
- Network changes to align with findings from completed studies, such as:
    - Holland Landing Secondary Plan;
    - Removal of Highway 404 midblock crossing north of Green Lane
    - Removal of collector network northeast of Highway 404 and Green Lane; and
    - Other completed projects.

These changes are incorporated based on the 2041 preferred scenario to reflect the forecast of 2051 horizon considering the connection to existing and planned roads as well as mitigation of crossing.

1 New Road Projects

New road projects are required to support the significant growth that the Town will experience over the next 30 years. These projects will also help support the proposed active transportation and transit opportunities for the Town by providing more direct connections between communities. Proposed road projects required for the 2051 horizon are shown in **Figure 1**.

Figure 1. Proposed 2051 Road Network



1.1.1 Road Improvements in Holland Landing

A total of five (5) new road projects have been identified in **Table 1-1** for the Holland Landing community and its surrounding Whitebelt area to improve transportation connections within the community and to support growth.

Table 1-1: Recommended Collector Road Improvements in Holland Landing

ID	Area	Road	From	To	Improvement Type
R-A1	HL	Centennial Avenue Extension (Level Crossing)	Toll Road	Holland Landing Road	New Construction
R-A2	HL	Centennial Avenue Extension	Highway 11	Holland Landing Road	New Construction
R-B21	NHL	E-W Collector 8	Silk Twist Drive	2nd Concession Road	New Construction
R-B22	NHL	Collector 7	2nd Concession Road	E-W Collector 8	New Construction
R-B23	NHL	N-S Collector 10	E-W Collector 8	Holland Landing Collector	New Construction

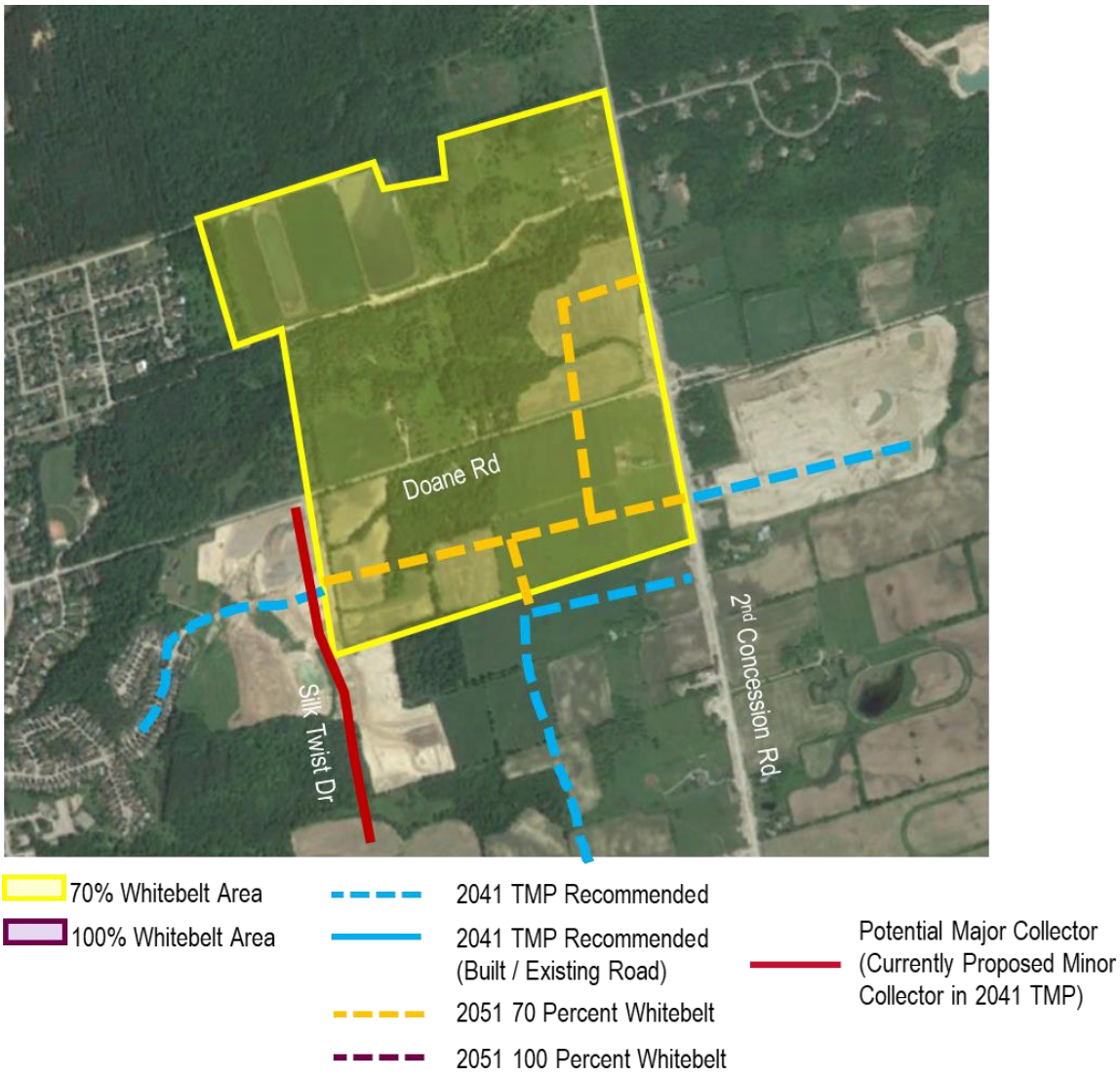
HL denotes 'Hollands Landing'
NHL denotes 'North of Hollands Landing'

The Silk Twist Drive Extension is already under construction as of the writing of this report. The improvements in Holland Landing and the 70% Whitebelt Area north of Holland Landing are illustrated in **Figure 2** and **Figure 3** respectively. It is noted that these community wide figures are for location references only with the final recommendations presented in **Figure 1**. Same statement applies to the rest sections.

Figure 2: New Collector Road Improvements in Holland Landing

For location references only, see **Figure 1** for final recommendations.
Source: Google Earth

Figure 3: New Collector Road Improvements in North of Holland Landing (70% Whitebelt Area)



For location references only, see **Figure 1** for final recommendations.
Source: Google Earth

The extension of the aforementioned roads is recommended to improve the connectivity of the Holland Landing community area. They will also improve the active transportation network as these road projects will include pedestrian and cycling infrastructure.

1.1.1.1 CENTENNIAL AVENUE AT GRADE CROSSING

As part of the road improvements in Holland Landing, the Centennial Avenue extension across the Barrie GO Rail Corridor was further analyzed to determine if grade separation is required for the crossing. With the planned Metrolinx Regional Express Rail (RER) service, the Barrie GO Rail Corridor

will experience all day, two-way GO Rail service to Barrie and Toronto every 30 minutes in the peak direction during peak periods and every 60 minutes during off-peak periods.

The Exposure Index (EI) is a measure typically used to assess the merit of grade separating an at level road crossing. The index is calculated as:

$$\boldsymbol{Exposure\ Index} = (Total\ number\ of\ train\ crossings\ per\ day) * Annual\ Average\ Daily\ Traffic$$

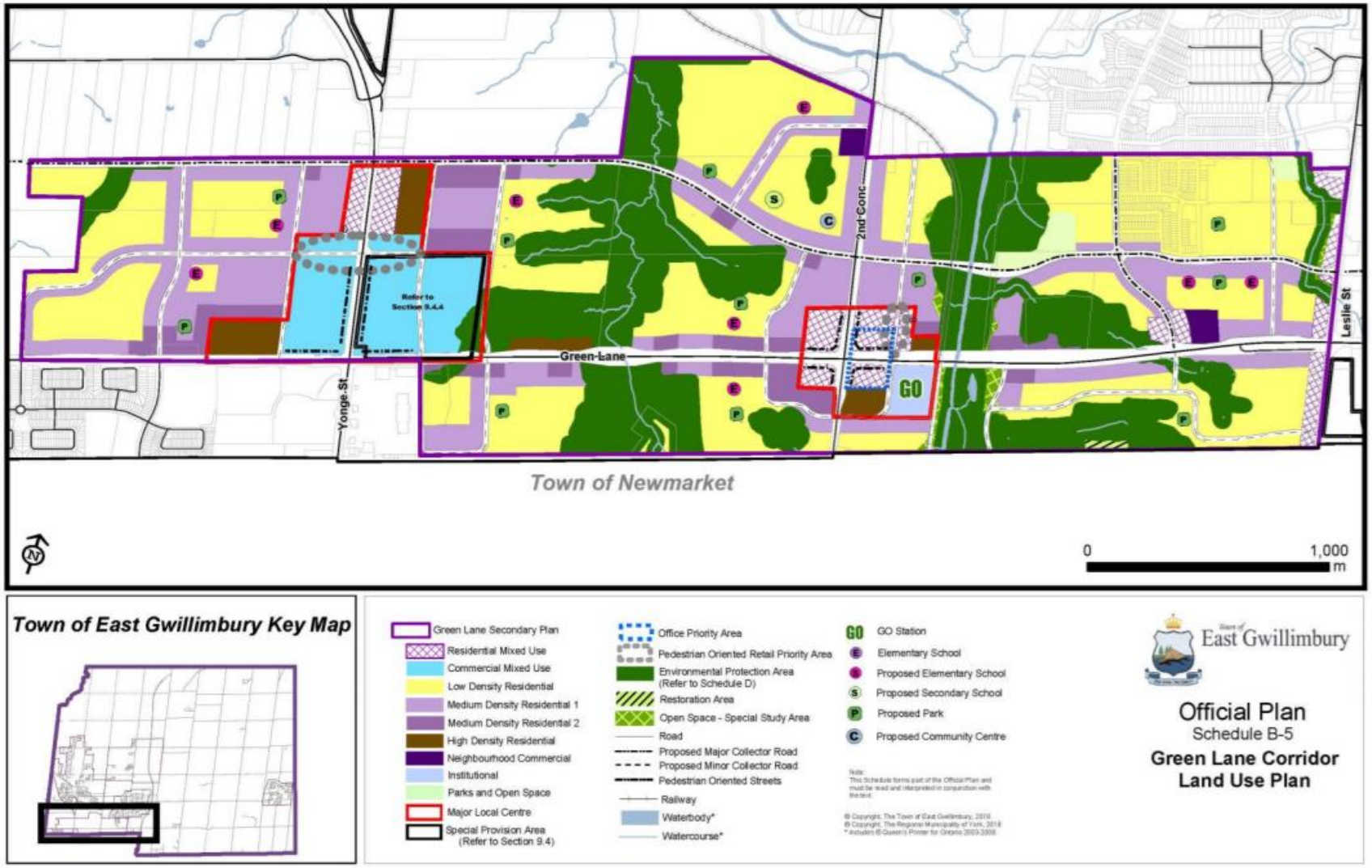
Most municipalities and agencies agree that an EI which exceeds 200,000 warrants grade separation. By 2041, the expected Average Annual Daily Traffic (AADT) for the Centennial Avenue extension is estimated to be 2,790 vehicles. With RER service, the Barrie GO Rail Corridor in East Gwillimbury will experience 18 trains per day. This results in an EI of 50,220, therefore grade separation is not warranted at the Centennial Avenue extension.

1.1.2 Road Improvements in Green Lane Corridor

The Green Lane Corridor is expected to experience significant growth over the next 30 years. To accommodate this growth and to satisfy policies from the Town's OP, several road projects have been identified with consultation of the ***Green Lane Secondary Plan*** (2018), as shown in **Figure 4.**

The recommended projects are displayed in **Table 1-2** and illustrated in **Figure 5**.

Figure 4: Green Lane Secondary Plan Road Network



For location references only, see **Figure 1** for final recommendations.

Source: Green Lane Secondary Plan (April 2018)

Table 1-2: Recommended Collector Road Projects in Green Lane West

ID	Road	From	To	Improvement Type
R-A3	Murell Boulevard Widening	East-West Collector	Green Lane	Widening
R-A4	Bayview Parkway Extension	Green Lane	Current Northern Terminus	New Construction
R-A5	Connector Road / Street I	2nd Concession	East-West Collector	New Construction
R-A7	East-West Collector + Structure	Bathurst Street	Harry Walker Parkway	New Construction
R-A8	Harry Walker Parkway Extension	East-West Collector	Green Lane	New Construction
R-A10	Lady Gwillim Avenue Extension	Green Lane	Ring Road H (East of Yonge)	New Construction
R-A11	New East-West Road (South of Green Lane) / Street F	Bayview Parkway	Leslie Street	New Construction
R-A11b	Murrell Blvd South Extension	Green Lane	Street F	New Construction
R-A12	North-South Connector (West of Yonge Street) / Street G	East-West Collector	Green Lane	New Construction
R-A13	Ring Road (East of Yonge Street) / Ring Road H	East-West Collector (west side)	East-West Collector (east side)	New Construction
R-A14	2nd Concession Ring Road / Ring Road J	Rogers Road	East-West Collector	New Construction
R-A15	Street K	Manor Hampton Street	Green Lane	New Construction
R-A16	Woodspring Avenue Extension	East-West Collector	Green Lane	New Construction
R-A59	Barrie GO Grade Separation	Green Lane	east of Second Concession	New Structure

Figure 5: Collector Road Improvements in the Green Lane Corridor

For location references only, see **Figure 1** for final recommendations.
Source: Google Earth

These road projects are necessary to support growth, in addition to connecting the communities within the Town: the Woodspring Avenue extension would connect Holland Landing to Green Lane West and the Harry Walker Parkway Extension would connect Sharon to Green Lane East. These connections help facilitate trips within the Town, which is expected to significantly increase. They will also support walking and cycling trips between the communities with active transportation infrastructure included within the road ROW. It must be noted that property acquisition may be necessary for certain parcels (namely Ring Road H and J) in order to implement the recommended road improvements.

1.1.3 Road Improvements in Sharon

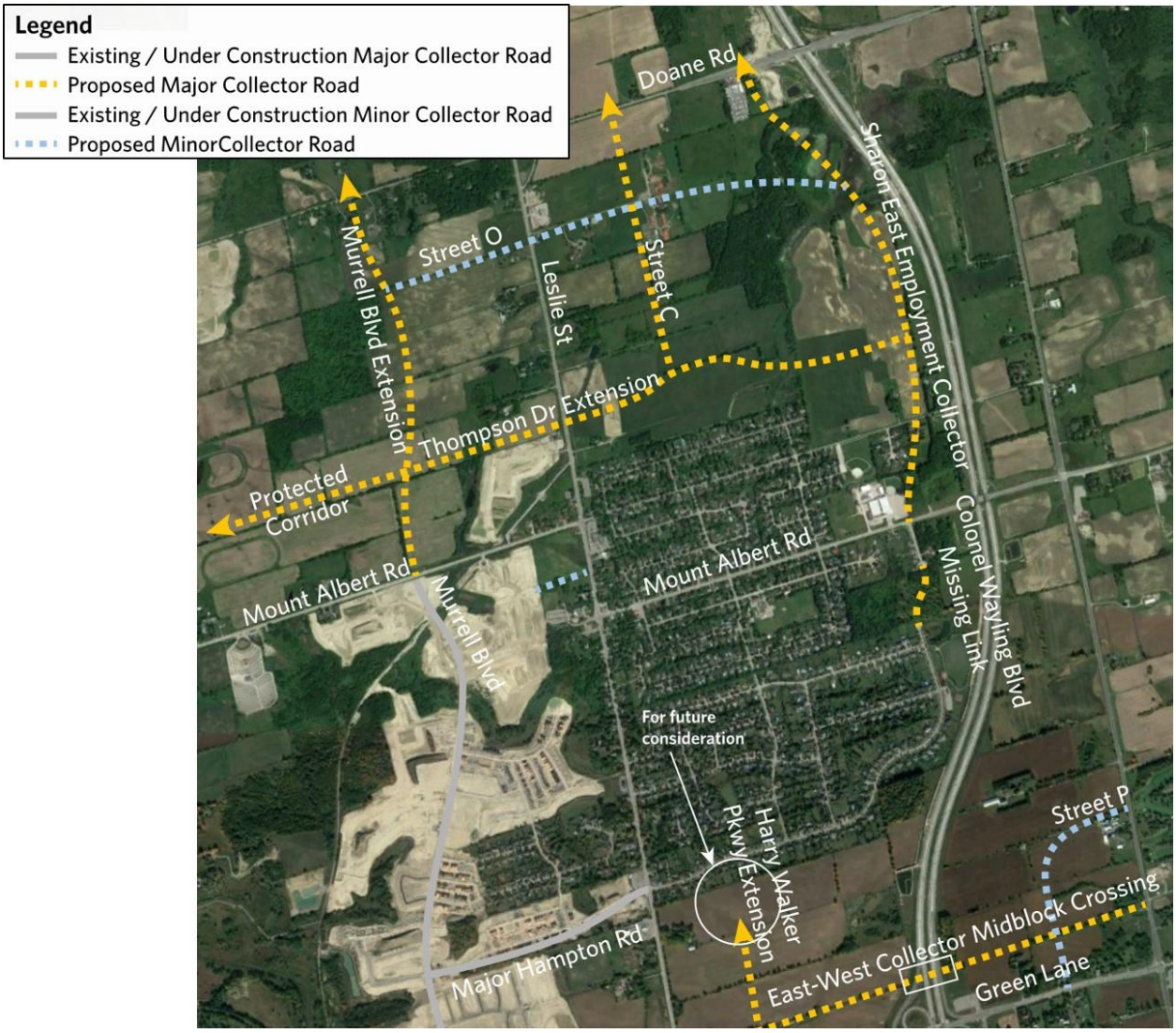
To support development within and around Sharon, fourteen (14) new road projects located in Sharon community and its surrounding Whitebelt area have been identified. **Table 1-3** lists the recommended improvements while **Figure 6** and **Figure 7** illustrate them visually.

Table 1-3: Recommended Collector Road Projects in Sharon

ID	Area	Road	From	To	Improvement Type
R-A21	SR	New North Queensville Ring Road / Street C	Doane Road	Silk Twist Drive	New Construction
R-A22	SR	Murrell Boulevard Extension	Doane Road	Mount Albert Road	New Construction
R-A23	SR	Sharon East Employment Collector	Doane Road	Ward Avenue	New Construction
R-A24	SR	Street O	Murell Boulevard Extension	Sharon East Employment Collector	New Construction
R-A25	SR	Silk Twist Drive East	Murell Boulevard Extension	Sharon East Employment Collector	New Construction
R-A26	SR	Silk Twist Drive West	2nd Concession	Murell Boulevard	New Construction
R-A60	SR	Highway 404 Interchange at Doane Road			New Structure
R-B24	SSR	Collector 8	2nd Concession Road	Doane Road	New Construction
R-B25	SSR	N-S Collector 11	Mount Albert Road	Doane Road	New Construction
R-B26	SSR	N-S Collector 12	Silk Twist Drive Extension	E-W Collector south of Doane Road	New Construction
R-B27	SSR	E-W Collector 9	2nd Concession Road	Sharon East Collector	New Construction

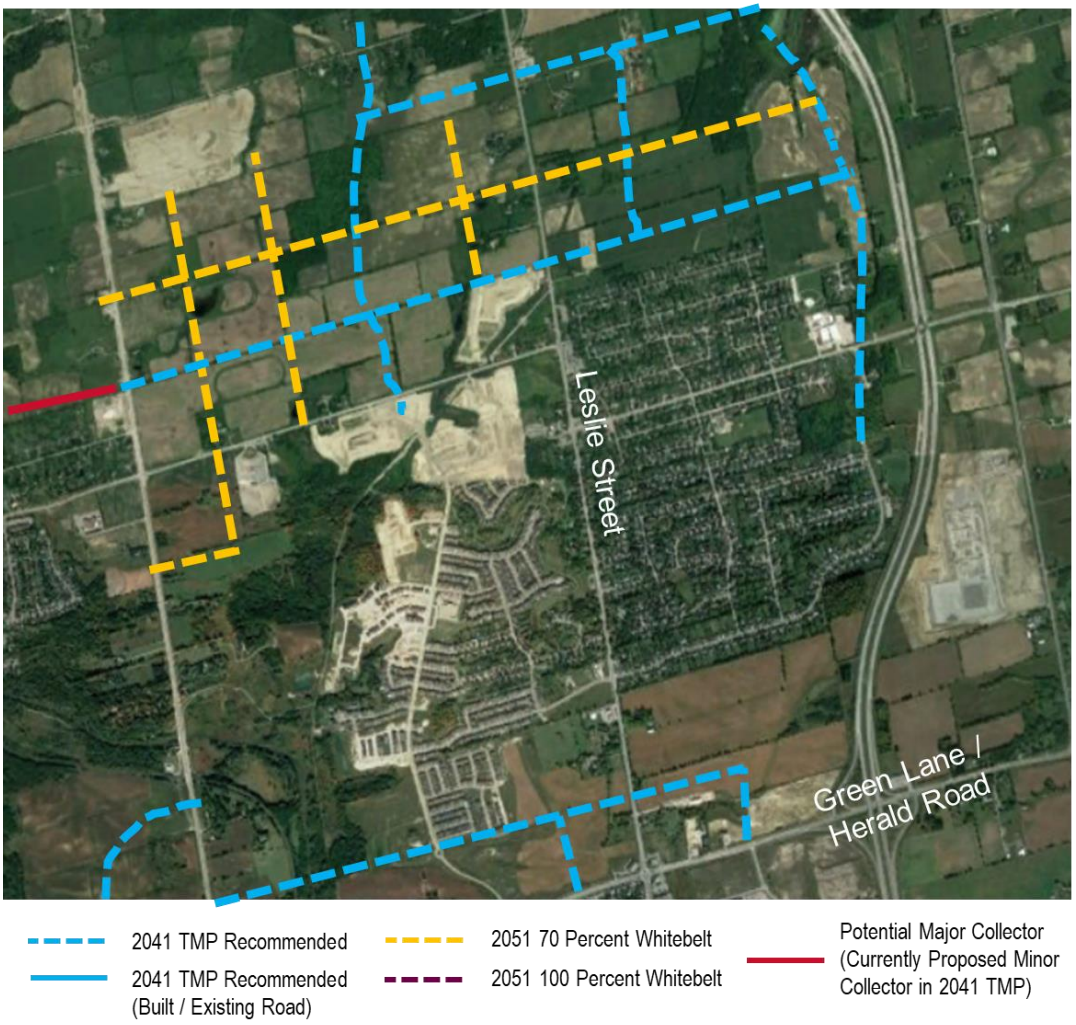
SR denotes ‘Sharon’
SSR denotes ‘Surrounding Sharon’

Figure 6: Collector Road Improvements in Sharon



For location references only, see **Figure 1** for final recommendations.
Source: Google Earth

Figure 7: New Collector Road Improvements Surrounding Sharon (70% Whitebelt Area)



For location references only, see **Figure 1** for final recommendations.
Source: Google Earth

These road projects will facilitate travel between Queensville and Sharon, support the Sharon Employment lands, and will provide continuous connections to support multimodal trips within the Town. Given that the recommended road network represents the long-term vision for Sharon, improvements such as the extension of Silk Twist Drive westwards from Murrell Boulevard to 2nd Concession should be assessed depending on potential impacts on the protected corridor it crosses.

1.1.4 Road Improvements in Queensville

The Queensville community area will experience significant growth and is therefore has a significant number of new road projects as outlined in **Table 1-4**. The road projects are illustrated in **Figure 8**.

Table 1-4: Recommended Collector Road Projects in Queensville

ID	Road	From	To	Improvement Type
R-A27	Jim Mortson Drive Extension (Southern Extension 1)	Leslie Street	New North Queensville Ring Road / Street C	New Construction
R-A28	Jim Mortson Drive Extension (Southern Extension 2)	New North Queensville Ring Road / Street C	New North-South Frontage Road (East of Hwy 404) / Street L	New Construction
R-A29	Jim Mortson Drive Extension (Northern Extension)	Leslie Street	Sharon East Employment Collector Extension / Street D	New Construction
R-A30	North Queensville Ring Road (East Portion)	Leslie Street	Queensville Sideroad	New Construction
R-A31	New North-South Road / Street A	Queensville Sideroad	Evans Farm Boulevard	New Construction
R-A32	North Queensville Ring Road Extension / Street C	Queensville Sideroad	Doane Road	New Construction
R-A33	New North-South Frontage Road (East of Hwy 404) / Street L	Queensville Sideroad	Doane Road	New Construction
R-A34	New East-West Road / Street M	New North-South Frontage Road (East of Hwy 404) / Street L	Woodbine Avenue	New Construction
R-A35	New East-West Road / Street N	New North-South Frontage Road (East of Hwy 404) / Street L	Woodbine Avenue	New Construction

ID	Road	From	To	Improvement Type
R-A36	Murrell Boulevard Extension / John Candy Drive	Ben Sinclair Avenue	Doane Road	New Construction
R-A37	Sharon East Employment Collector Extension / Street D	Leslie Street	Doane Road	New Construction

Figure 8: Road Collector Improvements in Queensville

For location references only, see **Figure 1** for final recommendations.
Source: Google Earth

The proposed road projects will support growth in the Queensville community area to the west of Highway 404 and the Queensville employment area to the

east of Highway 404. The projects will also improve multimodal connectivity between Queensville and Sharon, allow for shorter and more direct trips.

1.1.5 Road Improvements north of Queensville Sideroad

Due to the identified 70% and 100% Whitebelt area in the north of Queensville Sideroad, several new road projects are recommended, listed in **Table 1-5** and illustrated visually in **Figure 9** and **Figure 10**

.

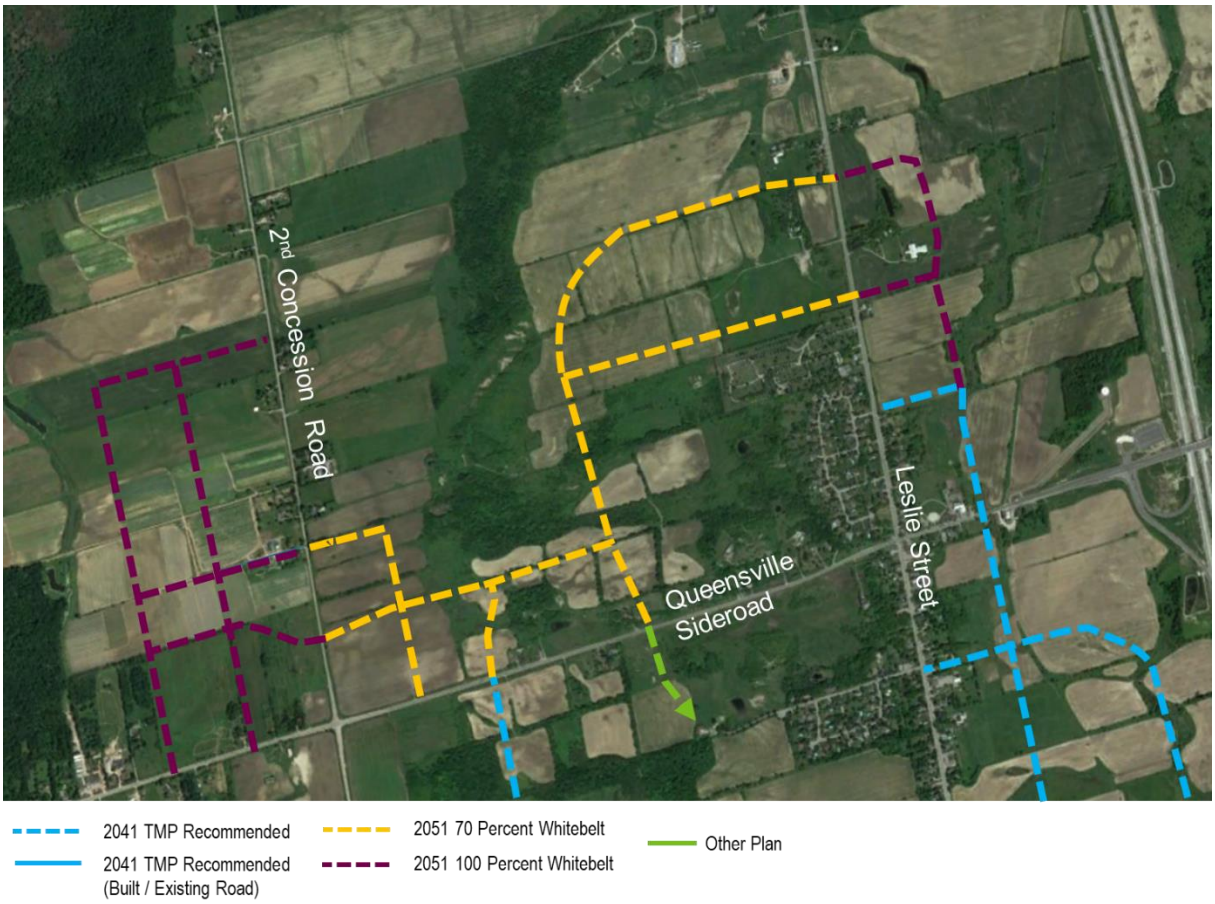
Table 1-5: Recommended Collector Road Projects North of Queensville Sideroad

ID	Area	Road	From	To	Improvement Type
R-B1	NWQ	N-S Collector 1	Queensville Sideroad	E-W Collector 4	New Construction
R-B2	NWQ	N-S Collector 2	Queensville Sideroad	E-W Collector 4	New Construction
R-B3	NWQ	N-S Collector 3	E-W Collector 1	E-W Collector 2	New Construction
R-B4	NWQ	E-W Collector 1	N-S Collector 1	2nd Concession Road	New Construction
R-B5	NWQ	E-W Collector 3	N-S Collector 1	2nd Concession Road	New Construction
R-B6	NWQ	E-W Collector 4	N-S Collector 1	2nd Concession Road	New Construction
R-B7	NWQ	Collector 1	Leslie Street	E-W Collector north of Queensville Sideroad	New Construction
R-B8	NWQ	E-W Collector 5	Leslie Street	Collector 1	New Construction
R-B9	NWQ	Collector 2	2nd Concession Road	Queensville Sideroad	New Construction
R-B10	NWQ	N-S Collector 4	E-W Collector 5	Queensville Sideroad	New Construction

ID	Area	Road	From	To	Improvement Type
R-B11	NWQ	Collector 3	Leslie Street	South of Queensville Sideroad	New Construction
R-B12	NWQ	E-W Collector 5	2nd Concession Road	Collector 2	New Construction
R-B13	NWQ	E-W Collector 6	Collector 2	Leslie Street	New Construction
R-B14	NEQ	70% Collectors (2 total in parallel)			New Construction
R-B15	NEQ	Collector 4	NEQ, 70% Collectors	Woodbine Avenue	New Construction
R-B16	NEQ	N-S Collector 6	Queensville Sideroad	NEQ, 70% Collectors	New Construction

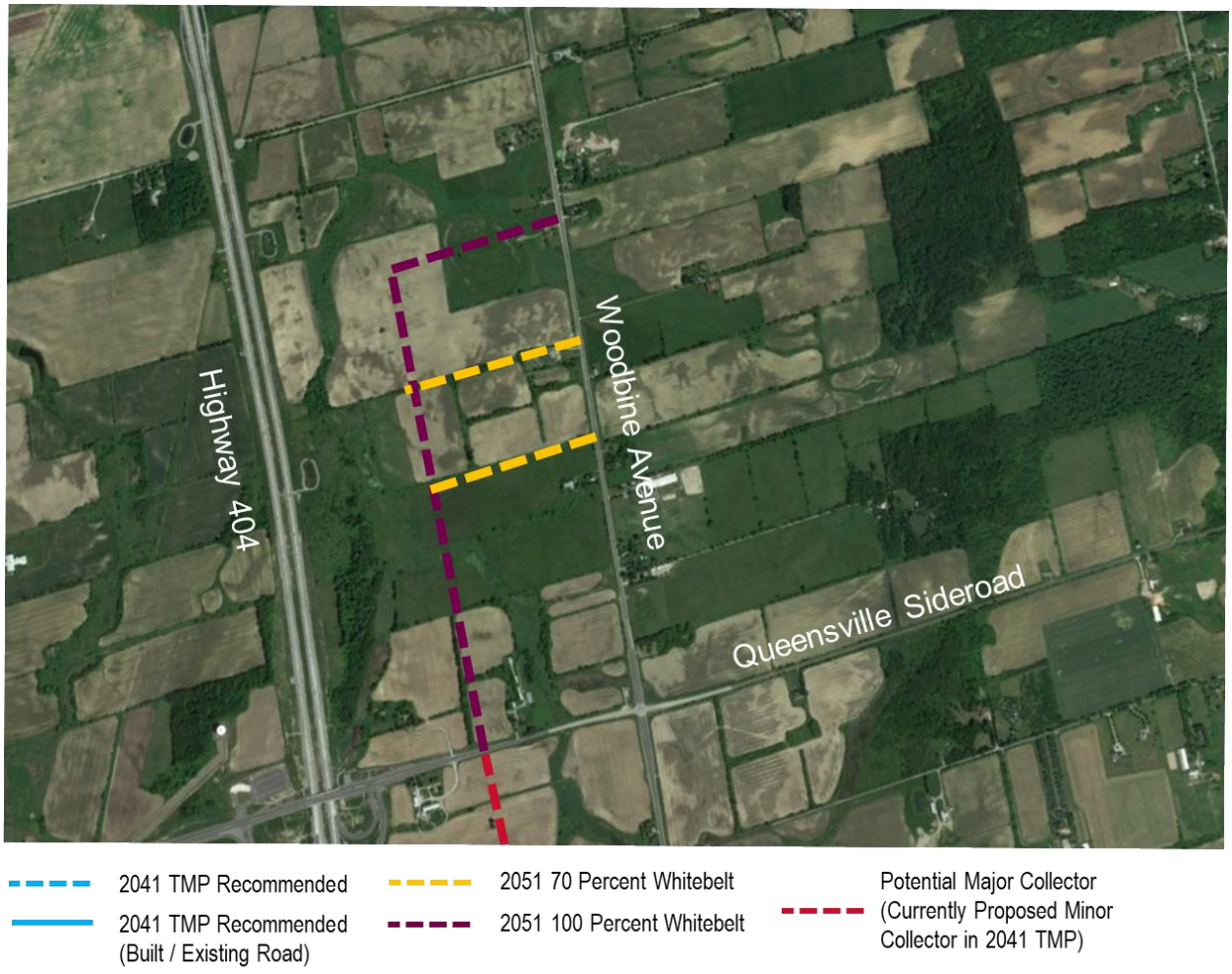
NWQ denotes 'Northwest of Queensville Sideroad and Highway 404'
NEW denotes 'Northeast of Queensville Sideroad and Highway 404'

Figure 9: New Collector Road Improvements Northwest of Queensville Sideroad (70% and 100% Whitebelt Area)



For location references only, see **Figure 1** for final recommendations.
Source: Google Earth

Figure 10: New Collector Road Improvements Northeast of Queensville Sideroad (70% and 100% Whitebelt Area)



For location references only, see **Figure 1** for final recommendations.
Source: Google Earth

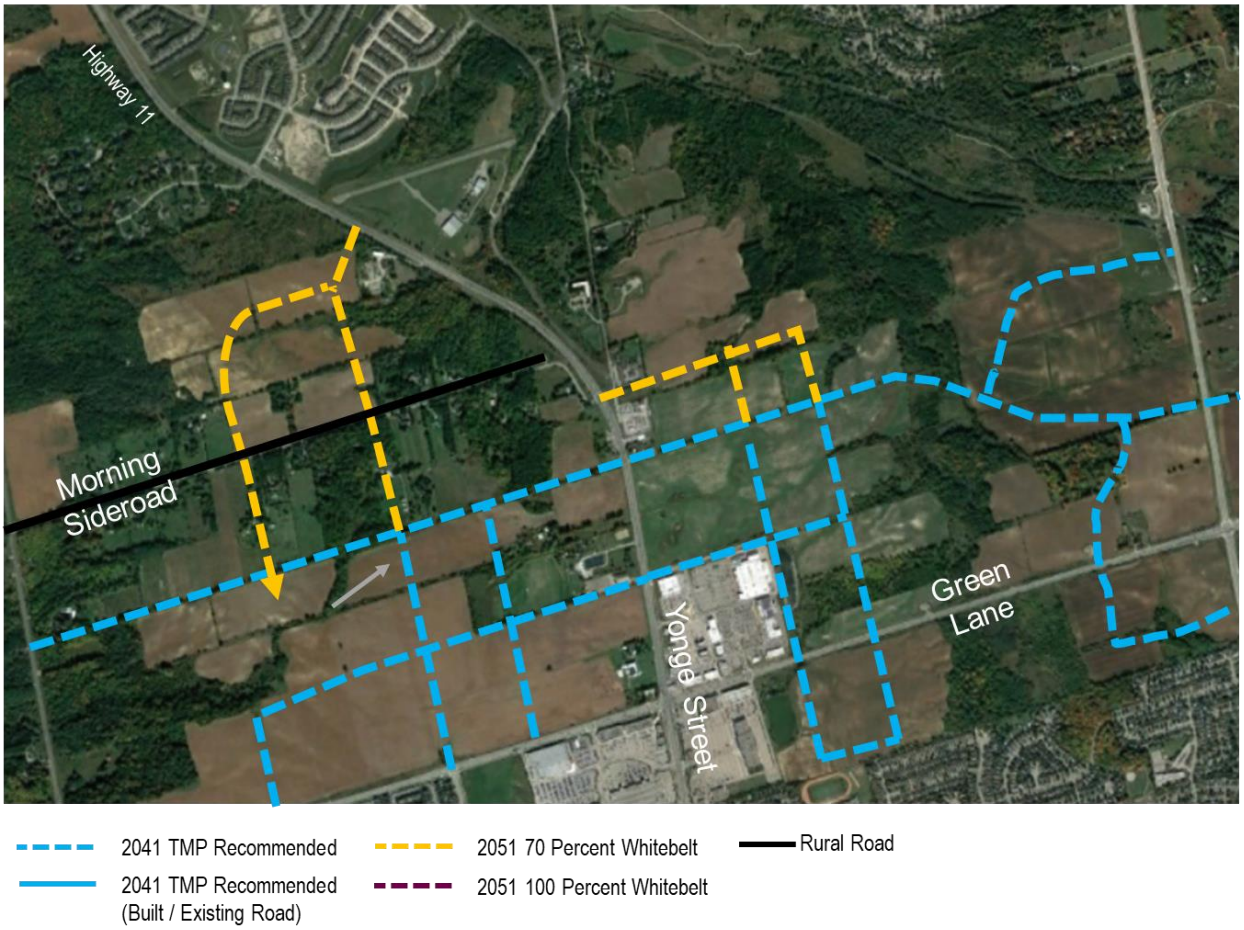
1.1.6 Road Improvements near Highway 11 and Yonge Street

To support the development of the 70% and 100% Whitebelt area near Highway 11 and Yong Street, several new road projects are recommended shown in **Table 1-6** and **Figure 11.** These new roads would improve the connectivity across communities including Holland Landing, Green Lane West, and the Whitebelt area in between. Additionally, as shown in **Figure 11,** the current rural road Morning Sideroad may be considered for urbanization to serve the community due to developments on either side of the road.

Table 1-6: Recommended Collector Road Projects near Highway 11 and Yonge Street

ID	Road	From	To	Improvement Type
R-B17	Collector 5	N-S Collector 8	E-W Collector north of Green Lane	New Construction
R-B18	N-S Collector 8	Highway 11	E-W Collector north of Green Lane	New Construction
R-B19	N-S Collector 9	Collector 6	E-W Collector north of Green Lane	New Construction
R-B20	Collector 6	Highway 11	E-W Collector north of Green Lane	New Construction

Figure 11: New Collector Road Improvements near Highway 11 and Yonge Street (70% and 100% Whitebelt Area)



For location references only, see **Figure 1** for final recommendations.
Source: Google Earth

1.1.7 Road Improvements in Other Areas

The preferred scenario includes recommendations for the reconstruction of several rural roads within the Town's boundaries. As shown in **Figure 6-1** under **Section 6** in the main report, this includes Queensville Sideroad, Doane Road, Herald Road, Centre Street, and York Durham Line.

Although these roads do not experience capacity issues, they carry significant volumes for 2 lane rural roads that have several constraints. These constraints include steep hills, blind intersections, narrow areas with deep ditches, winding areas, and little/no shoulders, all of which are safety issues.

In order to safely accommodate growth and to facilitate safe travel between communities within the Town, it is recommended that these roads be reconstructed and should include paved shoulders. Based on projected 2041 traffic volumes (shown in **Figure 12**), Herald Road is recommended as the first priority for reconstruction, followed by Queensville Sideroad, Doane Road, Centre Street, and York Durham Line. The road segments identified for reconstruction with the Town of East Gwillimbury are outlined in **Table 1-7**.

Reconstruction of these roads refers to pavement rehabilitation and the widening of pavement width to the necessary standards within the road ROW. These roads will maintain their rural cross section and will include shoulders (paved or unpaved) and ditches. For these specific roads, paved shoulders are recommended and are detailed further in **Section 3 Active Transportation**.

In addition, one new local street (not shown in **Table 1-7**) is proposed for the 100% Whitebelt area located in the northeast of Holland Landing Road and Oriole Drive as shown in **Figure 13**. It is noted that collector roads are not required as local streets can sufficiently serve future development.

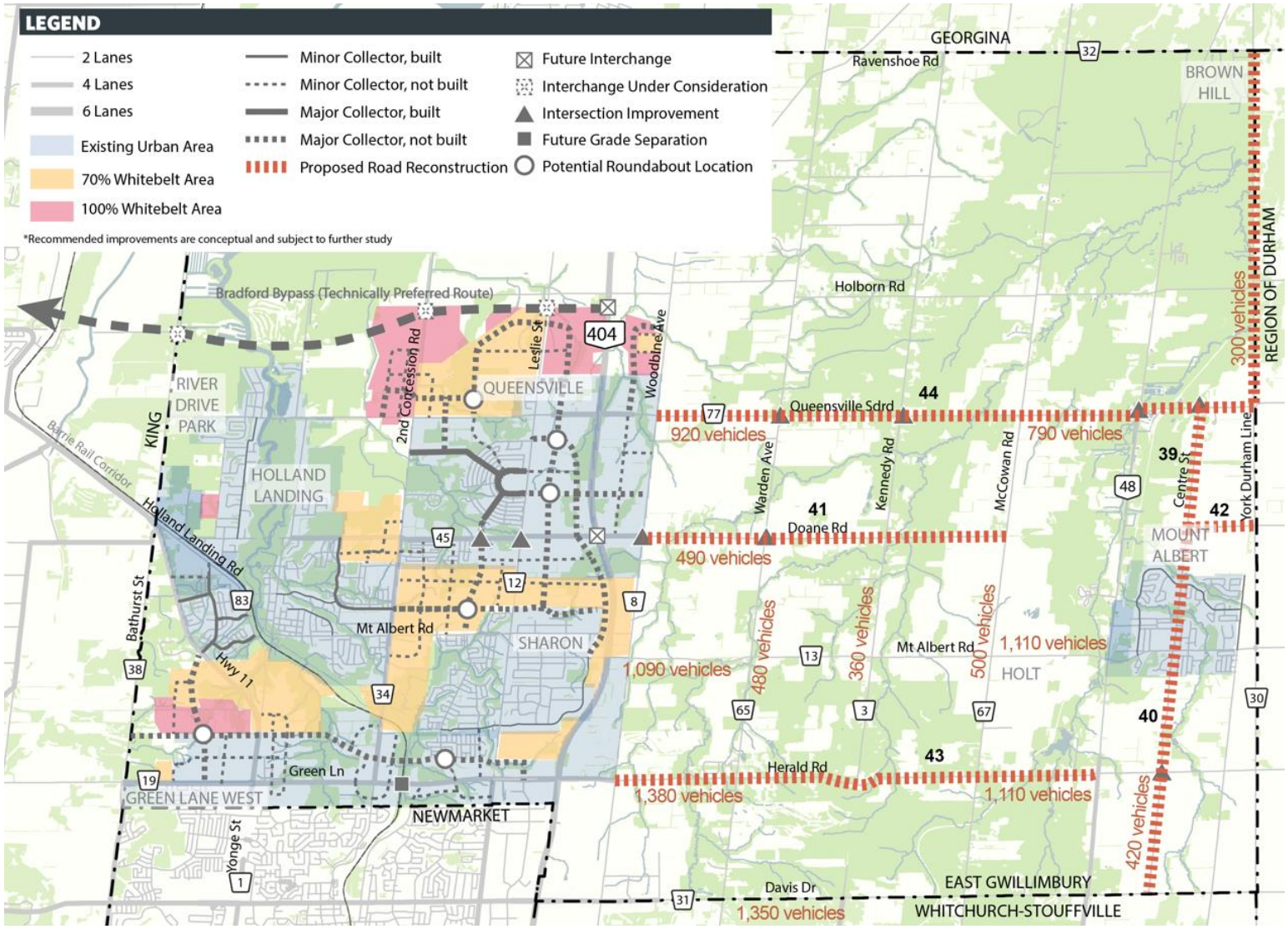
Table 1-7: Road Improvements in Other Areas

ID	Road	From	To	Improvement Type
R-A39	Centre Street	Queensville Sideroad	King Street and King Street East	Reconstruction
R-A40	Centre Street	Mount Albert Road	Davis Drive	Reconstruction
R-A41	Doane Road	Woodbine Avenue	McCowan Road	Reconstruction

ID	Road	From	To	Improvement Type
R-A42*	Doane Road	Centre Street	York Durham Line	Reconstruction
R-A43	Herald Road	Woodbine Avenue	Hwy 48	Reconstruction
R-A44	Queensville Sideroad	Woodbine Avenue	York Durham Line	Reconstruction
R-A61	York Durham Line	Ravenshoe Road	Queensville Sideroad	Reconstruction

*Funded projects that are recommended in the TMP but not included in total cost

Figure 12: Rural Improvements Locations



Source: York Region EMME Model (2041 forecast volumes)

Figure 13: New Road Improvements Northeast of Holland Landing and Oriole Drive

For location references only, see **Figure 1** for final recommendations.
Source: Google Earth

2 Road Jurisdiction Review

York Region has a Regional Road Assumption Policy which can be used to determine if a Town road should be uploaded to York Region's Regional Road network. Due to significant growth within the Town and an increase in internal travel, a review of Queensville Sideroad from Woodbine Avenue to York Durham Line was conducted.

Queensville Sideroad is currently a rural east-west arterial. However, the role of this road will change as the Town grows and as internal travel demand increases. By 2041, Queensville Sideroad will carry over 900 vehicles in the peak hour, east of Woodbine Avenue (**Figure 12**).

Based on the policy criteria set forth by the Region, as illustrated in **Table 2-1**, it is **recommended that Queensville Sideroad from Woodbine Avenue to York Durham Line be transferred to the Region's jurisdiction.**

2nd Concession Road and Bathurst Street may also require potential 2 to 4 lane widening and road class update due to the addition of Bradford Bypass. Protection for potential interchange and road improvements between Queensville Sideroad and Holborn Road on 2nd Concession Road and Bathurst Street is expected for the 2051 horizon.

Table 2-1. York Region Road Jurisdiction Review for Queensville Sideroad

Criteria No.	Rural Criteria	Description of Queensville Sideroad
1	Connects designated rural settlements having existing major commercial / industrial development of more than 150 persons to each other and a Regional Road or Provincial Highway	No. The area surrounding the road traverses the Greenbelt (Protected Countryside) and the Oak Ridges Moraine according to the EG-OP 2010.
2	Connects a Provincial Highway or Regional Road to: • Provincial Highway • Major commercial or industrial areas • Major institutional complexes such as colleges and hospital	Yes. It connects Highway 404 to Highway 48.
3	Provides service close to consistent major attractors or generators of heavy vehicles	Yes. Queensville Sideroad provides service to a Secondary Goods Movement Corridor (Queensville Sideroad west of Woodbine Avenue)
4	Provides service parallel to and, where justified, crossing major barriers to free traffic movement	Yes. The road crosses VIA Rail Passenger Line (The Canadian)
5	Provides service on those roads which are extensions of roads designated as Regional roads in urban areas and to a Regional road or Provincial Highway	Yes. Queensville Sideroad east of Woodbine would be an extension of RR77- Queensville Sideroad west
6	Provides service on those roads which are extensions of roads designated as Regional or County Roads in neighbouring jurisdictions and to a Regional road or a Provincial Highway	Yes. Queensville Sideroad extends into a neighbouring jurisdiction, the Region of Durham, as a Regional Road (Durham RR39)
7	Roads should have a current traffic volume greater than 4,000 AADT	No. Current traffic volume is 1,000 to 2,000 approximately
8	Roads should be part of the original concession road grid	Yes.

3 Active Transportation

3.1 Pedestrian Infrastructure

A review of the existing pedestrian infrastructure in the Town of East Gwillimbury found that several corridors have missing sidewalks, creating gaps in the sidewalk network. Two objectives of this TMP focus on walking and includes:

- Improving the streets within the Town making them safe and accessible for all road users; and
- Promoting walking as the first choice for short trips.

Sidewalks provide a safe and accessible environment for pedestrians. By filling in the “missing gaps” in the network, walking will be a more viable option to users. This will also include reviewing the existing sidewalk network to determine if there are any sidewalks that are below standard. **Table 3-1** lists the proposed sidewalk improvements and **Figure 14** illustrates the future sidewalk network.

Table 3-1. Proposed Pedestrian Infrastructure

ID	Area	Road	From	To	Improvement Type
W-A1a	RR	2nd Concession Road	Queensville Sideroad	Green Lane	Sidewalk on Both Sides
	RR	2nd Concession Road	Doane Road	Queensville Sideroad	MUP on One Side
	RR	Doane Road	Yonge Street	Woodbine Avenue	MUP on One Side
	RR	Green Lane	Yonge Street	Woodbine Avenue	MUP on One Side
W-A4	RR	Holland Landing Road	Bathurst Street	Yonge Street	Sidewalk on One Side
	RR	Leslie Street	Colonel Wayling Boulevard	Green Lane	MUP on One Side
W-A5c	RR	Leslie Street	E-W Collector	Green Lane	Sidewalk on One Side
	RR	Mount Albert Road	2nd Concession Road	Leslie Street	MUP on One Side
W-A6b*	RR	Mount Albert Road	220m west of Colony Trail Boulevard	Colony Trail Boulevard	Sidewalk on One Side
W-A6c	RR	Mount Albert Road (north side)	Yonge Street	2nd Concession Road	Sidewalk on One Side
W-A6d	RR	Mount Albert Road (south side)	335m west of 2nd Concession Road	2nd Concession Road	Sidewalk on One Side
W-A6e	RR	Mount Albert Road (south side)	Charles Street	Sports Complex	Sidewalk on One Side

Notes:
Shaded IDs indicate MUP projects with project IDs noted in **Section 3.2.3 Proposed Cycling Network**.

RR = Regional Roads

Regional Road recommendations build from the 2022 York Region Transportation Master Plan (YRTMP), including the cycling facilities from YRTMP Map 1. Any corridors designated as “Dedicated/Separated Cycling Facilities” are assumed as MUPs so that corridors can accommodate pedestrians and cyclists.

*Funded projects that are recommended in the TMP but not included in total cost

Table 9. Proposed Pedestrian Infrastructure (continued)

ID	Area	Road	From	To	Improvement Type
W-A6f*	RR	Mount Albert Road (north side)	Conn Drive / Howard Avenue	Sports Complex	Sidewalk on One Side
W-A6g	RR	Mount Albert Road (south side)	Highway 48	Royal Oak Road	Sidewalk on One Side
W-A6h	RR	Mount Albert Road (north side)	Royal Oak Road	York Durham Line	Sidewalk on One Side
W-A7a	RR	Queensville Sideroad (south side)	Sand Road	River Drive	Sidewalk on One Side
	RR	Queensville Sideroad	Holland's Landing Depot Driveway	Leslie Street	MUP on One Side
W-A7c	RR	Queensville Sideroad	North Queensville Ring Road	Woodbine Avenue	Sidewalk on Both Sides
W-A7d	RR	Queensville Sideroad (north side)	115m West of Karissa Lane	River Drive	Sidewalk on One Side
W-A8a	RR	Yonge Street	Queensville Sideroad	Maple Street	Sidewalk on One Side
W-A8b	RR	Yonge Street (west side)	Mount Albert Road	Holland Landing Road	Sidewalk on One Side
W-A8c	RR	Yonge Street	East-West Collector	Lady Gwillim Avenue Extension	Sidewalk on Both Sides
W-A9	RR	Woodbine Avenue (west side)	Queensville Sideroad	Davis Drive	Sidewalk on One Side
W-A10	RR	Highway 11 / Yonge Street (east side)	Bathurst Street	East-West Collector	Sidewalk on One Side

Notes:
RR = Regional Roads

Regional Road recommendations build from the 2022 York Region Transportation Master Plan (YRTMP), including the cycling facilities from YRTMP Map 1. Any corridors designated as "Dedicated/Separated Cycling Facilities" are assumed as MUPs so that corridors can accommodate pedestrians and cyclists.

*Funded projects that are recommended in the TMP but not included in total cost

Table 9. Proposed Pedestrian Infrastructure (continued)

ID	Area	Road	From	To	Improvement Type
	RR	Leslie Street	Mount Albert Road (North Leg)	Colonel Wayling Boulevard	MUP on One Side
W-A11*	RR	Highway 48 (east side)	0.4km North of Princess Street	Mount Albert Road	Sidewalk on One Side
W-A11b	RR	Leslie Street	Jim Mortson Drive (North Leg)	E-W Collector 9	Sidewalk on Both Sides
W-A11c	RR	Leslie Street	Silk Twist Drive	Mount Albert Road (North Leg)	Sidewalk on Both Sides
W-B401	RR	Queensville Sideroad	Zone 1 100% Whitebelt west boundary	2nd Concession Road	Sidewalk on One Side
W-B402	RR	Queensville Sideroad	2nd Concession Road	Zone 1 70% Whitebelt east boundary	Sidewalk on One Side
W-B403	RR	Leslie Street (Northern Section)	Zone 1 70% Whitebelt north boundary	Zone 1 70% Whitebelt south boundary	Sidewalk on One Side
W-B404	RR	Leslie Street (Northern Section)	Zone 1 100% Whitebelt north boundary	Zone 1 100% Whitebelt south boundary	Sidewalk on One Side
W-B405	RR	2nd Concession (Northern Section)	Queensville Sideroad	E-W Collector 3	Sidewalk on One Side
W-B406	RR	2nd Concession (Northern Section)	Queensville Sideroad	E-W Collector 3	Sidewalk on One Side

Notes:
Shaded IDs indicate MUP projects with project IDs noted in **Section 3.2.3 Proposed Cycling Network**.

RR = Regional Roads

Regional Road recommendations build from the 2022 York Region Transportation Master Plan (YRTMP), including the cycling facilities from YRTMP Map 1. Any corridors designated as “Dedicated/Separated Cycling Facilities” are assumed as MUPs so that corridors can accommodate pedestrians and cyclists.

*Funded projects that are recommended in the TMP but not included in total cost

Table 9. Proposed Pedestrian Infrastructure (continued)

ID	Area	Road	From	To	Improvement Type
W-B407	RR	2nd Concession (Northern Section)	E-W Collector 3	Zone 1 100% Whitebelt north boundary	Sidewalk on Both Sides
W-B408	RR	Woodbine Avenue (Northern Section)	Queensville Sideroad	Zone 2 100% Whitebelt north boundary	Sidewalk on One Side
W-B409	RR	Highway 11 / Yonge Street	Highway 11/Yonge Street	Zone 3 70% Whitebelt north boundary	Sidewalk on Both Sides
W-B410	RR	Highway 11 / Yonge Street	Highway 11/Yonge Street	Zone 3 70% Whitebelt south boundary	Sidewalk on One Side
W-B411	RR	Highway 11 / Yonge Street	Highway 11/Yonge Street	Zone 3 100% Whitebelt south boundary	Sidewalk on One Side
W-B415	RR	Mount Albert Road	Allangrove Avenue	2nd Concession Road	Sidewalk on Both Sides
W-B416	RR	Mount Albert Road	West of Countryman Road	Allangrove Avenue	Sidewalk on One Side
W-B417	RR	Leslie Street (Southern Section)	Silk Twist Drive extension	Zone 5 70% Whitebelt north boundary	Sidewalk on Both Sides
W-B418	RR	Leslie Street (Southern Section)	E-W Collector (north of Green Lane)	Colonel Wayling Boulevard	Sidewalk on One Side
W-B419	RR	Woodbine Avenue (Southern Section)	Zone 5 70% Whitebelt north boundary	Zone 5 70% Whitebelt south boundary	Sidewalk on One Side
W-B420	RR	Doane Road	Yonge Street	Woodbine Avenue	Sidewalk on One Side

Notes:
Shaded IDs indicate MUP projects with project IDs noted in **Section 3.2.3 Proposed Cycling Network**.

RR = Regional Roads

Regional Road recommendations build from the 2022 York Region Transportation Master Plan (YRTMP), including the cycling facilities from YRTMP Map 1. Any corridors designated as “Dedicated/Separated Cycling Facilities” are assumed as MUPs so that corridors can accommodate pedestrians and cyclists.

Table 9. Proposed Pedestrian Infrastructure (continued)

ID	Area	Road	From	To	Improvement Type
	RR	Yonge Street	400m north of Green Lane	East-West Collector	MUP on One Side
	RR	Highway 11	Sherwood Glen/Dogwood Blvd	Crimson King Way	MUP on One Side
	RR	Highway 11	Crimson King Way	Bathurst St	MUP on One Side
	RR	Highway 11	Morning Sideroad	Sherwood Glen/Dogwood Blvd	MUP on One Side
	RR	Yonge Street	East West Collector	Morning Sideroad	MUP on One Side

Notes:
Shaded IDs indicate MUP projects with project IDs noted in **Section 3.2.3 Proposed Cycling Network**.

RR = Regional Roads

Regional Road recommendations build from the 2022 York Region Transportation Master Plan (YRTMP), including the cycling facilities from YRTMP Map 1. Any corridors designated as “Dedicated/Separated Cycling Facilities” are assumed as MUPs so that corridors can accommodate pedestrians and cyclists.

Table 9. Proposed Pedestrian Infrastructure (continued)

ID	Area	Road	From	To	Improvement Type
W-A12b	HL	Centennial Avenue Extension	Highway 11	Holland Landing Road	Sidewalk on Both Sides
W-A13	HL	Oriole Drive	Toll Road	250m east of Toll Road	Sidewalk on One Side
W-A15	HL	Toll Road	Oriole Drive	350m south of Oriole Drive	Sidewalk on One Side
W-A51	HL	Mount Albert Road	Sand Road	Yonge Street	Sidewalk on Both Sides
W-A16a	GLW	Murrell Boulevard Widening	East-West Collector	Green Lane	Sidewalk on Both Sides
W-A16b	GLW	Murrell Blvd South Extension	Green Lane	Street F	Sidewalk on Both Sides
W-A17	GLW	Street G	East-West Collector	Green Lane	Sidewalk on Both Sides
W-A18	GLW	Bayview Parkway Extension	Green Lane	Current Northern Terminus	Sidewalk on Both Sides
W-A19	GLW	Connector Road / Street I	2nd Concession	East-West Collector	Sidewalk on Both Sides
W-A20b	GLW	Woodspring Avenue Extension	East-West Collector	Green Lane	Sidewalk on Both Sides
W-A21	GLW	East West Collector	Bathurst Street	Harry Walker Parkway	Sidewalk on Both Sides
W-A22a	GLW	Harry Walker Parkway Extension	East-West Collector	Green Lane	Sidewalk on Both Sides
W-A23	GLW	Lady Gwillimbury Avenue Extension	Green Lane	Ring Road H (east of Yonge)	Sidewalk on Both Sides
W-A24	GLW	Street F	Bayview Parkway	Leslie Street	Sidewalk on Both Sides
W-A25	GLW	Ring Road H	East-West Collector (west leg)	East-West Collector (east leg)	Sidewalk on Both Sides

Notes:
RR = Regional Roads, GLW = Green Lane West

Table 9. Proposed Pedestrian Infrastructure (continued)

ID	Area	Road	From	To	Improvement Type
W-A26	GLW	Ring Road J	Rogers Road	East-West Collector	Sidewalk on Both Sides
W-A27	GLW	Street K	Manor Hampton Street	Green Lane	Sidewalk on Both Sides
W-A29	SR	Farr Avenue	Oxford Court	Sharon East Employment Collector	Sidewalk on One Side
W-A16c	SR	Murrell Boulevard Extension	Doane Road	Mount Albert Road	Sidewalk on Both Sides
W-A31	SR	Sharon East Employment Collector	Doane Road	Mount Albert Road	Sidewalk on Both Sides
W-A32	SR	Street C	Doane Road	Silk Twist Drive	Sidewalk on Both Sides
W-A33	SR	Street O	Murrell Boulevard Extension	Sharon East Employment Collector	Sidewalk on Both Sides
W-A34a	SR	Silk Twist Drive East	Murrell Boulevard Extension	Sharon East Employment Collector	Sidewalk on Both Sides
W-A34b	SR	Silk Twist Drive West	2nd Concession	Murrell Boulevard	Sidewalk on Both Sides
W-A37a	QV	Jim Mortson Drive Extension (Southern Extension)	Leslie Street	Street C	Sidewalk on Both Sides
W-A37b	QV	Jim Mortson Drive Extension (Southern Extension 2)	Street C	Street L	Sidewalk on Both Sides
W-A37c	QV	Jim Mortson Drive Extension (Northern Extension)	Leslie Street	Street D	Sidewalk on Both Sides

Notes:
GLW = Green Lane West, SR = Sharon, QV = Queensville

Table 9. Proposed Pedestrian Infrastructure (continued)

ID	Area	Road	From	To	Improvement Type
W-A38	QV	North Queensville Ring Road (East Portion)	Leslie Street	Queensville Sideroad	Sidewalk on Both Sides
W-A39	QV	Street A	Queensville Sideroad	Evans Farm Boulevard / Street B	Sidewalk on One Side
W-A40a	QV	Evans Farm Boulevard / Street B	2nd Concession	Milne Lane	Sidewalk on One Side
W-A41	QV	New North Queensville Ring Road Extension / Street C	Queensville Sideroad	Doane Road	Sidewalk on Both Sides
W-A42	QV	Sharon East Employment Collector Extension / Street D	Leslie Street	Doane Road	Sidewalk on Both Sides
W-A43	QV	Street L	Queensville Sideroad	Doane Road	Sidewalk on Both Sides
W-A44	QV	Street M	Street L	Woodbine Avenue	Sidewalk on Both Sides
W-A45	QV	Street N	Street L	Woodbine Avenue	Sidewalk on Both Sides
W-A16d	QV	Murell Boulevard Extension / John Candy Drive	Ben Sinclair Avenue	Doane Road	Sidewalk on Both Sides

Notes:
QV = Queensville

Table 9. Proposed Pedestrian Infrastructure (continued)

ID	Area	Road	From	To	Improvement Type
W-A46	MA	Centre Street	King Street and King Street East	Mount Albert Road	Sidewalk on Both Sides
W-A47	MA	Samuel Harper Court (west side)	Northern Terminus	Mount Albert Road	Sidewalk on One Side
W-A48	MA	King Street (east side)	340m north of Mount Albert Road	Mount Albert Road	Sidewalk on One Side
W-A49*	MA	Ninth Line (west side)	30m south of Donald Stewart Crescent	Mount Albert Road	Sidewalk on One Side
W-A50	MA	Ninth Line (west side)	Vivian Creek Road	North Terminus	Sidewalk on One Side
W-B1	NWQ	N-S Collector 1	Queensville Sideroad	E-W Collector 4	Sidewalk on One Side
W-B2	NWQ	N-S Collector 2	Queensville Sideroad	E-W Collector 4	Sidewalk on Both Sides
W-B3	NWQ	N-S Collector 3	E-W Collector 1	E-W Collector 2	Sidewalk on Both Sides
W-B4	NWQ	E-W Collector 1	N-S Collector 1	2nd Concession Road	Sidewalk on One Side
W-B5	NWQ	E-W Collector 3	N-S Collector 1	2nd Concession Road	Sidewalk on Both Sides
W-B6	NWQ	E-W Collector 4	N-S Collector 1	2nd Concession Road	Sidewalk on One Side
W-B7	NWQ	Collector 1	Leslie Street	E-W Collector north of Queensville Sideroad	Sidewalk on One Side
W-B8	NWQ	E-W Collector 5	Leslie Street	Collector 1	Sidewalk on Both Sides
W-B9	NWQ	Collector 2	2nd Concession Road	Queensville Sideroad	Sidewalk on Both Sides
W-B10	NWQ	N-S Collector 4	E-W Collector 5	Queensville Sideroad	Sidewalk on One Side
W-B11	NWQ	Collector 3	Leslie Street	South of Queensville Sideroad	Sidewalk on One Side
W-B12	NWQ	E-W Collector 5	2nd Concession Road	Collector 2	Sidewalk on One Side
W-B13	NWQ	E-W Collector 6	Collector 2	Leslie Street	Sidewalk on Both Sides

Notes:
MA = Mount Albert, NWQ = Northwest of Queensville Sideroad and Highway 404
*Funded projects that are recommended in the TMP but not included in total cost

Table 9. Proposed Pedestrian Infrastructure (continued)

ID	Area	Road	From	To	Improvement Type
W-B14	NEQ	70% Collectors (2 total in parallel)			Sidewalk on Both Sides
W-B15	NEQ	Collector 4	Zone 2, 70% Collectors	Woodbine Avenue	Sidewalk on One Side
W-B16	NEQ	N-S Collector 6	Queensville Sideroad	Zone 2, 70% Collectors	Sidewalk on One Side
W-B17	Hwy11	Collector 5	N-S Collector 8	E-W Collector north of Green Lane	Sidewalk on Both Sides
W-B18	Hwy11	N-S Collector 8	Highway 11	E-W Collector north of Green Lane	Sidewalk on One Side
W-B19	Hwy11	N-S Collector 9	Collector 6	E-W Collector north of Green Lane	Sidewalk on Both Sides
W-B20	Hwy11	Collector 6	Highway 11	E-W Collector north of Green Lane	Sidewalk on Both Sides
W-B21	NHL	E-W Collector 8	Silk Twist Drive	2nd Concession Road	Sidewalk on Both Sides
W-B22	NHL	Collector 7	2nd Concession Road	E-W Collector 8	Sidewalk on Both Sides
W-B23	NHL	N-S Collector 10	E-W Collector 8	Holland Landing Collector	Sidewalk on Both Sides
W-B24	SSR	Collector 8	2nd Concession Road	Doane Road	Sidewalk on One Side
W-B25	SSR	N-S Collector 11	Mount Albert Road	Doane Road	Sidewalk on Both Sides
W-B26	SSR	N-S Collector 12	Silk Twist Drive Extension	E-W Collector south of Doane Road	Sidewalk on Both Sides
W-B27	SSR	E-W Collector 9	2nd Concession Road	Sharon East Collector	Sidewalk on Both Sides

Notes:

NEQ = Northeast of Queensville Sideroad and Highway 404, Hwy11 = Near Highway 11 and Yonge Street,

NHL = North of Holland Landing, SSR = Surrounding Sharon

Table 9. Proposed Pedestrian Infrastructure (continued)

ID	Area	Road	From	To	Improvement Type
	NWQ	N-S Collector 1	Queensville Sideroad	E-W Collector 4	MUP on One Side
	NWQ	E-W Collector 1	N-S Collector 1	2nd Concession Road	MUP on One Side
	NWQ	E-W Collector 4	N-S Collector 1	2nd Concession Road	MUP on One Side
	NWQ	Collector 1	Leslie Street	E-W Collector north of Queensville Sideroad	MUP on One Side
	NWQ	N-S Collector 4	E-W Collector 5	Queensville Sideroad	MUP on One Side
	NWQ	Collector 3	Leslie Street	South of Queensville Sideroad	MUP on One Side
	NWQ	E-W Collector 5	2nd Concession Road	Collector 2	MUP on One Side
	NEQ	Collector 4	Zone 2, 70% Collectors	Woodbine Avenue	MUP on One Side
	NEQ	N-S Collector 6	Queensville Sideroad	Zone 2, 70% Collectors	MUP on One Side
	Hwy11	N-S Collector 8	Highway 11	E-W Collector north of Green Lane	MUP on One Side
	SSR	Collector 8	2nd Concession Road	Doane Road	MUP on One Side

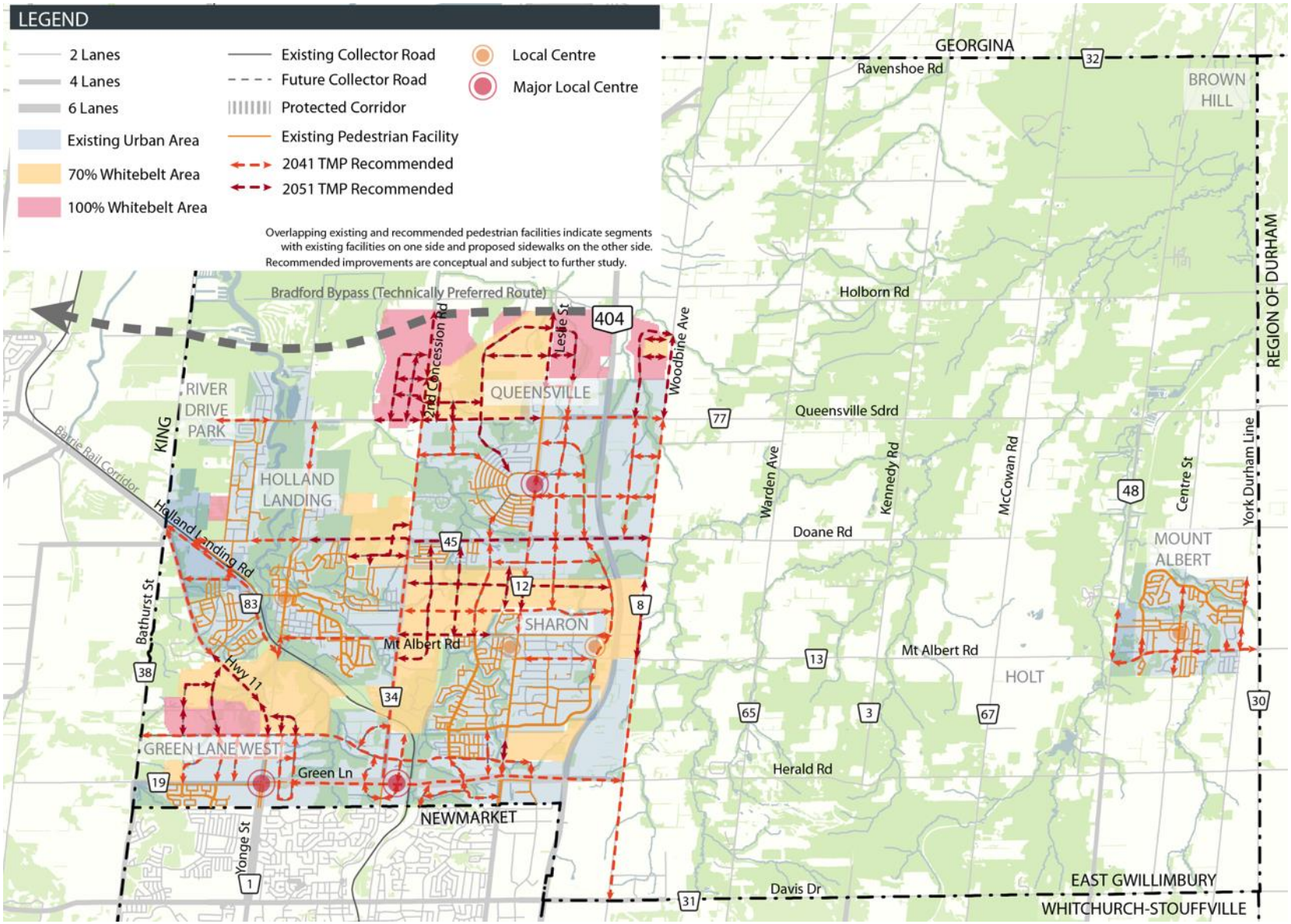
Notes:
Shaded IDs indicate MUP projects with project IDs noted in **Section 3.2.3 Proposed Cycling Network**.

SSR = Surrounding Sharon, Hwy11 = Near Highway 11 and Yonge Street

NWQ = Northwest of Queensville Sideroad and Highway 404

NEQ = Northeast of Queensville Sideroad and Highway 404

Figure 14. Proposed 2051 Sidewalk Network



3.2 Cycling Infrastructure

As part of the preferred scenario, cycling infrastructure is recommended within the road ROW for new and existing collector and arterial roads. Cycling infrastructure cross sections are recommended based on the Ontario Traffic Manual (OTM) Book 18 and are based on four types of facilities: sharrows, paved shoulders, painted bike lanes, and Multi-Use Paths (MUPs). **Table 3-2** summarizes the cycling facilities.

Table 3-2. Types of Cycling Facilities

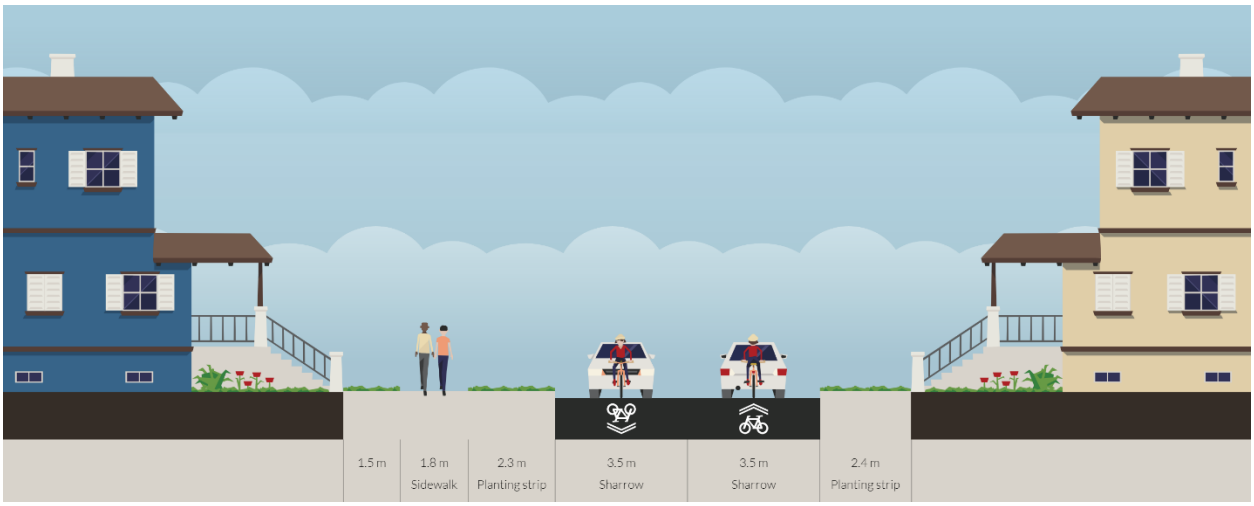
Cycling Facility	Description	Example
Sharrows	• Not necessarily a facility, but are directional signs painted on the road • Lane is shared with vehicles and cyclists • Requires no additional street space • Does not require narrowing of travel lanes • Provides a wayfinding element along bike routes • No separation from traffic	
Paved Shoulders	• Can be shared with pedestrians and cyclists • Generally recommended for rural areas • Requires road signs and pavement markings to ensure visibility of the facility • Minimum width of 2.0m to be considered as an active transportation facility	
Painted Bike Lane	• Dedicated on-road cycling facility • Some separation from traffic • Can accommodate cyclists on both sides of streets • May require narrowing of travel lanes to accommodate • Minimum width of 1.5m, but recommended to be 1.8m	

Cycling Facility	Description	Example
Multi-Use Path	• Off-road facility • Shared facility between pedestrians and cyclists • Accommodates cyclists on one side of the street only • Offers routes with minimal vehicular conflict • Road right of way requirements are larger than other facilities	

3.2.1 Existing Collector Roads

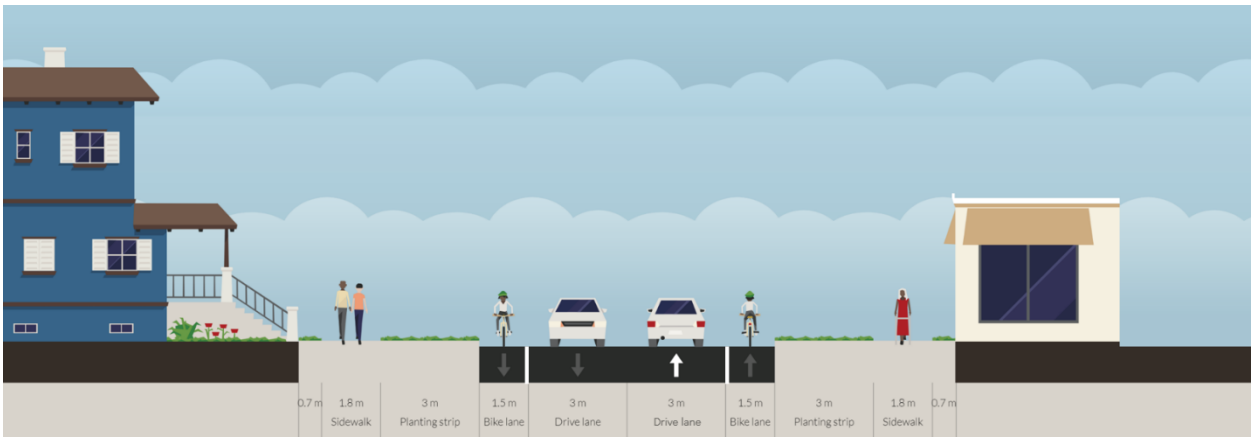
To create a complete and connected cycling network, existing collector roads may be retrofitted to accommodate cycling infrastructure within the existing pavement width. The recommended cycling infrastructure is dependent on several factors, including pavement width, 2051 projected peak auto volume, vehicular speed, and the existing cross section. **Figure 15** and **Figure 16** illustrate the potential cross sections for sharrows and painted bike lanes within existing pavement widths.

Figure 15: Retrofit of Existing Collector with Sharrows (7m Pavement Width)



Source: Streetmix.net

Figure 16: Retrofit of Existing Collector with Painted Bike Lanes (9m Pavement Width)



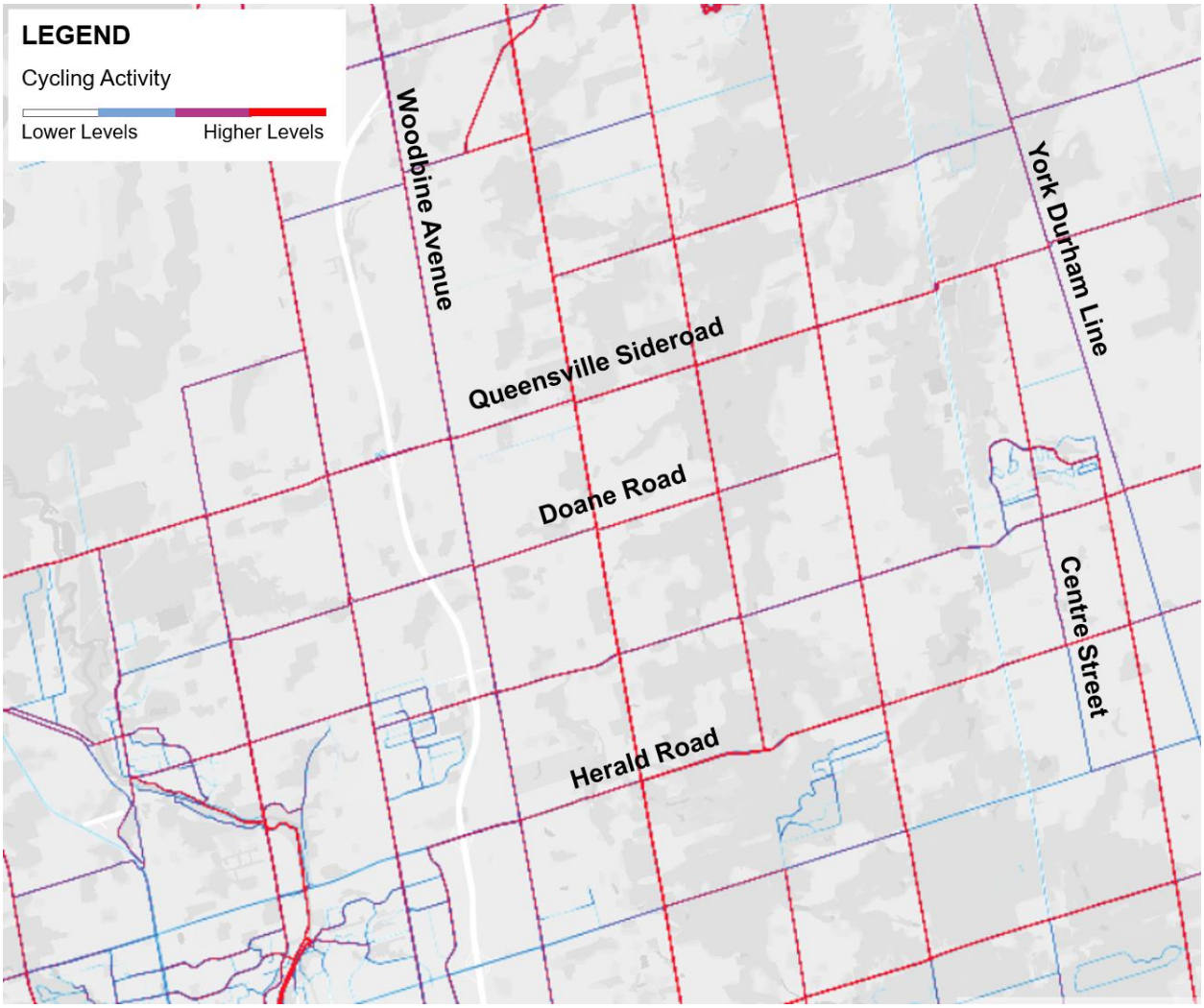
Source: Streetmix.net

3.2.2 Rural Roads

With the proposed reconstruction of Queensville Sideroad, Doane Road, Centre Street, and Herald Road, cycling infrastructure has also been considered for these arterial roads. Although rural roads tend to have lower volumes of cyclists, it has been proven that these roads are quite popular with cyclists, as illustrated in **Figure 17**. The map illustrates the amount of cycling activity on the road network for the past two years, with red lines indicating high level of activity and blue lines indicating low levels of activity. Between Woodbine Avenue and York Durham Line, Queensville Sideroad, Doane Road, and Herald Road experience high level of active transportation activity. Centre Street experiences high level of active transportation activity between Queensville Sideroad and Herald Road.

To account for high levels of cycling activity, the proposed reconstruction will include paved shoulders so that all users can safely use these corridors.

Figure 17: Heat Map of Active Transportation Activity



Source: Strava

3.2.3 Proposed Cycling Network

The proposed 2051 cycling network includes recommendations to Regional Roads, the existing collector network, and the proposed collector network. **Table 3-3** summarizes the proposed infrastructure based on area. The projects are illustrated in **Figure 18**. It is noted that the proposed cycling projects originally recommended for 2041 are under Category A in the table, while the proposed cycling projects added for 2051 development are under Category B in the table.

In areas where there is pedestrian infrastructure and an MUP identified, it is assumed that the cross section will include a sidewalk on one side and a MUP on the other.

Table 3-3. Proposed Cycling Improvements

ID	Area	Road	From	To	Improvement Type
C-A1	RR	2nd Concession Road	Doane Road	Queensville Sideroad	MUP on One Side
C-A2	RR	Bathurst Street	Highway 11	Southern Town Boundary	Paved Shoulders
C-A3	RR	Davis Drive	Warden Avenue	York Durham Line	Paved Shoulders
C-A4	RR	Green Lane	Yonge Street	Woodbine Avenue	MUP on One Side
C-A7	RR	Kennedy Road	Ravenshoe Road	Herald Road	Paved Shoulders
C-A8	RR	Kennedy Road	550m North of Davis Drive	Davis Drive	Paved Shoulders
C-A9	RR	Leslie Street	Testa Street	Milne Lane	Painted Bike Lanes
C-A9b	RR	Leslie Street	Mount Albert Road (North Leg)	Colonel Wayling Boulevard	MUP on One Side
C-A9c	RR	Leslie Street	Colonel Wayling Boulevard	Green Lane	MUP on One Side
C-A10	RR	McCowan Road	Ravenshoe Road	Davis Drive	Paved Shoulders
C-A11a	RR	Mount Albert Road	Yonge Street	2nd Concession Road	Painted Bike Lanes
C-A11b	RR	Mount Albert Road	2nd Concession Road	Leslie Street	MUP on One Side
C-A11c	RR	Mount Albert Road	Woodbine Avenue	King Street	Paved Shoulders
C-A12	RR	Ravenshoe Road	Western Town Boundary	York Durham Line	Paved Shoulders
C-A13	RR	Warden Avenue	Ravenshoe Road	Davis Drive	Paved Shoulders
C-A14a	RR	Yonge Street	Olive Street / Beckett Avenue	Holland Landing Road / Old Yonge Street	Painted Bike Lanes
C-A14b*	RR	Yonge Street	East-West Collector	Green Lane	Painted Bike Lanes
C-A14c	RR	Yonge Street	400m north of Green Lane	East-West Collector	MUP on One Side

Notes:
RR = Regional Road

Regional Road recommendations build from the 2022 York Region Transportation Master Plan (YRTMP), including the cycling facilities from YRTMP Map 1.

It is assumed that all new development areas do not include cycling infrastructure on collector roads in their subdivision plan (excluding Murrell Boulevard from Mount Albert Road to Green Lane). Therefore, recommendations were made to the collector roads in the proposed subdivisions.

*Funded projects that are recommended in the TMP but not included in total cost

Table 3-3. Proposed Cycling Improvements (continued)

ID	Area	Road	From	To	Improvement Type
C-A14d	RR	Highway 11	Sherwood Glen/Dogwood Blvd	Crimson King Way	MUP on One Side
C-A14e	RR	Highway 11	Crimson King Way	Bathurst St	MUP on One Side
C-A15	RR	York Durham Line	Ravenshoe Road	Davis Drive	Paved Shoulders
C-A15a	RR	Doane Road	Yonge Street	Woodbine Avenue	MUP on One Side
C-A46*	RR	Queensville Sideroad	Holland's Landing Depot Driveway	Leslie Street	MUP on One Side
C-B201a	RR	Highway 11	Morning Sideroad	Sherwood Glen/Dogwood Blvd	MUP on One Side
C-B201b	RR	Yonge Street	East West Collector	Morning Sideroad	MUP on One Side
C-B202	RR	2nd Concession (Northern Section)	E-W Collector 3	Zone 1 70% Whitebelt north boundary	Paved Shoulders
C-B203	RR	2nd Concession (Northern Section)	Queensville Sideroad	E-W Collector 3	Paved Shoulders
C-B204	RR	Queensville Sideroad	Zone 1 100% Whitebelt west boundary	2nd Concession Road	Paved Shoulders
C-B205	RR	Queensville Sideroad	2nd Concession Road	Zone 1 70% Whitebelt east boundary	Paved Shoulders
C-B208	RR	Leslie Street (Southern Section)	E-W Collector (north of Green Lane)	Colonel Wayling Boulevard	Painted Bike Lanes

Notes:
RR = Regional Road

Regional Road recommendations build from the 2022 York Region Transportation Master Plan (YRTMP), including the cycling facilities from YRTMP Map 1.

It is assumed that all new development areas do not include cycling infrastructure on collector roads in their subdivision plan (excluding Murrell Boulevard from Mount Albert Road to Green Lane). Therefore, recommendations were made to the collector roads in the proposed subdivisions.

*Funded projects that are recommended in the TMP but not included in total cost

Table 3-3. Proposed Cycling Improvements (continued)

ID	Area	Road	From	To	Improvement Type
	Rural	Centre Street	Queensville Sideroad	King Street and King Street East	Paved Shoulders
	Rural	Centre Street	Mount Albert Road	Davis Drive	Paved Shoulders
	Rural	Doane Road	Woodbine Avenue	McCowan	Paved Shoulders
	Rural	Herald Street	Woodbine Avenue	York Durham Line	Paved Shoulders
	Rural	Queensville Sideroad	Woodbine Avenue	York Durham Line	Paved Shoulders
C-A20a	HL	Centennial Avenue Extension (Level Crossing)	Toll Road	Holland Landing Road	Painted Bike Lanes
C-A20b	HL	Centennial Avenue Extension	Highway 11	Holland Landing Road	Painted Bike Lanes
C-A21	HL	Colony Trail Boulevard	Western Terminus	Mount Albert Road	Painted Bike Lanes / Sharrows
C-A22	HL	Oriole Drive	Holland Landing Road	Eastern Terminus	Painted Bike Lanes / Sharrows
C-A23	HL	Sand Road	Queensville Sideroad	Oriole Drive	Sharrows
C-A24a	HL	Thompson Drive	Yonge Street	Silk Twist Drive	Painted Bike Lanes / Sharrows
C-A24b	HL	Bradford Street	Yonge Street	Holland Landing Road	Painted Bike Lanes
C-A25	HL	Oriole Drive	Holland Landing Road	Sand Road	Sharrows
C-A62	HL	Silk Twist Drive	Doane Road	2nd Concession Road	Painted Bike Lanes

Notes:
Shaded IDs indicate paved shoulder projects with that are included in corresponding road projects.
RR = Rural = Rural Area, HL = Holland Landing

It is assumed that all new development areas do not include cycling infrastructure on collector roads in their subdivision plan (excluding Murrell Boulevard from Mount Albert Road to Green Lane). Therefore, recommendations were made to the collector roads in the proposed subdivisions.

Table 3-3. Proposed Cycling Improvements (continued)

ID	Area	Road	From	To	Improvement Type
C-A63a	HL	Dog Wood Boulevard	Northern Terminus	Highway 11	Painted Bike Lanes
C-A63b	HL	Crimson King Way	Highway 11	Dog Wood Boulevard	Painted Bike Lanes
C-A63c	HL	Charlotte Abby Drive	Dog Wood Boulevard	Holland Landing Road	Painted Bike Lanes
C-A63d	HL	Holland Vista Street	Dog Wood Boulevard	Holland Landing Road	Painted Bike Lanes
C-B21	NHL	E-W Collector 8	Silk Twist Drive	2nd Concession Road	Painted Bike Lanes
C-B22	NHL	Collector 7	2nd Concession Road	E-W Collector 8	Painted Bike Lanes
C-B23	NHL	N-S Collector 10	E-W Collector 8	Holland Landing Collector	Painted Bike Lanes
C-A26	GLW	Murrell Boulevard Widening	East-West Collector	Green Lane	Painted Bike Lanes
C-A27	GLW	Bayview Parkway Extension	Green Lane	Current Northern Terminus	Painted Bike Lanes
C-A28	GLW	Connector Road / Street I	2nd Concession	East-West Collector	Painted Bike Lanes
C-A29b	GLW	Woodspring Avenue Extension	East-West Collector	Green Lane	Painted Bike Lanes
C-A30	GLW	East West Collector	Bathurst	Harry Walker Parkway	Painted Bike Lanes
C-A31a	GLW	Harry Walker Parkway Extension	East-West Collector	Green Lane	Painted Bike Lanes

Notes:
HL = Holland Landing, NHL = North of Holland Landing, GLW = Green Lane West

It is assumed that all new development areas do not include cycling infrastructure on collector roads in their subdivision plan (excluding Murrell Boulevard from Mount Albert Road to Green Lane). Therefore, recommendations were made to the collector roads in the proposed subdivisions.

Table 3-3. Proposed Cycling Improvements (continued)

ID	Area	Road	From	To	Improvement Type
C-A32	GLW	Lady Gwillim Avenue Extension	Green Lane	Ring Road H (East of Yonge)	Painted Bike Lanes
C-A33	GLW	Street F	Bayview Parkway Extension	Leslie Street	Painted Bike Lanes
C-A34	GLW	Murrell Blvd South Extension	Green Lane	Street F	Painted Bike Lanes
C-A35	GLW	Street G	Green Lane	East-West Collector	Painted Bike Lanes
C-A36	GLW	Ring Road H	East-West Collector (west leg)	East-West Collector (East leg)	Painted Bike Lanes
C-A37	GLW	Ring Road J	Rogers Road	East-West Collector	Painted Bike Lanes
C-A38	GLW	Street K	Manor Hampton St	Green Lane	Painted Bike Lanes
C-A39	GLW	Harvest Hills (19T-04001)	Nature Way Crescent	Woodspring Avenue	Painted Bike Lanes / Sharrows
C-A40a	SR	Colonel Wayling Boulevard	Northern Terminus	Leslie Street	Painted Bike Lanes
C-A42	SR	Manor Hampton Street	Murrell Boulevard	Leslie Street	Painted Bike Lanes / Sharrows
C-A43*	SR	Murrell Boulevard Extension	Doane Road	Mount Albert Road	Painted Bike Lanes
C-A44	SR	Sharon East Employment Collector	Doane Road	Mount Albert Road	Painted Bike Lanes
C-A45	SR	Street C	Doane Road	Silk Twist Drive	Painted Bike Lanes / Sharrows
C-A46	SR	Street O	Murrell Boulevard Extension	Sharon East Employment Collector	Painted Bike Lanes / Sharrows

Notes:
GLW = Green Lane West, SR = Sharon

It is assumed that all new development areas do not include cycling infrastructure on collector roads in their subdivision plan (excluding Murrell Boulevard from Mount Albert Road to Green Lane). Therefore, recommendations were made to the collector roads in the proposed subdivisions.

*Funded projects that are recommended in the TMP but not included in total cost

Table 3-3. Proposed Cycling Improvements (continued)

ID	Area	Road	From	To	Improvement Type
C-A47	SR	Silk Twist Drive East	Murrell Boulevard Extension	Sharon East Employment Collector	Painted Bike Lanes / Sharrows
C-A48	SR	Silk Twist Drive West	2nd Concession	Murrell Boulevard	Painted Bike Lanes / Sharrows
C-B24	SSR	Collector 8	2nd Concession Road	Doane Road	MUP on one side
C-B25	SSR	N-S Collector 11	Mount Albert Road	Doane Road	Painted Bike Lanes
C-B26	SSR	N-S Collector 12	Silk Twist Drive Extension	E-W Collector south of Doane Road	Painted Bike Lanes
C-B27	SSR	E-W Collector 9	2nd Concession Road	Sharon East Collector	Painted Bike Lanes
C-A50	QV	Jim Mortson Drive	Leslie Street (north leg)	Leslie Street (south leg)	Painted Bike Lanes / Sharrows
C-A50a	QV	Jim Mortson Drive Extension (Southern Extension)	Leslie Street	Street C	Painted Bike Lanes / Sharrows
C-A50b	QV	Jim Mortson Drive Extension (Southern Extension 2)	Street C	Street L	Sharrows
C-A50c	QV	Jim Mortson Drive Extension (Northern Extension)	Leslie Street	Street D	Sharrows

Notes:
SR = Sharon, SSR = Surrounding Sharon, QV = Queensville

It is assumed that all new development areas do not include cycling infrastructure on collector roads in their subdivision plan (excluding Murrell Boulevard from Mount Albert Road to Green Lane). Therefore, recommendations were made to the collector roads in the proposed subdivisions.

Table 3-3. Proposed Cycling Improvements (continued)

ID	Area	Road	From	To	Improvement Type
C-A51	QV	Murrell Boulevard Extension / John Candy Drive	Blazing Star Street	Doane Road	Sharrows
C-A52	QV	North Queensville Ring Road (East Portion)	Leslie Street	Queensville Sideroad	Painted Bike Lanes / Sharrows
C-A53	QV	Street A	Queensville Sideroad	Evans Farm Boulevard	Painted Bike Lanes / Sharrows
C-A54	QV	Evans Farm Boulevard /	2nd Concession	Jim Mortson Drive Ring	Painted Bike Lanes
C-A55	QV	North Queensville Ring Road Extension / Street C	Queensville Sideroad	Doane Road	Painted Bike Lanes / Sharrows
C-A56	QV	Sharon East Employment Collector Extension / Street D	Leslie Street	Doane Road	Painted Bike Lanes
C-A57	QV	Street L	Queensville Sideroad	Doane Road	Painted Bike Lanes / Sharrows
C-A58	QV	Street M	Street L	Woodbine Avenue	Painted Bike Lanes / Sharrows
C-A59	QV	Street N	Street L	Woodbine Avenue	Painted Bike Lanes / Sharrows
C-A60	MA	Centre Street	King Street and King Street East	Mount Albert Road	Sharrows

Notes:
QV = Queensville, MA = Mount Albert

It is assumed that all new development areas do not include cycling infrastructure on collector roads in their subdivision plan (excluding Murrell Boulevard from Mount Albert Road to Green Lane). Therefore, recommendations were made to the collector roads in the proposed subdivisions.

Table 3-3. Proposed Cycling Improvements (continued)

ID	Area	Road	From	To	Improvement Type
C-A61	MA	King Street and King Street East	Mount Albert Road	Ninth Line	Painted Bike Lanes / Sharrows
C-B1	NWQ	N-S Collector 1	Queensville Sideroad	E-W Collector 4	MUP on one side
C-B2	NWQ	N-S Collector 2	Queensville Sideroad	E-W Collector 4	Painted Bike Lanes
C-B3	NWQ	N-S Collector 3	E-W Collector 1	E-W Collector 2	Painted Bike Lanes
C-B4	NWQ	E-W Collector 1	N-S Collector 1	2nd Concession Road	MUP on one side
C-B5	NWQ	E-W Collector 3	N-S Collector 1	2nd Concession Road	Painted Bike Lanes
C-B6	NWQ	E-W Collector 4	N-S Collector 1	2nd Concession Road	MUP on one side
C-B7	NWQ	Collector 1	Leslie Street	E-W Collector north of Queensville Sideroad	MUP on one side
C-B8	NWQ	E-W Collector 5	Leslie Street	Collector 1	Painted Bike Lanes
C-B9	NWQ	Collector 2	2nd Concession Road	Queensville Sideroad	Painted Bike Lanes
C-B10	NWQ	N-S Collector 4	E-W Collector 5	Queensville Sideroad	MUP on one side
C-B11	NWQ	Collector 3	Leslie Street	South of Queensville Sideroad	MUP on one side
C-B12	NWQ	E-W Collector 5	2nd Concession Road	Collector 2	MUP on one side
C-B13	NWQ	E-W Collector 6	Collector 2	Leslie Street	Painted Bike Lanes

Notes:
MA = Mount Albert, NWQ = Northwest of Queensville Sideroad and Highway 404

It is assumed that all new development areas do not include cycling infrastructure on collector roads in their subdivision plan (excluding Murrell Boulevard from Mount Albert Road to Green Lane). Therefore, recommendations were made to the collector roads in the proposed subdivisions.

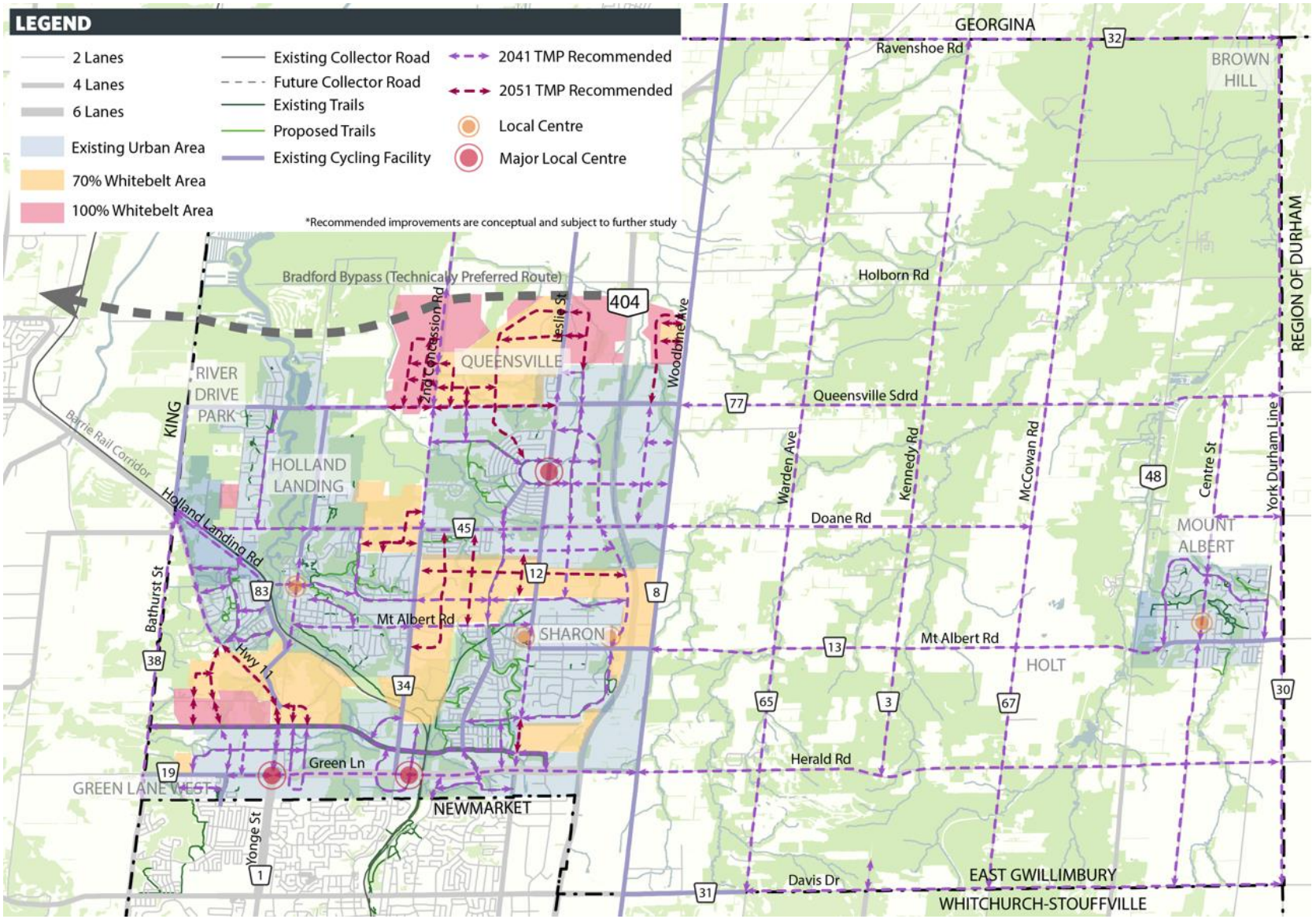
Table 3-3. Proposed Cycling Improvements (continued)

ID	Area	Road	From	To	Improvement Type
C-B14	NEQ	70% Collectors (2 total in parallel)			Painted Bike Lanes
C-B15	NEQ	Collector 4	Zone 2, 70% Collectors	Woodbine Avenue	MUP on one side
C-B16	NEQ	N-S Collector 6	Queensville Sideroad	Zone 2, 70% Collectors	MUP on one side
C-B17	Hwy11	Collector 5	N-S Collector 8	E-W Collector north of Green Lane	Painted Bike Lanes
C-B18	Hwy11	N-S Collector 8	Highway 11	E-W Collector north of Green Lane	MUP on one side
C-B19	Hwy11	N-S Collector 9	Collector 6	E-W Collector north of Green Lane	Painted Bike Lanes
C-B20	Hwy11	Collector 6	Highway 11	E-W Collector north of Green Lane	Painted Bike Lanes

Notes:
NEQ = Northeast of Queensville Sideroad and Highway 404, Hwy 11 = Near Highway 11 and Yonge Street

It is assumed that all new development areas do not include cycling infrastructure on collector roads in their subdivision plan (excluding Murrell Boulevard from Mount Albert Road to Green Lane). Therefore, recommendations were made to the collector roads in the proposed subdivisions.

Figure 18: Proposed 2051 Cycling Network



4 Transit

The 2022 York Region TMP identifies Green Lane, west of the East Gwillimbury GO Station as a Rapid Transit Corridor. The Metrolinx Regional Transportation Plan recommends two-way, all day and 15-minute service along the Barrie GO Transit. Although the Frequent Transit Network (FTN) presented in the 2016 Regional TMP is no longer included in the 2051 Proposed Transit Map of the 2022 Regional TMP, there are still mentions for the potential for FTN development and increased local bus services and Mobility On-Request in response to shorter-term demand is not precluded.

The Mobility On-Request service is accessible to users of all abilities and ages and is proposed to improve service efficiency, promote public transit, increase ridership, and connect customers to transit corridors. Users can access the program using a mobile platform to call for transit service and will be dropped off at bus routes on main transit corridors.

To facilitate the success of the on-demand transit strategy, the service is ideally integrated with the EcoMobility Hub and the bike share pilot programs. The on-demand service could drop off users at EcoMobility Hubs or in the bike share service area to facilitate the first/last mile.

5 EcoMobility Hubs

As part of the preferred scenario, an EcoMobility Hub pilot program is recommended for the Town. An EcoMobility hub is a multi-modal one-stop point intended to facilitate smart and easy access to mobility services[1][2]. The concept of EcoMobility hubs was identified in the City of Toronto's ConsumersNext Transportation Master Plan which recommended that the City form a strategic partnership with Smart Commute North Toronto Vaughan and the Toronto Parking Authority to develop a pilot program. EcoMobility hubs are popping up around the world including in several cities in Germany, and are essentially one-stop service points for shared multimodal systems including car sharing, ride sharing and bike sharing.

These hubs may vary in scale from major transit station areas (i.e. East Gwillimbury GO Station) to smaller scale, community based hubs. Depending

[1] Karim D. M., Innovative Mobility Master Plan: Connecting Multimodal Systems with Smart Technologies, Disrupting Mobility Conference, MIT Media Lab, Cambridge, USA, November 11~13, 2015.

[2] Karim D. M., Creating an Innovative Mobility Ecosystem for Urban Planning Areas, Disrupting Mobility - Impacts of Sharing Economy and Innovative Transportation on Cities, Springer Book, Lectures in Mobility, ISBN: 978-3-319-51601-1, pages 21-47, 2017.

on the scale, the hub may include bus stops, dedicated car-share parking spaces with charging stations, parking lay-bys for ride sharing, bike share stations, comfortable and safe waiting areas with displays for real-time data for all modes, benches, open space, free Wi-Fi, wayfinding information, and retail support. A large scale EcoMobility Hub is illustrated in **Figure 19**.

Figure 19: Large Scale EcoMobility Hub

Source: Multi Mobility, Sophia von Berg, 2014

EcoMobility hubs can:

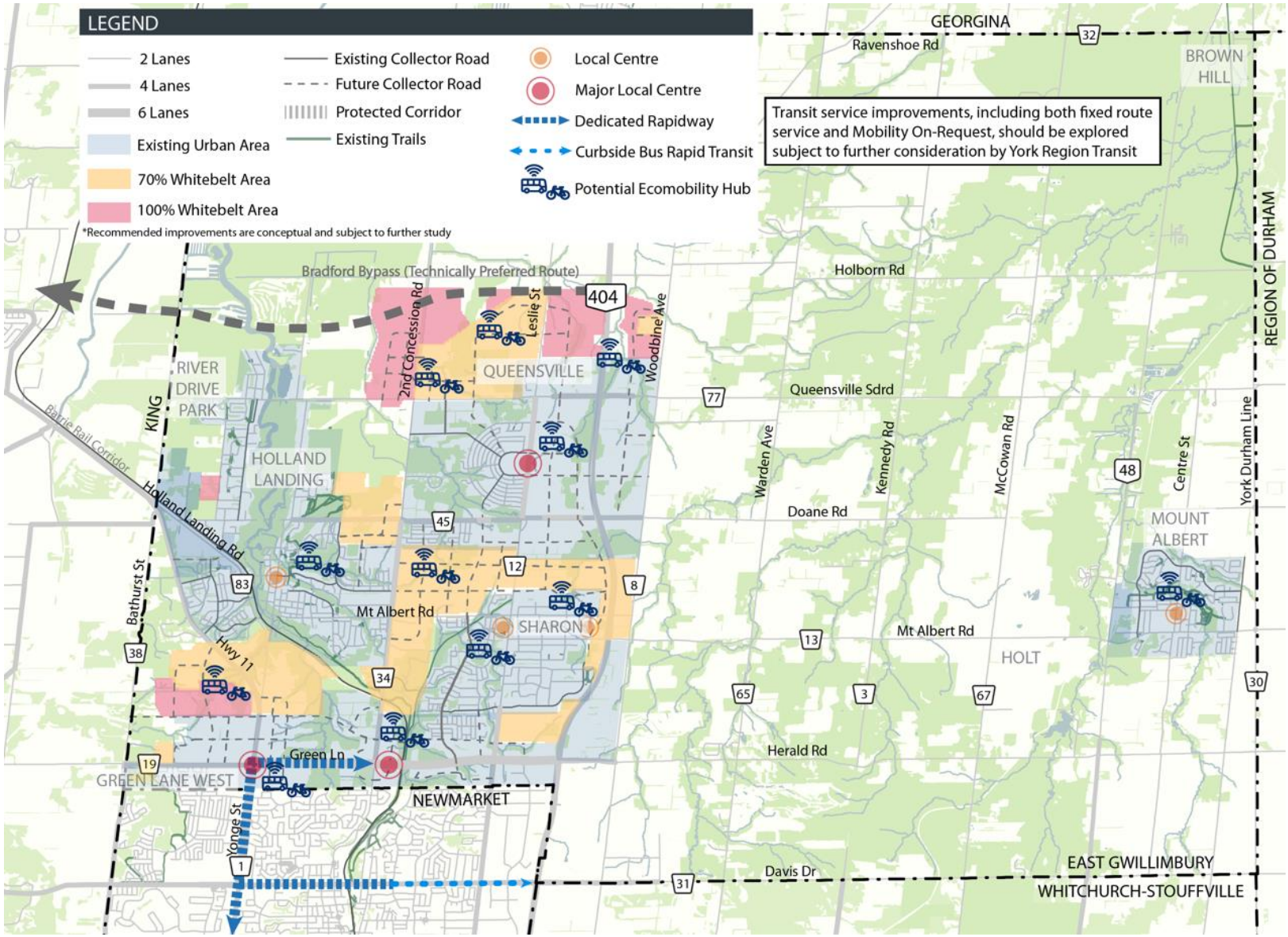
- Provide increased transportation choices for residents and visitors;
- Decrease dependence on the private automobile; and
- Reduce congestion.

Consideration may be warranted, in the immediate future, for providing small scale EcoMobility hubs in popular areas such as:

- The Civic Centre;
- East Gwillimbury GO;
- East Gwillimbury Sports Complex;
- East Gwillimbury Public Library;
- Designated major local centres; and
- Designated local centres.

Initially, the EcoMobility Hub can be trialed through a pilot program at key locations with enhancements to existing facilities (e.g. designated indoor waiting areas, car-sharing spots and enhance bike parking at town facilities near transit) and can facilitate key first/last mile connections. The proposed 2051 transit strategy map with potential locations of EcoMobility Hub indicated is shown in **Figure 20**.

Figure 20: Proposed 2051 Transit Strategy



5.1 Potential Costs

The potential cost of an Eco-mobility hub would vary depending on the availability of existing infrastructure (e.g. shelters, parking lots, etc.), the variety of service provided, and whether or not the hub would be staffed. Costs sharing agreements should be considered or discussed with partner agencies such as York Region / York Region Transit or Metrolinx / Smart Commute.

5.2 Bike Share

In parallel to the EcoMobility Hub pilot program, it is recommended that the Town should implement a bike share pilot program. Bike sharing services allow users to rent bicycles within a designated service area. The program allows users who do not have access to a bicycle to make cycling trips at an affordable cost. There are two types of bike share services: fixed station and “dockless”. The former is currently used by Bike Share Toronto and allows users to pick up and drop off bicycles at one of 680 fixed stations located around the City. The “dockless” system is more common in Europe and Asia and allows users to find and check out bicycles using an app and leaving locked to fixed objects anywhere within the designated service area. There are many noted challenges with successful “dockless” systems however, including the need to provide enough incentives to ensure that users leave the bikes in appropriate locations for example.

A bike share pilot program could increase the accessibility of cycling to Town residents, and make cycling a more attractive option for commuter and other utilitarian trips.

6 Improving Connectivity to the GO Station

The East Gwillimbury GO Station is located at the southeast corner of 2nd Concession Road / Main Street North and Green Lane East, near the Town’s boundary with Newmarket. The Station has bicycle racks, designated carpool parking, “Kiss & Ride” passenger drop off, reserved parking, and a total of 642 parking spaces. The GO Station is served by the Barrie GO Line which provides weekday AM peak service south to Union Station in Toronto and PM peak service north to Allandale Waterfront in Simcoe County. Some two-way service is currently provided on weekends.

Metrolinx’s 2023 GO Rail Station Access Plan identifies access to the East Gwillimbury GO Station should facilitate increased ridership, enhance users’ experience and safety, and reduce dependency on single-occupancy

vehicles. Improvements to station accessibility at East Gwillimbury GO will help promote alternative mode choices to further support ongoing efforts to achieve two-way all-day 15-minute service along the Barrie Line. This includes prioritizing active modes for short trips and non single-occupancy modes for longer trips.

As described in detail in **Section 5.5 Transit Demand and Opportunities** under the main report, the primary mode of access for this GO Station is driving (89%). Only 1% of GO users accessed the station by local transit, and none walked or cycled.

Passengers originate primarily from Newmarket and East Gwillimbury. Within East Gwillimbury the highest density of trip origins is from the southern portion of Holland Landing (within 5 km of the station). The station also draws passengers from Mount Albert and rural areas in the eastern part of the town.

6.1 Transportation and Built Environment Context

East Gwillimbury GO is well connected to the road network with access from Green Lane.

The negligible active mode share for passengers accessing East Gwillimbury GO is likely primarily due to two factors – the station's disconnect from urbanized areas of the town, and poor to non-existent pedestrian and cycling connections between the station and those areas – particularly Sharon and Holland Landing. With the exception of a connection to the Nokiidaa Trail, shown in **Figure 21**, there are no continuous pedestrian or cycling links to the station. Pedestrian and cycling connections through the site to the station building are also generally poor.

Specific issues include:

- No walking and cycling connections along Green Lane;
- No sidewalks on 2nd Concession Road north of Green Lane; and
- Poor pedestrian LOS at intersection of 2nd Concession Road and Green Lane.

Figure 21: Access and Connectivity to East Gwillimbury GO Station

6.2 Transit Connectivity

Two YRT routes connect East Gwillimbury GO to the rest of East Gwillimbury:

- **52 Holland Landing:** (Newmarket GO Bus Terminal and Holland Landing). 5 weekday SB trips from Holland Landing from 05:17 to 09:22 in the morning and 02:28 pm to 06:28 in the afternoon, respectively. 3 weekday NB trips from 07:00 to 9:00 in the morning and 5 weekday NB trips from 02:00 to 06:00 in the afternoon, respectively. No weekend service.
- **58 Mount Albert:** (404 Town Centre, Sharon and Mount Albert). Route 59 is currently suspended and operates as Mobility On-Request service which allows passenger to travel within the service area to one of the six fixed locations. Service is available from 5:30 am to 10:45 pm on weekdays and 8 am to 7:45 pm on Saturdays. No Sunday service.

Current YRT service to East Gwillimbury GO means that commuters who wish to use transit for their entire trip have substantially fewer options than those who have access to a car. For example, there are currently only 5 morning bus trips from Holland Landing to East Gwillimbury GO, whereas there are 7 GO Train departures in the morning to Union Station. This likely contributes to the low public transit mode share for station access.

6.3 Improvements

6.3.1 Goals

In line with Metrolinx's GO Rail Station Access Plan, access to the East Gwillimbury GO Station should facilitate increased ridership, enhance users' experience and safety, and reduce dependency on single-occupancy vehicles.

The below strategies and interventions are informed by the GO Rail Station Access Plan for East Gwillimbury, and consider initiatives included in the York Region TMP. They focus on connections to the GO site over improvements to the site itself. The Town should work with Metrolinx where practical to facilitate improvements on the Station site as outlined in the GO Rail Station Access Plan.

6.3.2 Strategy

Trips that originate within 5 km of the station are good candidates for a shift to active modes. Efforts should be prioritized to improve pedestrian and cycling connections to Sharon and Holland Landing and ensure that new development within 5k of the station is designed to facilitate walking and cycling.

Efforts should also be made to shift trips from areas over 5km from the station from single-occupancy vehicles to other modes. The town should consider working with YRT to better align schedules to GO train departures and arrivals, and to increase the number of peak period trips to the station from Holland Landing and Mount Albert. Carpooling and demand-responsive transit should be considered for low-density rural areas over 5km from the station that are difficult to serve with traditional transit.

6.3.3 Potential Improvements

Potential improvements should be considered, working in partnership with Metrolinx and York Region. Considerations for further discussion include:

- Implementing measures to improve the Pedestrian Level of Service of the Green Lane / 2nd Concession Road Intersection;
- Implement planned cycling infrastructure along Green Lane in tandem with new development in the Green Lane Secondary Plan Area;
- Ensure proposed future development along the north and west side of Green Lane incorporates a permeable local road network connecting into the GO station;

- Consider the feasibility of a grade separated eastern connection for cyclists and pedestrians to the GO station; and
- Ensure any future grade separation of the rail corridor at Green Lane incorporates facilities for active modes.
- Complete an east-west pedestrian and cycling connection from Main Street to the GO Station, south of Green Lane.
- Consider a micro-transit feasibility study / pilot project to improve access to the GO Station, reduce surface parking requirements as the Town continues to grow, and to reduce single occupant vehicle queues during peak times. The micro-transit service could be integrated with other shared mobility services as per the EcoMobility hub concept, at the GO Station.

7 Roundabouts

Roundabouts are recommended as an intersection control along collector roads within the Town and should be considered over traffic signals wherever traffic signals are warranted on Town roads, should road geometry and available property allow for it. The following subsections provide additional information on the benefits of roundabouts and an overview of implementation considerations for the development of a full roundabout policy.

7.1 Existing Guidelines

The Canadian Roundabout Design Guide (Transportation Association of Canada, TAC 2017) and Roundabouts: An Informational Guide (U.S. National Cooperative Highway Research Program, NCHRP 2017) are recognized as the leading sources of information on roundabouts and provide guidance on their planning, design, and implementation. Much of the information presented in this section refers to these guiding documents.

7.2 Roundabout Use and Policies in Other Jurisdictions

A number of jurisdictions in Ontario have implemented roundabouts and developed implementation policies including the Ministry of Transportation, Region of York and other upper tier municipalities, and a number of lower tier municipalities. A summary of the roundabout policies in some of these other jurisdictions is provided in **Table 7-1**.

Table 7-1. Roundabout Policies in Other Jurisdictions

Jurisdiction	Roundabout Use / Policies
Town of Innisfil	The Town's Roundabout Implementation Policy recommends single-lane roundabouts to be considered for all new intersections or intersection improvements on collector roads.
Town of Whitchurch-Stouffville	The Town has implemented a number of roundabouts on its collector roads with plans for more. The Town's TMP recommends considering roundabouts whenever new intersections are being built or intersection improvements are needed.
City of St. Thomas	St. Thomas has nine roundabouts with the first implemented about ten years ago. The City implements roundabouts based on the policy guidance of the Region of Waterloo.
City of Markham	Roundabouts are implemented on collector roads within some of its residential subdivisions and are generally permitted subject to suitability on a case by case basis. Implementation policies follow the Region of York.
County of Simcoe	Roundabout Feasibility Guidelines: identifies the criteria that should be used when assessing roundabouts as an alternative intersection control.
Regional Municipality of Peel	Roundabout Screening Tools: a streamlined approach to determine where a roundabout might be a suitable alternative to address intersection improvement needs
Regional Municipality of York	Roundabout Screening Tools: a streamlined approach to determine where a roundabout might be a suitable alternative to address intersection improvement needs
Regional Municipality of Waterloo	Consider a roundabout as an alternative whenever a new intersection is proposed, signals are warranted, or improvements are planned for an existing intersection
Ontario Ministry of Transportation (MTO)	Uses signal warrants as a trigger to consider roundabouts at provincial intersections.

7.3 Types of Roundabouts

The TAC Canadian Roundabout Design Guide describes three basic types of roundabouts recommended for use in Canada: single-lane roundabouts, multi-lane roundabouts, and mini roundabouts.

7.3.1 Single-Lane Roundabout

Single-lane roundabouts feature raised central and splitter islands, one lane entries on all approaches, and one circulatory lane. The central island is non-traversable, although it may include a mountable truck apron to accommodate heavy vehicles. This roundabout design can typically accommodate volumes

of up to 25,000 vehicles daily and have an inscribed circle diameter (ICD) ranging from 28 to 60 m.

7.3.2 Multilane Roundabout

Multilane roundabouts are characterized by at least one entry with two or more lanes. The circulatory roadway is wider to accommodate the higher volumes (AADT more than 25,000) and is designed so that no lane changes are required for any movement throughout the roundabout. Multilane roundabouts typically have an ICD of 46 to 100 m and have a capacity of up to 45,000 vehicles daily. Multilane roundabouts present challenges for active transportation users. This roundabout design has longer crossing distances for pedestrians, and it is more difficult and costly to implement cycling facilities.

7.3.3 Mini Roundabout

Mini-roundabouts are the smaller cousin of single-lane and multi-lane roundabouts. The ICD typically ranges from 14 to 27 m, and the roundabout can accommodate up to approximately 15,000 vehicles per day. This roundabout design features a fully traversable centre island and mountable splitter islands, thus could allow heavy vehicles to maneuver through the intersection with ease in spite of the smaller ICD. However, the mountable island design also reduces safety benefits.

7.4 Advantages and Disadvantages of Roundabouts

Roundabouts provide many benefits in comparison to other traffic control types. According to the Canadian Roundabout Design Guide, roundabouts offer the following advantages:

Safety - Safety is often the primary reason for selecting this form of intersection control. Roundabouts are proven to reduce frequency and severity of collisions compared to both stop controlled and signalized intersections. Roundabout design features contributing to this benefit include fewer conflict points, lower entering and circulating speed, and a reduced angle of impact, reducing or eliminating right-angle and head-on collisions.

Operations / Access Management - Stop and signal controlled intersections require vehicles to stop even when no other vehicles are present. Roundabouts use yield at-entry control to eliminate unnecessary stopping and therefore tend to operate with lower delays and shorter queues, particularly in lower volume situations. Roundabouts also provide safe U-turn opportunities and may reduce midblock left-turns.

Traffic Management / Calming – A roundabout's geometric design influences drivers to reduce speed compared to abrupt stopping and starting at stop and signal controlled intersections. Roundabouts can also be used as effective gateway treatments between rural and urban areas to slow traffic.

Environment and Sustainability - The operational benefits from reduced delays and stopping also results in reduced fuel consumption and vehicle emissions. Forced stops also result in more noise from vehicles braking and accelerating. Finally, roundabouts also consume less energy than traffic signals and require little maintenance. Overall these factors minimize carbon footprint, enhance sustainability, and reduce life-cycle costs of operations and maintenance.

Economics - Roundabouts offer reduced maintenance costs compared to traffic signals along with time and fuel savings for users and societal costs savings from less severe and fewer collisions.

Aesthetics - Particularly within the central island, roundabouts offer landscaping opportunities to and can as a gateway feature.

Potential disadvantages include:

Spatial requirements - Generally the shape of a roundabout requires more property beyond the limits of a typical road allowance compared to stop or signal controlled intersections. However, reduced auxiliary lane requirements may actually reduce the overall intersection footprint. Furthermore, a "mini-roundabout" can potentially fit within a typical roadway allowance.

Constructability / Costs - Roundabouts typically have higher construction costs and a longer construction period, particularly in retrofit applications.

Operational limitations - Roundabouts operate most efficiently when traffic volumes are roughly equal between the two intersecting streets. Once main street traffic volumes reach approximately 70% of total intersection volumes, the operational benefits of roundabouts compared to signalized intersections decreases.

Active transportation impacts – Roundabouts do not provide protected crossing opportunities for pedestrians and cyclists, an issue particularly in higher volume applications with limited gaps in traffic. Larger roundabouts also force pedestrians to divert from their natural path. The US and Canadian guidelines recommend incorporating zebra striping and splitter islands such that pedestrians only cross one direction of traffic at a time. With respect to cyclists, the best practice for on-street bike lanes is to for either the cyclist to

share the roundabout with vehicular traffic or to provide a ramp off of the street prior to entering the roundabout to minimize potential conflicts.

Public education requirements - In communities where roundabouts are not a common form of intersection control, new installations may require public education prior to implementation.

7.5 Roundabout Implementation Policies

It is recommended that the Town update its Official Plan to recognize roundabouts as a potential traffic control at new intersections as well as a means of traffic calming or safety improvement at existing intersections where warranted. Secondly, the Town should develop its own roundabout screening tool to help guide decisions on where best to implement roundabouts for both existing and future intersections. Finally, a network screening study can be completed using the tool to identify priority locations for roundabout implementation.

Given the above-noted benefits, it is recommended that single lane roundabouts be the first consideration for intersection controls for all new intersections or intersection improvements on rural roads, minor collector roads and major collector roads in the Town. Further, it should be demonstrated to the Town's satisfaction that a single-lane roundabout is not desired if a signal or stop controlled intersection is proposed.

Other candidate locations for roundabouts, including on arterial roads, might be established based on the following criteria:

- The current traffic control type is signalized or two-way stop controlled
- There is a history of injury, fatal collisions, head-on, angle, or turning collisions
- There is a transition point between high and low speed roads or a rural and urban area
- A gateway feature is required as an entry to a community
- Traffic calming is required

Circumstances where single lane roundabouts may not provide the best solution include those with prohibitive costs, nearby traffic queuing impacts, proximity to vulnerable pedestrians, environmental impacts, and capacity constraints.

Multilane roundabouts may be considered, but the challenges are important to consider including the lack of a protected crossing for active transportation

and increased potential for driver confusion. These challenges must be strongly considered and mitigated during the design stage.

Mini roundabouts are not recommended at this time due to the limited enhancements to safety relative to implementation costs, and high potential for driver confusion if not designed appropriately. Mini roundabouts may be considered in the longer term future once the public becomes increasingly comfortable roundabouts.

7.6 Potential Roundabout Locations

A preliminary review was conducted to determine where roundabouts should be considered as the intersection control to support the transportation network detailed for the 2051 horizon**.**

Figure 22 illustrates potential roundabout locations where the Town should consider roundabouts as the intersection control. Additional recommended intersection improvements to support the recommended transportation network are listed in **Table 7-2** (including potential roundabout opportunities).

Figure 22: Potential Roundabout Locations

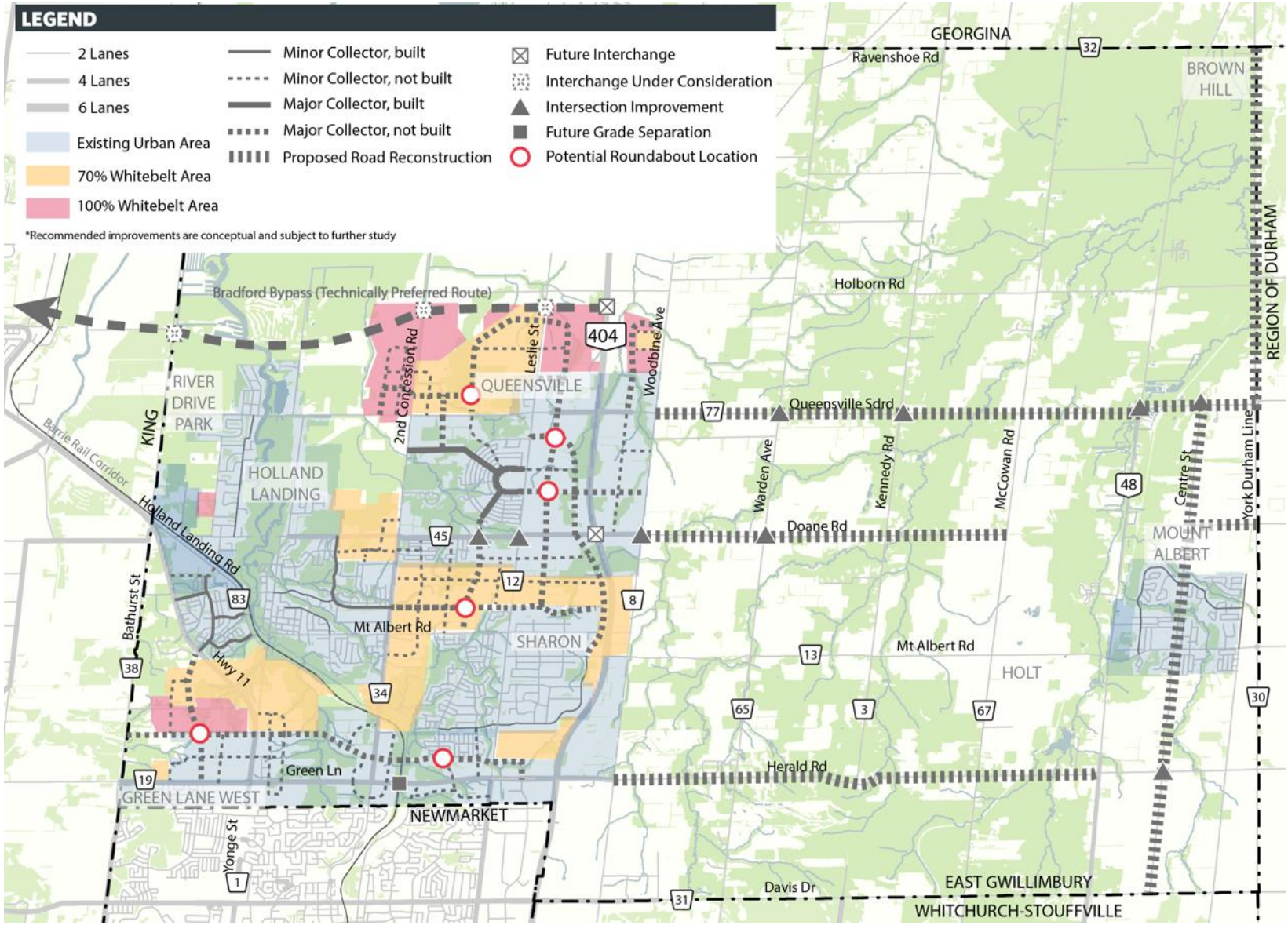


Table 7-2: Recommended Intersection Improvements

ID	Intersection	Improvement Type
R-A45	Queensville Sideroad / Centre Street	Intersection Improvement
R-A46	Queensville Sideroad / Kennedy Road (Regional Int.)	Intersection Improvement
R-A47	Queensville Sideroad / Warden Avenue (Regional Int.)	Intersection Improvement
R-A48	Doane Road / Warden Avenue (Regional Int.)	Intersection Improvement
R-A49	East-West Collector and Murrell Boulevard	Roundabout
R-A50	Herald Road / Centre Street	Intersection Improvement
R-A51	Queensville Sideroad / Highway 48 (Provincial Int.)	Intersection Improvement
R-A52	Doane Road / Woodbine Avenue	Intersection Improvement
R-A53	Doane Road / Leslie Street (Regional Int.)	Intersection Improvement
R-A54	Doane Road / Murrell Boulevard (Regional Int.)	Intersection Improvement
R-A55	North Queensville Ring Road / Street D (Regional Int.)	Roundabout
R-A56	North Queensville Ring Road / Jim Mortson Drive Extension (Southern Extension 1)	Roundabout
R-A57	East-West Collector north of Green Lane / N-S Collector 8 (Woodspring Avenue Extension)	Roundabout
R-A58	Silk Twist Drive East / Murrell Boulevard Extension	Roundabout
R-B601	E-W Collector 5 / Collector 3	Roundabout