# **DURHAM – SCARBOROUGH**

Bus Rapid Transit

Appendix G – Socio-Economic and Land Use Study



Prepared for Metrolinx by IBI Group & Parsons

# Report Socio-Economic and Land Use Study



by IBI Group with Parsons December 23, 2021

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# 1 Introduction

In 2018, Metrolinx completed the Durham-Scarborough Bus Rapid Transit (DS BRT) Initial Business Case. The study recommended a preferred Bus Rapid Transit (BRT) alignment between Downtown Oshawa (in Durham Region) and Scarborough Centre (in the City of Toronto). The project has now advanced to the Preliminary Design Business Case and Environmental Assessment/Transit Project Assessment Process (TPAP) phase in accordance with the Metrolinx Business Case Framework, for capital investment projects. IBI Group and Parsons are managing the project on behalf of Metrolinx.

The Durham-Scarborough Bus Rapid Transit (DS BRT) project proposes approximately 36 kilometres of dedicated transit infrastructure, connecting downtown Oshawa, Whitby, Ajax, Pickering and Scarborough. This project builds on the existing PULSE service and will provide more dedicated transit infrastructure along Highway 2 and Ellesmere Road to connect to Scarborough Centre. The corridor has varied traffic, land use conditions and constraints. With rapid growth in the past decade, and an expectation for this growth to continue into the future, travel demand along the corridor will continue to increase and higher capacity transit will be needed to link communities and employment on both sides of the Toronto-Durham boundary. Transit infrastructure will include a range of design solutions in different segments of the corridor. The preliminary design concept includes segments with buses operating with transit priority measures, and segments with dedicated curbside or centre-median transit lanes. The design concept varies by segment based on available space, travel demand, and land use context.

The intent of the Socio-Economic and Land Use study is to document existing conditions within the Study Area, complete a Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis, and identify potential impacts that the Project may have on the socio-economic and land use environments. Mitigation and monitoring measures are recommended to minimize potential negative impacts. This study will support the Transit Project Assessment Process (TPAP), as prescribed in Ontario Regulation (O.Reg.) 231/08 under the Environmental Assessment Act (EAA).

# 1.1 Socio-Economic and Land Use Study

Metrolinx has retained IBI Group and Parsons to undertake the preliminary design and TPAP for the Durham-Scarborough BRT. The Socio-Economic and Land Use study is one component of the TPAP. The study will document existing conditions, identify potential effects of the Project, and identify potential mitigation and monitoring measures with respect to the socio-economic and land use environments within the Study Area, as described in **Section 2**. The areas that will be addressed as part of this assessment are:

- Land use compatibility;
- Disruption and long-term function of businesses;
- Connections to community services;
- Connections to existing and planned transit; and,
- Other potential impacts to be determined as the study progresses.

# 2 Study Area

The Durham-Scarborough BRT route extends from Scarborough Centre to Downtown Oshawa, spanning approximately 36 kilometers and traversing through the City of Toronto, City of Pickering, Town of Ajax, Town of Whitby, and the City of Oshawa. The Study Area for the Socio-economic and Land Use study covers an 800 m buffer on either side of the route and can be found in **Appendix A**.

Due to the length of the route, the Study Area encompasses a variety of socioeconomic and land use characteristics, as it crosses through a number of jurisdictions with different planning policy frameworks. For documentation purposes, the project team divided the Study Area into five route segments, with one segment for each of the respective municipalities.

# 3 Existing Socio-Economic & Employment Characteristics

This section documents and analyzes the existing socio-economic and business establishment characteristics in the Study Area. Existing conditions are centred on demographic characteristics, employment, and community resources within the Study Area. The findings form the baseline conditions used to identify potential positive or adverse impacts that the Project will have on these environments.

Data sets were obtained from the following sources:

- **1. Demographics:** 2016 Canadian Census, for Census Tracts within the Study Area, and for the corresponding Census Divisions and Census Subdivisions;
- 2. Community Resources: Community Services file available through Durham Region Open Data Portal, and data sets for schools, libraries, parks and community centres available through the City of Toronto Open Data Catalogue; and,
- **3. Employment:** Durham Region Business Directory, available through Durham Region Open Data Portal, and Employment Survey Data sent to IBI Group from City of Toronto staff.

# 3.1 Demographics

The Study Area is situated within five municipalities: Toronto, Pickering, Ajax, Whitby and Oshawa. As such, demographics within the study area are reported by route segment. Each route segment is compared to the demographic profile of the municipality and region, where applicable, to understand unique attributes of the Study Area. Detailed demographic statistics are provided in **Appendix B**.

The following demographic characteristics are evaluated:

- Total Population;
- Population Density;
- Population by Age Group;
- Housing Distribution by Type and Tenure;
- Average Household Income;
- Period of Immigration; and,
- Educational Attainment.

A map of Census Tracts that are situated within the Study Area that were examined to complete the demographic analysis can be found in **Appendix A**.

### 3.1.1 Total Population, Population Density & Population by Age Group

This section provides an overview of population growth, total population, population density and the age structure of the population within the Study Area, and within each route segment.

### 3.1.1.1 Study Area Overview

The Census Tracts located within the Study Area represent a population of 300,397 people as of the 2016 Census. Over the 2011 to 2016 period, the Study Area experienced a population growth of 8,743 people. Population growth within the Study Area over this period was slower compared to growth within the City of Toronto and Durham Region as a whole. The Study Area has a population density of 2,376 people per square kilometre. This is significantly higher than the average population density throughout Durham Region, and about half of the population density of the City of Toronto.

When compared to the City of Toronto, the Study Area is in line with the age distribution of the population, with the majority of the population within the 25 to 64 age group. Durham Region has a greater proportion of the population in the 0 to 14 age bracket when compared to the Study Area, and a lower proportion of seniors.

# 3.1.1.2 City of Toronto Route Segment

The population in the City of Toronto grew by over 116,000 people (4.5%) over the Census period. In contrast, the population located within the City of Toronto Route Segment grew at a slower rate when compared to the City of Toronto, growing by 955 people, representing a growth of 1% for a total population of 97,673 as of the 2016 Census. There has been minimal population growth in the City of Toronto Route Segment over the Census period.

The population density in the City of Toronto is high when compared to the City of Toronto Route Segment, with 4,334 people per square kilometre. The population density within the City of Toronto Route Segment is 3,040 people per square kilometre. In the City of Toronto Route Segment, population densities range from 1,756 to 9,076 people per square kilometre.

Similar to the City of Toronto, over 50% of the population within the City of Toronto Route Segment belong in the 25-64 age group. The City of Toronto Route Segment has a higher proportion of the population in the 0-14, 15-24 and 65+ age groups when compared to the City of Toronto. Overall, the age structure of the population in this segment is similar to the City of Toronto.

# 3.1.1.3 City of Pickering Route Segment

The population in Durham Region grew by 37,738 over the Census period (6.2%), while the City of Pickering grew by 3,050 (3.4%). The 5.5% population growth rate during the Census period in the City of Pickering Route Segment was slower than Durham Region and higher than the City of Pickering when compared. With a population of 64,957 as of the 2016 Census, The City of

Pickering Route Segment comprises 70% of the total population within the City of Pickering.

The population density in the City of Pickering and Durham Region is low when compared to the City of Pickering Route Segment, with 396 and 256 people per square kilometre, respectively. The population density within the City of Pickering Route Segment is 2,010 people per square kilometre. In the City of Pickering Route Segment, population densities range from 889 to 3,706 people per square kilometre.

Over 50% of the population within the City of Pickering Route Segment belong in the 25-64 age group, which is in line with Durham Region. There is a lower proportion of the population in the 0-14 age group, and a higher proportion in the 15-24 and 65+ age groups within the City of Pickering Route Segment when compared to Durham Region.

### 3.1.1.4 Town of Ajax Route Segment

The Town of Ajax Route Segment experienced strong population growth over the last Census period. The population in the Town of Ajax Route Segment grew at a higher rate than Durham Region and a lower rate than the Town of Ajax when compared. The population in the Town of Ajax Route Segment increased by 4,191 people (8.2%) over the Census period to 55,113 in 2016, while in the Town of Ajax the population grew by 10,077 (9.2%).

The population density within the Town of Ajax Route Segment is higher than Durham Region and the Town of Ajax when compared, with 2,436 people per square kilometre. In the Town of Ajax Route Segment, population densities range from 730 to 6,177 people per square kilometre.

The majority of the population within the Town of Ajax Route Segment are within the 25-64 age group, which is commensurate with Durham Region and the Town of Ajax. There is a lower proportion of the population in the 65+ age group, and a higher proportion in the 15-24 age group within the Town of Ajax Route Segment when compared to Durham Region.

### 3.1.1.5 Town of Whitby Route Segment

The population within the Town of Whitby Route Segment experienced limited growth when compared to Durham Region, growing by 492 people (1.0%) over the Census period, representing a population of 48,419 in 2016. Population growth in the Town of Whitby also outpaced the Town of Whitby Route Segment, growing by 6,355 (5.2%) over the Census period.

Population density within the Town of Whitby Route Segment is higher than Durham Region and the Town of Whitby when compared, with 1,842 people per square kilometre. In the Town of Whitby Route Segment, population densities range from 1,065 to 3,381 people per square kilometre.

The majority of the population within the Town of Whitby Route Segment are within the 25-64 age group, which is commensurate with Durham Region and the Town of Whitby. There is a higher proportion of the population in the 65+

age group, and a lower proportion in the 0-14 age group within the Town of Whitby Route Segment when compared to Durham Region.

### 3.1.1.6 City of Oshawa Route Segment

The population within the City of Oshawa Route Segment declined by 296 people (-0.9%) over the Census period, representing a population of 34,235 in 2016. Population growth in the City of Oshawa Route Segment was stagnant in comparison to the City of Oshawa, which grew by 9,851 (6.6%) over the Census period. The City of Oshawa Route Segment is the only route segment within the Study Area that declined in population over the period examined.

The population density within the City of Oshawa Route Segment is higher than Durham Region and the City of Oshawa when compared, with 2,619 people per square kilometre. In the City of Oshawa Route Segment, population densities range from 1,742 to 3,982 people per square kilometre.

Majority of the population in the City of Oshawa Route Segment are within the 25-64 age group, which is commensurate with both Durham Region and the City of Oshawa. There is a higher proportion of the population in the 65+ age group, and a lower proportion in the 0-14 and 15-24 age groups within the City of Oshawa Route Segment when compared to Durham Region.

# 3.1.2 Housing Distribution by Type and Tenure

This section provides an overview of the housing stock and tenure distribution within the Study Area, and within each route segment. The types of dwellings being examined as per the Census Profile are single-detached dwellings, semidetached dwellings, row dwellings, apartment dwellings and other types of dwellings. Other types of dwellings include movable dwellings such as mobile homes and houseboats.

### 3.1.2.1 Study Area Overview

There are 106,565 households within the Study Area. Over half of this housing stock is comprised of single-detached dwellings, with the second largest share of units being within the apartment category. A small share of the units are in the semi-detached and row typologies.

When compared to the City of Toronto, the Study Area has a higher share of single-detached dwellings and a lower share of apartments. The Study Area has a lower share of single-detached dwellings when compared to Durham Region, with 66% of Durham Region's housing stock being comprised of single-detached dwellings. Durham Region has a lower share of apartments when compared to the Study Area.

The majority of households in the Study Area are owned, while 24% of the households are rented. When compared to the City of Toronto, the Study Area has a higher proportion of the population owning their dwelling. The Study Area has a lower share of owners when compared to Durham Region, where 81% of households are occupied by owners.

# 3.1.2.2 City of Toronto Route Segment

Within the City of Toronto Route Segment there are 33,855 households. The majority of the households in the City of Toronto Route Segment are singledetached dwellings and apartments, with the majority of apartments being five storeys or greater. The housing stock in the City of Toronto has a large share of apartment units, with the majority of these being five storeys or greater as well. Overall, the City of Toronto Route Segment has a higher proportion of ground related housing when compared to the City of Toronto.

The majority of households within the City of Toronto Route Segment are owned (71%), while 29% of households are rented. This distribution between households that own and rent in the City of Toronto Route Segment is distinct from the City of Toronto, where 53% of households own and 47% rent.

# 3.1.2.3 City of Pickering Route Segment

Within the City of Pickering Route Segment there are 22,210 households. The housing distribution within the City of Pickering Route Segment is similar to both Durham Region and the City of Pickering, with a higher proportion of dwellings in the apartment and row category. Overall, the majority of the housing stock in this segment is comprised of ground related housing.

The majority of households in the City of Pickering Route Segment own their dwellings (88%), while 12% rent. There is a higher proportion of owners in the City of Pickering Route Segment when compared to Durham Region, although the distribution is proportionate overall.

# 3.1.2.4 Town of Ajax Route Segment

Within the Town of Ajax Route Segment there are 16,845 households. The housing stock in the Town of Ajax Route Segment is similar to Durham Region, with the majority of households being ground related housing. When compared to Durham Region, the Town of Ajax Route Segment has a lower share of apartments, and a higher share of row and single detached dwellings. When compared to the Town of Ajax, the Town of Ajax Route Segment has a lower share of share of apartments, and a higher share of row and single detached dwellings.

The majority of households in the Town of Ajax Route Segment own their dwellings (89%), while 11% rent. Overall, the proportion of renters and owners within the Town of Ajax Route Segment are in line with Durham Region and the Town of Ajax.

# 3.1.2.5 Town of Whitby Route Segment

There are 18,390 households within the Town of Whitby Route Segment. Within the Town of Whitby Route Segment there are a higher proportion of apartments, and a lower proportion of singles, semi-detached and row housing when compared to Durham Region. The apartments in the Town of Whitby Route Segment are evenly distributed between apartments that are five storeys and above, and five storeys and below. Overall, the Town of Whitby Route Segment is largely comprised of ground related housing. When compared to Durham Region, the Town of Whitby Route Segment has a higher proportion of households that rent (27%), and a lower proportion of households that own (73%). When compared to the Town of Whitby, the Town of Whitby Route Segment has a higher proportion of households that rent, and a lower proportion of households that own.

# 3.1.2.6 City of Oshawa Route Segment

There are 15,265 households within the City of Oshawa Route Segment. The housing distribution in the City of Oshawa Route Segment is distinct when compared to Durham Region, with a larger share of dwellings being comprised of apartments, and a lower share of single detached dwellings. Apartments and single-detached dwellings make up the majority of the housing stock in the City of Oshawa Route Segment.

When compared to Durham Region, the City of Oshawa Route Segment has a higher proportion of households that rent (46%), and a lower proportion of households that own (54%). When compared to the City of Oshawa, the City of Oshawa Route Segment has a higher proportion of households that rent, and a lower proportion of households that own.

# 3.1.3 Average Total Household Income and Educational Attainment

This section provides an overview of the average total household income and educational attainment within the Study Area, and within each route segment. As per the Census Profile definition, educational attainment is: "The general hierarchy used in deriving this variable (high school, trades, college, university) is loosely tied to the 'in-class' duration of the various types of education. At the detailed level, someone who has completed one type of certificate, diploma or degree will not necessarily have completed the credentials listed below it in the hierarchy. 'Secondary (high) school diploma or equivalency certificate' includes only people who have this as their highest educational qualification. It excludes persons with a postsecondary certificate, diploma or degree."

# 3.1.3.1 Study Area Overview

The average household income in the Study Area is \$97,624, which is lower than both the City of Toronto at \$102,721 and Durham Region at \$106,886. In terms of educational attainment, the Study Area population is similar to both the City of Toronto and Durham Region. The Study Area has a lower proportion of the population that has achieved a post-secondary degree when compared to the City of Toronto, and a higher proportion of the population that has achieved a post-secondary degree when compared to Durham Region.

### 3.1.3.2 City of Toronto Route Segment

When compared to the City of Toronto, the City of Toronto Route Segment has a lower average household income at \$89,287. The City of Toronto has a higher proportion of the population that has achieved post-secondary degrees when compared to the City of Toronto Route Segment, and a higher proportion of people with no certificate. Overall, educational attainment in the City of Toronto and the City of Toronto Route Segment are similar, with more than 50% of the population achieving a post-secondary degree.

# 3.1.3.3 City of Pickering Route Segment

The average household income in the City of Pickering Route Segment is \$115,302, which is higher than Durham Region, and lower than the City of Pickering. The City of Pickering Route Segment has a higher share of the population that has attained a post-secondary degree when compared to Durham Region, and a lower proportion of the population that has no certificate. When compared to the City of Pickering, the City of Pickering Route Segment is commensurate in terms of educational attainment.

# 3.1.3.4 Town of Ajax Route Segment

The average household income in the Town of Ajax Route Segment is \$113,537, which is higher than Durham Region and the Town of Ajax when compared. The proportion of the population in the Town of Ajax Route Segment who have achieved a secondary and post-secondary degree is similar to the Town of Ajax and Durham Region.

# 3.1.3.5 Town of Whitby Route Segment

The average household income within the Town of Whitby Route Segment is \$101,792, which is lower than Durham Region and the Town of Whitby. The proportion of the population that has achieved a post-secondary degree in the Town of Whitby Route Segment is commensurate with Durham Region, and lower than the Town of Whitby.

# 3.1.3.6 City of Oshawa Route Segment

The average household income within the City of Oshawa Route Segment is \$67,790, which is lower than Durham Region and the City of Oshawa. The proportion of the population that has attained a post-secondary degree within the City of Oshawa Route Segment is lower than both the City of Oshawa and Durham Region, with a higher share of the population achieving no certificate.

# 3.1.4 Period of Immigration

This section provides an overview of the immigrant population time of arrival within the Study Area, and within each route segment. As per the Census Profile definition, the immigrant population is defined as: "Immigrants includes persons who are, or who have ever been, landed immigrants or permanent residents. Such persons have been granted the right to live in Canada permanently by immigration authorities. Immigrants who have obtained Canadian citizenship by naturalization are included in this category. In the 2016 Census of Population, 'Immigrants' includes immigrants who landed in Canada on or prior to May 10, 2016."

### 3.1.4.1 Study Area Overview

There is an immigrant population of 110,820 situated within the Study Area, representing 37% of the total population. The majority of the immigrant population within the Study Area arrived before the year 2000, which is commensurate with both the City of Toronto and Durham Region. When compared to the City of Toronto, the Study Area has a lower share of the immigrant population that arrived between 2001 and 2016. When compared to Durham Region, the Study Area has a higher share of the immigrant population that arrived between 2011 and 2016.

### 3.1.4.2 City of Toronto Route Segment

The majority of the immigrant population within the City of Toronto Route Segment arrived prior to 2011 and constitute 55% of the total population. Within the City of Toronto, the immigrant population represents approximately half of the population, with the majority of immigrants also arriving prior to 2011.

### 3.1.4.3 City of Pickering Route Segment

The immigrant population within the City of Pickering Route Segment represents 36% of the total population, which is a higher proportion of the population when compared to Durham Region. The majority of the immigrant population arrived in the City of Pickering Route Segment arrived prior to 2011, which is commensurate with both the City of Pickering and Durham Region.

### 3.1.4.4 Town of Ajax Route Segment

The majority of the immigrant population within the Town of Ajax Route Segment arrived prior to 2011 and constitute roughly 40% of the total population, which is commensurate with both the Town of Ajax and Durham Region.

### 3.1.4.5 Town of Whitby Route Segment

The immigrant population within the Town of Whitby Route Segment represents 21% of the total population, which is a lower proportion of the population when compared to Durham Region and the Town of Whitby. Nearly half of the immigrant population within the Town of Whitby Route Segment arrived before 1981, with a small share of immigrants arriving after 2011.

### 3.1.4.6 City of Oshawa Route Segment

The immigrant population within the City of Oshawa Route Segment represents a small proportion of the total population (15%). The majority of the immigrant population situated within the City of Oshawa Route Segment arrived before 1981, which is a larger share when compared to the City of Oshawa and Durham Region.

### 3.2 Community Resources Review

This section provides an overview of the types and location of community resources available in each respective route segment of the Study Area. The community resources that are part of this overview include schools, libraries, parks, cemeteries and community centres. Federal and Provincial conservation area data were also examined. No conservation areas were identified in the Study Area. The data sets utilized for this analysis are available through the City of Toronto and Durham Region open data portals, which can be found in **Section 12**. Mapping associated with the Community Resources Review that identifies the location of community resources can be found in **Appendix A**.

# 3.2.1 City of Toronto Route Segment

The City of Toronto Route Segment encompasses a total of 32 schools, with 16 being part of the Toronto District School Board, six as part of the Toronto Catholic District School Board, seven private schools, and the remainder being college or university campuses. The post-secondary institutions identified include the University of Toronto Scarborough Campus and Centennial College. In addition, two libraries are situated in the City of Toronto Route Segment, one of which is located within the Scarborough Civic Centre, the other is the Highland Creek Library. The Highland Creek Library encompasses an early years' centre that is joined by two other early years' centres. There are 117 parks within the City of Toronto Route Segment, providing a number of green spaces for residents to utilize. No cemeteries were identified in the City of Toronto Route Segment.

# 3.2.2 City of Pickering Route Segment

Within the City of Pickering Route Segment, there are a total of 12 schools, with five being part of the Durham District School Board, one is part of the Durham Catholic District School Board, and six private schools. In addition, two public libraries are situated in the City of Pickering Route Segment: the Petticoat Creek Branch and the Central Library. There are a total of 10 recreation facilities, which encompass parks, indoor pools, and a recreation complex. There are two community facilities located in the City of Pickering Route Segment, the Petticoat Creek Community Centre, which is located within the library, as well as the Pickering Civic Complex. No cemeteries were identified in the City of Pickering Route Segment.

# 3.2.3 Town of Ajax Route Segment

Within the Town of Ajax Route Segment there are a total of 13 schools, with seven being part of the Durham District School Board, three part of the Durham Catholic District School Board, one French Catholic school, and two private schools. In terms of community facilities and space, there are two public libraries, the Ajax Public Library Village Branch and the McLean Branch, and five public parks. In addition, there are three recreation facilities that include two community centres and an arena. One cemetery was identified in the Town of Ajax Route Segment, the Hicksite/Brown Quaker Cemetery.

# 3.2.4 Town of Whitby Route Segment

The Town of Whitby Route Segment encompasses a total of 14 schools. Of these, seven are part of the Durham District School Board, three are part of the Durham Catholic District School Board, and three are private schools, and one is a French Catholic school. There are a number of parks in this segment for residents to utilize, eight in total. In terms of community facilities, there is the Dundas Branch of the Whitby Public Library, as well as the Centennial Building. One cemetery was identified in the Town of Whitby Route Segment, the Mount Lawn Funeral Home and Cemetery.

# 3.2.5 City of Oshawa Route Segment

The City of Oshawa Route Segment comprises a total of eight schools. Of these, three are part of the Durham District School Board, two are private schools and three are post-secondary institutions, including Ontario Tech University, Durham College and Trent University. There are three parks in this segment, as well as the McLaughlin Public Library. There are 12 community facilities, including the Durham YMCA, several recreation complexes and community centres, a curling club, and a children's arena. One cemetery was identified in the City of Oshawa Route Segment, the Union Cemetery.

### 3.3 Characteristics of Existing Businesses

This section provides a review of the types of existing businesses that currently operate within the Study Area. The Project Team utilized data provided by the City of Toronto that is derived from the annual Employment Survey, as well as the Durham Region Business Directory available through the Durham Region open data portal, to understand the type and location of these businesses. The Project Team utilized the North American Industry Classification System (NAICS) structure to categorize businesses into the following classifications:

- **Primary:** Includes agriculture, forestry, mining, and utilities;
- **Employment Area Employment:** Includes construction, manufacturing, wholesale trade, transportation and warehousing;
- **Retail and Service:** Includes retail trade, administrative support and waste management services, accommodation and food services, and other services;
- Office: Includes information and cultural industries, finance and insurance, real estate and rental leasing, professional, scientific and technical services, and the management of companies and enterprises; and
- **Institutional**: Includes educational services, health care and social assistance, arts, entertainment and recreation, and public administration.

A detailed summary of which North American Industry Classifications were grouped together to assemble these consolidated categories is provided in **Appendix C**.

To display this information and highlight the areas where businesses are concentrated throughout the Study Area, the project team compiled hot spot maps for the entire corridor, as well as for each route segment, to identify areas with a high-density of businesses in each route segment, which can be found in **Appendix A**.

# 3.3.1 Study Area Overview

The Study Area encompasses a total of 4,285 business establishments. The City of Toronto Route Segment represents the largest share of total business establishments, with the City of Oshawa Route Segment, the City of Pickering Route Segment and the Town of Whitby Route Segments each accounting for approximately 20% of the total. **Figure 3-1** displays the number of business establishments by municipality.

MUNICIPALITY	NUMBER OF BUSINESS ESTABLISHMENTS	PERCENTAGE SHARE
Toronto	1,398	33%
Pickering	793	18%
Ajax	451	11%
Whitby	783	18%
Oshawa	860	20%
TOTAL	4,285	100.0%

# Figure 3-1: Distribution of Businesses by Route Segment, Study Area Overview

Over 50% of the businesses situated in the Study Area operate within the retail and service category, with the second largest share of businesses falling within the institutional category. It was observed that 17% of the businesses are classified as office employment, and 8% are classified as employment area employment. **Figure 3-2** illustrates the distribution of businesses by type.

Figure 3-2: Distribution of	Businesses by Type	, Study Area Overview
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BUSINESS TYPE	NUMBER OF BUSINESS ESTABLISHMENTS	PERCENTAGE SHARE
Employment Area	324	8%
Employment		
Retail and Service	2,302	54%
Office	714	17%
Institutional	945	22%
TOTAL	4,285	100%

Overall, the major business clusters identified within the Study Area are located at the Scarborough Centre, Pickering Centre, Downtown Whitby, Downtown Oshawa and the areas surrounding these nodes.

# 3.3.2 City of Toronto Route Segment

Similar to the Study Area as a whole, the City of Toronto Route Segment is made up largely of businesses in the retail and service category. A large cluster of the retail and service employment is situated between Brimley Road and Markham Road, which comprise the majority of the Scarborough Secondary Plan Study Area. Roughly 29% of the total retail and service businesses in the Study Area are located within the City of Toronto Route Segment. The majority of the businesses in the employment area employment category within the Study Area are also situated within the City of Toronto Route Segment (66%). Nearly half of the businesses in the employment area employment category is manufacturing based (46%), with the second largest share being attributed to wholesale trade (32%). The remaining business establishments in the City of Toronto Route Segment are within the office and institutional categories. **Figure 3-3** illustrates the distribution of employment by type in the City of Toronto Route Segment.

BUSINESS TYPE	NUMBER OF BUSINESS ESTABLISHMENTS	PERCENTAGE SHARE
Employment Area Employment	215	15%
Retail and Service	663	47%
Office	206	15%
Institutional	314	22%
TOTAL	1,398	100%

Figure 3-3: Distribution of Businesses by Type, City of Toronto Route Segment

### 3.3.3 City of Pickering Route Segment

The majority of businesses within the City of Pickering Route Segment operate within the retail and service category. Roughly 50% of the businesses in the retail and service category are classified as retail trade, with 25% classified as accommodation and food services, and 21% classified as other services. The next largest share of employment in the City of Pickering Route Segment is attributed to institutional establishments, with a low proportion of office and employment area employment. **Figure 3-4** illustrates the distribution of business establishments by type.

BUSINESS TYPE	NUMBER OF BUSINESS ESTABLISHMENTS	PERCENTAGE SHARE
Employment Area Employment	36	5%
Retail and Service	481	61%
Office	114	14%
Institutional	162	20%
TOTAL	793	100%

Figure 3-4: Distribution of Businesses by Type, City of Pickering Route Segment

There are a cluster of businesses at the Kingston Road and Liverpool Road intersection that make up the Pickering Town Centre. To the west of this cluster, there is the Brookdale Centre and to the east is SmartCentres Pickering. These three areas represent nodes of power retail centres that serve the City of Pickering.

# 3.3.4 Town of Ajax Route Segment

Roughly 60% of the businesses within the Town of Ajax Route Segment operate within the retail and service classification. Of these businesses, 46% operate within the retail trade sub-sector, and 24% are the accommodation and food services sub-sector. The second highest share of businesses in this segment are attributed to institutional establishments, with office and employment area employment accounting for a 21% share of the businesses situated in the Town of Ajax Route Segment. **Figure 3-5** illustrates the distribution of business establishments by type.

BUSINESS TYPE	NUMBER OF BUSINESS ESTABLISHMENTS	PERCENTAGE SHARE
Employment Area Employment	21	5%
Retail and Service	272	60%
Office	72	16%
Institutional	86	19%
TOTAL	451	100%

# Figure 3-5: Distribution of Business Establishments by Type, Town of Ajax Route Segment

When compared to the entire Study Area as a whole, the Town of Ajax Route Segment does not have higher density business clusters. There are two business clusters identified. One is located at Kingston Road West and Church Street North, which encompasses the Pickering Village Heritage Conservation District. This cluster has a number of retail and service uses, as well as a handful of small boutique offices. The second cluster is located at Kingston Road West and Harwood Avenue North, which includes the RioCan Durham Centre. This is another power retail node in the Study Area that has a number of big box stores such as Costco, Home Depot, Canadian Tire and Wal-Mart. To the west of RioCan Durham Centre on the north side of Kingston Road there are a number of food service, big box and grocery stores to Westney Road North. To the south of the RioCan Durham Centre, there are a handful of food service establishments. Casino Ajax is located to the east of the power retail node.

### 3.3.5 Town of Whitby Route Segment

Similar to the other route segments in Durham Region, the majority of businesses located in the Town of Whitby Route Segment are retail and service oriented (54%). Of the retail and service businesses, 40% are classified as retail trade establishments, and 21% are accommodation and food services. Institutional establishments make up approximately a quarter of the total business establishments in the Town of Whitby Route Segment, with 17% office and 4% employment area employment. **Figure 3-6** provides a summary of the distribution of business establishments by type.

BUSINESS TYPE	NUMBER OF BUSINESS ESTABLISHMENTS	PERCENTAGE SHARE
Employment Area Employment	30	4%
Retail and Service	419	54%
Office	135	17%
Institutional	199	25%
TOTAL	783	100%

# Figure 3-6: Distribution of Business Establishments by Type, Town of Whitby Route Segment

The area that has the highest business density in the Town of Whitby Route Segment is at Brock Street and Dundas Street West, which comprises Downtown Whitby. Downtown Whitby is a commercial centre that includes a variety of businesses, services and institutions, such as the Whitby Public Library. To the east of downtown, at Thickson Road and Dundas Street East, there is another node that has a high concentration of businesses. A number of businesses in this area are big box retailers and food service retailers. The Whitby Mall is located at the southeast corner of the intersection, and in the northwest quadrant of the intersection, there are two large automotive dealerships.

### 3.3.6 City of Oshawa Route Segment

The majority of businesses situated within the City of Oshawa Route Segment are classified as retail and service establishments. Roughly 60% of the businesses in this category operate within the retail trade sub-sector, with 21% working within the accommodation and food services sub-sector. When compared to the Study Area as a whole, the City of Oshawa Route Segment has a higher share of offices. Institutional establishments represent 21% of total establishments in the City of Oshawa Route Segment represent, and employment area employment represents a 3% share overall, which is commensurate with the Study Area as a whole. **Figure 3-7** provides a summary of the distribution of business establishments by type.

<b>BUSINESS TYPE</b>	NUMBER OF BUSINESS ESTABLISHMENTS	PERCENTAGE SHARE
Employment Area Employment	22	3%
Retail and Service	467	54%
Office	186	22%
Institutional	184	21%
TOTAL	859	100%

Figure 3-7: Distribution of Business Establishments by Type, City of Oshawa Route Segment

Two dense business clusters were identified within the City of Oshawa Route Segment. These clusters are located at King Street West and Stevenson Road South, and at King Street West and Simcoe Street South. The first cluster, located to the west, comprises the Oshawa Centre, which is a two-storey shopping mall that is the largest mall in Durham Region with over 230 retail stores and services. There are also a handful of big box stores south of Oshawa Centre, such as Canadian Tire and the Real Canadian Superstore, as well as a number of retail establishments and a gas station to the north. The second business cluster is located in Downtown Oshawa at King Street West and Simcoe Street, which is the Downtown Oshawa Urban Growth Centre. Downtown Oshawa is a business improvement area that has a number of establishments that encompass the retail and service, office and institutional sectors.

# 4 Existing Travel Patterns

As part of the Initial Business Case, completed for the DS BRT system in 2018, existing travel patterns in and around the Study Area were analyzed. Information on existing travel patterns was obtained from the 2011 Transportation Tomorrow Survey (TTS) data, which collects data on travel patterns within the Greater Golden Horseshoe Area (GGH).

# 4.1 Trip Purposes within the Study Area

**Figure 4-1** provides a breakdown of trip purpose in the a.m. peak period (6:00 a.m. through 8:59 a.m.) by each of the five local municipalities within the Study Area. The total number of trips destined to Toronto segment (54,600) during the 3-hour a.m. peak period far exceeds the number of trips destined to all other areas within the Study Area: approximately 21,000 trips to Pickering, 18,000 to Ajax, 19,000 to Whitby, and 23,000 to Oshawa. Trips to school represent 40% of all trips due to the presence of Centennial College, UTSC and TTC Line 2 subway service in Scarborough.



# Figure 4-1: 2011 Trip Purpose in the BRT Study Area

Source: 20 portation Tomorrow Survey

# 4.2 Tı de Share in the Study Area

Travel to  $\varepsilon$  ; the highest transit mode share at 22%, followed by trips to work at 7% er" trips, such as trips for shopping, entertainment, personal business, or to daycare, at 3%. As a whole, the mode share for all trips destined to the Study Area in the 3-hour a.m. peak period (6:00 a.m. through 8:59 a.m.) is 10% as shown in **Figure 4-2**.



Figure 4-2: Transit Mode Share by Trip Purpose

Source: 2011 Transportation Tomorrow Survey

# 4.3 Origins and Destinations within the Study Area

Travel in the Study Area is highly directional with a strong westbound flow in the a.m. peak, reflecting the higher employment areas in the western section of the corridor. Overall, 41% of 3-hour a.m. peak trips (169,000 trips) generated in the Study Area stay within the Study Area. The rest of the trips, which are destined for locations outside the Study Area, are destined to south Scarborough (8%), north Scarborough (5%), Downtown Toronto (12%), the rest of Toronto (12%), the rest of Durham Region (12%), and elsewhere in the GGH (8%).

41% of trips beginning in the Study Area during the 3-hour a.m. peak period also end within the Study Area. This suggests the need for a high-quality BRT connection between Durham Region and Scarborough, and to the broader Regional Frequent Transit Network, as defined in the 2041 Regional Transportation Plan.

A map showing the distribution of a.m. peak trip destinations that originate in the Study Area is provided in **Figure 4-3**.

Although the main Ontario Technology University/Durham College campus is located approximately 6 km outside of the Study Area, there are over 900 trips from the Study Area to the main Ontario Technology University/Durham campus, at a transit mode share of 51%.

It is also important to recognize that the 2011 TTS data was comprised prior to the implementation of PULSE. The 2011 data shows that transit demand from Durham Region to UTSC was low (100 trips). The majority of trips to UTSC are from other areas of Toronto. However, 2011 Metrolinx ridership data shows that there are approximately 1,400 total trips destined for UTSC that originate in the Study Area during the 3-hour a.m. peak, suggesting there is a market for travel to this destination from other places along the corridor.



Figure 4-3: Distribution of 3-hour AM Peak Trip Destinations (All Modes) Originating in the BRT Corridor

# 4.4 Transit Ridership

Existing ridership varies considerably throughout the corridor and is spread between GO Transit Bus, TTC and DRT services, including PULSE. The a.m. peak direction is primarily westbound, with steady increase in passenger load between Oshawa and Scarborough. Travel, between the Toronto-Durham boundary and Scarborough Centre represents a significantly large proportion of the total corridor ridership, due to the frequent TTC services in that section.

While the UTSC and Scarborough Centre have the most boardings and alightings, there are destinations in Durham Region with high concentration of boardings and alightings in the a.m. peak period in both the eastbound and westbound direction. They are:

- Centre Street, Downtown Oshawa
- Brock Street, Downtown Whitby
- Harwood Road, Ajax
- Westney Road, Ajax
- Glenanna Road, Downtown Pickering
- Whites Road, Pickering

A summary of the existing transit routes that traverse the BRT corridor and their a.m. peak period service frequency are provided in **Figure 4-4**.





Combination of TTC, DRT and GO transit maps current to 2018

# 5 Planning Policy Review & Existing Land Use Conditions

This section reviews the provincial, regional and municipal planning policy framework in place within the Study Area. The intent of this review is to provide an understanding of the goals, objectives and built form that the policy framework aims to achieve. A summary of each of the policy documents listed in the work plan is provided.

The policy review is augmented by an analysis that quantifies the amount of land in each of the land use designations throughout the Study Area, as well as within each route segment. The project team identified a total of 49 land uses within the Study Area based on each respective municipal Official Plan. Official Plan land use designations were grouped into a set of standardized land uses that is applied across all municipalities within the Study Area. Combining land uses into broader categories allows the project team to take an approach to compare land use characteristics throughout the Study Area in a more straightforward manner.

Official Plan land use designations are categorized into the following standardized designations:

- Mixed-use;
- Residential;
- Multi-family Residential;
- Commercial;
- Institutional;
- Open Space;
- Industrial;
- Village;
- Rural;
- Centre; and,
- Other.

A description of each standardized land use designation can be found in **Section 5.1**.

The project team also quantified the amount of land in each land use designation by Official Plan designation and standardized designation. Quantifying the amount of land in each land use designation provides a basis for understanding the potential type and density of development that may be realized within the Study Area over the long-term. It also provides an insight into potential land use conflicts or synergies throughout the Study Area that informs the SWOT analysis, as well as the mitigation and monitoring measures.

# 5.1 Existing Land Use Conditions

This section provides a high-level overview of the land use designations that have been identified within the Study Area. **Section 5.2** includes a summary of the land acreage in each Official Plan land use designation for each municipality situated along the corridor to provide an insight into the distribution of uses along the corridor and the overall planning direction. This exercise compares the 11 standardized land use designations identified in **Section 4**.

**Appendix D** provides a table that identifies the Official Plan land use designations that have been consolidated to create the standardized land use designations established by the project team. The following provides a brief overview of each standardized land use designation.

- **Centre:** Areas identified as Centres that have a high concentration of activity and include a number of community services and facilities, as well as a wide variety of uses. These areas are community nodes that are planned for high-density development that provide connectivity to multiple transportation modes. Centres will contribute to achieving intensification goals and targets mandated by the Province. Centres include both Regional Centres as identified by Durham Region in its Official Plan, and Urban Growth Centres as identified by the Province in A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2019). The mapping in **Appendix A** identifies Urban Growth Centres.
- **Commercial:** Includes uses such as: retailing nodes, mixed employment, prestige employment, and general employment, as well as major and community commercial areas. In some instances, employment areas that include a number of commercial uses are designated commercial for the purposes of this exercise.
- **Industrial:** Includes areas designated for light, heavy, and prestige industrial uses. These areas are to be retained for business and supporting employment growth, where possible.
- **Institutional:** Areas that are zoned for institutional uses are included in this designation, which accommodate facilities such as schools, universities and health care services. These areas are important to support emerging economic sectors and the aging population.
- **Mixed-Use:** Growth is directed to mixed-use areas to achieve a number of planning objectives through allowing a variety of uses. Mixed-use areas and corridors in Official Plans are included. These areas will contribute to achieving intensification goals and targets that are mandated by the Province.
- **Residential:** Includes areas that are identified to accommodate lowrise, low-density primarily residential neighborhoods. Development or redevelopment in these areas is required to be compatible with the character and scale of existing surrounding communities.

- **Multi-Family Residential:** Comprises medium and high-density residential uses. These areas will contribute to achieving intensification goals and targets that are mandated by the Province.
- **Open Space:** Includes open space designations such as parks, natural areas, golf courses, cemeteries, active recreational areas, as well as natural heritage systems and urban river valleys as identified in the Greenbelt Plan. These uses intend to encourage healthy lifestyles and physical activity.
- **Rural:** The rural area designation only appears in the Ajax Official Plan. The Rural Area is part of the greenbelt and encompasses rural and agricultural lands, which contribute to establishing a permanent countryside.
- **Village:** Includes areas such as Hamlets and Village Regional Centres that are intended to serve the rural population, consisting of primarily single-detached dwellings, community uses, parks and limited commercial and employment uses.
- **Other:** This designation comprises utility corridors, roads, controlled access areas, and areas that have been deferred by Regional Council.

To remain consistent with the previous sections of the existing conditions review, this section first examines the Study Area as a whole, and then provides a summary of existing land use conditions by each municipality that is located within the Study Area.

### 5.1.1 Study Area Overview

The overview first provides an insight into the regional structure imposed by the Durham Regional Official Plan and the urban structure imposed by the City of Toronto Official Plan. It then transitions into a summary of the land area in each of the standardized land use designations within the Study Area, created by the project team. Additionally, land areas within each land use designation in each respective route segment is reported on.

In the Durham Region Official Plan (DROP), Kingston Road, which transitions into Dundas Street, is identified as a Regional Corridor and a Transit Spine, which are intended to promote public transit ridership through well designed, mixed-use development of higher densities. In July 2018, through Durham Regions Transportation Master Plan Amendment (ROPA #171), the Transit Spine designation has been updated to become a Rapid Transit Spine. Rapid Transit Spines within Regional Corridors are intended to support higher order transit services and pedestrian oriented development to connect residents to Urban Growth Centres, Regional Centres, and centres in adjacent municipalities. The DROP includes planning provisions that guide development in the Regional Centres, and along the Regional Corridor between the Regional Centres along Highway 2. In the City of Toronto Official Plan, the Scarborough Centre is identified as a centre and is also an Urban Growth Centre mandated by the Province as identified in A Place to Grow: Growth Plan for the Greater Golden Horseshoe. Urban Growth Centres are focal points for growth in the region. Additionally, Ellesmere Road is designated as a transit priority corridor that intersects with the GO Rail Line and current and planned TTC lines, providing connectivity to the greater transit system.

The Study Area is located in several jurisdictions. The jurisdictions and associated land area within each jurisdiction or Route Segment are provided in **Figure 5-1.** 

ROUTE SEGMENT	AREA (HA)	PERCENTAGE OF STUDY AREA
City of Toronto Route Segment	1,840.2	33.3%
City of Pickering Route Segment	1,223.74	22.1%
Town of Ajax Route Segment	1,081.56	19.5%
Town of Whitby Route Segment	824.82	14.9%
City of Oshawa Route Segment	564.45	10.2%
Durham Region Total	3,694.57	66.7%
TOTAL	5,534.77	100%

#### Figure 5-1: Land Area by Route Segment

As mentioned above, the Study Area encompasses a wide range of land use designations that have been standardized. The standardized land use designations and associated land area is displayed in **Figure 5-2**.

LAND USE	AREA (HA)	PERCENTAGE OF STUDY AREA
Centre	224.48	3.81%
Commercial	560.78	9.51%
Industrial	89.57	1.52%
Institutional	88.52	1.50%
Mixed-use	421.9	7.15%
Multi-Family Residential	237.94	4.03%
Open Space	1,114.16	18.89%
Other	318.26	5.40%
Residential	2,654.79	45.02%
Rural	121.83	2.07%
Village	64.84	1.10%
Total	5,897.07	100%

# Figure 5-2: Breakdown of Standardized Land Use Designations, Study Area

### 5.1.1.1 Areas with Low Growth Potential

Nearly 50% of the land area within the Study Area is designated for Residential uses. The majority of the residential land area identified is comprised of lowdensity uses such as stable neighborhoods, while roughly 4% is identified for high-density, multi-family residential uses. Residential uses are distributed along the entire corridor abutting commercial and mixed-use areas, as well as the Centres. A number of low-density, stable residential neighborhoods have already been built-out. It is not anticipated that these areas will redevelop over the short or medium-term. The second largest share of land area within the Study Area is designated for Open Space Uses. Open Space uses are also not anticipated to redevelop, as these areas will remain intact to preserve recreational spaces.

Other designations that are considered to have low growth potential are rural areas, village areas and other.

### 5.1.1.2 Areas with Medium and High Growth Potential

The project team has identified standardized land use designations that can support medium to high growth in order to inform the Strength, Weaknesses, Opportunities and Threats analysis, and to provide an overview of what portions of the Study Area are more receptive to redevelopment or intensification as a result of the project. Designations that have been identified as having high growth potential for the purposes of this exercise are: Centres, Commercial, Mixed-use, Institutional, and to a lesser extent Industrial uses. Together, these areas represent roughly 1,385 hectares, or 23% of the Study Area, and will continue to provide a number of trip generators for the project.

Of these medium to high growth areas, Commercial designations made up the largest share of acreage. These areas are scattered along the corridor, with notable areas being the Employment Area adjacent to Scarborough Centre, SmartCentres Pickering, a Prestige Employment zone surrounding Casino Ajax, as well as Downtown Whitby, Oshawa Centre, and Downtown Oshawa. These areas accommodate power retail, main street retail, office, and employment areas, which are generally surrounded by large, open surface parking lots to accommodate users and employees.

Centres and Mixed-use areas, which are designations that closely resemble each other in terms of permissions and growth potential, make up roughly 12.5% of the Study Area. Notable Centres and Mixed-Use areas within the Study Area include Scarborough Centre, Pickering City Centre, Ajax Uptown Regional Centre, the area surrounding the intersection of Dundas Road West and Thickson Road in Whitby, and Downtown Oshawa. These designations have the potential to accommodate intensification to create complete communities connected by transit.

Industrial and Institutional designations have the potential to intensify as well, albeit to a lesser extent than the designations noted above. In particular, the University of Toronto Scarborough Campus is the largest area that can accommodate institutional uses, which is also surrounded by large surface parking lots.

### 5.1.2 City of Toronto Route Segment

Almost half of the total land area in the City of Toronto Route Segment is identified for low-density, ground related residential uses, with the second largest share of acreage attributed to open space. Commercial and mixed-use areas represent roughly 13% of the City of Toronto Route Segment. Commercial and mixed-use land accommodates the Scarborough Centre, which is a focal point for growth in eastern Toronto, and the abutting employment area that accommodates a number of commercial and light industrial uses. There is also a mixed-use area surrounding the Kingston Road and Rylander Boulevard intersection.

Institutional designations make up 4% of the City of Toronto Route Segment. This is where the University of Toronto Scarborough Campus is situated, as well as the Scarborough Health Network at Ellesmere Road and Neilson Road. A hydro corridor cuts through the Toronto segment, which encompasses a multiuse path known as the Gatineau Hydro Corridor.

LAND USE	AREA (HA)	PERCENTAGE OF TORONTO SEGMENT
Commercial	74.72	4.06%
Institutional	75.19	4.09%
Mixed-use	162.3	8.82%
Multi-Family Residential	20.79	1.13%
Open Space	409.52	22.25%
Other	223.1	12.12%
Residential	874.58	47.53%
Total	1,840.2	100%

# Figure 5-3: Breakdown of Standardized Land Use Designations, City of Toronto Route Segment

# 5.1.3 City of Pickering Route Segment

Similar to the Study Area as a whole, half of the City of Pickering Route Segment land area is comprised of residential uses, with 41% being low-density residential uses adjacent to the Kingston Road corridor. The City of Pickering Route Segment has the highest share of land area dedicated to multi-family residential uses when compared to other route segments of the Study Area, providing opportunities for intensification and redevelopment surrounding the City Centre. The Pickering City Centre has also been designated as an Urban Growth Center by the Province through A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2019). Urban Growth Centres are focal points to accommodate growth in the Greater Golden Horseshoe.

The Pickering City Centre is a major growth area for the City of Pickering that is surrounded by mixed-use and commercial areas, which are also situated along the Kingston Road corridor. Together, these areas comprise roughly 29% of the Pickering Segment and will provide a number of trip generators, as well as intensification and redevelopment opportunities.

LAND USE	AREA (HA)	PERCENTAGE OF PICKERING SEGMENT
Centre	117.6	9.61%
Commercial	69.64	5.69%
Mixed-use	165.39	13.52%
Multi-Family Residential	134.36	10.98%
Open Space	135.64	11.08%
Other	92.2	7.53%
Residential	508.91	41.59%
Total	1,223.74	100%

# Figure 5-4: Breakdown of Standardized Land Use Designations, City of Pickering Route Segment

# 5.1.4 Town of Ajax Route Segment

A significant share of the land area within the Town of Ajax Route Segment is designated for low-density residential uses, with limited opportunities for future multi-family residential redevelopment. There is also a large share of the land area that is designated to accommodate rural and village uses, which encompasses Pickering Village. These areas have low growth potential and development must be compatible with the existing character of these neighborhoods.

The major node that is identified to accommodate growth and intensification within the Town of Ajax Route Segment is the Uptown Regional Centre, which encompasses the RioCan Durham Centre, as well as the surrounding commercial and mixed-use area, which includes Casino Ajax. Combined, these areas represent approximately 27% of the land area within the Town of Ajax Route Segment.

LAND USE	AREA (HA)	PERCENTAGE OF AJAX SEGMENT
Centre	106.88	9.88%
Commercial	166.28	15.37%
Mixed-use	22.67	2.10%
Multi-Family Residential	21.1	1.95%
Open Space	190.35	17.60%
Residential	402.47	37.21%
Rural	121.83	11.26%
Village	49.98	4.62%
Total	1,081.56	100%

# Figure 5-5: Breakdown of Standardized Land Use Designations, Town of Ajax Route Segment

# 5.1.5 Town of Whitby Route Segment

The Town of Whitby Route Segment encompasses Downtown Whitby, which is the commercial core that is intended to accommodate a compact, pedestrianoriented built form to support retail and personal service uses, as well as provide a range of housing types through intensification that are of higher density. Downtown Whitby also includes pockets of land zoned for institutional uses.

Areas adjacent to downtown are largely low-density residential designations. Residential uses make up over 50% of the land area in the Town of Whitby Route Segment. East of the downtown, along Dundas Street, there is a mixeduse and commercial corridor, which encompasses Thickson Place, the Whitby Mall and several businesses. The western-most portion of the Whitby segment is comprised of planned industrial uses that are compatible with the existing residential and proposed multi-family residential areas.
LAND USE	AREA (HA)	PERCENTAGE OF WHITBY SEGMENT
Commercial	74.95	6.31%
Industrial	89.57	7.55%
Institutional	13.33	1.12%
Mixed-use	71.54	6.03%
Multi-Family Residential	61.69	5.20%
Open Space	292.57	24.65%
Residential	568.61	47.90%
Village	14.86	1.25%
Total	1,187.12	100%

# Figure 5-6: Breakdown of Standardized Land Use Designations, Town of Whitby Route Segment

### 5.1.6 City of Oshawa Route Segment

A large share of the land area in the City of Oshawa Route Segment is dedicated to the Downtown Oshawa UGC, which is intended to serve as a major employment centre and a focal point for growth in the City. Development in the UGC will accommodate medium and high-density development, with some lowrise development. To the east of the UGC, as part of the City Centre Planning Area, is a large tract of land designated for commercial uses. This is where the Oshawa Centre is located, which has large surface parking lots and offers potential intensification and redevelopment opportunities.

The majority of land surrounding these areas is designated for low-density residential uses, as well as open space. Residential areas are largely built-out and will likely not intensify or redevelop in the short or medium-term.

LAND USE	AREA (HA)	PERCENTAGE OF OSHAWA SEGMENT
Centre	100.62	17.83%
Commercial	78.79	13.96%
Open Space	84.28	14.93%
Other	2.96	0.52%
Residential	297.82	52.76%
Total	564.47	100%

# Figure 5-7: Breakdown of Standardized Land Use Designations, City of Oshawa Route Segment

# 5.2 Provincial, Regional and Municipal Policy Review

This section provides a summary of the pertinent planning policy documents that govern land use within the Study Area.

# 5.2.1 Provincial Policy Statement (2020)

The Provincial Policy Statement (PPS) is issued under Section 3 of the Planning Act and provides provincial direction for land use planning and development decisions in Ontario that concern matters of provincial interest. The PPS is a consolidated statement that works together with provincial land use plans to provide a policy direction to support the long-term vision of creating strong and complete communities, sustained economic prosperity, and a clean and healthy environment. In May of 2020, the Ontario government released the amended Provincial Policy Statement, which replaced the 2014 iteration.

The PPS policy framework impacts the Project as it relates to efficient land use patterns, infrastructure and transportation systems, long-term economic prosperity, and natural heritage. Some relevant policies include:

- Promoting efficient development and land use patterns which sustain the financial well-being of the Province and municipalities over the long-term (1.1.1.A);
- Promoting the integration of land use planning, growth management, transit-supportive development, intensification and infrastructure planning to achieve cost effective development patterns, optimization of transit investments, and standards to minimize land consumption and servicing costs (1.1.1.E);
- Requiring transit-supportive development and prioritizing intensification, including potential air rights development, in proximity to transit, including corridors and stations (1.4.3.E);
- Transportation systems should be provided which are safe, energy efficient, facilitate the movement of people and goods, and are appropriate to address projected needs (1.6.7.1);
- Planning authorities shall plan for and protect corridors and rights-ofway for infrastructure, including transportation, transit and electricity generation facilities and transmission systems to meet current and projected needs (1.6.8.1);
- New development proposed on adjacent lands to existing or planned corridors and transportation facilities should be compatible with and supportive of the long-term purposes of the corridor and should be designed to avoid, mitigate or minimize negative impacts on and from the corridor and transportation facilities (1.6.8.3);
- The promotion of economic development opportunities and community investment readiness (1.7.1.A);

- An efficient, cost-effective and reliable multimodal transportation system that is integrated with adjacent systems and jurisdictions (1.7.1.G); and,
- Development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas, identified in policies 2.1.4, 2.1.5, and 2.1.6, unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.

# 5.2.2 A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2019)

A Place to Grow: Growth Plan for the Greater Golden Horseshoe (Growth Plan) is a long-term growth management framework for the region to ensure a strategic, comprehensive and integrated approach to guide population and employment growth to the year 2041. The Growth Plan works towards building economically thriving and affordable communities through delineating strategic growth areas and aligning infrastructure investments and networks in order to serve those growth areas effectively and to promote the efficient use of land.

Section 2.2.1 is focused on managing growth and outlines the vision for landuse planning and growth management for the Greater Golden Horseshoe. A primary objective of supporting future growth is to provide access to a range of transportation options that are easily accessible to support the realization of complete communities (2.2.1.4). The Growth Plan ensures a coordinated approach for future transportation investments and aims to achieve connectivity between transportation corridors and nodes regionally to encourage reduced reliance on private vehicles and minimize the associated greenhouse gas emissions to the greatest extent possible (3.2.2). Additionally, Section 3.2.3 states that public transit is the first priority for infrastructure investment and planning for the region in order to improve connectivity to Urban Growth Centres, Major Transit Station Areas, and other major transit nodes. Urban Growth Centres identified within the Study Area are Downtown Oshawa, Downtown Pickering and Scarborough Centre.

When completed, the Project will connect two Urban Growth Centers as identified in Schedule 2 of the Growth Plan. The Study Area also encompasses planned Strategic Growth Areas such as Regional Centres and Corridors, which are areas that are intended to accommodate higher densities along the route. Given that the Project is considered higher order transit, there is a potential for the Study Area to become a Priority Transit Corridor through an amendment to the Growth Plan, that would include the identification of Major Transit Station Areas (MTSAs) in the Study Area. A minimum density target of 160 residents and jobs combined per hectare is in place that must be achieved in MTSAs served by light rail transit or bus rapid transit.

# 5.2.3 Greenbelt Plan (2017)

The Greenbelt Plan was introduced in 2005 to support the Growth Plan and PPS to preserve natural environments and scenic landscapes that are considered ecologically and hydrologically significant. These areas include the Oak Ridges Moraine, the Niagara Escarpment, as well as some of the most productive farmland in Canada, referred to as the Agricultural System. The Greenbelt Plan identifies areas where growth and urbanization are not permitted in order to protect and preserve these ecologically and hydrologically significant areas. In addition, the Greenbelt Plan supports the efficient use of land and limits unmanaged growth to help deliver compact, complete communities that are transit-supportive.

The Project will run adjacent to lands within the Protected Countryside and Natural Heritage System as identified in the Greenbelt Plan. Approximately 654 hectares of the Study Area is identified as part of the Greenbelt Plan area, with 194 hectares being Natural Heritage Systems, 325 hectares the Protected Countryside, and 135 hectares Urban River Valleys. **Appendix A** provides mapping that identifies Greenbelt Plan Areas within the Study Area.

According to Section 3.2.2, Towns and Villages are not permitted to expand into the Natural Heritage System. Proposed infrastructure projects within the Protected Country Side are only permitted when appropriate infrastructure connections are provided to Urban Growth Centres that anticipate significant growth and economic development (4.2.1.1.b). The construction, expansion or extension of infrastructure shall minimize adverse impacts on the Greenbelt and shall avoid key natural heritage or hydrological features (4.2.1.2.a-b).

### 5.2.4 Durham Region Official Plan

The Durham Region Official Plan (ROP) builds on the direction of the PPS and Growth Plan to implement a coordinated approach to directing growth and development in Durham Region. The ROP was approved by the Ministry of Municipal Affairs and Housing in 1993, which replaced the former iteration prepared in 1976. A consolidated version was released in 2020.

The ROP imposes a regional structure that all local area municipalities must conform to. The regional structure delineates the urban area boundary, identifies regional centres and corridors and directs growth to these areas, as well as living areas, employment areas, and includes provisions regarding the greenlands system and the transportation system.

The goals of the ROP are centred on promoting growth that supports economic development and aligning infrastructure investments accordingly, providing housing options in Urban Areas that accommodate the social and economic needs of current and future residents, creating complete and sustainable communities, and managing resources in the region responsibly. One of the primary directions that underpins realizing these goals is to improve transportation linkages within the Region, as well as to adjacent areas.

Kingston Road, which transitions into Dundas Street, is identified as a Regional Corridor and a Rapid Transit Spine. Regional Corridors are intended to promote

public transit ridership through well designed, mixed-use development of higher densities, as well maintain and enhance historical main streets through integrating new forms of development with existing development patterns (8A.1.5). As mixed-use areas of higher density, Rapid Transit Spines within Regional Corridors are intended to support higher order transit services and pedestrian oriented development to connect residents to Urban Growth Centres, Regional Centres, as well as centres in adjacent municipalities (11.3.18).

# 5.2.5 City of Toronto Official Plan

The City of Toronto Official Plan is in place to guide the growth and development of the City to the year 2031. The latest Official Plan consolidation that includes all currently approved and in effect amendments was released in February 2019, which replaced the previous iteration of the consolidated Official Plan in June 2015. The original certified documents were approved in July, 2006 by the Ontario Municipal Board.

As part of the plan's growth strategy, the land use designations that are anticipated to absorb the majority of future growth are: Mixed-use Areas, Employment Areas, Regeneration Areas, and Institutional Areas. Many properties that comprise the Centres and Avenues are designated as Mixed-Use Areas, which permit a number of commercial, residential, institutional and open space uses. The Study Area encompasses the Scarborough Centre, which is situated at the end of the Scarborough Rapid Transit Line. The vision and anticipated development for the Scarborough Centre is covered in **Section 5.2.13**.

In total, the City of Toronto Route Segment makes up a 33% share of the entire Study Area in terms of land area.

LAND USE	AREA (HA)	PERCENTAGE OF TORONTO SEGMENT
Apartment Neighborhoods	20.79	1.13%
Core Employment Areas	41.18	2.24%
General Employment Areas	33.54	1.82%
Institutional Areas	75.19	4.09%
Mixed-use Areas	162.3	8.82%
Natural Areas	325.69	17.70%
Neighborhoods	874.58	47.53%
Other Open Space Areas	3.65	0.20%
Parks	80.18	4.36%
Roads	178.24	9.69%
Utility Corridors	44.86	2.44%
Total	1,840.2	100%

# Figure 5-8: Official Plan Land Use Breakdown, City of Toronto Route Segment

# 5.2.6 City of Pickering Official Plan

The City of Pickering Official Plan builds on the Durham Region Official Plan policy framework to set out the land use policy direction to guide the long-term growth and development of the City to the year 2031. The most recent Official Plan consolidation, Edition 8 was released in October 2018.

The land directly adjacent to Kingston Road is primarily comprised of Mixed-use Areas with a portion of the corridor encompassing the Pickering City Centre. In the 1970s there was a shopping mall built on the land that the Pickering City Centre is situated on. In the 1980s and 1990s, the area began to see expansion with higher density development. Today, the City Centre is one of many provincially designated Urban Growth Centres, which has the highest diversity and intensity of uses throughout the City, including higher density residential, office, shopping, civic and recreational uses, and includes a GO Station.

The City Centre is anticipated to continue to have the highest mix and intensity of uses and activities of all neighborhoods, in order to transform the area into a liveable, walkable and human-scaled neighborhood (12.10, 12.10A). Mixed-use Areas subcategories include: Local Nodes, Community Nodes, Mixed Corridors, Speciality Retailing Nodes and the City Centre. These areas and corridors are

intended to accommodate the highest concentration of development activity in the City, as well as community services and facilities.

A significant share of the City of Pickering Route Segment is designated as Low-density Areas. The majority of these areas are fully built-out and will likely not experience a great deal of redevelopment in the short to medium-term.

The City of Pickering Route Segment makes up a 22% share of the Study Area in terms of total land area.

# Figure 5-9: Official Plan Land Use Breakdown, City of Pickering Route Segment

LAND USE	AREA (HA)	PERCENTAGE OF PICKERING SEGMENT
Active Recreational Centres	10.55	0.86%
City Centre	114.61	9.37%
Controlled Access Areas	92.2	7.53%
High-density Areas	6.31	0.52%
Local Nodes	2.99	0.24%
Low-density Areas	508.91	41.59%
Medium Density Areas	128.05	10.46%
Mixed-Corridors	137.03	11.20%
Mixed Employment	7.14	0.58%
Natural Areas	125.09	10.22%
Potential Multi Use Areas	28.36	2.32%
Prestige Employment	32.01	2.62%
Specialty Retailing Node	30.49	2.49%
Total	1,223.74	100%

# 5.2.7 Town of Ajax Official Plan

The Town of Ajax Official Plan conforms to the regional policy direction to manage physical, social and economic development and change within the Town over a 25 year period. The most recent iteration of the Official Plan was consolidated in January 2016. The original iteration of the Official Plan was approved for the entire municipality in 2000, which later was brought into conformity with provincial plans and policies in 2008 and 2010.

The Town of Ajax Route Segment comprises both a Village Regional Centre, as well as an Uptown Regional Centre. Regional Centres are intensification areas that are planned to absorb the majority of urban growth and development, which require higher density development formats that encompass a wide variety of land uses. These uses include retail, commercial, office, cultural, entertainment, community facilities, as well as medium to high transit-supportive density residential uses.

The largest retail commercial focus in the Town is the Uptown Regional Centre, which is envisioned to become a primary intensification area, as it is a central location with significant commercial and mixed-use potential. Improvement of transit nodes is required to support the intended densities of the Uptown Regional Centre, which are to be provided in immediate proximity to existing commercial uses.

The Village Centre, known as Pickering Village, contains a number of heritage assets and has an old village character that is intended to be preserved. The vision for Old Kingston Road is intended to become a thriving shopping street that is pedestrian-oriented. A more detailed overview of the Pickering Village Heritage Conservation District is provided in **Section 5.2.17**.

A large share of the land area adjacent to the Centres is made up of Lowdensity Residential uses, along with areas zoned for Environmental Protection. These areas will not likely experience a great deal of development over the short to medium-term.

The Town of Ajax Route Segment makes up a 19% share of the Study Area in terms of total land area.

Figure 5-10:	Official Plan	Land Use I	Breakdown, '	Town of A	jax Route
Segment					

LAND USE	AREA (HA)	PERCENTAGE OF AJAX SEGMENT
Environmental Protection	143.24	13.24%
General Employment	33.4	3.09%
High-density Residential	3.64	0.34%
Low-density Residential	402.47	37.21%
Medium Density Residential	17.46	1.61%
Midtown Corridor	18.53	1.71%
Mixed Commercial Corridor	4.14	0.38%
Open Space	47.11	4.36%
Prestige Employment	132.88	12.29%
Rural Area	121.83	11.26%
Uptown Regional Centre	106.88	9.88%
Village Regional Centre	49.98	4.62%
Total	1,081.56	100%

### 5.2.8 Town of Whitby Official Plan

The initial Town of Whitby Official Plan was adopted by Council in 1994 and approved by Durham Region Council in 1995. Since then, there have been a number of iterations released that have incorporated various amendments, with the most recent consolidation in June 2018.<sup>1</sup>

The majority of the land situated within the Town of Whitby Route Segment is designated Residential, Mixed Use, and Major Open Space. The goal in residential areas is to create complete communities that are safe and attractive through developing and redeveloping neighborhoods with a diversity of housing options and ancillary uses (4.4.1.1). Permitted ancillary uses include recreational, institutional, and community uses. Residential intensification is encouraged in suitable locations and must maintain or enhance the character and identity of existing residential neighborhoods. New development and

<sup>&</sup>lt;sup>1</sup> A subsequent office consolidation was prepared in August 2021. This report reflects the June 2018 office consolidation.

redevelopment in these areas is to be transit-supportive and focused on pedestrian-oriented design (4.4.2.3).

Along Dundas Street East, there is a large swath of land that is designated Mixed-use and Major Commercial, generally from the rail line west of Anderson Street to Garrard Road. This area is identified in Schedule B as an intensification area. Intensification areas are where the majority of intensification is expected to occur over the planning horizon.

Mixed-use areas situated in intensification areas are intended to encourage both residential and commercial development and redevelopment that is comprised of a built form that is intensive and transit-supportive (4.6.2.1). Permitted land use designations in these areas include: residential, office, retail, restaurant, personal service, and community and/or institutional uses.

The Town of Whitby Route Segment also encompasses Downtown Whitby, which is another intensification area that is primarily designated Commercial, and surrounded largely by medium to high-density residential uses, as well as institutional uses. The Downtown Whitby Secondary Plan is summarized in **Section 5.2.18**.

The Town of Whitby Route Segment makes up a 14% share of the Study Area in terms of total land area.

LAND USE	AREA (HA)	PERCENTAGE OF WHITBY SEGMENT
Community Commercial	3.91	0.44%
General Industrial	13.14	1.47%
Major Commercial	29.8	3.34%
Major Open Space	256.15	28.70%
Mixed-use	56.49	6.33%
Prestige Industrial	76.4	8.56%
Residential	465.32	52.15%
Total	892.21	100%

# Figure 5-11: Official Plan Land Use Breakdown, Town of Whitby Route Segment

# 5.2.9 City of Oshawa Official Plan

The City of Oshawa Official Plan is a policy framework that is in place to the guide the land use planning system to direct the physical development and redevelopment pattern of the City. The most recent official consolidation of the Official Plan was updated and released in September 2019.

The majority of the City of Oshawa Route Segment is comprised of land designated Residential. Residential uses are predominately used to

accommodate residential dwellings, with other uses such as schools, places of worship, nursing homes, homes for the aged, day care centres and libraries permitted. The majority of the residential area within the Oshawa segment is built-out; it is unlikely that these areas will redevelop in the short to medium-term.

The second largest share of land within the City of Oshawa Route Segment is designated as the Downtown Oshawa Urban Growth Centre (UGC), which is an Urban Growth Centre established through the Growth Plan for the Greater Golden Horseshoe. The UGC is a Central Area that encompasses a Planned Commercial Centre, as well as a Planned Commercial Strip along King Street. Central Areas are intended to become the focal points of activity and development, interest and identity for residents.

The UGC is envisioned to serve as a major employment centre and as such is a primary focus area for major office uses, and will accommodate a built form that is compact and affords residents the ability to access commercial, retail, institutional, recreational, and cultural uses, and entertainment. Higher density residential uses, public services and the planned Central Oshawa Transportation Hub are intended to be located in the UGC.

The City of Oshawa Route Segment makes up a 10% share of the Study Area in terms of total land area.

LAND USE	AREA (HA)	PERCENTAGE OF OSHAWA SEGMENT
Deferred by Regional Council	2.96	0.52%
Downtown Oshawa Urban Growth Centre	100.62	17.83%
Commercial	78.79	13.96%
Open Space and Recreation	84.28	14.93%
Residential	297.82	52.76%
Total	564.47	100%

# Figure 5-12: Official Plan Land Use Breakdown, City of Oshawa Route Segment

# 5.2.10 Durham Region Transportation Master Plan (2017)

The Durham Region Transportation Master Plan ("the TMP") provides strategic planning policy direction to guide the development of programs and infrastructure required to manage expected long-term transportation demands in the Region. The primary directions of the TMP are to:

• Ensure that the transportation network supports compact, mixed-use land patterns; and,

• Strengthen the role of public transit in meeting travel demand, making walking and cycling more practical to promote sustainable travel choices, while improving goods movement and making strategic investments in the transportation system.

These strategic directions support the following goals that are relevant to the Project:

- Ensure direct, safe and accessible connectivity between existing transportation networks and new neighborhoods (3.4.1);
- Promote Transit Oriented Development to create clusters of compact, high-density development in close proximity to current and planned transit infrastructure to support achieving intensification targets, and to drive transit ridership to capitalize on infrastructure investments (3.4.3);
- Deliver a convenient and reliable transit system through providing service options for residents in urbanized areas within walking distance to residences or workplaces, enhance connections between rural areas and nearby population centres, and introducing transit to developing areas as early as possible through service agreements (4.4.1);
- Utilize Higher Order Transit Corridors such as Highway 2 and Simcoe Street to provide connectivity to major destinations like Regional Centres, Transit Hubs, and Urban Growth Centres (4.4.6); and,
- Ensure new development will support sustainable travel through development regulations and approvals (7.4.10).

# 5.2.11 Durham Regional Cycling Plan (2012)

The 2012 Durham Regional Cycling Plan (DRCP) proposes a cycling and active transportation network plan that aims to expand the existing network and enhance routes to accommodate a variety of users and trip types. Durham Region is currently undertaking an update to the DRCP that is anticipated to be released in late 2020.<sup>2</sup>

The active transportation facilities proposed as part of the Durham-Scarborough BRT project were developed based on the proposed cycling network upgrades and expansions in the DRCP.

There are several existing and planned cycling facilities that intersect the BRT corridor in Durham Region. To compliment the Project, the proposed cycling facilities will provide a larger, more connected active transportation network. According to the network phasing, the balance of cycling network upgrades are expected to be completed within the 2017 to 2032 timeframe.

<sup>&</sup>lt;sup>2</sup> Durham Region Cycling Plan was updated in 2021. This report reflects the 2012 plan.

### 5.2.12 Highland Creek Secondary Plan (2012)

The Highland Creek Secondary Plan area is located north and south of Kingston Road, between Sheppard Avenue and Morningside Avenue within the Study Area and encompasses a portion of the Project route. The Highland Creek Community includes the University of Toronto Scarborough campus, residential areas characterized by detached dwellings on spacious, treed lots, and the mixed-use Highland Creek Village, which forms the core of the Highland Creek Community.

The policies within the Secondary Plan are focused on preserving the character of existing residential uses and supporting new infill that is compatible with this character. The built form in residential neighborhoods is primarily single detached dwellings with spacious treed lots. Highland Creek Village is envisioned to become re-urbanized into a vibrant mixed-use, pedestrian focused community that will promote a variety of new commercial and residential building types to attract new businesses and residents to the community.

### 5.2.13 Scarborough Centre Secondary Plan (2018)

The Scarborough Centre Secondary Plan was approved in 2005 to support the vision of becoming an urban focal point for eastern Toronto that comprises a mix of uses and community services that are well connected to transit. The Centre is situated at the core of an employment corridor along Highway 401 at the western edge of the Study Area at Ellesmere Road and McCowan Road, which has a growing population and a mix of uses that include retail, government, institutional, employment and residential. Scarborough Centre is an Urban Growth Centre identified in the Growth Plan that covers roughly 180 hectares, and is one of four designated Centres in the City of Toronto.

Scarborough Centre is expected to experience a great deal of population and employment growth over the next 30 years - upwards of 40,000 residents and 23,000 jobs, as a result of development, redevelopment, and public sector investments. Realizing this growth potential is contingent on having the required transportation infrastructure in place to ensure adequate mobility to and from the Centre.

The City of Toronto is currently undertaking a focused review of the Scarborough Centre Secondary Plan. The intent of this study is to update and further articulate the secondary plan by clarifying and updating the vision, planning framework and policies of the plan, while also recognizing the significant investment in civic infrastructure with new station entrances and a new bus terminal associated with the Scarborough Subway Extension. The study will guide and support positive change and placemaking over the coming decades and support the development of Scarborough Centre as a vibrant urban node.

### 5.2.14 Scarborough Centre Transportation Master Plan (2018)

In May 2018, Official Plan Amendments 408 and 409 were adopted by Toronto City Council as a result of the Scarborough Centre on the Move Transportation

Master Plan Study. The associated by-laws came into force in June 2018. The Scarborough Centre is located at the west end of the Study Area at the intersection of Ellesmere Road and McCowan Road.

The development of the transportation network that will support growth in the Scarborough Centre will be guided by the Scarborough Centre on the Move Transportation Master Plan Study in order to provide greater connectivity the rest of the City and the greater region. The Scarborough Centre on the Move Transportation Master Plan Study is intended to foster a public realm that is attractive to people and employers, offer mobility options for users of all ages, abilities, and incomes, and support the future growth and development of the Scarborough Centre.

One of the primary objectives of the Scarborough Centre on the Move Transportation Master Plan Study vision is to create a transportation network that will be fully integrated into the regional transportation system. This includes transit, pedestrian and cycling networks, as well as connections to neighbouring communities. Current changes to the transportation network include extending the Bloor-Danforth Subway from Kennedy Station to Scarborough Centre. In total, there are 16 proposed projects to improve the transportation network, one of which is the Durham-Scarborough Bus Rapid Transit project. One of the pillars that supports these projects as part of the master plan is to integrate land use and transportation.

Small development blocks have been recommended in the Scarborough Centre on the Move Transportation Master Plan Study to spur high-density, mixed-use development that is supportive of transit use, with the overall goal of reducing dependency on private vehicles.

# 5.2.15 University of Toronto Scarborough Campus Master Plan (2011) and Proposed Secondary Plan

The University of Toronto Scarborough Campus (UTSC) has experienced robust growth over the past decade and is located within the Study Area at the intersection of Ellesmere Road and Morningside Avenue. This growth has allowed the campus to transition from a satellite campus into a mid-sized university. To prepare for future growth, UTSC implemented a master plan for the campus in 2011 that is based on a new vision for campus expansion. The document guides the development of the built environment to ensure that any expansions are compatible with the surrounding community, integrate a mix of land uses, are well-connected by transit and active transportation networks, and feature pedestrian-centered design.

Growth will be focused on the North Campus precinct, which is located along Military Trail and Ellesmere Road. The vision for this area is to accommodate a mix of uses through mid-rise and high-rise development, connected by open space and pedestrian routes. The Campus Core, located at the intersection of Military Trail and Ellesmere Road, will be the focal point of the campus. This area is envisioned to become a high-density, mixed-use hub that encompasses office and residential uses. Retail, restaurant, entertainment and cultural uses will also be integrated to support the surrounding community. There is a rapid transit station planned to be accommodated within a mixed-use building in the Campus Core, which will provide connectivity to the greater region and is envisioned to be a point of convergence for multiple travel modes.

The guiding principles that underpin the master plan include maximizing transportation options, with the intention of transit becoming the primary means for enhancing access to campus. Streetscape improvements, which include bicycle lanes, will be focused along rapid transit corridors. Pedestrian and bicycle networks are envisioned to connect to transit stops, to provide a seamless network capable of facilitating active transportation throughout the campus.

The University has proposed a new Secondary Plan for the campus. This proposal was submitted to the City for review as an Official Plan Amendment application in 2016. The objective of this document is to guide future growth and development of a campus that is compact and integrated, connected, open and green. It is intended to guide the growth of the campus to support a long-term projected future population of approximately 35,000 students and 2,500 faculty and staff. The draft Secondary Plan is currently under review.

# 5.2.16 Kingston Road Corridor and Specialty Retailing Node Intensification Study (2019)

The Kingston Road Corridor and Specialty Retailing Node Intensification Study is an ongoing project in South Pickering, located within the Study Area along Kingston Road from Altona Road to Dixie Road. The Study is aimed at creating a new vision and strategy for intensification and redevelopment along the Kingston Road corridor and within the Speciality Retailing Node to prepare the area for infill and redevelopment. The area is planned to transition into a vibrant, mixed-use and transit supportive community as part of the City's larger Growth Management Program.

The Study builds on the South Pickering Intensification Study, otherwise known as Phase 1, which developed a suite of key themes, including direction to focus on intensification and higher density development along Corridors like Kingston Road. From this work, Phase 2 of the study established a preferred intensification scenario that is centred on the Kingston Road Corridor and Speciality Retailing Node. The Specialty Retailing Node is defined as the area east of Brock Road and south of Kingston Road. Phase 3 is now closed and resulted in an Intensification Plan and Draft Urban Design Guidelines.

The Recommended Intensification Scenario is broken out into four precincts with tailored land-use strategies that are in place to improve the connectivity, place-making, land-use and built form in each precinct. The precincts and associated planned residents and jobs at build-out based on potential redevelopment sites are listed below.

### 5.2.17 Pickering Village Heritage Conservation District Plan (2013)

Pickering Village is a neighborhood in the Town of Ajax that comprises a collection of heritage buildings and open spaces that are of significance to the

community. The District is located along Old Kingston Road within the Study Area, generally between Church Street North and Elizabeth Street, with heritage buildings on either side of Elizabeth Street. The Pickering Village Heritage Conservation District Plan was established to preserve the heritage buildings and open spaces to maintain the character of the community's only historic main street.

Infill development in the District must enhance the heritage character and be compatible with the village-like, human scale of development. Development on adjacent lands to the District must demonstrate that the heritage attributes of the District will be preserved. New residential buildings will have a similar height, width, setback, design and orientation as adjacent buildings, and should not be less than 80% or more than 120% of the average height of adjacent properties. New commercial buildings cannot exceed 4 stories or a height of 12.5 metres.

### 5.2.18 Downtown Whitby Secondary Plan (2017)

The Downtown Whitby Secondary Plan<sup>3</sup> is in place to guide growth and development in Downtown Whitby to enhance the role of the downtown as a focal point and foundation of identity for the Town. Downtown Whitby is located in the Study Area, surrounding the intersection of Dundas Street East and Brock Street.

The primary objectives of the plan are to foster a compact, pedestrian-oriented built form in order to support the retail and personal service uses within the commercial core, as well as provide a range of housing types through intensification that are of higher density. Redevelopment and intensification must ensure that stable neighborhoods, and buildings of architectural and historical significance are preserved. In this regard, the character of the downtown ought to be maintained or enhanced through redevelopment. Efficient movement of traffic through the downtown is a priority in order to curb traffic congestion to the greatest extent possible.

Within the downtown, commercial designations permit retail, personal service, offices uses, entertainment, open space, institutional and parking uses. Retail and service uses are to be located on the ground floor in order to maintain the main street character, with a minimum height of two storeys. The use of public transit to and from the downtown will be encouraged. As such, the downtown will continue to act as an integral node of convergence for the Town's transit system.

# 5.2.19 West Whitby Secondary Plan (2014)

The West Whitby Secondary Plan is in force to ensure that significant natural heritage features and ecological functions situated within the Secondary Plan Area are protected or enhanced. As part of the Secondary Plan, development must have regard for the approved Lynde Creek Watershed Plan. The West Whitby Secondary Plan area is located within the Study Area, at the intersection of Dundas Street West and Halls Road North.

<sup>&</sup>lt;sup>3</sup> The Downtown Whitby Secondary Plan review is underway at the time of writing. This report reflects the 2017 version.

The Plan also encourages the development of an integrated transportation system that minimizes the impact on the natural environment. When designing Arterial Roads, public transit will be a priority to ensure that required facilities such as stops, shelters, and dedicated lanes are built into the arterial road network. Higher density development is promoted along Arterial Roads, which is to be supported by a pedestrian-oriented, transit supportive environment.

# 5.2.20 Werden's Plan Neighbourhood Heritage Conservation District (2017)

In 1994, as part of the Town of Whitby Official Plan adoption, there was a policy direction to examine identifying Downtown Whitby or a portion thereof as a heritage conservation district. The heritage conservation district is located in the Study Area, at the intersection of Dundas Street and Centre Street. The formation of the draft Werden's Plan Neighborhood Heritage Conservation District Plan commenced in 2014 by the Town of Whitby Council to identify and protect the neighborhood as a heritage conservation district. The draft plan was reviewed by Town Planning staff in 2016 and received approval from the Local Planning Appeal Tribunal on May 13, 2019.

The intent of the Plan is to manage the long-term physical change of the neighborhood in a manner that preserves the small-town, historic character of the area. This will be achieved through aligning land use to the neighborhoods existing character in order to maintain the low-density residential appearance. The Plan specifies neighborhood changes that would trigger a heritage review, and those that are exempt from heritage review. The Plan does not exclude redevelopment in the area, however, the opportunities for new construction are limited to additions to existing buildings or to new single-detached dwellings on lots that have been identified for building replacement. The Plan discourages widening any Town roadway or road allowance in the district.

# 5.2.21 Town of Whitby Transportation Master Plan Study (2010)

The Town of Whitby Transportation Master Plan Study is a strategic policy planning document that is intended to support the development of a diversified transportation network to underpin long-term growth and the efficient movement of people and goods. One of the fundamental principles of the Study is to integrate the local transportation system with Regional and Provincial transportation infrastructure and transit services. As part of this, the transportation system should provide for all trip types and uses, which include accommodating residents, businesses and visitors. This requires that the transportation system supports greater use of transit, pedestrian and cycling facilities in order to curb automobile dependence.

In order to encourage and facilitate public transit, Section 8 of the Plan includes the following actions:

 Position land use planning and local road network decisions to support transit usage in order to realize the 15% auto mode share reduction target;

- Develop a Transit Oriented Development Policy to establish guidelines for Greenfield development and intensification around primary transit corridors and nodes. This includes aligning the urban structure, mix of land uses, density of development, and distances to transit facilities to support transit-supportive development;
- Encourage high-density development with mixed-uses in locations at origins and destinations;
- Promote mixing compatible land uses and live/work opportunities; and,
- Implemented as required to provide strategic connections to existing infrastructure, which will maximize and integrate mobility opportunities for people and goods.

### 5.2.22 City of Oshawa Integrated Transportation Master Plan (2015)

The Oshawa Integrated Transportation Master Plan is in place to provide a framework to guide the long-term growth of the transportation system in Oshawa in order to build a balanced, sustainable, and multi-modal network. Section 5 of the Plan put forward a number of goals that are largely centred on improving mobility, alleviating congestion, and encouraging sustainability through promoting and providing access to multiple modes of transportation.

In order to realize these goals, the Plan identifies a number of action items. These action items include:

- Facilitate the development of and connectivity to the two designated Mobility Hubs located in Downtown Oshawa and around the Oshawa Go Train Station. This includes amending land use planning policy and zoning regulations to maximize intensification of land uses and transit-oriented development surrounding mobility hubs;
- Improving connectivity in the downtown through providing a variety of transportation options and repurposing the road network with people in mind;
- Ensure that active transportation is a priority in planning moving forward through adhering to the Active Transportation Master Plan in order to develop a comprehensive active transportation network; and,
- Increase transit ridership through providing active transportation linkages to mobility hubs, other transit stations and stops.

### 5.2.23 Oshawa Urban Growth Centre Community Improvement Plan (2020)

5.2.24 The Oshawa Urban Growth Centre Community Improvement Plan provides a framework for improvement Project Area, in order to encourage residential and economic growth in the Urban Growth Centre. The Plan defines five programs to address a number of opportunities in Oshawa's Urban Growth Centre, including residential growth and intensification, commercial growth and

#### entrepreneurship, economic development, and downtown beautification. The plan sets out objectives to achieve population and employment density at five year intervals to 2031.Ajax Integrated Transportation Master Plan (2019)

The Town of Ajax recently released an Integrated Transportation Master Plan to guide transportation planning in the Town over the short, medium and long-term planning horizons. The Plan is a multi-modal planning tool that is intended to improve walking, cycling, public transit, and driving in Ajax to the year 2031 and beyond.

The objectives of the Plan are to address the impact that population and employment growth will have on the transportation network, align the plan with Provincial and Regional government policies, enhance community benefits, respond to new transportation trends, and encourage public engagement and participation in decision making. The Plan emphasizes the importance of integrating active transportation systems in order to support the achievement of a multi-modal transportation network.

The Plan aims to:

- Shift the existing travel mode split to have 30% of all commuter trips accommodated by transit, cycling and walking by 2031 (1.5);
- Apply complete streets polices to all existing, retrofitted and new transportation projects and provide multi-function street corridors to better provide accessibility and access to different users (6.1.4); and
- Integrate land use planning in infrastructure projects to promote short distance trips and reduce auto dependency (6.1.6).

# 6 Streetscape Policy Review

This section provides a summary of the policy documents that provide direction related to streetscape and urban design within the Study Area, including streetscape and landscape design guidelines and policies from applicable Secondary Plans, Precinct Plans, and any other relevant planning initiatives.

The intent of this review is to understand the streetscape and landscape design guidelines, policies and directions in place along the corridor to help inform the streetscape design for the DS BRT system.

# 6.1 City of Toronto

# 6.1.1 Markham-Ellesmere Revitalization Study (2009)

The Revitalization Study provides additional detail on the Site and Area Specific Policy Number 311 in Chapter 7 of the City's Official Plan described in section 5.2.5. The Study presents a conceptual Master Plan for the area around Ellesmere Road and Markham Road, recommending improved pedestrian connections, additional traffic signals, new road connections, and tree planting in the public realm. Additionally, planted medians are proposed on Ellesmere Road to enhance safety and restrict turning movements. The Study provides direction on intersection conditions that will inform the streetscape design. The document also includes land use related policies for Parks and Open Space, Mixed Use Development/Commercial Uses, New Residential Development, Potential Tower Renewal and Built Form. This Study will be consulted with regards to roadway and streetscape design in the area.

# 6.1.2 Scarborough Centre Public Space + Streetscape Master Plan (2012)

Scarborough Centre is bordered by Highway 401, Ellesmere Road, Brimley Road and McCowan Road. The Public Space and Streetscape Master Plan provides an approach and implementation strategy to shape outdoor public space through creating a pedestrian scaled grain of streets, a connected network of legible urban spaces, and a cohesive landscape and streetscape palette. Ellesmere Road has been proposed as an Arterial Corridor within the Streets Hierarchy. Streetscape and open space recommendations will be considered in the design the Scarborough Centre area.

# 6.1.3 Highland Creek Community Secondary Plan (2017)

The Highland Creek Community Secondary Plan area seeks to ensure that development and infill reinforces the spacious residential character of the area. Ellesmere Road is in the centre of the Highland Creek Secondary Plan area. One of the major policy objectives is to create a comfortable pedestrian environment and transition to protect adjacent neighbourhoods. Preservation of mature trees and enhanced landscaping is encouraged.

### 6.1.4 University of Toronto Scarborough Campus Master Plan (2011)

The Campus Master plan provides a vision, master plan, and implementation strategy for the University of Toronto Scarborough Campus. The Plan provides recommendations for the open space network, and prioritizes mobility. The modal split indicates that 35% of trips to campus are by transit and 10% by cycling, with an initiative to grow these modes. The Plan also recommends that transit is integrated into the campus, with transit stops serving as important hubs that seamlessly connected to active transportation networks.

# 6.1.5 Scarborough Centre on the Move Transportation Master Plan Study (SCTMP 2018)

The SCTMP builds off of the pre-existing planning framework to provide detailed transportation policies, initiatives, strategies, and implementation priorities to transform Scarborough Centre into a vibrant mixed-use urban hub. One of the key Guiding Principles of the TMP is serving people through providing transportation modal choices that encourage sustainable transportation and integration of different transportation modes. The Plan recommends a ROW width of 36 metres for Ellesmere Road adjacent to the centre. The BRT corridor design should integrate with the SCTMP design strategy.

# 6.1.6 Complete Streets Guidelines

The Guidelines provides a vision and goals for fostering complete streets in the City of Toronto. The document outlines a variety of street types and provides guidelines and standards for the design of complete streets, including the pedestrian realm, cycling infrastructure, green infrastructure, transit design, roadway, and intersection design. These guidelines will be consulted for functional design of the City of Toronto portion of the corridor.

# 6.1.7 Cycling Network Plan

The City's cycling network plan will inform the type of cycling facilities along the corridor.

# 6.1.8 Eglinton East LRT (EELRT) Design

The Eglinton East LRT design is at the 5% conceptual design phase. There is overlap between the EELRT and the DS BRT project between Morningside Avenue and Military Trail, where the right-of-way is relatively narrow. In this area, the DS BRT will run in the curb lanes to accommodate the LRT.

# 6.2 Durham Region

# 6.2.1 Durham Region Official Plan

The Durham Region Official Plan, described in Section 5.2.4, provides classification for the road network and land uses which inform the more specific planning studies, as well as the BRT corridor design.

# 6.2.2 Arterial Corridor Guidelines (2007)

The Arterial Corridor Guidelines provide standards for Arterial Road design within Durham Region, and serve as the basis for the roadway and streetscape design. The Guidelines provide a framework for the transportation priorities along the corridor, including the types of transportation infrastructure recommended and their geometry. The Guidelines also provide recommended street tree species.

# 6.3 City of Pickering

### 6.3.1 City Centre Urban Design Guidelines (2017)

The Urban Design Guidelines provide a vision and guidelines for the City of Pickering City Centre, including built form, landscape, and mobility networks. The document prioritizes an integrated mobility system including transit, pedestrian and cycling networks. Recommendations are made for the type of roadway infrastructure that should be implemented on different road classifications. Guidelines are established for 2.5 to 3.0 metre wide sidewalks on arterial roads, with pedestrian space for street furnishing, tree planting, transit shelters, and sidewalk cafes etc. in high pedestrian areas. Guidelines are also provided for transit stops and hubs, transit networks, street tree planting, street furnishing, street lighting, cycling networks, and pedestrian crossing.

### 6.3.2 Downtown Pickering Vision & Redevelopment Framework (2013)

The document provides a vision and strategies for mobility, the public realm, place-making, sustainability, built form, growth, and implementation for Downtown Pickering. Kingston Road is classified as a Major Street within the Street Network, with a conceptual cross section provided illustrating the BRT corridor with a pedestrian zone, bike lane, landscaped area, and landscaped centre median that is transition into a transit platform over time. Policy recommendations are provided for transit, pedestrian, and cycling infrastructure.

# 6.3.3 Kingston Road Corridor and Specialty Retail Node Urban Design Guidelines (2019)

The Intensification Study provides a vision and recommendations for built form, place-making, and connectivity for the Pickering Kingston Road Corridor. The document provides a framework for the existing conditions, land use, proposed future intensification and built form, and mobility improvements around Kingston Road from Altona Road to Squires Beach Road. The corridor is broken down into four Precincts: Rougemount Precinct, Whites Precinct, Dunbarton/Liverpool Precinct, and Brock Precinct. The Downtown Pickering Study Area is not included in the study, as this area has been captured in the Downtown Pickering planning documents. The Study outlines a cycling network (existing and/or planned) along the entirety of Kingston Road within the corridor. The study also provides design guidelines for transit infrastructure.

### 6.3.4 Kingston Road Corridor and Specialty Retail Node Intensification Plan (2019)

The Intensification Plan provides a comprehensive framework and strategy for development along the Kingston Road corridor in the City of Pickering. The document outlines detailed plans for land use, built form, and area character, establishing place-making priorities related to natural heritage, public realm and open space. Improvements to the street, transit, cycling, and pedestrian network are recommended. The Cycling Network recommendations propose on-street bike lanes or in-boulevard cycling tracks, and/or Multi-Use Paths for new streets.

# 6.4 Town of Ajax

# 6.4.1 Design Criteria (2011)

The Ajax Design Criteria provides an overview of the Town's Engineering review processes and design standards. Relevant Sections include: Section B Roadways, Section C Stormwater Management and Storm Drainage, Section D Storm Drainage Connections, Section F Traffic and Signs, Section G Street Tree Planting, Section I Street Lighting and Section M Street Furniture. These standards will be referred to throughout the design process.

# 6.4.2 Employment Areas Urban Design Guidelines (2006)

The Guidelines provide clear urban design criteria to be incorporated within development proposals for employment areas, including the public realm. The three major areas of employment areas are outlined as Carruthers Creek Employment Properties, Established Core Area, and Audley Road Area. Notion Road Area is also listed as subject to a land use and urban design study jointly prepared by the Town of Ajax and City of Pickering (2001). The document prioritizes creating a legible identity for the Town through urban design, celebrating heritage, and enhancing multi-modal linkages. Recommendations are made for the employment area public realm including creating active street edges, ensuring a balance of unity and variety in urban form, promoting complete streets, investing in highly visible and utilized streets, and providing landscape buffers where there are larger setbacks.

# 6.4.3 Pickering Village Community Improvement Plan (2013)

The Pickering Village Heritage Conservation District extends north of Kingston Road West from Elizabeth Street to Church Street North. The Community Improvement Plan builds off of the vision of Pickering Village, providing tools to stimulate implementation. The vision includes ensuring "Old Kingston Road becomes a vibrant, thriving, beautiful shopping street filled with pedestrians at all times of day" and "streetscapes and sidewalks are attractive and inviting both for passersby and pedestrians." The vision is elaborated on through principles and evaluation criteria that include increasing pedestrian friendliness and cycling amenities, enhancing connectivity, and preserving and enhancing the heritage character.

# 6.4.4 Urban Design and Built Form Guidelines for Pickering Village (2008)

Pickering Village extends along Kingston Road east of Duffins Creek to Rotherglen Road South, and along Church Street south to Highway 401. The Guidelines provide a framework for the public realm, streetscape design, and built form in the area. The Guidelines seek to support an active pedestrian realm through streetscape elements such as trees, benches, signage and lights, and reinforce the character of the area. The document outlines that transit stops should be treated as important public places. The Guidelines seek to utilize the streetscape as a unifying element for the neighbourhood with a strong identity. Streetscape guidelines are provided for street furniture, lighting, paving, planting, signage, public art, and utilities.

### 6.5 Town of Whitby

# 6.5.1 West Whitby Community Urban Design / Architectural Design Guidelines (2016)

The West Whitby Community is bound by Lyndebrook Road to the north, Whitby's existing Built Boundary to the east (west of Lynde Creek), Highway 401 to the south, and Lake Ridge Road to the west. The document provides a vision and guidelines for sustainability, public realm design, low-rise, mid-rise and high-rise development design, mixed-use and non-residential design, and implementation in the West Whitby Community. The Guidelines set out to foster a vibrant, high quality, cohesive and complete urban community through ensuring the urban design is appropriate to the local context, environmentally sustainable, achieves design excellence in the pedestrian realm, respects natural features, creates an attractive and safe public realm, and supports active transportation and trail connections. The Guidelines identify Dundas Road West east of Lynde Creek as a Mixed-Use Node, with the surrounding areas as Gateway Areas. Dundas Road West is identified as a Type 'B' Arterial Road, with a Proposed Walkway / Multi-Use Path / Bike Way.

### 6.5.2 Downtown Whitby Action Plan (2016, 2019)

The Action Plan provides the Vision, Goal, Objectives, and Action Items to guide Downtown Whitby towards renewal. The Plan's Objectives are to: enable new opportunities for a prosperous and innovative Downtown, create Downtown Whitby as a walkable pedestrian-focused destination, inspire and enhance cultural life, and cultivate downtown connections and promotions. Promoting walkability is a key Objective to the plan, with Action Items including supporting a pedestrian friendly historic core around Brock Street and Dunas Street, providing urban forest canopy, and developing a Streetscape Improvement Master Plan. The intersection of Dundas Street and Brock Road has been identified as an activated Commercial Area.

The Downtown Whitby Action Plan Update provides updates to the 2016 Action Plan, including additional information on the Business Improvement Area (BIA).

#### 6.5.3 Landscape Plan Guidelines for Site Plan and Subdivision Developments

The document provides guidelines for landscape site plan submissions including street tree requirements, utility clearance requirements, and landscape standards and specifications.

# 6.6 City of Oshawa

### 6.6.1 Oshawa Downtown Streetscape Design Vision

The Oshawa Downtown Streetscape Design Vision (O.D.S.D.V) guides development within the public realm, with a focus on the Downtown Oshawa Business Improvement Area. The document provides a streetscape vision that centres on the core principles of functionality, aesthetics, accessibility, safety, environment, and seasonality.

# 7 Existing Streetscape Conditions Review

The BRT corridor is comprised of various land use and physical contexts across multiple municipalities. Because the route passes through multiple jurisdictions, there are several standards for streetscape elements and multiple existing and planned right-of-way widths. A site visit was conducted to confirm existing conditions along the corridor.

Generally, the corridor is not comprised of an active public realm and does not have high volumes of pedestrian activity or active transportation use. The policy direction speaks to the need for public realm improvements, including upgrades that will increase walkability and active transportation connections along the corridor. The project provides an opportunity to upgrade the public realm and use the streetscape design to celebrate the natural and cultural heritage features along the corridor.

# 7.1 Pinch Points

There are five pinch point areas with particularly constrained right-of-way conditions: Ellesmere Road in Scarborough (Military Trail to Meadowvale Road and Meadowvale Road to Kingston Road), Pickering Village in Ajax, Downtown Whitby, and Downtown Oshawa. A site visit was conducted to confirm streetscape conditions in these areas in order to identify where typical streetscape typologies will need to be modified. A memo documenting the existing conditions is included in **Appendix E**.

# 7.2 Typical BRT Corridor

Generally, the corridor does not have an activated street edge. With the exception of some commercial mixed-use areas, urban / town centres and institutional areas, the streetscape is predominantly adjacent to strip malls and commercial establishments buffered with surface parking, some naturalized areas, and some low-density residential uses. These uses do not typically encourage pedestrian activity along the streetscape. Some areas along the corridor will likely intensify. In the areas that are not likely to transform into active street edges, appropriate streetscape treatments should be used that provide safe and comfortable travel for pedestrians and cyclists.

# 7.3 Green Space and Open Space Areas

The BRT corridor passes through several naturalized and open space areas, including Highland Creek / Greenvale Park, Colonel Danforth Park, the Rouge Valley, South Petticoat Ravine, Steeple Hill Park, Diana Princess of Wales Park, Duffin's Creek, and Lynde Creek. Trail systems pass through these areas.

The streetscape existing conditions generally do not celebrate the connections to these naturalized areas and systems or provide sufficient active transportation connections or wayfinding. The BRT streetscape provides an opportunity to strengthen multi-modal connectivity to these areas and create gateways to announce and celebrate the entry into these spaces.

# 8 Streetscape Vision and Guiding Principles

To stitch together the variety of land uses and drive design decisions, Streetscape Vision and Guiding Principles were developed. The Vision and Guiding Principles provide a foundation for the streetscape design by outlining goals and priorities.

# 8.1 Streetscape Vision

The DS BRT project provides the opportunity to significantly transform the corridor by increasing access and activity in the area. The influx of transit users along the corridor can be capitalized on to develop a more vibrant and pedestrian-oriented corridor. Based on the policy direction determined through the streetscape policy review, input from the PWG and stakeholders, it is clear that there is a desire to apply complete street principles and foster a strong sense of place. **Figure 8-1** outlines key words that are central to the vision for the DS BRT streetscape.

### Figure 8-1: Key Words used to Inform Streetscape Vision



To guide the DS BRT streetscape design, the following vision statement was developed in response to the policy framework and stakeholder input:

"The DS BRT streetscape design will foster a safe and accessible multi-modal network connecting communities. The streetscape design will be contextsensitive, while showcasing a unique sense of place. The DS BRT corridor will encourage the use of public transit and promote social equity and economic prosperity, while protecting environmental resiliency. "

# 8.2 Streetscape Guiding Principles

A set of guiding principles were developed to guide the streetscape design. These principles provide a direction for what the DS BRT Streetscape aims to achieve in the long-term. Due to property and budgetary constraints, it may not be feasible to implement all the guiding principles at the project's outset. Resources should be focused on key areas which are most heavily used or require additional attention. As the corridor matures and transforms into a more vibrant corridor over time, the streetscape should continue to be enhanced.

The Streetscape Guiding Principles are illustrated in Figure 8-2:

# Figure 8-2: Streetscape Guiding Principles





# **Cohesive Identity**

Though there are varying land use and physical conditions along the DS BRT corridor, a cohesive BRT streetscape identity will aid in wayfinding and recognition of the route. This identity will be established through the shelter design, the look and feel of the BRT running way, and the streetscape design and material palette.



# **Context Driven**

The streetscape design should be flexible to respond to the varying existing and future corridor contexts. Streetscape typologies will be developed to aid in establishing context-driven design options. The streetscape design should be flexible enough to adapt to the surrounding context, as well as the varying needs of the corridor throughout the year.



### Safety

Safety of streetscape users has been identified as a particularly important guiding principle. Safety should be considered in all design decisions, including the streetscape design. Safety of road users can be enhanced by providing ample pedestrian clearways and clearly demarcated cycling infrastructure with buffers where appropriate. Intersection designs must prioritize safety of all users, through such means as tactile warning strips, clearly marked crosswalks, right-sized curb radii at corners, and proper lighting.



### **Pedestrian-Oriented Environment**

The streetscape should enhance the pedestrian environment, providing a spacious pedestrian clearway with an ample pedestrian realm in key areas. Intersection treatments should foster safe and easy crossing for pedestrians.



#### **Complete Streets**

The streetscape should serve all users, providing infrastructure for transit users, pedestrians, cyclists, and vehicles. Users with varying abilities should be considered throughout the streetscape design. Space within the right-of-way should be shared between all users, with right-sized elements to encourage safe transportation of pedestrians, transit users, cyclists, and vehicles.



# **Cycling & Active Transportation**

Active transportation is encouraged along the corridor to reinforce a vibrant, safe, and well used corridor. Cycling infrastructure will be incorporated that is context responsive and informed by policy and guidelines put in place by Municipal and Regional bodies.



### **Environmental Resilience**

Environmental resilience should be incorporated into the streetscape design, where feasible. Green infrastructure and Low Impact Development techniques, such as the potential for green stormwater management, low maintenance plant species selection, and light paving colours, can aid in creating an environmentally resilient corridor. Further, encouraging active transportation and transit use will add to the resilience of the corridor.



#### Sense of Place

The streetscape design should work to reinforce a unique DS BST sense of place along the corridor, while also highlighting and celebrating the many neighbourhoods along the corridor. The streetscape should foster vibrant street life, where appropriate. Where there is a current or planned activated street edge, through mixed-use establishment, key destinations, or active green space, amenities and streetscape elements should be provided that enhance this vibrancy.



# **Heritage Preservation**

Cultural and natural heritage along the corridor should be protected and celebrated through the streetscape design. Districts with a sense of cultural heritage should be celebrated through the design and materiality of the streetscape. Connectivity to natural heritage is also key to the streetscape design.

# 9 Streetscape Typologies

It is important that the streetscape design respond to the unique conditions along the corridor. Accordingly, context-sensitive streetscape typologies were developed to provide a framework for the streetscape design within four general contexts. The streetscape typologies provide a general framework for the key elements of the streetscape design along the corridor. The typologies serve as the initial classification. As more detailed design is undertaken for the corridor, the typologies will provide a framework in which specific context conditions will be overlaid to refine the streetscape design. The streetscape typologies aid in informing the following key factors:

### **Streetscape Elements**

The streetscape typologies aid in informing what types of infrastructure will be incorporated into the streetscape. For instance, the volume of pedestrians and cyclists in an area will inform whether street trees should be placed within hardscape in grates (with soil cells) to optimize the pedestrian realm space, or if a lower cost option such as street trees in sod is more appropriate given the segment's context and use. The context will also aid in informing the presence, type, and frequency of streetscape furniture and wayfinding elements.

#### **Streetscape Geometry**

The streetscape typologies aid in establishing the necessary size of streetscape elements to accommodate all users, as well as how the elements relate to one another. The geometry includes the width of the pedestrian clearway, cycling infrastructures, and the placement of streetscape elements within the cross section. Additionally, the typologies provide guidelines for the spacing of street trees, and street furniture. Regional and municipal streetscape and design guidelines will be adhered to.

#### Materiality

The streetscape typology will help to define the appropriate materiality of the streetscape. The usage of the segments will help to determine if concrete or unit pavers should be employed, if sod is appropriate, or if raised planters should be implemented. Some elements of the materiality may shift while maintaining a consistent look and feel along the corridor.

Four general typologies have been established to drive the streetscape design along the DS BRT corridor (**Figure 9-1**):



### Figure 9-1: DS BRT Streetscape Typologies

# 9.1 Urban Streetscape Typology

### Context

The Urban streetscape typology will be applied in areas with more dense development patterns such as downtowns and city centres. This includes areas with mixed-use development, particularly when the uses foster an active street edge, transportation hubs, employment area uses that could foster an active pedestrian environment, as well as more densely populated residential areas.

Areas that provide access to key destinations are also appropriate for the Urban streetscape typology. Additionally, the typology could be applied to intensification areas identified in local and regional policy. The typology is informed by the current context conditions, as well as the future conditions.



#### Figure 9-2: Example of Urban Precedent

Precedent Image: vivaNext Bus Rapid Transit Rendering, York Region

### Features

The Urban streetscape typology is intended to cater to areas with a high-level of streetscape activity. As a result, ample amenities should be provided in these areas. The streetscape typology will include elements such as:

### **Ample Pedestrian Clearway**

Generous sidewalks widths should be provided to accommodate high volumes of pedestrian activity. In key areas, the look and feel of the sidewalk may be specialized to celebrate significant areas.

### **Urban Street Trees**

Street trees should be utilized to create a pleasant sense of place and provide shade, to reduce the urban heat island effect in more developed areas. In constrained areas, the street trees should be situated in grates with soil cells (in line with the municipal standards) to optimize pedestrian space. In unconstrained areas, street trees can be planted in raised planters.

### Placemaking Elements (e.g. BIA banners, planters, hanging baskets, etc.)

Investment in placemaking elements such as banners, planters, and hanging baskets, should be focused within the Urban streetscape typology, where they will be more widely utilized and seen due to the high volumes of users in these areas. There is possibility to collaborate with Business Improvement Associations (BIAs) for the styling and funding of these elements. These unique placemaking elements will aid in establishing a unique sense of place in key areas along the corridor and can allow for neighbourhood branding.

#### **Flexible Public Realm**

In instances where there is availability for additional public realm spaces, such as parklets, parkettes, or small plaza spaces, these spaces can be enhanced within the Urban segments of the corridor. Flexible public realm spaces can provide opportunities to activate the public realm through pop up markets and community events.

#### **Street Furnishing**

In the Urban segments of the corridor warrant investment in street furnishing such as benches and waste receptacles. This type of pedestrian amenity can help enhance the vibrancy of the area and limit littering.

#### **Wayfinding Features**

In key areas, wayfinding features can help road users identify key destinations and reinforce neighbourhood identities.

#### **Pedestrian Scale Lighting**

Pedestrian scale lighting may be provided in key areas to enhance the sense of place and provide additional visibility to increase pedestrian safety.

### 9.2 Campus Streetscape Typology

#### Context

The Campus streetscape typology is intended to drive the streetscape design along areas of the corridor that are adjacent to campus settings, such as educational institutions, hospitals, and other institutional land uses. These areas are likely to see an influx of users of specific demographics, such as students. The areas area also may see significant peak usage periods, i.e. directly before or after classes.



#### Figure 9-3: Example of Campus Precedent

Precedent Image: University Avenue Gateway Master Plan Rendering, Waterloo

#### Features

These segments must incorporate the influx of users (students, or employees) that may occur at peak times. The Campus streetscape should provide strong multi-modal connectivity and flexible pedestrian spaces. Additionally, the streetscape should provide clear wayfinding to campus amenities and aid in reinforcing the campus sense of place. The streetscape typology will include elements such as:

#### **Ample Pedestrian Clearway**

Generous sidewalk widths can be provided in these segments to accommodate the high volumes of pedestrians. The pedestrian clearway should consider the potential influx of pedestrians during peak periods, such as before and after common class times.

#### **Street Trees and Planting**

Street trees will be utilized in these areas to reinforce a campus sense of place and provide shade for users. In highly utilized areas or areas with constrained ROWs, the street trees should be situated in grates with soil cells (in line with the municipal standards) to optimize pedestrian spaces. In more spacious areas, street trees can be planted in raised planters with additional planting.

#### **Gateway / Wayfinding Features**

Wayfinding features can be employed to help users find key campus destinations and reinforce campus identities. Campus gateways should be incorporated in key areas to celebrate the campus and provide additional wayfinding for transit users.

#### **Flexible Public Realm**

Flexible public realm spaces can provide opportunities to activate the campus public realm through pop up markets and campus events. These spaces will likely be situated on campus lands.

#### **Street Furnishing**

In the campus segments of the corridor which have high volumes of pedestrians, investment in street furnishing such as benches and waste receptacles, should be prioritized. This type of pedestrian amenity will help to enhance the vibrancy of the area and limit littering.

#### Seamless Connection between Streetscape and Campus

The connectivity between transit and active transportation networks within the streetscape and the campus should be optimized.

#### **Pedestrian Scale Lighting**

Pedestrian scale lighting may be provided in key areas to enhance the sense of place and provide additional visibility to increase pedestrian safety.

# 9.3 Typical Streetscape Typology

#### Context

Most of the corridor will fall under the Typical streetscape typology. The typical segments of the route are more suburban in nature and do not contain particularly active street edges. Low density residential, industrial, and rural land uses commonly fall under the Typical streetscape typology.

#### Figure 9-4: Example of Typical Precedent



Precedent Image: Eglinton Crosstown Light Rail Transit Rendering, Toronto
#### Features

The Typical streetscape typology prioritizes the safe and effective movement of transit and active transportation users, while buffering uses adjacent to the streetscape, where necessary. The streetscape typology will include elements such as:

#### **Pedestrian Clearway**

A pedestrian clearway that meets Municipal and Regional standards should be provided along the entirety of the corridor. These areas are expected to have less pedestrian activity; therefore, the minimum requirement should be sufficient.

#### Low Maintenance Green Infrastructure & Large Canopy Street Trees

Green infrastructure should be incorporated wherever feasible to improve environmental resiliency. Within the Typical streetscape typology section, street trees, likely in sod, should be included in the streetscape wherever feasible.

Low maintenance green infrastructure such as sod or ornamental grasses should be considered where street trees is not feasible

## **Street Furniture in Key Locations**

Street furniture such as benches and waste receptacles should be focused in key areas with high volumes of transit users and pedestrians.

## 9.4 Naturalized Streetscape Typology

## Context

The Naturalized streetscape typology applies to areas where the DS BRT connects to naturalized areas, such as ravines, creeks, and significant parkland.

## Figure 9-5: Example of Naturalized Precedent



Precedent Image: Eglinton Crosstown Light Rail Transit Rendering, Toronto

## Features

The Naturalized streetscape typology celebrates green space by bringing green infrastructure into the streetscape, optimizing connectivity to these spaces, and providing gateways and clear wayfinding. The streetscape typology will include elements such as:

## Low Maintenance Green Infrastructure

Within the Naturalized streetscape typology, green infrastructure can spill out to the streetscape, helping to identify and celebrate these green connections. Low maintenance green infrastructure is recommended, such as rain gardens or sod. This green infrastructure can also aid in mitigating flooding issues in key areas.

## Native / Non-Invasive Species

The species selection in these segments should be native, or non-invasive to avoid negative impacts to the adjacent green spaces.

## **Gateway / Wayfinding Features**

Wayfinding features can be implemented to help users find connections to adjacent green spaces and reinforce the areas' sense of place. Trail connection gateways should be incorporated in key areas to celebrate the entry into these networks.

## 9.5 Typology Map

Based on a review of existing and future land use, built form and active transportation and traffic volumes, the typologies were applied to the BRT stops along the corridor. **Figure 9-6** illustrates which of the four streetscape typologies should be applied at each BRT stop location.



#### Figure 9-6: Streetscape Typology Map

## 9.6 Demonstration Areas

To illustrate how the streetscape typologies could be applied along the corridor, six demonstration areas were chosen to develop streetscape design. The demonstration areas were selected to represent the varied land use, urban forms, and pedestrian activity levels that are present within the study area. The locations are also geographically distributed, with at least one demonstration area within each of the local municipalities. The demonstration areas are as follows:

1. Ellesmere Road and Neilson Road – Campus Typology

The intersection of Ellesmere Road and Neilson Road is located in Toronto and is adjacent to Centenary Hospital. The Campus streetscape typology will be applied in this location. The design should strive to accommodate high volumes of pedestrian activity, prioritize multi-modal connectivity, and include adequate wayfinding and signage (**Figure 9-7**).



Figure 9-7: Rendering of Ellesmere Road and Neilson Road

2. Kingston Road and Altona Road - Naturalized Typology

The intersection of Kingston Road and Altona Road is located in Pickering, adjacent to the Rouge Valley. The Naturalized streetscape typology will be applied in this location. The design should strive to enhance connectivity and celebrate the natural feature by incorporating natural elements such as native plant species.

3. Kingston Road and Liverpool Road – Urban Typology

The intersection of Kingston Road and Liverpool Road is located in Pickering, within the Downtown Urban Growth Centre. The Urban streetscape typology will be applied in this location. The design should strive to include placemaking elements such as public art and accommodate high volumes of pedestrian activity (**Figure 9-8**).



Figure 9-8: Rendering of Kingston Road and Liverpool Road

4. Kingston Road and Church Street – Urban Typology

The intersection of Kingston Road and Church Street is located in Ajax, within Pickering Village. The Urban streetscape typology will be applied in this location. The design should strive to include elements that reflect the character of Pickering Village and accommodate high volumes of pedestrian activity (**Figure 9-9**).



Figure 9-9: Rendering of Kingston Road and Church Street

5. Dundas Street and Annes Street – Typical Typology

The intersection of Dundas Street and Annes Street is located in Whitby. The Typical streetscape typology will be applied in this location. The design should strive to balance the needs of various road users while considering the available space and existing uses (**Figure 9-10**).

## Figure 9-10: Rendering of Dundas Street and Annes Street



## 6. Bond Street and Park Street – Urban Typology

The intersection of Bond Street and Park Street is located in Oshawa. The Urban streetscape typology will be applied in this location. The design should strive to include elements that reflect the character of Downtown Oshawa and accommodate high volumes of pedestrian activity (**Figure 9-11**).

Figure 9-11: Rendering of Bond Street and Park Street

# 10 Strengths, Weaknesses, Opportunities and Threats Analysis

The project team completed an analysis to identify strengths, weaknesses, opportunities and threats associated with the Study Area (SWOT). The SWOT builds on the existing conditions review and was utilized to provide input into the identification of potential construction and operational impacts, as outlined in **Section 11**.

The SWOT analysis focuses on four primary areas:

- Land Use and Growth Potential;
- Trip Generators;
- Network Connections; and
- Streetscape.

The following provides a summary of the SWOT for each of the four primary areas examined. Refer to **Appendix F** for the full SWOT analysis.

## 10.1 Land Use and Growth Potential

Land use designations are separated into high growth and low growth designations as described in **Section 5.1.1.1** and **Section 5.1.1.2**. The SWOT for this component is based on growth potential.

## 10.1.1 High Growth Areas

The project will connect three Urban Growth Centres identified in the Growth Plan (2019) located within the Study Area, as well as other high growth areas. Planned infrastructure investments have been directed to these areas and secondary and master planning exercises are underway, with mixed-use development of higher densities planned. These planning exercises will help establish transit supportive densities and will help development proceed in a timely manner to support the project.

While this magnitude of growth is being planned for, it may take up to 25 years to realize this growth, given planning approvals, infrastructure investments, and construction take time. Several areas identified for high growth have already built out and redevelopment of these areas may not occur in the medium-term and will have unique redevelopment challenges. Market demand in these areas may soften over the buildout horizon, and there are multiple stakeholders that that may have differing interests. Planned infrastructure investments may not be realized due to funding constraints and residents may be resistant to higher density development. These factors may present potential challenges to realize transit supportive densities along the corridor.

## 10.1.2 Limited Growth Areas

Limited growth areas will provide an existing ridership base for the project in the early stages of operation. These areas may have a strong community character

that has been developed over time. The limited growth areas have established retail and services, multi-use pathways, open spaces, parks, and recreational spaces that will have enhanced access due to the project. Redevelopment in these areas will add additional potential future ridership, while keeping the community character intact.

Limited growth areas are not likely to provide a significant increase in future transit ridership and some lower density residential areas do not have direct access to the project, which may serve as a barrier. North/south connections must be offered to provide access to these areas. Residents in limited growth areas may choose to drive instead of using transit, meaning they may not contribute to increased transit ridership.

## 10.2 Trip Generators

Trip generators are separated into institutions, major office and business clusters in higher density centres and downtown areas, power retail nodes, main street retail, and community facilities. The SWOT for this component is based on the type of trip generator being examined.

The project will provide enhanced transit access to existing trip generators, which include retail and services that the community requires to accommodate daily needs and employment clusters that are accessed on a regular basis. Existing institutions such as the University of Toronto Scarborough Campus have plans to grow and intensify, which will provide potential further future transit ridership in addition to the ridership that existing trip generators provide. Further transit ridership and improved streetscape design will encourage pedestrian traffic, which will help support existing trip generators.

The development pattern along the corridor is auto-centric. Businesses are often accompanied by an ample supply of surface parking that is free to use, which encourages private vehicle use. Business clusters are typically located a large distance from each other and are separated by low-rise residential and open space uses, which may prohibit continuous redevelopment along the corridor. Power retail nodes have been located close to highway interchanges to provide easy private vehicle access, further encouraging automobile use to access these facilities. Encouraging a shift in travel mode split will be a primary challenge.

## 10.3 Network Connections

Network connections are separated into regional transit, local transit, highways and arterials, and active transportation. The SWOT for this component is based on the type of network connection being examined.

The province has enacted a policy framework that directs growth to areas where transit investments are being made to optimize the use of infrastructure by helping to establish transit-supportive development patterns. Through the 2041 Regional Transportation Plan, Metrolinx has committed to planning for and investing in a regional transit network that provides seamless transit connectivity throughout the GTHA, one of the fastest growing regions in North America. This

network plan will help establish that growth areas in the Study Area will be connected to the greater region, and that gaps in local transit can be mended. Highways and arterials will provide ample goods movement opportunities for major centres and employment areas along the corridor. Active transportation improvements planned as part of the project will help to address gaps and deficiencies in the network.

While regional and local transit investments are planned to provide enhanced connectivity, it will take time to acquire funding and build the network. Connectivity gaps will exist in the interim. North/south connections must be planned to support an effective network that connects to transit hubs along the route. Fare integration must be implemented to provide transit users the ability to easily transfer between regional and local transit affordably. First and last mile challenges will continue and must be addressed.

## 10.4 Streetscape

The streetscape component of the SWOT is based on the design qualities and attributes of the streetscape in the Study Area.

Certain areas along the corridor such as Pickering Village have a strong sense of place and streetscaping that promotes pedestrian traffic through a wide and walkable pedestrian realm. Design principles in these areas can be applied to other areas along the corridor that lack a sense of place. The existing transit and pedestrian infrastructure along the corridor can be upgraded or retrofitted to support the project and will encourage pedestrian traffic. Many areas have a wide pedestrian realm that can undergo retrofitting to help establish an attractive streetscape.

While there are select areas along the corridor that have a strong sense of place and streetscaping, the character of the road is auto-oriented in many segments. These areas have little sense of place or sense of arrival into downtown areas. Some areas also have inconsistent street furnishings and degraded streetscape elements. The project provides an opportunity to transform auto-oriented into roadways with elements of complete streets, and to bundle the delivery of streetscape infrastructure with the delivery of transit infrastructure.

# 11 Impacts, Mitigation and Monitoring Measures

This section outlines the assessment of project's potential impacts on the socioeconomic and land use environments within the Study Area and provides recommendations for mitigation and monitoring measures.

This assessment addresses the following three elements:

- Demographics and Community Resources;
- Existing Businesses; and
- Land Uses.

The impact assessment identifies potential impacts during the construction and operational phases of the project. Mitigation and monitoring measures are recommended to help minimize or eliminate potential negative impacts.

The severity of the potential impacts identified for this assessment will be uneven throughout the Study Area. This is the case given that there are varied land use and socio-economic conditions and because construction will take place at different segments of the corridor at different points in time. Construction is anticipated to commence in 2025, and due to the length of the corridor, construction will be completed in three phases. As such, businesses, community resources, and land uses in different route segments of the corridor may experience the potential impacts for a longer or shorter duration during construction, with the varied severity.

Given the length of the route, and the fact that conditions may change during the construction period, more granular work must be completed as the design is refined and construction phases unfold to identify appropriate mitigation and monitoring measures. The following mitigation and monitoring measures should be revisited to account for the changing conditions, when and where appropriate.

## 11.1 Summary of Recommended Plans and Assessments

Several action plans and assessments are recommended as part of the mitigation measures for the various elements in the following sections. Each action plan and assessment is described below.

The recommended plans must conform to the jurisdictional requirements and regulations in each municipality. Developing these plans will provide a tailored approach in each jurisdiction that can also be aligned with the phasing of the project. The following plans and assessments are recommended as part of mitigation measures:

• **Signage and Wayfinding Action Plan:** Directs vehicle and pedestrian traffic through the Study Area during construction by identifying appropriate locations for signage and types of signage required. Signage will help establish that that community resources, businesses and institutions are accessible during project construction and that movement within the Study Area is managed effectively. Metrolinx will consult

business owners when developing the Signage and Wayfinding Action Plan prior to construction;

- Emergency Response and Incident Management Plan: Develop a framework to respond to different types of emergencies that may occur in the Study Area. This includes ensuring that emergency vehicles will have enough space to navigate the Study Area during peak traffic periods, that emergency vehicles are provided with sufficient turning radius to access incident sites, and that infrastructure built into the street such as fire hydrants are always accessible;
- Haul Route Analysis and Truck Route Plan: The corridor encompasses arterial roads that accommodates heavy truck traffic. A haul route analysis must be completed to confirm that heavy single unit trucks are not subject to detour routes through residential areas, review turning radius for safe operation on detour routes, and that heavy single unit trucks can safely and easily access loading and unloading facilities both during construction and post-construction. Metrolinx will consult business owners when developing the Plan prior to construction;
- Traffic Management and Control Plan: Works together with the Signage and Wayfinding Action Plan, Emergency Response and Incident Management Plan, and Haul Route Analysis to direct traffic through the Study Area successfully during construction. Transit stop locations may need to be temporarily relocated during construction. Such changes should be identified and communicated to the local community, businesses, and the travelling public. Access routes for cyclists and pedestrians should be included. This plan will help establish the ways that all road users travelling within the Study Area can operate safely and efficiently. Metrolinx will consult business owners when developing the Plan prior to construction;
- **Dust Management Plan:** Works together with the Signage and Wayfinding Action Plan to identify measures in the Study Area that can be applied during and post construction to reduce the amount of dust created and areas where signage should be placed to communicate these measures throughout the Study Area;
- **Curbside Management Plan:** Identifies how curbside operations will be altered during construction to communicate to businesses, institutions, community resources and service providers how to successfully manage their day to day processes, especially in areas that front onto the corridor, such as in downtown Whitby and downtown Oshawa;
- Business Retention and Management Plan: Project construction may cause businesses to experience a loss of revenue due to access interruptions. This plan will help establish supports to retain existing businesses in the Study Area through understanding concerns by completing consultations with business improvement areas, business owners and other applicable stakeholders. Metrolinx will consult business owners when developing the Plan prior to construction and share

outcomes and supports to businesses to clearly communicate available supports; and

- Community Liaison Committee: Prior to the start of construction, create Community Liaison Committees to meet and review the detail design, provide more feedback, and stay up to date on project process and the construction schedule.
- **Tree Inventory Assessment:** A tree inventory should be undertaken to document the health and location of each tree in the Study Area, which can be compared to tree conditions after construction is complete.

## 11.2 Demographics and Community Resources

**Section 3.2** provides an existing condition review of the community resources available in each respective route segment of the Study Area. The community resources that were examined as part of the existing conditions review include schools, libraries, parks, cemeteries, and community centres.

This section outlines the potential impacts to these community resources during the construction and operational phases of the project, as well as mitigation and motoring measures to address the potential impacts.

## 11.2.1 Potential Impacts

## 11.2.1.1 Construction

The potential impacts to demographics and community resources that are anticipated during the construction phase include:

- Pedestrian and cycling infrastructure may be closed during construction for an extended period, potentially resulting in pedestrian and cycling infrastructure gaps;
- Safety concerns when using pedestrian and cycling infrastructure such as bike lanes and sidewalks due to reduced lanes and parked construction equipment;
- Driveways, sidewalks, cycling facilities and transit stops of community resources that front onto Ellesmere Road, Kingston Road, Dundas Street, Bond Street and King Street may have access interrupted during construction;
- Access to community resources may be reduced;
- In the case of an emergency, emergency services such as police or fire may have difficulty accessing community resources due to reduced lanes and road closures. Infrastructure built into the streetscape, such as fire hydrants, may also be difficult to access in the construction zone during an emergency; and
- Potential nuisance impacts related to dust, emissions, and noise from operating construction equipment for community resources and users of pedestrian and cycling infrastructure.

## 11.2.1.2 Operations

The potential impacts to demographics and community resources that are anticipated during the operational phase of the include:

- Given the high traffic volume and speed of arterial roads, cycling facilities may be unsafe without a separated bike lane, which is why separated facilities are proposed along the majority of the corridor;
- As the corridor intensifies and accommodates additional population, there will be further demand created for community resources to uphold current service levels. Demand for services should be examined by each municipality as the corridor intensifies;
- As the corridor intensifies and accommodates additional population, there will be further demand for open space and parks. Demand for open space and parks should be examined by each municipality as the corridor intensifies;
- It is expected that the project will have a positive impact on the existing demographics and community resources as these areas will be served by higher order transit, providing an enhanced service by reducing travel times for users and providing more frequent service; and
- Enhanced transit service is expected to encourage further transit ridership and will provide time savings for existing users. In addition, enhanced transit service will be provided to access destinations served by the broader transit network.

## 11.2.2 Mitigation and Monitoring

## 11.2.2.1 Construction

Recommended mitigation and monitoring measures to address potential construction related impacts are listed below. The following Plans are recommended as part of the mitigation measures: Traffic Management and Control Plan, Signage and Wayfinding Action Plan and Emergency Response and Incident Management Plan. Details on the plans are provided in Section 11.1.

- Determine if cycling infrastructure is safe to use during construction. If it is considered potentially unsafe, that facilities will be temporarily closed and cyclists will be re-routed, where possible, until the infrastructure is safe to use;
- Determine whether the use of sidewalks and other pedestrian infrastructure is safe to use during construction. Areas that are considered unsafe will be temporarily closed. Detour routes that are considered safe and accessible will be provided where possible and in well lit areas;
- Community resources that front onto the corridor should be contacted to inform staff that access to facilities may be interrupted during project

construction. Prior to project construction, the community facilities that will experience access issues will be identified;

- Adjacent road closures and construction on adjacent crossings should be avoided;
- Community resource operators should be notified at least two weeks in advance of any road closures that may impact them. The anticipated duration of the closure should also be specified;
- A contact should be provided to accommodate questions and concerns from community resource staff regarding access to facilities during the construction period;
- Implement a Signage and Wayfinding Action Plan that identifies appropriate signage, alternative access points and parking arrangements will be developed to maintain access to community resources, and other businesses and institutions, during project construction. The community resources that may experience access interruptions will be a priority;
- Consult with staff from fire, police, ambulance, engineering, construction services, transportation services, and other applicable departments from City of Toronto, Durham Region, City of Pickering, Town of Ajax, Town of Whitby and City of Oshawa to develop an Emergency Response and Incidence Management Plan. Consultation with municipal staff will confirm that each jurisdictions rules and regulations are upheld.

## 11.2.2.2 Operations

Recommended mitigation and monitoring measures to address potential operational impacts include:

- The active transportation network will continue to develop to accommodate the incoming population as lands along the Durham-Scarborough BRT are redeveloped. As part of the planning approvals process, staff reviewing development applications should encourage connections to and further development of the active transportation network. This will help to expand and eliminate gaps that may exist in the surrounding network;
- High traffic volumes coupled with high posted speeds in certain segments of the corridor suggest the need for separated cycling facilities to enhance safety. Physically separated cycling facilities have been included in the preliminary design in a context-sensitive manner consistent with active transportation plans in each municipality;
- Staff reviewing development applications should create criteria that would trigger a full Community Services and Facilities Study. This would require applicants to submit a study as part of a complete development application. The study will identify potential impact on community resources that a development may have, and where expansions will need to occur to service the incoming population;

• Given that each municipality has parkland dedication provisions in place, no mitigation and monitoring measures are required to uphold the service levels related to parkland and open space.

## 11.3 Existing Businesses

**Section 3.3** of this report provides an existing condition review of the business establishments that currently operate within the Study Area. The Project Team utilized the North American Industry Classification System (NAICS) structure to categorize businesses into the following classifications: Primary, Employment Area Employment, Retail and Service, Office, and Institutional.

This section provides potential impacts to existing businesses by business type. Business categories were consolidated to develop business types. Each business type will likely experience varied impacts. As such, the mitigation and monitoring measures have been tailored to address possible differences.

To help identify mitigation and monitoring measures, a Community Liaison Committees (CLCs) will be established once funding is secured, and the project moves into the detailed design phase. The Committee will meet regularly throughout the lifecycle of the project and will include stakeholders such as business associations and other important organizations along the corridor to provide Metrolinx with feedback on matters such as business supports, mitigation strategies for construction and noise disruption, etc. to ensure that they reflect and meet the needs of the community. Metrolinx will communicate clearly and regularly regarding available supports, along with mitigation and monitoring measures to support businesses during construction.

## 11.3.1 Potential Impacts

## 11.3.1.1 Construction

Potential impacts, mitigation and monitoring measures that have been identified in this section are commented on further within **Section 11.4** to address any broader impacts to Centres, Commercial, Mixed-use, Institutional and Industrial uses. Those impacts identified in **Section 11.4** provide insight into potential impacts that would apply to all business establishments under each land use category. Potential impacts to each consolidated business category during construction include:

- Employment Area Employment: Arterial roads in the City of Toronto and Durham Region accommodate heavy truck traffic. Employment areas may experience temporary nuisance impacts resulting from longer than expected delivery times to and from facilities due to a reduction in traffic lanes. Truck traffic may also have difficulty turning onto roads where construction is taking place due to a reduced turning radius;
- **Power Retail & Malls:** Most retail establishments within the Study Area are in the power retail or mall format, which are set back from the corridor. Potential nuisance impacts include delivery delays due to a reduction in traffic lanes. Some retail centre accesses may be interrupted

during construction. Access restrictions may cause further negative impacts related to reduced revenue;

- Main Street Retail & Services: Main street retail may experience greater negative impacts than Power Retail & Malls during construction. Impacts may include limited access to on-street parking, reduced business visibility, reduced access to storefronts, and public perception that businesses are not operational. Revenue may be impacted due to access restrictions. Impacts will be greatest to retail storefronts that front directly onto the corridor where construction will occur will have;
- Office: Offices that directly abut the corridor may experience nuisance impacts related to longer than average travel times for employees. Further potential negative impacts include reduced visibility and reduced access to driveways and parking lots, which may also impact revenue generation depending on the type of business; and
- **Institutional:** Institutional establishments fronting onto the corridor may experience nuisance impacts related to longer than average travel times to get to and from the facilities due to a reduction in travel lanes. Further potential negative impacts include reduced visibility of the institutions and reduced access to driveways and parking lots, which may also impact revenue generation depending on the type of institution being examined.

## 11.3.1.2 Operations

All business types are expected to experience net positive impacts from the project. Potential operational impacts for each consolidated business category include:

- Employment Area Employment: Minor negative impacts include access modifications as a result of the curb-height raised centre median. Positive impacts include enhanced transit access for employees and visitors that use transit through reduced travel times and more frequent service;
- **Power Retail & Malls:** Minor negative impacts include access modifications as a result of the curb-height raised centre median. Potential positive impacts include the encouragement of site redevelopment through enhanced transit access, which will help establish transit supportive densities and mixed-use, complete communities. Further positive impacts include enhanced transit access for employees and customers that use transit by reducing travel times and providing access to more frequent service;
- Main Street Retail & Services: Minor negative impacts include access modifications as a result of the curb-height raised centre median. Positive impacts include enhanced transit access for employees and customers that use transit by reducing travel times and providing access to more frequent service, as well as an improved streetscape to help attract pedestrian traffic;

- Office: Minor negative impacts include access modifications as a result of the curb-height raised centre median. On-street parking is a minimal concern for offices as many offices in the Study Area have dedicated parking lots to serve them Offices abutting the corridor may experience positive impacts related to enhanced transit access to support employees, and an improved streetscape to benefit the environment of these offices; and
- **Institutional:** Minor negative impacts include access modifications as a result of the curb-height raised centre median. Institutional facilities fronting onto the corridor may experience positive impacts related to enhanced transit access to support employees and users, and an improved streetscape to benefit the environment of these institutions.

## 11.3.2 Mitigation and Monitoring

#### 11.3.2.1 Construction

During detail design and pre-construction, work with municipal Economic Development staff, local Chambers of Commerce and Business Improvement Areas to support businesses during construction. Engage with local businesses during detail design to understand needs during construction and during operations of the DSBRT. Develop a plan to support businesses as the project moves forward.

During detail design and pre-construction, review commercial property driveways and consider design refinements to support turning trucks while meeting design standards.

During construction, recommended mitigation and monitoring measures by consolidated business classification include:

- Employment Area Employment: Provide enough space for heavy single unit trucks to make right and left-turns onto the route/arterial where construction is taking place. This can be accomplished by providing a minimum effective turning radius for heavy single unit trucks, especially on roads that connect to Highway 401 interchanges. If appropriate radii cannot be accommodated, appropriate detour routes must be provided for heavy single unit trucks. Consult with City of Toronto, Durham Region, City of Pickering, Town of Ajax, Town of Whitby and City of Oshawa to develop a Traffic Management and Control Plan that identifies appropriate routes for heavy truck traffic that is supported by a Haul Route Analysis;
- Power Retail & Malls: Keep entry points into malls and power retail centres along the corridor operational and unobstructed. Ahead of construction, intersections that may experience temporary closures or interruptions to operations should be identified, as well as the potential timing and duration of the interruptions. Property owners and managers of the mall and power retail facilities must be contacted and made aware of potential obstructions or closures to main entry points. Arrangements

should be made with concerned property owners and managers to address potential issues due to limited access. Deliveries into these facilities may be impacted and visitors may be confused about how to access these businesses – both factors should be considered in the Traffic Management and Control Plan;

- Main Street Retail & Services: Storefronts should remain visible by implementing transparent fencing in place of plywood where it is possible and safe to do so. Main street retail and services should be considered in the Signage and Wayfinding Action Plan, especially in areas that comprise concentrations of main street retail, such as Downtown Whitby and Downtown Oshawa. The Signage and Wayfinding Action Plan should determine how to best direct customers to where parking is available in the absence of on-street parking, and help identify which businesses are operational during the construction period;
- Office: No mitigation or monitoring measures required; and
- **Institutional:** The Signage and Wayfinding Action Plan must also cover institutions in Downtown Whitby and Downtown Oshawa, and other applicable areas. The Plan should communicate what facilities are operational and where to park if on-street parking is impacted.

## 11.3.2.2 Operations

During operations, mitigation and monitoring measures by business classification include:

- **Employment Area Employment:** No mitigation or monitoring measures required;
- Power Retail & Malls: No mitigation or monitoring measures required;
- Main Street Retail & Services: Relocate on-street parking spaces that are to be removed by the project. Where possible, spots should be maintained in close proximity to main street retail;
- Office: No mitigation or monitoring measures required; and
- Institutional: No mitigation or monitoring measures required.

## 11.4 Standardized Land Use Designations

**Section 5** of this report provides an existing condition review of the land use designations within the Study Area and an understanding of the goals, objectives and built form that the planning policy framework is in place to achieve. As part of this work, the Project Team categorized the various land use designations within the Study Area into the following standardized land use designations:

- Mixed-use;
- Residential;

- Multi-family Residential;
- Commercial;
- Institutional;
- Open Space;
- Industrial;
- Village;
- Rural;
- Centre; and,
- Other.

This section outlines potential impacts to standardized land use designations during the construction and operational phases of the project. Mitigation and motoring measures to address potential impacts are recommended.

To help identify mitigation and monitoring measures, a Community Liaison Committees (CLCs) will be established once funding is secured, and the project moves into the detailed design phase. The Committee will meet regularly throughout the lifecycle of the project and will include stakeholders such as local residents, community associations, business associations and other important organizations along the corridor to provide Metrolinx with feedback on matters such as traffic calming measures, business supports, mitigation strategies for construction and noise disruption, etc. to ensure that they reflect and meet the needs of the community.

## 11.4.1 Residential & Multi-family Residential

## 11.4.1.1 Potential Impacts

#### **Construction**

Residential uses are scattered throughout the Study Area and are comprised primarily of lower density, ground related residential uses. The majority of these areas appear to be built-out. As such, these areas are primarily stable residential neighborhoods. Potential impacts for both lower density and multifamily residential areas include:

- Emissions and dust from construction equipment and trucks may result in temporary potential negative impacts. Long-term negative impacts from construction vehicles and equipment are not anticipated;
- Noise and vibration from construction equipment may present potential temporary nuisance impacts for residential uses;
- Detour routes through residential areas during construction will result in negative impacts including excessive noise, emissions, truck traffic, dirt, and debris to local roads;

- Emergency response personnel may have difficulty accessing residential areas during construction;
- A number of residential areas along the route have driveways that front onto the corridor. Potential negative impacts include reduced driveway access and associated construction traffic; and
- Road closures may impact residents ability to easily access their dwellings.

No negative impacts are anticipated during operations for residential uses, largely because the corridor already accommodates high traffic volumes and is an existing transit route. Traffic pattern changes to left-turns will be required at unsignalized side streets and driveways. Positive impacts include enhanced transit access to residential uses and improved service for users, as well as encouraging redevelopment opportunities to help establish transit supportive densities.

## 11.4.1.2 Mitigation and Monitoring

#### **Construction**

Recommended mitigation and monitoring measures to address potential construction related impacts are listed below. The following Plans are recommended as part of the mitigation measures: Traffic Management and Control Plan, Haul Route Analysis and Truck Route Plan, Dust Management Plan, Signage and Wayfinding Action Plan and Emergency Response and Incident Management Plan. Details on the plans are provided in Section 11.1.

- Create and implement Dust Management Plan to identify a full list of measures to minimize the spread of dust and emissions that will be applied by the entity completing construction;
- Fences and wind screens will be utilized to help minimize the spread of dust. Truckloads carrying dust-producing material will be covered;
- Soil surfaces capable of producing dust will undergo wetting, covering, or paving to minimize the spread of dust;
- Traffic speeds within the construction zone will be reduced to minimize the spread of dust;
- Construction work schedules and procedures will adapt to changing weather conditions when negative impacts are possible, such as wetting during high speed winds;
- Construction equipment and machinery will be in good working condition and undergo regular maintenance, and will comply with federal and provincial regulations. Emissions and noise will be minimized where possible;
- Prohibit construction equipment and machinery from idling for extended periods of time through posting signage throughout the construction site

with guidelines to minimize emissions. This can be integrated into the Signage and Wayfinding Action Plan;

- Comply with by-law provisions imposed by the local area municipalities and Durham Region, and permit exemptions where necessary;
- Complete construction during permitted hours, and notify residents during periods where construction is anticipated to take place after permitted hours with the anticipated duration;
- Construction equipment will comply with noise regulations mandated by the province and local area municipalities; and
- Through the Haul Route Analysis and Traffic Management and Control Plan, help establish that detour routes and haulage routes use main roads where possible to minimize adverse impacts to residential areas. In addition, help establish that heavy truck traffic does not pass through residential areas where possible.
- Property owners with driveways fronting onto the corridor will be identified and notified that driveway access may be reduced during construction. The anticipated duration of will be identified;
- If road closures will impact property owners, property owners will be notified by mail at least two weeks prior to the road closures. The anticipated duration will be identified;

## **Operations**

Mitigation and monitoring measures are not required during operations.

## 11.4.2 Centres & Mixed Use

## 11.4.2.1 Potential Impacts

## **Construction**

In addition to the potential negative impacts identified for each business type outlined in **Section 11.3.1**, further potential negative impacts to areas designated for Centres and Mixed-Use uses are:

- Centres within the Study Area have a limited number of entry points, which are generally located at or near major intersections. Entry points and major intersections that provide access to Centres may be reduced during construction;
- Left hand turns into Centres and Mixed-Use areas will be limited during construction;
- Road closures may result in reduced access to Centres and Mixed-Use areas;
- Heavy single unit trucks making deliveries to or from Centres and Mixed-Use areas may have difficulty turning into facilities given the reduced turning radius attributed to reduced lanes during construction;

- In the event of an emergency, it may be difficult for emergency response personnel to access Centres and Mixed-Use areas during construction; and
- Centres and Mixed-Use Areas that front onto the corridor may experience potential negative impacts related to dust, emissions, and noise during construction hours. It is expected that emissions will be minimal, as construction equipment must comply with provincial and federal air quality standards.

Positive impacts include enhanced transit access to Centres and Mixed-Use areas and improved service for users, as well as encouraging redevelopment opportunities to help establish transit supportive densities. In addition, positive impacts include regional transit connectivity to Centres and Urban Growth Centres identified by the province outside of the Study Area. No negative impacts are anticipated during operations. Traffic pattern changes to left-turns will be required at unsignalized side streets and driveways.

## 11.4.2.2 Mitigation and Monitoring

## **Construction**

Recommended mitigation and monitoring measures to address potential construction related impacts are listed below. The following Plans are recommended as part of the mitigation measures: Traffic Management and Control Plan, Haul Route Analysis and Truck Route Plan, Dust Management Plan, Signage and Wayfinding Action Plan and Emergency Response and Incident Management Plan. Details on the plans are provided in Section 11.1.

- Through the Traffic Management and Control Plan, ensure that major intersections and entry points into Centres and Mixed-Use areas remain fully operational, where possible. This is intended to support the effective movement of traffic through these areas, and to avoid business interruptions during the construction phase. At minimum, key intersections that should remain fully operational during construction if possible, include:
  - City of Toronto Route Segment: Ellesmere Road and McCowan Road, Kingston Road and Sheppard Avenue East, and Ellesmere Road and Markham Road;
  - City of Pickering Route Segment: Kingston Road and Whites Road North, Kingston Road and Liverpool Road, Kingston Road and Glenanna Road, and Kingston Road and Brock Road.
  - Town of Ajax Route Segment: Kingston Road West and Westney Road North, Kingston Road West and Hardwood Avenue North, and Kingston Road East and Salem Road.

- Town of Whitby Route Segment: Dundas Street East and Thickson Road South, and Dundas Street East and Garrard Road; and
- **Town of Oshawa Route Segment:** King Street West and Stevenson Road.
- Road closures will be communicated to businesses within Centres and Mixed-Use areas at least two weeks prior to the road closure;
- Maintain adequate turning radii for heavy single unit trucks turning into Centres or Mixed-Use Areas. If suitable turning radii cannot be accommodated during construction, appropriate detour routes will be provided for heavy single unit trucks. Consultation will be undertaken with business owners to create a solution that minimizes impacts to business operations;
- Post signage in areas where heavy truck traffic would experience unsafe turning conditions. This should be included within the Signage and Wayfinding Action Plan;
- Consult with staff from fire, police, ambulance, engineering, construction services, transportation services, and other applicable departments from City of Toronto, Durham Region, City of Pickering, Town of Ajax, Town of Whitby and City of Oshawa to develop an Emergency Response and Incidence Management Plan. Consultation with municipal staff will confirm that each jurisdictions rules and regulations are upheld;
- Implement a Dust Management Plan to minimize the spread of dust;
- Fences and wind screens will be utilized to help minimize the spread of dust, and truckloads carrying dust-producing material will be covered;
- Soil surfaces capable of producing dust will undergo wetting, covering, or paving in order to minimize the spread of dust;
- Traffic speeds within the construction zone will be reduced to minimize the spread of dust;
- Work schedules and procedures will adapt to changing weather conditions when negative impacts are possible, such as wetting during high speed winds;
- Construction equipment and machinery will be in good working condition and undergo regular maintenance, and will comply with federal and provincial regulations. Emissions and noise will be minimized where possible;
- Prohibit construction equipment and machinery from idling for extended periods of time by posting signage throughout the construction site with guidelines to minimize emissions. This should be included within the Signage and Wayfinding Action Plan; and

• Construction equipment will comply with noise regulations mandated by the province and local area municipalities.

#### **Operations**

Mitigation and monitoring measures are not required during operations.

#### 11.4.3 Commercial

#### 11.4.3.1 Potential Impacts

#### **Construction**

Areas zoned for commercial uses are scattered along the corridor, in many instances abutting the Centres and Mixed-Use areas, and within the downtown areas. The potential impacts include:

- Commercial uses that front onto the corridor and have loading, unloading and delivery procedures that take place in the front of the building may experience temporary negative impacts related to successfully carrying out these procedures during construction;
- If traffic is reduced to one lane, this will disrupt the flow of traffic and is not ideal for curbside management purposes;
- On-street parking spaces may be impacted, which may result in negative impacts to businesses with customers who rely on on-street parking;
- Access to commercial parking lots that businesses rely on to accommodate customers may be reduced;
- Deliveries to and from facilities may be delayed due to delivery vehicles having to take detour routes to reach the destination;
- Heavy truck units that are delivering to or from commercial areas may experience difficulty turning into driveways or accessing loading or unloading facilities that are in the rear of the building due to reduced turning radius;
- The placement of construction equipment, fencing and signage may reduce the visibility of businesses that front onto the corridor;
- The placement of construction equipment, fencing and signage may block streetlights, making walking and other pedestrian activities unsafe at night time;
- Potential negative impacts related to dust, emissions, and noise during construction hours. Dust may dirty merchants' windows, creating an unattractive environment;
- Customers may be discouraged to enter the Study Area due to construction, which may negatively impact the ability to attract customers and generate revenue;

- If certain segments of the road or sidewalk are shut down during construction, it is unlikely and difficult for businesses to attract customers and generate revenue;
- The pedestrian environment that abuts commercial uses will be noisy, dusty and have emissions from construction equipment which may discourage foot traffic during construction;
- People with disabilities may have difficulty navigating the pedestrian environment during construction due to the placement of equipment, fencing and narrower than normal sidewalks; and
- If an emergency such as a fire occurs, emergency vehicles may have difficulty accessing the site and utilizing infrastructure that is built into the streetscape, such as fire hydrants;

Minimal negative impacts are anticipated during the operational stage for commercial uses. Potential negative impacts include a lack of parking spaces to serve local businesses, given some on-street parking will be removed to accommodate the project. Potential positive impacts include enhanced transit access to support mobility to and from businesses, and a more attractive streetscape in particular areas.

## 11.4.3.2 Mitigation and Monitoring

## **Construction**

Recommended mitigation and monitoring measures to address potential construction related impacts are listed below. The following Plans are recommended as part of the mitigation measures: Traffic Management and Control Plan, Haul Route Analysis and Truck Route Plan, Curbside Management Plan, Business Retention and Management Plan, Signage and Wayfinding Action Plan, Dust Management Plan, and Emergency Response and Incident Management Plan. Details on the plans are provided in Section 11.1.

- Engage with local Business Improvement Areas, businesses, and other stakeholders to address area specific concerns, communicate timing of construction impacts, and identify mitigation opportunities in collaboration with these entities;
- In areas where commercial uses front onto the corridor, such as in downtown Whitby and downtown Oshawa, a Curbside Management Plan that identifies how curbside operations will be altered during construction would allow businesses to understand how to successfully manage their day to day processes;
- Build into the Signage and Wayfinding Action Plan a section that outlines where parking will be directed in the absence of on-street parking spots;
- Identify commercial driveways that will be blocked or closed due to construction. Notify merchants that rely on those driveways to create

alternative arrangements for loading, unloading, and parking that commercial driveways serve. Notice should be provided to establishments at least two weeks in advance of any interruptions;

- Provide adequate turning radii for heavy single unit trucks to access loading and unloading facilities in the rear of buildings. Where this is not possible, post signage indicating that it is unsafe for heavy single unit trucks to turn into facilities. This should be an item within the Signage and Wayfinding Action Plan;
- Where possible and safe, utilize construction fences that are transparent. Also place construction equipment in areas that do not obstruct the view of businesses or the light emitted from streetlights;
- Implement a Dust Management Plan to minimize the spread of dust;
- Create a Business Retention and Management Plan to support businesses that may be experiencing difficulties operating during the construction phase and may have reduced revenue as a result. This would allow for a strategy to be implemented to retain businesses along the corridor during construction, and potentially provide assistance where necessary. Metrolinx will communicate clearly and regularly regarding available supports, along with mitigation and monitoring measures to support businesses during construction. A business support program will be determined after the procurement phase, once a successful proponent has been selected. This will help establish a support system for businesses that have been negatively impacted by construction to curb vacancies and allow the character of communities to remain intact;
- Sidewalks are to remain unobstructed to allow for people with disabilities to use the sidewalk. Where this is not possible, provide a detour route that is appropriate for people with disabilities where possible; and
- Maintain access to street infrastructure such as fire hydrants, and stage construction so that emergency vehicles such as ambulances and fire trucks can successfully navigate through the construction zone. Consult with City of Toronto, Durham Region, City of Pickering, Town of Ajax, Town of Whitby and City of Oshawa staff in the fire, police, ambulance, engineering, construction services, transportation services, and other applicable departments to integrate commercial uses into the Emergency Response and Incidence Management Plan.

#### **Operations**

On-street parking spaces that businesses require should be replaced or relocated to provide sufficient space for customers to park and access the businesses that front onto the corridor.

## 11.4.4 Industrial

#### 11.4.4.1 Potential Impacts

#### **Construction**

Industrial uses within the Study Area were identified in the Town of Whitby Route Segment, generally surrounding the Highway 412 interchange at Dundas Street East, and north of the Burns Street East and Hopkins Street intersection. The potential impacts for Industrial areas anticipated during construction include:

- Given that the planned industrial areas identified in Whitby are in close proximity to highway interchanges that include Highway 401 and 412, limited negative impacts are anticipated in terms of goods movement to and from industrial areas. These areas are not yet built out, but may be by 2029, when construction is expected to be completed;
- Given that industrial areas frequently accommodate heavy truck traffic, limited negative impacts are anticipated for industrial areas in terms of noise, dust and emissions; and
- Industrial areas do not front onto the corridor where construction will take place. As such, limited negative impacts are anticipated in terms of accessing driveways, loading, and unloading areas or facilities.

#### **Operations**

During operations, it is anticipated that the project will not have a negative impact on the Study Area overall. Positive impacts to the Study Area include enhanced transit service and facilities to support employees travelling to and from industrial areas, which will result in time savings.

## 11.4.4.2 Mitigation and Monitoring

#### **Construction**

Recommended mitigation and monitoring measures to address potential construction related impacts are listed below. The following Plans are recommended as part of the mitigation measures: Traffic Management and Control Plan, and a Haul Route Analysis and Truck Route Plan. Details on the plans are provided in Section 11.1.

- Minimize access interruptions to industrial areas, particularly if the industrial areas identified at the Highway 412 interchange at Dundas Street east is developed by 2029; and
- Maintain adequate turning radii for heavy single unit trucks to turn into industrial facilities. If suitable turning radii cannot be accommodated during construction, appropriate detour routes will be provided for heavy single unit trucks. Consultation will be undertaken with business owners to create a solution that minimizes impacts to business operations. In particular, these measures will be applied to the Dundas Street East and Hopkins Street intersection.

No mitigation and monitoring measures are required during the operational phase of the project.

#### 11.4.5 Institutional

#### 11.4.5.1 Potential Impacts

#### **Construction**

Institutional areas within the Study Area are primarily situated in the City of Toronto Route Segment and encompass the University of Toronto Scarborough Campus and the West Hill Collegiate Institute. Other institutional areas were identified within and surrounding downtown Whitby. The potential impacts for Institutional areas, beyond those identified in **Section 11.3** that are anticipated during construction include:

- Pedestrian infrastructure may be interrupted during construction, including bike lanes, pedestrian paths or walkways, sidewalks, pedestrian cross walks, among others;
- At the intersection of Dundas Street West and Cochrane Street, there is an institutional use that comprises the Fairview Lodge, which is a longterm care home. Residents/Staff and visitors of this facility may experience difficulty accessing the transit stop outside of the facility due to narrower than normal sidewalks, and the placement of construction equipment and fences;
- People with disabilities accessing institutional uses may have difficulty navigating the pedestrian environment during construction due to the placement of equipment, fencing and narrower than normal sidewalks;
- The placement of construction equipment, fencing and signage may block streetlights, making walking and other pedestrian activities unsafe at night time;
- Access to entrances into parking lots and facilities may be reduced due to placement of construction equipment, fencing or signage;
- Institutional uses, like those identified within and surrounding downtown Whitby, may by negatively impacted by the removal of on-street parking to serve users;
- Heavy single unit trucks that are deliver to institutional areas may have difficulty navigating the corridor during construction, due to reduced lanes and turning radius; and
- Institutional uses that front onto the corridor, like the University of Toronto Scarborough Campus, may experience negative impacts related to dust, emissions and noise resulting from construction.

No negative impacts are anticipated during the operational phase of the project for institutional uses. Positive impacts include enhanced transit access to institutions within the Study Area that provides greater connectivity to the regional transit network and time savings.

#### 11.4.5.2 Mitigation and Monitoring

#### **Construction**

Recommended mitigation and monitoring measures to address potential construction related impacts are listed below. The following Plans are recommended as part of the mitigation measures: Traffic Management and Control Plan, Haul Route Analysis and Truck Route Plan, Signage and Wayfinding Action Plan, Dust Management Plan, and Emergency Response and Incident Management Plan. Details on the plans are provided in Section 11.1.

- Construction equipment and fencing will be set up to avoid blocking sidewalks or pedestrian infrastructure. In cases where this is not an option, provide a pedestrian detour route that can safely accommodate people with disabilities and mobility restrictions;
- Provide adequate parking in areas where on-street parking is blocked or removed due to construction to accommodate users and employees.
- Provide an adequate turning radius for heavy single unit truck drivers to allow for successful deliveries;
- Integrate Institutional uses into the Dust Management Plan to identify a full list of measures to minimize the spread of dust and emissions that will be applied by the entity completing construction;
- Fences and wind screens will be utilized to help minimize the spread of dust;
- Truckloads carrying dust-producing material will be covered;
- Soil surfaces capable of producing dust will undergo wetting, covering, or paving in order to minimize the spread of dust;
- Traffic speeds within the construction zone will be reduced to minimize the spread of dust;
- Construction equipment and machinery will be in good working condition and undergo regular maintenance. Equipment will comply with federal and provincial regulations. Emissions and noise will be minimized, where possible;
- Prohibit construction equipment and machinery from idling for extended periods of time by posting signage throughout the construction site with guidelines to minimize emissions. This should be an item within the Signage and Wayfinding Action Plan.

No mitigation and monitoring measures are required during the operational phase.

#### 11.4.6 Village

#### 11.4.6.1 Potential Impacts

#### **Construction**

There are two locations within the Study Area that are classified as a Village designation; Pickering Village in the Town of Ajax, and the Almond Village in the Town of Whitby. The potential impacts for areas identified as Village uses that are anticipated during construction include:

- The placement of construction equipment, fencing and signage may reduce the visibility of businesses that front onto the corridor;
- Visual features and areas within Village areas may be designated for heritage value. Construction may damage or negatively affect these cultural heritage resources;
- The placement of construction equipment, fencing and signage may block streetlights, making walking and other pedestrian activities unsafe at night time;
- People with disabilities may have difficulty navigating the pedestrian environment during construction due to the placement of equipment, fencing and narrower than normal sidewalks.
- Road closures may restrict access to businesses within Village areas;
- Customers may be discouraged to enter the Study Area due to construction, which may negatively impact the ability to attract customers and generate revenue;
- Curbside operations, such as waste collection, loading and unloading, may be interrupted;
- Heavy truck units that are delivering to businesses within Village areas may experience difficulty turning into driveways or accessing loading or unloading facilities due to reduced turning radius resulting from reduced lanes;
- If an emergency such as a fire occurs, emergency vehicles may have difficulty accessing the site to carry out emergency procedures and utilizing infrastructure that is built into the streetscape such as fire hydrants; and
- Businesses within Village that front onto the corridor may experience negative impacts related to dust, emissions and noise resulting from construction. Dust may dirty merchant and restaurant windows and create nuisance impacts for patios, creating an unattractive environment for customers.

No negative impacts are anticipated for Village uses during the operational phase.

## 11.4.6.2 Mitigation and Monitoring

#### **Construction**

Recommended mitigation and monitoring measures to address potential construction related impacts are listed below. The following Plans are recommended as part of the mitigation measures: Traffic Management and Control Plan, Haul Route Analysis and Truck Route Plan, Signage and Wayfinding Action Plan, Dust Management Plan, and Emergency Response and Incident Management Plan. Details on the plans are provided in Section 11.1.

- Construction equipment and fencing will be set up to avoid blocking sidewalks or pedestrian infrastructure. In cases where this is not an option, provide a pedestrian detour route that can accommodate people with disabilities and mobility restrictions and is well lit;
- Provide an adequate turning radius for heavy single unit trucks to allow for successful deliveries, loading and unloading;
- Consult with the City of Toronto, Durham Region, City of Pickering, Town of Ajax, Town of Whitby, and City of Oshawa to develop an Emergency Response and Incidence Management Plan. The plan will help maintain access for emergency response personnel and vehicles to enable timely emergency responses;
- Consider creating a compensation plan for merchants that would allocate funding for items such as window cleaning, and to support businesses that can demonstrate a decline in revenue of 30% or greater to help businesses stay afloat during construction; and
- Integrate Village uses into the Dust Management Plan to identify a full list of measures to minimize the spread of dust and emissions that will be applied by the entity completing construction;
- Fences and wind screens will be utilized to help minimize the spread of dust;
- Truckloads carrying dust-producing material will be covered;
- Soil surfaces capable of producing dust will undergo wetting, covering, or paving in order to minimize the spread of dust;
- Traffic speeds within the construction zone will be reduced to minimize the spread of dust and maintain a safe environment for pedestrians and cyclists;
- Construction equipment and machinery will be in good working condition and undergo regular maintenance. Equipment will comply with federal and provincial regulations. Emissions and noise will be minimized, where possible; and

• Prohibit construction equipment and machinery from idling for extended periods of time by posting signage throughout the construction site with guidelines to minimize emissions.

#### **Operations**

There are no negative impacts anticipated during the operational phase. Positive impacts during operations include enhanced transit access to Villages and potentially more foot traffic to support businesses in these areas.

## 11.4.7 Rural

## 11.4.7.1 Potential Impacts

#### **Construction**

The only rural standardized land use designation within the Study Area is within the Town of Ajax Route Segment, which is also part of the Greenbelt. Within the Rural land use, there are a handful of residences that front onto the corridor, as well as a market that sells fresh produce and an associated orchard. Potential negative impacts for rural residences during construction include reduced driveway access, temporary nuisance impacts for private vehicles backing out of driveways due to reduced lanes and associated traffic. Potential negative impacts to the rural residences, the market, and the orchard, include emissions and dust from construction equipment and heavy trucks. Given that the market and orchard deal with food products, without proper mitigation, emissions and dust may compromise the safety of the food.

#### **Operations**

No negative impacts anticipated during operations for Rural land uses.

## 11.4.7.2 Mitigation and Monitoring

## **Construction**

The same mitigation and monitoring measures identified in **Section 11.4.1.2** apply to Rural uses to minimize potential negative impacts related to dust and emissions. In addition to those measures, further mitigation and monitoring measures that apply to the market and orchard include:

- Notify these establishments, at least two weeks prior to construction, that dust and emissions may impact the safety of outdoor operations for a period of time and identify the duration. These facilities will have to adjust operations to maintain food safety;
- Identify and communicate the proposed construction hours, and provide written notice if working hours will extend beyond regular construction hours; and
- Site supervisors will prevent high impact activities from being completed in high wind conditions, as the market and orchard are sensitive uses that grow and handle food products.

Mitigation and monitoring measures not required during operations.

#### 11.4.8 Open Space & Other

#### 11.4.8.1 Potential Impacts

#### **Construction**

Where Open Space and Other land uses are directly adjacent to the corridor, potential negative impacts include the damage of trees, grass, and vegetation due to operation, placement, and storage of construction equipment on site.

#### **Operations**

No negative impacts anticipated during operations for Open Space and Other land uses.

#### 11.4.8.2 Mitigation and Monitoring

#### **Construction**

Identify where equipment, machinery and materials will be parked or stored when not in use. Locations that will minimize negative impacts to trees, grass and other vegetation should be selected, where possible. If grass, trees, or vegetation is damaged due to construction, restore the area to the condition observed before construction or better. Take all necessary precautions to prevent trees from being damaged. If damage occurs due to construction, trees will be replaced. This could be achieved by completing a Tree Inventory for the corridor and tracking the health of the trees before and after the construction period.

#### **Operation**

Mitigation and monitoring measures not required during operations.

# 12 References

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City of Oshawa Official Plan (2019). Available: <u>https://www.oshawa.ca/business-and-investment/resources/City-of-Oshawa-Official-Plan.pdf</u>
# Appendix A:

**Existing Conditions Mapping** 







Municipal Boundary







1	LEGEND
	Proposed BRT Route
	800m Setback From Proposed BRT Route
	<ul> <li>School</li> </ul>
N K K D	Community Facility
SEBAN	
DY DY	Municipal Dark
DS LANE	
	Cemetery
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Park	
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	REFERENCE
	Coordinate System: NAD 1983 LITM Zone 17N
	Projection Transverse Mercator Datum: North American 1983
	PROJECT
	DURHAM-SCARBOROUGH BRT
	TITLE COMMUNITY RESOURCES: TORONTO
	DESIGN
	GIS JG 2020-05-08















- School
- Community Facility
- Library
- Municipal Park
  - Cemetery

SCALE			
0	0.5	1	2
		Kilometres	

#### REFERENCE

Coordinate System: NAD 1983 UTM Zone 17N Projection: Transverse Mercato Datum: North American 1983

PROJECT

#### **DURHAM-SCARBOROUGH BRT**

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COMMUNITY RESOURCES: OSHAWA

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#### Business / Hectare 0 - 0.01278 0.01278 - 0.04041 0.04041 - 0.10015 0.10015 - 0.22928 0.22928 - 0.50845 0.50845 - 0.11197 0.11197 - 0.41666 2.41666 - 5.23719 Proposed BRT Route



#### REFERENCE

Coordinate System: NAD 1983 UTM Zone 17N Projection: Transverse Mercator Datum: North American 1983

PROJECT

#### DURHAM-SCARBOROUGH BRT

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BUSINESS CLUSTERS: OSHAWA

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	Urban Growth Centre Boundary
Stan	dardized Land Uses
	Centre
	Commercial
	Industrial
	Institutional
	Mixed Use
	Multi-Family Residential
	Open Space
	Other
	Residential
	Rural
	Village



#### REFERENCE

Coordinate System: NAD 1983 UTM Zone 17N Projection: Transverse Mercator Datum: North American 1983

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DURHAM-SCARBOROUGH BRT

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LEGEND	
Urban Growth Centre Boundary	
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Commercial	
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Institutional	
Mixed Use	
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Other	
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#### DURHAM-SCARBOROUGH BRT

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LEGEND
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Multi-Family Residential
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Coordinate System: NAD 1983 UTM Zone 17N Projection: Transverse Mercator Datum: North American 1983

PROJECT

#### DURHAM-SCARBOROUGH BRT

### TITLE STANDARDIZED LAND USE DESIGNATIONS: OSHAWA

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	0 2 4 8 Kilometres
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	Coordinate System: NAD 1083 JITM Zong 17N
	Projection: Transverse Mercator Datum: North American 1983
	DURHAM-SCARBOROUGH BRT
	TITLE GREENBELT
	PROJECT NO. 119887 SCALE AS SHOWN REV. 0.0 DESIGN
	<b>IBI</b> GIS JG 2020-09-14 CHECK
	REVIEW

# Appendix B:

Demographic Analysis Statistics

Geography	2011	2016	Growth	Percent Change
Study Area	291,654	300,397	8,743	3.0%
City of Toronto	2,615,060	2,731,571	116,511	4.5%
City of Pickering	88,721	91,771	3,050	3.4%
Town of Ajax	109,600	119,677	10,077	9.2%
Town of Whitby	122,022	128,377	6,355	5.2%
City of Oshawa	149,607	159,458	9,851	6.6%
Durham Region	608,124	645,862	37,738	6.2%
City of Toronto Route Segment	96,718	97,673	955	1.0%
City of Pickering Route Segment	61,556	64,957	3,401	5.5%
Town of Ajax Route Segment	50,922	55,113	4,191	8.2%
Town of Whitby Route Segment	47,927	48,419	492	1.0%
City of Oshawa Route Segment	34,531	34,235	(296)	-0.9%

## Population Density (2016)

Geography	Population (2016)	Land Area (Km <sup>2</sup> )	Population Density (Km <sup>2</sup> )
Study Area	300,397	126.4	2,376
City of Toronto	2,731,571	630.2	4,334
City of Pickering	91,771	231.6	396
Town of Ajax	119,677	67.0	1,786
Town of Whitby	128,377	146.7	875
City of Oshawa	159,458	145.6	1,095
Durham Region	645,862	2,523.8	256
City of Toronto Route Segment	97,673	32.1	3,040
City of Pickering Route Segment	64,957	32.3	2,010
Town of Ajax Route Segment	55,113	22.6	2,436
Town of Whitby Route Segment	48,419	26.3	1,842
City of Oshawa Route Segment	34,235	13.1	2,619

### Population by Age Group (2016)

Geography	(0-14)	(15-24)	(25-64)	65+
Study Area	46,750	42,545	163,485	47,610
Percentage Breakdown	15.6%	14.2%	54.4%	15.8%
City of Toronto	398,135	340,275	1,566,225	426,945
Percentage Breakdown	14.6%	12.5%	57.3%	15.6%
City of Pickering	14,915	12,955	50,460	13,445
Percentage Breakdown	16.3%	14.1%	55.0%	14.6%
Town of Ajax	23,660	17,040	65,850	13,135
Percentage Breakdown	19.8%	14.2%	55.0%	11.0%
Town of Whitby	25,535	17,425	68,885	16,530
Percentage Breakdown	19.9%	13.6%	53.7%	12.9%
City of Oshawa	26,575	19,880	86,655	26,350
Percentage Breakdown	16.7%	12.5%	54.3%	16.5%
Durham Region	116,185	86,205	350,690	92,790
Percentage Breakdown	18.0%	13.3%	54.3%	14.4%
City of Toronto Route Segment	14,710	14,625	52,165	16,200
Percentage Breakdown	15.1%	15.0%	53.4%	16.6%
City of Pickering Route Segment	10,465	8,885	35,480	10,110
Percentage Breakdown	16.1%	13.7%	54.6%	15.6%
Town of Ajax Route Segment	10,030	8,715	30,855	5,505
Percentage Breakdown	18.2%	15.8%	56.0%	10.0%
Town of Whitby Route Segment	7,250	6,380	26,290	8,540
Percentage Breakdown	15.0%	13.2%	54.3%	17.6%
City of Oshawa Route Segment	4,295	3,940	18,695	7,255
Percentage Breakdown	12.6%	11.5%	54.7%	21.2%

Geography	Single- Detached	Semi- Detached	Row	Apartment	Other
Study Area	55.4%	4.0%	10.1%	30.3%	0.1%
City of Toronto	47.3%	1.8%	6.7%	44.1%	0.1%
City of Pickering	60.7%	7.6%	13.9%	17.7%	0.1%
Town of Ajax	65.8%	5.7%	15.1%	13.4%	0.0%
Town of Whitby	69.8%	2.9%	12.7%	14.5%	0.1%
City of Oshawa	55.6%	8.4%	9.0%	26.7%	0.2%
Durham Region	66.8%	5.5%	10.7%	16.8%	0.2%
City of Toronto Route Segment	47.3%	1.8%	6.7%	44.1%	0.1%
City of Pickering Route Segment	57.0%	6.1%	16.3%	20.5%	0.0%
Town of Ajax Route Segment	72.9%	2.6%	14.9%	9.5%	0.1%
Town of Whitby Route Segment	62.4%	3.4%	9.8%	24.3%	0.1%
City of Oshawa Route Segment	43.4%	8.3%	3.8%	43.9%	0.6%

### Housing Distribution by Type (2016)

#### Housing Distribution by Tenure (2016)

Geography	Owner	Renter
Study Area	75.2%	24.8%
City of Toronto	52.8%	47.2%
City of Pickering	87.4%	12.6%
Town of Ajax	86.2%	13.8%
Town of Whitby	83.3%	16.7%
City of Oshawa	68.5%	31.5%
Durham Region	81.2%	18.8%
City of Toronto Route Segment	70.8%	29.2%
City of Pickering Route Segment	87.7%	12.3%
Town of Ajax Route Segment	89.2%	10.8%
Town of Whitby Route Segment	72.8%	27.2%
City of Oshawa Route Segment	54.4%	45.6%

	Average Total	Educational Attainment			
Geography	Household Income	No Certificate	Secondary	Post- Secondary	
Study Area	\$97,624	15.7%	29.8%	54.6%	
City of Toronto	\$102,721	16.4%	24.5%	59.1%	
City of Pickering	\$119,411	13.6%	29.1%	57.3%	
Town of Ajax	\$ 112,569	15.1%	29.1%	55.9%	
Town of Whitby	\$ 121,180	13.7%	28.4%	57.9%	
City of Oshawa	\$ 84,871	20.1%	32.2%	47.7%	
Durham Region	\$106,886	16.2%	29.9%	53.9%	
City of Toronto Route Segment	\$89,287	15.0%	28.7%	56.3%	
City of Pickering Route Segment	\$115,302	13.5%	29.3%	57.2%	
Town of Ajax Route Segment	\$ 113,537	15.6%	29.8%	54.7%	
Town of Whitby Route Segment	\$ 101,792	14.7%	30.8%	54.5%	
City of Oshawa Route Segment	\$ 67,790	23.3%	32.2%	44.5%	

#### Average Total Household Income and Educational Attainment

#### Period of Immigration

	Period of Immigration				
	Before 1981	1981- 1990	1991-2000	2001-2010	2011-2016
Study Area	29.7%	15.2%	23.1%	22.7%	9.3%
City of Toronto	23.2%	13.6%	22.3%	26.1%	14.8%
City of Pickering	36.8%	15.6%	21.7%	19.7%	6.2%
Town of Ajax	24.3%	16.2%	26.4%	25.3%	7.7%
Town of Whitby	37.8%	14.5%	19.0%	21.5%	7.2%
City of Oshawa	44.2%	14.0%	15.9%	18.7%	7.2%
Durham Region	36.8%	15.1%	20.6%	20.7%	6.8%
City of Toronto Route Segment	22.4%	15.4%	25.1%	25.2%	11.9%
City of Pickering Route Segment	35.4%	15.1%	21.6%	20.9%	7.0%
Town of Ajax Route Segment	25.7%	17.0%	26.2%	23.8%	7.4%
Town of Whitby Route Segment	48.4%	12.7%	14.6%	16.6%	7.7%
City of Oshawa Route Segment	56.3%	12.2%	12.5%	12.3%	6.8%

# Appendix C:

North American Industry Classifications

Classifi	cation of NAICS Codes into Broader Categories
	11 Agriculture, forestry, fishing and hunting
	21 Mining, quarrying, and oil and gas extraction
	22 Utilities
	23 Construction
	31-33 Manufacturing
	41 Wholesale trade
	44-45 Retail trade
	48-49 Transportation and warehousing
	51 Information and cultural industries
	52 Finance and insurance
	53 Real estate and rental and leasing
	54 Professional, scientific and technical services
	55 Management of companies and enterprises
	56 Administrative and support, waste management and remediation services
	61 Educational services
	62 Health care and social assistance
	71 Arts, entertainment and recreation
	72 Accommodation and food services
	81 Other services (except public administration)
	91 Public administration

## **Broader Categories**

Primary
Employment Lands Employment (Manufacturing & Warehousing)
Retail & Service
Office
Institutional

# Appendix D:

Official Plan Designations Utilized to Standardize Land Use Designations

Official Plans						
Jurisdiction	Tier	Landuse types	Standardized Use			
		Parks	Open Space			
		Natural Areas	Open Space			
		General Employment Areas	Commercial			
	Toronto	Core Employment Areas	Commercial			
		Mixed Use Areas	Mixed Use			
City of Toronto OP		Neighbourhoods	Residential			
		Roads	Other			
		Institutional Areas	Institutional			
		Other Open Spaces Areas (Golf Courses, Cemeteries, Public Utilities)	Open Space			
			Other			
		Anartment Neighbourhoods	Multi-Eamily Residential			
		Mixed Corridors	Mixed Lise			
		City Centre	Centre			
		Specialty Retailing Node	Commercial			
		L ocal Nodes	Centre			
		Mixed Employment	Commercial			
		Prestige Employment	Commercial			
	Pickering	Detential Multi Llea Areas	Mixed Llos			
Pickering OP			Other			
			Desidential			
		Low Density Areas	Residential			
			Multi-Family Residential			
		High Density Areas	Multi-Family Residential			
		Natural Areas	Open Space			
		Active Recreational Areas	Open Space			
		Midtown Corridor	Mixed Use			
		Village Regional Centre	Village			
		Environmental Protection	Open Space			
		General Employment	Commercial			
	Ajax Whitby	High Density Residential	Multi-Family Residential			
Ajax OP		Low Density Residential	Residential			
		Milited Continencial Control	Multi Eamily Posidential			
		Prestige Employment	Commercial			
		Rural Area	Rural			
		Lintown Regional Centre	Centre			
		Mixed Use	Mixed Use			
		Major Open Space	Open Space			
		General Industrial	Industrial			
		Residential	Residential			
Whitby OP		Institutional	Institutional			
		Major Commercial	Commercial			
		Prestige Industrial	Industrial			
		Hamlet	Village			
		Community Commercial	Commercial			
	Oshawa	Residential	Residential			
		Downtown Oshawa Urban Growth Centre	Centre			
Oshawa OP		Planned Commercial Centre	Commercial			
		Planned Commercial Strip	Commercial			
		Special Purpose Commercial	Commercial			
		Open Space and Recreation	Open Space			
		Deferred by Regional Council	Other			

# Appendix E:

Pinch Point Streetscape Conditions

# **ELLESMERE ROAD-SCARBOROUGH**

## **Ellesmere Road from** Military Trail to Kingston Road

#### **Right-of-Way Characteristics**



#### **MILITARY TRAIL & ELLESMERE ROAD**

- Main intersection within the pinch point, serving UofT Scarborough Campus
- Two through lanes in each direction

\*\*\*\*\*\*

- Military Trail has channelized EB and WB right-turn lanes with pedestrian median
- Protected right-turn lane with pedestrian median turning westbound from Military Trail to Ellesmere Road
- Majority of bus traffic turns right from Ellesmere Rd to Military Trail at the intersection
- Large surface parking lot in proximity to the intersection, as well as higher density institutional buildings



#### **ELLESMERE ROAD EAST OF CONLINS ROAD TO KINGSTON ROAD**

Primarily low-density residential neighbourhood

- Houses are generally well set back and feature wide driveways .
- Narrow sidewalks and lack of streetscape elements
- Along some portions of the corridor, sidewalks only exist on the south side of Ellesmere Road

#### Streetscape Elements



TTC Bus shelter and wider pedestrian realm, with concrete banding



Tactile paving and wide corner treatment at crosswalks for high pedestiran volumes



Modern and higher density built form setback from the ROW



Painted crosswalks with wide crossing area









Pedestrian median/buffer space adjacent to right turn lane from Military Trail

Campus paths directly lead to intersection, connecting to a large surface parking lot to the north

Trailhead directly adjacent to and accessible via the main intersection

Lower traffic heading towards campus entrance, with one-lane ROW in each direction

#### **Pinch Point Details**

The character in this area varies, two of the major intersections in this area were profiled. The pinch point will be most impactful at the inter-section of Ellesmere Road and Military Trail at the University of Toronto Scarborough campus. Key considerations include high volumes of pedestrian traffic, integration with post-secondary institutions and connections to local and regional transit. Streetscape efforts will likely be focused around these intersections and can be aligned with those utilized on campus and to City of Toronto standards.

## **DOWNTOWN AJAX-PICKERING VILLAGE**

Kingston Road West and Old **Kingston Road from Elizabeth** Street to Rotherglen Road

#### **Right-of-Way Characteristics**



ELIZABETH STREET AND KINGSTON ROAD Northbound street, delineating the beginning of the pinch point

- T-intersection marks beginning of pinch point Four-lane cross-section with two through lanes in each direction
- Little sense of place or arrival into Downtown Ajax
- No evidence of streetscaping or landscape



#### **OLD KINGSTON ROAD**

A strong model for streetscaping and sense of place creation

- Old Kingston Road and Kingston Road West intersect west of Church Street
- One through lane in each direction, with perpendicular and parallel on-street parking
- Strong sense of place and wide, walkable pedestrian realm
- Heritage character with immense street furnishings and trees



# ROTHERGLEN ROAD NORTH & KINGSTON ROAD N-S street delineating the end of the pinch point

- Two through lanes with left turn lanes at
- intersection Surrounding land use is predominately
- low-density residential No evidence of streetscaping or landscape
- Mature trees provide shade to the pedestrian realm

#### Streetscape Elements



Crosswalks clearly delineated with signature pressed paving



Character area, heritage-style lighting with banners and planters



Black metal trash receptacles and unit paver accent banding



Rotherglen intersection-less walkable and an absence of consistent, distinct streetscape elements











No street trees, with exception of those on private property abutting the roadway

Hanging baskets and overlapping mature street cover from adjacent residential properties

Accent paving along Kingston Road, and degrading pedestrian clearway

Accent paving along Kingston Road, and wide pedestrian realm

## **Pinch Point Details**

The pinch point itself, extending from Elizabeth St to Rotherglen Road along Kingston Road W, is characterized by its lacking sense of place and effort to create an attractive and welcoming public realm. The absence of street furnishing and trees, as well as the presence of overhead hydro wires provides ample room for improvement. Old Kingston Road, to the north, and highlighted in the above streetscape elements, pro-vides a strong model of the streetscaping potential for the area and the character should be replicated along Kingston Road W.

# **DOWNTOWN WHITBY**

#### **Dundas Street from Frances** Street to Garden Street

#### **Right-of-Way Characteristics**



FRANCES STREET N-S street delineating the end of the pinch point through Downtown Whitby
T- intersection with two through lanes and a

- centre left-turn lane
- A mix of residential and commercials uses with a predominately auto-oriented character and large setbacks
- Wider ROW and decreased pedestrian realm space, with lack of streetscape elements

Residential/low density commercial adjacencies

EUCLID STREET TO BROCK STREET More accurately delineates the confines of the pinch point, as the Downtown portion of Whitby

- Four-lane cross-section with some on-street parking
- No turning lanes at some major intersections Narrow ROW
- Wider pedestrian realm and clear Downtown character and streetscaping
  - Consistent street wall framing the ROW



N-S roadway delineating the beginning of the pinch point

- Two through lanes in each direction with leftturn lanes at intersection
- Surrounding land uses include commercial, residential and natural areas. Intersection is characterized by large setbacks comprised of
- landscaping and parking lots Lack of streetscape elements and sense of place or arrival
- Narrow pedestrian realm with mature trees providing shade

#### **Streetscape Elements**



Durham PULSE bus shelter and wall art



Tactile paving at each intersection



Bollards at crosswalks and red accent paving alongside the street



Seasonal planting beds and parkette space











Heritage style, black metal accents with signature wayfinding and signage within the Downtown

Downtown seasonal banners and heritage-style lighting, with signature paving pattern on main and side streets extending from Dundas

Mature street trees throughout Downtown Core, wrapped with lights

Waste receptacle and bus shelter treatment

#### **Pinch Point Details**

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The pinch point is more accurately bounded by Brock Street S and Euclid Street, as the Downtown character exists mainly through this section and is defined by a more narrow roadway, lay-by parking and a wider pedestrian realm. The Downtown streetscaping efforts are well defined and can be continued along the corridor to provide an enhanced sense of arrival.

# **DOWNTOWN OSHAWA**

### King Street West and Bond Street West at Simcoe Street North

#### **Right-of-Way Characteristics**



#### **KING STREET WEST**

One-way eastbound traffic along King Street W

- Four lane cross-section with some on-street parking and patio extensions
- parking and patio extensions.More pedestrian traffic than Bond Street
- Lack of a gateway into Downtown Oshawa when entering on King Street



#### SIMCOE STREET NORTH

One-way northbound traffic north of King Street • Four-lane cross-section with on-street park-

- ing in right curbside laneMost distinct and notable streetscaping, with
- a consistent street wall enclosing the public relam

- Bus stops near each intersection
- Wider pedestrian clearway than King and Bond



#### BOND STREET WEST

One-way westbound traffic

- Four-lane cross-section with some on-street parking
- Inconsistent streetwall and less pedestrian traffic
- Bus stops near each intersection
- GO Station west of Simcoe intersection
- Red accent furniture, likely corresponding to the BIA

#### Streetscape Elements



Concrete curb separated bike lanes on side streets, no bike lanes on subject roadways





Character area, heritage-style lighting on concrete polished light post





Red accent street furnishing along Bond St





Black metal waste receptacles and benches- one per block



Crosswalks a faded pressed paving pattern along Simcoe Street

Seasonal hanging planter baskets on each light post

Concrete planters at main intersections with seasonal planting

Distinct character area banners delineating Downtown Oshawa

#### **Pinch Point Details**

Key considerations include the constrained ROW with narrow setbacks, and proposed removal of on-street parking. In addition, the area lacks a gateway feature or en-tranceway signage into the Downtown, which detracts from the area's sense of place. Streetscaping efforts have been implemented, howev-er, more consistent street furnishing and upgrades to degraded streetscape elements (crosswalk treatment, benches, bus shelters. etc), will be necessary to improve the area's image and pedestrian experience.

# Appendix F:

Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis

# S.W.O.T. Analysis: Durham-Scarborough Bus Rapid Transit Corridor

CATEGORY	ELEMENT	STRENGTHS	WEAKNESSES	OPPORTUNITIES	
Land Use & Growth Potential	High Growth <sup>1</sup>	<ul> <li>Urban Growth Centres located along the corridor are identified in the Growth Plan (2019) as focal points for development, are planned to accommodate significant population and employment growth to 2041.</li> <li>Investment in public service facilities and infrastructure is directed to centres along the corridor to serve planned higher density development, benefitting the regional transit network through providing additional ridership.</li> <li>Secondary planning and master planning processes have already commenced in a number of high-growth locations along the corridor, which may help development to proceed in a timely manner.</li> <li>Mixed-use development of medium and high density is planned abutting the corridor, creating the potential for corridor segments which will provide access to daily retail and services to residents, supporting complete communities.</li> <li>Ongoing redevelopment in multi-family residential areas is already occurring, indicating demand along the corridor.</li> </ul>	<ul> <li>Growth and development in these areas may take up to 25 years to be realized given typical timelines associated with master planning and secondary plan exercises underway, in addition to planning approvals and construction. Ridership will slowly increase, potentially in an uneven manner, as a result.</li> <li>Potential crowding on transit lines during peak periods beyond 2041, as growth continues.</li> <li>Most areas identified for high growth are already built-out.</li> </ul>	<ul> <li>High growth areas are connected to the greater region through the transit and active transportation infrastructure proposed through this project.</li> <li>Transit connections to the greater region create further demand for development in high growth areas.</li> <li>Future development provides transit-supportive densities to help achieve financially successful transit operations.</li> <li>Lands designated for high growth that are currently occupied by surface parking redevelop/intensify.</li> <li>Transit hubs are developed in high-growth locations, which spur private investment and contribute to economic development locally and regionally.</li> </ul>	<ul> <li>Infrastruct funding con</li> <li>Unknown</li> <li>Market watime.</li> <li>Multiple is</li> <li>Water and of growth eight the benefit articulated</li> </ul>
	Limited Growth <sup>1</sup>	<ul> <li>Strong community character.</li> <li>Existing lower density residential areas will provide potential ridership for the project in the early stages of operations.</li> <li>Villages may provide opportunities for redevelopment while keeping intact the strong character of the community, and may help to preserve community features that have cultural heritage value.</li> <li>Existing retail and services in these areas will have enhanced transit access.</li> <li>Existing residents in these areas will have enhanced transit access.</li> </ul>	<ul> <li>Existing low density residential areas are not likely to provide a significant increase in future transit ridership.</li> <li>Some low density residential areas do not have direct access to the corridor, which may act as a barrier to using the BRT.</li> </ul>	<ul> <li>Extend enhanced transit service to existing neighborhoods.</li> <li>Encourage people who currently drive private vehicles for all trips to begin making trips using transit to shift travel mode split.</li> <li>Improved transit facilities to encourage additional ridership.</li> <li>Additional transit connections to accommodate underserviced areas.</li> </ul>	<ul> <li>North/So provide cor</li> <li>Unknowr</li> <li>Residents</li> <li>continue to</li> </ul>
	No Growth/Unknown <sup>1</sup>	<ul> <li>Multi-use pathways, open spaces and parks along the corridor will continue to provide the community with recreational spaces.</li> <li>Natural features, environmentally significant areas and buildings that have cultural heritage value will remain intact for current and incoming populations along the corridor.</li> </ul>	<ul> <li>No future ridership will be realized in these areas.</li> </ul>	<ul> <li>Project provides enhanced connectivity to these areas.</li> <li>Expansion and better connectivity to recreational space through the active transportation network by integrating cycling and pedestrian infrastructure into design where appropriate.</li> </ul>	• N/A
Trip Generators	Existing Institutions	<ul> <li>Existing institutions have plans to grow and intensify (i.e. UTSC) and will provide potential increased future ridership.</li> <li>Planned active transportation infrastructure similar to that found in the UTSC campus master plan will add to and help enhance the reach of the greater municipal transit and active transportation network.</li> <li>A number of existing institutions within walking distance to the BRT route that will have enhanced transit connectivity, providing visitors and employees new mobility options.</li> </ul>	• Existing institutions have been identified at the outer edge of the Study Area and may not have direct access to the BRT route.	<ul> <li>Provide students and employees the ability to get to campus without relying on a private vehicle.</li> <li>Transit connectivity helps achieve the objectives of the UTSC campus master plan.</li> <li>Shift travel mode split to access institutions.</li> <li>Large surface parking lots can be redeveloped to make better use of land and expand institutional footprints as transit usages and population increases along the corridor.</li> </ul>	<ul> <li>Staff and</li> <li>Driving a</li> <li>Travel mo</li> <li>North/so frequently</li> <li>BRT stops transit.</li> </ul>
	Major Office and Business Clusters Higher Density, Downtown Areas and Centres	<ul> <li>Clusters currently provide a large number of employment, retail and service establishments that draw people to the corridor from the Greater Toronto Area.</li> <li>Clusters are linked in most areas by land with mixed-use permissions along the BRT corridor, which helps to encourage private investment and transit ridership to access clusters.</li> <li>Many clusters have been identified to accommodate future growth in provincial and municipal plans, and there are ongoing secondary planning processes to support and direct growth, which may create future trip generators.</li> </ul>	<ul> <li>Development pattern is autocentric with an ample supply of parking spaces that are free to use, encouraging private automobile use to access these areas.</li> <li>Clusters are located a large distance from each other and separated by low-rise residential and open space uses, which may prohibit continuous redevelopment along the corridor.</li> </ul>	<ul> <li>Select business clusters along the corridor such as Scarborough Centre are planned to intensify/redevelop dramatically over the next 25 years and may provide opportunities to develop new office space, residential units and add to existing retail. This may bring additional population and employment and create future trip generators.</li> <li>Employees and users utilize rapid transit to access business clusters.</li> <li>Businesses surrounded by surface parking lots intensify and create additional trip generators.</li> </ul>	<ul> <li>Free or in destination</li> <li>Stops are</li> <li>On street</li> <li>Visibility of</li> <li>Certain cl may make during BRT</li> <li>BRT stops</li> </ul>
	Power Retail	<ul> <li>Most power retail nodes along the corridor are set back from the BRT route and will encounter minimal interruptions during project construction.</li> <li>People are already drawn to these areas to access retail.</li> <li>Many different goods and services required for daily living are provided through retail that people living along the corridor have access to.</li> </ul>	<ul> <li>Power retail nodes are designed to be accessed by a private vehicle.</li> <li>Power retail nodes are located in close proximity to highway interchanges as they serve a large market area, which further encourages automobile use to access them.</li> </ul>	<ul> <li>Additional population accesses retail and contributes to economic growth through intensification and redevelopment.</li> <li>Demand for retail space to accommodate the incoming residential and employment population increases.</li> <li>New retail space has the potential to draw additional visitors from within the study area, who arrive via transit through a regional transit network.</li> </ul>	<ul> <li>Entrance:</li> <li>BRT stops facilities via</li> <li>BRT cons</li> <li>Essential accommod</li> </ul>
	Main Street Retail	<ul> <li>Many different goods and services required for daily living are provided through retail that people living along the corridor have access to.</li> <li>Main street retail creates a strong community character and generally have small enough floorplates to accommodate independent retailers.</li> <li>Main street retail creates pedestrian traffic.</li> </ul>	• Main street retail, like in downtown Whitby, abuts the corridor, which may create challenges to access retail during BRT construction.	<ul> <li>Additional population accesses retail and contribute to economic growth through intensification and redevelopment.</li> <li>Demand for retail space to accommodate the incoming residential and employment population increases.</li> <li>Increase in pedestrian traffic due to public realm upgrades.</li> </ul>	<ul> <li>BRT const</li> <li>Essential accommod</li> </ul>
	Community Facilities	<ul> <li>Existing and future populations will be able to access community facilities via transit.</li> <li>Community facilities, both existing and future, may provide potential transit ridership.</li> <li>Residents that currently utilize transit to access facilities can access community facilities in a more time efficient manner due to BRT.</li> <li>A number of community facilities abut the route and will be easily accessible.</li> </ul>	• Facilities not located immediately adjacent to the route may be difficult to access.	<ul> <li>Better connections to local and regional transit networks to provide greater connectivity to community facilities.</li> <li>More residents access community facilities via transit.</li> </ul>	<ul> <li>Users cor</li> <li>Increased expand ser</li> <li>BRT stops transit.</li> <li>Facilities</li> <li>Project co</li> </ul>

TUDEATC
cture planned to service these areas is not developed on time or at all due to instraints. n timing of redevelopment.
weakens and demand for development in these areas is stifled for a period of
nd sanitary infrastructure capacity is not sufficient to accommodate the amount expected / desired. residents may be resistant to high density development in their neighbourhood
ts that the investment and development bring to the wider community must be I.
outh transit and active transportation connections are not put in place to nnectivity to existing neighbourhoods. n timing or feasibility of redevelopment in these areas.
s who currently utilize a private vehicle to access daily needs and employment o do so and do not contribute to increased transit ridership.
l users continue to drive to access facilities. private vehicle takes less time to get to a destination than the BRT. ode split to access institutions remains unchanged.
buth connections to other transit routes may not be timed correctly or run enough for user to travel to and from existing institutions using transit.
nexpensive parking encourages employees and visitors to drive to these ns.
t parking that businesses require is removed.
it difficult to keep public aware that businesses are operational and accessible
is may not be located close enough to encourage users to access the facilities
es into power retail centres are difficult to access during BRT construction. Is are not located close enough to retail to encourage users to access the a transit.
struction reduces visibility of businesses during construction. Parking spaces that are required to support retail are removed to date the BRT.
struction reduces visibility of businesses during construction. parking spaces that are required to support retail are removed to date the BRT.
ntinue to access community facilities via private vehicle. d population along the corridor puts pressure on community facilities to
rvice delivery to accommodate further demand. Is are not located close enough to encourage users to access the facilities via
abutting the route are difficult to access during the construction period. construction causes traffic and delays in accessing facilities.
CATEGORY
---------------------
Network Connections
Streetscape

<sup>1</sup> Please see Sections 5.1.1.1 and 5.1.1.2 to gain an understanding of high growth, limited growth and no growth/unknown land use designations are defined for the purposes of this exercise.

THREATS
bose to use the Lakeshore East GO Train Line instead of the BRT, as the rail line irectly to Union Station and the greater region via rail and provides frequent
not provide adequate time savings to the user for making regional/longer
gration is not implemented and transit is costly for users if having to transfer to t.
rst mile/last mile connections. connections take longer than anticipated to construct and be operational.
uth transit connections are not timed properly and cause long wait times ransferring to and from the BRT. uth connections do not run frequently enough. ray not run at hours when certain employees need it, such as shift workers. rst mile/last mile connections. rship. e time savings.
cess to major business and power retail nodes via highway interchanges and ds maintains private vehicle use. nts along the BRT corridor, which are located on arterials, increase travel
edestrian and cycling networks are interrupted during project construction. uth connections and feeder routes to the greater active transportation e limited. menities are not built into transit stations. does not serve key destinations that will result in high rates of cycling. lumes and road speed creates unsafe cycling conditions if separated bike lanes plemented where proposed. emand along the corridor is lacking.
parking and narrow through lanes at pinch points in areas like Downtown esent potential conflicts with future BRT integration. pe elements and sense of place is lacking in areas where narrow right of way t, constraining BRT integration. nt in pedestrian realm is insufficient to transform the corridor, and the mains auto-oriented by design.
ic along the cornuor remains low and pedestrian intrastructure is not well