

#### REFERENCE

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<http://www.bing.com/maps>  
 Projection: UTM Zone 17N Datum: NAD 83

Groundwater level measurements were carried out by WSP staff at nine monitoring wells on May 2 and May 3, 2016. Water levels measured ranged from 0.91 mbgs to 9.02 mbgs. Three wells were noted to be dry to depths ranging from 7.4 mbgs to 8.1 mbgs. The groundwater monitoring indicates that the shallow groundwater levels are generally between 6.5 mbgs and

9.0 mbgs within the Study Area, with the exception located at BH15-15 (in the vicinity of the tributary to Black Creek), where the static water level was measured 0.91 mbgs. Based on the design drawings, construction is unlikely to intercept the groundwater table and preliminary dewatering estimates indicate that the volume of excess water generated during earthworks is likely to be minimal, and would not require an Environmental Activity and Sector Registry (EASR) or Permit to Take Water (PTTW). These estimates should be updated through the detailed design process when additional hydrogeological information becomes available.

For the analyzed metals and inorganics parameters, chloride was the only parameter that exceeded the applicable standard at BH15-15, located within the Keele Street extension.

PHCs (F2, F3, and F4 fractions) were measured at concentrations exceeding the MOECP applicable Standards at three locations (BH15-07B, BH15-14, and BH15-15). F2 and F3 fractions exceeded at BH15-07B, F3 and F4 fractions exceeded at BH15-14, and F3 fraction exceeded at BH15-15. These locations are situated across the length of the Study Area, and impact the Gunns Road extension, Keele Street extension, and Davenport Road extension.

PAHs were measured at concentrations exceeding the MOECP Table 3 Standards at one location (BH15-14). BH15-14 is situated in the north portion of the Study Area, in the vicinity of the Gunns Road extension and the Keele Street extension. PAH site condition standards are low, which reflects the toxicity of these contaminants and their generally low aqueous solubility. Instances of exceedances can be associated with contaminants adhered to sediments rather than being representative of dissolved component in groundwater. Concentrations of PAHs in soil also exceeded the standards at this location.

VOCs were measured exceeding the applicable standards at one location (BH15-07B). This location also had exceedances of PHCs in the F3 and F4 fractions in groundwater, and PHCs in the F1 fraction in soil. This well was drilled within the former Cadet Cleaners property, and was identified in the Phase One ESA as high potential environmental concern. The groundwater at BH15-07B exceed the tetrachloroethylene, trichloroethylene, vinyl chloride, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, and vinyl chloride levels in the standards.



Tetra-chloroethylene and trichloroethylene are common industrial solvents, and vinyl chloride, cis-1,2-dichloroethylene, and trans-1,2-dichloroethylene are degradation products of these chemicals. Exceedances at this location have implications for the Davenport Road extension.

Based on the groundwater quality results, a groundwater management plan is recommended during construction.

### 3.1.8 Soil

A soil sampling program was completed where soil samples were obtained from the borehole drilling program. The soil samples were submitted for analysis of metals, inorganic parameters, PAHs, PHCs including the F1 to F4 fractions and benzene, toluene, ethylbenzene, and xylene, and VOCs. The details of the soils conditions assessment are documented in **Appendix D**.

Comparison of analytical results of the investigation to the applicable MOECP 2011 Standards identified one or more metals and inorganics parameters exceeding the standard at six locations. Electrical Conductivity and/or Sodium Adsorption Ratio concentrations exceeding the Standards were identified in BH15-03B, BH15-09, and BH15-10. These locations are on or adjacent to St. Clair Avenue West, and are indicative of potential salt impacts. BH15-02 is also located along St. Clair Avenue West, and exceeded the standard for lead.

The sample collected at BH15-04D exceeded the applicable standards for six metals parameters (antimony, barium, boron, lead, molybdenum and silver). This borehole is located within a wrecking yard and adjacent to the railway in the northern portion of the project. Exceedances at this location have implications for the Keele Street extension and the Gunns Road extension.

Two locations (BH15-07B and BH15-14) were identified exceeding the applicable standards for one or more PAHs. BH15-07B is located within the former Cadet Cleaners property in the south portion of the Study Area, along the Davenport Road extension. BH15-14 is located within the wrecking yard in the northern portion of the Study Area, along the Gunns Road extension. The sample collected at BH15-14 also exceeded the standard for lead. The samples that contained exceedances were collected from fill material at these locations where visual impacts were observed.

Samples at three locations (BH15-07B, BH15-10, and BH15-14) exceeded the Standards for PHCs. Samples collected from BH15-07B and BH15-10 exceeded the Standard for F1 fraction, and the sample collected from BH15-14 exceeded the Standard for F3 fraction. These three locations are situated across the length of the Study Area and represent impacts to each of the preferred alternatives.

Based on the results of the soil quality analysis, a soil management plan is recommended during construction.

### 3.2 Socio-Economic Environment

The study area exists within the City of Toronto. There are primarily two municipal wards that divide the study area: Ward 11 (York South-Weston) and Ward 17 (Davenport), while Ward 12 (York South-Weston) shares a border with the northern limit of the study area. Please note that the ward references included in the TMP are based on the 2018 Ward map.

Ward 11 is bounded by Highway 401 to the north, the Humber River to the west, the Canadian Pacific (CP) rail to the south, and Jane Street and Weston Road to the east. This ward includes sections of several Toronto neighbourhoods, including: Junction Area, Rockcliffe-Smythe, Weston, Mount Dennis, and Cliffcrest.

The northern limit of Ward 17 is Eglinton Avenue West, extending to Winona Drive to the east, the CP rail to the south and the Kitchener Rail Corridor rail to the west. This ward is comprised of sections of several Toronto neighbourhoods, including: Weston-Pellam Park, Corsa Italia-Davenport, Wychwood, Oakwood-Vaughan, Caledonia-Fairbanks, and Keele-Edlington West.

#### 3.2.1 Demographic Profile

The City of Toronto is divided into four districts: Scarborough, Toronto and East York, North York, and Etobicoke York. The Transportation Master Plan (TMP) study area is within Wards 11 and 17, which are located in the Etobicoke York District. This district comprises of the lands west of downtown Toronto and has seen a population increase of 3.3% between 2006 and 2011.

##### Ward 11 (York South-Weston)

The population of Ward 11 has been progressively increasing with a growth of approximately 3.8% between 2006 and 2016 from a population of 60,325 to 62,620 (Toronto City Planning, 2018). According to Toronto's 2011 National Household Survey, the majority of the labourforce in this ward works in the following sectors: manufacturing, retail trade, health care, and social assistance.

Land use form is characterized by older private residential dwellings, with the majority constructed prior to 1980. This established neighbourhood saw a 0.9% increase of new private dwellings between 2006 and 2011. Housing in this ward is dominated by apartments, followed by row/townhouses.

### Ward 17 (Davenport)

Between 2006 and 2016, the population in Ward 17 decreased by 0.5%; from 50,995 to 50,745 (Statistics Canada, 2016). The majority of the residents in Ward 17 are employed in construction, transportation, warehousing, and retail trade sectors.

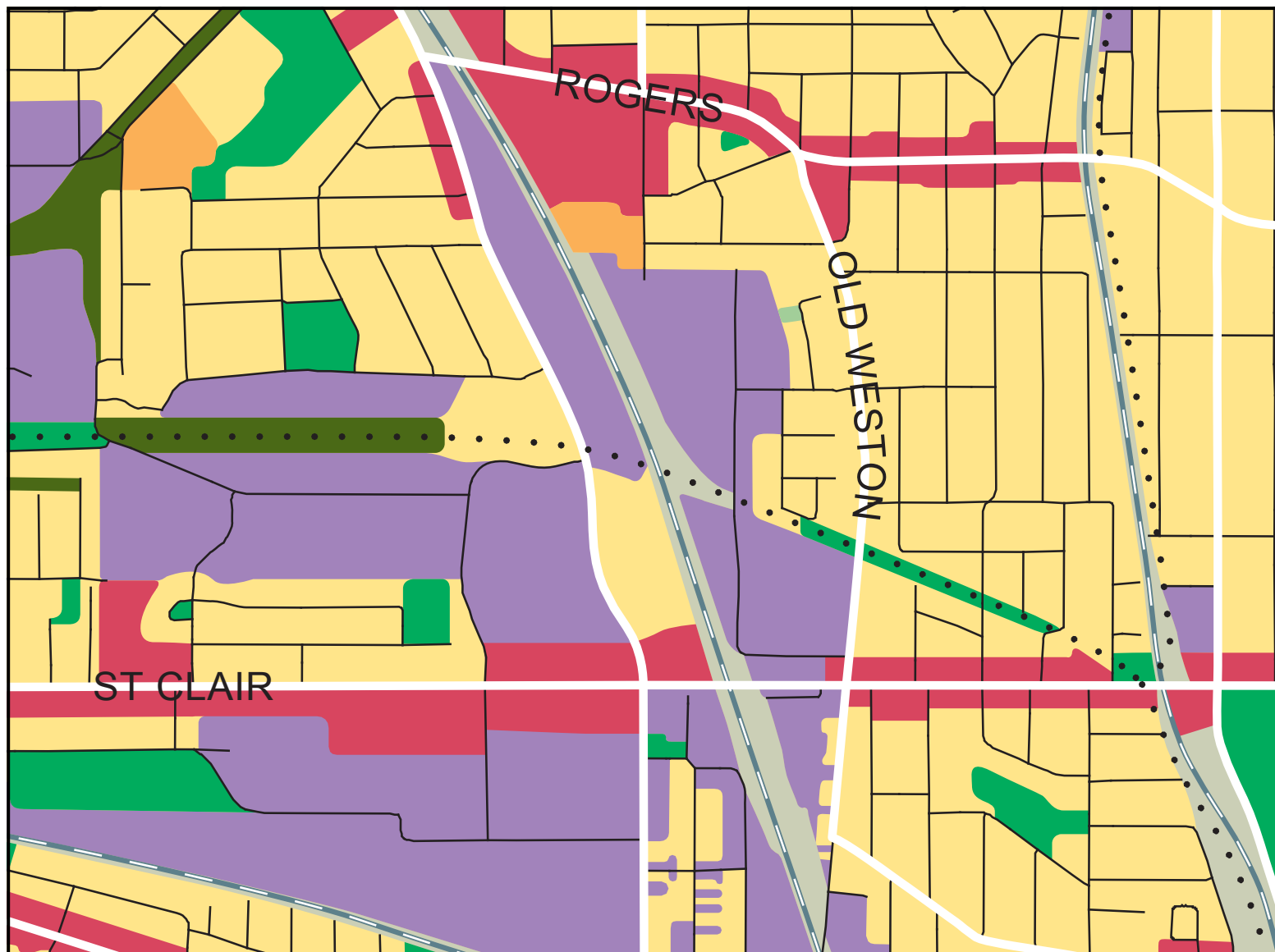
The housing supply in this ward is largely characterized by single-family dwellings, row/townhouses and apartment buildings (less than five stories). The vast majority of the single-family dwellings were constructed in or prior to the 1960s. Construction of new private dwellings has decreased by 2.3% between 2006 and 2011.

#### 3.2.2 Land Use

The City of Toronto *Zoning By-Law 569-2013* designates the lands within the study area as predominately “Residential” and “Employment Industrial”, with pockets of ‘Commercial Residential” and “Open Space”. The rail corridor that runs north-south through the study area is zoned as “Utility and Transportation”. The railway tracks that service Canadian Pacific, GO Transit and Metrolinx is designated as a utility corridor. The north-south and east-west tracks form a junction in the southern portion of the study area. **Exhibit 3-6** shows the land use designations for the study area.

The section of St. Clair Avenue West east of the rail corridor is zoned as a mixed-use corridor that is designated as an Avenue in the City’s Official Plan. Ground floors are generally occupied by commercial businesses with residential units located on the upper floors.

The Stockyards Village (the “Stockyards”), which opened in August 2015, is an urban, mixed-use retail centre with over 51,000 m<sup>2</sup> of retail and office space. The Stockyards is located on the northwest quadrant of the St. Clair Avenue West and Keele Street / Weston Road intersection, and is bounded by Gunns Road and Weston Road. Operated by RioCan, the Stockyards is a redevelopment of a historically significant industrial site. The Stockyards contributes to the transformation of this neighbourhood that was recognized for its industrial uses to a residential neighbourhood with commercial and retail uses.



## Land Use Designations

- Neighbourhoods
- Apartment Neighbourhoods
- Mixed Use Areas
- Parks and Open Space Areas
- Natural Areas
- Parks
- Other Open Space Areas  
(Including Golf Courses, Cemeteries, Public Utilities)
- Institutional Areas
- Regeneration Areas
- Employment Areas
- Utility Corridors
- Major Streets and Highways
- Local Streets
- Railway Lines
- Hydro Corridors



### 3.2.3 Noise and Vibration

A noise assessment was completed to assess the existing conditions and the findings are documented in **Appendix E**. Given the scope of the TMP, a vibration assessment is not required, since the improvements contemplated serve motor vehicles, cyclists and pedestrians. These modes do not generate the vibration due to the vibration dampening attributes of rubber tire vehicles. The main source of vibration in the study area would be attributed to the St. Clair-Old Weston SmartTrack Station and the Regional Express Rail (RER) initiatives, which are assessed through separate study documentations. In addition, the existing streetcar operations along St. Clair Avenue West are largely being maintained from existing conditions in terms of services and distance to residential uses.

The primary noise sources within the study are vehicular noises. It should be noted that highly intrusive short duration noise caused by a source such as an aircraft flyover or a train pass-by has not been included. Therefore, the sound levels from train pass-bys from MacTier Sub / Weston Sub were not included in the noise assessment. The existing road traffic volumes were determined based on Turning Movement Counts provided by the City.

An Outdoor Living Area (OLA) is an outdoor space easily accessible from a building and is designed for the quiet enjoyment of the outdoor environment. A review of the study area identified OLAs that would have the greatest exposure to the project undertaking and therefore be most impacted by the project. The locations of these OLA receptors were generally assumed to be 3 m from the rear façade of the building at a height of 1.5 m above the existing grade at the critical noise sensitive areas. The locations of the receptors were established primarily near Old Weston Road/Davenport Road, near the terminus of Keele Street, and along the frontage of St. Clair Avenue West near the residential use west of the rail bridge. The results indicate that the existing noise levels in the study area are typical of urban areas with daytime ambient sound levels ranging from 46 dBA to 62 dBA.

### 3.2.4 Air Quality

Air pollution is strongly influenced by weather systems (i.e., meteorology) that typically move out of central Canada into the mid-west of the U.S. then eastward to the Atlantic coast. In Ontario, the number of smog days is increasing, which is affected by motor vehicle emissions and weather systems. Over half of Toronto's air pollution is emitted within the City's boundaries, with the most significant local source being motor vehicle traffic, including all types of personal and freight vehicles (Toronto Public Health, 2014). Impacts to air quality was measured qualitatively based on number of vehicles and is linked to the traffic studies completed as part of this study.

Two of the criteria for achieving healthier air that can be addressed as part of this TMP, include: reducing traffic-related pollution associated with motor vehicles idling during congestion and reducing vehicle dependency by providing more opportunities for people to use alternate modes of transportation including: walking, cycling and taking transit.

### 3.3 Cultural Environment

#### 3.3.1 Archaeological Resources

A Stage 1 archaeological Assessment was completed during the Functional Planning Study (FPS) that included gathering background data and completing a survey of the study area in August 2014. The Stage 1 archaeological assessment identified several sites with archaeological potential that requires further Stage 2 and 3 archaeological assessment. An additional Stage 1 archaeological assessment was completed as part of this TMP to assess the archaeological potential associated with the additional alternatives proposed, and is provided in **Appendix F**. Stage 1 archaeological assessments were completed as part of the TMP which identified three areas requiring further Stage 2 archaeological assessment. The remainder of the study area is deemed to exhibit no archaeological potential due to the scale and intensity of the landscape alterations that have resulted from development.

A Stage 2 archaeology assessment was completed in October 2018 in the areas where further archaeological assessment was recommended by the Stage 1 archaeological assessments completed during the FPS and TMP, including 153 Weston Road and the Lavender Creek Ravine. A field liaison representative from the Mississaugas of the Credit First Nation was present during the Stage 2 Archaeological Assessment at 153 Weston Road and Lavender Creek ravine. No archaeological materials were recovered during the October 2018 archaeological assessment, and there is no recommendation for further work in the areas where the Stage 1-2 archaeological assessment was completed. The Stage 1-2 Archaeological Assessment Reports are provided in **Appendix F**.

There are lands with deeply buried archaeological potential requiring Stage 3 Archaeological Assessment (i.e. trenching) recommended from the Stage 1 archaeological assessment completed during the FPS. Given these areas are within privately owned land, and paved over, this work will be completed during Detailed Design once property purchase has been completed. A commitment to complete all required additional archaeological work, and standard best management practices and mitigation measures are summarized in **Exhibit 7-3**.



### 3.3.2 Built Heritage and Cultural Heritage Landscapes

A cultural heritage assessment was carried out to provide preliminary information about built heritage and cultural heritage landscapes within the study area. The cultural heritage assessment is provided in **Appendix G**. The assessment focused on identifying cultural heritage landscapes, above-ground built heritage resources that are older than forty years and recognized heritage resources. A windshield reconnaissance survey was conducted in October 2015 to confirm the current conditions for the cultural heritage landscapes and built heritage features identified in the FPS.

22 cultural heritage resources were identified during the survey of the study corridor, as summarized in **Exhibits 3-7** and shown in **Exhibit 3-8 a-c**. The survey confirmed the grain elevators associated with the former Campbell Flour Mills Co. Ltd./Maple Leaf Mills site located at 43 Junction Road have been demolished since being identified in the 2013 survey for the FPS.

Potential impacts to the heritage resources and proposed mitigation measures are summarized in **Section 7.1.3**

## Exhibit 3-7: Summary of Existing Cultural Heritage Resources

Site #	Location	Description	Known Heritage Recognition
1	35 Cawthra Avenue City of Toronto	National Rubber Co. (former Gurney Foundry Co.)	<ul style="list-style-type: none"> <li>The property is not included on the <i>City of Toronto Heritage Register</i>.</li> <li>Noted as being of historical value or interest in the walking tour pamphlet, "Carleton &amp; Davenport Revisited", published by the West Toronto Junction Historical Society.</li> </ul>
2	Bounded by Junction Road (south), Keele Street (west), St Clair Avenue (north) and Cawthra Avenue (east) City of Toronto	Residential Neighbourhood, Late 19 <sup>th</sup> and early 20 <sup>th</sup> century Subdivision	<ul style="list-style-type: none"> <li>The property is not included on the City of Toronto Heritage Register.</li> </ul>
3	Old Weston Road through Study Focus Area from Junction Road to Lavender Road City of Toronto.	Old Weston Road	<ul style="list-style-type: none"> <li>The property is not included on the City of Toronto Heritage Register.</li> <li>Noted as being of historical value or interest in the walking tour pamphlet, "Carleton &amp; Davenport Revisited", published by the West Toronto Junction Historical Society.</li> </ul>
4	224-316 Old Weston Road City of Toronto	Workers' Housing	<ul style="list-style-type: none"> <li>The property is not included on the City of Toronto Heritage Register.</li> <li>Noted as being of historical value or interest in the walking tour pamphlet, "Carleton &amp; Davenport Revisited", published by the West Toronto Junction Historical Society.</li> </ul>

Site #	Location	Description	Known Heritage Recognition
5	Davenport Road in the Study Focus Area from Old Weston Road to Osler Avenue City of Toronto	Davenport Road	<ul style="list-style-type: none"> <li>The property is not included on the City of Toronto Heritage Register.</li> <li>Davenport Road and buildings at 2053 and 2045-2049 noted as being of historical value or interest in the walking tour pamphlet, "Carleton &amp; Davenport Revisited", published by the West Toronto Junction Historical Society.</li> </ul>
6	Bounded by CP tracks (south), Old Weston Road (west), to St. Clair Avenue West (north) and Osler Avenue (east) City of Toronto	Residential Neighbourhood, Late 19th and early 20th century Subdivision)	<ul style="list-style-type: none"> <li>The property is not included on the City of Toronto Heritage Register.</li> </ul>
7	2054 Davenport Road City of Toronto	Division 11 Police Station (Carleton Public School)	<ul style="list-style-type: none"> <li>Notice of intention to designate under Part IV of the OHA was tabled at City Council in 2008 but it did not proceed. The property is not included on the City of Toronto Heritage Register.</li> <li>Noted as being of historical value or interest in the walking tour pamphlet, "Carleton &amp; Davenport Revisited", published by the West Toronto Junction Historical Society.</li> </ul>
8	257 Osler Street City of Toronto	Residence	<ul style="list-style-type: none"> <li>The property is not included on the City of Toronto Heritage Register.</li> <li>Noted as being of historical value or interest in the walking tour pamphlet, "Carleton &amp; Davenport Revisited", published by the West Toronto Junction Historical Society.</li> </ul>
9	315 Osler Street City of Toronto	Carleton Village Public School (Osler	<ul style="list-style-type: none"> <li>The property is not included on the City of Toronto Heritage Register.</li> </ul>

Site #	Location	Description	Known Heritage Recognition
		Senior Public School)	
10	65 Ford Street City of Toronto	Centre Charismatique Parole de Grace (Former West Toronto Fire Hall No. 2)	<ul style="list-style-type: none"> <li>The property is not included on the City of Toronto Heritage Register.</li> </ul>
11	St. Clair Avenue West and Old Weston Road City of Toronto	Community of Carlton	<ul style="list-style-type: none"> <li>The property is not included on the City of Toronto Heritage Register.</li> <li>Noted as being of historical value or interest in the walking tour pamphlet, "Carleton &amp; Davenport Revisited", published by the West Toronto Junction Historical Society.</li> </ul>
12	St. Clair Avenue between Keele Street and Old Weston Road	St. Clair Avenue West Railway Underpass	<ul style="list-style-type: none"> <li>The property is not included on the <i>City of Toronto Heritage Register</i>.</li> <li>Metrolinx completed a Cultural Heritage Screening Report and Cultural Heritage Evaluation Report (CHER) for the St. Clair Avenue West Railway Underpass as part of the Environmental Project Report for the St. Clair-Old Weston SmartTrack Station which recommended that a Heritage Impact Assessment be completed during detail design. The following Statement of Cultural Heritage Value was developed by the Metrolinx Heritage Committee for the St. Clair Ave. West Subway:   <i>The St. Clair Avenue West Subway has physical, associative and contextual cultural heritage value. The structure displays strong associative value as part of the Northwest Toronto Grade Separation project. The Northwest Toronto Grade Separation was one of four large-scale grade separation projects undertaken in the City of Toronto in the first decades of the 20th century. During this period, the West</i> </li> </ul>



Site #	Location	Description	Known Heritage Recognition
			<p><i>Toronto Junction in the northwest part of the city experienced significant industrial growth. The expansion of factories in combination with the network of railroad tracks crossing the area resulted in significant traffic problems. The City of Toronto began lobbying for grade separation in the northwest part of the municipality in the early 1920's. Unlike the other grade separation projects that entailed a linear rail corridor, the Northwest Toronto Grade Separation project was complex and comprised several lines that were owned by CN and CP. The grade separation work allowed the TTC to expand its streetcar network and enhanced connections between West Toronto Junction and other parts of the city. The St. Clair Avenue West Subway is directly associated with the Northwest Toronto Grade Separation project, a significant city building activity in Toronto. It is also linked to CN, an organization of importance to the West Toronto Junction. The structure reflects the work and ideas of CN's Central Region bridge engineering office which was under the leadership of Thomas T. Irving, Chief Engineer and Charles P. Disney, Bridge Engineer. Both have been noted for their innovation and expertise in concrete grade separation structures of this type.</i></p> <p><i>The structure has physical and design value as a result of the engineering methods used by CN for its construction. For the grade separation, CN began to use precast concrete deck slabs to construct rail bridges under traffic in the early 1930's and by 1933 they were using this method regularly for grade separations structures. St. Clair Avenue West Subway is an early example of this method in CN's Central Region and it consists of a cast-in-place concrete for the substructure and reinforced, precast concrete deck slabs for the superstructure. The concrete slabs were generally designed to hold one rail of a single track. This structure carries 4 active tracks across the expanse of St. Clair Avenue West.</i></p> <p><i>The St. Clair Avenue West Subway has contextual value as one of the last remnants that maintains the historic industrial character of the area. The property is historically linked to the rail corridor, St. Clair Avenue West, and the remaining industrial structures. The property is</i></p>

Site #	Location	Description	Known Heritage Recognition
			<i>prominently located on St. Clair Avenue West. The grade separation lowered the street below the structure so as you approach the Subway from either side it becomes the most prominent feature. The restriction of traffic flow caused by the later addition of a streetcar lane further emphasized the presence of the structure and as a result the St. Clair Avenue West Subway has become a landmark in the area.</i>
13	East of Keele Street, north to south through study area.	CP and GO Transit Rail Corridor	<ul style="list-style-type: none"> <li>The property is not included on the City of Toronto Heritage Register.</li> </ul>
14	No municipal number, St. Clair Avenue West, west of Heydon House (1834 St. Clair Avenue West).	Hydro Transformer Station	<ul style="list-style-type: none"> <li>The property is not included on the City of Toronto Heritage Register.</li> </ul>
15	1834 St. Clair Avenue West on the northwest corner of St. Clair Avenue West and Old Weston Road City of Toronto	Heydon House Hotel	<ul style="list-style-type: none"> <li>The property is designated under Part IV of the Ontario Heritage Act, By-law 599-83.</li> <li>Noted as being of historical value or interest in the walking tour pamphlet, "Carleton &amp; Davenport Revisited", published by the West Toronto Junction Historical Society.</li> </ul>
16	373-411 Old Weston Road East side of Old Weston Road, north of St. Clair Avenue City of Toronto	Housing	<ul style="list-style-type: none"> <li>The property is not included on the City of Toronto Heritage Register.</li> <li>Noted as being of historical value or interest in the walking tour pamphlet, "Carleton &amp; Davenport Revisited", published by the West Toronto Junction Historical Society.</li> </ul>

Site #	Location	Description	Known Heritage Recognition
17	Runs east to west across the study area to the north of St. Clair Avenue West City of Toronto	Toronto & Niagara Transmission Corridor	<ul style="list-style-type: none"> <li>The property is not included on the City of Toronto Heritage Register.</li> </ul>
18	153 Weston Road City of Toronto	ABC Lumber	<ul style="list-style-type: none"> <li>The property is not included on the City of Toronto Heritage Register.</li> <li>Based on the historical significance of the property (i.e. Transfer Station for the Toronto Suburban Railway), a Cultural Heritage Evaluation Report is recommended for the property, particularly the white building during the next design phase.</li> <li>Local community groups and residents expressed interest in the preservation of the white building on the property due the historical significance of the property.</li> </ul>
19	180-192 Weston Road City of Toronto	Workers' Housing	<ul style="list-style-type: none"> <li>The property is not included on the City of Toronto Heritage Register.</li> </ul>
20	201 Weston Road City of Toronto	Canada Cycle & Motor Co. Ltd. and Willys-Overland Motor Company	<ul style="list-style-type: none"> <li>The property is not included on the City of Toronto Heritage Register.</li> </ul>
21	30 Turnberry Avenue City of Toronto	General Mercer Public School	<ul style="list-style-type: none"> <li>The property is not included on the City of Toronto Heritage Register.</li> </ul>
22	18 Lavender Road City of Toronto	St. Matthew Catholic School	<ul style="list-style-type: none"> <li>The property is not included on the City of Toronto Heritage Register.</li> </ul>

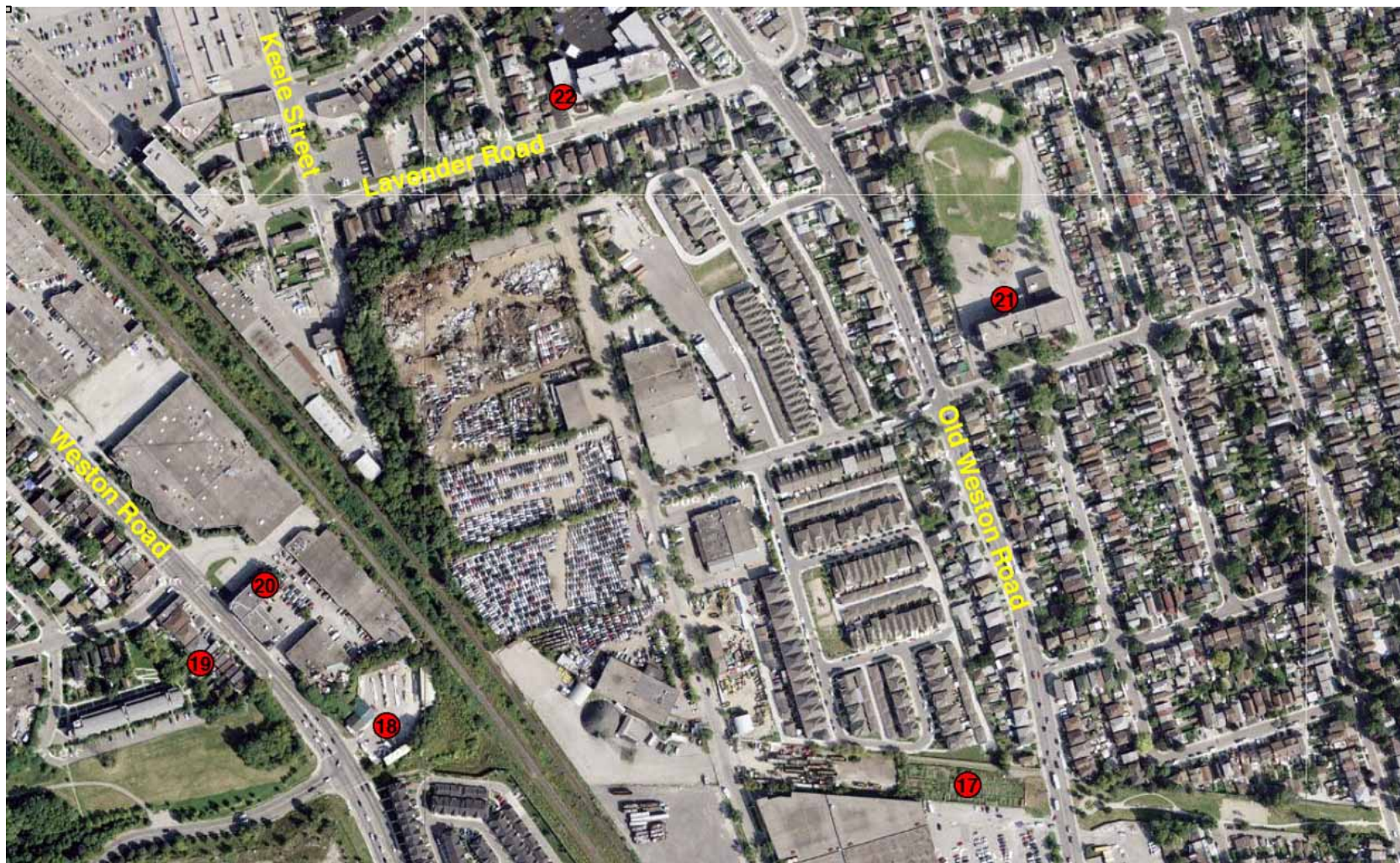












### 3.4 Municipal Servicing and Utilities

The existing municipal servicing infrastructure and utilities within the study area along the following roads were identified to understand the potential for conflicts with proposed alternatives. The findings are detailed in the servicing and utility report provided in **Appendix H**. The services and utilities were categorized as shallow, deep, or abandoned. The project team met and coordinated with the various utility and service providers such as Toronto Water and Enbridge (full list of utility and service providers consulted is documented in Section 6.2 of the TMP) to establish the existing conditions within proximity of the following sections.

- St. Clair Avenue West from Keele Street to Osler Street;
- Davenport Road near Old Weston Road;
- Union Street between Townsley Street and Turnberry Avenue;
- Keele Street south of Lavender Road; and
- Gunns Road near Weston Road.

#### 3.4.1 Transportation Features

As noted in **Section 2.1**, the underlying cause for the traffic congestion along St. Clair Avenue West within the study area is due to the lane reduction under the Kitchener GO railway underpass, limited east-west routes across the railway, and lack of active transportation facilities. The following section documents the existing transportation conditions in the study area with respect to vehicles, transit and active transportation.

#### 3.4.2 Roadway Network

The key arterial roads within the study area include: St. Clair Avenue West, Davenport Road, Weston Road, Old Weston Road and Keele Street. The key characteristics of these roads are outlined as follows:

- **St. Clair Avenue West** is a four-lane major arterial with two lanes in each direction and an exclusive street car right-of-way in the centre. The portion of the street around the Kitchener GO railway becomes one motor vehicle lane in each direction. The speed limit on St. Clair Avenue West in the study area is 50km/h.
- **Keele Street** is a four-lane major arterial with two lanes in each direction. The alignment for Keele is discontinuous at the rail corridor from St. Clair Avenue West to south of Lavender Road. Weston Road continues from Keele Street north of St. Clair. The speed limit on Keele Street in the study area is 50 km/h.
- **Weston Road** forms the northerly extension Keele Street north of St. Clair Avenue West. It has a four-lane cross section with two lanes in each direction. The speed limit on Weston Road in the study area is 50 km/h.



- **Old Weston Road** is a four-lane minor arterial with two lanes in each direction. The speed limit on Old Weston Road in the study area is 50km/h. The alignment of the road merges with Rogers Road to continue westerly to Weston Road.
- **Davenport Road** is a two-lane minor arterial with one lane in each direction traveling east-west. There are also curb-side, uni-directional bike lanes on Davenport Road. The posted speed limit is 40km/h.

The above arterials, along with the following local roads form the focus study intersections that are outlined in Section 3.5.

- **Townsley Street** is a local road with a pavement width of approximately 10 m and allows for two-way east-west travel to/from Old Weston Road. The alignment of Townsley Street continues turns northerly as Union Street. The speed limit is 50km/h.
- **Union Street** is a north-south local road parallel to Old Weston Road, from Townsley Street at the south and dead-ends at a point south of Lavender Road. The pavement width of Union Street ranges from between 8.5 and 9 m. The speed limit is 50km/h.
- **Gunns Road** is a local road linking Weston Road and St. Clair Avenue West. The pavement width of the road ranges from approximately 10 to 13 m and accommodates two-way travel. The posted speed limit is 40km/h.
- **Turnberry Avenue** is a local street from Union Street to Silverthorn Avenue, with a pavement width ranging from 9.6 to 10 m. The road accommodates two- way travel and has a posted speed limit of 40km/h.

### 3.4.3 Public Transit

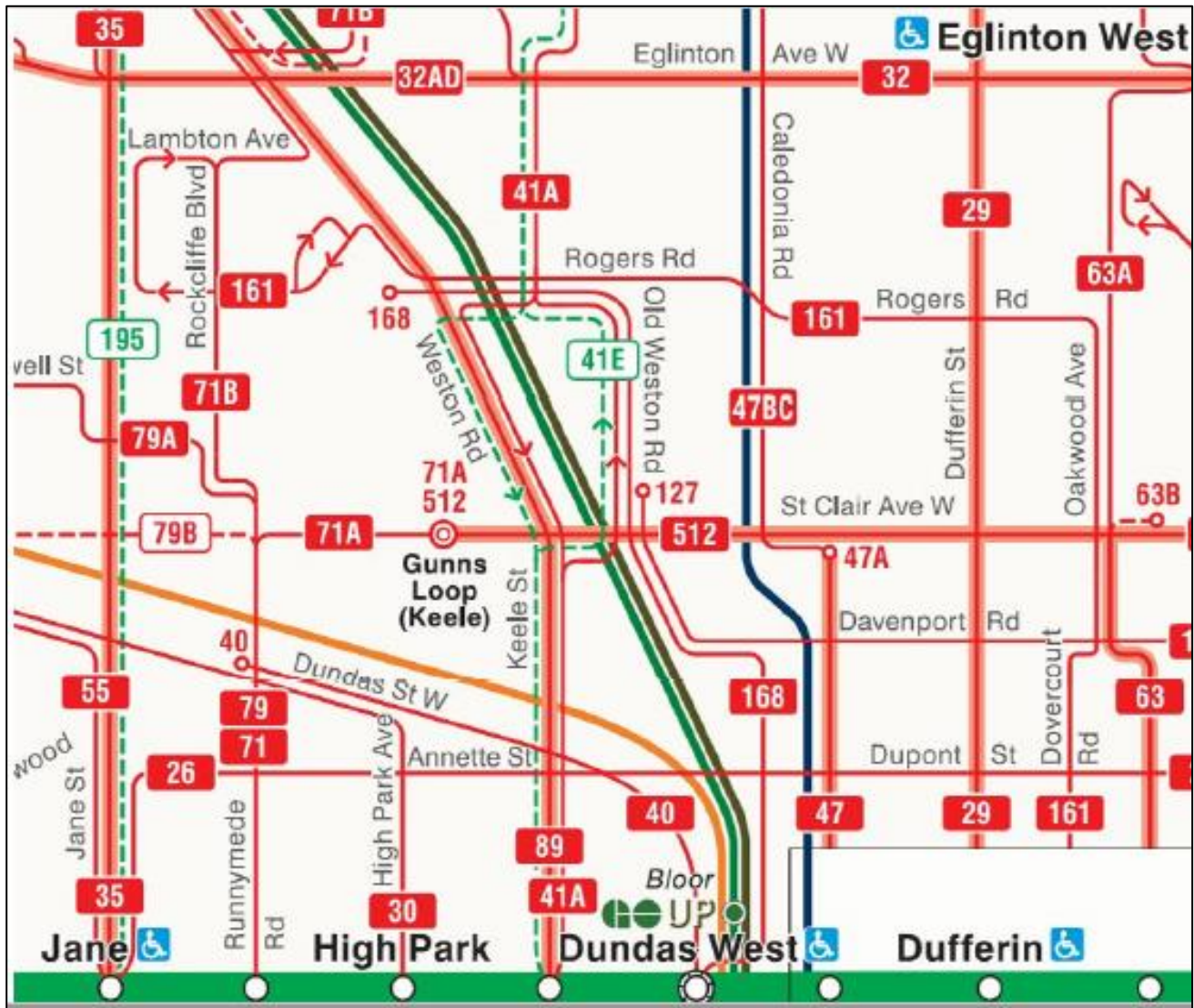
The current public transit services through the TMP study area are documented as follows, and shown in **Exhibit 3-9**.

#### Toronto Transit Commission (TTC)

- **512 St Clair** provides east-west streetcar service in a dedicated right-of-way in the centre of St. Clair Avenue, operating between the Gunns Road Loop / Keele Street and St. Clair Subway Station on Line 1. Along the route, this streetcar also serves the St. Clair West Subway Station on Line 1. This streetcar route operates every day with frequent headways (headways of approximately 3 minutes during the peak periods and approximately 6 minutes during off-peak periods) in both directions from 5 am to 2 am.
- **41 Keele** buses operate between Keele Subway Station on Line 2 to Pioneer Village Subway Station on Line 1, including a stop at Finch West Station. The 41A branch is serviced every day from approximately 5 am to 2 am. The Blue Night Service goes around York University and operates from 2:30 am to 4:30 am on weekdays, and until 6 am on weekends. Headways are approximately 10 minutes during the day and 5 minutes during peak hours.



Exhibit 3-9: Existing Public Transit Services



- **71 Runnymede** buses operate between Runnymede Subway Station on Line 2 to St. Clair Avenue West for the 71A branch, and to the Industry Street / Black Creek Drive area for the 71B branch. Both branches operate seven days a week from 5:30 am to 1:30 am on weekdays, and 6 am to 1 am on weekends. Headways are generally 15 to 25 minutes daily.
- **89 Weston** buses operate from Keele Subway Station on Line 2 to Weston Road and Albion Road. As part of the 10 minute network, this route operates all day, every day with a headway of 10 minutes.
- **127 Davenport** buses operate between Spadina Subway Station on Lines 1 and 2 to the bus loop at Old Weston Road and Townsley Street (one block north of St. Clair Avenue West) via Davenport Road. Service is provided every day from approximately 6 am to 1:30 am. Headways are 17 to 20 minutes on weekdays, and 20 to 23 minutes on weekends.
- **161 Rogers** buses operate between Ossington Subway Station on Line 2 to Jane Street and Alliance Avenue, primarily via Rogers Road. Service is provided from approximately 5 am to 2 am weekdays and Saturdays, and 6 am to 2 am on Sundays. Headways range from 13 minutes in the peak hours to 20 minutes in the evenings.
- **168 Symington** buses operate from Dundas West Subway Station on Line 2 to Rogers Road and Weston Road. Service hours are between 5 am to 2 am daily. The headway is 10 to 20 minutes on weekdays, and 15 to 30 minutes on the weekends. Peak hour headways range between 5 and 10 minutes.
- **312 St. Clair** Blue Night buses operate between St. Clair Subway Station on Line 1 and Dundas West Subway Station on Line 2. As an overnight route, service is approximately from 1:30 am to 5 am every day. The headway is approximately 30 minutes.
- **341 Keele** Blue Night buses operate between Keele Subway Station on Line 2 and York University. Service is provided from 3 am to 5 am on weekdays, 2:30 am to 4:30 am on Saturdays, and 2:30 am to 6 am on Sundays. The headway is 30 minutes every day.

### GO Transit and Metrolinx

Metrolinx owns the Kitchener GO Rail corridor and operates commuter rail services through the TMP study area. However, there is currently no services that stop within the study area. The CP freight and VIA Rail intercity passenger trains also operate along the Kitchener GO Rail corridor. The commuter rail services currently operating through the study area include:

- **Kitchener GO Line** trains operate between Toronto and Kitchener-Waterloo providing service during the weekday rush-hours to Kitchener GO Station, and midday services terminating at Mt. Pleasant GO Station. The rail crosses St. Clair Avenue West near Weston Road.
- **Union Pearson Express** operates between Union Station and Pearson International Airport. The route intersects with the Line 2 subway with a stop at Bloor Station and

uses the same tracks as the Kitchener Line. The headway is 15 minutes and service is provided from 5:30 a.m. and 1 a.m. every day.

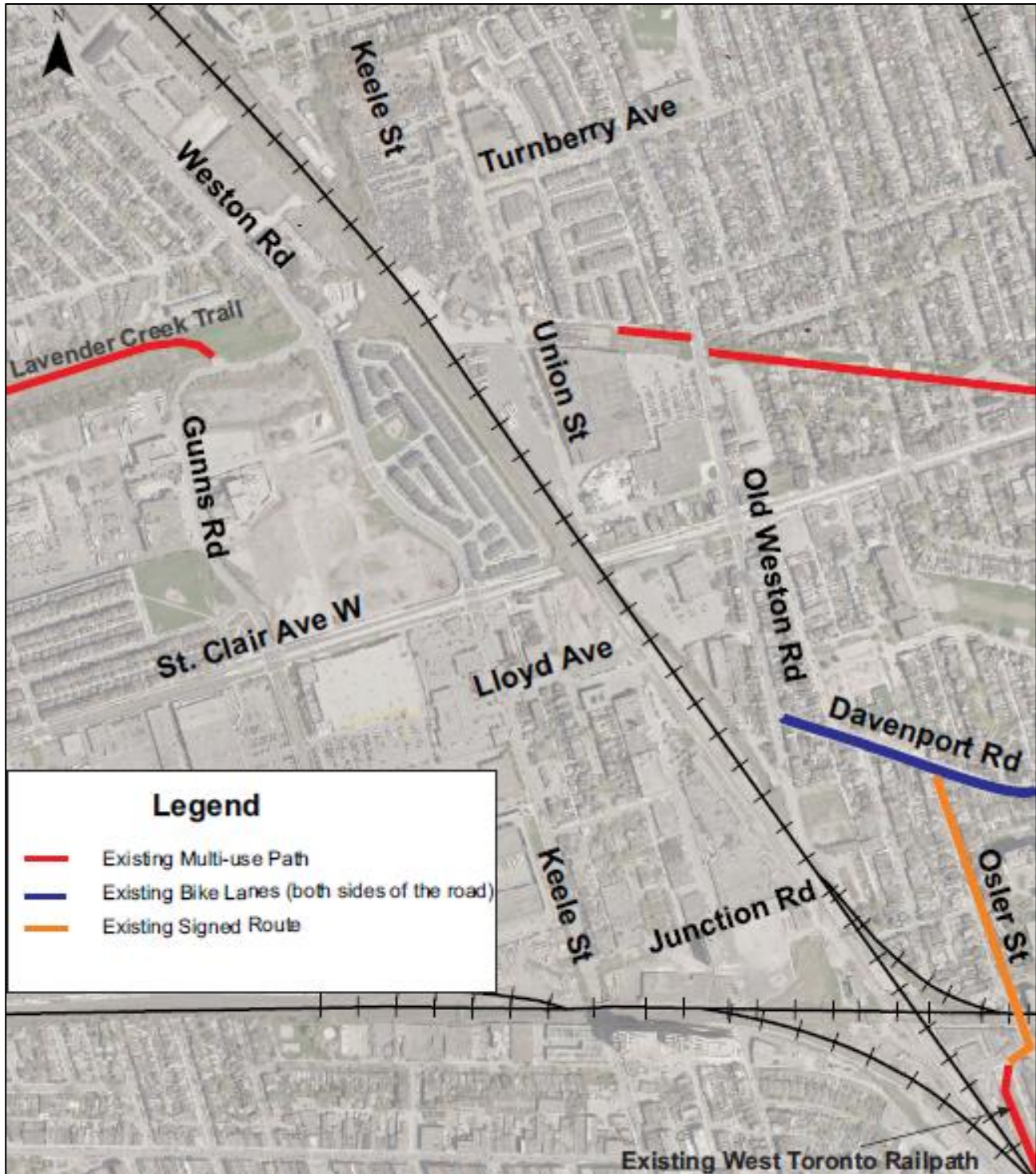
#### 3.4.4 Cycling

The current cycling network within the TMP study area is shown in **Exhibit 3-10**. There are limited cycling facilities, and none that are continuous along the Kitchener GO Rail corridor. The facilities consist of uni-directional bike lanes along Rogers Road and Davenport Road, which both end at Old Weston Road. The Davenport Road bike lanes represent a significant east-west facility in the City spanning between Old Weston Road and the Bay/Yorkville area downtown. Based on a count in August 2017, the Davenport Road cycling facility ranks amongst the top 10 in the City with an average weekday volume of 1,390 (Bloor Street West Bike Lane Pilot Project Evaluation, City of Toronto, October 3, 2017).

In 2001, City Council adopted the Toronto Bike Plan which set out short and long-term goals for on and off-street cycling infrastructure. The Toronto Bike Plan identified an off-road trail connection along the Kitchener GO Transit rail corridor from north of Dupont Street to Strachan Avenue. The first phase of the West Toronto Railpath was completed in 2008 to provide a multi-use trail along the rail corridor from Cariboo Avenue (just north of Dupont) to the Dundas Street West Overpass. The design and evaluation work to extend the West Toronto Railpath south from Dundas Street West to Strachan Avenue is in progress. Another multi-use trail within the study area is the Lavender Creek Trail, which spans between the Black Creek trail and just west of the Weston Road / Gunns Road intersection.



Exhibit 3-10: Existing Cycling Facilities





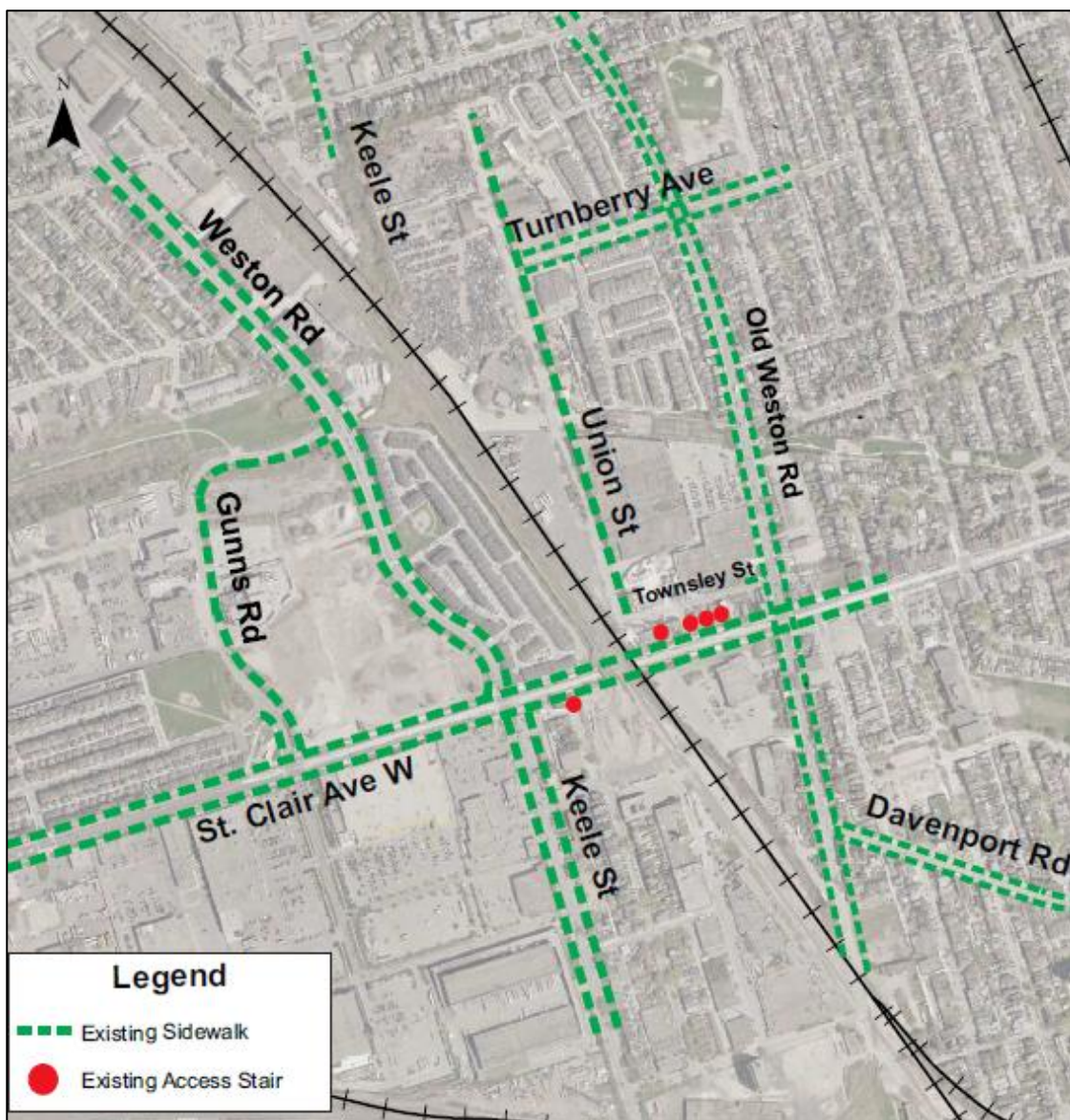
### 3.4.5 Pedestrian Facilities

The current pedestrian network within the TMP study area is shown in **Exhibit 3-11**. The key aspects of the pedestrian facilities along the study roads are outlined as follow:

- **St. Clair Avenue West** has sidewalks on both sides of the street, along with crosswalks at the signalized intersections of Keele/Weston and Old Weston. The sidewalks are raised at above street grade and under the Kitchener GO Rail corridor. There are constrained sections of sidewalk along St. Clair Avenue West within the study area where due to the lack of boulevard space, utility poles are located within the pedestrian clearway. Along St. Clair Avenue West, there are stairs that lead to Townsley Street - just east of the Kitchener GO Rail corridor, and to Mulock Avenue – west of the Kitchener GO Rail corridor. Within the primary study area, the only pedestrian facility that crosses the Kitchener GO Rail corridor is along St. Clair Avenue West.
- **Keele Street**, south of St. Clair Avenue West, has sidewalks on both sides of the street. Crosswalks are present at the signalized intersections of St. Clair Avenue West, and West Toronto Street. On the section of Keele Street north of the terminus near Lavender Road, sidewalk is only present on the west side of the street until Hillary Avenue, where an east sidewalk begins but is partially blocked by parking for the commercial buildings. Past Rogers, the sidewalks are unobstructed. There are crosswalks at the Rogers Road signalized intersection.
- **Weston Road** has sidewalks located on both sides of the street. There are crosswalks at the signalized intersections of St. Clair Avenue West, Birdstone Crescent/Stockyards driveway, Gunns Road, McCormack Street, Northland Avenue and Rogers Road. It is noted that at Weston Road / Gunns Road, pedestrians are prohibited from crossing the north leg of this intersection and therefore there is currently no cross-walk across this leg.
- **Old Weston Road** has sidewalks on both sides of the street. Crosswalks are available at the signalized intersections with Davenport Road, St. Clair Avenue West, Turnberry Avenue, Kane Avenue / Lavender Road, and Rogers Road. It is noted that at Davenport Road / Old Weston Road, pedestrians are prohibited from crossing the north leg of this intersection and therefore there is currently no cross-walk across this leg.
- **Townsley Street** has no sidewalks except for a short segment near the TTC bus loop at Old Weston Road.
- **Union Street** has a sidewalk on the east side of the street. There are no boulevards, which result in some utility poles in close proximity to the sidewalk. There are some informal paved segments on the west side of Union Street just north Townsley Street.
- **Davenport Road** has sidewalks on both sides of the street with crosswalks at the signalized intersections at Old Weston Road and at Osler Street.

- **Gunns Road** has sidewalks on the side bounding the Stockyards commercial use. There are segments where the sidewalk is absent due to the curb drop associated with industrial/commercial uses in the area. In the vicinity of the Gunns Loop and Tarragonna Boulevard, sidewalks are present on both sides of Gunns Road. There are signalized crosswalks at St. Clair Avenue West, the Stockyards Driveway, and at Weston Road. There is no crossing of Gunns Road at the terminus of the Lavender Creek Trail, which is west of the Weston Road / Gunns Road intersection.
- **Turnberry Avenue** has sidewalks on both sides of the street and crosswalks at Old Weston Road and at Rosethorn Avenue.

Exhibit 3-11: Existing Pedestrian Facilities



### 3.5 Existing Traffic Conditions

The existing traffic operational performance was analyzed using an Aimsun-based microsimulation model to understand current issues that prevail in the study area. The detailed Aimsun evaluation and input parameters are provided in **Appendix I**. The Aimsun model, which was developed initially for the Functional Planning study, was updated to reflect 2015 conditions, the year when the TMP was initiated, by incorporating the following information available in 2015, which are documented in **Appendix I**. Data Sources referenced include:

- 2015 City-collected turning movement and pedestrian counts;
- TTC transit schedules and vehicle occupancy data of study area routes;
- updated signal timing plans;
- City of Toronto Emme travel demand forecasting model; and
- origin-destination information collected using Bluetooth technology.

#### 3.5.1 Traffic Simulation Study Area and Period

The Aimsun model assessed conditions within the context of the study area and extended study area as shown in the study area map in **Exhibit 1-1**. Demand data based on City's Emme model reflects typical weekday morning peak conditions. This is in part because morning traffic patterns are more stable and representative than afternoon periods for the purpose of modelling. Moreover, the Functional Planning Study only evaluated the morning peak conditions. Accordingly, it was agreed with City staff that the traffic operational analysis of the TMP evaluates the weekday morning peak period. In addition to understanding the constraints of the study area, the existing traffic model provides the benchmark for evaluating the effectiveness of various improvements.

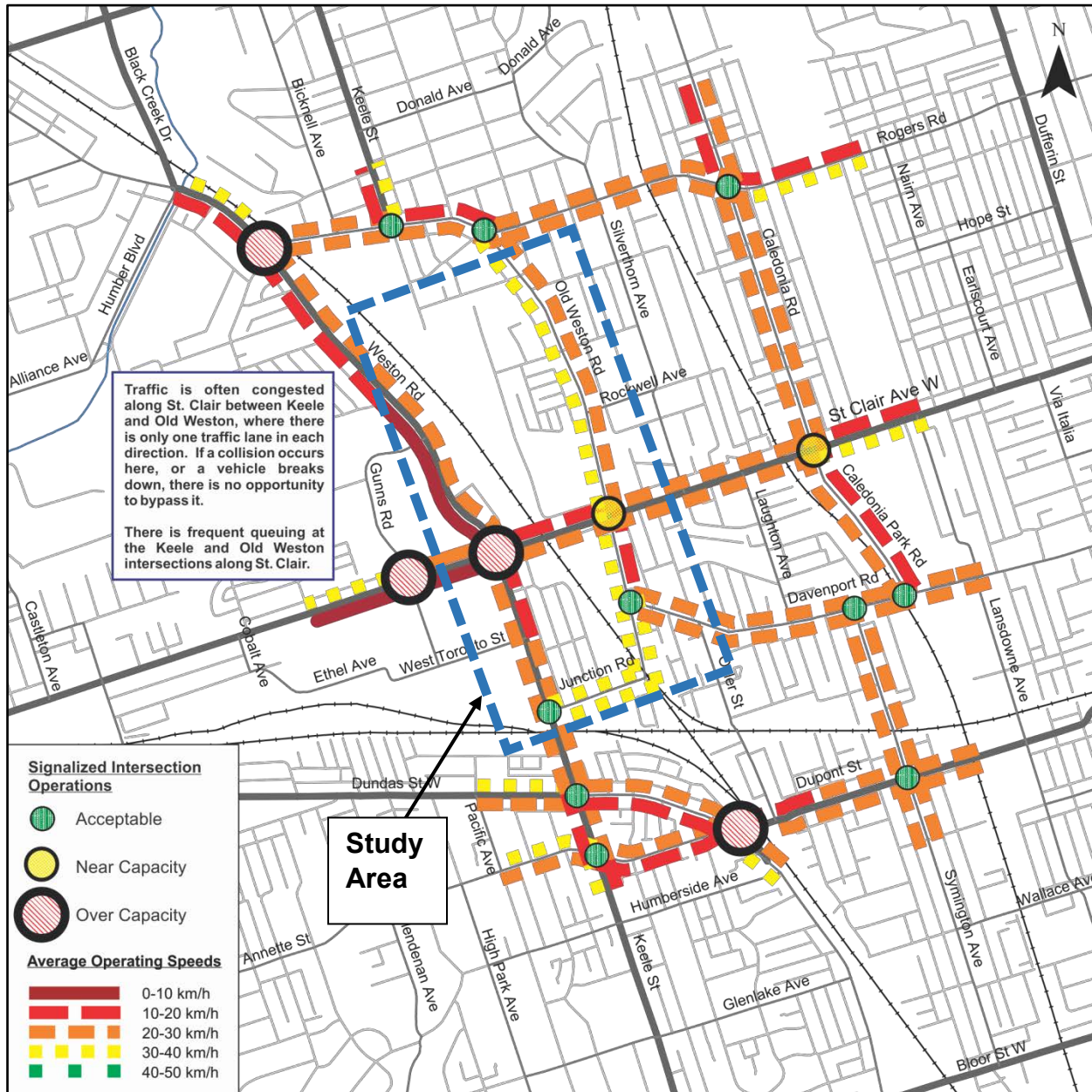
#### 3.5.2 Existing Traffic Operations Assessment - Aimsun

Existing traffic conditions were analyzed for the extended study area to understand current issues that prevail in the study area. The simulated existing conditions are illustrated in **Exhibit 3-12**.

During the weekday AM peak hour, the traffic operational analysis identifies the St. Clair Avenue West and Weston Road / Keele Street intersection as the one location within the study area (as defined in Exhibit 1-1) to be operating at over capacity causing delays and queues on all approaches to the intersection. These impacts lead to operational issues such as lower average speeds and congestions at upstream, downstream and parallel intersections in the extended study area. The average intersection delays at the St. Clair Avenue West intersections east (Old Weston Road) and west (Weston Road / Keele Street) of the Kitchener GO Rail corridor are 43 and 221 seconds, respectively.



Exhibit 3-12: Existing Weekday AM Peak Hour Traffic Conditions (Extended Area)



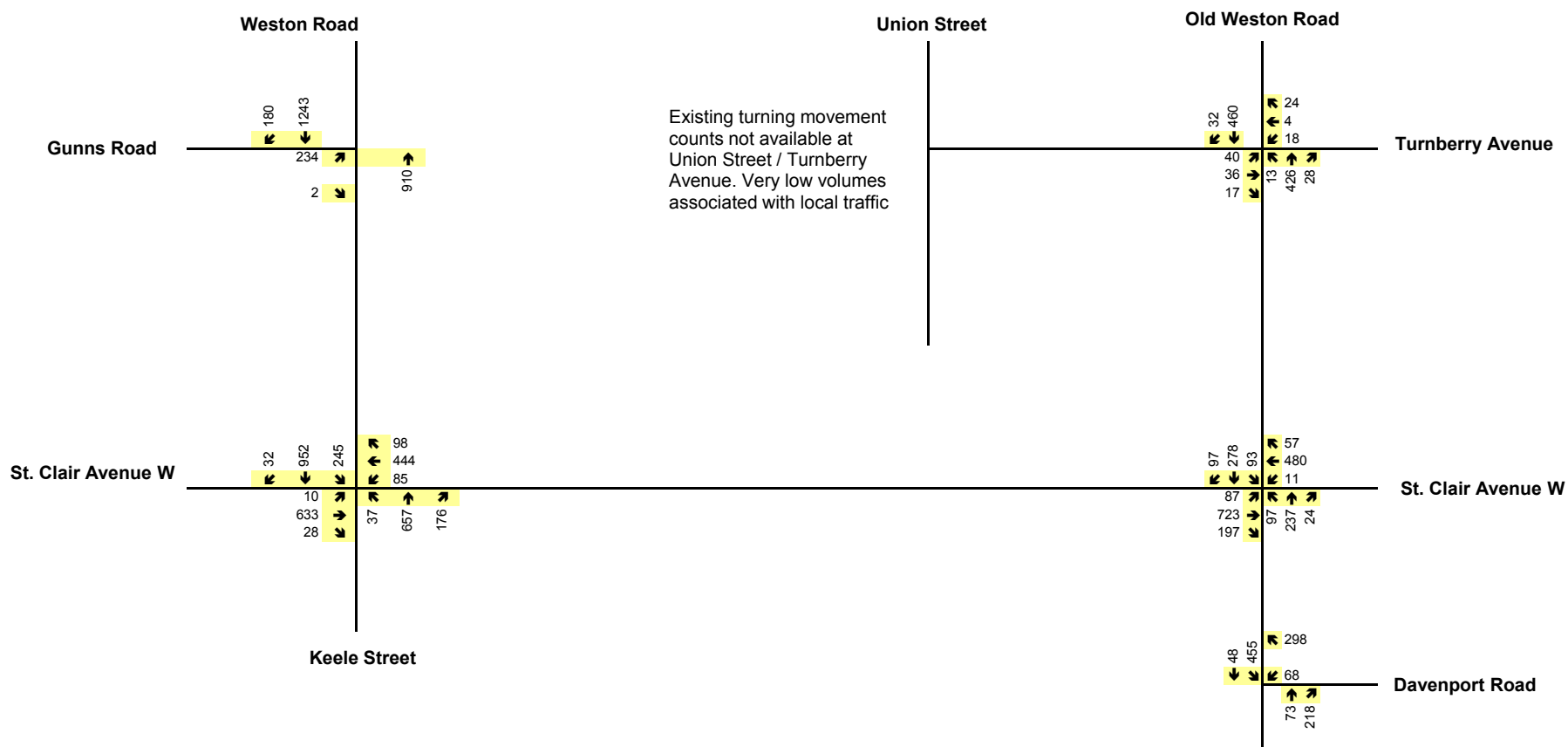
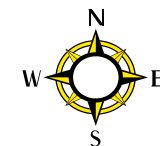
Qualitatively, operational issues for the St. Clair Avenue West and Weston Road / Keele Street intersection can be attributed to the reduced number of lanes on St. Clair Avenue at the railway underpass, the volume of turning vehicular traffic, lack of alternative railway corridor crossing points in the study area, and the volume of pedestrians crossing at the intersection. The existing traffic conditions support the rationale behind initiating the TMP and confirms the need for improvements within the study area.

### 3.5.3 Existing Traffic Operations Assessment - Synchro

A supplementary evaluation of the study area was also conducted using the Synchro 10 software, which provides an intersection-focused assessment. The AM peak hour volumes evaluated at the study intersections are shown in **Exhibit 3-13**. The existing lane configurations of the study intersections are shown in **Exhibit 3-14**. Based on the Synchro assessment, which is detailed in **Appendix I**, the existing traffic conditions within the study area are shown in **Exhibit 3-15**.

The Synchro assessment is consistent with the Aimsun finding in that the St. Clair Avenue West / Weston Road / Keele Street intersection is over capacity ( $v/c > 1.0$ ) and operates with longer than desirable queues for a number of movements. Based on the Highway Capacity Manual, which assigns a level of service (LOS) for an intersection based on the average delay, the St. Clair Avenue West / Weston Road / Keele Street intersection operates at a LOS 'E'. A LOS 'D' or worse constitutes undesirable conditions.





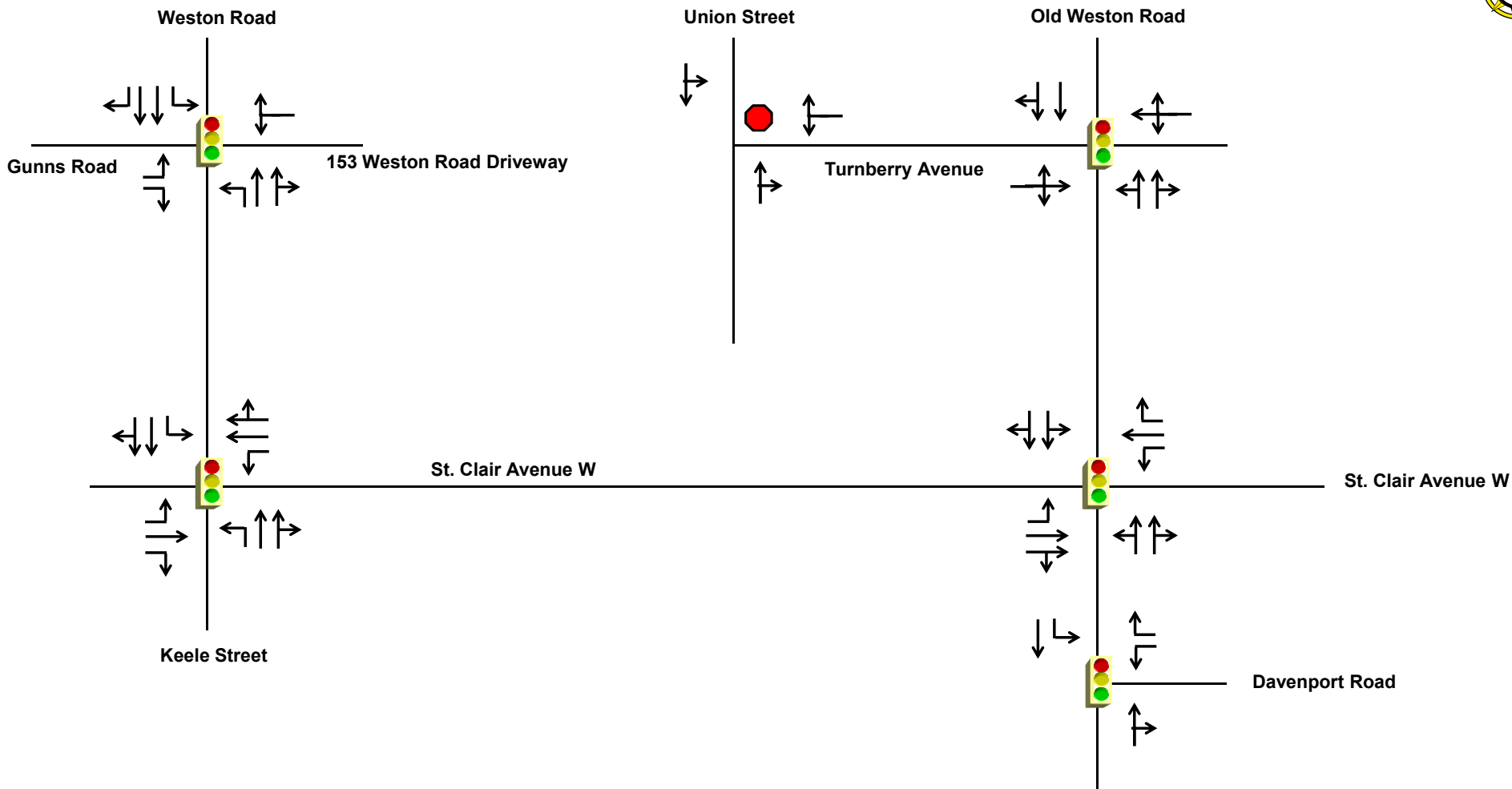
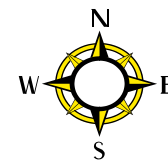
## St Clair Avenue West Transportation Master Plan



### LEGEND

XX AM Peak Hour Volumes

**Exhibit 3-13**  
**Existing Traffic Volumes**



# St Clair Avenue West Transportation Master Plan



## LEGEND



Stop Controlled



Signalized



Lane Configurations

**Exhibit 3-14**  
**Existing Lane Configurations**

## Exhibit 3-15 – Existing Intersection Operations

Intersection	LOS (Avg delay per vehicle in seconds)	Critical Movements (v/c ratio)	Critical Movement Queue Lengths 95 <sup>th</sup> percentile (50 <sup>th</sup> percentile)	Available Storage
St. Clair Ave W & Old Weston Rd	C (23)	--	--	--
St. Clair Ave W & Keele St / Weston Rd	E (62)	EB-T (1.14) NB-T (0.91) SB-T (1.33) SB-T (0.92)	EB-T 250m (179m) NB-T 130m (89m) SB-T 106m (54m) SB-T 170m (128m)	EB-T 262m NB-T 260m SB-T 105m SB-T 195m
Old Weston Rd & Davenport Rd	A (8)	--	--	--
Old Weston Rd & Turnberry Ave	A (8)	--	--	--
Weston Rd & Gunns Rd	B (14)	--	--	--

### 3.6 Safety and Traffic Calming Reporting

The number of collisions involving fatal, personal injury and property damage were reviewed based on data provided by the City's Transportation Services unit for the period January 1, 2015 to December 31, 2017. In addition, records of concerns submitted about traffic infiltration and traffic calming between 2010 and 2017 within the study area were also reviewed. The focus of the assessment was to identify any discernable trends in terms of collision frequency and types and traffic calming needs.

Based on the review of the collision records, there were no fatal incidents within the study area during this time period. There has also been a downward trend in all types of collisions. The review of the records of concern about traffic infiltration indicate that there have been some requests for traffic calming measures along Turnberry Avenue east of Old Weston Road, which were primarily related to the General Mercer Junior Public School. However, these requests were preliminary and did not result in further actions. They were either not pursued by the party who initiated the complaint or the investigation conducted by Transportation Services concluded that there was insufficient evidence to warrant the installation of traffic calming measures. Further discussions of safety and traffic infiltrations are provided in **Appendix I**.