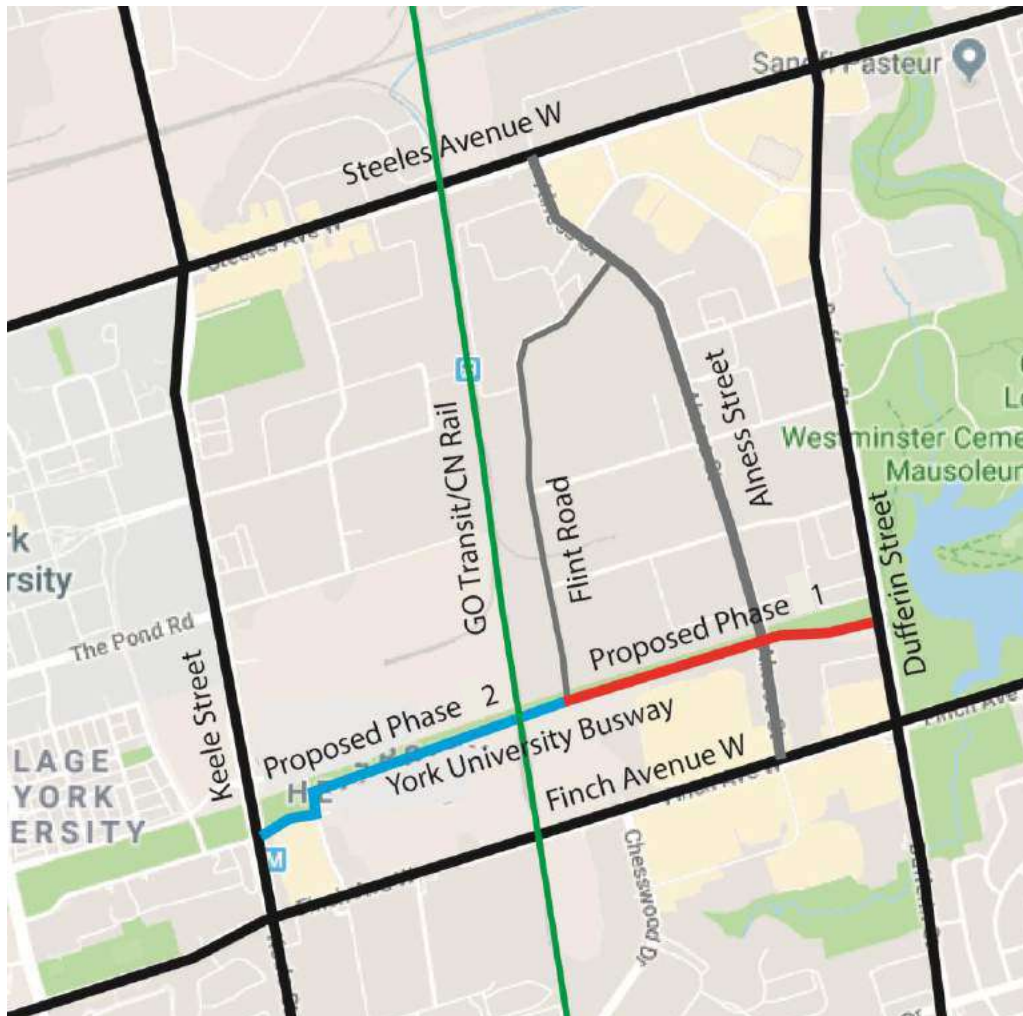


YORK UNIVERSITY BUSWAY

A PROPOSAL TO CONNECT IT TO THE CITY'S TRANSPORTATION SYSTEM



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Prepared for: DUKE Heights BIA



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Executive Summary

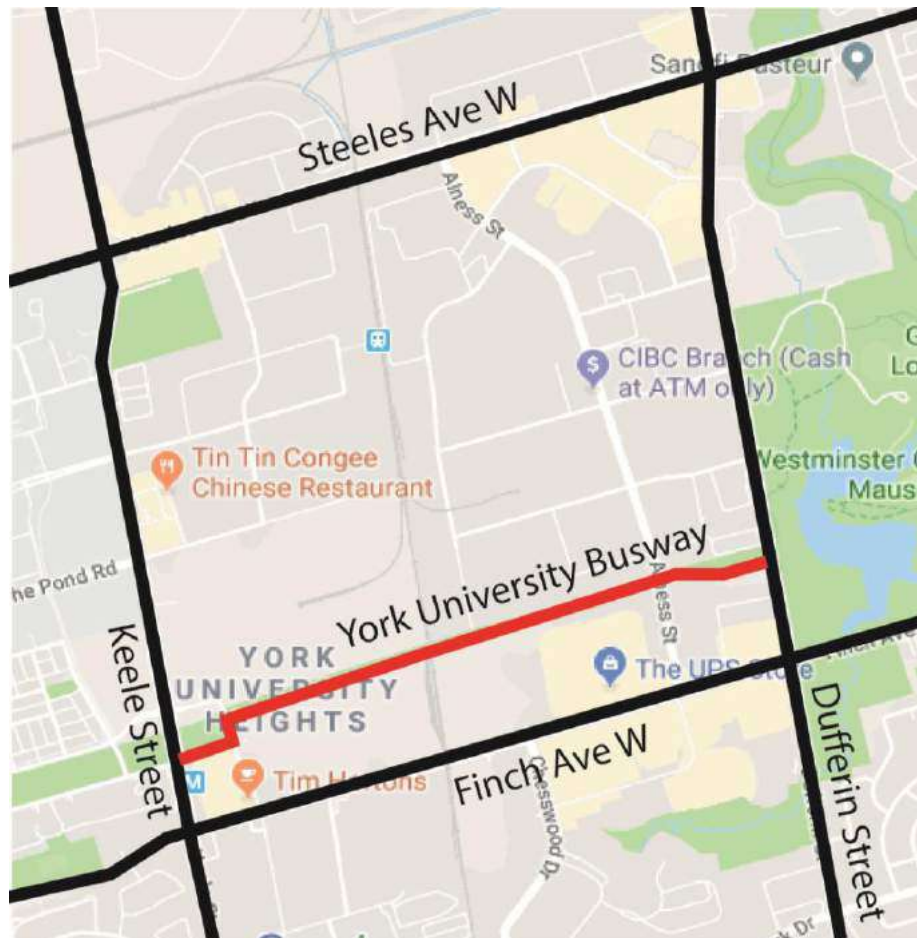
The York University Busway(YUB) was built by the City of Toronto/TTC on lands leased from Hydro One and The province of Ontario for transit-only-use to provide express bus service to and from the University of York. It opened in 2009 after an estimated expenditure of about \$37.8 million. With the openings of the subway extensions in December 2017(including to the University of York),the YUB is now less used(only by the express bus service linking Finch Subway Station on Yonge Street with the Finch West Subway Station at Keele Street). As the road transportation system locally and regionally is congested and will become even more so with the expected intensification in and around the area, one of the solutions is to convert all or part of the YUB into a regular road to also be used for the movements of trucks and people in private vehicles. This report explores this possibility and need and finds that such a change for the Busway is desirable and doable.

Recommendations:

That the City of Toronto approve the future use of the York University Busway also by private vehicles and trucks and to achieve the same:

- 1. Seek appropriate changes to its present lease from Hydro One and the Province of Ontario;**
- 2. As Phase One (see Figure 11, pp16), develop, approve and implement the required changes to the York University Busway : a) at its present intersections with Dufferin Street and Alness Street (see Figure 12, 13, pp17-18) ; and b) at new intersection with Flint Road(See Figure 14, pp 19); and**
- 3. As Phase Two(see Figure 11, pp16), develop, approve and implement changes to the York University Busway from the proposed new intersection with Flint Road, westerly to Tangiers Road and Keele Street.**

Figure 1
The York University Busway has the potential to provide an effective east-west connection between Dufferin Street and Keele Street



Study Objective and Methodology

The purpose of this report is to study and assess the continued and expanded use of the currently underutilized York University Busway (YUB) as an essential roadway thus alleviating traffic in major and minor arterial roads in the area.

Toward this end, the report will: 1) Review the employment activity taking place within the broader land-use planning context within which the DHBIA is situated, and 2) to provide recommendations for better transportation and connectivity in the area.

This report utilizes data to understand existing transit and road conditions in the DHBIA. Methods included site visits; government (municipal and provincial) reports/meeting minutes; and Toronto Transit Commission (TTC) reports and statistical data.

The DUKE Heights Business Improvement Area

The DUKE Heights¹ BIA is located in the northern part of the City of Toronto (Figure 2). It is bounded by Keele Street to the west, Dufferin Street to the east, Steeles Avenue West to the north, and by Sheppard Avenue West to the south. It is bisected in a north-south direction, by the CN/GO Transit Railway Tracks (Figure 3). The rail corridor, also used by the Barrie GO line, acts as a barrier to east-west travel by car, bike and foot in the northern and southern sectors of the DHBIA (Pembina, 2016). The York University Busway runs within a hydro corridor within the study Area. It is adjacent to a “greenway” that acts as an important recreational and circulatory route for cyclists and pedestrians but also as an important linear green corridor that is treed and/or planted with grasses and seasonal plants. The greenway also serves as a wildlife habitat and bio-diversity corridor.

An area covering over 720 hectares, the BIA contains within its boundaries approximately 2,500 businesses and over 30,000 people employed in offices, manufacturing and retail/service industries (Pembina Institute, 2016; see also IBI Group, 2016). Manufacturing alone is the second biggest source of employment in the area (DHBIA, 2018a). This makes the BIA an important employment hub within the Greater Toronto Area (GTA).

DUKE Heights BIA, originally the Dufferin Finch BIA, was founded in 2014. The BIA’s primary objective is to promote the potential of the area, provide support to businesses, and inject new resources to tap into the potential of the community. DUKE Heights BIA is the second largest business improvement area in North America.

Despite the economic significance of the BIA, the area is not well-served by higher-order transit. This is changing. In recent years, there has been extensive investment in public transit in the area.

Figure 2
Location of DHBIA in the City of Toronto



¹ ¹ DUKE Heights name origin: “DUKE was formed by connecting the first two letters of the two names, Dufferin and Keele, that mark the boundaries of the area. ‘Heights’ was added because the area is located at the highest point in the City of Toronto. ” (DHBIA 2018a)

Figure 3
Map of DUKE Heights Business Improvement Area (City of Toronto, 2016).

Map of the City of Dallas showing the Dallas County Jail location. The jail is highlighted in gray and is located in the central part of the city, bounded by the Trinity River to the west and the Dallas-Fort Worth Expressway to the east. The map shows major highways, streets, and landmarks. A scale bar at the bottom left indicates distances in miles (0, 0.25, 0.5). A north arrow is located at the bottom center. The map is titled 'Map of the City of Dallas' and 'Dallas County Jail'.

The majority of the DHBIA area is designated as an “employment area” in the City of Toronto Official Plan. While the DHBIA has very little residential development within its boundaries, the surrounding area to its east and west is residential, with a mixed-use designation along at Keele and Finch. (Pembina, 2016). The adjacent population demographic consists of “higher proportion of immigrants and young people, and a lower than average private household income” (Pembina, 2016).

Figure 4
BIA Types of Employment by Sector (IBI Group, 2016).

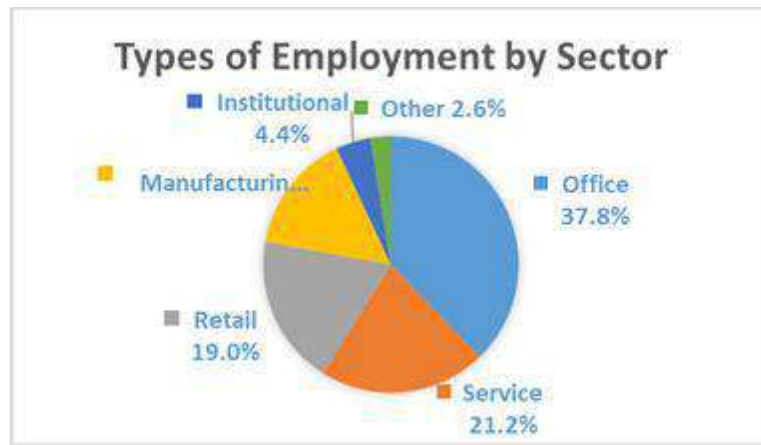
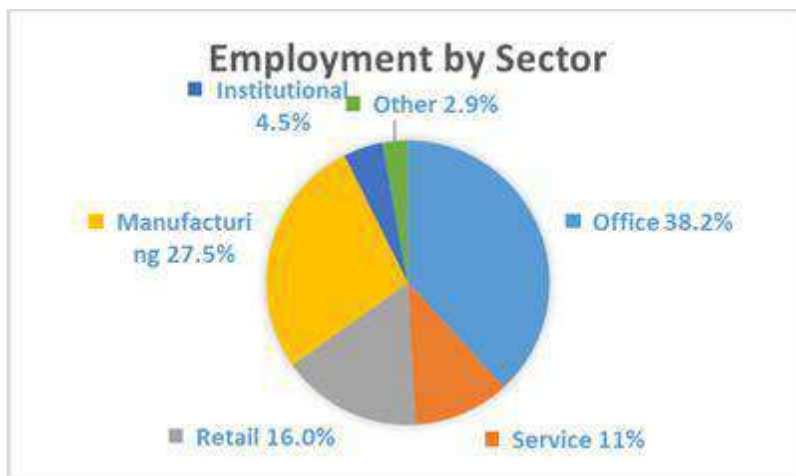


Figure 5
Employment by Sector (IBI Group, 2016)



Based on data from the City of Toronto Employment Survey (2014), the DHBIA consists of primarily office, service, retail and manufacturing sectors (Figure 3) (IBI Group, 2016). The high ratio of employment (office, retail and service) and manufacturing within the DHBIA (Figure 4), coupled with a lack of transit accessibility (particularly in the northeast quadrant), mean a high volume of truck traffic (shipping/delivery) and automobile traffic are key transit constraints to consider in the area (Pembina, 2016).

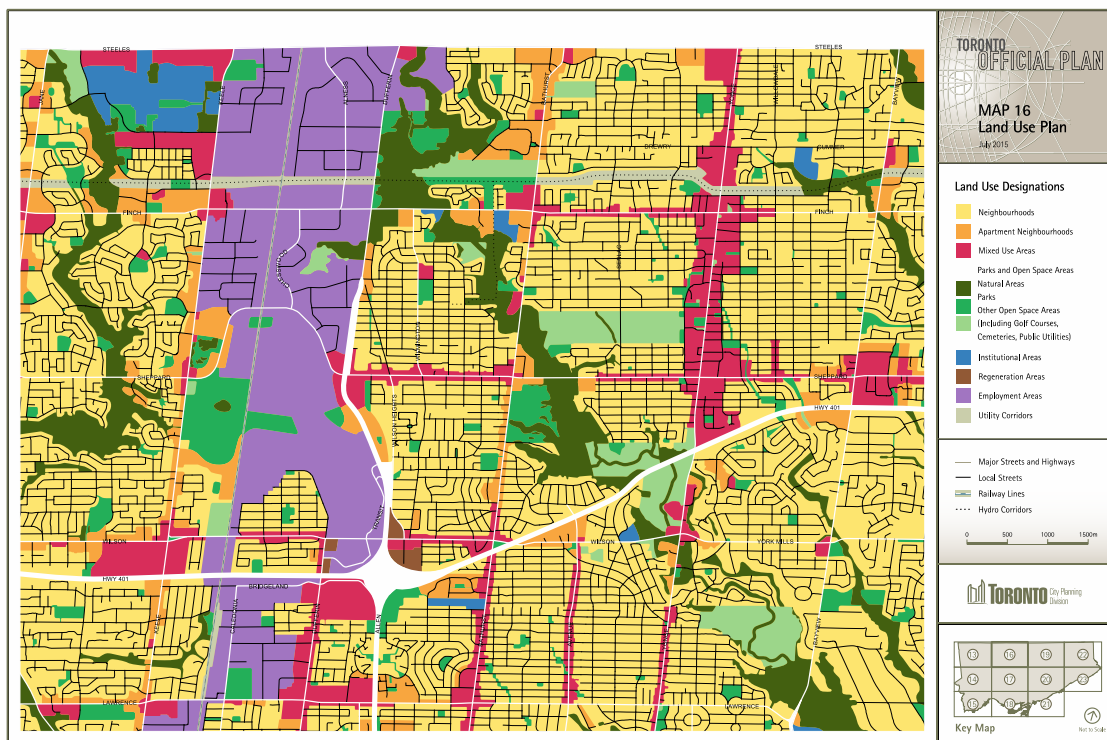
“The area has the opportunity to become a significant urban centre” (The Planning Partnership, 2016). The DHBIA is “investing in public realm and streetscape improvements as a first step in establishing itself as a prominent and attractive employment district” (The Planning Partnership, 2016). Currently, the physical characteristic of the DHBIA “consists almost exclusively of low-rise structures sitting on large lots with generous setbacks. Streets are designed for vehicles” (The Planning Partnership, 2016). In particular, south of Finch Avenue West can be described as primarily single-story industrial building with large footprints on large parcels of land south of

Finch Avenue West. North of Finch Avenue West, is a large fuel storage and distribution centre with large industrial storage tanks (City of Toronto, 2015a). The Keele and Finch intersection “consists of mid-sized office buildings with retail at grade, and some mixed-use designated areas” (City of Toronto, 2015a). However, with DHBIA’s investment “A high-quality public realm network has tremendous economic value in terms of real estate value, and assessment value-that needs to be continuously enhanced through public sector investment” (The Planning Partnership, 2016).

Broader Planning policy Context Governing Land-use in the DHBIA

The DHBIA is regulated by various planning documents. A key planning document is the City of Toronto’s Official Plan, which works in conjunction with provincial-level policies including the Provincial Policy Statement, and the Growth Plan for the Greater Golden Horseshoe (*Places to Grow Act*). The City of Toronto Official Plan designates the area within the DHBIA as primarily Employment Area (Figure 5) (City of Toronto, 2015).

Figure 6
Land-use designation map, highlighting DHBIA (in proper colour) as an employment area (City of Toronto, 2015b).



The intersection of Keele Avenue and Finch Avenue West has been identified as a ‘major transit station area’ in the Growth Plan, and a ‘mobility hub’ in Metrolinx’s Big Move transit policy as a result of the construction of the Toronto-York Spadina Subway Extension, and the Finch West LRT presently under construction. The Growth Plan also identifies this area as having potential for increased residential and employment densities into the future (GHD Limited, 2016).

The industrial-oriented nature of the area also brings into play regulations such as the Ministry of the Environment and Climate Change (MOECC) Guideline D-6, and City of Toronto zoning bylaws, such as Zoning By-law 569-2013. Guideline D-6 regulates “compatibility between industrial facilities and sensitive areas” and is important as the area develops beyond industrial and manufacturing sectors to include commercial and residential development (Government of Ontario, 2018). Zoning By-law 569-2013 “regulates the use of land, the bulk, height, location, erection and use of buildings and structures, the provision of parking spaces, loading spaces and other associated matters in the City of Toronto” (City of Toronto, 2018).

The construction of the York University Busway followed provincial and federal environmental assessments. City of Toronto and TTC staff “requested a minor amendment to the Municipal Class EA to clarify the issue and allow the Class EA process to apply to this project” (TTC, 2004, p. 27). Additionally, a federal environmental assessment was also triggered as a result of federal funding for the project. As such, TTC and City of Toronto were also required to follow procedure as outlined under the *Canadian Environmental Assessment Act* (CEAA).

The York University Busway: Backgrounder

In 2001, the Toronto Transit Commission (TTC) approved the staff report entitled, *Expanding Transit Priorities in Toronto*, in which staff recommended the creation of dedicated bus lanes between Downsview Subway Station and York University. It was argued that the bus lanes would make public transit a more competitive option to private automobiles in the area, and would provide a faster and more reliable corridor for the operation of the 196 York University Rocket, 117 Alness and 105 Dufferin buses (City of Toronto, 2005; Toronto Transit Commission, 2009). Toward this goal, in 2002, the TTC approved a \$500,000 fund to conduct an environmental assessment study of the proposed improvements under the 2003-2007 Capital Program Budget, and the fund was confirmed by City Council in 2003. In 2003, the TTC also approved the staff report *Ridership Growth Strategy*, which recommended that high priority be given to implementation of the Bus Rapid Transit to York University (City of Toronto, 2005).

On March 31, 2004, as part of a five year, \$1.05 billion investment in transit under the Federal-Provincial-Municipal TTC Capital Funding, funds were allocated for the Bus Rapid Transit project. In the same year, the TTC and City of Toronto formed a working committee consisting of representatives from the TTC, City of Toronto Planning, City of Toronto Transportation, York Region Transit and GO Transit and URS Canada consulting, to undertake an Environmental Assessment (EA) in order to study of improved surface transit connection between Downsview Subway Station and York University (City of Toronto, 2005).

The EA described the traffic conditions of the 196 York University Rocket-the express bus between Downsview Subway Station and York University. They examined ridership, frequency of operation, routes and delays, and concluded that a bus-only lane was the most appropriate way of improving the quality of transit service offered in the corridor (City of Toronto, 2005). It was concluded, however, that the best way to address problems with 196 York University Rocket was to operate “a fast bus service in lanes that are, to the greatest extent practical, separated from other traffic and with infrequent stops” (City of Toronto, 2005, p. 10; see also TTC, 2007a). The EA recommended the Dufferin Street/Hydro Corridor routing “because it

would provide the same dramatic improvement in transit speeds and reliability, but with fewer impacts, including having to widen roads, left turns at unsignalized driveways and side streets, and capital costs” (City of Toronto, 2005, pp. 12-13).

The two-lane roadway was constructed in the hydro corridor and reserved for buses and emergency vehicles only. The Hybrid design required at-grade crossing of the CN rail line, which required modifications to an existing spur line which accommodates rail service to the adjacent Imperial Oil “tank farm” (City of Toronto, 2005, p. 21).

Environmental Assessment approvals by the provincial and federal governments were received in 2006 (TTC, 2007b). In the same year, the City of Toronto entered into negotiations and began the process of acquiring lands to construct the Busway. City of Toronto Council adopted Clause 33 of Report No. 6, titled Acquiring Land Necessary for the York University Busway, “which authorized staff to enter into negotiations for the acquisition.

A rail crossing warning system was installed at the intersection of the tracks and Busway, consisting of flashing lights, bells and gates” (City of Toronto, 2008).

Relocation of the existing Esso siding and installation of new signalized level road/rail crossing to complete construction was estimated at \$2,420,000. Funds for this expenditure were included in Project 3.3 (Yards and Roads), under Bus Rapid Transit – Spadina Subway to York University/Steeles Avenue in the TTC 2008-2012 Capital Program (TTC, 2007c)

The construction of the busway required a 5.5-hectare portion of the Hydro corridor. The property, owned by the Province of Ontario, and represented by Ontario Realty Corporation (ORC), is used by Hydro One for purposes of a hydro distribution system (City of Toronto, 2007). The 2-kilometre stretch of the Busway, which runs through the hydro corridor required securing a Hydro Easement Agreement between the City of Toronto, TTC, Ontario Realty Corporation (ORC) and Hydro One. The parties entered into a permanent easement and a temporary construction license with ORC in 2007 (City of Toronto, 2008). The contract (Contract A60-16) for building the YUB was awarded to Brennan Paving and Construction Ltd (now part of the Miller Group), in the amount of \$17,100,788 (TTC, 2007d).

The busway project involved the designation of existing High Occupancy Vehicle traffic lanes on Dufferin Street and Allen Road as bus-only. Additionally, new bus-only roadways were constructed in the hydro corridor between Keele Street and Dufferin Avenue, just north of Finch Avenue West, as well as on York University lands (TTC, 2008 “Officials break ground on BRT”). The project also included the hydro corridor north of Finch Avenue, between Dufferin Street and Keele Street; and the construction of a new north-south bus-only roadway on York University lands between Murray Ross Parkway and York Boulevard (TTC, 2009).

Usage of Y.U.B Prior and After Subway Extension Opening

Before the opening of the subway extension, the ridership of bus routes 196 and 199 which used YUB was 40,947 per day. The Busway is now used only by the 939B express service and the ridership is significantly reduced. The previous riders are commuting by the new subway extension.

The final cost of the Busway was \$37.8 million, of which \$18.4 million was contributed by the City of Toronto, and \$9.6 million was contributed each from the Government of Canada and the Province of Ontario. The Busway was meant to alleviate local traffic in the interim, while the TYSSE was being constructed, and the “TTC had intended to close the Busway after the Spadina subway extension to Vaughan opens, but on November 14, 2016, the TTC decided not to close the Busway”.

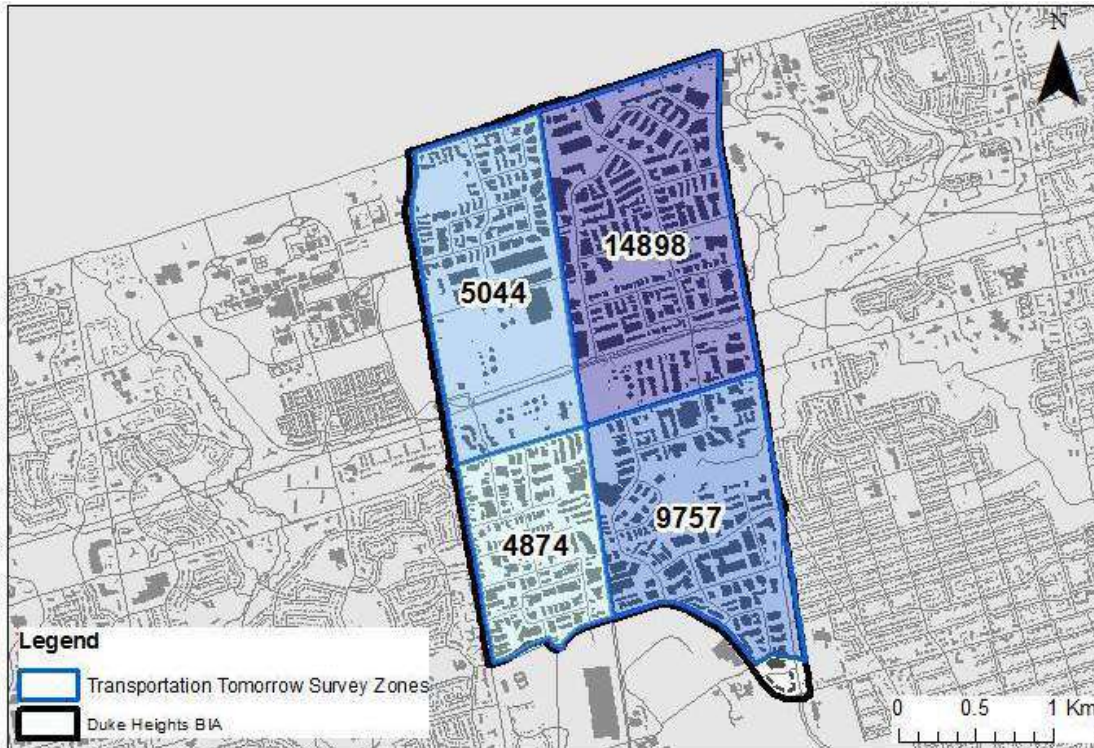
Transportation Conditions in the Study Area

In their 2016 report, drawing on the Transportation Tomorrow Survey² (TTS), Pembina Institute paints a picture of transportation modes in the DHBIA.

All modes of transportation and for all purposes, approximately 34,500 trips are made to the DHBIA on a typical weekday (Pembina, 2016, p. 25) “These arrivals are not spread evenly across the sector, but are concentrated in the eastern end: the northeast quadrant (incidentally, the quadrant the farthest from rapid transit stations) is the destination for 43% of all trips to the DHBIA, while the southeast quadrant is the destination for 28% of all trips” (Figure 7) (Pembina, 2016, p. 25).

² The TTS is a travel survey conducted by telephone in the Greater Toronto and Hamilton Area (GTHA) and surrounding region, once every 5 years. The survey provides a snapshot of transportation behaviour on a typical day (Pembina, 2016, p. 25)

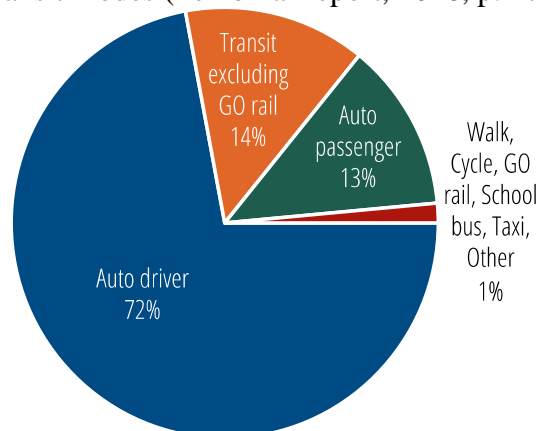
Figure 7
Average daily trips arriving in the DHBIA (Pembina Institute, 2016).



Given the function of the DHBIA area as an employment and commercial hub, it is unsurprising that 61% of all trips to the DHBIA are made for work purposes, while some 14% are for shopping. Another 17% are made for “other” purposes, which includes personal business and entertainment trips

A large majority of trips to the DHBIA are made by car: 72% as a driver and another 13% as a passenger for a total of 85% of trips by car. Most of the remainder 14% of trips are made by transit. Though some trips are made by bike and foot, they are relatively negligible as a share of overall trips (Figure 8)

Figure 8
Transit modes (Pembina Report, 2016, p. 27).



Traffic within the study area is highly concentrated along the major arterials: Finch Avenue W, Steeles W as well as Keele Street and Dufferin Street. With a high number of employers located within the BIA, traffic volume is extensive along Finch Ave W and Steeles Avenue W in the morning and evening peak periods. Steels Avenue W is running at or over capacity in peak times and Finch Avenue W can only accommodate 300-500 vehicles more per hour in future (Figure 9, pp 14). Traffic volume at the intersection Dufferin-Finch and Dufferin-Steeles are averaging at 40-50k whereas Keele-Finch and Keele-Steeles are 30-40K (based on 8 hour total)³, which indicates congestion in these major intersections. Finch Avenue West at Tangiers Road has a traffic volume of around 16K. Slow moving tankers and large trailer trucks consume significant time at the area's intersections. It is to be noted that areas on the east of Keele St have heavy industry use and higher truck movement is anticipated. Most of the trucks use Keele St to access major arterials east-west to the highways. At the intersections Keele-Finch the truck volume is 1000-1500 daily.⁴ An alternative road in east-west direction would help to reduce congestion on Finch Avenue W and Steels Avenue W significantly and as YUB roadway already exists, continued use of this to alleviate traffic on major/minor arterials makes economic sense.

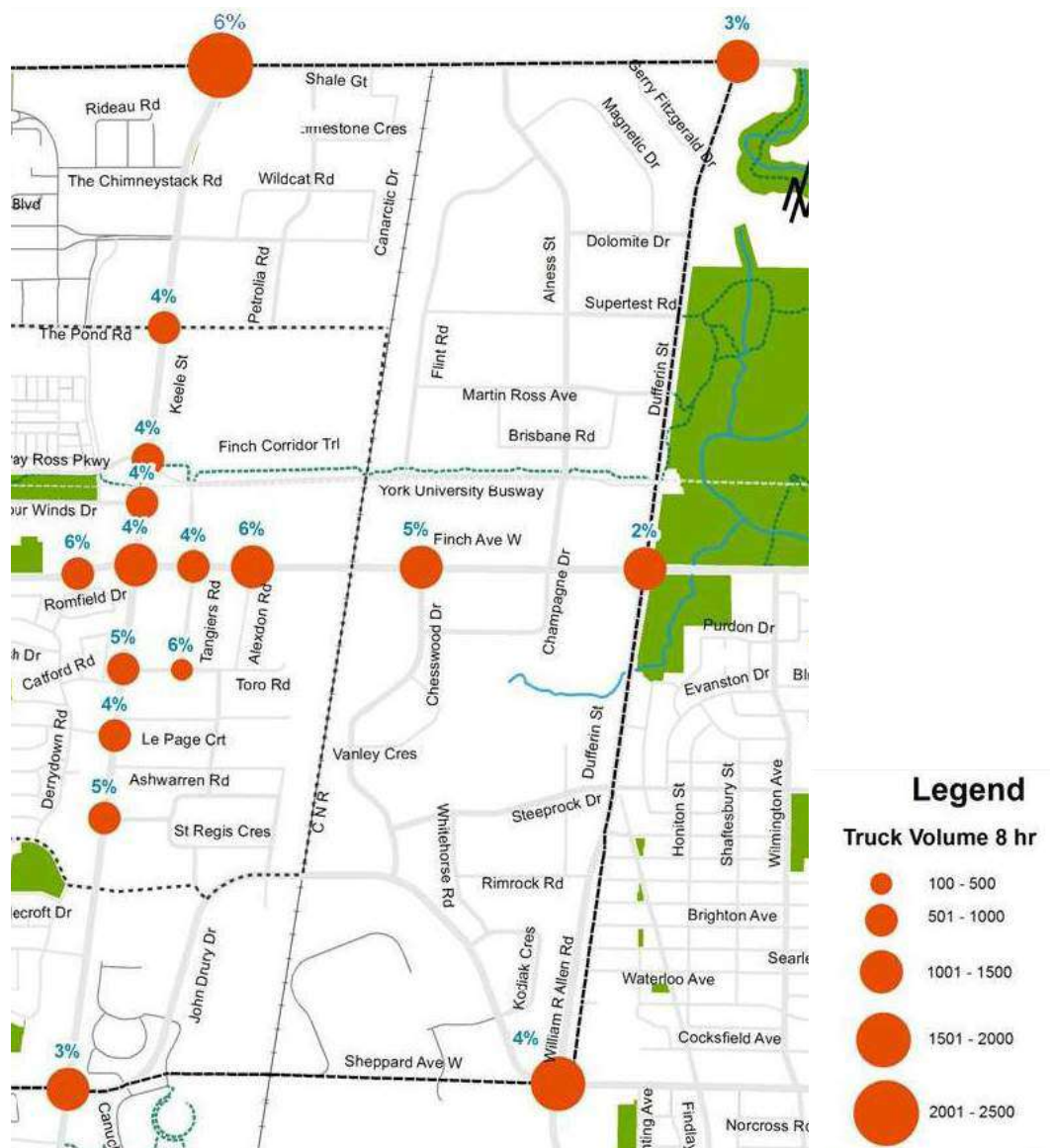
³ Exhibit 4-12 Intersection Traffic Volume (8 Hour), Keele Finch Plus Transportation Study

⁴ Exhibit 4-20 Existing Goods movement Conditions(8 Hour), Keele Finch Plus Transportation Study, pp 51

Figure 9
Peak Hour Traffic Volume on Steels Avenue W and Finch Avenue W (Keele-Finch Plus
Transportation Study, 2017, p. 42).

	Traffic Volume Morning Peak/hr	Traffic Volume Evening Peak/hr	Maximum capacity/hr	Remaining capacity/hr
Steele Avenue W				
Traffic entering Steels Avenue W eastbound and westbound through the intersections at Keele-Steeles and Dufferin-Steeles	1800	1700	1800-2000	0-100
Traffic exiting Steeles Avenue W eastbound and westbound through the intersections at Dufferin-Steeles and Keele -Steeles	1700	1800	1800-2000	400-600
Finch Avenue W				
Traffic entering Finch Avenue W eastbound and westbound through the intersections at Dufferin-Finch and Keele-Finch	1300	1700	1800-2000	100-300
Traffic exiting Finch Avenue W eastbound and westbound through the intersections at Keele-Finch and Dufferin-Finch	1400	1500	1800-2000	300-500

Figure 10
Existing Daily Truck Traffic (8 hours) (Keele-Finch Plus Transportation Study, 2017, p. 51).



Key Findings and Recommendations

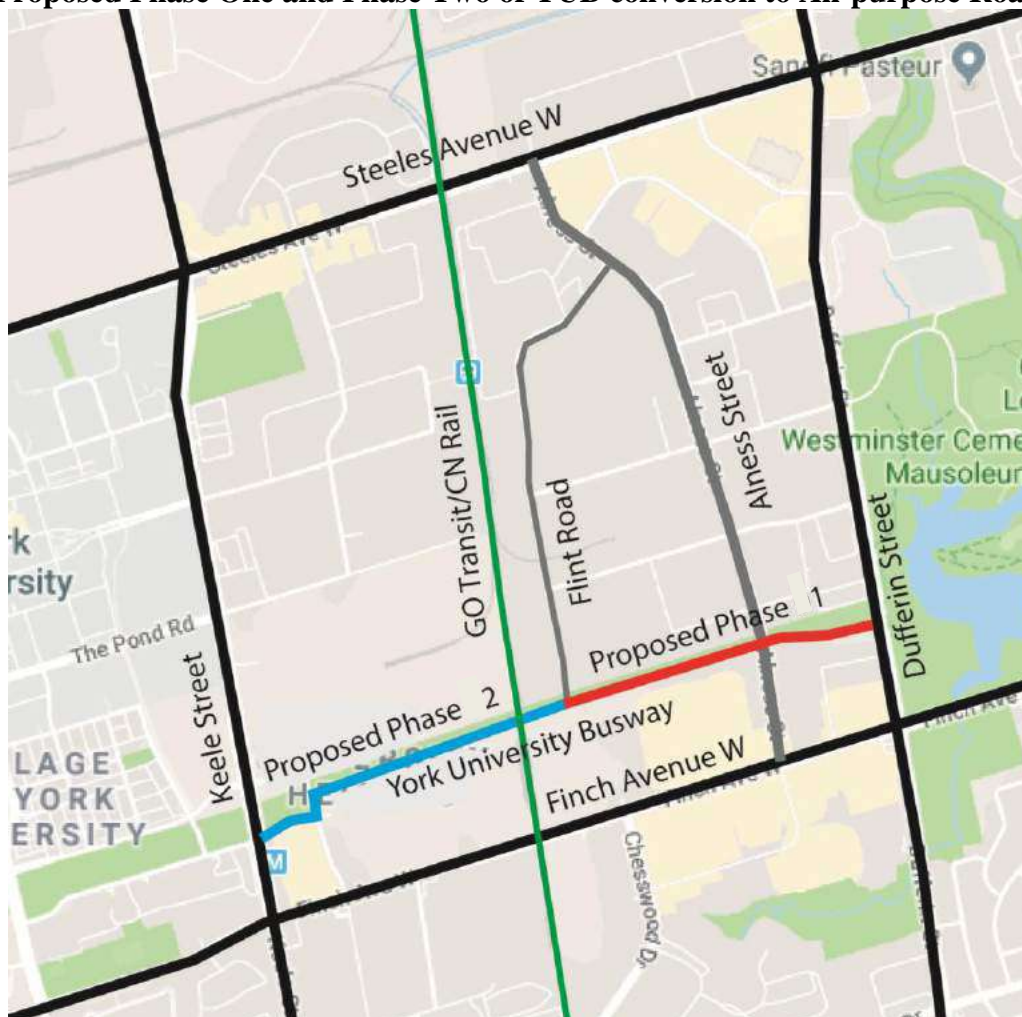
The east-west connection provided by the YUB is necessary in the area. The proposal is to utilize and optimize the use of the YUB by all types of vehicles that are currently using the nearby congested streets and intersections, by allowing for personal cars and trucks to also use the roadway. The YUB is presently underutilised despite the significant public cost (\$37.8 million) of building it.

The Phase One transformation of YUB (from a newly constructed Flint Road/ Busway intersection) easterly to Dufferin Street (with intersection improvements at Alness/Busway and Dufferin/Busway) would directly support the highly successful North-Eastern quadrant of DHBIA with its 14,898+ daily trips (43% of DHBIA daily trips)⁵. It would support existing successful businesses (such as Teknion, Global) and encourage future employment growth. This proposal is schematically illustrated in the figures 11,12,13,14.

The Phase Two transformation of the YUB (from the newly constructed Flint Road/Busway intersection westerly to Tangier's Road/Keele Street) would additionally improve accessibility and needs to be, also, implemented after appropriate consultations with CN Rail/GO Transit due to the presence of at-shape rail crossing with the YUB.

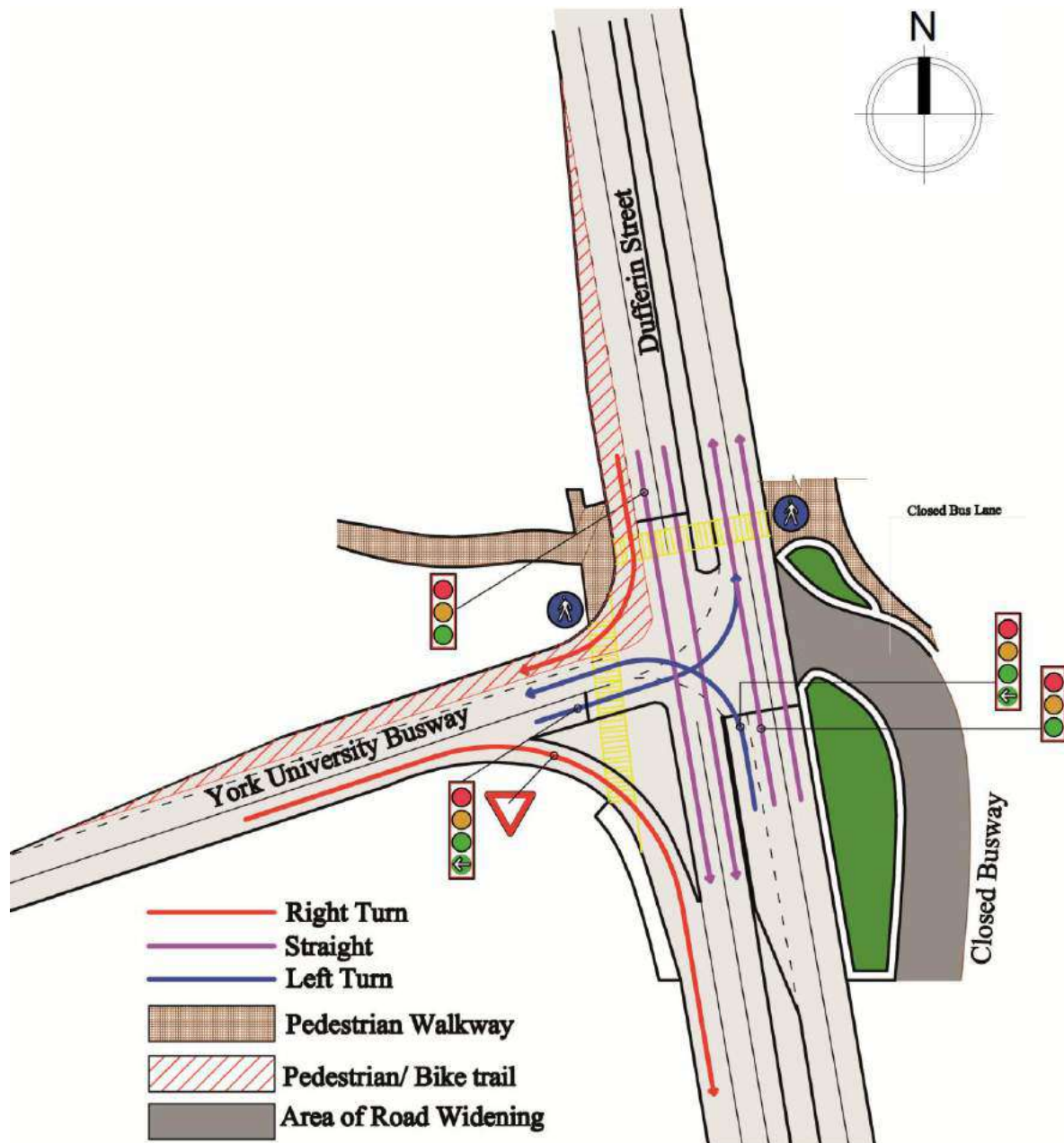
Figure 11

Proposed Phase One and Phase Two of YUB conversion to All-purpose Road



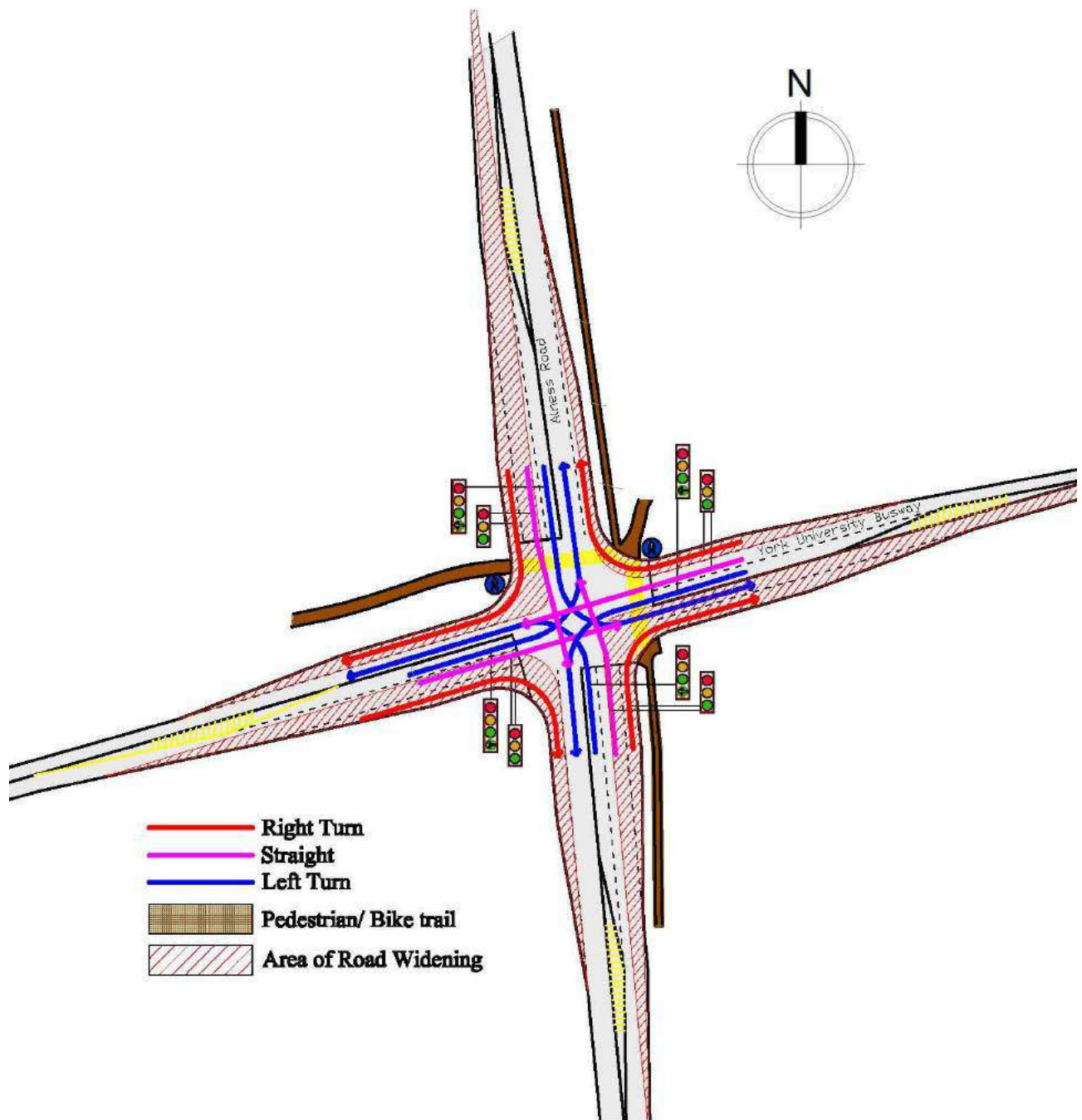
⁵ DUKE Heights Business Improvement Area Transit and Cycling Assessment Existing Conditions and Analysis Report, Pembina Institute, 2016

Figure 12
Proposed Dufferin Street-York University Busway (YUB) Intersection



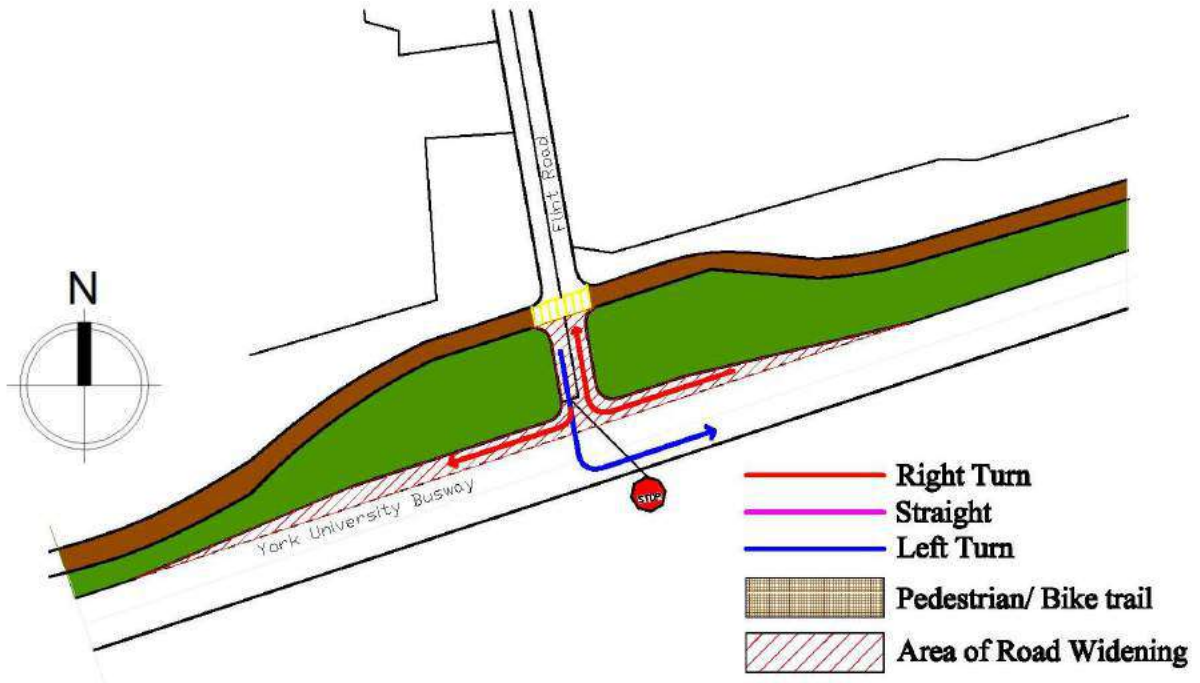
The intersection is proposed to be regularised by a) adding a southbound right turn lane b) a northbound left turn lane to YUB and c) by eliminating the northbound bus only roadway onto the YUB

Figure 13
Proposed Alness Street-York University Busway(YUB) Intersection



This intersection is proposed to be regularised by introducing/improving right hand and left hand turns in all directions (road widening are consequently required).

Figure 14
Proposed new Flint Road-York University Busway(YUB) Intersection



This intersection is proposed to be regularised as a 'T' intersection in order to connect the extended Flint Road with the YUB

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APPENDICES

APPENDIX A: Images of York University Busway

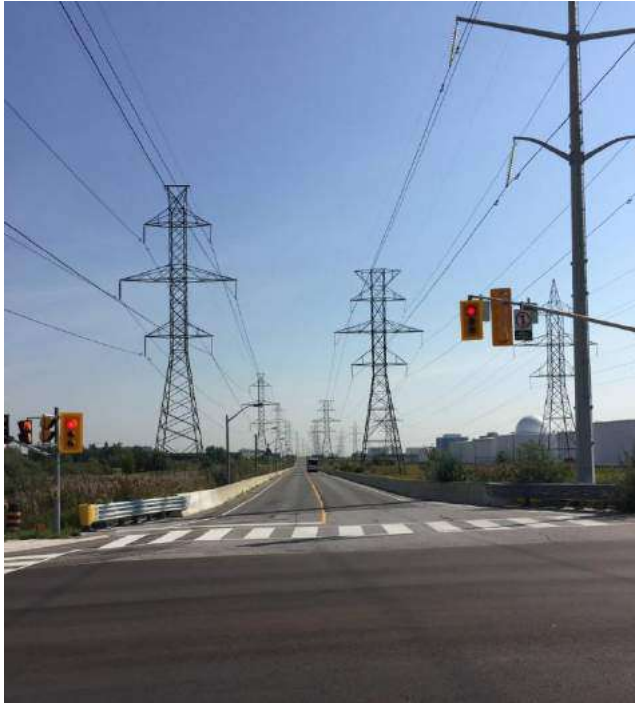


Image 1. York University Busway (YUB), facing east. From Tangiers Road



Image 2. West side of Dufferin Street and YUB facing North



Image 2. West Side of Dufferin Street and YUB, facing South.



Image 3. Intersection of Alness Street and YUB.(facing West)



Image 4. YUB from Flint road (facing south)



Image 5 Flint road from YUB (facing south)



Image 4 Signalized CN Railway. At Y.U.B