2017 Cycling Infrastructure Requests

Duke Heights Business Improvement Area
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November 2017

DUKE HEIGHTS

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Summary

DUKE Heights BIA is located in the area bounded by Steeles Ave West to the north, Dufferin Street to the east, Sheppard Avenue West to the south and Keele Street to the west. The BIA is surrounded by residential areas, parkland, commercial areas and York University. A developed cycling infrastructure master plan within the BIA can help to connect surrounding areas and also improve internal circulation providing safe, active transit options to the over 32,000 people employed in the BIA. Please find below both our priority and comprehensive requests:

Priority Requests

1. Finch Avenue West: Create dedicated bike lanes on Finch Avenue West from Wilmington Avenue to Sentinel Road;

2. Dufferin Street:
    a. Create bike lanes on Dufferin Street (parallel to W.R. Allen Road south of Steeprock) from Sheppard West Station to Finch Trail Corridor,
    b. Adjust metal barrier at Wilson Heights Boulevard and Steeprock Drive to provide easier cycling connectivity (see Appendix 1);
    c. Widen the cyclist and pedestrian access to Dufferin Street at Rimrock Road crossing, and
    d. Create a east-west cyclist and pedestrian crosswalk on the south side of the Rimrock-Dufferin intersection;

3. Keele Street: Add bike lanes from Sheppard Avenue West to Steeles Avenue West;

4. Sheppard Avenue West: Add bike lanes from Wilmington Avenue to Keele Street; and

5. Add cycle stations at Sheppard West Station, Downsview Station, Finch West Station and Finch Corridor Trail at Dufferin Street.

Comprehensive requests for additional bike lanes (See Map 1)

a) Canarctic Drive
b) Pond Road (Evelyn Wright Drive to Petrolia Road)
c) Petrolia Road
d) Tangiers Road (Finch Corridor Trail to Toro Road)
e) Toro Road (Tangiers Road to Keele Street)
f) St. Regis Crescent (Bakersfield Street to Keele Street)
g) Bakersfield Street (Sheppard Avenue West to St. Regis Crescent)
h) Alness Street (Finch Corridor Trail to Steeles Avenue West)
i) Whitehorse Road (Rimrock Road to Steeprock Road)
j) Dufferin Woodlot-Chesswood Drive connection (See Appendix 2)

Discussion

The BIA is divided by a north-south rail corridor which is transected by Finch Avenue West, Sheppard Avenue West and Steeles Avenue West. East-west connections beyond these major arterial streets is limited to the York University Busway and the Finch Corridor Trail. The Trail is an important part of cycling infrastructure in the BIA which provides the only complete east-west cycling infrastructure across the area.

Current cycling infrastructure within the BIA is disconnected internally and to paths and trails outside of the BIA. Opportunities exist to connect to trails and paths on the edges of the BIA and expand the cycle network (see Map 1).

The major arterial roads in the BIA are heavily used by buses, private vehicles and transport trucks as well as cyclists. These busy streets are identified as priority bike lanes by the BIA to ensure that are safe transit options for cyclists:

- Finch Avenue West
- Dufferin Street
- Keele Street
- Sheppard Avenue West

Long term goals for further cycling infrastructure have also been identified. Bike lanes should be added or extended on:

- Canarctic Drive
- Pond Road (Evelyn Wright Drive to Petrolia Road)
- Petrolia Road
- Tangiers Road (Finch Corridor Trail to Toro Road)
- Toro Road (Tangiers Road to Keele Street)
- St. Regis Crescent (Bakersfield Street to Keele Street)
- Bakersfield Street (Sheppard Avenue West to St. Regis Crescent)
- Alness Street (Finch Corridor Trail to Steeles Avenue West)
- Whitehorse Road (Rimrock Road to Steeprock Road)

Mid-block connections should be explored in the BIA. The BIA is comprised of large lots which limits interior circulation options. Mid-block path connections should be considered in the Dufferin Woodlot, where desire lines have already formed, connecting Dufferin Street to Chesswood Drive and the north-east corner of the BIA between Gerry Fitzgerald Drive and Magnetic Drive.

The only cycle posts located within the BIA are at the corner of Steeles Avenue West and Dufferin Street. Cycle posts have been requested at 20 transit stops throughout the BIA (Map 2).

Background

DUKE Heights has commissioned several reports reviewing existing cycling infrastructure and potential cycling infrastructure including new trails, cycle routes and cycle posts.

Creating Connectivity

The *Creating Connectivity* report (January 2017, Appendix 1) analyzes potential methods for creating safer and more connective cycling routes in the southern portion of the BIA (area bounded by Finch St W, Dufferin St, Sheppard Ave W and Keele St). The arterial roads are identified as a major obstacle to pedestrian and cyclist due to the high volume and speed of vehicles. Cyclists are often discouraged from using the road due to concerns for safety and opt to use sidewalks.

Five areas of opportunity to were identified to increase cyclist safety and infrastructure:

1. Finch Avenue Bike Lanes: create dedicated bike lanes on Finch Avenue West from Wilmington Avenue to Sentinel Road.
2. Dufferin Street and Wilson Heights Boulevard: a) Remove metal barrier and narrow Wilson Heights Boulevard at Steeprock Drive to provide cycling and pedestrian amenities.b) Create bike lanes on Dufferin Street from Sheppard West Station and increase bicycle parking at the station.
3. Rimrock Road and W.R. Allen Road: a) Widen the pedestrian access on Dufferin Street to Rimrock Road crossing for cyclists. b) Create a crosswalk on the south side of the intersection.
4. Keele Street to Derrydown Road: Create a designated walkway for pedestrians and cyclists from Derrydown Road to Keele Street through an existing parking lot.
5. Grandravine Drive road extension: Ensure future road connecting Grandravine Drive to Transit Road has protected bicycle lanes.

Dufferin & Chesswood

The *Chesswood and Dufferin Link* report (April 2017, Appendix 2) identifies the Dufferin Woodlot, a natural zoned open space-natural zone, as an area to potentially expand a multi-use trail to connect Dufferin Street to Vanley Crescent and Chesswood Drive. The Toronto Cycling Network has identified Chesswood Drive for proposed bike lanes in the future.

There are two proposed alignments for the multi-use trail. The first alignment runs along the southern edge of the woodlot connecting along the edge of the Dufferin Transfer Station, a City

of Toronto property. It would connect an existing desire line off Dufferin Street to Vanley Crescent and Chesswood Drive. The second alignment is along the top of the bank of the woodlot along several privately owned parking lots. It would connect the traffic signal at 4400 Dufferin Street with Chesswood Drive.

Both alignments would require the use of private property to complete the connection to the interior of the BIA and proposed future bike path.

Dufferin-Finch Intersection

The BIA conducted a study of TTC user movements at the corner of Dufferin Street and Finch Avenue West during June and July 2017. Over the course of the observations, it was noted a majority of cyclists used the sidewalk and the cement padding on the northeast corner of the intersection to navigate around the intersection. Currently, part of Finch Avenue West and Dufferin Street are proposed trails which would serve to connect the gap in the Finch Corridor Trail and to the G Ross Lord Park trails.

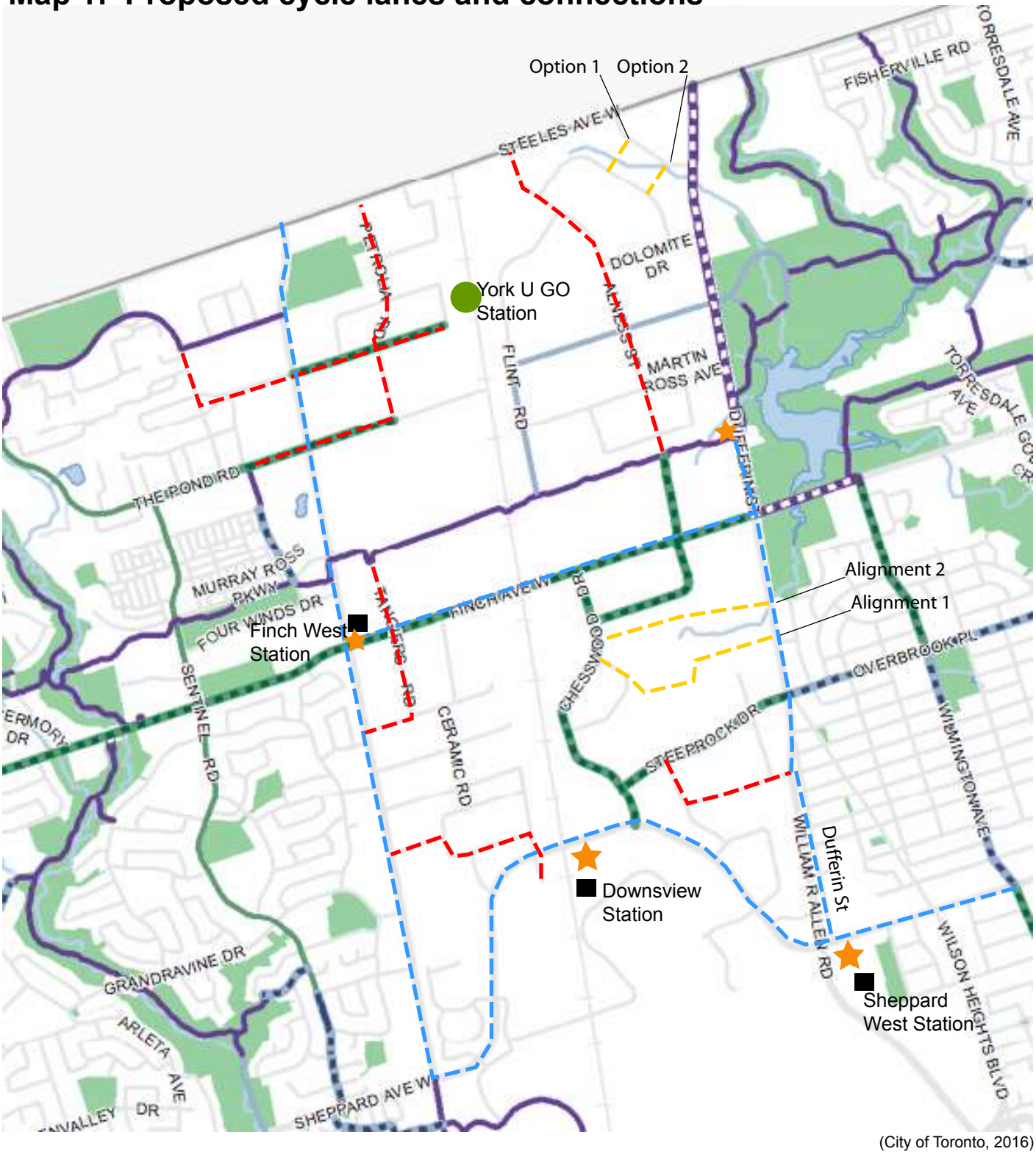
Northwest quadrant

The northwest quadrant of the BIA (Finch Ave W to Steeles Ave W and Keele St to the rail corridor) is adjacent to residential and York University neighbourhoods. Currently there is no dedicated cycling infrastructure except for a suggested cycling route connecting the York U GO station to York University. There are proposed bike lanes on sections of Pond Road and Canarctic Drive to provide better connections into the York University Campus area.

Requested Bicycle Racks at Bus Stops

Cycle posts have been requested at twenty existing bus stops in the BIA (See Map 2). The bicycle racks have been requested in order to support cycling around the BIA. Streets include Finch Avenue West, Keele Street, Steeles Avenue West, Alness Street, Supertest Road and Chesswood Drive.

Map 1: Proposed cycle lanes and connections



(City of Toronto, 2016)

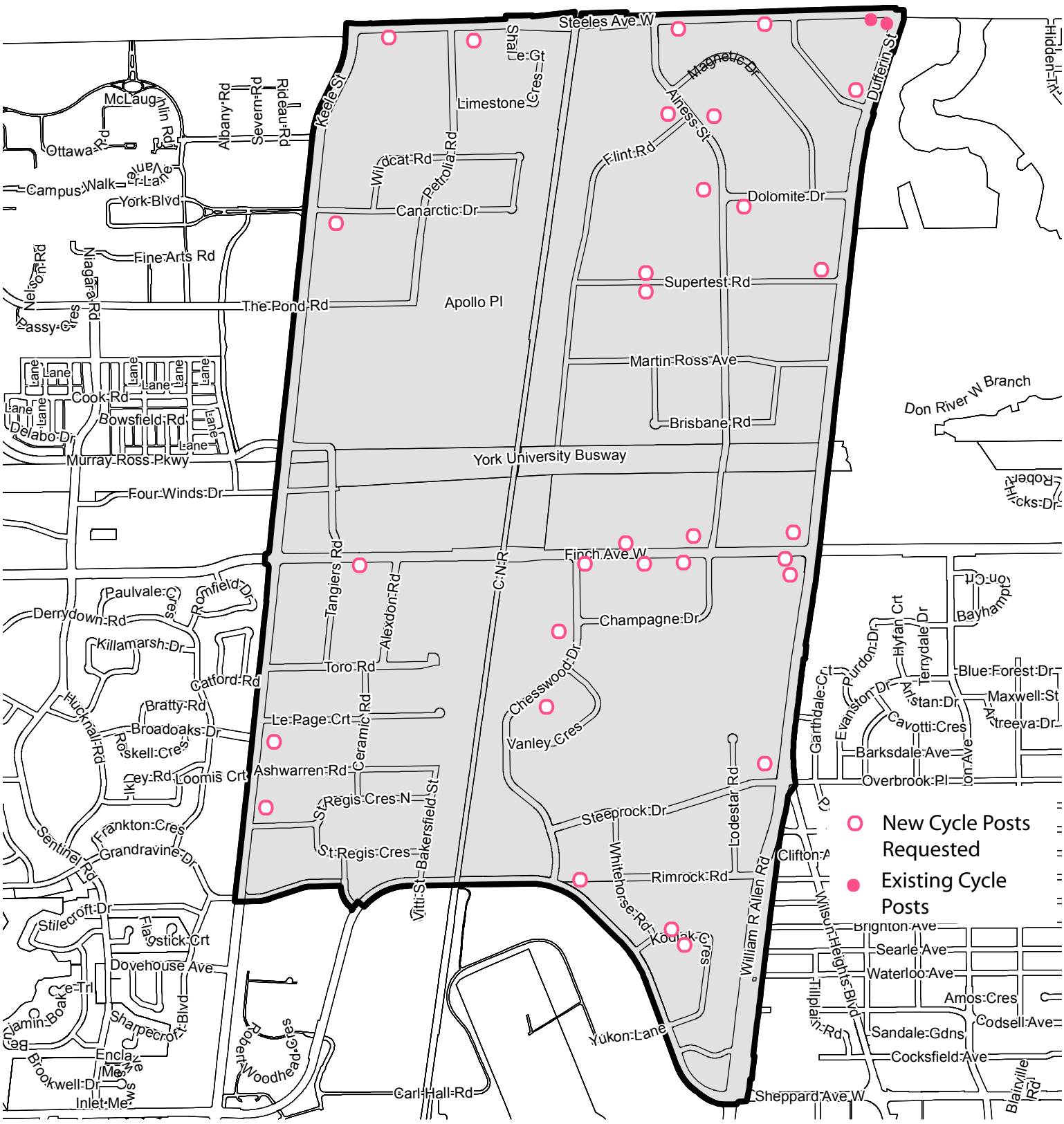
BIA priority bike lanes

Additional bike lanes

Connections

Cycle Station

Map 2: Requested Cycling Infrastructure in DUKE Heights BIA



Source: City of Toronto
Map File: web\DuKeHeights.mxd
Created by: GCC, May 2016.

Bus stop locations are approximate.

Appendix 1

January 2017

Creating Connectivity

A Pedestrian and Cycling Study for the DUKE Heights BIA and Adjoining Residential Neighbourhood

DUKE HEIGHTS BIA

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Executive Summary:

The Duke Heights BIA has concerns regarding the connectivity of pedestrians and cyclists to the businesses located in the BIA as well as future transit mobility hubs in the future.

Recommendations:

1. a) Create dedicated bike lanes protecting cyclists from vehicular traffic on Finch Avenue from Wilmington Avenue to existing bike infrastructure on Sentinel Road.

   b) Consistently upkeep Finch Bike Lanes to remove rocks and sand that collects on the side of the road from the truck traffic on Finch Ave West.

2. a) Remove the metal barrier and narrow Wilson Heights Blvd at Steeprock Drive to create an opportunity for better cycling and pedestrian amenities such as sidewalks and bike lanes.

   b) Create bike lanes on Dufferin Street from Downsview Station (on the north side of Sheppard) as well as more bicycle parking at the station.

3. a) Widen the pedestrian access from Dufferin Street to Rimrock Road crossing for cyclists.

   b) Create a crosswalk on the south side of the intersection.

4. Create a designated walkway for pedestrians from Derrydown Road to Keele Street through an existing parking lot.

5. a) Create a formal walkway from Romfield Road to Keele Street with trees protecting pedestrians and good lighting.

   b) In the future add a traffic signal to create a formal crosswalk at the end of this walkway.

6. Protect pedestrians and cyclists with trees from fast moving traffic on a future arterial road connecting Grandravine Drive to Transit Road.

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Introduction:
The DUKE Heights Business Improvement Area (BIA) is situated between Keele Street and Dufferin Road, Steeles Avenue to the North and Sheppard Avenue to the South and is about 1,819 acres. Over 2,500 businesses operate here and over 31,000 people work in the DUKE Heights BIA. It is the second largest businesses improvement area in Canada, primarily consisting of office and service sector businesses. The BIA is situated between two residential neighbourhoods to the East and West totalling approximately 28,000 residents (2011 census data) in the immediately adjacent areas.

The BIA is located conveniently close to several major highways: 401, 400, and 407 and provides ample free parking. When the subway extension to Vaughan opens, the BIA will be accessible by three subway stations: Sheppard West Station, Downsview Park Station, and Finch West Station. In addition to this the Finch LRT is planned to terminate at the new Finch West Subway Station. With this many planned and existing rapid transit intersections, the DUKE Heights BIA is a gateway mobility hub. There is a need for better connectivity as 40% of trips are made by transit, walking, and cycling and one-third of trips begin and end in the area.

All of this exciting development will bring more opportunity to the BIA and nearby residents. However, there is a lack of direct connectivity between residents and the businesses in the BIA. The area has many factors that create poor walking and cycling accessibility such as curvilinear roads, lack of sidewalk infrastructure, fast moving cars on arterial roads, and high truck traffic. This document will examine the barriers to better pedestrian and cycling infrastructure and with the future gateway mobility hub in mind, conclude with recommendations for better connectivity.

Barriers:

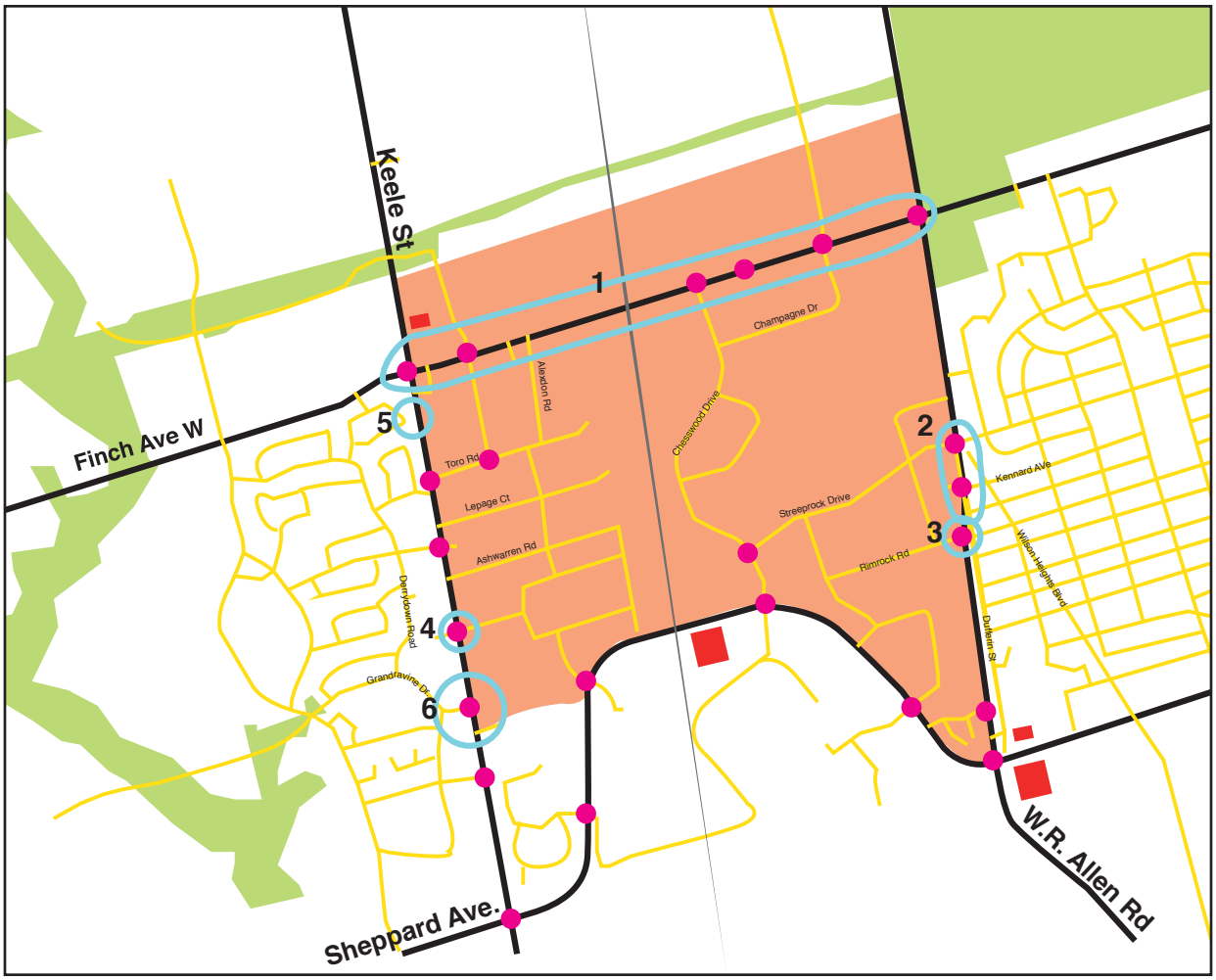
Arterial Roads

The DUKE Heights BIA is surrounded by fast moving arterial roads that are heavily congested during the morning and afternoon peak periods. Finch Avenue, Keele Street, Dufferin Street (W.R. Allen Road), and Sheppard Avenue are wide roads that encourage fast movement of vehicles. These roads are large and dominated by cars, most speed limits on arterial roads vary between 60 – 80 km/h however vehicles generally travel faster due to the nature of the road. In addition to cars, large trucks are common on these roads as well. There is also an express bus lane on Dufferin Street to W.R. Allen Road to Downsview Station to link the York University community to the subway. This poses a large challenge to integrate other means of mobility on these roads. Vulnerable users such as cyclists and pedestrians do not feel safe because of the landscape of the road.

Poor Pedestrian and Cycling Realm

Curvilinear residential roads create barriers to both pedestrians and cyclists who must navigate a network of these roads rather than being provided direct access to their destinations. A lack of sidewalks also discourages pedestrian use. The residential neighbourhood located East of W.R. Allen Road lacks sidewalk infrastructure on both sides of the road. Cyclists experience few amenities such as bicycle parking and lack a network of dedicated bike lanes. This discourages potential cyclists as they have to contest their safety cycling on fast moving arterial roads, in fact most cyclists opt to use sidewalks. Parking lots are large and difficult to navigate as a pedestrian. Bus stops are far from amenities that have frequent use, such as grocery stores with a large parking lot dividing the pedestrian from their destination. Cars also tend to drive into these parking lots very quickly as they exit from these fast moving roads onto property driveways. This adds to an unsafe pedestrian landscape.

Map of Study Area:



Legend

- Subway Station
- Traffic Signal
- Area of Opportunity
- Study Area
- Green Space
- Non-Arterial Road
- Arterial Road

Areas of Opportunity:

1. Finch Avenue Bike Lanes
Finch Avenue is to become a major transit link when Finch West Subway Station opens and later the Finch LRT. With such a vital link located at Keele Street and Finch Avenue, the lack of cycling infrastructure on Finch Avenue will discourage future cyclists to bike to this transit link. There are many businesses located on Finch Avenue that would benefit from a dedicated and protected bike lane infrastructure. The lanes must be protected as vehicular traffic moves at high speeds and during peak periods roads are congested. In addition to cars, large trucks are common on Finch Avenue, making connections to the 400 series highway and this type of traffic contributes to the poor quality of the existing bike lane. Rocks and sand collects on the shoulder of the road and this is very dangerous to cyclists.

1.1 Recommendation:
Create dedicated bike lanes protecting cyclists from vehicular traffic on Finch Avenue from Wilmington Avenue to existing bike infrastructure on Sentinel Road. This will encourage connectivity to the residents living East of Dufferin Street and provide access to the businesses on Finch and a major transit link in the future.

Consistently remain upkeep of Finch Bike Lanes to remove rocks and sand that collects on the side of the road from the truck traffic. Although bollards would be useful, it would prevent the ability to clean the bike lanes. Another option would be to create curbed protection from cars as this would keep rocks and sand out of the bike lanes.

2. Dufferin Street (Residential) and Wilson Heights Boulevard

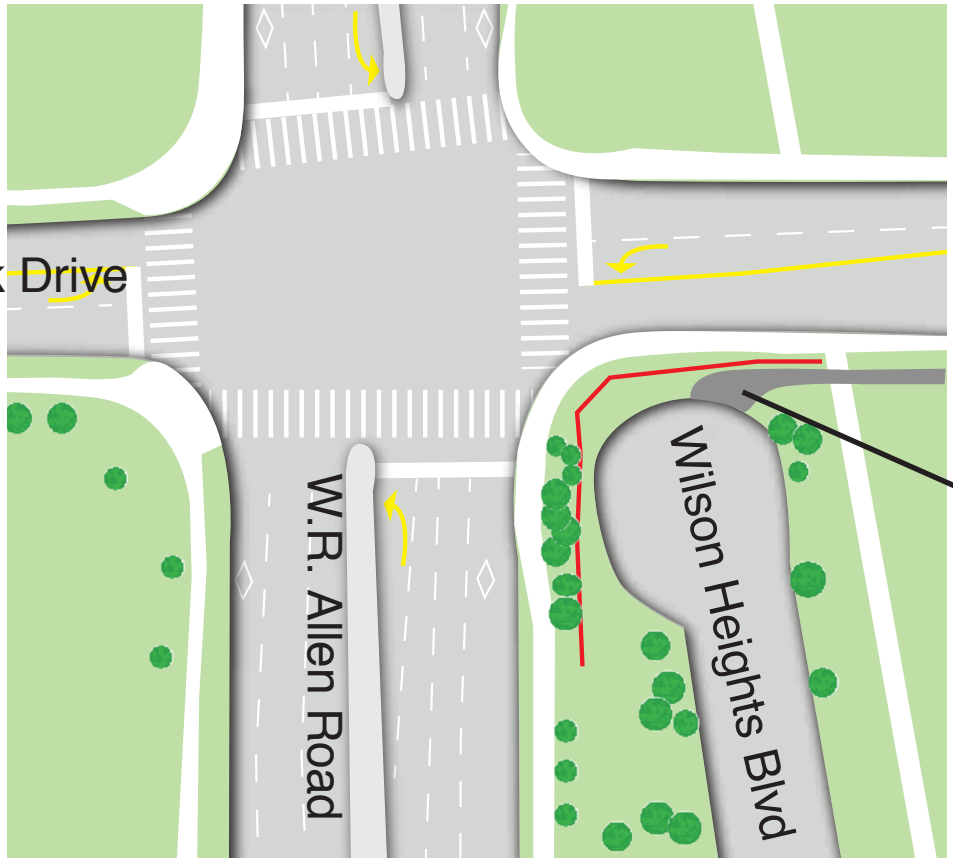
The connection of these two roads to Steeprock Drive and Overbrook Place where a future bike lane has been approved could connect Sheppard West subway station and the residents in the area to a larger cycling network. Currently sidewalk infrastructure is lacking as residential Dufferin Street ends abruptly between Rimrock Road and Kennard Avenue. Wilson Heights Boulevard ends into a cul-de-sac and has a poorly placed connection to bus stops at Kennard Avenue and W.R. Allen Road discouraging pedestrian access to transit and businesses across the street. In addition to these challenges there is a metal barrier blocking direct pedestrian and cycling access to W.R. Allen Road and businesses across the street at the end of Wilson Heights Blvd.

2.1 Recommendation:

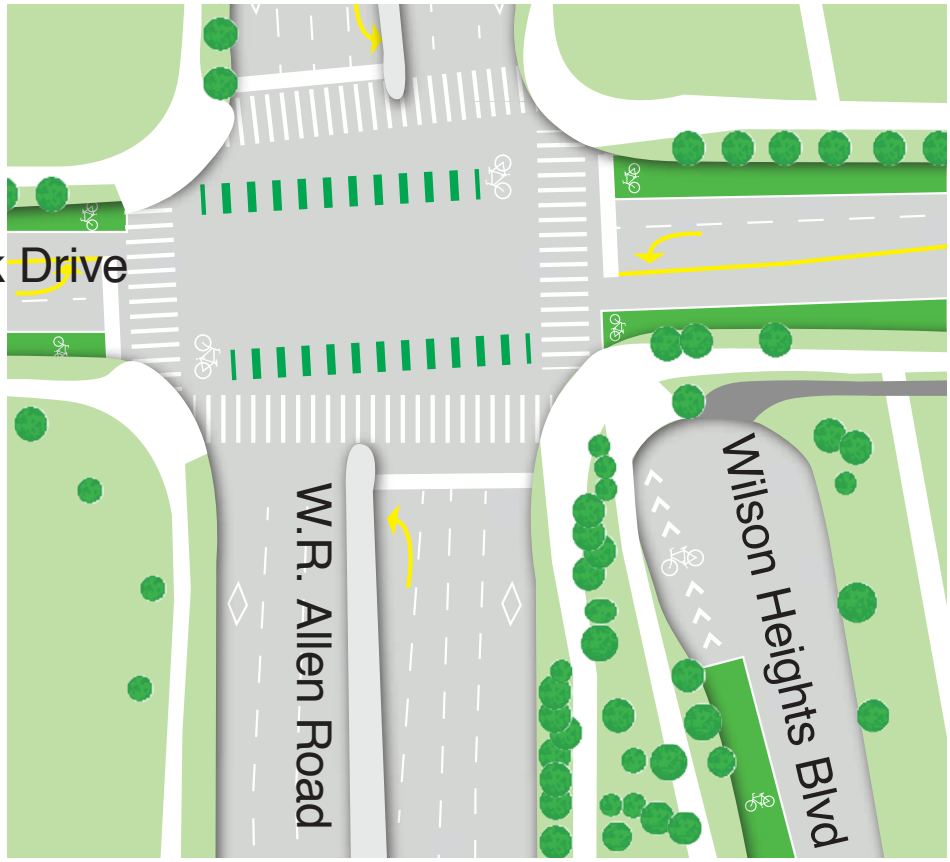
These two roads end for vehicular traffic but should not end for pedestrians and cyclists. This has the potential to be a connecting node to businesses and transit, opening opportunity for residents in this neighbourhood. It would be advantageous to create a bike network from Sheppard West Station through a quiet residential street (Dufferin St) connecting retail and future bike lanes on Steeprock.

To make the intersection feel safer to pedestrians, the redesign should follow the complete streets guidelines by extending the tree canopy and planting trees between sidewalks and roads. Sidewalks for pedestrians should not be immediately adjacent to the road (such as on the West side of the W.R. Allen Road south of Rimrock Road). This does not create a safe pedestrian realm. Narrowing Wilson Heights Blvd, to create a safer pedestrian and cycling experience. As depicted, removing the barrier and creating direct access to the intersection to create better connectivity for residents.

Before



After



3. Rimrock Road and W.R. Allen Road

Presently crossing the street at Rimrock and W.R. Allen is lacking pedestrian accessibility. Pedestrians may only cross on the north side of Rimrock Road even though there is a bus stop on the south side of the road. Improving walkability here would encourage residents in the adjacent neighbourhood to walk to businesses in the Business Improvement Area.

3.1 Recommendation:

Improving pedestrian accessibility would require access to crossing facilities on the south side of Rimrock Road. Painting a crosswalk and creating sidewalk facilities to accommodate crossing on any side of the street would encourage pedestrian activity. In addition to this, widening the current pedestrian access from the residential neighbourhood would encourage walking and cycling with minimal altering of the current land. Cyclists and pedestrians will feel the walkway is large enough for both groups to pass on another.

Highlighted in Red – missing crosswalk and current pedestrian access

Before

After

4. Keele Street to Derrydown Road
Currently St. Regis ends west of Keele in a cul-de-sac of residential townhouses and parking. There are steps at the end of this parking that connect to another row of townhomes and a driveway connects these homes to Derrydown Road. There is no pedestrian space here besides a sidewalk with no buffer from cars. The curvilinear shape of the roads create a poor walking experience as pedestrians have to walk long distances to navigate these streets. This can be mitigated by redesigning this length of driveways and parking lots into a safer walking space for pedestrians. This would encourage walking to retail such as No Frills across the road from Derrydown Road residents.

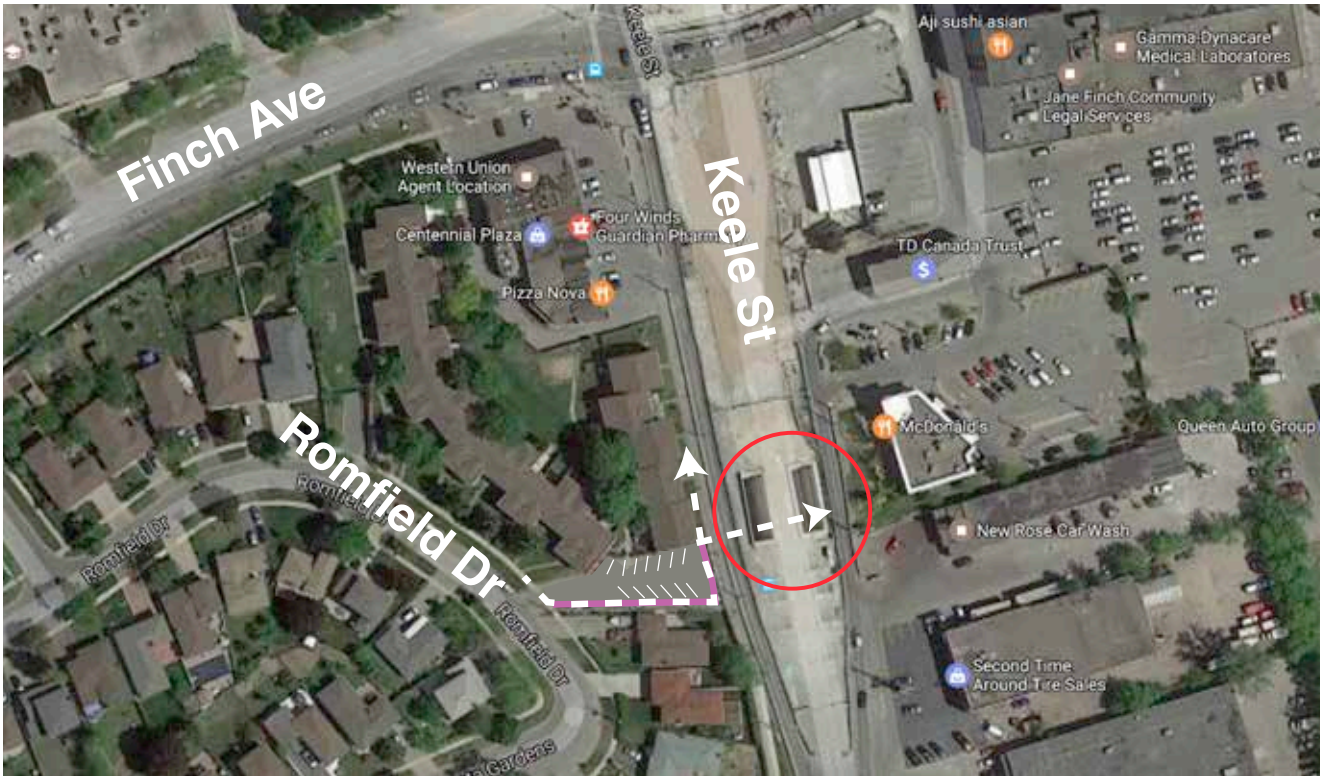
4.1 Recommendation:
The should be a designated walkway through this neighbourhood to encourage walking and cycling on a well lit and marked path. There is a large amount of space being used for car parking and through further studies these can be altered to include other users for better accessibility.

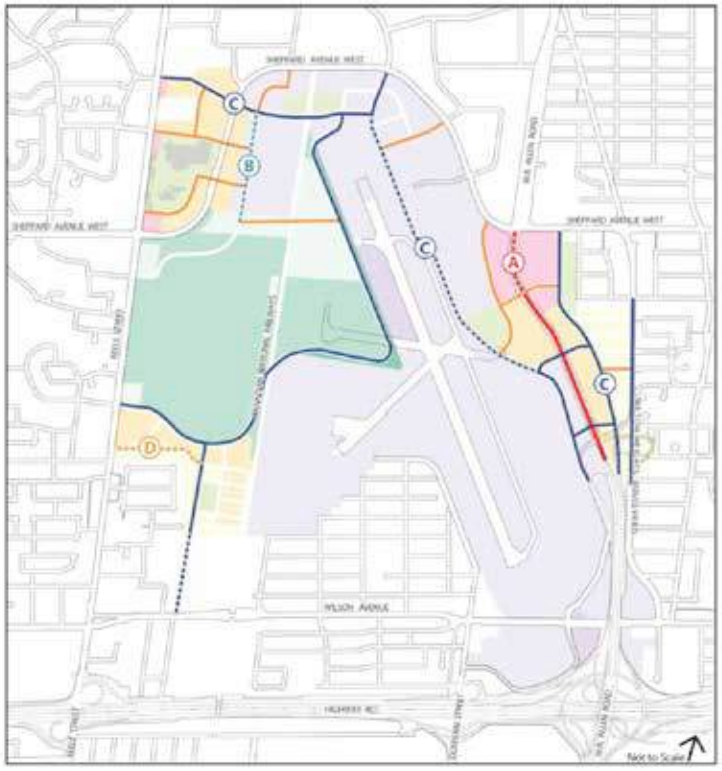
Before

After

5. Romfield Drive to Keele Street
A similar problem occurs connecting Romfield Drive to Keele Street, pedestrians must navigate through a parking lot to connect to businesses, and future transit. This connection would be especially important as Finch West subway station will open within the 800m walking distance of this neighbourhood. By providing an improved pedestrian realm more residents can benefit from walking to the subway, thereby tackling the problem of "the last mile" that most pedestrians face.

5.1 Recommendation:
Create a formalized walking space through this parking lot, separated by trees and provide good lighting. In addition to this, provide a traffic signal on Keele Street for residents to have greater access to amenities across the road.





E-W Road. Keele Street to Transit

6. Grandravine Drive road extension

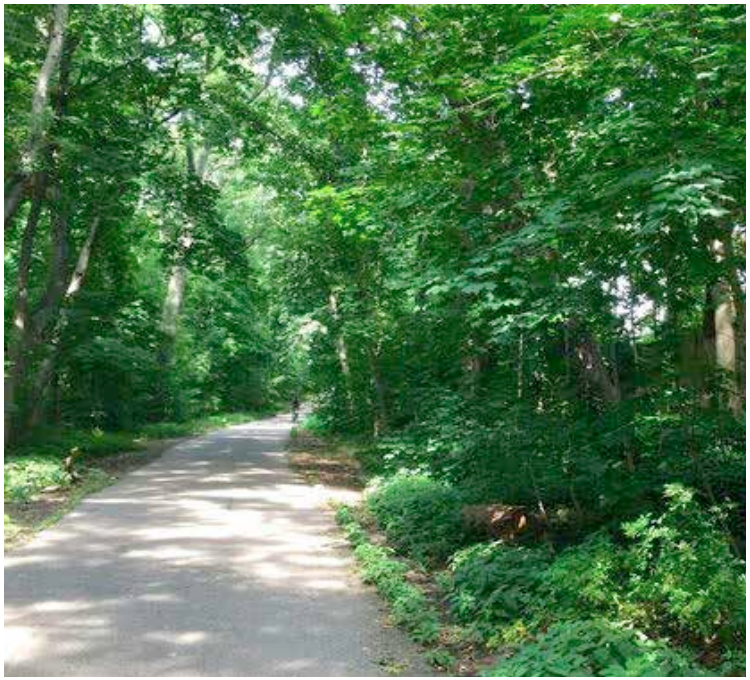
Grandravine Drive is set to extend to Sheppard Avenue for a better connection to Downsview Park Subway Station. According to the Downsview secondary plan this road is to be an arterial East-West Road connecting Keele Street to the extension of Transit Road to Chesswood Drive, with a 27 metre right of way. This is an opportunity to create a complete street for transit, cyclists, and pedestrians so everyone can connect to the new station more conveniently. Currently the residents living on Grandravine Drive and surrounding streets would have to walk much further to Downsview Park Subway Station rather than cutting across, creating easier access. These residents are reliant on bus services to bring them to subway stations even though this residential area will fall within 800m walking distance of the new subway station.

6.1 Recommendation:

The Grandravine Drive road extension should follow the complete streets guidelines to create a safe atmosphere for all users rather than just fast moving cars. This road extension would encourage residents to bike or walk to the Downsview Park subway station. The road should protect vulnerable users from cars, pedestrians and cyclists should be protects by trees.

Appendix 2

Chesswood and Dufferin Link



DUKE HEIGHTS BIA

April 2017

Executive Summary:

The Dufferin Woodlot is a part of the Don River and contains natural greenspace located within the Duke Heights BIA. With the City of Toronto expanding its cycling network on Chesswood Drive and Finch Ave West, The Duke Heights BIA is looking forward to expand this network to create better access for cyclists and pedestrians.

Recommendations:

1. Create a bike path and pedestrian walkway through the Dufferin Woodlot, West of Dufferin, to connect to Vanley Crescent and to future Chesswood Drive bike lanes;

2. Build the path in such a way, near Vanley Crescent to protect cyclists and pedestrians from heavy trucks using the Dufferin Transfer Station;

3. Set back fencing where required which surrounds the Dufferin Transfer Station to accommodate the bike and pedestrian path and greenspace; and

4. As redevelopment occurs, create a top of bank north edge bike and pedestrian path linking from 4400 Dufferin Street traffic signal to Chesswood Drive bike lanes.

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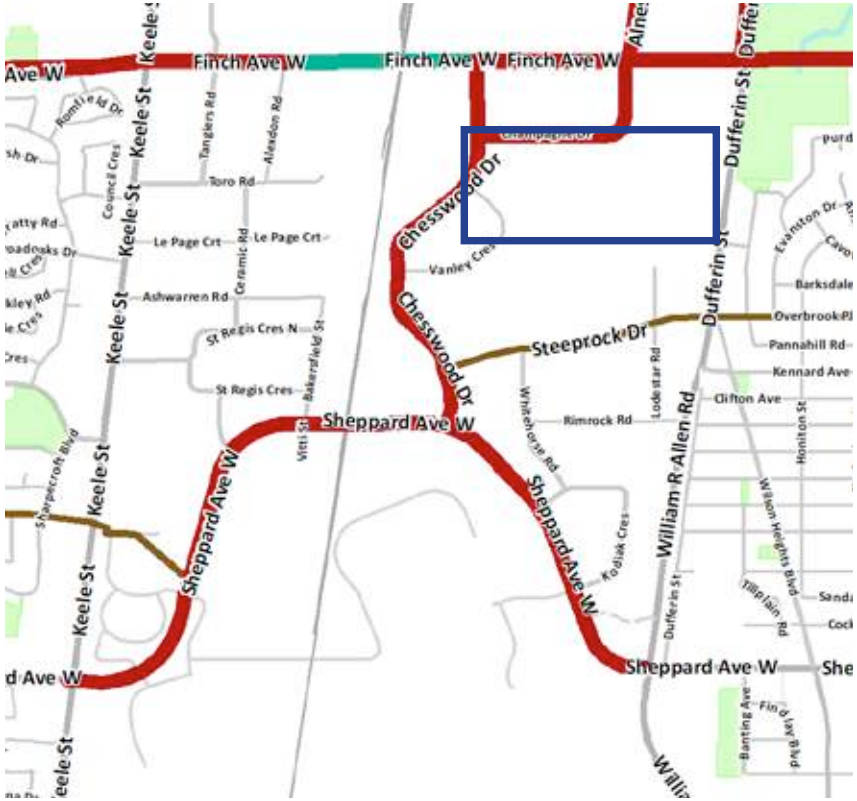
Introduction



Legend

- Proposed major corridor study, to build a City-wide network
- Proposed route on fast, busy street
- Proposed route on quiet street
- Approved multi-use trail
- Existing cycling network

Study Area

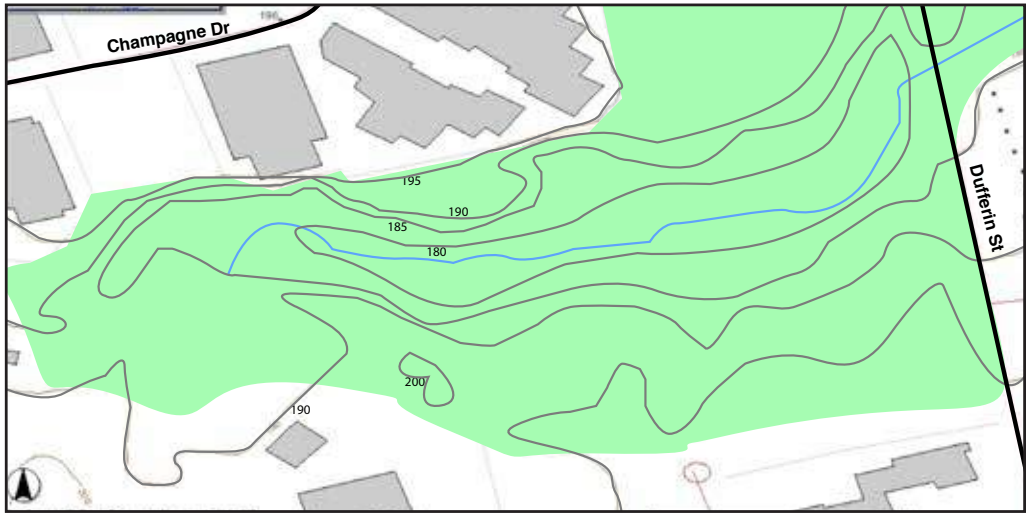
The Dufferin Woodlot is located within the DUKE Heights BIA and is zoned as open space within the BIA. It contains a branch of the Don River within it. In conjunction with improving connectivity to the surrounding residential neighbourhoods, this study proposes a bike path and pedestrain path through the woodlot to better connect businesses within the BIA to the resdidential.

In a previous study for the BIA called "Creating Connectivity" recommended creating safer cycling infrastructure and walking ameneties along W.R. Allen and Dufferin.

According to the Toronto Cycling Network (pictured left) Chesswood Drive and Champagne Drive are both proposed to have bike lanes in future. Therefore, it is important to create a connection to a major road: Dufferin Street.

Overview & Challenges

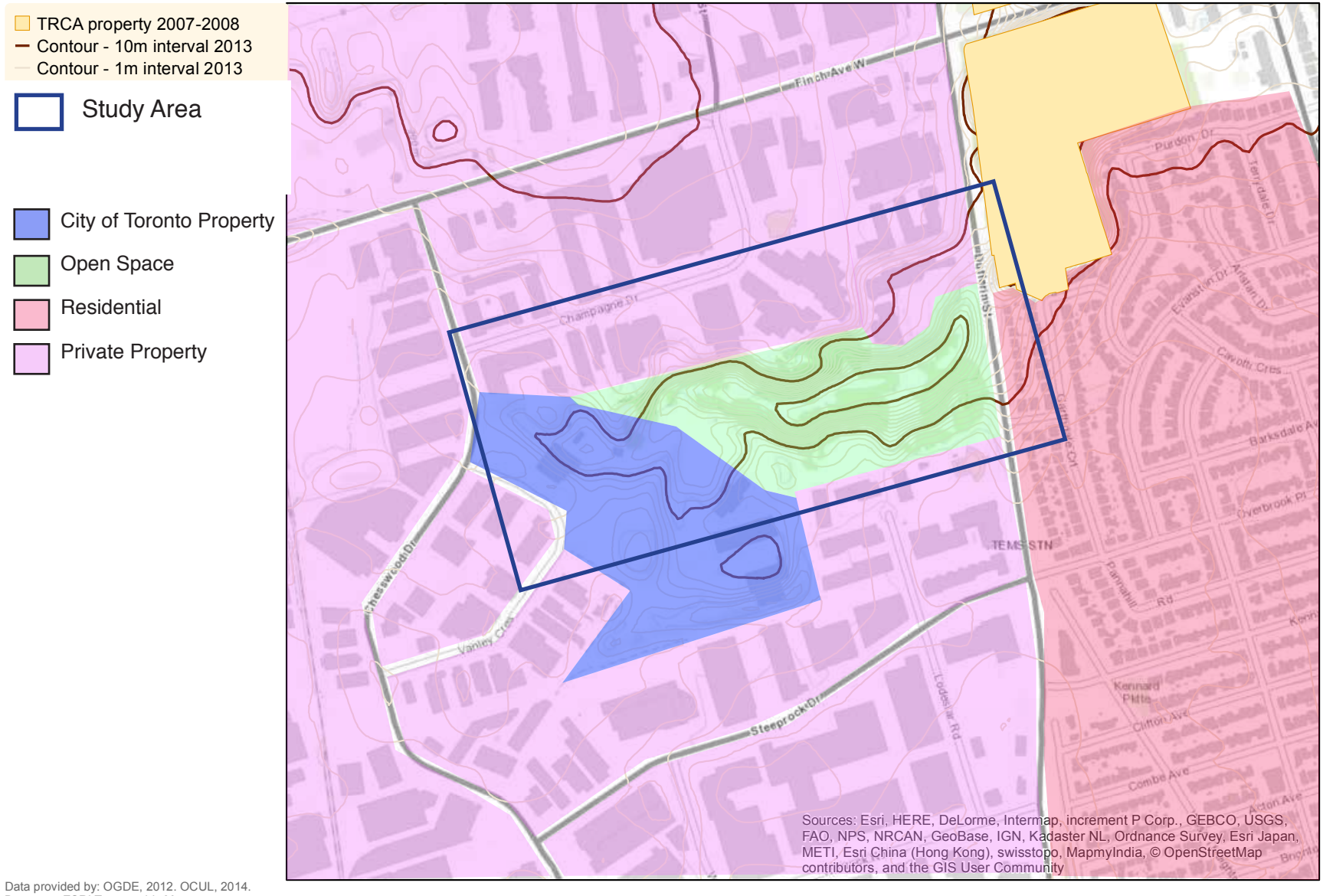
There are several challenges on this lot, heavily forested areas, steep grading (See Appendix: Figure 1.3), and thorny bushes. In addition to this, the woodlot backs onto City of Toronto owned Dufferin Transfer Station, which is surrounded by a fence and barbed wire, this poses a barrier as the bike and pedestrian access is to go around this station. The path of least resistance should be chosen to mitigate the steep grading with minimal damage to natural elements in accordance with the City of Toronto Official Plan.



Contour Map of Ravine Area

Source: Open Data Toronto

Ownership of Affected Lands



Data provided by: OGDE, 2012. OCUL, 2014.
Basemap: ESRI Topographic Map

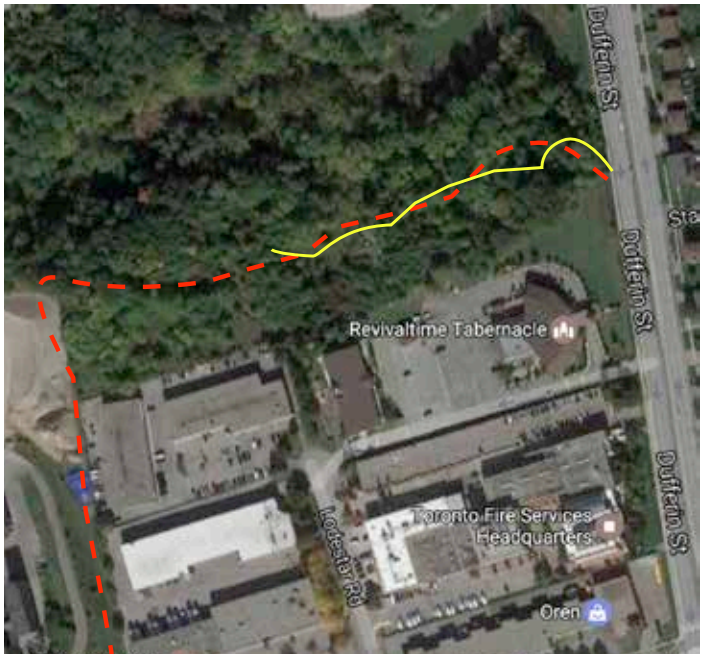
kilometres
0.25 0.125 0 0.25 0.5
1:10,994

Created on: 3/4/2017
Created by: Patrycja

Scholars GeoPortal

Current Desire Line

Overview of Study Area in relation to surrounding area. Source: Open Data Toronto



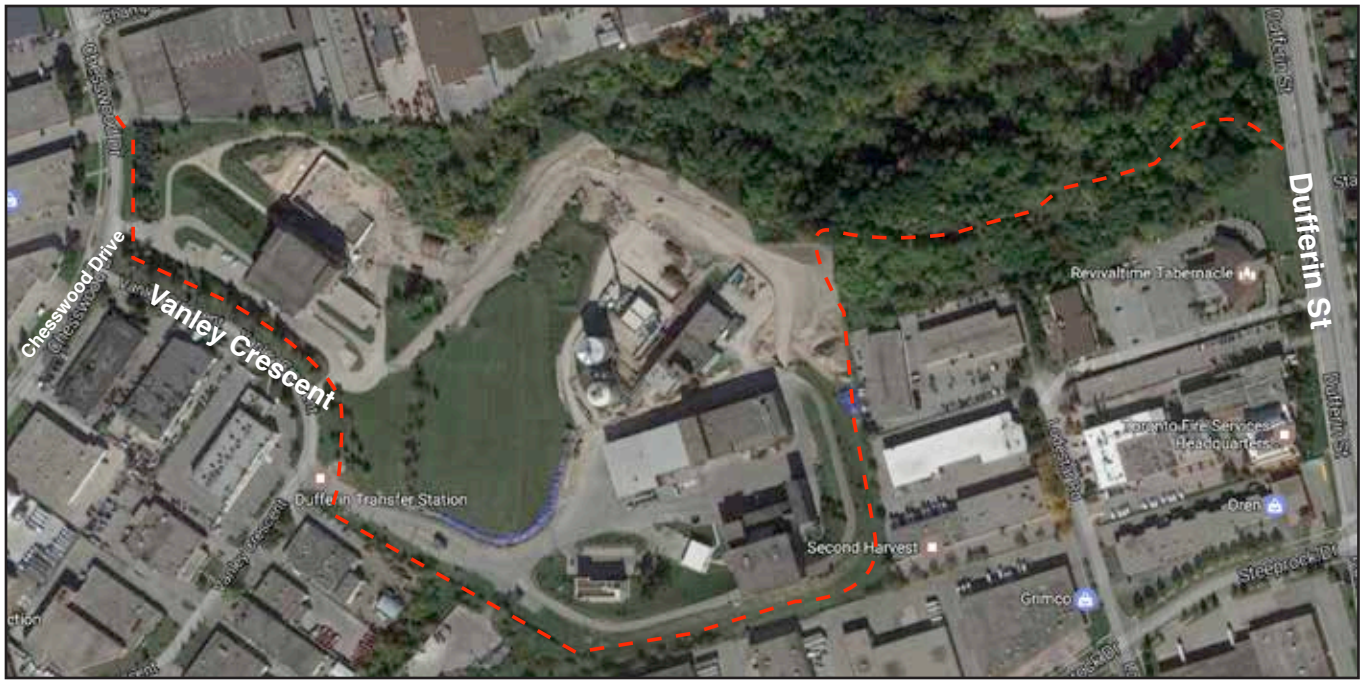
Enlargement and proposed bike path.

Currently there is an informal path or a "desire line" from Dufferin Street into the Dufferin Woodlot from Dufferin Street wide enough for pedestrian access. This desire line leads into the Dufferin Woodlot and deadends. It indicates there is potential to formalize a path.

Using the desire line as a guide, the proposed bike path and pedestrain walkway would formally connect Dufferin Street to Vanley Crescent and Chesswood Drive within the BIA.

This portion of the proposed path is within the Natural Heritage System according to the City of Toronto.

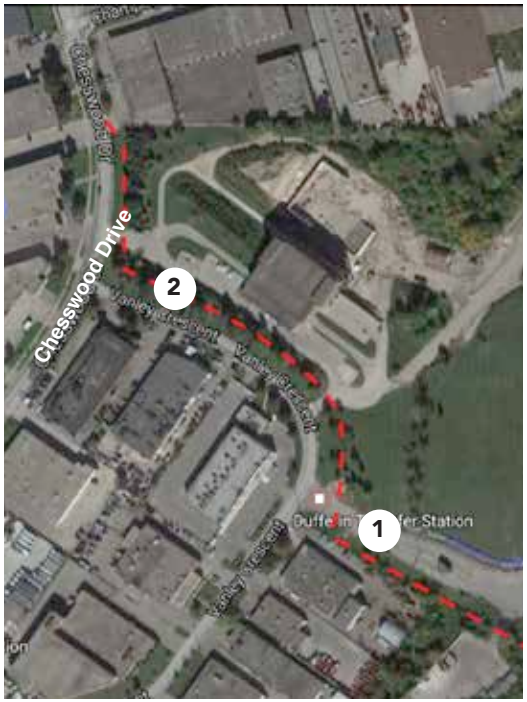
Proposed Alignment 1



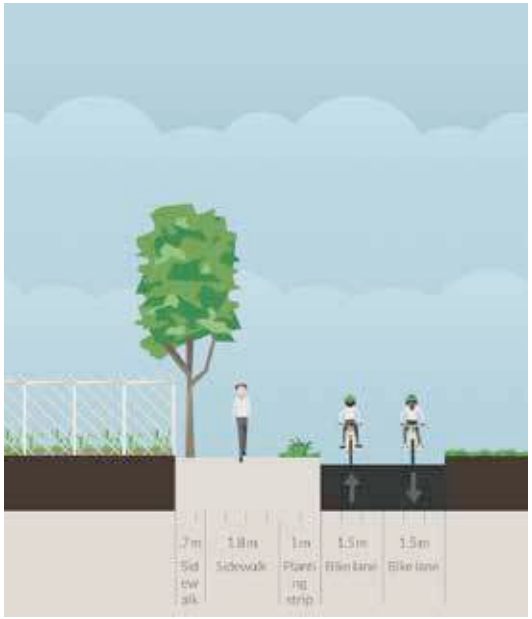
Full View

Source: Google Maps

This proposed alignment follows the desire line created by pedestrians within the Dufferin Woodlot. The property is currently owned by the City of Toronto at the margins of the Dufferin Transfer Station. This map shows the full view of the proposed bike and pedestrian path, the following pages will explore challenges and solutions of this site.



Source: Google Maps

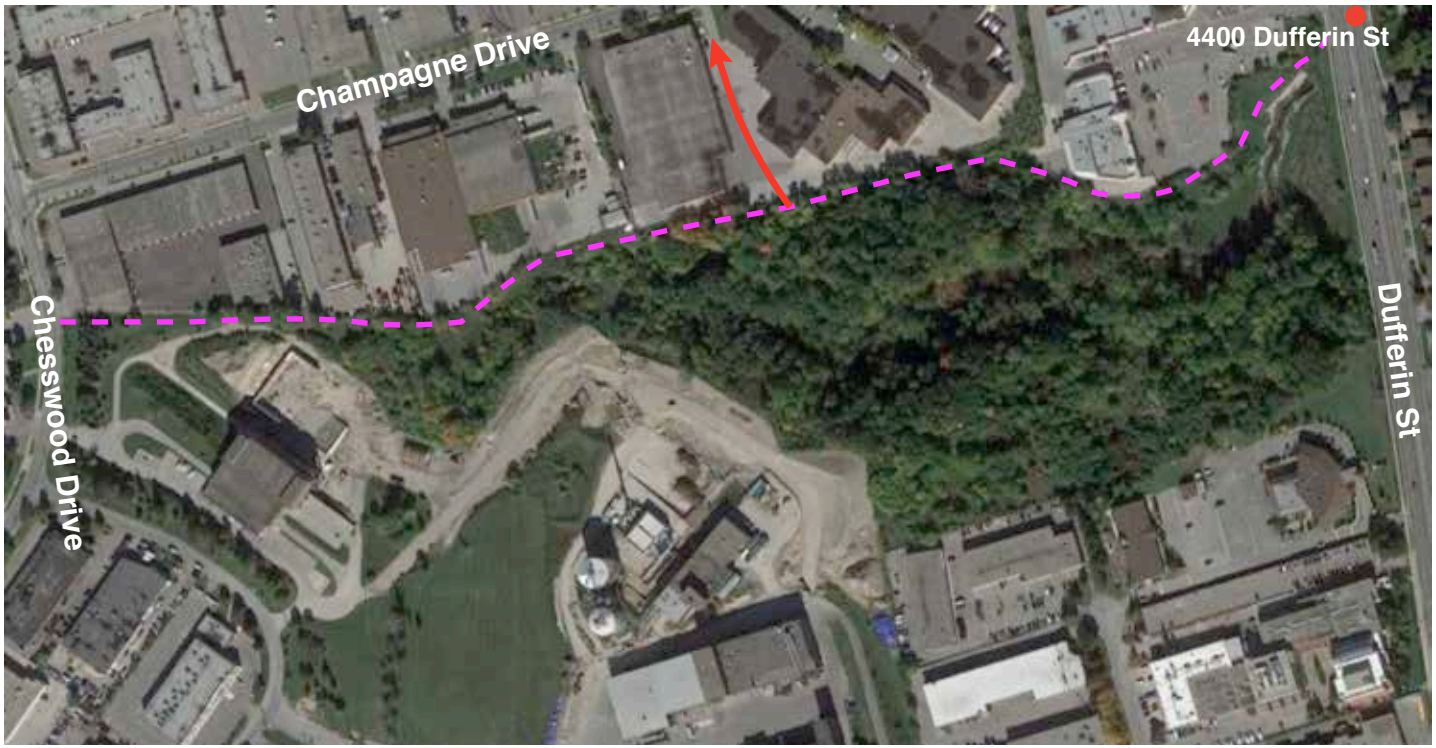

Potential Streetscape: Total width 6.5 m

The proposed bike path would require the City of Toronto to adjust the fencing around the property of the Dufferin Transfer Station, to better accommodate the proper width for a bike lane and pedestrian walkway.

The total width required would be approximately 6.5 metres. To accommodate for a bike path, pedestrian path, and appropriate set backs, as illustrated. This property is currently under review as proposed in the site plan in the Appendix (Figure 1.1). The addition of a new road (Spur Road) (1) could provide a unique opportunity to build a bike lane alongside this road (Figure 1.2). The bike path must also be adequately signed to warn cyclists and pedestrians to be aware and to cross the entrances to the Dufferin Transfer Station safely.

In this enlargement, this study also proposes that the bike path cross through the green space (2) rather than adjacent to Vanley Crescent. The fence of the Dufferin Transfer Station will have to be set back to adjust for this. The bike path will connect to the future Chesswood Drive bike lanes.

Proposed Alignment 2



An additional alignment would be a top of bank bicycle and pedestrain walkway. As private redevelopment occurs, it presents an opportunity to create better connectivity within the DUKE Heights BIA. Many of these properties are on large sized lots and contain excessively large parking lots. Some of this land can be reclaimed from private land owners and used to connect pedestrians and cyclists along an East-West route to Dufferin Street. This path would connect from the traffic signal at 4400 Dufferin Street to the Chesswood bike lanes proposed by the City of Toronto. The path would also be able to connect to Champagne Drive in future as shown with a red arrow on the above figure.

Appendix

Site Plan of Dufferin Transfer Station

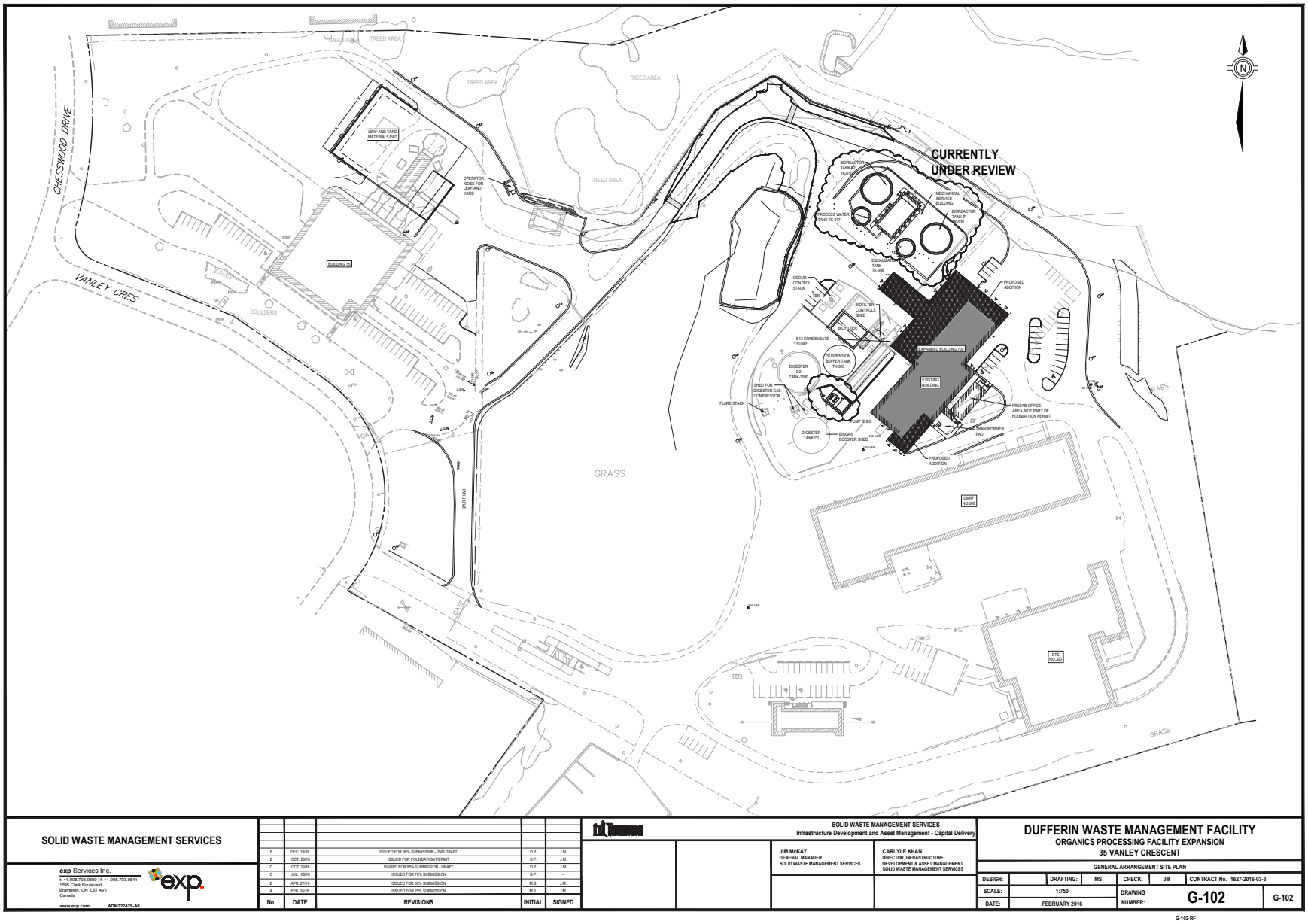


Figure 1.1 - Proposed Site Plan. Source City of Toronto.

Site Plan with Proposed Path

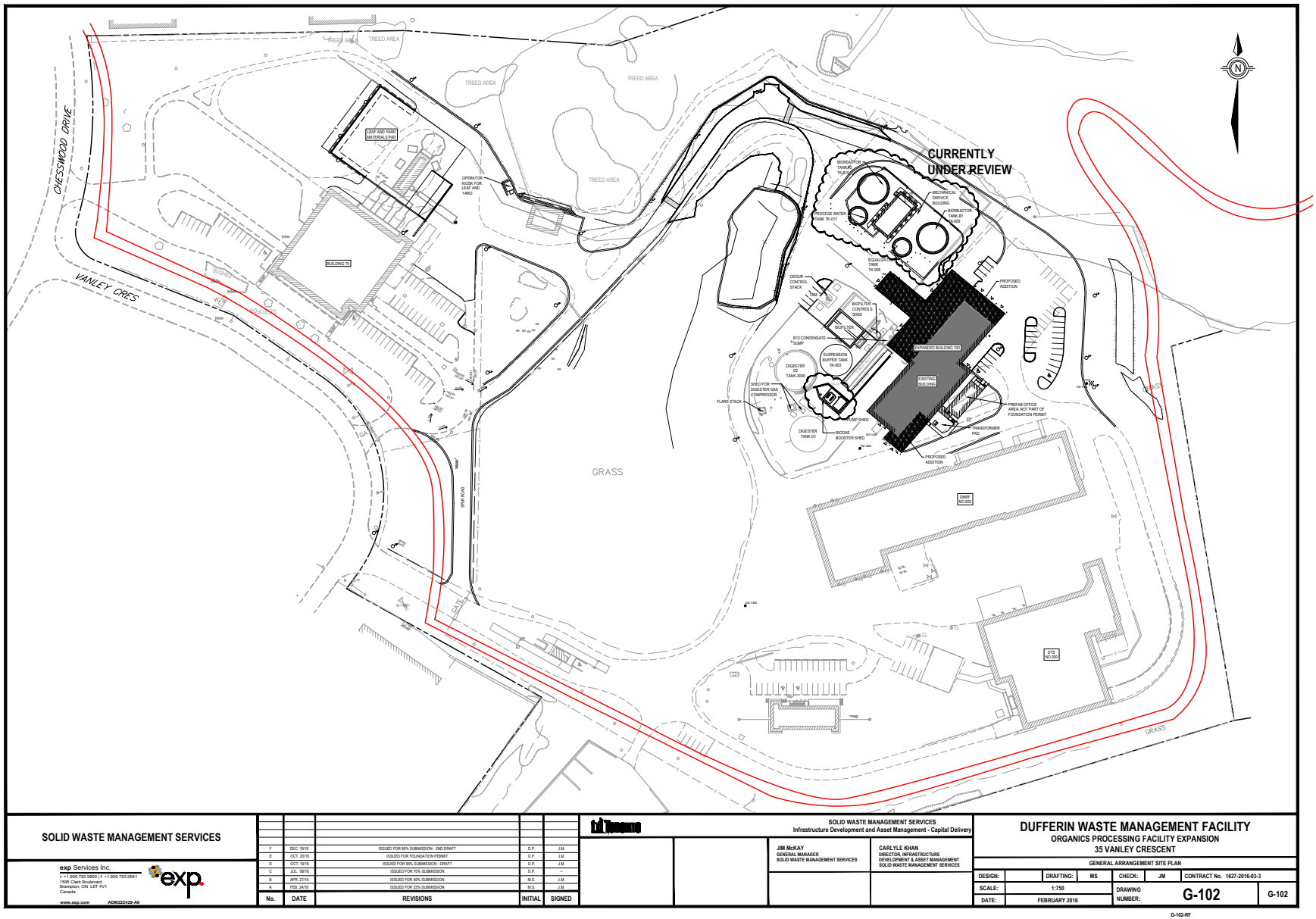


Figure 1.2 - Proposed Site Plan with future path drawn in. Site Plan Source City of Toronto.

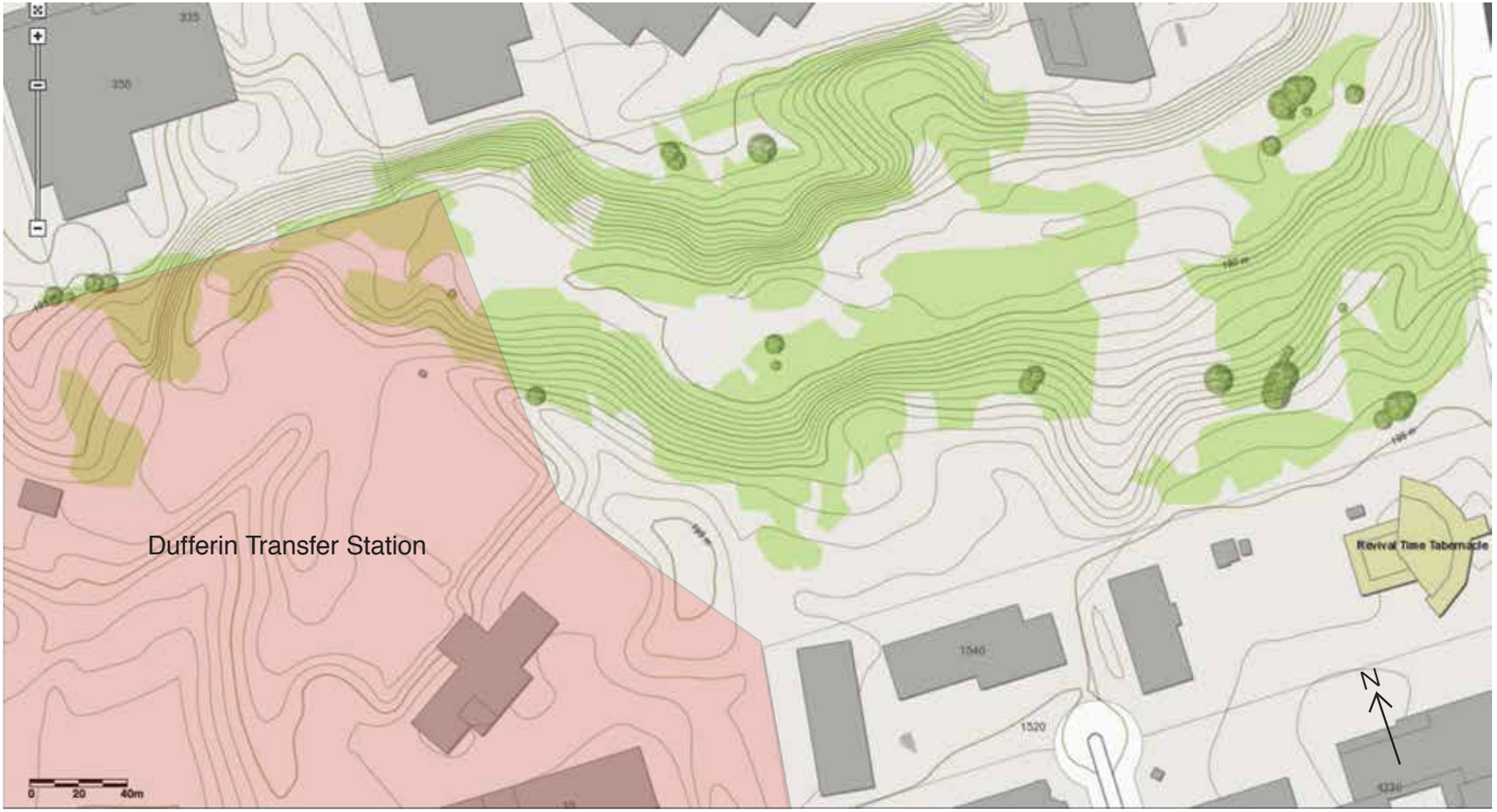


Figure 1.3 - Topographical Map of Study Area.