

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

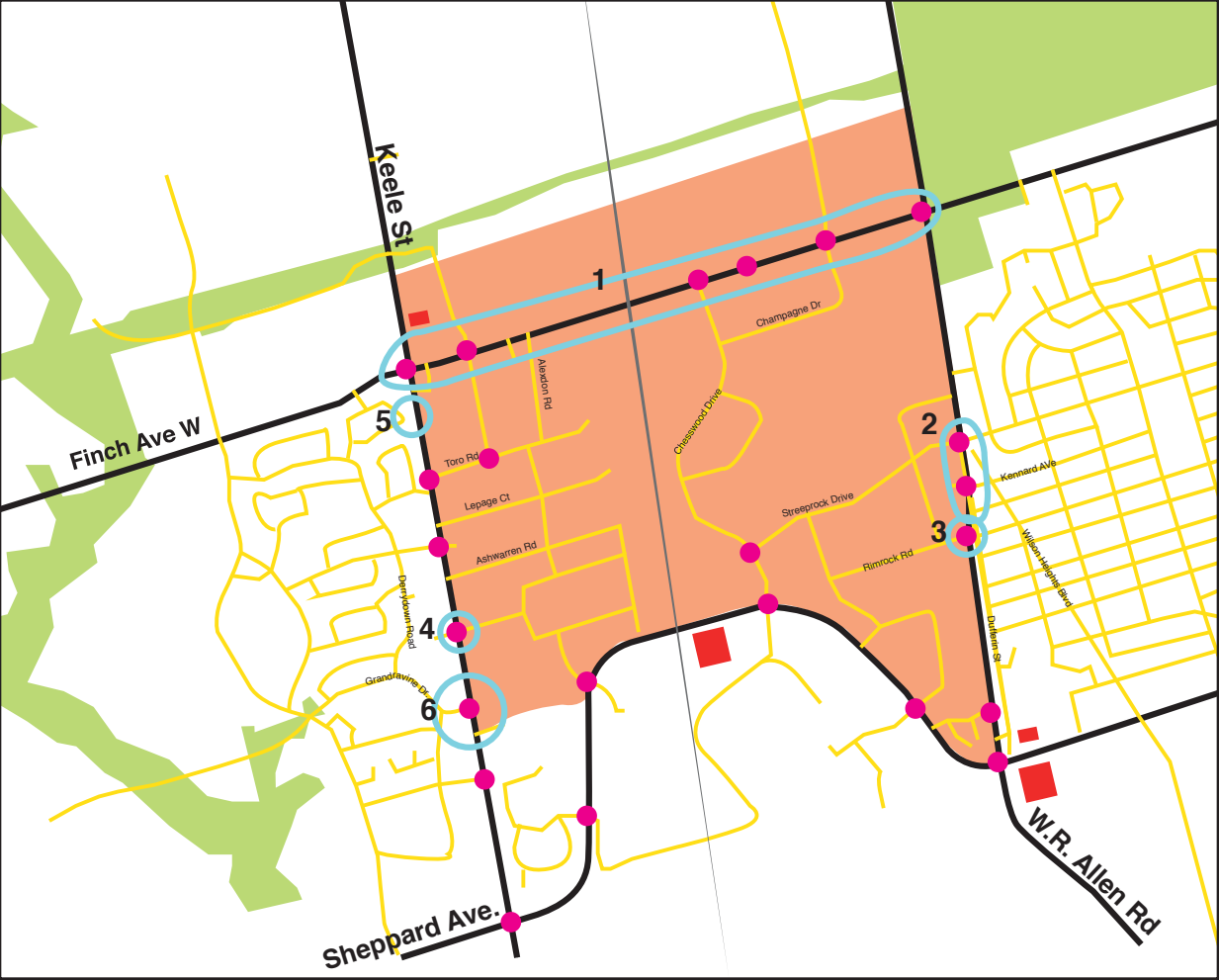
The DUKE Heights BIA is surrounded by fast moving arterial roads that are heavily congested during the morning and afternoon peak periods. Finch Avenue, Keele Street, Dufferin Street (W.R. Allen Road), and Sheppard Avenue are wide roads that encourage fast movement of vehicles. These roads are large 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.



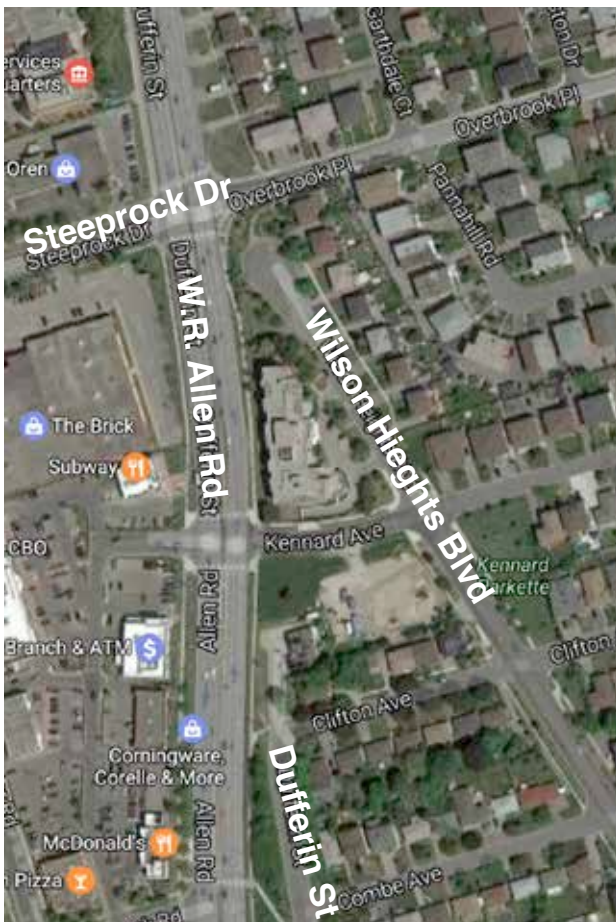
2. Dufferin Street (Residential) and Wilson Heights Boulevard

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

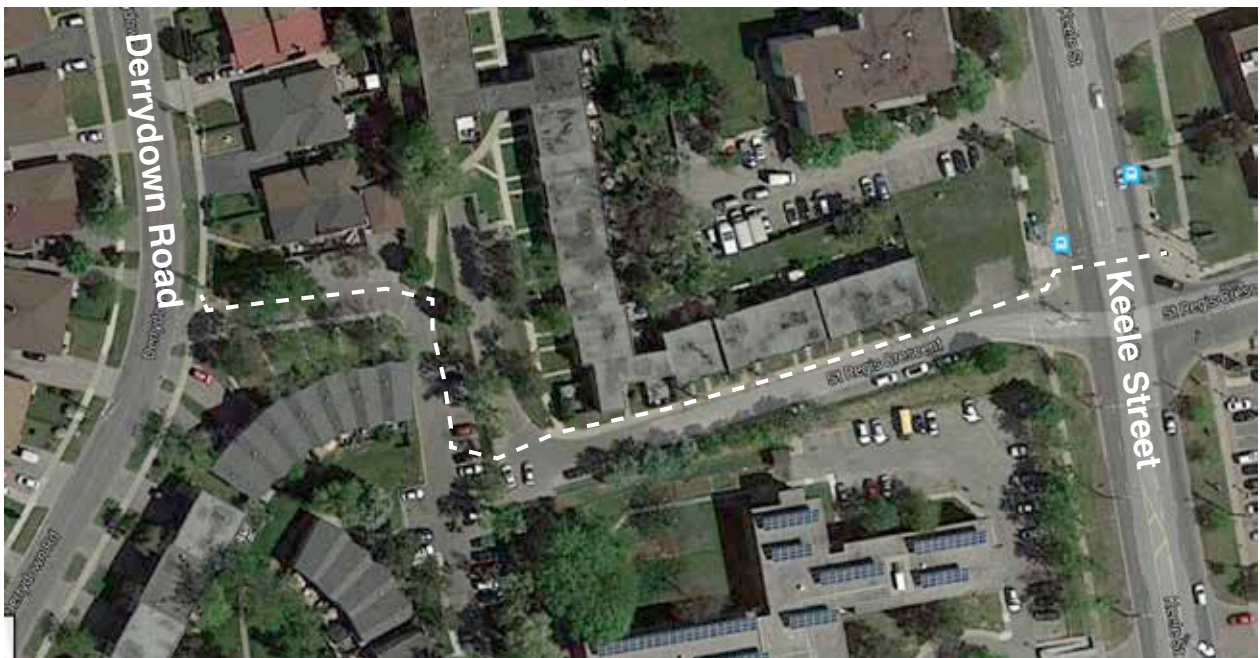


4. Keele Street to Derrydown Road

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



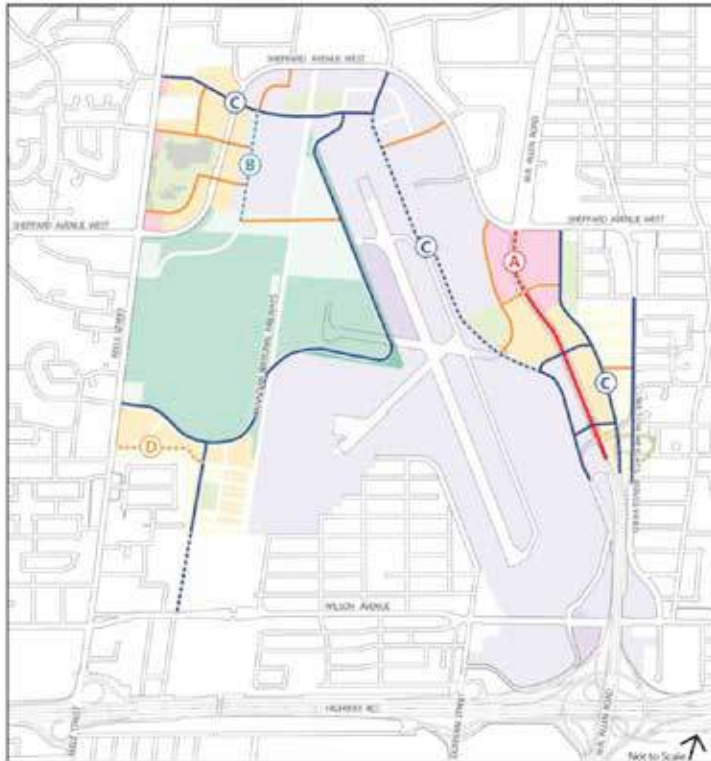
5. Romfield Drive to Keele Street

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.





Downsview Area Secondary Plan

Road Right-of-Way (ROW) Width

- 45m ROW Width
- 30m ROW Width
- 27m ROW Width
- 20m ROW Width



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 protected by trees.