

## **Pedestrian Crossing Protection Studies - Bathurst Manor Neighbourhood Mobility Plan**

Date: October 30, 2023

To: North York Community Council

From: Director, Project Design and Management, Transportation Services and Director, Traffic Management

Wards: Ward 6, York Centre

### **SUMMARY**

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As the Toronto Transit Commission (TTC) operates a transit service on Wilmington Avenue and Wilson Heights Boulevard, City Council approval of this report is required.

Through the Bathurst Manor Neighbourhood Mobility Plan (BMNMP), Transportation Services reviewed the need for traffic control signals at the intersection of Wilmington Avenue and Codsell Avenue, and pedestrian crossing protection at the intersection of Wilson Heights Boulevard and Codsell Avenue. Based on the assessment undertaken, Transportation Services recommends the installation of traffic control signals and pedestrian crossing protection at above intersections.

The proposed traffic control signals and pedestrian crossover (PXO) will provide enhanced safety for all road users and is justified based on the assessment undertaken.

### **RECOMMENDATIONS**

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The Director, Project Design and Management, Transportation Services and Director, Traffic Management recommend that:

1. City Council authorize the installation of traffic control signals at the intersection of Wilmington Avenue and Codsell Avenue.
2. City Council authorize the installation of pedestrian crossover at the intersection of Wilson Heights Boulevard and Codsell Avenue.

### **FINANCIAL IMPACT**

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The estimated cost for installing a traffic control signal at the intersection of Wilmington Avenue and Codsell Avenue is approximately \$250,000.00. The estimated cost for

installing a pedestrian crossover at Wilson Heights Boulevard and Codsell Avenue is \$100,000.00. Funding is subject to availability and competing priorities within the Transportation Services Capital Budget.

## **DECISION HISTORY**

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In February 2023, North York Community Council adopted item 2023.NY3.7 (Tillplain Road and Codsell Avenue - All-Way Stop Control and Parking Amendments) authorizing the installation of an all-way compulsory stop control at the intersection of Tillplain Road and Codsell Avenue and associated parking amendments.

<https://secure.toronto.ca/council/agenda-item.do?item=2023.NY3.7>

In December 2021, City Council amended item 2021.IE26.10 (Cycling Network Plan - 2021 Cycling Infrastructure Installation - Fourth Quarter Update and the Future of the 2020 ActiveTO Cycling Network Projects) and approved the permanent installation of 2020 ActiveTO Cycling Network Expansion projects, including designated bicycle lanes on Wilmington Avenue from Finch Avenue West to Sheppard Avenue West.

<https://secure.toronto.ca/council/agenda-item.do?item=2021.IE26.10>

In February 2019, North York Community Council adopted item 2019.NY3.19 (Bathurst Manor Traffic Management Plan) directing Transportation Services to work with the community and evaluate their traffic concerns to develop a traffic management plan.

<https://secure.toronto.ca/council/agenda-item.do?item=2019.NY3.19>

In June 2018, North York Community Council adopted item 2018.NY31.13 (Turn Prohibitions - Codsell Avenue, between Bathurst Street and Wilson Heights Boulevard) approving northbound right-turn and southbound left-turn prohibitions from 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m., Monday to Friday, at the intersection of Codsell Avenue and Wilmington Avenue.

<https://secure.toronto.ca/council/agenda-item.do?item=2018.NY31.13>

In November 2017, North York Community Council adopted item 2017.NY26.56 (Turn Prohibitions - Codsell Avenue at Wilson Heights Boulevard, Wilmington Avenue and Bathurst Street) directing Transportation Services to study the implementation of turn prohibitions onto Codsell Avenue from Wilmington Avenue, Wilson Heights Boulevard and Bathurst Street.

<https://secure.toronto.ca/council/agenda-item.do?item=2017.NY26.56>

In November 2017, North York Community Council amended item 2017.NY26.23 (Traffic Calming - Codsell Avenue, between Bathurst Street and Wilson Heights Boulevard) and approved the reduction of the speed limit on Codsell Avenue between Bathurst Street and Wilson Heights Boulevard.

<https://secure.toronto.ca/council/agenda-item.do?item=2017.NY26.23>

## **COMMENTS**

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Through the BMNMP study process, staff were requested to investigate the feasibility of improving the safety at intersections along Codsell Avenue, specifically at the intersections of Wilmington Avenue and Wilson Heights Boulevard. Codsell Avenue is one of the only continuous east-west connections from Bathurst Street to the west end of the neighbourhood; it is a popular route for pedestrians and school-aged children as it has a continuous sidewalk and connects to William Lyon Mackenzie King Collegiate Institute at the western terminus. Transportation Services investigated intersection control options at the intersections of Wilmington Avenue and Wilson Heights Boulevard along Codsell Avenue to improve crossing conditions, specifically for vulnerable road users, including but not limited to children travelling to school.

### **Existing Conditions - Item #1 (Traffic Control Signals)**

Wilmington Avenue at Codsell Avenue is characterized by the following conditions:

- It is a north-south minor arterial road that has a two-lane cross-section, bike lane with buffer space installed on both sides;
- It operates with two-way traffic on a pavement width of approximately 12 metres;
- Average daily two-way traffic volume is approximately 5,455 motor vehicles;
- The speed limit is 40 km/h;
- Heavy trucks are prohibited at all times;
- There is TTC bus service provided by the 104 Faywood bus route;
- There are bus stops on the south/east and north/west corners of the intersection;
- There are sidewalks located on both sides of the street; and
- There are bike lanes on both sides of the street.

Codsell Avenue at Wilmington Avenue is characterized by the following conditions:

- It is an east-west local road that has a two-lane cross-section;
- It operates two-way traffic on a pavement width of approximately 8.5 metres;
- Average daily two-way traffic volume is approximately 1428 motor vehicles;
- The speed limit is 30 km/h;
- Heavy trucks are prohibited at all times;
- There is a northbound right turn prohibition in effect Monday-Friday between 7a.m. and 9a.m. and between 4p.m. and 6p.m.;
- There is a southbound left turn prohibition in effect Monday-Friday between 7a.m. and 9a.m. and between 4p.m. and 6p.m.;
- There is no TTC bus service provided along the roadway; and
- Sidewalks are located on south side of the street.

Wilmington Avenue and Codsell Avenue form a skewed four-leg intersection at a skewed angle. Codsell Avenue is stop-sign controlled while Wilmington Avenue is uncontrolled free-flow.

The adjacent land use in this area is residential. Codsell Avenue terminates three blocks to the west at the front of William Lyon Mackenzie King Collegiate Institute.

The closest adjacent controlled crossings are located approximately 250 metres to the north at Searle Avenue (PXO), and 290 metres to the south at Sheppard Avenue West (traffic control signals).

A map of the area is shown in Attachment 1.

### **Existing Conditions - Item #2 (Pedestrian Crossover)**

Wilson Heights Boulevard at Codsell Avenue is characterized by the following conditions:

- It is a north-south collector road that has a three-lane cross-section, including dedicated left-turn lanes for northbound and southbound traffic;
- It operates two-way traffic on a pavement width of approximately 13 metres;
- Average daily two-way traffic volume is approximately 8,754 motor vehicles;
- The speed limit is 40 km/h on Wilson Heights Boulevard and 30 km/h on Codsell Avenue;
- Heavy trucks are prohibited at all times;
- There is TTC bus service provided by the 104 Faywood bus route;
- There is a bus stop on the west side of Wilson Heights Boulevard, approximately 85 metres south of Codsell Avenue; and
- There are sidewalks located on both sides of the street.

Codsell Avenue at Wilson Heights Boulevard is characterized by the following conditions:

- It is an east-west local road that has a two-lane cross-section;
- It operates two-way traffic on a pavement width of approximately 8.5 metres on east leg and 10.7 metres on west leg;
- The daily two-way traffic volume is approximately 1,155 motor vehicles;
- The speed limit is 30 km/h;
- Heavy trucks are prohibited at all times;
- There is no TTC bus service provided along the roadway; and
- There are sidewalks located on both sides of the street.

Wilson Heights Boulevard and Codsell Avenue form an offset intersection. North/south traffic on Wilson Heights Boulevard operates free-flow and east/west traffic on Codsell Avenue is stop controlled.

The adjacent land use in this area is generally residential, with pedestrian generators including William Lyon Mackenzie Collegiate Institute, Borochoy Cultural Centre, Kol Yisroel Congregation, Children Are People Child Care Centre, and Wilson Heights Parkette nearby.

The closest adjacent traffic signal are located approximately 130 metres to the north at Waterloo Avenue, and 320 metres to the south at Sheppard Avenue West.

A map of the area is shown in Attachment 2.

### **Traffic Control Signals**

To determine the need for traffic control signals at the intersection of Wilmington Avenue and Codsell Avenue, staff rely on the justification criteria as outlined in the

Ontario Traffic Manual (OTM) Book 12. The OTM justification criteria includes factors such as volume of vehicles and pedestrians, delay to cross traffic, and collision history. In addition to these technical justifications, staff consider an environmental checklist which includes consideration of road width, posted speed limit, operating speeds, adjacent land uses, pedestrian desire lines and demographics, presence of a transit stop, sight lines, and distance between existing crossing opportunities.

As part of the investigation, staff conducted a pedestrian delay and classification study on November 1, 2022, and vehicle and pedestrian count on December 17, 2019, at the subject intersection. The results of the count and collision hazard are summarized in Table 1.

Table 1: Traffic control signal warrant criteria and compliance at Wilmington Avenue and Codsell Avenue

<b>Justification</b>	<b>Compliance level</b>
Minimum vehicular volume	72%
Delay to cross traffic (pedestrians and vehicles)	71%
Collision hazard	0%

To meet the justification criteria for the installation of traffic control signals, one of the justifications must be 100 percent satisfied, or both the minimum vehicular volume and delay to cross traffic justifications must be at least 80 percent satisfied. The collision hazard warrant is based on number of collisions susceptible to correction by the installation of traffic control signals and must be 100 percent satisfied. Based on the technical warrant criteria, the installation of traffic control signals is not technically justified.

Throughout the BMNMP study public engagement process, Codsell Avenue was identified as a key route in the neighbourhood, especially for vulnerable road users including pedestrians, people cycling, seniors and school-aged children. In regards to the environmental checklist, staff completed an assessment and determined that there are area conditions that justify the need for traffic control signals. Staff noted the following factors:

- The long spacing between protected pedestrian crossings from this intersection on Wilmington Avenue (250 metres north to Searle Avenue, or 290 metres south to Sheppard Avenue West)
- The presence of transit stops in both directions on Wilmington Avenue at this intersection. This attracts pedestrians who cross the street.
- Safety concerns for pedestrians who may intend to cross Wilmington Avenue with the high vehicle speeds. The operating speed of Wilmington Avenue between Codsell Avenue and Sandale Gardens is 53km/hr (13km/hr above the posted speed limit).

In considering the above environmental factors, Transportation Services recommends the installation of traffic control signals at the intersection of Wilmington Avenue and Codsell Avenue, as it will provide enhanced safety for all road users.

The TTC has been consulted and concurs with these findings. The TTC recommends making minor adjustments to accommodate the crosswalks and bring them to standard.

### **Pedestrian Crossover (PXO)**

To determine the need for a PXO at Wilson Heights Boulevard and Codsell Avenue, staff rely on the justification criteria as outlined in the Ontario Traffic Manual (OTM) Book 12. The OTM justification criteria includes two main factors: the volume of vehicles and pedestrians, and pedestrian delay to cross traffic. Based on the traffic volume on Wilson Heights Boulevard, the warrants require a minimum of 274 pedestrians crossing over eight hours. Also, based on the pedestrian crossing volume, at least 75 pedestrians must be delayed more than 10 seconds.

An eight-hour pedestrian volume and delay study was conducted on November 1, 2022 which recorded the total volume and delays of pedestrians crossing at Wilson Heights Boulevard and Codsell Avenue. Seniors, unassisted children and people with disabilities that are observed crossing are given a higher weighting by a factor of two. The adjusted volume of pedestrians observed crossing was 70; of these, 57 experienced a delay greater than 10 seconds. The compliance level of the study results in relation to the warrant criteria is shown in Table 2 below.

Table 2: Pedestrian Crossover Warrant Criteria and Compliance at Wilson Heights Boulevard and Codsell Avenue

Justification	Compliance
Pedestrian Volume	26 percent
Pedestrian Delay	76 percent

In order to meet the warrant criteria, 100 percent compliance is required in both categories. Based on the results of the study, a PXO is not technically justified as the compliance levels did not meet the minimum requirements.

Staff also reviewed the collision history at this location. Collision statistics provided by the Toronto Police Service for the three-year period ending October 6, 2023, disclosed no collisions at the area of Wilson Heights Boulevard and Codsell Avenue that involved crossing pedestrians.

In addition to the technical criteria, consideration of the surrounding area is given and in some cases engineering judgement may be applied to recommend a PXO even if the number of pedestrians do not meet the threshold of the technical warrants. Due to the presence of transit stops and the known school travel route to William Lyon Mackenzie King Collegiate Institute, Transportation Services is recommending the installation of a

PXO at Wilson Heights Boulevard and Codsell Avenue as it will provide enhanced safety for all road users.

Environmental safety characteristics were evaluated in addition to the warrant criteria to ensure that the installation of a PXO would be appropriate at this location. Based on the evaluation, a PXO would be a suitable type of pedestrian crossing protection at this location. Details of the evaluation are included in the Attachment 3.

The TTC has been consulted and concurs with these findings. TTC advised that they may consider consolidating or repositioning stops along Wilson Heights Boulevard to match desire lines in the catchment area.

### **Other Considerations**

It should also be noted that the installation of traffic control signals on Wilmington Avenue at Codsell Avenue and a PXO on Wilson Heights Boulevard at Codsell Avenue could potentially result in minor delays for traffic, including TTC buses, as north-south traffic will no longer operate in free-flow. They could also increase the use of Codsell as an alternate route to Sheppard Avenue West. There is no impact to parking on Wilmington Avenue or Wilson Heights Boulevard as parking is not permitted at anytime where they intersect with Codsell Avenue. Parking on Codsell Avenue at Wilmington will be impacted, as motor vehicles will be prohibited from parking within 15m of the signalized intersection.

The Ward Councillor has been advised of the recommendations in this report.

### **CONTACT**

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Michelle Berquist  
Manager, Area Transportation Planning, Transportation Services  
416-338-7139, michelle.berquist@toronto.ca

### **SIGNATURE**

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Jacquelyn Hayward  
Director, Project Design and Management, Transportation Services

Roger Browne, M.A.Sc., P. Eng.  
Director, Traffic Management, Transportation Services

## **ATTACHMENTS**

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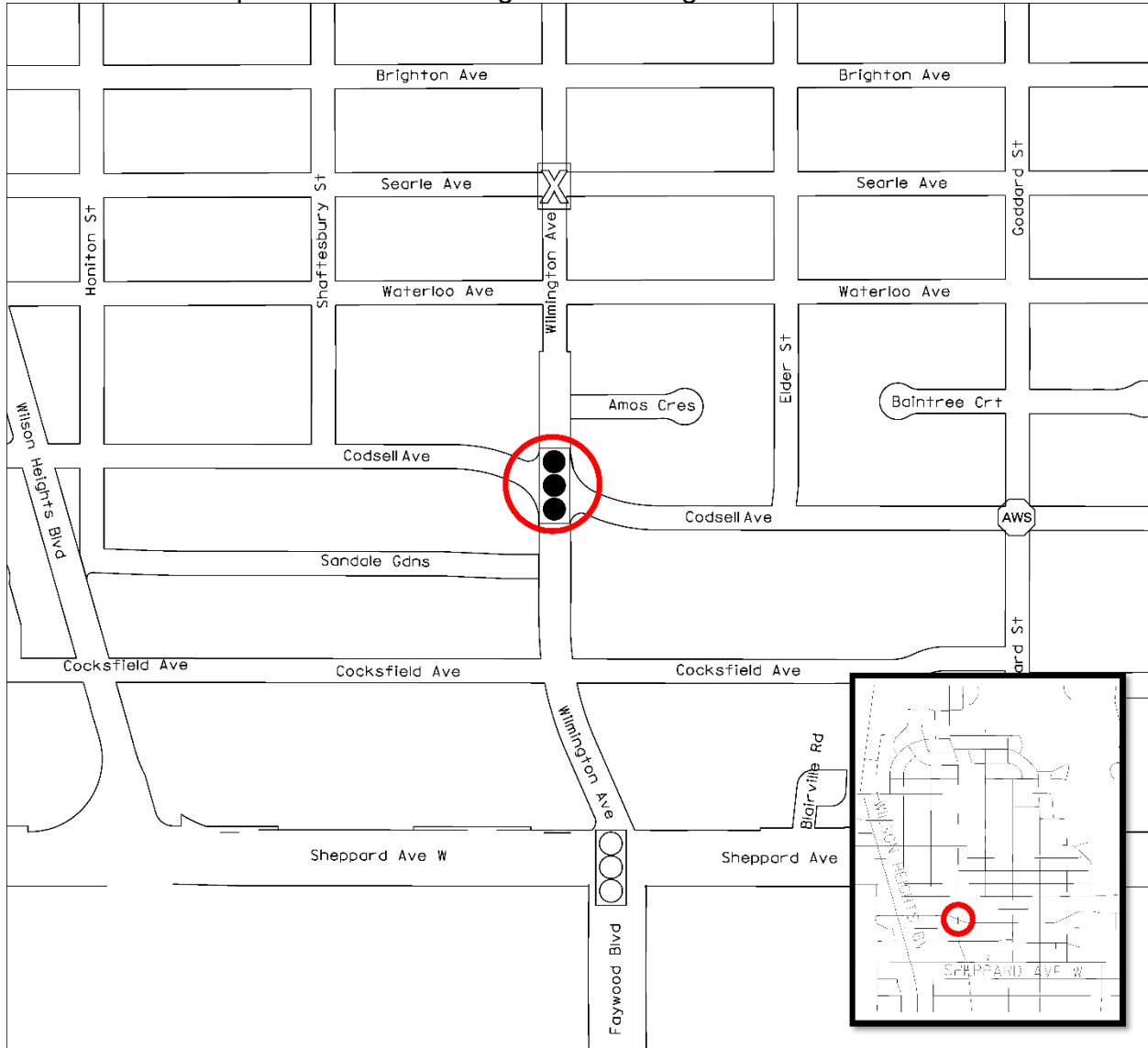
Attachment 1: Map - Traffic Control Signals - Wilmington Avenue and Codsell Avenue

Attachment 2: Map - Pedestrian Crossing Protection - Wilson Heights Boulevard and Codsell Avenue

Attachment 3: Environmental Safety Audit - PXO - Wilson Heights Boulevard and Codsell Avenue



Attachment 1: Map - Traffic Control Signals - Wilmington Avenue and Codsell Avenue



TRAFFIC CONTROL SIGNAL STUDY LOCATION



EXISTING ALL-WAY STOP SIGN



EXISTING TRAFFIC CONTROL SIGNAL



EXISTING PEDESTRIAN CROSSOVER



# TRAFFIC CONTROL SIGNALS WILMINGTON AVENUE & CODSELL AVENUE

M.M.

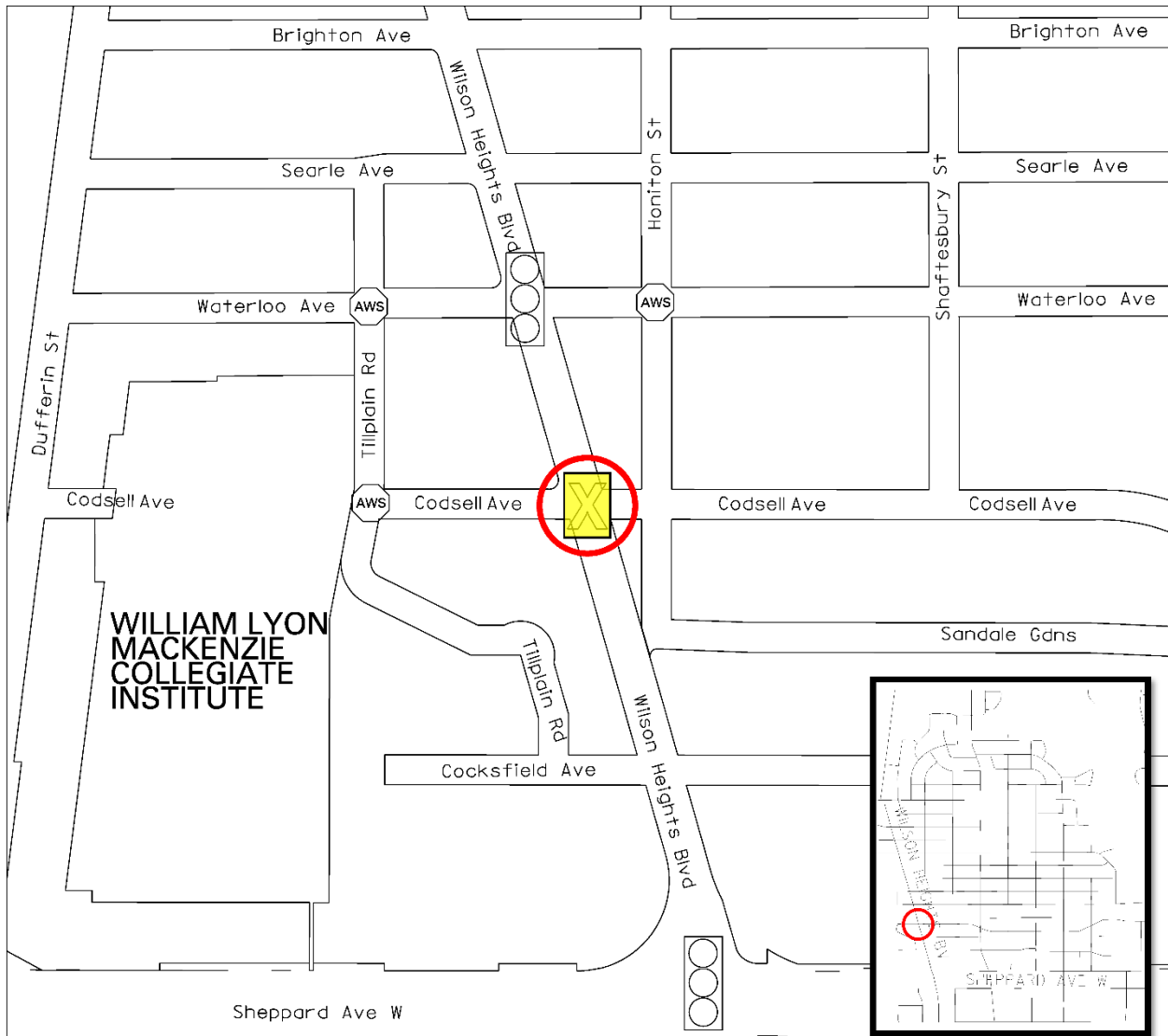
DWG. NO. ATP23-003

OCTOBER, 2023

TRANSPORTATION SERVICES

NORTH YORK DISTRICT

Attachment 2: Map - Pedestrian Crossing Protection - Wilson Heights Boulevard and Codsell Avenue



EXISTING PEDESTRIAN CROSSOVER



EXISTING ALL-WAY STOP SIGN



EXISTING TRAFFIC CONTROL SIGNAL



## PEDESTRIAN CROSSING PROTECTION WILSON HEIGHTS BOULEVARD & CODSELL AVENUE

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DWG. NO. ATP23-004

OCTOBER, 2023

TRANSPORTATION SERVICES

NORTH YORK DISTRICT

Attachment 3: Environmental Safety Audit - PXO - Wilson Heights Boulevard and  
Codsell Avenue

Standard	Comments	Standard Met/Not Met
Vehicle operating speed less than 60 km/h	The posted speed limit on Wilson Heights Boulevard is 40 km/h with an operating speed of 55 km/h	Met
Not more than four lanes wide on a two-way street or more than three lanes wide on a one-way street	Wilson Heights Boulevard operates with two lanes in each direction with a centre left turn lane.	Met
Traffic volume not more than 35,000 vehicles per day	Wilson Heights Boulevard carries approximately 8,754 vehicles per day.	Met
No significant volume of turning movements	The volume of traffic turning to/from Wilson Heights Boulevard is moderate.	Met
No visibility problems exist for either pedestrians or motorists	No vertical or horizontal curves.	Met
No loading zones (including TTC) in the immediate area	TTC stops are located 87 metres south of the intersection.	Met
No driveways or entrances nearby	No driveways in the vicinity of PXO	Met
Spacing is not less than 200 metres to another pedestrian crossover or traffic control signal	Wilson Heights Boulevard and Waterloo Street (TCS) - 145 metres north Wilson Heights Boulevard and Sheppard Avenue West (TCS) - 310 metres south	Not Met