



North York Centre: REimagining Yonge (Sheppard to Finch) Municipal Class Environmental Assessment Study

Date: November 17, 2020

To: Infrastructure and Environment Committee

From: General Manager, Transportation Services

Wards: Ward 18 - Willowdale

SUMMARY

Yonge Street from south of Sheppard Avenue to north of Finch Avenue is in the heart of North York Centre - one of four dynamic mixed-use Centres in Toronto with plans focused on growth of commercial office and residential uses existing side by side. Improving Centres outside the core is critical to balanced growth and prosperity across the City and it is also key to the affordability of City services since new employment uses have a positive impact on City finances.

Centres with a healthy mix of land uses help take pressure off public transit infrastructure and roads as they encourage people to live, work and play within a centralized geography.

The North York Centre Service Roads - comprised of Doris Avenue and Beecroft Road - form a ring road around the North York Centre, east and west of Yonge Street were planned and constructed to support traffic capacity, growth, and convenient rear access to residential, retail, and office buildings on Yonge Street. Supported by this broader transportation network, Yonge Street is envisioned as a Complete Street that provides a range of transportation options and safe passage to the many destinations in this vibrant, growing neighbourhood.

Despite being second to Downtown in civic importance, scale, and growth, investment in the state of good repair and the quality of the Yonge Street streetscape has not kept pace with the area's transportation network and the scale and density of development. As a transportation asset, Yonge Street is at the end of its lifecycle - with full reconstruction for Yonge Street required within five to eight years.

Today, the area has numerous challenges including boulevards that have deteriorated to such a degree that full reconstruction is necessary, sub-standard (narrow) sidewalk

widths and few opportunities for safe pedestrian crossings, as well as an overall need to improve safety and health outcomes for people who walk and cycle.

Yonge Street, between Sheppard Avenue and Steeles Avenue, has been identified as a priority corridor for safety improvements under the Vision Zero Road Safety Plan.

Transportation Services has carried out a Municipal Class Environmental Assessment (EA), referred to as "REimagining Yonge" that considers how the street can be improved at the time of reconstruction.

The overarching goals of the "REimagining Yonge" project are to:

- facilitate efficient movement of people, surface transit, and general traffic through better utilization of North York Centre's road network;
- improve safety and reduce the number of people who are killed and seriously injured on the street in keeping with the City's Vision Zero Road Safety Plan;
- improve vibrancy of the streetscape in keeping with the economic importance of North York Centre; and
- address state-of-good repair along the corridor.

"Transform Yonge" is recommended as the preferred alternative as it best supports these goals, as well as the City's broader policy objectives such as the City's Climate Action Strategy - TransformTO.

On March 5, 2018 the Board of Health requested the Medical Officer of Health to collaborate with Transportation Services to ensure health benefits are maximized through the REimagining Yonge study. Toronto Public Health's research identify "Transform Yonge" as the preferred alternative which best delivers on the evidence-based design principles that promote health. It has many elements that facilitate physical activity and promote safety, especially for vulnerable road users. Toronto Public Health noted that the "Transform Yonge" alternative provides greater connectivity, a diverse mix of land use and densities that encourage social interaction and invite active living better than other scenarios considered.

North York Centre - Transportation Network Integration and Phasing

As directed by Council in March 2018, Transportation Services has worked with the Toronto Transit Commission (TTC) and other transit agencies (York Region Transit and GO Transit), to determine the surface transit operational impacts associated with the "Transform Yonge" alternative.

The updated modelling work compared the base future 2031 "Do Nothing" scenario against the 2031 "Transform Yonge" alternative (including transit mitigation measures). Both the "Do Nothing" scenario and "Transform Yonge" alternative include the North York Service Road extension that would link Doris Avenue and Tradewind Avenue south of Sheppard Avenue and east of Yonge Street. The results identified "Transform Yonge" as the preferred alternative to improving surface transit operations in 2031, as it does not hinder the long-term operational performance of surface transit buses along Yonge Street.

Prior to proceeding with the “Transform Yonge” alternative, other planned network improvements are recommended to be in place. The Doris Avenue (South Service Road), and Beecroft Road (north to Drewry Avenue) extensions are two integral pieces of transportation network infrastructure required to support growth and development priorities in North York Centre. The North York Centre: Doris Avenue Extension (South Service Road) Environmental Assessment Addendum, is being reported concurrently with this report. It is recommended that in order for the vision of REimagining Yonge to proceed, at least the initial phases of both the Doris Avenue and Beecroft Avenue extensions will need to be in place.

RECOMMENDATIONS

The General Manager, Transportation Services recommends that:

1. City Council endorse the recommended design for the reconstruction of Yonge Street from Florence Avenue / Avondale Avenue to the Finch Hydro Corridor as generally shown in Attachment 1 and refinements shown in Attachment 2.
2. City Council authorize the General Manager, Transportation Services to issue a Notice of Study Completion and file the REimagining Yonge Environmental Assessment Study in the public record for a minimum 30 days, in accordance with the requirements of the Municipal Class Environmental Assessment.

FINANCIAL IMPACT

The estimated capital cost of constructing the preferred alternative "Transform Yonge" is \$60.44 million, including detailed design, municipal servicing, and utility relocations. The cost estimate was adjusted from 2017 dollars to 2020 dollars.

Funding for detailed design and capital construction is not currently identified within the approved 2020-2029 Capital Budget and Plan for Transportation Services. Opportunities to secure funding through the development review process, particularly as it relates to streetscape costs, are being pursued. Funding for the REimagining Yonge project would be considered against other unfunded City priorities as part of a future capital budget process.

Reconstructing this section of Yonge Street on simply a like-for-like basis without relocating curbs and without any improvements to the streetscape quality or safety, would cost approximately \$29-35 million. This includes approximately \$6 million to reconstruct and extend the existing median. The approach of reconstructing Yonge Street like-for-like is not recommended, as it would fail to leverage on the opportunity of creating a safer and more Complete Street through state-of-good-repair investments.

The Chief Financial Officer and Treasurer has reviewed this report and agrees with the financial impact information.

DECISION HISTORY

At its meeting on March 26 and 27, 2018, City Council postponed its consideration of staff report PW27.1 "Reimagining Yonge (Sheppard to Finch) Municipal Class Environmental Assessment Study" to a later date to permit the Toronto Transit Commission to consider the long-term implications for surface level buses as well as overall City/York Region transit planning.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2018.PW27.1>

At its meeting on March 5, 2018, the Board of Health requested the Medical Officer of Health to collaborate with Transportation Services and support monitoring and adaptation for REimagining Yonge as plans are implemented, to ensure health benefits are maximized.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2018.HL25.4>

At its meeting of May 9, 2017, the Public Works and Infrastructure Committee adopted the REimagining Yonge (Sheppard to Finch) Municipal Class EA Study - Interim Project Status Update report. Staff were directed to undertake additional stakeholder consultation, and complete a further phase of design work which considered cycling facilities on Doris Avenue and/or Beecroft Road and Willowdale Avenue from Bishop Avenue to Steeles Avenue. Staff were also directed to carry out additional project development to determine an option for a secondary preferred alternative, traffic modelling work to assess the new design option(s), and 30 percent design of a secondary preferred alternative.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2017.PW21.9>

At its meeting of February 15, 2017, City Council adopted the following: "City Council decrease the 2017 - 2026 Budget Committee Recommended Capital Budget and Plan for Transportation Services by \$4.0 million in 2017 cash flows, \$2.0 million debt and \$2.0 million Public Transit Infrastructure funds and defer consideration of the REimagining Yonge Street Sheppard to Finch capital project to the 2018 Budget process.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2017.EX22.2>

At its meeting of February 7, 2017, Executive Committee adopted a motion "that City Council decrease the 2017 - 2026 Budget Committee Recommended Capital Budget and Plan for Transportation Services by \$4.0 million in 2017 cash flows, and defer consideration of the Re-Imagining Yonge Street Sheppard to Finch capital project to the 2018 Budget process."

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2017.EX22.2>

At its meeting on July 12, 13, 14 and 15, 2016, City Council approved the Vision Zero Road Safety Plan. Yonge Street from Sheppard Avenue to Steeles Avenue is one of 14 locations that has been identified for undertaking a road safety audit due to the number of killed or seriously injured (KSI) collisions. More details about Vision Zero, including mapping of key locations within the City that are being prioritized, is available here:

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2016.PW14.1>

At its meeting of June 7, 8 and 9, 2016, City Council adopted in principle the Ten Year Cycling Network Plan which included the Major Corridor Study along Yonge Street, between Sheppard Avenue and Finch Avenue, being carried out through the Reimagining Yonge (Sheppard to Finch) EA Study.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2016.PW13.11>

At its meeting on September 22, 2015, Public Works and Infrastructure Committee received a staff report PW7.5 “Ten Year Cycling Network Plan: Project Update and 2016 Implementation Program” which included a Major Corridor Study of Yonge Street between Sheppard Avenue and Finch Avenue, in conjunction with a streetscape study. This is being carried out through the REimagining Yonge (Sheppard to Finch) EA Study.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.PW7.5>

The North York Centre Secondary Plan (which is primarily based on the Former City of North York's North York Centre Secondary Plan) was approved as part of the Official Plan in 2002, and subsequently approved by the OMB in 2006. The Secondary Plan provides area-specific policies to guide the redevelopment of North York Centre. The Secondary Plan provides a vision for Yonge Street with clear built form direction regarding permitted building heights, setbacks and step backs, a parks and open space concept plan as well as a strategy linked to an enhanced Yonge Street streetscape. The Secondary Plan also recommends the extension of the Yonge Street median and generally throughout North York Centre.

<https://www.toronto.ca/wp-content/uploads/2017/11/8fe9-cp-official-plan-SP-8-North-York-Centre.pdf>

COMMENTS

The study area, shown in Figure 1, is bounded by Bathurst Street to the west, Bayview Avenue to the east, Steeles Avenue to the north and Wilson Avenue / York Mills Road to the south. The Study Focus Area includes Yonge Street from Florence Avenue / Avondale Avenue to the Finch Hydro Corridor Trail, in the vicinity of Hendon Avenue / Bishop Avenue. The Study Focus Area includes Beecroft Road and Doris Avenue, which form a ring road around the North York Centre, east and west of Yonge Street. These service roads are critical as they improve the transportation network by providing additional capacity to manage traffic flow on Yonge Street and convenient rear-servicing access to residential, retail, and office buildings on Yonge Street.

The roadway and streetscape along the Yonge Street corridor are in a state of disrepair and lack the infrastructure required to support safe mobility. Roadway reconstruction is typically needed on a 50 year cycle. Road reconstruction of the Yonge Street corridor was last carried out in 1975, with roadway resurfacing last occurring in 1994. Based on condition assessments, the Yonge Street corridor requires a full road reconstruction within five to eight years with several segments along the corridor that have required immediate attention. Over the last few years, Transportation Services has carried out numerous temporary repairs to sidewalks and the roadway surface to restore utility cuts and temporarily improve the pavement condition along the corridor.

The Yonge Street streetscape has been enhanced incrementally over a long period of time, which has resulted in significant gaps and inconsistencies in the streetscape conditions. Over the course of the last decade, the condition of the boulevards has deteriorated and the centre median on Yonge Street has yet to be extended as identified in the North York Centre Secondary Plan. Irrespective of the design carried forward, streetscape and safety improvements that should be implemented through a reconstruction of Yonge Street include replacement and extension of the centre landscaped median and improvements to the streetscape, including new trees/planters, street furniture, and a balancing of sidewalk widths on both sides of the street where possible.

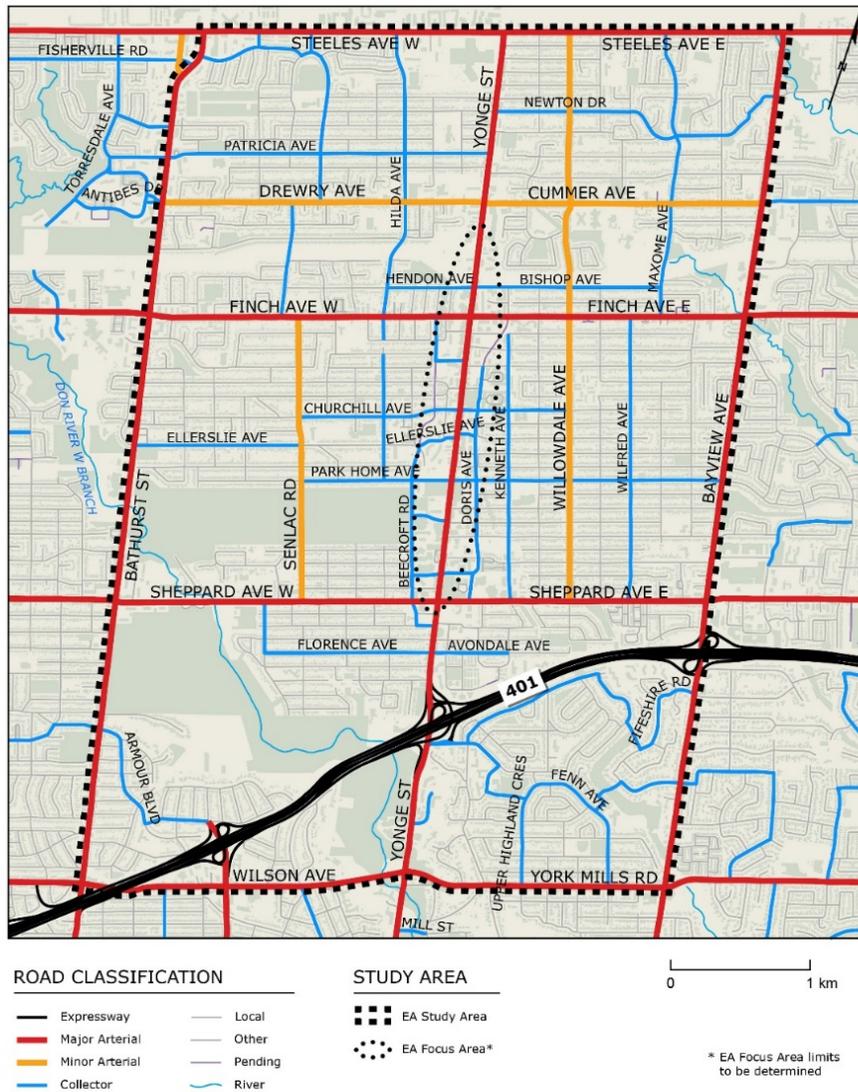


Figure 1. Study Area

Summary of Key Project Recommendations and Council Direction

In May 2017, the "Transform Yonge" alternative (generally shown in Attachment 1), referred to as Stage 1, was identified to the Public Works and Infrastructure Committee

as the preliminary preferred alternative. The "Transform Yonge" design is proposed to include:

- a full reconstruction of Yonge Street within the City's existing right-of-way;
- wider sidewalks and boulevards;
- new and enhanced pedestrian crossings;
- a centre landscaped median; and
- protected bicycle lanes (cycle tracks) to improve safety and provide connectivity to the surrounding cycling network.

To achieve the enhancements included in the design, the number of travel lanes on Yonge Street between Sheppard Avenue and Hendon Avenue/Bishop Avenue (north of Finch Avenue) is proposed to be reduced from six to four lanes. South of Sheppard Avenue, the existing number of travel lanes would be maintained at six lanes, in order to provide additional traffic flow capacity where it is most needed, in proximity to the Yonge Street/Highway 401 interchange.

In May 2017, the Public Works and Infrastructure Committee directed Transportation Services to undertake further assessment of cycling facilities on other parallel corridors, specifically Doris Avenue and/or Beecroft Road, rather than on Yonge Street. In addition, the Committee directed that wider consultation be undertaken on the project, particularly with local businesses.

In March 2018, Transportation Services reported to City Council on the results of the new phase of work, referred to as Stage 2. The work included:

- a comprehensive review of design options to implement cycling facilities on Doris Avenue and/or Beecroft Road and Willowdale Avenue from Bishop Avenue to Steeles Avenue;
- additional project development to determine an option for a secondary preferred alternative that does not reduce traffic capacity on Yonge Street;
- traffic modelling work to assess new design option(s);
- 30% design of a secondary preferred alternative; and
- additional stakeholder consultation, including wider business consultation.

Further information on the Stage 2 phase of work is included in Attachment 3.

The Stage 2 analysis assessed a new alternative referred to as "Enhance Yonge and Transform Beecroft". This alternative would involve reconstruction of both Yonge Street and Beecroft Road. It would provide dedicated cycle tracks on Beecroft Road, maintain all existing traffic capacity in North York Centre and address the state-of-good-repair issues on Yonge Street. The "Enhance Yonge and Transform Beecroft" alternative was then compared against the "Transform Yonge" alternative from Stage 1 to determine which option best meets the project objectives. Further details on the 2018 comparison of "Transform Yonge" and "Enhance Yonge and Transform Beecroft" is included in Attachment 4.

While the "Enhance Yonge and Transform Beecroft" alternative could potentially be a viable option for addressing the study objectives, "Transform Yonge" was recommended to City Council in March 2018 as the overall preliminary preferred

alternative as it better supports the objectives of the study based on the evaluation criteria and can be implemented at a lower cost with less disruption to the North York Centre.

City Council deferred consideration of the item to permit the TTC to consider the long-term implications for surface level buses as well as overall City/York Region transit planning. This report includes the findings of that work.

Background of “Transform Yonge” Concept

Key elements of the “Transform Yonge” concept on Yonge Street from Sheppard Avenue to approaching Finch Avenue include:

- A cross-section reduction from six to four lanes;
- Wider sidewalks and boulevards;
- New and enhanced pedestrian crossings - traffic signals and turn restrictions at some intersections
- A centre landscaped median;
- Protected bicycle lanes (cycle tracks) from Florence Avenue/Avondale Avenue to Hendon Avenue/Bishop Avenue;
- On-street lay-bys for parking, loading and deliveries, where right-of way width permits; and
- The removal of both northbound and southbound left-turn lanes at the intersection of Yonge Street and Sheppard Avenue.

Updates to the “Transform Yonge” Alternative

As depicted in Attachment 1, the “Transform Yonge” preferred design has generally stayed the same, with four modifications to the section between Finch Avenue and Hendon Avenue/Bishop Avenue (refer to Attachment 2 for drawings of the proposed changes). These modifications were included as transit mitigation measures to address roadway capacity in the vicinity of the bus terminal, and to improve TTC bus access and egress. The modifications include:

- Additional southbound through capacity south of Hendon Avenue/Bishop Avenue. This change maintains three southbound travel lanes between Hendon Avenue/Bishop Avenue and Finch Avenue (consistent with existing conditions);
- Modified the northbound curb lane from Pemberton access (TTC exit from the bus terminal) to facilitate a TTC bus turning directly into a dedicated bus lane from the Pemberton exit (allowing buses to exit more easily, without having to wait for a gap in traffic in the adjacent lane); and
- Reduced the southbound left storage lane from Yonge Street to Pemberton access, from approximately 20 metres to 10 metres in length (given the low turn volumes).

Background on Traffic Analysis Approach

A multi-modal transportation model was utilized to assess the impact of the proposed changes to the road network within the study area based on the City's 2011 and 2031 planning horizon.

During the previous round of traffic modelling completed in 2018, the microsimulation area (the area analyzed in the greatest detail) generally covered the boundary of the “EA Focus Area”, as depicted in Figure 1, above, and the traffic analysis focused on the AM peak period.

In order to better understand overall traffic and transit operational implications, both AM and PM peak hour conditions were assessed and the microsimulation focus area was extended from Bishop Avenue/Hendon Avenue north to Steeles Avenue, as this stretch of Yonge Street is the “spine” for many bus routes north of the Finch terminus station.

The microsimulation work focused on two periods, existing conditions, and a future year condition, to account for growth in demand, as well as planned infrastructure improvements. These periods are summarized below:

- *2016 Existing Conditions*
Serves as a baseline reference point for existing conditions. Using the City's 2011 planning horizon, traffic demands are “grown” to 2016 levels using updated turning movement counts.
- *2031 Do-nothing scenario + Doris/Tradewind connection*
This scenario includes the existing road network (with the 6-lane cross-section for Yonge Street) and projected 2031 traffic demand. This scenario includes 2031 pedestrian volumes and projected increases¹ in transit service frequency. This scenario also includes a connection of the North York Service Road via Doris/Tradewind at Sheppard Avenue. This scenario has been evaluated for both the AM and PM peak periods.
- *2031 "Transform Yonge" Scenario 2*
Prior to identifying a preferred “Transform Yonge” transportation network scenario to compare against the Do-nothing scenario, approved and/or feasible network improvements that could be in place prior to, or in conjunction with, the implementation of “Transform Yonge” were considered.

Three "Transform Yonge" network scenarios were considered (refer to Attachment 5 for details of each scenario assumptions), and although the traffic evaluation did not identify any significant advantages for one scenario over the others, Scenario 2 was preferred given its ability to best advance planning policy objectives, namely improving mobility and forming a finer grained street network. Scenario 2 includes the following key network modifications:

- A cross-section reduction from six to four lanes on Yonge Street from Sheppard Avenue to Finch Avenue, with the addition of cycle tracks on Yonge Street from Florence Avenue/Avondale Avenue to Hendon Avenue/Bishop Avenue;
- The addition of the Doris/Tradewind connection at Sheppard Avenue;
- Beecroft Road extension from current terminus to Drewry Avenue with 4-lane cross section; and

¹ Includes 1.2% growth per year projections for TTC and York Region Transit. GO Transit did not identify an increased service frequency for 2031

- Mid-block connection on the Beecroft Road extension at Turnberry Court with 4-lane cross-section.

Analysis of Impacts to Surface Transit Operations

In March 2018, City Council deferred consideration of REimagining Yonge to permit the TTC to consider the long-term implications for surface level buses as well as overall City/York Region transit planning. As directed by Council, Transportation Services has worked with the TTC and other transit agencies (York Region Transit and GO Transit), to determine the surface transit operational impacts associated with the “Transform Yonge” alternative.

Multiple TTC bus routes, including the heavily-used Steeles East and Steeles West routes, and various York Region Transit and GO Transit routes use the stretch of Yonge Street between south of Steeles Avenue to north of Finch Avenue. South of the Finch Bus terminal, due to the presence of the Line 1 subway, TTC bus service is limited to a single, low frequency service (although GO buses use this stretch of Yonge Street to connect to Highway 401). Overall, the Finch bus terminal is a busy facility, serving approximately 700 (AM) and 600 (PM) TTC buses (total arriving and departing) in the AM/PM peak periods. These buses on average are arriving/departing with a total of approximately 15,000 riders in the AM, and 17,000 in the PM. These numbers give an indication of the magnitude of TTC riders arriving/departing the station, and the importance to ensuring safe and efficient bus operations on adjacent roadways.

The discussion below focuses on the performance of TTC surface transit in 2031, assuming that the Line 1 Yonge subway extension is not completed in that timeframe. The northward extension of the Yonge subway would result in a re-organization of TTC bus routes and terminal facilities.

The updated modelling work compared the base future 2031 “Do Nothing” scenario against the 2031 “Transform Yonge” alternative (including transit mitigation measures).

Based on the results of this analysis; it is observed that transit performance at the network level is generally no worse for “Transform Yonge” than it is for the “Do-nothing” scenario. In some cases, the “Transform Yonge” shows a modest improvement for some metrics.

Some key transit observations associated with buses entering and exiting the Finch and Sheppard bus terminals include:

- *Entering the Finch terminal from southbound Yonge via Bishop*, there is a nominal increase in delay for the “Transform Yonge” alternative accessing the terminal via a southbound left turn from Yonge Street and the eastbound right turn from Bishop Avenue (2 seconds during the morning peak hour and 3 seconds during the afternoon peak hour).
- *Exiting the Finch terminal to northbound Yonge at the Pemberton access*, including passage through the Yonge/Bishop intersection, the “Transform Yonge” alternative reduces travel time delay by up to 7 seconds in AM peak hour, and up to 74 seconds during the PM peak hour, as observed in the simulation.

- *Buses using the Finch access to the Finch bus terminal and the Sheppard access to the Sheppard bus terminal would experience relatively nominal changes in delay (mostly less than 5 seconds), with most of the changes being reductions in delay.*

Assuming the Line 1 Yonge subway is not extended until post-2031, TTC travel time between Steeles Avenue and the Finch bus terminal is expected to undergo a minor increase for southbound travel under the “Transform Yonge” scenario, relative to the “Do-nothing” scenario during the AM peak hour. During this period, travel time for buses is expected to increase by no more than 30 seconds over a trip that normally requires 7.2 minutes to complete. Travel time for TTC buses is expected to improve in the AM peak hour for northbound, and in the PM peak hour for both northbound/southbound travel.

The impact on the delay to transit buses, which includes stopped time and time-in-queue at traffic signals, has similar results to travel time, with again only southbound buses during the morning peak hour experiencing an increase in delay (less than 30 seconds).

Further detail on the analysis of impacts to surface transit operations is included in Attachment 6.

Analysis of Impacts to Traffic on Yonge Street

Future traffic scenarios were modelled and compared against one another over a 3 hour simulation covering the AM and PM peak periods. Overall, the reduction in the number of lanes on Yonge Street, from six to four lanes, results in minimal change to traffic performance in the overall peak-period (AM and PM) across the study area.

Based on the traffic simulation results, it is observed that travel times for general traffic along Yonge Street between Wilson/York Mills and Steeles are expected to increase in conjunction with the “Transform Yonge” alternative, but these increases are less than 1 minute over a trip that would have required 16.6 to 16.9 minutes heading southbound during the AM and PM, and 16.7 to 24.1 minutes heading northbound during the same periods.

Comparing the average travel speed between the two scenarios, the greatest difference is 1.3 km/h (southbound in the PM). Overall, the increases in travel time, and reductions in average travel speed, are relatively nominal and represent an acceptable trade-off against the implementation of safety improvements, including wider sidewalks, and cycle tracks on Yonge Street.

Further detail on the analysis of impacts to traffic on Yonge Street is included in Attachment 6.

Analysis of Impacts to Traffic on Other Streets

The reduction of Yonge Street from six to four lanes under the “Transform Yonge” alternative would result in some redistribution of traffic throughout the study area.

The diversion away from Yonge Street expected to result from Transform Yonge varies by direction and time of day but is not significant. Even for the most critical peak hours and directions, this diversion is not expected to exceed 300 to 420 vehicles/hour, less than 50% of the typical capacity of one lane of a major arterial road. This diverted volume would be distributed across multiple alternative north/south routes and not any single corridor.

Overall, the anticipated changes in traffic rerouting and patterns resulting from the “Transform Yonge” are not significant in the context of traffic volumes that can be expected on key arterial roadways during the peak periods. Furthermore, phasing infrastructure improvements like the Beecroft Road and Doris Avenue extensions will add additional vehicular capacity on parallel corridors, and mitigation measures, such as signal timing and intersection improvements on Yonge Street, are fundamental in managing rerouting and traffic flows throughout the study area.

Further detail on the analysis of impacts to traffic on other streets is included in Attachment 6.

Optimizing “Transform Yonge” for Efficient Movement of Public Transit and General Traffic

The evaluation process included investigation of measures specifically focused on mitigating existing transit operational issues in order to offset, to the extent possible, the impact of growth-related increases in traffic and transit flows and the potential operational implications of the “Transform Yonge” alternative. These include:

- Adjustments to traffic signal timing along Yonge Street;
- Reinstatement of the northbound far-side bus-stop at Yonge/Sheppard (GO buses are currently using an interim near-side stop due to construction activity) and reconfigured as a bus-bay able to accommodate two buses rather than as a stop in the general traffic lane that would interfere with traffic flow;
- Reconfiguration of the bus terminal exit at Pemberton Avenue to allow buses to turn directly into the northbound curb lane (i.e., without having to occupy two lanes during the turn, as they do today). A short section of this lane would be reserved for buses (requiring the prohibition of on-street parking along this section), changing to an exclusive right-turn lane (buses exempted) at the Yonge Street/Bishop Avenue/Hendon Avenue intersection. This improvement is facilitated by the Yonge Street reconfiguration associated with the “Transform Yonge” proposal;
- Termination of the southbound High Occupancy Vehicle/transit lane south of the GO terminal intersection, as it is not needed for most bus movements. Removal of the current restrictions on its use will tend to reduce southbound queuing at Hendon Avenues / Bishop Avenue, and facilitate bus access to the southbound left-turn lane;
- Modification of the existing south-to-east left turn transit signal priority feature at the Yonge Street/Bishop Avenue/Hendon Avenue intersection, so that the left turn green arrow can be further extended. This will benefit the many buses entering the Finch bus terminal at this intersection;
- Removal of the northbound and southbound left-turn lanes at the intersection of Yonge Street and Sheppard Avenue, which will allow additional green time to be

reallocated to north/southbound and east/westbound movements, improving the overall through capacity at this intersection; and

- The planned Extension of Beecroft Road north to Drewry Avenue will provide an alternative connection to Yonge Street north of the transit terminals and an alternative access route to the commuter parking lots west of Yonge Street. This extension would relieve pressure on the Yonge/Bishop/Hendon intersection which is key to transit operations related to the Finch TTC terminal, and should be considered an integral part of the overall “Transform Yonge” alternative.

Safety and Public Health Outcomes

The City’s Vision Zero Road Safety Plan (RSP) is a comprehensive and data-driven City-wide strategy endorsed by Council in July 2016, with the goal of eliminating the Killed and Serious Injury (KSI) collisions on City roads. In July 2019, Council endorsed Vision Zero 2.0, which recommended a set of more extensive, more proactive and more targeted initiatives, informed by data and aimed at eliminating serious injury and fatalities on Toronto's roads.

As part of the Vision Zero RSP, Transportation Services has reviewed recent City-wide collision data and identified the section of Yonge Street, between Sheppard Avenue and Steeles Avenue, as a priority safety concern.

Over a nine year period between January 2011 and December 2019, there were a total of 143 collisions involving pedestrians and an additional 16 involving cyclists on Yonge Street within the project focus area (Bishop & Hendon Avenue and Avondale Avenue). Of these collisions, 10 involved fatalities or serious injuries.²

Vulnerable road users make up a quarter of the on-street share at key intersections within the Focus Area, with pedestrians and cyclists accounting for approximately 27% at Yonge/Sheppard and approximately 25% at Yonge/Finch.³ This is important when prioritizing safety.

Within the study area, Yonge Street is a wide six lane roadway (not including lanes for dedicated left and right turns). As a wide multi-lane roadway with the Highway 401 interchange in close proximity, faster travel speeds are observed, contributing to a risk of increased collisions with vulnerable users.

As was reflected in the Vision Zero 2.0 Strategy, the relationship between speed and injury severity is critical for vulnerable road users, as higher speeds contribute to higher risk of serious injuries and fatalities by reducing driver reaction time, increasing the vehicle stopping distance, and inflicting more severe blunt force trauma on victims upon

² Note, the event on April 23, 2018 where a man driving van deliberately targeted pedestrians in North York Centre, killing 10 and injuring 16, is not included in the count.

³ Based on turning movement counts, which includes auto, transit, walking and cycling trips that were observed at five key intersections along the Yonge corridor (Bishop/Hendon, Finch, Empress/Park Home, North York Blvd, and Sheppard). All five intersections had counts over 30,000 road users, from 7:30 AM to 6:00 PM. Of note, there were over 50,000 road users observed at Yonge and Sheppard (May 2016), and approximately 45,000 at Yonge and Finch (March 2019).

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impact. According to the World Health Organization, an increase in average speed of 1 km/h can typically result in a 3% higher risk of a crash involving injury.

As shown in Table 1 below, the average travel speed along Yonge Street in North York Centre is up to 18 km/h faster compared to other major urban "main street" corridors like Yonge Street in the Downtown, Bloor Street, and Danforth Avenue during the AM and PM, and off-peak periods (between January 2019 to March 2019). When comparing the roadway design of these major corridors, only Yonge Street in North York Centre has a six lane cross-section, while other urban streets have between two and four lanes.

Table 1. Urban Corridor Average Travel Speed

Main Street (Travel Direction)	Between	Average Travel Speed (km/h)		
		AM Peak Period (7:00 - 8:59)	PM Peak Period (16:00 - 17:59)	PM Off- Peak (19:00 - 22:59)
Yonge St (SB)	Finch to Sheppard	33	29	32
Yonge St (NB)	Sheppard to Finch	36	28	30
Yonge St (SB)	Bloor to Dundas	23	15	16
Yonge St (NB)	Dundas to Bloor	21	18	18
Yonge St (SB)	Dundas to Front	18	10	14
Yonge St (NB)	Front to Dundas	18	15	15
Bloor St (WB)	Jarvis to Spadina	18	14	17
Bloor St (EB)	Spadina to Jarvis	20	16	18
Danforth Ave (WB)	Greenwood to Broadview	30	17	21
Danforth Ave (EB)	Broadview to Greenwood	27	22	22

Source: iPeMS HERE Data City of Toronto

By reducing a travel lane in each direction, and implementing wider sidewalks for pedestrians, as well as protected bicycle lanes (cycle tracks), Yonge Street can be designed to be a safer and more comfortable environment. The road reconstruction presents an opportunity to bring the design speed in line with the target speed, which can be achieved by reducing the number and width of travel lanes. Further, with the inclusion of streetscape improvements such as enhanced landscaping, operating speeds can be reduced to improve the safety of people who walk and cycle, and encourage a modal shift towards active transportation.

The implementation of cycle tracks on Yonge Street, between Florence/Avondale Avenues (south of Sheppard Avenue) and Bishop/Hendon Avenues (north of Finch Avenue), would create an important north-south spine in North York Centre. Today, cycling infrastructure in North York Centre includes the Finch Hydro corridor multi-use trail and bicycle lanes on Willowdale Avenue. The introduction of cycle tracks as recommended in Transform Yonge is fully aligned with, York Region's planned cycling infrastructure on Yonge Street north of Steeles Avenue.

On March 5, 2018 the Board of Health requested the Medical Officer of Health to collaborate with Transportation Services to ensure health benefits are maximized through the REimagining Yonge study.

Toronto Public Health reviewed evidence linking healthy design and the built environment to influencing the behaviour of individuals to live a healthy and active life. The benefits of designing healthy communities leads to people living healthier lives, and in turn, leads to positive health, social, and economic outcomes.

The key findings of Toronto Public Health's research identify "Transform Yonge" as the preferred alternative which best delivers on the evidence-based design principles that promote health, such as the Complete Streets Guidelines, Active City Principles and the Healthy Development Index.⁴ It has many elements that facilitate physical activity and promote safety, especially for vulnerable road users.

Toronto Public Health noted that the "Transform Yonge" alternative provides greater connectivity, a diverse mix of land use and densities that encourage social interaction and invite active living better than other scenarios considered. Further information from Toronto Public Health on the evaluation measures considered can be found in Attachment 7.

The proposed "Transform Yonge" alternative for the redesign of Yonge Street is the preferred option over the "Enhance Yonge, and Transform Beecroft" because it incorporates a wider variety of design elements that are known to promote health, including density and destinations, improved connectivity with transit, wider sidewalks and spaces for people of all ages and abilities to interact.

Improving road safety on Yonge Street is a key objective of the recommendations made in this report and is critical to meeting City Council's Vision Zero goal of eliminating serious injuries and fatalities on City streets.

Implementation Schedule, Related Projects and Next Steps

This report recommends the "Transform Yonge" alternative. Should this item be adopted by Council, and subject to available funding, the implementation schedule is as follows:

- Complete Environmental Study Report and 30 day Public Review Period: Q2 2021
- Detailed Design: 2023-2025
 - Through detailed design, the location, width, and alignment will be determined for sidewalks, cycle tracks, auto lanes, landscaped medians, on-street lay-bys for parking, and loading/delivery zones. In addition, a safety audit, and other important elements, such as municipal servicing, utility relocations, streetscape, light poles, traffic signals, lane markings, would be confirmed. Further public consultation would be undertaken to inform the detailed design process.

⁴ Region of Peel. Healthy Development Assessment User Guide. 2016.
<https://www.peelregion.ca/health/resources/healthbydesign/pdf/HDA-User-Guide-Jun3-2016.pdf>

- Construction: 2026+ (to follow phasing schedule outlined below)

Construction Phasing Strategy

- Phase 1 - Doris Ave Connection to Tradewind Ave Extension (2023-2024)
- Phase 2 - Beecroft Extension to at least Turnberry Court to connect to Cummer Ave (2024-2026)
- Phase 3 – “Transform Yonge” (2026+)

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ATTACHMENTS

Attachment 1: Stage 1 “Transform Yonge” Alternative Solutions
Attachment 2: “Transform Yonge” Design Refinements
Attachment 3: Stage 2 “Enhance Yonge Transform Beecroft” Alternative Solutions
Attachment 4: 2018 Comparison of “Transform Yonge” and “Enhance Yonge Transform Beecroft” Alternatives
Attachment 5: “Transform Yonge” Evaluation of Preferred Transportation Network
Attachment 6: Traffic Analysis
Attachment 7: TPH: Transform Yonge Health Considerations