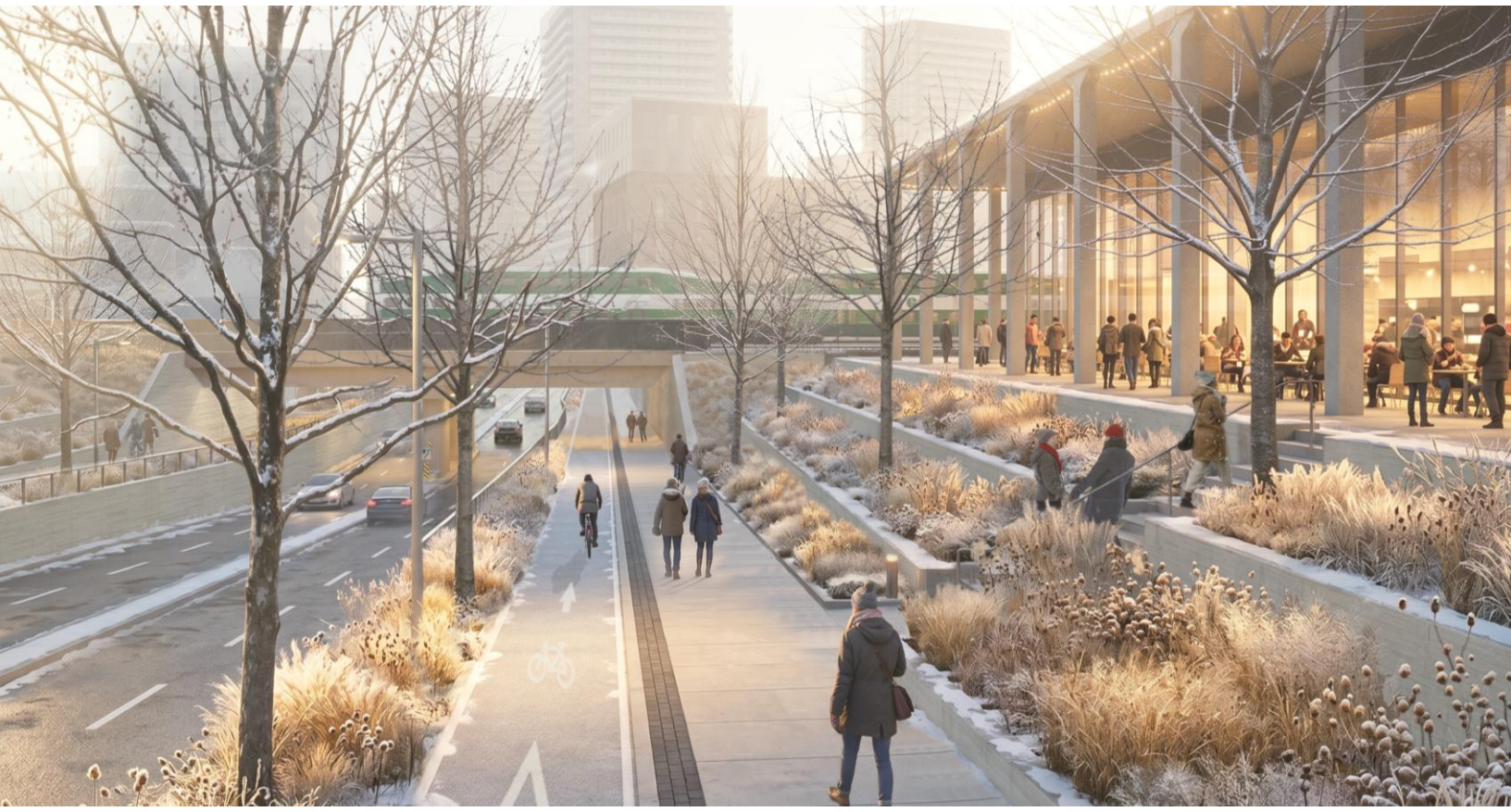
Evaluation Summary for Northern Street Alternative Designs

Downsview Major Streets Phases 3-4
Environmental Assessment

Stage 2 Public Consultation

June 2026



TORONTO

Table of Contents

1. Purpose of the Evaluation Summary

This document is supplementary material for the Stage #2 Public Consultation on the Downsview Major Streets Phases 3-4 Environmental Assessment (EA) study.

It documents the Alternative Design Concepts for Northern Street, the evaluation framework, scoring results against the final evaluation criteria, and provides a summary of the evaluation and key decision points on how each preferred Alternative Design Concept was selected. Full evaluation details will be included in the final report.

For more information on the project overall and details on the evaluation of Alternative Design Concepts for the other major streets, please visit the project website at www.toronto.ca/DownsviewEA.

2. Evaluation Framework

The evaluation framework for the Downsview Major Streets Phases 3-4 EA study consists of five main categories, each with related criteria and considerations. The draft evaluation criteria were presented during the first public consultation stage in June 2025 and were then refined based on feedback received. The final evaluation criteria are presented in Table 1 through Table 5.

Table 1. Evaluation Criteria – Category 1: Connectivity and Technical Viability

Criteria	Considerations
Mobility network performance and traffic impacts	• Geometric designs and lane configurations that meet acceptable traffic operations while also balancing safety of all road users. • Impacts to bus operations, bus delay, passenger delay and travel times, and transit impacts in a mixed traffic condition. • Traffic impacts to adjacent neighbourhoods.
Connections to existing and planned transportation	• Logical continuity of existing and planned streets, active transportation, and transit infrastructure to support connectivity and efficiency of networks. • Transit network and providing opportunities for transit expansion, routes and access.
Feasibility and constructability	• Key technical challenges and construction complexity (e.g. grading, staging, construction impacts).
Prioritize multi-modal/non-auto travel and safety	• Creation of urban streets that promote roadway safety through design and physical elements. • Safety and comfort for vulnerable road users. Includes sufficient widths to accommodate various design users (e.g. cargo bikes, electric bikes, electric scooters, etc.); separation of uses and conflict points. • Accessibility and all ages and abilities requirements and best practices. • Alignment with City Transportation policies, standards and guidelines.
Stormwater management and green infrastructure (GI)	• Opportunities to implement GI that achieves the most co-benefits (e.g. increases biodiversity, addresses urban heat island, enhances air quality, etc.). over traditional stormwater management strategies, with a priority on GI that requires less maintenance and upkeep. • Area for GI to meet stormwater management modelling requirements. • Potential for integration with landscaping and plantings.
Utility impacts	• Utility impacts due to servicing expansion, road widening and green infrastructure.
Metrolinx and rail coordination	• Aligns with Metrolinx design standards and guidelines, allowing for easier Metrolinx approvals. • Impacts to the rail corridor and rail operations. • Opportunities for future plans for the rail corridor crossing.

Table 2. Evaluation Criteria – Category 2: Socio-Economic Environment

Criteria	Considerations
Construction impacts	• Temporary construction impacts on surrounding areas such as noise, dust, duration of construction, particularly to any sensitive uses. • Impacts to private/commercial accesses during construction.
Streetscaping and community benefits	• Streets as public spaces that contribute to street vibrancy, sense of place, and well being. • Opportunities for public open spaces/gathering spaces within the road ROW.
Integration with surrounding uses	• Impacts on adjacent uses and suitability to existing/planned uses.
Aligns with Downsview Secondary Plan (DSP) and District Planning	• Alignment with Downsview Secondary Plan. • Street design supports existing and proposed adjacent land uses and the vision of each District, including development potential. • Alignment with right-sizing ROW principles for the Downsview area.
Noise impacts	• Impacts to existing and future sensitive areas including residential and institutional uses. • Complexity of noise mitigation measures (if required).
Air quality impacts	• Impacts to existing and future sensitive areas including residential and institutional uses. • Space dedicated towards street trees to potentially improve air quality.
Property impacts	• Property impacts due to servicing expansion and road widening. • Impacts to existing accesses and driveways.

Table 3. Evaluation Criteria – Category 3: Natural Environment

Criteria	Considerations
Natural environmental features	• Extent of potential impacts to natural environmental features, including wildlife, SAR, habitat, woodlands, water features, etc. • Opportunity to create or improve natural environmental areas including for trees, vegetation, and wildlife habitat.
Street trees	• Impacts to existing trees. • Opportunity to create a comfortable street canopy that supports street tree health.
Environmental sustainability and resilience	• Alignment with City Green Streets standards and guidelines and TransformTO strategies. • Climate change resiliency through managing stormwater sustainably and resistance to extreme weather events. • Reduction in greenhouse gases.
Inclusion of environmental input from Indigenous perspectives	• Potential impacts to plant species of Indigenous interest, which have significance for medicinal, cultural and crafting purposes. • Opportunities for renaturalization / replanting of native species of Indigenous interest. • Opportunities for the natural environment to deliver cultural and socio-economic benefits from an indigenous perspective.

Table 4. Evaluation Criteria – Category 4: Cultural Environment

Criteria	Considerations
Built cultural heritage resources	• Impacts on built heritage resources (i.e. avoid, modify, relocate or demolish and commemorate).
Archaeological resources	• Extent of impacts in areas of archaeological potential.
Impacts on Aboriginal and Treaty Rights and use of Land / Resources for Traditional purposes	• Enables and supports a culture of environmental stewardship and cultural uses of the land. • Opportunities to mitigate impacts and accommodate Indigenous values such as through renaturalization, commemoration, or inclusion through art, design, etc.

Table 5. Evaluation Criteria – Category 5: Costs

Criteria	Considerations
Costs (e.g., capital costs, operational costs, maintenance costs)	• Capital costs. • Operational costs (i.e. TTC surface routes). • Maintenance costs (i.e. degree of maintenance requirements, training requirements).
Property costs	• Land acquisition costs.

Each alternative was evaluated using the 5-level "circle" sliding scale, as shown graphically in Figure 1. A level 1 on the scale, i.e., an empty circle, indicates that the alternative does not meet criteria. A level 5 on the scale, i.e., a full circle, indicates the alternative best meets the criteria. Criteria bolded in black represent the most significant criteria within their category and are weighted more strongly as part of the evaluation.

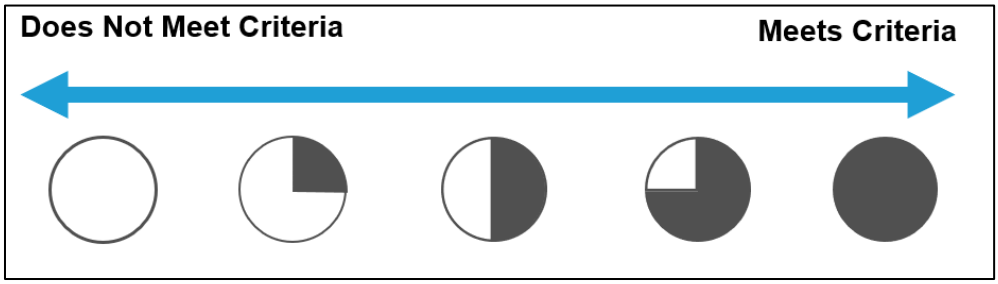


Figure 1. Evaluation Criteria Rating System

3. Development of Alternative Design Concepts

Phase 3 of the EA process involves identifying and evaluating Alternative Design Concepts to recommend a preferred design concept. The Major Streets are separated into distinct segments to allow for more detailed and context-specific evaluations (Figure 2). Alternative Design Concepts are identified and evaluated for each segment.

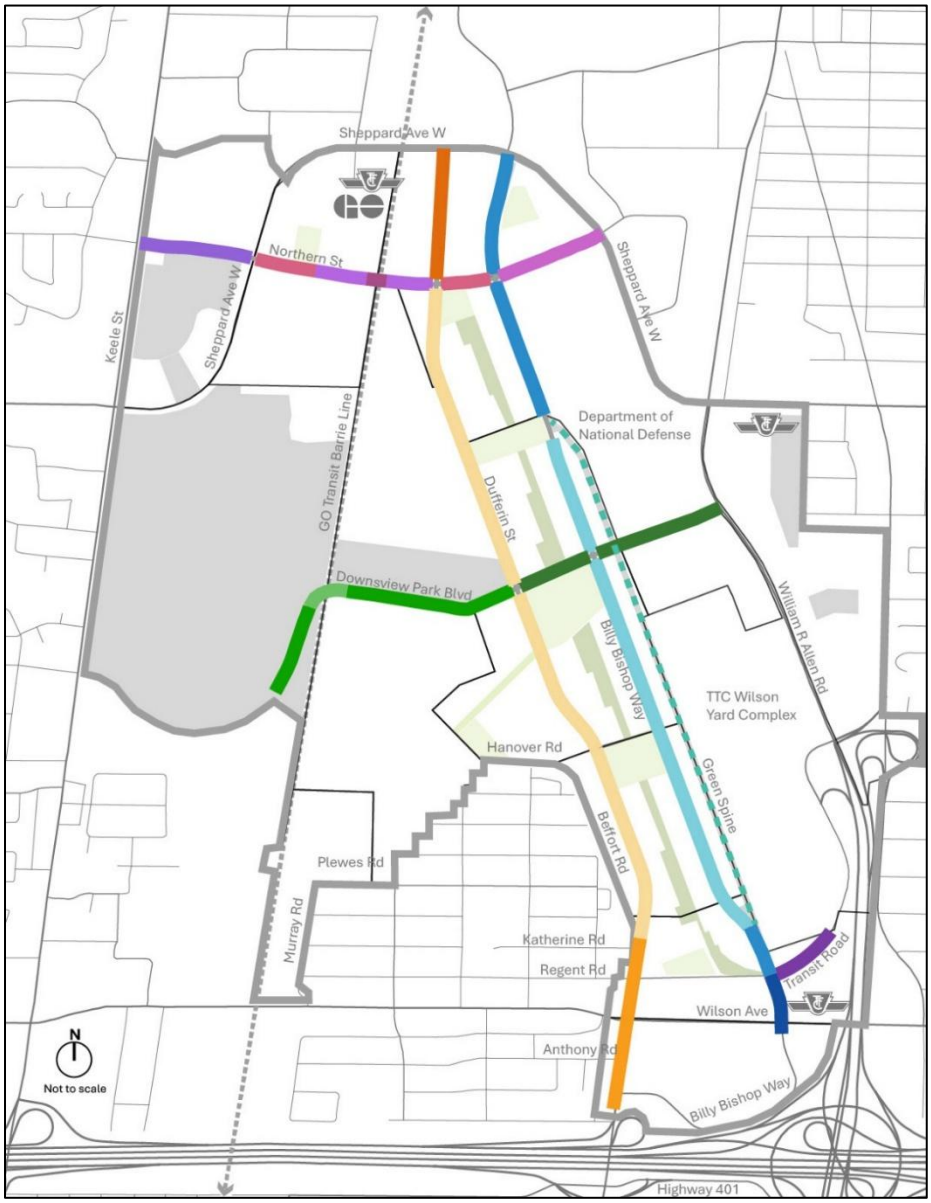


Figure 2. Street Segments Key Plan

4. Northern Street – Alternative Design Concepts

This document focuses on the evaluation of Alternative Design Concepts for Northern Street. Northern Street was identified in the Master Environmental Servicing Plan (MESP) as a new east-west Major Street, connecting Dovehouse Avenue to Kodiak Crescent. Northern Street will have an underpass, where the road crosses underneath the existing GO Transit Barrie rail line. Northern Street was assessed using the following distinct segments as shown in Figure 3:

1. Keele Street to Sheppard Avenue West
2. Sheppard Avenue West to Billy Bishop Way (excluding underpass segments)
3. Northern Street Underpass Area
4. Billy Bishop Way to Sheppard Avenue West

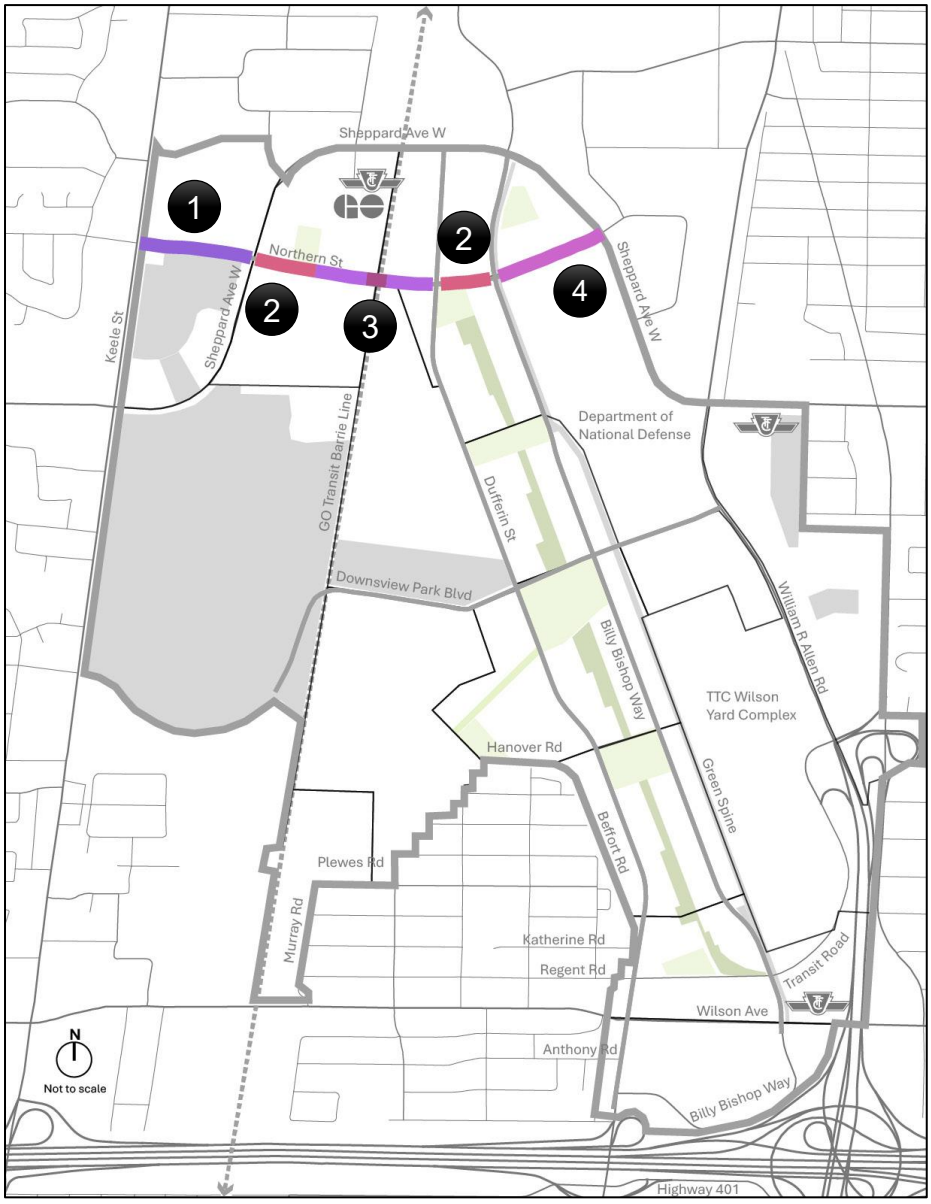


Figure 3. Northern Street Segment Key Plan

4.1. Northern Street (Keele Street to Sheppard Avenue West)

This segment of Northern Street extends for approximately 390m from Keele Street to Sheppard Avenue West (Figure 4).

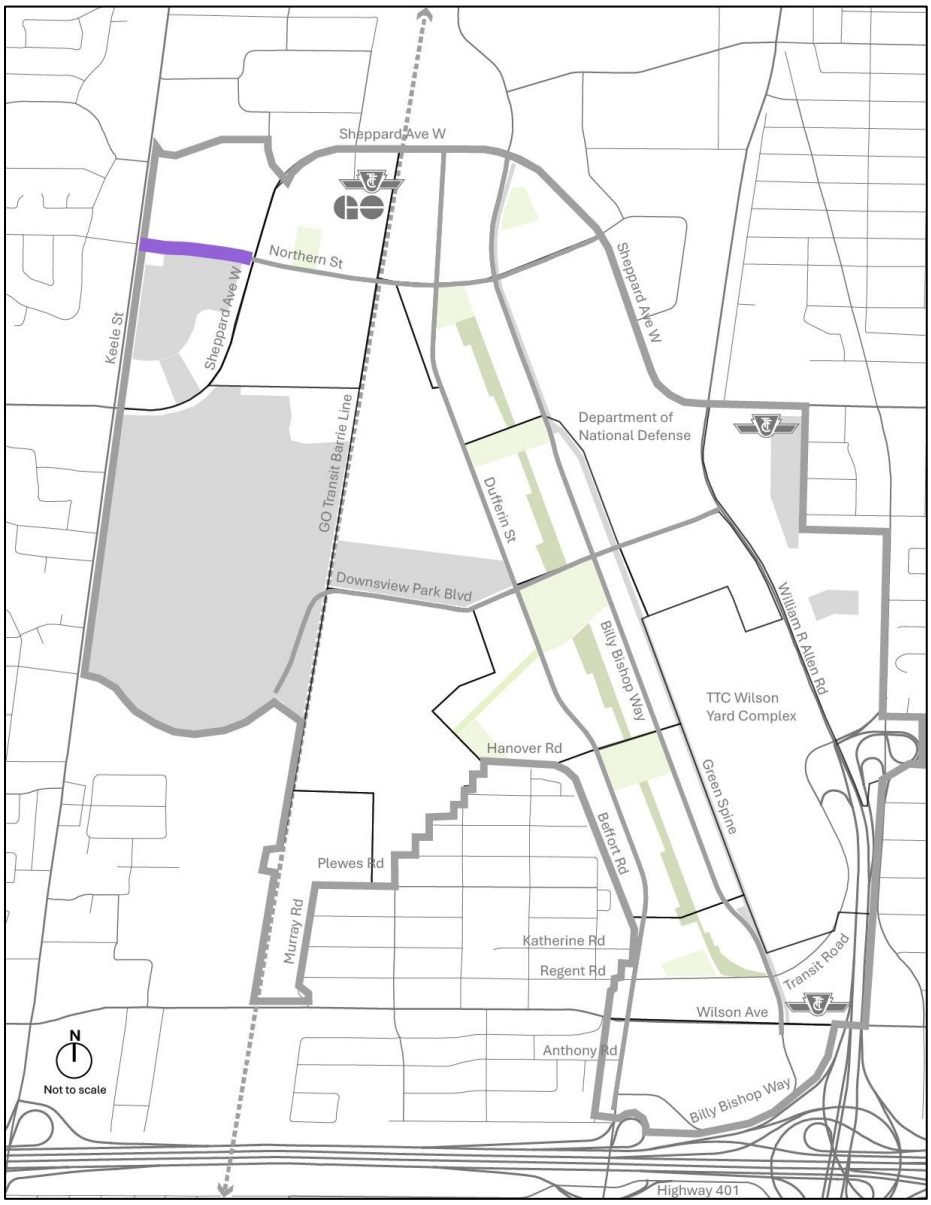


Figure 4. Northern Street (Keele Street to Sheppard Avenue West)

4.1.1. Alternative Design Concepts

Three cross-section options were assessed for this segment (refer to Figure 5 through Figure 7 below):

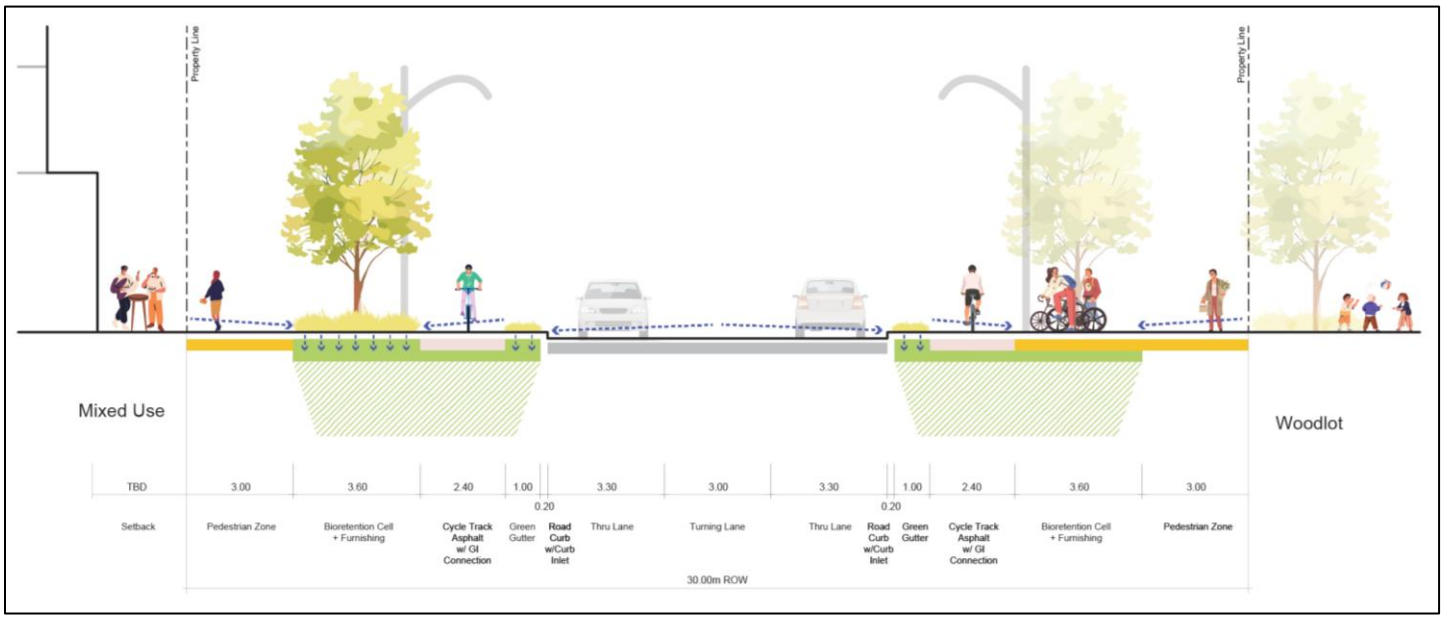


Figure 5. Northern Street (Keele Street to Sheppard Avenue West) Cross-Section – Option 1

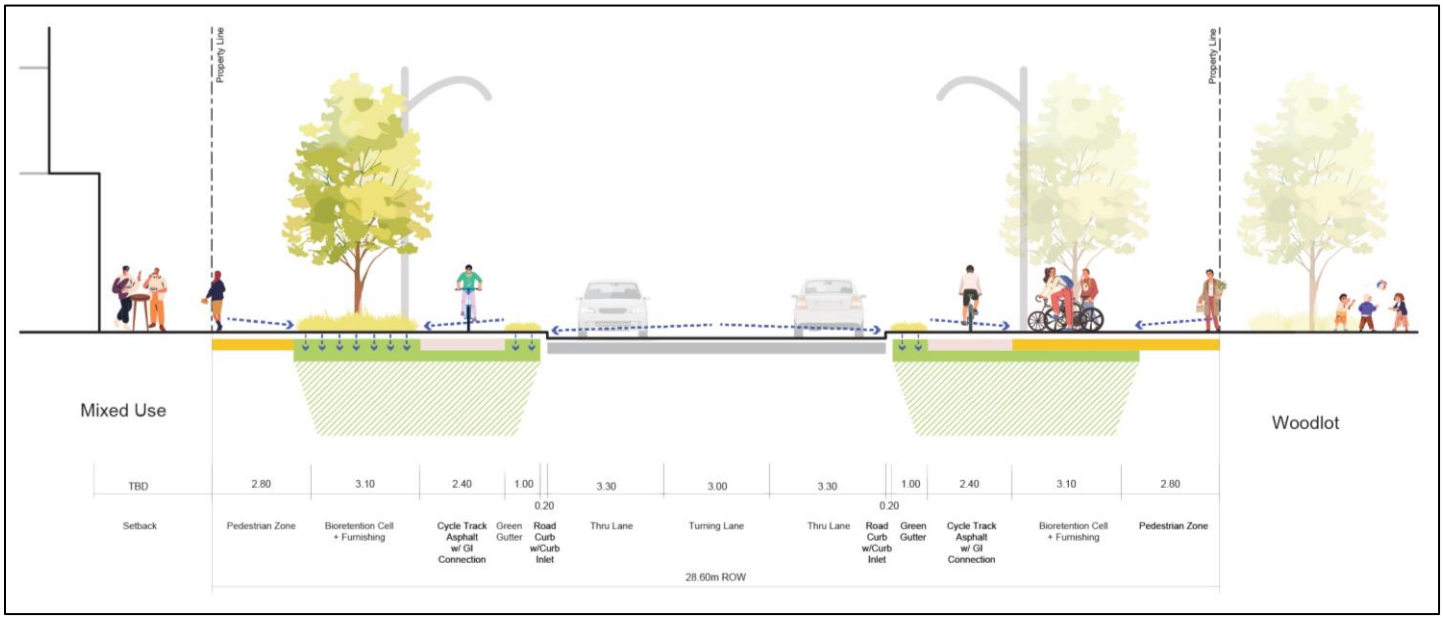


Figure 6. Northern Street (Keele Street to Sheppard Avenue West) Cross-Section – Option 2

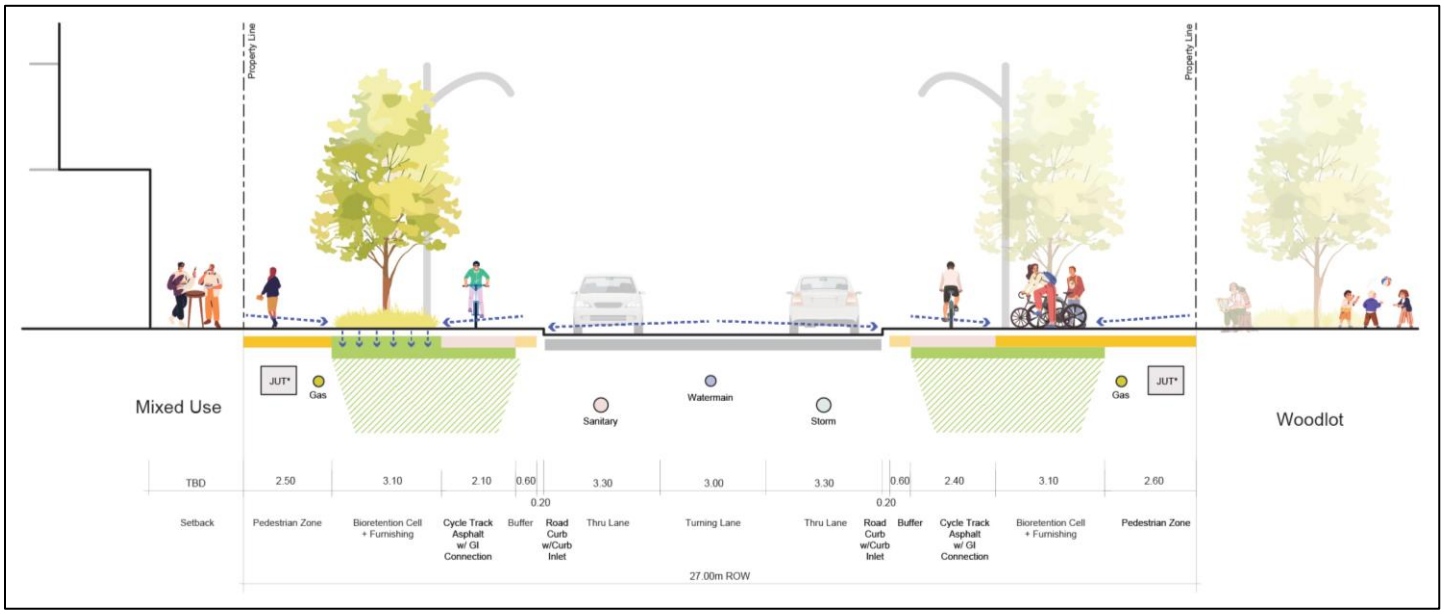


Figure 7. Northern Street (Keele Street to Sheppard Avenue West) Cross-Section – Option 3

Table 6 below describes key components of each cross-section option.

Table 6. Cross-Section Options for Northern Street (Keele Street to Sheppard Avenue West)

Option	Right of Way Width	Vehicle Lanes	Pedestrian Clearway (Both Sides)	Cycle Track (Both Sides)	Green Infrastructure and Furnishing Zone (Both Sides)
1	30.0m	• Two general purpose through lanes (3.3m) • One center turning lane (3.0m)	3.0m	2.4m	3.6m
2	28.6m	• Two general purpose through lanes (3.3m) • One center turning lane (3.0m)	2.8m	2.4m	3.1m
3	27.0m	• Two general purpose through lanes (3.3m) • One center turning lane (3.0m)	2.5m (north) 2.6m (south)	2.1m (north) 2.4m (south)	3.1m

4.1.2. Evaluation Summary

Table 7 summarizes the evaluation results for the three cross-section options for Northern Street (Keele Street to Sheppard Avenue West).

Table 7. Northern Street (Keele Street to Sheppard Avenue West) Evaluation Summary

Category	Weight	Option 1 3 lanes, 30.0m ROW	Option 2 3 lanes, 28.6m ROW	Option 3 3 lanes, 27.0m ROW
Category 1: Connectivity and Technical Viability	High	◕	●	●
Category 2: Socio-Economic Environment	High	◕	◕	●
Category 3: Natural Environment	Medium	●	◕	◕
Category 4: Cultural Environment	Medium	●	●	●
Category 5: Costs	Medium	●	●	●
Overall		◕	◕	●
				Preferred

Key Considerations for **Preferred Alternative Design Option 3**:

- It best meets transportation and servicing needs while taking into consideration the surrounding context.
- Since there are no existing or future alternate east/west active transportation routes in the vicinity of Northern Street, it is anticipated there will be higher active transportation user volumes, particularly cycling volumes on the south side. As such, a wider pedestrian zone and cycle track on the south side is provided to connect into the woodlot trail which connects to Downsview Park. It is anticipated cycling volumes will be less on the north, as such a narrower facility is sufficient.
- The narrow ROW width minimizes encroachment onto adjacent developable lands.
- Option 3 has the lowest anticipated capital costs.

4.2. Northern Street (Sheppard Avenue West to Billy Bishop Way)

This segment of Northern Street extends for approximately 800m from Sheppard Avenue West to Billy Bishop Way and includes distinct recommendations for Northern Street from Sheppard Avenue West to Depot Boulevard (140m, future road in Downsview West District) and Northern Street from Dufferin Street Extension to Billy Bishop Way Extension (200m) (Figure 8).

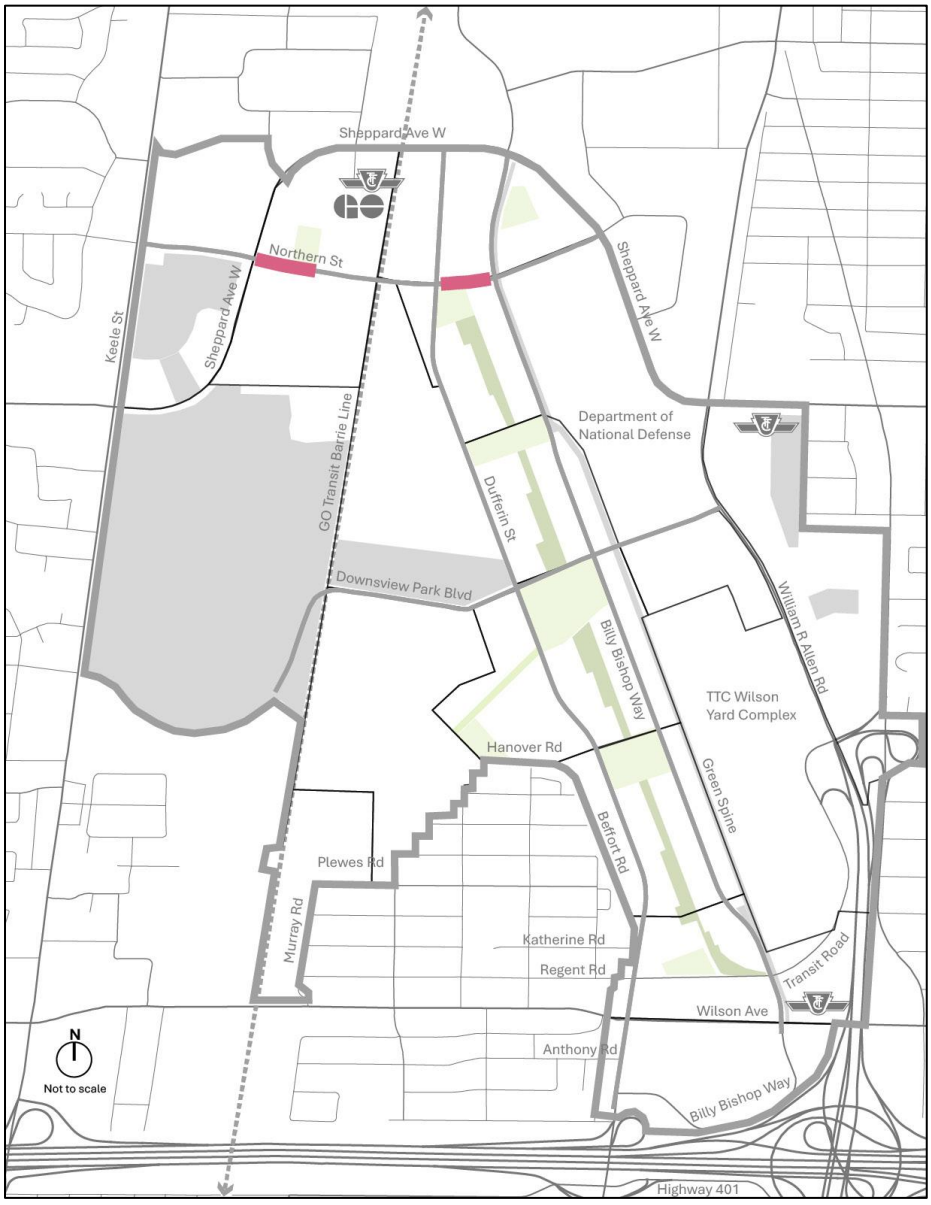


Figure 8. Northern Street (Sheppard Avenue West to Billy Bishop Way)

4.2.1. Alternative Design Concepts

Four cross-section options were assessed for this segment (refer to Figure 9 through Figure 12 below):

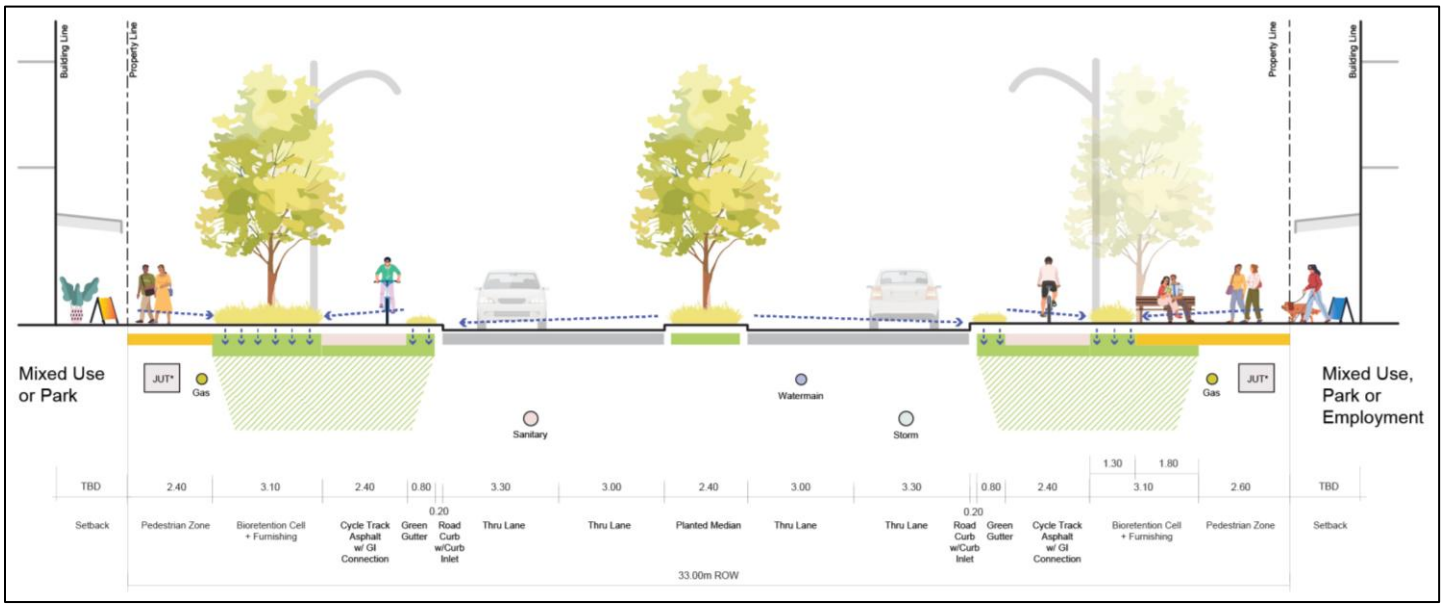


Figure 9. Northern Street (Sheppard Avenue West to Billy Bishop Way) Cross-Section – Option 1

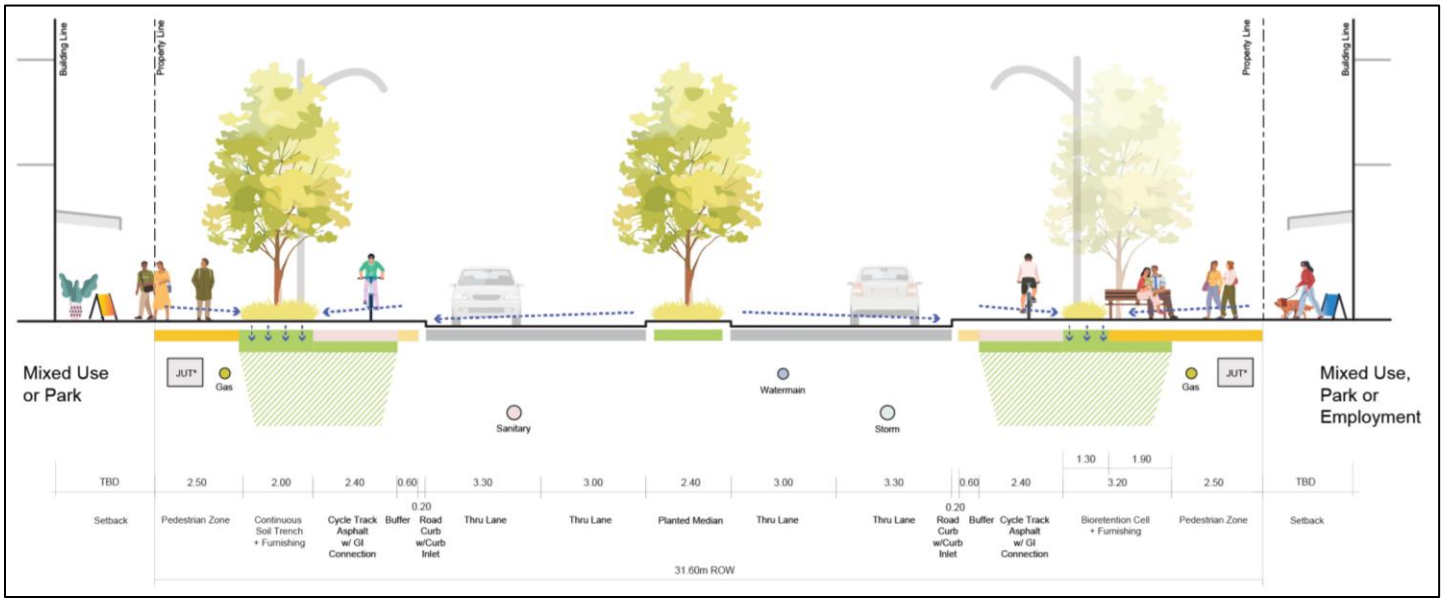


Figure 10. Northern Street (Sheppard Avenue West to Billy Bishop Way) Cross-Section – Option 2

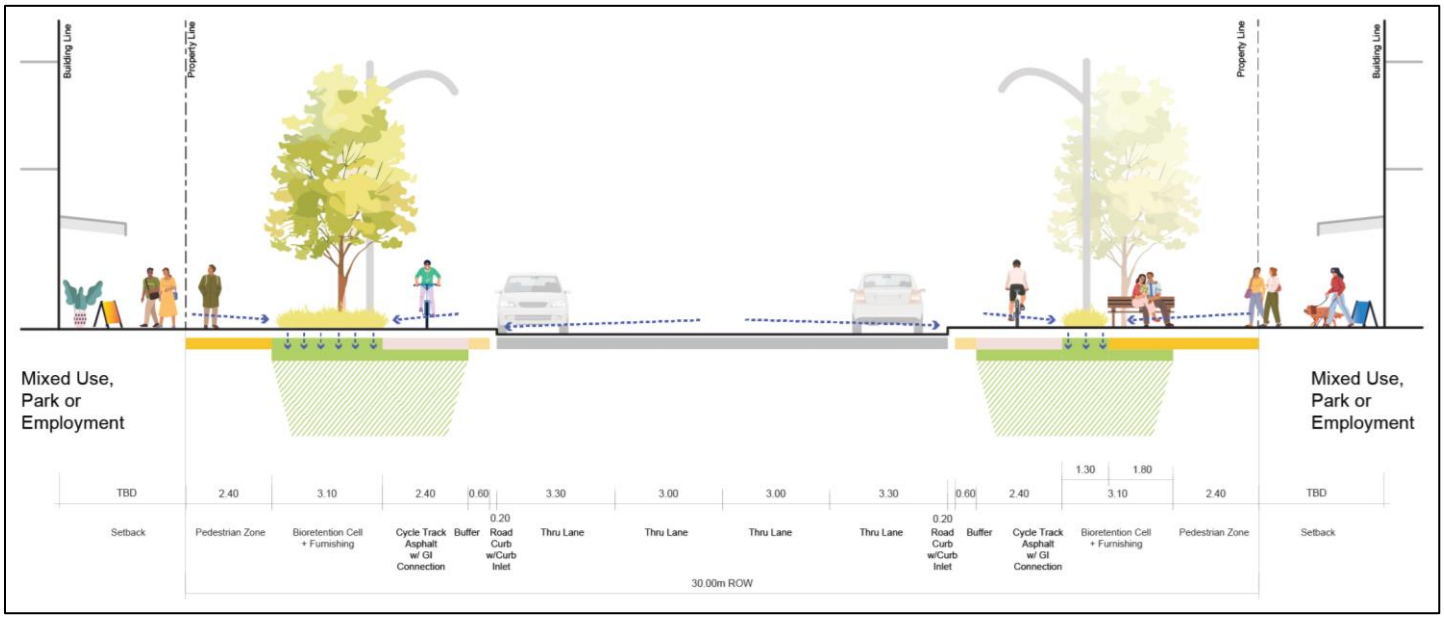


Figure 11. Northern Street (Sheppard Avenue West to Billy Bishop Way) Cross-Section – Option 3

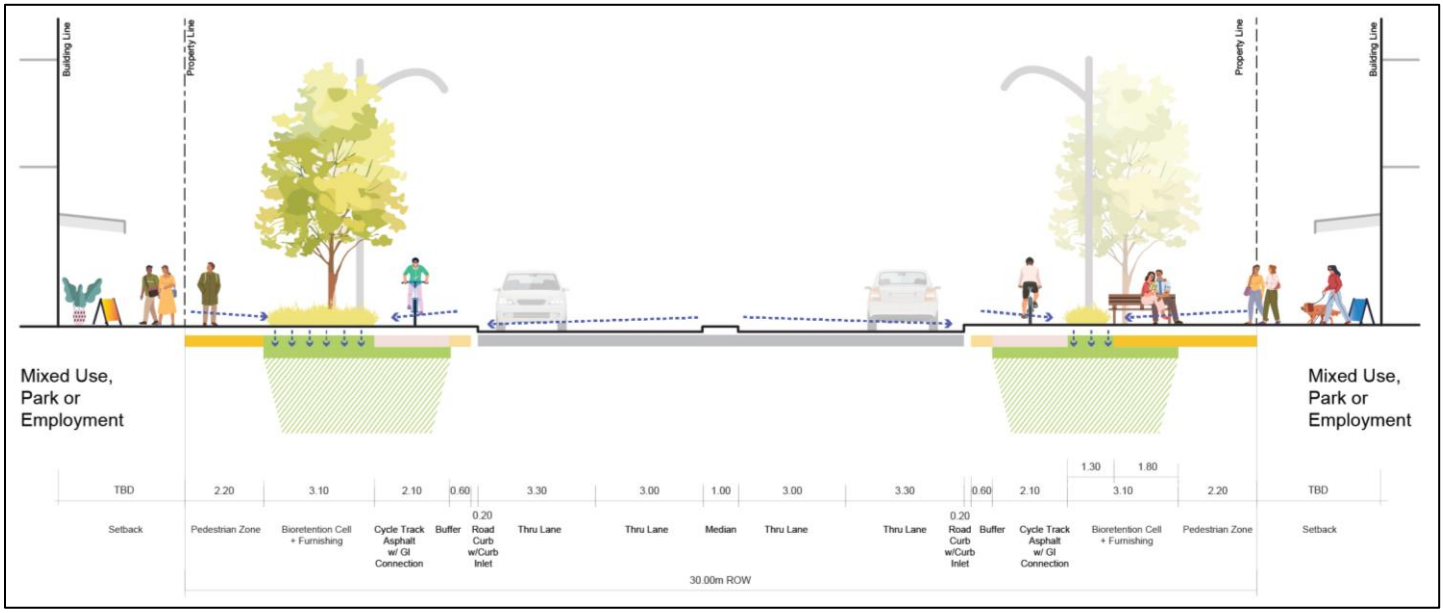


Figure 12. Northern Street (Sheppard Avenue West to Billy Bishop Way) Cross-Section – Option 4

Table 8 below describes key components of each cross-section option.

Table 8. Cross-Section Options for Northern Street (Sheppard Avenue West to Billy Bishop Way)

Option	Right of Way Width	Vehicle Lanes	Pedestrian Clearway (Both Sides)	Cycle Track (Both Sides)	Green Infrastructure and Furnishing Zone (Both Sides)
1	33.0m	• Four general purpose lanes (3.0m through and 3.3m curbside) • 2.4m planted median	2.4m (north) 2.6m (south)	2.4m	3.1m
2	31.6m	• Four general purpose lanes (3.0m through and 3.3m curbside) • 2.4m planted median	2.5m	2.4m	2.0m (north) 3.2m (south)
3	30.0m	• Four general purpose lanes (3.0m through and 3.3m curbside)	2.4m	2.4m	3.1m
4	30.0m	• Four general purpose lanes (3.0m through and 3.3m curbside) • 1.0m median	2.2m	2.1m	3.1m

4.2.2. Evaluation Summary

Table 9 summarizes the evaluation results for the four cross-section options for Northern Street (Sheppard Avenue West to Billy Bishop Way).

Table 9. Northern Street (Sheppard Avenue West to Billy Bishop Way) Evaluation Summary

Category	Weight	Option 1 4 lanes, 33.0m ROW	Option 2 4 lanes, 31.6m ROW	Option 3 4 lanes, 30.0m ROW	Option 4 4 lanes, 30.0m ROW
Category 1: Connectivity and Technical Viability	High	●	●	◕	◑
Category 2: Socio-Economic Environment	High	●	●	◕	◑
Category 3: Natural Environment	Medium	●	●	●	●
Category 4: Cultural Environment	Medium	●	●	●	●
Category 5: Costs	Medium	●	●	●	●
Overall		●	●	◕	◑
		Preferred	**Preferred**		

Key Considerations for **Preferred Alternative Design Option 1 and 2**:

- Option 2 is recommended for the section of Northern Street between Sheppard Avenue West and Depot Boulevard (future road in Downsview West District) because it utilizes a narrower right-of-way (31.6m) to limit impacts to the surrounding lands while also better integrating with proposed Heart Park in Downsview West District on the northern edge of this section. There may be an opportunity to further refine/reduce the green infrastructure adjacent to Heart Park in consultation with landowners.
- Option 1 is recommended for the section of Northern Street between Dufferin Street and Billy Bishop Way because it best utilizes a wider right-of-way (33.0m) allowing wider boulevard space to match with the terminus of the Runway.
- The 2.4m planted median provides safety benefits by managing vehicle speeds, reducing head on collisions and providing strong pedestrian refuge and reduced/fewer conflicts. The median especially improves crossing safety at the interface with the Runway terminus and along an area of high traffic volumes.

- The planted median could also provide additional stormwater management and continuity with adjacent sections where the median is required for the underpass.
- Wider pedestrian (2.4m-2.6m) and cycling facilities (2.4m), and safety measures support higher active transportation demand anticipated at the interface with the Runway and Heart Park.

4.3. Northern Street (Underpass)

The Northern Street underpass is located at the point where Northern Street intersects with the GO Transit Barrie Rail Line (Figure 13).

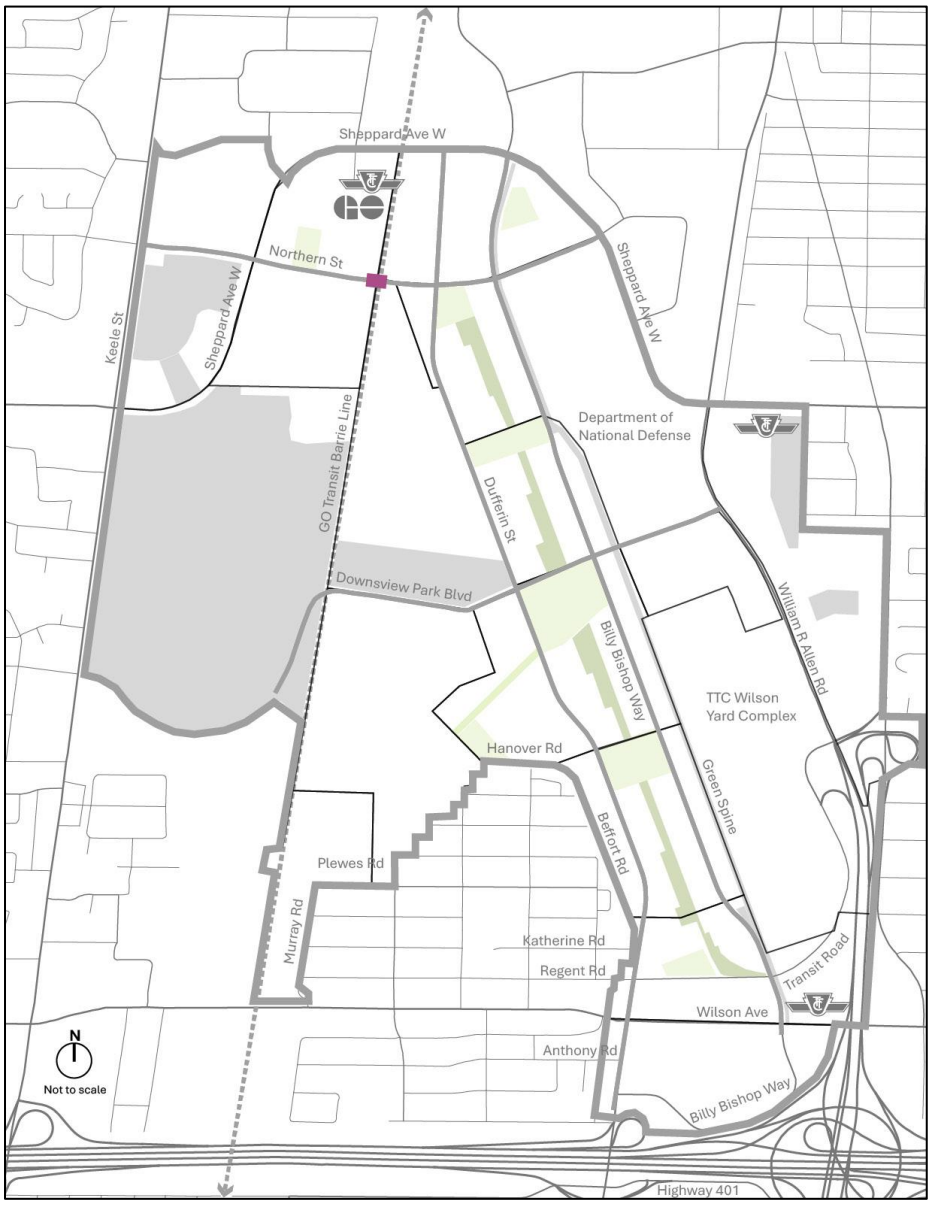


Figure 13. Northern Street (Underpass)

4.3.1. Alternative Design Concepts

Two cross-section options were assessed for this segment (refer to Figure 14 and Figure 15 below):

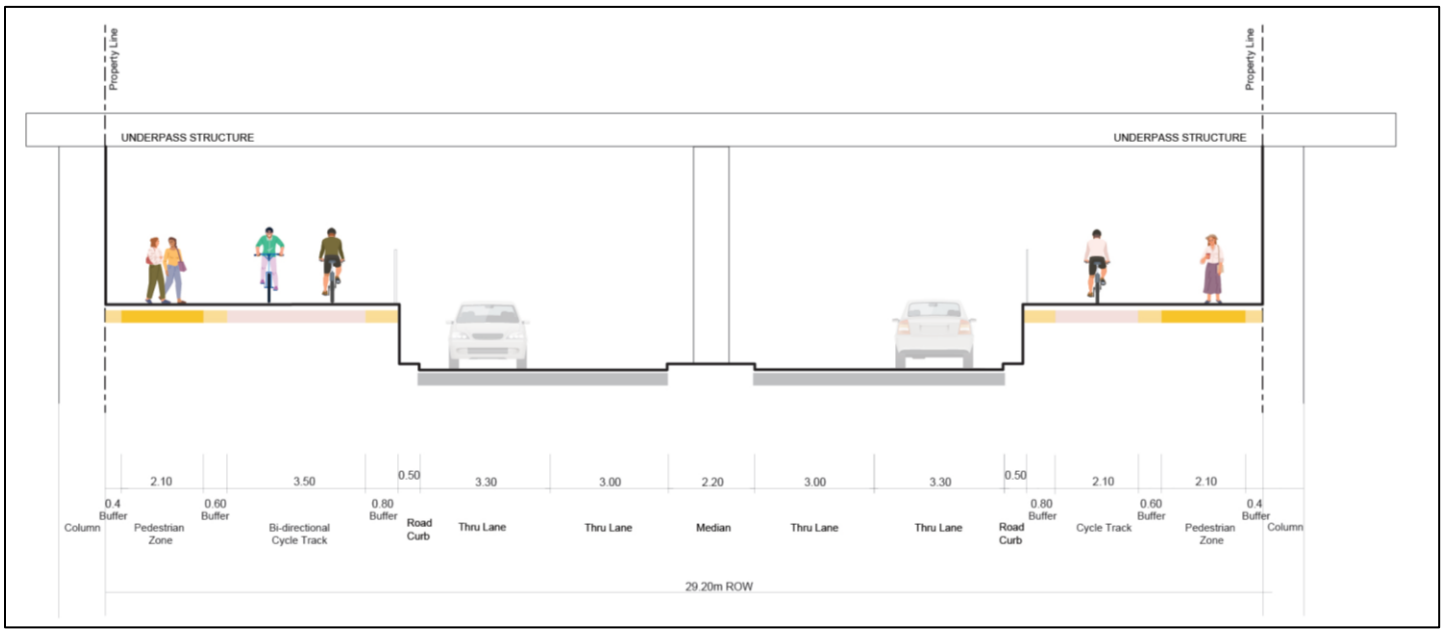


Figure 14. Northern Street (Underpass) Cross-Section – Option 1

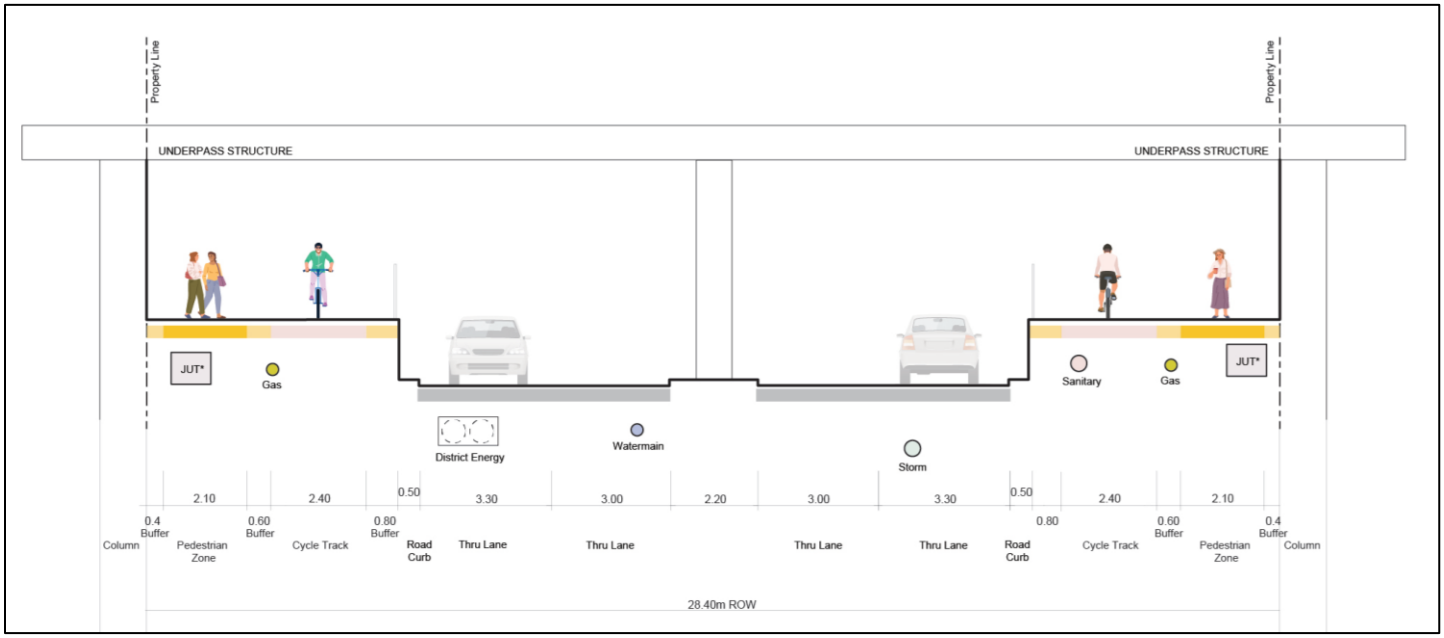


Figure 15. Northern Street (Underpass) Cross-Section – Option 2

Table 10 below describes key components of each cross-section option.

Table 10. Cross-Section Options for Northern Street (Underpass)

Option	Right of Way Width	Vehicle Lanes	Pedestrian Clearway (Both Sides)	Cycle Track (Both Sides)	Green Infrastructure and Furnishing Zone (Both Sides)
1	29.2m	• Four general purpose lanes (3.0m through and 3.3m curbside) • 2.2m median	2.1m	3.5m bi-directional (north) 2.1m uni-directional (south)	N/A
2	28.4m	• Four general purpose lanes (3.0m through and 3.3m curbside) • 2.2m median	2.1m	2.4m uni-directional	N/A

4.3.2. Evaluation Summary

Table 11 summarizes the evaluation results for the two cross-section options for Northern Street (Underpass).

Table 11. Northern Street (Underpass) Evaluation Summary

Category	Weight	Option 1 4 lanes, 29.2m ROW	Option 2 4 lanes, 28.4m ROW
Category 1: Connectivity and Technical Viability	High	◕	●
Category 2: Socio-Economic Environment	High	◕	●
Category 3: Natural Environment	Medium	●	●
Category 4: Cultural Environment	Medium	●	●
Category 5: Costs	Medium	●	●
Overall		◕	●
			Preferred

Key Considerations for **Preferred Alternative Design Option 2**:

- The uni-directional cycle tracks on both sides more logically connect into Northern Street east and west of this segment. Having a bi-directional cycle track on the north side brings challenges with transitioning to uni-directional cycle tracks east (Dufferin Street) and west (Depot Boulevard). Having only a short segment of a bi-directional facility may cause confusion for cyclists when the bi-directional facility starts and ends, which could result in more conflicts and less predictability for drivers at the intersection where the facility transitions.
- The narrower ROW also minimizes encroachment onto adjacent developable lands in the Downsview East and West Districts.
- Option 2 has a slightly lower capital cost compared to Option 1.
- Sidewalks and cycle tracks included comfortable buffers on both sides and are elevated from the road to improve safety and comfort.

4.4. Northern Street (Underpass – Open to Sky)

This segment of Northern Street extends for approximately 450m from Depot Boulevard (future road within Downsview West District) to the Dufferin Street Extension (Figure 16).

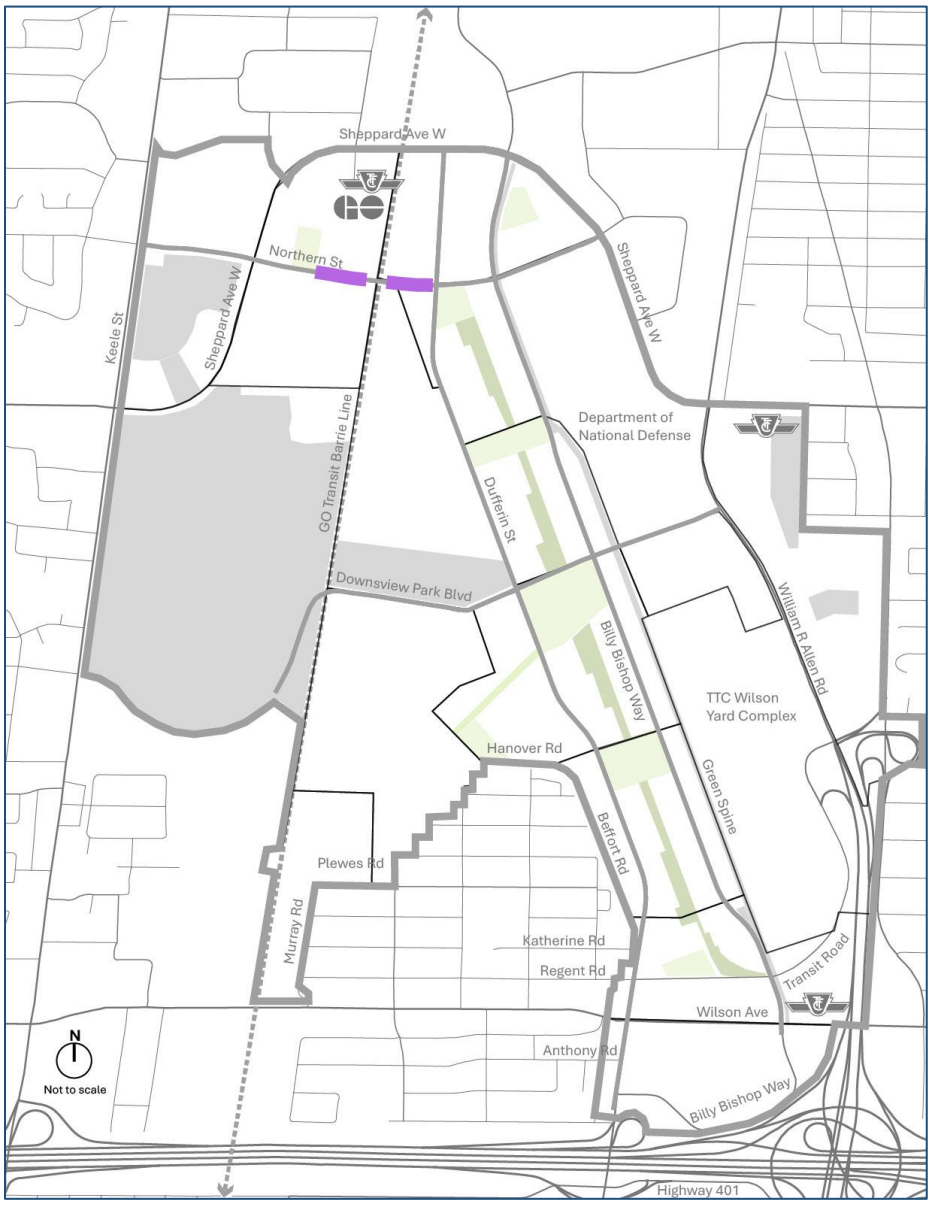


Figure 16. Northern Street (Underpass – Open to Sky)

4.4.1. Alternative Design Concepts

Three cross-section options were assessed for this segment (refer to Figure 17 through Figure 19 below):

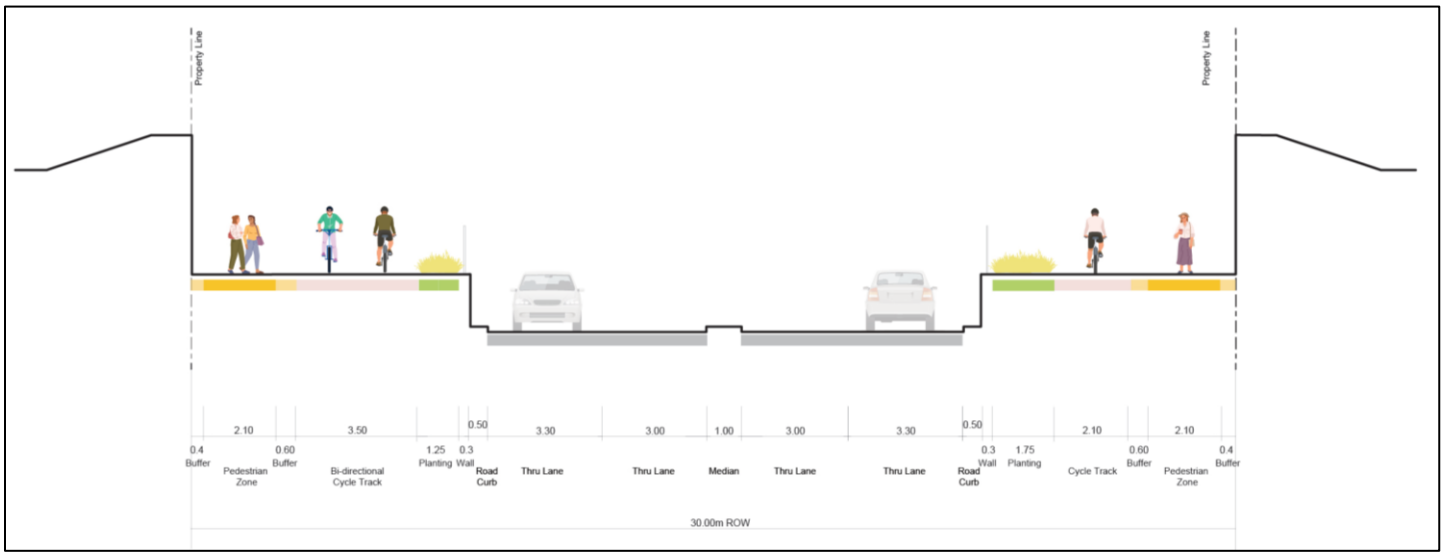


Figure 17. Northern Street (Underpass – Open to Sky) Cross-Section – Option 1

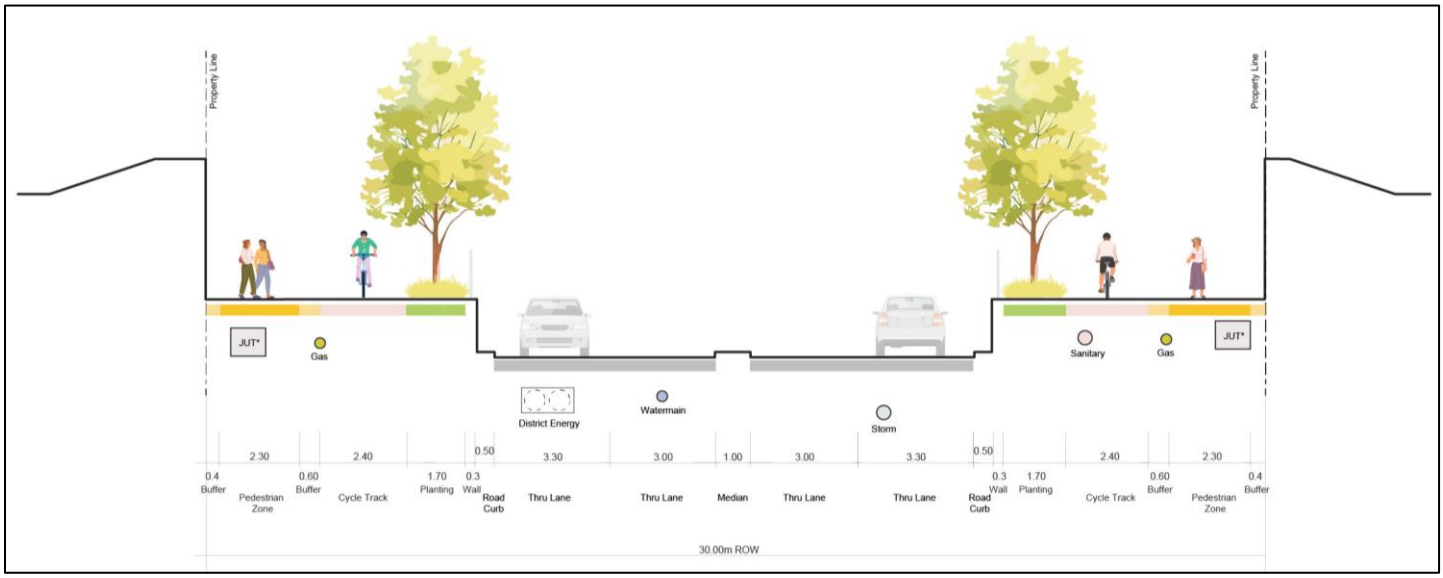


Figure 18. Northern Street (Underpass – Open to Sky) Cross-Section – Option 2

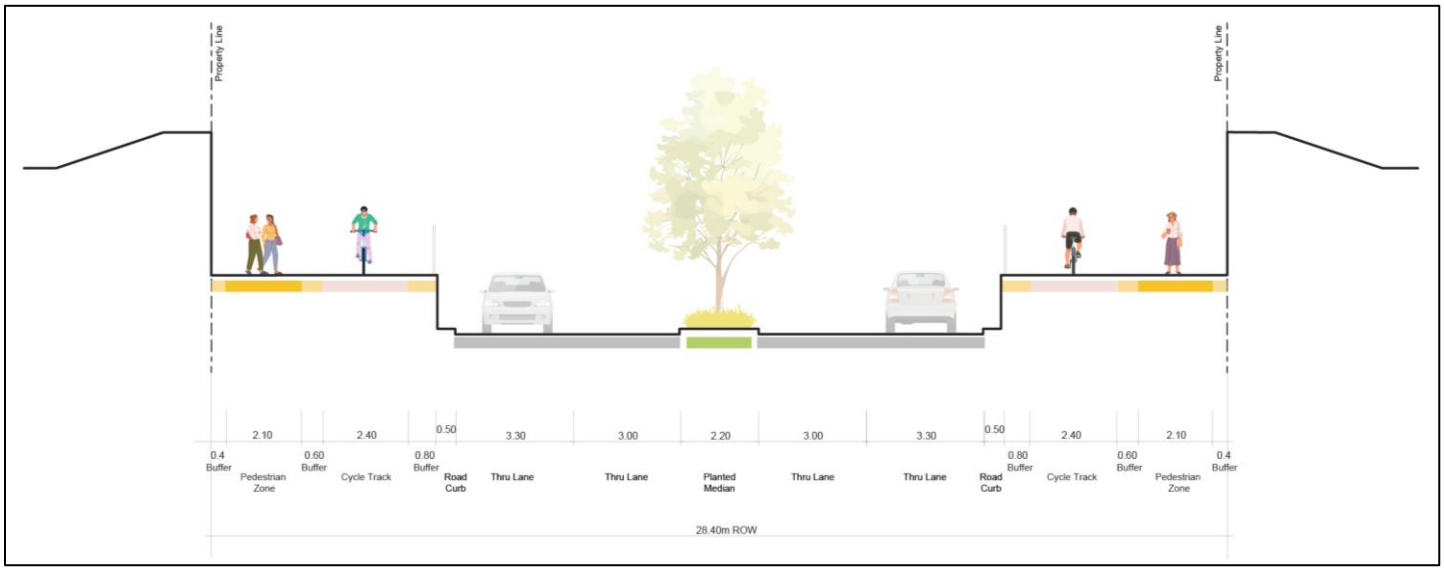


Figure 19. Northern Street (Underpass – Open to Sky) Cross-Section – Option 3

Table 12 below describes key components of each cross-section option.

Table 12. Cross-Section Options for Northern Street (Underpass – Open to Sky)

Option	Right of Way Width	Vehicle Lanes	Pedestrian Clearway (Both Sides)	Cycle Track (Both Sides)	Boulevard Planting and Wall
1	30.0m	• Four general purpose lanes (3.0m through and 3.3m curbside) • 1.0m median	2.1m	3.5m bi-directional (north) 2.1m uni-directional (south)	1.55m (north) 2.05m (south)
2	30.0m	• Four general purpose lanes (3.0m through and 3.3m curbside) • 1.0m median	2.3m	2.4m	2.0m both sides
3	28.4m	• Four general purpose lanes (3.0m through and 3.3m curbside) • 2.2m planted median	2.1m	2.4m	Planting in Median

4.4.2. Evaluation Summary

Table 13 summarizes the evaluation results for the two cross-section options for Northern Street (Underpass – Open to Sky).

Table 13. Northern Street (Underpass – Open to Sky) Evaluation Summary

Category	Weight	Option 1 4 lanes, 30.0m ROW	Option 2 4 lanes, 30.0m ROW	Option 3 4 lanes, 28.4m ROW
Category 1: Connectivity and Technical Viability	High	◕	●	◕
Category 2: Socio-Economic Environment	High	◕	◕	◕
Category 3: Natural Environment	Medium	●	●	◕
Category 4: Cultural Environment	Medium	●	●	●
Category 5: Costs	Medium	●	●	●
Overall		◕	●	◕
			Preferred	

Key Considerations for **Preferred Alternative Design Option 2**:

- Option 2 best balances the transportation needs and road user comfort. The cross-section widths sufficiently meet the anticipated traffic volumes, and wider active transportation facilities are preferred especially when on the slope of the underpasses.
- There is no green infrastructure in the underpass or open to sky segment because it is less effective when implemented under a slope. However, boulevard plantings still provide aesthetic and additional comfort (acts as a buffer from the road and provides shade) for users even if it does not fulfill a stormwater function.
- Wider sidewalks provide transition space and visibility for the adjacent Depot Building open space areas (i.e. Depot Porch and Plaza as proposed in Downsview West District), which will require stair and/or ramp access.

4.5. Northern Street (Billy Bishop Way to Sheppard Avenue West)

This segment of Northern Street extends for approximately 380m from Billy Bishop Way to Sheppard Avenue West (Figure 20).

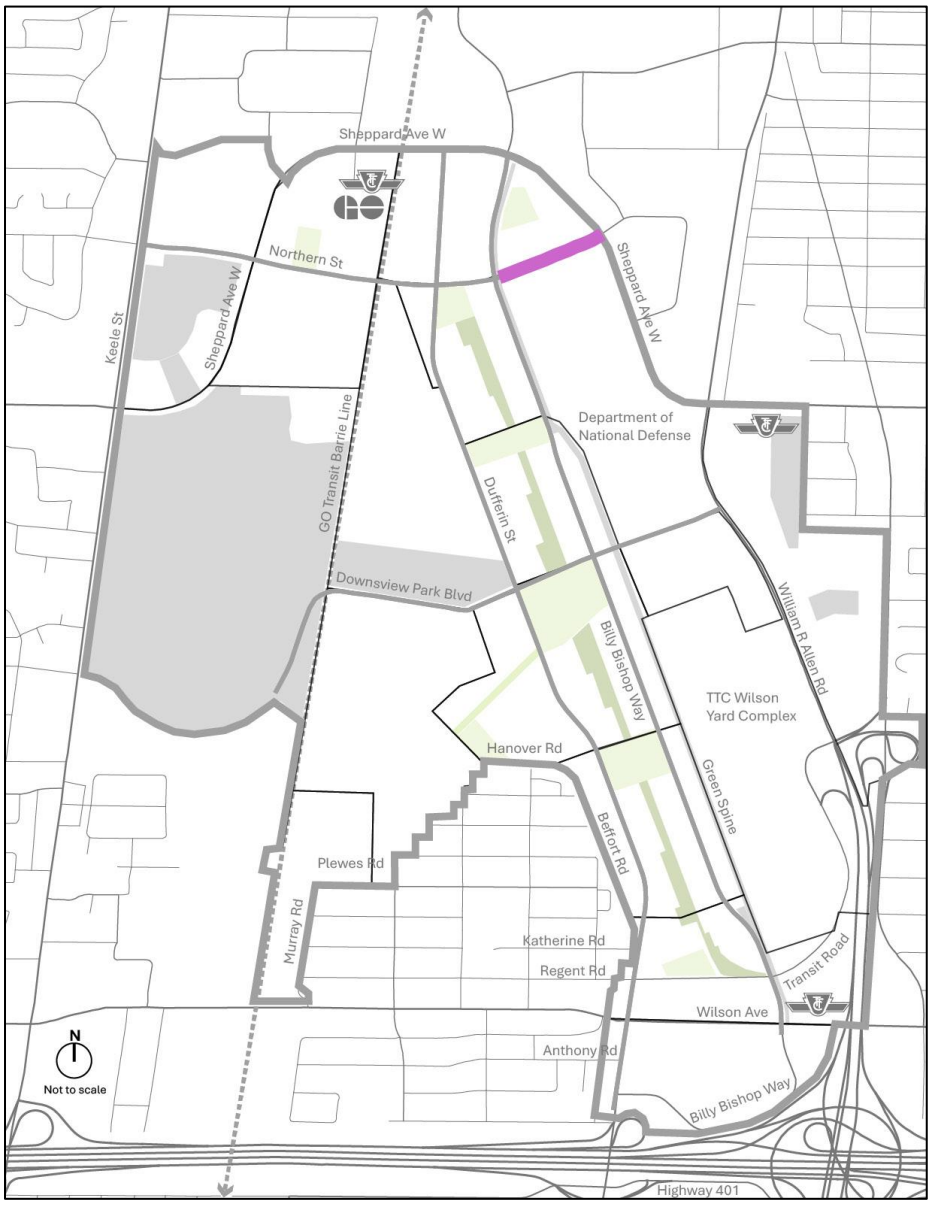


Figure 20. Northern Street (Billy Bishop Way to Sheppard Avenue West)

4.5.1. Alternative Design Concepts

Four cross-section options were assessed for this segment (refer to Figure 21 through Figure 24 below):

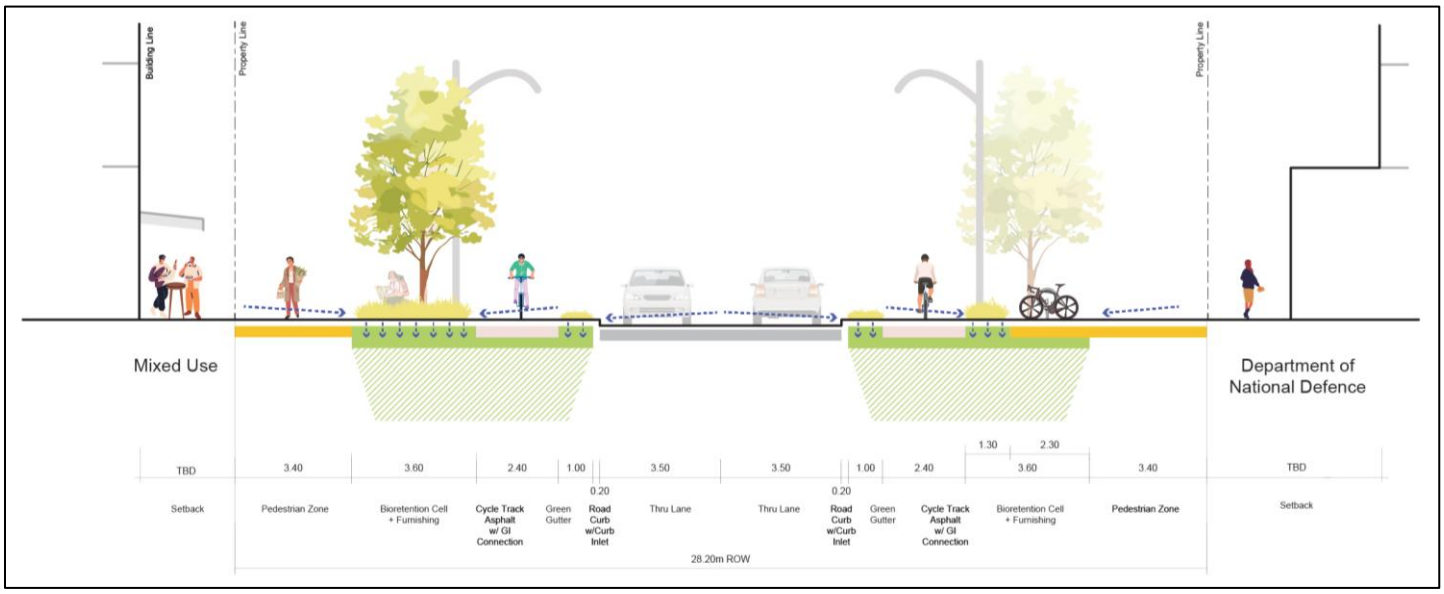


Figure 21. Northern Street (Billy Bishop Way to Sheppard Avenue West) Cross-Section – Option 1

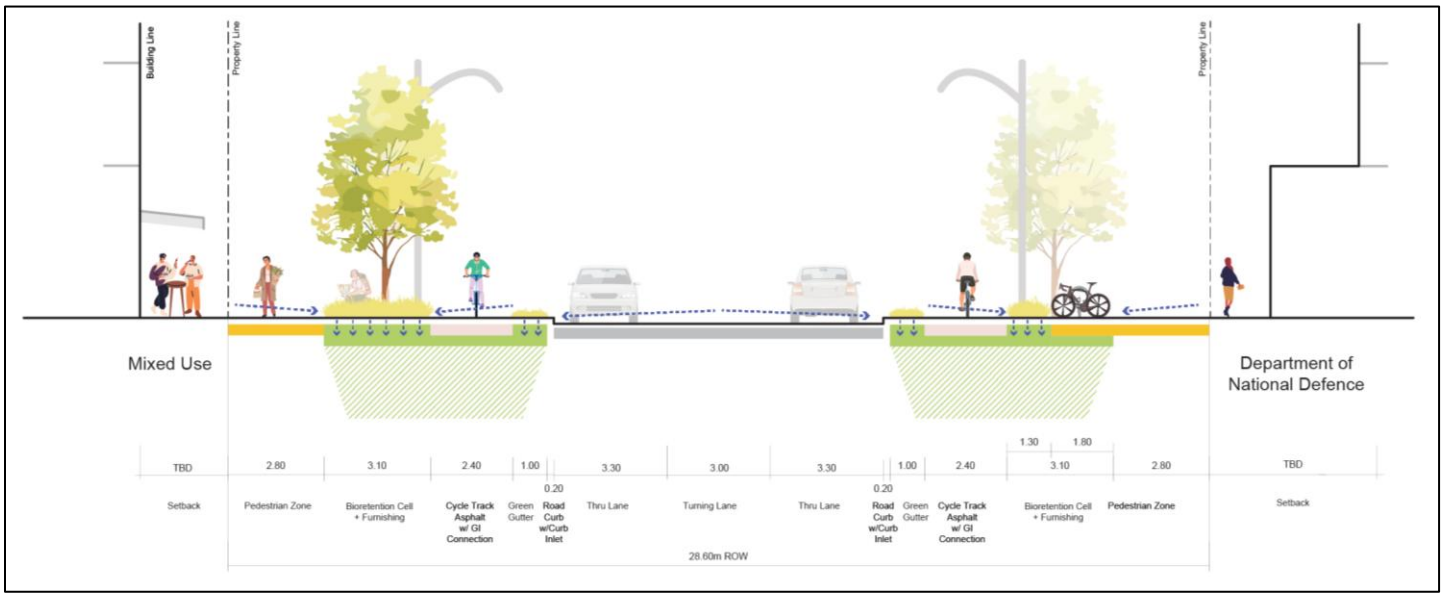


Figure 22. Northern Street (Billy Bishop Way to Sheppard Avenue West) Cross-Section – Option 2

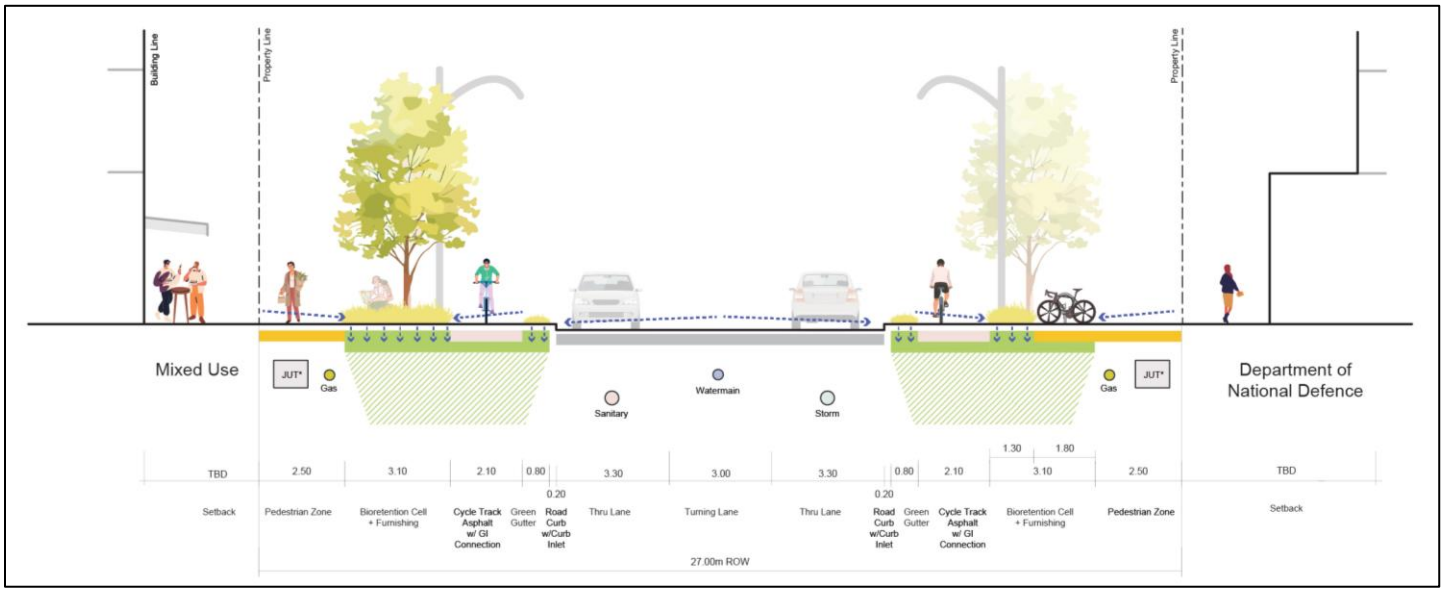


Figure 23. Northern Street (Billy Bishop Way to Sheppard Avenue West) Cross-Section – Option 3

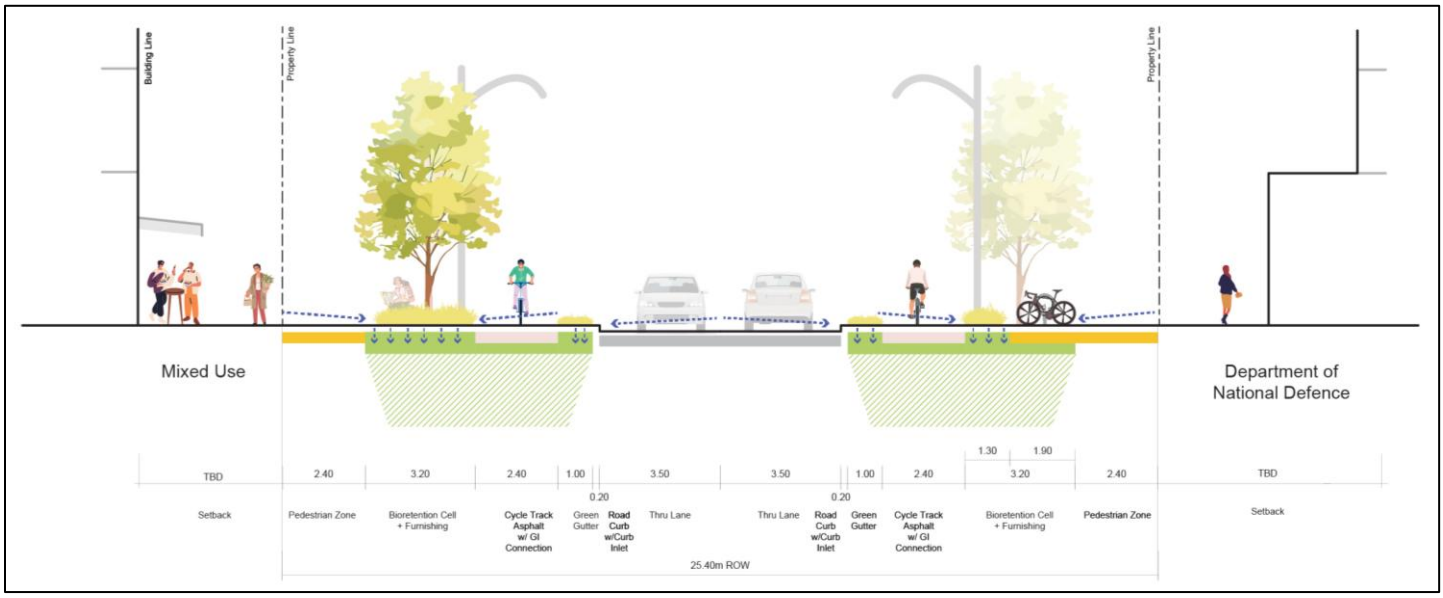


Figure 24. Northern Street (Billy Bishop Way to Sheppard Avenue West) Cross-Section – Option 4

Table 14 below describes key components of each cross-section option.

Table 14. Cross-Section Options for Northern Street (Billy Bishop Way to Sheppard Avenue West)

Option	Right of Way Width	Vehicle Lanes	Pedestrian Clearway (Both Sides)	Cycle Track (Both Sides)	Green Infrastructure and Furnishing Zone (Both Sides)
1	28.2m	• Two general purpose through lanes (3.5m)	3.4m	2.4m	3.6m
2	28.6m	• Two general purpose through lanes (3.3m) • One center turning lane (3.0m)	2.8m	2.4m	3.1m
3	27.0m	• Two general purpose through lanes (3.3m) • One center turning lane (3.0m)	2.5m	2.1m	3.1m
4	25.4m	• Two general purpose lanes (3.5m)	2.4m	2.4m	3.2m

4.5.2. Evaluation Summary

Table 15 summarizes the evaluation results for the four cross-section options for Northern Street (Billy Bishop Way to Sheppard Avenue West).

Table 15. Northern Street (Billy Bishop Way to Sheppard Avenue West) Evaluation Summary

Category	Weight	Option 1 2 lanes, 28.2m ROW	Option 2 3 lanes, 28.6m ROW	Option 3 3 lanes, 27.0m ROW	Option 4 2 lanes, 25.4m ROW
Category 1: Connectivity and Technical Viability	High	◕	●	●	◕
Category 2: Socio-Economic Environment	High	◕	◕	●	●
Category 3: Natural Environment	Medium	●	◕	◕	◕
Category 4: Cultural Environment	Medium	●	●	●	●
Category 5: Costs	Medium	◕	◕	◕	●
Overall		◕	◕	●	◕
				Preferred	

Key Considerations for **Preferred Alternative Design Option 3**:

- It best meets the anticipated transportation needs of this segment and a narrower right-of-way supports better development blocks.
- A turning lane better accommodates anticipated traffic volume at this segment.
- Given the surrounding land uses, notably the Department of National Defense lands and industrial uses east of Sheppard Avenue West, it is envisioned this segment of Northern Street would have less active transportation use and as such, the recommended active transportation facility widths are suitable for the anticipated volumes.