FINAL: 2016.11.17

York Region

Newmarket

IBI

YONGE STREET & DAVIS DRIVE STREETSCAPE MASTER PLAN

PHASE 3 REPORT: STREETSCAPE MASTER PLAN

FINAL

Contents

PROJECT OVERVIEW

STREETSCAPE CONCEPTS

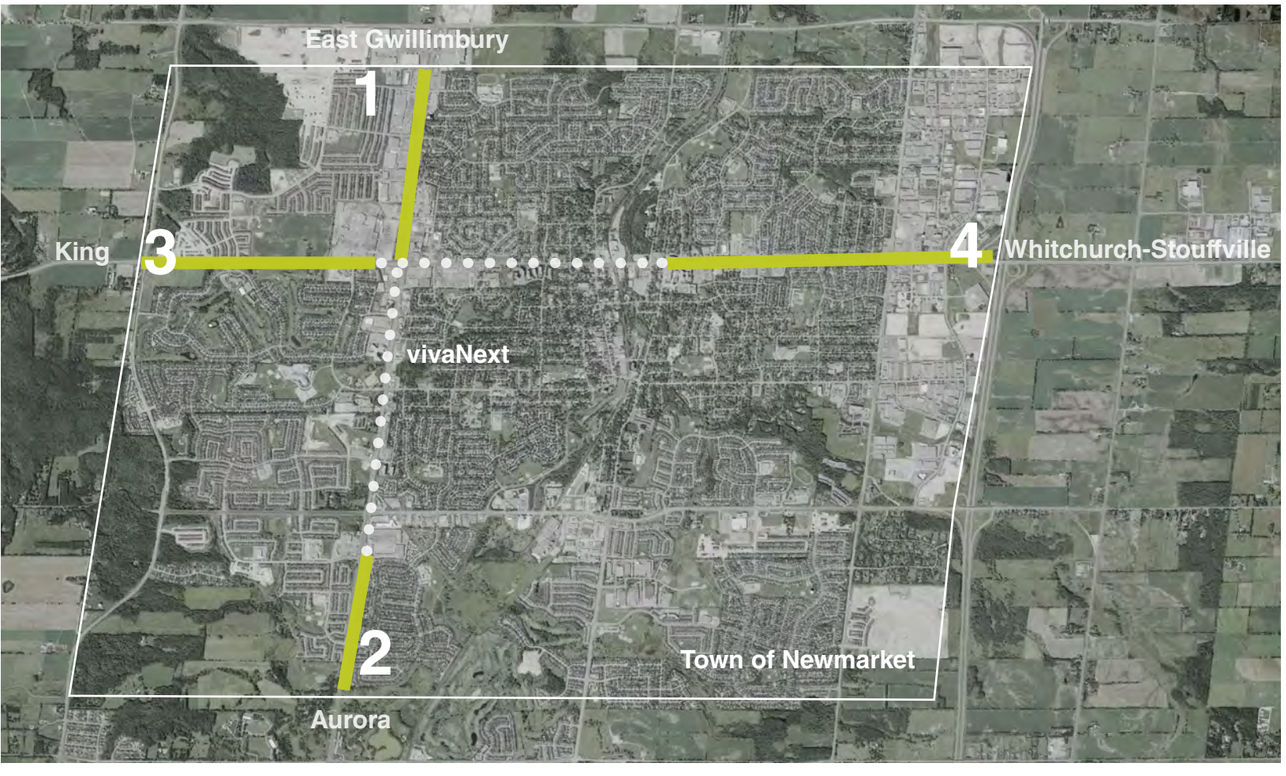
STREETSCAPE MASTER PLAN

1.0 PROJECT OVERVIEW

1.1 Executive Summary

YONGE STREET & DAVIS DRIVE VISION

VIBRANT | GREEN | ACTIVE



1 Yonge Street North
Town Boundary to Davis Drive

2 Yonge Street South
Sawmill Valley Drive to Town Boundary

3 Davis Drive West
Bathurst Street to 200m West of Yonge Street

4 Davis Drive East
Highway 404 to Patterson Street

Within the Town of Newmarket and The Regional Municipality of York, the Yonge Street and Davis Drive corridors have been identified as key locations for intensification, growth and development. With public and private sector projects already in the works, a major transformation of these corridors is imminent.

The Streetscape Master Plan will support the transformation the streetscape from a primarily car-oriented corridor to a walking, cycling, and transit oriented public realm. The Master Plan will guide streetscape development and provide recommendations to strengthen and reinforce the sense of place.

The Master Plan area is separated into 4 segments for analysis: Yonge Street North, Yonge Street South, Davis Drive West and Davis Drive East.

Through conducting research on the current streetscape conditions, as well as the existing policies, studies and initiatives regarding York Region and the Town of Newmarket, Phase 1 of the project established a comprehensive understanding of the current and future state of Yonge Street and Davis Drive.

A SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis was conducted on Yonge Street and Davis Drive (for more information please refer to Phase 1 Report). Yonge Street and Davis Drive currently operate as car dominated corridors with expansive right of ways (ROW). Pedestrian and cyclist infrastructure is limited. There are minimal street trees present throughout the corridors and some areas contain open ditches adjacent to the roadway and sidewalks. There is a significant presence of utility poles and infrastructure throughout the streetscape.

Informed by the current streetscape conditions, ongoing and future initiatives for these corridors, as well as streetscape design best practices, the Project Core Team and IBI Group have created a 30 year vision for the future of Yonge Street and Davis Drive in the Town of Newmarket.

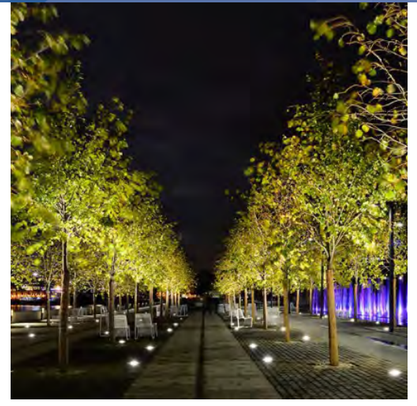
This vision was developed in a Visioning Workshop held to discuss local town and Regional priorities for the Yonge Street & Davis Drive Streetscape Master Plan. The aim of the workshop was to develop a clear and united Master Plan vision informed by the objectives of the Region and Town. The Stakeholders discussed key issues pertaining to urban design, green infrastructure, active transportation and right size streets.

This vision of Yonge Street and Davis Drive as **Vibrant, Green & Active** informed the design decisions for the Streetscape Master Plan.

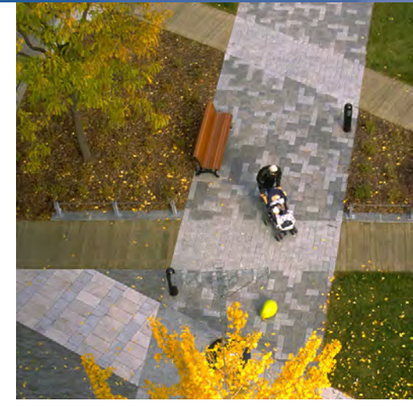
Two concepts for the Yonge Street & Davis Drive Streetscape Master Plan (in section 2.0) were developed in response to the streetscape vision: **Green Yonge & Davis** and **Active Yonge & Davis**. This report will present the two streetscape concepts and evaluate their benefits and drawbacks. After evaluating both concepts, the Project Core Team concluded that a hybrid of both concepts was a balanced approach for the Master Plan for the Town of Newmarket.

The report will go on to present the hybrid concept vision in the Streetscape Master Plan (in section 3.0), including its design approach and key elements. Through the use of sections, plans, illustrated detailed plans, and visualizations, the report presents illustrations of typical streetscape conditions, as well as unique areas such as gateway intersections.

The purpose of this report is to establish the streetscape typologies that make up the Streetscape Master Plan with a focus on: roadway lane widths, curb radii, median design, cycling infrastructure type and location relative to the boulevard, pedestrian infrastructure, and planting-furnishing zone configuration. Detailed design elements such as paving material, street furniture, plant material, tree species, tree grates and light standards, are discussed in the Phase 4 Report: Detailed Design and Guidelines (forthcoming).








2.0 STREETSCAPE CONCEPTS

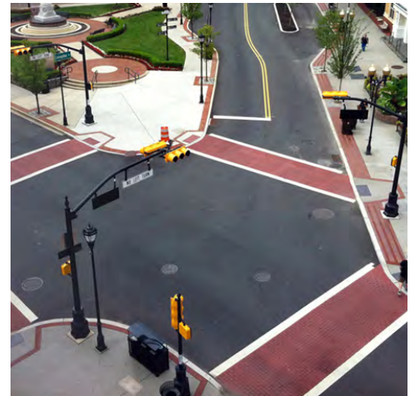













2.1 Streetscape Concepts Overview

In response to the SWOT analysis (in Phase 1) and the vision for Yonge Street and Davis Drive as **Vibrant, Green & Active** (in Phase 2), two design concepts were developed for Yonge Street and Davis Drive:

- Green Yonge & Davis
- Active Yonge & Davis

These concepts were developed through the Visioning Workshop and are informed by the Project Core Team's vision for the future of Newmarket.

Each concept explores the possibility of emphasizing one key aspect of the vision (Green or Active), and makes design decisions based on achieving the theme.

This section examines the concepts, their approach to design, key objectives and the key strategies employed to achieve the objectives. The concepts will be explored through illustrative sections which examine the typical streetscape conditions and geometry in each quadrant of the Master Plan (Yonge Street North, Yonge Street South, Davis Drive West, and Davis Drive East).

The final section of this chapter provides an evaluation of the benefits and shortcomings for both concepts and compares their merits, concluding that a hybrid option of both concepts is the best solution for the Town of Newmarket.

Concept One: Green Yonge & Davis

This section explores the **Green Yonge & Davis** concept, in which all design decisions are motivated by an effort to **create** an **environmentally resilient streetscape.**

In this concept, a green Yonge Street and Davis Drive is achieved through maximizing sustainable planting, using Low Impact Development (LID), stormwater management (SWM) techniques and utilizing green space to benefit the community.

Concept Two: Active Yonge & Davis

This section explores the **Active Yonge & Davis** concept, in which all design decisions are driven towards achieving an **efficient, safe and vibrant multi-modal transportation network focused on active transportation.**

In this concept, an active Yonge Street and Davis Drive is achieved through promoting mobility of all users, safety, wayfinding and accessibility.

Hybrid Concept

Through exploring these two possible directions for the Yonge Street & Davis Drive Streetscape Master Plan and evaluating their benefits and shortcomings, the Project Core Team concluded that a hybrid of the two concepts is the best solution for the Town of Newmarket.

2.2 Concept One: Green Yonge & Davis

The **Green Yonge & Davis** concept presents a streetscape in which all decisions are aimed towards creating a green environmentally resilient streetscape. This concept imagines a lush green sustainable streetscape that has positive environmental impacts and establishes the Town of Newmarket with a strong sense of place.

The following key principles are utilized to achieve a **Green Yonge & Davis**:

- Maximize Sustainable Planting
- Stormwater Management (SWM)
- Low Impact Development (LID)
- Green Space as a Community Amenity

Key strategies are identified under each principles.

Maximize Sustainable Planting




KEY STRATEGIES

1. Use standard sidewalk, cycling lane and vehicular lane widths in order to optimize green space.
2. Use Hendrix cables to maximize tree canopy under hydro lines.
3. Plant trees close together to create an urban grove.
4. Implement green walls to maximize green space and create cohesion on rear lots in residential areas.
5. Select diverse species that are native, salt tolerant, and drought tolerant.

Low Impact Development (LID)




KEY STRATEGIES

1. Increase pavement permeability to reduce stormwater runoff.
2. Use permeable pavers to increase infiltration.
3. Minimize affect of pavement albedo.
4. Implement strategies to utilize stormwater for plant irrigation therefore reducing the usage of potable water.
5. Select plants that are appropriate for the context and consequently improve sustainability.

Stormwater Management (SWM)




KEY STRATEGIES

1. Use stormwater infiltration planters to collect and filter stormwater.
2. Install bioswales and rain gardens to collect and filter storm runoff, taking pressure off of the municipal sewer system.
3. Transform stormwater management ponds into a community amenity.

Green Space as a Community Amenity

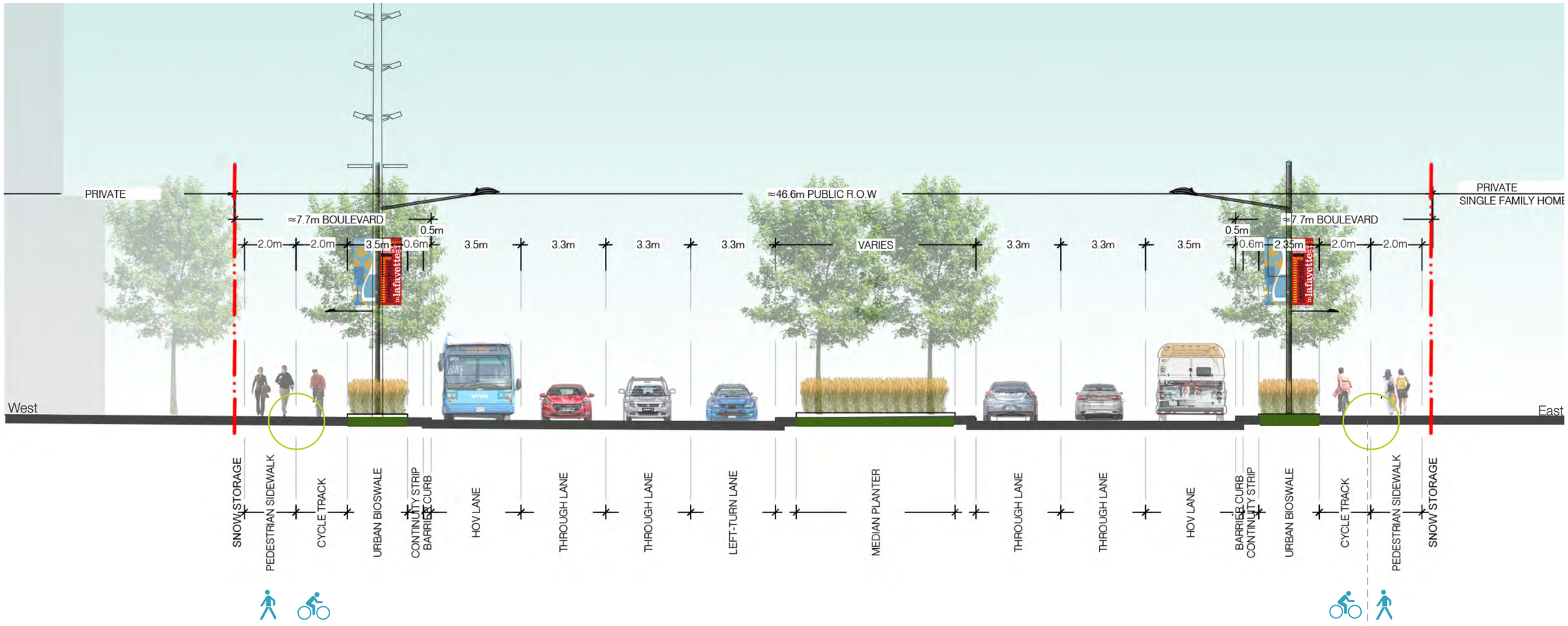



KEY STRATEGIES

1. Create urban agricultural lots to involve the community in the ‘greening’ of Yonge Street and Davis Drive. Yonge Street South at St. John’s Sideroad is a potential location for urban agricultural initiatives.
2. Implement cycle tracks and pedestrian circulation to connect to existing trails (i.e. Nokiidaa Bike Trail leading to Tom Taylor Trail on Yonge Street South).
3. Utilize the streetscape as a ‘living lab’ to educate the community about environmental issues.

Yonge Street North

2.2.1 Conceptual Section North of Dawson Manor Boulevard



This section illustrates a **green** strategy for an urbanized corridor. Key features include:

- In areas where the Two Way Left Turn Lane (TWLTL) is currently a painted median, it is replaced with a planted centre median in order to optimize green space.
- Urban bioswales aid with stormwater management and provide a buffer for cyclists and pedestrians from traffic.
- A separated cycle track promotes cyclist safety.
- A total of three southbound lanes with one right turn lane and three northbound lanes with a standard width of 3.3 metres.
- 3.5 metre wide curbside HOV lane on both sides of street.
- Soil cell technology in boulevard.

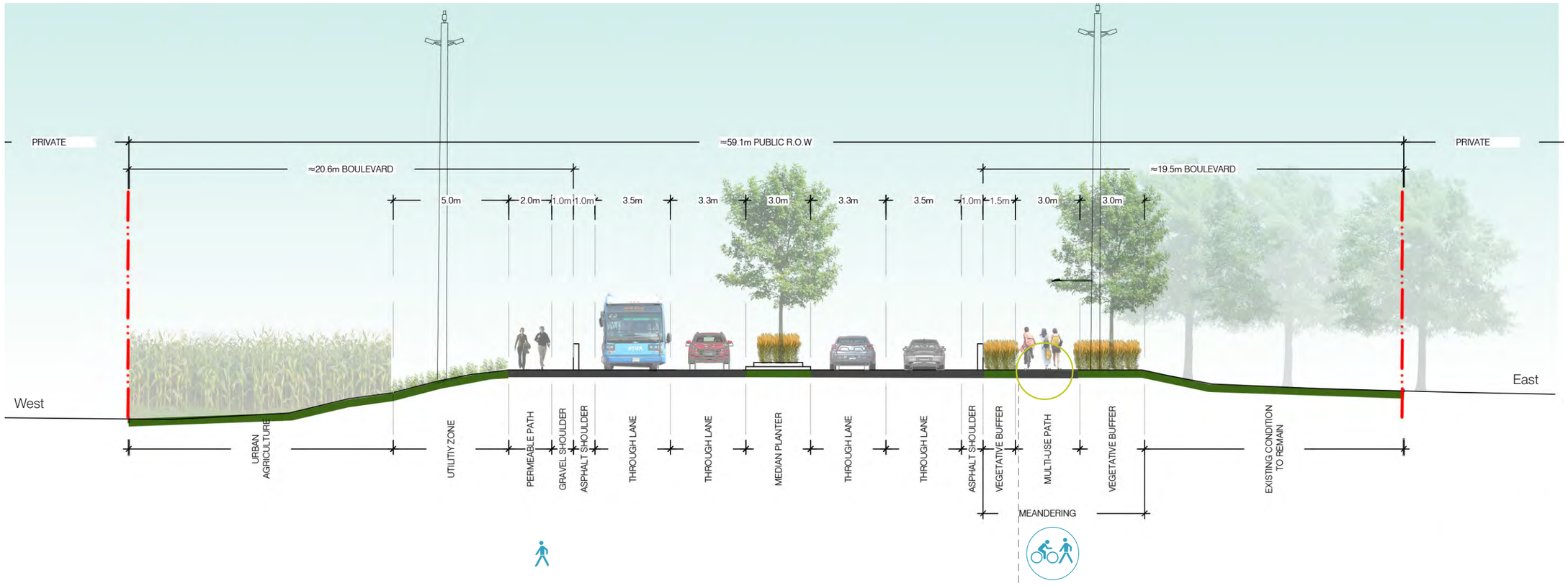
Cycle Track

Precedent image of a cycle track next to pedestrian walkway

0 1 2 3 4 5 8m

Yonge Street South

2.2.2 Conceptual Section North of St. John's Sideroad



This section illustrates a **green** strategy for a corridor of green open space. Key features include:

- In areas where the TWLTL is currently a painted median, it is replaced with a planted centre median in order to optimize green space.
- Vegetative buffer along the east side of Yonge Street.
- 3.0 metre multi-use path for cyclists and pedestrians along the east side that connects to the Nokiidaa Bike Trail, which leads to the Tom Taylor Trail.
- 2.0 metre wide pedestrian path on the west side.
- Two vehicular through lanes in each direction.

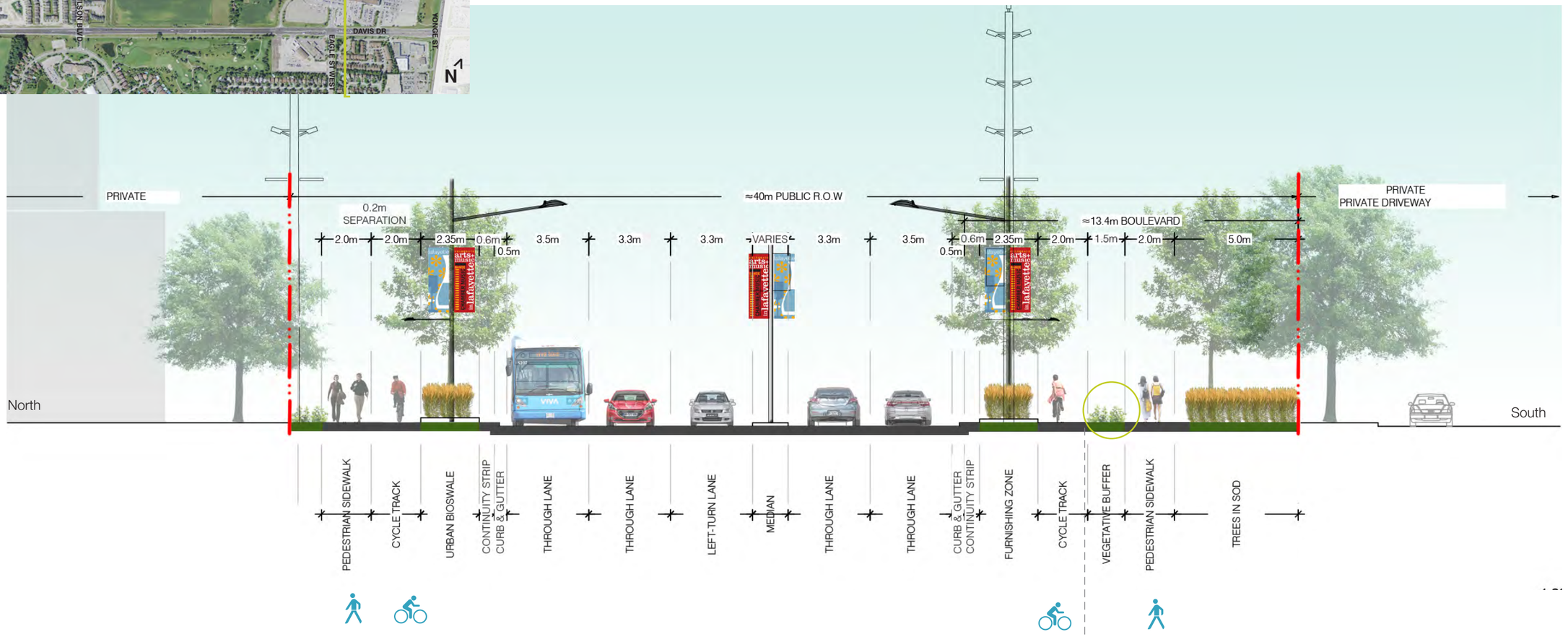
Multi-Use Path

Precedent image of a multi-use path with landscape buffer

0 1 2 3 4 5 8m

Davis Drive West

2.2.3 Conceptual Section East of Eagle Street



This section illustrates a **green** approach to a commercial area. Key features include:

- Two 3.3 metre wide lanes of traffic in both directions.
- Centre median is utilized to establish a sense of place through banners (as it is not wide enough to accommodate planting).
- Urban bioswales to aid with stormwater management.
- Pedestrian sidewalks and cycle tracks protected from vehicular traffic by a landscaped buffer.
- Raised cycle track is separated from traffic by a landscaped buffer which reduces the interactions between cyclists and vehicular traffic. This creates a safer cycling condition and consequently encourages active transportation and a decrease in carbon emissions from vehicles.

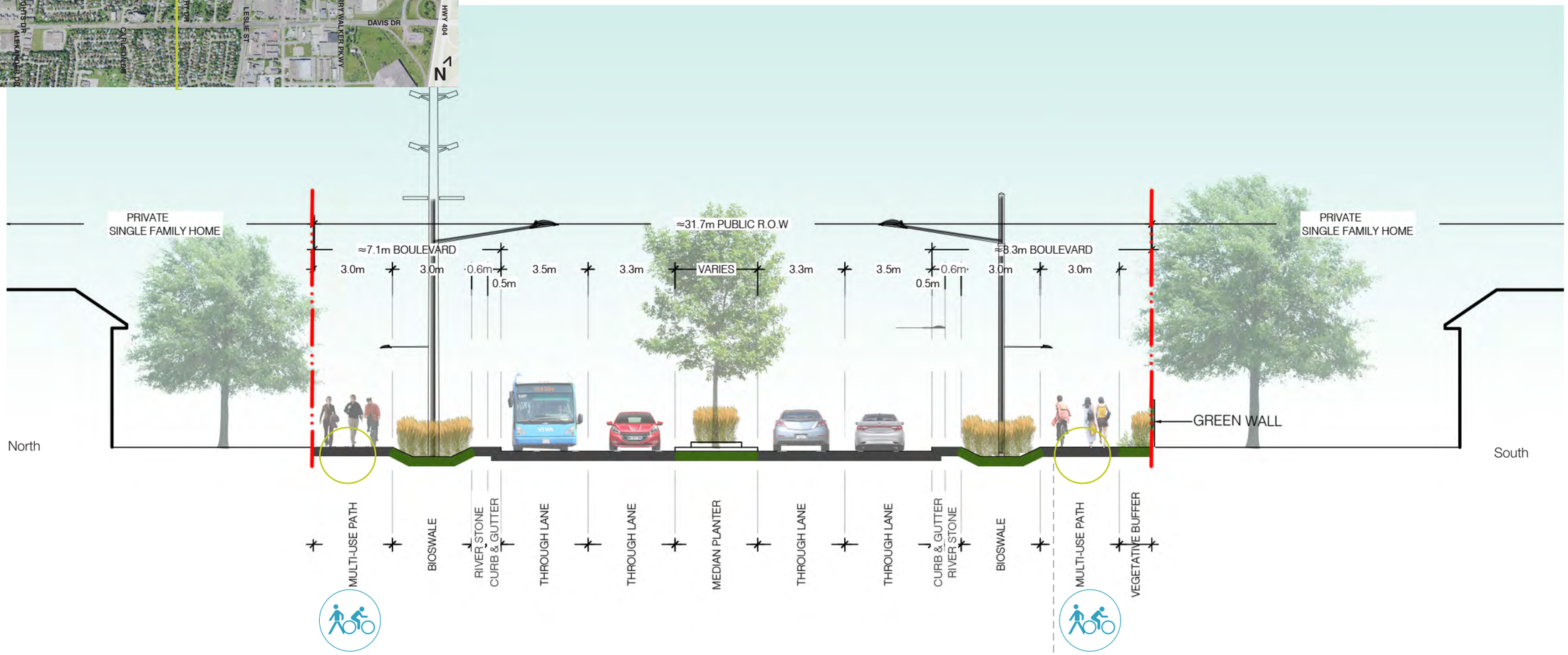
Cycle Track

Precedent image of a cycle track separated from pedestrian circulation with landscaped buffer

0 1 2 3 4 5 8m

Davis Drive East

2.2.4 Conceptual Section West of Belfry Drive



This section illustrates a **green** residential area with rear lots in which mismatched private fences line the streetscape. Key features include:

- Greens walls along the corridor to optimize green infrastructure and create visual cohesion.
- Bioswales aid with stormwater management and buffer the 3.0 metre wide multi-use path from vehicular traffic.
- Planted median contributes to the greening of the corridor and reduction of Urban Heat Island (UHI) effect.
- Two vehicular through lanes in each direction.

Multi-Use Path

Precedent image of a multi-use path with vegetated buffer

0 1 2 3 4 5 8m

2.3 Concept Two: Active Yonge & Davis

The **Active Yonge & Davis** concept presents a streetscape in which all decisions are aimed towards optimizing active transportation. This concept is focused on fostering a healthier community by engaging them with the streetscape in an active way.

The following key principles are utilized to achieve a **Active Yonge & Davis**:

- Mobility
- Wayfinding
- Safety
- Accessibility

Key strategies are identified under each principles.

Mobility




KEY STRATEGIES

1. Create a balanced, multi-modal corridor.
2. Elevate the importance of cyclists and pedestrians.
3. Encourage active transportation through continuous cycle tracks and sidewalks.
4. Create wide boulevard cycling tracks that are segregated from vehicle and pedestrian circulation to avoid conflict.
5. Facilitate passing through curbside cycle tracks and rolled curbs.
6. Provide continuous obstacle-free sidewalks in order to promote active transportation.

Safety




KEY STRATEGIES

1. Give intersections visual importance to increase safety.
2. Raise cycle tracks to establish a clear separation between cyclists and vehicles with a barrier curb.
3. Separate cyclists from pedestrians by a planted boulevard to minimize conflicts.
4. Provide wide sidewalks.
5. Provide a buffer between different modes of transportation.

Wayfinding




KEY STRATEGIES

1. Clearly delineate differing modes of transportation that prioritize pedestrians and encourage active transportation.
2. Create universally accessible wayfinding techniques (i.e. integrated into the paving) in order to promote accessibility.
3. Utilize distinctive wayfinding techniques to create a strong sense of place.
4. Implement cycling, running and walking 'Activity Loops' of varying distances to promote an active lifestyle and animate the streetscape. Activity Loops connect to existing trails and cultural areas.

Accessibility

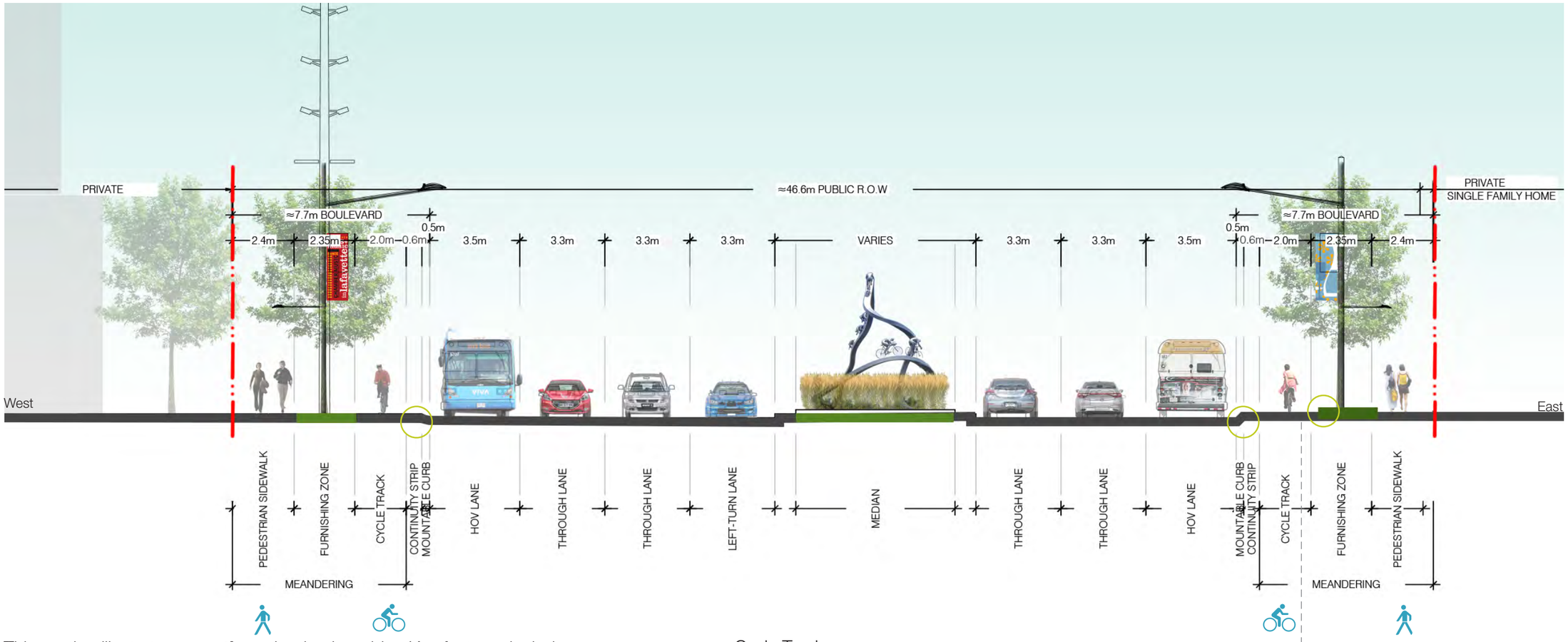



KEY STRATEGIES

1. Implement continuous clear sidewalks to prioritize pedestrian circulation.
2. Direct clear pedestrian routes between transit stops and community amenities.
3. Use accessible curbs at intersections.
4. Comply with AODA standards.
5. Improve access to public transit stops.

Yonge Street North

2.3.1 Conceptual Section North of Dawson Manor Boulevard



This section illustrates an **active** urbanized corridor. Key features include:

- The painted median at unused portions of the TWLTL has been transformed into a planted median utilized to showcase public art that references the active theme.
- A 2.0 metre wide separated raised cycle track promotes cyclist safety.
- A semi-mountable curb at the edge of the cycle track allows for passing.
- A 2.4 metre wide sidewalk provides ample room for pedestrian circulation.
- The cycle track and pedestrian sidewalk are separated by a planting/furnishing zone to minimize conflict
- A total of three southbound lanes with one left turn lane and three northbound lanes with a standard width of 3.3 metres.
- Both sides contain curbside HOV lanes that are 3.5 metres wide.

Cycle Track

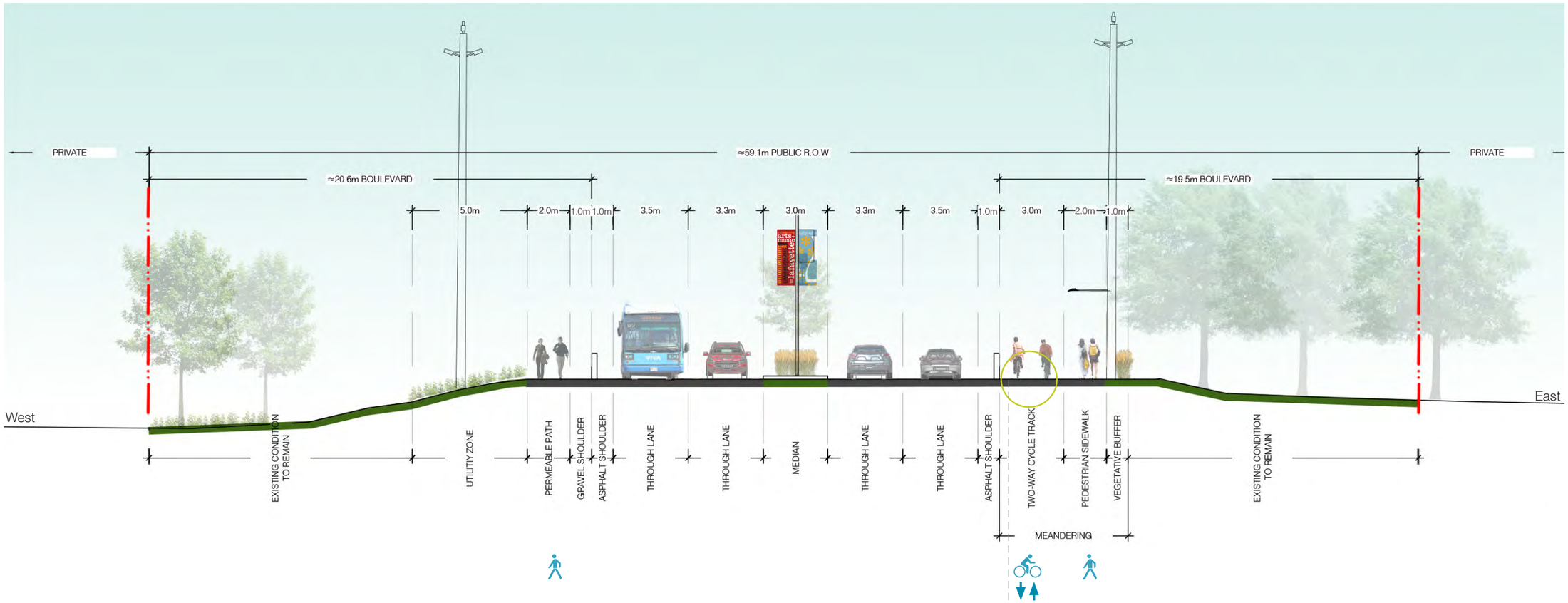
Precedent image of a raised cycle track next to roadway

Precedent image of a cycle track separated from pedestrian circulation with landscaped buffer

0 1 2 3 4 5 8m

Yonge Street South

2.3.2 Conceptual Section North of St. John's Sideroad



This section illustrates an **active** rural corridor. Key features include:

- The painted median at unused portions of the TWLTL has been transformed into a planted median with banners.
- A 3.0 metre wide two-way cycle track and 2.0 metre wide pedestrian sidewalk on the east side facilitates active transportation and connects into the Nokiidaa Trail.
- The west side of the street contains a pedestrian path that connects to off-road trails and local municipal road.
- There are two through lanes in each direction.

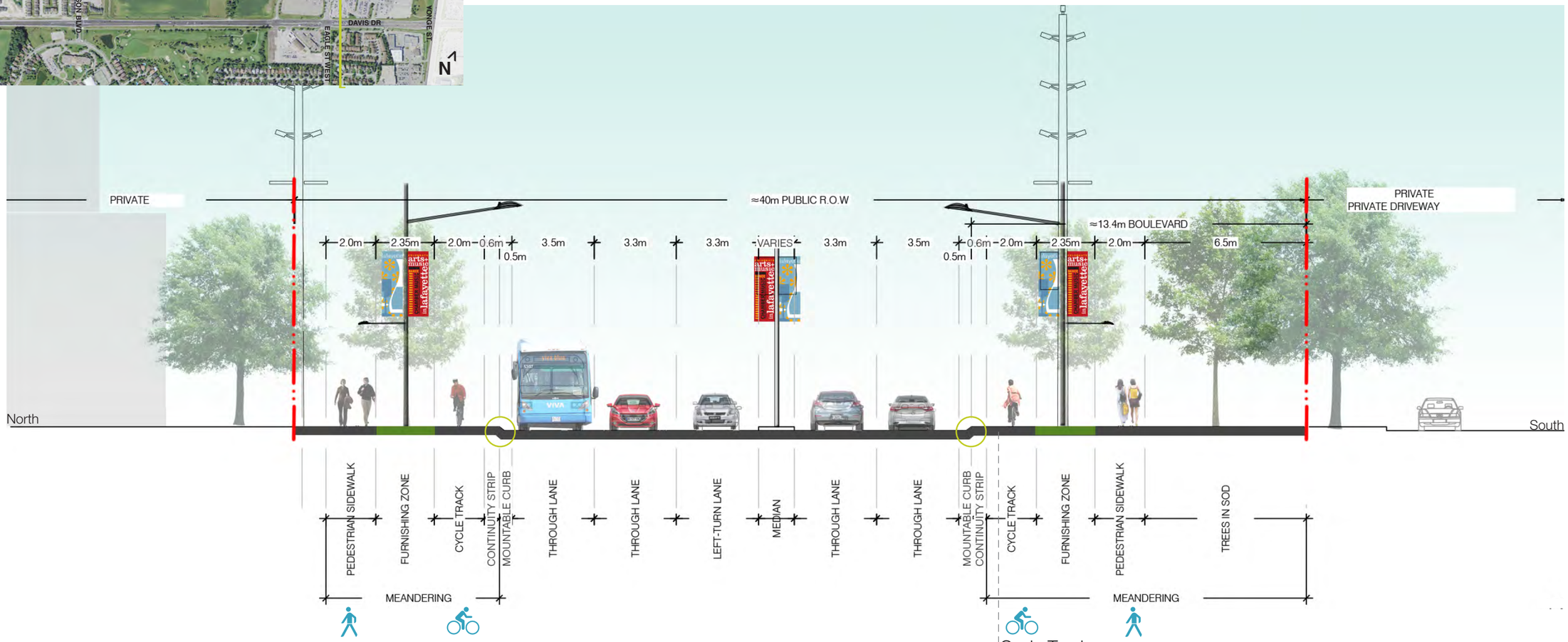
Cycling Infrastructure

Precedent image of a two-way cycle track

0 1 2 3 4 5 8m

Davis Drive West

2.3.3 Conceptual Section Eagle Street to Yonge Street



This section located near Eagle Street and Davis Drive illustrates an **active** commercial/ residential area. Key features include:

- Four through lanes, two in either direction, and a left-turn lane.
- The painted median lane where the TWLTL is not required has been replaced with a raised median containing banners.
- A 2.0 metre raised cycle track is separated from a 2.0 metre wide pedestrian sidewalk by a planting/furnishing zone in order to minimize pedestrian-cyclist conflicts.
- The cycle track is roadside and has a rolled curb which allows cyclists to enter the roadway to pass if necessary.

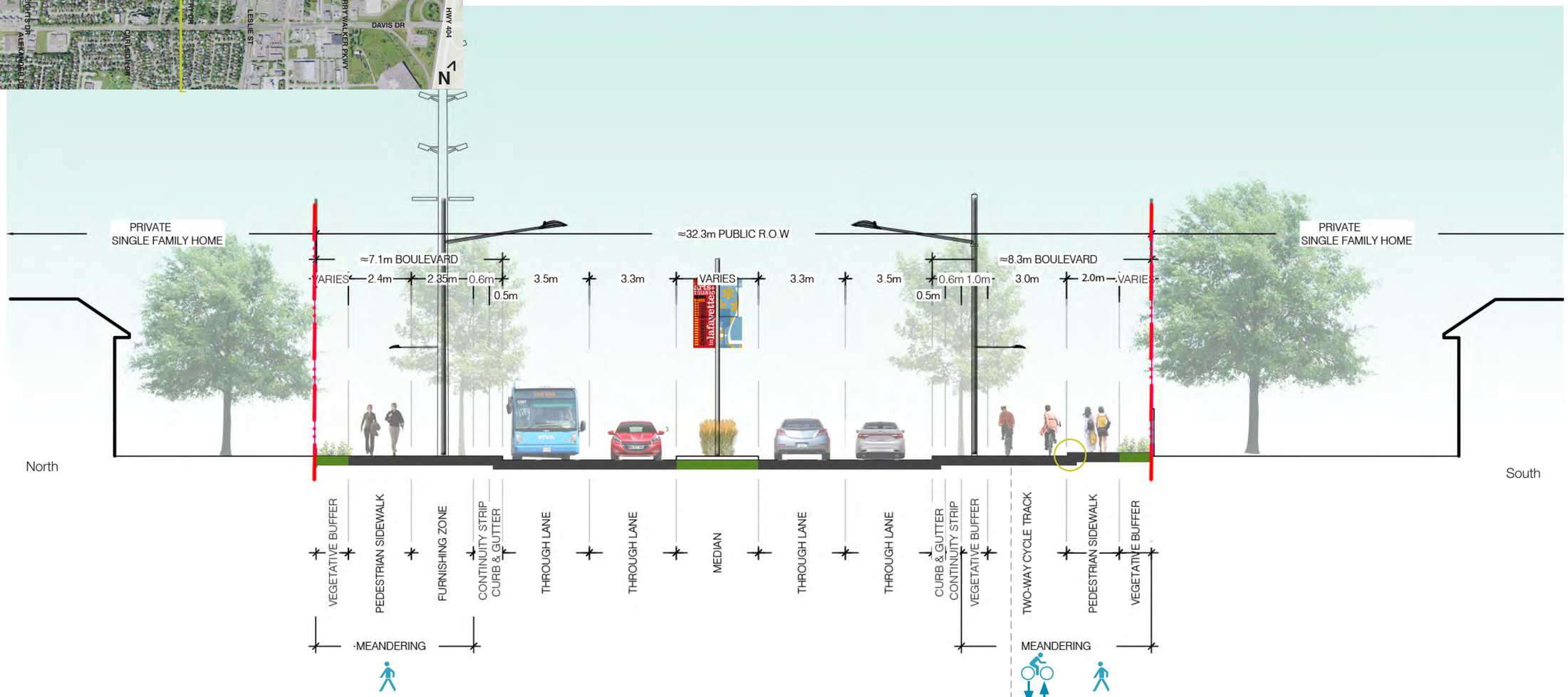
Precedent image of a raised cycle track next to roadway

Precedent image of a cycle track separated from pedestrian circulation with landscaped buffer

0 1 2 3 4 5 8m

Davis Drive East

2.3.4 Conceptual Section West of Belfry Drive



This section illustrates an **active** residential area with rear lots. Key features include:

- A 3.0 metre wide two-way cycle track on the south side of the streetscape that is separated from vehicular traffic by a planting/furnishing zone and vertically separated from the pedestrian sidewalk in order to minimize conflict.
- The two-way cycle track connects to the Tom Taylor Trail.
- Both sides of the street have pedestrian sidewalks (2.4 metres wide on the north side and 2.0 metres wide on the south).
- The painted median lane has been transformed into a planted median.
- There are four vehicular lanes, two in each direction.

Cycle Track

Precedent image of a raised two-way cycle track with vertical separation from pedestrian sidewalk

0 1 2 3 4 5 8m

2.4 Concept Comparison and Evaluation

The two design concepts highlight different aspects of the Yonge Street & Davis Drive Streetscape Master Plan vision; Green and Active. Both concepts take differing approaches, but fulfill the **vibrant** aspect of the vision through establishing a more animated streetscape.

The Green Yonge & Davis concept establishes a strong **green** sense of place for the corridors through the use of urban groves, bioswales and enhanced landscaped areas. The concept promotes community engagement through green space (i.e. urban agriculture and 'living labs') and minimizes storm runoff during extreme weather events through reducing impermeable surfaces. The streetscape design works towards mitigating the UHI effect and aids in the slowing of climate change. The predominant disadvantage of the Green Yonge & Davis concept is the elevated costs for the installation and maintenance of the green infrastructure.

The Active Yonge & Davis concept establishes Yonge Street and Davis Drive as key **active** transportation routes for the Town of Newmarket. Through utilizing context sensitive active transportation typologies, the concept encourages a more active lifestyle for residents, and consequently could lead to a decrease in vehicular carbon emissions. The predominant disadvantage for the Active Yonge & Davis concept also lies in material, installation and operation costing.

Community	• Engage community in open green space	✓	• Encourage active transportation to promote a healthier lifestyle	✓
	• Build community through 'living lab' and urban agriculture	✓	• Build community through active events	✓
Environmental	• Improve air quality with increased plant material	✓	• Potentially reduce carbon emissions by decreasing vehicular traffic	✓
	• Reduce urban heat island effect	✓		
	• Increase infiltration through SWM techniques	✓		
Safety	• Promote safe transportation with green buffers between pedestrians, cyclists and motorists	✓	• Provide ample room for active transportation	✓
	• Minimize flooding during extreme weather events with SWM techniques	✓	• Separate cyclists from vehicular traffic	✓
Operations / Maintenance	• Minimize pressure on sewer system with SWM techniques	✓	• Potentially reduce vehicular traffic	✓
	• Increase maintenance cost for softscape	×	• Increase time spent on operational tasks such as snow removal due to vertically separated cycle track	×
Costs	• Increase materials cost (i.e. bioswales, planting, trees)	×	• Increase spending on hardscape infrastructure (i.e. paths, buffers, intersections)	×
Placemaking	• Establish a strong identity for the streetscape through green infrastructure (i.e. signature grasses)	✓	• Incorporate activity nodes into public parks to promote fitness	✓
	• Enhances user experience of public plazas through green infrastructure (i.e. provides shade, reduces the urban heat island effect)	✓		
Transportation	• Keep trees and plant material clear of vehicular and cyclist sight lines at intersections and driveways	×	• Reduce vehicular traffic volumes through promoting active transportation and transit	✓
Utilities	• Tree root zones can interfere with below grade utilities	×	• Easily access below grade utility repairs under sidewalk and cycle track pavement	✓
	• Overhead hydro lines impact tree species selection	×		

2.5 Preferred Concept: Vibrant, Green & Active Streetscape

The Project Core Team evaluated both concepts for the Yonge Street & Davis Drive Streetscape Master Plan and concluded that a **hybrid** of both concepts would be most effective moving forward. Through optimizing both active transportation as well as green infrastructure, the Master Plan can best achieve a vision for a **Vibrant, Green & Active** streetscape.

Through applying elements of both design concepts and utilizing them in specific corridors in which they will provide the most benefit, the hybrid streetscape is able to provide the most well-balanced Streetscape Master Plan. These design decisions are informed by the present and future streetscape context and accompanying usages of the streetscape.

The hybrid streetscape concept delivers a balanced complete street and public realm that will be instrumental in shaping a better community for York Region and the Town of Newmarket.

Key design strategies include:

- Equalizing the importance of all users including pedestrians, cyclists, transit users and vehicles;
- Providing safe accessible pedestrian sidewalks;
- Providing safe and continuous cycling infrastructure;
- Maximizing the urban forest thorough comprehensive best practices;
- Implementing Low Impact Development (LID) strategies within the public realm

The streetscape typologies provide a clear and logical system for where to use specific streetscape elements. Refer to the next chapter for further information on the hybrid Streetscape Master Plan.

3.0 STREETSCAPE MASTER PLAN

3.1 Design Approach

The Yonge Street & Davis Drive Streetscape Master Plan is aimed at creating a **Vibrant, Green & Active** streetscape that is unique to the Town of Newmarket and York Region. The plan provides a context-sensitive approach in order to support mixed-use pedestrian environments with attractive streets, high quality urban design and a distinct sense of place.

The Streetscape Master Plan has evolved and developed throughout all three phases of the project (Phase 1: Research, Site Inventory, and SWOT Analysis, Phase 2: Vision Statement, Principles and Objectives and the current phase, Phase 3: Streetscape Master Plan). Through conducting a thorough SWOT analysis of the corridors and the Town of Newmarket more generally, the Streetscape Master Plan is grounded in the specific corridor context. Further, through researching existing and future initiatives, studies and policies, the Master Plan works in conjunction with existing initiatives.

The vision of Yonge Street and Davis Drive as Vibrant, Green and Active evolved through two concepts: Green Yonge & Davis and Active Yonge & Davis. After exploring how these concepts would materialize and evaluating their benefits and shortcomings, the Project Core Team concluded that a hybrid of the two options would be most beneficial for the Town of Newmarket.

The Streetscape Master Plan is a result of the Project Core Team and the stakeholders' vision for the future of the Town of Newmarket, streetscape design principles as well as a response to the specific context and needs of the community.

The preliminary Streetscape Master Plan was presented to the community in a Public Information Session in November 2015. Feedback from the attendees has been incorporated into the Streetscape Master Plan.

- The Streetscape Master Plan presents a 30-year vision for the Town of Newmarket, responding to the future state of the corridors rather than the present.
- Certain areas of stable residential land use are expected to remain unchanged.
- Other areas, particularly commercial, are expected to change dramatically. As the population of the Town of Newmarket continues to grow the suburban streetscape edges are expected to urbanize.
- The Master Plan is aimed at creating a streetscape that fosters community and culture through a vibrant streetscape that caters to pedestrians, cyclists, transit users, community members, business owners and drivers.
- In order to balance the needs of all streetscape users, the geometry of the corridors has been 'Right Sized'.
- The Streetscape Master Plan fits within the existing publicly owned ROW.
- The Master Plan provides a context driven approach to the streetscape, in which streetscape typologies are utilized to fulfill the functional and aesthetic needs of each corridor.

A key consideration in the design of a vibrant public realm and streetscape is designing Complete Streets, which support the needs of all users including pedestrians, cyclists, transit users and motorists. One way to achieve a Complete Street is to re-locate the roadway space to gain more space in the boulevard. This contemporary movement is referred to as "Right Size Streets". IBI Group hosted a workshop in January 2016 to explore options on refining and reducing the roadway geometry to provide a more balanced public realm.

Key Design Objectives

- Create a Complete Street (a street that caters to all users, not just motorists)
- Improve community identity and pride
- Provide safe accessible pedestrian sidewalks
- Design safe and continuous cycling infrastructure
- Expand the urban forest
- Implement Low Impact Development sustainable strategies within the public realm

3.1.1 Right Size Streets

Background

A key element to the Yonge Street & Davis Drive Streetscape Master Plan is adherence to Right Size Streets principles. A Right Size Streets Workshop evaluated the current roadway conditions and informed a framework to move forward with the Streetscape Master Plan. Through utilizing Right Size Street principles with a context-specific approach, a streetscape that benefits all users including pedestrians, cyclists, transit users and motorists, has been developed.

Introduction to Right Size Streets

Right Size Streets is a contemporary movement towards creating streets that cater to all users, providing a safer, more vibrant streetscape. Right Size Streets are aimed at:

- Increasing accessibility for all users;
- Increasing safety;
- Encouraging active transportation and transit use;
- Supporting businesses and the local economy;
- Creating a pedestrian friendly and accessible place;
- Creating streetscapes that foster community and livability; and
- Creating a destination.

Right Size Streets Principles

Right Size Streets (especially suited to urban contexts) are designed to create the safest roadway and street conditions for drivers, transit users, pedestrians and cyclists. Key aspects to Right Size Streets as follows:

- Design strategies such as reduced lane widths and turning radii are used to encourage road users to maintain a safe driving speed.
- Visual cues within the right-of-way provide the information required for drivers to make good decisions and have flexibility when judgment errors are made.

At higher operating speeds, drivers tend to narrow their field of vision, which reduces their ability to detect pedestrians that may be entering the roadway. Further, contemporary multi-tasking life styles and gadgets such as, complex in-car GPS systems and smartphones present frequent distractions which should be mitigated through roadway design that reinforce the intended speed.

Conventional Highway Design consists of the Design Speed being greater than the Operating Speed, which is greater than the Posted Speed. This type of design is problematic as the geometry of the roadway encourages faster speeds than the intended speed. Fast driving speeds are not in line with the Streetscape Master Plan's aim to create a vibrant, urban streetscape. Through utilizing proactive urban street design, in which the target speed, design speed and posted speed are all the same, the streetscape design encourages maintaining a safe driving speed (National Association of City Transportation Officials (NACTO) Urban Street Design Guide).

As NACTO Urban Street Design Guide explains, Right Size Streets are designed "for the most vulnerable street users rather than the largest possible vehicle. While designs must account for the challenges that larger vehicles, especially emergency vehicles, may face, these infrequent challenges must not dominate the safety or comfort of a site for the majority of daily users."

Right Size Streets Design Strategies

Right Size Streets provides strategies aimed at reducing the roadway size, encouraging safer vehicular speeds and providing more space in the boulevard to create more comfortable/ accessible space for pedestrians, transit users and cyclists. The Right Size Streets Strategies figure located to the right outlines the most prevalent Right Size Street tactics and their benefits.

Right Size Streets Implementation

Right Size Streets have been implemented in the City of Toronto and all over North America. The City of Toronto Right Size Streets Precedents figure located to the right presents local built streetscape examples and their geometry.

Right Size Streets Strategies

Right Size Street Strategy	Benefit to the Streetscape
Reduced number of lanes	• Reduces vehicular speed; • Creates more room in the boulevard for active transportation infrastructure, landscaped areas, boulevard trees, public art, patios and other placemaking elements.
Reduce lane widths	
Reduce curb turning radii and eliminate 'pork chop' islands	• Slows turning speeds; • Shortens pedestrian crosswalk distances; • Creates pedestrian priority.
Add cycling infrastructure	• Encourages active transportation; • Could decrease traffic.
Increase pedestrian realm	• Encourages walking; • Could decrease traffic; • Creates space for streetscape animation and placemaking.

City of Toronto Right Size Streets Precedents

Street Name	Extent	Posted Speed	Curbside Through Lane Width	Through Lane Width	Centre Lane Width/ TWLTL
Pharmacy Avenue	St. Clair Ave. E to Comstock Rd	50 km/ hr	3.4 m	3.1 m	N/A
Ellesmere Road	McCowan Rd to Markham Rd	50 km/ hr	3.25 m	3.0 m	2.7 m
Warden Avenue	Finch Ave E to Bridletown Circle	50 km/ hr	3.1 m	3.0 m	3.0 m
Nugget Road	Shorting Rd to Markham Rd	50 km/ hr	3.3 m	3.0 m	N/A
Brimley Road	Kingston Rd to St. Clair Avenue East	50 km/ hr	3.3 m	3.0 m	N/A

Source: City of Toronto

Yonge Street & Davis Drive: Right Size Streets Matrix			
	Existing Conditions	**Streetscape Master Plan** *Ultimate Vision*	**Interim** *Pre-BRT**
Design Speed			
Yonge Street North	80-100 km/h	50 km/h	60 km/h
Yonge Street South	80 km/h	60 km/h	60 km/h
Davis Drive East	60 km/h	60 km/h	60 km/h
Davis Drive West	60 km/h	60 km/h	60 km/h
Lane Width			
Through Lane	~3.3m - 4.5m	3.3 m	3.3 m
Curbside Through Lane	~ 3.3m - 3.9m	3.5 m	3.5 m
Right Turn Lane	~ 3.7 m	3.0 m	3.5 m
Left Turn Lane	~3.2 m	3.0 m	3.3 m
Corner Curb Radii**			
Major- Major	14 m	10 m	9 m
Major- Minor	15 m (two-way) 13 m (one-way)	9 m	9 m
Minor- Major	8 m	9 m	9 m
Driveways	10 m (residential) 15 m (commercial)	7 m	7 m
Truck Specific Lane	N/A	15 m	15 m
Pedestrian Facilities			
Yonge Street North	~ 1.5 m	2.4 m	2.0 m
Yonge Street South	~ 1.5 m & non-existent	3.0 m MUP	3. 0 m MUP
Davis Drive East	~ 1.5 m	2.0 m	2.0 m
Davis Drive West	~ 1.5 m	2.0 m	2.0 m
Cycling Facilities			
Yonge Street North	None	1.5 m boulevard cycle track	1.5 m cycle track
Yonge Street South	None	3.0 m MUP	3.0 m MUP
Davis Drive East	Shared lane 'sharrows'	1.5 m cycle track + 0.6m buffer 3.0 m MUP	1.5 m cycle track + 0.6m buffer 3.0 m MUP + 0.6m buffer
Davis Drive West	None	1.5 m cycle track + 0.6m buffer 3.0 m MUP	1.5 m cycle track + 0.6m buffer 3.0 m MUP + 0.6m buffer

Source: Project Core Team Decision Matrix April 26, 2016

Right Size Yonge Street and Davis Drive

The Right Size Street Workshop was held to compile research on Right Size Streets and analyze the components that are suitable for Yonge Street and Davis Drive. Context-specific elements of the corridor were considered such as:

- The need to accommodate YRT bus transit;
- The need to accommodate future vivaNext expansions;
- Future vivaNext bus rapidway geometry and design speed;
- Snowplow turning radii;
- The necessity for snow storage;
- The presence of hydro poles;
- Providing more space in the boulevard to develop an urban forest;
- Providing more space for safe, comfortable cycling infrastructure;
- The potential for stormwater management; and
- The vision of an active and green streetscape.

Through taking into account Right Size Street tactics and context-specific elements of the corridors, the Project Core Team developed the Yonge Street & Davis Drive: Right Size Streets Matrix to the left.

Refer to Appendix A for the Right Size Streets Workshop presentation material.

** The Interim column refers to geometry that is being implemented in current York Region capital projects such as Yonge Street North as well as the Bathurst Street and Davis Drive intersection. The Streetscape Master Plan column indicates the final build-out of the ultimate streetscape vision.*

*** Values may differ for Yonge Street North. Refer to Section 3.2.6 Auto-Turn Analysis for location specific figures.*

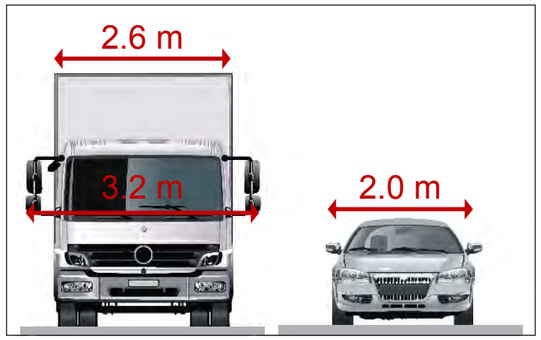
Vehicle Dominated Streetscape

Right Size Streetscape

Right Size Street Turning Radii Precedent: vivaNext Bus Rapidway

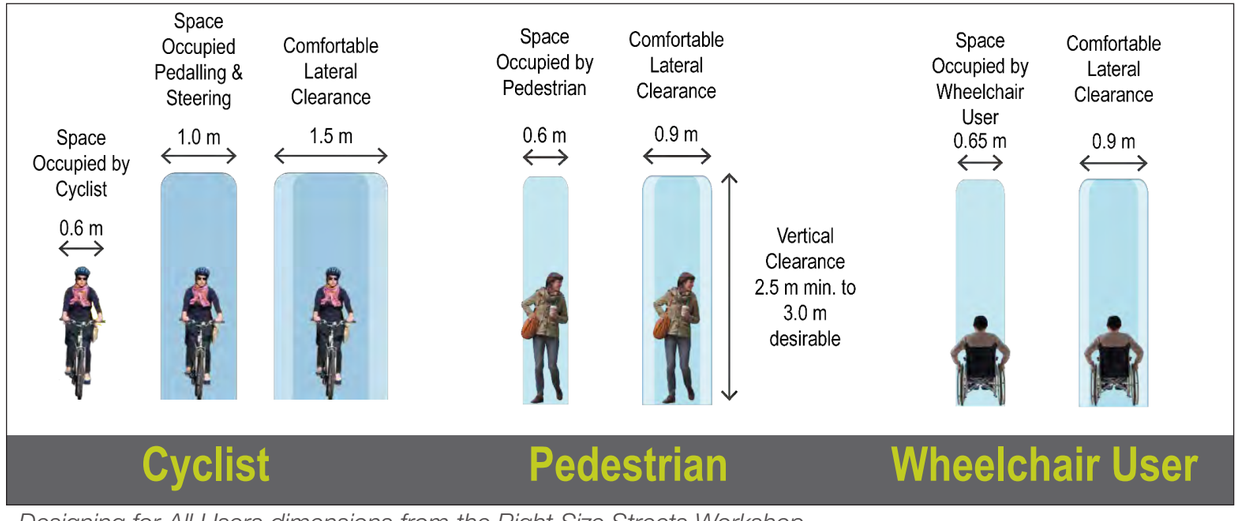
York Region Rapid Transit Corporation (YRRTC) have successfully brought rapid transit to York Region with vivaNext along Highway 7 (H3, H2 VMC) and Davis Drive (D1). YRRTC's vision supports the belief that well planned transit including the design of the public realm is instrumental in shaping better communities. The vivaNext project captures the philosophy of the Complete Street which anticipates and accommodates the needs of all users – pedestrians, transportation users, cyclists and drivers by providing a welcoming, functional and safe environment for everyone, no matter how they want to get to and from their destination. Included in this approach is the reduction of turning radii at intersections to slow cars down, the reduction of crossing distances for pedestrians and the increase of real estate in the boulevard. The matrix below indicates successful built precedents on D1 with reduced radii at intersections and driveways along Davis Drive in Newmarket.

vivaNext Curb Radii				
	Westbound		Eastbound	
Intersections	Right In	Right Out	Right In	Right Out
Davis Dr. and Yonge St.	15m	15m	15m	15m
David Dr. and Longford Dr.	10m	10m	12m	10m
Davis Dr. and Main St.	10m	10m	10m	10m
Davis Dr. and George St.	10m	10m	1om	10m
Davis Dr. and Barbara Rd.	10m	10m	9m	9m
Davis Dr. and Hill St.	10m	10m	N/A	N/A
Davis Dr. and Lorne Ave.	N/A	N/A	10m	10m
Davis Dr. and Vincent St.	10m	10m	10m	7.5m
Davis Dr. and Superior St.	N/A	N/A	6m	9m
Davis Dr. and Bayview Pkwy.	7.5m	10m	7.5m	7.5m
Davis Dr. and Lundy's Ln.	10m	10m	10m	10m
Davis Dr. and Patterson St.	10m	10m	10m	10m
Davis Dr. and Huron Heights Dr.	10m	10m	10m	10m
Residential Driveways	3.5m-5m	5m	5m	5m



Typical Vehicle Dimensions from the Right Size Streets Workshop

vivaNext Intersection



Designing for All Users dimensions from the Right Size Streets Workshop

3.1.2 Auto-Turn Analysis

A key component of Right Size Streets philosophy is to urbanize intersections, which includes reduced turning radii. From an urban design and safety perspective, a reduced turning radii is desired for the following reasons (refer to diagram below):

- Safer for pedestrians as it forces vehicles to slow down as they make the turn;
- Reduces the crossing distance so pedestrians spend less time in the roadway where hazard risk increases;
- Provides more room in the boulevard for pedestrian circulation, accessibility and amenities such as lighting, seating and wayfinding signage.

YRT and vivaNext buses must be able to operate safely and efficiently throughout the corridors. In order to analyse the needs of transit, operations and maintenance vehicles, IBI Group conducted a high level auto-turn analysis to assess vehicle access, clearances, and swept path maneuvers. The analysis was conducted for the Yonge Street North corridor only using a curb-lane width of 3.5m and a through lane width of 3.3m.

The auto-turn analysis was conducted for the following four intersections in the Yonge Street North corridor:

- Yonge Street and Davis Drive
- Yonge Street and Dawson Manor Boulevard/ Kingston Road
- Yonge Street and Bonshaw Avenue/London Road
- Yonge Street and Aspenwood Drive/Bristol Road

The analysis was conducted using the worst-case scenario vehicles as per below:

- Nova LFS 60' Articulating Bus
- WB20 Tractor Trailer (TACC-1999)

The Nova LFS 60' bus (YRT) was used rather than the Van Hool AG300 (Viva) since it has a larger turning radius. The WB20 is the largest tractor trailer in the TACC vehicle library.

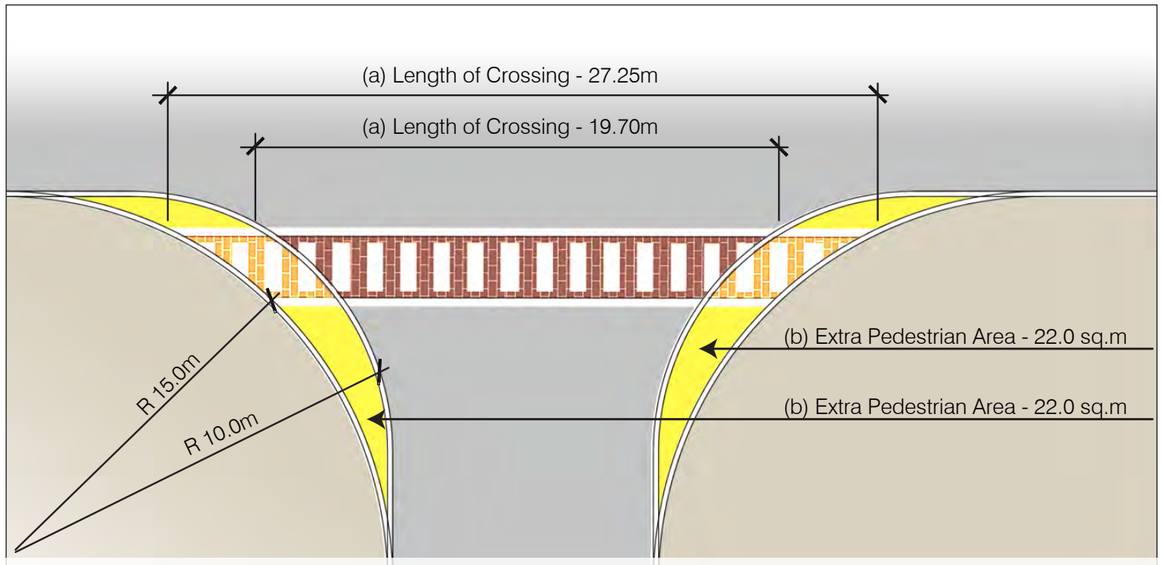


Diagram depicts the decrease of pedestrian crossing distance with reduced turning radii

3.1.2.1. Results and Recommendations

WB20 (Truck) scenario:

The drawings on the following pages indicate that the truck can make right turn maneuvers at a 15 metre curb radius without conflicting with the proposed curb. However, in most cases more severe encroachments are required in the through lanes to complete the maneuver and avoid conflicting with the curb.

To avoid through lane encroachments:
- curb radii more than 15 metres;
- compound curves; and
- larger receiving lanes; or
- a combination thereof may be considered.

However, since large curb radii would likely be required to completely eliminate through lane encroachments, adjustments may not be feasible or desired.

Nova (Articulating Bus) Scenario:

The drawings on the following pages indicate that the bus can complete the right-turn maneuvers at a 15 metre radius without conflicting with the proposed curb. However, there are some instances where minor encroachments are required in the through lanes to complete the maneuver and to avoid conflicting with the curb.

In order to avoid through lane encroachments,:
- curb radii larger than 15 metres;
- compound curves; and
- larger receiving lanes; or
- a combination thereof may be considered at the detailed design stage.

The tables on the following page provides a detailed analysis of the Nova LFS 60' Articulating Bus including maneuver type, results, recommendations and assumptions.

Van Hool (40' Bus) Scenario:

The Yonge Street and Dawson Manor Boulevard/ Kingston Road intersection currently does not have a bus route. However a community bus route with a smaller 40' Van Hool Bus is likely in the near future. The drawing on the following page indicates that this smaller bus can complete maneuvers with little to no encroachment with a 10 metre radii.

Conclusion:

The results of auto-turn analysis which was conducted using the worst-case scenario vehicles demonstrates that encroachment with separated bike lanes occurs even using a large 15m radius.

In order to provide an urbanized corridor which takes the needs of all users into account, the public realm designers and engineers together with York Region should assess the level of encroachment that they are willing to accept at the detailed design stage while being mindful of the long term streetscape vision's goals and objectives.

Reduced Road Radii Matrix			
			Difference
Radius	R=15m	R=10m	5m
Length of Crossing	27.25 m	19.7 m	7.55m
Boulevard Space Added	N/A	44.0 sq m	44.0 sq m

Yonge Street North

3.1.2.2. Auto-Turn Analysis: Yonge Street North Corridor

Introduction

Auto-Turn Analysis was conducted in order to ensure the operations of the Right Sized lanes and corner curb radii along the Yonge Street North corridor. The following intersections were tested:

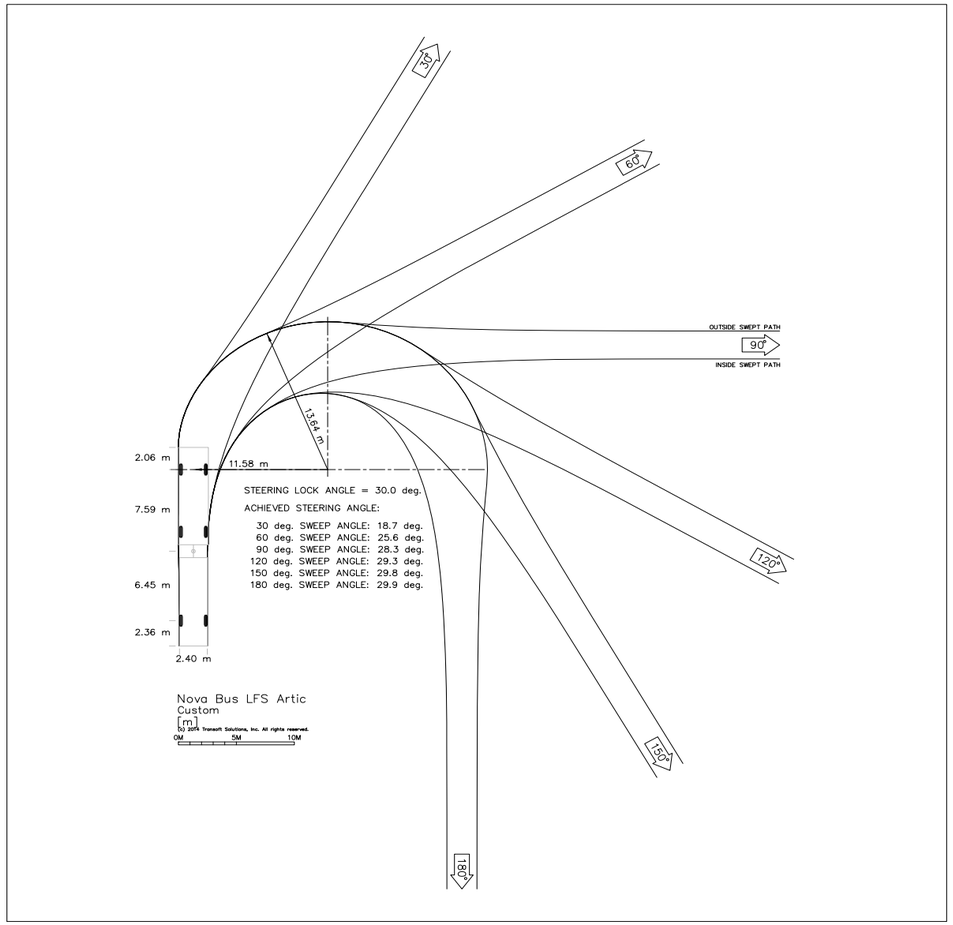
- Yonge Street and Davis Drive
- Yonge Street and Dawson Manor Boulevard/ Kingston Road
- Yonge Street and Bonshaw Avenue/ London Road
- Aspenwood Drive/ Bristol Road

'Wost case scenario' vehicles were tested to analyse if the roadway geometry was ample enough for safe passage of the largest vehicles that frequent the roadway. The following vehicles were tested:

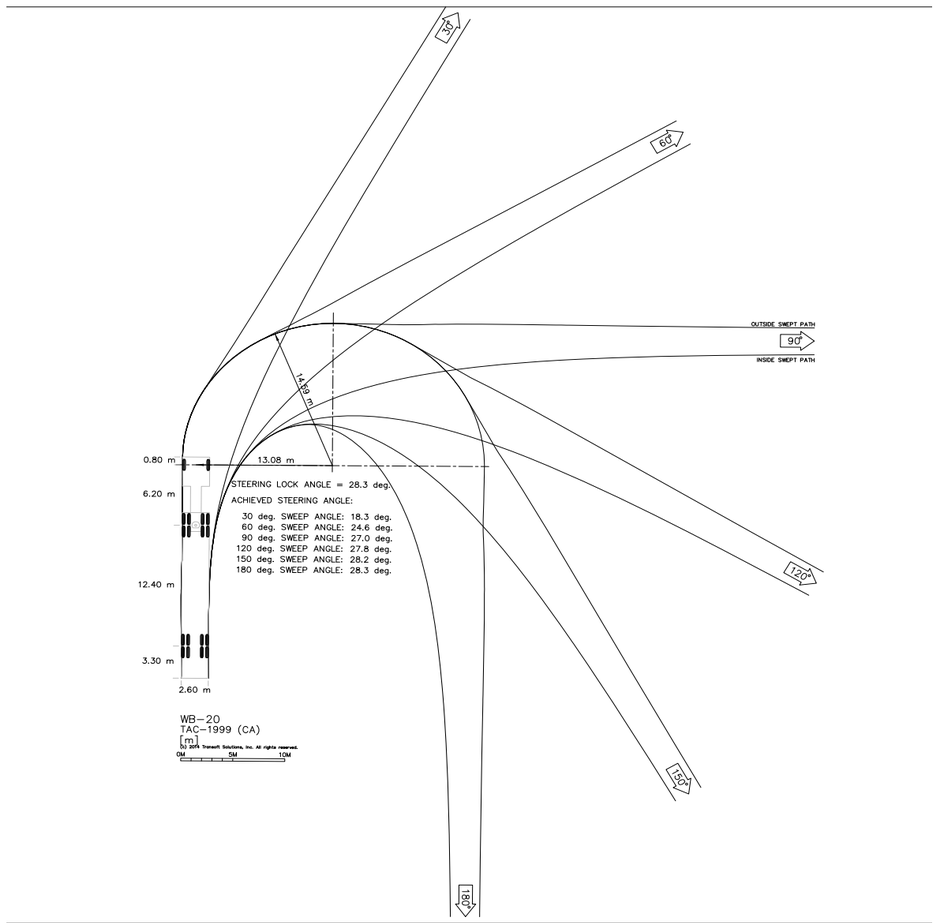
- Nova LFS 60' Articulating Bus
- WB20 Tractor Trailer (TACC-1999)

The following pages present the auto-turn analysis.

Nova LFS 60' Articulating Bus

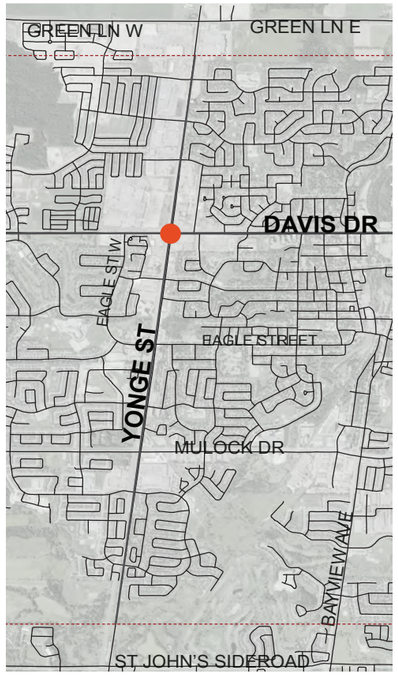


WB20 Truck Tractor Trailer (TACC-1999)



Yonge Street North

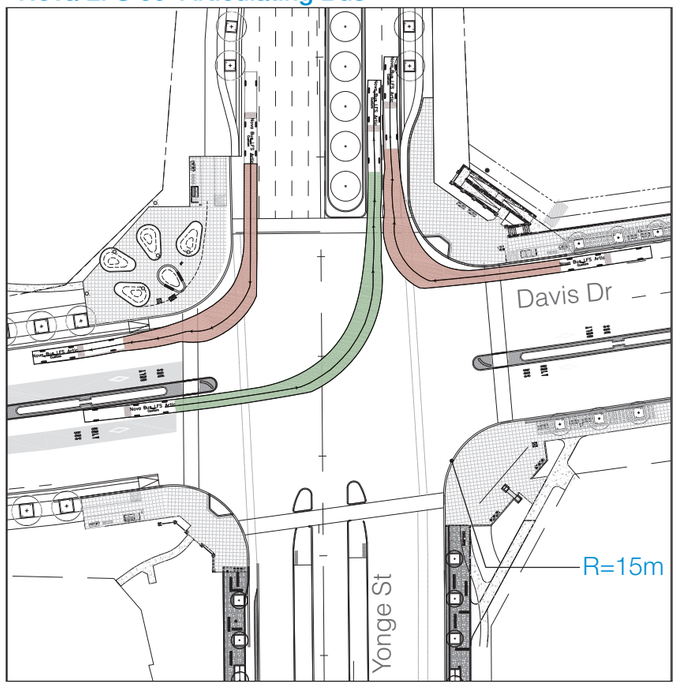
3.1.2.3. Auto-Turn Analysis: Yonge Street and Davis Drive Intersection



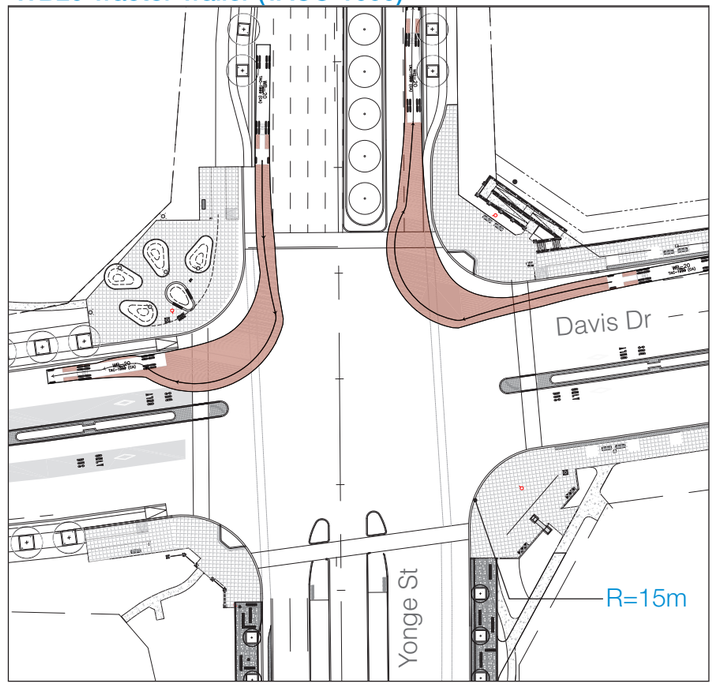
Right Sized Features

- Curbside Lane: 3.5 metres
- Through Lane: 3.3 metres
- Left Turn Lane: 3.3 metres
- Corner Turning Radius: 15 metres
- YRT Bus Route (52, 98, 99, 521)

Nova LFS 60' Articulating Bus



WB20 Tractor Trailer (TACC-1999)

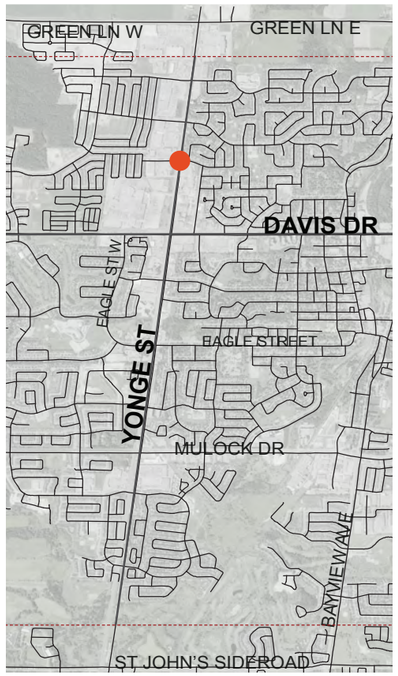


N 0 5 10 15 20m

Maneuver	Location	Vehicle	Pass	Fail	Comments	Recommendations
Right Hand Turn	N/E Corner	Nova LFS 60' Articulating		x	Conflicts with cycle track	Include painted bike lane merge marking with a 20m radius
Right Hand Turn	N/W Corner	Nova LFS 60' Articulating		x	Conflicts with cycle track	Move bike lane ramp approximately 4m west
Left Hand Turn	EB Davis to NB Yonge	Nova LFS 60' Articulating	✓		N/A	N/A

Yonge Street North

3.1.2.4. Auto-Turn Analysis: Yonge Street and Dawson Manor Boulevard/ Kingston Road Intersection

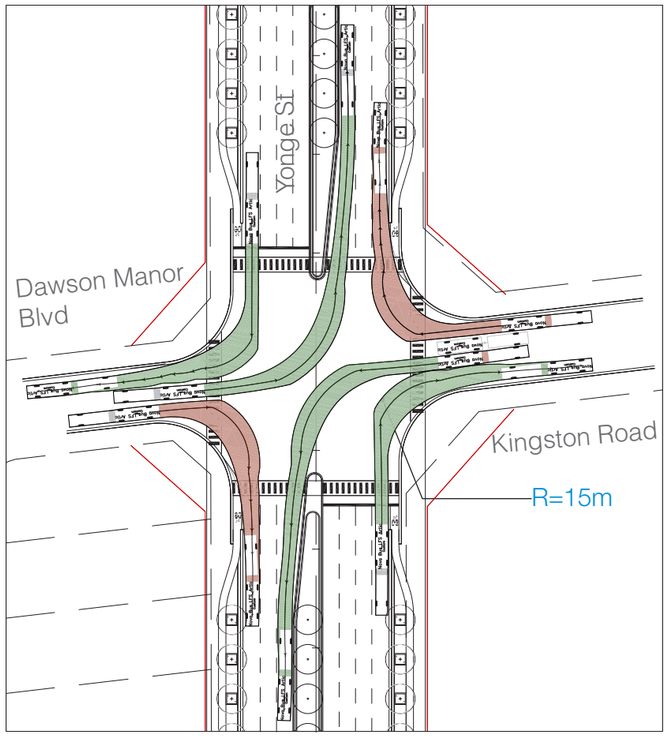


Right Sized Features

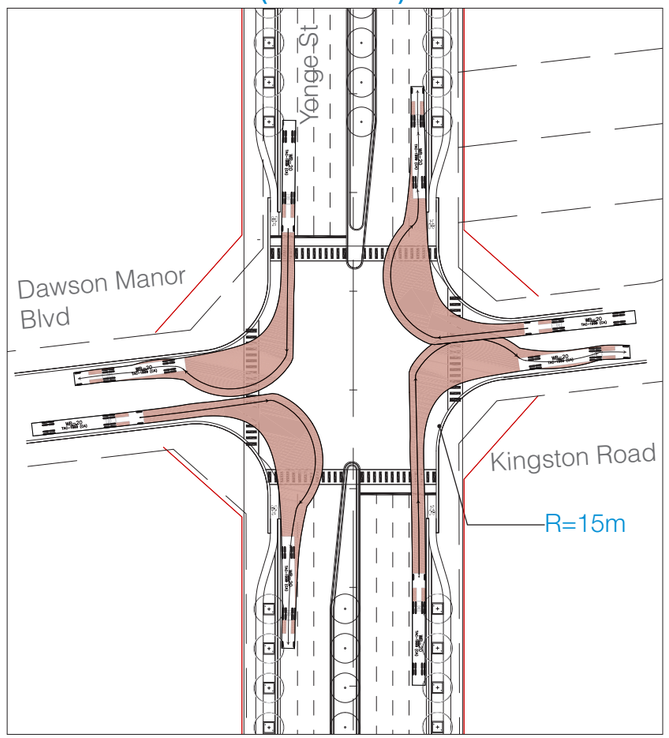
- Curbside Lane: 3.5 metres
- Through Lane: 3.3 metres
- Left Turn Lane: 3.3 metres
- Corner Turning Radius: 15 metres & 10m tested
- Not currently a bus route

Note: This intersection currently does not have a bus route however a community bus route with a smaller 40' Van Hool Bus is likely in the near future. This smaller bus means that the turning radii can be reduced to 10m with little to no encroachment.

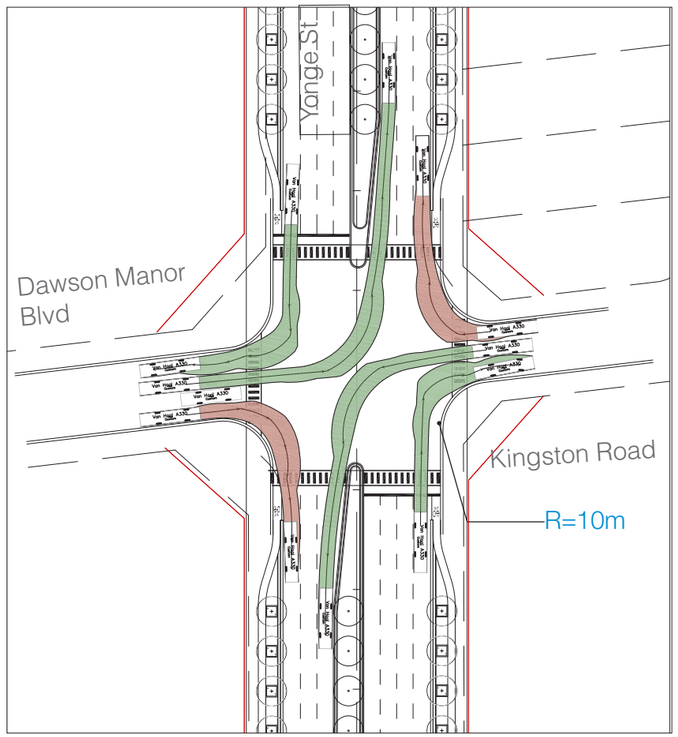
Nova LFS 60' Articulating Bus



WB20 Tractor Trailer (TACC-1999)



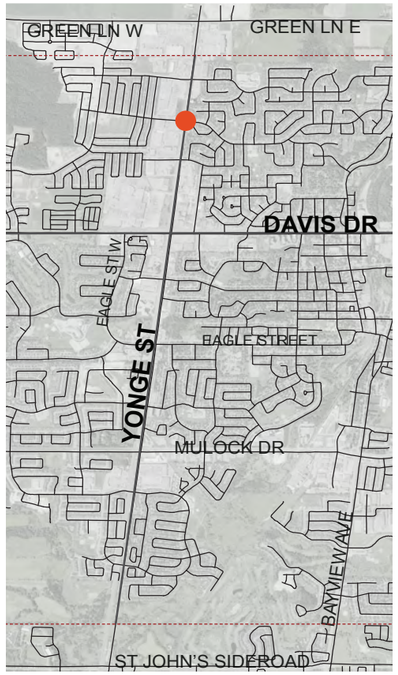
Van Hool A330 40'



Maneuver	Location	Vehicle	Pass	Fail	Comments	Recommendations
Right Hand Turn	N/E Corner	Nova LFS 60' Articulating		x	Conflicts with cycle track	Include a painted bike lane merge marking with a 20m radius rather than 10m
Right Hand Turn	N/W Corner	Nova LFS 60' Articulating	✓		N/A	N/A
Right Hand Turn	S/W Corner	Nova LFS 60' Articulating		x	Conflicts with cycle track	Include a painted bike lane merge marking with a 20m radius rather than 10m
Right Hand Turn	S/E Corner	Nova LFS 60' Articulating	✓		N/A	N/A
Left Hand Turn	EB Dawson to NB Yonge	Nova LFS 60' Articulating	✓		N/A	N/A
Left Hand Turn	WB Kingston to SB Yonge	Nova LFS 60' Articulating	✓		N/A	N/A

Yonge Street North

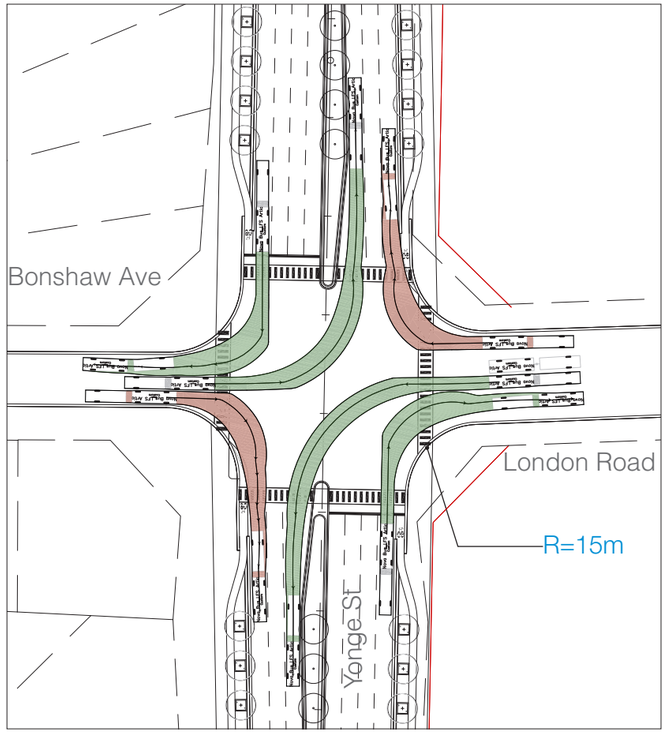
3.1.2.5. Auto-Turn Analysis: Yonge Street and Bonshaw Avenue/ London Road Intersection



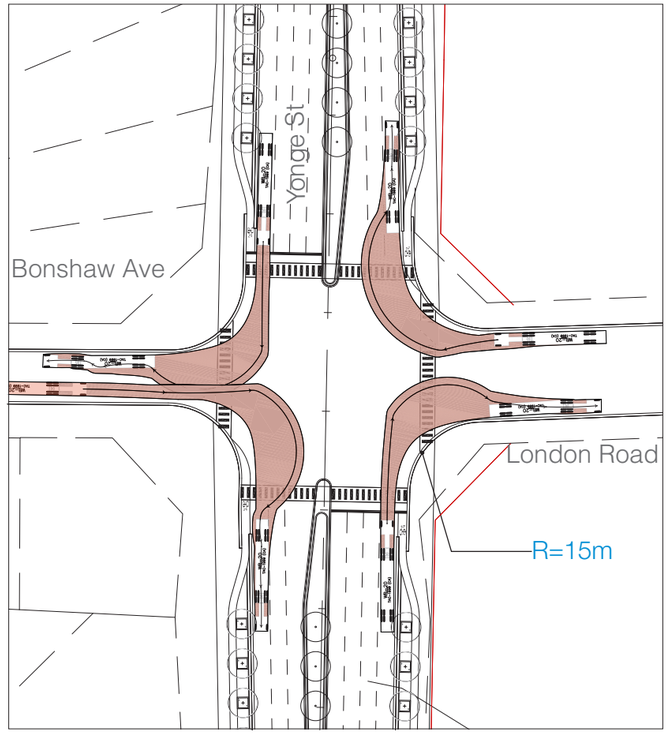
Right Sized Features

- Curbside Lane: 3.5 metres
- Through Lane: 3.3 metres
- Left Turn Lane: 3.3 metres
- Corner Turning Radius: 15 metres
- Community Bus Route (44, 423, 521)

Nova LFS 60' Articulating Bus



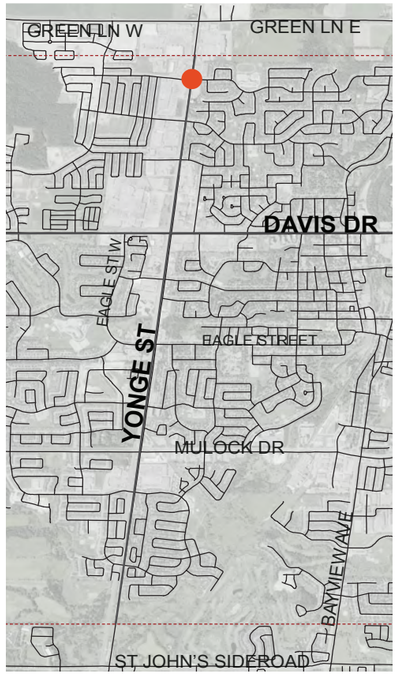
WB20 Tractor Trailer (TACC-1999)



Maneuver	Location	Vehicle	Pass	Fail	Comments	Recommendations
Right Hand Turn	N/E Corner	Nova LFS 60' Articulating		x	Conflicts with cycle track	Include a painted bike lane merge marking with a 20m radius rather than 10m
Right Hand Turn	N/W Corner	Nova LFS 60' Articulating	✓		N/A	N/A
Right Hand Turn	S/W Corner	Nova LFS 60' Articulating		x	Conflicts with cycle track	Include a painted bike lane merge marking with a 20m radius rather than 10m
Right Hand Turn	S/E Corner	Nova LFS 60' Articulating	✓		N/A	N/A
Left Hand Turn	EB Bonshaw to NB Yonge	Nova LFS 60' Articulating	✓		N/A	N/A
Left Hand Turn	WB London to SB Yonge	Nova LFS 60' Articulating	✓		N/A	N/A

Yonge Street North

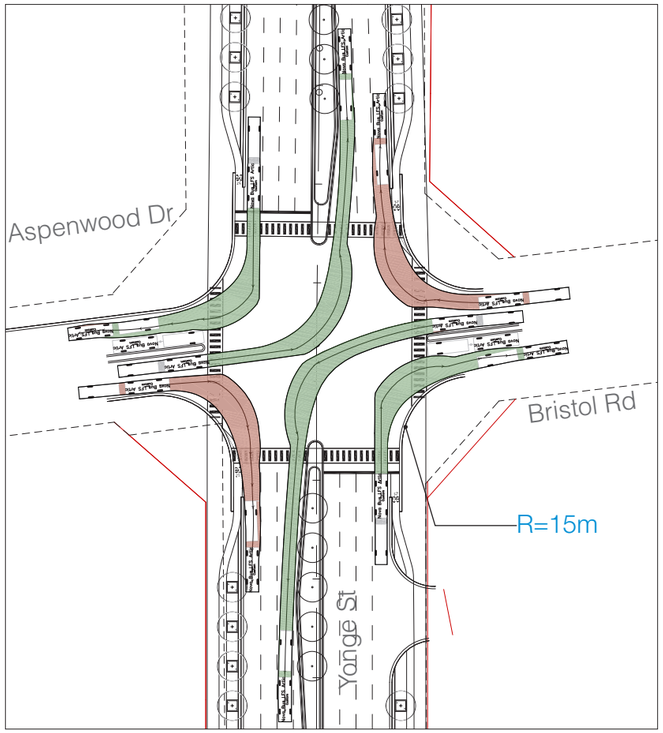
Auto-Turn Analysis: Yonge Street and Aspenwood Drive/ Bristol Road Intersection



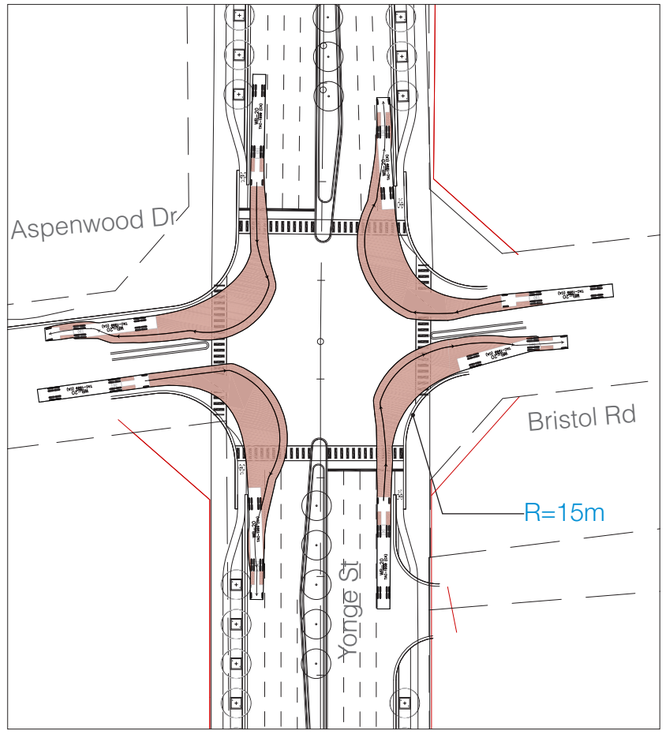
Right Sized Features

- Curbside Lane: 3.5 metres
- Through Lane: 3.3 metres
- Left Turn Lane: 3.3 metres
- Corner Turning Radius: 15 metres
- Community Bus Route (44, 423, 521)

Nova LFS 60' Articulating Bus



WB20 Tractor Trailer (TACC-1999)



Maneuver	Location	Vehicle	Pass	Fail	Comments	Recommendations
Right Hand Turn	N/E Corner	Nova LFS 60' Articulating		x	Conflicts with cycle track	Include a painted bike lane merge marking with a 20m radius rather than 10m
Right Hand Turn	N/W Corner	Nova LFS 60' Articulating	✓		N/A	N/A
Right Hand Turn	S/W Corner	Nova LFS 60' Articulating		x	Conflicts with cycle track	Include a painted bike lane merge marking with a 20m radius rather than 10m
Right Hand Turn	S/E Corner	Nova LFS 60' Articulating	✓		N/A	N/A
Left Hand Turn	EB Aspenwood to NB Yonge	Nova LFS 60' Articulating	✓		N/A	N/A
Left Hand Turn	WB Bristol to SB Yonge	Nova LFS 60' Articulating	✓		N/A	N/A

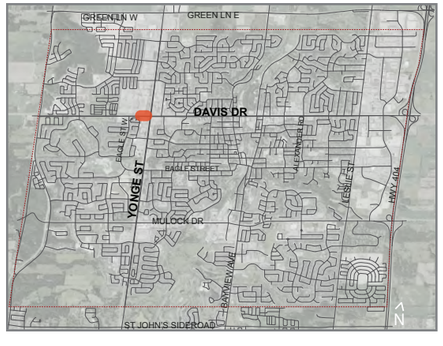
3.1.3 VivaNext Streetscape Transitions

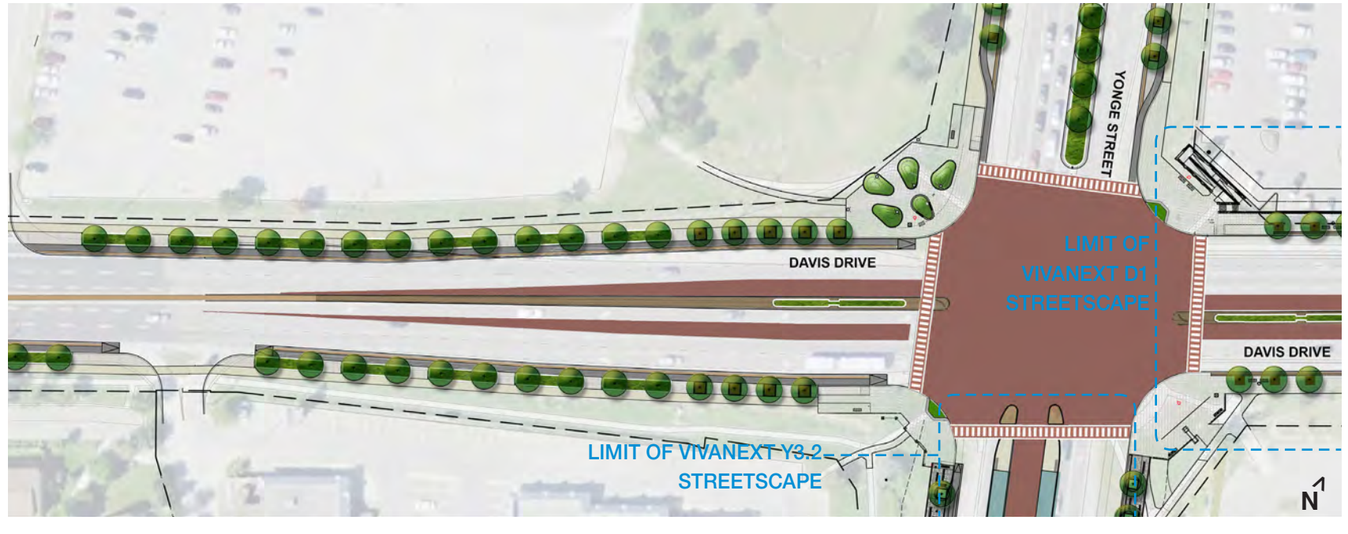
The Yonge Street & Davis Drive Streetscape Master Plan will interface with the vivaNext streetscape along the Davis Drive West corridor at Yonge Street, as well as at the project limits along the Davis Drive East corridor. The Yonge Street & Davis Drive Streetscape Master Plan gradually transitions from the vivaNext streetscape at spatially logical places.

The transition along Davis Drive West involves gradually tapering the bus rapid lanes as they merge into local traffic west of Yonge Street.

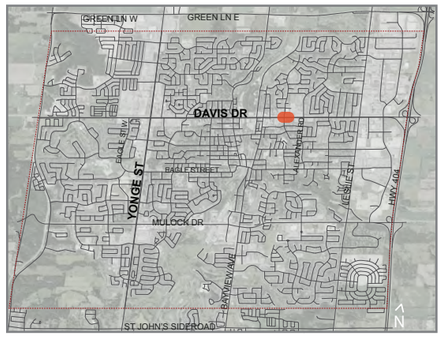
The Streetscape Master Plan transitions at Davis Drive East into a 'suburban' vivaNext Streetscape. VivaNext lights extend east of Patterson Street into the Streetscape Master Plan scope for a gradual transition.

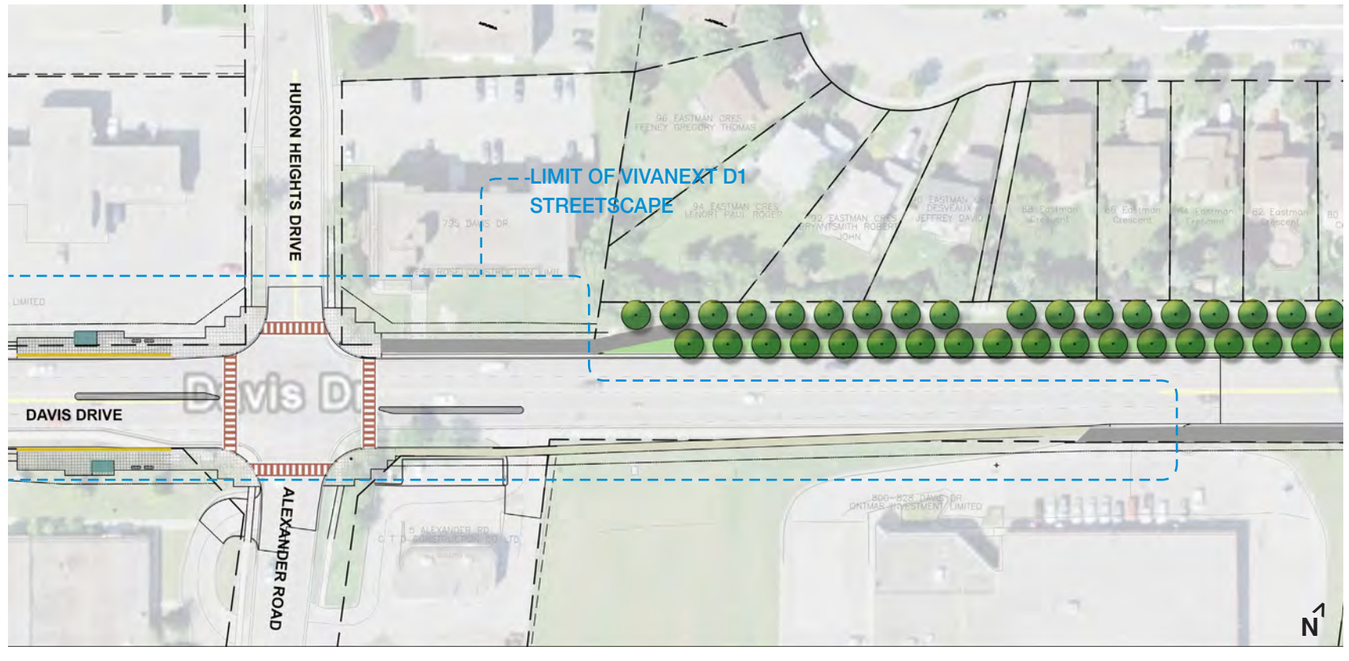
DAVIS DRIVE WEST TRANSITION WITH VIVANEXT D1



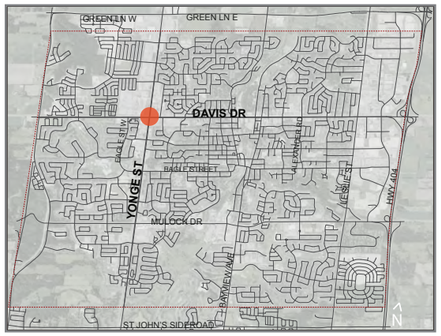


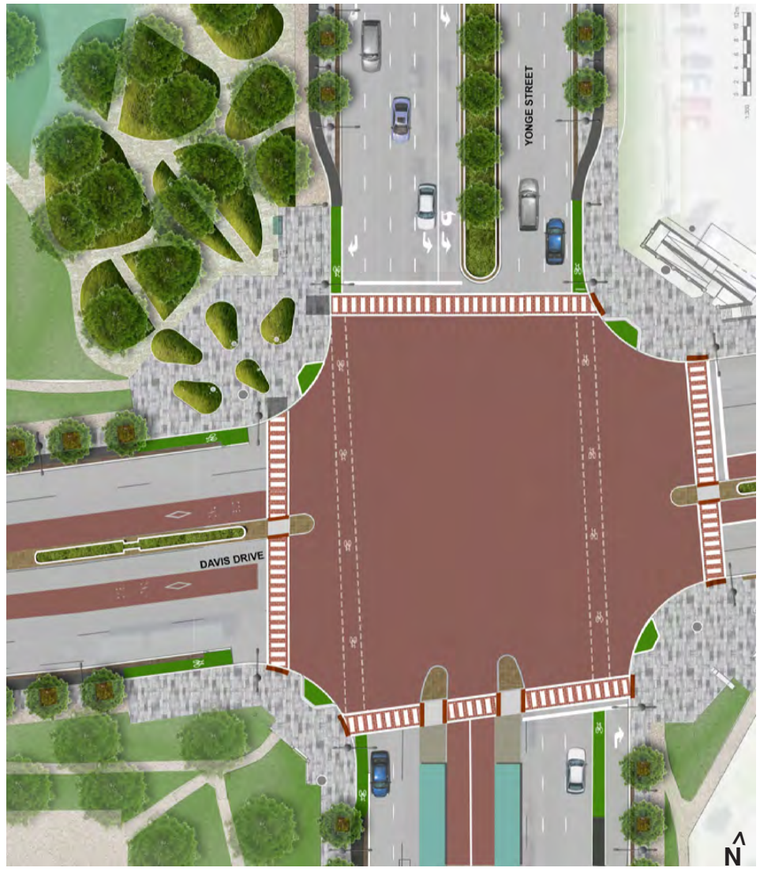
DAVIS DRIVE EAST TRANSITION WITH VIVANEXT D1





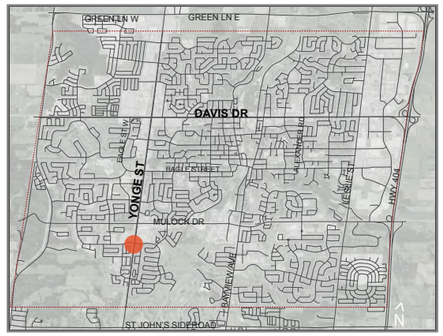
YONGE NORTH STREETSCAPE TRANSITION





Yonge Street North begins at Davis Drive. This intersection is marked by the signature vivaNext red paving throughout the intersection. Measures have been taken to ensure a smooth transition into the vivaNext streetscape geometry. Buses will transition from the BRT lane into vehicular traffic and over to the curbside HOV lanes. VivaNext may be implemented on Yonge Street North in the future. The Yonge Street North streetscape plan demonstrated in this report is the interim condition which protects the center of the ROW for the future vivaNext BRT planned for in the next 25 years. The future BRT will be implemented pending approval and funding by the Province and Metrolinx. The streetscape Master Plan shows a planted centre median with trees spaced 8 m on centre with an understorey of hardy shrub planting. Once the BRT arrives, the centre median will be removed and replaced by the rapidway with a running width of 3.5m in each direction. The curb line will remain fixed as well as the boulevard treatment behind the curb including cycle track, tree planting, hydro, utilities, traffic signals, lighting and pedestrian infrastructure. However, the road geometry may change including the elimination of through lanes or right/left-hand turn lanes during the future detailed design stage. This follows the rationale that the future BRT will replace some of the volume of private vehicles.

YONGE SOUTH STREETSCAPE TRANSITION



The Yonge Street & Davis Drive Streetscape Master Plan does not interface with the vivaNext streetscape on Yonge Street South. VivaNext terminates at Mulock Drive, where as the northern project limit of Yonge Street South is at Sawmill Valley Drive.

3.1.4 Context Driven Streetscape Typologies

The Master Plan consists of context driven streetscape typologies that are applied to the various segments throughout the corridors.

The streetscape typologies are informed by the adjacent land uses, the vision for Yonge Street and Davis Drive as well as urban design best practices. They provide a framework for future streetscape development through distilling the predominant objectives of the streetscape and the means to achieve these objectives. Through developing a rational for the streetscape development, the Master Plan ensures that the motivations behind the project remain at the forefront of future development.

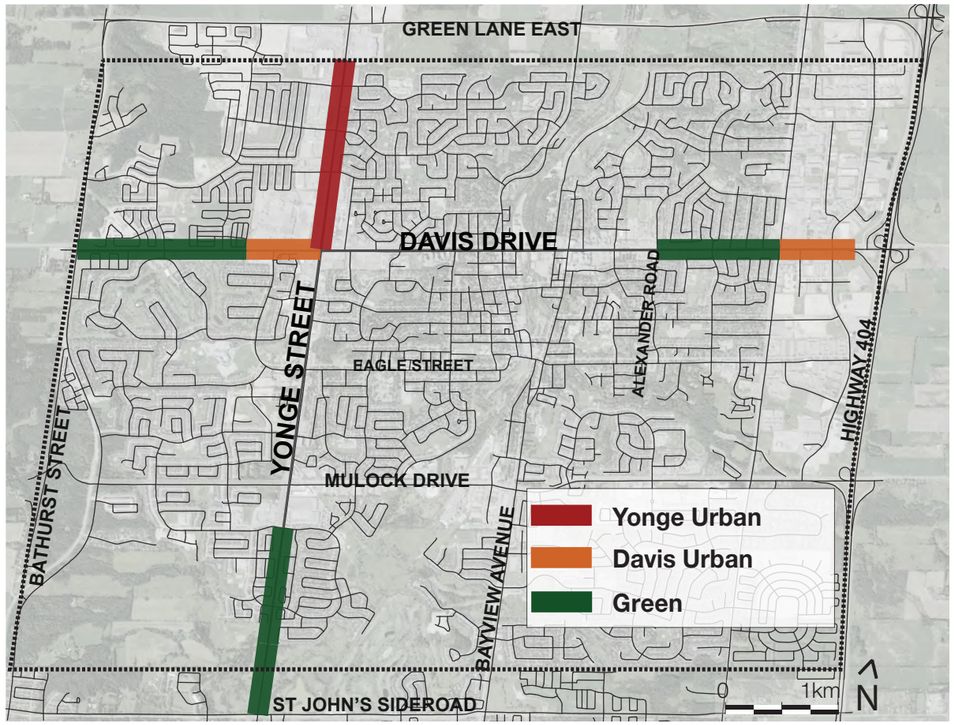
The typologies provide a basis for all streetscape designs including the typical streetscape geometrics for intersections and midblock conditions. The typologies present ideal forms for pedestrian, and cyclist transportation, public realm amenities, and planting geometries. The typologies respond to the current and projected land use contexts and illustrate effective ways for the streetscape to interface with its current and future surroundings.

These typologies include the following:

- Yonge Urban Streetscape
- Davis Urban Streetscape
- Green Streetscape

Both Urban Streetscape Typologies provide the framework for streetscapes in urban areas. The major difference between the Yonge Urban Streetscape and the Davis Urban Streetscape is the location of the raised cycle track in the boulevard.

Though the typologies serve as a basis for the typical streetscape condition, there is room for alterations when the context necessitates.



Streetscape Typologies Key Plan

3.1.4.1. Urban Streetscape Typology

This streetscape typology is utilized in commercial areas where there will be an influx of businesses and people. The streetscape is based on a projected urban intensification, in which animated mixed-use frontages line the streetscape.

Philosophy & Approach

In accordance with the urbanized setting, this streetscape typology has a distinctly urban ambiance. Valuable space in the boulevard is gained through the implementation of Right Size Streets strategies. Pedestrian space is enhanced through the presence of pedestrian amenities such as street furniture, pedestrian lighting and street trees. Trees are planted in grates at intersections maximize pedestrian circulation space and contribute to the urban atmosphere.

The boundary between the public and private realm is blurred to create a visually cohesive streetscape pedestrian plaza.

Geometry

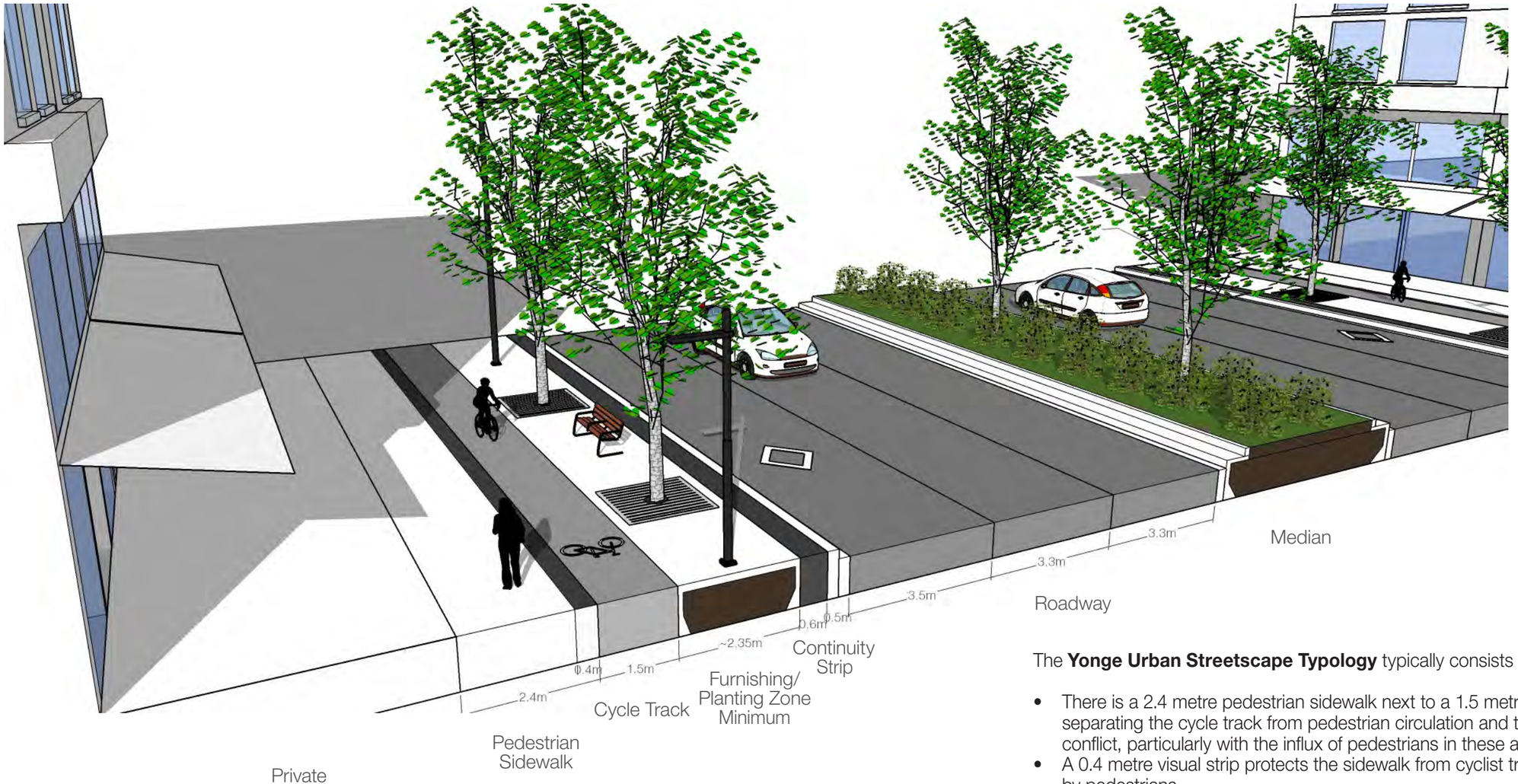
The geometry of the **Urban Streetscape Typology** focuses on optimizing pedestrian space for an animated streetscape through the implementation of Right Size Street strategies.. Measures are taken to minimize conflict between pedestrian circulation and other forms of transportation.

There are two sub-types of the Urban Streetscape Typology that are differentiated based on the placement of the cycle track.

The following elements are present throughout **both** types of the Urban Streetscape Typology

- Right Size Street strategies are implemented as follows:
  - 3.0 to 3.3 m wide through lane
  - 3.35 to 3.5m wide curb side lane
  - 3.0m wide right-hand turn/left- hand turn lane
  - Reduced corner-curb radii at intersections and driveways
- The planting/ furnishing zone contains Town of Newmarket signature street lights with pedestrian luminaires with additional pedestrian lighting.
- Urbanized intersections with smaller turning radii reduce pedestrians crossing distances and slow vehicular turning.
- Street trees are planted in grates 6 metres on centre in close proximity to intersections, in order to optimize space for pedestrian circulation and create an urban grove.
- Urban planters contain street trees midblock
- Roadway lanes are typically 3.3 metres wide with a 3.5 metres wide HOV lane curbside wherever appropriate.
- The centre median is utilized for planting, banners and/or public art installations, in order to establish a strong identity and sense of place.
- 0.6 metre curbside continuity strip reinforces Town of Newmarket theme.

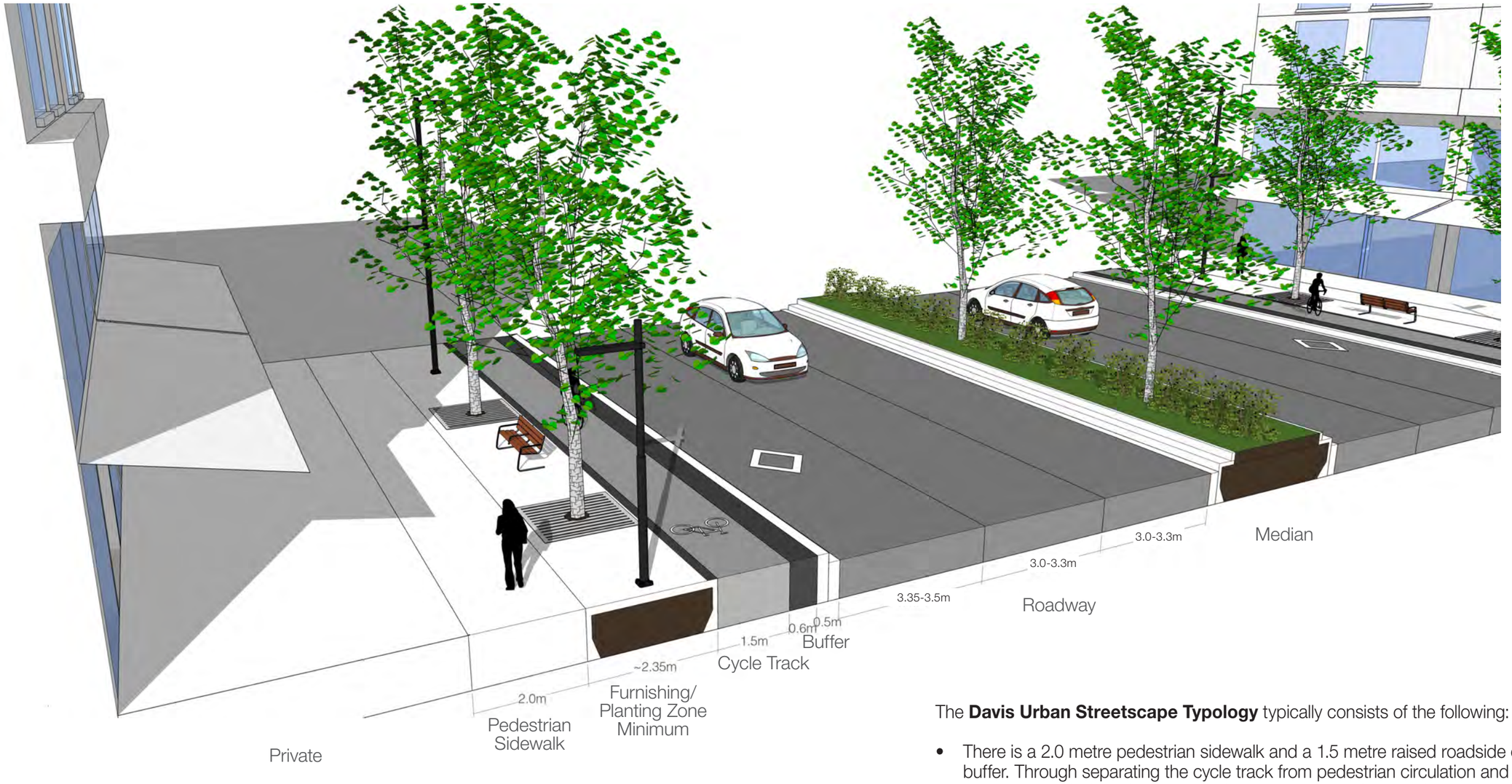
Yonge Urban Streetscape Typology



The **Yonge Urban Streetscape Typology** typically consists of the following:

- There is a 2.4 metre pedestrian sidewalk next to a 1.5 metre raised cycle track. Through separating the cycle track from pedestrian circulation and the roadway, this design minimizes conflict, particularly with the influx of pedestrians in these areas.
- A 0.4 metre visual strip protects the sidewalk from cyclist traverse. This area can be accessed by pedestrians.
- There is a furnishing/planting zone buffer between the cycle track and the roadway in order to protect cyclists from vehicular traffic, and reduces the visual impact of the expansive roadway for cyclists and pedestrians. The placement of the furnishing/planting zone next to the roadway visually reduces the appearance of the ROW.
- Roadway lanes are typically 3.3 metres wide, with 3.5 metre wide HOV lanes curbside.
- Right and left turn lanes are 3.0 metres wide.
- The corner curb radii is reduced at intersections and driveways.

Davis Urban Streetscape Typology



The **Davis Urban Streetscape Typology** typically consists of the following:

- There is a 2.0 metre pedestrian sidewalk and a 1.5 metre raised roadside cycle track with a 0.6 metre buffer. Through separating the cycle track from pedestrian circulation and the roadway, this design minimizes conflict, particularly with the influx of pedestrians in these areas.
- There is a furnishing/planting zone buffer between the cycle track and pedestrian sidewalk.
- Roadway lanes are typically 3.0 - 3.3 metres wide, with 3.35- 3.5 metre wide HOV lanes curbside.
- Right and left turn lanes are 3.0 metres wide.
- The corner curb radii is reduced at intersections and driveways.

3.1.4.2. Green Streetscape Typology

This streetscape typology is utilized in stable and developing residential areas along the corridors, as well as adjacent to open green space.

Philosophy & Approach

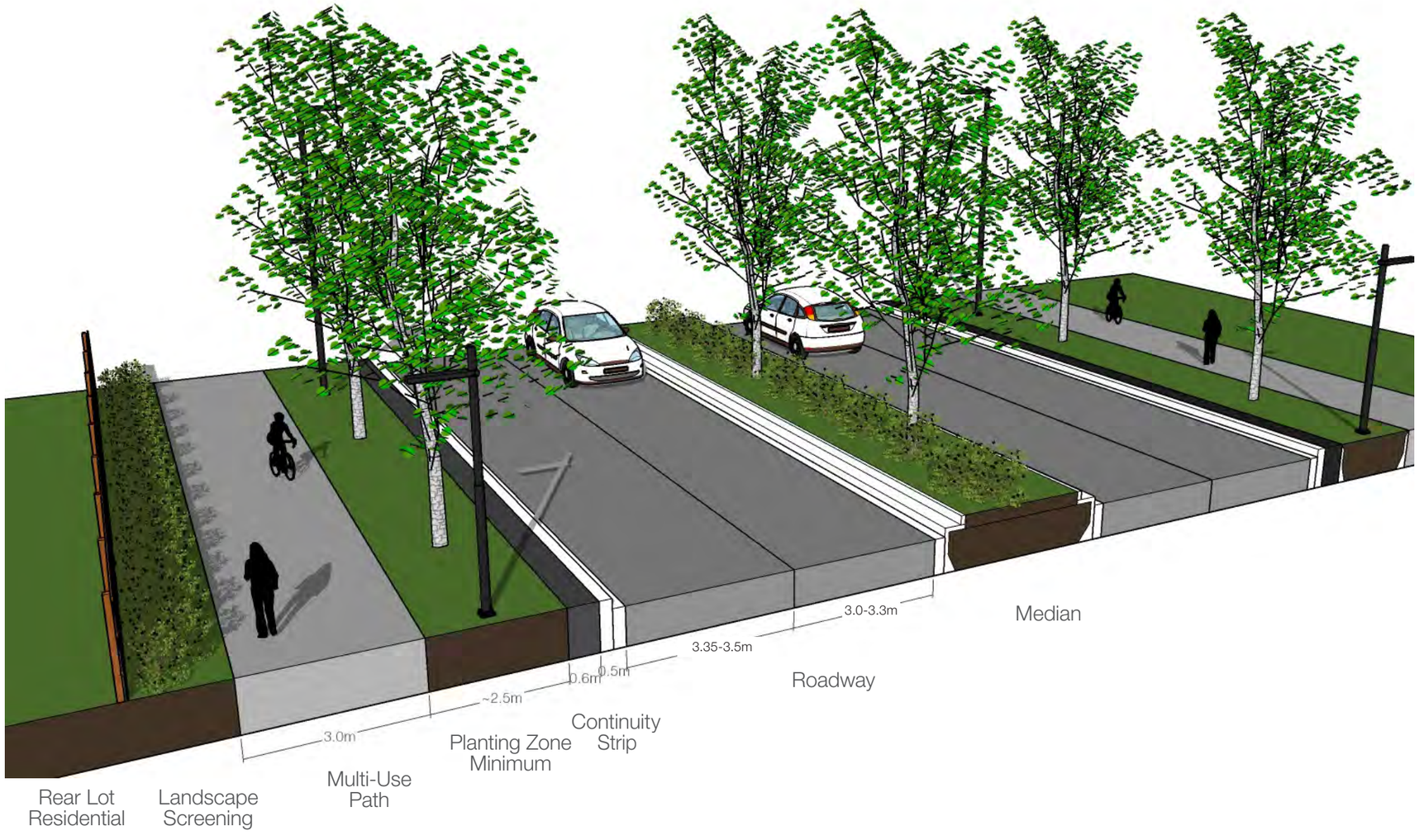
This streetscape typology aims to create a lush green streetscape that provides comfortable means for active transportation and a strong, cohesive sense of place along the streetscape. Valuable space in the boulevard is gained through the implementation of Right Size Streets strategies.

In residential areas, the streetscape typology caters to the population of low to mid density residential areas. Multi-use paths with landscaped buffers from the roadway provide shaded and protected corridors for people of different ages and ability to partake in active transportation.

In areas of open green space, the streetscape creates comfortable passage to and from the trail networks.

The Green Streetscape Typology is focused on the safe and comfortable transportation of residents and trail users.

Strategies such as signature grasses and landscaped buffers are utilized in order to create a sense of visual cohesion in areas that can be disparate due to differing privacy fencing types. Landscape is used to create cohesion between the streetscape and the adjacent lands.



Right Size Street Geometry

This typology consists predominantly of multi-use paths that are lined on one or both sides of the street with landscaped areas. Bioswales are utilized for SWM where there is sufficient room in the Right of Way (ROW).

- The multi-use path is 3.0 metres wide in order to accommodate multiple forms of active transportation including walking, running and cycling.
- Multi-use path is segregated from the roadway through a landscape buffer.
- In the corridors with rear lot residential, a landscape buffer screens the private fences and provides visual cohesion and additional opportunities for green infrastructure.
- Roadway lanes are typically 3.0 - 3.3 metres wide, with 3.35- 3.5 metre wide HOV lanes curbside.
- Right and left turn lanes are 3.0 metres wide.
- The corner curb radii is reduced at intersections and driveways.
- The centre median is utilized for planting in order to reduce the expansive appearance of the ROW and contribute to the urban forest.
- Urbanized intersections with smaller turning radii reduce pedestrians crossing distances and slow vehicular turning.