

## Report to Planning and Environment Committee

**To:** Chair and Members  
Planning & Environment Committee

**From:** Kelly Scherr, P. ENG., MBA, FEC  
Managing Director, Environmental & Engineering  
Services and City Engineer  
John M. Fleming, MCIP, RPP Managing Director, City Planning  
and City Planner

**Subject:** Lambeth Main Streetscape Master Plan Concept  
And Background Document

**Meeting on:** Monday, April 29, 2019

## Recommendation

That, on the recommendation of the Managing Director, Environmental & Engineering Services and City Engineer and the Managing Director, Planning & City Planner, the following actions **BE TAKEN** with respect to the Lambeth Main Street Streetscape Master Plan Concept:

- a) The Lambeth Main Street Streetscape Master Plan Concept Background Document attached hereto as Appendix “A”, **BE RECEIVED** for information; and,
- b) The Lambeth Main Street Streetscape Master Plan Concept attached hereto as Appendix “B”, **BE APPROVED** as a plan identifying infrastructure and urban design guidance for future road projects and redevelopment; and,
- c) City Staff **BE DIRECTED** to initiate an Official Plan amendment in order to add the Lambeth Main Street Streetscape Master Plan Concept to the list of Council approved Urban Regeneration Guidelines in The London Plan.

## Previous Reports Pertinent To This Matter

- Civic Works Committee – April 04, 2018 – Contract Award: Tender No. T18-16 Infrastructure Renewal – Contract 15 Main Street
- Civic Works Committee – June 02, 2015 – Appointment of Consulting Engineers Infrastructure Renewal Program 2016 – 2017

## 2015 – 2019 Strategic Plan

The following report supports the Strategic Plan through the strategic focus area of Building a Sustainable City by implementing and enhancing safe and convenient mobility choices for transit, automobile users, pedestrians and cyclists. The Lambeth Main Street Streetscape Master Plan Concept will provide guidance to infrastructure and development activities to ensure that a high quality pedestrian environment is incorporated and the vision for the Main Street corridor is preserved; creating more beautiful places and spaces.

## Purpose And Effect Of Recommended Action

The purpose and effect of the recommended action is to initiate the process in order to insert the Lambeth Main Street Streetscape Master Plan Concept into the London Plan Urban Regeneration Guidelines (Section 1717) in order for the document to act as a tool for infrastructure and urban design guidance for all future infrastructure projects, planning and development applications, as well as Community Improvement Plan

incentive applications for properties along the Main Street corridor (shown below in Figure 1).

**Figure 1: Location Map – Main Street Corridor**



## Rationale

The adoption of the Lambeth Main Street Streetscape Master Plan Concept as a guideline document is consistent with the 'Our Tools' section of the London Plan (sections 1712 through 1715) as:

- The proposed guideline document contains performance criteria that is more detailed and requires more flexibility, in interpretation or implementation, than the Official Plan allows; and
- The proposed guideline document provides specific direction for the preparation and review of planning and development proposals, in this area.

The Lambeth Main Street Streetscape Master Plan Concept is fulfilling a staff objective to prepare a design manual in order to provide design guidance for renovations, restorations, new developments and infrastructure projects.

## Background

### Context

#### Project Initiation

The 2016 Infrastructure Lifecycle Renewal Contract D – Lambeth was awarded to IBI Group Inc. Established at a preliminary design meeting was the requirement to incorporate initiatives presented in the Southwest Area Secondary Plan and the Official Plan. These initiatives would form a streetscape guideline for the design of the corridor, with the ultimate objective being the creation of a complete street with pedestrian priority, AODA compliant access, bike lanes, street trees, furnishing zones, and on-street parking (as requested by BIA and local Stakeholders).

#### Community Involvement & Public Participation

Several public presentations and meetings have occurred regarding the Streetscape Master Plan Concept. On October 18, 2016, staff and the Community Improvement Plan Pulse Team met with Councillor Hopkins to discuss the concept design; following the discussion the concept design was presented at the shared public meeting with the Community Improvement Plan and Dingman Creek EA. On April 24th, 2017 staff met



with the president of the Lambeth Community Association to present the streetscape master plan.

A community information meeting was held on October 05, 2017 to present the streetscape objective, roadway cross-sections and opportunities for landscape enhancement for areas within the public realm. The streetscape plans (short-term vision) for the restoration of Main Street’s 2018 Infrastructure Renewal works was also presented at this meeting, where it was well received by those in attendance. The streetscape plans were also available for viewing during a project update meeting held on January 17, 2018 to discuss potential construction impacts with Lambeth residents associated with the 2018 Infrastructure Renewal project.

Preliminary Works

On April 24, 2018 Council approved the award of the construction contract for Main Street Lambeth. The works completed during 2018 construction incorporate the foundations for redevelopment of the Lambeth Main Street corridor. With the addition of new municipal services during the 2018 construction including sanitary sewer, increased storm sewer capacity and new water services, Lambeth is well-positioned for redevelopment in the coming years.

Redevelopment

Land dedications received during redevelopment along Main Street will increase the City right-of-way by approximately 6 metres from centreline. Over time, this will bring the total City right-of-way width to 36 metres. The additional land afforded to the City will allow for future development and infrastructure works to incorporate the long-term vision criteria presented in the Lambeth Main Street Streetscape Master Plan Concept.

**Policy Context**

The framework and recommendations set out by the City of London’s existing policy documents informed the design approach of the Lambeth Main Street Streetscape Master Plan Concept. Relevant documents include:

- Complete Streets Design Manual (2018)
- The London Plan (2016)
- London On Bikes – Cycling Master Plan (2016)
- Southwest Area Secondary Plan (2016)
- A New Mobility Transportation Master Plan for London - 2030 Transportation Master Plan: Smart Moves (2013)

The streetscape alternatives presented in the Lambeth Main Street Streetscape Master Plan Concept are also informed by urban design best practices and AODA requirements.

**Discussion**

**The Planning Act**

The Planning Act identifies the following as a matter of provincial interest:

- 2 (q) the promotion of development that is designed to be sustainable, to support public transit and to be oriented to pedestrians;
- 2 (r) the promotion of built form that,
  - (i) is well-designed,
  - (ii) encourages a sense of place, and
  - (iii) provides for public spaces that are of high quality, safe, accessible, attractive and vibrant.

The recommendation is consistent with the Planning Act as it will provide guidance to all planning and development proposals (i.e. London Plan amendments, Zoning Bylaw amendments, Site Plan applications, Minor Variances and Consents) from both the public and the private sector as well as all projects seeking available municipal

incentives. Implementing the guidelines will promote a well-designed built form by promoting a high quality of design that will complement the existing structures in the area; encourage a sense of place by promoting design that is unique in character to the Lambeth community; and provide for public spaces that are of high quality, safe, accessible, attractive and vibrant.

#### **The Provincial Policy Statement, 2014**

Consistent with the Provincial Policy Statement, 2014 (PPS), Section 1.7 Long-Term Economic Prosperity:

- 1.7.1 c. maintaining and, where possible, enhancing the vitality and viability of downtowns and mainstreets;
- 1.7.1 d. encouraging a sense of place, by promoting well-designed built form and cultural planning, and by conserving features that help define character, including *built heritage resources* and *cultural heritage landscapes*;

The recommendation is consistent with the Provincial Policy Statement, 2014 as the implementation of the Lambeth Main Street Streetscape Master Plan Concept will enhance the vitality and viability of the Main Street Lambeth corridor by promoting a high quality of design that will complement existing structures and achieve the vision for the area.

#### **The London Plan (2016, in force with sections under appeal)**

##### Place Type Policies – Main Street

- 903 Main Streets are some of London's most cherished historical business areas that contain a mix of residential and commercial uses that were initially established to serve surrounding neighbourhoods. In new neighbourhoods, main street areas can be planned to create a strong neighbourhood character and distinct sense of place.
- 904 Main Streets play a large role in defining our history and our identity as a city. They include many important cultural heritage resources and their preservation is an important part of our goal to conserve our cultural heritage to pass along to future generations. Main Streets are strongly tied to their surrounding communities, but also provide a unique and inviting shopping and leisure experience for all Londoners and out-of-City visitors.
- 905 *The London Plan* envisions both the creation of new Main Streets and the regeneration of historic Main Streets throughout our city. The important cultural heritage resources of these streets are to be conserved, while allowing for sensitive repurposing, intensification and infill. These streets will contribute significantly to our image and identity as a city and will support the regeneration and continued vitality of the neighbourhoods that surround them.
- 906 *The London Plan* addresses Main Streets in two different ways:
  - 1. As specific segment policies within the Rapid Transit and Urban Corridors Place Type
  - 2. Within this chapter, as a separate Main Street Place Type e. Lambeth
- 907 We will realize our vision for Main Streets by implementing the following in all the planning we do and the public works we undertake:
  - 1. Recognize that each Main Street is unique.
  - 2. Protect and conserve the significant cultural heritage resources of our historic Main Streets.
  - 3. Allow for appropriate and sensitive infill and intensification within our Main Streets.

4. Work toward the regeneration of Main Streets, utilizing community improvement plan programs.
5. Enhance the character of Main Streets with the public works we undertake.
6. Ensure our Main Streets are well connected with transit services.
7. Allow for appropriate forms of intensification at suitable locations to support the sustainability of our Main Streets.
8. Where appropriate, support the efforts of all organizations that are working to improve Main Streets.
9. In new Main Streets encourage a mix of uses with active ground floor uses and forms.

- 911 The following form policies will apply within the Main Street Place Type:
1. All planning and development applications will conform with the City Design policies of this Plan, any existing heritage conservation district plan, the *Ontario Heritage Act*, and any other applicable guidelines.
  2. All new development will be designed to be well integrated with the character and design of the associated Main Street.
  3. Design guidelines may be prepared to provide guidance for development, streetscape improvements, and public works for a specific main street.
  4. Buildings should be located at or along the front property line in order to create a street wall that sets the context for a comfortable pedestrian environment. Exceptions may be made where guidelines suggest an alternative form of development along a specific main street.
  5. All the planning and design that is undertaken in the Main Street Place Type will place a priority on the pedestrian experience through site layout, building location, and a design that reinforces pedestrian comfort and safety.
  6. The public realm should be of a highly urban character and pedestrian and cycling amenities should be integrated into all public works undertaken along main streets.
  7. Enhanced street tree planting should be incorporated into new development proposals to provide for a comfortable pedestrian environment.
  8. Signage should be integrated with the architecture of the buildings, fixed to the building, and its size and application should be appropriate for the character of the area.
  9. Surface parking will be located to the rear or interior side yard of a building. Parking facilities will not be located between the building and the street.

#### Our Tools – Guideline Documents

- 1712 City Council may adopt guideline documents to provide direction for the implementation of the policies of this Plan or to guide development of a specific area. Guideline documents may contain guidelines, standards, and performance criteria that are either too detailed, or require more flexibility in interpretation or implementation than the policies of this Plan would allow.
- 1713 Guideline documents will be adopted by resolution of City Council. Planning and development applications and public works shall be reviewed to determine their consistency with the provisions of any applicable guideline document, and conditions may be imposed upon the approval of development accordingly. Provincial guideline documents will also be used to implement the policies of this Plan.
- 1714 The preparation of a guideline document will include provisions to encourage input from agencies, associations, and individuals that have an interest in the subject matter. Before adopting or amending a guideline

document, City Council will hold a public meeting to provide for input from interested parties.

- 1715 Where there is a conflict or incongruence between a guideline document and one or more policies within *The London Plan*, the policies of *The London Plan* shall prevail.

The Lambeth Main Street Streetscape Master Plan Concept complies with the Main Street place type policies (sections 903 through 911) and the tools for guideline documents (sections 1712 through 1715) of the London Plan. The manual will provide guidance for all future development along the Main Street Lambeth corridor to preserve the vision for the area in accordance with the Main Street Place Type. Adoption of the Lambeth Main Street Streetscape Master Plan Concept by Council will include incorporating the manual in the list of Urban Regeneration Guideline documents section (1717) of the London Plan.

#### Summary

The Lambeth Main Street Streetscape Master Plan Concept will be referenced in conjunction with the design policies of the London Plan to evaluate all planning and development proposals (e.g. London Plan amendments, Zoning Bylaw amendments, Site Plan applications, Minor Variances and Consents) from both the public and the private sector as well as all projects seeking available Community Improvement Plan financial incentives. It may also be referenced by development proponents when contemplating their plans. Additionally, the manual will be provided to consultants for future infrastructure works to ensure designs align with the ultimate vision for the Main Street Lambeth corridor.

## **Conclusion**

The recommended action to have staff initiate an Official Plan amendment to adopt the Lambeth Main Street Streetscape Master Plan Concept in the City of London's Official Plan (The London Plan); meeting the Provincial interests of providing a well-designed built form and providing for a sense of place. The recommendation is consistent with the Provincial Policy Statement and is consistent with the London Plan. An amendment will provide for a guideline document that will act as a tool for infrastructure and urban design guidance for all future road projects, planning applications and Community Improvement Plan incentive applications in this area.

This report was prepared with the assistance of Karl Grabowski, P.Eng., Transportation Design Engineer and Matt Davenport, EIT, Engineer in Training of the Transportation Planning & Design Division, and Britt O'Hagan, Manager, Urban Regeneration from City Planning.

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Note: The opinions contained herein are offered by a person or persons qualified to provide expert opinion. Further detail with respect to qualifications can be obtained from Planning Services	

April 17, 2019  
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- Attach: Appendix A: Lambeth Main Street Streetscape Master Plan Background Document
- Appendix B: Lambeth Main Street Streetscape Master Plan Concept

cc:



**Appendix A: Lambeth Main Street Streetscape Master Plan Background Document**





# Lambeth Main Street

## Streetscape Master Plan Concept Background Document

July 2018





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# Executive Summary

Within southwest London, the Main Street corridor between Colonel Talbot Road and Campbell Street in Lambeth has been identified as a focus area for growth and development.

The Streetscape Master Plan Concept will support the transformation of the streetscape from a primarily car-oriented corridor to a pedestrian friendly public realm, with balanced transportation choices for the long term. The Master Plan will guide streetscape development and provide strategies to strengthen and reinforce the sense of place.

The Streetscape Master Plan Concept is consistent with the vision and directives that were established through the Southwest Area Plan.

There are two main components to the Main Street Project:

1. **Infrastructure Renewal:** which will see new municipal services installed in 2018.
2. **Streetscape Concepts:** which have been developed in coordination with the Lambeth Community Improvement Plan, parts of which will be incorporated into the restoration works for the 2018 construction project.

This Streetscape Master Plan Concept presents a vision for the short and long term redevelopment of the Main Street corridor in Lambeth, focusing on streetscape design recommendations for the focus area. It outlines several streetscape design alternatives which represent different streetscape priorities and intensities of investment and redevelopment throughout the corridor, and at specific nodes where Main Street intersects with adjacent roadways.

The streetscape concepts are based upon the assertion that there is significant potential and a desire for the Main Street Corridor to become an “imageable” mixed-use heart of the Village – the “spine” or “backbone” of Lambeth.

A series of consultations were held throughout this project to discuss local municipal priorities for the Lambeth Main Street Streetscape Master Plan Concept vision. The consultations examined the project background, varying land uses and existing contexts in the corridor, the municipal plans, future projects in the area, active transportation precedents and streetscape best practices, all of which help to inform a context-driven Streetscape Master Plan Concept.

The report is organized in the following sequence:

## 1.0 Introduction

- Outlines project scope, roles and responsibilities, and project background.

## 2.0 Project Context

- Provides an overview of the secondary plan, land use context, and existing conditions analysis.

## 3.0 Project Vision & Objectives

- Highlights the united project vision and objectives.

## 4.0 Streetscape Design Principles

- Outlines the guiding principles factored into the development of design concepts for the Streetscape Master Plan.

## 5.0 Streetscape Design Elements

- Outlines the streetscape design elements considered and parameters for utilizing Right Size Street principles.

## 6.0 Streetscape Design Concept Alternatives

- Outlines the approach to selecting concepts.



# 1.0

## Introduction

### 1.1 Study Area

The Lambeth Main Street Streetscape Master Plan Concept comprises of the Main Street segment between Colonel Talbot Road and Campbell Street.

The focus of this Master Plan is the streetscape within the existing and future extents of the ROW, specifically between property lines – and does not address built form or intersecting roads within Lambeth Village.

The Study was completed in two parts. Part 1: the Streetscape Master Plan Concept Background Document, comprising of the background review, visioning and objectives, design principles and elements; and Part 2: the Streetscape Master Plan Concept which provides the design alternatives, preferred concepts, lane configuration and suggested materials, under separate cover.

[The segment is shown on the following page.](#)

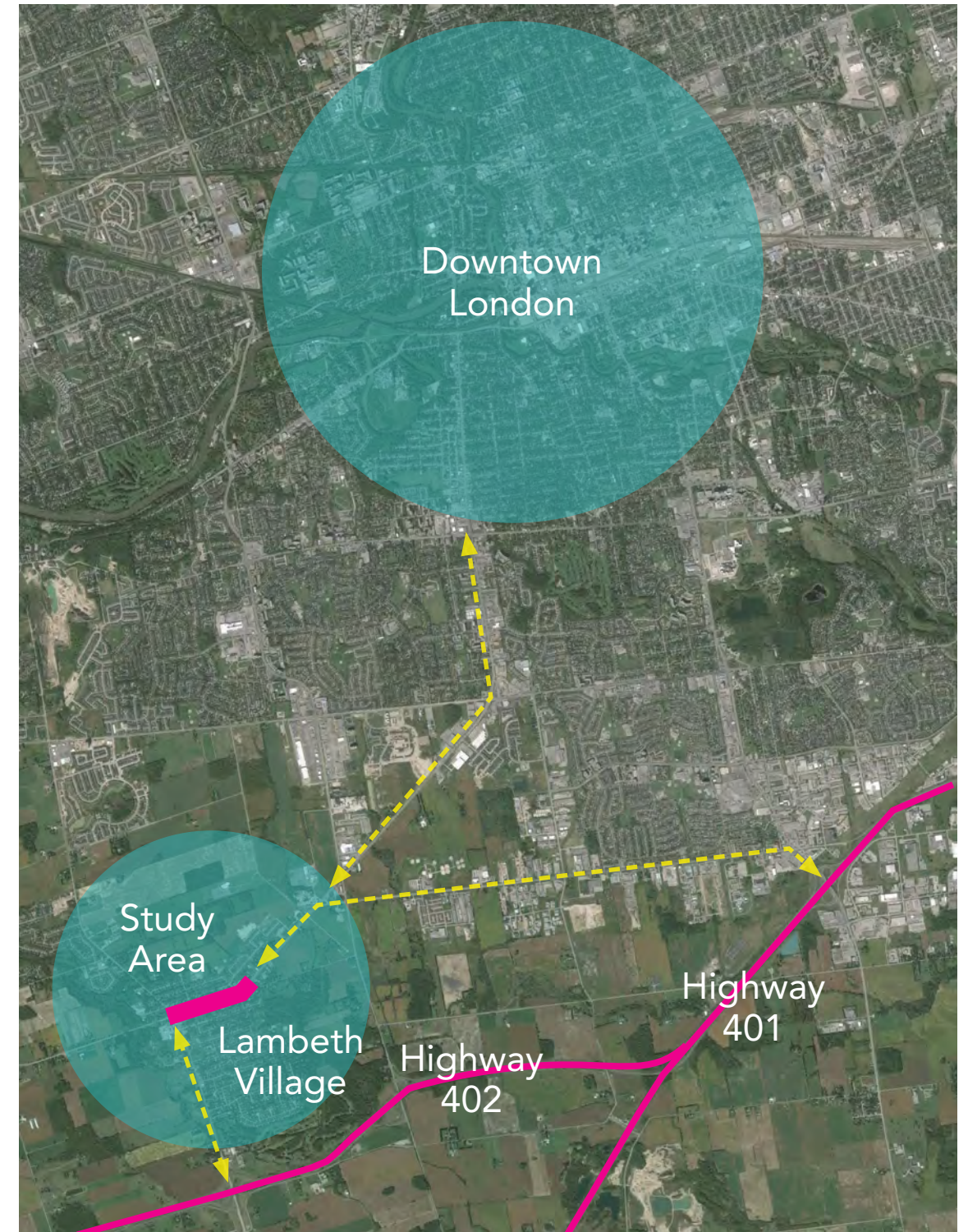




Figure 1: Project Study Area





# 2.0

## Project Context

### 2.1 Policy Context

The Streetscape Master Plan Concept for Lambeth’s Main Street supports the initiatives set by the City of London’s existing policy documents. Relevant documents include:

- Southwest Area Secondary Plan, City of London (2016)
- The London Plan (2016)
- London ON Bikes, City of London Cycling Master Plan (2016)
- A New Mobility Transportation Master Plan for London: 2030 Transportation Master Plan Smart Moves (2013)
- London Complete Streets Design Manual (2018)

The policy framework and recommendations set out by these documents inform the design approach of the Main Street Streetscape Master Plan Concept. The streetscape alternatives are also informed by Urban Design best practices, guidelines and standards, including AODA requirements.

A brief overview of some of the most relevant aspects of the plans are set out in this section.

SECONDARYPLAN 20.5	
November 2012	
	
Southwest Area Plan City of London	
Contents	
20.5.1	Introduction Introduction Purpose and Use of the Plan Vision Principles of the Secondary Plan Existing Approved Area Plans
20.5.2	Community Structure Plan
20.5.3	General Policies Housing Sustainable/Green Development Neighbourhood Central Activity Nodes Community Parkland and Trail Network Parkland Dedication Natural Heritage Community Facilities Transportation Urban Design
20.5.4	General Land Use Policies Residential Institutional Open Space
20.5.5	Neighbourhoods and Land Use
20.5.6	Wonderland Boulevard Neighbourhood
20.5.7	Lambeth Neighbourhood
20.5.8	Lambeth Village Core Neighbourhood
20.5.9	Bostwick Residential Neighbourhood

### Southwest Area Secondary Plan, City of London (2016)

This Southwest Area Secondary Plan is organized on the basis of neighbourhood areas which have specific functions and characteristics. The study area in question is located within the ‘Lambeth Village Core Neighbourhood’. As identified in the Secondary Plan, the predominant land use designations are mixed use with flexible ground floor uses (e.g., office and commercial) and low density residential. The Main Street Streetscape Master Plan Concept must comply with the Southwest Area Secondary Plan’s detailed land use plans and policy guidelines. Key attributes that inform the Streetscape Master Plan Concept are as follows:

#### Built Form

- Mixed-use
- Low rise (three storeys)
- Flexible ground floor (commercial and office)
- ‘Village’ Streetscape Character

#### Transportation

- Facilitate walking and cycling
- On-street parking
- Minimal building front parking
- Maintain the function as an important arterial road



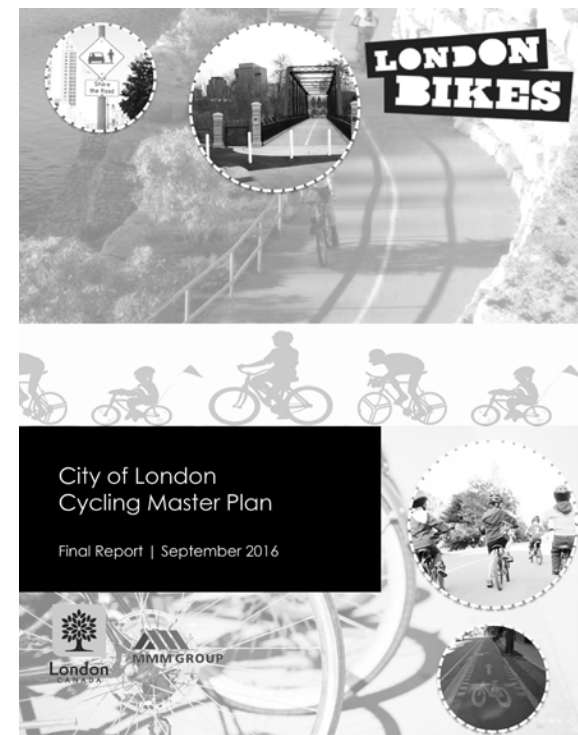
## The London Plan (2016)

The London Plan outlines key issues facing the city and establishes a vision for the future of London, as well as directions and key strategies to achieve the vision. The London Plan goes on to outline eight directions to achieve this vision.

The eight directions are as follows:

1. Plan Strategically for a Prosperous City
2. Connect London to the Surrounding Region
3. Celebrate and Support London as a Culturally Rich, Creative and Diverse City
4. Become one of the Greenest Cities in Canada
5. Build a Mixed-Use Compact City
6. Place a New Emphasis on Creating Attractive Mobility Choices
7. Build Strong, Healthy and Attractive Neighbourhoods for Everyone
8. Make Wise Planning Decisions

The Main Street corridor should work towards achieving these directions. Creating a vibrant, strong sense of place is key to achieving The London Plan Vision.

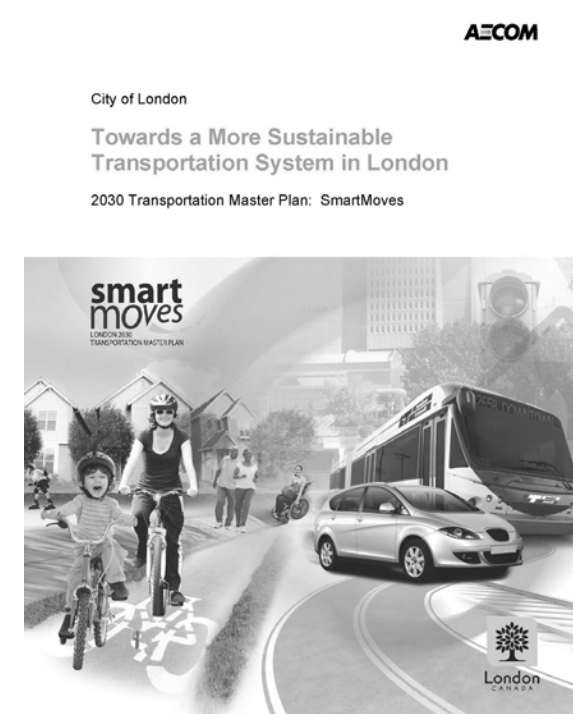


## London ON Bikes, City of London Cycling Master Plan (2016)

The 2016 Cycling Master Plan provides a holistic plan for the future of the City's cycling network, including key pathways, supporting programming as well as outlines a recommended investment and implementation strategy to 2031. The recommended facilities are considered for the Main Street Streetscape Master Plan Concept.

## A New Mobility Transportation Master Plan for London: 2030 Transportation Master Plan Smart Moves (2013)

The London 2030 Transportation Master Plan (TMP) is a long-term Transportation Strategy for the City that will help guide the City's transportation and land use decisions through to 2030. The report addresses 5 Smart Moves through context sensitive solutions. Working within the various contexts found within the different communities in London, the TMP provides a toolbox of options which outlines the proposed responses. A key outcome from this report that impacts the Lambeth Main Street streetscape design is the recommended road improvements for future transportation operations on Main Street.

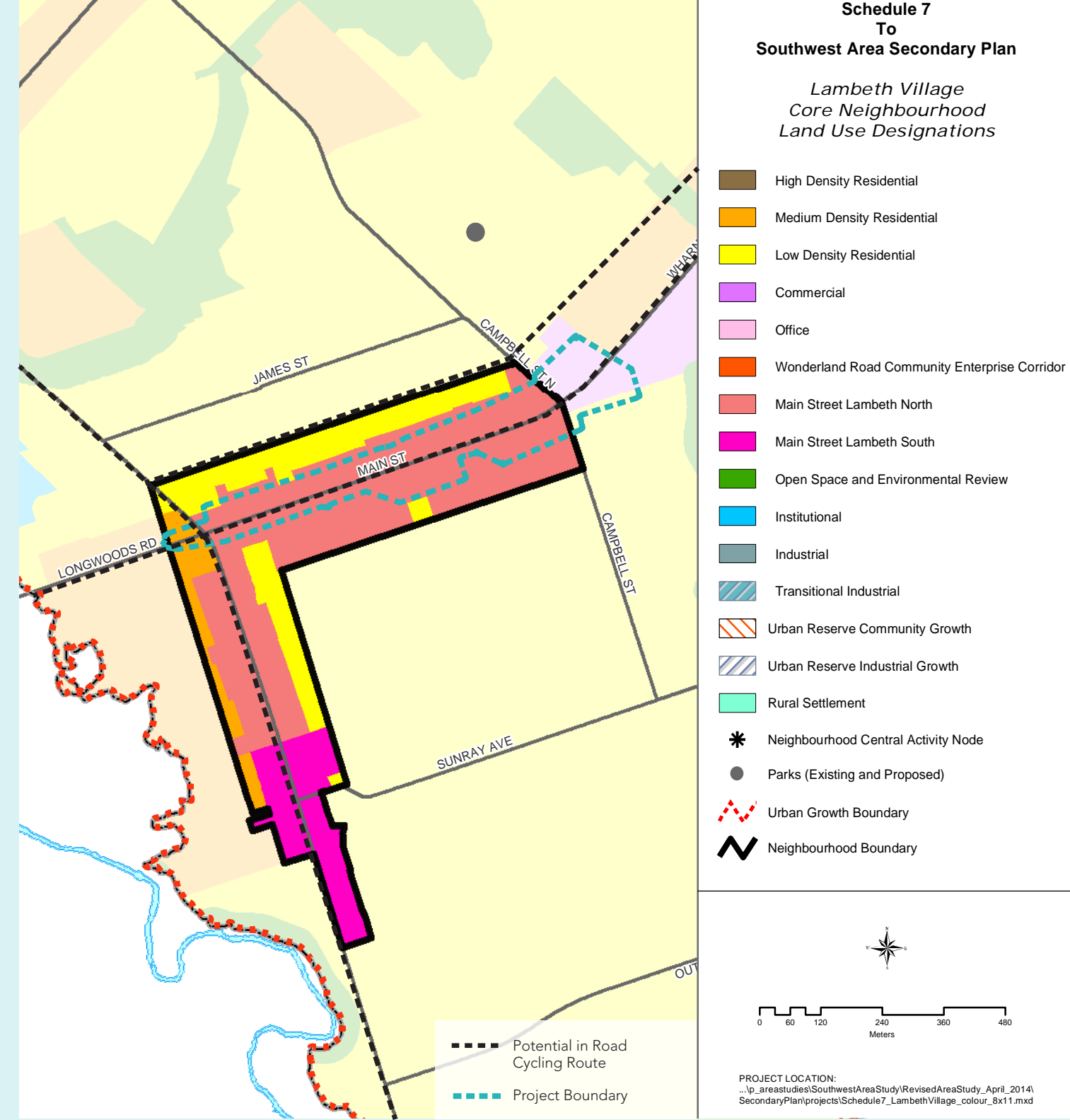


## London Complete Streets Design Manual (2018)

Drafted in 2018, London's Complete Streets Design Manual is intended to be the guiding framework for street design, as London continues to grow and evolve. Streets are to be designed and upgraded to be more 'complete', meaning they will meet the needs of a wide range of users, as determined by the place type. In keeping with the Complete Streets Design Manual, the Main Street Streetscape Concept Master Plan is influenced by the principles of "completeness" and considers a balance of modes, users and places. A high-quality pedestrian realm with seamless integration to transit services, cycling networks and automobile users are considered within the recommended improvements.



Figure 2: Land Use Designation



Text and Map Source: Southwest Area Secondary Plan 2016 and  
London ON Bikes City of London Cycling Master Plan 2016



## 2.2 Land Use

As shown in the Southwest Area Plan, the predominant land use designations for 'Lambeth Village Core Neighbourhood' are 'Main Street Lambeth North' and 'Low Density Residential'. This designation is intended to encourage mixed-use buildings (e.g., office and commercial), whilst still allowing stand-alone residential uses. This designation applies to lands that have frontage on Main Street within the Neighbourhood.

## 2.3 Place Type

The Main Street Streetscape Master Plan Concept should respond to the corresponding Place Type outlined in the London Plan. The 'Main Street' Place Type is assigned to the Lambeth Village Core Neighbourhood. As defined in the London Plan, Main Streets include many important cultural heritage resources and their preservation is an important part of the City's goal to conserve cultural heritage.

The London Plan envisions the regeneration of historic Main Streets such as Lambeth's Main Street. Moreover, the London Plan stipulates that all development that is undertaken in the Main Street Place Type must place a priority on the pedestrian experience. The public realm should be of a highly urban character, and pedestrian and cycling amenities should be integrated into all public works undertaken along main streets.



## 2.4 Existing Conditions

The Main Street is perceived to be the “spine” of the Village. In spite of that, the corridor lacks a discernable identity, cohesive urban fabric, and a treed boulevard for pedestrian comfort. Numerous successful tenants and businesses draw significant traffic to the corridor. At present, Main Street is a car dominant corridor with frequent driveway accesses to commercial, retail and low density residential uses.

In summary, there is considerable urban life flowing through the Main Street corridor. The corridor is within close proximity to stable residential neighbourhoods, creating the potential for walkable environments and strong connections between residential and commercial uses.

The challenges observed from site inventory are listed below:

1. Narrow 20.1 metre right of way (ROW) .
2. Streetscape character predominantly low density retail and residential with wide set back from street line.
3. Architecture character predominately consists of detached houses with porch details.
4. Hydro poles are the most outstanding elements on the street.
5. Individual driveways typically connect the properties to Main Street.
6. Large asphalt parking lots in front of strip malls.
7. Narrow sidewalks on both side of the street.
8. Rural cross section at Main Street and Colonel Talbot Road with retail parking lots and a cemetery.
9. Suburban cross section at Main Street and Campbell Street with strip malls and their parking lots defining the node.





# 3.0

## Project Vision and Objectives

Main Street's primary function is to support local business, active transportation options and vehicular movement in order to foster a vibrant mixed-use neighbourhood spine that is rich in history and serves as a community hub in the southwest part of London.

### Streetscape Vision

The focus at this stage is to develop a streetscape vision for Main Street that builds upon the transformation of the public realm through a place-based approach, incorporating urban design guidelines that:

*Create a pedestrian oriented, walkable urban mixed-use main street; Serve as a central community focal point*

*Provide a neighbourhood level of service within walkable distance for Lambeth residents and other nearby communities*

*Maintain and enhance "high quality architectural design to provide an identifiable character"*

*Celebrate the "potential Heritage Conservation District"*

*Cater to major traffic needs of Main Street*

### Streetscape Objectives

#### Great Streets:

*Designed for safety and accessibility for all users and modes of transportation*

*Public spaces for people and the surrounding community*

*Encouraging of a prosperous economy, culture and environment*

*Designed for sustainability and public health*



Community Hub for southwest London



Local Transit Connection



Character Rich Community Spine



Vibrant Mixed-Use Neighbourhood



Active Transportation



Public Realm with Strong Sense of Place



Vehicular Movement



# 4.0

## Streetscape Design Principles

Review of relevant documents, including the Southwest Area Secondary Plan, the London Plan, and the Cycling Master Plan, as well as insights gained from staff and key person interviews suggest several guiding principles that should inform concepts for re-envisioning and improving the corridor. These guiding principles factored heavily into the development of the three (3) design alternatives found within the Streetscape Master Plan Concept.

### Streetscape Design Principles

- 1. Establish a vision, development tools and implementation strategies incorporating great street principles.*
- 2. Develop a comprehensive complete street.*
- 3. Renew infrastructure and servicing.*
- 4. Provide pedestrian accessibility, comfort and amenity.*
- 5. Enhance the neighbourhood characteristics.*
- 6. Provide connectivity and establish a neighbourhood destination.*
- 7. Stimulate placemaking opportunities.*





*Protection against traffic and accidents*

*Protection against unpleasant sensory experience*

*Options for mobility*

*Options to stand and linger*

*Options for sitting*

*Options for play, exercise, and activities*

*Appropriate scale*

*Opportunities to enjoy the positive aspects of climate*

*Experience of aesthetic qualities and positive sensory experiences*





# 5.0

## Streetscape Design Elements













Significant change along the Main Street corridor will take time. At the outset, however, it is important to agree upon the design elements that will support improvement along the corridor. The Main Street Streetscape Concept could pursue a course that would radically change its image; through distinctive design elements, engaging the street and surrounds to make the corridor an attractive place for shopping, entertainment, living, and working.

The elements support the use of the corridor as a kinetic experience for drivers and pedestrians, incorporating rhythm and scale, public art, colour and plantings.

The following pages illustrate the streetscape design elements considered for the corridor's Streetscape Master Plan Concept Alternatives. Each element includes a descriptive strategy to be used for deployment.

### Streetscape Design Elements

- Lane Width
- Median
- Curb Radii
- Sight Triangle
- Driveway
- Sidewalk
- Lighting Poles
- Utility Poles
- Planting
- Parking
- Street Wall
- Active Transportation

Streetscape Element		Strategy
Lane Width		Narrow lanes will urbanize the street and slow traffic down.
Median		Medians can provide pedestrians refuge at signalized crossings and integrate street trees and planting into the streetscape.
Curb Radii		Reduce radii wherever possible (dependent on land use) in order to slow traffic and reduce pedestrian crossing distances.
Sight Triangle		Sizing varies dependent on speed limit, number of lanes and intersection configurations. Visual obstacles should be minimized within the sight triangle.
Driveway		Combine driveways where possible and reduce width in order to minimize disruption to streetscape. Maintain pedestrian/ cyclist priority at driveways.
Sidewalk		Wider, continuous sidewalks (i.e. through driveways) create a safer more appealing pedestrian environment that can accommodate pedestrian amenities.
Lighting Poles		Lighting design that is coordinated with other street furniture aids in establishing a strong, unique sense of place for the corridor.
Utility Poles		Burying utilities creates more space for streetscape elements such as planting, cycling infrastructure and pedestrian amenities as well as minimizes streetscape clutter.
Planting		Large trees separate the roadway, provide shade and environmental benefits as well as aid in establishing an appealing streetscape.
Parking		Through minimizing surface parking lots that front the streetscape in favour of on-street parking, the streetscape becomes a more animated, urban environment.
Street Wall		The corridor can be urbanized through encouraging new buildings to front directly or in close proximity to the streetscape.
Active Transportation		Cycle tracks or multi-use paths allow for safer, more comfortable cycling and can encourage active transportation.

## 5.1 Parameters for Streetscape Design

A key element to the Streetscape Master Plan Concept is optimization of road widths to allow for the allocation of appropriate space for street elements. Through utilizing Right Size Street principles with a context-specific approach, a streetscape that benefits all users including pedestrians, cyclists, transit users and motorists, can be developed.

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;
- Supporting businesses and the local economy;
- Creating streetscapes that foster community; and
- Creating a destination.

### Right Size Streets Principles

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

- Reduced lane widths are used to encourage road users to maintain a safe driving speed and create more room for active transportation infrastructure, landscaped areas, boulevard trees, public art and other placemaking elements;
- Reduce curb turning radii;
- Add cycling infrastructure; and
- Increase pedestrian realm.

The following table demonstrates the geometry employed in the Streetscape Master Plan Concept.

	Streetscape Element	Streetscape Master Plan Width
	Sidewalk	1.8m+
	Raised Cycle Track	1.8m
	Curb Lane	3.5m
	Two-Way Left Turn Lane	3.5m
	On-Street Parking	2.5m
	Curb	0.6m
	Median	2.9m+
	Sidewalk-Cycle Track Buffer	0.4m+
	Furnishing/ Landscape Zone	1.8m+





# 6.0

## Streetscape Design Concept Alternatives

In a process that involved objectively considering feasible scenarios, three (3) alternative concepts (explained further in this section) were proposed for the corridor:

- Option 1: Roadway Priority;
- Option 2: Transit Priority; and
- Option 3: Boulevard Priority.

Each alternative concept identifies near term and long term improvements along the corridor, according to the dominant streetscape typology. The corridor's individual streetscape typologies are informed by existing and future land uses.

Several streetscape typologies were identified along the corridor as requiring context-sensitive solutions due to the unique qualities of the street interface and surrounding built and natural environment.

The streetscape typologies include:

- Main Street Midblock Treatment with Layby Parking;
- Permanent Intersection Treatment; and
- Lower Density Midblock Treatment.

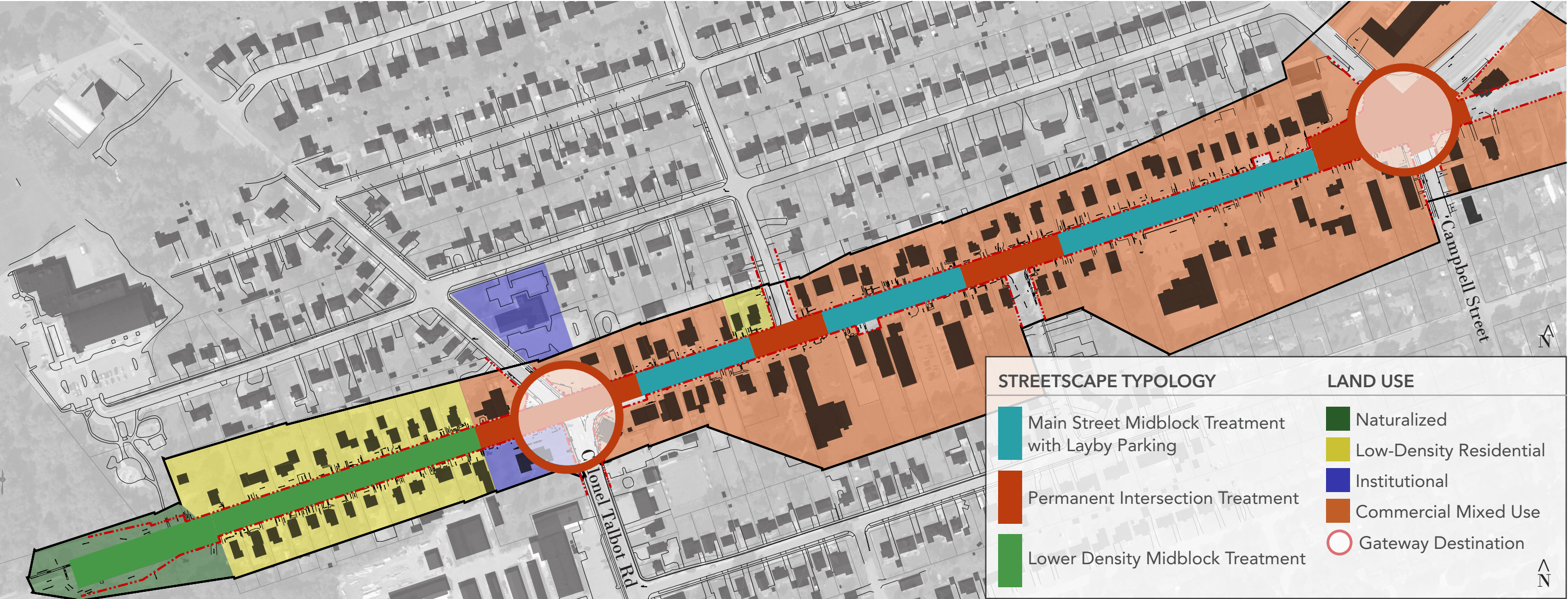
Main Street Midblock Treatment requires short-term improvements with the introduction of right sizing and design elements.

Permanent Intersection Treatment will see long-term improvements that will influence future improvements to midblock sections. Creating destination 'gateways' is also key to this approach and will incorporate placemaking features to establish a strong sense of place along Main Street.

Lower Density Midblock Treatment features low-impact measures due to the residential land uses and proximity to Dingman Creek.



Figure 3: Streetscape Typology and Land Use



Potential features include:

- Community space for free events and activities
- Public art
- Activated corner uses
- Improved sight lines through plaza
- Enhanced lighting in the plaza

*Gateway features at Colonel Talbot Road and Campbell Street establish a strong sense of place along Main Street.*



Streetscape Priority	Streetscape Form	Streetscape Typologies
Option 1: <b>Roadway</b> Priority	a: Centre Median	Midblock
		Minor Intersection
		Major Intersection
	b: Sharrow Cycling Facilities	Midblock
		Minor Intersection
		Major Intersection
Option 2: <b>Transit</b> Priority	Bus Bays	Midblock
		Minor Intersection
		Major Intersection
Option 3: <b>Boulevard</b> Priority	Boulevard Cycle Track	Midblock
		Minor Intersection
		Major Intersection

## 6.1 Design Process

In order to deduce the final streetscape design concept, the design process involved outlining and contextualizing a stream of streetscape design alternatives. The three streetscape priorities that emerged in this process are shown in the adjacent table, and represent programs that incorporate varying configurations and design elements within the right-of-way.

## 6.2 Design Alternatives

### Option 1: Roadway Priority

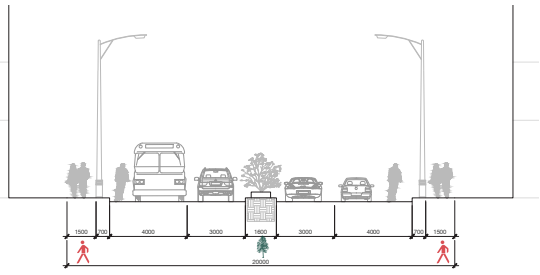
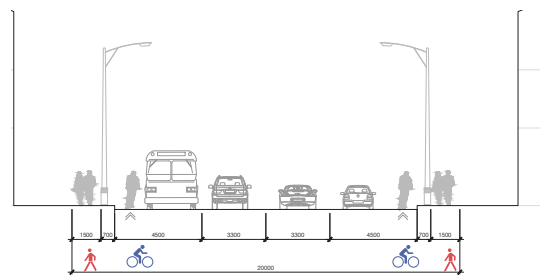
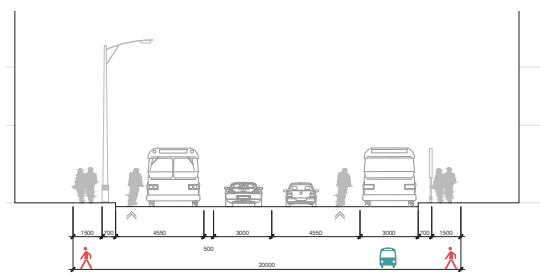
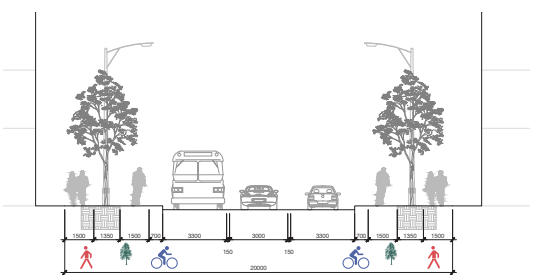
The public realm will be primarily enhanced for pedestrian and motorist users. The preferable right size width increases the current standard width for pedestrian sidewalks. The width ensures a consistent centre median and provides sharrow cycling facilities. The width will allocate lanes for buses, motorists, trucks and parked cars. The streetscape forms will be configured according to the streetscape typology. For cross sections, refer to the Appendix A.

### Option 2: Transit Priority

The public realm will be primarily enhanced for pedestrian and transit users. The preferable right size width increases the current standard width for pedestrian sidewalks. In this option, the width does not allocate a lane for cycling facilities. The width does allocate lanes for buses, motorists, trucks and parked cars. Surface bus routes will provide clearly marked bus stops that call attention to the stop and explain the route. Frequency and placement of the bus stop will serve multiple streetscape typologies with planned bus stops located at midblock points, minor intersections and major intersections. For cross sections, refer to the Appendix A.

### Option 3: Boulevard Priority

The public realm will be primarily enhanced for pedestrians and cyclist users. The preferable right size width increases the current standard width for pedestrian sidewalks. The width will allocate lanes for cyclists, buses, motorists, trucks and parked cars. Boulevard cycle tracks will be provided to improve safety and reduce risk for all road users and minimize impacts to curbside operations. The boulevard cycle track will serve multiple streetscape typologies for clear sight lines and safe crossings.

Option		Midblock Cross Section	Program		
1: Roadway Priority	a: Centre Median		<ul style="list-style-type: none"><li>Green elements</li><li>Median integrates with mid-block crosswalk</li><li>Two vehicular lanes in either direction</li><li>Street lights</li></ul>	<ul style="list-style-type: none"><li>No cycling facilities</li><li>Boulevard only contains pedestrian sidewalk</li><li>No on-street parking</li></ul>	<ul style="list-style-type: none"><li>Ideal 3m setback</li><li>Minimum 1m setback</li></ul>
	b: Sharrow Cycling Facilities		<ul style="list-style-type: none"><li>Sharrow cycling infrastructure</li><li>Two vehicular lanes in either direction</li><li>Street lights</li></ul>	<ul style="list-style-type: none"><li>No green elements</li><li>No on-street parking</li></ul>	<ul style="list-style-type: none"><li>Ideal 3m setback</li><li>Minimum 1m setback</li></ul>
2: Transit Priority	Bus Bays		<ul style="list-style-type: none"><li>Bus bays</li><li>Sharrow cycling infrastructure</li><li>One vehicular lanes in either direction</li><li>Turning Lane</li><li>Street lights</li></ul>	<ul style="list-style-type: none"><li>No green elements</li><li>No on-street parking</li><li>Bus must cross bike path</li></ul>	<ul style="list-style-type: none"><li>Ideal 3m setback</li><li>Minimum 1m setback</li></ul>
3: Boulevard Priority	Boulevard Cycle Track		<ul style="list-style-type: none"><li>Green elements</li><li>Segregated cycling facilities</li><li>Tree canopy provides shade for users</li><li>Turning Lane</li><li>Street lights</li></ul>	<ul style="list-style-type: none"><li>One lane of vehicular traffic in either direction</li><li>No on-street parking</li></ul>	<ul style="list-style-type: none"><li>Ideal 3m setback</li><li>Minimum 1m setback</li></ul>



## 6.3 Design Concept Precedents

A Design Concept Precedent analysis was used to identify best practice solutions that can be made applicable to the Main Street context. The precedents are described below.

### Streetscape

The precedents notably prioritize pedestrians first. This means providing continuous accessible sidewalks along both sides of the street. Where possible, street trees are planted approaching signalized intersections to facilitate pedestrian circulation. The streetscape will be animated through the combined use of streetscape design elements that incorporate rhythm and scale, public art, colour and planting.

### Gateway Plaza

Creating destination gateway plazas are key to this approach and will reinforce a sense of place unique to Lambeth through the use of specialized paving treatments.

### Furnishing and Planters

Furnishing and greening zones create opportunities to create visual cohesion in an area that currently lacks continuity.

### Rain Garden

Rain Gardens collect and filter stormwater in order to take pressure off of the sewer system during extreme weather events, as well as minimize the usage of potable water for irrigation. The use of a rain garden also presents the opportunity for an animated community space.

### Signage / Public Art




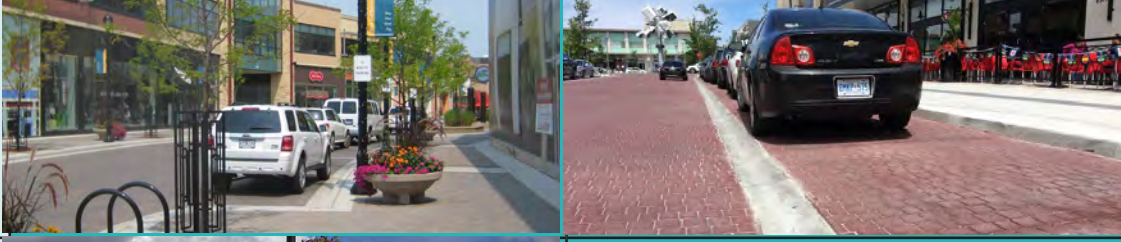
Integrating the signage strategy into the design language and aesthetic of the streetscape will require considering the human factor in design and developing universally accessible standards.

### Parking

The addition of on-street parking will bring people closer to businesses and introduce a buffer at the street edge.

### Lighting and Utility Poles

A lighting hierarchy should be developed to satisfy the needs of all users. Coordinating the design vocabulary of the lights with the design aesthetic of the streetscape is key. Also, providing accent lighting to highlight areas of interest of high pedestrian activity.

Streetscape Concept Precedents	Strategy
<div data-bbox="307 354 540 399" data-label="Caption">Streetscape</div> 	<p>Continuous accessible sidewalks will make active transportations a desirable option.</p>
<div data-bbox="282 584 565 628" data-label="Caption">Gateway Plaza</div> 	<p>Provide well defined urban spaces with distinct streetscape elements to enhance sight lines and provide a high quality public realm.</p>
<div data-bbox="344 814 503 858" data-label="Caption">Planters</div> 	<p>Use a cohesive and unique plant palette paired with distinctive tree species to aid in presenting a clear theme.</p>
<div data-bbox="304 1044 543 1088" data-label="Caption">Rain Garden</div> 	<p>Aid in the collection and filtering of stormwater and create an opportunity for an animated community space.</p>
<div data-bbox="229 1274 621 1318" data-label="Caption">Signage / Public Art</div> 	<p>Public art and signage at key locations will promote community identity and celebrate the historical and cultural qualities of the space.</p>
<div data-bbox="348 1503 497 1548" data-label="Caption">Parking</div> 	<p>On-street parking brings people closer to businesses and creates a buffer at the street edge.</p>
<div data-bbox="183 1729 671 1774" data-label="Caption">Lighting and Utility Poles</div> 	<p>Ensure sufficient lighting that follow a unified and cohesive architectural and urban design.</p>



An aerial photograph of a suburban neighborhood, showing a grid of streets, residential houses, and trees. A teal banner is overlaid across the middle of the image, containing the title text.

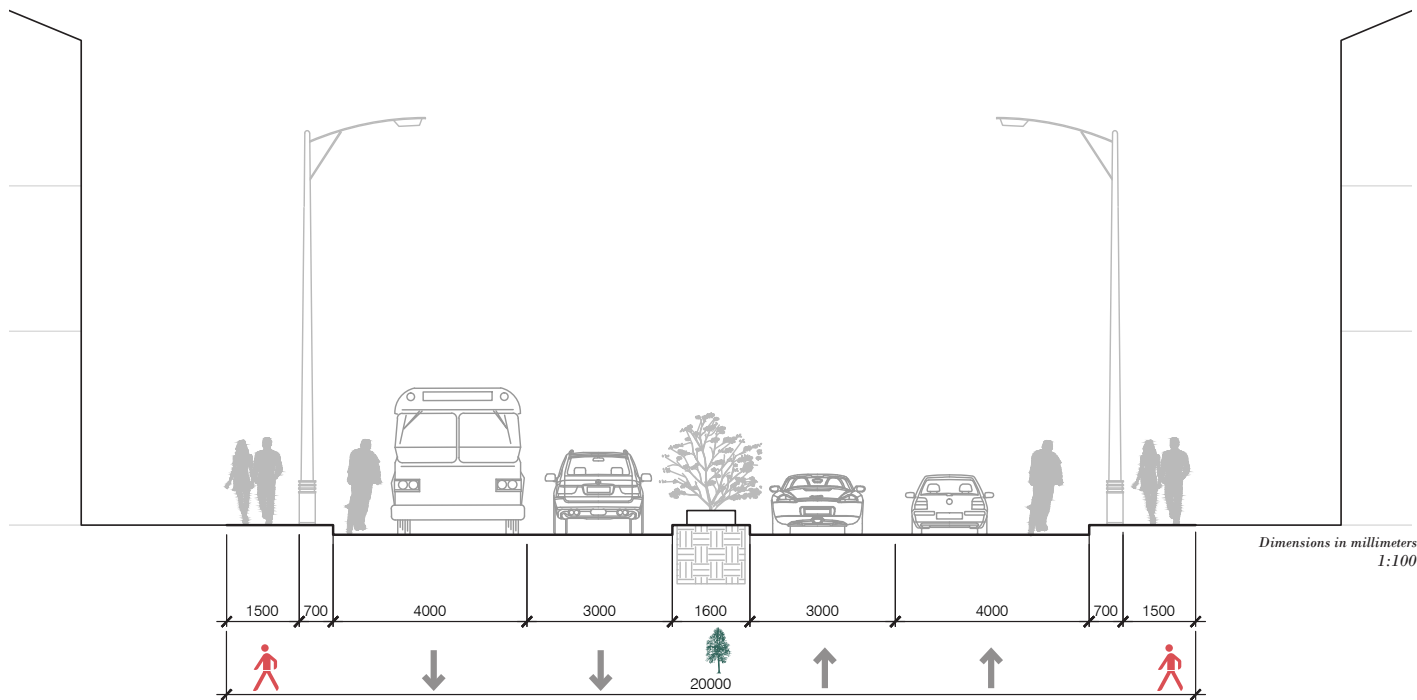
# Appendix A | Streetscape Concept Alternatives





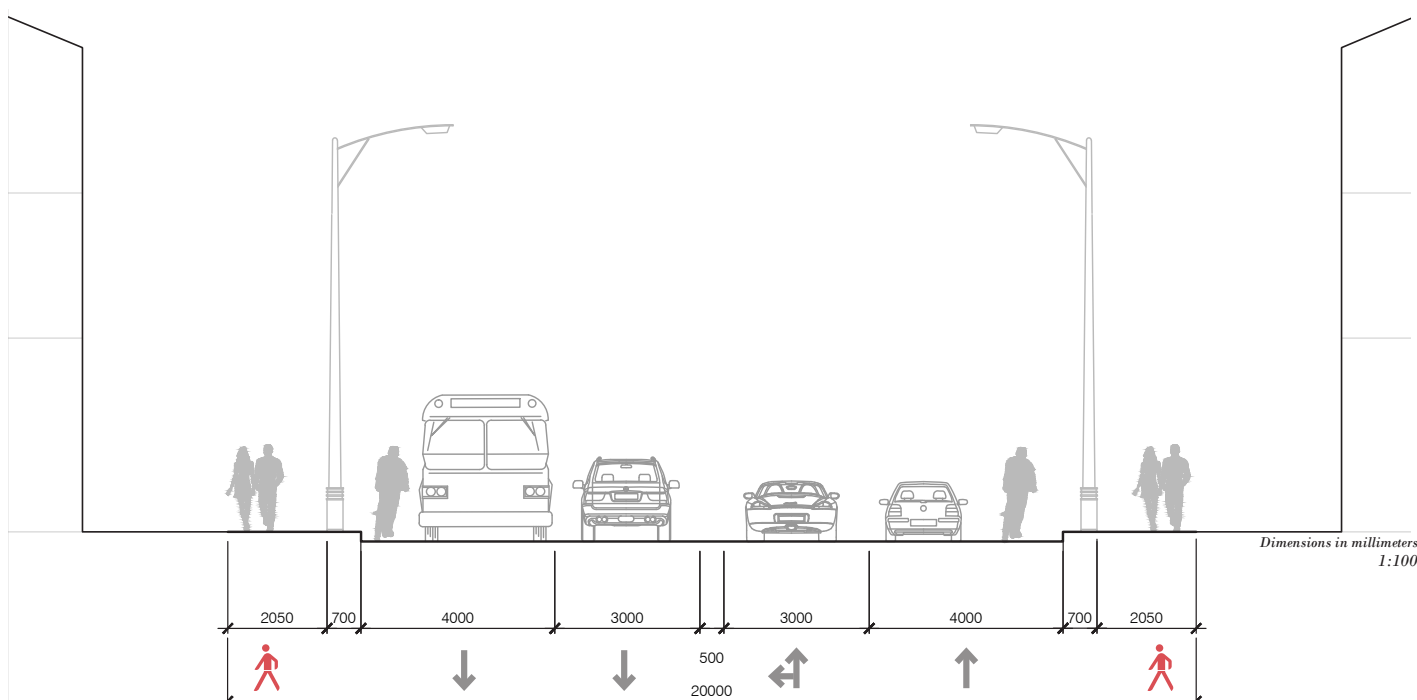
Option 1a: Centre Median

Midblock Condition



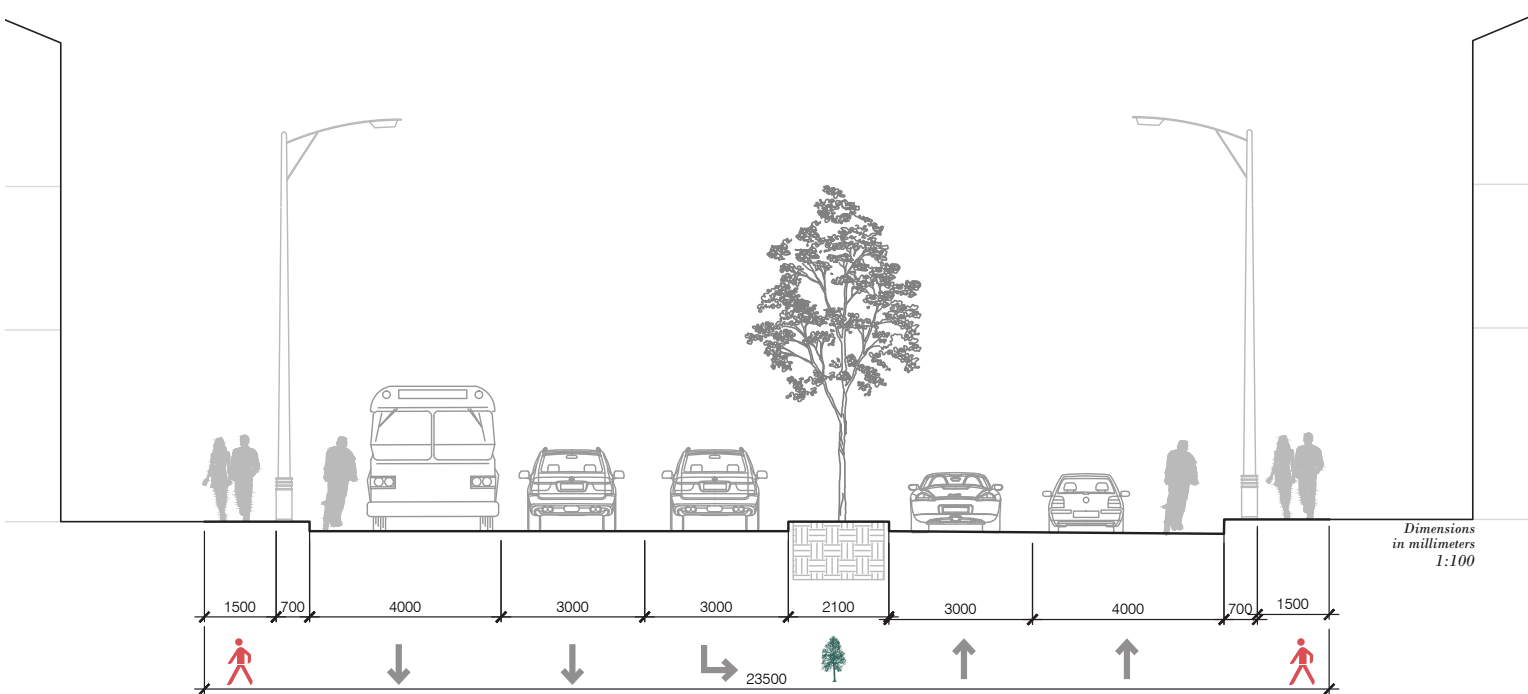
Option 1a: Centre Median

Minor Intersection Condition



Option 1a: Centre Median

Major Intersection Condition



Option 1(a): Four Vehicular Through Lanes  
Roadway Priority Options

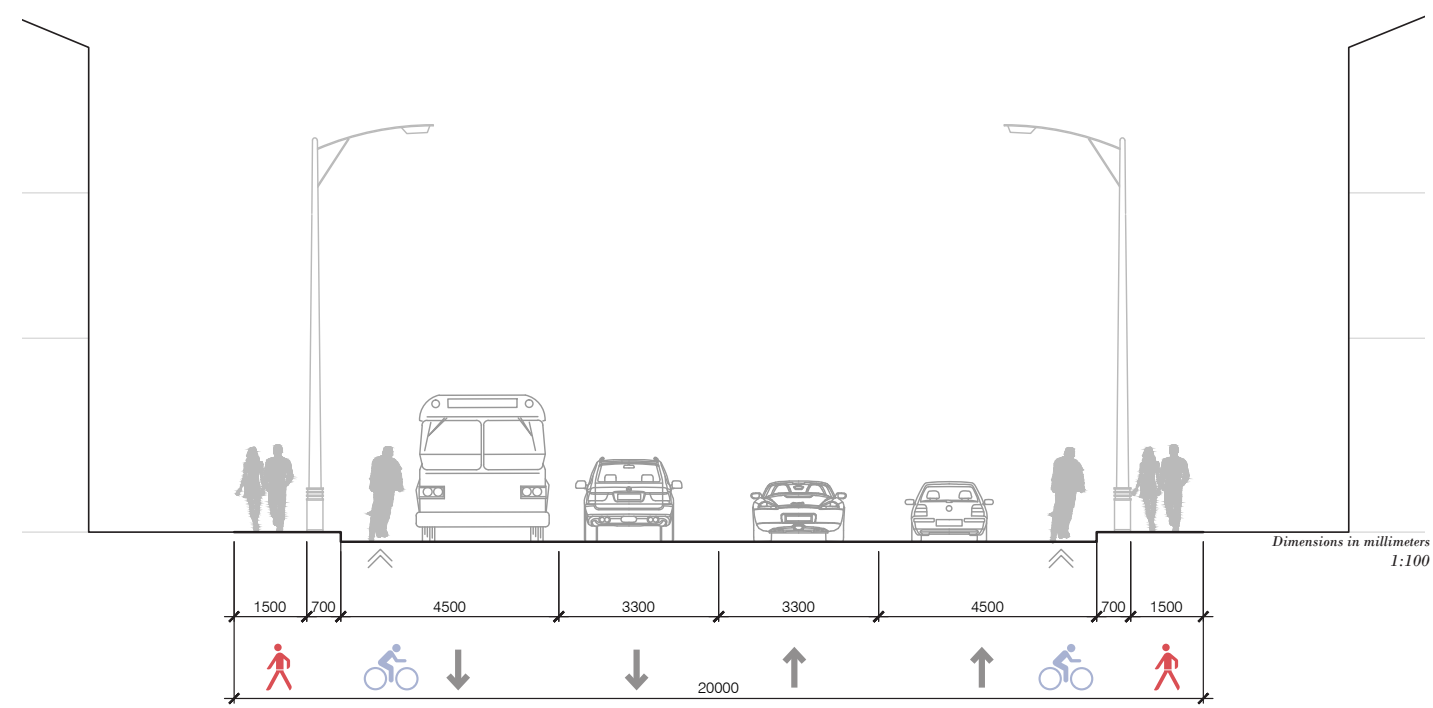
Midblock Condition

Minor Intersection Condition

Major Intersection Condition

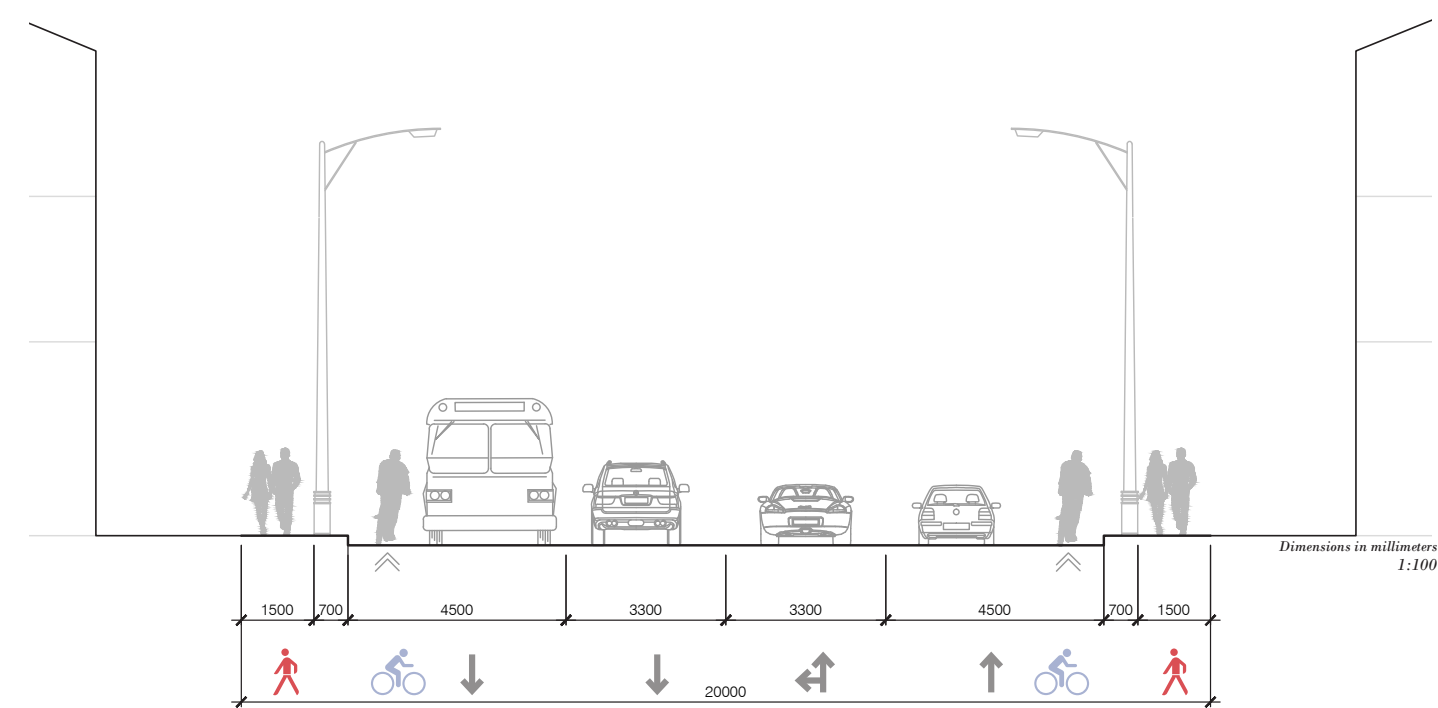
Option 1b: Sharrow Cycling Facilities

Midblock Condition



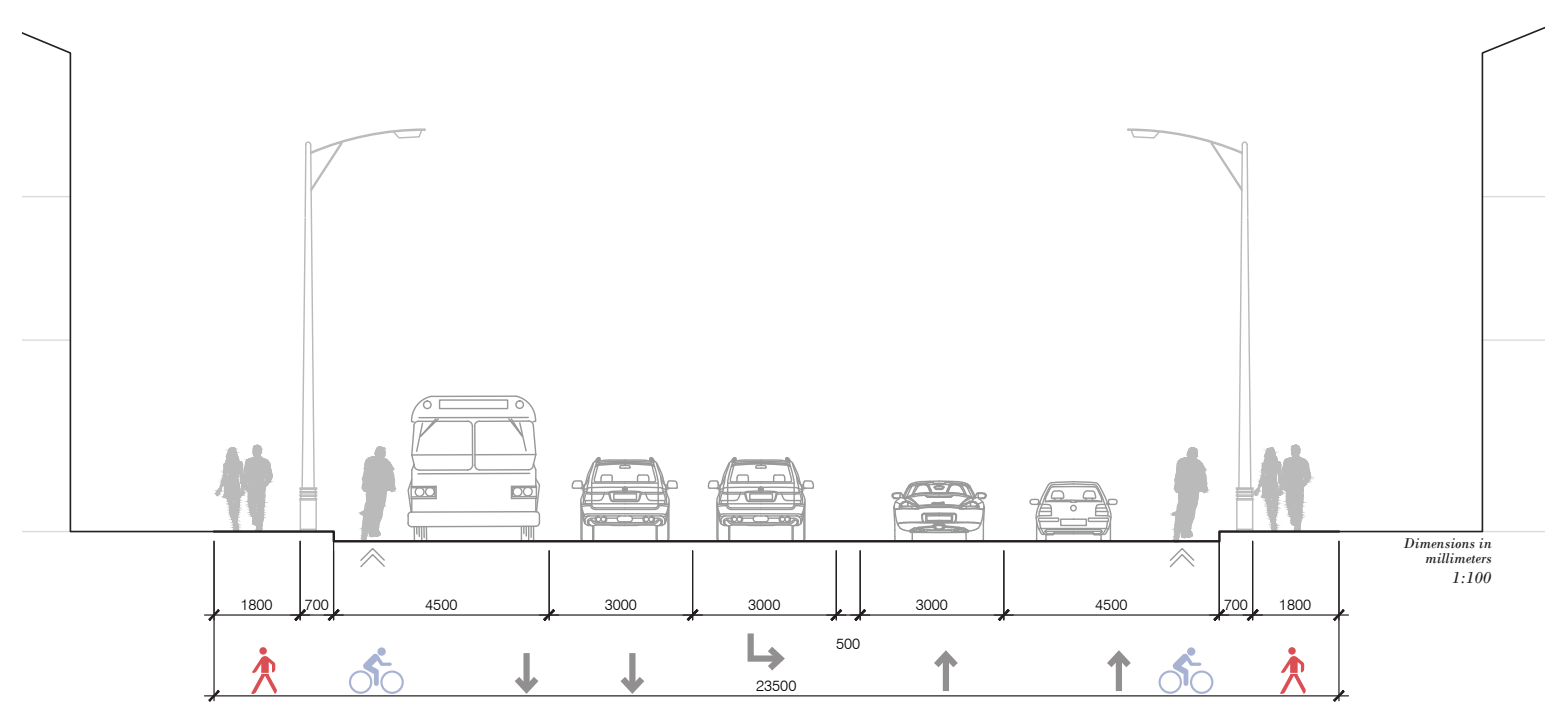
Option 1b: Sharrow Cycling Facilities

Minor Intersection Condition



Option 1b: Sharrow Cycling Facilities

Major Intersection Condition



Option 1(b): Four Vehicular Through Lanes

Roadway Priority Options

Midblock Condition

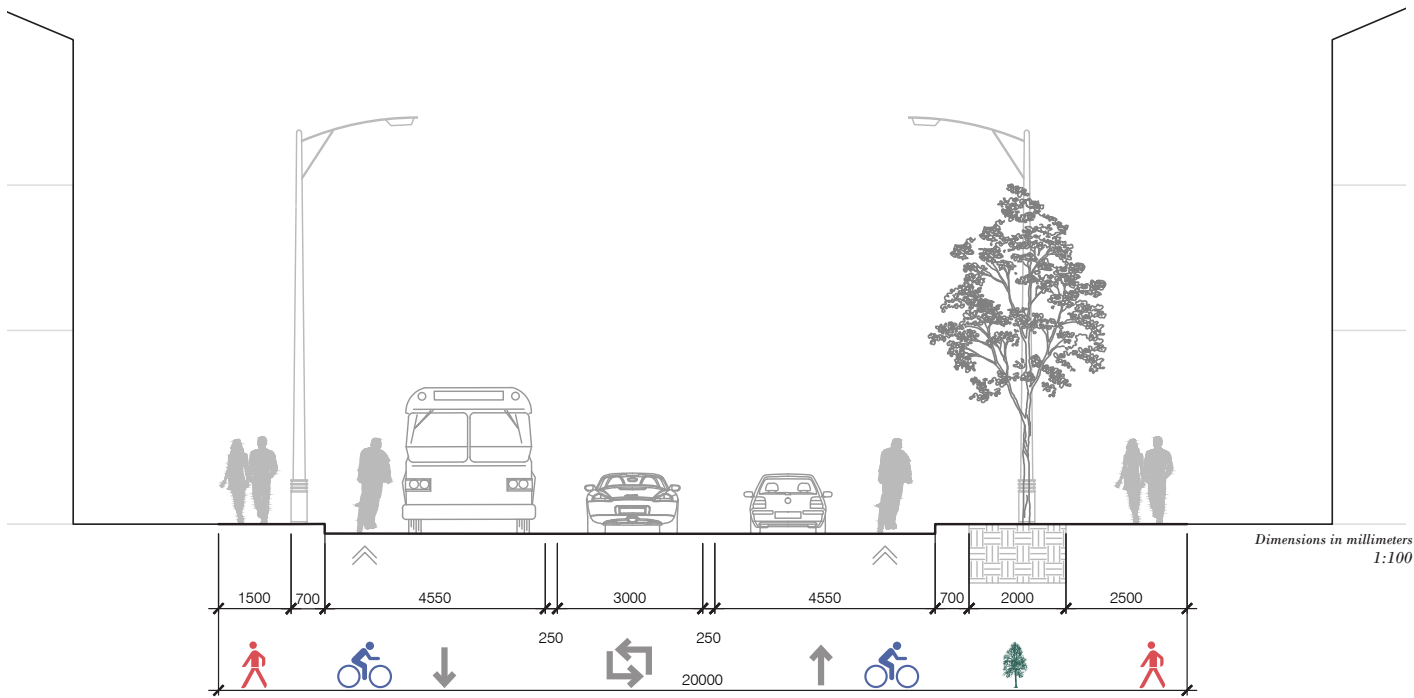
Minor Intersection Condition

Major Intersection Condition



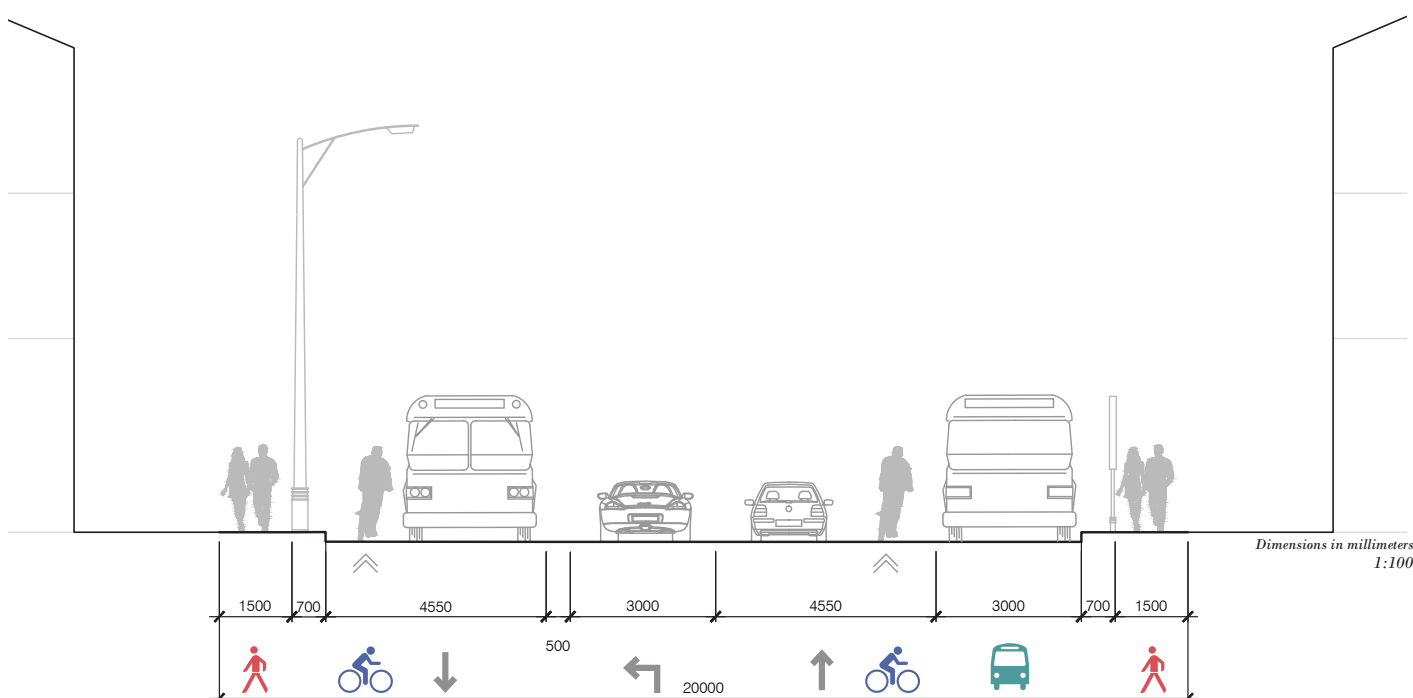
Option 2: Bus Bays

Midblock Condition



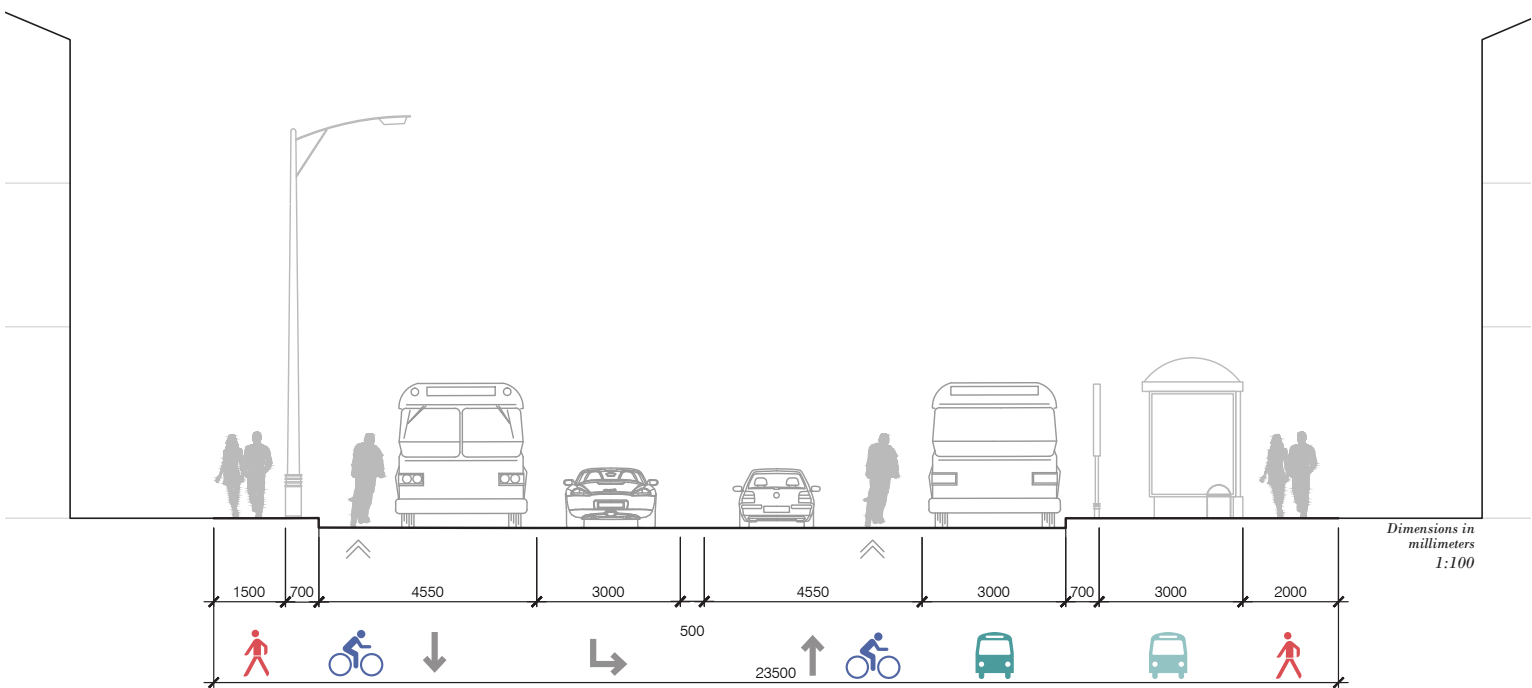
Option 2: Bus Bays

Minor Intersection Condition



Option 2: Bus Bays

Major Intersection Condition



Option 2: Bus Bays, Two Vehicular Through Lanes with Turn Lanes

Transit Priority Option

Midblock Condition

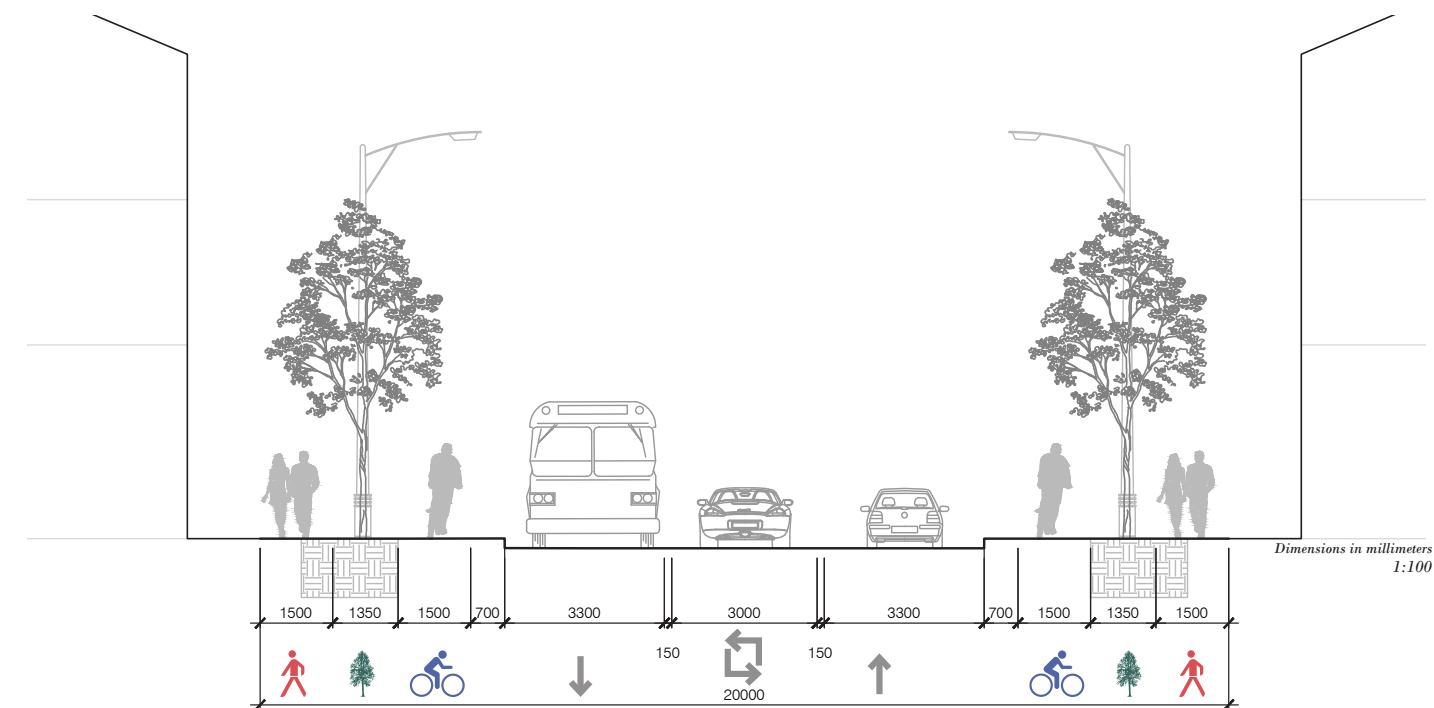
Minor Intersection Condition

Major Intersection Condition



# Option 3: Boulevard Cycle Track

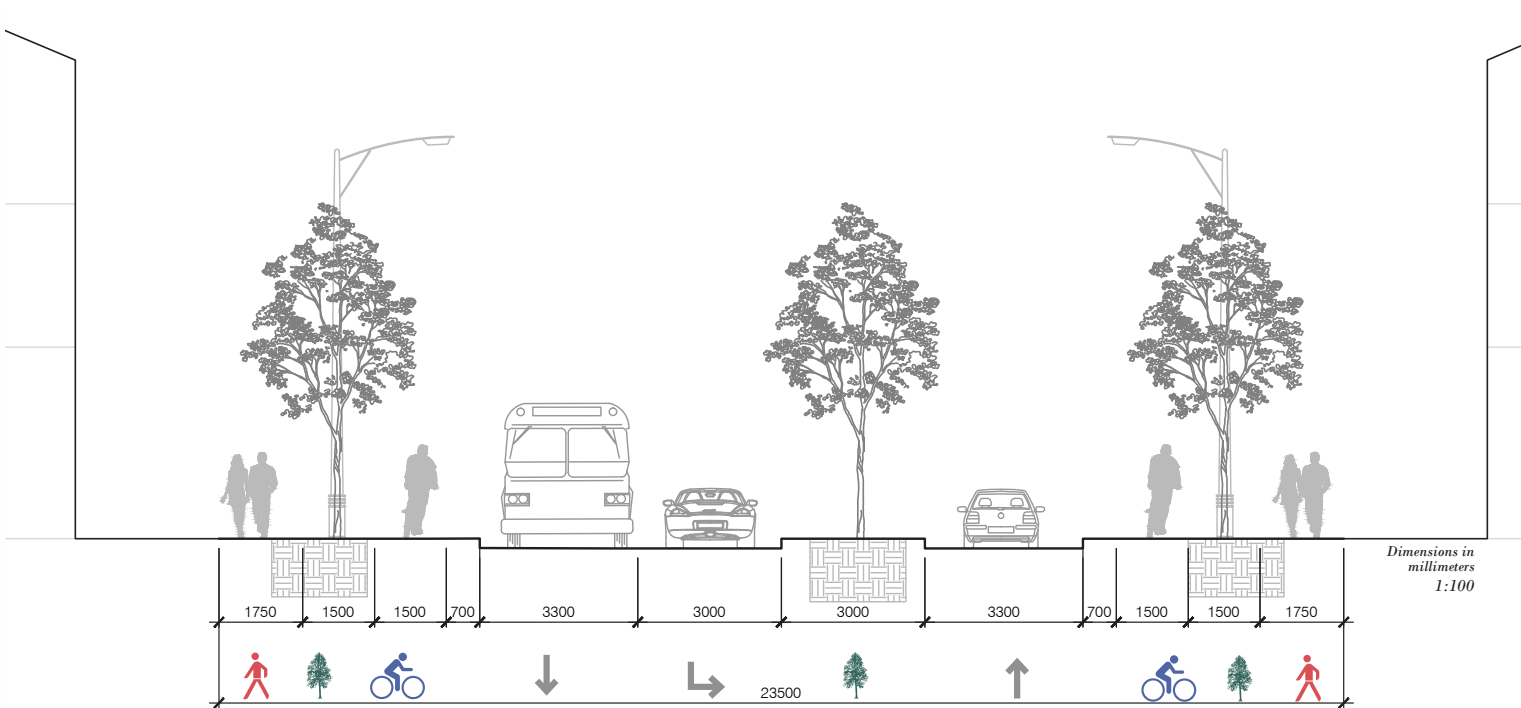
Midblock and Minor Condition



\* Potential for Centre Turn Lane be a Planted Median at key points of interest where a turn lane is not necessary.

# Option 3: Boulevard Cycle Track

Major Intersection Condition



## Option 3: Two Vehicular Through Lanes with Turn Lane Boulevard Priority Option

Midblock and Minor Condition

Major Intersection Condition

# References

A New Mobility Transportation Master Plan for London: 2030  
Transportation Master Plans: SmartMoves, City of London (May 2013)

London ON Bikes, City of London Cycling Master Plan (September 2016)

Bikeways Design Manual, Ontario Ministry of Transportation (March 2014)

Design Specifications & Requirements Manual: Transportation, City of London (April 2015)

Downtown Design Manual, City of London (February 2015)

Illustrated Urban Design Principles, City of London (May 2010)

The London Plan, City of London (June 2016)

Southwest Area Secondary Plan, City of London (May 2016)

London Complete Streets Design Manual (May 2018)





# Lambeth Main Street

Streetscape Master Plan Concept  
Background Document

July 2018

**Appendix B: Lambeth Main Street Streetscape Master Plan Concept**





# Lambeth Main Street

## Streetscape Master Plan Concept

July 2018





Streetscape Master Plan Concept

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# Executive Summary

Within southwest London, the Main Street corridor between Colonel Talbot Road and Campbell Street in Lambeth has been identified as a focus area for growth and development.

The Streetscape Master Plan Concept will support the transformation of the streetscape from a primarily car-oriented corridor to a pedestrian friendly public realm, with balanced transportation choices for the long term. The Master Plan Concept will guide streetscape development and provide strategies to strengthen and reinforce the sense of place.

The Streetscape Master Plan Concept is consistent with the vision and directives that were established through the Southwest Area Plan.

There are two main components to the Main Street Project:

1. **Infrastructure Renewal:** which will see new municipal services installed in 2018.
2. **Streetscape Concepts:** which have been developed in coordination with the Lambeth Community Improvement Plan, parts of which will be incorporated into the restoration works for the 2018 construction project.

This Streetscape Master Plan Concept presents a vision for the short and long term redevelopment of the Main Street corridor in Lambeth, focusing on streetscape design recommendations for the focus area. It outlines several streetscape design alternatives which represent different streetscape priorities and intensities of investment and redevelopment throughout the corridor, and at specific nodes where Main Street intersects with adjacent roadways.

The streetscape concepts are based upon the assertion that there is significant potential and a desire for the Main Street Corridor to become an “imageable” mixed-use heart of the Village – the “spine” or “backbone” of Lambeth.

A series of consultations were held throughout this project to discuss local municipal priorities for the Lambeth Main Street Streetscape Master Plan Concept vision. The consultations examined the project background, varying land uses and existing contexts in the corridor, the municipal plans, future projects in the area, active transportation precedents and streetscape best practices, all of which help to inform a context-driven Streetscape Master Plan Concept.

The report is organized in the following sequence:

## 1.0 Introduction

- Outlines project scope, roles and responsibilities, and project background.

## 2.0 Streetscape Preferred Concept

- Presents the final concepts, including its key elements through the use of sections, plans, and demonstrations.

## 3.0 Streetscape Materials Palette

- Identifies an optimal palette for the Main Street context.

## 4.0 Next Steps

- Outlines the next steps moving forward.



# 1.0

## Introduction

### 1.1 Study Area

The Lambeth Main Street Streetscape Master Plan Concept comprises of the Main Street segment between Colonel Talbot Road and Campbell Street.

The focus of this Master Plan Concept is the streetscape within the existing and future extents of the ROW, specifically between property lines – and does not address built form or intersecting roads within Lambeth Village.

The Study was completed in two parts. Part 1: the Streetscape Master Plan Concept Background Document, under separate cover comprising of the background review, visioning and objectives, design principles and elements; and Part 2: the Streetscape Master Plan Concept which provides the design alternatives, preferred concepts, lane configuration and suggested materials.

The segment is shown on the following page.

*All graphics in this report illustrate the Master Plan vision. They are not intended for construction reference. Streetscape design may be revised during the detailed design and construction process.*

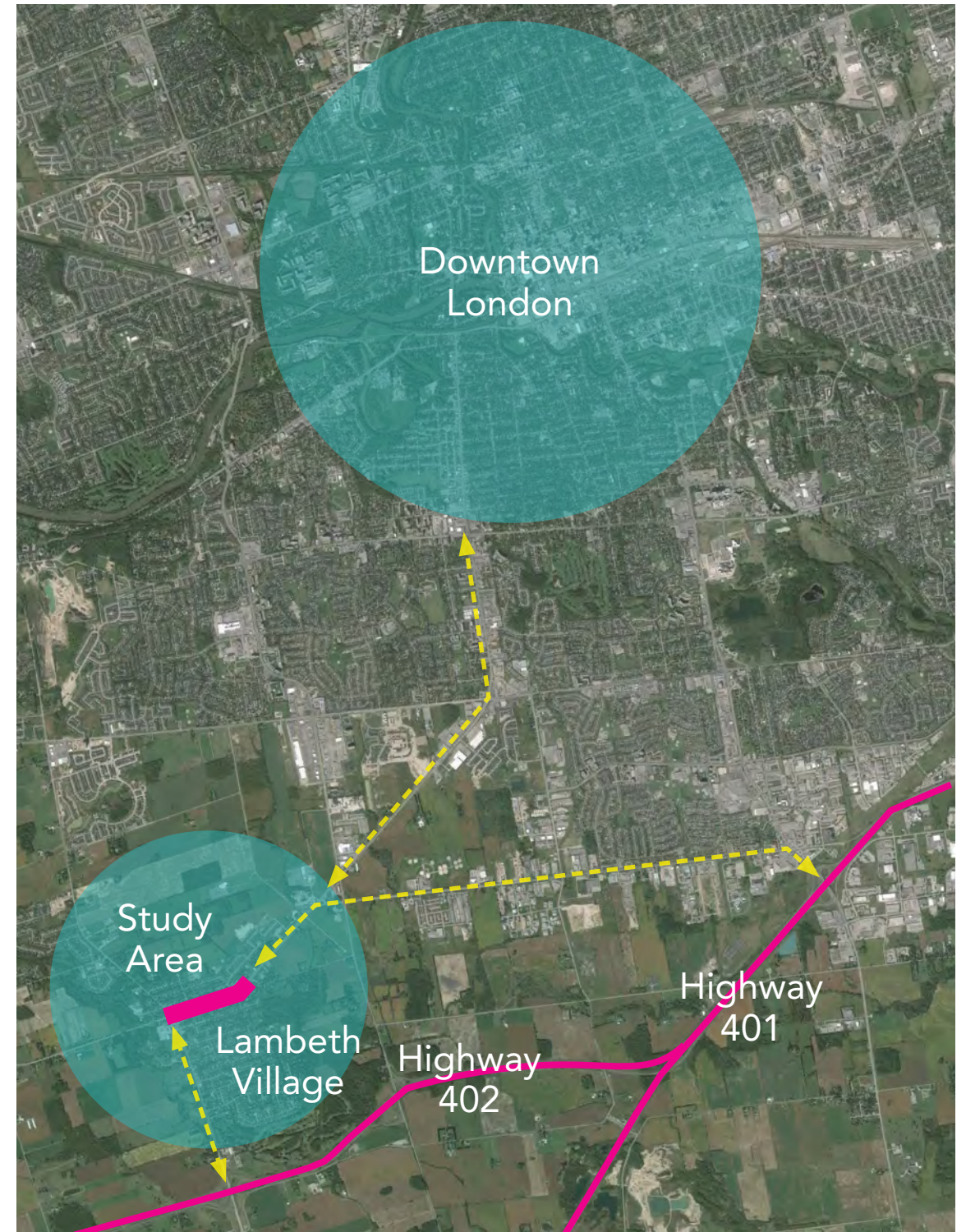






Figure 1: Project Study Area



# 2.0 Streetscape Preferred Concept

As per the Project vision to transform the streetscape from a primarily car-oriented corridor to a walking, cycling and historical public realm, the Streetscape Master Plan Concept will guide streetscape development through a preferred concept for both the near term and the long term. The aforementioned streetscape concept alternatives were deduced to arrive at the preferred concept "Option 3: Boulevard Priority", described in this section.

The preferred concept presents a picture of incremental and modest development that builds upon the corridor's existing strengths, seizes near-term opportunities, and implements strategies to mitigate specific weaknesses. The preferred concept identifies near term improvements and emphasizes pragmatic solutions to existing issues, while positioning the corridor for future growth.

The preferred concept presents a challenging program of activities, suggesting changes regarding the configuration of Main Street, from 4 lanes to 3 lanes, to public boulevard improvements, street intersection enhancements, an on-street parking strategy and the introduction of cycle track in the long-term future.

## 2.1 Lane Configuration

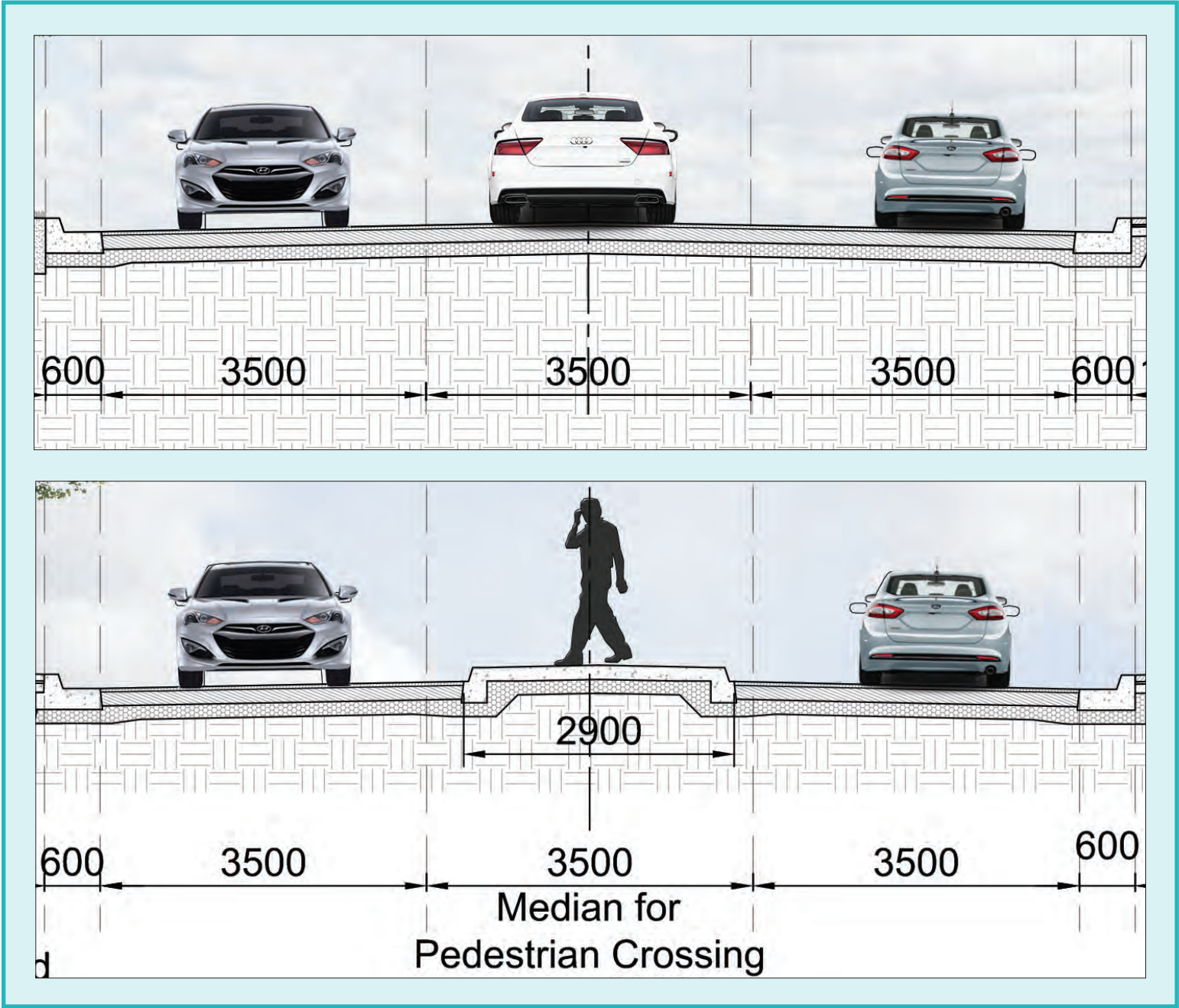


Figure 2: Analysis of 3-Lane Configuration

### Existing Conditions and Opportunities

Between 2012 and 2016, daily through traffic volumes on Main Street decreased by 19%. The two signalized intersections operate below their theoretical capacities during the AM and PM peak hours. The reduction in traffic demand presented an opportunity to reconfigure the cross-section to conduct a "Road Diet" that will free up valuable real estate for other uses within the right-of-way.

### Analysis of a 3-Lane Configuration showed:

- A 3-lane cross-section is recommended (one through lane per direction and a centre two-way left-turn lane);
- The 3-lane cross-section will maintain access to the properties along Main Street, while keeping through traffic moving;
- Dedicated left-turn lanes at both signalized intersections are recommended;
- Analysis of the 3-lane cross section at the signalized intersections indicated that the roadway geometry will operate below capacity in the present and the forecast future (2026); and
- Medians for pedestrian crossing are recommended to be implemented where feasible as part of the long term corridor plan.

For detailed documentation on traffic analysis, refer to Appendix B.



## 2.2 Streetscape Preferred Design Concept

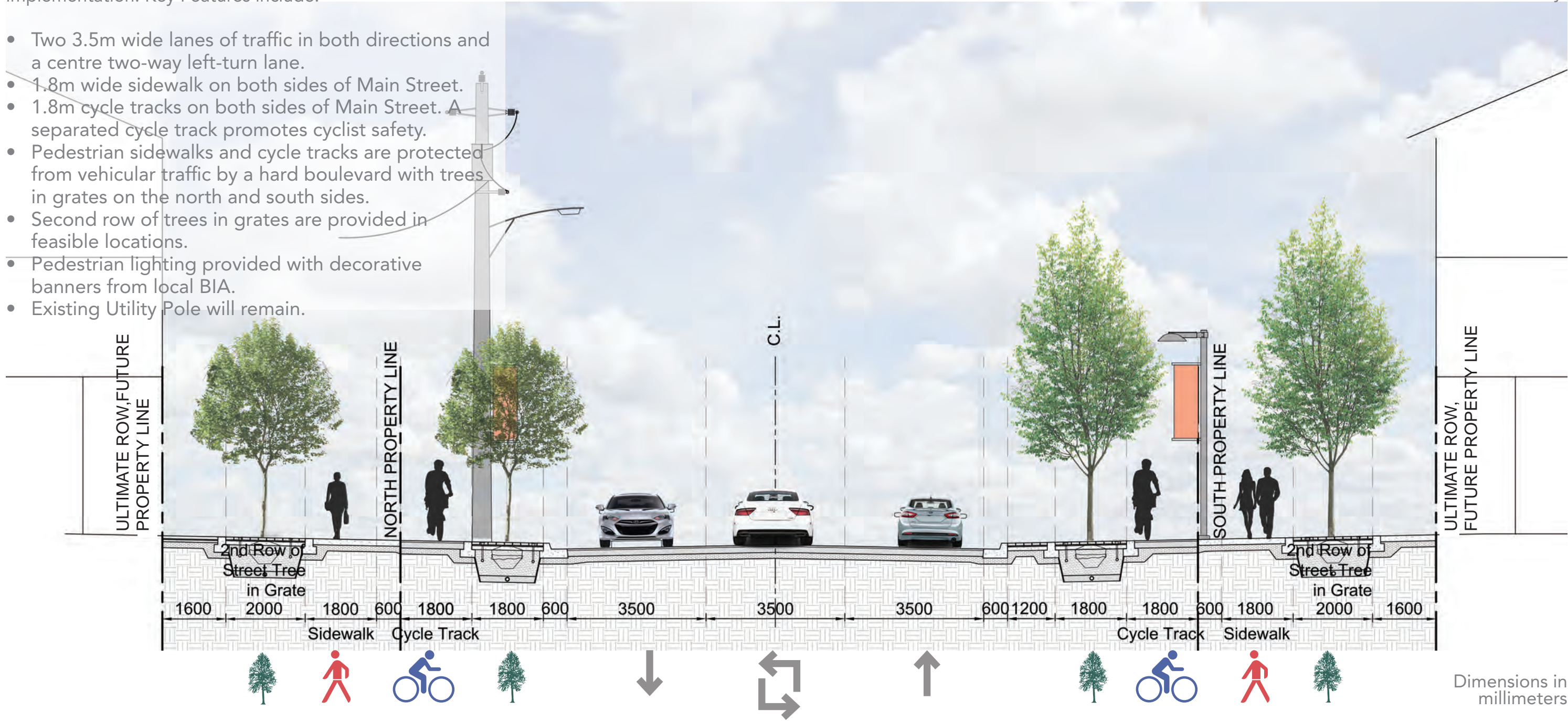
### 2.2.1 Long Term

The section illustrates a Boulevard Section for long-term implementation. Key Features include:

- Two 3.5m wide lanes of traffic in both directions and a centre two-way left-turn lane.
- 1.8m wide sidewalk on both sides of Main Street.
- 1.8m cycle tracks on both sides of Main Street. A separated cycle track promotes cyclist safety.
- Pedestrian sidewalks and cycle tracks are protected from vehicular traffic by a hard boulevard with trees in grates on the north and south sides.
- Second row of trees in grates are provided in feasible locations.
- Pedestrian lighting provided with decorative banners from local BIA.
- Existing Utility Pole will remain.

Figure 3: Boulevard Section | Long-Term • Typical

Potential for Centre Turn Lane to be replaced with a planted median at key points of interest where a turn lane is not necessary.



\* The Long-Term Design is intended to be implemented as future development occurs.



2.2.1.1 Streetscape Demonstrations

The Streetscape Demonstration Plan illustrates the long term placemaking vision for Main Street.

Figure 4: Streetscape Concept



*Lay-by Parking*

*Planted Median*

*Cycle Track*

*Pedestrian  
Lighting*

*Sidewalk*

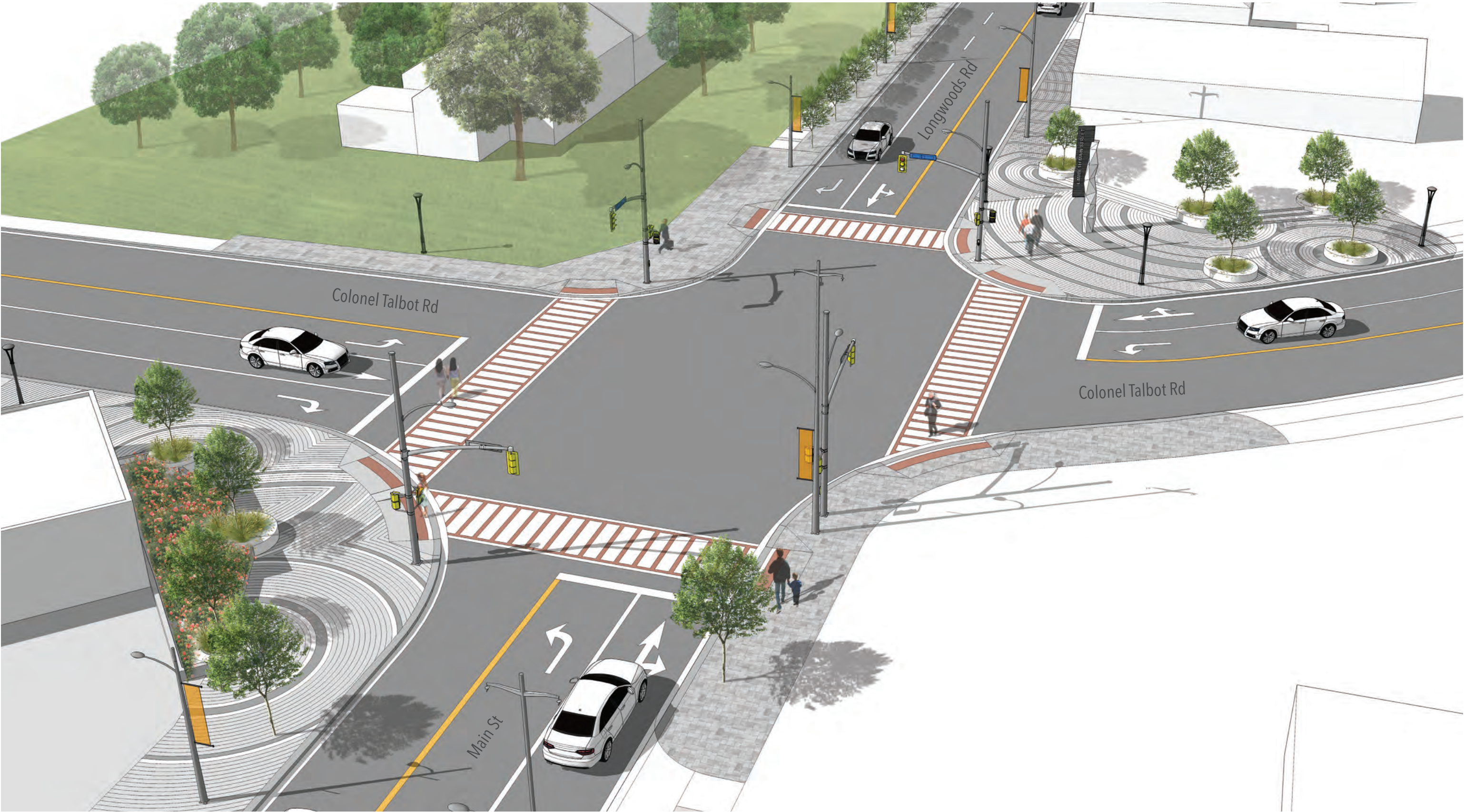
*Planting/  
Furnishing Zone*

*Double Row  
of Street Trees*



The Streetscape Demonstration illustrates the design concept at Main Street and Colonel Talbot Road.

Figure 5: Main Street and Colonel Talbot Road Concept





The Streetscape Demonstration illustrates the design concept at Main Street and Campbell Street.

Figure 6: Main Street and Campbell Street Concept | Short Term





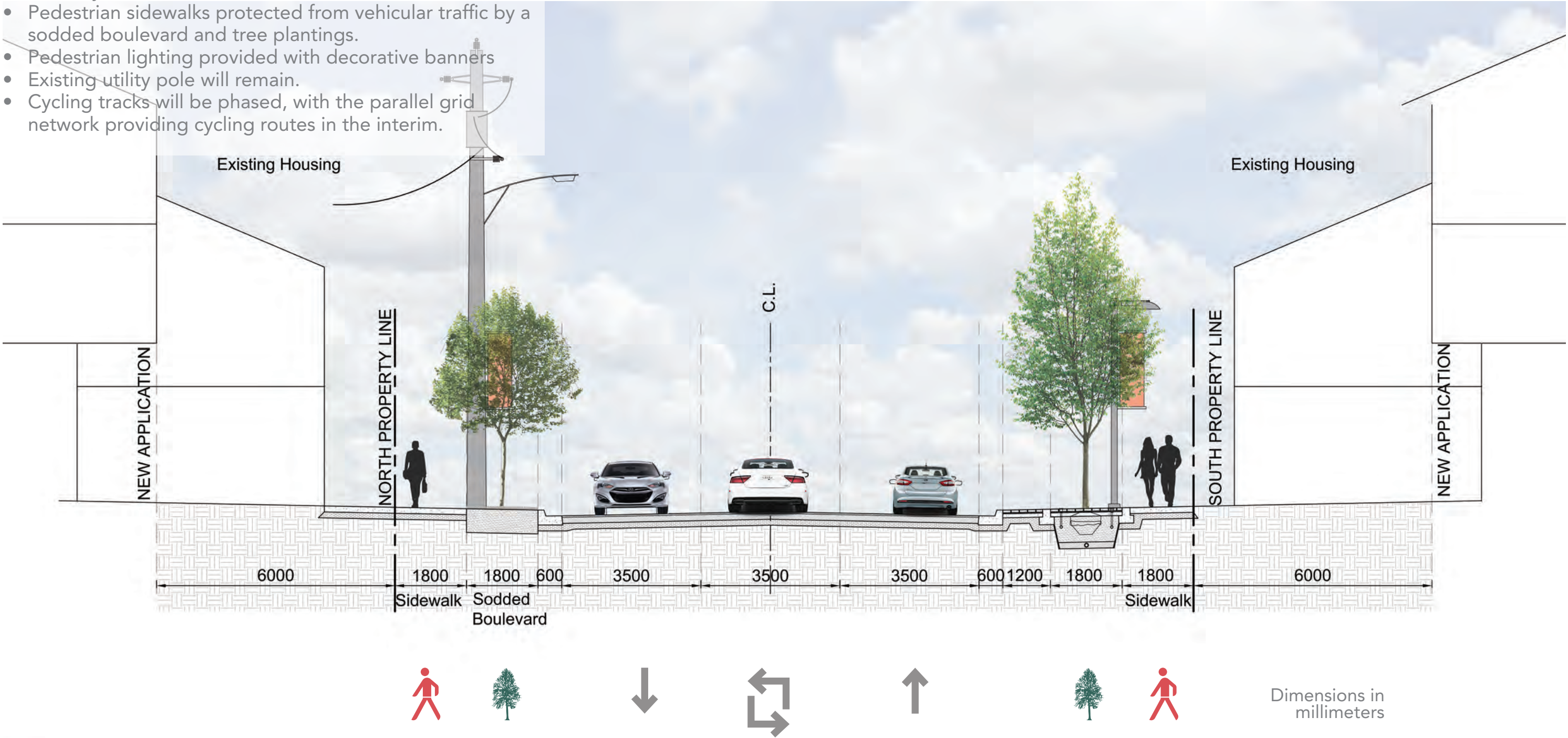
Figure 7: Boulevard Section | Short Term • Typical

2.2.2 Short Term

The section illustrates a Boulevard Section for near term implementation. Key Features include:

- Two 3.5m wide lanes of traffic in both directions and a centre two-way left-turn lane.
- Pedestrian sidewalks protected from vehicular traffic by a sodded boulevard and tree plantings.
- Pedestrian lighting provided with decorative banners
- Existing utility pole will remain.
- Cycling tracks will be phased, with the parallel grid network providing cycling routes in the interim.

Potential for Centre Turn Lane to be replaced with a planted median at key points of interest where a turn lane is not necessary.







KEY MAP

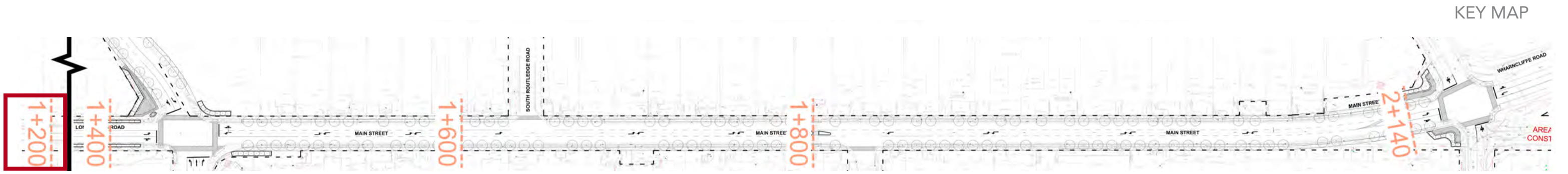
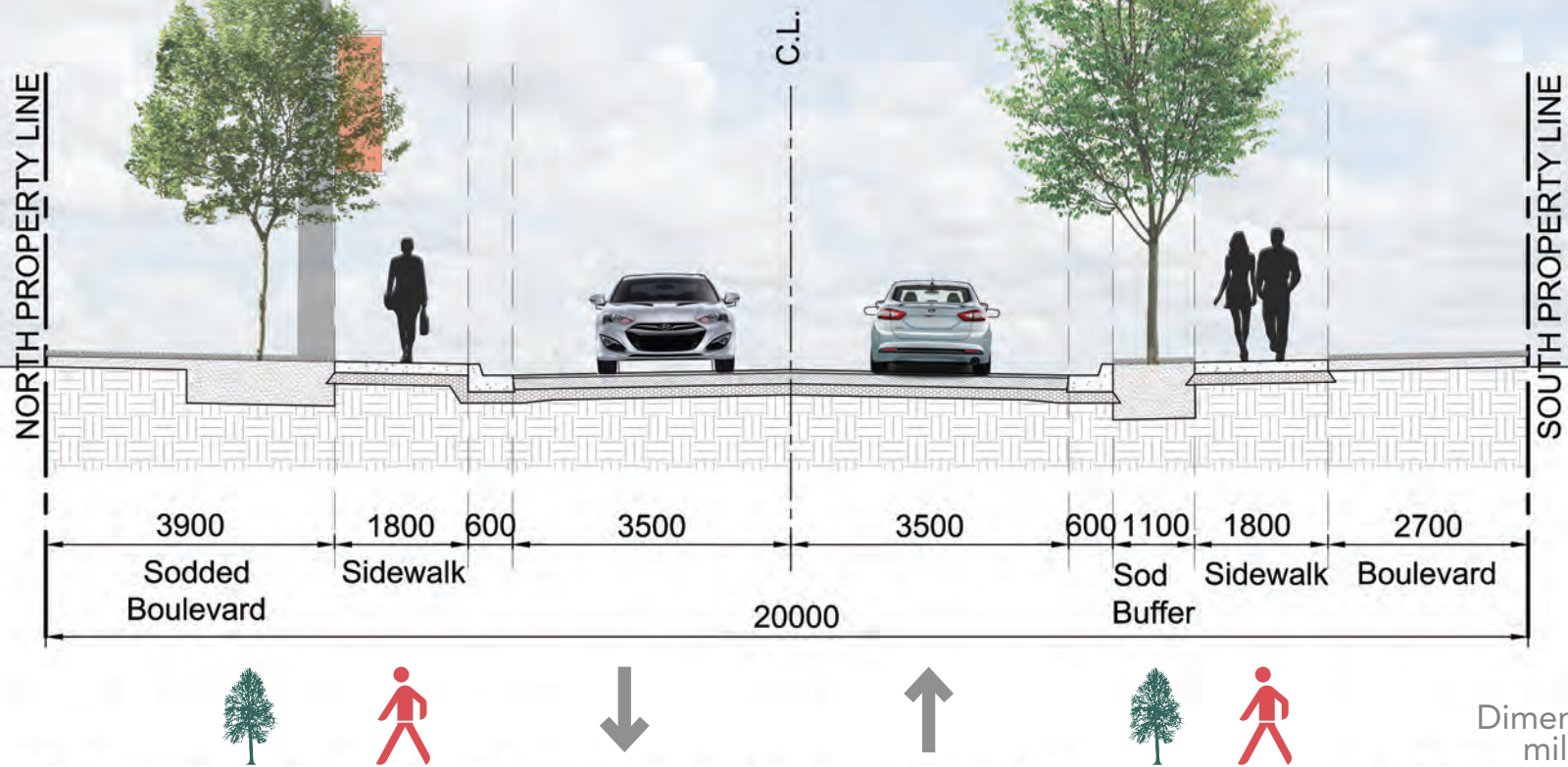




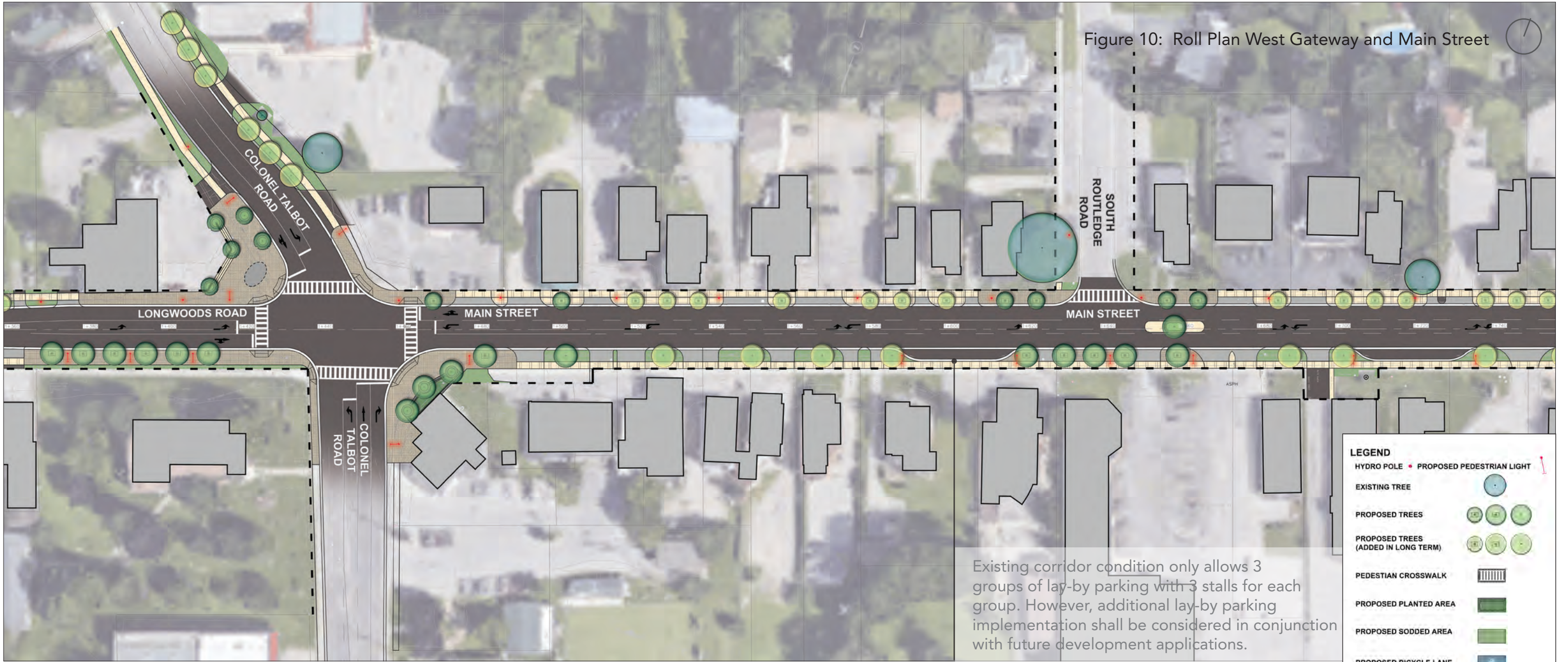
The section illustrates a Boulevard Section at 1+200 for near term implementation. Key Features include:

- Two 3.5m wide lanes of traffic in both directions.
- 1.8m wide sidewalk on both sides of Main Street.
- 3.9m sodded boulevard along the north side of Main Street to optimize green space in low density residential area and manage stormwater runoff to Dingman Creek.
- Pedestrian sidewalks protected from vehicular traffic by a sodded boulevard and tree plantings on the south side.
- Existing Utility Poles will remain.

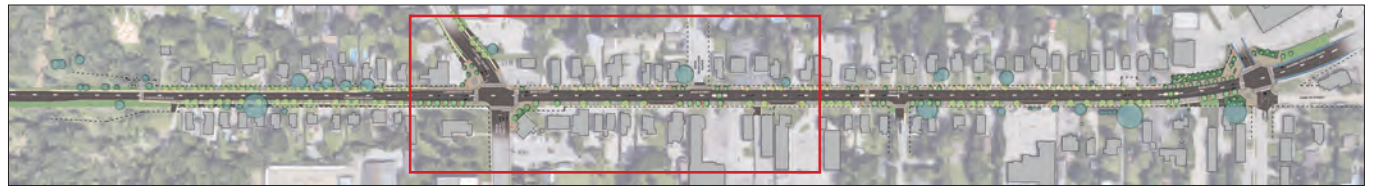
Figure 9: Main Street Facing East | Boulevard Section at 1+200







KEY MAP



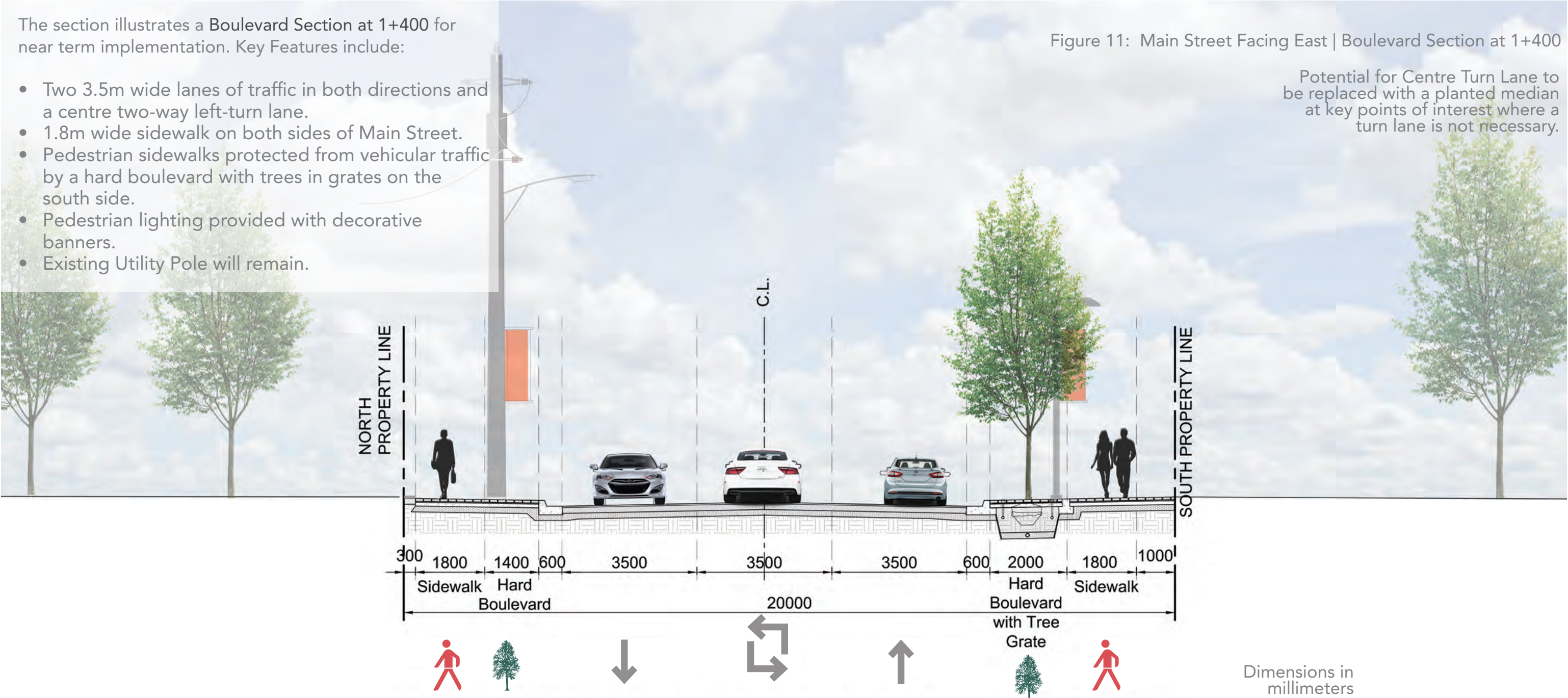


The section illustrates a Boulevard Section at 1+400 for near term implementation. Key Features include:

- Two 3.5m wide lanes of traffic in both directions and a centre two-way left-turn lane.
- 1.8m wide sidewalk on both sides of Main Street.
- Pedestrian sidewalks protected from vehicular traffic by a hard boulevard with trees in grates on the south side.
- Pedestrian lighting provided with decorative banners.
- Existing Utility Pole will remain.

Figure 11: Main Street Facing East | Boulevard Section at 1+400

Potential for Centre Turn Lane to be replaced with a planted median at key points of interest where a turn lane is not necessary.



KEY MAP



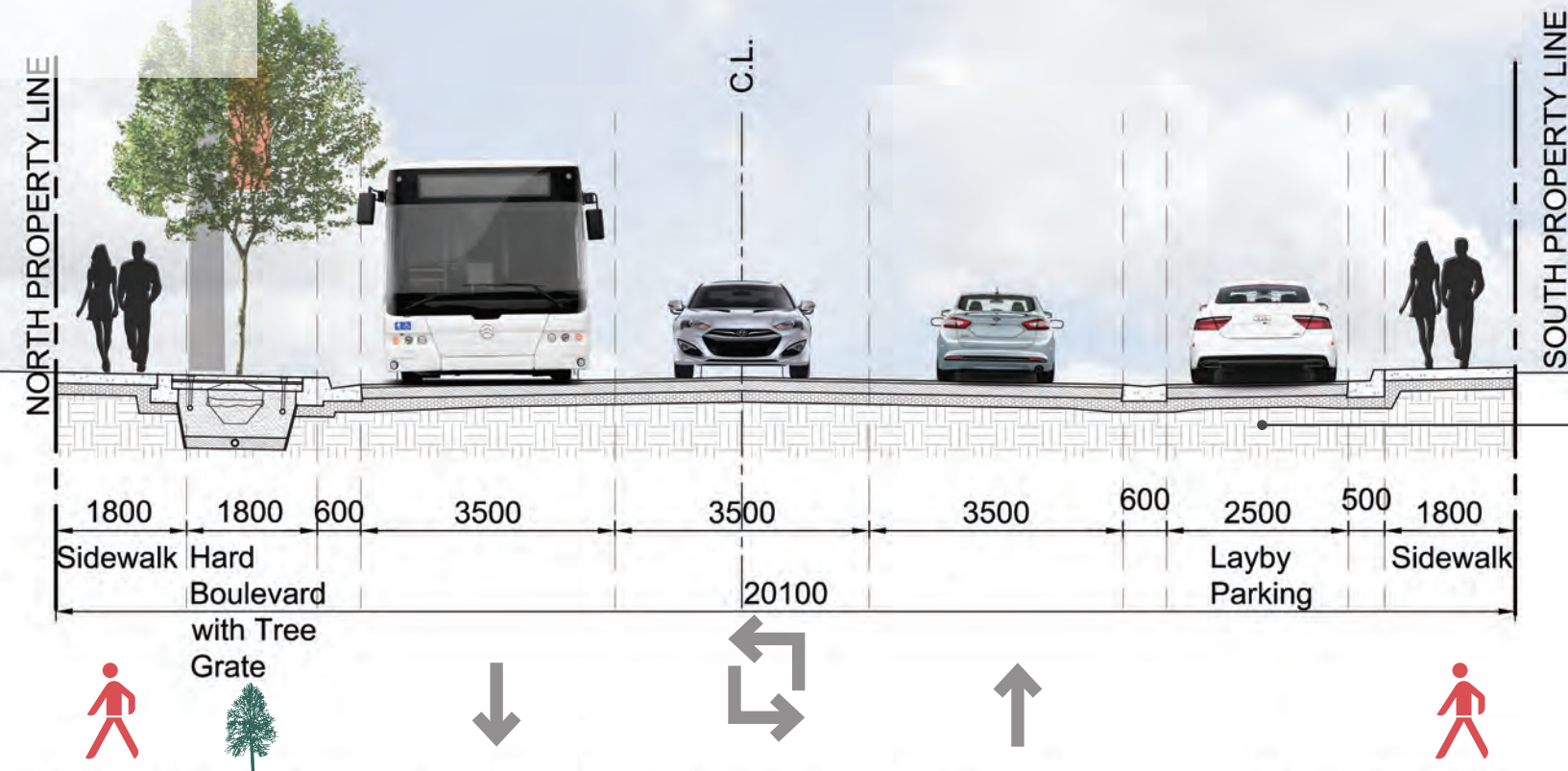


The section illustrates a Boulevard Section at 1+600 for near term implementation. Key Features include:

- Two 3.5m wide lanes of traffic in both directions and a centre two-way left-turn lane.
- 1.8m wide sidewalk on both sides of Main Street.
- Pedestrian sidewalks protected from vehicular traffic by a hard boulevard with trees in grates on the north side.
- Pedestrian lighting provided with decorative banners.
- Lay-by parking provided on the south side with a buffer on each side of the lane.
- Existing utility pole will remain.

Figure 12: Main Street Facing East | Boulevard Section at 1+600

Potential for Centre Turn Lane to be replaced with a planted median at key points of interest where a turn lane is not necessary.



Existing corridor condition only allows 3 groups of lay-by parking with 3 stalls for each group. However, additional lay-by parking implementation shall be considered in conjunction with future development applications.

Dimensions in millimeters



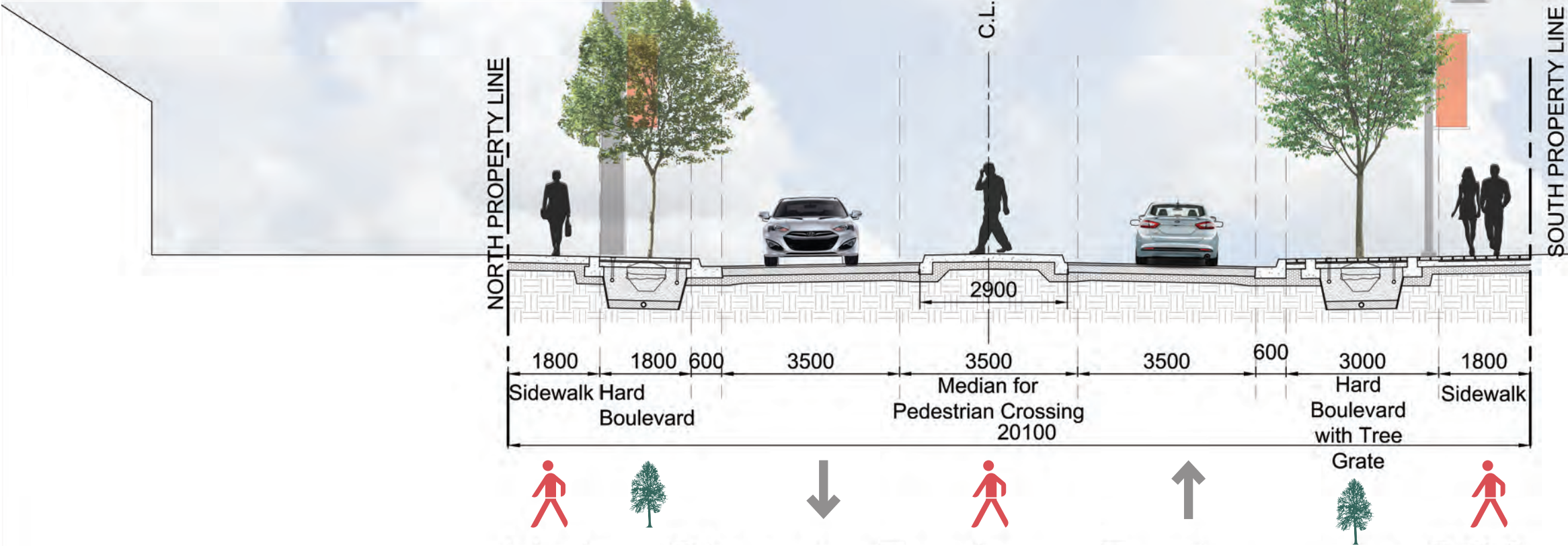


The section illustrates a Boulevard Section at 1+800 for near term implementation. Key Features include:

- Two 3.5m wide lanes of traffic in both directions.
- 2.9m median for pedestrian crossing.
- 1.8m wide sidewalk on both sides of Main Street.
- Pedestrian sidewalks protected from vehicular traffic by a hard boulevard with trees in grates on the north and south sides.
- Pedestrian lighting provided with decorative banners.
- Existing utility pole will remain.

Figure 13: Main Street Facing East | Boulevard Section at 1+800

Potential for Centre Turn Lane to be replaced with a planted median at key points of interest where a turn lane is not necessary.



Dimensions in millimeters

KEY MAP



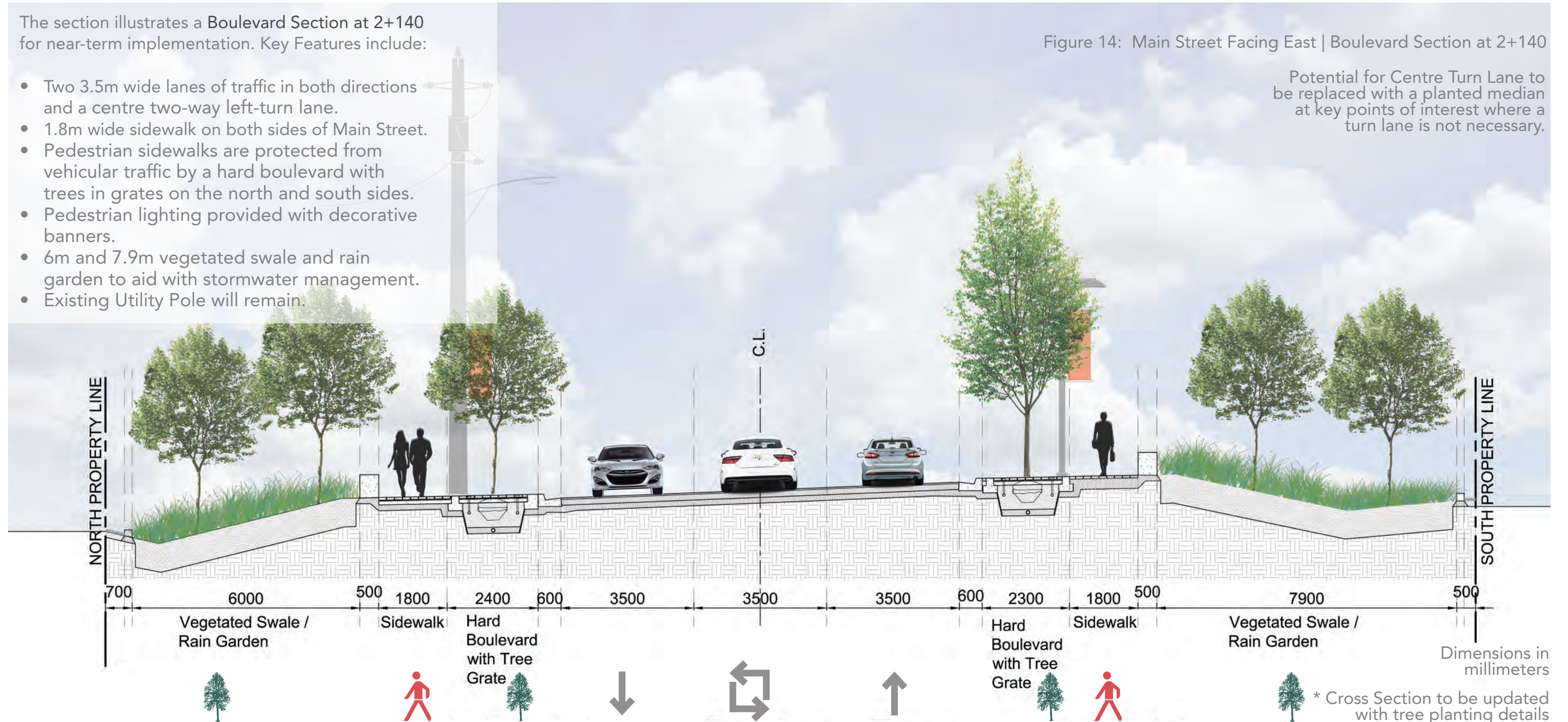


The section illustrates a Boulevard Section at 2+140 for near-term implementation. Key Features include:

- Two 3.5m wide lanes of traffic in both directions and a centre two-way left-turn lane.
- 1.8m wide sidewalk on both sides of Main Street.
- Pedestrian sidewalks are protected from vehicular traffic by a hard boulevard with trees in grates on the north and south sides.
- Pedestrian lighting provided with decorative banners.
- 6m and 7.9m vegetated swale and rain garden to aid with stormwater management.
- Existing Utility Pole will remain.

Figure 14: Main Street Facing East | Boulevard Section at 2+140

Potential for Centre Turn Lane to be replaced with a planted median at key points of interest where a turn lane is not necessary.



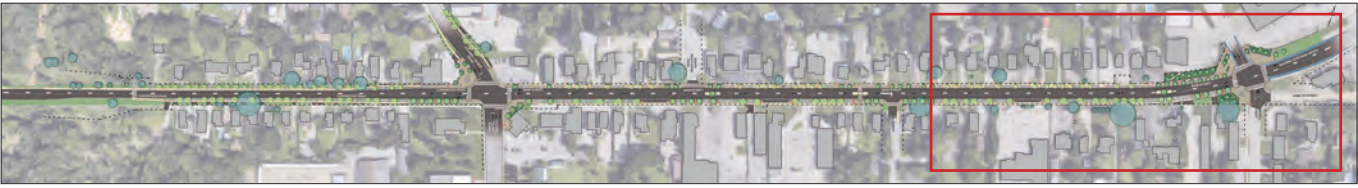
KEY MAP







KEY MAP

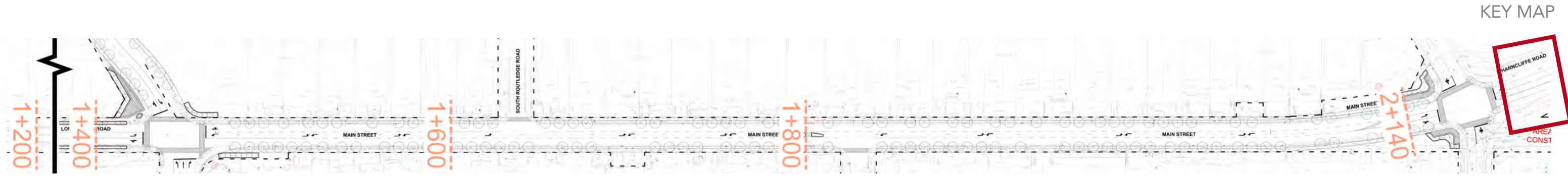
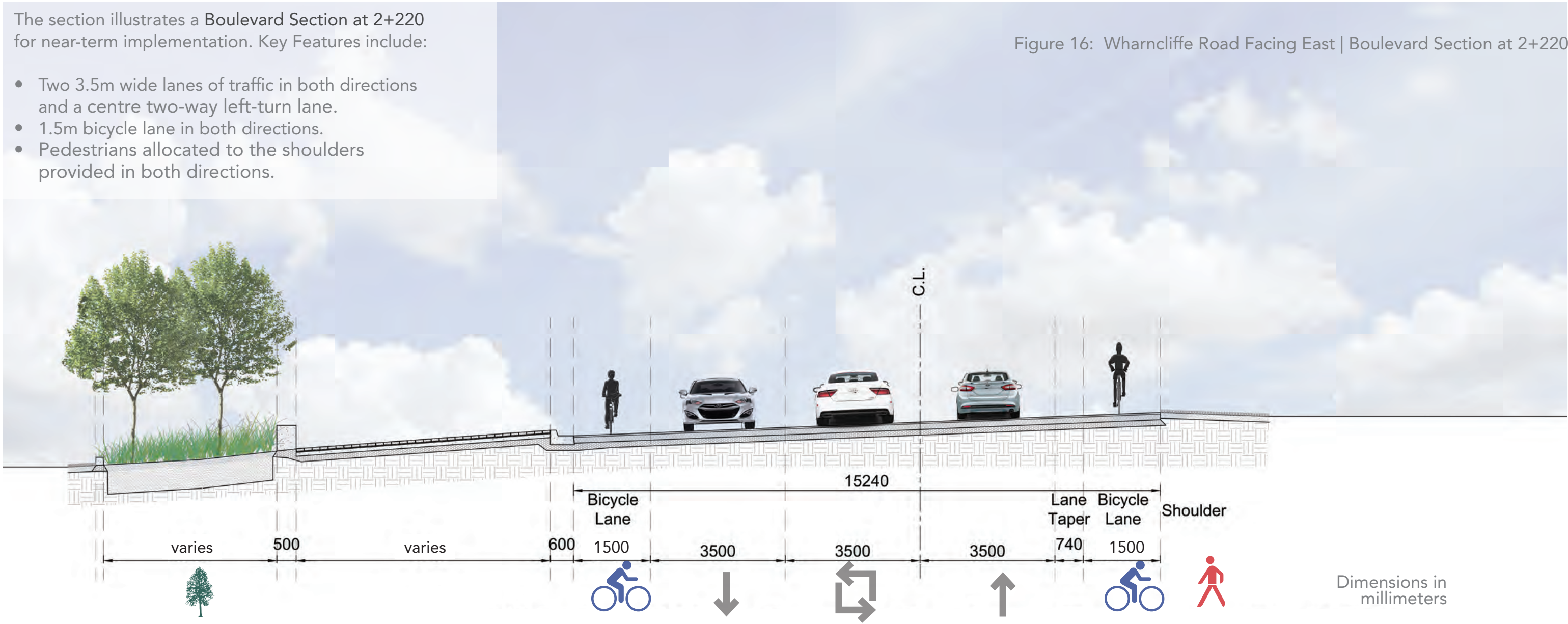




The section illustrates a Boulevard Section at 2+220 for near-term implementation. Key Features include:

- Two 3.5m wide lanes of traffic in both directions and a centre two-way left-turn lane.
- 1.5m bicycle lane in both directions.
- Pedestrians allocated to the shoulders provided in both directions.

Figure 16: Wharncliffe Road Facing East | Boulevard Section at 2+220



KEY MAP



# 3.0

## Streetscape Materials Palette

A precedent analysis of streetscape materials was used to identify an optimal palette for the Main Street context. The corridor possesses a unique context sensitive identity and the materials should cater to its specific conditions. The corridor's unique identities should be reinforced through streetscape design. The gateways and midblock conditions should work together to establish a unifying theme for Lambeth.

The theme will strengthen the streetscape's visual continuity and sense of place. A theme should ultimately be established based on context, history, or urban aesthetic. Streetscape theming should be reinforced through the unifying materials such as paving patterns, street furniture, plant palette, lighting and scale.

Presenting a strong theme will amplify an understanding of Lambeth and Southwest London as a unique and memorable place. The following section demonstrates the envisioned theme for the corridor, a theme that follows a combination of contemporary and traditional elements, in keeping with the historical backdrop of Main Street.



Family of Street Furnishings  
*Updated Traditional*



*Philips Lumec UrbanScape*



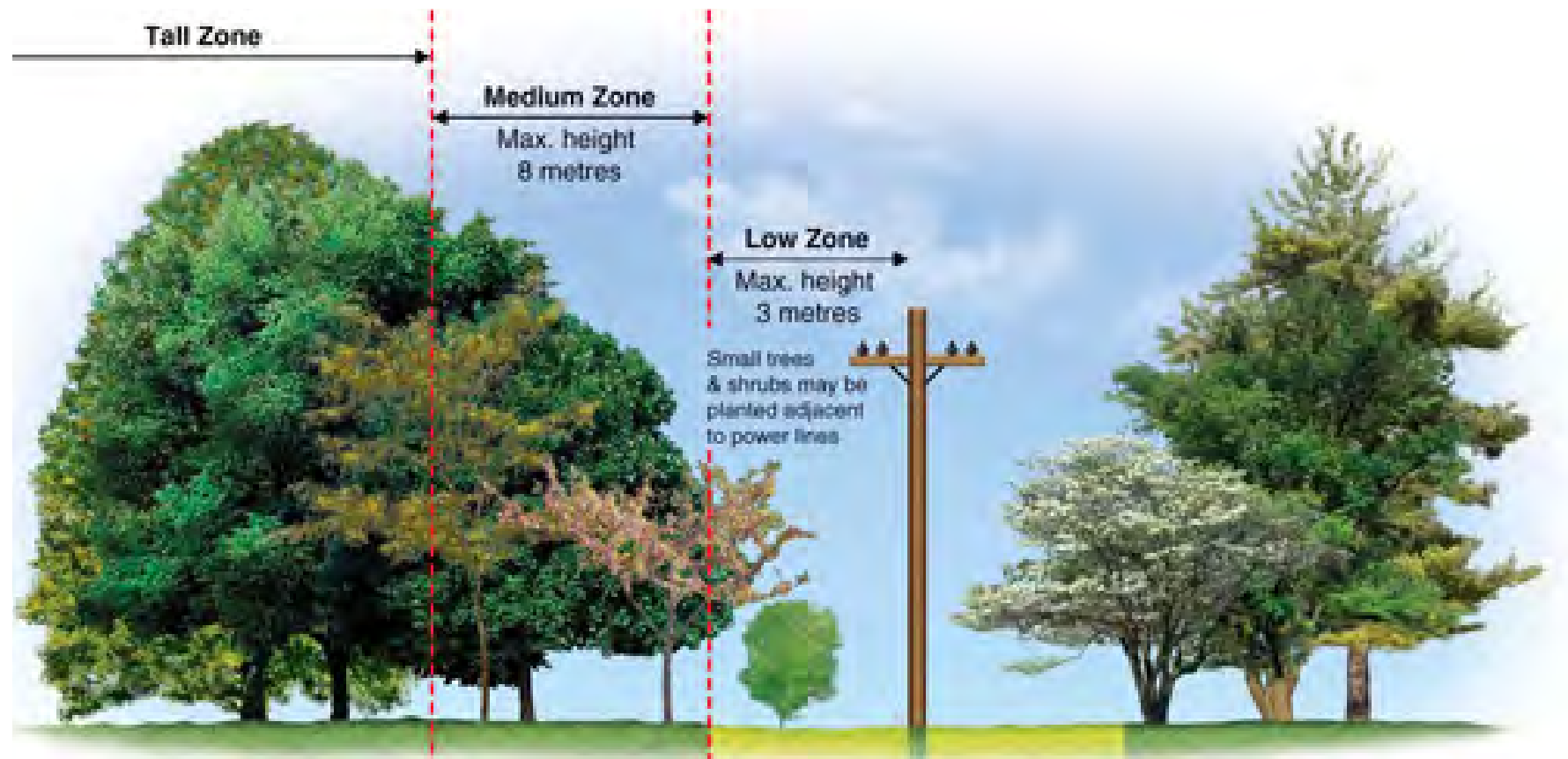


Figure 17: Planting Zones

## Planting Zones

The existing overhead power lines create a challenge for the streetscape design since their easements occupy space within the corridor, and hydro regulations do not allow the planting of large trees under hydro lines. These constraints affect tree planting choices and the ability to place trees in an organized manner within the boulevard.

Moving forward with the design concept, it's critical to allocate trees based on dedicated planting zones that consider spatial relationships to surrounding trees and overhead power lines.



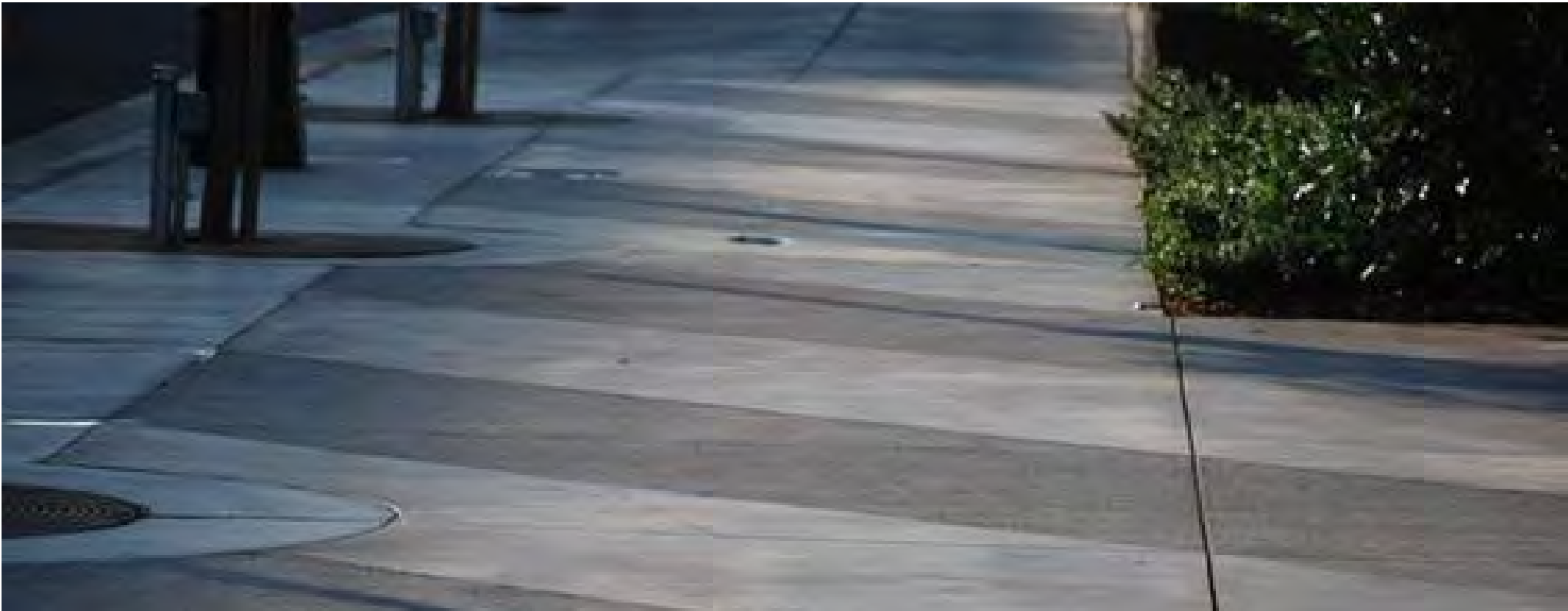
Plant Palette		Species
Hydro Form Tree Species		Field Maple, Bradford Pear, Ohio Buckeye, Downy Serviceberry, Callery Pear, Thornless Cockspur Hawthorn, Amur Maackia, Japanese Tree Lilac, Flowering & Domestic Apple, Ornamental Cherry, Choke Cherry
Full Form Tree Species		Autumn Blaze, Common Hackberry, Maidenhair, Thornless Honeylocust, Kentucky Coffee, Little Leaf Linden, Red Oak, Smoothleaf Elm, Japanese Zelkova
Shrubs and Grasses		Feather Reed Grass, Eldorado Feather Reed Grass, Red Switch Grass, Blue Switch Grass, Red Osier Dogwood, Saltspray Rose, Northern Bayberry, Gold Star, Gro-Low Sumac, False Spiraea, Common Snowberry, Japanese Spirea
Rain Garden Trees		Red Maple, Silver Maple, Yellow Birch, River Birch, Shellbark Hickory, American Beech, Swano White Oak, Swamp Spanish Oak, American Elm
Rain Garden Shrubs		Allergheny Serviceberry, Chokeberry, Common Buttonbush, Gray Dogwood, Red Osier Dogwood, Spicebush, Northern Bayberry, Ninebark, Sumac, Bebb's Willow, Pussy Willow, Narrowleaf Willow, American Black Elderberry, Arrowwood Viburnum, Nannyberry
Rain Garden Grasses and Broadleaf Herbaceous		Big Bluestem Grass, Tufted Hairgrass, Canada Wild Rye, Little Bluestem, Red Columbine, Swamp Milkweed, Butterfly Weed, Showy Trick Trefolk, Purple Cone Flower, Joe Pye, Ox Eye, Blue Flag, Shasta Daisy, Wild Bergarnot, Black Eyed Susan, New England Aster, Blue Vervain, Hoary Vervain

Planting Palette

Trees and landscape add visual interest, shade, ornamentation and continuity between urban spaces, while contributing to a reduction of noise and air pollution. There are minimal street trees planted within the study area. Cognizant of the restraints that affect tree planting choices and the ability to place trees in an organized manner, the strategy for plant selection included scoping tree species that are proven top performers in an urban environment. Equally important, is the use of native species and drought-resistant species to encourage a healthy ecosystem and minimize the need for irrigation. For a comprehensive review of plant species in each category, refer to Appendix A.

*The Master Plan provides a vision for the corridor planting. Exact species selection and planting details to be determined in detailed design in accordance with the City of London Forestry Department.*

Material Palette: Concrete Finishes





Material Palette: Tree Grates and Continuous Tree Trench





# 4.0

## Next Steps

The Streetscape Master Plan Concept utilizes different streetscape typologies in order to achieve a context driven streetscape design. A cohesive theme for Lambeth and Southwest London is maintained through the materials palette and repeating streetscape typologies. These typologies work together to achieve the vision for the streetscape. The report presents detailed guidelines of the geometry and dimensions for near-term and long-term enhancements through the preferred concept: Boulevard Priority.

This information provides a good reference for local municipal review of development applications and site plans. It has also been a valuable tool in informing the detailed design process.

The next phases will distill items of continuity and variability throughout the streetscape. It will also deduce the materials to be utilized for the streetscape as well as the street furniture style.

The construction of near term enhancements slated for the streetscape have commenced as of Spring 2018.









# Appendix A | Plant Palette



Plant Palette: Hydro Form Tree Species

Acer campestre  
Field Maple  
\*Invasive



Pyrus Calleryana  
'Bradford'



Malus (most)  
Flowering & Domestic Crab  
Apple  
\*Invasive



Acer ginnala  
Amur Maple  
\*Invasive



Crataegus crusgalli var. inermis  
Thornless Cockspur Hawthorn



Prunus (flowering varieties)  
Ornamental Cherry  
\* Limited Use



Aesculus glabra  
Ohio Buckeye



Maackia amurensis  
Amur Maackia  
\*Invasive



Prunus Virginiana  
'Shubert'



Amelanchier arborea  
Downy Serviceberry



Syringa Reticulata  
'Ivory Silk'



*\* Invasive species should not be used within 200m of a natural area or watercourse. Only use in highly urbanized and disturbed environments*



Plant Palette: Full Form Tree Species

Gleditsia triacanthos var.  
Inermis Thornless Honeylocust



Tilia cordata 'Glenleven'  
Little Leaf Linden



Zelkova serrata  
Japanese Zelkova



Ginkgo biloba Maidenhair tree  
(Male cultivar only)



Gymnocladus dioicus Kentucky  
coffeetree



Celtis occidentalis  
Common Hackberry



Quercus rubra  
Red Oak



Acer x freemanii  
Autumn Blaze



Ulmus carpinifolia 'Pioneer'  
Smoothleaf Elm





Plant Palette: Shrubs and Grasses

Calamagrostis x acutiflora 'Karl Foerster'  
Feather Reed Grass



Cornus sericea  
Red Osier Dogwood



Rhus aromatica 'Gro Low'  
Gro-Low Sumac



Calamagrostis x El dorado  
Eldorado Feather Reed Grass



Rosa rugosa  
Saltspray Rose



Sorbaria sorbifolia  
False spiraea



Panicum virgatum 'Shenandoah'  
Red Switch Grass



Myrica pensylvanica  
Northern Bayberry



Symphoricarpos albus  
Common Snowberry



Panicum virgatum 'Heavy metal'  
Blue Switchgrass



Goldstar Potentilla  
Potentilla Fruticosa 'Gold Star'



Spiraea japonica 'Anthony Waterer'  
Japanese spirea





Plant Palette: Rain Garden Trees

Acer rubrum  
Red Maple



Carya laciniosa  
Shellbark Hickory



Ulmus americana (pest  
resistant variety)  
American Elm



Acer saccharinum  
Silver Maple



Fagus grandifolia  
American Beech



Betula alleghaniensis  
Yellow Birch



Quercus bicolor  
Swamp White Oak



Betula nigra  
River Birch



Quercus palustris  
Swamp Spanish Oak





Plant Palette: Rain Garden Shrubs

Amelanchier laevis  
Allegheny Serviceberry



Aronia melanocarpa  
Chokeberry



Cephalanthus occidentalis  
Common Buttonbush



Cornus foemina ssp. racemosa  
Gray dogwood



Cornus stolonifera  
Red Osier Dogwood



Lindera benzoin  
Spicebush



Myrica pensylvanica  
Northern Bayberry



Physocarpus opulifolius  
Ninebark



Rhus aromatica  
Sumac



Salix bebbiana  
Bebb's Willow



Salix discolor  
Pussy Willow



Salix exigua  
Narrowleaf Willow



Sambucus canadensis  
American Black Elderberry



Viburnum dentatum  
Arrowwood Viburnum



Viburnum lentago  
Nannyberry





Plant Palette: Rain Garden Grasses and Broadleaf Herbaceous

Andropogon gerardii  
Big Bluestem Grass



Deschampsia cespitosa  
Tufted Hairgrass



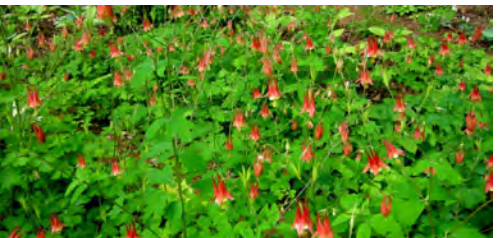
Elymus canadensis  
Canada Wild Rye



Schizachyrium scoparium  
Little Bluestem



Aquilegia canadensis  
Red columbine



Asclepias incarnata ssp. incarnata  
Swamp Milkweed



Asclepias tuberosa  
Butterfly Weed



Desmodium canadense  
Showy Trick Trefoil



Echinacea purpurea  
Purple Cone Flower



Eupatorium maculatum ssp. maculatum  
Joe Pye



Heliopsis helianthoides  
Ox Eye



Iris versicolor  
Blue Flag



Leucanthemum x superbum  
Shasta Daisy



Monarda fistulosa  
Wild Bergamot



Rudbeckia hirta  
Black Eyed Susan



Symphiotrichum novae angliae  
New England Aster



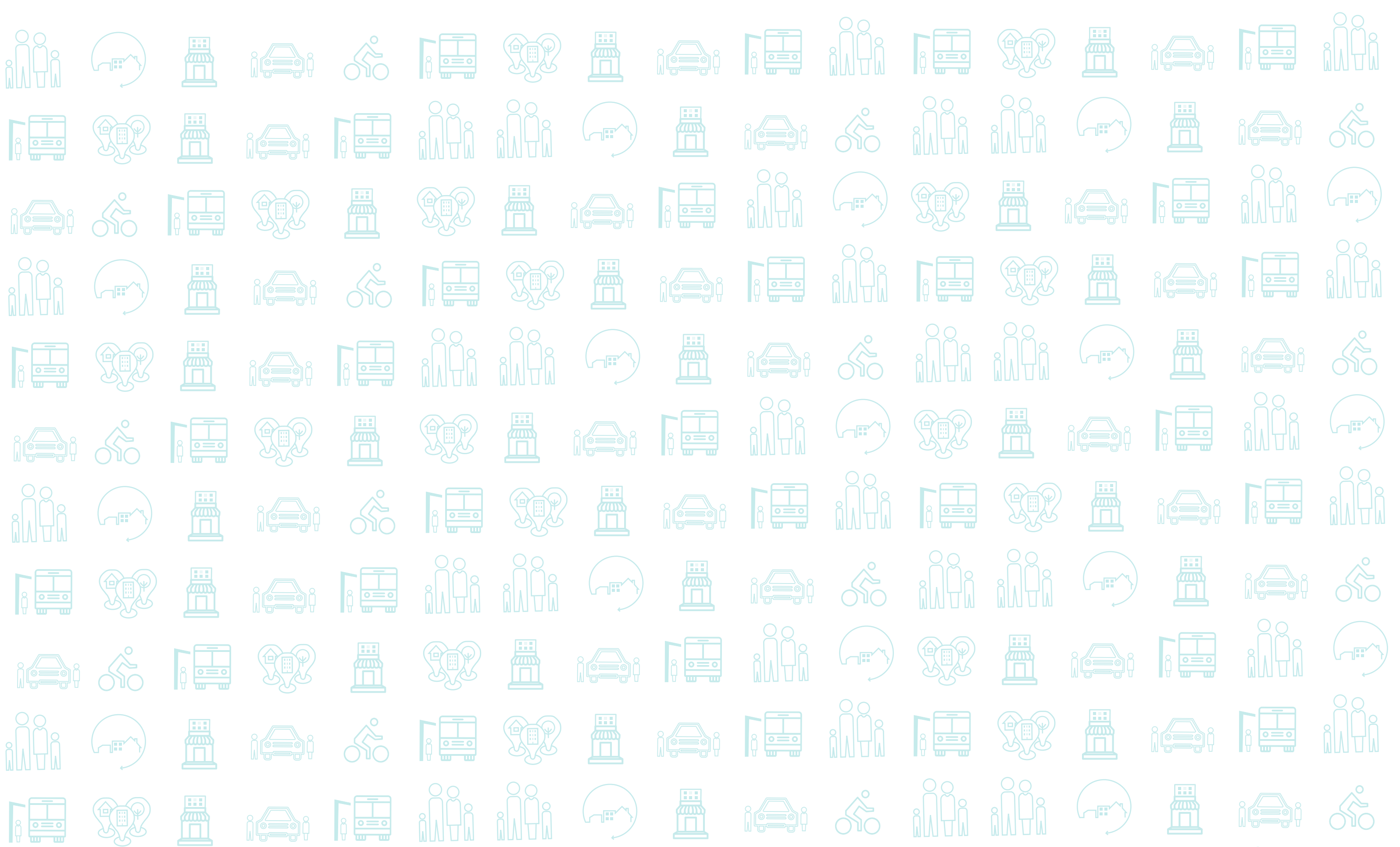
Verbena hastata  
Blue Vervain



Verbena stricta  
Hoary Vervain











# Appendix B | Main Street Traffic Review





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Toronto ON M4V 2Y7 Canada  
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ibigroup.com

# Memorandum

**To/Attention** Joe Heyninck, IBI Group      **Date** May 10, 2016  
**From** Matt Colwill, IBI Group      **Project No** 38766  
**cc** Ron Stewart, IBI Group  
**Subject** City of London Lambeth Main Street Road Diet Traffic Review

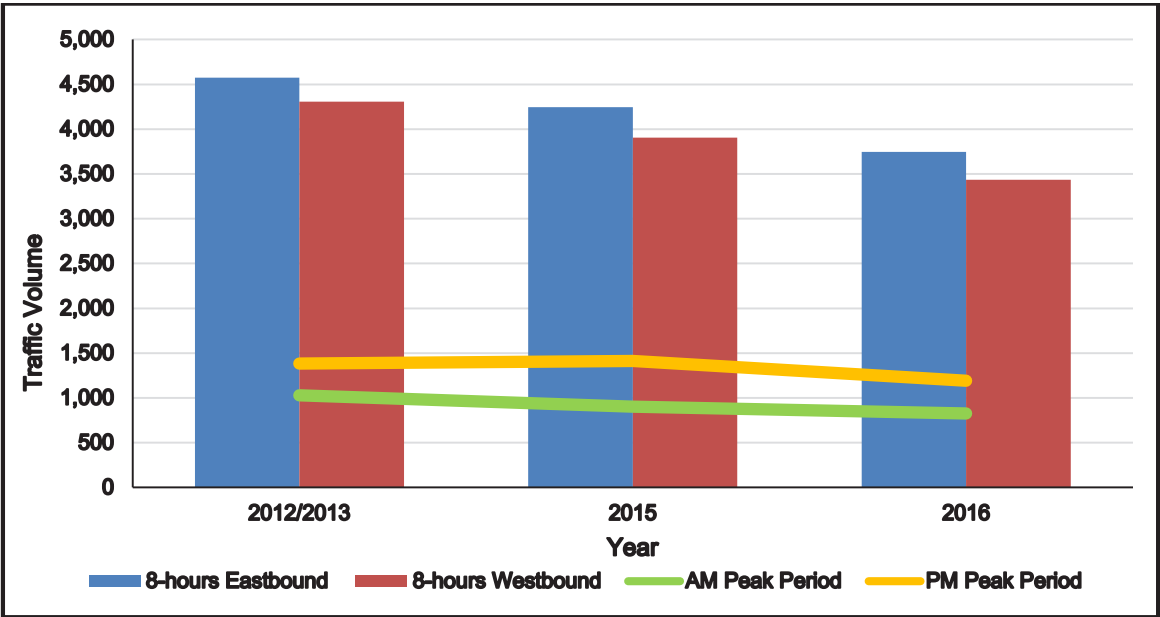
## BACKGROUND

The City of London retained IBI Group to prepare an infrastructure lifecycle renewal study for Main Street in Lambeth. As part of the infrastructure lifecycle renewal, a lane reduction or “road diet” treatment is one of the options being considered for Main Street. The treatment is intended to reduce the number of through lanes along the roadway to only one lane per direction, along with a centre two-way left-turn lane (TWLTL), and dedicated left-turn lanes at intersections. This memo documents the traffic operations assessment of the potential lane reduction.

## TRAFFIC VOLUME TRENDS

Turning movement counts were conducted at the two study intersections in 2012/2013 (Colonel Talbot Road and Main Street intersection was counted in 2012, and the Campbell and Main Street intersection was counted in 2013), 2015, and 2016. The traffic volume on Main Street was computed from the turning movement counts, as illustrated in **Exhibit 1**.

Exhibit 1 Historical Traffic Volume Trend



Joe Heyninck, IBI Group – May 10, 2016

As shown by the plot, the volume on Main Street has a generally decreasing trend in both the eastbound and westbound directions. From the 2012/2013 count period to the 2016 count period, Main Street has experienced a volume reduction of approximately 19%. The PM peak volume is higher than the AM peak volume, which is typical for urban arterial roadways, such as Main Street. The reduction in traffic volume could be associated with more traffic using the Wonderland Road to access the Highway 402 interchange and the more recently opened Highway 401 interchange, as a means of bypassing downtown Lambeth.

In addition to the Main Street volume analysis, the following findings were noted based on a more detailed review of the turning movement counts:

- Overall, heavy vehicle traffic volume has decreased. The proportion of heavy vehicle has decreased slightly (from approximately 4% in 2012/2013 to 3% in 2016);
- The overall volume reduction was largely because of reduced through traffic. Most of the left-turn and right-turn movement volumes at the two study intersections fluctuated throughout the three study periods, without any clear trends; and
- At the Colonel Talbot Road and Main Street intersection, the northbound right-turn movement and westbound left-turn movement represent a significant proportion (approximately 40%) of the total inbound traffic volume. This is expected due to Colonel Talbot Road’s connection to Highway 402 and Highway 401 to the south. These two turning movements have also demonstrated a decreasing trend in traffic volumes over the analysis period.

## EXISTING TRAFFIC CONDITIONS

The existing lane configuration along Main Street in the study area is illustrated in **Exhibit 2**.

Exhibit 2 Existing Lane Configuration





Joe Heyninck, IBI Group – May 10, 2016

Intersection capacity was analyzed for the two study signalized intersections, using the Synchro 9 software and Highway Capacity Manual (HCM) intersection capacity methodology. The traffic volume used in the analysis was based on the turning movement counts collected in March 2016. The operating performance is summarized in **Exhibit 3**.

Exhibit 3 Existing Intersection Capacity Analysis

MEASURES OF EFFECTIVENESS			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Main Street and Colonel Talbot Road	AM	Volume	8	278	103	141	119	25	71	244	196	84	466	11
		v/c ratio	0.46	0.46	0.07	0.43	0.22	0.22	0.33	0.35	0.13	0.20	0.68	0.68
		Control Delay (sec.)	14.6	14.6	10.8	8.5	3.4	3.4	14.2	11.8	10.0	10.8	17.3	17.3
		LOS	B	B	B	A	A	A	B	B	A	B	B	B
		95 <sup>th</sup> Queue (m)	37.7	37.7	7.3	5.5	4.0	4.0	13.1	29.4	9.2	12.5	63.0	63.0
	PM	Volume	23	209	75	210	317	132	116	449	272	89	261	23
		v/c ratio	0.33	0.33	0.05	0.46	0.59	0.59	0.35	0.70	0.18	0.46	0.45	0.45
		Control Delay (sec.)	12.4	12.4	10.0	11.9	13.0	13.0	16.4	22.0	13.6	21.7	16.6	16.6
		LOS	B	B	A	B	B	B	B	C	B	C	B	B
		95 <sup>th</sup> Queue (m)	31.6	31.6	6.0	41.1	76.4	76.4	21.6	73.6	12.7	20.8	43.1	43.1
Main Street and Campbell Street	AM	Volume	23	491	14	50	258	33	9	29	102	79	7	15
		v/c ratio	0.46	0.46	0.46	0.34	0.34	0.34	0.14	0.14	0.14	0.22	0.22	0.22
		Control Delay (sec.)	9.2	9.2	9.2	12.0	12.0	12.0	10.6	10.6	10.6	11.6	11.6	11.6
		LOS	A	A	A	B	B	B	B	B	B	B	B	B
		95 <sup>th</sup> Queue (m)	19.8	19.8	19.8	19.1	19.1	19.1	10.8	10.8	10.8	13.8	13.8	13.8
	PM	Volume	34	463	28	119	567	70	12	21	75	62	28	51
		v/c ratio	0.37	0.37	0.37	0.60	0.60	0.60	0.12	0.12	0.12	0.27	0.27	0.27
		Control Delay (sec.)	9.9	9.9	9.9	12.7	12.7	12.7	15.8	15.8	15.8	17.5	17.5	17.5
		LOS	A	A	A	B	B	B	B	B	B	B	B	B
		95 <sup>th</sup> Queue (m)	33.1	33.1	33.1	45.8	45.8	45.8	12.4	12.4	12.4	20.8	20.8	20.8

The traffic operations analysis indicates that both intersections operate below their theoretical capacities during the AM and PM peak hours. There is no individual critical movement that is near its operating capacity.

TRAFFIC CONDITIONS AFTER LANE REDUCITONS

Intersection capacity was also analyzed for the potential lane reduction condition, in which Main Street would operate with a three-lane cross-section. The same signal timings used in the existing conditions analysis, was used for the three-lane cross-section condition. Therefore, traffic operations in the north-south directions are not impacted. In addition, eastbound and westbound approaches at the Main Street and Colonel Talbot Road intersection already conform to the three-lane cross-section. Therefore their traffic operations also remain the same as the existing conditions. The change in operating performance (compared to the four-lane cross-section) in the east-west directions at the Main Street and Campbell Street intersection is illustrated in **Exhibit 4**.

Joe Heyninck, IBI Group – May 10, 2016

Exhibit 4 Comparative Intersection Capacity Analysis under Three-lane Cross-section

MEASURES OF EFFECTIVENESS			EBL	EBT	EBR	WBL	WBT	WBR
Main Street and Campbell Street	AM	Volume	23	491	14	50	258	33
		v/c ratio	0.46 → 0.06	0.46 → 0.78	0.46 → 0.78	0.34 → 0.29	0.34 → 0.46	0.34 → 0.46
		Control Delay (sec.)	9.2 → 7.9	9.2 → 18.2	9.2 → 18.2	12.0 → 14.7	12.0 → 13.9	12.0 → 13.9
		LOS	A → A	A → B	A → B	B → B	B → B	B → B
		95 <sup>th</sup> Queue (m)	19.8 → 3.2	19.8 → 87.5	19.8 → 87.5	19.1 → 10.5	19.1 → 36.3	19.1 → 36.3
	PM	Volume	34	463	28	119	567	70
		v/c ratio	0.37 → 0.17	0.37 → 0.57	0.37 → 0.57	0.60 → 0.38	0.60 → 0.73	0.60 → 0.73
		Control Delay (sec.)	9.9 → 10.3	9.9 → 13.3	9.9 → 13.3	12.7 → 12.5	12.7 → 16.8	12.7 → 16.8
		LOS	A → A	A → A	A → A	B → B	B → B	B → B
		95 <sup>th</sup> Queue (m)	33.1 → 7	33.1 → 72.8	33.1 → 72.8	45.8 → 19.8	45.8 → 90.6	45.8 → 90.6

The analysis suggests the following:

- Eastbound and westbound left-turn movements have improved performance compared to existing conditions, due to the addition of dedicated left-turn lanes; and
- Eastbound and westbound through movements have slightly deteriorated performance compared to existing conditions; however, they continue to operate well below their theoretical capacities. In addition, because north-south directions have very low capacity utilization, there are opportunities to re-allocate green times from north-south phases to east-west phases. Therefore, the overall impacts are anticipated to be minor.

FUTURE TRAFFIC CONDITION

Using a 10-year study horizon, a 2026 future condition was analyzed. The future condition was developed based on an annual traffic growth rate of 1.5%, as previously agreed to with the City of London staff. This is anticipated to be a conservative estimate, given that historically traffic volume has demonstrated negative growth. The growth rate was applied to all through movements, as well as for northbound right-turn and westbound left-turn movements at the Main Street and Colonel Talbot Road intersection. Both the existing four-lane cross-section scenario and the three-lane cross-section scenario were analyzed under the future traffic volume condition.

Existing Four-Lane Cross-section

The operating performance for the four-lane cross-section scenario is summarized in **Exhibit 5**.



Joe Heyninck, IBI Group – May 10, 2016

Joe Heyninck, IBI Group – May 10, 2016

Exhibit 5 Future Condition Intersection Capacity Analysis – Four-lane Cross-section

MEASURES OF EFFECTIVENESS			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Main Street and Colonel Talbot Road	AM	Volume	8	323	103	164	138	25	71	283	227	84	541	11
		v/c ratio	0.54	0.54	0.07	0.57	0.26	0.26	0.45	0.41	0.16	0.21	0.79	0.79
		Control Delay (sec.)	15.8	15.8	10.8	13.4	4.6	4.6	19.3	12.4	10.1	10.9	21.4	21.4
		LOS	B	B	B	B	A	A	B	B	B	B	C	C
		95 <sup>th</sup> Queue (m)	44.3	44.3	7.3	33.7	6.1	6.1	16.8	34.3	9.8	12.6	91.6	91.6
	PM	Volume	23	243	75	244	369	132	116	521	316	89	303	23
		v/c ratio	0.38	0.38	0.05	0.56	0.66	0.66	0.39	0.81	0.21	0.66	0.52	0.52
		Control Delay (sec.)	13.0	13.0	10.0	14.1	14.4	14.4	17.5	27.1	13.9	36.3	17.7	17.7
		LOS	B	B	A	B	B	B	B	C	B	D	B	B
		95 <sup>th</sup> Queue (m)	36.4	36.4	6.0	44.5	88.2	88.2	22.5	13	13.5	29.8	50.3	50.3
Main Street and Campbell Street	AM	Volume	23	570	14	50	299	33	9	34	102	79	8	15
		v/c ratio	0.53	0.53	0.53	0.39	0.39	0.39	0.15	0.15	0.15	0.22	0.22	0.22
		Control Delay (sec.)	9.9	9.9	9.9	12.4	12.4	12.4	10.7	10.7	10.7	11.6	11.6	11.6
		LOS	A	A	A	B	B	B	B	B	B	B	B	B
		95 <sup>th</sup> Queue (m)	23.1	23.1	23.1	21.7	21.7	21.7	11.3	11.3	11.3	13.9	13.9	13.9
	PM	Volume	34	537	28	119	658	70	12	24	75	62	32	51
		v/c ratio	0.42	0.42	0.42	0.69	0.69	0.69	0.13	0.13	0.13	0.28	0.28	0.28
		Control Delay (sec.)	10.3	10.3	10.3	14.4	14.4	14.4	15.8	15.8	15.8	17.7	17.7	17.7
		LOS	B	B	B	B	B	B	B	B	B	B	B	B
		95 <sup>th</sup> Queue (m)	37.7	37.7	37.7	55.1	55.1	55.1	12.8	12.8	12.8	21.9	21.9	21.9

The traffic operations analysis indicates that all approaches have increased capacity usage due to increase in the projected traffic volume. However, in general, all movements remain well below their theoretical operating capacities.

Three-Lane Road Diet Cross-section

Under the three-lane cross-section, again only the east-west lane configurations at the Main Street and Campbell Street intersection is impacted. The change in operating performance is illustrated in **Exhibit 6**.

Exhibit 6 Comparative Future Condition Intersection Capacity Analysis – Three-lane Cross-section

MEASURES OF EFFECTIVENESS			EBL	EBT	EBR	WBL	WBT	WBR
Main Street and Campbell Street	AM	Volume	23	491	14	50	258	33
		v/c ratio	0.53 → 0.07	0.53 → 0.91	0.53 → 0.91	0.39 → 0.38	0.39 → 0.53	0.39 → 0.53
		Control Delay (sec.)	9.9 → 7.9	9.9 → 27.8	9.9 → 27.8	12.4 → 18.8	12.4 → 14.9	12.4 → 14.9
		LOS	A → A	A → C	A → C	B → B	B → B	B → B
		95 <sup>th</sup> Queue (m)	23.1 → 3	23.1 → 106	23.1 → 106	21.7 → 11.9	21.7 → 42.4	21.7 → 42.4
	PM	Volume	34	463	28	119	567	70
		v/c ratio	0.42 → 0.26	0.42 → 0.66	0.42 → 0.66	0.69 → 0.47	0.69 → 0.84	0.69 → 0.84
		Control Delay (sec.)	10.3 → 13.2	10.3 → 14.9	10.3 → 14.9	14.4 → 15.4	14.4 → 21.7	14.4 → 21.7
		LOS	B → B	B → B	B → B	B → B	B → C	B → C
		95 <sup>th</sup> Queue (m)	37.7 → 8.1	37.7 → 86.1	37.7 → 86.1	55.1 → 22.8	55.1 → 133	55.1 → 133

Similar to the three-lane condition using the 2016 traffic volumes, left-turn movements are anticipated to have improved performance due to the addition of left-turn lanes. Through movements are anticipated to operate with deteriorated performance, specifically the eastbound direction during the AM peak and the westbound direction during the PM peak. Again, because north-south directions have very low capacity utilization, there are opportunities to re-allocate green time from the north-south phases to the east-west phases. The operational performance under an optimized signal timing is illustrated in **Exhibit 7**.

Exhibit 7 Future Condition Intersection Capacity Analysis – Three-lane Cross-section with Optimized Signal Timing

MEASURES OF EFFECTIVENESS			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Main Street and Campbell Street	AM	Volume	23	570	14	50	299	33	9	34	102	79	8	15
		v/c ratio	0.05	0.69	0.69	0.22	0.40	0.40	0.17	0.17	0.17	0.27	0.27	0.27
		Control Delay (sec.)	5.7	12.7	12.7	10.4	10.7	10.7	16.2	16.2	16.2	17.7	17.7	17.7
		LOS	A	B	B	B	B	B	B	B	B	B	B	B
		95 <sup>th</sup> Queue (m)	2.5	88.7	88.7	9.2	38.6	38.6	15.0	15.0	15.0	18.9	18.9	18.9
	PM	Volume	34	537	28	119	658	70	12	24	75	62	32	51
		v/c ratio	0.17	0.58	0.58	0.37	0.73	0.73	0.14	0.14	0.14	0.34	0.34	0.34
		Control Delay (sec.)	8.8	11.9	11.9	11.1	15.5	15.5	20.7	20.7	20.7	23.6	23.6	23.6
		LOS	A	B	B	B	B	B	C	C	C	C	C	C
		95 <sup>th</sup> Queue (m)	6.7	73.4	73.4	19.6	110	110	15.4	15.4	15.4	27.8	27.8	27.8

The analysis suggests that, the capacity of the eastbound and westbound approaches could be increased by the re-allocation of green time. Under the optimized signal timings, the delays experienced by eastbound and westbound movements are anticipated to be similar to those under the existing four-lane cross-section. Although the queues are anticipated to be longer, they only occupy one lane, whereas in the existing four-lane cross-section they would have occupied two lanes. This is anticipated to reduce the variability of queue lengths as a result of vehicles that would have been stuck behind a left-turn vehicle in the existing four-lane cross-section, and also reduce potential lane-changing conflicts. Also, because the delay is low and



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the queue is able to clear within one cycle, the increase in queue length is not anticipated to be a major issue. The analysis suggests that northbound and southbound movements will not be significantly impacted. Therefore, the overall impacts of converting the cross-section to three-lane are anticipated to be minor.

ROUNDAABOUT ALTERNATIVE

The potential of reconfiguring the Main Street and Campbell Street intersection into a roundabout was assessed using the HCM 2010 roundabout traffic flow worksheet. The 2016 and 2026 AM peak and PM peak hour traffic volumes were tested. The preliminary assessment results are presented in **Exhibit 8**.

Exhibit 8 Preliminary Assessment of Roundabout Alternatives

LOCATION	STUDY HORIZON	MEASURE OF EFFECTIVENESS	EB	WB	NB	SB
Main Street and Campbell Street	2016 Existing Volume	AM v/c ratio	0.55	0.32	0.23	0.13
		PM v/c ratio	0.59	0.72	0.17	0.26
	2026 Future Volume	AM v/c ratio	0.64	0.37	0.26	0.13
		PM v/c ratio	0.68	0.81	0.19	0.29

The preliminary capacity utilization assessment indicates that during both AM and PM peak periods, a single-lane (1-entry-1-cirulcating lane) roundabout can sufficiently accommodate the traffic volumes. The volume to capacity ratios under the single-lane roundabout alternative are similar to those under the existing traffic signal operations; this implies that the roundabout alternative has a higher operating efficiency since the existing lane configuration provides one additional lane per direction.

POTENTIAL COMPLETE STREETS FEATURES

In addition to the changes in traffic operating performance discussed in the previous sections, the road diet treatment along Main Street is also anticipated to bring forth other benefits, some of which align with the Complete Streets Policy and the Smart Growth philosophy. These benefits include:

- Reduced conflict points at intersections, due to the reduced number of lanes that vehicles have to cross;
- Potential for traffic calming and reducing operating speeds; the combination of reduced conflict points and reduced operating speeds (through increased “friction” and potential lane narrowing) have the potential to reduce collision frequency;
- Reduced crossing distances for pedestrians; this could provide opportunities for reducing the clearance intervals and cycle lengths at the two traffic signals;
- Improved mid-corridor pedestrian crossing opportunities, at S. Routeledge Road and Bainard Street (Given that both intersections are T-intersections, it might be possible to provide pedestrian refuge islands in the centre lane, opposite the dedicated left-turn lane portion of the TWLTL, and recent changes to the HTA could allow for these to be controlled crossings, granting greater pedestrian priority.); and
- Reserve cross-section widths for other Complete Street design practices; the spaces made available by the removed through lanes can be used to serve other

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users and functions, such as bike lanes, transit lanes, sidewalk expansion, and/or on-street parking.

CONCLUSIONS

This memo analyzes the historical traffic volume patterns, existing traffic operations, future traffic operations, and the potential for a roundabout alternative. Overall, the analyses suggest that the conversion of the existing four-lane cross-section to a proposed three-lane cross-section would have no major operational impacts. The key findings from this memo are summarized below:

- The volume on Main Street has a generally decreasing trend in both the eastbound and westbound directions;
- The study intersections are operating with sufficient reserve capacity under the existing conditions during both AM and PM peak periods. The conversion from the existing four-lane cross-section to a three-lane cross-section is not anticipated to cause any major operational impacts; the intersections are anticipated to continue operating with sufficient reserve capacity under the three-lane cross-section condition during both peak periods;
- The study intersections are anticipated to continue operating with sufficient reserved capacity under the 2026 future traffic conditions. All approaches will experience slightly increased capacity utilization, but all movements remain well below their theoretical capacities. The conversion from the four-lane cross-section to the three-lane cross-section is not anticipated to cause any major operational impacts, as all movements continue operating with sufficient reserve capacity during both peak periods; in addition, there are opportunities to re-allocate green time from the side street directions, to further improve main street operations;
- The preliminary roundabout capacity utilization assessment suggests that the Main Street and Campbell Street intersection has the potential to be converted to a roundabout. A single-lane roundabout is anticipated to be able to sufficiently accommodate the projected 2026 future traffic volume during both peak periods; and
- The three-lane cross-section provides opportunities for other potential benefits, including reduced conflict points, potential for traffic calming, reduced crossing distances, and reserve cross-section width for pedestrian, cyclists, and transit facilities.