

358 REYNOLDS STREET

URBAN DESIGN BRIEF



NOVEMBER 2023



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01 INTRODUCTION

1.1 PURPOSE OF THE DOCUMENT

MacDonald Rose Inc. has retained NAK Design Strategies to prepare this Urban Design Brief (UDB) document in support of a Zoning By-law Amendment and Draft Plan application to permit a townhouse development.

The townhouse development (hereinafter referred to as “Subject Site”) is located on the south-west corner of Reynolds Street and MacDonald Road, in south-east Oakville.

This Urban Design Brief (UDB) describes and illustrates the design strategy for the townhouse development. The development’s design vision and guiding principles prescribe open space and built form guidelines and principles for these blocks, while allowing some flexibility for delivering a wide range of design expressions, architectural form and styles that provide interest in the urban environment.

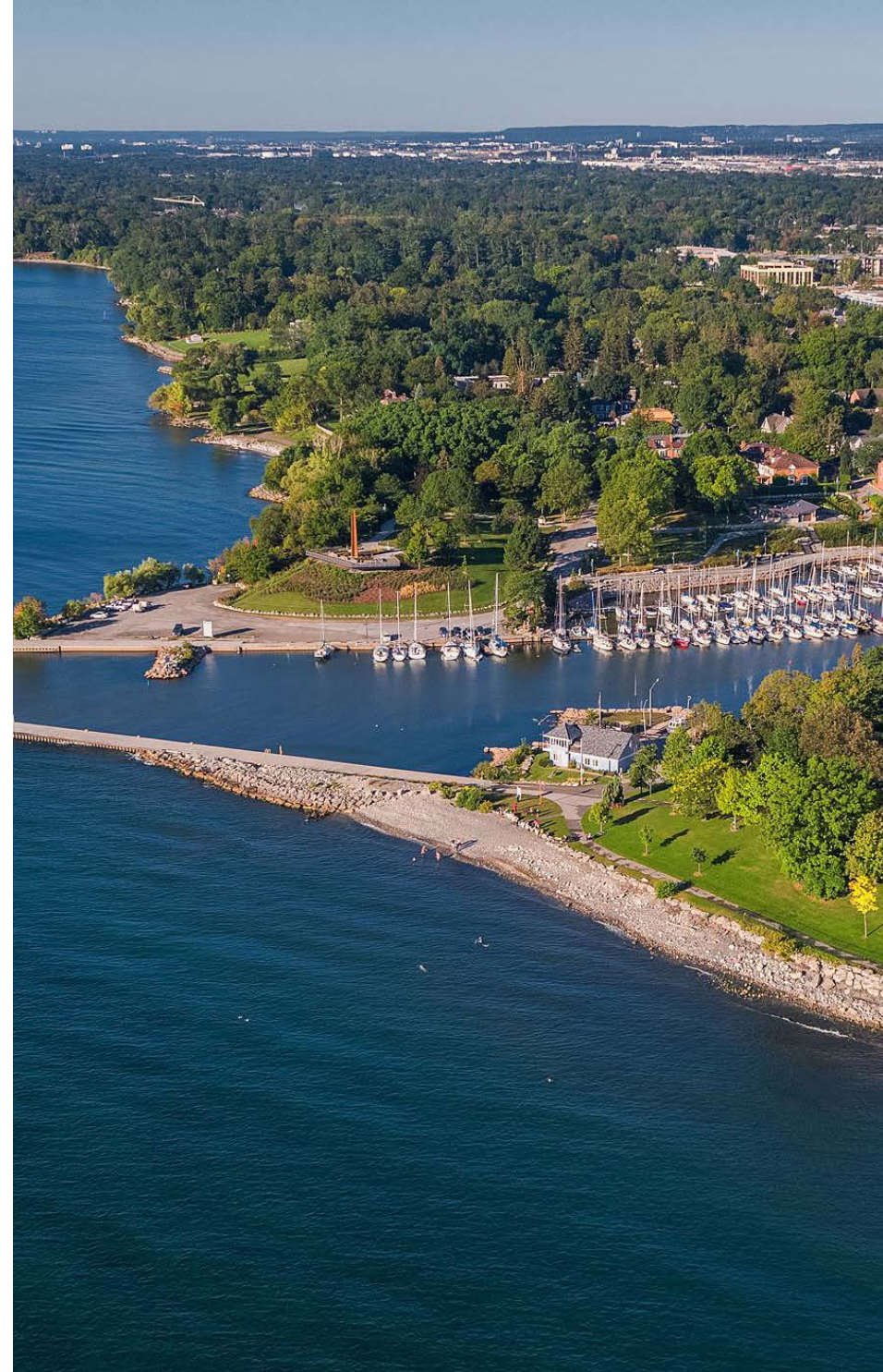
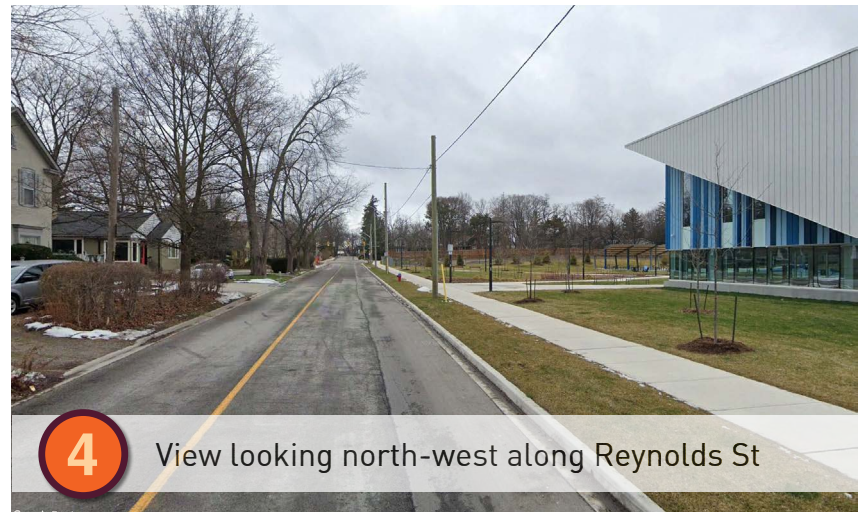
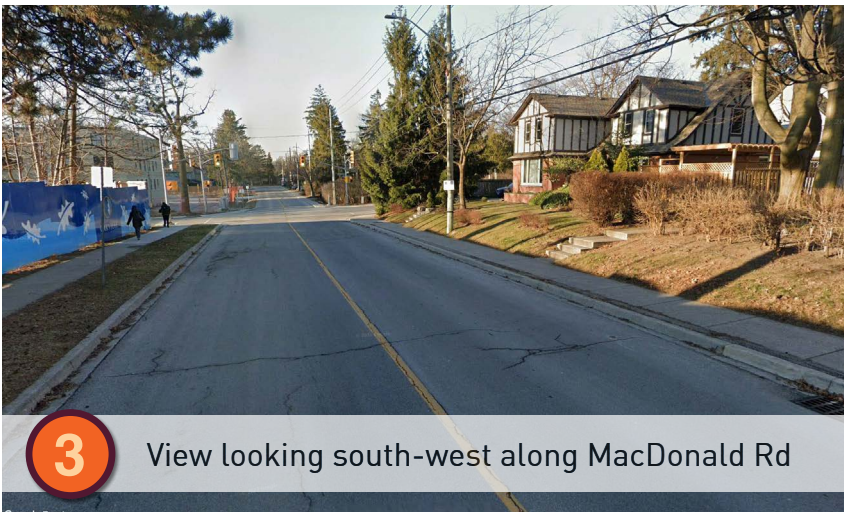
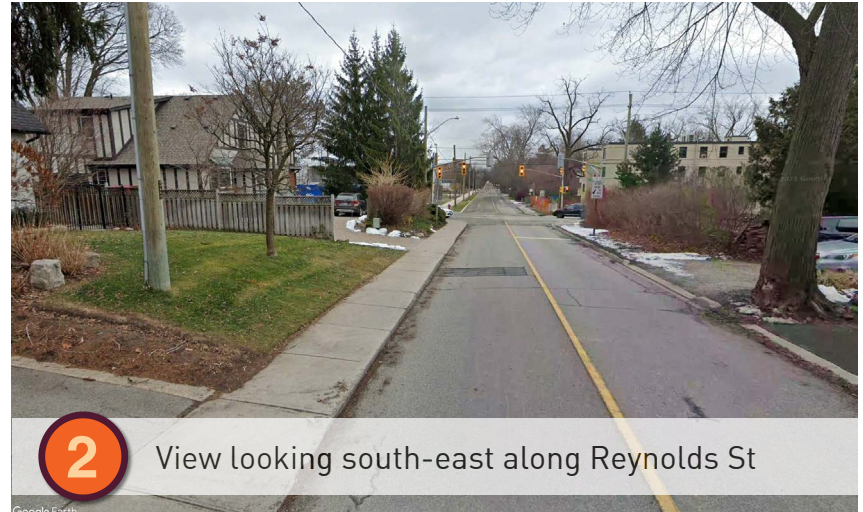
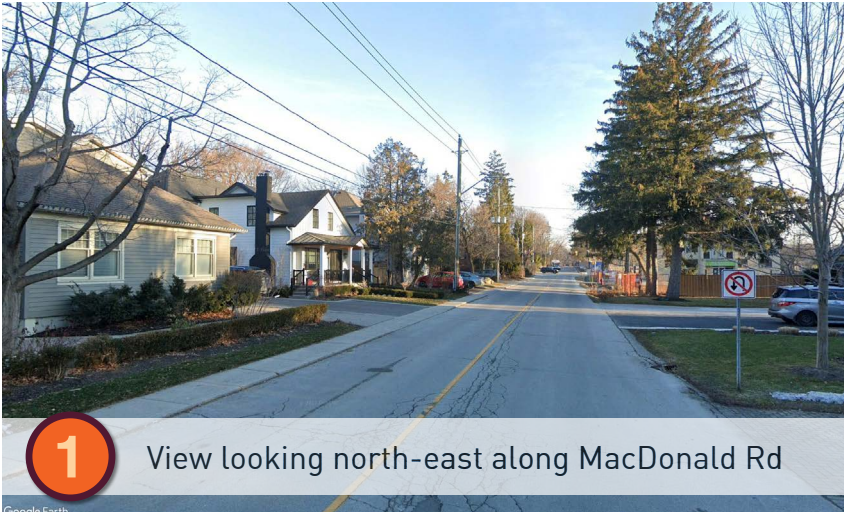




Figure 1.2: 358 Reynolds Street Context Analysis

02 CONTEXTUAL ANALYSIS





2.1 EXISTING NATURAL FEATURES, TOPOGRAPHY & VEGETATION

The Subject Site is situated within an area that has a mature, residential landscape. The land responds to the topography of the Sixteen Mile Creek Valley, just located to the west. The surrounding area comprises a diverse, well-maintained scenic setting of private front yards that are defined by landscape elements such as hedges, low ornamental fences, planting beds, grass boulevards, treelined sidewalks with tree canopies.

2.2 SURROUNDING LAND USES & BUILT FORM CHARACTER

The surrounding area consists of mainly low density residential uses. However, other land uses in the area include:

- **North:** Institutional (Grace Evangelical Lutheran Church), low density residential
- **East:** Oakville Trafalgar Memorial Hospital Redevelopment consisting of low and medium density residential, civic (Oakville Trafalgar Community Centre), as well as parks and open spaces
- **South:** Institutional (MacLachlan College), low density residential
- **West:** Sixteen Mile Creek, low density residential

In vernacular fashion, this area has a considerable range and diversity in its architectural heritage, with distinct styles from the nineteenth century (Second Empire, Gothic Revival, and Italianate), the twentieth century (Four Square, Tudor Revival, Period Revival, Craftsman and Bungalow), as well as post WWII Victory Housing.



2.3 VIEWS & VISTA FROM THE SITE

Public access views and viewsheds are integral components of an attractive, walkable, and sustainable community. In keeping with the overall vision for the area, it is important to maintain views to natural landscape features, as well as residential landscape elements such as front lawns, tree plantings, fences, distinctive treeline and canopied streetscapes. Further, the Trafalgar Road Heritage Conservation District Plan also highlights the importance of maintaining traditional views of properties from the public right-of-way.

2.4 GATEWAYS & LANDMARKS

While the existing building does not have heritage significance, the Subject Site is designated under Part V of the Ontario Heritage Act in the Trafalgar Road Heritage Conservation District Plan. The area contains several buildings of architectural significance due to workmanship, age, beauty and uniqueness. Along with historical significance, the area offers a distinct sense of place through the series of common building elements, focal buildings and landscape features.

2.5 TRANSPORTATION NETWORKS

Outlined in the Livable Oakville Official Plan, MacDonald Road is classified as a Minor Collector Road, and Trafalgar Road and Reynolds Street are classified as Minor Arterial Roads. These routes carry higher volumes of traffic, and promote a range of transportation alternatives. Through the Official Plan, the Town proposes signed bike lanes on Trafalgar Road and MacDonald Road that lead to the greater cycling network. Currently, both MacDonald Road and Reynolds Street have a sidewalk on one side of the street.

Further, this area of south-east Oakville is serviced by two Oakville Transit routes - 11 and 83. The 11 bus route travels from the Oakville GO Station, south on Reynolds Street and then east on MacDonald Road, towards Clarkson GO Station. Route 83 is a school route, traveling from Oakville GO Station, south on Reynolds Street and then travels west towards Thomas A. Blakelock High School. Situated on the corner of Macdonald Road and Reynolds Street, the Subject Site is approximately a two minute walk to the 11 bus route. The site's access to regional transit services encourages the use of alternative modes of transportation.

03 POLICY CONTEXT

3.1 THE LIVABLE OAKVILLE PLAN (2009 TOWN OF OAKVILLE OFFICIAL PLAN)

The Livable Oakville Plan (2009 Town of Oakville Official Plan) sets out policies on how the land should be used and how growth should be managed. It currently applies to all lands within the Town except the land outlined in the North Oakville East and West Secondary Plan. Aligning with the policy framework, the character of the Subject Site recognizes and reflects the following guiding principles:

- *Preserve, enhance, and protect the distinct character, cultural heritage, living environment, and sense of community of neighbourhoods (2.2.1a);*
- *Enable the availability and accessibility of a wide range of housing, jobs and community resources to meet the diverse needs of the community through all stages of life (2.2.2a);*
- *Foster the Town's sense of place through excellence in building and community design (2.2.2c);*
- *Achieve sustainable building and community design (2.2.3c); and*
- *Encourage growth and intensification (including infill, redevelopment, and greyfield and brownfield sites) in lands outside of identified Growth Areas provided that the overall urban structure is upheld the character is preserved (4.3).*

3.2 LIVABLE BY DESIGN MANUAL (PART A)

The Livable by Design Manual (LBDM) Part A - Urban Design Direction for Oakville applies to all development proposals that are subject to approval by the Town of Oakville. Part A provides detailed design direction for the public realm, built form, and site development.

The purpose of the design manual is to:

- Visually articulate the strategic direction and design objectives of the Oakville Official Plan;
- Set clear expectations for preferred design and development outcomes;
- Establish an assessment framework for the review of development proposals; and
- Provide guiding design principles and urban design direction for the creation of detailed design documents.

3.3 LIVABLE BY DESIGN MANUAL (PART C)

The Livable by Design Manual (LBDM) Part C - Site Design and Development Standards establishes a benchmark by which development proposals will be reviewed in order to achieve a consistent level of quality built form throughout the Town.

The objectives of this document is to:

- Set clear expectations and standards for development;
- Document established current practices and incorporate best practices;
- Institute requirements and benchmarks; and
- Establish uniformity in the development review process to achieve consistency in site design and development.

3.4 TRAFALGAR ROAD HERITAGE CONSERVATION DISTRICT (TRHCD) PLAN

The Subject Site is located within the Town of Oakville's Trafalgar Road Heritage Conservation District (TRHCD). It comprises a unique collection of heritage buildings and landscapes that have resulted from a century and a half of social, economic, natural and physical changes. Due to its unique residential heritage character, the Plan identifies the importance of preserving distinct character and cultural heritage to create a sense of community. It provides specific guidance in the management of change and development in a manner that respects the building stock and quality of the streetscape.

The goals and objectives of this document are to:

- Maintain the residential character of TRHCD;
- Protect and enhance existing heritage residential buildings;
- Avoid the destruction of the heritage buildings and landscape fabric within the TRHCD;
- Encourage changes that are undertaken in a manner that maintains the integrity of the site; and
- Permit new development where it respects or otherwise complements the prevailing character of the existing heritage buildings and structures within the TRHCD.

04 VISION, GUIDING PRINCIPLES & OBJECTIVES

VISION



It is envisioned that the proposed development will be designed in a manner that is respectful of, and compatible with, the existing and emerging development within the surrounding community.

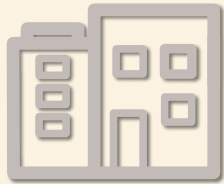
4.1 DESIGN VISION

The Town is committed to achieving a high standard of urban design and architectural quality to provide an innovative and diverse urban form that promotes a sustainable, dynamic and livable environment.

While the existing building on the Subject Site does not have heritage significance, the Subject Site is designated under Part V of the Ontario Heritage Act as part of the TRHCD. Previously occupied by medical uses, the existing building was vacated following the closure of the Oakville Trafalgar Hospital, located east of Reynolds Street.

The 358 Reynolds Street Subject Site is approximately 0.28ha (0.70ac) in size. The design vision for the proposed development includes eleven (11) 3-storey freehold townhouses in two (2) blocks, with driveways fronting onto MacDonald Road and Reynolds Street. The townhouses will be designed to complement the prevailing character of existing heritage built form within the district, with prominent landscaping that will contribute to the streetscape.

4.2 COMMUNITY GUIDING PRINCIPLES & OBJECTIVES



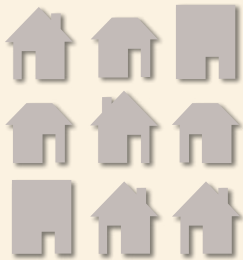
PROVIDE ATTRACTIVE BUILT FORM

Encourage a high standard of design that reflects the existing heritage character of the Town and Region, and enhances the existing and planned surrounding context.



CREATE A COMFORTABLE & ACCESSIBLE PUBLIC REALM

Provide a seamless transition between the public and private realms and promote pedestrian access between the built form and public realm along the streetscape.



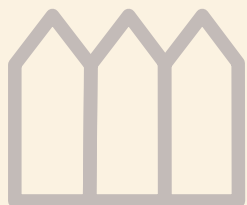
CONTRIBUTE TO HOUSING CHOICE IN THE COMMUNITY

Recognize the benefits of integrating higher residential density options that animate the street and contribute to the community character.



PROVIDE LOGICAL CONNECTIONS WITH ADJACENT EXISTING & FUTURE COMMUNITIES

Ensure the Subject Land is part of a well-connected and cohesive community framework with strong pedestrian and vehicular links to the adjacent residential neighbourhoods.



CONTRIBUTE TO THE HERITAGE CONSERVATION DISTRICT

Ensure that the new development integrates with the vision, goals and characteristics of the TRHCD.



PROVIDE ACCESS & VISIBILITY TO SURROUNDING NATURAL AREAS

Recognize the importance of developing physical and visual access to open spaces that will contribute to enhanced livability while maintaining the integrity of all environmental systems.

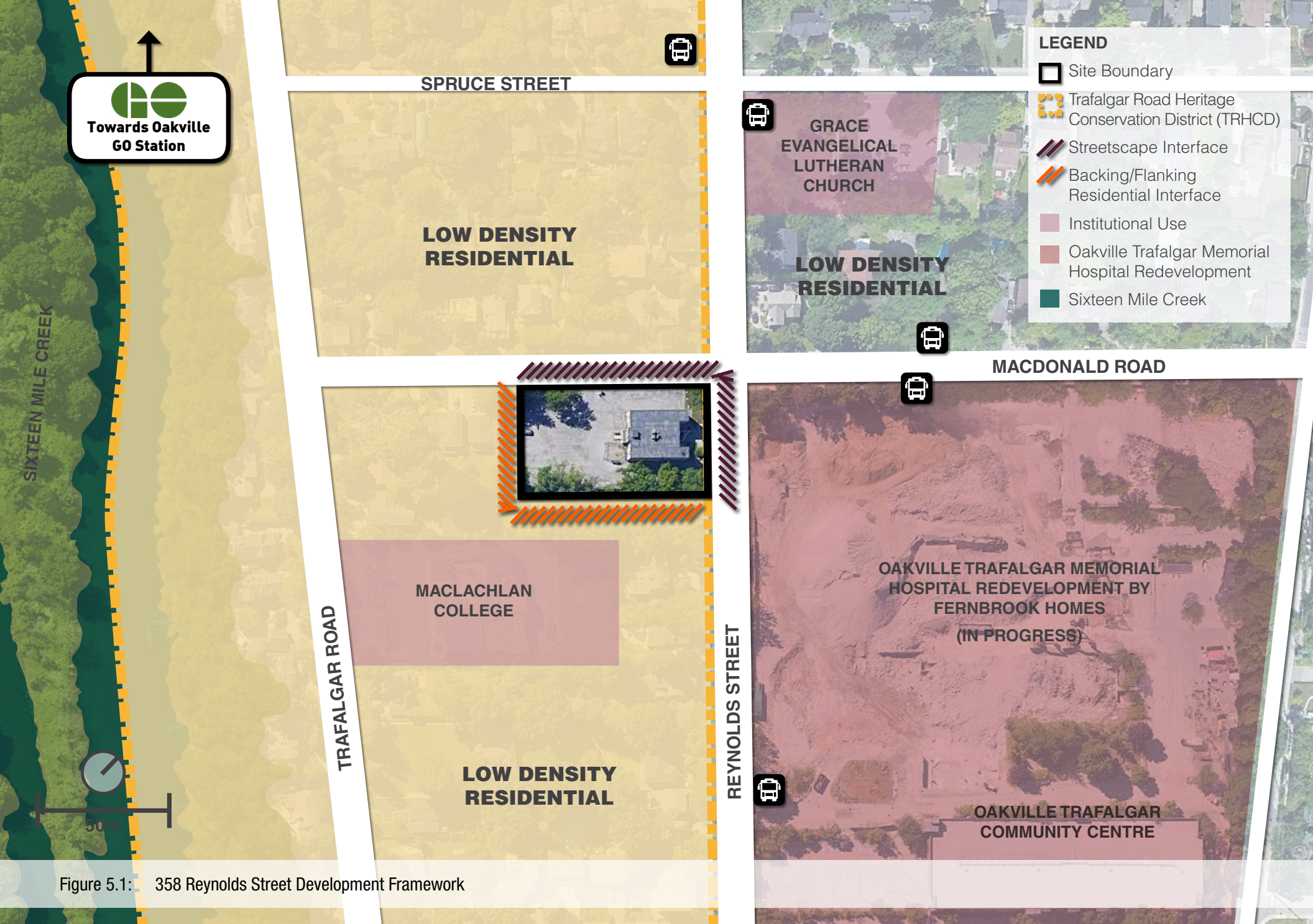


Figure 5.1: 358 Reynolds Street Development Framework

05 DEVELOPMENT FRAMEWORK

Due to its location, the Subject Site is an ideal area for a townhouse development, and the proposed design is appropriate considering the existing conditions and adjacent future developments.

5.1 BOUNDARY INTERFACE / EXISTING ESTABLISHED HERITAGE COMMUNITY

The Subject Site interfaces with existing low density residential uses along MacDonald Road, as well as Oakville Trafalgar Memorial Hospital Redevelopment along Reynolds Street, which proposes low and medium density residential such as townhouses. These two edge conditions shall respect and enhance the characteristics of the residential street on which it interfaces. Along the MacDonald Road interface, the right-of-way will be widened by 1.0m to contribute to the enhancement of the streetscape.

The Subject Site also backs/flanks existing low density residential homes, MacLachlan College and a school park. There shall be sufficient space to ensure there is adequate privacy between the proposed and existing buildings. With the appropriate boundary interfaces, this new development complements the prevailing character of existing heritage buildings and structures within the TRHCD.

5.2 PATTERN OF LAND USES

Situated within a primarily low density residential land use area, the design of the Subject Site shall consider the following:

- Compatible with the low density residential environment within the District;
- Complement the existing uses; and
- Discourage land uses that would have detrimental effects upon the residential and open space character of the District.

5.3 OPEN SPACE

With respect to the parks and open space system, the design of the Subject Site shall consider the following:

- Maintain/preserve individual trees, treelines and grass boulevards within the District; and
- Enhance public facing spaces with appropriate landscaping, where practical.

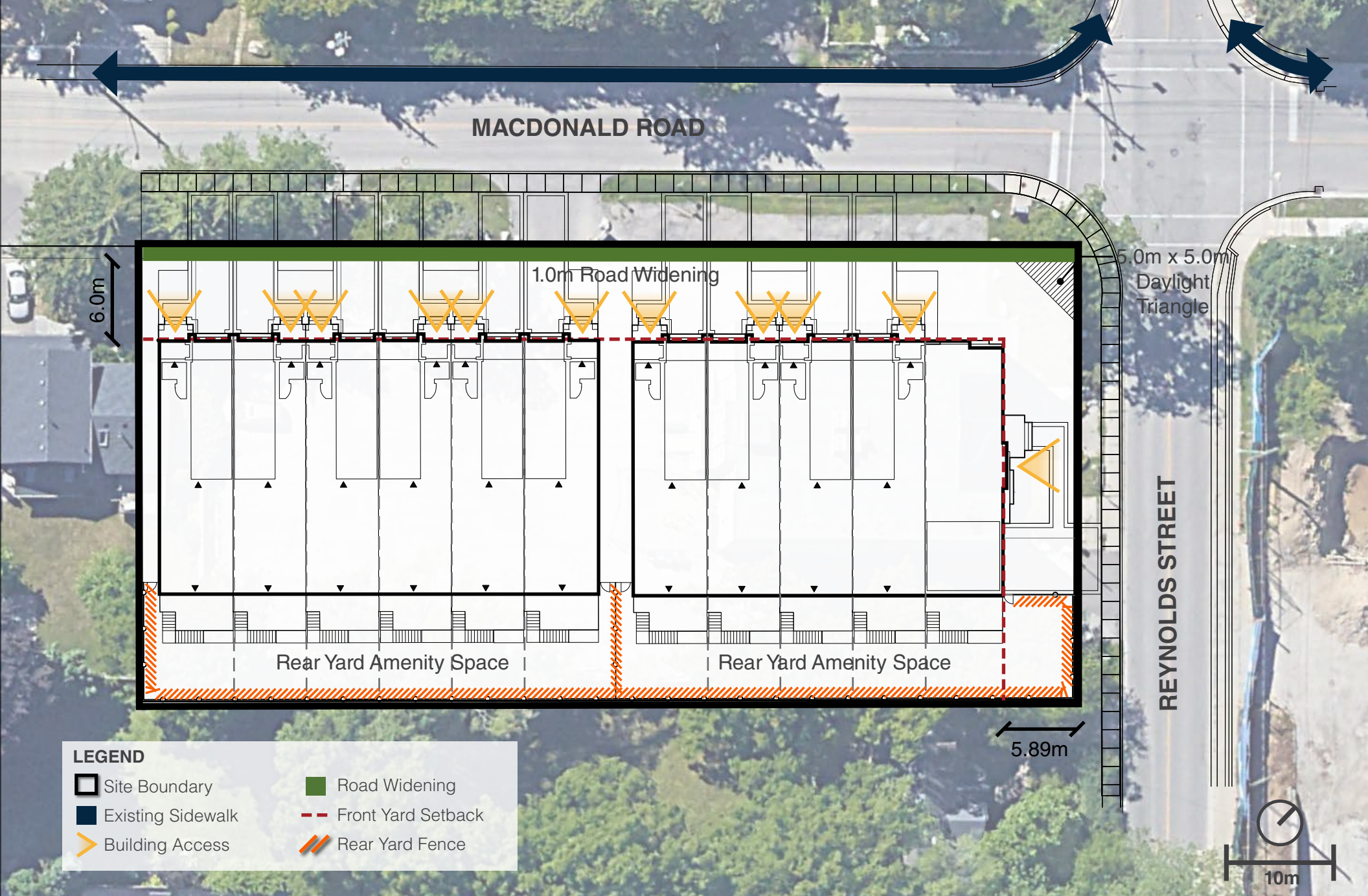


Figure 6.1: 358 Reynolds Street Conceptual Site Plan

04 DEVELOPMENT PLAN

In an effort to reduce energy consumption, increase the diversity of built form within a community, and provide strategic transit supportive density, the proposed development plan within the Subject Site includes:

- Two (2) blocks of 3-storey townhouses (11 units);
- 1.0m road widening along MacDonald Road; and
- 5m x 5m daylight triangle.

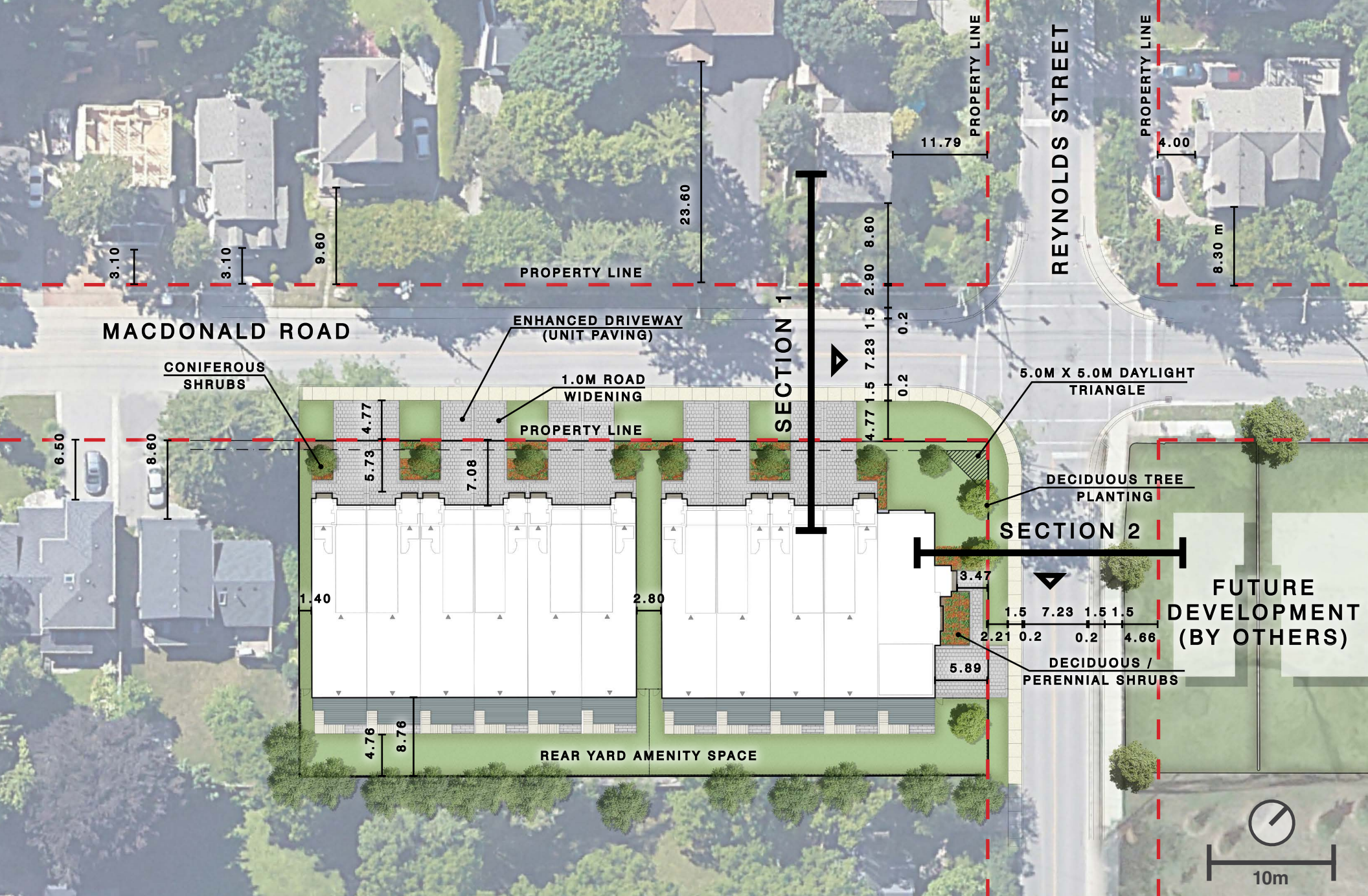


Figure 7.1: 358 Reynolds Street Conceptual Streetscape / Landscape Plan

07 DETAILED DESIGN DIRECTION

7.1 BUILDING PLACEMENT

Although setbacks vary throughout the TRHCD, design and placement of proposed development is intended to be compatible with the existing and planned surrounding neighbourhood.

With an emphasis on enhancing the streetscape, the ten (10) townhouses facing MacDonald Road have setbacks and strategically paired driveways to maximize front yard landscaping. The pairing and setbacks of the driveways and garages is consistent with the existing homes immediately to the west.

Further, the one (1) proposed corner unit that faces Reynolds Street is setback to ensure space for ample landscaping. The building placement supports the pedestrian scale of the street, while providing diversity of built form and architectural expression. Refer to Figure 7.1 for a streetscape plan and Figures 7.2 and 7.3 for cross-sections of MacDonald Road and Reynolds Street.

These guidelines are intended to complement the urban design direction outlined in the Livable Oakville Official Plan. Please see Section 6 of the Official Plan for more information.

DESIGN GUIDELINES:

- Buildings will address the street by having entrances which are clearly visible from the street, as well as porches, stoops, overhangs or porticoes in the front that project beyond the garage;
- All elevations of the building visible within the public realm should be well articulated and detailed;
- Corner buildings will respond to both street frontages; and
- There should be considerations to the interface of existing buildings or residences, and special care should be given to the design of new buildings being proposed in their vicinity.

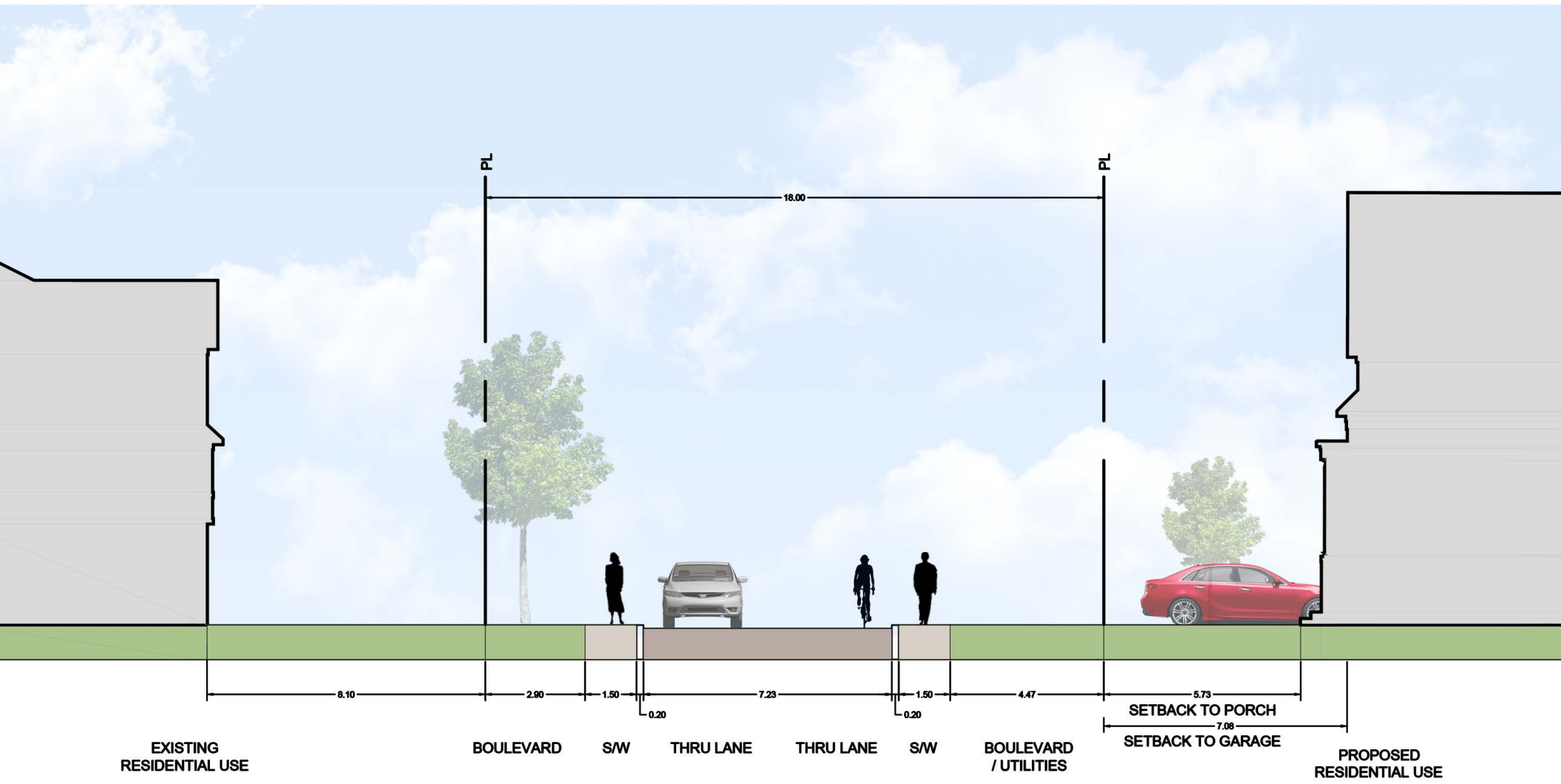


Figure 7.2: MacDonal Road Cross-section

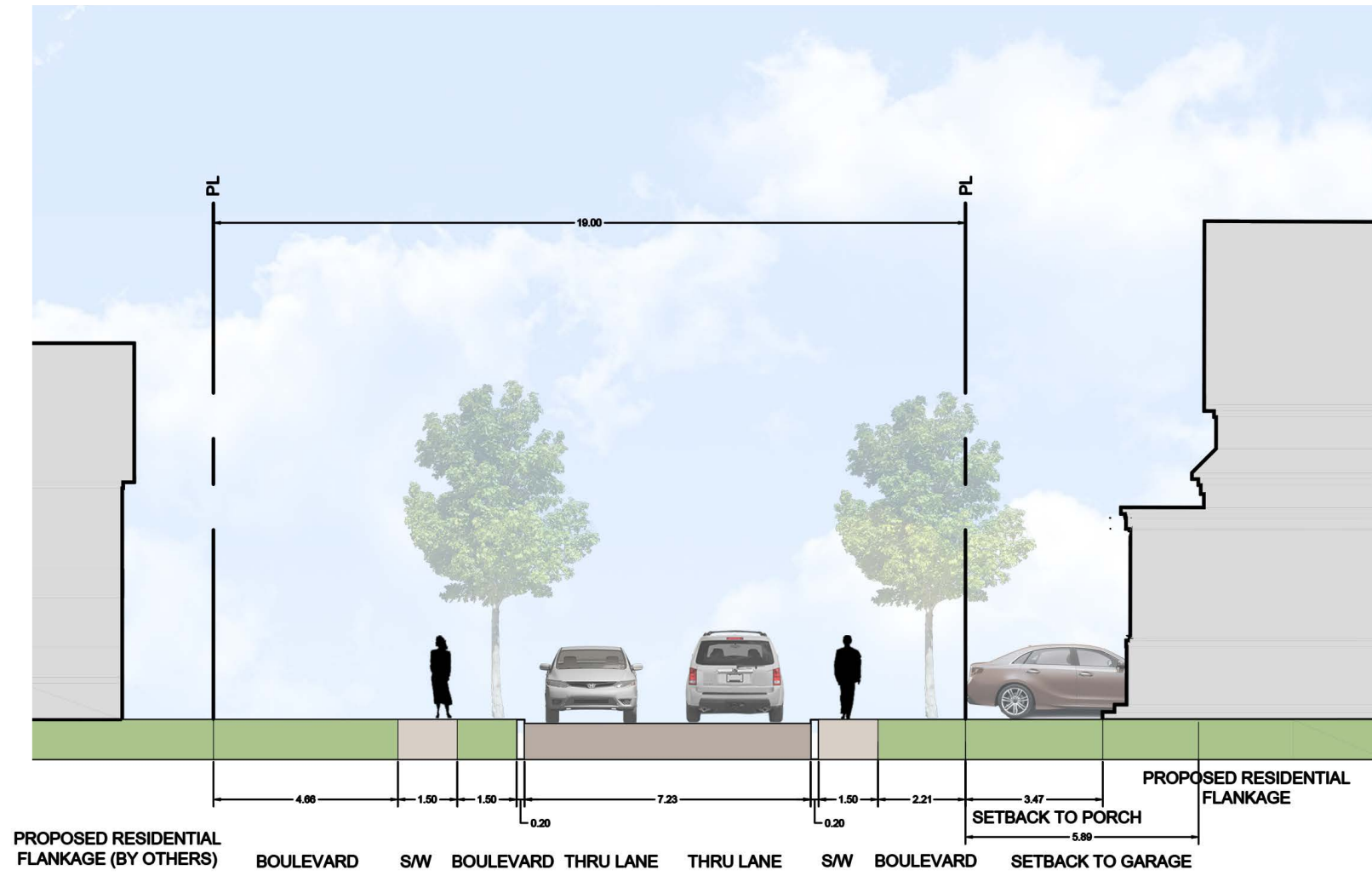


Figure 7.3: Reynolds Street Cross-section

7.2 HEIGHT & MASSING

An attractive streetscape relies in large part on the arrangement of buildings within the street block. Visually, the grouping and massing of dwellings within a block has greater impact than a dwelling's individual detailing. Height and massing that is appropriate to the context of the street is key to achieving a pedestrian-friendly, comfortable scale environment.

DESIGN GUIDELINES:

- The height and massing of proposed townhouse dwellings shall reflect a similar scale and massing of the existing building stock;

- For appropriate height transition, a maximum height difference of 1.5 storeys shall be provided between buildings immediately adjacent to one another; and
- To maintain compatibility and appropriate built form transition with the surrounding residential neighbourhood, the proposed townhouse dwellings will be a maximum of 3 storeys in height. Roofs will be designed to reduce the appearance of height and massing through reductions on portions of the building adjacent to existing development, and will be punctuated by dormers and gables, breaking up the facade and giving the units the appearance of unique dwellings.



Figure 7.4: Height and massing appropriate for pedestrian scale.

7.3 FACADES

A high quality built form character shall be achieved for the proposed townhouse dwellings, which aim to deliver architecture that is rich and varied in its form and treatments, creating cohesive and visually appealing streetscapes.

To encourage a sense of safety and more eyes on the street, main building entrances and large windows make up most of the facade. Garages are also paired and set back to minimize their appearance.

The design of all townhouse dwellings within the Subject Site shall offer a harmonious mix of architectural themes derived from traditional architectural styles. Stylistic influences may be borrowed from local architectural precedents noted in the TRHCD, such as:

- Second Empire;
- Gothic Revival;
- Italianate;
- Four Square;
- Tudor Revival;
- Period Revival;
- Craftsman;
- Bungalow; and
- Post WWII Victory Housing.



Figure 7.5: Proposed Corner Elevation (Reynolds Street).

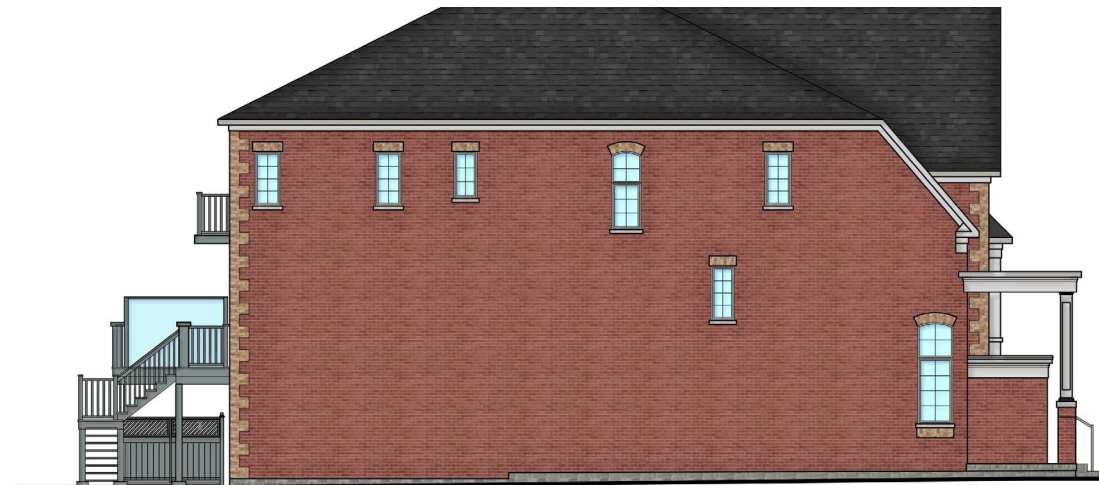


Figure 7.6: Proposed Interior Side Elevation.



Figure 7.7: Proposed 5-Unit Townhouse Elevation (Front).



Figure 7.8: Proposed 5-Unit Townhouse Elevation (Rear).



Figure 7.9: Proposed 6-Unit Townhouse Elevation (Front).



Figure 7.10: Proposed 6-Unit Townhouse Elevation (Rear).



Figure 7.11: Entrance as a distinct element of the building design.



Figure 7.12: Entrance features (e.g. light) contributes to identity and safety along the streetscape.

7.4 ENTRANCEWAYS

The front entry of a building is aesthetically, functionally, and socially important to the design of both the individual building and the streetscape. A visible and well-designed entry area promotes an individual sense of address and a collective sense of community and safety by providing “eyes on the street”.

DESIGN GUIDELINES:

- The main entry should be a distinctive element of the building design, and should reflect the character of the entire building;
- The main entry should be close to the ground level to ensure that the buildings retain the character of the streetscape;
- The main entry shall project from the garage, ensuring an prominent and inviting front porch;
- Varied and distinctive entry door designs should be provided, such as door with sidelights or transoms;
- Main entry designs should provide shelter from the weather;
- Handrails shall be provided where required by the Ontario Building Code and additionally may be included for aesthetic or stylistic reasons; and
- Where handrails are provided they are to have a top and bottom rail with vertical pickets, and to be consistent with style of porch columns, in terms of vernacular and colour.

7.5 BUILDING DETAILING & MATERIALS

Building design and articulation should provide architectural expression that relates to the existing character of the TRHCD, linking the Subject Site with various communities of similar characteristics in the Town of Oakville. As such, the proposed building materials for the development includes brick as the main facade, with a stone foundation above ground level. The main roof will use asphalt shingles, and the porch roof will be metal panels.

Each building type should be articulated with high-quality materials and design elements that contribute to an enhanced public realm. Elements such as window bays, over-hangs, canopies, ample fenestration, and exterior material patterns play a key role in articulating a relationship to adjacent areas and structures.

Design Guidelines:

- All elevations exposed to public view shall include ample fenestration and articulated designs (i.e., changes in plane, architectural details and complementary high-quality materials);
- Local materials shall be encouraged to avoid unnecessary long distance transport of building materials, and materials that have been sustainably harvested shall be encouraged; and
- Materials and architectural details shall be consistent and complement the dwelling's style/design.



Figure 7.13: Examples of dwellings with brick as primary building material, with stone foundation and asphalt roof shingles.



Figure 7.14: Landscaping example from 157 Reynolds Street Townhouse development.



Figure 7.15: Example of Rear Yard Amenity Space with Deck from 157 Reynolds Street Townhouse development

7.6 COMPATIBILITY WITH ADJACENT SURROUNDINGS

Considering the existing built form character in the TRHCD, the Subject Site must provide appropriate seamless transitions to the established neighbourhoods. Figures 7.14 and 7.15 show 157 Reynolds Street, a nearby townhouse development. Through similar landscaping and design elements, the Subject Site demonstrates compatibility with buildings in its surroundings. Figures 7.16 through 7.20 show conceptual perspective images of the proposed built form in the context of the neighbourhood.

Design Guidelines:

- Potential land use impacts shall be minimized by grouping similar uses together and by providing appropriate transitions between different uses;
- Suitable interface for all buildings, streets, and open spaces facing adjacent lands shall be demonstrated; and
- Shadow impacts on the public realm and surrounding private amenity spaces shall be minimized (see Appendix A for Shadow Impact Analysis).



Figure 7.16: View of proposed built form along MacDonald Road, showing adjacent existing and proposed development.



Figure 7.18: View of proposed built form from the intersection of MacDonald Road and Reynolds Street.



Figure 7.17: View of proposed built form, looking east along MacDonald Road, showing recessed garages and prominent front porches.



Figure 7.19: View of proposed built form from the intersection of MacDonald Road and Reynolds Street, looking west.



Figure 7.20: View of proposed built form flankage condition along Reynolds Street.

7.7 LANDSCAPE CONCEPT

The streetscape plays a key role in enhancing the character, identity, and safety of a community. Through a carefully considered combination of elements within the right-of-way, an inviting and unique public realm experience can be created. The design of streetscape elements shall be coordinated and consistent with the mature and established landscape vision established for the TRHCD.

In the Subject Site, front yards have ample landscaping opportunities that will promote the overall vision of the area. With ample setbacks for the units along MacDonald Road and the corner unit along Reynolds Street, landscaping will include a mix of deciduous tree planting, deciduous shrub/perennials, as well as coniferous shrubs.

DESIGN GUIDELINES:

- The use of native, non-invasive tree species is required for streets, particularly those tolerant of urban conditions (pollution, salt, drought, soil compaction);
- The selection of proposed tree species shall be from the Town of Oakville's recommended list (Please refer to TRHCD Plan Section 5.5); and
- Enhanced unit paving on driveways and pathways should be designed to complement the surrounding public realm and streetscape, enhancing aesthetics and functionality while promoting a sense of community.



Figure 7.21: Front yard landscaping.



Figure 7.22: Perennial beds.

08 IMPLEMENTATION

The Urban Design Brief (UDB) is required as part of a Zoning By-law Amendment and Draft Plan application identified through the Town of Oakville's Pre-Consultation process. The UDB has addressed pertinent urban design issues as applied to 358 Reynolds Street's overall goals and objectives, land uses, streetscapes, and built form.

The proposed design of 358 Reynolds Street aligns with the Livable Oakville Plan and the guidelines set forth in the Livable by Design Manual (LBDM). The UDB strives to consider aspects of built form and landscape design that are specific to the site, within the overall framework of the surrounding Oakville communities. However, to garner a complete and comprehensive understanding of all urban design aspects, the reader should reference all relevant Oakville policy context.

The UDB will be reviewed, modified, and approved by Town of Oakville staff and will form part of the approvals package for the 358 Reynolds Street proposal. Detailed design will be implemented through the final development design and Site Plan Approval process.

A APPENDIX

SHADOW IMPACT ANALYSIS

A shadow impact analysis was conducted to demonstrate the effects of shadows cast by two (2) proposed blocks of townhouses (11 units) throughout the day and at set intervals during the year. The analysis followed the development application guidelines set forth by the Town of Oakville using Eastern Time Zone (Standard Time: Universal Time minus 5 hours and Daylight Saving Time: Universal Time minus 4 hours) and the geographic coordinates 43.46° N, 79.72° W. It was conducted for April 21, June 21, September 21 and December 21 at hourly intervals starting 1.5 hours after sunrise and ending 1.5 hours before sunset.

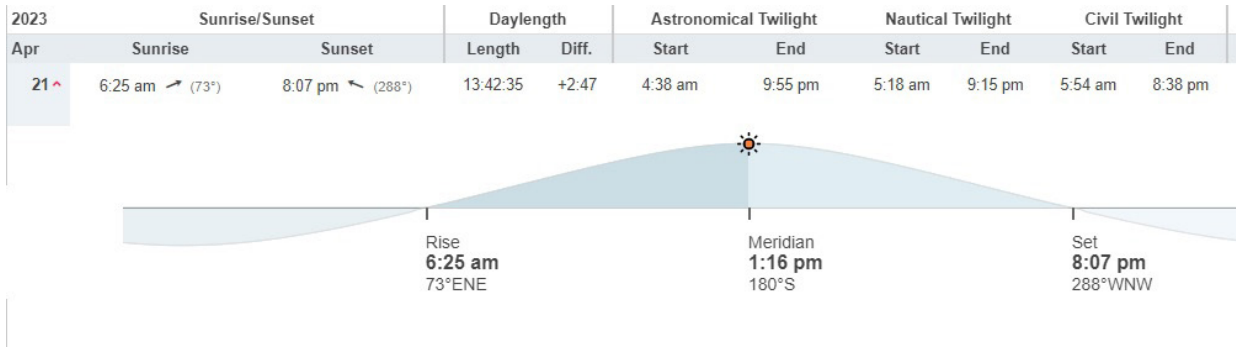
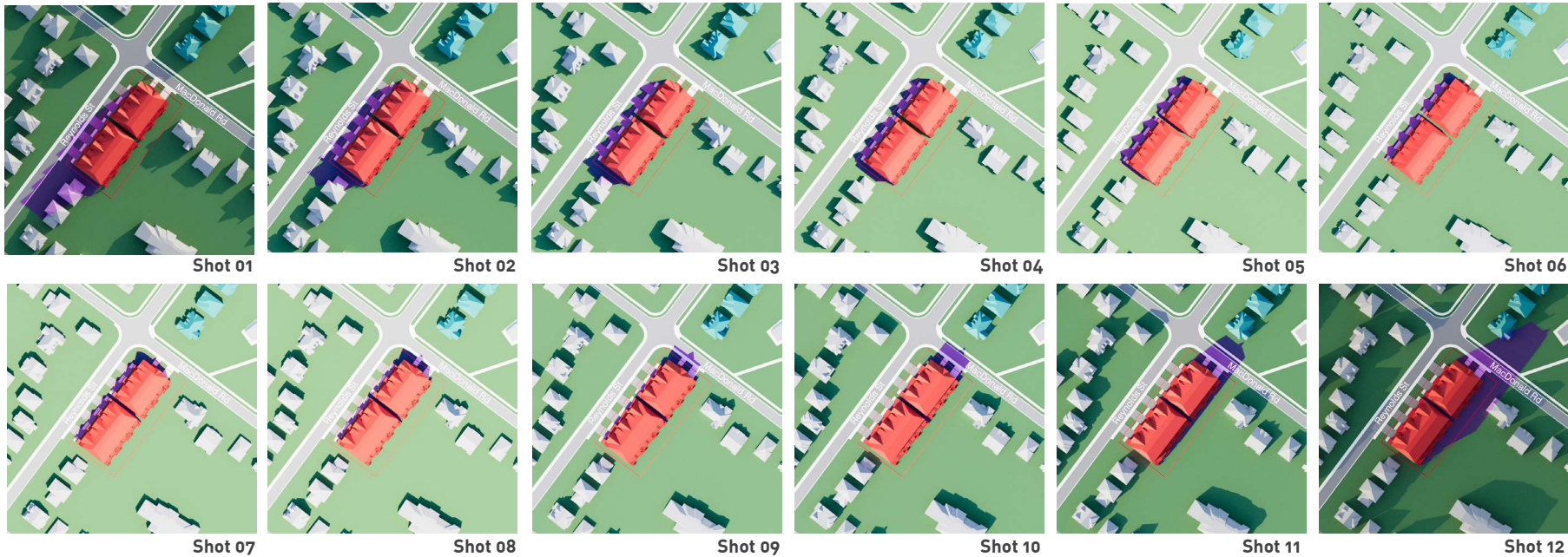
As shown in the analysis on the following pages, shadows from the proposed development have no impact on surrounding residential amenity spaces between 10:00am and 6:00pm on April 21, June 21, September 21, or December 21.

The shadow impact analysis demonstrates that all public sidewalks surrounding the proposed development receive at least 5 hours of continuous sunlight per day on April 21, June 21, and September 21.

The proposed development allows adequate sunlight on surrounding building faces and roofs for the possibility of using solar energy on April 21, June 21, and September 21. Shadow impacts on surrounding buildings do not exceed two consecutive hourly test times on December 21.

The shadow impact analysis demonstrates that the proposal does not cause undue shadow impacts on the subject lands nor on the surrounding context, including building facades, private and public outdoor amenity and open spaces, public parkland, sidewalks and other components of the public realm.

SHADOW STUDY - REYNOLDS STREET- APRIL 21



21-Apr		
	TIME	HOUR INTERVALS
SUNRISE	6:25:00 AM	
Shot 01	7:55:00 AM	1:30:00
Shot 02	8:55:00 AM	1:00:00
Shot 03	9:55:00 AM	1:00:00
Shot 04	10:55:00 AM	1:00:00
Shot 05	11:55:00 AM	1:00:00
Shot 06	12:55:00 PM	1:00:00
Shot 07	1:55:00 PM	1:00:00
Shot 08	2:55:00 PM	1:00:00
Shot 09	3:55:00 PM	1:00:00
Shot 10	4:55:00 PM	1:00:00
Shot 11	5:55:00 PM	1:00:00
Shot 13	6:37:00 PM	1:30:00
SUNSET	8:07:00 PM	

SHADOW STUDY - REYNOLDS STREET- JUNE 21



Shot 01

Shot 02

Shot 03

Shot 04

Shot 05

Shot 06

Shot 07

Shot 08

Shot 09

Shot 10

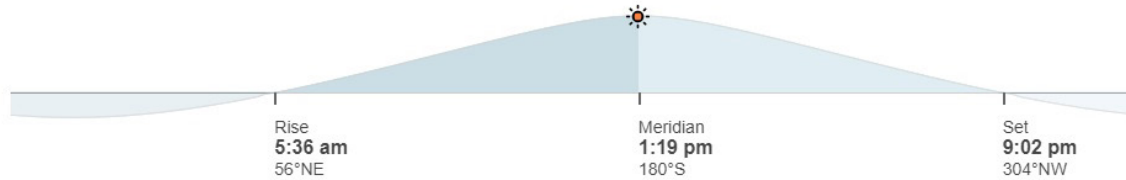
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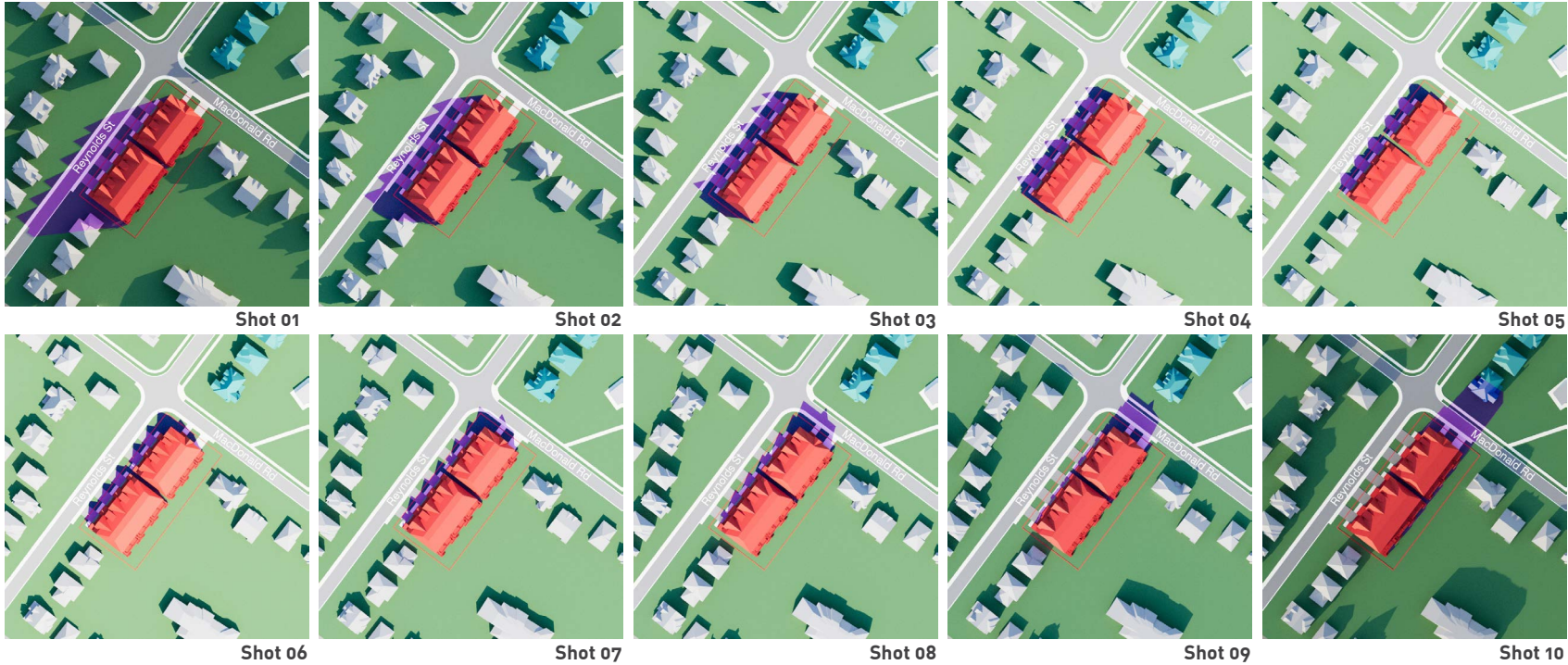
Shot 13

2023		Sunrise/Sunset		Daylength		Astronomical Twilight		Nautical Twilight		Civil Twilight	
Jun	21	Sunrise	Sunset	Length	Diff.	Start	End	Start	End	Start	End
	21	5:36 am ↗ (56°)	9:02 pm ↙ (304°)	15:26:33	+0:01	3:13 am	11:25 pm	4:12 am	10:25 pm	5:00 am	9:38 pm

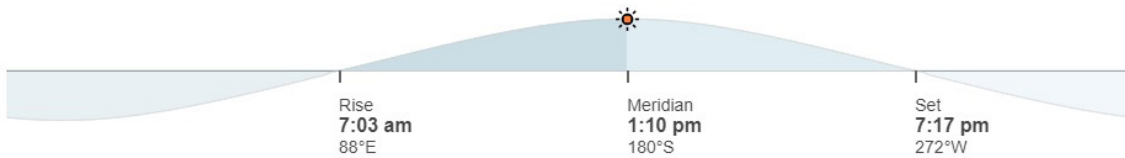


21-Jun		
	TIME	HOUR INTERVALS
SUNRISE	5:36:00 AM	
Shot 01	7:06:00 AM	1:30:00
Shot 02	8:06:00 AM	1:00:00
Shot 03	9:06:00 AM	1:00:00
Shot 04	10:06:00 AM	1:00:00
Shot 05	11:06:00 AM	1:00:00
Shot 06	12:06:00 PM	1:00:00
Shot 07	1:06:00 PM	1:00:00
Shot 08	2:06:00 PM	1:00:00
Shot 09	3:06:00 PM	1:00:00
Shot 10	4:06:00 PM	1:00:00
Shot 11	5:06:00 PM	1:00:00
Shot 12	6:06:00 PM	1:00:00
Shot 13	7:32:00 PM	1:30:00
SUNSET	9:02:00 PM	

SHADOW STUDY - REYNOLDS STREET- SEPTEMBER 21



2023 Sep	Sunrise/Sunset		Daylength		Astronomical Twilight		Nautical Twilight		Civil Twilight	
	Sunrise	Sunset	Length	Diff.	Start	End	Start	End	Start	End
21 ^	7:03 am → (88°)	7:17 pm ← (271°)	12:13:38	-2:57	5:26 am	8:53 pm	6:01 am	8:19 pm	6:34 am	7:45 pm



21-Sep		
	TIME	HOUR INTERVALS
SUNRISE	7:03:00 AM	
Shot 01	8:33:00 AM	1:30:00
Shot 02	9:33:00 AM	1:00:00
Shot 03	10:33:00 AM	1:00:00
Shot 04	11:33:00 AM	1:00:00
Shot 05	12:33:00 PM	1:00:00
Shot 06	1:33:00 PM	1:00:00
Shot 07	2:33:00 PM	1:00:00
Shot 08	3:33:00 PM	1:00:00
Shot 09	4:33:00 PM	1:00:00
Shot 10	5:47:00 PM	1:30:00
SUNSET	7:17:00 PM	

SHADOW STUDY - REYNOLDS STREET- DECEMBER 21



Shot 01



Shot 02



Shot 03



Shot 04



Shot 05

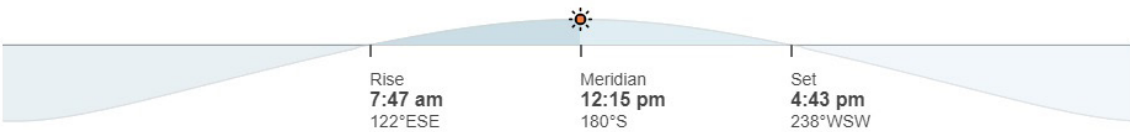


Shot 06



Shot 07

2023	Sunrise/Sunset		Daylength		Astronomical Twilight		Nautical Twilight		Civil Twilight			
	Dec	Sunrise	Sunset	Length	Diff.	Start	End	Start	End	Start	End	
21	7:47 am	(122°)	4:43 pm	(238°)	8:55:45	-0:04	6:03 am	6:27 pm	6:38 am	5:52 pm	7:14 am	5:16 pm



21-Dec		
	TIME	HOUR INTERVALS
SUNRISE	7:47:00 AM	
Shot 01	9:17:00 AM	1:30:00
Shot 02	10:17:00 AM	1:00:00
Shot 03	11:17:00 AM	1:00:00
Shot 04	12:17:00 PM	1:00:00
Shot 05	1:17:00 PM	1:00:00
Shot 06	2:17:00 PM	1:00:00
Shot 07	3:13:00 PM	1:30:00
SUNSET	4:43:00 PM	



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