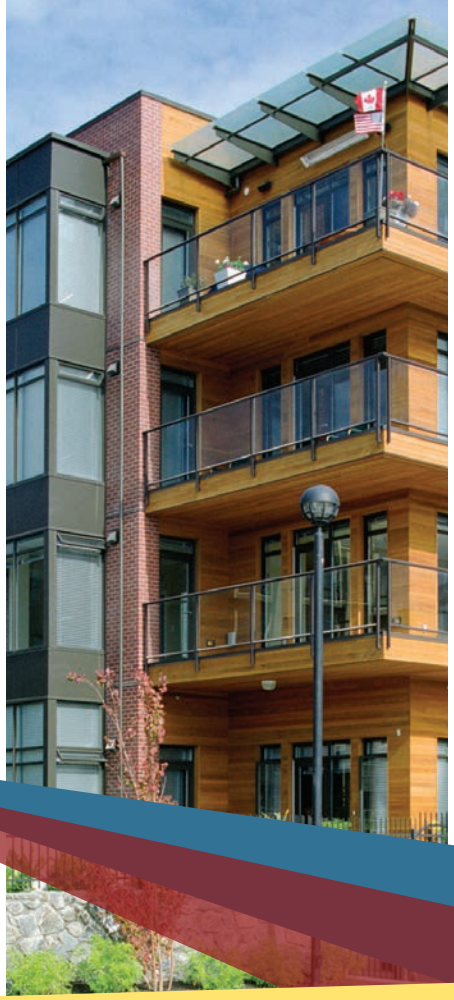

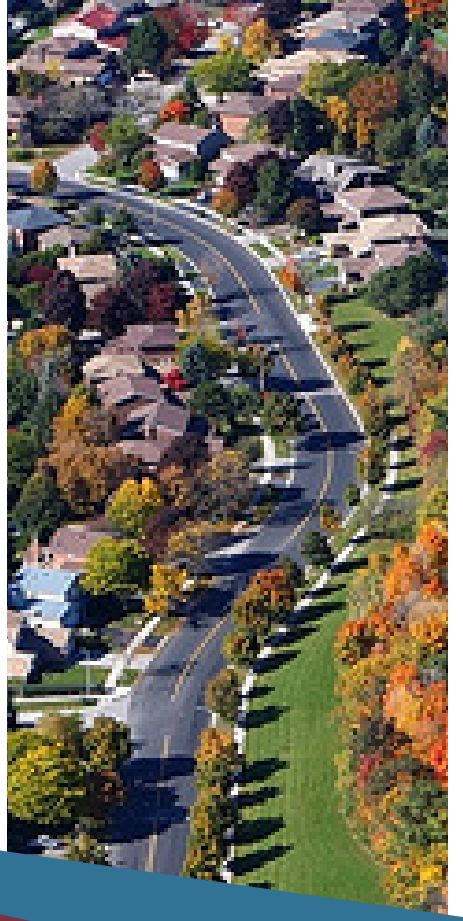

City of Sarnia

AREA 2
Urban Design Guidelines

January 2024

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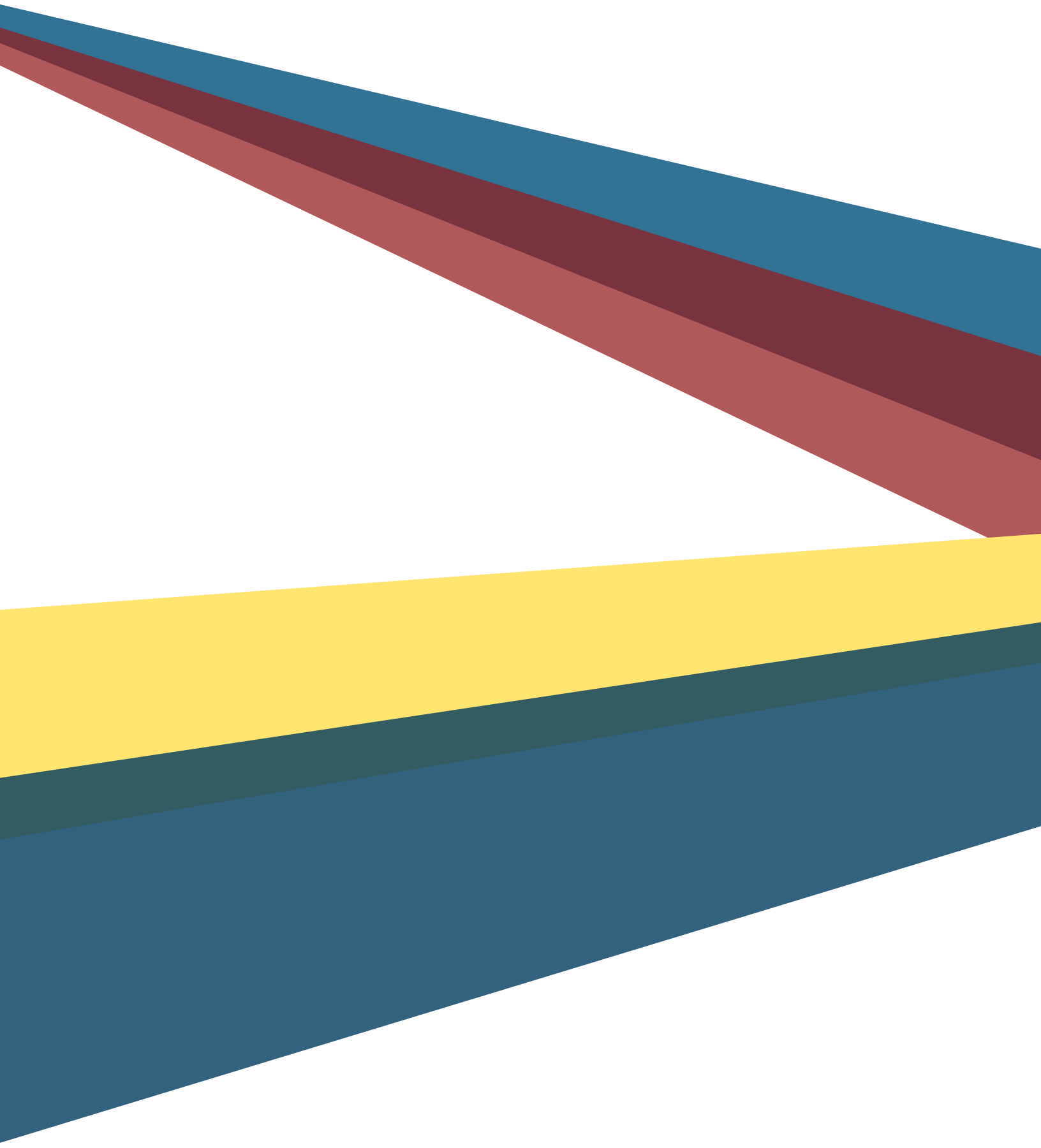


1.0 introduction


Highway 402
London Line
Blackwell Glen
Western Sarnia-Lambton Research Park
AREA 2
Wellington Street
Modeland Road
Blackwell Sideroad
Heritage Park
Confederation Line
CN Railway

1. INTRODUCTION

1.1 Context and Purpose of the Urban Design Guidelines

Context

The Area 2 Secondary Plan (Area 2) is located in the City of Sarnia, and consists of the lands bounded by the Canadian National Railway to the south, Modeland Road to the west, Blackwell Sideroad to the east, and London Line to the north, as identified on the map on the opposite page. Area 2 is approximately 570 hectares in size and includes a number of existing uses including the residential neighbourhoods of Heritage Park and Blackwell Glen, the Western Sarnia-Lambton Research Park, and highway commercial uses along London Line. Area 2 also includes natural heritage features that are comprised of significant woodlands and the Perch Creek Corridor.

Area 2, at a minimum, will accommodate approximately 17,400 residents and 6,200 dwelling units.

The current planning paradigm plans for the City's greatest height and density along its major roads and intersections while promoting compatibility and stability in the surrounding low-rise neighbourhoods.

Purpose

The purpose of the Urban Design Guidelines (UDG) is to support the principles and policies of the Official Plan and the Area 2 Secondary Plan to guide development within Area 2, as it is implemented through subdivision, zoning, and site plan control. The UGD's encourage the design of a complete, effective, and sustainable built environment consistent with Sarnia's character and vision for the future. The UDG provides guidance on design matters that are directly related to ensuring that development projects are of high quality, pedestrian-oriented, interconnected, sensitive to the natural and built environment, and provide adequate public facilities and infrastructure.

The UDG will provide predictability for applicants, the City, and stakeholders by offering consistent direction about the criteria for the design of development in Area 2.

The provisions and examples in the UDG should be used as the foundation of design for all development projects and will be used in the assessment of development proposals. Meeting the requirements of the UDG does not preclude the necessity to design specific site elements to function properly, be of high quality construction, and with appropriate attention to details that ensure that site improvements can be properly maintained.

1.2 Interpretation & Implementation of the Guidelines

What Are Urban Design Guidelines?

Urban design is the process of giving form, shape, and character to the physical elements that comprise the various neighbourhoods and areas of Area 2. Good urban design contributes to the vitality and health of a community; aesthetics, architecture, and compatibility; and to vibrant and successful public spaces. Urban design guidelines are intended to guide site development to achieve a desired level of prescribed quality in both the public and private realms.

Urban design guidelines include design guidance, recommendations, criteria, and standards for how to shape the built environment. Guidelines typically address the design of sites and buildings and their organization within a defined area, as well as their relationship to their surroundings - built and natural.

Note. Illustrations and photographs shown throughout this guideline document demonstrate examples of how the guidelines can be applied, and are not intended to exclude other designs that meet the intent of the UDG.

How Will the UDG be Used?

The UDG is intended to implement the Secondary Plan direction for Area 2 and provide greater clarity on urban design, streetscapes, built form, and sustainability initiatives. The UDG is to be read in conjunction with, and complement the objectives and policies of the Secondary Plan, Official Plan, the provisions of the City of Sarnia Zoning By-law, and other guidelines or standards, such as the Engineering Design Criteria.

The UDG, in concert with the Secondary Plan policies, will be used to evaluate development applications in order to ensure that a high level of urban design and the intended level of sustainability is achieved.

The UDG is to be applied as an evaluation tool for development applications and used by:

- City Council and Committees when evaluating whether an application meets the City's vision for development in Area 2;
- City staff and external agencies when reviewing development applications and as a reference for design decisions for proposed studies and projects;
- The development industry including but not limited to developers, consultants, and property owners to demonstrate how their proposals align with the City vision; and,
- The public for use of greater awareness of the benefits of urban design in their community.

Notwithstanding the foregoing, the policies the Official Plan and the provisions of the Zoning By-law shall prevail over the provisions of UDG in the event of any conflict.

Structure of the Urban Design Guidelines

Development in Area 2 will reference all sections of the UDG guidelines to ensure that the design of the public realm, buildings, and sites are informed by the comprehensive vision and design goals of the Secondary Plan. The UDG are organized under three main sections:

Section 2 - Public Realm

Public Realm guidelines are related to the design of elements within the public realm, including the design of roads, parks, trails, gateways, streetscape design elements, street trees and landscaping, and stormwater management facilities. Guidance is also provided for the interface with natural heritage features and their role as defining character elements in Area 2.

Section 3 - Private Realm

Private Realm guidelines are related to building design and site organization and design within the private realm. They provide guidance on the design of specific residential, commercial and mixed use, employment, and institutional building types.

Section 4 - Sustainable Buildings + Infrastructure

Sustainable Buildings and Infrastructure guidelines apply to both the private and public realm and are related to energy and water conservation, waste management, green infrastructure and building practices, and urban agriculture.

Implementation Tools

The Zoning by-law addresses matters such as lot coverage, parking, setbacks, and height - many quantitative aspects of a community's physical form. While zoning regulates how buildings sit within a lot or block, it represents only one of the planning tools that may be used to guide and shape development. Zoning is best used in conjunction with draft plan of subdivision or condominium design, or site plan control, all of which would consider the UDG to create development that promotes design excellence, and is compatible with, and fits within, its surrounding context.

The UDG guidelines address the relative height, massing, and articulation of buildings and landscapes, and their relationship to one another and to their surroundings. These qualitative aspects of physical form work in combination with zoning parameters to lend shape and character to a community

The City will utilize the UDG to guide development and redevelopment to be more sustainable and resilient to climate change. The City may consider the use of tools such as the Community Benefits By-law, Community Improvement Plans, and associated incentive programs to assist with the implementation of sustainable development design standards.

Applicability

The UDG shall apply to all projects subject to review and Planning approval by the City through subdivisions, condominiums, and site plan control applications as permitted under the Planning Act and the City of Sarnia Comprehensive Zoning By-law.

Compliance with the provisions of the UDG does not preclude compliance with other development regulations associated with an application as required by the City or other applicable jurisdiction. Where provisions of the UDG may conflict due to the characteristics of a proposal, the more restrictive shall apply and/or an alternative design solution(s) may be required that meets the intent of the UDG.

Submissions

To assist decision makers, stakeholders, and community members in understanding proposals for new development or redevelopment, applicants shall submit an **Urban Design Report** to describe the project and demonstrate to the City how their proposal meets the UDG, including any additional written materials, graphic illustrations, and diagrams necessary to demonstrate compliance with the UDG. A Terms of Reference is provided in **Appendix A**.

1.3 Planning Principles

The Official Plan promotes Sarnia as A Successful City

To achieve **A Successful City**, the Official Plan sets forth five fundamental planning principles. The guidelines shall support the Official Plan to achieve the following key objectives from the principles:

Principle 1: A Sustainable and Resilient City

A Sustainable and Resilient City will lead to safer, more active, healthier, and more financially prosperous and resource conscious communities. A Sustainable and Resilient City will also meet the challenges of climate change, and other environmental issues through integrated solutions rather than through fragmented, incremental approaches that meet one objective at the expense of the others.

Principle 2: A Complete Community

A Complete Community meets people's needs for daily living throughout their entire lifetime by providing convenient access to an appropriate mix of jobs, local services, a full range of housing, community facilities,a robust parks and open space system, and convenient access to public transit and options for active transportation.

Principle 3: A Beautiful and Well-Designed City

A Beautiful and Well-designed City promotes a sense of pride as a place to live and a sense of stewardship in its long-term care and maintenance. Crucial to a beautiful and well-designed City is the attention to the inter- play among built form, the public realm, and the natural environment.

Principle 4: A Healthy City

A Healthy City consciously seeks to improve the health of its citizens by putting public health high on the social and political agenda. Physical, social, and mental well-being are the necessary components of public health, including access to healthy food and clean air and water, as well as opportunities for residents to be physically active and socially engaged.

Principle 5: A Viable City

A Viable City actively supports economic development initiatives that create a full range of employment opportunities and to ensure that development is efficient and cost-effective. In a Viable City there is inherent flexibility to allow new development to respond to the market-place over time, and to intensify over time.

1.4 The Demonstration Plan

The Demonstration Plan for the Area 2 Secondary Plan is a representation of the overall vision and structure for the lands. The Demonstration Plan illustrates the major and local road pattern with a potential layout for the local streets and development blocks. The Plan also identifies the location for the elementary schools, neighbourhood parks, and stormwater management ponds.

The natural heritage system which is the initial structuring element around which all other elements are built. The natural heritage system includes all core natural heritage features, such as significant woodlands, floodplains, and creeks and shall be protected, restored, and enhanced to create continuous green corridors.

The road network includes the major connector roads within Area 2. The road network will follow a modified grid pattern to ensure a permeable and connected system of roads that allow for direct routes into, through, and out of the community. The road network will be developed under the principle of "complete streets" and will accommodate appropriate facilities for the movement of pedestrians, cyclists, transit, and vehicles.

The neighbourhoods will be planned and designed as accessible, pedestrian-oriented areas that are distinct in character and connected. The Neighbourhoods will include a mix and diversity of housing types to ensure variety and choice. Low-rise housing will be centrally focused in neighbourhoods, with mid-rise and high-rise housing distributed along collectors and arterials.

The parks system should be designed to provide a fair distribution of amenity spaces for a range of users in a linked network. The parks system includes Neighbourhood Parks, parkettes/urban squares, and a trail network. Parks are located throughout the community and are centrally located to ensure that residents are within 400 metres (5 minute walk) of an open space. Where appropriate, stormwater management ponds will include areas for passive recreation, through paths and trails, and as visual extensions of the parks system.

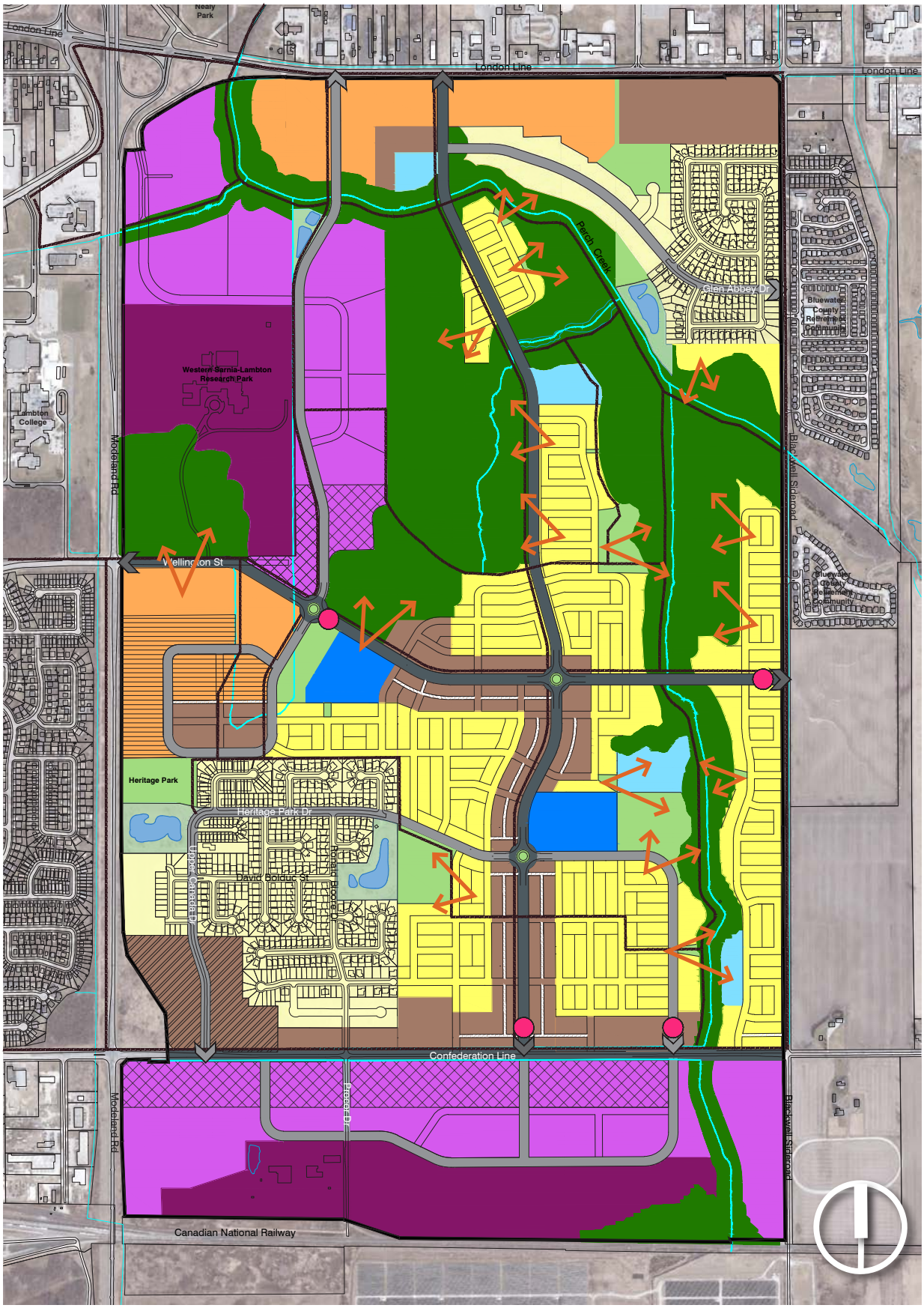
Commercial and employment uses have been included in Area 2 to provide opportunities for amenities, services, and jobs within approximately 800 to 1600 metres (10 - 20 minute walk) of residents.

Elementary schools have been located central to the neighbourhood to support children walking to school. Elementary schools also act as a neighbourhood focal point and in some locations have been located adjacent to a neighbourhood park creating opportunities for the sharing of facilities.

Legend

- New Neighbourhood - Low-Rise
- Existing Neighbourhood
- Mixed Use Corridor I - Mid- to High-Rise
- Mixed Use Corridor I Special Policy Area
- Mixed Use Corridor II - Low- to Mid-Rise
- Mixed Use Corridor II Special Policy Area
- Prestige Employment
- Prestige Employment Special Policy Area
- General Employment
- Elementary School
- Existing Stormwater Management Facilities
- Proposed Stormwater Management Facilities
- Parks and Open Space
- Environmental Protection
- Arterial Roads
- Collector Roads
- Local Roads
- Lanes
- Trails System
- Views
- Gateways
- Watercourses
- Secondary Plan Boundary

Demonstration Plan



1.5 Area 2 Proposed Zoning

The Zoning for the Area 2 Secondary Plan includes the following Zones:

- Residential Districts;
- Neighbourhood Supporting Uses;
- Strategic Growth Areas;
- Employment Districts; and,
- Natural Heritage System.

For the provisions of the Zones in Area 2 refer to the City of Sarnia Comprehensive Zoning By-law.

The majority of Area 2 is pre-zoned with a Hold or 'H' Symbol. The intent of the Hold is that before zone provisions can be implemented the City may require a number of approval elements/technical studies be prepared, to the satisfaction of the City.

The City may scope the scale of the studies in a manner that reflects the scale and/or complexity of the development. The technical studies include:

- Planning Rationale Report
- Urban Design Study
- Archaeological Assessment
- Block Plan
- Environmental Impact Study
- Tree Inventory and Preservation Study
- Stormwater Management Plan
- Functional Servicing Report
- Transportation Impact Study
- Noise and/or Vibration Study
- Climate Change Study
- Environmental Site Assessment
- Financial Impact Study

Legend

Residential Districts
- R1 - Residential One
- R2 - Residential Two

Neighbourhood Supporting Uses
- I - Institutional
- POS - Parks and Open Space

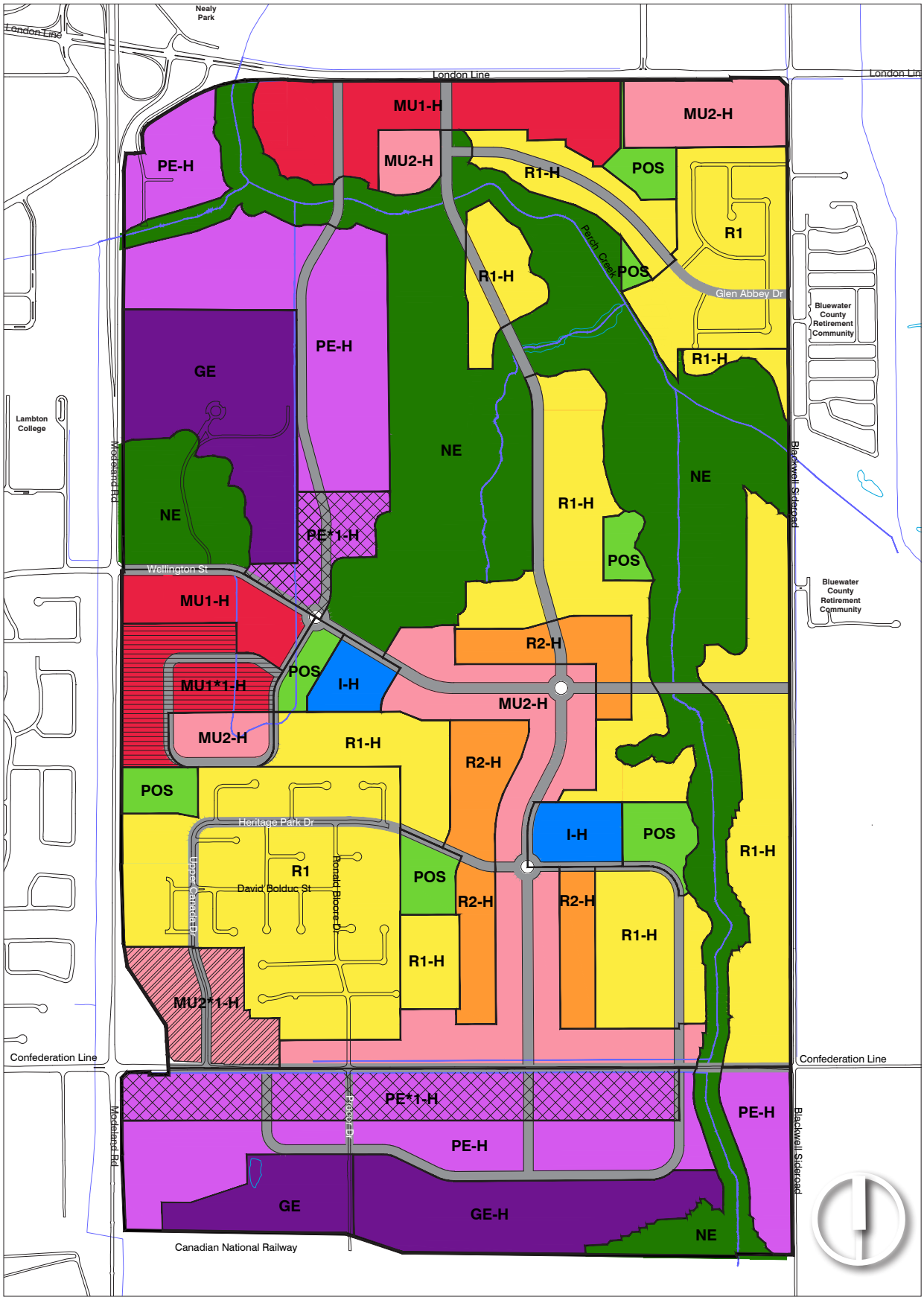
Strategic Growth Areas
- MU1 - Mixed Use One
- MU2 - Mixed Use Two
- MU1*1 - Mixed Use One Exception
- MU2*1 - Mixed Use Two Exception

Employment Districts
- PE - Prestige Employment
- GE - General Employment
- PE*1 - Prestige Employment Exception

Natural Heritage System
- NE - Natural Environment

- Roads
- Secondary Plan Boundary

Zoning Map


Nealy Park
London Line
MU1-H
MU2-H
PE-H
MU2-H
R1-H
POS
R1
Perch Creek
POS
Glen Abbey Dr
R1-H
Bluewater County Retirement Community
PE-H
GE
Lambton College
NE
Modeland Rd
NE
R1-H
NE
Blackwell Sideroad
PE*1-H
POS
Wellington St
MU1-H
Bluewater County Retirement Community
R2-H
POS
I-H
MU1*1-H
MU2-H
MU2-H
R1-H
R2-H
POS
Heritage Park Dr
I-H
POS
R1-H
R1
David Bolduc St
Ronald Bloore Dr
POS
R2-H
R2-H
R1-H
R1-H
MU2*1-H
Confederation Line
Confederation Line
PE*1-H
Ronald Bloore Dr
PE-H
Modeland Rd
PE-H
Blackwell Sideroad
GE
GE-H
NE
Canadian National Railway

2.0 public realm

2. THE PUBLIC REALM

Parks offer a variety of experiences, including passive and active recreation activities.

The design and organization of the public realm will contribute to place-making and to the framework and setting for development.

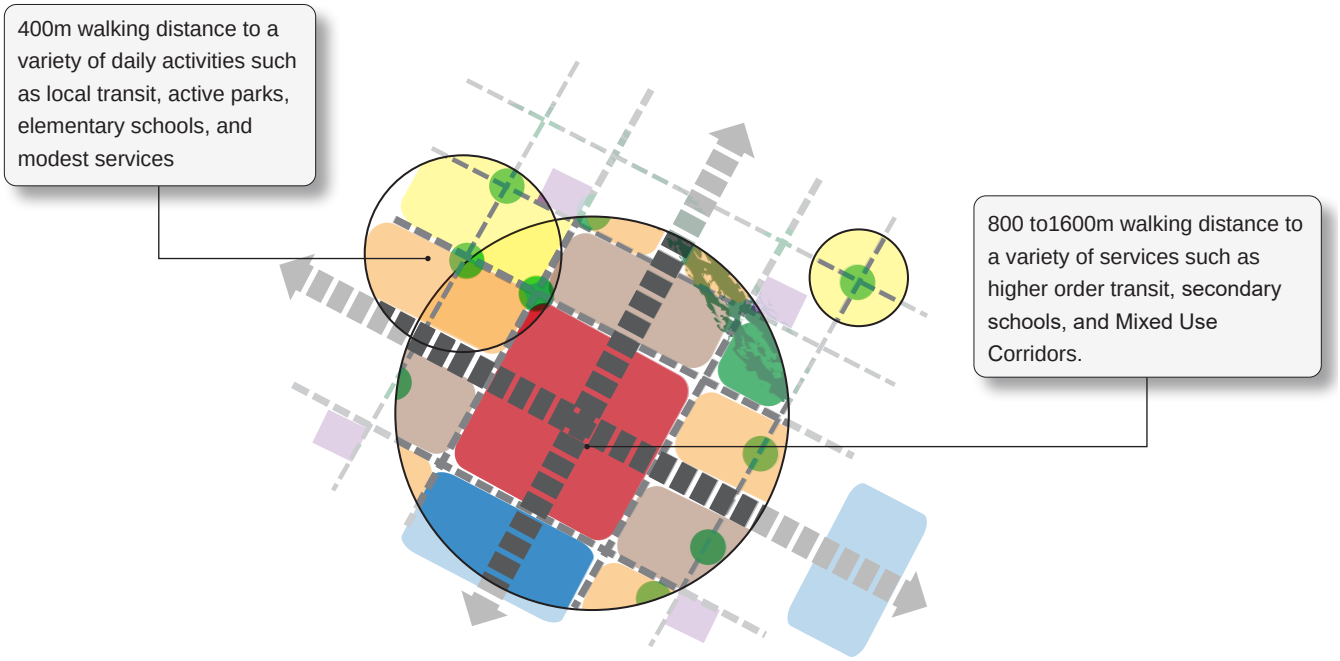
Guidelines for the public realm will address matters such as the arrangement of streets and blocks, ease of movement, streetscapes, parks and open spaces, views, natural heritage features, and stormwater management facilities. The successful design of the public realm relies on defining the community character and creating diverse, comfortable, welcoming, safe, and accessible spaces.

The guidelines will be considered when municipal initiatives or private development applications impact elements of the public realm.

2.1 General Guidelines

1. Promote internal connectivity and multiple connections to the community at large, taking into account the existing and proposed urban structure of adjacent and adjoining areas.

2. To ensure the effective continuity of the street pattern, and implementation of long range active transportation plans:
   a. Gaps in the existing street grid shall be completed by providing connecting streets through developments;
   b. Adjoining streets shall be extended into developments and subdivisions; and,
   c. Streets shall be extended to the boundaries of the development as appropriate to accommodate further extension of the street pattern and to create interconnections to adjacent neighbourhoods and uses.



Locating services and amenities within walking distance supports daily physical activity and reduces the reliance on the private automobile.

3. Provide for an interconnected network of sidewalks, bicycle routes, transit, and multi-use trails ensuring proper integration with surrounding neighbourhoods and a variety of destinations, allowing for continuous movement throughout the community.

4. Ensure a typical walking distance of 400 metres (5 minute walk) to daily activities, such as transit (local bus routes), elementary schools, active parks, and modest services, or 800 to 1,600 metres (10 to 20 minute walk) to higher order transit, secondary schools, and the Mixed Use Corridors.

5. Implement traffic calming measures such as on-street parking, reduced lane widths, public laneways, raised intersections, curb bulb-outs, and/or traffic circles to reduce vehicular traffic speeds and to ensure safe walking and cycling environments.

7. Provide neighbourhood permeability by designing blocks to be generally no more than 200 metres in length to promote active transportation, discourage excessive driver speed, and disperse traffic movements.

8. Ensure access to green space through a variety of park spaces above and beyond requirements.

2.2 Universal Design

Designs for new developments shall ensure that all community members have access to services, social activities, and opportunities to move freely within Area 2. Project designs shall enhance people's comfort with features that fit well with the average person's physical capabilities and senses.

Universal Design seeks to ensure that products and environments are usable by people regardless of age, ability, or situation.

Key principles of Universal Design include:

- Equitable use (does not disadvantage, stigmatize or privilege any group of user);
- Flexibility in use (accommodates a wide range of individual preferences and abilities);
- Simple and intuitive (easy to understand regardless of user's experience, knowledge, or language skills);
- Low physical effort (can be used efficiently, comfortably and with minimal fatigue);
- Perceptible information (communicates all necessary information to all users regardless of ambient conditions or the users' abilities);
- Tolerance for error (minimizes hazards and adverse consequences of accidental or unintended actions);
- Size and space for approach and use (provides appropriate size and space for approach and use regardless of body size, posture or functional ability).

2.3 Guidelines for Roads

Throughout Area 2, roads shall be designed to be complete streets which form a network to facilitate the movement for people and goods in an integrated, safe, comfortable, and accessible manner. The road network will prioritize connectivity and will allow for different users and modes of transportation, including pedestrians, cyclists, transit, and vehicles.

A typical cross section that identifies the boulevard and the roadway are provided in this section for each road type.

Boulevard: part of the public realm of streets and generally consists of a sidewalk, planting and furnishing zone, and bicycle path, where feasible.

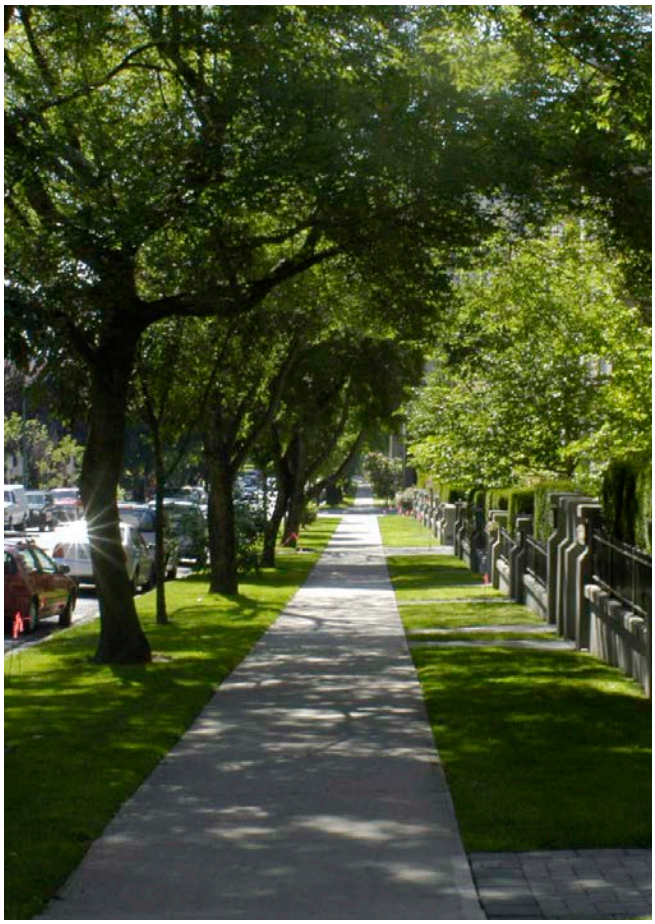
Roadway: part of the public realm that is dedicated to the movement of transportation and includes travel lanes for vehicles; dedicated or shared bicycle lanes; and lanes for street parking.

The specific technical details of the road cross-sections (i.e., engineering standards) will be determined through the appropriate design review process. Refer to the **City of Sarnia Area 2 Engineering Design Criteria** for typical road cross sections and the **Transportation Master Plan**. County Roads are under the jurisdiction of Lambton County and reference shall be made to those standards.

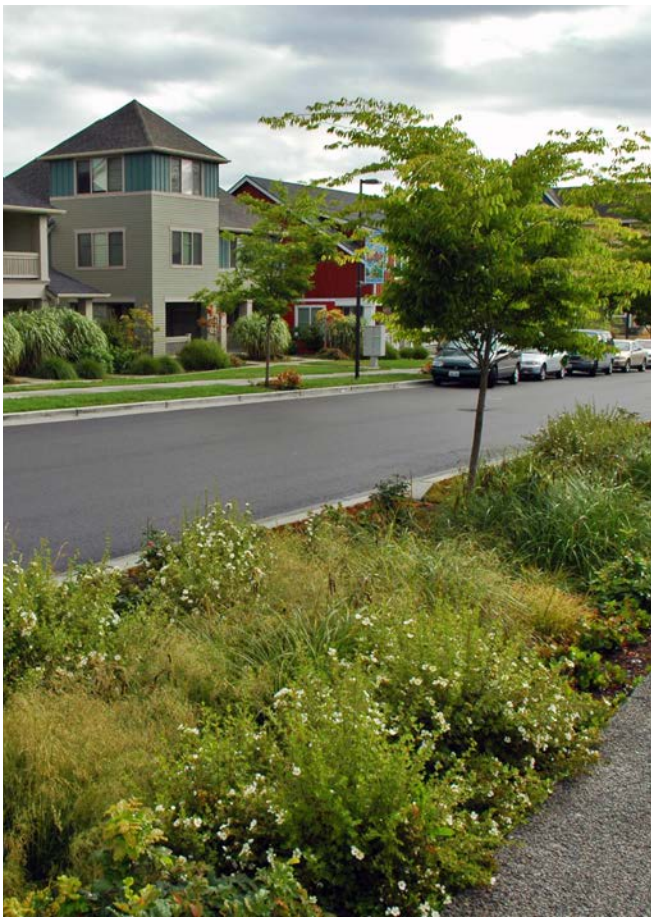
2.3.1 General Guidelines for Roads and Blocks

1. Design the road and block pattern to emphasize connections, both internally and with surrounding neighbourhoods, through a grid or modified grid pattern. Cul-de-sacs, p-loops, and crescents are generally discouraged, except where necessary due to grading, topography, environmental features, or existing development that prohibits a connection.

2. Avoid back-lotting or reverse lot frontages where feasible. This condition should not be considered unless demonstrated to be the only option



Large canopy trees provide shade over the sidewalk.



Local Road with a bioswale in the right-of-way to assist with run-off and infiltration.

3. Terminate roads at public facilities or landmark buildings, parks, open spaces, or rural areas, where possible.

4. Encourage the layout of roads to relate to natural areas, water courses, parks, and rural edges.

5. Design all roads to include defined and, wherever possible, continuous zones for plantings, street furnishings, utilities, pedestrian sidewalks, bicycle lanes, and vehicular pavements.

6. Construct all sidewalks to municipal standards and accommodate on all street types to facilitate pedestrian and bicycle circulation.

7. Plant street trees to create and enhance the urban tree canopy while providing shade over sidewalks. Provide a continuous row of canopy street trees on both sides of the road.

8. Introduce green infrastructure, such as bioswales, within the public right-of-way to enhance ground water infiltration and improve water quality as part of a comprehensive water management plan.

Collector Road lined with rear lane live-work units and lay-by parking.

2.3.2 Arterial Roads

Arterial Roads are primarily envisioned to provide key routes for transit, vehicles, pedestrians, and cyclists through Area 2. Please refer to **Figure 1** for a typical cross-section and plan for an Arterial Road.

1. Roadway

a. Arterial Roads are intended to accommodate large volumes of traffic and generally have a right-of-way-width of 26.5 to 30.5 metres.

b. Arterial Roads will be designed to Arterial standards and access to individual properties is discouraged to minimize disruptions to traffic flow and to maximize safety and the attractiveness of the road.

2. Boulevard

a. Arterial Roads have boulevards on both sides of the pavement with a grass verge with street trees.

b. Provide a minimum 1.5 metre sidewalk on one side and a minimum 3.0 metre wide multi-use path on the other side of the right-of-way.

2.3.3 Collector Roads

Collector Roads connect to Arterial Roads and provide primary connections to Local Roads. Please refer to **Figure 2** for a typical cross-section and plan for a Collector Road.

1. Roadway

a. Collector Roads generally have a right-of-way width of 20.0 to 26.5 metres.

b. Collector Roads may include optional 3.0 metre on-street parking on both sides of the road along Mixed Use Corridors.

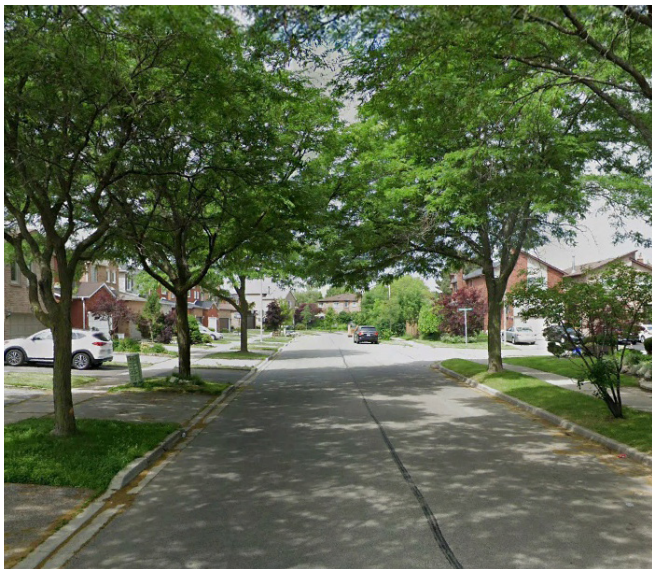
c. Transit facilities may be accommodated on all Collector Roads.

d. Provide separated or shared space for cyclists with or without separation from traffic lanes.

2. Boulevard

a. Collector Roads have boulevards on both sides of the pavement and accommodate a grass verge with street trees and minimum 1.5 metre sidewalks on both sides.

b. Direct driveway access to any development site is permitted.



A Local Road with street tree planting.

Window Road with buffer plantings on the boulevard adjacent to an Arterial Road.

2.3.4 Local Roads

Local Roads provide the fine-grain transportation network for the community, connecting to Collector Roads and linking with public spaces. Please refer to **Figure 3** for a typical cross-section and plan for a Local Road.

1. Roadway

a. Local Roads have a maximum right-of-way width of 20.0 metres. Alternative local road widths may also be specified subject to approval from the City.

b. The road surface will be a maximum of 8.5 metres, including a parking lane on one side of the road, that could alternate to both sides of the road.

c. Consider bicycle movement as a normal part of Local Road traffic movement; no dedicated bicycle infrastructure is required.

2. Boulevard

a. Locate street trees and landscaping continuously along Local Roads, where feasible.

b. Provide a minimum 1.5 metre sidewalk on one side. Sidewalks on both sides of the road is recommended, particularly near schools and parks to facilitate continuous pedestrian connections.

2.3.5 Window Roads

Window Roads are proposed in particular situations to avoid residential reverse lotting and frontages directly along Arterial Roads. Window Roads can be Collector or Local Roads that are typically single-loaded and are parallel to Arterial Roads or adjacent to natural features. Window Roads along natural features provide the opportunity to enhance the character of the community, as well as provide unobstructed views to the natural areas. Please refer to **Figure 4** for a typical cross-section and plan for a Window Road.

1. Roadway

a. Window Roads have one lane in each direction.

b. Accommodate for on-street parking adjacent to the Arterial Road boulevard.

2. Boulevard

a. Provide a 1.5 metre wide sidewalk on the residential side of the street.

b. Integrate a second sidewalk or, where feasible, multi-use trail into the right-of-way of the adjoining Arterial Road with direct pedestrian connections to the Window Road.

Lane with landscaping to enhance the visual appeal.

c. Ensure the boulevard treatment consists of street trees on the dwelling side boulevard and trees with buffer planting and low decorative fencing within a grass boulevard adjacent to the Arterial Road boulevard. Landscaping of Window Roads shall be consistent in design.

d. Design Window Road treatments to take into consideration noise attenuation, grading issues, the need for headlight screening, and safe pedestrian access into the neighbourhood.

2.3.6 Lanes

The use of rear Lanes provides significant benefits such as enabling continuous street tree planting and creating safer pedestrian environments through the removal of driveways from the street edge. Lanes may be used in key locations where private access along prominent roads should be minimized. Please refer to **Figure 5** for a typical cross-section and plan for a Lane.

Lanes are a component of the street pattern and may be required based on development design, use, and site characteristics to:

- Improve the visual quality of a streetscape;
- Create frontage onto open spaces, stream corridors, or parks; and,
- To provide access to residential and commercial areas along Arterial Roads.

1. Roadway

a. Lane right-of-ways shall be a maximum of 8.5 metres with a paved surface of 6.0 metres.

b. The desirable Lane length is a maximum of 150 metres to be consistent with fire hydrant spacing on road connections.

c. Consider the use of porous or permeable materials in areas where sufficient drainage exists.

d. Identify snow storage locations for the design of new lanes. Set aside areas for this purpose.

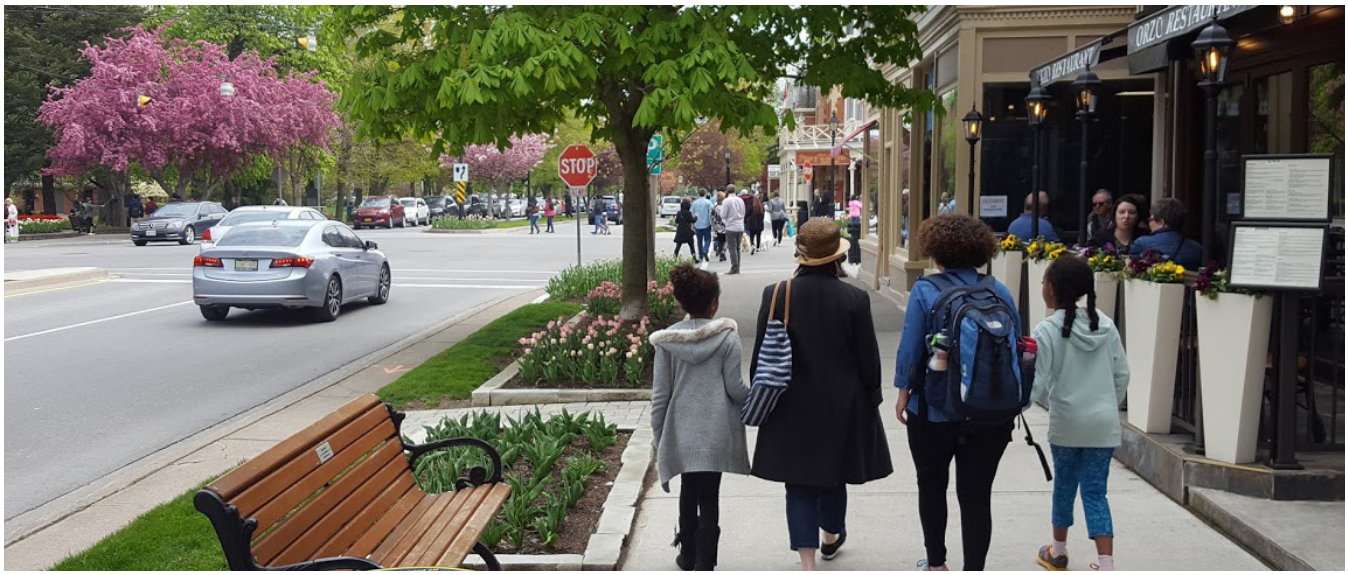
2. Boulevard

a. Provide a 1.25 metre utility corridor on either side of the lane.

b. Provide pedestrian access to lot frontages where Lanes are used to provide vehicle access for housing fronting Arterial Roads, open spaces, and parks.

c. Provide landscape areas in Lanes where possible to enhance lane appeal and promote their use as gathering and playing areas.

d. Provide lighting at Lane entrances to promote vehicular and pedestrian safety.



An enhanced public realm with wider sidewalks, plantings, paving materials, patios, and retail display.

2.3.7 Private Roads

The following guidelines apply to new roads which will not be owned or maintained by the City and which facilitate access to new multi-unit residential, commercial, or mixed-use developments on private properties. Please refer to **Figure 6** for a typical cross-section and plan for a Private Road.

1. Roadway

a. Private Roads have a minimum right-of way width of 9.0 metres with a minimum paved surface width of 6.0 metres.

2. Boulevard

a Provide a minimum 1.5 metre landscaped utility corridor on either side of the Private Road.

b. Sidewalks are required on at least one side of a Private Road, and may be located within the utility corridor.

c. Consider the use of porous or permeable materials in areas where sufficient drainage exists.

2.4 Streetscape Elements

2.4.1 Sidewalks

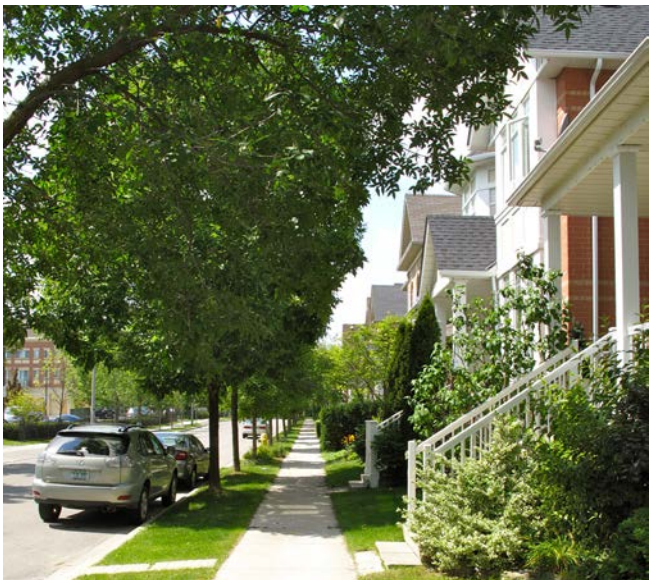
1. Ensure sidewalks are continuous throughout the community and constitute an integral part of the pedestrian system to promote active transportation. Design sidewalks as follows:
   - 1.5 metres on Local Roads;
   - 1.5 to 2.0 metres on Collector and Arterial Roads; and
   - 1.8 to 3.0 metres in high pedestrian areas along Mixed Use Corridors, particularly where retail is provided along the street.

   In all cases, provide sufficient space for street furnishings, public utilities, lighting, tree plantings, and transit shelters.

3. Sites along highway corridors may substitute walkways or trail connections for sidewalks based on location and as approved by the City.

4. Industrial, business, or institutional campuses may provide sidewalks on only one side of the street based on design merit and overall pedestrian infrastructure network proposed.

5. Ensure the needs of persons with disabilities and the elderly are accommodated in the design sidewalks. Design to municipal standards.



Sidewalks with street trees to provide shade and increase tree canopy.

Bicycle racks designed as an interesting design feature along the street.

2.4.2 Street Trees and Planting

Street trees contribute to the urban tree canopy, act as a buffer to separate the pedestrian from moving vehicles, and create a canopy and shade over sidewalks to enhance pedestrian comfort.

1. Plant street trees on both sides of the road in the public right-of-way. Provide robust species selection to anticipate climate change conditions and operational constraints.

2. Encourage a diversity of tree species along each road, native to the City and County, that are non-invasive, drought and salt tolerant, and low maintenance. Consider these attributes for plantings within medians and roundabouts.

3. Encourage the delivery of alternative planting strategies along high-pedestrian areas such as soil cells, sufficient soil medium, continuous planting trenches, etc., to sustain long-term growth and healthier tree life.

4. Utilize a comprehensive planting and soils strategy based upon species diversity, resiliency, and urban tolerance.

5. Plant a double row of trees in key areas, such as adjacent to parks and where a wider boulevard exists.

2.4.3 Street Furniture

Street furniture is an essential component of comfortable, pedestrian supportive streetscapes. Street furniture includes seating, benches, bicycle racks, bollards, and raised planters, among others.

1. Concentrate street furniture in areas with the highest pedestrian traffic, such as along Mixed Use Corridors, key intersections, and parks.

2. Where possible, use street furniture manufactured from recycled material(s).

3. Ensure that street furniture does not obstruct pedestrian, cyclist, or vehicular circulation.

4. Where raised planters are used in the boulevard, they should be designed to function as alternative seating along the sidewalk edge.

5. Ensure the placement of bicycle racks within the pedestrian realm does not impede pedestrian movement.

Decorative paving and wider sidewalks.

2.4.4 Street Lighting

1. Provide pedestrian-scaled street lighting to enhance safety and visibility on streets.

2. Consider sustainability and the impacts of light pollution in the design and location of lighting.

3. Provide downcast pedestrian-scale lighting in high traffic pedestrian areas.

4. Group street lighting with street furniture, waste receptacles, and landscaping elements to minimize disruptions to pedestrian circulation.

5. Ensure street lighting reflects the City's standard palette and consider maintenance requirements.

2.4.5 Pedestrian Crossings

1. Provide formal pedestrian crossings at every four-way intersection in high pedestrian areas in order to promote walkability and a pedestrian-focused environment.

2. Provide signalized pedestrian crosswalks at locations where important destinations or significant walking traffic is anticipated, such as near retail shops and schools.

3. Ensure pedestrian crossings have a minimum width of 3.0 metres, are continuous, and connect to adjacent sidewalks.

4. Utilize feature paving such as alternative paving markings or materials, or distinctive painted lines to minimize the conflict between vehicles and pedestrians and to enhance the visibility and quality of pedestrian crossings.

5. Define and enhance safe routes to schools. Provide pedestrian crossings, signage, and other pedestrian safety features and amenities as determined appropriate and effective by the City.

6. Minimize the height of curb cuts to facilitate wheel-chair and stroller usage in high pedestrian areas.

Curb extensions slow traffic, provide improved public safety, and slow stormwater run-off.

2.4.6 Community Mailboxes

1. Recommended that mailboxes are located either at parks or stormwater management facilities along the street edge, or along side yards between the sidewalk and the corner lot line.

2. Where appropriate, coordinate the location of community mailboxes, newspaper boxes, seating, and waste receptacles.

2.4.7 Utilities

1. Wherever possible, utilities should be buried below grade. The use of a joint utility trench is encouraged for access and maintenance benefits to maximize available space for street trees.

2. Where below-grade utility design is not feasible, group at grade utilities in single locations to minimize their aesthetic and access impacts on the public realm.

3. Encourage utility design that minimizes street clutter. Utilize products that incorporate street lighting and telecommunications facilities within the same utility pole.

2.4.8 Traffic Calming

1. Traffic calming designs shall correspond to the appropriate engineering standards and must be approved by the City. Additional traffic calming designs to reduce vehicular traffic speeds and to ensure safe walking and cycling environments may include:
   a. Pedestrian-priority streets, woonerfs, or home-zones (i.e., the speed limit is under 15km/hr. and vehicles must yield to pedestrians and cyclists);
   b. Street design that discourages vehicle speeding through right-of-way curvature, raised intersections, traffic circles, building proximity to the street, and boulevard street tree planting; and/or,
   c. Minimum number of traffic lanes in the roadway.

2. Consider curb extensions on streets to provide improved pedestrian safety. These shall be designed to:
   a. Reduce crossing distances;
   b. Reduce vehicle speeds; and,
   c. Include a combination of landscape and hard surface elements to improve aesthetics and slow stormwater run-off.

Decorative stone gateway identifying the entrance to a community.

Bicycle racks at a transit stop support active transportation.

2.4.9 Gateways

Gateways play an important role in a community's structure and design by providing visual landmarks that enhance the sense of arrival and place, promote community character, and assist with wayfinding.

Community Gateways occur at major entry points to neighbourhoods.

1. Design gateways to identify the intersection as an entry point into the community.

2. Incorporate gateway features, such as community signage, low walls, fencing or enhanced landscape treatment in the design of entry road intersections. Coordinate the design and materials with adjacent structures.

3. Include a planted centre median for gateways and entry roads into the community to signify their importance.

4. Utilize distinctive surface treatment for pedestrian crossings, including wider sidewalks, and connections to bus shelters at gateway intersections.

2.4.10 Transit Support Guidelines

Transit supportive systems require densities and development patterns that connect people of all ages to homes, jobs, school, and other places linked to their lifestyles.

1. Complement and support the transit system through a network of on-road and off-road active transportation facilities, such as bicycle lanes, multi-use trails, and sidewalks to further promote inter-modal and first-mile and last mile connections (walking, cycling, transit).

2. Support bike use through the provision of bike racks and bike storage at transit stops and stations.

Typical Arterial Road - 30.5 metre ROW

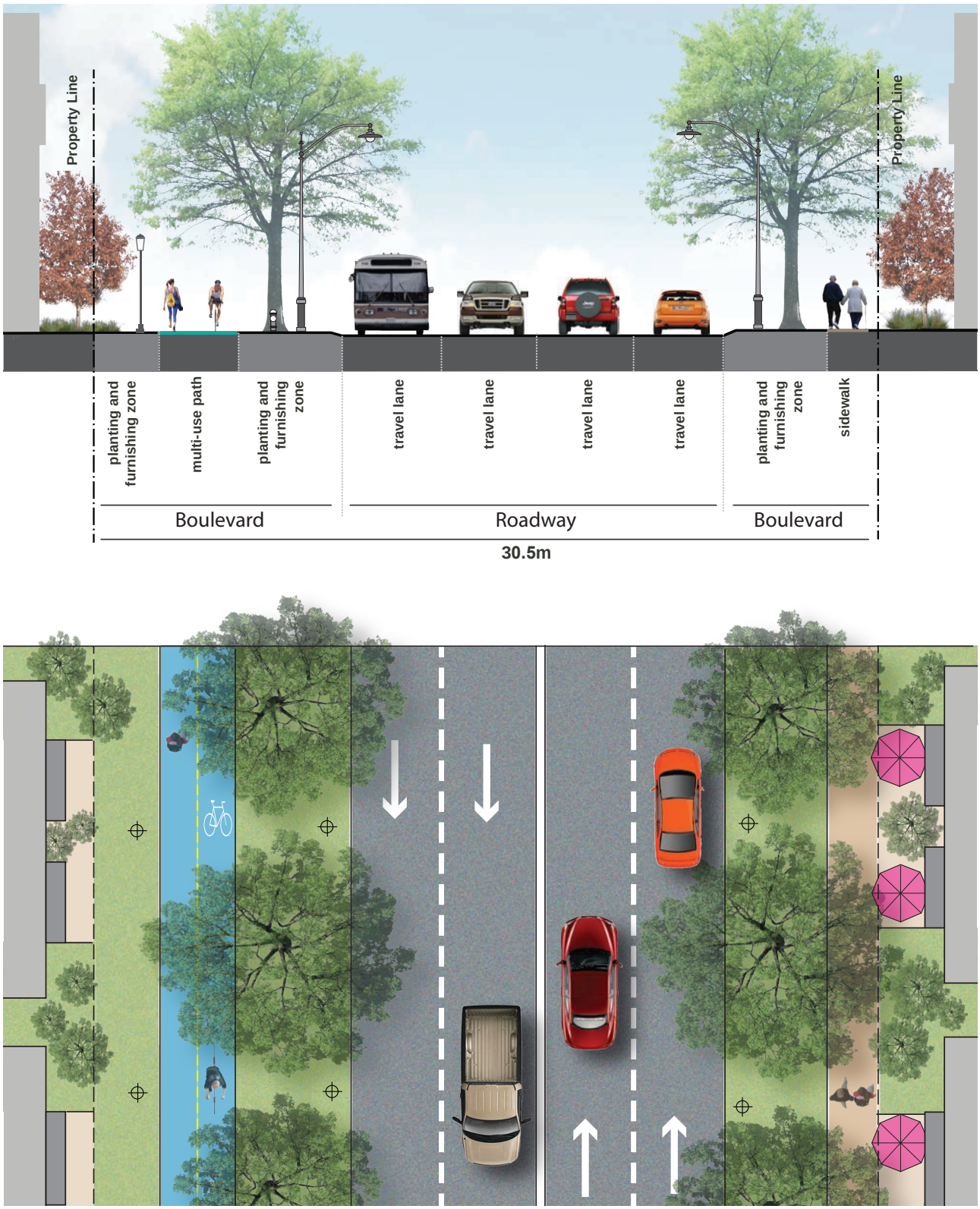
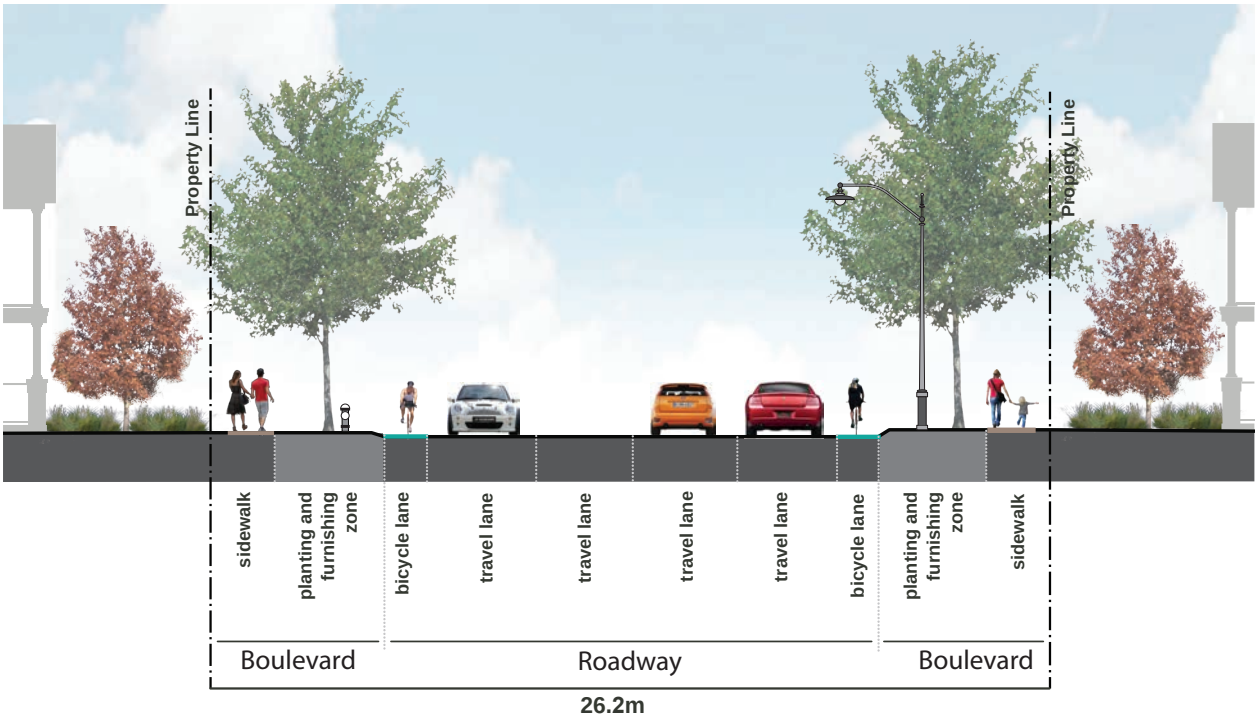


Figure 1 - Arterial Road cross-section and plan

Typical Collector Road - 26.2 metre ROW



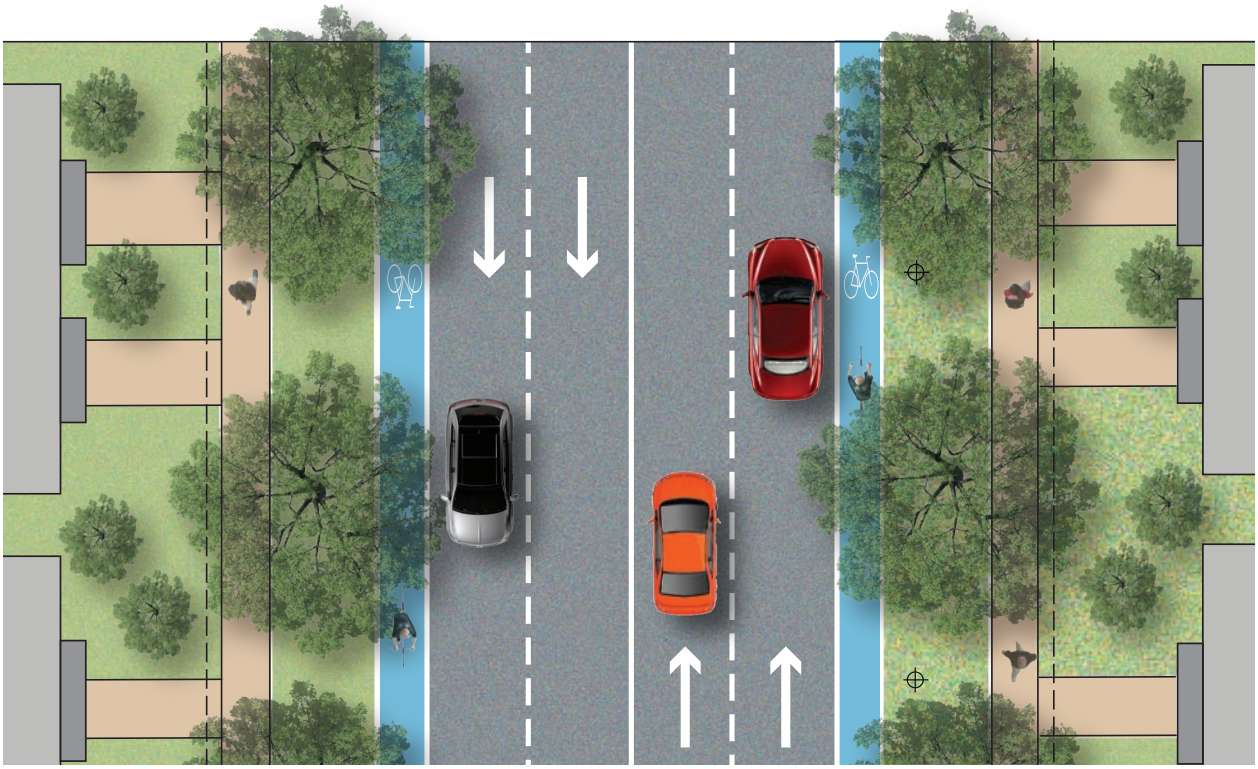


Figure 2 - Collector Road cross-section and plan

Typical Local Road - 20.0 metre ROW

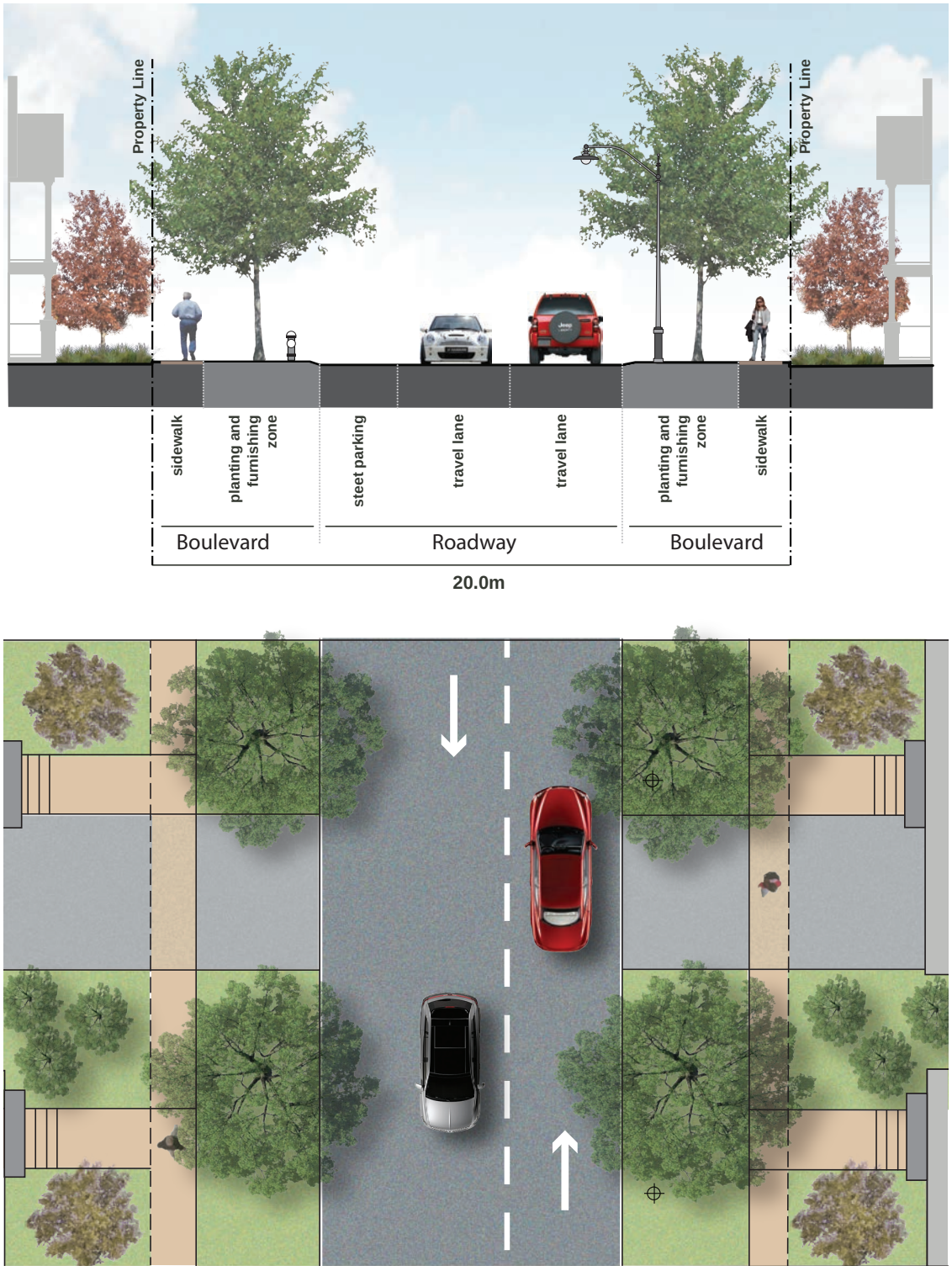


Figure 3 - Local Road cross-section and plan

Typical Window Road - 16.0 metre ROW

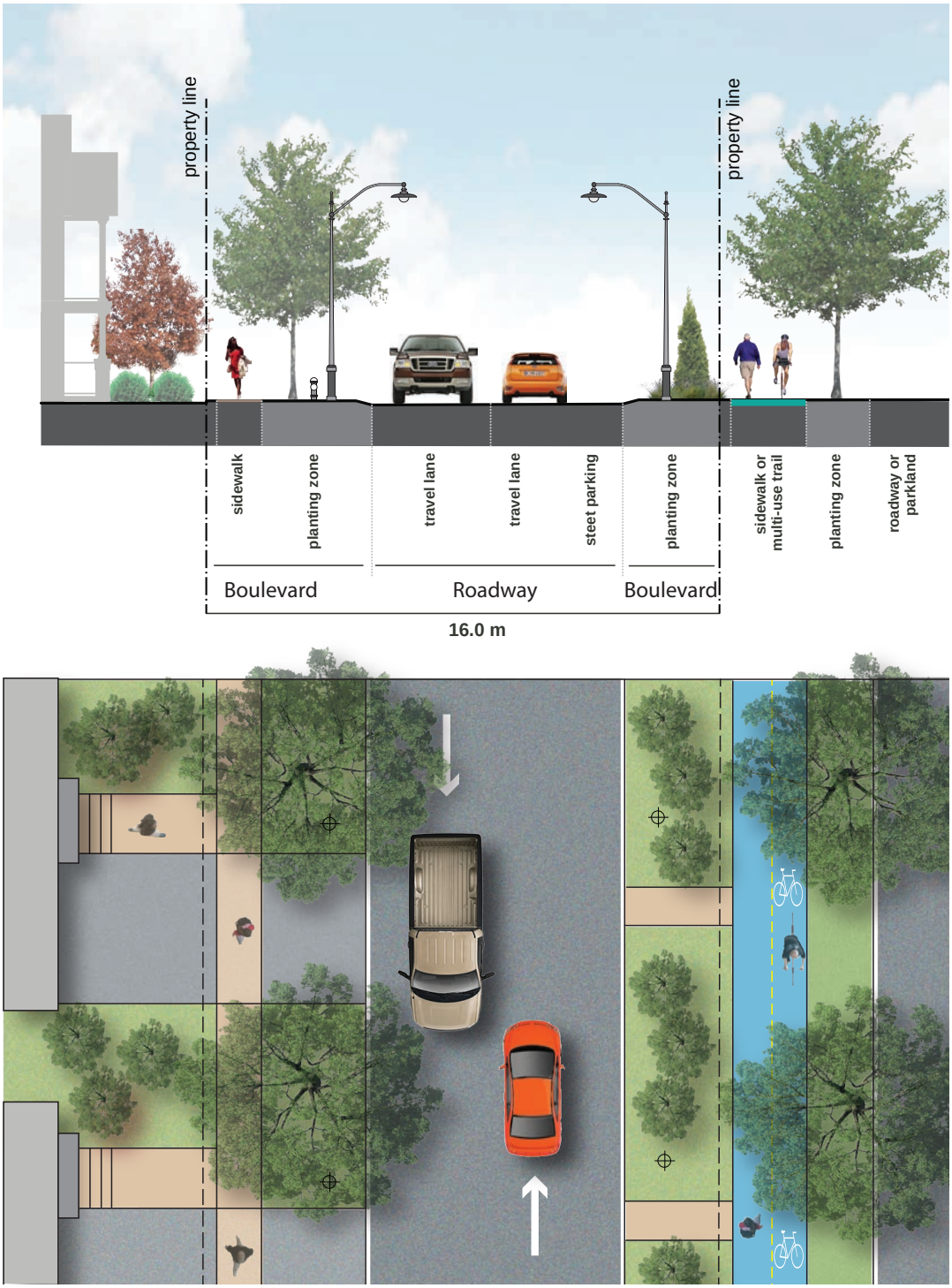
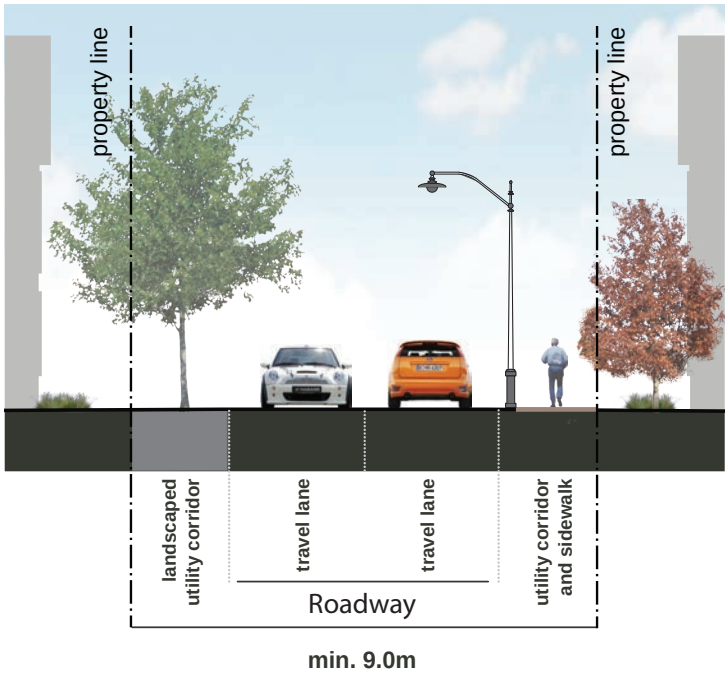


Figure 4 - Window Road cross-section and plan

Typical Private Road - 9.0 metre ROW



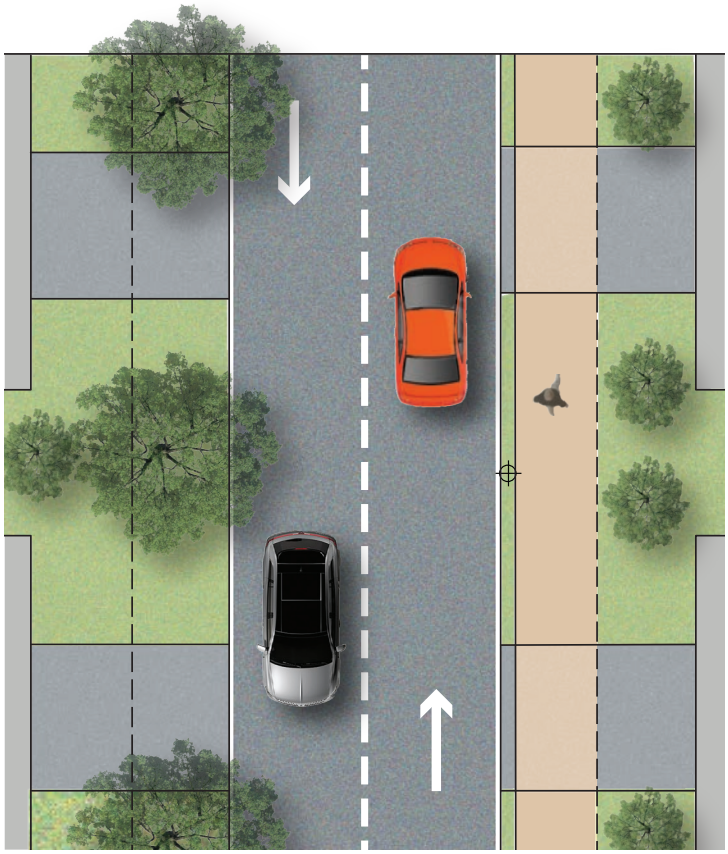
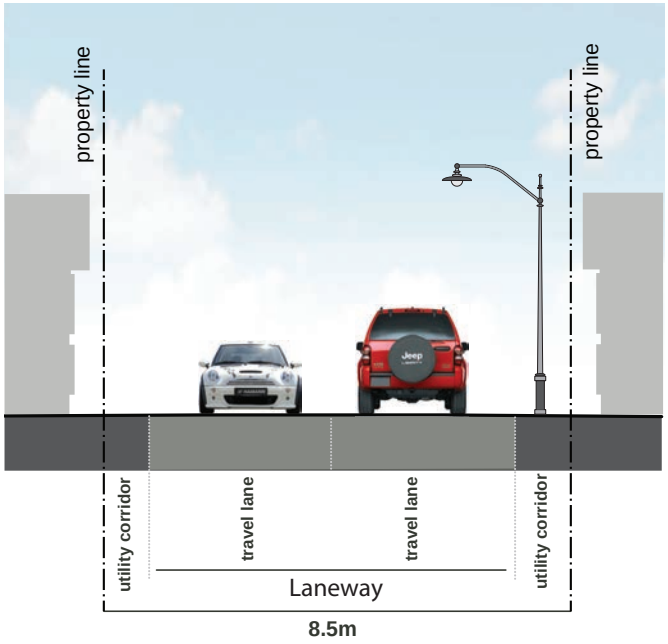


Figure 4 - Private Road cross-section and plan

Typical Lane - 8.5 metre ROW



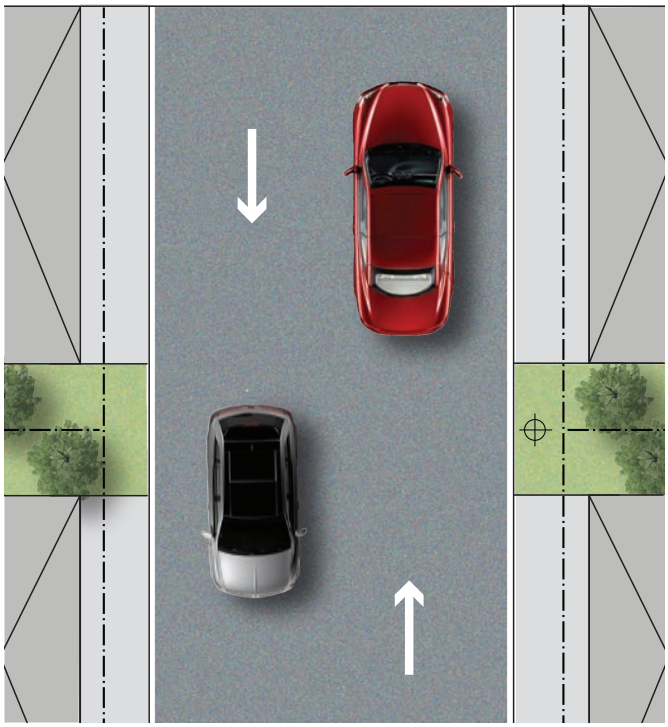


Figure 5 - Lane cross-section and plan

Integrate the natural heritage system with the community, creating opportunities for access, where appropriate.

2.5 The Natural Heritage System, Parks and Open Spaces

The Natural Heritage System, Parks and Open Spaces are a functional, structural, and aesthetic component of Area 2. The natural environment, urban forest, parks, open spaces, and trail systems are essential components of a healthy, sustainable community ensuring residents have convenient access to a connected and diverse range of recreational opportunities.

2.5.1 Natural Heritage System

The Natural Heritage System contributes to the community's character and is a key structural element of Area 2. The following guidelines aim to protect, restore and enhance the Natural Heritage System, while mitigating any existing or potential negative impacts due to development.

2.5.1.1 General Guidelines

1. As opportunities arise, connect and integrate the Natural Heritage System with Parks and Open Spaces and the local and regional trail systems to buffer and expand natural heritage features and functions, ensuring ecological systems are not interrupted.
2. Integrate the Natural Heritage System as a key structural element in the neighbourhood's design by providing for a range of development interfaces that create opportunities for public vistas and connections to the Natural Heritage System (e.g. terminal views at the end of prominent streets).
3. Incorporate recreational opportunities such as trails within the Natural Heritage System to encourage physical activity, where negative impacts will not occur.
4. Provide frequent access points and significant street frontage along the Natural Heritage System to promote views, where appropriate.
5. Provide naturalization planting and restoration to enhance the urban ecology and function of natural heritage features and their adjacent lands.

Opportunities for walking trails through the natural heritage system.

2.5.1.2 Woodlands

Trees provide ecological services that benefit human and environmental health, such as reducing the urban heat island effect, sequestering greenhouse gases, and providing shade in the summer.

1. Preserve and expand existing tree cover to connect and buffer protected woodlands and other natural areas and to mitigate urban heat island impacts.

2. Provide opportunities for naturalized plantings and landscape restoration to enhance and help to establish local ecological features.

3. Prevent direct access from private properties backing onto woodlands.

4. Ensure the location of trail heads will have no long term impact to the existing vegetation and wildlife communities.

2.5.1.3 Watercourses

1. Preserve and enhance watercourses and maintain the habitat value and charm that the natural environment brings to residents and visitors by ensuring that all streams, creeks, and rivers remain open and uncovered.

2. Covered or buried natural water courses should be daylighted as part of new developments or redevelopments where practical. This involves uncovering and appropriately rehabilitating the watercourses.

3. Introduce and maintain natural vegetation and other suitable erosion control methods on the banks of watercourses.

4. Plant trees or install other buffer measures where appropriate to protect watercourse banks and enhance the ecological corridor role of watercourses.

Residential fronting onto a neighbourhood park, with areas for seating and shade.

2.5.2 Parks Network

A Parks Network provides for a variety of open spaces, parks, and recreation facilities to support opportunities for improved public health. Convenient access to these amenities encourages residents to walk and cycle, in addition to providing places for gathering, socializing, and active and passive recreation.

Refer to the City's **Parks and Recreation Master Plan** for additional urban design recommendations.

1. Incorporate the following Crime Prevention through Environmental Design (CPTED)principles into the design of parks:
    - Facilitate visual permeability and clear sightlines by ensuring the ability to see what is ahead and around;
    - Provide strategic lighting to illuminate pathways;
    - Avoid landscaping that obstructs natural surveillance;
    - Orient buildings to overlook public spaces. Playgrounds should be highly visible to public streets and/or houses to enhance safety;
    - Ensure proper site design and signage for ease of access and egress; and,
    - Program parks with a mix of activities for constant use of the space.

Public art serves as a defining feature for a public park.

2. Ensure new trees and landscaping within parks are native plant materials, and where possible, salvaged from the site or the local area.

3. Consider public art as focal points in open spaces to reflect the cultural heritage of the location. Public art can include memorials, sculptures, water features, or individual installations at visually prominent sites.

Natural playground that incorporates the use of natural materials.

4. Consider natural parks and play spaces that predominantly use landscape features, landforms, natural materials, and plantings to achieve the intended uses. Design natural parks to harmonize with the surrounding landscape and incorporate the use of natural materials.

5. Design natural parks and play spaces to include the following:
   a. Topographic changes in the form of berms, rockeries, and other similar features;
   b. Interpretive signage describing the natural features and the unique characteristics of the natural play space;
   c. Direct interaction with natural materials and the environment; and,
   d. All season play with particular attention to plant materials that highlight seasonal changes.

6. Locate and design parks and open spaces to support, complement, and buffer the Natural Heritage System.

7. Provide bicycle parking in parks. Bike racks should be accessible and conveniently located adjacent to play areas and park entrances, with hard surfaces under the bike rack.

8. Provide lighting that is Dark Sky/Nighttime Friendly compliant.

9. Incorporate LED lighting or solar powered lighting for natural trails, park pathways, and other public spaces to reduce electric energy supply in the public realm.

Active recreation through the use of playgrounds.

Parkettes should include areas of shade and seating.

2.5.2.1 Neighbourhood Parks

Neighbourhood Parks are intended to primarily serve the needs of the community and are within a 5 to 10 minute walk (approximately 400 to 800 metres).

1. Neighbourhood Parks are typically between 0.5 hectares to 2 hectares in size.

2. Plan Neighbourhood Parks as focal points of neighbourhoods, preferably centrally located at the terminus of a major street or at the corner of a main intersection, and within walking distance of schools and other community amenities and destinations.

3. Ensure Neighbourhood Parks have significant frontage on adjacent streets to promote views and reinforce their focal nature. Street frontage shall not be less than 30% of the park perimeter.

4. Avoid backing residential lots onto Neighbourhood Parks, where possible.

5. Coordinate the design of park structures, such as gazebos, with other neighbourhood elements such as transit stops and community mail boxes.

6. Include a range of active and passive recreation opportunities in Neighbourhood Parks, such as playgrounds, waterplay, courts, walkways, seating, planting areas, and/or natural or cultural features.

2.5.2.2 Parkettes / Urban Greens

Parkettes/Urban Greens support local residents and are located within a 5 minute walk (approximately 400 metres).

1. Parkettes/Urban Greens may be less than 1.0 hectares in size.

2. Plan Parkettes/Urban Greens with local level facilities such as playgrounds, waterplay, seating areas, and walking paths.

3. Street frontage on more than one public street is encouraged to support accessibility and visibility.

4. Design for universal/barrier-free access and user safety.

5. Connect formalized paths within Parkettes/Urban Greens to pedestrian sidewalks and trails.

Larger Urban Squares with distinctive paving can be used to hold large-scale, occasional events, such as a farmers market.

2.5.2.3 Urban Squares

Urban Squares are a moderately scaled typology of the urban public park hierarchy commonly associated with higher intensity mixed use and residential areas.

1. Locate Urban Squares to achieve significant public exposure and access with frontage on at least 2 public streets.

2. Urban Squares are between 0.25 to 1.0 hectare in size and shall generally follow a 1:1 proportion of length to width.

3. Design Urban Squares to enhance the character of the surrounding public realm through public art, site furniture, seating areas and places to eat, landscape treatments, as well as street-related activities such as vendor and exhibit space.

4. Use distinctive, high quality paving treatments for the Urban Square with consideration given to extending the paving treatment onto the street to give the space further prominence. This additional area would delineate an extended space that could be occasionally utilized for large-scale events such as a farmers market or festival.

2.5.2.4 Views and Vistas

Enhancing the views of important community elements for residents can assist in the creation of a sense of place. The best way to achieve these views is through the orientation of streets and buildings.

1. Orient streets to maximize views to the natural heritage system. These views are an opportunity to reinforce these natural elements as landmark features.

2. Existing natural features should form the basis for directing views.

3. Protect significant views through the location and configuration of open space opportunities.

4. Where possible, site community buildings such as schools, churches, and community facilities as view terminations.

5. Design buildings that terminate views as special landmark buildings.

6. Vistas from the development site, or adjacent public areas, should be considered in the design as potential assets, as much as practical.

Multi-use path designed to accommodate a range of users.

2.6 Active Transportation

2.6.1 Pedestrian & Cycling Network

Encourage active transportation and support physical activity through the provision of a linked system of pedestrian and bicycle routes and trails that ensure residents have increased access and mobility options to local destinations for work and play.

1. Create a continuous and diverse active transportation network of inter-connected pedestrian and cycling routes, walkways, sidewalks, and bicycle lanes that link the community with surrounding neighbourhoods, integrate with existing and future public transit infrastructure, and connect to sidewalks and the open space system.

2. Design new development to incorporate a pedestrian path network that links the following uses:
   - Transit stops;
   - Sidewalks;
   - Trails;
   - Building entrances;
   - Public gathering areas,
   - Community mailboxes; and,
   - Parks and open spaces.

3. Design pedestrian ways and connections to be convenient, comfortable, safe and easily navigable, continuous, and barrier-free. Design pedestrian ways to be:
   a. Clear of obstructions and maintaining a minimum 1.5 metre wide passageway;
   b. Slip resistant;
   c. Unobstructed and without unnecessary meanders around built obstacles such as mail boxes, street lights, utility poles, seating, and street furniture;
   d. Hard surfaced (hard-packed gravel may be permitted for walkway surfaces in areas adjacent to natural areas); and,
   e. Designed with appropriate accessibility components for persons with disabilities including ramps, sight assistance strips, and textured edges at grade transitions and street crossings.

4. Develop a cycling network that includes bike lanes and off-road cycling or Multi-use Trails that connect to existing bike lanes and trails.

5. Design Multi-use Trails (shared off-street pedestrian and bicycle paths) based on the requirements of the route. Pedestrian and cycling lanes should be painted along Multi-use Trails or clearly identified by other means to minimize pedestrian and cycling conflicts.

Clearly marked cycling lanes painted on the road.

Easement used as component of the trail system.

6. Design Multi-use Trails to be a minimum 3.0 metres wide to facilitate two-way cyclist and/or pedestrian movement.

7. Ensure Multi-Use Trails include adequate amenities including seating, waste receptacles, and signage. Amenities should be designed to reflect site-specific conditions.

8. Provide frequent access points along Multi-Use Trails from adjacent streets, trails, open spaces, and nodes of activity.

9. Provide active transportation connections across water courses and open spaces for pedestrians and cyclists, where required. Design as functional multi-season connections.

10. Encourage safe routes to schools by providing a network of connected local streets with inherent traffic calming measures. To ensure safe use by young pedestrians and cyclists, such measures may include reduced lane widths, raised intersections, slower vehicle speeds, and crosswalks.

2.6.2 Trails

1. Provide for a continuous, linked, legible, and clearly marked system of trails throughout the community as part of the open space network.

2. For new developments link or maintain additional trails, connections, and public accesses between roads and trails to ensure connectivity through developments for pedestrians.

3. Avoid creating trails that cross roadways. Off-road connections are preferred, wherever possible.

4. Design trails to be barrier-free and to accommodate a range of users and abilities. Where possible, slopes should be under 5% with curb-cuts and other safety measures provided to improve access at road crossings.

5. Trails must be clearly signed identifying trail entry and access points, permitted uses, and speed. Provide wayfinding signage and trail markers throughout the trail network.

6. Incorporate interpretive signage on trails located in proximity to significant natural heritage features to educate and promote stewardship initiatives that will protect and enhance the features and functions of the natural landscape.

Ponds should blend with the natural landscape.

7. Consider special treatments at trail head entrances including features such as landscaping, benches, natural or built shade structures, decorative paving pattern, interpretive or directional signage, or wider pathway widths.

8. Design trails to minimize and mitigate impacts on natural heritage features. Consider the use of low impact materials such as wood chips, limestone screenings, or porous or permeable materials for trail construction in areas where sufficient drainage exists.

9. To address accessibility and active transportation needs, asphalt surfaces may be incorporated into the trails system.

10. Provide lighting for pedestrian safety along primary connecting trails. Lighting is not acceptable in natural heritage features.

11. Use native, non-invasive species along trails abutting natural features to contribute to the urban tree canopy and provide shade for trails.

2.7 Stormwater Management Facilities

Stormwater management facilities should be developed in a manner that will yield the greatest environmental and amenity benefit to the neighbourhood, which can be achieved first through reducing stormwater run-off and flow to the ponds, and secondly, through the design and landscaping of the pond.

These facilities promote sustainability by providing habitat, enhancing ecosystem structure and resilience, and managing stormwater on site.

1. Design stormwater management facilities as major open space features that provide passive recreational and educational opportunities, while augmenting the extent of the community's open spaces and associated microclimatic benefits.

2. Enhance views and access to ponds by designing a portion of the pond to be bounded by either streets and/or open space.

3. For pond design and landscaping:
   a. Locate ponds off line and as a buffer to environmental features;
   b. Landscape ponds to contribute to the urban tree canopy, add to the natural features of the community, and support wildlife habitat;

Formal hardscaped paths, seating, and playgrounds are located around the perimeter of the pond.

c. In addition to functional objectives related to flow moderation and water quality, design ponds as key focal/visual features within the community; and

d. Design ponds as part of the overall pedestrian and trail system with view points and interpretive signage. Surround ponds with public walking or cycling trails and extend along stormwater channels.

4. Fencing of the entire perimeter of stormwater management ponds is discouraged, except where necessary along steep slopes, or the rear or flankage of residential property lines. Install 1.8 metre high black-vinyl-coated chainlink fencing along the property line where the stormwater management facility block abuts private property. It should be continuous with no gates permitted.

5. Fencing is not required along the property line where a stormwater management facility abuts a public park, open space, natural area, or road right-of-way.

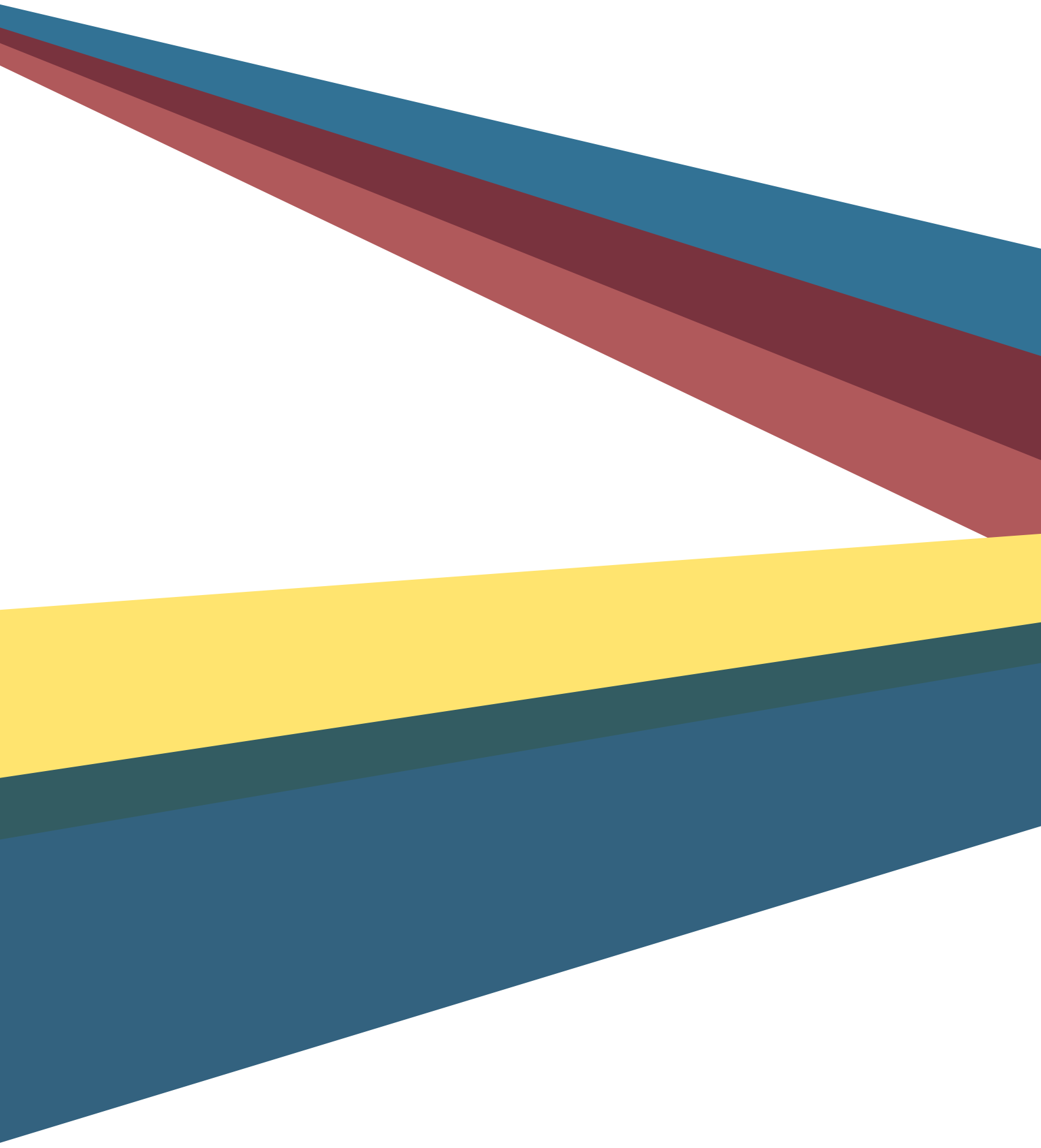
6. Consider on-site treatment of stormwater through the use of green infrastructure such as bioswales, at source infiltration, and permeable pavement.

7. Design stormwater management facilities to blend with the natural landscape. Where feasible, conceal inlet and outlet structures using a combination of planting, grading, and natural stone.

8. Ensure the edges of ponds abutting natural heritage features remain naturalized.

9. Install signage at prominent locations along the road frontage or in an appropriate location along the interface between the pond block and the adjacent open space to ensure it is highly visible to the public. The purpose of signage is to identify the site as a stormwater management facility and raise public awareness of the functional aspects and related potential hazards of the facility.

10. Coordinate landscape components such as look-outs, seating areas, fountains and gazebos to complement the overall character of the pond.



3.0
private realm

3. THE PRIVATE REALM

Mix and range of housing types in a neighbourhood.

The private realm within Area 2 is comprised of the built form and site design within development blocks and their relationship to adjacent open spaces and roads. The residential, institutional, commercial, mixed-use, and employment buildings within a community contribute to its character and can assist in further defining and complementing the public realm.

The UDG promotes high quality urban design within the private realm that is based upon the quality, scale, and character of the surrounding existing and emerging contexts to reinforce 'human scaled' environments and promote a sense of place.

Good urban design practices will promote excellence in the design of the private realm. While the specifics of each development proposal may vary, the overall objectives will remain the same throughout Area 2 These objectives include:

- Creating distinctive, appealing, and pedestrian friendly streetscapes through attention to building design and detailing;
- Ensuring appropriate massing, materials, building siting, and design compatibility; and
- Identifying enhanced design requirements for priority lots having highly visible elevations.

The guidelines will be considered and implemented through the review of development applications within the private realm which are visible from the public realm.

Multi-storey mixed use buildings with activity at the ground level.

3.1 General Guidelines for all Development

All development shall ensure excellence in design, be designed to achieve a high degree of environmental sustainability, and demonstrate high quality architectural detailing, in accordance with the following guidelines.

3.1.1 Mixed-Use Corridors

Mixed-Use Corridors are the connective spines of Area 2 and are envisioned to develop as mixed use and transit supportive corridors. Corridors can accommodate a full range of residential, office, recreational, cultural, and community uses and facilities over time.

1. Locate Mid- and High-Rise forms of residential and mixed uses along London Line and at the Wellington Street gateway to create areas of community focus. Low- and Mid-Rise development will occur along the internal Arterials and Collectors, and Confederation Line.

2. Ensure development blocks are permeable, providing access and frontage between buildings within the Mixed-Use Corridors.

3. Design parking lots with planting strips and landscaped traffic islands, medians, or bump-outs to break up the expanse of hard surface areas.

4. Design buildings to be compatible with, and sensitively integrated with the surrounding land uses and built forms. Ensure appropriate transition to adjacent uses and built forms through reduced building heights, angular planes, increased building setbacks, step-backs, and/or enhanced landscaped buffer strips.

Single detached dwellings with front porches and varied elevations.

Construction of an employment office building.

3.1.2 Neighbourhoods

Neighbourhoods will include a range and mix of housing types and centrally located parks and community facilities. Development will be in Low-Rise Buildings.

1. Design neighbourhoods to ensure residents are in proximity to amenities that will meet their daily needs including convenience commercial, office and personal services, institutional, and recreational uses.

2. Provide a mix of housing types, densities, sizes, and tenures, including special needs housing in new residential development.

3. Ensure residential development is well-designed to:
   a. Reduce the prominence of garages in the front elevation;
   b. Promote pedestrian activity;
   c. Create functional and visual diversity; and,
   d. Include multi-unit residential forms that fit within the community.

4. Ensure new residential blocks contain a mix of dwelling types with a variety of elevations to avoid a homogeneous streetscape.

5. Ensure appropriate transitions in terms of height and massing between buildings of different densities, particularly if they belong in the same block.

3.1.3 Employment Areas

Employment Areas in Area 2 are expected to accommodate primarily employment opportunities with a focus on heavy and light industrial, business park opportunities, and office uses.

1. Arrange and design industrial and business parks to incorporate a campus design to ensure that all development components are recognizable as part of an integrated complex. A campus design format consists of one or more individual buildings or multiple tenancy buildings having shared parking, loading, and access facilities.

2. Design buildings to have high-quality design features including built form, architectural detail, landscaping, and signage.

3. Orient buildings adjacent to Confederation Line, or an Arterial or Collector Road, to face the road to provide good visibility.

4. Provide adequate parking, loading, and garbage collection/storage facilities on-site and screened from view. Shared access and parking among various properties is encouraged.

3.2 Site Planning

Site planning plays an important role in how a development is experienced and how it functions, including elements such as building orientation, site access, and landscaping. The following will guide new development to maximize the positive attributes of the City and continue Sarnia's development pattern of visually attractive, walkable, and interconnected neighbourhoods.

3.2.1 Site Layout

1. Arrange all new development to address the street by lining streets with building front facades, active uses, and public spaces. Maintain and reinforce existing setbacks by aligning the building base with adjacent building bases, or by placing the building at the average distance between those of adjacent properties.

2. Use prominent built form to address gateways and other key locations. On larger sites, create 'paired' corner buildings on either side of a street to emphasize a sense of entry or to distinguish one street district from another.

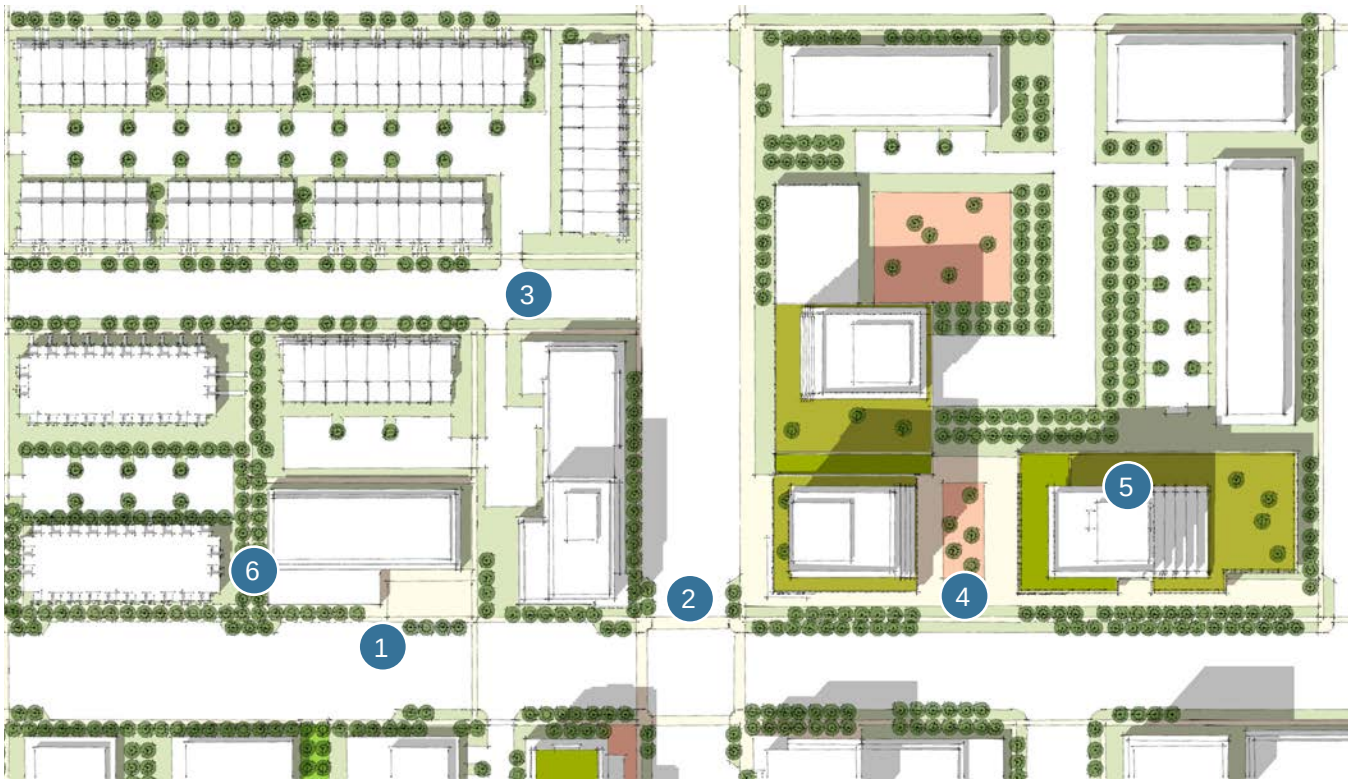
3. Provide a safe, clear, and accessible site circulation system for pedestrians, cyclists, and vehicles, including connections to the surrounding street network, public sidewalks, transit stops, and parking areas.

4. Create a pedestrian-scaled environment by arranging buildings to create comfortable and protected pedestrian spaces that provide a sense of enclosure.

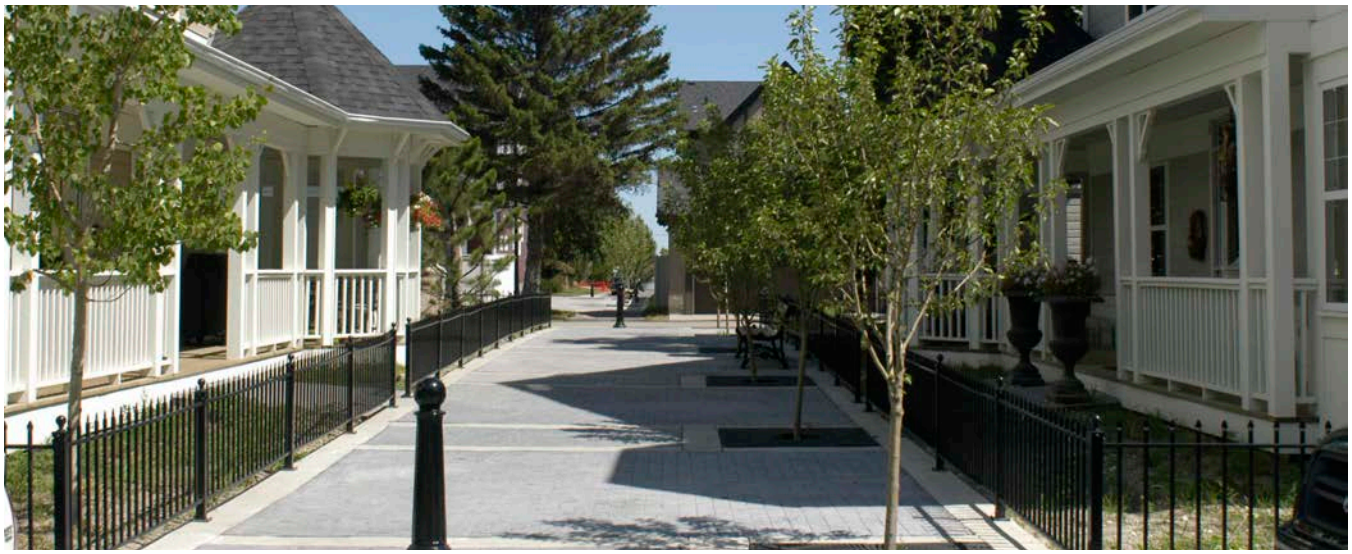
5. Design blocks with a regular shape measuring a maximum of 100 metres in width and 200 metres in length. For industrial areas, the maximum block dimension is 300 by 300 metres.

6. Provide mid-block pedestrian connections for development blocks over 200 metres in length to support pedestrian movement.

7. Enhance wayfinding by using buildings as gateways and landmarks, public spaces as focal points, and streetscapes to frame significant views.



Example of a site layout illustrating building placement, access, and landscaping.



Pedestrian mid-block connection with paving and landscaping.

8. Ensure a mix of housing types and densities with the denser residential uses located at the ends of blocks or adjacent to parks, community amenities, or civic uses and buildings, and along collector or arterial roads.

9. In order to minimize the visual impact of long blocks, the lots located on the end should be turned 90-degrees to face the flanking road. Consider a variety of lot facing conditions, in addition to flankage lots, along long stretches of road.

10. Consolidate vehicular entrances to serve multiple buildings in order to minimize the number of interruptions to the street wall and sidewalk network.

11 Surface parking lots should be screened from view from roads, open spaces, and adjacent residential areas with low fencing, architectural features, landscaping and/or other mitigating design measures, such as lowered parking surfaces with landscaped buffers.

12. All pedestrian connections and entrances shall be visible and universally accessible. Walkways should be distinguished from driveways through a change in material or by using a planted or sodded edge.

13. In high pedestrian volume areas, provide connections through blocks of buildings or a building. This may be achieved through the introduction of a walkway, galleria, or other similar features to connect two streets; and/or connections to publicly accessible spaces such as parks, courtyards, and outdoor amenity spaces.

14. The design of shared mailbox facilities should consider:
    a. Locations where they act as an integral component of the streetscape, or in central areas such as an amenity area or park space.
    b. Providing seating and waste receptacles, where appropriate; and,
    c. Including landscaping and/or privacy fencing as a buffer when located at a corner or end lot.

Landscaped areas provide a transition from private to public areas.

Street tree planting to buffer the sidewalk from the street.

3.2.2 Site Landscaping

Landscaping design should reinforce the structure of the site with a focus on creating a safe, comfortable, and animated pedestrian environment.

1. Develop a comprehensive strategy for planting, built features, fencing, walls, paving, lighting, signage, and site furnishings.

2. Prepare a planting strategy based on year-round interest, hardiness, drought, salt and disease tolerance, and bio-diversity.

3. Preserve, protect, and incorporate existing healthy and mature trees into the site and landscape designs.

4. Minimize the use of hard, paved areas to reduce surface run-off and the urban heat island effect. Use permeable or porous paving, wherever possible.

5. Use high-quality, durable materials for all landscape features such as paving, fences, walls, planters, site furniture, and shade structures.

6. Consider green roofs for mid- and high-rise buildings. This will assist with reducing the urban heat island effect and improving air quality and noise insulation. See Guidelines under Section 4.1.

7. Appropriate planting conditions such as soil depth, volume, and growing mediums must be provided for successful landscapes.

8. Utilize landscaped buffers which are linear green open spaces to provide an appealing and ‘soft’ transitional interface between new development areas and the backyards of exiting established areas. Landscaped buffers should be comprised of lush landscaping, such as evergreens, that retain their foliage in all seasons to provide a visual barrier, as well as some sound attenuation

9. Ensure the design of lighting avoids light spill onto abutting properties and adjacent residential neighbourhoods.

10. Avoid using noise attenuation fences or walls, if possible.

11. Where noise attenuation fences or walls are used ensure the fencing provides pedestrian connections and integrates with the design of the surroundings. Coordination in the design, colour, texture, and plantings is encouraged.

Single detached dwelling with upgraded side elevation.

An upgraded elevation with variety in roof lines, materials, and a front porch.

3.4 Low-Rise Buildings

The following guidelines apply to Low-Rise Residential Buildings up to 3 storeys in height.

3.4.1 General Guidelines

1. All low-rise buildings shall demonstrate design excellence and compatibility with the surrounding context. Architectural detailing, landscape treatments, colour, and building materials shall be representative of the highest quality possible.

2. Ensure the height difference between adjacent low-rise buildings on the same block does not vary by more than 1 storey to maintain a consistent street wall.

3. Upgrade the side and rear elevations of units that are exposed and visible from a public space or public right-of-way to ensure they are consistent and continuous in design, quality, and material as the front elevation.

4. Locate garages and driveways on a Local Road or Rear Lane, off Arterial or Collector Roads.

5. Screen utility meters, air conditioning units, and similar features from public view and integrate into the design of dwelling units through the use of wall recesses, enclosures, screening, or insetting within the building walls. Rear lane units shall locate utility meters at the rear lot line.

3.4.2 Typologies

3.4.2.1 Single Detached, Semi Detached, and Duplex Dwellings

1. Design dwellings to frame the street edge with a consistent setback. Ensure front doors, windows, and entry features face the road to create a consistent street wall.

2. Design the front elevation of the dwelling so that its front entrance and architectural elements reduce the visual dominance of the garage.

3. The setback to the main building face should be 3.0 to 6.0 metres from the edge of the right-of-way. The main building face could be the main front wall, second floor room over or beside the garage, or a significant element such as a roofed porch or verandah.

4. Porches, stairs, canopies, and other entrance features may encroach into the required setbacks a maximum of 1.5 metres.

5. Pair the garages of semi-detached and duplex dwellings with a front facing garage and driveway to maximize the extent of continuous green planting area.

Example of a triplex dwelling.

Example of a detached additional residential unit.

6. Ensure semi-detached and duplex dwellings have a single unified roof form and continuous and consistent architectural details and materials for both dwelling units.

7. Design duplex buildings with separate entrances for each unit.

3.4.2.2 Triplex and Fourplex Dwellings

1. Up-down triplexes and fourplexes are intended to be designed as a large single detached dwelling.

2. Side-by-side triplexes and fourplexes are intended to be designed as a small townhouse grouping.

3. Each unit should have an easily identifiable access to the fronting street.

4. Exterior stairs should be avoided; where necessary they should be limited to rear or interior side yards.

5. Use porches or other architectural feature to complement additional front facing doors and to reduce the visual impact of these entrances.

6. Each unit should have access to private on-site, outdoor amenity space via balconies, porches, or a yard.

3.4.2.3 Detached Additional Residential Units

1. An additional residential unit is permitted in a detached accessory building or structure on a lot that includes a primary single detached, semi-detached and/or townhouse building. Ensure the detached building:
   a. Is created and used in accordance with the Implementing Zoning By-law;
   b. Is built in accordance with all relevant regulations of both the Building Code and Fire Code;
   c. Is connected to full municipal sanitary sewer and water services or private services to the satisfaction of the City;
   d. Has a maximum gross floor area of no more than 75 square metres and a maximum height of 2 storeys;
   e. Is designed to complement the architecture of the main building; and,
   f. Has a direct pedestrian access from a public street or laneway through an unobstructed walkway.

2 Provide an additional parking space as a tandem parking space on the lot.

Example of variation between the units of a townhouse block.

3.4.2.4 Townhouses

1. Coordinate the siting, massing, and facade design of townhouse units on a block-by-block basis.

2. Articulate the elevation of the townhouse block to provide variation between units.

3. Utilize variety in the design of roofs through the use of traditional gables and dormers, or more contemporary designs that include cantilevers and parapet details to break up the massing of units within a block. The main roof should appear as one roof where possible.

4. Limit blocks of street townhouses to a maximum of 8 units, with 6 units preferred. The length of townhouse blocks should not exceed 50 metres, unless it is essential to the architectural style of the townhouse block.

5. Orient the main front entry of interior units to the front lot line or higher order street. Orient the entry of the end unit to the exterior lot line when on a corner lot. Where a dwelling unit flanks a private street or laneway, the main entrance shall face the front lot line.

6. Orient blocks of attached townhouse units to the street with integrated front garages accessed from the street. For rear lane townhouses an attached or detached garage will be located at the rear of the block and accessed from a lane.

7. Design front garages to not exceed 50% of the width of the unit and to not protrude beyond the main front wall of the dwelling unit.

8. Pair front driveways to allow for more substantial front yard green space.

9. Ensure rear lane accessed garages are complementary in design and building material with the principal dwelling.

Live-work units with lay-by parking.

Low-rise building with inset balconies and entrances along the street.

3.4.2.5 Live-Work Units

Live-Work units introduce a flexible built form use that allows for the unit to be used fully as a residence or a residence above with retail, commercial, or office uses at grade. Live-Work units are ideally suited for the mixed-use context in the Downtown Core and along the Mixed-Use Corridors.

1. Design Live-Work buildings to support pedestrian activity through minimal front yard setbacks, pedestrian weather protection such as canopies, and enlarged clear glazed windows.

2. Provide on-street parking by using lay-by parking with resident parking provided at the rear of the building and accessed from a lane or a private road.

3. Ensure Live-Work units have continuous and consistent architectural details and materials for the entirety of the block.

4. Screen mechanical equipment including air conditioning units and utility meters or locate away from public view.

3.4.2.6 Low-Rise Apartment Buildings

1. Design the building and the site layout to consider overall form, massing and proportions, and rhythm of major repetitive building elements to create a streetscape that supports a pedestrian scale.

2. Ensure the majority of the main building facade fronts the abutting street.

3. Locate and orient primary building entrances to public roads and design to be visible and accessible to the public.

4. Locate visitor parking, loading, and service areas in areas of low public visibility in side or rear yards and set back from the building.

5. Screen tenant and visitor parking from street view through the use of landscaping or fencing, or a combination of both.

3.4.3 Siting and Setbacks

1. Integrate existing topography and natural features into the development, and minimize alteration to the existing grading of the site, if feasible.

2. Locate dwelling units and townhouse blocks close to the street edge to create a pedestrian-oriented streetscape.

3. Orient dwelling units and townhouse blocks to face the public realm, and particularly any adjacent streetscape, pedestrian connection or open space, to promote a high level of comfort and create a safe environment.

4. Ensure the front yard setback of new units is consistent with that of adjacent units. If there are differing setbacks on adjacent lots, the new unit should be located to act as a transition between the differing setbacks.

5. Where lot depths permit, design dwellings on long, straight streets to give the appearance of a diversity of setbacks, through architectural details and permitted encroachments.

6. The following elements may be permitted to encroach into front, rear, and exterior side yards, when appropriate:
   - Bay windows;
   - Balconies or decks; and,
   - Porches of up to 1 storey.

7. Where the first floor of the dwelling or townhouse unit is within 3 metres of a sidewalk, raise the entry of the unit a minimum of 0.9 metres to a maximum of 1.2 metres above the sidewalk grade. The change of grade should be reinforced through landscaping features.

8. Maintain consistent side yard setbacks along the streetscape. If there are differing setbacks on adjacent lots, the side yard setbacks of new units should be the average distance of those on either side of the development.

9. Increase side yard setbacks at pedestrian links and public open spaces.

10. Low-rise developments are to have front-to-front or back-to-back dwelling configuration along streets, lanes, or around open spaces.

11. Avoid front-to-back façade configurations where possible. If necessary, the 'rear' facing units of front-to-back façade configurations are to include:
    - Recessed garages;
    - Enhanced landscaping; and,
    - Upgraded façades.

12. Locate built form to minimize the need for noise attenuation walls.

3.4.4 Private Outdoor Amenity Space

The design of private outdoor amenity areas, such as balconies, terraces, back yards, or gardens provide an important extension to the livable space of a dwelling unit.

1. Design private outdoor amenity spaces to have direct access to sunlight and sky view.

2. Avoid a 'rear yard' condition along streets and parks/open spaces.

3. Locate private outdoor amenity spaces for family-sized units so that they have views and access to outdoor play areas, where possible.

4. Provide outdoor privacy areas for townhouse units. Consider outdoor amenity areas in the form of second floor decks or rooftop patios for townhouses with an attached garage in the rear over traditional rear yard amenity areas.

5. Inset or partially inset balconies to offer greater privacy and shelter from wind, reduce the building bulk, and minimize the impact of shadow on other amenity spaces below.

Garages flush with the main dwelling do not dominate the facade.

3.4.5 Garages and Driveways

The design of garages can have a major impact on the visual character of the individual dwelling and the collective streetscape. A cohesive streetscape where garages compliment instead of dominate the streetscape is intended.

The visual presence of garages shall be minimized by prohibiting garages from projecting beyond the front wall of the house face. A variety of parking strategies should be explored for Low-Rise Residential housing, including attached garages, attached recessed side yard garages, rear yard garages, and laneway access garages.

3.4.5.1 Front Garages

In order to minimize the presence of the garage, the following guidelines shall be applied for attached and detached garages accessed from the front yard.

1. Ensure garages are a natural extension of the design, massing, and materials of the main dwelling.

2. Ensure garages are set behind or flush with the main building face and do not project beyond the main wall of the dwelling. Garage doors facing a public road should be setback a distance of 6.0 metres from the right-of-way.

3. Design attached garages as follows:

   a. De-emphasize their presence on the streetscape by recessing garages 0.5 to 1.5 metres from the main wall of the dwelling;

   b. Accommodate a maximum of 2 garage doors for garages fronting the road, with a maximum width 50% of the dwelling width. Three garage doors may be permitted for single detached dwellings on a large lot but is not encouraged;

   c. Include two single garage doors separated by a masonry pier for double garages;

   d. Setback a second storey built over the garage a maximum of 2.0 metres;

   e. Consider glazed top panels or transom lights for all garage doors, especially for traditional style dwellings; and

   f. Utilize a consistent garage door throughout a townhouse block.

4. Detached garages are only permitted in the rear yard and interior side yard.

Detached garage located in the rear yard.

Driveways with light coloured materials assist with reducing the urban heat island effect.

5. Design detached garages to complement the architecture of the main building and as follows:
    a. Provide access from either a rear lane or the street by a driveway;
    b. Provide main cladding materials consistent with those of the exterior of the main dwelling;
    c. Create staggering garage door depths and planes, and varying roof styles and details along lanes;
    d. Ensure a minimum setback of 2.0 metres from the dwelling;
    e. Ensure a minimum setback of 1.2 metres from the side lot line; and,
    f. Ensure a maximum height of 2 storeys.

3.4.5.2 Lane-Accessed Garages

Garages that are accessed from a laneway can either be detached or attached to the main dwelling at the rear. Attached garages can be set into the house with access at the rear, or they can be attached to the main dwelling through a breezeway which forms a side courtyard for amenity space.

1. The minimum setback for garages accessed by a lane should be 0.6 metres from the lane right-of-way.

2. Side yard setbacks may be a minimum of 1.2 metres if the garage has doors or windows facing the side yard.

3. Side yard setbacks may be a minimum of 0.3 metres if the garage has no doors or windows facing the side yard. 0.0 metre setback is allowed where the garages on abutting lots are attached.

4. Where possible, pair garages to allow for increased rear yards or an outdoor parking pad.

5. The maximum number of attached garages on adjacent lots is three.

3.4.5.3 Driveways

1. Ensure driveway widths are no larger than the interior width of the garage. A maximum driveway width of 3.0 metres shall be permitted for single car garages and a maximum driveway width of 6.0 metres shall be permitted for double car garages.

2. Utilize light-coloured paving material for driveways to reduce the urban heat island effect.

3. Utilize porous or permeable pavement for surfacing driveways and parking areas instead of asphalt and concrete to reduce stormwater run-off.

4. Locate driveways as far as possible from parks, open space features, public walkways, schools, and intersections.

Lane with parking pad and private outdoor amenity space over the garage.

A porch flanking a park creates “eyes on the park”.

3.4.5.4 Multiple Unit Parking

1. Locate parking areas away from the street frontage, at the rear or sides of the principal building.

2. For multiple unit development locate visitor parking spaces within a 200 metre walking distance or one block, which ever is less, of the residential units served.

3. Design surface parking areas for multiple unit residential buildings with the following:
   a. continuous brick, pavers, or other distinct and decorative pavement treatment;
   b. markings for stalls;
   c. pedestrian scaled lighting; and
   d. low fencing, architectural features, or landscaping to screen from public view.

3.4.6 Priority Lots

Priority lots are those which are situated in prominent locations and are highly visible from the public realm. Priority lots include:

- Gateway lots;
- Corner lots;
- Lots which terminate at “T” intersections; and,
- Lots facing, adjacent to, or backing onto parks, open spaces, and pedestrian links.

1. Architectural and siting treatments for priority lots are recommended in order to promote a defined and attractive streetscape with visual focal points.

2. Where a townhouse is sited on a corner lot, the end unit flanking a street is defined as a priority lot.

3. In cases where a semi-detached dwelling is sited on a corner lot, both units are defined as a priority lot.

Gateway dwelling with expanded porch and front entry detailing.

Dwellings located at the intersection of two streets shall address both streets

3.4.6.1 Gateway Lots

1. Ensure dwellings on gateway lots are given special consideration in architectural design, massing, orientation, siting, and materials, and shall be of high architectural quality.

2. Utilize entry elements and porches to produce interest in the facade, as well as to help define the entrance to the neighbourhood.

3. Pair similar model units on lots directly opposite to each other to establish and enhance a gateway condition. Use stone or other quality materials as the main massing material for gateway units where possible.

4. Provide upgraded landscape features on gateway lots including decorative fencing, where appropriate.

5. Coordinate the materials of dwellings on gateway lots with those used on gateway features.

3.4.6.2 Corner Lots

1. Consider wrap around windows, porches, and other architectural treatments for corner lot dwelling units.

2. Ensure active living spaces are designed for the rooms adjacent to the corner.

3. Locate main entry features on the flankage elevation where possible.

4. Coordinate privacy fencing design for all corner lots to prevent views into the private rear yard amenity area.

Dwelling unit at the end of a “T” intersection

An example of front porches overlooking amenity areas.

3.4.6.3 “T” Intersections

“T” intersections occur when one street terminates at a right angle to another.

1. Ensure the architecture on lots at the end of “T” intersections is of a highly articulated facade design such as coordinated fenestration, masonry detailing, and entry elements.

2. Incorporate special built form such as added height, turrets, or bay windows for “T” intersection lots.

3. Consider pairing side yards to form a landscaped area at the terminus of the “T“ intersection.

4. Locate garages away from the “T” intersection of the streets.

5. Provide larger front yard setbacks at the view terminus for “T” intersections.

3.4.6.4 Lots Adjacent to Parks & Open Spaces

1. Ensure front, side, and rear elevations exposed to public spaces such as neighbourhood parks and urban greens are highly articulated. Utilize a combination of fenestration, bay windows, material changes, and dormers in addition to other design elements to achieve the objective.

2. Ensure side and rear elevations adopt a similar design and use materials that are consistent with those used on front elevations. Architectural detailing such as corbelling should continue from front to side elevations, where visible to the public.

3. Ensure the location of porches, windows, and entry doors for units surrounding parks and urban greens maximizes opportunities for overview.

4. Locate driveways of adjacent dwellings as far away as possible from the public space.

A block of townhouse units with a variety of elevations and colours.

Front porch highlights the dwelling entrance and addresses the street.

3.4.7 Building Design

3.4.7.1 Massing & Elevation Articulation

1. Ensure a generally consistent height and massing along a street.

2. Provide appropriate transitions between all unit types to avoid drastic changes in height and/or massing.

3. Limit the height of new dwellings in existing neighbourhoods to no more than one storey greater than the height of existing, adjacent buildings.

4. Ensure appropriate design compatibility where different unit types are located adjacent to each other.

5. Design dwellings to have articulated elevations, especially those exposed to streets and open spaces. Articulated elevations might include changes in plane, projections, enhanced fenestration, highlighted entrances, complementary materials, among other architectural elements.

6 Upgrade the façade treatment for side and rear elevations visible from public areas.

3.4.7.2 Porches and Entry Features

1. Ensure the main entrance faces the street, with the door in a prominent position. The front door should be clearly visible and approachable from the street.

2. Articulate front elevations by highlighting front entries with features like porches, verandahs, arches, generous overhangs, and massing elements such as a cantilevered or recessed upper storeys.

3. Ensure steps from a front porch are not located closer than 1 metre from a property line.

4. To ensure porches and verandahs are useable they should be a minimum of 1.5 metres in depth.

Example of a mix of building materials on the facade of a dwelling.

3.4.7.3 Materials

The variety of building materials contributes to the interest along the street and to the varied architectural character of the neighbourhood.

1. Ensure building materials reflect and complement the existing materials in the area and are high quality, durable, and easily maintained.

2. Ensure the materials selected are consistent for a building's facade and any walls that are publicly visible.

3. Recommended building materials include brick masonry, stone masonry, wood, or stucco; one or two of these materials should be selected as base materials and may be complemented by a wider range of accent materials.

4. Ensure rear and side walls exposed to public view are of a similar composition to the front wall.

3.4.7.4 Utility Meters and Mechanical Equipment

1. Where possible, locate utilities and meters in interior side yards, away from public view.

2 Locate utility and service meters discreetly by:

   a. Integrating into the design of the building;

   b. Screening through landscaping;

   c. Recessing or enclosing in the porch entry or landing;

   d. Installing below porch slabs and porch steps;

   e. Grouping in one location in a wall recess, enclosure or, where appropriate, a small roof overhang; and,

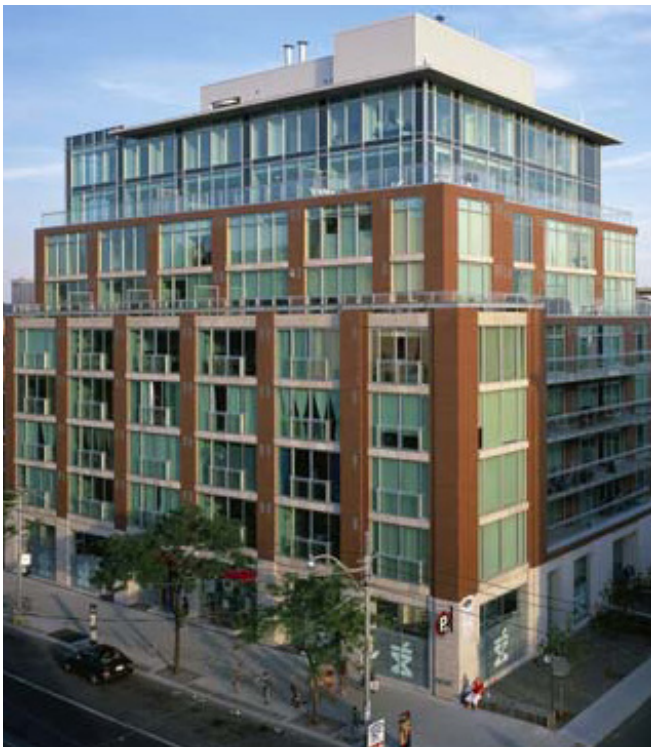
   f. Screening meters on exposed elevations by integrating them into a wall or below porches and steps, providing complementary landscaping, or placing them behind a change in plane towards the rear of the elevation.

3. Locate dryer vents, exhaust fans, furnaces, and hot water tanks on rear elevations.

4. Locate air conditioning units in the rear yard or interior side yard.

5. For flat roof buildings, locate air conditioning units on the roof, setback from the edge, so they are out of sight from public view, where possible.

Four storey apartment building with an articulated facade.



Example of a 9 storey high-rise residential building.

3.5 Mid-Rise and High-Rise Buildings

The following guidelines apply to mid- and high-rise built form. Mid- and High-Rise buildings provide opportunities for framing and defining the public realm, while allowing for increased densities that more efficiently use land and infrastructure. They support mixed use communities, promote active transportation, and if done properly, generate livable pedestrian experiences.

Mid-Rise buildings have a maximum height of 6 storeys and High-Rise buildings have a maximum height of 12 storeys.

3.5.1 General Guidelines

1. Concentrate the greatest heights and massing along the frontage of an Arterial or Collector Road.

2. Ensure the scale of mid- and high-rise buildings is compatible and sensitively integrated with surrounding residential uses in terms of building mass, height, setbacks, orientation, privacy, landscaping, shadow casting, accessibility, and visual impact.

3. To demonstrate mitigation of potential shadow or wind impacts on existing or proposed pedestrian routes, public spaces, and adjacent development technical studies may be required including a wind study and/or sun/shadow study.

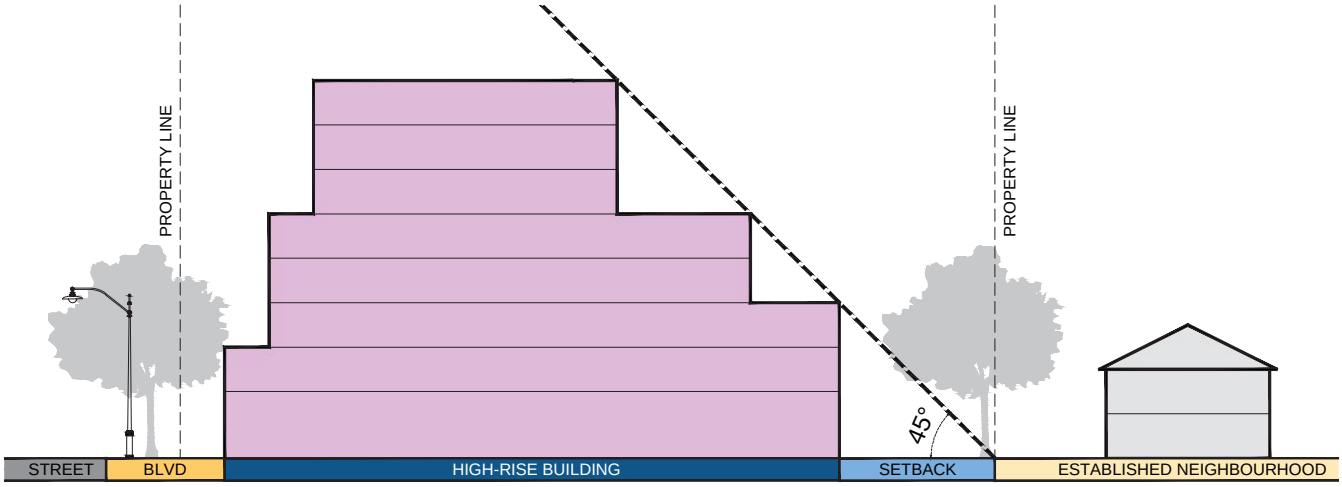
4. Development transition requirements may be met using a combination of the following:

   a. Separate mid- and high-rise buildings from low-rise buildings with a Local Road;

   b. Locate less dense and lower scale buildings in locations adjacent to existing low-rise neighbourhoods;

   c. Require a minimum 7.5 metre rear yard setback where mid- and high-rise development abuts low-rise properties;

   d. Mitigate the actual and perceived massing impacts of a mid- and high-rise building by breaking up the mass horizontally and vertically, through the creative incorporation of changes in materials, balcony, floor plate design, architectural features, and unit/amenity locations;



Angular plane diagram - 45 degree angular plane measured from property line.

e. Provide rear and side step-backs for upper storeys to provide contextually appropriate transitions from the mid- and high-rise buildings to the surrounding low-rise neighbourhoods; and

f. Provide high quality landscape treatment such as decorative fencing, trees, shrubs, grassed areas, and berming.

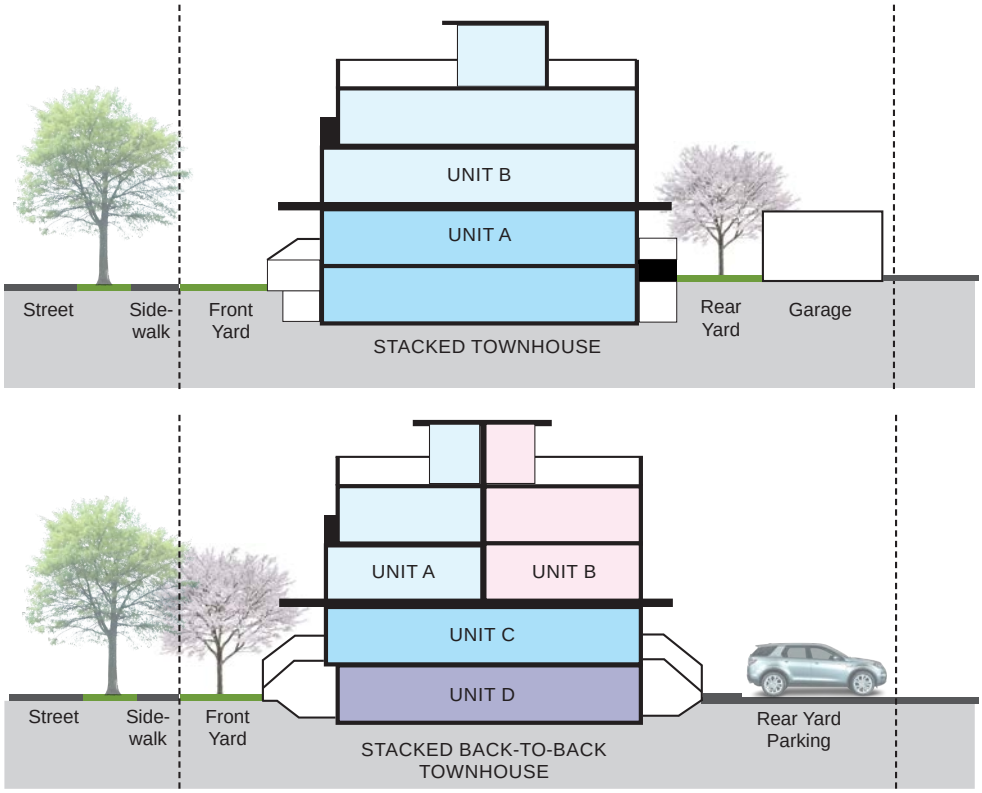
5. Angular planes can be used as a tool to evaluate the massing and height transitions of proposed developments to ensure appropriate skyview, light, and separation. Development along the Mixed-Use Corridors shall apply a minimum 45 degree rear yard angular plane measured from the abutting property line where a building transitions to an adjacent low-rise residential area.

6. Ensure new development is compatible with adjacent and neighbouring development by siting and massing new buildings to avoid undue adverse impacts on adjacent properties particularly in regard to adequate privacy conditions for residential buildings and their outdoor amenity areas.

Use of step-backs to provide appropriate transition to adjacent uses.

7. Locate and orient primary building entrances to public roads, and design to be visible and accessible to the public.

8. Screen rooftop mechanical equipment from view through architectural design that reflects the building's façade treatment. Add-on screening elements such as lattice are prohibited.



Typical sections for Stacked and Back-to-Back Stacked townhouses.

3.5.2 Typologies

3.5.2.1 Stacked and Back-to-Back Stacked Townhouses

Stacked townhouses are typically a 3 to 4 storey building of attached units which are stacked one above the other and oriented to the street.

Stacked townhouses have units stacked vertically. This can include three units located on top of each other, a two storey unit stacked on top of a one storey unit, or a two storey unit stacked on top of two storey unit. Each unit has its own entrance at grade.

Back-to-Back Stacked townhouses share a rear and side wall and are two stacked townhouses placed back-to-back.

1. Articulate the elevation of the townhouse block in a manner that provides variation between units and reinforces common characteristics that visually unites the block.
2. Use continuous and consistent architectural details and materials for the entirety of the building.
3. Limit stacked townhouse buildings to 3 to 8 units per block and the length of the townhouse block should not exceed 50 metres, unless it is essential to the architectural style of the building.
4. Locate and orient windows, decks, and balconies to limit overlook into nearby windows and amenity spaces of adjacent properties while enabling “eyes on the street” for common public areas.
5. Locate attached garages at the rear of the building to be accessed from a lane or private drive.
6. Provide underground parking for stacked back-to-back buildings with direct access to each unit.

Example of stacked townhouses with prominent entrances.

Example of a 6 storey residential building.

7. Provide prominent, well-designed and integrated building entrances such as porches, porticos, or canopies along the building frontage.

8. On corner or double-fronting sites, locate building fronts and entrances facing both streets. Buildings on corner sites require additional attention to detail to enhance the corner.

3.5.2.2 Mid-Rise and High-Rise Buildings

These buildings are multi-storey structures that contribute to complete communities, provide a mix of housing and activity, and are built at densities that improve the viability of transit.

1. Mid- and high-rise buildings may include commercial and office uses at grade and multi-unit residential above or behind. Design ground floors to be appealing to pedestrians and include uses that are more active in terms of pedestrian traffic, such as commercial/retail, personal service, and restaurant type uses on the ground floor.

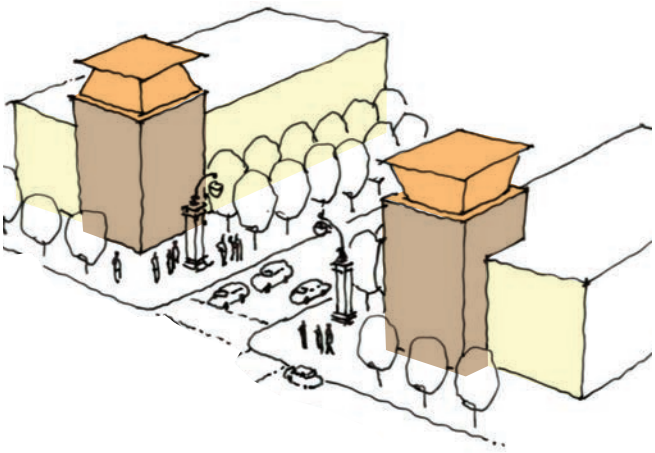
2. Provide retail and service commercial uses on the ground floors of buildings to bring animation to the street and encourage pedestrian activity. Such uses should have a minimum 4.25 metre floor-to-ceiling height.

3. Ensure residential entrances are clearly distinguished from the commercial entrances through building design and locate at the front or side of the building.

4. Balconies on all storeys above grade are encouraged.

5. Locate visitor drop off areas at the side or rear of buildings with lane or private drive access.

6. Design interior courtyards to maximize sun exposure through the massing and location of tall building elements.



Paired corner buildings to emphasize a sense of entry.

Corner building as a gateway feature.

3.5.3 Siting and Setbacks

1. Locate buildings close to the street edge to frame and animate the public realm. Where it supports a high quality public realm, new development should generally maintain and reinforce existing setbacks by aligning the base with adjacent building bases, or by placing it at the average distance between those of adjacent properties.

2. Organize and design the site (internal circulation and arrangement of structures) to reflect the urban context and fabric of the surrounding neighbourhood.

3. Provide mid-block pedestrian connections and multiple access-points to enhance visual and pedestrian permeability.

4. Include the provision of a minimum separation distance of 25 metres between high-rise buildings on the same site and a minimum tower setback of 12.5 metres from side and rear property lines. This will maximize sky views and natural sunlight, provide proper privacy, and minimize wind and shade impacts on surrounding areas.

5. Allow balconies to encroach on the 25 metre separation between buildings, while not contributing excessively to the building massing.

6. Use prominent built form to address gateways and other key locations within the community. On larger sites, create ‘paired’ corner buildings on either side of a street to emphasize a sense of entry or to distinguish one street district from another.

Parking lot with smaller courts, plantings, and decorative paving.

Underground parking garage access screened by decorative door.

3.5.4 Access, Parking and Servicing

1. Provide access to parking, servicing, and loading from the rear of the building, or a laneway, where possible. On corner sites, provide access from secondary streets provided the entrance facilities are well integrated into the rest of the frontage.

2. Encourage lane-based and/or underground parking. Where not feasible, at grade and structured parking above grade may be permitted at the back of the building, preferably lined with active uses along all public frontages.

3. Locate and screen parking, loading, utilities, and servicing areas away from the public view through a combination of soft and hard landscaping, as well as other integrated architectural elements such as walls and pergolas.

4. Facilities for handling, storing, and separating waste and recycling should be integrated into the building design and screened from public view through landscaping and architectural elements.

5. Where it is only possible to provide parking at grade, split the surface parking into small courtyards by using walkways, bicycle parking, public art, or landscaped strips.

6. Avoid vehicular site access from higher order roads. Provide access from local roads or rear lanes where possible.

7. Consolidate vehicular entrances to serve multiple buildings in order to minimize the number of interruptions to the street wall and sidewalk network. Limit the number of accesses from the same street to two.

8. Design underground/above ground parking ramps and service entrances as part of the building façade.

9. Provide long-term bicycle storage inside the building and short-term bicycle parking areas and racks close to entrances and external to the building.

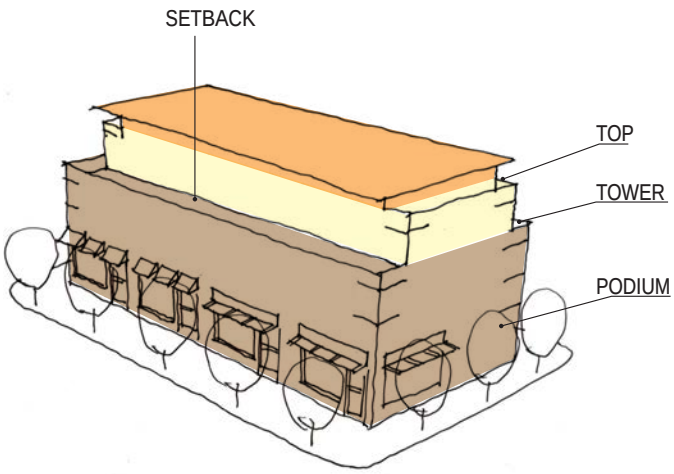


Diagram illustrating the building components of podium, tower and top.

The height of the podium on the mid-rise building should match the adjacent dwellings.

3.5.5 Building Design

3.5.5.1 Height and Massing

Mid-Rise and High-Rise buildings are generally comprised of a podium, tower, and top.

1. The height of the podium, and the tower step-backs above, should generally reflect the established streetwall. Ensure the height of the podium matches existing adjacent structures to reinforce the pedestrian scale of the streetscape.

2. Where no established streetwall exists, the minimum height of the podium shall be 3 storeys to frame the streetscape.

3. For mid- and high-rise buildings with retail or other active uses at grade, provide a minimum ground floor height of 4.25 m. Residential ground floors should be a minimum of 4.0 m in height.

4. The tower should step-back a minimum of 3 metres from the podium to differentiate between the building podium and tower and to ensure usable outdoor amenity space.

5. Consider an additional step-back for buildings taller than 8 storeys in height.

6. Provide a height transition towards adjacent existing or planned built form. Refer to Guideline 3.5.1.5 for Angular Plane application.

7. The top of the building defines the tower while further distinguishing a unique and interesting skyline. Design the top of buildings to include a variety of elements, such as step-backs, material variations, lighting, and other architectural elements to reinforce a strong presence at the top of the building.

8. Where possible, include outdoor amenity space within the top of the building, including balconies, patios, terraces, and rooftop gardens.

9. All mechanical penthouses should be designed and clad with materials that complement the main building façades.

10. Locate mechanical rooms to the centre of the building rooftop and integrate into the rooftop design so they are not visible from the public realm.

11. Avoid blank or long expansive elevations which are exposed to the public view. Where unavoidable, consider art or special wall treatments (i.e., screens, living walls, metallic or wooden textures).

12. For developments with more than one building, provide a range of heights and establish a height hierarchy related to site conditions and context.

Windows and balconies included on all elevations of the building.

Changes in exterior materials lessen the visual impact of the building.

3.5.5.2 Articulation and Architectural Features

1. To animate the public realm and promote safe environments encourage active uses at grade based on the street character (i.e., retail, commercial uses, day-care facilities, townhouses, etc).

2. Mitigate the actual and perceived impacts of mid- and high-rise buildings by breaking up the mass both vertically and horizontally through the creative incorporation of changes in materials, balcony and floor plate design, architectural features, and amenity locations.

3. Incorporate windows and balconies on all elevations, especially if exposed to public view.

4. Locate entrances strategically so they are highly visible and well connected to the public realm.

5. Provide a high level of glazing at ground level, especially for those areas related to lobbies, common/amenity areas, and non-residential uses (i.e. commercial uses).

6. Encourage weather protective design at grade and at the podium level through canopies, arcades, and cantilevers. Canopies located on the ground floor should be at least 1.5 metres deep.

3.5.5.3 Exterior Materials

1. Ensure high quality and durable materials are used on all elements and elevations of the development.

2. Select materials to complement the architecture, character, size, and style of the building, as well as the streetscape.

3. Incorporate changes in materials to visually break-up the building massing.

4. Use reflective, low intensity colours on rooftops to reduce the urban heat island effect and HVAC loads. Refer to Section 4.1 for cool roofing material and solar reflectance guidelines.

5. Minimize danger to migratory birds by:
   a. Avoiding untreated reflective glass or clear glass that reflects trees and the sky;
   b. Ensuring glass has visual markers and is not reflective within the first 12 metres of building height; and,
   c. Locating and managing lighting to reduce reflections that might confuse migratory birds.

Generous and well-designed landscaped areas to offer privacy, screening, and an attractive interface with the public realm.

3.5.6 Private Outdoor Amenity Space

Private outdoor amenity spaces can be provided in a variety of forms including front verandas on buildings where the podium is designed to incorporate townhouse units, raised terraces, roof-top decks, balconies, or a design with similar intent. Private outdoor amenity spaces should have access to sunlight, be comfortable, and designed to afford a level of privacy.

1. Provide shared space for both indoor and outdoor amenities in new multi-unit residential development.

2. Design private outdoor amenity spaces to:
   a. Have direct access to sunlight and sky view;
   b. Mitigate impacts on the public realm and neighbours through increased facing distances between buildings;
   c. Provide generous and well-designed landscaped areas to offer privacy, screening, and an attractive interface with the public realm; and,
   d. Include railing designs to increase privacy, screen items from view, and reduce risk of bird strikes.

3. Raised terraces provide an entrance to only one unit. Provide privacy with planting and architectural elements and translucent or solid railings.

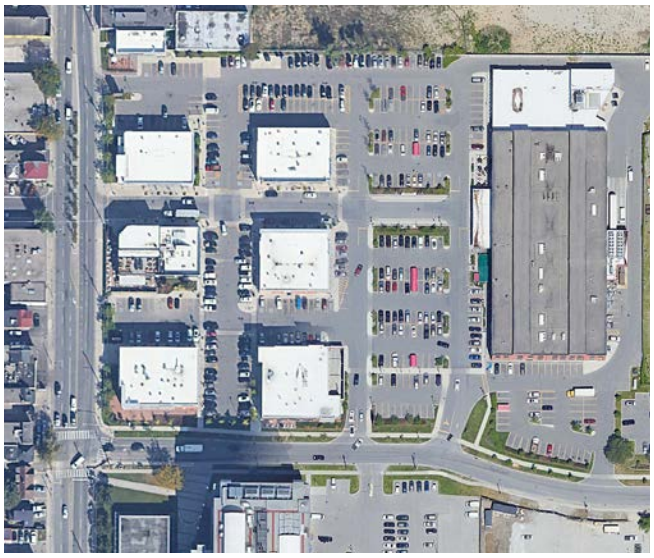
4. Raised terraces are raised a minimum of 0.6 metres and a maximum of 1.2 metres.

5. Design roof top private amenity spaces to limit overlook into the adjacent neighbourhood:

6. Design roof top terraces with parapets and solid or translucent railings.

7. Inset balconies or partially inset to offer greater privacy and shelter from wind, reduce the building bulk, and minimize the impact of shadow on other amenity spaces below.

8. Limit the size and avoid continuous projecting balconies, especially on residential streets, or when a private outdoor amenity space, pedestrian mews, and/or landscaped walkway is located below.



A pedestrian-scaled, permeable and connected internal layout

Corner buildings address both sides of the street with windows, signage, lighting, and a continuation of public walkways.

3.6 Commercial and Mixed-Use Buildings

In Area 2, commercial and mixed-use development is directed to the Mixed-Use Corridors along London Line, Confederation Line, and internal Arterials and Collectors.

New and redeveloped commercial and mixed-use buildings should be designed to frame the street edge, provide clear pedestrian access, and create gathering spaces such as patios, in order to foster a greater sense of place.

Mixed-use buildings contain retail or office at ground level and residential and/or office above. These buildings contribute to a vibrant, pedestrian friendly streetscape with active uses at grade.

3.6.1 Building Design

3.6.1.1 Building Placement and Orientation

Building placement refers to the location of the building in relation to the street. The orientation and placement of buildings along the street can help to reinforce the public realm by enhancing the pedestrian environment and creating a sense of enclosure. Key guidelines for the orientation and placement of buildings include:

1. Use mixed-use buildings and smaller scale retail and commercial stores to frame the street with a consistent building setback.
2. Ensure the siting and massing of buildings provides a consistent relationship, continuity, and enclosure to adjacent public roads. A pedestrian-scaled, permeable, and connected internal layout (block and street pattern) creates comfortable and protected pedestrian spaces that have a sense of enclosure.
3. At key corner sites, sidewalk cafes, kiosks, and street vendors are encouraged, and larger setbacks may be permitted. The area within the front yard setback should be hardscaped with paving for extension into the sidewalk.
4. Ensure buildings located adjacent to, or at the edge of parks or urban greens provide opportunities for overlook into the public space with windows and doors. The massing, siting, and scale of these buildings should create a degree of enclosure or definition appropriate to the type of open space they enclose.
5. Ensure primary entrances to buildings are clearly visible and located on a public road or onto a public open space for reasons of public safety and convenience. Secondary doors, such as those that face the parking area, emergency exits, and service doors should be designed to blend in with the building façade.

Primary entrances located along the street frontage.

Articulation of the facade with a variety of materials and offsets.

6. Ensure access to primary building entrances from sidewalks and public open space areas are illuminated, convenient, and direct with minimum changes in grade.

7. No parking, driveways, or lanes should be located between the buildings and the street. Exceptions may be granted for large buildings on large sites with multiple buildings where the larger buildings are be situated to the interior of the block with smaller buildings facing the street.

8. Locate patios along primary streets in areas that maximize sun exposure and effectively animate the public realm.

9. Provide accessible and secure bicycle racks and parking at retail, commercial, and employment developments, as well as at other key locations to support active transportation.

3.6.1.2 Building Articulation, Massing, and Architecture

The aesthetic qualities of the building, it's façade, roof line, windows, and access points are all vital factors in how the public perceive a building and how that building impacts their experience of the street.

1. Divide building frontages that exceed 12 metres in width into functionally and visually smaller units through the use of façade articulation, internal courtyards, and networks of connected walkways and landscaping.

2. Articulate large walls visible from the street through various treatments such as offsets in massing, and façade and fenestration treatments.

3. For stand-alone commercial uses, minimize the building footprint by providing a multi-storey building in order to deliver compact form and conserve land.

4. Ensure a high level of architectural quality for the façade of buildings located at corner sites along Arterial and Collector Roads.

5. Design sites with multiple buildings to reflect a consistent architectural theme. Similar building elements could include colours, materials, signage, and the base and top of buildings.

Awnings, canopies, and signage provide shade and weather protection for pedestrians.

6. Ensure consistent high quality building design and architectural elements on all building elevations, particularly on façades in public view or backing onto residential properties.

7. Establish a rhythm of minor breaks or articulation along the façade, distinguishing one unit (retail or residential) or building component from the next.

8. Incorporate architectural elements to enhance the pedestrian environment such as canopies, overhangs, awnings, projecting display windows, architectural arcades, and colonnades. These elements should be designed as integral parts of the building in terms of form, style, material, and colour.

9. Steps and ramps should be architecturally incorporated into the building entrance.

10. Incorporate garbage and recycling storage bins that can be accessed for pick up into the principal building design. Food waste shall always be stored in climate controlled rooms.

3.6.1.3 Drive-Throughs

Drive through facilities must contribute to an attractive streetscape and demonstrate that they do not adversely affect the character of the existing and planned streetscape, do not impact views and sightlines, or compromise the safe and efficient movement of pedestrians and cyclists.

1. Design drive through sites and buildings to:
    a. Locate buildings close to or at the streetline to define and support the street edge and facilitate pedestrian activity and access;

    b. Align new buildings with the front façades of existing buildings;

    c. Ensure an appropriate transition in setback from existing and adjacent buildings along the street;

    d. Locate the main entrance directly off the public sidewalk;

    e. Ensure walls visible from the street are transparent with windows, doors, and other forms of transparent building materials to maximize views in and out of the building enhancing the relationship between interior and exterior to support and animate the public street and sidewalk;

Patios along the ground floor animate the streetscape.

f. Provide vehicular access and stacking lanes along the side or the rear of the building away from adjacent residential uses, streetscapes, and open spaces. Do not locate stacking lanes or driveways between the building and the street;

g. Provide parking adjacent to the secondary entrance to the facility so it is not necessary for pedestrians who arrive by car to cross driveways or stacking lanes to enter the building;

h. Locate utilities and service components such as transformers, loading, and garbage pick up at the rear or flank of the building out of view from the street and other public areas; and,

i. Provide sufficient signage where necessary to indicate direction of vehicular travel, stop signs, or no entrance areas.

3.6.1.4 Storefronts

1. Provide retail and service commercial uses on the ground floors of buildings to bring animation to the street and encourage pedestrian activity. The floor-to-ceiling height of ground floors for all new buildings shall be at least 4.25 metres.

2. Locate entrances to stores and the ground floor of live-work units at grade and design to be universally accessible, highly visible, and clearly articulated.

3. Provide spill-out space around the base of buildings for uses such as patios, street furniture, and special events.

4. Where retail uses are provided at-grade, ensure a significant amount of the building frontage on the ground floor and at building base levels is glass to allow views of the indoor uses and create visual interest for pedestrians. Clear glass is preferred to promote the highest level of visibility.

5. Provide awnings or canopies above windows and doors for weather protection.

Lighting is directed at the sign and complements the design of the building.

Hanging signs encroach over the streetline.

Lowered parking surfaces and landscaped buffers help screen parking areas from street view.

3.6.1.5 Signage

1. Integrate signage in the building design and ensure it complements the building's elevation, animates the ground level, and enhances the streetscape.

2. Design signage to be consistent with respect to materials, size, location (on a building), lettering and lighting, while also allowing some flexibility for tenant branding.

3. Ensure signage lighting design complements the design of the building.

4. Direct signage lighting to limit light trespass to surrounding properties and to prevent light pollution.

5. Signage should add diversity and interest to the street and not overwhelm either the storefront or streetscape. Design building signage to be compatible and complement the architecture of the building in its scale, material, consistency and design.

6. Projecting or hanging signs should be permitted to encroach over the streetline provided that they do not project more than 1.0 metre from the building. There should be a minimum 2.4 metre clearance between the bottom of the sign and grade.

3.6.2 Parking

1. Provide a variety of parking options, including on-street parking, underground parking, structured, and screened at-rear parking courtyards. Avoid the use of large surface parking areas, where possible.

2. Locate parking areas away from the street frontage, at the rear or sides of the principal building.

3. Screen surface parking lots from roads, open spaces, and adjacent residential areas with the use of buildings, low fencing, architectural features, landscaping, berms, or other mitigating design measures, such as lowered parking surfaces with landscaped buffers.

4. Design surface parking to minimize environmental impacts by reducing the parking area size, considering shared parking facilities with adjacent buildings, and providing preferential parking for fuel efficient vehicles.

5. Break large parking areas into smaller courts by providing walkways at a minimum interval of 8 rows of parking. Locate walkways flanking a lane or between 2 parking rows.

Landscaped islands, pedestrian walkways with distinct paving, lighting, and plantings provide safe crossing through the parking lot.

6. Ensure pedestrian walkways and landscaping in surface parking areas along primary vehicular routes are safe, barrier free, and direct movement to principal building entrances and the sidewalk. Design walkways with a minimum width of 1.8 metres.

7. Where walkways cross drive aisles, they should be differentiated from the driving surface through the use of surface materials and colour.

8. Use landscaping to break up parking areas and to assist with reducing the urban heat island effect. Landscaped islands should have a minimum width of 2.5 metres.

9. Consider above or below grade parking structures, where possible and feasible, in efforts to conserve land, promote compact development, and reduce the urban heat island effect.

10. Incorporate active uses at-grade for above grade parking structures facing onto any Arterial or Collector Road, where possible.

11. Where above grade parking structures abut a road, minimize the visual impact of the building through screening or by treating the building face like an occupied building through architectural features and material compatible with adjacent façades.

3.6.3 Servicing, Storage + Loading

Servicing, utility, storage, and loading are necessary components of all building sites. These areas need to be functional and easily accessible and their visual impact minimized through location and screening.

1. Coordinate, consolidate, and integrate loading docks, service areas, and storage within the building envelope, where possible.

2. Fully screen and locate loading, service, and storage areas away from public view. These facilities should be located in the rear or side yards away from residential uses, major roads, and open space areas. Where possible, integrate these functions within buildings.

3. Ensure that waste collection vehicles have ample room to maneuver at the site planning stage to ensure that these functions do not spill over into either the public right-of-way or public spaces.

4. Provide access to servicing and loading areas from secondary streets or rear laneways. Include design treatments to minimize impact and improve safety for pedestrians and cyclists crossing these areas.

5. Locate all utilities underground. Where components of utilities must be located above ground, utility providers are encouraged to consider innovative methods of containing utility services on or within streetscape features.

6. For all restaurant uses, cooking ventilation systems, incorporate ecologizer, water wash, ultraviolet, or other equivalent odour extraction mechanisms that are sufficient to ensure that the resulting exhaust is substantially odour free and will not affect surrounding residents.

7. Integrate facilities for the handling, storing, and separating of waste and recycling in the building design.

8. Ensure waste facilities within an external structure are consistent in design, colour, and materials to the main building and are not in a prominent location.

Example of a parking lot that incorporates planting strips for as a stormwater management strategy.

3.7 Employment Areas

Employment Areas may include a wide variety of uses, including offices, research and development, warehouses, and manufacturing uses. Industrial buildings should be sited to define the street edge, limit nuisance effects from industrial operations, employ a high quality of design, and facilitate active transportation and public transit access.

1. Gateway employment sites are highly visible sites within employment areas. Design gateway employment sites with entry features and identifiable architectural features, such as towers, enhanced elevation treatments, unique massing or roofing lines, a multi-storey presence, or other prominent architectural forms to help identify an area as employment lands.

2. If there are multiple buildings on one site, provide a coordinated architectural treatment to develop overall site harmony. Provide differentiating characteristics, particularly at building entrances.

3. Avoid long stretches of monotonous building façades or 'blank walls'. Building articulation and material and colour changes should be the primary means to create interest on long expanses of walls.

4. Industrial uses may provide less decorative façade materials for non-street frontages, such as concrete and metal siding; provided the front façade material does not transition at the corner, and is wrapped around to the sides.

5. For accessory buildings, provide compatible and complimentary design, colour, and materials to the main building.

6. Provide outdoor amenity areas, such as courtyards, patios, and seating areas in desirable areas, such as facing public streets or natural heritage features, and define with building façades, architectural features, fencing, and/or landscaping.

7. Ensure parking lots are configured, designed, and landscaped as well defined areas linked to a particular building with safe and convenient pedestrian ways; and, with no more parking stalls than is necessary to comply with the Zoning By-law.

8. Integrate stormwater facilities for large parking lots into the parking area and design as aesthetic landscape features such as planting strips between parking rows, where feasible.

Use of vegetated screening as a visual buffer.

Bicycle parking in employment areas to support active transportation.

9. Provide pedestrian walkways to connect industrial buildings to on-site parking areas and amenity areas, to public sidewalks and transit stops, and to adjacent sites with convenient destinations (e.g., ancillary commercial uses).

10. Where permitted, ensure that outdoor storage only occurs within physically-defined areas, is screened with appropriate fencing, walls, or landscaping, and that all materials in an outside storage area are stored on an impermeable surface to prevent adverse impact on site drainage and stormwater management facilities.

11. Where practical, vehicular access to parking areas between adjacent properties should be shared, to reduce the extent of interruption along the sidewalk and the streetscape.

12. Provide specifically designated areas for uses such as service entrances, delivery and sorting, temporary storage, garbage and recycling, outdoor storage, outdoor work areas, and other similar uses. These shall be:
    a. Located behind buildings;
    b. Appropriately sized for the intended use; and,
    c. Screened from public areas and residential uses to reduce visual, or sound impacts on adjacent uses.

13. Ensure that service areas have adequate space for maneuvering and allow for efficient operation. Vehicle movements in and around service areas should not conflict with adjacent parking areas.

14. Ensure truck maneuvering, circulation, and queuing lanes are signed, and marked accordingly on the pavement.

15. Provide sufficient on site truck queuing areas as necessary for the expected number of trucks. Locate behind buildings and screen, as practical.

16. Ensure loading and delivery areas are not located in a required setback area.

17. Construct waste and recycling enclosures to be compatible with the project architecture and materials, built to house sufficiently sized bins for the intended use, and designed with a wall height that is sufficient to completely conceal bins.

18. Use berms in landscape strips to minimize views/ noise from adjacent uses, parking, loading, and service areas.

19. Provide accessible and secure bike racks and parking at employment area developments to promote purposeful cycling.

Example of the use of architectural features to denote landmark community facilities.

3.8 Institutional and Community Services

Institutional buildings provide important opportunities for place-making and landmarking. With distinct architecture and high quality public spaces, and the potential to co-locate and share facilities, these sites can become hubs of activity and focal points for social interaction, gathering, and civic events.

Careful attention must be paid to the design of these structures to ensure they reflect the built quality and scale of the surrounding neighbourhood.

3.8.1 General Guidelines

1. Site institutional buildings prominently and where possible, to terminate views. Ensure buildings are sited to specifically differ from the surrounding urban fabric in order to emphasize their importance as landmarks.

2. Locate institutional buildings in community hubs to promote cost-effectiveness and facilitate service integration and access to transit.

3. Locate institutional buildings close to the road to reinforce the street wall and define intersections.

4. Ensure institutional buildings have direct access from the surrounding community through a comprehensive and connected active transportation network with linked trails and parks.

5. Ensure the site is well landscaped and visible at the pedestrian level.

6. Locate vehicular parking at the side or rear of the building. Parking for cyclists should be located near building entrances and where visual surveillance can be maximized.

7. Provide drop-off areas for buses and cars in the public right-of-way where possible, but when located on site they should be at the side, and not the front of the building.

8. Ensure institutional buildings contribute to the creation of compact neighbourhoods through multi-storey buildings in order to maximize the site and services, minimize building footprint, as well as contribute to an urban street condition.

9. Ensure the site and building incorporates accessibly for all individuals of varying ages and abilities.

The building is located close to the road to frame the street edge.

Plantings and consistent materials along the building facade.

3.8.2 Building Design

1. Design institutional buildings as special landmark buildings with high quality architectural design, materials, and finishes.

2. Respond to the local context and site conditions when siting buildings. Where applicable, design buildings to respond to the site's topography.

3. Locate the most active portions of the buildings facing higher order streets. Locate large portions of buildings such as gymnasiums or auditoriums to the sides, rear, or interior of buildings.

4. Incorporate architectural elements such as massing and special features to terminate important views and vistas.

5. Ensure highly articulated façade design for all elevations exposed to public view. This includes changes in plane and materials, fenestration, projections, relief, and horizontal and vertical elements. Blank, uninterrupted walls shall be avoided.

6. For buildings located at corners, design elevations to equally address the two street frontages. Additionally, use prominent massing, height, architectural elements and detailing to emphasize these locations.

7. Provide integrated weather protection elements at main entrances and ensure they complement the building's design.

8. Provide a sufficiently sized gathering space designed as an outdoor amenity space for institutional buildings where significant numbers of people are expected to gather or wait outside the main entrance.

9. Ensure the front door of all institutional buildingsare connected by a walkway to the sidewalk and have direct access to transit stops.

10. Coordinate building materials and ensure they reflect, complement, and enhance the building's architectural style and detailing.

11. Ensure the design of ancillary buildings and structures is coordinated with that of the principal building in terms of height, massing, architectural details, signage, materials, and colours.

Green roofs reduce surface run-off on buildings.

12. Provide a high level of visual transparency and permeability at eye level for lobbies by using windows and prominent entrances.

13. Utilize daylighting strategies, such as building orientation, uniform windows across the façade, or skylights to capture natural light and reduce the need for electric lights during the day.

14. Consider roof forms other than flat roofs to respond to the context and character of the neighbourhood, particularly where there is a heritage context, and to highlight the nature of the public or institutional building.

15. Where flat roofs are used, incorporate cool roofs and/or green roofs in the design of the building to minimize surface runoff, reduce the urban heat island effect, provide noise insulation, and improve local air quality. See Guidelines under Section 4.1.

16. Screen rooftop mechanical equipment with materials that are complementary to the building.

17. Integrate signage within the building design and ensure it complements the building's elevation, animates the ground level, and enhances the streetscape.

18. Direct signage lighting to limit light trespass to surrounding properties and downcast to prevent light pollution.

19. Ensure signage provides a high level of clarity, visibility, and visual interest, and should aid pedestrians and drivers in navigating the area, especially at night.

Parking is located to the rear of the building off the main road and the front entrance to the building is directly connected to the public sidewalk.

3.8.3 School Sites

1. Minimize the land area required for school sites in order to promote compact development and conserve land. School Boards are encouraged to build more compact facilities including three storey elementary schools and buildings located close to the street.

2. Where possible, locate elementary school sites adjacent to a neighbourhood park to allow for the sharing of playfields to promote compact development and minimize land area requirements. Explore the use of appropriate and innovative engineered turf material to increase the durability of the playfields and minimize maintenance requirements.

3. Consider shared parking lots for elementary school sites with neighbourhood parks, and secondary school sites with community parks, in order to reduce the number of parking requirements. Locate and site the shared parking lot to facilitate easy and safe access by students.

4. Consider maximizing the opportunity for using the natural heritage system for passive open space uses, such as trails and trail heads, for school sites located adjacent to the natural heritage system.

5. Provide direct pedestrian and cycling routes to school sites from all parts of the surrounding community that are linked with the active transportation network.

6. Design schools to ensure safe pedestrian crossing and cycling practices. Whenever possible, ensure students are able to easily reach building entrances without crossing bus zones, parking entrances, and student drop-off areas.

7. Design school sites to provide for visitor parking and bus pick-up and drop-off for automobiles and buses on site. For smaller sites, consider demarcated bays in the adjacent Collector Road right of way.

8. Locate parking at the rear or to the side of the principal building. Circulation in front yards should be limited to drop-off zones, and clear sight lines should be preserved to the street.

Example of a fire station with prominent architectural features. *Source: City of Sarnia*

3.8.4 Fire Stations

1. Locate fire stations in a prominent and visible location with convenient access to an Arterial or Collector Road.

2. Ensure fire stations have a close relationship to the intended service area by integrating with the surrounding development, through appropriate architectural design, landscaping, and buffering from residential buildings.

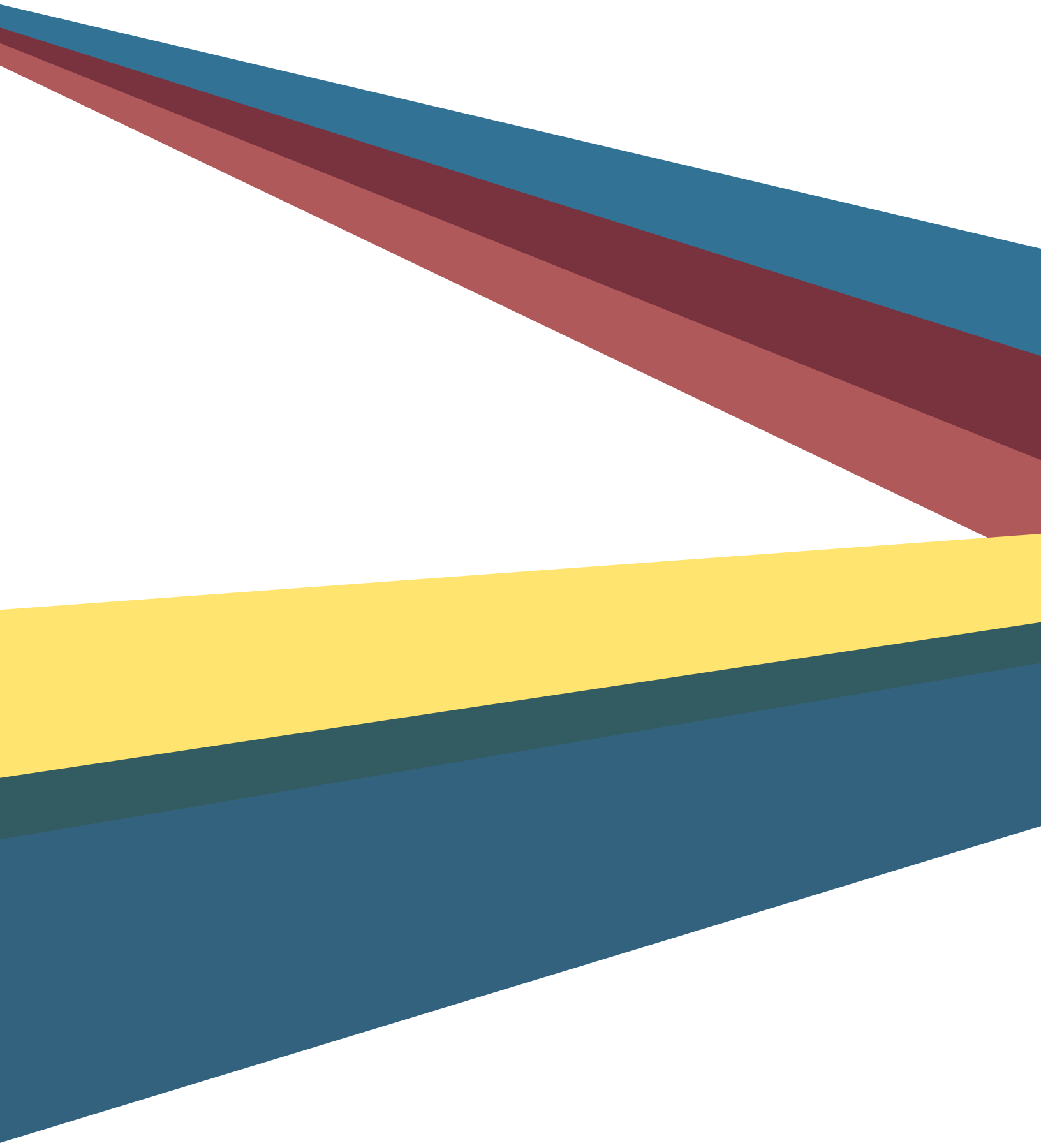
3.8.5 Places of Worship

1. Locate Places of Worship on Arterial or Collector Roads along public transit routes in order to maximize transit ridership.

2. Consider the joint use of parking areas with adjacent uses in order to reduce land requirements and promote compact development, especially in mixed use areas.

3. Ensure the massing and scale of the building is compatible with the character of adjacent development, especially within low-rise areas through the use of similar setbacks, material selection, and the use of architectural elements.

4. Provide buffering, including visual screening, planting and/or fencing, between the place of worship use and any adjacent residential uses.



4.0 sustainable buildings + infrastructure

4. SUSTAINABLE BUILDINGS + INFRASTRUCTURE

Wind turbines on the roof of an office building.

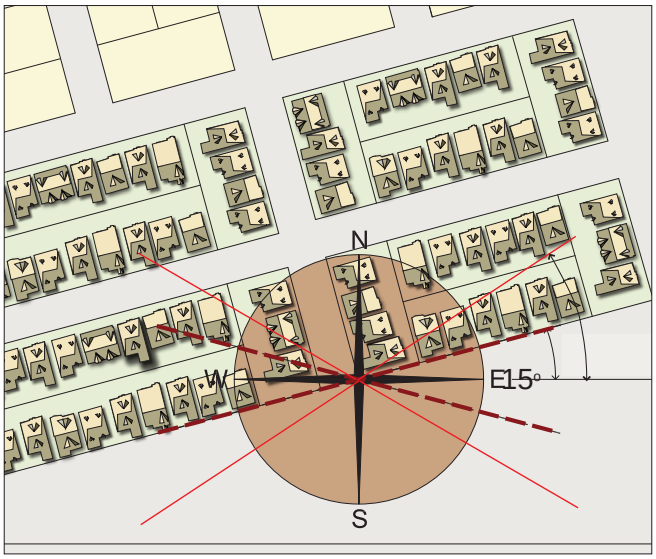
Solar canopies in surface parking lots.

While sustainability is an overarching objective throughout the UDG, this section provides guidance on green infrastructure and building practices and helps achieve the broad sustainability principles of the Official Plan.

Development in Area 2 should incorporate sustainable design to:

- Protect and enhance local and regional ecosystems and biological diversity.
- Promote the responsible use of resources to ensure long-term sustainability, reduce greenhouse gas emissions, and reduce demands for energy, water, and waste systems.
- Demonstrate leadership in sustainable forms of green building design and technology, including the incorporation of renewable and alternative energy sources.
- Promote innovative residential and public building designs that contribute to energy reduction and natural resource conservation, green roofs, synergies between buildings, and site management practices.
- Protect the urban forest and the tree canopy and identify objectives for how it can be enhanced and expanded.
- Support opportunities for best management practices for stormwater to protect against flooding and erosion while improving water quality.

As part of the strategy to support a high level of sustainability within Area 2, the Sustainable Buildings and Infrastructure guidelines apply to both the private and public realm.



To maximize passive solar orientation the street and block alignment should be designed within 15 degrees of geographic east-west.

Solar panels on the roof of low-rise development.

4.1 Energy Conservation

Energy conservation refers to minimizing energy consumption by generating or using less energy. It can also play a significant role of lessening climate change by replacing non-renewable resources with renewable energy.

1. Where feasible, consider alternative community energy systems such as district energy, geo-exchange, sewer heat recovery, and/or inter-seasonal thermal energy.

2. Consider reducing demand for energy from the grid and encourage renewable energy production. Renewable energy sources that could be employed may include the use of solar thermal and photovoltaic equipment or wind power. Proposed alternative energy sources could be used in combination with energy from the grid.

3. Encourage passive solar building orientation to permit enhanced energy efficiencies by creating optimum conditions for the use of passive and active solar strategies. The integration of passive building systems is enhanced with buildings oriented to maximize the potential for sunlight and natural ventilation.

4. Where feasible, implement street and block alignment within 15 degrees of geographic east-west to maximize passive solar orientation of buildings front and rear windows.

5. Consider constructing all low and mid-rise residential buildings to be Solar Ready. Being Solar Ready means built with all the necessary piping and equipment that would be needed to install a rooftop solar power system.

6. Reduce heat absorption through the use of cool roofs that are designed to reflect more sunlight and absorb less heat than a standard roof. Cool roofs can be made of a highly reflective type of paint, a sheet covering, or highly reflective tiles or shingles. Consider cool roofing material with a minimum initial solar reflectance of 0.65 and minimum thermal emittance of 0.90.

7. For a low sloped roof, typical of commercial and institutional buildings, the cool roof Solar Reflectance Index (SRI) value should be 64 and for steep sloped roofs, typical of residential, the SRI value should be 15.

Light coloured pavers assist with the reduction of the urban heat island effect.

Charging stations for electric vehicles in mixed use areas.

8. Green roofs are encouraged for high-rise residential, office, employment, and public institutional buildings to minimize surface runoff, reduce the urban heat island effect, provide noise insulation, and improve local air quality.

9. Provide green roofs for 80% of all high density development. In high-rise residential buildings, design roofs as amenity areas.

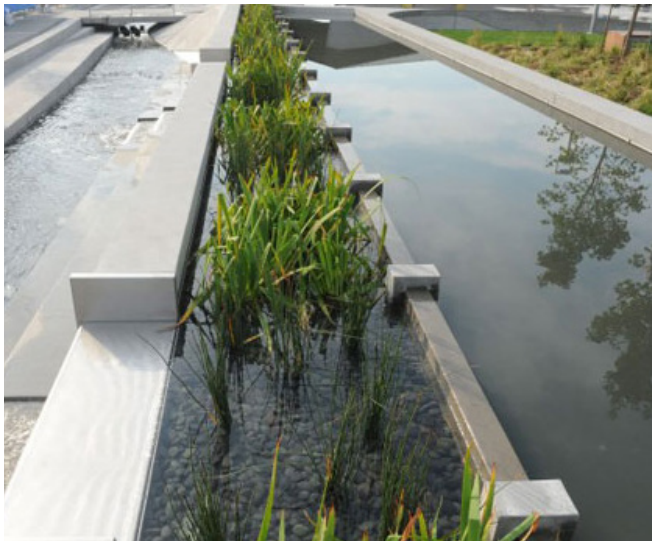
10. Encourage community and public buildings to install green roofs with 50% coverage with the remainder of the roof covered with light coloured material.

11. Mitigate the urban heat island effect through the installation of light-coloured paving materials including white concrete, grey concrete, open pavers, and any material with a solar reflectance index of at least 28. Consider light-colored material for development with hardscape or paved surfaces in the Mixed-Use Corridors, including parking areas, pedestrian walkways, and urban squares.

12. Consider paving driveways for grade related residential dwellings with light-coloured material to assist with reducing the urban heat island effect.

13. Implement the strategic use of deciduous trees or preserve existing trees to help with evapotranspiration and the shading of sidewalks and hard surface areas in the summer and solar access in the winter.

14. Charging stations that would supply electricity for electric vehicles are encouraged. Provide charging stations in parking areas of mixed-use, office, institutional, or employment uses, or within underground garages for multi-unit residential buildings, where feasible.



Example of an innovative stormwater management facility.

Bioretention planters assist with street greening and have stormwater management benefit.

4.2 Water Use and Management

1. In order to promote water conservation, all new developments are encouraged to:
   a. Achieve 10% greater water efficiency than the Ontario Building Code and to encourage through appropriate incentive programs, 20% greater water efficiency than the Ontario Building Code;
   b. Restrict the use of potable water for outdoor watering;
   c. Consider the use of water efficient and drought resistant plant materials in parks, along streetscapes, and in public and private landscaping;
   d. Avoid use of turf grass areas, and when required, install drought resistant sod;
   e. Increase topsoil depths and provide soil scarification;
   f. Utilize native species; and
   g. Reduce the impact caused by new development on the natural hydrological cycle by installing permeable or porous driveway and parking lot surfaces.

2. Encourage the implementation of Low Impact Development standards that emphasize the use of bioswales, innovative stormwater practices, constructed wetlands, at-source infiltration, greywater re-use systems, and alternative filtration systems such as treatment trains.

3. Consider the following strategies for stormwater retention and run-off:
   a. Retain stormwater on-site through rainwater harvesting, on-site infiltration, and evapotranspiration;
   b. Direct flow to landscaped areas and minimize the use of hard surfaces in order to reduce the volume of run-off into the storm drainage system;
   c. Store snow piles away from drainage courses, storm drain inlets, and planted areas; and
   d. Use infiltration trenches, dry swales and naturalized bioswales adjacent to parking areas to improve on-site infiltration.

4. Stormwater management quality control devices which require frequent operation or maintenance such as Oil Grit Separators are discouraged within the public right-of-way.

5. Introduce green infrastructure, such as bioswales or bio-retention planters, within the public right-of-way to enhance ground water infiltration and improve water quality as part of a comprehensive water management plan.

Landscaped island with a bioswale to filter run-off from the parking lot.

Collect, store, and distribute rainwater in underground storage tanks.

6. Consider the use of permeable or porous pavement instead of standard asphalt and concrete for surfacing sidewalks, driveways, parking areas, and road surfaces, as a stormwater run-off management strategy.

7. Consider the inclusion of third pipe greywater systems and rain water harvesting for watering lawns and gardening, to reduce demand on potable water use;

8. Implement a rainwater harvesting program to provide the passive irrigation of public and private greenspace, including absorbent landscaping, cisterns, rain barrels, underground storage tanks, infiltration trenches, etc.

9. Consider the installation of subsurface basins below parking lots to enable stormwater to be stored and absorbed slowly into surrounding soils.

10. Where feasible, implement curb cuts along sidewalks and driveways to allow water to flow onto planted zones or infiltration basins.

11. Implement xeriscaping using native, drought-tolerant plants as a cost-effective landscape method to conserve water and other resources on a residential and community-wide level.

4.3 Material Resources and Solid Waste

1. Consider the use of recycled/reclaimed materials for new infrastructure including roadways, parking lots, sidewalks, unit pavings, curbs, water retention tanks and vaults, stormwater management facilities, sanitary sewers, and/or water pipes.

2. Reduce waste volumes through the provision of recycling/reuse stations, drop-off points for potentially hazardous waste, and centralized composting stations.

3. In large buildings, such as multi-unit residential buildings and institutional or public buildings, provide on-site recycling facilities for handling, storing, and separating of recyclables.

4. Recycle and/or salvage at least 50% of nonhazardous construction and demolition debris and locate a designated area for recyclable materials on site during construction.

5. Where possible, source materials from certified local businesses.

Urban agriculture supports sustainable local food production.

4.4 Urban Agriculture

Urban agriculture provides the opportunity for an alternative use of green space and as a transition in land uses such as community gardens and traditional farm areas at community peripheries.

1. Promote initiatives such as sustainable food production practices as a component of a new development. Development plans and building designs shall incorporate opportunities for local food production through:
   - Community gardens;
   - Edible landscapes;
   - Small scale food processing, such as community kitchens, food co-ops, and community food centres;
   - Food-related home occupations/industries;
   - Small and medium scaled food retailers; and,
   - Local market space (i.e., a farmer's market).

2. Incorporate urban agriculture as part of a neighbourhoods character and open space system, while also providing a transitional use between the natural and built environments. Measures to protect natural features must be considered.

4.5 Stewardship and Education

For new development in Area 2 the following should be considered to support homeowner education and stewardship.

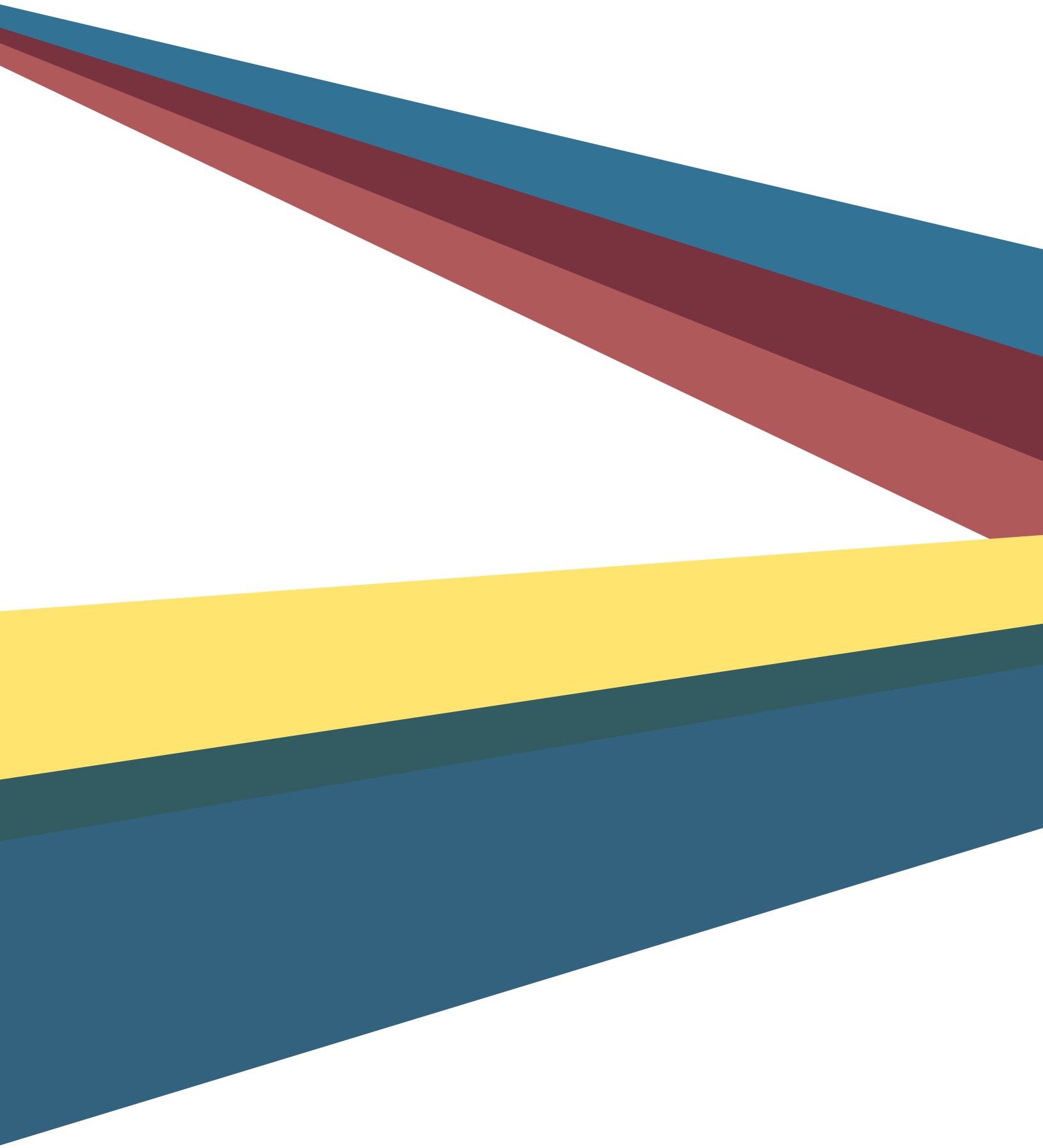
1. Create a Homebuyer's Environmental Instruction Guide that explains the unique environmental aspects of the development and special maintenance considerations.

2. Include an owner/tenant education package at the time of purchase or rental regarding activities to improve energy and water efficiency, access to transit, location of recycling station, etc. Coordinate with existing City and County information.

3. Include environmental builder specifications in all subcontracts.

4. Produce detailed sales and promotion materials that feature the conservation aspects of the development.

5. Develop subdivision covenants that establish ground rules for the maintenance of shared open lands and individual lots.



A Appendix

urban design brief terms of reference

Purpose

An Urban Design Brief may be required to support a development proposal as part of a complete development application, such as an Official Plan Amendment, Zoning By-law Amendment, Draft Plan of Subdivision/Condominium, and/or Site Plan Control Application. This requirement will be identified by Planning Staff at the Pre-Consultation meeting.

An Urban Design Brief is intended to describe and illustrate the proposed design for a development proposal and demonstrate how the design meets the intent of Area 2's Urban Design Guidelines and other City guidelines, standards, and policies.

Planning Staff will use the Urban Design Brief to assess the urban design aspects of development applications to ensure high quality design is achieved in the public and private realms. The City is committed to urban design excellence that results in a complete, functional, sustainable, and attractive built environments consistent with Sarnia's character and vision for the future, as outlined in the City's Official Plan.

The Urban Design Brief Terms of Reference has been prepared to standardize the City's expectation for Urban Design Brief submissions. The scope and level of detail expected in the Urban Design Brief will depend on the scale, site, nature, and complexity of the development proposal.

Components of an Urban Design Brief

1.0 Existing Site Conditions and Surrounding Context

The Urban Design Brief should provide a description and analysis of the site and surrounding context. Photographs and a context map showing the subject site in relation to the existing neighbourhood should be included.

2.0 Applicable Design Guidelines and Policies

The Urban Design Brief should identify relevant urban design guidelines, policies, and standards from the following documents that are applicable to the proposed development:

- City of Sarnia Official Plan
- Area 2 Urban Design Guidelines
- Applicable City guidelines and standards

3.0 Project Design Analysis

The Urban Design Brief should provide an analysis of the design rationale for the building, landscape, and site design elements of the proposed development and explain why the proposed development represents the optimum design solution. Discussion should consider the following:

- How the design of the proposed development meets the intent of the City's applicable urban design guidelines and policies;
- How the design of the proposal meets sustainable design considerations;
- How the design addresses existing site conditions and constraints such as lot size, grading, or natural heritage features;
- How the proposed development is compatible with the surrounding context;
- How the design of the proposed development integrates with the existing neighbourhood and enhances its function and aesthetics; and,
- How the design of the proposed development will influence and integrate with future development in the neighbourhood.

4.0 Design Considerations

The Urban Design Brief should include a written description, plans, elevations, diagrams, and/or photographs to illustrate the design choices of the proposed development and site design. Depending on the scale of the development proposal explain how the following applicable design considerations have been addressed:

- Street and block pattern (e.g., connectivity, pedestrian access);
- Lot sizes;
- Building orientation and site layout;
- Built form, height, scale, and massing;
- Building articulation and detailing;
- Building materials;
- Setbacks from adjacent properties and the street;
- Building step back (if applicable);
- Building transition to adjacent neighbourhoods;
- Heritage considerations (if applicable);
- Location of parking (surface or underground), driveways, ramps, drop-off areas;
- Access to transit;
- Bicycle parking/storage;
- Location of servicing, garbage, organics, and recycling storage and collection, and loading areas;
- Streetscape elements (e.g., boulevard design, landscaping, street furniture, public art, signage, lighting, etc.); and,
- On-site landscaping and buffering.