Clarington

Municipality of Clarington
Soper Hills Secondary Plan

Urban Design and Sustainability Guidelines

May 2026





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GUIDELINE STRUCTURE

The document is organized as a series of guidelines along with detailed guidance to assist designers in achieving that objective. It is intended that creativity and sensitivity to context should be encouraged to achieve the intent of each guideline with consideration of alternative approaches on a case-by-case basis where it can be demonstrated that the objective is being met.

SECTION 1 – Introduction	
SECTION 2 – Community Structure	
SECTION 3 – Streets and Blocks	
SECTION 4 – Built Environment	
SECTION 5 – Mobility	
SECTION 6 – Natural Environment	
SECTION 7 – Green Infrastructure and Buildings	

1 INTRODUCTION

The Soper Hills Secondary Plan Study Area is a 193 hectare (ha) area on the east side of Bowmanville in the Municipality of Clarington. It is generally bound by Regional Highway 2 to the south, Lambs Road to the west, the Canadian Pacific Railway to the north and Providence Road and its unopened road allowance to the east.

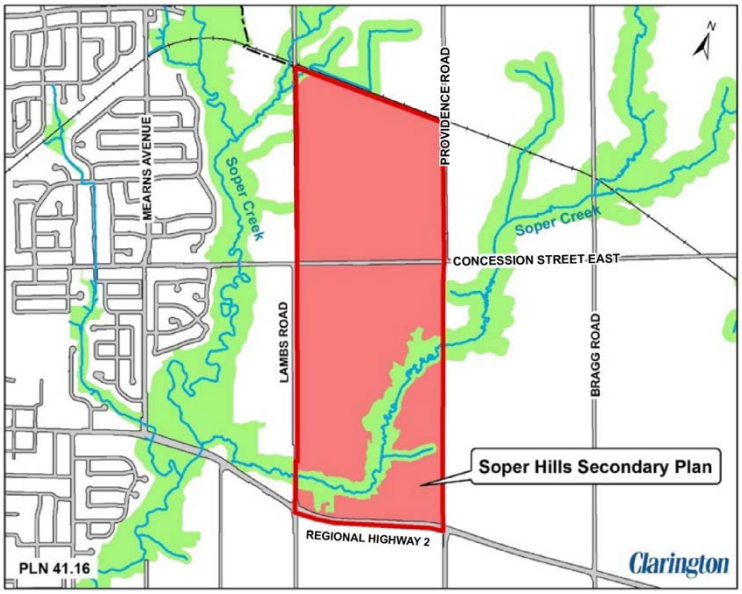


Figure 1: Soper Hills Secondary Plan Area

1.1 PURPOSE OF THE GUIDELINES

The Urban Design & Sustainably Guidelines (Guidelines) build on the Sustainability + Green Principles Report prepared by SGL Planning and Design Inc. which were informed by the Municipality of Clarington's sustainable journey. These Guidelines also build on the Council endorsed Priority Green Clarington (2015), which provided a plan to promote and encourage greener, more sustainable neighbourhoods in the Municipality.

The Guidelines provide guidance for the design of streets and blocks, built form, streetscape design, community focal points, Environmental Protection Area (EPA) interface, parks and open space as well as sustainability. They will provide a level of expectation for the design and assist with the review and evaluation of future development applications.

The Guidelines are to be used by:

	Council and Committee to confirm whether an application meets the vision for Soper Hills.
	Municipal Staff and Agencies as a reference for review and approval.
	Developers and consultants to understand how to make their proposals align with the vision.
	The public to understand how their community is to be designed.

1.2 OBJECTIVES OF THE GUIDELINES

The Guidelines have been prepared to accomplish the following objectives:

- Achieve high quality urban design throughout the community in both the public and private realm;
- Encourage the design and building of an attractive and sustainable environment consistent with the vision for the Soper Hills Secondary Plan area;
- Ensure new development is unique;
- Incorporate an active transportation network;
- Maintain compatibility with the surrounding natural heritage; and
- Provide consistent direction of the design of the community for the public, development community and Municipal Staff.

1.3 INTERPRETATION AND IMPLEMENTATION

The Guidelines are intended to implement the Secondary Plan direction for the Soper Hills Community and provide direction on urban design, streetscapes, built form, and sustainability initiatives.

The Guidelines are to be read in conjunction with, and complement the policies of the Soper Hills Secondary Plan, objectives and policies of the Municipality of Clarington Official Plan (COP), the provisions of the Municipality of Clarington Zoning By-law, the Priority Green Development Framework and Implementation Plan, and other guidelines.

In the event of a conflict between the Guidelines and the Secondary Plan, the provisions of the Secondary Plan shall prevail over the provisions of these Guidelines.

1.4 PLACEMAKING AND DESIGN EXCELLENCE

Placemaking is both a philosophy and a multi-faceted approach to planning and urban design. While not a new concept, placemaking has recently come to the forefront of planning for successful, sustainable and complete communities. Through a collaborative process, the intent of placemaking is to capitalize on a community's vision, assets and potential and define the physical, cultural and social identities that will help support its ongoing evolution. Placemaking through the cohesive design of the public and private realm helps provide residents, workers and visitors with a strong sense of place.

Appropriate, place-specific urban design principles and practices are a key element that shape how we experience and interact with the public realm, which includes destinations such as places to shop, eat, gather, interact, learn, enjoy and work. Great places can be defined by a combination of their natural landscapes and access to the environment, walkability and mix of uses, safe and attractive streetscapes, high quality architecture and human-scaled built form, parks and urban squares, public art and neighbourhood composition. Placemaking through good urban design will play a key role for the Soper Hills Secondary Plan to promote physical and mental health, community well-being and sustainability.

Good urban design will promote excellence in the design of the Soper Hills community. While the specifics of each development proposal may vary, the overall objectives for the highest quality designs will remain the same throughout the Secondary Plan area.



1.5 VISION AND GUIDING PRINCIPLES

The Soper Hills Secondary Plan will promote a positive image and foster a strong sense of place. The goal for creating vibrant and sustainable urban places as stated in Section 5 of the Clarington Official Plan is:

> "To create a built environment that celebrates and enhances the history and character of Clarington, fosters a sense of place for neighbourhoods and communities, promotes a positive image of the Municipality, demonstrates a high quality of sustainable architectural design, and enhances the well-being of residents, both present and future."

The urban design and sustainability principles reflect the vision and framework set out by the Clarington Official Plan and the Municipality's Priority Green Plan, and more specifically the Priority Green checklist for secondary plans. These principles were used to inform the preparation of the Secondary Plan policies and will be used to inform the Guidelines. In Phase 1 of the Secondary Plan Study, SGL prepared the Sustainability and Green Principles Report. The Report identified four main themes and principles for each of the themes that will also inform the Guidelines. **Figure 2** summarizes each of the four key themes: built environment, mobility, natural environment and open space, and infrastructure and buildings and identifies the urban design and sustainability principles within each theme.



Figure 2: Key themes for design principles in Soper Hills

1.6 THE LAND USE SCHEDULE

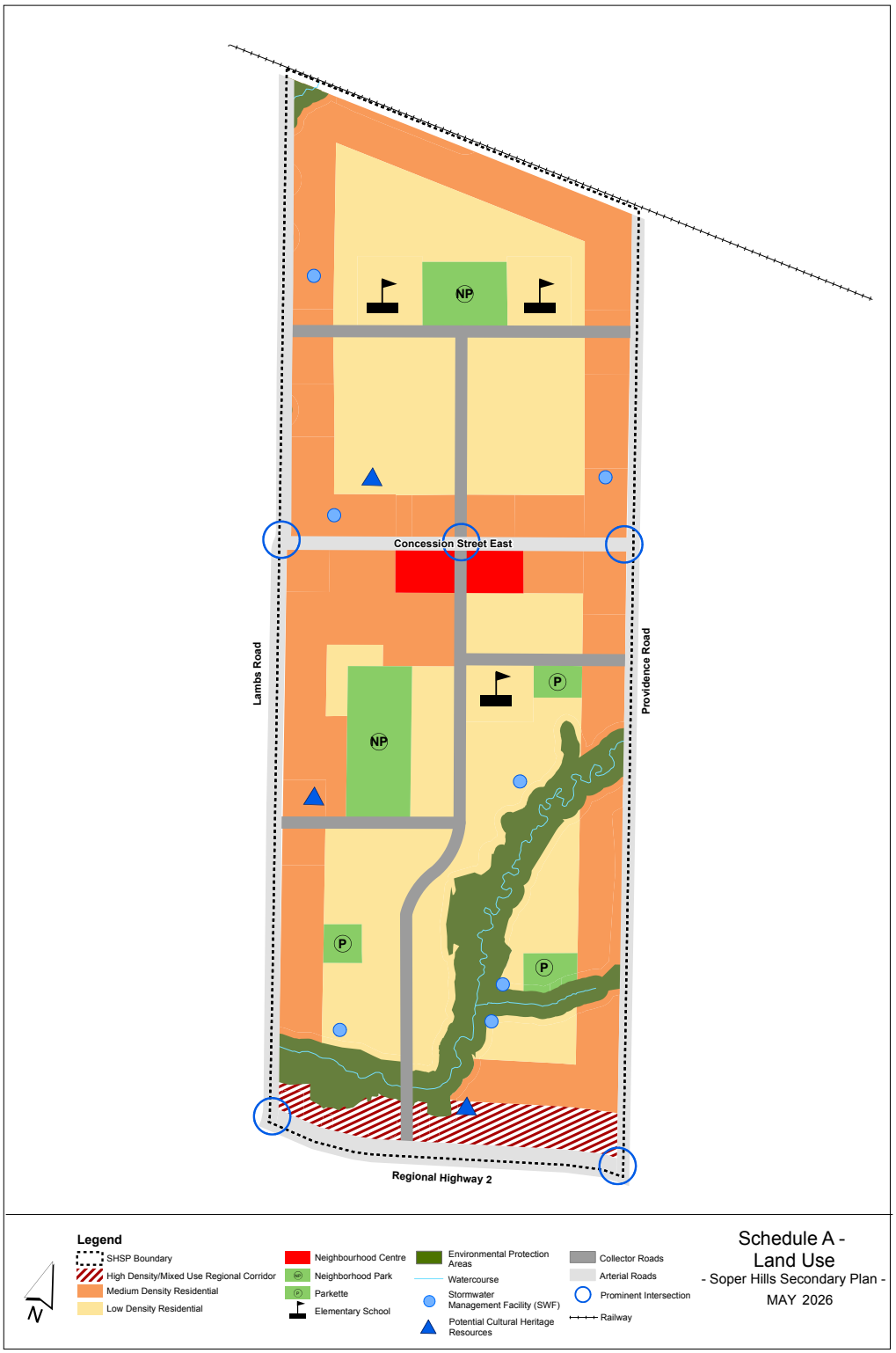
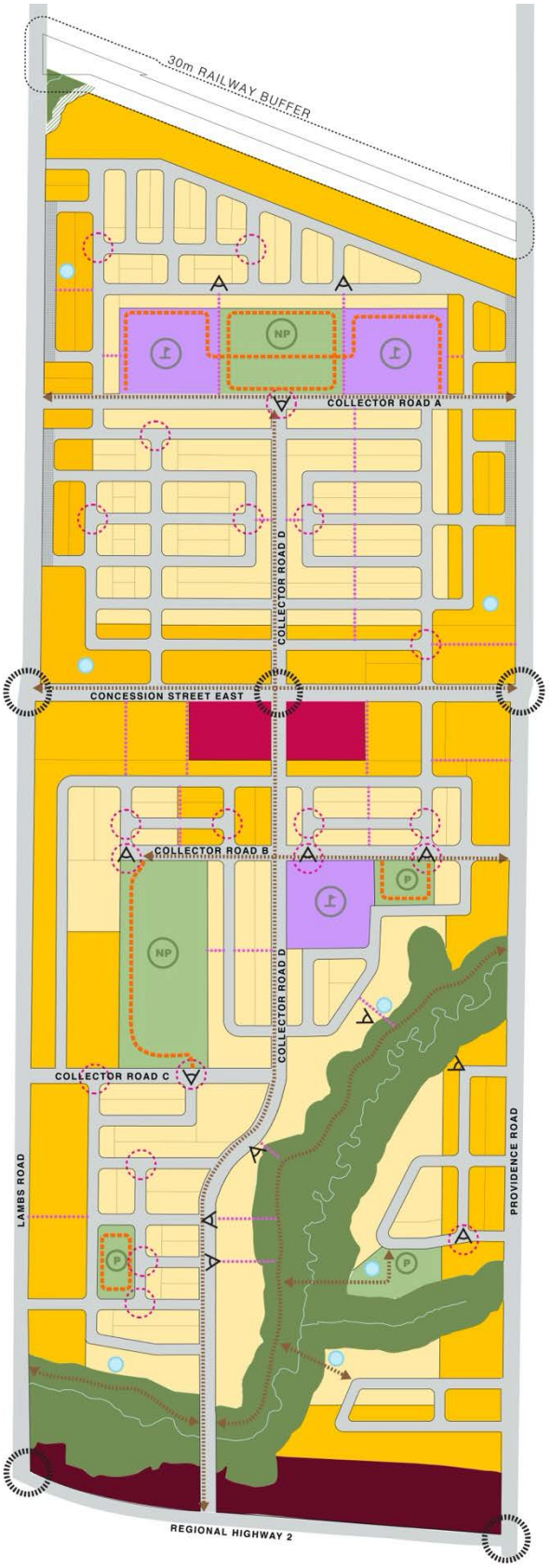


Figure 3: Schedule A - Land Use

1.7 THE DEMONSTRATION PLAN

Schedule A of the Secondary Plan is further refined into a Demonstration Plan. This plan illustrates conceptually how a local road layout, streets and blocks, a mix of land uses, parks and open spaces and trails could be laid out. A detailed vignette for the design of the Neighbourhood Centre has also been prepared to demonstrate one possible way the area could be designed in Section 4.4 of these Guidelines. Each land use and community element is described in Section 2 of these Guidelines.



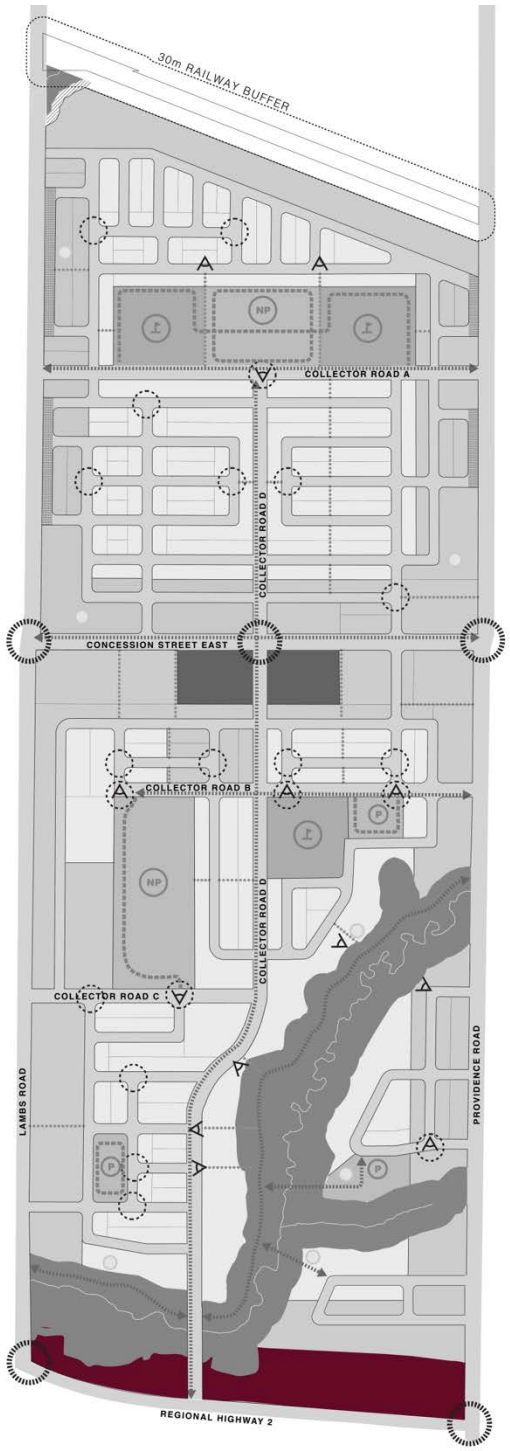
- NEIGHBOURHOOD CENTRE
- HIGH DENSITY/MIXED USE REGIONAL CORRIDOR
- MEDIUM DENSITY
- LOW DENSITY
- NEIGHBOURHOOD PARK
- PARKETTE
- ENVIRONMENTAL PROTECTION AREAS (EPA)
- ELEMENTARY SCHOOL
- WINDOW STREET
- MULTI-USE PATH
- PARK TRAILS
- MIDBLOCK CONNECTION
- PROMINENT INTERSECTION
- STORMWATER MANAGEMENT POND
- RAIL BUFFER
- VIEW CORRIDOR
- ROAD TERMINUS

2 COMMUNITY STRUCTURE

The Soper Hills Secondary Plan provides a framework for the development of a compact, walkable, and accessible community. This Section is meant to provide a description of what the Secondary Plan envisions for the different structure components. The Guidelines provide design guidance for the different components of the community.

2.1 REGIONAL CORRIDOR

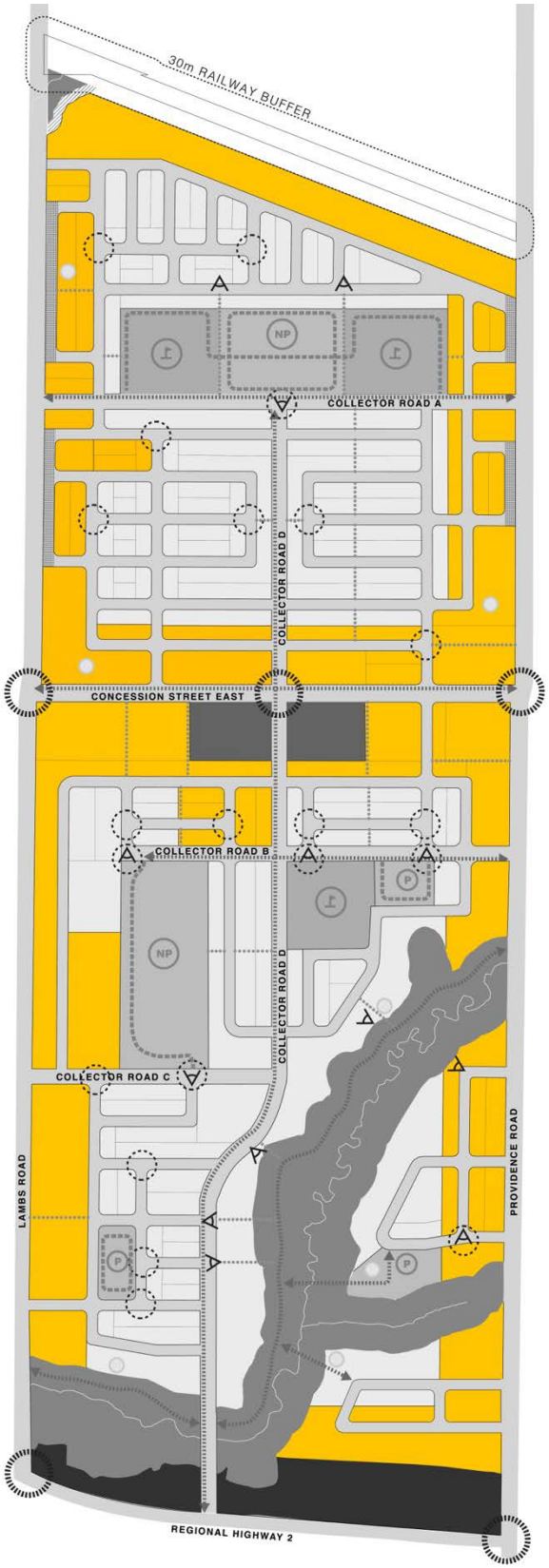
The Regional Corridor is located along Regional Highway 2 and is comprised of Medium and High Density/ Mixed Use designations. Mid- and high-rise apartments and mixed use buildings can be up to 12 storeys in height.

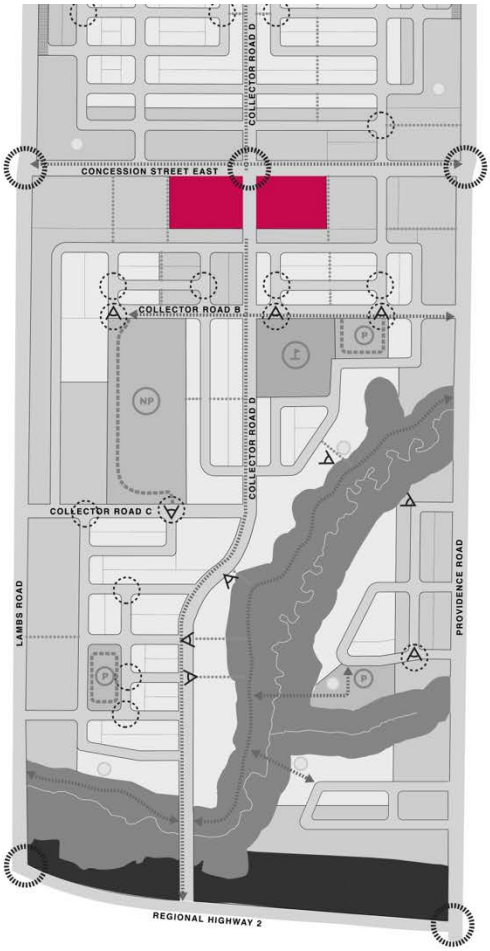


2.2 LOCAL CORRIDOR / MEDIUM DENSITY RESIDENTIAL

Lambs Road, Providence Road, and Concession Street East are identified as Local Corridors and contain Medium Density Residential land uses. Local Corridors are intended to provide residential and mixed use development between 3 and 6 storeys in height with a variety of uses to achieve higher densities and transit-oriented development. Street townhouses are permitted to be 2-storeys, and as well as where adjacent to low density residential.

Permitted housing types include mixed use buildings, apartments, and all forms of townhouses. Along Local Corridors, non-residential uses are only permitted in mixed use buildings.





2.3 NEIGHBOURHOOD CENTRE

A Neighbourhood Centre located at the intersection of Concession Street East and Collector Road D serves as a focal point to the community and permits a range of retail and service uses to accommodate daily needs of residents. It provides the opportunity for residents to walk or bike to the node for daily needs and helps to create a more sustainable plan.



Figure 4: Example of site and built form layout in the Neighbourhood Centre

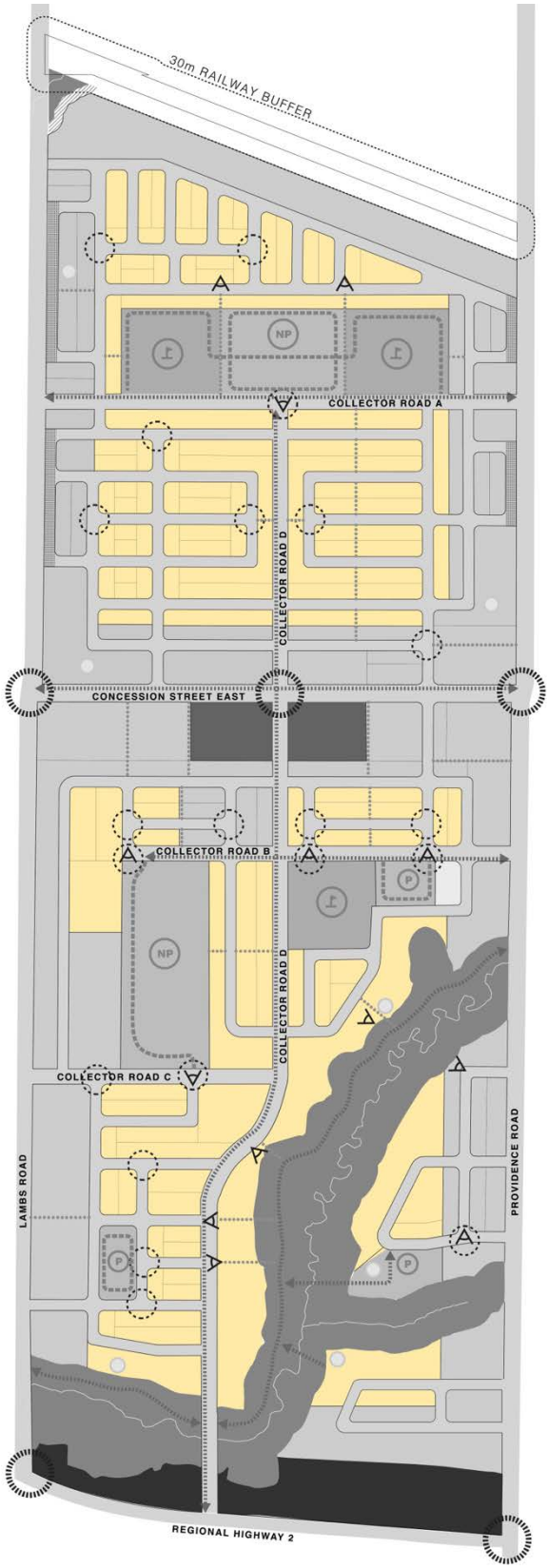


Figure 5: The Neighbourhood Centre is a focal point for the community and may include built form that orients to the Prominent Intersection, public art, layby parking, and a mix of land uses

2.4 URBAN RESIDENTIAL AREAS

Outside the Regional Corridors, most lands are planned for Low Density Residential land uses and are generally located south of Collector Road B, north of Concession Street East, and north of Collector Road A.

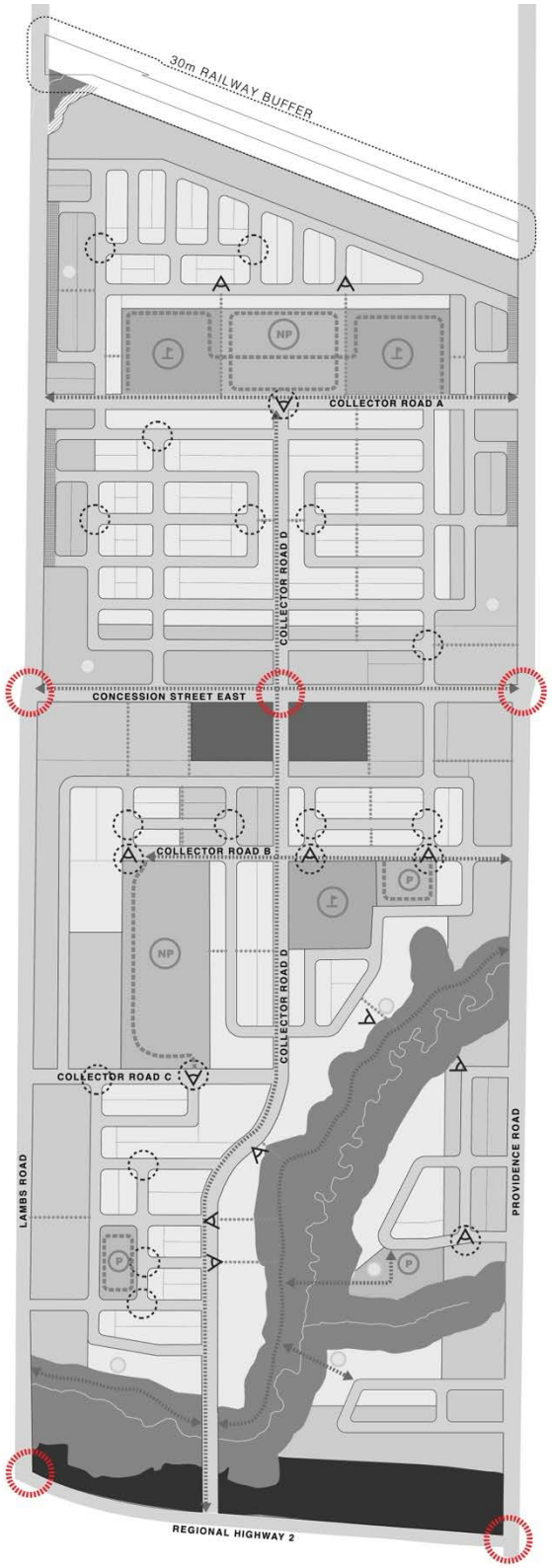
Low Density Residential designation will include semi-detached and detached houses. All forms of townhouses and low-rise apartments are also permitted but can only make up 20% of the total number of units in the Low Density Residential designation.



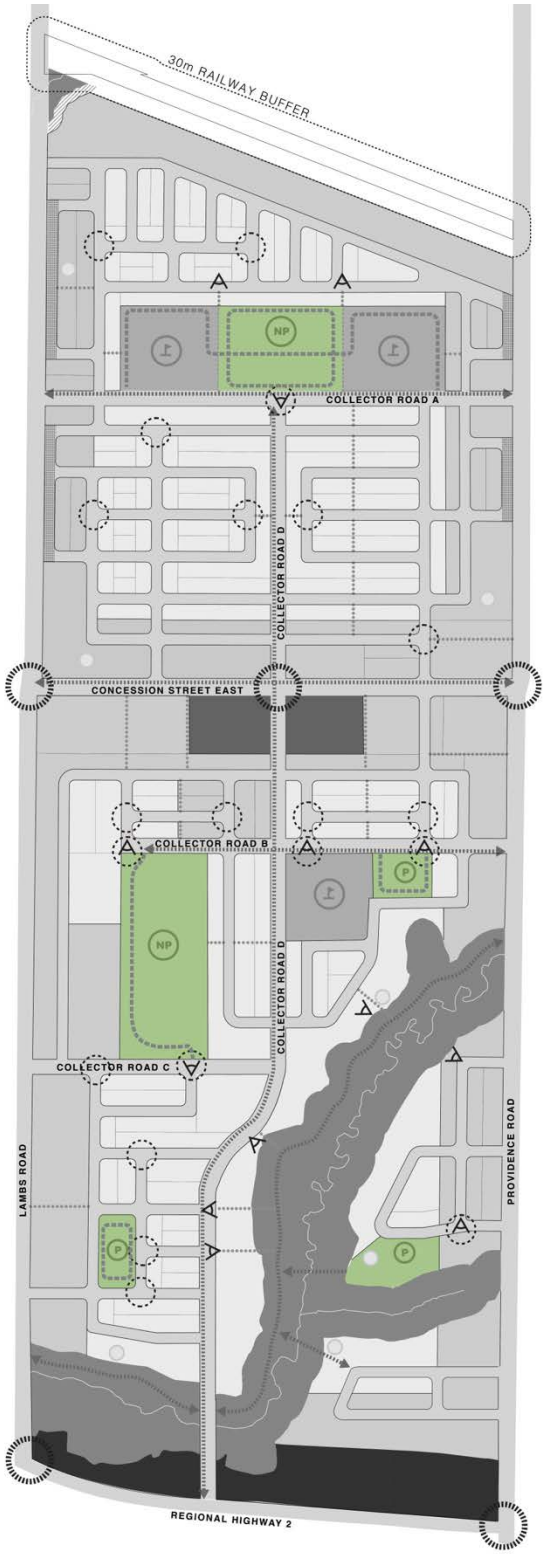
2.5 PROMINENT INTERSECTIONS

Prominent Intersections are located at Providence Road and Concession Street East, Concession Street East and Lambs Road, Concession Street East and Collector Road D, Regional Highway 2 and Lambs Road and Regional Highway 2 and Providence Road.

Prominent Intersections apply to all four corners of the intersection and will form the primary gateway into the community. These areas will also have the greatest concentration of height and commercial uses.



PROMINENT INTERSECTION



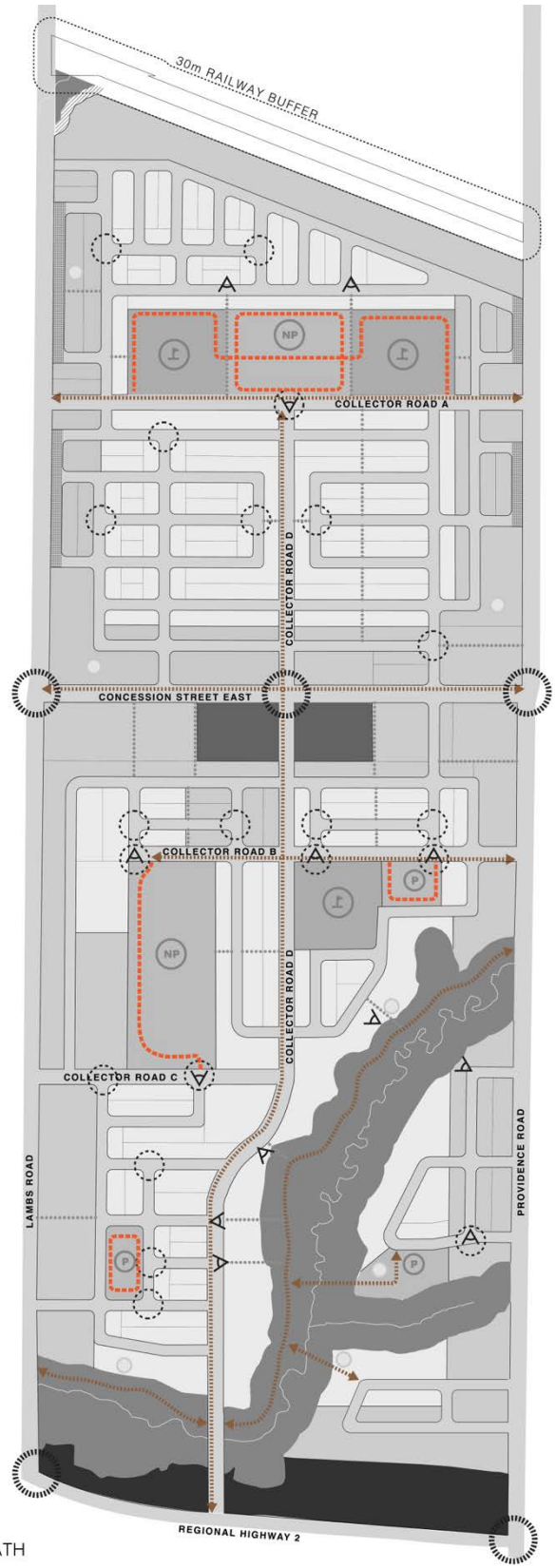
2.6 PARKS

Neighbourhood Parks serve active and low intensity recreational needs of the surrounding residents. Neighbourhood parks are between 1.5 to 3 ha in size depending on the area served and the activities to be provided. A Neighbourhood Park located between Collector Road B and C is larger to accommodate a knoll in this location.

Parkettes are intended to augment the recreation, leisure and amenity needs of a neighbourhood and are between 0.5 and 1 ha in size. They will not contain sports fields. Parkettes are required wherever the Municipality deems it necessary to augment or adjust the park requirements of any neighbourhood (COP policy 18.3.7).

2.7 TRAILS

Multi-use paths (MUPs) and park trails are proposed for Soper Hills. MUPs are pathways separated from vehicular traffic that accommodate pedestrian and cycling routes. They are wider than typical sidewalks and usually indicate separate lanes for walking and cycling. Park trails are specific connections from parks to the MUP or public sidewalk, and are typically paved trails. MUPs in the EPA are either paved or unpaved and provides access to environmental areas. They are intended to keep users on a designated path to minimize disruption to the surrounding landscape. These trails are narrower than MUPs and usually have a surface of crushed aggregate or woodchip.



3 STREETS AND BLOCKS

Human scale streets and small blocks are important elements of a walkable neighbourhood. Creating a tight network of pedestrian- friendly streets and blocks helps people choose to walk rather than take their car, especially for short trips.



Figure 6: An example of a modified grid layout of streets

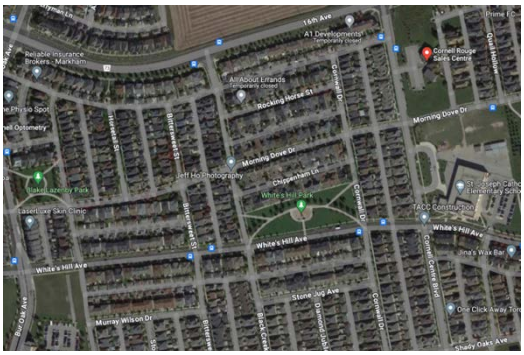


Figure 7: Example of a grid layout of streets

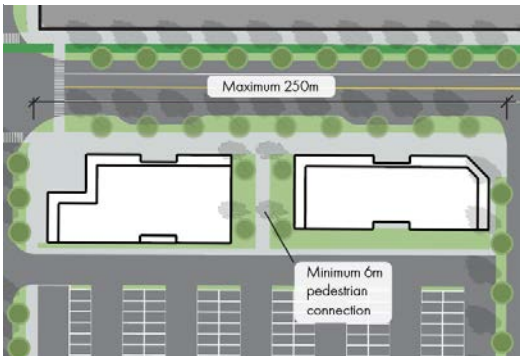


Figure 8: Blocks should be generally 250m wide

1. Streets and blocks should be designed to have a rectilinear or modified grid.
2. Irregular shaped blocks are appropriate when responding to topographic or unique conditions or to achieve distinct neighbourhood character.
3. Block lengths should not exceed 250m for collector or local roads to support active transportation where appropriate.
4. Block depths should be designed to maximize density and allow for appropriate built form typologies, accommodate adequate setbacks, outdoor amenity spaces, service, parking and vehicle access arrangements, and transitions in scale.
5. Where possible, streets and blocks should be designed to protect existing mature trees and vegetation outside the EPA lands.
6. Streets and blocks should retain, protect and enhance significant cultural heritage resources.
7. Design of streets should create views to landmarks or natural features through careful placement of intersections and terminus.

8. Where feasible streets and blocks should run parallel to contours and minimize grade alteration and maximize views.
9. Cul-de-sac and dead-end streets are discouraged. If necessary, pedestrian connection from cul-de-sacs and dead-end streets to other parts of the community should be a priority.
10. Back-lotting or reverse lot frontages should be avoided where feasible and not considered unless demonstrated to be the only option.
11. For blocks with grade-related residential units, encourage street and block alignments within 25-degrees of geographic east-west to maximize passive solar orientation of buildings.
12. Streets should terminate at public facilities such as parks, NHS or landmark buildings.

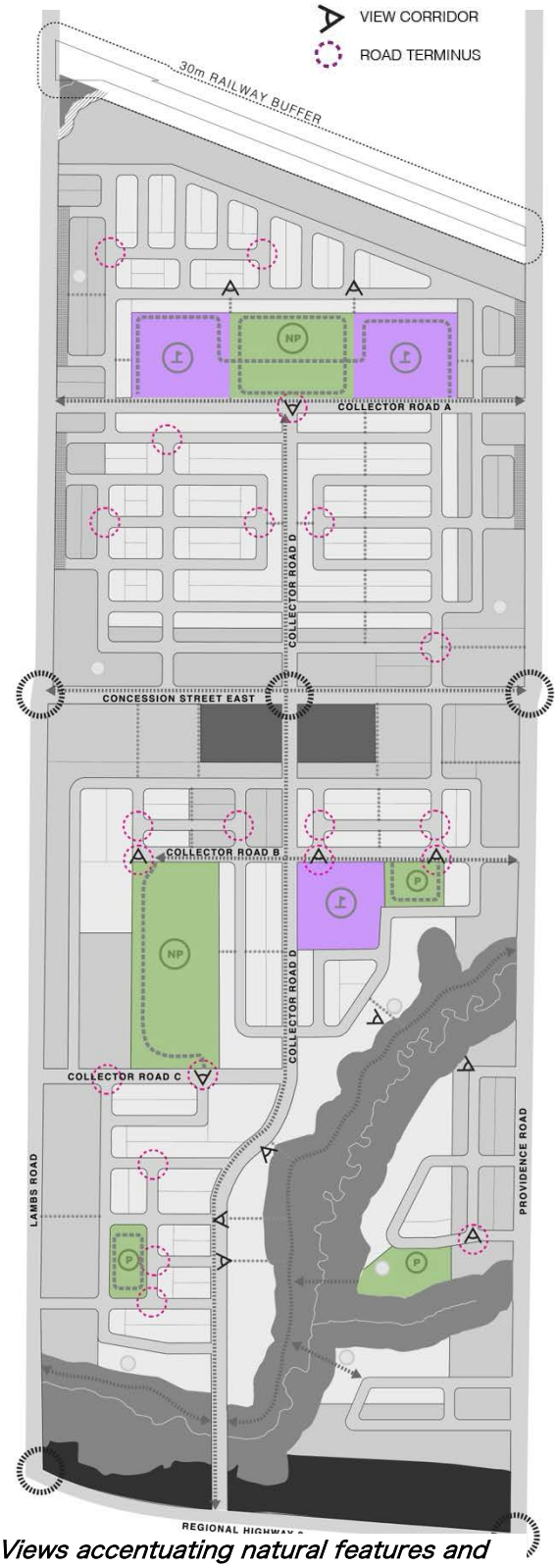


Figure 9: Views accentuating natural features and road terminus at neighbourhood amenities such as schools and parks

4 BUILT ENVIRONMENT

4.1 LOW RISE RESIDENTIAL

As identified in Section 2.5, Low Rise Residential accounts for most of the Urban Residential Areas of Soper Hills. Low-rise built form includes singles, semi-detached, all forms of townhouses, and low-rise apartment up to 3 storeys in height. Some higher density low-rise uses, identified in Section 2.2, permit mixed use buildings, apartments, and all forms of townhouse dwellings up to 3 storeys in height.

4.1.1 GENERAL

1. Demonstrate design excellence with architectural detailing of the highest quality possible for all buildings.
2. Variations in elevations and a mix of unit types are encouraged within a block and throughout a draft plan of subdivision.
3. The difference between adjacent building heights should generally not vary more than 1 storey, however greater variation may be permitted if compatibility between adjacent building forms can be demonstrated.
4. Generally, lots should be rectilinear in shape, where there are variations in topography and other limiting factors variations in shape are permitted.
5. Diversity in housing size and design should be facilitated by a variety of lot sizes.



Figure 10: Example of townhouses with high-quality architectural detail



Figure 11: Difference between adjacent buildings should generally not vary more than 1 storey

6. Orient buildings to the street, park or open space to establish a streetwall that contributes to an active public realm encouraging walking and cycling.
7. The siting and massing of dwellings should be compatible and harmonious with adjacent dwellings.
8. Site buildings close to the street edge to help define the street edge.
9. Due to their prominence at intersections, corner lots should have a high level of design detail.
10. Provide equal and prominent design consideration for both building elevations on corner lots.
11. Prominent architectural elements such as balconies, wraparound porches are encouraged.
12. Exposed elevations should include well-articulated fenestration.

4.1.2 SINGLE AND SEMI-DETACHED DWELLINGS

1. Create a consistent street wall by designing dwellings to frame the street edge with a consistent setback, with front doors, windows, and entry features facing the road.
2. Reduce the visual dominance of the garage and front driveway through the design of the front entrance and architectural elements.
3. Porches, stairs, canopies, and other entrance features are encouraged to give prominence to the front entrance.



Figure 12: Porches are encouraged to give prominence to the front entrance

4. Garages should not protrude beyond the main front wall of the dwelling unit or front porch. Garages should generally be set behind or flush with the main front wall or accessed from a rear lane. Where a garage protrudes beyond the main front wall it should be flush with the porch.

5. Both halves of a semi-detached dwelling should be compatible in terms of design expression. Symmetrical building elevations are encouraged. Asymmetrical elevations may be permitted provided it is complementary and harmonious to the overall dwelling.
6. Both semi-detached units should be fully attached above grade.
7. Maximize continuous green planting areas along the street by pairing driveways and garages where feasible to maximize the extent of continuous green planting area.



Figure 13: Example of a dwelling with a portico and recessed garage

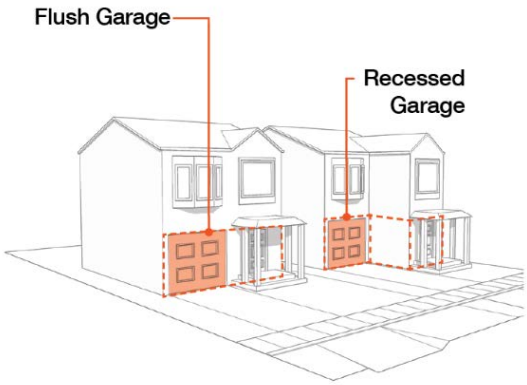


Figure 14: Set garages flush or behind the main front wall to reduce visual dominance of garages

4.1.3 TOWNHOUSES

1. Coordinate the siting, massing, and façade design of townhouse on a block-by-block basis.
2. Visually unite and articulate each townhouse block to provide variation between units.
3. Provide a variety in roof designs to break up the massing of the units.
4. Use traditional gables and dormers, or more contemporary designs that include cantilevers and parapet details to break up the roof massing.
5. Where possible, the main roof should appear as one roof and reflect the architectural style of the block units.
6. Blocks of attached townhouse units should be oriented 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. Orient the main front entry to the front lot line for interior units, while the entry of the corner unit is encouraged to be oriented to the exterior lot line.



Figure 15: Example of a rear-lane townhouse



Figure 16: Example of a back-to-back townhouse



Figure 17: Example of a rear-lane townhouse

8. The massing and built form of townhouse units adjacent to single and semi-detached dwellings should be broken down with architectural elements to promote visual integration.

9. Garages should not protrude beyond the main front wall of the dwelling unit and front garages should not exceed 50% of the width of the unit and should be paired to allow for more substantial front yard green space.
10. Rows of street townhouses should generally be limited to a maximum of 6 units.
11. Utility meters should be screened from public view and integrated into the design of the units using wall recesses, enclosures, or insetting within the building walls. Rear lane units should locate utility meters at the rear lot line where allowed by the utility provider.

4.1.4 GARAGES AND DRIVEWAYS

1. Design driveways to be as far away from parks, schools and open space features.
2. The width of the driveway should be no larger than the interior width of the garage.
3. Garages should not dominate the streetscape.



Figure 18: Reduce visual prominence of garages

4.2 RESIDENTIAL MID-RISE AND HIGH-RISE

For the purposes of these guidelines a mid-rise building is defined as a building between 4 and 6 storeys in height. A high- rise building is defined as a building between 7 and 12 storeys in height.





Figure 19: Examples of mid-rise built form

1. The Regional and Local Corridor should include the greatest heights and massing, typically with the greatest heights at the corner of the Prominent Intersection.
2. A sun/shadow and/or wind study may be required to demonstrate there is no adverse impacts on public parks, sidewalks, private amenity spaces and adjacent development.
3. Transition may be required such as a local road to separate different built forms, lower heights and adjacent to low rise.
4. Minimize the design of a slab building and reduce the overall massing with a maximum building length of generally 60m.
5. To help mitigate overlook and maximize sunlight to the lower levels of the buildings, a minimum separation distance of 15m is required for high-rise buildings. This space should be void of any building projections.
6. Break up the building mass with changes in material, balconies, stepbacks and building articulation.



Figure 20: Example of a high-rise residential built form

7. High-rise apartment buildings and 6 storey mid-rise buildings should include a minimum 1.5m building stepback above the 3rd storey to aid with transition and prevent slab buildings. Where a mid-rise or high-rise apartment building abuts a low-rise

designation provide additional transition through increased building setbacks and stepbacks to prevent overlook to low-rise dwellings.



Figure 21: High-rise buildings should have a clear base, middle and top

8. High-rise buildings should have a clear base, middle and top to provide articulation and high-quality design.
9. Pair corner buildings at either side of a Prominent Intersection to create a gateway to the community.
10. Orient visual and accessible primary building entrances to the public roads.
11. Provide a 2m to 5m private setback at grade for residential units for pedestrian access, privacy and private amenity areas, by using screening, hard and soft landscape treatments and grade changes within the setbacks.

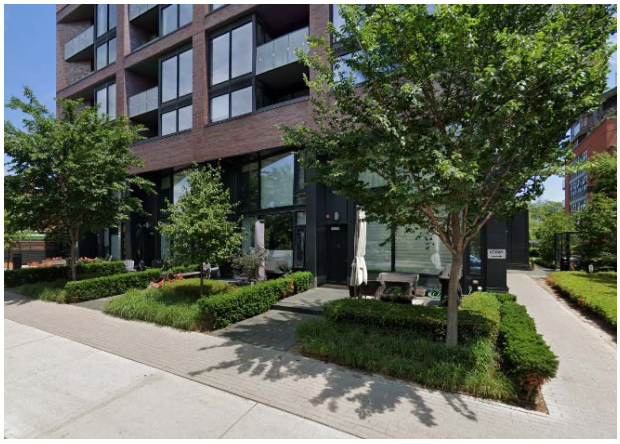


Figure 22: Create privacy and direct access for residential units at grade through building setbacks



Figure 23: Example of built form transition for a mixed use building

4.3 MID-RISE AND HIGH-RISE MIXED USE



Figure 24: Example of a live-work townhouse





Figure 25: Examples of mid-rise and high-rise buildings with built from transition to the rear of the building

1. Distinguish residential entrances from commercial entrances through building design and location.
2. At-grade retail should be broken down in scale and designed with a finer grain frontage.
3. Active at grade uses such as cafes or patios should be provided to animate the street and encourage pedestrian activity where appropriate.
4. The 1st floor of a mixed use building should have a minimum height of 4.5m.
5. High-rise buildings should have a clear base, middle and top to provide articulation and high-quality design.
6. High-rise apartment buildings and 6 storey mid-rise buildings should include a minimum 1.5m building stepback at every 3rd floor to aid with transition and prevent slab buildings. Where a mid-rise apartment building abuts a low-rise designation provide additional transition through increased building setbacks and stepbacks to prevent overlook to low-rise dwellings.
7. For mid-rise buildings balconies above the 1st floor are encouraged. For high-rise buildings balconies are encouraged above the 3rd floor.
8. Temporary parking and bicycle storage should be incorporated into all buildings wherever possible.

9. Parking within mid-rise and high-rise mixed use buildings is encouraged to be underground. Where underground is not feasible structured parking could be acceptable. Surface parking is the least preferred.
10. Locate surface parking at the rear or side of the building or buildings.
11. Utility meters, air conditioning units, and similar infrastructure should be incorporated as part of the building design and be screened and not visible from the public realm.
12. Screen all rooftop mechanicals and telecom infrastructure with the design of the building or parapet walls.
13. Servicing, loading and parking access should be accessed from the rear or side of the building.



Figure 26: Screen rooftop equipment and utilities from the public view



Figure 27: Development blocks can incorporate a variety of building types to provide transition to lower density areas

4.4 NEIGHBOURHOOD CENTRE

Section 10.5 of the Official Plan sets out the criteria for development within the Neighbourhood Centre. In addition to the design criteria, development should follow the design guidelines of this section.

4.4.1 BUILT FORM

1. Buildings designs should include added height at corner locations, articulation and massing features.
2. Primary entrances should be clearly visible and emphasized through wall articulation, canopies and/or material change, be accessed via sidewalks and ensure connections are AODA compliant.

4.4.2 STREETS, STREETSCAPES AND MID-BLOCK CONNECTIONS

1. The portion of Concession Street East and the new Collector Road D fronting the Neighbourhood Centre land use (Zone A) will be designed as an enhanced streetscape. The streetscape will incorporate street trees, seating areas, wider sidewalks, and street-oriented retail units on the ground floor.
2. The northern side of this portion of Concession Street East will include a tree lined street and multi-use pathway.

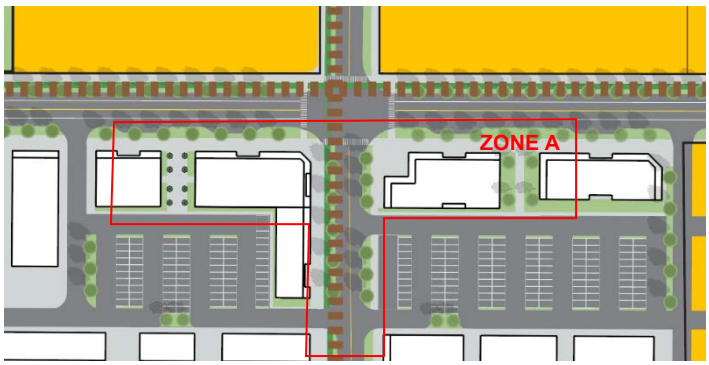


Figure 28: Zone A in the Neighbourhood Centre



Figure 29: Example of a multi-use path showing separation between pedestrian and cycling areas

3. Roads and mid-block connections within the Neighbourhood Centre blocks should include wider walking and cycling paths and street trees to provide comfortable pedestrian and cyclist connections between retail uses.



Figure 30: Urban streetscapes in the Neighbourhood Centre should be designed with street trees and wider sidewalks

4. Mid-block connections will have adequate lighting from adjacent streets or from within the mid-block connection to enhance safety and visibility, but without causing adverse impacts on adjacent residential land uses.
5. Sidewalk surface should be continuous from building face to on-street parking lane. Sod boulevards are not appropriate.
6. Sidewalk, cycle track and on-street / layby parking zones should be distinguished through different material, colour and/or texture.

4.4.3 PARKING LOTS

1. Layby parallel parking should be provided, wherever possible in Zone A, to animate streets, provide traffic calming and serve as a buffer between pedestrians and vehicles.

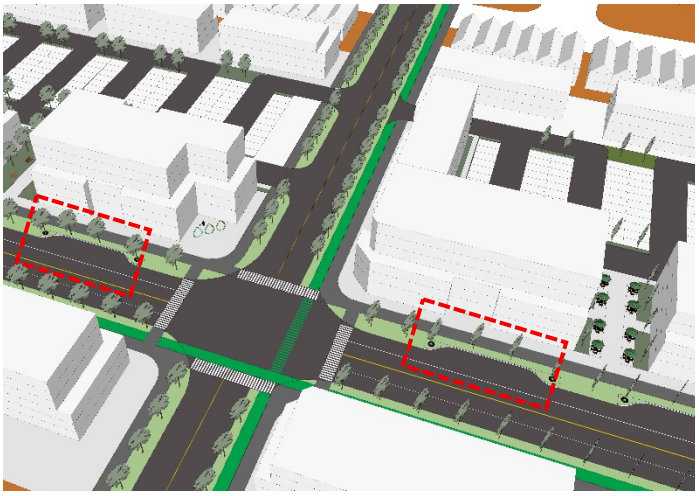


Figure 31: Potential locations of layby parallel parking areas in Zone A

2. Convenient parking for bicycles, scooters and strollers should be provided within the public realm of Zone A to encourage alternative transportation options and active transportation.

3. Indoor bike parking for mixed use, standalone commercial and residential buildings should be provided for long term use by employees and residents.
4. Locate bicycle parking so it does not obstruct pedestrian movement, gathering areas or children's play.
5. Surface parking spaces shall be located behind the building front wall at the side or rear of buildings and shall be accessed by laneways or through consolidated block-level access.
6. Surface parking lots should be screened from view along adjacent streets, with low-level landscape buffering.
7. Accessible parking spaces should have direct access to building entrances and should not be placed across a drive aisle.



Figure 32: Consider providing on-street parking in Zone A



Figure 33: Screen parking lots with low-level landscape buffering

4.5 PROMINENT INTERSECTIONS

1. Design Prominent Intersections as community focal points.
2. Prominent Intersections will be emphasized through building massing, architectural treatment and materials, street furniture, landscaping, and public art.

3. Prominent Intersections will be the primary gateways to the Soper Hills Community. The commercial use buildings in the Neighbourhood Centre should provide special architectural elements such as corner design, massing and height, awnings, and entrance door features.
4. Privately-owned publicly-accessible open spaces should be located at the Prominent Intersection to contribute to its visual prominence, improve the relationship of built form to the public right-of-way, and contribute to the area's identity.



Figure 34: Built form surrounding Prominent Intersections should be designed to address the intersection



Figure 35: Prominent Intersections should include street furniture such as bike racks, landscaping, and high-quality streetscape materials

4.6 INSTITUTIONAL BUILDINGS - SCHOOLS

Soper Hills Secondary Plan Areas proposes 3 elementary schools. The Secondary Plan shows the general location of future schools co-located with neighbourhood parks. The following guidelines apply to school sites:



1. School Boards are encouraged to consider alternative standards for schools that would optimize the use of land by promoting multi-storey school buildings and minimizing parking and pick-up/drop-off areas.

2. Co-location of parks and schools is strongly encouraged to facilitate shared play facilities, parking and efficient use of land.
3. Schools should be located close to the street to help define the street and create prominence.
4. Schools should be designed with high quality finishes, and architectural details.
5. The front door should face the main street and be directly accessible from the public sidewalk.
6. No parking or drop off should be located between the building and the street with the front door. Parking should be located at the side of the building.





Figure 36: Examples of multi-storey schools

7. Rooftop mechanical equipment should be screen from view through a parapet wall or complementary materials.
8. Schools should be designed to ensure safe cycling and pedestrian access and crossing. Students should be able to reach the entrances without crossing bus zones, parking and drop off areas.

5 MOBILITY

5.1 ACTIVE TRANSPORTATION



The active transportation network consists of pedestrian, cycling and trail networks that include both on and off-street facilities. The Soper Hills active transportation network provides opportunities for the community to access different mobility options. Sidewalks, Trails and MUPs provide facilities for walking, cycling and other human powered forms of transportation. The network will be designed to be accessible for all ages and abilities.

5.1.1 GENERAL GUIDELINES

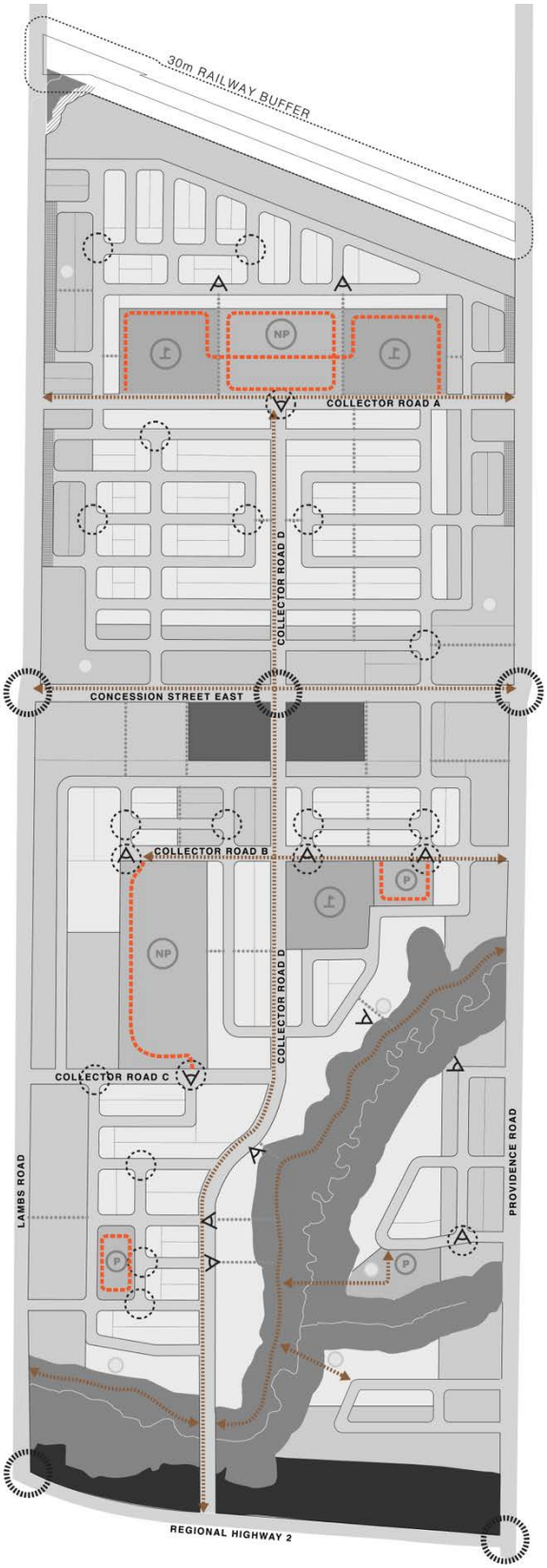


Figure 37: Design multi-use paths in accordance with Municipal standards

1. Complimenting the road network, the active transportation facilities will be well connected and facilitate permeability and connectivity both internally and externally.
2. Ensure the network is safe and comfortable for all users.
3. Implement wayfinding that directs users to intersections, landmarks and both on and off-street facilities.
4. Year-round use is encouraged through well maintained connections for sidewalks and trails to destinations such as parks, transit stops and commercial uses.
5. Ensure off-road trails or MUPs provide a continuous and connected network that lead to destinations such as a transit stops or Local Corridor.
6. Mid-block pedestrian connections are encouraged for blocks longer than 250 metres.

5.1.2 TRAILS

1. Trails are an important part of the active transportation network and should be connected to sidewalks and MUPs.
2. Trails should be designed to serve all ages and abilities by minimizing grading and sloping between development areas.
3. Trail design shall comply with AODA and Municipality of Clarington standards.
4. Clear signage should identify shared or dedicated use and network layout for pedestrians and/or cyclists.
5. Generally permitted adjacent to the EPA, trails should connect to parks and the trail system to provide opportunity for passive recreation.



5.1.3 CYCLING INFRASTRUCTURE

1. Offer dedicated or shared cycling infrastructure off-road throughout the community.
2. Cycling infrastructure shall be designed to meet Municipality of Clarington design standards.
3. Grading and sloping should be minimized to meet accessibility requirements and serve all users.
4. Provide clear signage for all cycling routes.



Figure 39: Example of a multi-use path which includes separated lanes for pedestrians and cyclists

5.2 TRANSIT

1. Street design should consider locations of transit stops and shelters.
2. Incorporate appropriate amenities for all transit stops, including but not limited to transit shelters, seating, tactile paving, bicycle racks, and appropriate lighting.
3. Locate transit stops near active transportation nodes and other focal points of the community, including but not limited to parks and open spaces, and building entrances of mixed use, retail and commercial developments.
4. Transit signage should be legible and prominent. Streetscape elements such as lighting and bike racks, should be placed near transit stops.
5. Plant shade trees near transit stops to provide relief from the sun.
6. Wayfinding and appropriate signage throughout the community will indicate transit stops and facilities.



Figure 40: Example of a transit shelter

5.3 ROAD TYPOLOGIES AND CROSS SECTIONS

The design of roads within the Soper Hills Community shall facilitate the movement of all users in a safe, comfortable and accessible environment. The network of roads consists of Collector Roads and Local Roads and is bound by Arterial Roads.

Detailed road designs are to be finalized as part of the review process in accordance with Municipality of Clarington engineering standards. Soper Hills is surrounded by three Type B Arterial Roads - Cross Sections for Lambs Road, Concession Street East and Regional Highway 2, as well as a Type C Arterial Road Cross Section for Providence Road. Typical sections for collector and local roads are provided below.

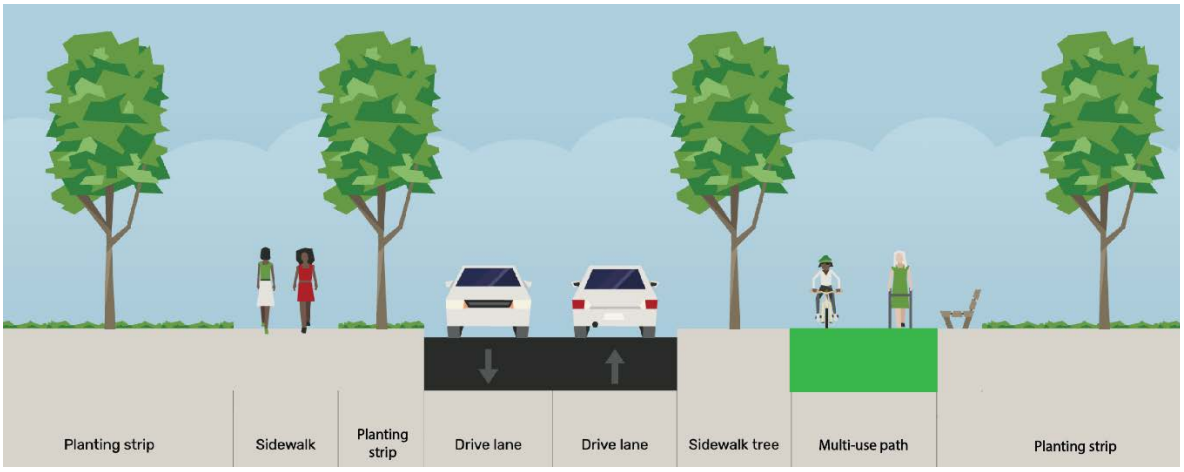


Figure 41: Recommended 30m wide cross-section for Lambs Road prepared by TYLin (Cross section conceptual and NTS)

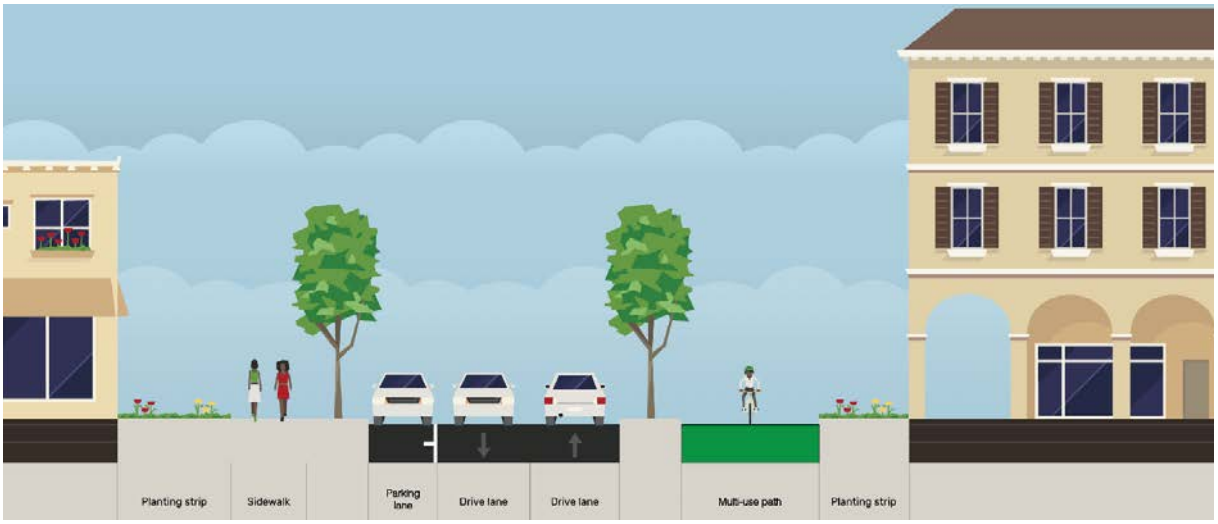


Figure 42: Recommended 23m wide collector road cross-section, prepared by TYLin (Cross section conceptual and NTS)

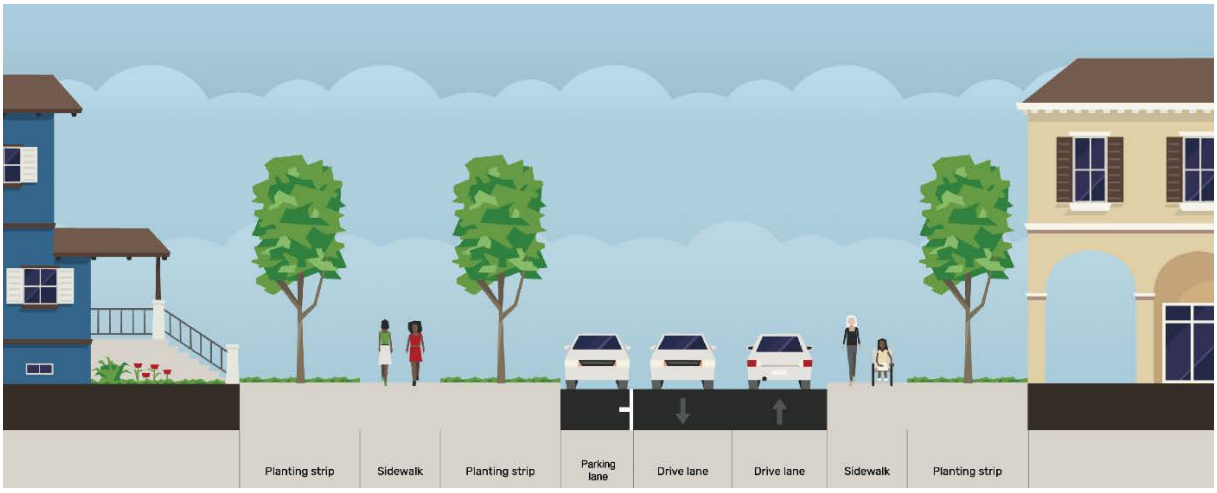


Figure 43: Recommended 20m wide local road cross-section, prepared by TYLin, conceptual and NTS

5.3.1 STREETSCAPE ELEMENTS

Primarily located on the boulevard, streetscape elements form an important part of the open space system and refers to components of the public realm such as street trees, landscaping, furniture, lighting, public art, and utilities. Where possible, green infrastructure should be considered in the boulevard. Streetscape elements help to create an attractive, cohesive and safe streetscape within Soper Hills.

5.3.2 SIDEWALKS

1. Sidewalks must be direct and continuous and be provided on at least one side of the street.
2. Sidewalks shall be constructed to municipal standards, with their width responding to the land use context and accessibility requirements.
3. The sidewalk network should be designed to connect to adjoining trails, MUPs and transit stops.



Figure 44: Example of an urbanized streetscape

4. Connect sidewalks with other public realm components such as parks and open spaces and tie directly with trails.

5.3.3 STREET TREES AND PLANTING

1. Plant street trees with sufficient soil volumes between the curb and the sidewalk.
2. A variety of native species should be planted to enhance biodiversity.
3. Generally, shade tree varieties should be selected over smaller ornamental varieties.
4. Tree species should be selected to support the character of distinct neighbourhoods.



Figure 45: Example of boulevard planting

5. For mixed use developments, enhance landscaping should be considered.

5.3.4 STREET LIGHTING

1. Light fixture design should support and enhance the identity of corridors and neighbourhoods and address functional requirements.
2. Pedestrian lighting should be provided in areas with greater pedestrian activity.
3. Pedestrian lighting may be integrated with street lighting poles or located as stand-alone fixtures within the boulevard.

5.3.5 UTILITY PLACEMENT

1. Utilities should be consolidated and screened from view.
2. The location of street trees, landscaping and furniture should be coordinated with underground and above-ground utilities and planned concurrently.



Figure 48: Utilities should be consolidated and screened from view

3. The placement of above-ground utilities shall not obstruct pedestrian movement in the sidewalk, at intersections, view corridors, or daylighting triangles. Where

this is unavoidable, utilities should be consolidated and screened, and public art opportunities should be considered in discussions with appropriate utility agencies.

4. Site above-ground utilities, such as Bell DMS Units, Micro Hubs, transformers and pedestals, to minimize their negative visual impact on the public realm. Avoid locating them at the end of “T” intersections, view corridors or day light triangles.



Figure 49: Clear pedestrian movement along sidewalks with public utilities

6 NATURAL ENVIRONMENT

6.1 NATURAL HERITAGE FEATURES

The Environmental Protection Area (EPA) is a key structural element of the Soper Hills Community. The EPA will contribute to Soper Hills character. Protection and integration are important components of the design of the community.

6.1.1 GENERAL GUIDELINES

1. Provide views, vistas and connections to the EPA by orienting streets and utilizing terminal views at the end of prominent streets.
2. Ensure connectivity between natural heritage features, maintaining, and where possible improving or restoring corridor function.
3. Consider connections, provided through such elements as parks and/or trails, to provide linkages between the north and south EPA and to the Municipal trail network west of Lambs Road.
4. The preservation of existing vegetation, particularly mature trees, is strongly encouraged.





Figure 50: Place parks in proximity or adjacent to EPAs

6.1.2 WOODLANDS

1. To help mitigate heat island impacts preserve and expand existing tree cover.
2. Help to establish local ecological features through opportunities for naturalized plantings and landscape restoration.
3. Where back lotting is required onto woodlands, discourage direct access from private properties.
4. Encourage access through trails to minimize long term impact.
5. Discourage lighting near woodlands to protect ecological features and functions.

6.1.3 URBAN FOREST

1. Contribute to the success of the urban forest by planting large native shade tree to help heat island effect, sequestering greenhouse gases, providing shade in the summer, separating pedestrians from vehicular traffic, and contributing to more appealing sidewalks and streets.
2. For singles, semis and townhouses, provide a minimum of 1 tree per lot where not impeded by utilities or other infrastructure; for multi-unit sites or commercial sites, provide as may trees, ensuring a minimum soil volume.



Figure 51: Consider the inclusion of boardwalks in EPAs



Figure 52: Encourage access to trails



Figure 53: Contribute to the success of the urban forest by planting large native shade tree to help heat island effect

3. Provide street trees on both sides of the road in the public right-of-way where feasible.
4. Encourage a variety of tree species along each road that are non-invasive, drought and salt tolerant, and low maintenance.
5. A double row of trees may be used in key areas, such as adjacent to parks and where a wider boulevard exists.
6. For more urban and mixed use areas, provide a minimum $30m^3$ of soil volume using soil cells such as Silva-cells, continuous planting trenches, structural soil.

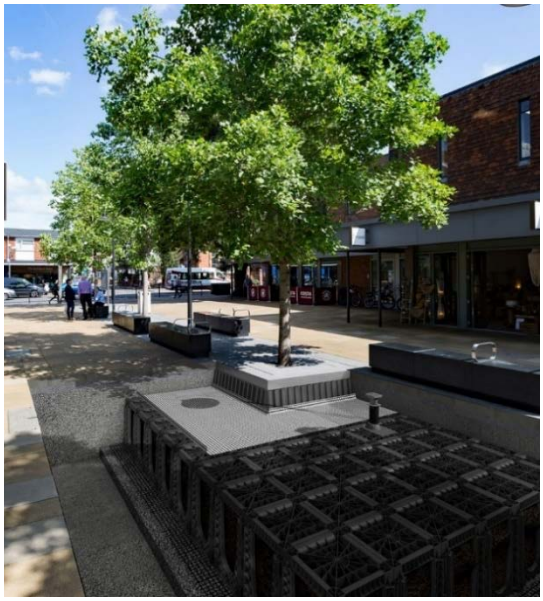


Figure 54: Soil cells can provide the required soil volume for street trees in urbanized areas



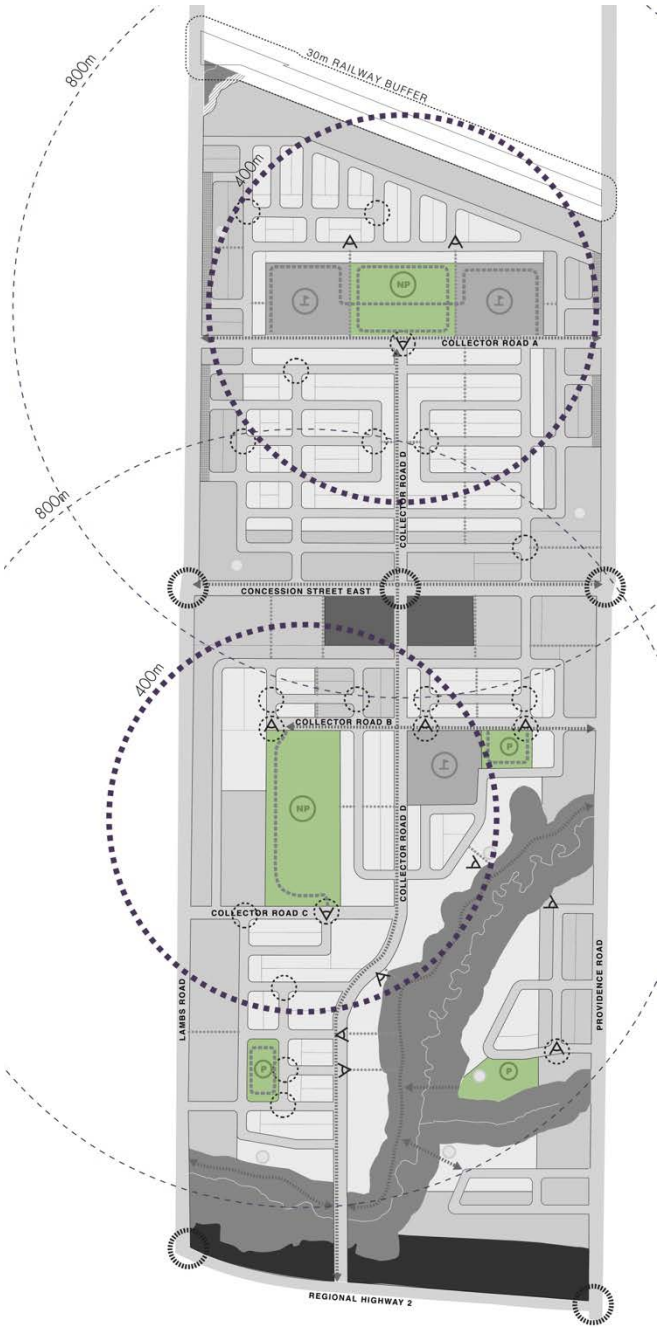
Figure 55: A double row of trees may be used in key areas, such as adjacent to parks and where a wider boulevard exists

6.2 PARKS AND OPEN SPACE

A vibrant community includes parks and open spaces that facilitate gathering and recreation and support ecological function. The parks and open space system includes parks, trails, stormwater management ponds and EPAs. The Soper Hills parks and open space system will be functional and safe.

6.2.1 NEIGHBOURHOOD PARKS

1. Neighbourhood Parks should be located on collector roads and where possible adjacent to the NHS.
2. Locate Neighbourhood Parks within a 5 to 10 minute (400m to 800m) walking distance of all residents creating the opportunity for physical activity and gathering.
3. Neighbourhood Parks are typically 1.5 to 3 ha in size and configured to accommodate both passive and active programming.
4. Site a larger Neighbourhood Park to preserve the existing knoll.
5. Connect parks to the trail system and sidewalks.
6. Where appropriate, co-locate parks and schools to allow shared amenities such as parking and recreational fields.
7. Provide on-street parking adjacent to the park wherever possible, as well as internally to the park.



8. Minimize back lotting and maximize exposure to a public street(s) through single loaded roads. Neighbourhood Parks should be designed with a minimum 50% public road frontage.
9. Signage and tree planting should clearly define access to the park.
10. Accessible and visible bicycle parking should be located on hard surfaces adjacent to play areas and entrances.



Figure 58: Neighbourhood Parks should accommodate both passive and active programming



Figure 58: Include wayfinding signage in parks

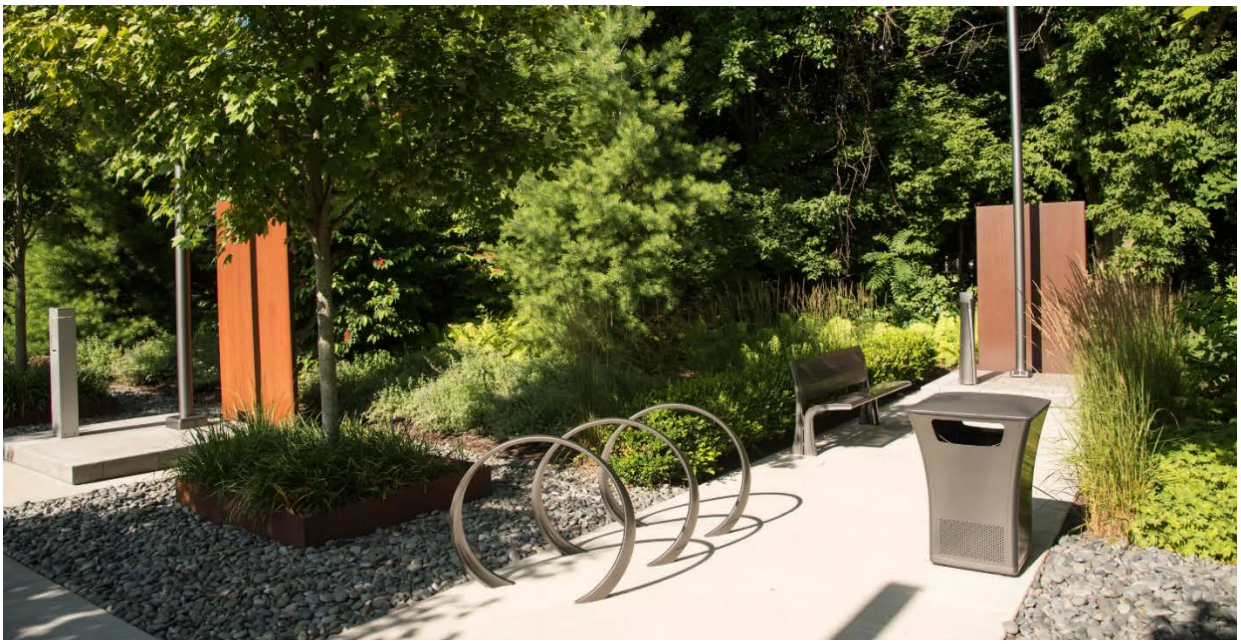


Figure 59: Include street furniture such as benches, bike racks and garbage receptacles in parks

6.2.2 PARKETTES

1. Parkettes vary in size from 0.5 to 1 ha and can be accessed by walking within 5 minutes (400 m).
2. Parkettes should be designed with a minimum 30% public road frontage. The remainder is encouraged to front a school or natural heritage feature.
3. Encourage safe and efficient pedestrian circulation with pathways within the parkette.
4. Provide areas of seating and shade as part of the design of the parkette.





Figure 60: Examples of Parkettes

6.2.3 PRIVATELY OWNED PUBLICLY ACCESSIBLE OPEN SPACES

1. Privately Owned Publicly Accessible Open Spaces (POPS) can include highly visible urban squares and plazas.
2. Reinforce their role in the community open space network by locating adjacent to key destinations and pedestrian connections.
3. POPS should contribute to the public realm through high quality design and integration with the adjacent built form.
4. They should be highly visible and located within local corridors at Prominent Intersections.



Figure 61: Example of unique design features that may be accommodated in parks and POPS

7 GREEN INFRASTRUCTURE AND BUILDINGS

7.1 ENERGY CONSERVATION

1. Consider renewable energy sources that could be employed for the use of solar thermal and photovoltaic equipment, and/or wind power.
2. Enhance the use of passive buildings systems through building orientation to maximize the potential for sunlight and natural ventilation.
3. Encourage constructing all low and medium density residential buildings to be Solar Ready, which includes all the necessary piping and equipment needed to install a rooftop solar power system.
4. Consider designing mid-rise buildings to reflect sunlight and absorb less heat using cool roofs that 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.
5. Mitigate heat island impacts with paving material with high solar reflectance, strategic use of deciduous trees or preserve existing trees as part of a free cooling strategy to help with evapotranspiration and shading of sidewalks and hard surface areas in summer and solar access in winter.



Figure 62: Solar panels



Figure 63: Charging stations

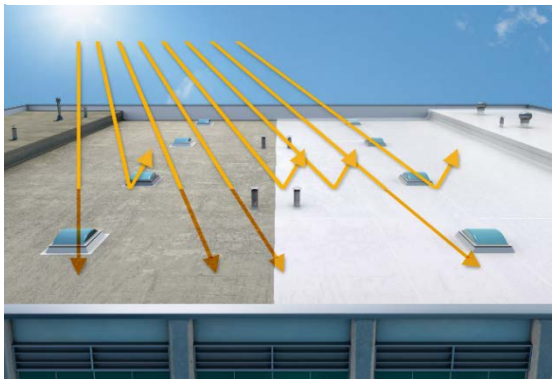


Figure 64: White roofs help reduce the urban heat island effect by reflecting sunlight

6. Consider provision of charging stations in parking areas of mixed uses, institutional uses, or within underground garages for multi-storey residential buildings.
7. Grade related residential unit driveways are encouraged to be paved with light-coloured material to reduce the heat island effect.

7.2 WATER USE AND MANAGEMENT

1. Where possible implement green infrastructure, such as bioswales, within public parks and the public right-of-way to enhance ground water infiltration and improve water quality as part of a comprehensive water management plan.
2. Encourage the inclusion of Low Impact Design Standards including the use of bio-swales, innovative stormwater practices, constructed wetlands, at-source infiltration, greywater re-use system, and alternative filtration systems such as treatment trains.
3. Consider the use of porous or permeable pavement in key locations such as on street parking and private parking lots as part of a stormwater run-off management strategy for promoting groundwater infiltration and water quality treatment.
4. Where possible, implement a rainwater harvesting program to provide the passive irrigation of public and/ or private greenspace, including absorbent landscaping, cisterns, rain barrels, underground storage tanks, infiltration trenches, etc.





Figure 65: Bioswales help to collect runoff after storm events



Figure 66: Example of a porous pavement that contributes to runoff management

5. Plant native, drought-tolerant plants to conserve water and other resources on a residential and community-wide level.

7.3 STORMWATER MANAGEMENT

1. Consider implementing a comprehensive rainwater and water recharge strategy in conjunction with required stormwater management ponds.
2. Use rainwater harvesting, on-site infiltration, and evapotranspiration to retain stormwater on-site.



Figure 67: Example of a Bioswale

3. Consider the use of a greywater systems and rainwater harvesting for watering lawns, gardening, to reduce demand on potable water use.
4. Encourage minimizing the use of hard surfaces by directing flow to landscaped areas and to reduce the volume of run-off into the storm drainage system.



Figure 68: Example of a stormwater pond with tree and shrub planting in Barrie

5. Consider the use of infiltration trenches, dry swales and naturalized bioswales adjacent to parking areas to improve on-site infiltration.
6. Encourage minimizing the risk of flooding by incorporating the natural drainage pattern.

7.4 MATERIAL RESOURCES AND SOLID WASTE

1. Incorporate strategies that emphasize targets for a higher diversion rate in recycling for the plan area.
2. Consider the use of recycled/reclaimed materials for new infrastructure including roadways, parking lots, sidewalks, unit paving, curbs, water retention tanks and



Figure 69: Reclaimed materials can be used for new infrastructure such as gabion walls

vaults, stormwater management ponds, sanitary sewers, and/or water pipes.

7.5 AIR QUALITY



Figure 70: Accommodate electric vehicle charging spots in parking lots

1. Consider developer sponsored transit passes to promote transit ridership.
2. Ensure the active transportation network provides for increased mobility choices to promote walking, cycling and transit to aid in the reduction of short trips by cars.
3. Consider providing Electric Vehicle (EV) charging station rough-ins for 20% of parking spaces in multi-unit residential buildings.
4. Consider providing EV charging station rough-ins for 15% of parking spaces in non-residential buildings.
5. Consider providing EV charging stations for 5% of parking spaces in non-residential buildings.



Figure 71: Consider including carpool parking spots in parking lots

6. Consider providing priority parking for carpool, ride share, low emissions and EVs at 5% for the total parking.
7. Minimize the number of parking spaces provided, particularly in areas served by efficient transit.
8. Consider buying local building materials and minimize the distance travelled to reach a construction site.

7.6 LIGHTING

1. Work to eliminate light pollution on natural areas with the installation of Dark Sky/Nighttime Friendly compliant light fixtures.
2. Choose light fixture that direct light down to minimize light spillage onto other properties.



Figure 72: Choose light fixture that are Dark Sky Compliant that direct light down to minimize light spillage onto other properties

3. Reduce energy use by installing high efficiency street lighting.
4. Consider opportunities for renewable energy use to reduce electric energy supply in the public realm, such as solar powered lighting for natural trails and park pathways.

7.7 GREEN BUILDINGS

The construction of buildings is a large contributor to greenhouse gas emissions. Any changes or improvements to where materials are sourced, the type of materials, and construction practices will help reduce emissions.

1. Encourage the construction of energy efficient buildings through third-party accreditation such as LEED.
2. Orient buildings for opportunities for south facing windows to maximize the potential for passive and active solar energy.
3. Minimize surface runoff and reduce urban heat island effect through the installation of green roofs.

7.8 STEWARDSHIP

1. Consider displaying in the sales centre, promotional information on the sustainable features of both the community and builders house designs.
2. Consider including education packages to residents regarding waste reduction, energy and water efficiency, and access to transit.
3. Design subdivision and site plans to promote current suitability aspects of development.



Figure 73: signage in restoration areas to facilitate education opportunities