Built Form Review Study

City of Waterloo

SvN

October 2023

Contents

1 Introduction

1.1 Purpose of the Study

The Built Form Review study assesses mid-rise and high-rise development, collectively referred to as 'tall buildings,' in the City of Waterloo. The study examines tall buildings from a number of perspectives:

Development trends – where development has occurred and potential areas of growth;

Policy framework – official plan policies and mapping that create the framework for intensification;

By-law framework – zoning regulations that define form and character of buildings;

Guideline framework – design guidelines and plans that set out the objectives for urban form and character; and

Best practices – benchmarking regulations and guidelines in other municipalities.

The study seeks to understand what is working well and what can be improved, and provides considerations and recommendations for change. These considerations are focused on achieving high quality design outcomes regardless of the method of implementation through policy, zoning, non-statutory plans, and development review processes.

The Built Form Review study is one of a number of initiatives that are feeding into the Official Plan Review and Urban Design Manual Refresh processes.

In this report, the terminology "**tall buildings**" is generally used to refer to buildings of **six storeys** in height or greater. The term encompasses both mid-rise and high-rise forms of development.

1.2 Data Sources

SvN worked collaboratively with the City of Waterloo to identify mapping and data that could assist in analyzing past development trends. All raw data, and all mapping, was provided by the City of Waterloo. Beyond standard data sources such as the Waterloo Official Plan and Zoning By-law, key data included:

- Records of tall building activity since 2007, including metrics such as site area, gross floor areas, unit and bedroom counts, and zone categories;
- Records of Official Plan and Zoning amendments since 2017; and
- Mapping tall building activity and OP/ZBL amendments over time.

SvN analyzed the data and maps for the purposes of identifying trends and drawing conclusions for this study.

2 Summary of Stakeholder Input

Input to the study was solicited from representatives of the development industry, as well as City of Waterloo staff, by way of focused round table discussions. Initial questions were prepared covering the range of topics presented in this report. Generally, participants at each session freely shared their thoughts and ideas on the issues that were of interest to them. A summary of feedback is provided below.

2.1 City of Waterloo Staff

City Staff have noted an increase in the design quality of initial development proposals, attributed to Zoning By-law 2018-050 and its focus on urban design performance standards for podiums, towers, and separation distances, among other matters. At the same time, there is a trend for the development industry to seek relief from the Zoning By-law, in terms of urban design performance standards, parking, and building height. There is active development interest on both small and large sites across the city.

Community Planning Team

- The Official Plan Review will refine but not significantly change the Nodes and Corridors structure;
- Expand depth of Corridors to accommodate viable development sites; and
- Past development capacity testing indicates there is a large supply of high-density lands.

Development Planning Team

- Current zoning is simple to implement; prefer to maintain this;
- Hold firm to current zoning, especially heights; developers required to justify amendments;
- Most commonly, developers seek parking rate reductions;
- Concern that City staff are conceding to developers too often, resulting in lowered design quality.
- King, University, Northdale, Uptown are current development hot spots;
- Seeing height increases (>25 storeys);
- The new zoning by-law has raised the level of the initial design; has resulted in more lot consolidation to achieve separation distances;
- Taller buildings could be considered along King near the expressway, in the suburban Station areas, on some Uptown Centre sites, and on former industrial sites; and
- Elevated design quality if >25 storeys.

2.2 Development Industry

Representatives from the development industry identified a number of design performance standards that are felt to constrain their ability to deliver financially feasible development to the marketplace. They expressed a desire for increased flexibility in regulation, with more reliance, in the City review process, on discussion and negotiation of urban design outcomes.

- Consider reduction in policy and more reliance on guidelines, with implementation by an experienced “adjudicator” (City staff person) or Design Review Panel:
    - Reduction in parking minimums;
    - Removal of limiting performance standards (slab length, height, minimum density, maximum density);
    - Use FSR as density measure, not beds/ha;
    - Focus on design and innovation;
- Guidelines to focus on key must haves;
- Performance Standards:
    - 40m building length is limiting for slab forms, compromises parking and unit floorplate efficiencies;
    - 25 storey height is limiting given the slab length maximum. Higher unit yields required = taller or longer buildings; and
- Make a distinction between market and student housing in policy/guidelines.

3 Guiding Growth

3.1 Introduction

This section focuses on factors affecting tall buildings at the City-wide scale, including the policy framework, tall building growth to date, and the potential consideration of additional height and density.

3.2 Official Plan Policies

3.2.1 Official Plan Review

The City of Waterloo Official Plan (OP) was approved by the Council for the Regional Municipality of Waterloo in November 2012 with subsequent revisions adopted in December 2012. The City has since initiated a review of the OP with an anticipated completion in 2023.

SvN's OP review focused largely on intensification and urban design policies that set out the expectations for where tall buildings are anticipated. The review looked at design considerations and guiding principles that affected high-rise development in Centres, Primary and Major Nodes, and Major Corridors, as well as in Minor Nodes and Corridors which are identified in the OP.

Official Plan policies could be strengthened to better **define the desired urban design character of development,** including:

- using more **assertive language**
- providing additional detail for design outcomes and **defining specific goals**, particularly for the public realm and tall building character and massing

As a general overview, while the OP is extensive, providing a thorough set of policies, it could chiefly benefit from strengthened and more direct language to ensure that specific long-term planning outcomes are achieved. The following paragraphs outline areas of opportunity in the OP, followed by a summary of precedent research findings.

As noted the OP directs tall buildings to areas intended for intensification including Centres, Major and Primary Nodes, Major Corridors, and Minor Nodes and Corridors. There is an opportunity for the City to strengthen the policy language in Section 3.6.5 - Intensification within Nodes and Corridors in a manner that allows for built-form control while still responding to context and user experience. For example, Policy 3.6.5.2 provides that High Density, Medium-High Density, and Medium Density land use will be encouraged to locate in designated Nodes and Corridors and therefore in proximity to major roads, major community infrastructure, public transit routes, and other supporting land uses. SvN recommends eliminating wording such as "encourage" or other vernacular that suggests the policy is not a requirement.

The City may also consider identifying intensification areas that could accommodate additional height above the existing Official Plan height provisions and not require an Official Plan Amendment. It is recommended that this bonusing would be subject to the provision of enhanced community benefits. The amount of permitted height would still be subject to meeting other urban design objectives (i.e. the increase in height should not create an adverse impact to shadowing on open space, among others).

Generally, except for the Commercial designation, Chapter 10 – Land Use policies do not provide urban design direction. The City can consider two approaches to tailor the intensification area provision to not only encourage but define tall building development. First, the policies could be strengthened directly in Chapter 3. For example, in Major Transit Station Areas (MTSAs) Policy 3.8, the only design considerations are high-level related to active frontages and some references to the pedestrian realm. For an area that will likely be

tower oriented, there should be requirements for Master/Block Context Plans and/or specific design criteria including but not limited to:

- Highly interconnected street and public realm network;
- High-quality tree-lined and furnished streetscapes;
- Compact multi-functional and all-season public spaces;
- Pedestrian-scaled street wall;
- Active uses at ground level;
- High-quality architecture and urban design; and
- Appropriate location and screening of parking.

Alternatively, if the intensification area urban design policies are to stay general, then there is an opportunity to have more specific urban design criteria for all of the land use designations, not just the Commercial designation. This could be framed as design criteria similar to the City of Toronto (see Precedent Research below).

If the "15-Minute City" is a concept that resonates with the City of Waterloo, consideration could also be made to expand the urban design objectives in intensification areas to include the following considerations:

- Creation of complete communities with access to employment opportunities, community services, retail/commercial, and amenities;
- Provision of human-scaled design;
- Delivery of pedestrian and cyclist infrastructure; and
- Emphasis on transit-oriented development.

There are a number of urban design policies that defer to reaffirming the existing character. This language may perpetuate less-than-desirable built-form outcomes. By overly relying on the existing character, there is the risk that the quality of future developments could undermine the long-term liveability and success of the city. The City could also consider defining how character is determined, and what criteria are considered in intensification areas, this could include items related to:

- Heights, scale, and massing;
- Streets and block patterns;
- Lot size and configuration;
- Prevailing setbacks of buildings from the street or streets;
- Setback and step back conditions;
- Landscape approaches;
- Heritage and cultural resources; and

- Other special landscape or built-form features.

There is only a small section in the OP (Policy 3.7.1.4) concerning architectural integrity. Otherwise, the OP only entrenches specific design outcomes for King Street. There is an opportunity to either strengthen the language in Policy 3.7.1.4 or include more precise design objectives that apply to tall buildings in intensification areas. The City can also consider character policies for an expanded selection of corridors to reinforce certain design outcomes. Moreover, the City could also revisit Policy 3.11.2 which provides that tall buildings within Nodes and Corridors should relate to the street width ratio, which may be appropriate for Corridors that are adjacent to low-rise residential areas, but perhaps this does not need to be applied to all Nodes.

Defining intended character also includes the Urban Design Manual and a potential Streetscape Master Plan.

While some policies support lot consolidation when intensifying Nodes and Corridors (Policy 3.6.5.5) to ensure that there are properties of sufficient size that enable medium, medium-high and high-density development, the City should explore the inclusion of master or block planning provisions, as currently there is only reference in the Specific Provision Area 45: Northdale (Policy 11.1.45), which requires a Block Plan study. This would ensure higher density development fits within the existing and planned context.

Where the City has existing master plans for the **Station Area Plans: City of Waterloo Station Area Planning (2017),** consider strengthening policies and mapping to better match the recommendation. For example, this could include the illustration of a fine-grain street and block network and special streets. The current maps only identify “potential” public spaces or connections.

Within designated Nodes and Corridors, Policy 3.6.6 supports minimizing surface parking and street screening, as well as encouraging underground and structured parking. Similarly, in the Uptown Centre parking is to be strategically located and encouraged to be accommodated underground or through parking structures/decks (Policy 3.7.2). There are no provisions that specify if above-grade parking should be wrapped or that underground parking should be prioritized where there are no demonstrated water table issues.

There are few policies that emphasize public realm objectives that support safe and comfortable pedestrian environments. This would include provisions related to base building scale, microclimates, streetscape conditions, and the like.

Lastly, there are limited references to the Urban Design Manual or other Design Guidelines. The Urban Design Implementation provisions (3.11.5.5) provide that the guidelines shall be used to evaluate development proposals. Given the interdependence of good urban design and the creation of liveable spaces, the importance of the design manual should be reinforced.

3.2.2 Official Plan Precedents

The following sections provide a brief review of several Official Plans across Canada that are of a similar scale to Waterloo, have a major university, and/or provide a particularly successful approach to urban design outcomes for tall buildings. Each section also includes excerpts of unique and effective policy language with commentary to guide potential revisions to the OP.

London Plan (December 2016)

The London Plan lays an effective path towards blending "past planning successes with a new approach". The London Plan focuses on directing high-intensity, mixed-use development to strategic locations - along rapid transit corridors and within the transit area. The London Plan takes a practical approach to "City Design" policies which are organized by Character, Street Network, Streetscapes, Public Space, Site Layout, and Buildings. Each topic area has a fulsome range of policies, many of which provide specificity (at the Official Plan level) for desired design outcomes. This thematic approach supports creating a consistent design language across the city, preventing the fragmentation that can sometimes occur.

The London Plan is a good example of providing specific design policies that are appropriate at the Official Plan level.

Policy Excerpts

Character Policy No. 199: All planning and development proposals within existing and new neighbourhoods will be required to articulate the neighbourhood's character and demonstrate how the proposal has been designed to fit within that context. The Our Tools chapter and the Residential Intensification policies in the Neighbourhoods Place Type chapter of this Plan provide further guidance for such proposals.

Note the requirement for development proposals to demonstrate the context fit, as well as policies that define the character to be achieved.

Street Network No 212: The configuration of streets planned for new neighbourhoods will be of a grid, or a modified grid, pattern. Cul-de-sacs, deadends, and other street patterns which inhibit such street networks should be minimized. To ensure connectivity and integration with existing and planned neighbourhoods, new neighbourhood street networks will generally be designed to have connections to existing and future neighbourhoods.

Note the very specific language requiring and discouraging certain street layouts.

Buildings Policy No. 293: High-rise buildings should be designed to minimize massing, shadowing, visual impact, and the obstruction of views from the street, public spaces, and neighbouring properties. To achieve these objectives, high rise buildings should take the form of slender towers. High rise buildings should not be designed with long axes where they create an overwhelming building mass.

Buildings Policy No. 289 to 293 discuss the form and design of high and mid-rise buildings. In particular, the above excerpt provides a very clear direction of the municipality's expectations for tall building forms.

London also sets out a vision for near campus neighbourhoods. Policy 965 provides that all planning and development applications will be reviewed to evaluate the degree to which they meet, amongst other matters, the following goals:

5. In the pursuit of balanced neighbourhoods, recognize areas that have already absorbed significant amounts of residential intensification and residential intensity and direct proposals for additional intensification away from such areas.

7. Encourage residential intensification in mid-rise and high-rise forms of development and discourage a concentration of residential intensification and residential intensity in low-rise forms of housing.

10. Ensure that residential intensification projects incorporate urban design qualities that enhance streetscapes, complement adjacent properties, and contribute to the character and functional and aesthetic quality of the neighbourhood.

The aforementioned policies emphasize an appropriate form of intensification to avoid undermining near-campus neighbourhoods. With respect to item 5, while we do not believe this approach is necessarily applicable to Northdale, but offers an example of how other municipalities are approaching near-campus development.

City of Toronto Official Plan (June 2006)

The City of Toronto Official Plan has a good approach to design criteria for each land use designation that warrants exploration. Furthermore, the City of Toronto also recently introduced two new Official Plan Amendments that provide more robust guidance for built form and massing outcomes without prescribing specific quantitative measures.

Development Criteria in Mixed Use Areas Policy 4.5.2(c): In Mixed Use Areas development will locate and mass new buildings to provide a transition between areas of different development intensity and scale, as necessary to achieve the objectives of this Plan, through means such as providing appropriate setbacks and/or a stepping down of heights, particularly towards lower scale Neighbourhoods.

The above excerpt is an example of critical considerations for evaluation that apply when dealing with the integration of new development in varying land use designations. It provides an added layer of protection at the Official Plan level for specific design outcomes.

Built Form, Tall Building Policy 3.1.4.10: The tower portion of a tall building should be designed to:

a) reduce the physical and visual impacts of the tower onto the public realm;

b) limit shadow impacts on the public realm and surrounding properties;

c) maximize access to sunlight and open views of the sky from the public realm;

d) limit and mitigate pedestrian level wind impacts; and

e) provide access to daylight and protect privacy in interior spaces within the tower.

Policy 3.1.411. Policies 3.1.4.10 a) through 3.1.4.10 e) should be achieved by:

a) stepping back the tower from the base building;

b) generally aligning the tower with, and parallel to, the street;

c) limiting and shaping the size of tower floorplates above base buildings;

d) providing appropriate separation distances from side and rear lot lines as well as other towers; and

e) locating and shaping balconies to limit shadow impacts.

The two above policies provide clear attributes to the shape and form of a tall building without entrenching quantitative measures.

SvN also reviewed the York University Secondary Plan which functions as a tool for the community and provides a vision for development in and adjacent to the plan area. The York University Secondary Plan is organized into precincts, comprised of Edge and Core Precincts and sub-categories of land use designations (ie. Mixed Use Areas A through C). Policy 4.2.7 provides Mixed Use Areas "C" will:

a) consist of a broad range of commercial, residential and institutional uses at a lower density and height than is provided for in Mixed Use Areas "A" and "B";

b) provide for mixed-use buildings along The Pond Road, Sentinel Road and Evelyn Wiggins Drive that will be built close to the streetline with at-grade retail, office and/or service uses;

c) have buildings that are developed at a pedestrian-scale height; and

d) provide appropriate transitions to the adjacent Neighbourhoods.

What is valuable with the above York University Secondary Plan policies is the delineation of built-form objectives on certain streets.

Mississauga Official Plan (August 2022)

The Mississauga Official Plan is similar to the OP whereby it envisions growth will be directed to Intensification Areas comprised of the Downtown, Major Nodes, Community Nodes, Corporate Centres, Intensification Corridors, and Major Transit Station Areas. While the Mississauga Official Plan does not provide much direction for institutional uses (ie. University of Toronto Mississauga), it is very effective in its treatment of intensification areas and their corresponding built-form outcomes.

Policy 9.2.1.7: Development proponents may be required to provide concept plans that show how a site will be developed with surrounding lands.

Note the requirement (at City Staff discretion) for a concept plan to accompany development proposals.

Policy 9.2.1.9 Where the right-of-way width exceeds 20 m, a greater building height may be required to achieve appropriate street enclosure in relation to the right-of-way width.

The above excerpt illustrates an approach for ensuring appropriate built-form proportions with rights-of-way.

Policy 9.5.2.2: Developments will be sited and massed to contribute to a safe and comfortable environment for pedestrians by:

a. providing walkways that are connected to the public sidewalk, are well lit, attractive and safe;

b. fronting walkways and sidewalks with doors and windows and having visible active uses inside;

c. avoiding blank walls facing pedestrian areas; and

d. providing opportunities for weather protection, including awnings and trees.

The above policy is an example of Official Plan objectives that support built-form features for an improved pedestrian realm.

Policy 13.4.4.3: Buildings will be designed to consider the street hierarchy and streetscape, as follows:

a. high priority streets: High priority streets are major roads and streets that may front onto public amenities, open spaces or parks. High priority streets will have the highest standard of design in the public and private realms, with a mixture of uses and pedestrian oriented built form. Building frontages on high priority streets will be developed to incorporate:

i. commercial uses at grade, where appropriate;

ii. connections to parks, public spaces and retail uses at grade, where appropriate; and

iii. a substantial amount of transparent vision glass at grade, where appropriate.

b. residential streets: Residential streets primarily support housing and local connectivity. Residential streets will be designed to ensure a quality pedestrian environment. Building frontages on residential streets will incorporate residential units at grade that provide direct access to the street, where appropriate. Buildings will contribute to a quality public and private realm.

c. service streets: Service streets will provide necessary access to parking facilities, loading, service and utility areas serving development blocks. Buildings will accommodate for service and vehicular access, and utilities along service streets.

The City of Mississauga recently amended their Official Plan to include **policies for large mall sites**. The policies focus on creating a comprehensive master plan that breaks down the superblock to create a **finer grain of development blocks** appropriate for intensification.

The above hierarchy of streets provides valuable direction for large site consolidation and redevelopment.

Policy 14.1.2.9.1: A road system with numerous intersections will be required to provide connectivity and encourage walking and cycling as the predominate modes of transportation within the nodes.

Policy 14.1.2.9.2: Block sizes will be a maximum of 80 by 180 metres or an equivalent perimeter. Roads surrounding blocks will be public and meet City right-of-way and design standards.

Policy 14.1.2.9.3: A limited number of private roads may be permitted instead of a public road to facilitate underground services such as deliveries and parking, subject to the following:

a. public easements will be required;

b. required right-of-way widths will be provided; and

c. appropriate terminus may be required for maintenance and operations where a public road connects with a private road.

Note the above policies concerning block planning for larger sites.

City of Kingston Official Plan (January 2010)

Amongst the precedents reviewed by SvN, the City of Kingston Official Plan goes into the greatest level of detail as it relates to institutional planning at the Official Plan level (as opposed to the provision of Secondary Plans). The following excerpts are useful in their efforts to protect adjacent neighbourhoods.

Policy 3.5.A.6: The growth and expansion requirements of Queen's University over the course of this Plan are addressed by the Queen's University Campus Master Plan. Any expansion of the Institutional designation shown on Schedule 3-A will be considered within the context of an application to amend this Plan to be supported by such Campus Master Plan. It is the intent of this Plan:

d. to prohibit expansion of the Main Campus into the adjacent westerly Residential designated lands or into the adjacent easterly Residential designated lands in order to protect the long-term maintenance and stability of those areas for residential use.

Amongst several other policies that dictate how the expansion of Queen's University should occur, this excerpt specifically emphasizes the protection of residential lands to prevent their destabilization. While we do not believe this is appropriate for the City of Waterloo, it presents an example of strong policy language.

Policy 3.5.A.7: The City may study the Campus Expansion Area as a possible location to accommodate residential intensification, in consultation with Queen's University and the public. Notwithstanding, it is the intent of this Plan that any future expansion of the Main Campus be directed to the Campus Expansion Area shown on Schedule 13, subject to the following policies:

a. that any new northerly limit for the Institutional designation be considered in the context of specific analysis, or on the basis of a joint secondary planning analysis of the Campus Expansion Area by the City and the University's Campus Master Plan;

b. that a strategy be adopted by Council to provide alternative accommodation, to replace or relocate any housing lost through the land use conversion process, prior to any expansion of the Main Campus into the Campus Expansion Area;

c. that the seven block area north of the Main Campus be recognized as being both a residential area and an area of potential university campus and building expansion;

d. that the Campus Expansion Area be designated for residential purposes on Schedule 3-A in recognition of the long standing residential uses and buildings of the area;

e. that residential development be permitted within the area subject to the Residential policies and Compatibility policies of this Plan and a rezoning for medium and high

density residential proposals and site plan control review, where applicable, (low density residential may occur without rezoning);

f. that any applications for residential development approval be circulated to the University for consideration for acquisition as part of any campus expansion program;

g. that the Campus Expansion Area be identified as an area in which the long period of unfulfilled land use transition from residential to University uses has imposed a high level of neighbourhood and owner uncertainty which may warrant land use planning analysis; and,

h. that such a planning analysis must also address the safety and convenience of adjacent neighbourhood residents.

Note the level of detail that the City of Kingston Official Plan has placed into controlling the manner in which Queen's university can expand.

Entrenched tall building policies in 10E. Princess Street Corridor Specific Policy Area

Policy 10E.1.32: The following policies apply to tall buildings:

a. Tall buildings will be designed with a mid-rise podium to reflect the intent and character of the addendum to the Williamsville Main Street Study (2020). These podiums will incorporate a mix of commercial and residential uses and shall meet all policies of Section 10E.1 that apply to the design of a mid-rise building.

b. The tower component of tall buildings will have a maximum floorplate of 790 square metres.

c. The tower component of tall buildings will be separated from each other by a minimum of 25 metres, measured from the two closest points between the towers. The tower component shall be setback a minimum of 12.5 metres from the property line of an adjacent property, except where the adjacent property has already been developed with a tall building, such tower may be located closer than 12.5 metres to the property line so long as the 25 metre separation distance between towers is maintained.

d. Consideration should be given to the location of a tower on a site. Towers will be located as far as possible from adjacent low-rise developments. Additional stepbacks from the top of the mid-rise podium will be required.

While most Official Plans reviewed do not provide any quantitative measures for tall buildings, the above is an example illustrating how separation distances and floor plate sizes have been incorporated for a special policy area only.

Urban Hamilton Official Plan (August 2013)

The Urban Hamilton Official Plan does not provide much direction in terms of tall building policies, instead, it places a lot of emphasis on policies related to the streetscape and public realm outcomes, particularly given the heritage context in Hamilton. For built-form policies affecting institutional areas, the Urban Hamilton Official Plan Major Activity Centre policies are helpful to review.

Policy 2.4.1.4 Residential intensification developments shall be evaluated based on the following criteria:

> *b) the relationship of the proposal to existing neighbourhood character so that it maintains, and where possible, enhances and builds upon desirable established patterns and built form; and*
>
> *d) the compatible integration of the development with the surrounding area in terms of use, scale, form and character. In this regard, the City encourages the use of innovative and creative urban design techniques.*

Observe the language concerning integration, particularly, the notion of enhancing desirable patterns.

3.3.2.4 Quality spaces physically and visually connect the public and private realms. Public and private development and redevelopment should create quality spaces by:

> *a) organizing space in a logical manner through the design, placement, and construction of new buildings, streets, structures, and landscaping;*
>
> *b) recognizing that every new building or structure is part of a greater whole that contributes to the overall appearance and visual cohesiveness of the urban fabric;*
>
> *c) using materials that are consistent and compatible with the surrounding context in the design of new buildings;*
>
> *d) creating streets as public spaces that are accessible to all;*
>
> *e) creating a continuous animated street edge in urban environments;*
>
> *f) including transitional areas between the public and private spaces where possible through use of features such as landscaping, planters, porches, canopies, and/or stairs;*
>
> *g) creating public spaces that are human-scale, comfortable, and publicly visible with ample building openings and glazing;*
>
> *h) creating, reinforcing, and emphasizing important public vistas and view corridors; and,*
>
> *i) minimizing excessive street noise and stationary noise source levels through the design, placement, and construction of buildings and landscaping.*

The excerpt provides an example of policy language that supports an improved public realm with an emphasis on public and private connections.

2.5.2 Major Activity Centres shall primarily accommodate major institutional uses but also provide for ancillary residential, recreation, research and office uses.

2.5.4 Major Activity Centres shall be linked by Primary Urban Corridors to other Urban Nodes including the Downtown and shall be served by the higher order transit service in recognition of the high ridership rates by students and employees.

The Urban Hamilton Official Plan stresses the function of major institutions (ie. McMaster University) as mixed use nodal areas, the two above policies are examples of how policy

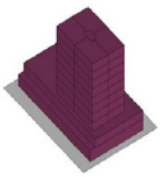
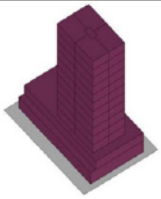
language protects these areas while recognizing the interrelationship with intensification areas (ie. nodes and corridors).

City of North Vancouver Official Community Plan (2014)

In many respects the approach to planning in North Vancouver is quite comparable to southern Ontario, the Official Community Plan employs a similar principle when it comes to urban design including transitioning density from high to low-rise neighbourhoods, focusing density near key transit corridors. In contrast, the details of the policy framework are much more prescriptive as it relates to built form.

Policy 1.3.2: Avoid "zoning cliffs" at the edges of high and medium density residential areas by designating lower density multiple residential development between higher density and single family areas.

Note that this policy provides the language for transition zones between differing land uses. As noted, the North Vancouver Official Community Plan is very prescriptive. The figure below illustrates how different land use categories are further sub-categorized with detailed form and density objectives. It also includes provisions for density bonusing.

 	**MIXED-USE LEVEL 4A** (High Density)	Purpose Form Max Density Max Bonus	To allow for a mix of higher-density multi-family and commercial uses in Lower Lonsdale. Buildings in this designation typically include a mix of retail and/or office space on lower floors and residential apartments on upper floors. Mid-rise or high-rise buildings. Heights are limited as indicated in the **Land Use map** (Schedule A, Appendix 1.0). **2.6 FSR** A maximum increase of **1.0 FSR** may be considered when public benefits are provided as per Section 2.2.
 	**MIXED-USE LEVEL 4B** (High Density)	Purpose Form Max Density Max Bonus	To allow for a mix of higher-density multi-family and commercial uses to strengthen the core of the city and generate employment opportunities. Buildings in this designation typically include a mix of retail and/or office space on lower floors and residential apartments on upper floors. High-rise buildings greater than six storeys. Heights are limited as indicated in the **Land Use map** (Schedule A in Appendix 1.0). **3.0 FSR** A maximum increase of **1.0 FSR** may be considered when public benefits are provided as per Section 2.2.

3.3 Official Plan Amendments

Since 2017, City of Waterloo data indicates that there have been 10 Official Plan Amendments involving tall buildings. Nine involved re-designations to categories with higher height and density permissions; the other one was for an increase in density within its current category. Of the nine, several seem quite reasonable in nature, bringing a site's designation into line with the planned context. The others re-designated from the medium-high category (40 metres) to high (81 metres).

These types of amendments appear straightforward in nature, and are to be expected in an intensifying city. There do not appear to be an exceptional number of amendments being sought. Every amendment must be considered on its own merit to understand if the higher heights being sought are appropriate to their location, whether there are negative external impacts on adjacent uses including the public realm, and whether good design is being achieved, and whether planned function is being maintained. This appears to be the case with recent amendments

There have not been a lot of developer-initiated Official Plan Amendments to date. Those that have occurred up-designate land, but they generally appear **appropriate to their context.**

3.4 Growth Potential

3.4.1 Data Analysis

The City of Waterloo Geographic Information System (GIS) provides data on tall buildings dating back to 2007. The data set includes completed buildings, buildings with final occupancy permits, and buildings with building permits issued. For each building, the data includes location, height, floor areas, units, bedrooms, zoning designations, official plan designations, and type of parking.

In a few cases, SvN made assumptions to round out the data set, for example, in cases where there were multiple buildings on a property, the total site area of the property was subdivided among the individual buildings so that each building would have an individual density. These assumptions were based on a review of aerial photography wherever possible.

For this study, the primary purpose of data analysis was to understand the nature of recent intensification in the City of Waterloo, particularly the densities achieved, as well as building heights, uses and spatial distribution.

For convenience, tall buildings were grouped into three groups based on their zoning designation:

- **High**: zoning up to 81 metres (e.g. RMU-81, RN-25); building heights typically 13-25 storeys;
- **Medium-high**: zoning up to 41.5 metres (e.g. RMU-40, RN-12); building heights typically 7-12 storeys;
- **Medium**: zoning up to 21.5 metres (e.g. RMU-20, RN-6); building heights typically 6 storeys; buildings of 5 storeys or less were not considered.

There are 82 zone categories* permitting tall buildings. For study purposes, tall buildings have been grouped as follows:

High
up to **25 storeys** (40-81 metres tall)

Medium-high
up to **12 storey**s (21.5-40 metres tall)

Medium
6 storeys (21.5 metres tall)

*82 zone categories is based on all sub-zones within each zone, for example, Residential Mixed Use zones permitting tall buildings include RMU-30, RMU-40, RMU-60, RMU-81, or four different zone categories. Each has differences in minimum height, maximum height, podium height, and density. Zone categories include RMU, RN, U1, U2, C1, C2, C3, C4, C5, C6, C7, C1A, C2A, C2B, C4A, E1, E2, E3, E3, E2A, E2B, EI, I and UC

These three groups serve as a way of organizing the City's 82 zone categories that permit tall buildings of six storeys or more across residential, commercial, mixed use, station area, employment and institutional designations. The groups correspond to the City's nodes and corridors structure, where taller, denser development is permitted in the Primary Node, Major Nodes and Major Corridors, with a tapering (lowering) of height and density to other designations such as Minor Nodes and Minor Corridors.

3.4.2 Average density

Average density for tall building sites since 2007 has been calculated based on Floor Space Index (FSI), units per hectare, and bedrooms per hectare using the City's data.

This chart provides a snapshot of the total number of units and the average densities achieved by tall building development in Waterloo since 2007. It only considers residential units (and by extension, residential population), not retail/ commercial space or jobs.

Tall Buildings (2007-present) Average Density

	FSI	u/ha	Beds/ha	Beds/unit	Total units
High	5.1	403	675	2.15	6108
Medium-high	3.7	456	575	1.55	3127
Medium	1.5	161	224	1.41	1982
Average	3.6	342	509	1.76	11217

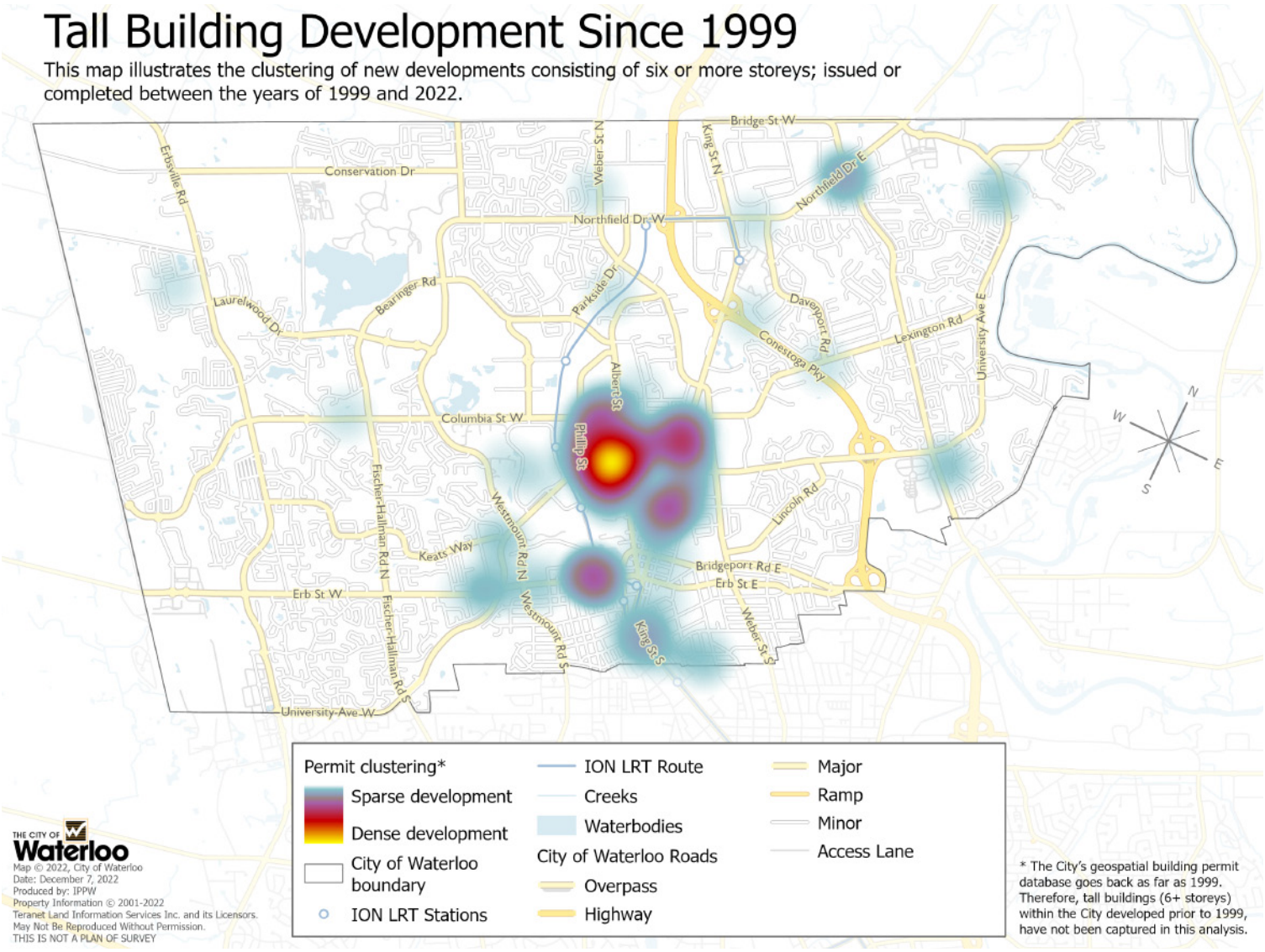
Generally, density increases with building height. However, a unique finding is that density expressed as units per hectare decreases from the medium-high to high categories, even though beds per hectare increases. The floor area of the buildings within the high category is being allocated to a high number of bedrooms within units. This seems to reflect Waterloo's high proportion of student housing within tall buildings, especially in the Northdale area. This is a relatively unique phenomenon to Waterloo, not typically seen in other municipalities.

Since 2007, the data may indicate a trend towards increasing densities, where more recent developments exhibit higher average densities than older developments. However, this is hard to see as a clear linear progression because of the relative lack of development in some years in some height categories, i.e. there is not enough data to average out variations in individual years.

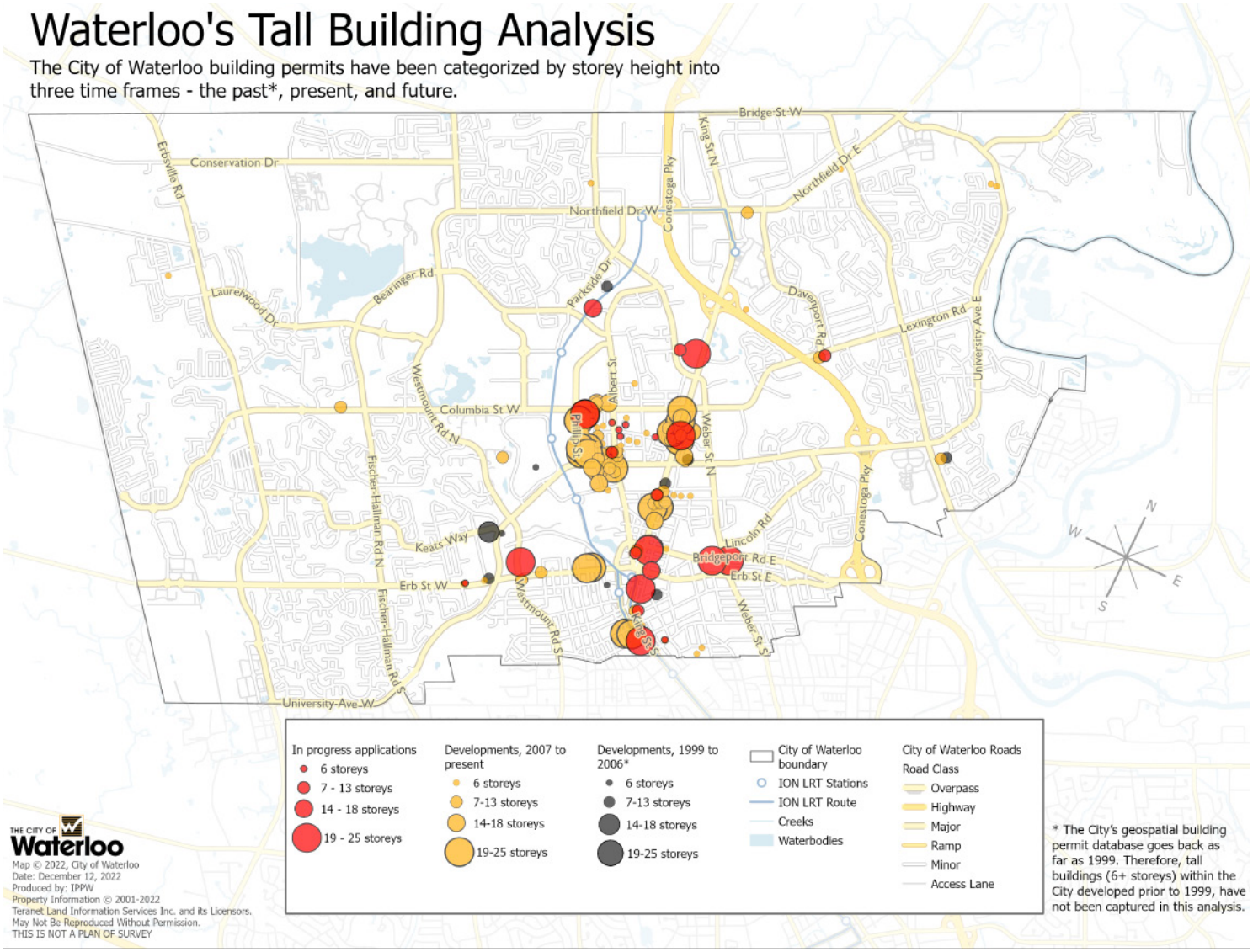
3.4.3 Development Location

The location of this tall building development clusters around key civic elements, including the Uptown Centre, the Universities, and the King Street and Erb/Bridgeport corridors. There is a discernible trend towards greater dispersal of development over time, away from these focal areas.

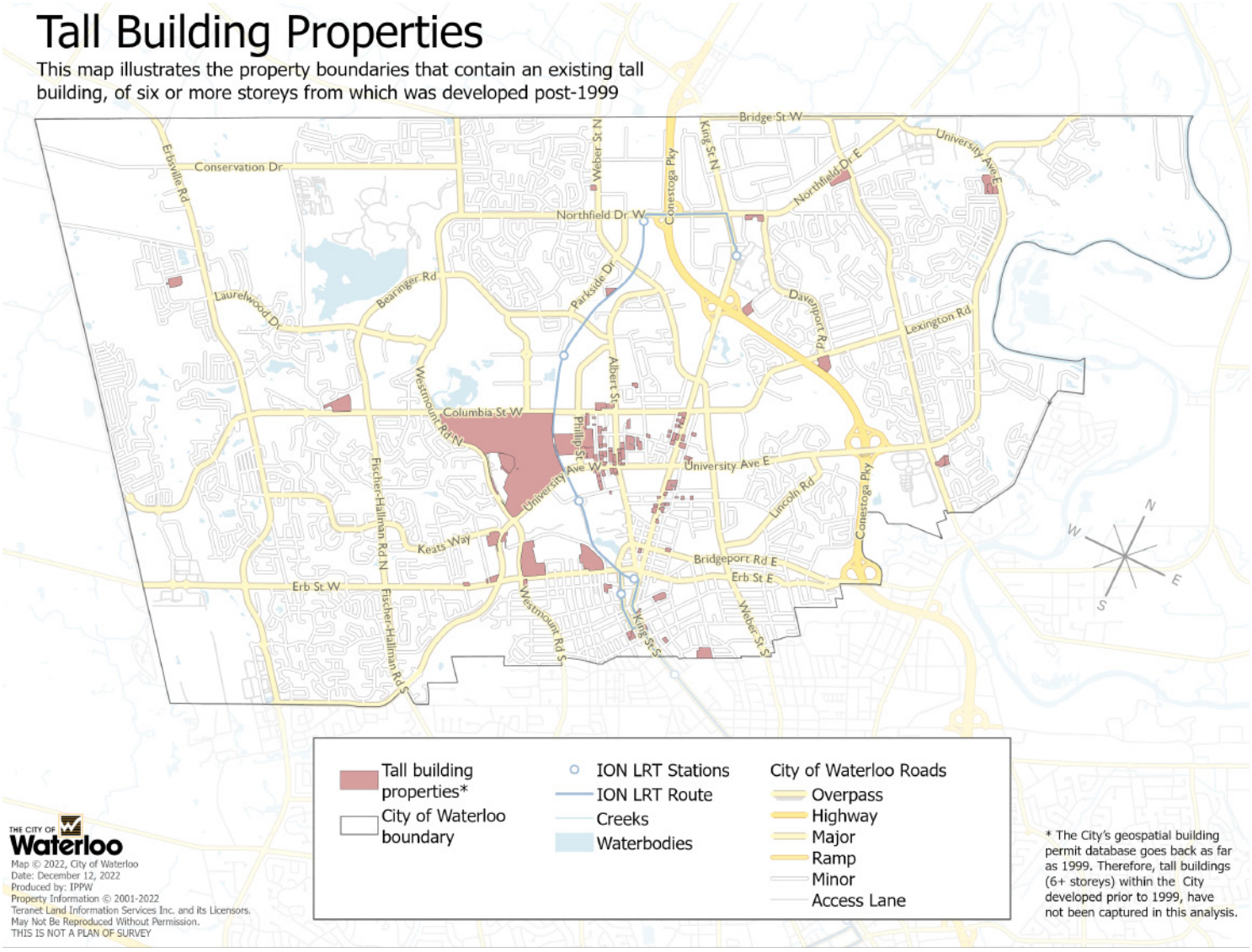
Heat Map: Location of Tall Building Development



Recent and Proposed Tall Building Development by Scale



Locations of Tall Buildings



The **Uptown Centre** and **Major Corridors** are achieving levels of density anticipated by the current Official Plan.

3.4.4 Intensification Areas

The distribution of intensification aligns with some Official Plan goals. The Uptown Centre is achieving 195 persons and jobs per hectare, very close to the defined target of 200 persons and jobs per hectare by 2031. Major Corridors are achieving 162 persons and jobs per hectare. While there is no specific defined target for Major Corridors, it compares favorably against the target of 160 persons and jobs per hectare for Major Transit Station Areas.

Major Nodes, Minor Nodes and Minor Corridors have not achieved the same levels of intensification, however, this is likely due to the very large land supply in each category. There are no defined targets for these categories.

There is no specific data available for Major Transit Station Areas. Station Areas within the Uptown Centre have likely achieved a moderate level of intensification. Those outside it have likely not because of the large quantum of employment and institutional lands within them, as well as their relatively more suburban locations. However, given recent development interest, as well as the ability to change the policy context to allow mixed use around the suburban Station Areas, this is poised to change.

Existing Total People, people & jobs (Source: DCM, last updated Oct. 31, 2022)

	Uptown Centre	Major Node	Minor Node	Major Corridor	Minor Corridor	TOTAL
People & jobs (by property centroid)	17,238	53,748	8,229	12,328	36,361	127,904
Land Area (ha)	88.62	537.04	132.88	76.13	452.52	1,287.19
People and jobs/ ha	195	100	62	162	80	99

3.4.5 Development Capacity

The City's Official Plan and Zoning By-law designate a significant supply of land that has tall building permissions. Some of the sites have been built out with tall buildings; however, most of the land can accommodate intensification in some form. How much development capacity does this represent? To establish a baseline, the intensification capacity of the lands that are deemed likely to be attractive for tall building development needs to be understood.

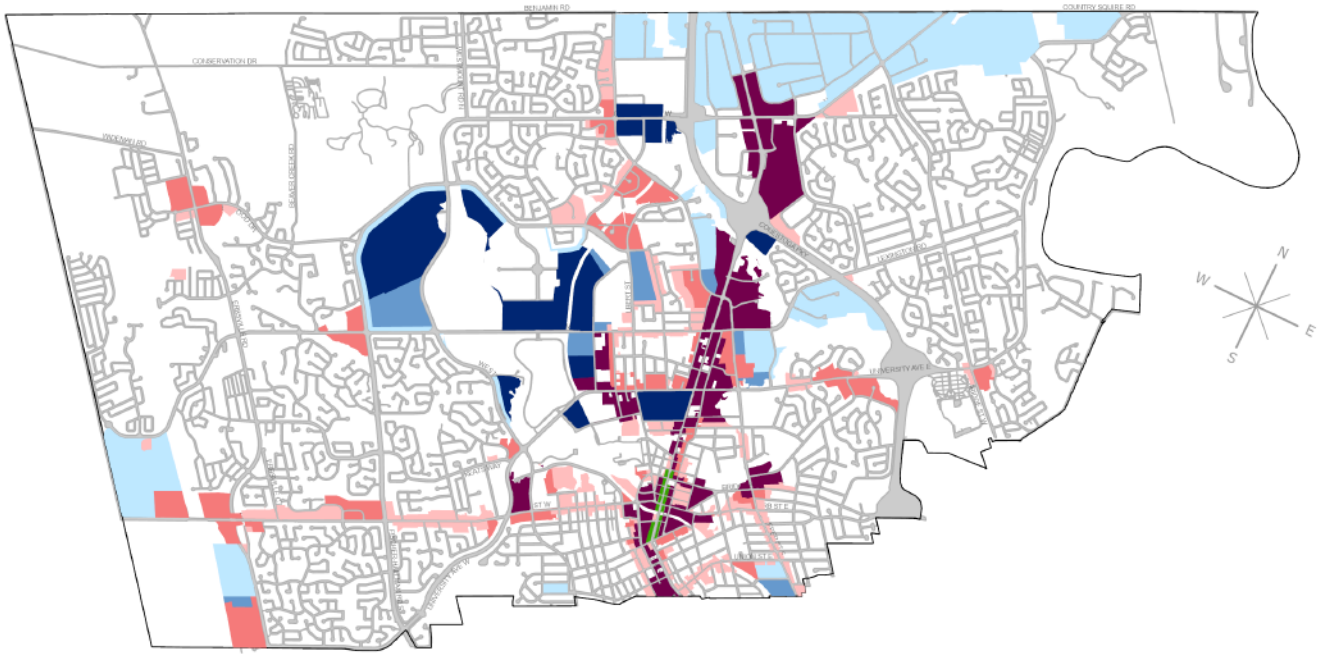
The capacity analysis focuses on areas zoned for residential development, e.g. residential, mixed use, and commercial zones. It also includes potential future station area zones around the ION Light Rapid Transit line where the Regional Official Plan has removed employment land designations, allowing the City to re-designate these areas to include residential intensification. The station areas are assumed to be in the high category.

While there are areas of employment and institutional zones that permit tall buildings, given the lack of development of tall office or university buildings in the City of Waterloo in the past 15 years, and the relative scarcity of it in any other context in Southern Ontario with the exception of downtown Toronto, it seems unlikely these areas will be attractive for tall

Net Land Areas with Tall Building Permissions

City Structure by Height Allowance

THE CITY OF Waterloo
Map © 2022, City of Waterloo
Date: November 8, 2022
Produced by: IPPW
THIS IS NOT A PLAN OF SURVEY



- Residential - high density, up to 81 metres
- Employment - high density, up to 81 metres
- Residential - medium density, up to 20m
- Employment - medium density, up to 27 metres
- Residential - medium high density, up to 40 metres
- Employment - medium-high density, up to 40 metres
- Main Street

*Note: this layer has been approved by Regional Council but has yet to receive ministerial approval at the Provincial level so it is not in force & effect.

	Permitted Maximum Height	Gross Land Area (ha.)	Lands within natural/flooding hazards (ha)	Regionally significant employment lands (ha)	Net Developable Area (removal of 15m rail buffer, flooding hazards, & existing tall building properties) (ha)
Residential		604.4	61.0	3.0	479.3
High Density	81 metres	223.4	24.6	0.9	172.6
Medium High Density	40 metres	204.2	20.2	1.4	166.2
Medium Density	20 metres	176.7	16.2	0.6	140.4
Employment		944.7	63.8	157.8	655.0
High Density	81 metres	327.2	29.8	63.5	172.6
Medium-High Density	40 metres	82.0	1.3	71.5	57.7
Medium Density	27 metres	535.6	32.7	22.8	424.7
Main Street		4.5			

The net land base of residentially designated areas that have not yet been developed to their full potential as per their Official Plan and Zoning By-law designations.

building development. These sites may develop in some form, but for the purposes of this study, they are assumed not to contribute to total capacity of tall building growth.

Sites that have existing tall buildings, including recently developed sites captured in the GIS data set, and sites with existing older buildings, were removed from the baseline area of potential intensification. In addition, floodplain hazard lands, and land within the ION corridor setback were also excluded.

NOTE: While "already developed" sites were identified in the data set and removed from the total land supply, there are examples where the data set has not caught up to on-the-ground development, i.e. some sites that have been recently developed have not been removed from the land supply data. These are likely not a significant proportion of the total land supply.

To determine potential development capacity, the remaining area of potential intensification was multiplied by the average density by height category achieved by development in Waterloo since 2007.

Multiplying the net land base of residentially designated areas that have not yet been developed to their full potential by achieved densities gives an estimate of the total intensification capacity. In other words, it extrapolates the density of recent development (since 2007) on undeveloped sites. This is an **order-of-magnitude estimate** and based on a number of assumptions. It only considers residential density, not commercial or employment density. It presents one methodology to calculating capacity – there are others, noted in the following section.

The estimate does not account for the existing population on those sites, but not all sites will intensify.

Potential Development Capacity

	Net development area	FSI	u/ha	beds/ha	Units	Population at 1.76 PPU
High	172.6ha	5.1	403	675	69,557	122,420
Medium-high	166.2ha	3.7	456	575	75,787	133,385
Medium	140.4ha	1.5	161	224	22,604	39,783
Total	493.7ha				167,948	295,588

The total intensification capacity of residentially designated zones is high, over 167,000 units or 295,000 population. This represents approximately two times the current population of the city. However, this figure does not account for the existing population of the current land uses.

As noted in the developer round table discussion, designating a supply of land for intensification does not mean it is available for development. Obstacles include:

- The current use of the land is more valuable than the potential future use through intensification. As an example, this happens in the Uptown Centre and along Corridors where existing single detached housing is very expensive to acquire and consolidate into a larger, developable parcel. The land cost of assembly cannot be recovered through development given current market/economic conditions. It may also happen in areas where there are existing, low apartments that generate satisfactory revenue for owners, and so the prospect of redevelopment, with associated risk and cost, is not attractive.

- Land is locked up by owners who have no plans to sell or develop. This can include large parcels such as malls, or common element townhouse or apartment complexes that have the ability to intensify.
- Land may only partially develop. This can include malls, which may intensify around their edges but leave the mall intact with associated parking and circulation space. Common element complexes may infill at partial density, for example by adding a new tall building to an existing surface parking lot, and leave the existing, lower housing forms intact.

Conservatively, if only half of the residentially designated supply was available for development, this would still represent 83,500 units or 145,000 population, less current population.

Again, designating a supply of land for intensification does not mean it is available for development. In the case of the Research & Technology and University of Waterloo Station Areas, the University of Waterloo is a major landowner of lands that could potentially intensify, and they may not be interested in pursuing non-academic development. However, there are tremendous synergies and benefits that can be achieved with a well planned university-employment-retail-residential precinct.

3.5 Benchmarks

Regional Official Plan Amendment No. 6 provides targets of 83% intensification and 19,740 new units in intensification areas to the City of Waterloo to the year 2051 (page 30, Table 3). The Region of Waterloo Land Needs Assessment Addendum, Appendix A Recommended Approach to Growth Residential Growth Background Details, 2022 to 2051, prepared by Dillon Consulting Limited and Watson & Associates Economists Ltd. identifies 23,755 new households (units) for the City of Waterloo (page 289 of 744).

There are several sources that indicate that the unit target can be achieved, including:

- There has been over 11,000 units of growth in Waterloo since 2007. If growth continues at the same pace, Waterloo could accommodate over 20,000 new units by 2051.
- The City of Waterloo Housing Needs and Demands Study (2022) estimated there are 98,500 units of capacity within Nodes, Corridors, and MTSAs
- The City of Waterloo Station Area Development Capacity Analysis (2022) indicates there is capacity for 80,000 residents and 183,000 jobs within the MTSAs. 80,000 residents would equate to approximately 45,000 units at 1.76 population per unit.
- This study, which finds there is over 167,000 units of capacity in residentially designated lands with tall building permissions, less existing units. **Even if only half of this land was available for development, there would still be 83,500 units of capacity.**
- There is significant current development interest on a number of sites around the city, potentially in the order of 8,000 units.

Several estimates suggest the **total intensification capacity of the city is high**.

Given these figures, it does not appear that the City of Waterloo needs to increase the land supply or density permissions in its Uptown, Nodes or Corridors growth areas in order to meet the Regional intensification target. However, there are other reasons to consider permitting increased height and density.

3.6 Additional Growth Potential

All development should make a positive contribution to the City of Waterloo, and projects with higher heights and density should always deliver high quality urban environments with good design. Contemplating even higher heights than the City of Waterloo's current regulatory framework permits must be done with a clear idea of the benefits to the city.

There are good reasons to consider additional height and density within the City of Waterloo:

- The cost of land and the cost of development are both increasing. In order to deliver economically feasible projects to the market place, developers may need additional height and density than is currently permitted.
- There is a significant need to increase the supply of housing in southern Ontario generally and in Waterloo in particular. Coupled with this is a continued shift towards intensification due to rising awareness of the environmental, social and economic cost of sprawl. Together, these factors are driving higher density housing forms in most cities.
- Achieving great urban forms – '15-minute cities' or 'complete communities' – is only achievable with higher densities and the suite of public benefits and amenities that higher densities can help pay for and deliver, such as great public spaces, community facilities, transportation choices, and lively streets with services and retail. There is a clear increase in the preference for these environments among a variety of demographics.
- It makes more efficient use of existing infrastructure that is currently underutilized, including hard services such as roads, transit, and utilities, and soft services such as streetscapes, parks, and community facilities.

3.6.1 Potential Locations

The City's Uptown Centre, Nodes and Corridors framework, together with the MTSAs, establishes the urban structure in which to consider the potential for additional height and density. Key locations within this framework that provide planning and design support for locations for additional height and density include the following.

Planning & Design Rationale Supporting Additional Height and Density

Potential Locations for Additional Height	Supporting Planning Rationale
The Uptown Centre	Heart of the City Focus of growth in City and Regional planning framework Supports the historic retail main street Existing high quality, walkable neighbourhood with historic character Highest mix of uses, amenities Near the City's main park (Waterloo Park)
MTSAs	Support LRT ridership (efficient use of infrastructure) Some MTSAs are in/near Uptown Centre, Universities Large properties with relatively few owners, especially outside of Uptown Centre More efficient use of land given changing commercial/employment landscape Lower impact on stable residential, especially outside of Uptown Centre
Large sites in the King Street, Weber Street, and Erb Street/Bridgeport Street corridors	Important corridors in City (efficient use of infrastructure) Reinforces King Street as the spine of the City Large properties with relatively few owners Lower impact on stable residential More efficient use of land given changing commercial/employment landscape
Mall sites	Usually very large sites with single ownership Lower impact on stable residential; ability to transition Efficient use of land given changing retail landscape

Permitting taller buildings may incentivize trade-offs with the development industry to deliver high quality urban forms with great community benefits. The chart identifies locations that have a strong planning rationale for considering increased height. The City can consider additional height in any of these areas.

However, if a more focused approach is desired, the **Uptown Centre**, the **Research & Technology Station** Area, the **Waterloo Station** Area and the **Laurier-Waterloo Park Station** Area are particularly appropriate for allowing additional height because of their context and their ability to achieve high quality city-building outcomes, as discussed on the following pages.

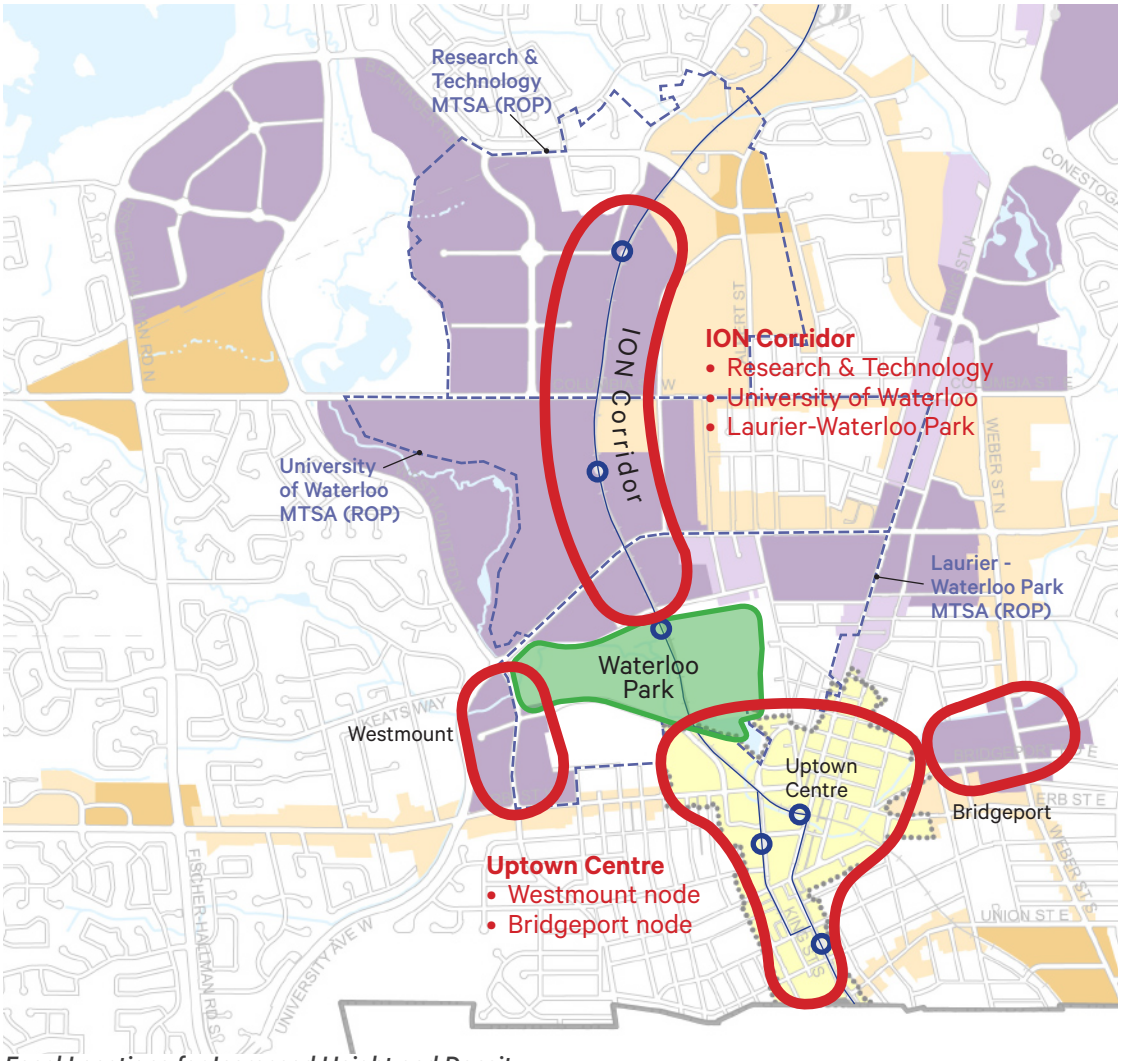
3.6.2 Focal Locations

From the above list, there are two areas in particular that can be considered as focal points for increased height and density:

- The Uptown Centre and strategic nodes that are adjacent to it; and
- Within the ION Corridor, The Research & Technology, University of Waterloo and Laurier-Waterloo Park Station Areas.

Focusing on these two areas can help:

- Attract development interest to key locations;
- Create a critical mass of built urban fabric in concentrated locations that showcase the benefits of higher density when linked with comprehensive planning and good design; and
- Test new processes and planning approvals.



Focal Locations for Increased Height and Density.

3.6.3 Uptown Centre and Strategic Nodes

Uptown Centre

The Uptown Centre is the focal point of the City. Continued infill and intensification, with good urban design, will strengthen and enhance its role and function.

Zoning By-law Schedule 'A' establishes an appropriate general height framework for the Uptown Centre that responds to the nuances of a complex downtown environment. Key height strategies are:

- A veneer of low-rise (16m) heights along King Street through the heart of downtown where there is a relatively contiguous, intact historic building fabric, from approximately William to Spring Streets;
- Tall buildings in the high category (81m) behind this veneer (i.e. behind King Street), as well as along King Street at the north and south ends beyond the historic core; and
- Transition zones between the high category and established low-rise neighbourhoods. They vary by context, but step down to 40m, 30m and/or 20m height zones.

This is a very deliberate height structure that should be maintained. Opportunities for additional height must be considered case by case, and answer important questions:

- Will the development result in enhancements to the Uptown Centre, particularly with respect to the public realm? And,
- Does the development maintain the principles of transition? Does it cause negative impacts beyond what would have been permitted (bulk, overlook, privacy, shadow)?

Opportunities for additional height in the Uptown Centre will be more challenging. The large blocks around Waterloo Town Square may be appropriate locations for additional height because they are of sufficient scale to provide for transition.

Strategic Nodes - Westmount and Bridgeport

The Uptown Centre is surrounded by an older urban fabric based on a street grid. These neighbourhoods are highly interconnected and an easy walk to the Uptown Centre – they are seamlessly integrated. They have great character, including mature street trees, historic and older homes with great diversity, and community amenities such as schools and parks that are small scale and highly accessible. This type of urban form is in limited supply in the City of Waterloo, and is highly desirable. Generally, this area is a stable neighbourhood and will not see significant intensification in the form of tall buildings.

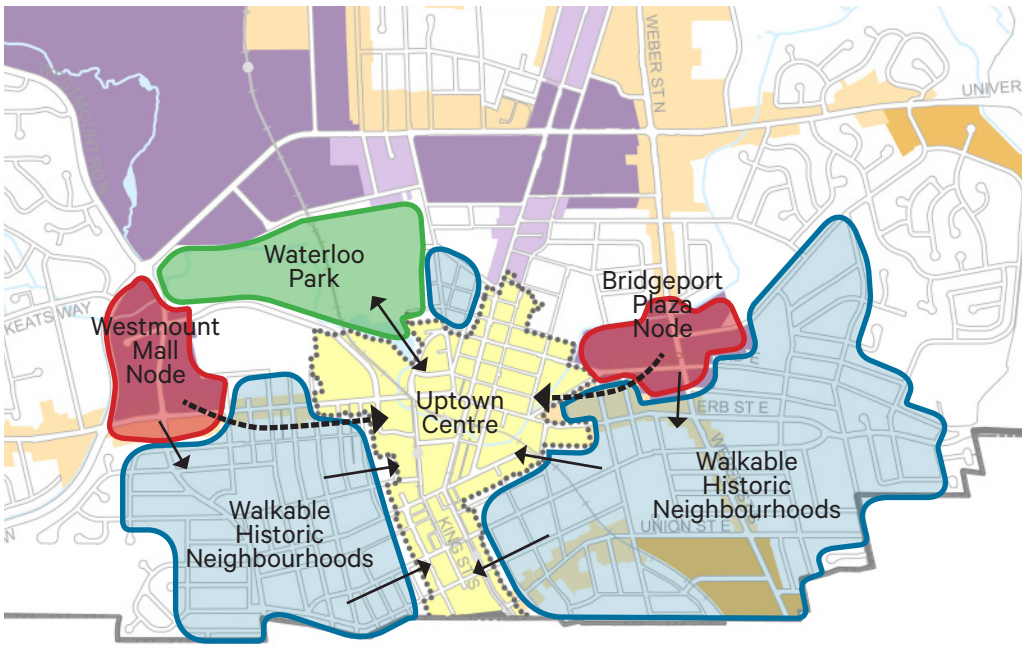
However, at the edges of this grid-based district surrounding the Uptown Centre are two nodes that have great potential for higher heights and densities:

- The Westmount Mall node at Westmount Road and Erb Street West, which includes auto-oriented low rise commercial uses and 'tower-in-the-park' residential; and
- The Bridgeport Plaza node at Weber Street and Bridgeport Road East, which includes auto-oriented low rise commercial and employment uses.

Strengths of these two additional nodes for consideration of increased height and density include:

- They can be integrated into the City's core area through street connections and land use planning;
- They build on emerging development interest in the Erb-Bridgeport corridor; and
- They are anchored by the mall sites which can be the cornerstone of great new mixed use neighbourhoods that both support the Uptown Centre and exhibit the principles of '15-minute cities' in themselves.

The Westmount Mall node and the Bridgeport Plaza node are good candidates for consideration of additional height and density, with appropriate built form transitions. With a **new, fine grain urban fabric**, they can become highly walkable urban districts that **support the Uptown Centre.**



Westmount Mall and Bridgeport Plaza Nodes

3.6.4 Research & Technology, University of Waterloo and Laurier-Waterloo Park Station Areas

All of the LRT stations are opportunities for significant intensification. The corridor along the ION line through the Research & Technology, University of Waterloo and Laurier-Waterloo Park stations, extending north from Waterloo Park, has particular advantages for consideration of additional height and density:

- Supports transit ridership;
- It is close to the University of Waterloo, Laurier University, Waterloo Park and the Uptown Centre;
- There is development interest within it;
- It has large parcels with existing underutilized land uses; and
- It further enhances the role and function of Waterloo Park as the primary open space serving a surrounding ring of high intensity uses. Waterloo Park's function as the 'central park' to the Uptown Centre, the University of Waterloo, Laurier University, and the Research & Technology, University of Waterloo and Laurier-Waterloo Park Station Area corridor would be enhanced.

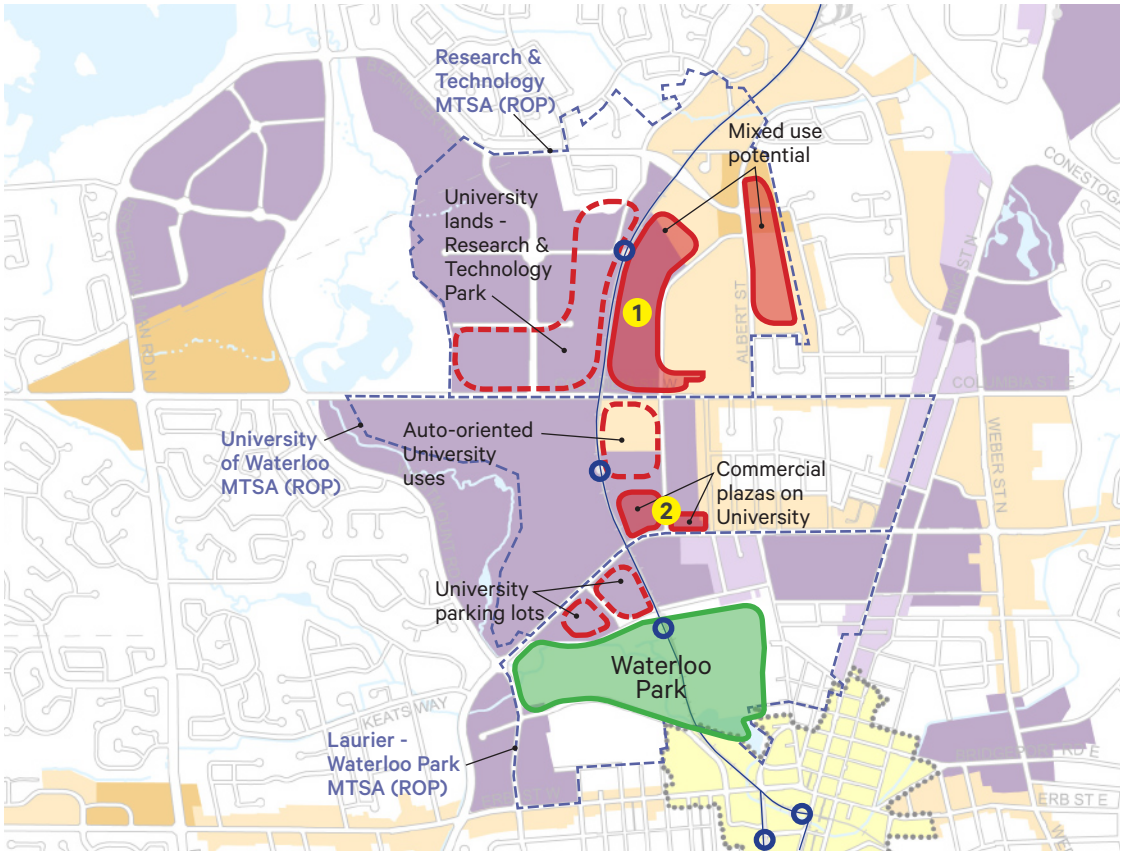
The map identifies large 'soft' sites within the Research & Technology, University of Waterloo and Waterloo-Laurier Station Areas that are candidates for consideration of additional height and density, with appropriate built form transitions. The University of Waterloo is a key land owner as they own several properties that could contribute to the corridor.

1 ION-Philip-Columbia:

- underutilized industrial parcels
- sufficient scale to create a complete mixed use district on its own

2 Commercial Plazas on University

- underutilized auto-oriented commercial
- can create an enhanced pedestrian link between University of Waterloo and Northdale



3.7 Important City-building Outcomes with Higher Height and Density

The areas discussed on the preceding pages are already identified Major Nodes in the Official Plan (with some Minor Corridor) and the large parcels are zoned in the high height category. Notwithstanding the potential for additional height and density, they must be designed according to good urban design principles, including appropriate transitions and interfaces with adjacent land uses. Allowing for additional height and density can be the incentive that achieves important, additional benefits to city-building.

A clear definition of base and enhanced urban design quality should be established in the enabling document(s), such as the Official Plan, Urban Design Manual, or Streetscape Master Plan.

Taller buildings must deliver the urban forms the City is looking for, including great design and enhanced community benefits.

Base Level **Expected of all tall building development proposals under the current building height framework.**	**Enhanced Level** **Expected of development proposals of greater height and density than the current framework.**
Implement the expected streetscape on all streets adjacent to or within the development – sidewalk, trees, furniture. Need a Streetscape Master Plan to define expected design.	Implement an enhanced streetscape – upgrading materials/paving, public art, additional seating or pedestrian amenities, woonerf/shared street, enhanced crosswalks and safety features, widened pedestrian zones/promenade.
Dedicate parkland per Bill 23 (10% if <5ha or 15% if >5ha) if the City prefers land over cash-in-lieu. Parkland location, shape to meet City's requirements as defined by OP policy. Parkland should be visible, convenient and accessible to surrounding community. Development should create a positive interface with the parkland.	Design and construct high quality parkland or plazas. Provide greater quantum of parkland. Provide additional POPS, mid-block connections and other public realm benefits. Delivery of Transit Plazas in MTSAs.
Design conformance to policy/guideline framework, including: • OP policies • Zoning standards • Active uses at grade where required • Screening of parking/servicing • Well articulated building – this is a complex topic with many components set out in design guidelines.	Landmark quality, enhanced architectural treatments, enhanced materials. Requires evaluation. Could be implemented through a Design Review Panel.

Base Level **Expected of all tall building development proposals under the current building height framework.**	**Enhanced Level** **Expected of development proposals of greater height and density than the current framework.**
Heritage preservation as per HIA study.	Greater preservation of heritage resources, or enhanced treatment/interpretation of heritage in built form, landscape and signage.
Provide community use space per the Community Benefits Charge (CBC).	Provide additional community use space – e.g. daycare, community centre, library, cultural groups, non-profits, arts/sports venue.
Per CBC.	Provide public art.
Meet minimum requirements of TransformWR or similar City document defining green development standards.	Meet green development standards, e.g. Passive House, CAGBC Zero Carbon Exceed minimum requirements of green development standards. Provide other significant green development benefits for stormwater management, biodiversity, habitat creation, canopy coverage.
Per CBC.	Provide additional affordable housing/rental housing.
Per CBC.	Provide additional institutional space/ partnerships – e.g. universities.
Per CBC.	Provide additional employment space/ partnerships - e.g. office space, compatible manufacturing or industrial. In MTSAs, this could be a minimum quantity or % of office/employment space to be provided in mixed use developments. Provide additional or enhanced retail, e.g. grocery store. These items can generate market rents and are delivered with development, but may be ahead of actual market demand.

The additional height and density can be permitted through density bonusing based on Official Plan policies, Zoning By-law regulations, or a Community Planning Permit System, and should be commensurate with the value of the benefit.

4 Urban Design

4.1 Introduction

This section focuses on the quality of tall buildings at the site scale. It reviews zoning and guidelines that shape urban form and architectural quality, and provides considerations and recommendations for improving urban design with a primary focus on a high quality public realm.

4.2 Tall Building Performance Standards in Zoning By-law 2018-050

The tall building performance standards in the Zoning By-law create a relatively standardized approach to the building envelope across all zone categories. The Zoning By-law aimed to incorporate lessons learned in Northdale and in other municipalities to create a building envelope that reflects Waterloo's uniqueness as well as best practices with a focus to good urban design.

The Zoning By-law has important principles of design embedded within it. These are strengths that should be maintained. However, in some cases the principles do not achieve their intended outcomes, and the performance standards could be adjusted.

Important design principles to be maintained.	Performance standards	Consideration for adjustment
Establishes a pedestrian-scale street wall though the podium-tower form	3 metre step back above the podium. Podium height minimum 10.5 metres (3 storeys), maximum 4 or 6 storeys	Yes. Consider additional flexibility for podium heights, reduced step back requirement.
Limits tower floorplate size to ensure access to sunlight/sky view. Seeks to achieve slender point towers, which are considered more aesthetically pleasing and reduce the impact of tall buildings (e.g. overshadowing).	1,000 square metres	Yes. 1,000 square metres is higher than typical zoning or urban design guideline standards. Results in bulky and long buildings.
Limits the length of the building above the podium to ensure access to sunlight/sky view (for pedestrians and building residents) and to avoid monolithic massing that overwhelms the pedestrian realm.	40 metre maximum building length; 35 metres in Northdale	Yes. 40 metres is longer than typical point tower form. Results in long slab-like buildings.

Zoning By-law 2018-050 promotes **good fundamental principles to shape the building envelope** that reflect best practices in urban design, including the tower-podium form with defined street edges.

Important design principles to be maintained.	Performance standards	Consideration for adjustment
Provides for tower separations to ensure access to sunlight/sky view.	22 metres separation between towers. 11 metres setback to common property lines	Not necessarily. 22 metres is slightly lower than typical.
Requires base buildings to define street edges.	75% of the building façade to be located within 7.5 or 6.0 metres of the street	Possibly: if front yard setback is lower, then the 75% building facade setback would also be lower.
In Northdale, requires active or convertible frontages and frequent front entrances.	1 entrance per 15/25 metres of street frontage.	None. Seems to be working well and improving the quality of design at the street level. Could consider similar provisions elsewhere.
The zoning map (Schedule A) lays out a logical height and zone category structure, consistent with the Official Plan's urban structure. See discussion below.		None. Bolster design guidelines to address potential transition concerns.

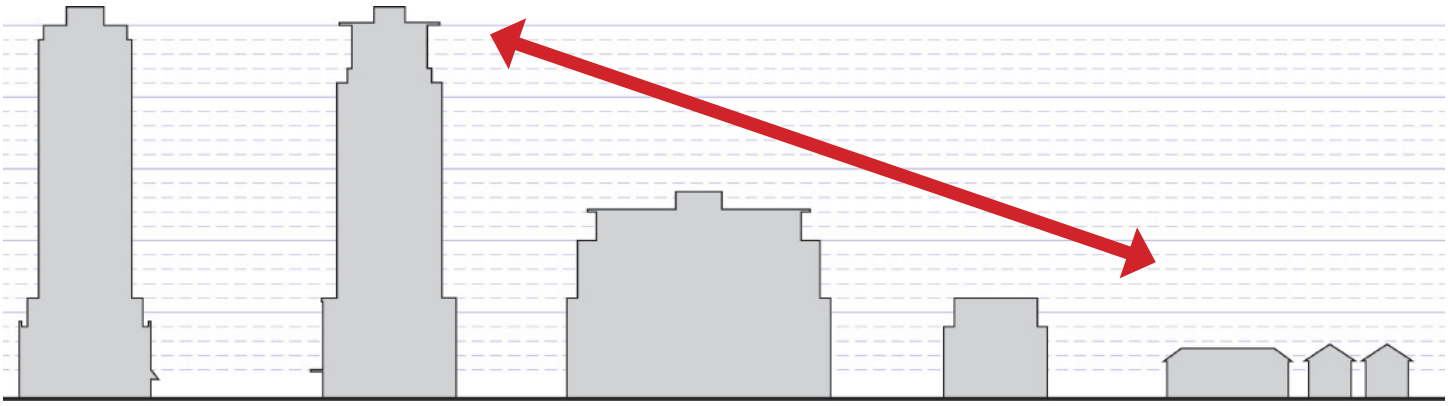
4.2.1 Schedule A: Transition

Schedule A of Zoning By-law 2018-050 defines maximum building heights across the city. It allows for tall buildings in the Uptown, Nodes and Corridors, while nuancing heights to contextual cues such as heritage areas, stable low-rise residential areas, and the existing lot fabric. This map has been carefully prepared. Many municipalities do not have this level of specificity and consideration for heights applied across their entire jurisdiction. Of note is the distribution of height zones in the Uptown, Nodes and Corridors, and the way they provide transition among different height zones to established low-rise neighbourhoods.

Urban design best practice advocates for appropriate transitions between development of different types and heights. In the case of intensification areas, this is usually applied as a gradual transition of building heights and intensity of uses from the tallest/most intense at the centre, for example in a downtown or along a corridor, to lowest/least intense at the periphery, for example adjacent to a low-rise neighbourhood. Abrupt height changes, such as high-rise towers adjacent to single detached lots, are considered inappropriate because of loss of privacy, shadow impacts, and other impacts associated with more intense development (noise, traffic, loading areas, etc.).

In general, Schedule A provides for appropriate transitions between height categories. It provides for tapering of height zones downwards where they approach lower height zones, or it provides for a spatial a buffer between them. In other words, good urban design transitions are 'built-in' to the zoning map and do not need to rely on design guidelines to enforce. There are a few locations where there are taller height zones directly adjacent to low height zones, for which design guidelines outlining transition principles is warranted.

The City's height map (Zoning By-law 2018-050 Schedule A) works well. It establishes a **logical structure for height peaks** along Nodes and Corridors, with **built-in transitions** to lower heights in the surrounding neighbourhoods.



Gradual transition in building height is considered urban design best practice as it provides for the tallest and most intense development at the core, to support transit, retail, and other services, and avoids undesirable impacts of tall buildings on nearby established low-rise neighbourhoods.

Excerpt from Schedule A of Zoning By-law 2018-050, showing examples of how building height transitions are 'built-in' to the map.

A.

The height peak of 81 metres (+/- 25 storeys) transitions through lower height zones of 40 metres and 20 metres as it approaches existing low-rise residential of 10 metres (+/- 3 storeys).

B.

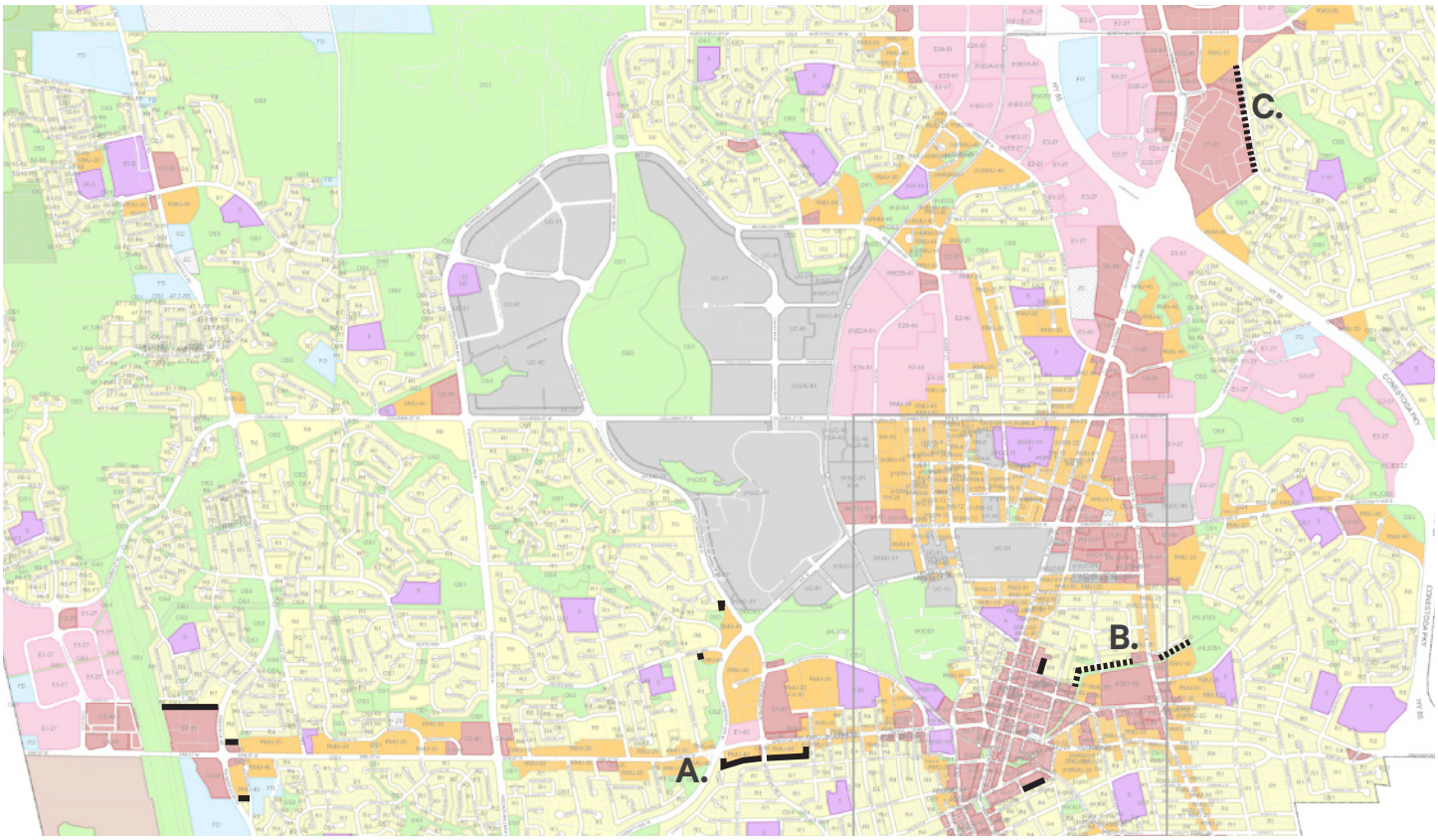
Corridors are generally 20 metres (+/- 6 storeys) height, which is an appropriate height when adjacent to existing low-rise residential of 10 metres (+/- 3 storeys).

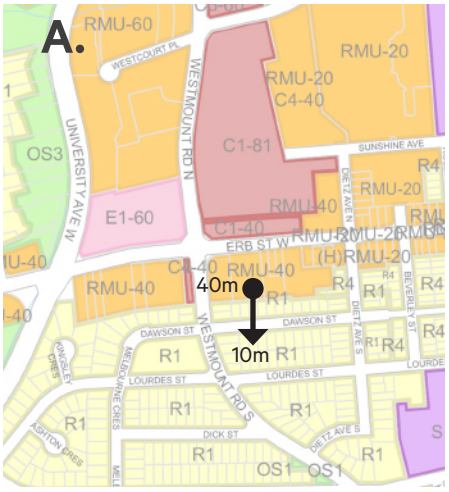
The examples above demonstrate appropriate height transitions. Schedule A provides for appropriate height transitions throughout the city, with only a few exceptions, noted on the next page.

From an urban design perspective, development applications in the taller height zones (81 metres, 60 metres, 40 metres) should be permitted to have tall buildings anywhere within that zone, without need for on-site height transition, because massing transition is built in to the zoning map. This doesn't preclude other reasons building heights may need to be lower to respond to site context, such as adjacency to public open spaces or cultural heritage resources.

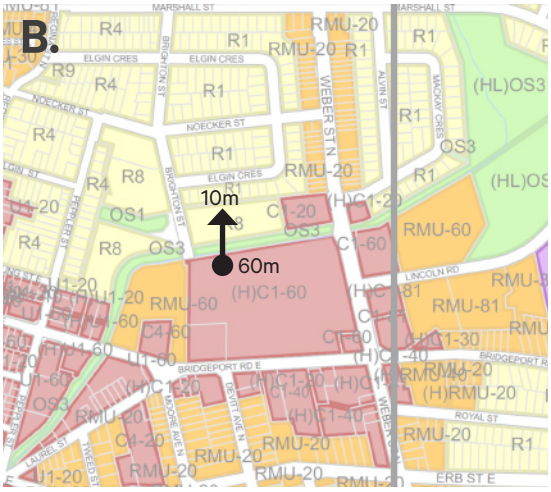
Caution should be exercised if developers seek to exceed the existing height zone or if the City considers allowing for bonus height. Transitions should be provided wherever there are potential impacts from taller buildings on a sensitive use that is adjacent.

Excerpt from Schedule A of Zoning By-law 2018-050, showing relatively few areas where building height transitions are more abrupt (dark lines).

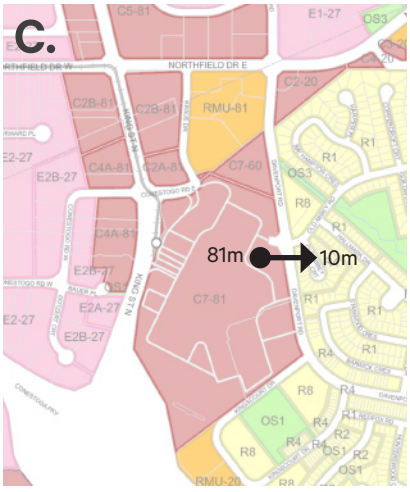




40 metre zone (+/- 12 storeys) backing onto low-rise residential of 10 metres (+/- 3 storeys). Here, the 40 metre building massing should be located as far north as possible along Erb Street, with a large building separation or a stepping down of height on-site to provide a transition to the low-rise residential to the south.



60 metre zone (+/- 19 storeys) close to low-rise residential of 10 metres (+/- 3 storeys). While the Laurel Creek does provide some separation between the height zones, building heights in the 60 metre zone should probably be lower directly adjacent to the creek, in order to provide a more gradual transition, and, to reduce shadow impact on the low-rise neighbourhood and the Laurel Creek Trail.



81 metre zone (+/- 25 storeys) across the street from low-rise residential of 10 metres (+/- 3 storeys). While the road does provide some separation between height zones, building heights should be lower at the interface to the low-rise residential zone to provide a more gradual transition.

4.3 Zoning By-law Amendments

Since 2017, there have been 29 Zoning By-law amendments, including adopted and under review, that relate to tall buildings and that were not related to removal of a Holding provision. Of these:

- 15 sought parking rate reductions;
- 17 sought setback relief. Front, side and rear yard setback exceptions were equally prevalent; and
- 14 sought building envelope relief, e.g. podium heights, step backs, building length.

According to City staff, a high proportion of tall buildings go through some form of zoning amendment. This is to be expected. It is common for intensification projects to vary from the established zoning, as every site is unique, as is every development proposal. Site location, land value, topography, water table, natural or cultural heritage resources, lot size and shape, access restrictions, and proposed building program can result in design solutions that differ from the zoning standards.

The concept of **cumulative impact** is important in urban design. A development proposal must do a number of things well, and conversely, avoid doing a number of things poorly, in order to meet expectations for design quality. A development proposal that does not meet a particular zoning standard (or design guideline) may be fine; however, if it does not meet several criteria, there is a high risk that it is inappropriate from an urban design perspective.

The amendments noted above are not necessarily a sign that the base zoning needs to be changed. It is important to evaluate zoning amendments on their merits so that new development contributes to the quality of the urban fabric.

While the parking rate requirement is not necessarily an urban design issue, it has a large impact on urban design. Generally, keeping parking rates as low as possible will translate into better design outcomes, but it needs to be balanced with ensuring sufficient parking is provided to accommodate the needs of the development. It is understood that parking rates are being examined as part of the Official Plan Review process.

Setback and building envelope exceptions are more difficult to judge in terms of design outcomes. Often, it is the cumulative impact of a number of performance standard exceptions, combined with design and material choices, that tip the scale from desirable design outcomes to negative outcomes. For example, an increase in building length above 40 metres, combined with step back reductions below 2.0 metres, and a lower quality podium façade due to structured parking above ground level, can result in a monolithic building with poor pedestrian scale, that the performance standards are seeking to prevent.

4.4 Review of Performance Criteria in Other Contexts

4.4.1 Zoning

In support of the review of Zoning Bylaw 2018-050, SvN carried out precedent research on the tall building provisions found in Toronto, Mississauga, Ottawa, Burlington, Kingston, Hamilton, Richmond, Halifax, and Portland, Oregon. The following is a summary of the research findings in comparison to Waterloo's tall building provisions:

- **Tower Floorplate Sizes**: Most municipalities do not include tower floorplates in their zoning by-laws, except Mississauga and Kingston which provide a maximum tower floorplate size of 850 and 790 square metres respectively, lower than Waterloo's maximum of 1,000 square metres;
- **Building Length**: No municipalities provided a maximum building (slab) length;
- **Height Minimums**: When a minimum building height is specified, it ranges from 2- to 3-storeys, which generally aligns with Waterloo's 7.5 to 13.5 metres (equivalent to 2- to 4-storeys);
- **Podium heights**: Mississauga is the only municipality to provide guidance on podium heights, and requires a minimum 3-storey podium for buildings greater than 12-storeys. Waterloo identifies a maximum height of 14.2 to 21 metres (equivalent to 4- to 7-storeys);
- **Angular Planes:** Toronto applies a 45-degree angular plane to the front lot line and rear when abutting residential or Residential Apartment zone categories. This angular plane does not apply to the City's highest height permissions. Kingston requires a 39-degree angular plane. While Hamilton and Portland do not include angular plane requirements, they include very precise step back requirements at certain heights subject to building proximity and adjacent conditions. There are no by-law provisions concerning angular planes in Waterloo. However, Waterloo accomplishes transitions by carefully pre-zoning all parcels with lower zone categories, and so angular planes are not necessary;
- **Tower Separation**: Only Kingston included a minimum tower separation distance of 25 metres (12.5 metres to a lot line), which is higher than Waterloo's requirement of 22 metres between towers (11 metres to a lot line); and
- **At-Grade Main Wall Provisions**: There was significant variation amongst municipalities for how main walls are treated through zoning. Generally, the parameters relate to glazing and build to lines. For example, Mississauga and Hamilton, respectively require a minimum of 65% and 60% of the area of the first storey street wall to contain glazing. Toronto and Kingston prescribe a minimum of 75% of the street wall of a building must be built to certain build to lines. Waterloo requires 75% of the street line front building façade to be built within (variously) 5.0, 6.0 or 7.5 metres of the street line; combined with a 4.0 or 5.0 metre minimum setback (typical), this creates a build to range.

4.4.2 Urban Design Guidelines

Precedent research of the tall building design guidelines was undertaken for Toronto, Mississauga, Guelph, Ottawa, Hamilton, Burlington, Halifax, and Chicago. The following is a summary of the research findings in comparison to Waterloo's Urban Design Manual (2009) tall building provisions:

- **Tower Floorplate Sizes**: The precedents reflected a range of floorplate requirements between 650 to 850 square metres, with some municipalities varying by tower height and/or use. For buildings under 12-storeys, some municipalities increased tower floorplates to 1,000 square metres. Ottawa was an outlier that permitted high-rise office buildings to have a floorplate of 2,000 square metres. In contrast, Waterloo's guidelines did not provide direction on floorplate sizes as this is captured within the zoning.
- **Building Length**: As with the zoning, no municipalities provided a maximum building (slab) length.
- **Podium heights**: Varying approaches were taken in determining podium height such as using the total or 80% of the right-of-way width, or providing a total number of storeys (which ranged between 2 to 6-storeys). Since this level of detail is included in Waterloo's zoning, it is not duplicated in the guidelines.
- **Angular Planes**: Toronto, Mississauga, Guelph, and Burlington apply a 45-degree angular plane to transition tall buildings adjacent to lower-scale areas. Whereas, Waterloo's guidelines only apply a 45-degree angular plane on certain streets within the Uptown (Primary Node) District.
- **Tower Step backs**: Toronto, Mississauga, Hamilton, and Guelph specify that towers should step back 3 metres or greater from the face of the base building. Waterloo does not identify quantitative step back requirements as it is captured in the zoning.
- **Tower Separation**: Requirements for building separations between towers varied from 20 to 30 metres across guidelines. Again, this information is included in the zoning, and as such Waterloo does not duplicate it in the guidelines.
- **At-Grade Main Wall interface**: Many of the guidelines, including Waterloo's, encourage pedestrian connections at-grade, a high degree of glazing, defined edges with well-proportioned podium buildings, permeable facades, and active uses at-grade.

4.5 Key Design Objectives for the City of Waterloo: Must Haves

In shaping the policy and guideline framework, and in evaluating development proposals, emphasis should be placed on 'must-haves:' key design objectives that should be exhibited by all development. If the key design objectives can be accomplished, then elements of the Zoning By-law and non-essential elements of the Urban Design Manual can be approached with more flexibility.

4.5.1 High Quality Streetscapes

The pedestrian experience at street level is the primary measure of good urban design. Good streetscapes integrate the public right of way and the private development that frames it.

Public (right of way) – The City should establish streetscape standards to define design objectives for sidewalks, crosswalks, boulevards, street trees, street furniture, lighting, and other elements. The standards should include a streetscape hierarchy that considers the role and function of street types (e.g. main streets, retail streets, Corridors, residential streets, etc.). This will act as the guiding document for the City to set standards for the streetscape improvements expected as part of development. If possible, work with the Region of Waterloo to define and implement high standards on Regional roads.

Define context-specific **streetscape standards for public rights of way**: sidewalks, paving, furniture, lighting and planting.

The vast majority of streets do not require enhanced furniture or fancy pavers. A good pedestrian realm can be achieved with wide sidewalks, clear crosswalks, and most importantly, healthy street trees. Attention to soil volume and soil quality, tree location, and species selection are critical to the long term growth of trees in urban areas. Trees are vital infrastructure that provide stormwater management, ameliorate the urban heat island, and provide bird and insect habitat, carbon sequestration and other ecosystem services. Studies have shown many human health benefits related to trees, as well as correlations to higher property values. Planting trees along streets is one of the most impactful design improvements that the City can make.

Finding ways to include street trees on both sides of the street along all streetscapes is an important priority. Street trees provide design, health and environmental benefits for generations.

Private (setbacks between the building and right of way) – the Urban Design Manual should articulate how the private boulevard, a result of the building setback, should be treated based on the streetscape hierarchy. This will include conditions such as:

Define context-specific streetscape standards for the **private setback zone** adjacent to the public boulevard.

- Retail frontages, where it is desired for the sidewalk to extend continuously from the building face, where it is on private property within the front yard setback, to the public right of way, where there is a minimum pedestrian clearway. It will usually be a more urban condition, with trees in planters or soil cells. From a pedestrian perspective, the sidewalk is generous and wide, and can support retail spill out and cafes. This condition may occur along institutional uses as well;
- Residential frontages, where there may be a variety of treatments:
    - For frontages where ground floor residential units are individually articulated as townhouse-type units and each has a direct entrance to the street, the

setback zone should be designed to provide a front yard or front stoop transition from public to semi-private space. This is the preferential condition.

- For frontages where units have no street entrances, or there is common space within the building at ground level (lobbies, amenity rooms, etc.), the setback zone should be designed with appropriate landscaping to provide a transition while still enhancing the public realm, for example by providing seating along the sidewalk edge.

The design guidelines should articulate a toolkit of basic and enhanced streetscape elements such as paving, seating, landscaping, lighting, wayfinding, and public art. It should also provide strategies for variations such as grade differences between the ground floor and the sidewalk, utilities, and ground level employment uses.

Example of a residential frontage where the setback is designed as semi-private front yards.

Example of a retail frontage where the setback is designed as a pedestrian sidewalk zone with amenities.

4.5.2 Focus on Ground Level and the Street Wall in Building Design

How buildings address the street is as important as the design of the elements within the right of way. The podium or street wall is primary, and design quality should be emphasized here rather than in the taller components of buildings.

Key elements of street wall design include:

Ground Floor

- Direct, seamless connections between indoors and outdoors, ideally at the same grade;
- Active uses on the ground floor, prioritizing retail, or individual unit entrances if residential, or common spaces (e.g. lobby, halls) if institutional or employment;
- Frequent entrances (whether retail, residential or other active uses);
- High transparency – lots of windows and doors;
- Tall ceiling heights – ideally 4.5 metres, up to 6 metres for retail;

Achieving great streetscapes is the most important design objective. Streetscapes include the public street, the setbacks, and the building edges, which work together to create the pedestrian environment. This objective should be the lens through which policy, zoning, and guidelines are interpreted and applied.

Street Wall (Including the Ground Floor)

- Pedestrian scale street wall, typically 2-6 storeys in height;
- Continuity of the street wall, minimizing gaps for access and servicing;
- An 'active façade,' one that is visually interesting and well articulated, providing pedestrian scale through detailing, and promotes observation of the street through windows, doors and/or balconies; and
- A rhythm of pedestrian-scaled architectural bays or modules along the street, that provides variety and visual interest.

Fine Grain

Fine grain results when pedestrian-scale is applied to urban form. A highly connected public realm creates fine grain through small block sizes, frequent street intersections, and the interconnection of streets and public spaces. Achieving fine grain, like achieving a good street wall, reduces the impact of building height, bulk and appearance, because the quality of the urban fabric is high at the pedestrian level.

Waterloo has large blocks (e.g. malls, industrial sites) that should be subdivided with new streets to achieve fine grain.

Access, Parking and Servicing Controls

The Zoning By-law and the Urban Design Manual provide the tools and guidelines that protect streetscapes from the negative impacts of vehicular access, loading and storage. In particular, the Zoning requirement to screen parking from streets with 25% ground floor active use is an important and effective tool. Requiring active uses within the building to come to the street edge screens it from view.

This approach could be extended to include the above-grade levels as well, requiring active uses within the building (usually residential units, but it could be any use) to be provided

The Zoning By-law protects for active uses at-grade to screen parking. On key streets, this could be extended to include active uses above-grade as well.

facing the street, with parking located behind. Consider applying this strategy to key pedestrian streetscapes in the streetscape hierarchy such as:

- Along important spine roads such as King Street, Erb Street, Bridgeport Road, University Avenue, Columbia Street, etc;
- Along neighbourhood connectors, important historical streets, park-facing streets, and other streets that define civic character; and
- Along important planned streets such as connector streets within Major Transit Station Areas.

Visible above-grade parking that comes to the street edge in the upper levels of the podium. While this condition complies with the intent of the zoning by-law, it is more appropriate for side streets, not primary streets such as King Street.

4.6 Potential Performance Standard Changes

In considering adjustments to the built form performance standards embedded in the Zoning By-law and in the Urban Design Manual, it is important to remember that, by themselves, performance standards cannot achieve good design outcomes. By necessity, they are broad in scope, applying similar standards across multiple sites and zones, whereas good urban design is nuanced to the unique characteristics, adjacencies, and objectives of each individual development site. As examples, sometimes a street wall height should be lower than zoning permits if development is beside a low-rise historic building. Sometimes it should be higher if it is defining the edge of a major public space. It's all in the context. This underscores the necessity for City staff to evaluate proposals on their individual merits and be flexible with some performance standards if warranted. In addition, **the quality of the architecture that performance standards shape is as or more important as the performance standards themselves.**

4.6.1 Tall Building Envelope

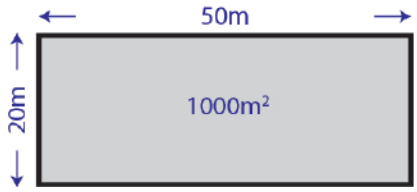
There are many examples of tall buildings in Waterloo that are slab forms: long buildings set parallel to the street with low levels of articulation. Combined with relatively little at-grade animation, it has resulted in streetscapes that lack pedestrian interest and scale. An example is the west side of King Street between Hickory Street and Columbia Street. Many slab buildings were built prior to the adoption of Zoning By-law 2018-050.

These long slab buildings on the west side of King Street do not support a pedestrian-oriented streetscape with active edges.

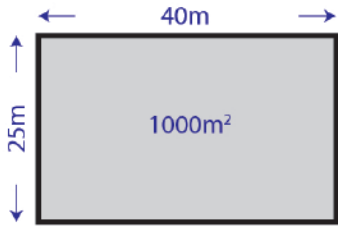
A key goal of Zoning By-law 2018-050 is to establish a tower-and-podium form, which will improve streetscapes. However, the Zoning By-law's performance standards for tall buildings allows for larger building envelopes than is typically prescribed by zoning by-laws or design guidelines in other municipalities in Ontario, which may not achieve the intent of the by-law. Of note is the City of Waterloo's tower floorplate maximum of 1,000 square metres. Most other jurisdictions prescribe a 750-800 square metre floorplate maximum. Northdale's floorplate maximum is 800 square metres.

Very few municipalities prescribe a building length maximum for tall buildings, as the 750-800 square metre floorplate maximums tend to prevent very long slabs and create point tower forms. In Waterloo's case, the 40 metres building length maximum is an attempt to limit the bulk of slab forms, because the 1,000 square metre floorplate allows for bulky, slab-like buildings. There is concern the development industry is seeking to exceed the 40 metre slab length maximum in order to achieve the 1,000 square metres floorplate maximum. The building length maximum in Northdale is 35 metres.

Challenges of the Tall Building Performance Standards Related to Bulk/Massing in Zoning By-law 2018-050



Left/Middle: 20 or 18 metre building depths are typical for slab buildings with central corridors. To achieve a 1,000 square metre tower floorplate requires building lengths of 50-55 metres. This results in a very long, slab-like building that is often undesirable from an urban design perspective, especially the taller the building is. Waterloo has many examples of this type of building, and they are what Zoning By-law 2018-50 is seeking to avoid by establishing a 40 metre building length maximum.



Right: To achieve a 1,000 square metre floorplate AND respect the 40 metre building length maximum, the tower must be 25 metres in depth. This is very deep for arranging units (deep units with poor access to daylight) both for point tower or central corridor arrangements. This is undesirable from a development perspective and a unit liveability perspective. In addition, 40 metres slab length is still quite long if the goal is to achieve a point tower form for tall buildings.

Reduced Floorplate Size

To prevent tall, bulky buildings, a reduced tower floorplate size should be considered, in the range of 750-800 square metres, consistent with a number of other municipalities. The floorplate maximum would apply above the sixth storey, i.e. a building of six storeys or lower could be any size. In conjunction, the City could consider removing or reducing the 40 metre building length maximum.

Consider smaller floorplate for tall buildings, in line with industry standards, to reduce bulk and ensure access to sky view and sunlight.

Toronto, which has experienced the highest level of tall building development in Southern Ontario, and has the longest experience with tall buildings, has a 750 square metre floorplate maximum. While not every tower adheres, the 750 square metre maximum (with other urban design standards) has resulted in tall buildings that do not overwhelm pedestrian scale, that provide sky view, and that allow sunlight to reach streets and public spaces. The City of Mississauga, which has experienced tall building intensification for some time and has recently refined its standards based on its experience, has gone to a graduated standard, allowing 750 square metres for 30 storeys, 800 square metres for 49 storeys, and 850 square metres above that. The increase in floorplate acknowledges the increase in elevators and core services required with increasing height. It should be noted that in some locations Mississauga allows 1,000 square metres up to 12 storeys.

For the City of Waterloo, the Northdale standard of 800 square metre floorplate maximum and 35 metre slab length maximum may be the most appropriate for a city-wide application since it is familiar to the City and development industry.

Notwithstanding a new city-wide standard, no changes are suggested for Northdale itself. This neighbourhood has an emerging character that is based on its tower bulk controls and should be allowed to build-out consistently with those standards.

4.6.2 Podium Height

Consider a flexible approach to **podium heights of 2 to 6 storeys.** Step backs would only be required for buildings above 6 storeys, and the step back could be located anywhere from the 2nd to 6th storey.

In Zoning By-law 2018-050, there is some variation in the approach to podiums across the zones. Some zones do not regulate a minimum podium height; others stipulate a minimum of 3 or 4 storeys and a maximum of 4 or 6 storeys. The zoning by-law allows taller buildings to have taller podiums.

Consideration can be given to simplifying the standards in all zones by setting minimum podium and building heights at 2 storeys (7.5 metres) and maximum podium heights at 6 storeys (21 metres). This would allow for a 6 storey building to be built straight up, with no step back. For buildings taller than 6 storeys, the step back could occur anywhere between the 2nd and 6th storeys. This allows a greater flexibility in the approach to the base building design. For example:

- It allows for the 'Vancouver model' characterized by 2-3 storey townhouses, or retail where appropriate, along street edges, punctuated by towers. In Vancouver, the townhouse/retail component is typically very well designed as an interesting, active frontage with many entrances and excellent streetscaping;
- It allows flexibility for mid-rise and high-rise buildings. Waterloo has a number of examples of podiums in the 2 to 6 storey range on both mid- and high-rise buildings, all of which are appropriate from an urban design perspective;
- It allows for 6 storey buildings without step backs, anticipating potential future design trends:
    - Sustainable building practices such as Net Zero and Passive House, which favour simple building envelopes wrapped by continuous insulation, and mass timber construction, which favours aligned column grids; and
    - Point access blocks, which may potentially be allowed by the 2025 Ontario Building Code. Common in Europe, point access would allow clusters of units to be accessed from a single stair/elevator core, eliminating the need for interior hallways, thus reducing development costs, with great benefits for unit design and potentially affordable housing.

Example of a building with both 2 storey and 6 storey street walls. Both are appropriate, given the overall massing and design.

Example of a 2 storey street wall for a tall building. It provides a comfortable pedestrian scale along the street edge.

Examples of buildings with 3 or 4 storey street walls.

Example of a building with a 5 to 6 storey street wall on the Caroline Street side and a 1, 3 and 4 storey street wall on the King Street side. The King Street podium, in particular, underscores the need to be flexible with performance standards, in some instances, to achieve good context-appropriate design, in this case emphasizing the heritage facade and providing public art.

Six storey buildings without a step back can be efficient from an architectural and sustainability perspective. When they are well done, with a fine grain of pedestrian-scale articulation, and have an active ground floor (retail or residential) with transparency and frequent entrances, they are appropriate buildings for street edges, whether they are stand-alone 6 storey buildings, or whether they are the podium with a tower above.

4.6.3 Step Back

In Waterloo, there are many tall buildings that appear to have the same floor plan repeated from the bottom of the building to the top. Many of these buildings are also slab-like, with their long axis oriented parallel to their street frontage. This gives the impression of monolithic architecture that overwhelms pedestrian scale.

The step back is a mechanism to achieve distinct massing for the street wall component of a building and the tower component of a building that is important to maintain in the Waterloo context. A street wall (or podium) creates a sense of human scale along the streetscape edge, with taller buildings stepped back from it. The step back is what defines the podium. The street wall of each individual building along the street creates continuity in the pedestrian experience. It is strongly recommended to maintain a step back requirement.

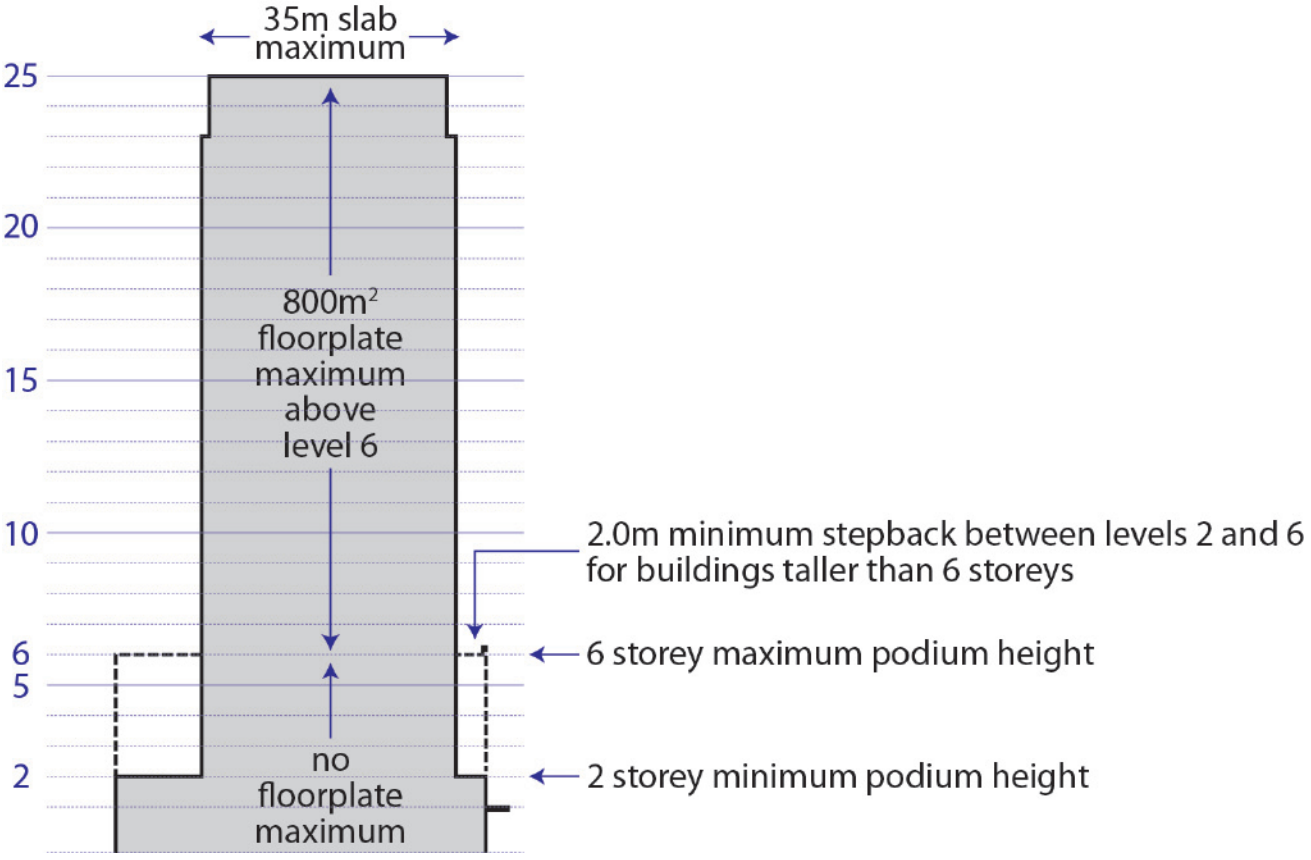
Minimum step backs could be reduced from 3 metres to 2 metres. This will allow greater flexibility for the development industry, particularly with reduced tower floorplates. A 2 metre step back is sufficient to provide a street wall, as well as create a terrace for units at the step back level.

That said, some flexibility in interpretation can be considered. For example, it can be desirable for a portion of the tower to come to ground, such as at a corner entry. Variation in the street wall is usually appropriate.

The requirement for a step back does not create additional architectural challenges for underground parking. Most towers require a transfer slab irrespective of whether a step back is required or not, as the structural needs of the parking and the structural needs of the tower are often different. The requirement for a step back does create some complication for the structure and additional detailing, however, this should not outweigh the creation of a street wall.

Maintain a requirement for a step back, but consider a minimum **2m step back** to allow more flexibility for development.

Potential Adjustments to Building Envelope Standards



4.6.4 5 Metre Setback

Many zones have a minimum 4 or 5 metres front yard street line setback. It is understood that the setback can accommodate a number of functions:

- A 2 metre wide underground utility easement on private property;
- a hydro wire swing zone;
- The ability to achieve street tree planting where it is not otherwise possible within the public road boulevard; and
- The ability to achieve, in some cases, a double row of street tree planting, where one row of trees is within the public boulevard, and the other within the setback.

The drawback of 4 and 5 metre minimum setbacks is that they add 8 to 10 metres to the width of the streetscape, from building face to building face. This decreases intimacy and compact form. The setbacks make the perception of arterial road corridors even wider.

Much of the Uptown Centre has a 0 metre setback requirement. This is appropriate, and reflects the compact historic core, where buildings located close to the street edge create an intimate and pedestrian-oriented street environment.

Ideally, the street line building setback would be a function of achieving high quality streetscapes on a context-specific basis, with a priority to provide street trees. Where there are hydro wires at or near the streetline, and/or utility easements, and/or where street trees are not possible within the road right of way, then a wider setback makes sense, especially to ensure street trees are provided. However, this is not the case for all streets. Setbacks could be lower where these conditions do not apply. In some municipalities (Toronto, Burlington), the building setback is a function of achieving a minimum sidewalk width between curb and building face.

A minimum setback of 1 or 2 metres is still recommended, to allow for grade-matching along the streetscape, and to avoid encroachments such as door swing. There are two ways this could be implemented:

- Leave setbacks at 4 or 5 metres in the zoning, but articulate the potential for lower setbacks in the Urban Design Manual if design criteria are met, including room for street trees, no hydro wires, etc. This would put the onus on the developer to apply for setback reduction via minor variance; or
- Reduce setbacks to 1 or 2 metres in the zoning, with strong direction in the Urban Design Manual and/or Site Plan Control Manual that the setback must be greater, at the City's discretion, where there are utility or landscape requirements.

Consideration can be given to creative solutions, for example ground floor building setbacks with an overhang or projection above, if design objectives are met.

If reduced setbacks are not desired at all, consider providing guidelines for an enhanced landscape approach to the setback area. The setback would be a tremendous opportunity to significantly increase the tree canopy, as well as provide high quality street landscaping, in concert with all new development. The guidelines should consider type of frontage (retail, residential, institutional) and type of road (Municipal, Regional, boulevard condition).

Setbacks should be small to achieve compact form and well-defined street corridors. Where necessary, they can be increased to **accommodate utilities or landscaping** – these conditions should be defined.

If the City does not wish to reduce setbacks, there should be **strong design direction for the street edge landscaping**.

4.6.5 30% Landscaped Open Space in Residential Mixed Use and Northdale

In the Residential Mixed Use and Northdale zones, landscaped open space for tall building development should focus on **high quality streetscapes and public realm**. This could be a requirement for landscape strips, in the front yard for streetscaping, and in side and rear yards adjacent to sensitive uses. If a minimum percentage is still desired, 10-15% is more appropriate.

The Residential Mixed Use and Northdale zones require 30% landscaped open space. This is a high requirement more typical of zoning for suburban areas, and should not typically be applied to more urban and intensifying sites in the City's core areas centred on the ION, King Street and Weber Street corridors (and including Northdale). Landscaping in new development should create positive street interfaces with a high quality public realm inclusive of canopy trees, with a secondary focus on buffering or screening from streets and from adjacent uses, where appropriate. It is very difficult to achieve 30% landscaped open space when building coverages can easily be 60-90%, in addition to access, circulation, loading and other needs that can occupy an additional 10-30% of the site area.

The important consideration for landscaping is to reinforce high quality streetscapes within front and exterior side yard setbacks, as well as high quality landscapes in mid block connections or POPS. Buffer or transition landscaping at the sides and rear of development sites is appropriate adjacent to low rise residential, open space, or other sensitive uses, where landscape strips rather than minimum landscaped open space requirements is more suitable. Schedule A of Zoning by-law 2018-050 does an excellent job of establishing adjacencies that do not require landscape buffering, for example, as when a 81 metre height zone is adjacent to a 40 or 20 metre height zone. In these cases, the side and rear yards of the development sites do not necessarily need buffer landscaping because the adjacent sites are urban in character.

Many other municipalities do not require large landscaped areas for their urban core, intensification, and mixed use areas.

Municipality	Landscape %	Landscape Strip at Street	Landscape Strip at Side/Rear
Kitchener	15% in mixed use		
Hamilton	not in majority of zones; 10% in a residential-only zone		1.5m adjacent to residential or institutional (some cases)
Burlington	no	3m	6m adjacent to residential
Mississauga	not in majority of zones		
Toronto	no	3m if building setback is >3m	1.5m adjacent to residential
Vaughan	not in majority of zones; 10% for a lower density zone	3.5-5.0m	3m adjacent to residential or open space
Markham (draft comprehensive by-law)	no		3m

If a minimum landscaped open space percentage is still desired, it is suggested that it be in the 10-15% range, consistent with the Station Area zones. Geographically, the potential 10-15% landscaped open space requirement for Residential Mixed Use zones (and for Northdale) would be most applicable in those areas that are expected to transform into more walkable mixed use districts. This could include all Nodes and Corridors with Residential Mixed Use zoning, or, if the City wishes to maintain higher landscape open space requirements in its more suburban areas, it may not apply to suburban Nodes and Corridors, for example, Erb Street West west of Fischer-Hallman Road.

4.6.6 Ground Floor Height

In Zoning By-law 2018-050, many of the zones require a minimum ground floor height of 4.0 metres. Not all zones have a minimum for ground floor height.

A minimum 4.5 metre ground floor height is recommended for all zones. This height allows for flexibility in use of the ground floor, including the provision of commercial fittings and HVAC equipment. It protects for the conversion of buildings with residential at grade to retail in the future. The 4.5 metre height also aligns with the loading space height requirement of 4.5 metres. While 4.5 metres is the minimum recommended, higher heights (e.g. 6 metres) can be encouraged for commercial frontages.

Consider increasing **minimum ground floor height to 4.5 metres** to ensure flexibility for commercial uses.

4.6.7 Parking

It is always desirable to locate parking underground. However, given the high water table, as well as the economic advantages of building above-grade parking structures, parking will likely continue to be built above-grade, where it can negatively impact streetscapes. Parking should not be located along the street edge at ground level.

Consideration should be given to ensuring important streets in the City's streetscape hierarchy do not have structured parking along the street edge *including above ground level*. This can be addressed through:

- A requirement to provide active uses along the edge of all street facing facades, including the above-grade levels of the podium; and/or
- A minimum setback and/or step back for structured parking, similar to the requirement within the Uptown Centre for structured parking not to be located within 15 metres of King Street.

The goal is to have a veneer of commercial or residential uses that completely screens the structured parking in behind. This could be implemented through zoning or through the Urban Design Manual Refresh. The minimum depth of active uses should be around 8 metres.

Streets where above-grade structured parking may be allowed to come to the street edge above grade are more appropriate for those that function as access/loading corridors, minor residential/local streets, and major roads that will not have pedestrian activity. In addition, stronger design guidelines in the Urban Design Manual are needed to ensure that visible structured parking is well designed and integrates with the overall building expression. Consideration should also be given to minimum 3 metre floor-to-floor heights with flat slabs for parking levels, to allow flexibility for conversion to residential in the future.

Consider mechanisms that ensure all above-grade structured parking is screened from **key street frontages** by active uses.

4.7 Other Performance Standards

4.7.1 Density

Maintain the density cap as a way to ensure development that exceeds the cap is providing appropriate design or public benefits. However, in reviewing applications, **focus on design quality and be prepared to grant density exceptions**.

Density can be a hugely variable concept in relation to design. The net site density for development is highly dependent on both building height and site area. The same building, when built on a tight, urban site in the Uptown Centre may have twice the density as when built on a more suburban site that has additional surface parking behind the building and larger setbacks. In both situations the building can be entirely appropriate from an architectural and streetscape perspective, but one may exceed a density cap (assuming both have the same cap).

In a similar vein, great architectural and streetscape design can be achieved by a building of 15 storeys or a building of 30 storeys on the same site. From a pedestrian perspective, most of the focus is on creating a great street wall with active building edges, and attractive street landscaping. Whether the building is 15 or 30 storeys has little impact on the pedestrian experience, yet one scenario may be twice the density of the other.

Great design can, and should, be a requirement of development at any density, but is particularly important for tall buildings. But density as a measuring factor has limited use in terms of design. Density is a more useful measure to examine technical limitations such as traffic impact or servicing capacity.

It is not recommended to adjust the existing density caps. Having a density cap allows the City to negotiate with development proponents if they apply for increased density. Height and density increases should provide community building elements appropriate to their scale, such as enhanced public open space and community uses. It is recommended to maintain overall density caps in each zone. However, in terms of assessing development applications, it is recommended that staff focus on design outcomes, and that density is a secondary concern.

4.7.2 Street Wall Gaps

Be cognizant of reducing street wall gaps in the review of development applications. Specific performance standards may not be necessary.

Along portions of King Street and along a number of streets within Northdale there has been a transition from the original, low density context to a fully intensified context. Given the lack of a rear laneway network or other mechanisms to consolidate vehicular access, each development site provides its own access to the public street in front of the building. Sometimes, these access locations also include small or flanking surface parking lots. The result is that there are street wall gaps.

Consideration should be given in the review of development applications to reduce the scale and impact of vehicular access, for example by building the podium over the access point, consolidating and sharing entrances, or creating rear laneways. Consider a minimum percentage of street frontage that must be defined by street walls along block faces that are intended to be highly pedestrian, such as within the Uptown Centre or along portions of King Street or University Avenue, 90% or more. This could be implemented through the Urban Design Manual.

4.8 Urban Design Manual

The Urban Design Manual (2009) is the primary city-wide design guideline document that supplements the statutory framework in establishing the urban design vision for the city, and it provides the detailed design basis for review of development applications. It is understood that the City is currently undertaking a Refresh to the Urban Design Manual, potentially creating a stand-alone Medium to High Density Built Form Standards document, and creating a separate Site Plan Guidelines document. This section reviews the Urban Design Manual in this context. Commentary on the Urban Design Manual, below, is meant to highlight how the content can be adapted or improved in connection with the Urban Design Manual Refresh.

4.8.1 Overview

The content of the Urban Design Manual addresses most urban design matters and is comparable with the content of many other urban design documents in Canada and the United States. It addresses key topic areas including site planning, public realm, built form, and circulation. Most of the design principles that are needed to shape good urban design are embedded somewhere within the Urban Design Manual.

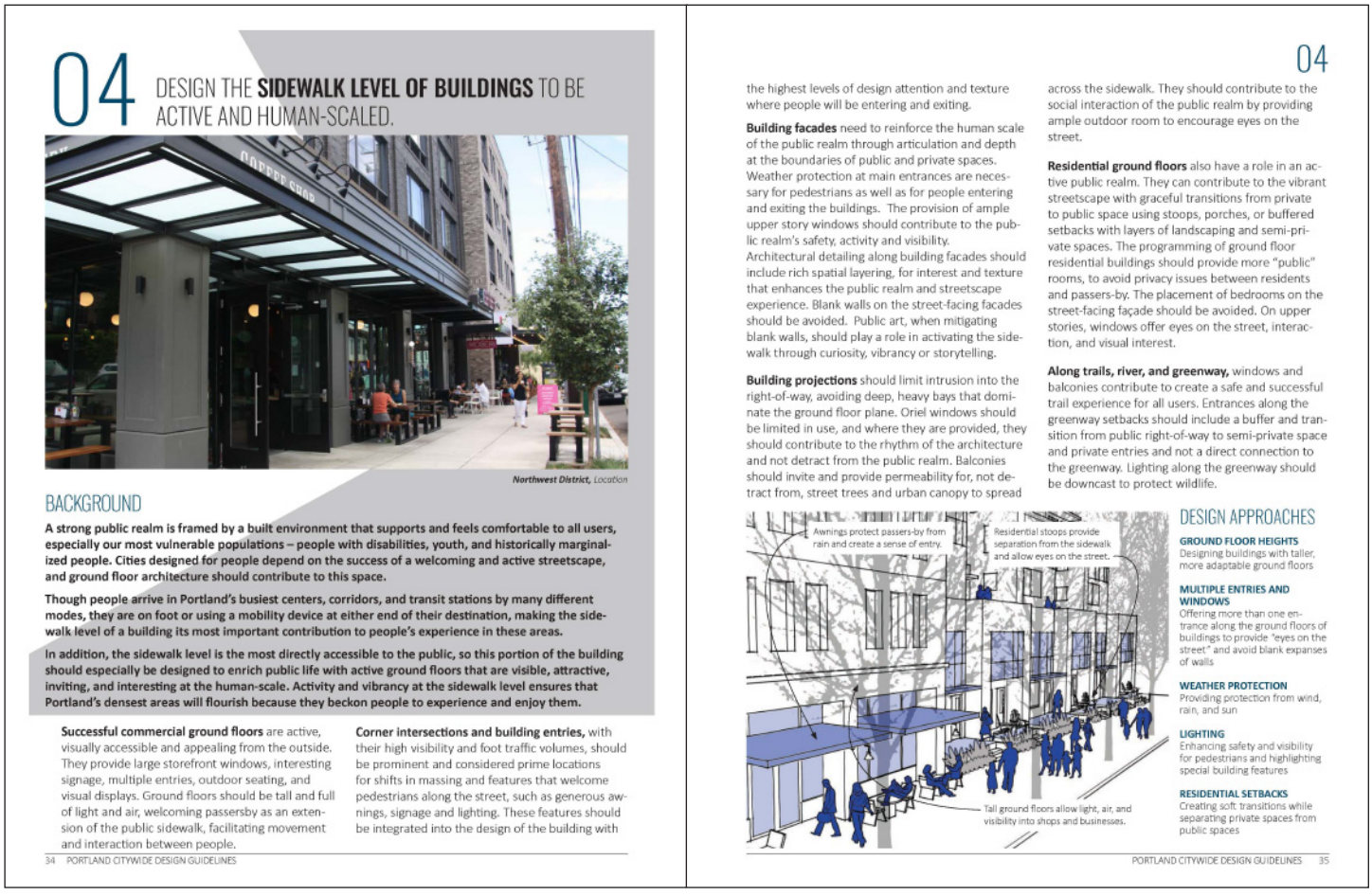
The Urban Design Manual is a relatively older document by industry standards, and best practices have evolved on a number of fronts, including language and presentation, level of detail and guidance on design matters, and consideration for the scale and context of development. Characteristics of the Urban Design Manual that can be evolved include the following.

4.8.2 Communication

- Modernize the language, graphics and layout;
- Greater clarity in page layout, navigation, headings and other elements graphic design;
- Show more examples. Use photographs, diagrams and sketches. Call attention to the specific characteristics within those images that are desired; and
- Use of larger images with captions that call attention to the relevant characteristics.

Portland Citywide Design Guidelines

- Provides high level guidance: goals and aspirations, followed by demonstrations of how to accomplish them. This is similar to the Urban Design Manual;
- The demonstrations are partly guidelines and partly examples, with great **photographs accompanied by descriptions**; **sometimes 3D modeling**;
- **The demonstrations are excellent and extensive**, showcasing a variety of ways of accomplishing the high level goal. Most are from Portland itself, which has a 20+ year legacy of good quality design and intensification; and
- Compared to other guidelines in Southern Ontario they are aspirational and do not provide specific metrics or binary conditions (i.e. "provide *this*" statements).



04 DESIGN THE **SIDEWALK LEVEL OF BUILDINGS** TO BE ACTIVE AND HUMAN-SCALED.

Northwest District, Location

BACKGROUND

A strong public realm is framed by a built environment that supports and feels comfortable to all users, especially our most vulnerable populations – people with disabilities, youth, and historically marginalized people. Cities designed for people depend on the success of a welcoming and active streetscape, and ground floor architecture should contribute to this space.

Though people arrive in Portland's busiest centers, corridors, and transit stations by many different modes, they are on foot or using a mobility device at either end of their destination, making the sidewalk level of a building its most important contribution to people's experience in these areas.

In addition, the sidewalk level is the most directly accessible to the public, so this portion of the building should especially be designed to enrich public life with active ground floors that are visible, attractive, inviting, and interesting at the human-scale. Activity and vibrancy at the sidewalk level ensures that Portland's densest areas will flourish because they beckon people to experience and enjoy them.

Successful commercial ground floors are active, visually accessible and appealing from the outside. They provide large storefront windows, interesting signage, multiple entries, outdoor seating, and visual displays. Ground floors should be tall and full of light and air, welcoming passersby as an extension of the public sidewalk, facilitating movement and interaction between people.

Corner intersections and building entries, with their high visibility and foot traffic volumes, should be prominent and considered prime locations for shifts in massing and features that welcome pedestrians along the street, such as generous awnings, signage and lighting. These features should be integrated into the design of the building with

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04

the highest levels of design attention and texture where people will be entering and exiting.

Building facades need to reinforce the human scale of the public realm through articulation and depth at the boundaries of public and private spaces. Weather protection at main entrances are necessary for pedestrians as well as for people entering and exiting the buildings. The provision of ample upper story windows should contribute to the public realm's safety, activity and visibility. Architectural detailing along building facades should include rich spatial layering, for interest and texture that enhances the public realm and streetscape experience. Blank walls on the street-facing facades should be avoided. Public art, when mitigating blank walls, should play a role in activating the sidewalk through curiosity, vibrancy or storytelling.

Building projections should limit intrusion into the right-of-way, avoiding deep, heavy bays that dominate the ground floor plane. Oriel windows should be limited in use, and where they are provided, they should contribute to the rhythm of the architecture and not detract from the public realm. Balconies should invite and provide permeability for, not detract from, street trees and urban canopy to spread across the sidewalk. They should contribute to the social interaction of the public realm by providing ample outdoor room to encourage eyes on the street.

Residential ground floors also have a role in an active public realm. They can contribute to the vibrant streetscape with graceful transitions from private to public space using stoops, porches, or buffered setbacks with layers of landscaping and semi-private spaces. The programming of ground floor residential buildings should provide more "public" rooms, to avoid privacy issues between residents and passers-by. The placement of bedrooms on the street-facing façade should be avoided. On upper stories, windows offer eyes on the street, interaction, and visual interest.

Along trails, river, and greenway, windows and balconies contribute to create a safe and successful trail experience for all users. Entrances along the greenway setbacks should include a buffer and transition from public right-of-way to semi-private space and private entries and not a direct connection to the greenway. Lighting along the greenway should be downcast to protect wildlife.

DESIGN APPROACHES

GROUND FLOOR HEIGHTS
Designing buildings with taller, more adaptable ground floors

MULTIPLE ENTRIES AND WINDOWS
Offering more than one entrance along the ground floors of buildings to provide "eyes on the street" and avoid blank expanses of walls

WEATHER PROTECTION
Providing protection from wind, rain, and sun

LIGHTING
Enhancing safety and visibility for pedestrians and highlighting special building features

RESIDENTIAL SETBACKS
Creating soft transitions while separating private spaces from public spaces

PORTLAND CITYWIDE DESIGN GUIDELINES 35

Portland Citywide Design Guidelines (2021)

04 Design the **sidewalk level of buildings** to be active and human-scaled.

THIS GUIDELINE MAY BE ACCOMPLISHED BY...

A

Designing covered entries, signage, seating, and glazing details that contribute to interest and activity at the human-scale.
Alberta, *NE Alberta and NE 21st*

B

Including wide, flexible openings. This restaurant's large bay of windows transforms to allow an expansion of seating during warmer, sunnier months, creating a versatile, active public realm.
Pearl, *NW Everett and NW9th*

C

Activating a corner with a welcoming entry, weather protection, and seating.
Ladd's Addition, *SE Ladd and SE Division*

D

Incorporating distinctive paving patterns, landscaping, artwork, and large entry canopies. Creating an extension of the sidewalk contributes to more interaction among patrons and passersby.
Northwest District, *NW Quimby and NW 22nd*

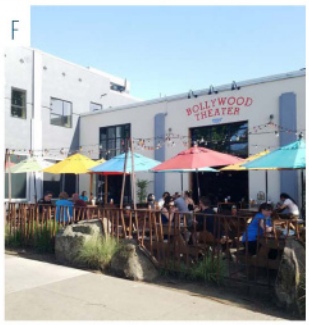
04

THIS GUIDELINE MAY BE ACCOMPLISHED BY...

E

Featuring multiple windows and doors, signage, and room for informal retail displays and planters.
Alberta, *NE Alberta and NE 18th*

F



Locating active uses directly adjacent to the public sidewalk. Providing covered seating, string lights, and multiple windows and entries within the setback creates an active streetscape.
Division, *SE Division and SE 30th*

G

Buffering ground floor residential units with generously landscaped planters to provide privacy and safety for residents. Multiple layers softens the street edge and can allow for a more pleasant streetscape.
Williams, *N Williams and N Mason*

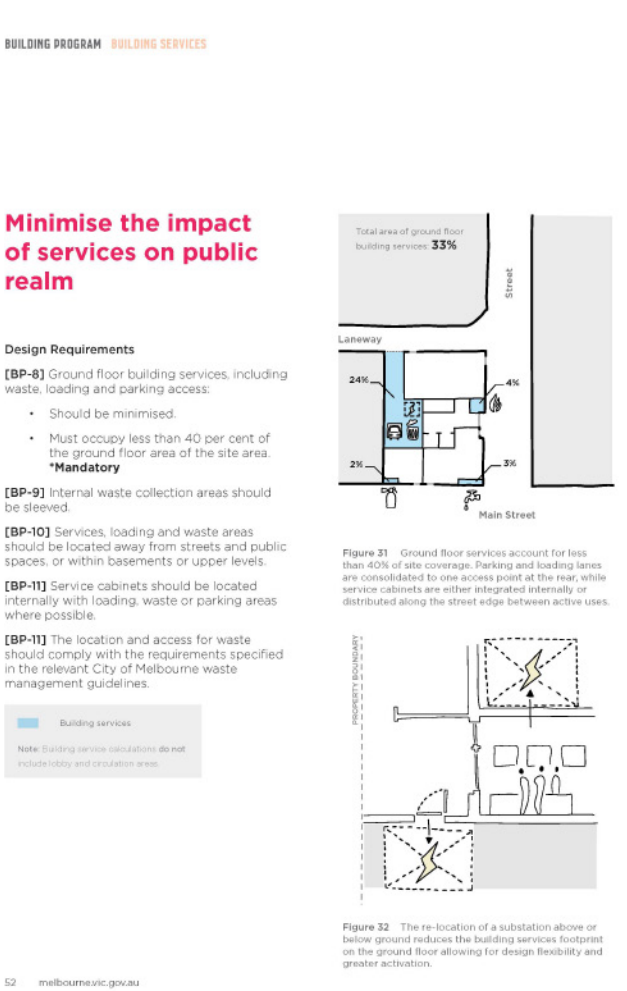
H

Offering signage, tall ground floors, and weather protection for pedestrians. High levels of visual permeability on the ground floors make sidewalks feel safe and inviting.
Division, *SE Division and SE 26th*

Portland Citywide Design Guidelines (2021)

Central Melbourne Design Guide

- Text is brief, diagrams are simple and easy to understand;
- Full page photo illustrates intended outcomes;
- Probably oversimplifies; more detail is likely needed for Waterloo.



BUILDING PROGRAM BUILDING SERVICES

Minimise the impact of services on public realm

Design Requirements

[BP-8] Ground floor building services, including waste, loading and parking access:

- Should be minimised.
- Must occupy less than 40 per cent of the ground floor area of the site area. ***Mandatory**

[BP-9] Internal waste collection areas should be sleeved.

[BP-10] Services, loading and waste areas should be located away from streets and public spaces, or within basements or upper levels.

[BP-11] Service cabinets should be located internally with loading, waste or parking areas where possible.

[BP-11] The location and access for waste should comply with the requirements specified in the relevant City of Melbourne waste management guidelines.

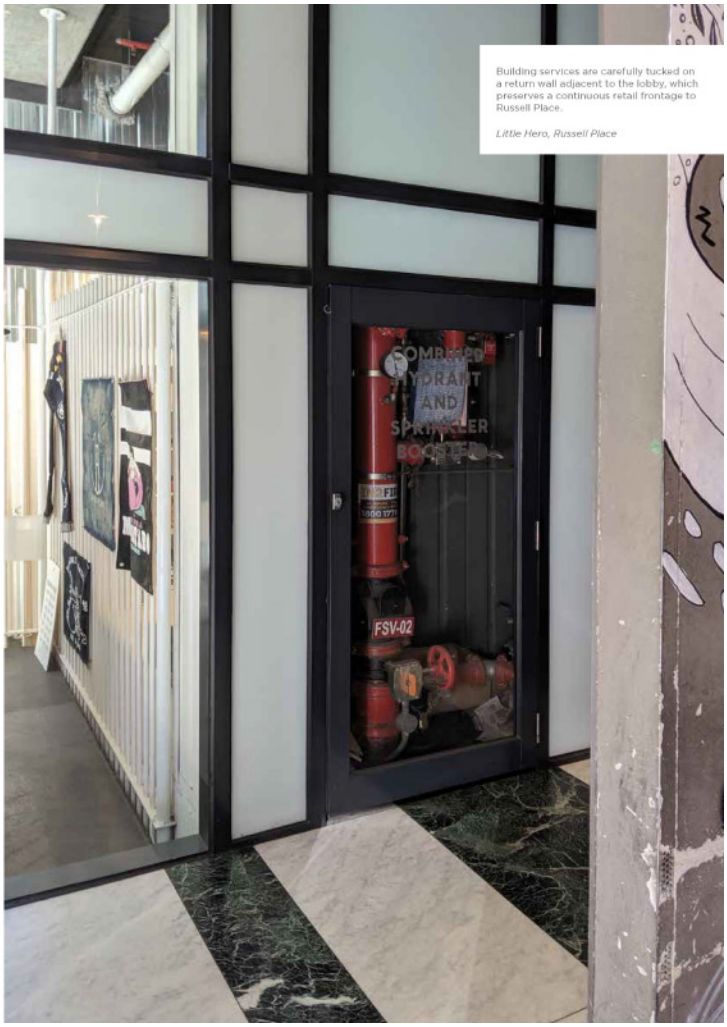
Building services

Note: Building service calculations do not include lobby and circulation areas.

Figure 31 Ground floor services account for less than 40% of site coverage. Parking and loading lanes are consolidated to one access point at the rear, while service cabinets are either integrated internally or distributed along the street edge between active uses.

Figure 32 The re-location of a substation above or below ground reduces the building services footprint on the ground floor allowing for design flexibility and greater activation.

52 melbourne.vic.gov.au



Central Melbourne Design Guide (2021)

Central Melbourne Design Guide

- Includes many examples of outcomes to be avoided. This may be a useful strategy for Waterloo to identify examples of development that could be improved.

SITE LAYOUT

Tips: design outcomes to avoid

Figure 17 A building setback without a clear public purpose disrupts the continuity of the street and reduces pedestrian comfort.

Figure 19 A broad vehicle entry on a main street negatively impacts the pedestrian realm.

Figure 18 The redevelopment of this former plaza results in small leftover spaces which are not suitable for stationary activity.

Figure 20 Low height colonnades with broad columns at the street edge can limit views through to the building interior and negatively impact upon the attractiveness and success of retail spaces.

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Central Melbourne Design Guide 33

Central Melbourne Design Guide (2021)

4.8.3 Elaboration

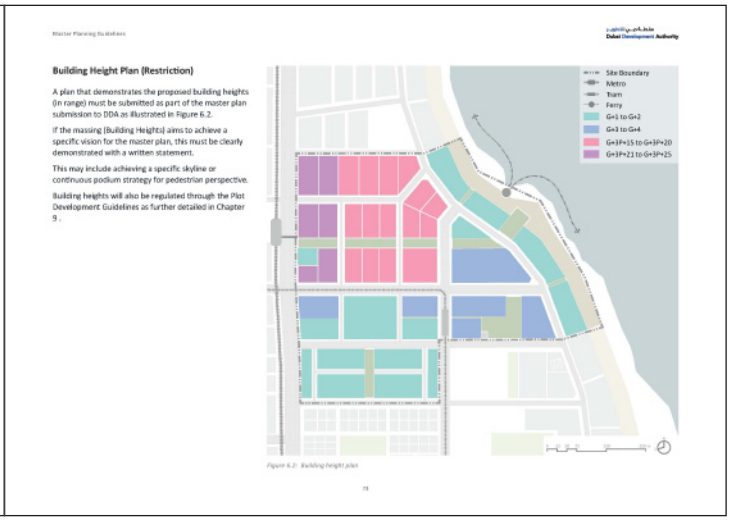
There are a few design topics where elaboration of the guidelines can have a major positive impact on communicating development quality by targeting specific challenges that the City has. In many cases, the topic exists in the Urban Design Manual, but it should be elaborated into a larger discussion with demonstrations of what is expected. By devoting more space to these topics, it sends a clear message to the development industry on what is expected. Areas for elaboration include the following.

Transition

- Between new development and existing, low rise residential uses;
- Between higher and lower forms of development; and
- Between different uses or conditions, e.g. employment uses, ION corridor, major road corridors, open spaces, etc.

Master Planning

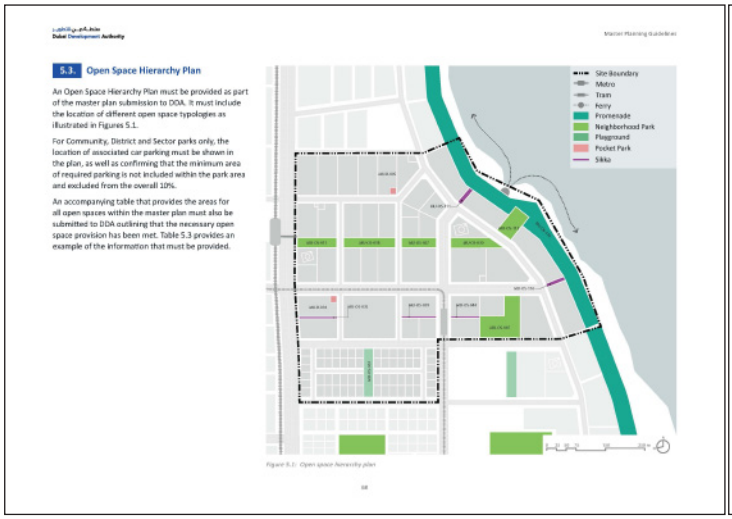
- Fine grain street and block pattern;
- Connectivity;
- Responding to existing context: connectivity, views, land use compatibility;
- Built form massing strategy;
- Public realm strategy; and
- Open space focal points for large development sites.

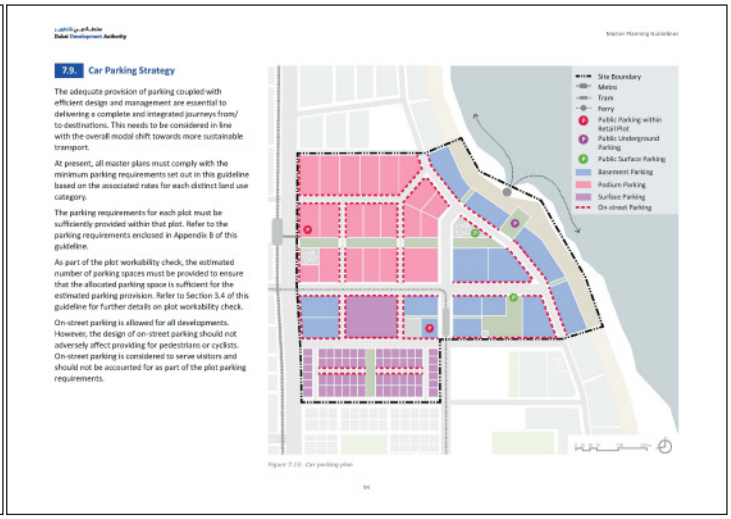


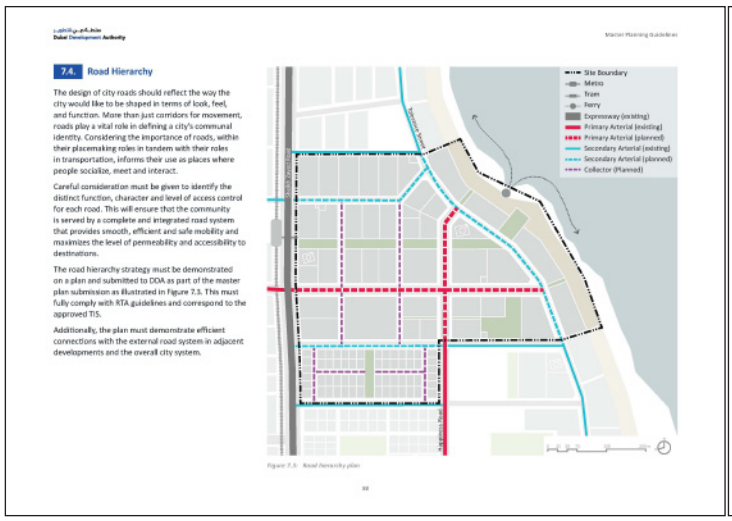
Dubai Development Authority Master Planning Guidelines (2019)

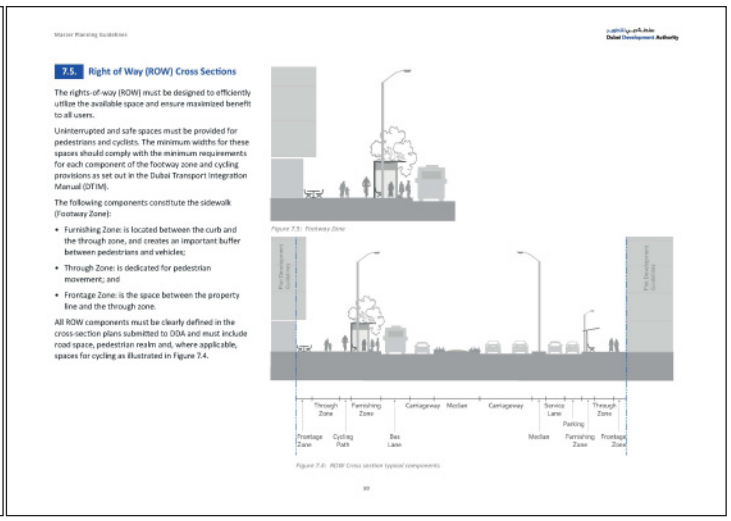
Dubai Master Planning Guidelines

- Developed as a ‘how-to’ as well as a terms of reference for development applications.
- Content is detailed and thorough. Covers the full range of urban design interdependencies including site analysis, land use, public spaces and facilities, built form, transportation and utilities; and
- Provides a useful model for developing more simplified master planning guidelines to include in the Urban Design Manual.









Dubai Development Authority Master Planning Guidelines (2019)

Contextual Fit

Responding to existing conditions both on-site and adjacent, as well as responding to the planned context. There are many ways of responding, such as making new connections, or setting development back, or continuing a datum line. The Urban Design Manual should provide guidance for a large range of scenarios:

- Land use;
- Street pattern, street hierarchy, streetscaping;
- Heritage buildings and landscapes;
- Destinations (parks, community uses, institutional, retail, etc;
- View corridors to natural features, heritage resources, destinations;
- Mid block connections and trails;
- Transit stops;
- Transition in massing;
- Overall massing, roof line;
- Datum lines, signs and architectural details;
- Materials and colours; and
- Wind and shadow.

Articulation

A prevalent characteristic of recent development in the City of Waterloo is their planar surfaces, which lack depth and do not create interest or pedestrian scale. Many buildings read as the simple repetition of a standard floorplate, and when combined with a simplistic approach to materials, can give the impression of value engineering and mass production. This is not to say planar buildings are inappropriate; simple, clean, modern buildings are fine, but they require careful design. Guidelines for articulation should emphasize:

- Breaking up large massing;
- Emphasis on entrances;
- Base, middle, top;
- Fenestration, balconies;
- Corner elements;
- Minimum change of plane dimension; and
- Change of materials; material returns.

San José Citywide Standards & Guidelines and **Downtown Design Guidelines & Standards**

- Provide a heavily illustrated, clean/clear modern format
- Guidelines organized at site, building and pedestrian levels (hierarchy);
- Each topic area begins with a simple goal statement, explains the rationale, then follows up with guidelines and standards, backed by **specific metrics and binary conditions**. Similar to level of detail in many Ontario municipalities;
- They are illustrated with 3D modeling of hypothetical development as well as with precedent photographs of built examples. **3D modeling Illustrates relationships and intent** without getting bogged down in style and detail. **Calls attention to key elements and functions as a diagram**. Precedent photos are highlighted to demonstrate design objectives;
- Guidelines for articulation are a good reference for Waterloo; and
- Downtown guidelines provide good detail for tall building development.

3.1 MASSING

3.1.2 Form, Proportion, and Scale

ANALYZE CONTEXT AND PROVIDE QUALITY DESIGN

Buildings with design, form, and massing similar to surrounding buildings support a cohesive urban fabric.

Rationale

Building design requires moderation in order to form a coherent *urban fabric*. A pattern of individual buildings creates a consistent backdrop that allows special or unique landmark buildings such as museums and large commercial developments to draw attention. The presence of too many individual, unique, and out-of-scale buildings creates an unattractive urban environment.

Standards

S1. Buildings at street intersections with traffic signals, terminus points, and open spaces must include at least two of the following architectural features for a minimum of 20 percent of each building *frontage* along the street (see Fig. 3.7):

- Corner plaza.
- *Articulated* corner with vertical or horizontal projections.
- Taller *massing* or exaggerated roof elements.
- Building entrances with a minimum recess of three feet.
- Different *façade* treatments such as variations in materials and color.

S2. When taller *massing* or exaggerated roof elements are provided, they can exceed the *maximum allowed building height* by up to 15 feet for a maximum of 10 percent of the roof area.

S3. For *streetwalls* more than 200 feet in length, provide at least one recess or projection in the *façade* that is at least:

- 15 feet wide and 10 feet deep for residential, commercial, and mixed-use developments (see Fig. 3.8).
- 10 feet wide and 5 feet deep for industrial developments.

Guidelines

G1. Take cues for form, proportions, roof forms, and building elements from nearby buildings of similar size (see Fig. 3.8).

Articulated corner with exaggerated roof element | Architectural break | Articulated building corner with public plaza | Architectural break

Fig. 3.7 Define corners using *articulation*, corner plaza, taller *massing*, or exaggerated roof elements and provide significant architectural breaks in the building mass to sculpt the buildings.

Fig. 3.8 Design the street *façade* to be proportional to the form and scale of surrounding developments.

Related Subsections

3.1.1 Massing Relationship to Context
3.1.3 Historic Adjacency
3.3.1 Façade Design and Articulation

General Plan Reference

CD-1, CD-4, CD-10, LU-9, LU-11, MS-1, MS-2

3.3 BUILDING ELEMENTS

3.3.1 Façade Design and Articulation

ANALYZE CONTEXT, PROVIDE QUALITY DESIGN, AND DESIGN FOR SUSTAINABILITY

Design buildings with attractive, timeless, and sophisticated contemporary architecture.

Rationale

The design and *articulation* of building *façades* adds to the visual richness of developments and creates patterns and scale within neighborhoods. Elements such as bay windows, balconies, changes in plane and height, and differentiation of materials and colors facilitate *façade articulation* and mitigate the monolithic appearance of large walls and roofs.

Standards

S1. *Articulate* all building *façades* facing a street or *public open space* for at least 80 percent of each *façade* length. *Articulate* all other building *façades* for at least 60 percent of each *façade* length. *Façade articulation* can be achieved by providing material and plane changes or by providing a *rhythmic* pattern of bays, columns, balconies, and other architectural elements to break up the building mass (see Fig. 3.22 to 3.29).

S2. Building elements such as bays, windows, and balconies that project from *façades* must have at least two feet of plane change (see Fig. 3.24).

Guidelines

G1. Design the *façade* as *base*, *middle*, and *top*, using a combination of the following design elements (see Fig. 3.28 and 3.29):

- *Base* - Create a *rhythm* of columns, windows, entry stoops, and porches.
- *Middle* - Employ bays, decks, balconies, plane and material changes, window patterns, and *sunshades*.
- *Top* - *Articulate* top floor(s) using different materials, patterns, roof forms, and parapet heights.

G2. Design new buildings so that all sides of a building are coordinated and create a cohesive *architectural idea*.

G3. Incorporate special corner treatments, such as changes in *façade* treatments, material, or *articulation*, for buildings at street intersections or adjacent to *public open spaces*.

Fig. 3.22 *Articulate façades* and create a *rhythm* of architectural features such as bays and windows.

Fig. 3.23 Similar design elements such as bays, balconies, and window treatments can be used with different architectural styles.

Fig. 3.24 *Façade articulation* using bays.

Fig. 3.25 Height *articulation* using corner elements and window patterns.

San José Citywide Design Standards and Guidelines (2021)

Heritage compatibility and integration

Consider a heritage-specific section that provides guidance on responding to heritage buildings (or landscapes) that are on-site or adjacent. Topic areas should include:

- Massing
- Floor heights
- Cornice lines
- Rhythm
- Proportion (architectural bays, windows)
- Materials and colour
- Transition between new and old
    - Step back
    - Setbacks or angular planes
    - Distinct materials
    - Façade vs. massing integration

Setbacks/private realm streetscaping

Provide examples of the types of landscape that are to be implemented within the front and exterior side yard setbacks. The landscape types should consider the existing context, such as retail, institutional or residential, as well as its planned context, such as future retail and streetscape objectives. A key driver is whether the private realm streetscaping will serve to extend the existing public sidewalk, such as in retail or institutional contexts, or whether it is semi-private in nature, serving as the transition zone to ground floor residential uses.

Skyline

The Urban Design Manual should explore the role of tall buildings in defining the City's skyline, as well as specific design techniques for integrating the mechanical penthouse in creating a building 'top.'

4.9 Uptown Centre

Zoning By-law 2018-050 establishes a number of unique performance standards for the Uptown Centre that are different from the more general tall building performance standards. For this report, the following are discussed in more detail.

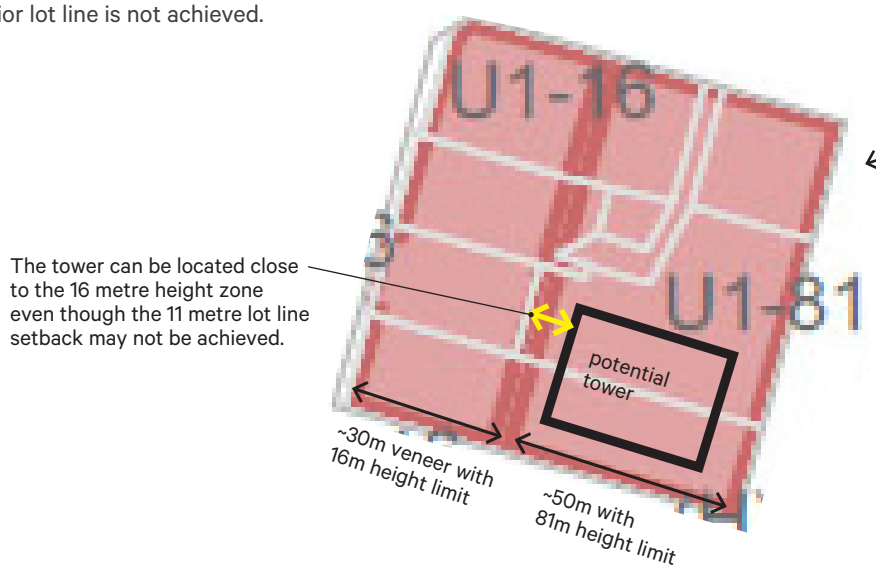
King Street Height Limit

There is a 16 metre (4 storey) height limit for properties fronting onto King Street, from William Street to Young/Spring Streets. This area corresponds to the fine grain, historic lot fabric built nearly continuously with 1 to 3.5 storey buildings fronting onto King Street. The 16 metre height veneer along King Street extends for approximately 30 metres horizontally, behind which taller buildings are permitted.

It is presumed that the 16 metre height limit was a deliberate mechanism intended to maintain the existing historic character, fine grain, and low scale of King Street. It is certainly effective in this. Given the 30 metre depth, it protects most or all of the properties fronting to King, significantly reducing their attractiveness for tall building development (barring zoning amendment applications). This may have other benefits as well, beyond character and heritage, such as preserving affordable commercial and residential space.

Behind the 16 metre height veneer, the zoning allows for taller buildings in the 40 to 81 metre height range. These properties front onto Dorset Street or Regina Street. Total block depths are approximately 80 metres, between King and Dorset or Regina. Given that tall buildings are not permitted along the King Street frontage, it is important for the City to be flexible with tall buildings within the 40 and 81 metre zones, because there is only 50 metres of block depth remaining in which to site a tower beyond the 16 metre limit. If other design factors are not compromised, it is appropriate for towers to be located adjacent or close to the 16 metre veneer (30 metre depth). This may mean that the 11 metre setback from tower to interior lot line is not achieved.

The zoning for the Uptown Centre, including the height map, are **appropriate because they reinforce its existing character.** No changes are needed. Flexibility for development applications that maintain the character of the Uptown Centre is appropriate.



Tower location within the taller height zone (40 to 81m) should be considered with some flexibility if it does not compromise the low rise historic character of King Street.

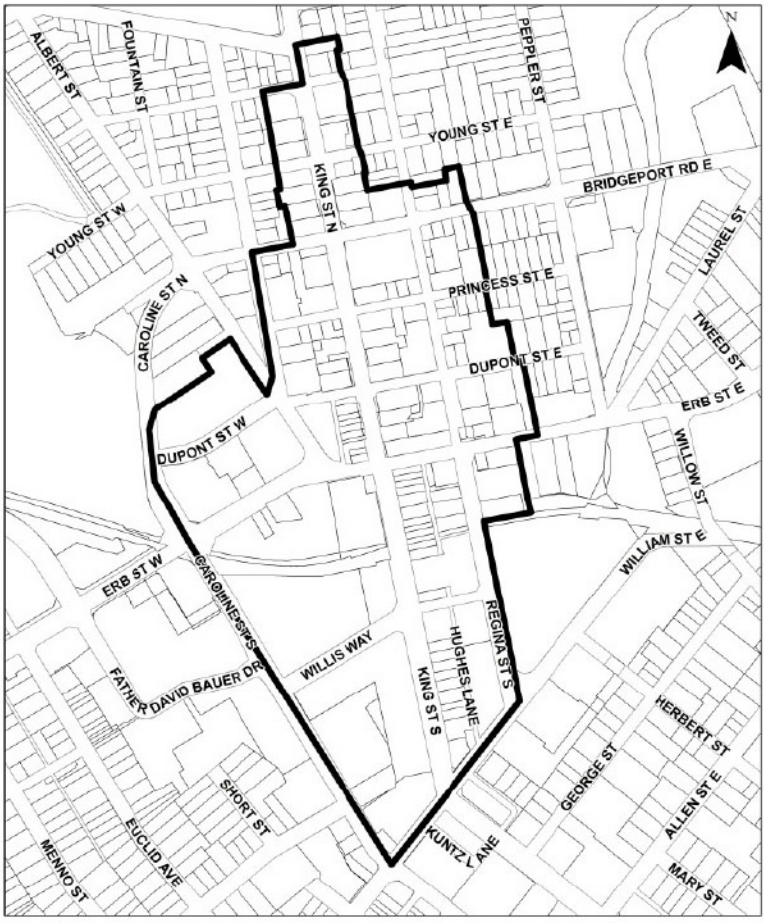
0m Setbacks

There are no front and side yard setbacks required (0 metre) within the core area of the Uptown Centre, as defined by Image 1 in Zoning By-law 2018-050. This corresponds to the historical commercial heart of the downtown, built with commercial or mixed use buildings (i.e. non-house-form buildings). This is an appropriate performance standard that allows new development to be consistent with the established character. The 0 metre minimum does not preclude a greater setback, if appropriate, for sidewalk widening or public realm improvements.

Landscaped Open Space

There are no landscaped open space requirements within the Uptown Centre zones. This is an appropriate performance standard that permits new development to fill in to achieve a similar, highly urban character consistent with the existing urban fabric. Appropriate landscaping is always welcome.

Uptown Commercial Core (U1) Zone



5 Implementation Considerations

5.1 Introduction

The considerations and recommendations in this report generally relate to urban design outcomes and are agnostic to method of implementation through Official Plan, Zoning, guidelines or other tools. Implementation will depend on the legal framework of the tool – what it can or cannot control – and the City's comfort level with using it.

There are many tools that can be used to implement recommendations in this report. The key principle in deciding what changes are needed, and what tools will be used, is:

Make the type of development the City wishes to see the simplest, easiest and most expedient for the development industry to get approved.

5.2 Additional Height and Density

When considering increased height and density and the community design benefits that accompany them, there are several options for implementation:

Enhanced Official Plan Policies – identify criteria and bonusing provisions for delivery of benefits for public realm, community uses, heritage preservation, etc. This could set out the general framework for bonusing in exchange for community benefits.

Area-Specific Policies in the Official Plan - Defines specific heights and densities for specific areas or land uses with specific amenities that are a priority in those areas. This is similar to the mechanism used by the Town of Oakville, and North Vancouver and Victoria, British Columbia.

Master Plan Compliance – defining the overall vision for important districts inclusive of public realm design, community uses, and built form framework. Compliance with the master plan is enforced by policy. The City can create master plans for important districts, update the Station Area Plans, and/or require the development industry to prepare them to the City's satisfaction. Master plan goals, objectives and criteria can be defined in the Urban Design Manual Refresh.

Community Planning Permit System – combines the master plan process with zoning and site plan to create the framework up front. It can allow for increased height and density with the delivery of defined benefits.

Holding Provision – could be a way to pre-zone a density bonusing system. The density is in place with a clear indication of the condition that will remove the holding provision. This could link together the defined benefits *and* compliance with design guidelines to achieve increased height and density.

5.3 Community Planning Permit System

The unique mechanisms of the Community Planning Permit System are attractive for defining a high quality urban design framework for key areas such as the Station Areas or Uptown Centre, one that would allow additional height and density. It combines zoning, site plan and minor variance into one process.

Advantages of the Community Planning Permit System are:

- Once implemented, it is a simpler process;
- Coordinates development across multiple ownerships and potential timeframes for development;
- Allows all of the components of planning and design – land use, height/density, streets/blocks, parkland, community benefits – to be comprehensively planned up front;
- Provides greater assurance in the face of weakening site plan powers arising from Bill 23;
- Allows for developer/staff negotiation and discretionary standards; and
- Once passed, only applicants may appeal staff decisions.

A disadvantage of the Community Planning Permit System is that it takes a long time to develop and implement, similar in length to a Secondary Plan. A Community Planning Permit System may be appropriate for development nodes that are expected to have a long timeframe for development.

5.4 Municipal Development Review

There has been a discernible improvement in the quality of tall buildings and the built urban environment in the City of Waterloo over the past decade. This can be attributed to the collective efforts of all involved, including staff, Council, the community, developers, and the public. This trend is part of a larger movement in most cities as people recognize the necessity and value of living in denser and more compact cities that offer high amenities.

Continued education is important to foster this trend. City staff are key in this, as they are the linchpin in communication with Council, the community and the development industry. Consider additional knowledge sharing, professional development and learning for planning and transportation staff on the benefits of intensification, achieved through an inter-disciplinary approach to city building.

Given the current volume and scale of development interest in the City of Waterloo, additional staff resources may be required to assist with reviewing and guiding development proposals. The City should have urban design, architectural design, and landscape/streetscape design expertise in-house that can be drawn upon as needed. It often requires more than one person to achieve a balance among these overlapping skills.

Important feedback from the development industry revealed the perception that it is more difficult to undertake the application/review process in the City of Waterloo as compared to other municipalities. One way to address this would be to have an urban design team who is available to engage with the development industry from concept to building permit, and provide a continuity of guidance throughout. Again, this requires greater staff commitment and a diverse skill set, from an understanding of the policy framework through to an understanding of construction. It is likely an overlap of several individuals. Resource availability is a consideration and potential constraint in establishing an appropriate team.

With the City's strong Official Plan and Zoning By-law framework in place, it is suggested that staff can be flexible in their interpretation of the framework, focusing on quality of design outcomes, and allowing for exceptions where it is warranted and where sufficient justification is provided.

Understanding when to be flexible and when to hold firm on design outcomes requires a staff team with planning and urban design expertise. This includes not only the initial assessment of a development application by a staff urban designer, but also an appreciation of the urban design issues on the part of land use planners and transportation engineers, who will also be involved in reviewing the application, communicating with the applicant, Council and the public, and negotiating and approving elements that fall under their jurisdiction.

5.5 Urban Design Review Panel

Many municipalities have implemented an urban design review panel as the volume, scale and importance of intensification has accelerated. An urban design review panel is typically 5-9 members who provide design advice to Council or to Staff based on Official Plan policies and urban design guidelines.

Advantages of an urban design review panel include:

- Provides an impartial opinion;
- Lends authority to design opinions;
- Brings a wider perspective to design review;
- Provides multiple perspectives and disciplines; and
- Elevates the design discussion.

There can be challenges with an urban design review panel. A membership of local representatives runs the risk of not being impartial. The panel's opinion may also diverge from staff or Council opinion.

Criteria for assembling a panel and selecting individual members should consider:

- Demonstrated professional experience or authority in design;
- Balance among public policy issues and development industry issues. Members who work for the private sector are important, as they provide insight into what is implementable, and, what reasonable compromises might be;

- Bias to urban design – members specializing in urban design, or, collectively, the combination of architecture, landscape architecture, planning and urban design; and
- Experience in multiple contexts, particularly outside of Waterloo Region.

5.6 Master Plans

A master plan should set out a comprehensive urban design vision for an area inclusive of:

- Vision, site context, integration with urban fabric;
- Land uses at and above grade. Includes community facilities, frontage conditions;
- Street network and hierarchy with landscaping. Includes transit, cycling, pedestrians, vehicles, access, private roads, and servicing/loading;
- Public open space network and hierarchy with landscaping. Includes natural areas, trails, parks, plazas, POPS, private landscaping, and character;
- Built form framework. Includes typologies, height, massing, podiums, street walls, character, setbacks, separation distances, parking strategy, unit types, population yield;
- Servicing (utility) strategy. Coordinates utility corridors, street cross sections, stormwater management, and site grading; and
- Phasing strategy.

Key functions of a master plan are coordinating logical street patterns, public spaces and community amenities across multiple properties that would otherwise not be considered with piecemeal development. Master plans ensure that intensification delivers community benefits, such as a central park that serves as a community focal point and is accessible from all surrounding developments. They are a way to ensure that development provides appropriate amenities that are not already provided by the City's existing infrastructure to serve population growth.

The extent of a master plan area should consider:

- Where intensification is desired. Master plans will fall within the City's Nodes and Corridors structure;
- Contiguous developable properties;
- Logical edges or boundaries, such as:
    - major roads (highways, arterials);
    - major open space systems (valleys);
    - change in uses (non-residential, low-rise residential);
    - walking radius (in the case of MTSAs); and

- Transition or interface with the surrounding urban fabric.

Master plans will vary in their level of comprehensiveness. An infill project does not need all of the elements identified in the list above, it just needs to show how it integrates with the urban fabric and provides a good public realm. Larger projects will require a comprehensive plan that responds to all of the elements. A master plan should always be required where a new street and block fabric is needed. The City may wish to initiate a master plan, or it can be a requirement of the private sector on development.

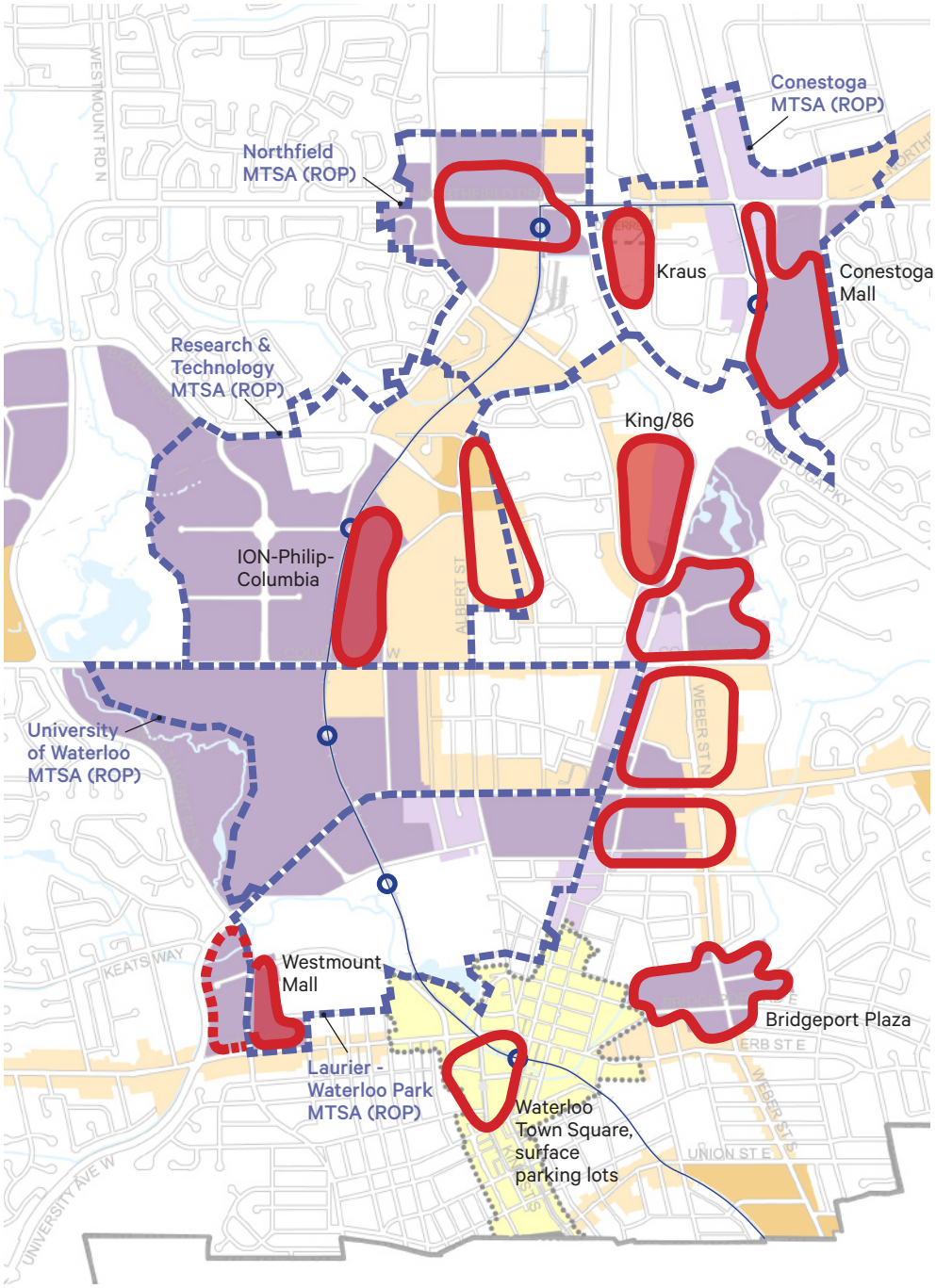
Candidate locations for master plans include any large areas or large parcels where new development has the potential to create new neighbourhoods with significant population growth, new street and block networks, and demand for retail and services, including:

- Major Transit Station Areas. The existing **City of Waterloo Station Area Planning: 5 Station Area Plans (2017)** document provides an excellent framework for developing the Major Transit Station Areas outside of the Uptown Centre. These master plans could be updated to reflect the potential mixed use designations the City may apply to these areas, and, to further define built form and especially public realm design expectations;
- Mall sites;
- Large commercial or industrial sites such as strip malls, big box retail, or former employment buildings, particularly in areas where they are clustered together;
- Existing residential areas that have potential for infll and/or redevelopment at a large scale; and
- If the City considers areas for increased height and density, as per the discussion in “3.6 Additional Growth Potential” on page 24, master plans for these areas would be helpful.

Different scales and contexts of development may have different needs in terms of a master planning process, but it would be useful to provide guidance on the process the City would like to see undertaken, such as:

- Defining the extent of the master plan (if not already defined);
- Expectations for public engagement, especially of the surrounding community. The public should have an opportunity to review and comment on design proposals;
- Coordination and consultation with affected and surrounding landowners;
- Expectations for City involvement in the public process (including all relevant departments and divisions), in stakeholder discussions and in review/approval;
- Expectations for other stakeholder coordination and consultation including, as applicable, Waterloo Region, GRCA, MTO, Colleges/Universities, Uptown Waterloo BIA, and Community groups, among others;
- Whether it is developer-led, City-led, or, City-led but development-funded; and
- What the City's internal approvals and sign-off requirements are.

It may be appropriate to include policy language in the Official Plan that speaks to the City's commitment to creating Master Plans prior to large-scale development and articulates some of the principles discussed above. Development of Master Plans could be integrated with or implemented through the Community Planning Permit System to support flexibility over longer development time frames.



Potential areas where a Master Plan would be desired. The boundaries shown above are generalized. Actual boundaries should be determined through further examination, and/or once development interest is more understood.

5.7 Streetscape Master Plan

Many municipalities have adopted a design manual (under a variety of names) that sets out the vision for how streets should be designed and landscaped, and referred to here as a Streetscape Master Plan. Whereas the Transportation Master Plan focuses on multi-modal movement and the function of the network, the Streetscape Master Plan provides detail on design matters. It is the 'how-to' guide for the Complete Streets chapter of the Transportation Master Plan.

The Streetscape Master Plan should include a streetscape hierarchy that defines the role and function of streets from a design perspective. It considers, but is different from road classifications (arterials, collectors, etc.). As an example, while King Street is a Regional Arterial Road, it is also the City's Primary Main Street, and the recent streetscape improvements – paving, seating, sidewalk widening, crosswalks, cycle lanes, landscaping – reflect its role and function in the hierarchy. The streetscape hierarchy includes special streets such as main streets, green streets, connector streets, retail streets, as well as typical streets such as local residential roads.

For each street type, a landscape standard is established. It includes sidewalk widths, paving materials, tree planting details, furniture, lighting, intersection treatments, and any unique design treatments.

The Streetscape Master Plan is used internally as a template for streetscape reconstruction and repairs, as well as by the development industry, who will build or contribute funds towards the street improvements they are responsible for.

The Streetscape Master Plan requires the input of planning, design, engineering and operations. As such, while the final document may be simple, it can be a complex to undertake.

The Streetscape Master Plan will be most beneficial in the Uptown Centre, and for Nodes and Corridors, where most population growth is anticipated, and where the highest proportion of pedestrians are. With three major universities in close proximity, student foot traffic is high, and consideration for enhanced streetscaping can have significant positive impacts. The City should also work with the Region of Waterloo to implement the Region's Context Sensitive Regional Transportation Corridor Design Guidelines, since Regional Roads are the primary backbone of the Nodes and Corridors framework.

6 Summary of Potential Changes

The following provides a summary of potential changes to policies, zoning, guidelines and practices for the City's consideration.

Short term: 0-2 years. Corresponding to the Official Plan Review process and immediate changes to other planning and design frameworks.

Medium term: 2-5 years. May involve other studies that need to be undertaken, and/or further thought and investigation on topics.

Long term: 5+ years. Part of ongoing effort to improve design outcomes and refine City's policies, guidelines and practices.

Consideration for Change	Section Reference	Details	Priority	Timing
Include enhanced urban design policies in Official Plan	3.2	Provide strong City-wide urban design policies for fine grain, pedestrian scale, great public realm and streetscapes, high quality architecture, active uses, non-visible parking, etc. Consider stronger mapping of design outcomes, e.g. Station Area Maps (J-J5) in OP	High	Short term
Include Master Planning policies in Official Plan	5.6	Articulate requirement for Master Plans for large sites that create new urban fabric. Reference Master Plan/Block Plan Terms of Reference. Examine use of Community Planning Permit System in Master Plan implementation.	High	Short term
Define the mechanisms for allowing additional height and density	3.2 3.7 5.2 5.3	Likely includes reference in Official Plan. List of criteria that warrant consideration for increased height, such as enhanced public realm, community services such as day care, public art, heritage commemoration, sustainability, etc. Identify the best combination of implementation tools such as Official Plan, Community Planning Permit System, Holding provision, Master Plan, etc. Develop supporting and precursor work that establishes benchmarks for criteria that would come into effect in conjunction with the additional height and density, such as Streetscape Master Plan, Green Design/ Sustainability standards, urban park standards, etc.	High	Short term Medium to long term
Define geographical locations for additional height and density	3.6	Consider focal areas around preferred locations, e.g. Uptown Centre and MTSAs.	High	Short Term

Consideration for Change	Section Reference	Details	Priority	Timing
Articulate intended character of nodes, corridors, districts and neighbourhoods	3.2	Likely includes reference in Official Plan. More detail can be included in guiding documents such as Master Plans (either City-led or proponent-led, e.g. MTSAs), Streetscape Master Plan, Public Realm Plans (e.g. Uptown Public Realm Strategy)	Medium	Short to long term
Establish urban design priorities	4.5	Articulate 'must-have' urban design outcomes vs. 'nice-to-have' in Urban Design Manual Refresh: high quality streetscapes, focus on ground level and street wall, fine grain, parking controls.	Medium	Medium term
Create a Public Realm Streetscape Master Plan	4.5.1 5.7	A manual that identifies streetscape hierarchy from a design perspective, and provides design templates for typical conditions within the right of way. Sets out street tree planting, sidewalk, street furniture, lighting, materials, and crossings.	Medium	Medium to long term
Create Private Realm Streetscape Guidelines	4.5.1	Likely part of Urban Design Manual Refresh. Companion to the Streetscape Master Plan. Design templates for typical conditions outside of the right of way, within the front yard setback zone. Sets out street tree planting, sidewalk, street furniture, lighting, and materials.	Medium	Medium term
Define a framework for the visibility of parking	4.5.2 4.6.7	Could be in zoning standards and/or in the Urban Design Manual Refresh. Companion to the Streetscape Master Plan. Identifies streets where above-grade parking structures should not be visible from the adjacent streetscape, i.e. screened by active uses.	Low	Medium term
Changes to zoning performance standards for tower massing	4.6.1	Reduce floorplate size, building length maximums. Consider height increase to incentivize reduced floorplate size.	Medium	Medium term
Changes to zoning performance standards for podium heights	4.6.2	Allow greater flexibility in podium height across all zones: 2 to 6 storeys	Medium	Medium term
Changes to zoning performance standards for step backs	4.6.3	Maintain a step back requirement. Consider reducing to 2 metres depending on context	Medium	Medium term
Changes to zoning performance standards for front yard setback	4.6.4	Context sensitive front yard setbacks to allow reduced setbacks where high quality streetscapes can be achieved, i.e. street trees on both sides of the street and a high quality pedestrian realm where there are no conflicts with utilities	Medium	Medium term

Consideration for Change	Section Reference	Details	Priority	Timing
Changes to zoning performance standards for landscaped open space	4.6.5	Consider reducing landscape open space requirements in the Residential Mixed Use and Northdale zones to encourage more urban approach to site design, where appropriate	Medium	Medium term
Changes to zoning performance standards for ground floor heights	4.6.6	Minimum 4.5m height to allow flexibility in commercial uses, or future conversion to commercial	Medium	Medium term
Urban Design Manual Refresh	4.8	Modernize communication and layout. Emphasis on graphics and photos to demonstrate desired outcomes. Provide additional detail on topics that are important in Waterloo's context: master planning, fine grain, contextual fit, and building articulation.	Medium	Medium term
Enhance urban design culture at staff level	5.4	Include urban design considerations in planning, transportation review. Consider additional urban design resources to meet volume of development. Emphasize quality of outcome and be flexible with planning policies and design guidelines where warranted.	High	Short to long term
Create an Urban Design Review Panel	5.5	Can provide an outside and unbiased opinion for large and/or important initiatives (privately or publicly led). Focused on high quality design outcomes, helps to raise the bar over time.	Medium	Medium
Initiate Master Plans for key areas	5.6	Update MTSA plans with more detail on public realm, community amenities, built form – particularly if land use permissions are changed from employment to mixed use. Consider if there are areas the City wishes to lead a master plan. Require master plans from the private sector for large/complex sites.	Low	Medium to long term

Final Thoughts

A major component of this study was to examine the policy and zoning framework of the City of Waterloo as it relates to tall buildings to understand where changes might be appropriate to improve design outcomes. There is only so much that can be anticipated and controlled through policy and zoning. The 'rules' in policy and zoning set the general intent and baseline. They are further articulated by rules of thumb in design guidelines. Both regulations and guidelines must be applied with creativity and flexibility on a site by site basis, considering the context of a development proposal and its specific objectives, in order to achieve good city-building.