Markham Built Form, Height and Massing Study

Built Form Principles

MARCH 2010

PREPARED FOR

JUNE 2009

PREPARED BY

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WITH PLANNING & URBAN DESIGN, TOWN OF MARKHAM

Acknowledgements

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Substantial Contributions & Review

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Referenced Standards

- "PLACES TO GROW" PLAN
- TREE PRESERVATION BY-LAW
- CYCLING, PATHWAYS, AND TRAILS MASTERPLAN (ENGINEERING)
- PATHWAYS AND TRAILS MASRTERPLAN (URBAN DESIGN)
- ACCESSIBILITY FOR ONTARIANS WITH DISABILITIES ACT
- PROVINCIAL POLICY STATEMENT
- MARKHAM TRANSPORTATION STRATEGIC PLAN
- MARKHAM SUSTAINABLE DEVELOPMENT STANDARDS AND GUIDELINES
- MARKHAM ACCESSIBILITY GUIDELINES
- MARKHAM STREETSCAPE MANUAL

General introduction

The Town of Markham faces unprecedented future intensification. This partially results from recent Provincial legislation that has placed the onus on municipalities to concentrate their growth and limit expansion of their urban boundaries. Significant expenditures by levels of government for public infrastructure, particularly transit improvements, are anticipated, and carry certain expectations for intensification to make them viable alternatives to the passenger vehicle.

As the development industry shifts in response to this forecast, taller buildings and more intensive building types are being proposed and built around Markham. This has created an environment of uncertainty, and in some cases fear, on the part of residents who may have moved to Markham with certain expectations of built form (usually low-rise and spread out), and are now seeing proposals for new building forms and types, and are concerned about potential negative impacts from them. They may also associate these building types as "city" types, and not necessarily as part of Markham's urban fabric.

This document is meant to be a tool to help guide and educate the builders of Markham's future built form, and to assist in creating more certainty for Town staff and residents with regard to the form of future, more intense parts of Markham. This document will assist in the preparation of Precinct Plans, Urban Design Guidelines, and Zoning By-laws that inform decision-making in different areas of the Town. Some of the principles set out in this study could be appropriate to locate within the Official Plan to help provide the vision and efficient allocation of the Town's resources strategically to best achieve the desired results of orderly, controlled growth.

The completion of a built form study does not mean that everywhere in Markham will intensify, or that each intensification area will intensify in the same fashion. There is a hierarchy of development areas in Markham where growth will occur, centred upon existing built-up areas, and key nodes and corridors within the Town structure. This hierarchy is defined and based upon the Provincial "Places to Grow" structure of "Regional Centres", "Key Development Areas", "Major Corridors", and "Local Centres and Corridors". However, Markham is expected, and in fact, legislated to grow in a certain fashion based on Provincial and Regional Policy. This is the primary driver of this exercise. Growth is not anticipated beyond the urban boundary, nor in the interior existing, mature neighbourhoods. These intensification areas are identified in Appendix B - "Intensification Areas".

The Markham Built Form, Height and Massing Study assembles a number of "best practices" that can be employed in creating walkable, connected, and transit-supportive neighbourhoods and communities. The Study addresses key principles such as *Public Realm, Streets and Block*s, *Building Location*, *Built Form*, *and Next Steps*. Each of these elements is interconnected, and there are often implications in one category that assist in the achievement of goals in other categories. The study also provides direction based on a series of test case analyses and principles specific to the form and intensity of development anticipated.

&CO ARCHITECTS, 2010

Definitions

CONTEXT

There are existing and planned contexts. Existing context refers to the surrounding buildings on neighbouring sites. Planned context refers to the future intent of built form of the area. In intensification areas, planned context will usually change from the existing context through intensified building forms.

The Secondary Plan and/or Zoning By-law should provide a basis for assessment of the "context". Where these have not yet been updated to reflect planned intensification areas, an area review should be conducted by the applicant as part of any application that addresses both existing and planned context.

FLOORPLATE

Floorplate generally describes the size of a building floor. For purposes of a "tower floorplate", this measurement will be taken from the exterior building walls, without including balcony projections.

MID-RISE BUILDING

Buildings that are generally 4 - 12 storeys in height. Buildings taller than 6 storeys should include stepbacks within a 45-degree angular plan projected from the top of the building face at the 6th-storey (shown in BF.05).

MAIN STREET

A main street is a qualitative term that describes a mixed-use street environmen, usually with a well-developed public realm.

PODIUM

A podium is the street-related portion of a tall building, which defines streets, parks and open spaces at a pedestrian scale. Podiums should also meet the definition of "mid-rise" buildings.

ROW

Right-of-way - generally referring to a street, which can include the roadway itself, as well as curbs, boulevards, utility trenches, planting strips and sidewalks within the street property lines.

SECONDARY STREET

A secondary street incorporates lesser traffic volume than a main street. It often provides a secondary means of access or address to corner lots.

TALL BUILDING

Any building taller than 12 storeys, or a building that penetrates the angular plane referenced in the definition of "mid rise".

Table of contents

Understanding the guidelines and ...

The Markham Built Form, Height and Massing Study is primarily focused on guiding development within Markham's Intensification Areas. These areas have been identified in a town-wide map (found in Appendix B).

This document considers options for transit-supportive development, neighbourhood connectivity, pedestrian-oriented commercially-viable main streets, and a strong sense of community within an active public realm.

The guidelines are organized into seven chapters: Public Realm; Streets and Blocks; Building Location; Built Form; Tall Buildings; Transition; Parking & Loading. Each chapter is subdivided into a series of Key Principles.

The first four chapters have been arranged to follow the normal sequence of city-building processes, with consideration given to the scales of planning, urban design and architecture.

1. *Public Realm*: This chapter explains how careful consideration of the public realm creates a sense of place on commercial main streets, establishes connections between and within residential neighbourhoods, and can develop appropriate approaches to transition between different land uses and densities. Other pertinent issues are utility coordination and microclimate.

2. *Streets and Blocks*: This chapter provides guidance for street layout and hierarchy, and provides standards for block size and structure.

3. *Building Location*: This chapter highlights site plan issues, including the relationship of built form to the street, and to other elements within the property such as outdoor amenity and provision of services.

4. *Built Form*: This chapter describes more specific approaches to architectural design regarding building height and massing, transition between areas of different intensities, and relationships between buildings and open spaces.

5. *Tall Buildings*: A subset of *Built Form*, this provides specific guidance for the location and evaluation of tall buildings.

6: *Transition*: This helps ensure that there is adequate and appropriate respect and distinction between differently scaled areas.

7: *Parking and Loading*: Some general principles about coordinating their function while achieving positive built form and streetscaping.

Following these chapters are two related sections titled: *Implementation*; *and Next Steps*.

Implementation describes the ways that Markham can apply the Guidelines to its city-building efforts and future planning documents. The Study was completed to address and structure intensification areas that have been identified and selected across the Town (*Appendix B*). These areas include Regional Centres (2), Key Development Areas (6), Major Corridors (5) and Local Centres and Corridors (6), for a total of 19 areas. These areas were all selected due to their lot configurations and their proximity to expected rapid transit improvements. This study should be consulted internally by the Town of Markham to address and evaluate development applications within those areas.

Next Steps discusses the different options available to Markham in terms of coordinating desired development in these areas.

Appendix A, Supplement to Key Principles, provides specific details and information on several categories: Utilities, Phasing & Interim Conditions, and Retail. Along with the Key Principles, this appendix should be consulted during proposal preparation.

Appendix B, Intensification Areas, indicates a map of Markham's planned transit improvements and intensification areas. This Study applies primarily to managing growth in these areas.

how to read the guidelines.

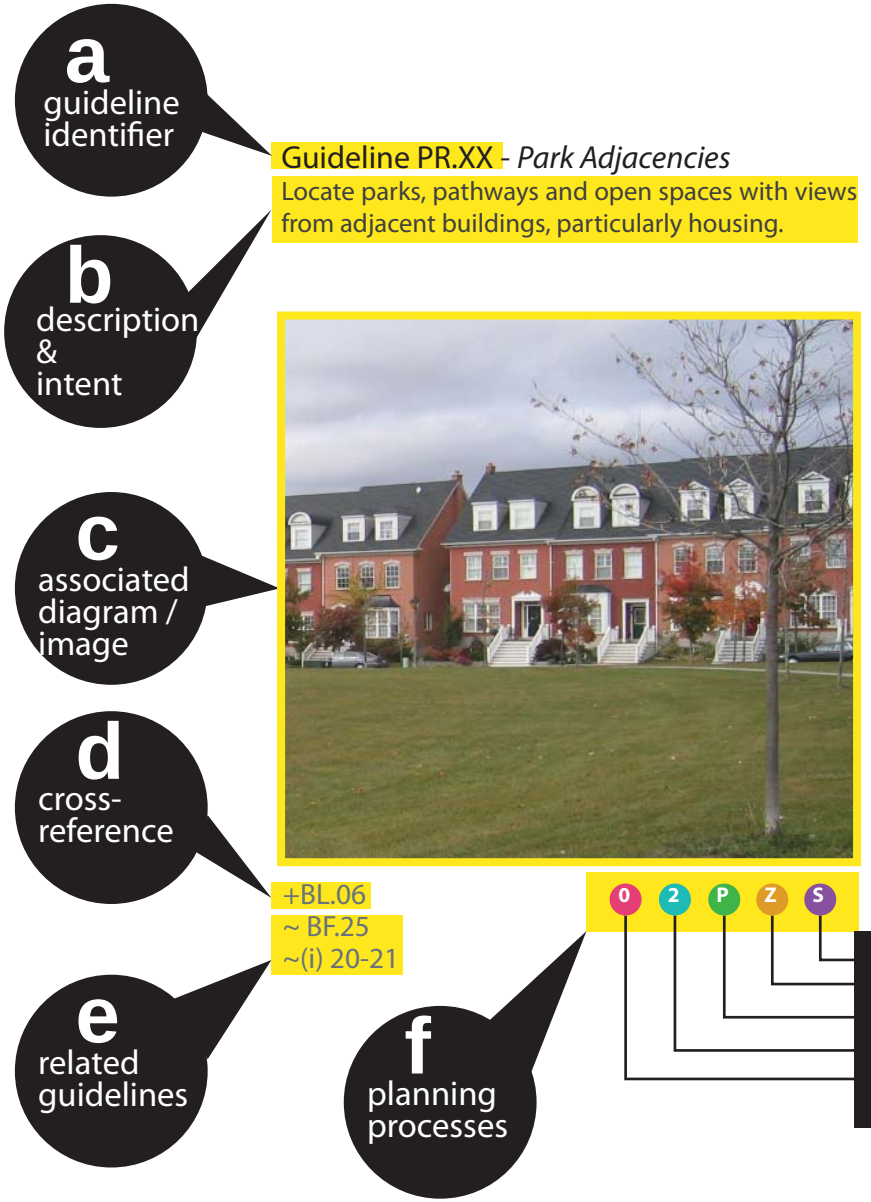
These guidelines are intended to inform developers, Town officials, staff and residents about how future intensification should be designed to achieve community and municipal goals.

Each guideline has a section-specific identifier. The guidelines are usually accompanied with a photo or diagram which helps to clarify the intent.

Some guidelines are cross-referenced (see bullets d and e, right). These references are found beneath the photo or diagram, indicated with the symbol "+" (directly related) or "~" (indirectly related). Some guidelines are tagged with the symbol "(i)", which points to sections in the document that describe certain issues in more detail.

Each guideline is referenced with the applicable planning process(es) (bullet f) to help aid in their application at the appropriate level. The five main processes are indicated: Official Plan, Secondary Plan, Precinct Plan, Zoning By-law and Site Plan/Plan of Subdivision.

In situations where there is conflict between applicable *Key Principles*, the more prescriptive guideline(s) should be followed.



A variety of paving patterns and objects provide visual interest and define different areas.

Public Realm

Public Realm refers to publicly-accessible urban space: streets, sidewalks, open spaces and parkland. A well-designed public realm strengthens the connection between individuals and communities.

A high quality public realm is the product of the coordination of multiple stakeholders, with respect to utility provision, the efficient and safe movement of vehicles, and the provision of microclimate for pedestrians and wildlife. It is important to include the consideration of the public realm context in the planning of new developments.

A well-designed public realm including parks, open spaces, and streets is essential to the quality of urban life, provides a legible structure for new communities as they grow, and is the primary experience of urban life.

Key Concepts:

- microclimate
- relationship of new open space to existing natural resources
- delineation of open space boundaries
- landscape architecture
- street planting & amenity
- building-to-open-space relationship
- privacy thresholds for at-grade units
- connectivity of pedestrian pathways
- shared uses of open space
- environmentally sustainable practices & urban agriculture

Public Realm

Guideline PR.01 - *Protect Microclimate*

New development can affect microclimate and impact human comfort in the public realm. To ensure favourable shade and/or wind conditions, locate tall buildings a minimum of 40m apart, and avoid tall slab buildings.

P Z S

~TB.02
~TB.03
~TB.05

Guideline PR.02 - *Connect to Open Space*

Connect new open space to existing natural resources such as existing park systems, trails, and natural systems (ravines, wetlands, and the Rouge River). Create a network of parks, pathways, and gathering spaces to promote active transport (walk, cycle, etc) and healthy living.

2 P Z S

Guideline PR.03 - *Open Space Hierarchy*

Create different types and sizes of parks and open spaces to support district, neighbourhood, and local activities that contribute to place-making and a legible public realm.

2 P Z S

Public Realm

Guideline PR.04 - *Focal Points*

Create neighbourhood focal points with open and public spaces.

0 2 P S

Guideline PR.05 - *Park Edges*

Define park boundaries with street edges and/or activated street frontages that are publicly accessible.

+SB.03
+SB.15
~BL.06

2 P S

Guideline PR.06 - *Views of Parks*

Maximize the opportunity for views from buildings adjacent to parks and open spaces. A large window, balcony, or porch provides a point of visual connection with the exterior.

+BL.06
~TB.02

2 P S

Public Realm

Guideline PR.07- *Open Space Variety*
Design new open spaces to provide a variety of options for residents and visitors: passive and active space; planted and paved areas; pathways and seating.

2 P S

Guideline PR.08 - *Space Flexibility*
Provide flexible community spaces that can be programmed at hours in the day and evening.

2 P Z

Guideline PR.09 - *Consistent Street Treatments*
Provide a consistent pedestrian environment through continous street edge treatments. Coordinate street landscape and amenity with neighbouring properties.

~BL.01 0 S

Public Realm

Guideline PR.10 - *Create Street Rhythm*

Design building facades and streetscape elements to create a consistent rhythm to maintain visual interest and vitality. Rhythm can be achieved through changes of materials, fenestration, building articulation and spacing of streetscape elements (ie. trees, planters, etc).

~BL.01
~BL.02

O S

Guideline PR.11 - *Wayfinding*

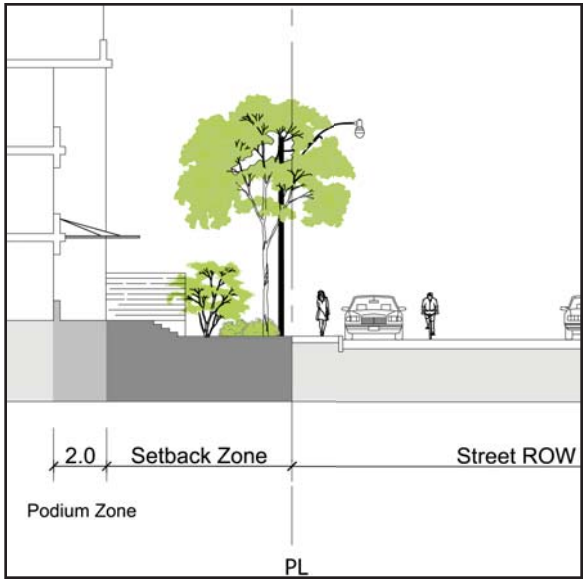
Incorporate wayfinding and visual cues into street and building design to direct pedestrian, bicycle, and vehicular movement. The ease to which a resident or visitor can move through a space will enhance their understanding and enjoyment of that space.

~BL.03

P S

Guideline PR.12 - *Defining Private Space*

Define the threshold between private residential uses at grade and the public realm through measures such as screening, planting, and elevation changes.



+BL.04
~BL.06

P Z S

Public Realm

Guideline PR.13 - *Mid-block Connections*

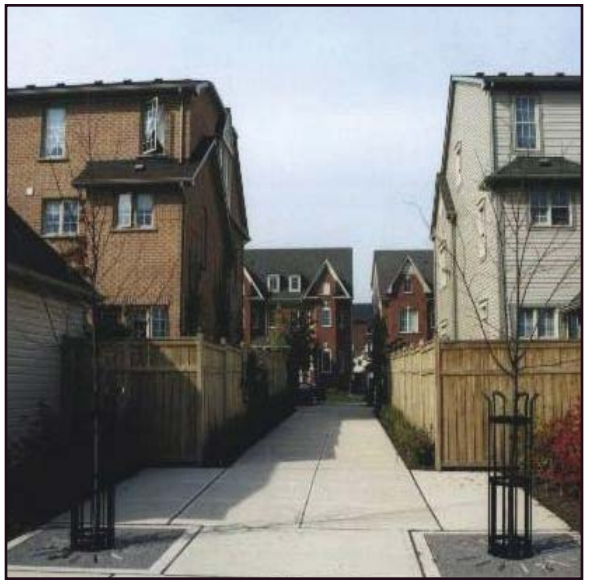
Create a connected series of mid-block pathways or shared lanes where appropriate to facilitate pedestrian movement through the community. It is desirable for mid-block connections on blocks over 150 metres in length.

~SB.13

2 P S

Guideline PR.14 - *Mid-block Security*

Provide windows onto mid-block pedestrian pathways to improve security along the path. Provide measures for maintaining privacy on properties adjacent to the path through setbacks, landscaping, screening and/or fencing.

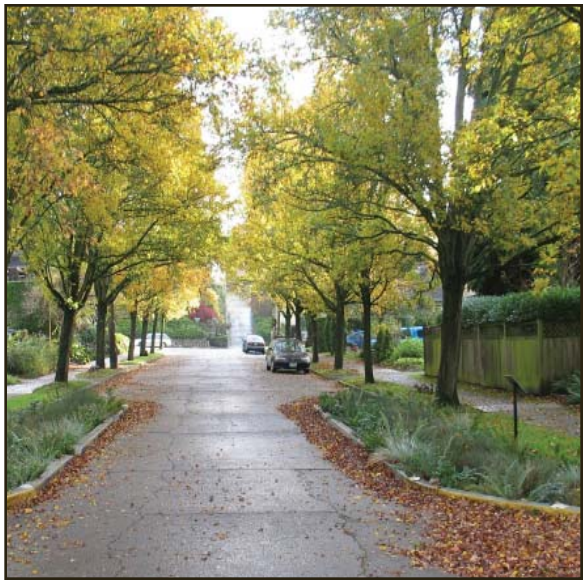


+SB.13

P Z S

Guideline PR.15 - *Park Edge Enhancements*

Provide for enhanced planting, wider sidewalks, and bicycle lanes along streets that connect to and surround major parks and open spaces. This emphasizes the relationship of the park to the surrounding neighbourhood.



~SB.14
~SB.15

P Z S

Public Realm

Guideline PR.16 - *Save Existing Trees*

Incorporate existing healthy trees into development wherever possible. Refer to Markham's Tree Preservation By-law and Markham's Streetscape Manual.

P Z S

Guideline PR.17 - *Tree/Utility Coordination*

Coordinate street planting with utility location to minimize disruption and ensure adequate space and growing conditions for trees. Refer to Markham's Streetscape Manual.

2 P Z S

+SB.07
~SB.09
~APPENDIX A - UTILITIES & STREET ELEMENTS

Guideline PR.18 - *School Open Space*

Locate schools adjacent to public parks to encourage the shared use of open space.

2 P Z S

Public Realm

Guideline PR.19 - *Sustainability as a Feature*

Develop environmentally sustainable measures such as energy conservation and storm water management into block and site design. Their creative incorporation can provide amenity for residents and neighbours.

0 2 P Z S

Guideline PR.20 - *Community Gardens*

Consider opportunities for urban agriculture, community gardens and pocket parks between buildings and spaces. These can strengthen the local identity and community, and provide options for multi-unit residents.

0 2 P Z S

Guideline PR.21 - *Pedestrian Shelter*

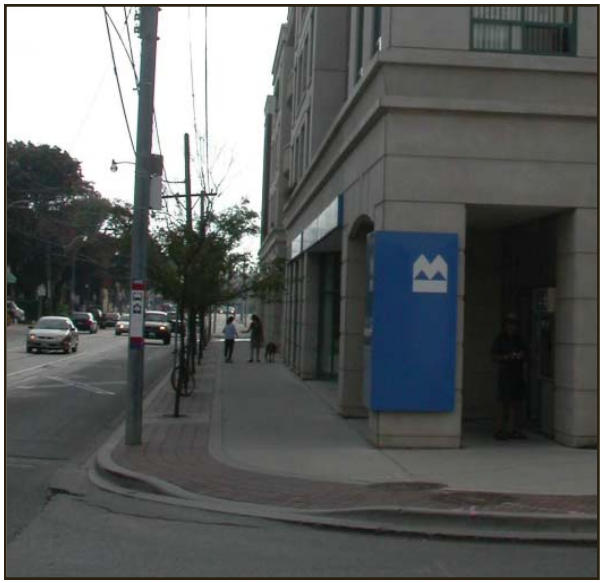
Incorporate shelter along main street sidewalks to protect from sun, wind and rain, such as using canopies, arcades, or awnings.

S

Public Realm

Guideline PR.22 - *Sidewalk Design*

Sidewalks should be designed as barrier-free. Refer to the Markham Accessibility Guidelines.



O S

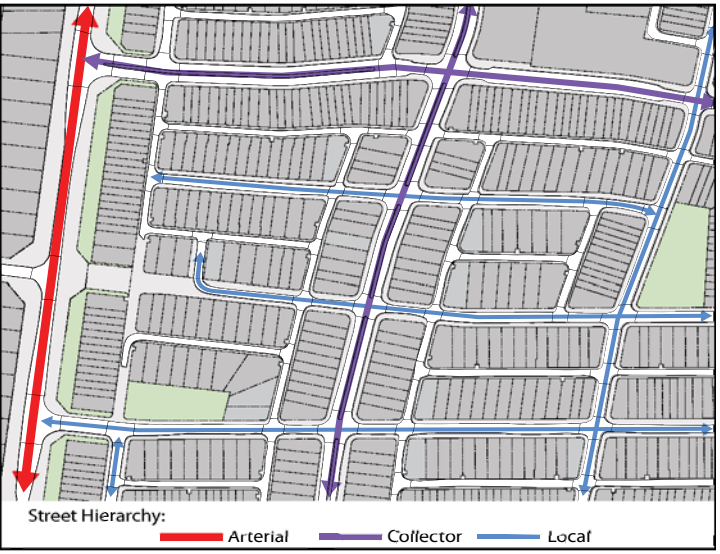
Guideline PR.23 - *Wider Sidewalk Widths*

Provide sidewalk widths wider than 1.5metres on main streets, grade-related commercial areas and in high density areas, which allows for greater volumes of pedestrian movement and a more comfortable pedestrian shopping experience. The additional width also provides opportunities for street retail and sales.

S

Streets and blocks

Streets



Coordination of traffic hierarchy with public amenity on the main street (top); Diagram of street heirarchy (bottom).

Streets and Blocks are the fundamental structure of new communities. The well laid-out pattern of streets and blocks allows for walkable and transit-supportive communities.

Appropriate street and block dimensions are essential. This chapter considers street hierarchy and block typology for a variety of land uses.

Street pattern is essentially the DNA of any neighbourhood or city. For the purpose of this document, the terms *Arterial, Collector,* and *Local* are used to define street hierarchy, ranging from most intense to least, respectively.

In cases where regional roads are present, consult applicable York Region standards.

Key Concepts:

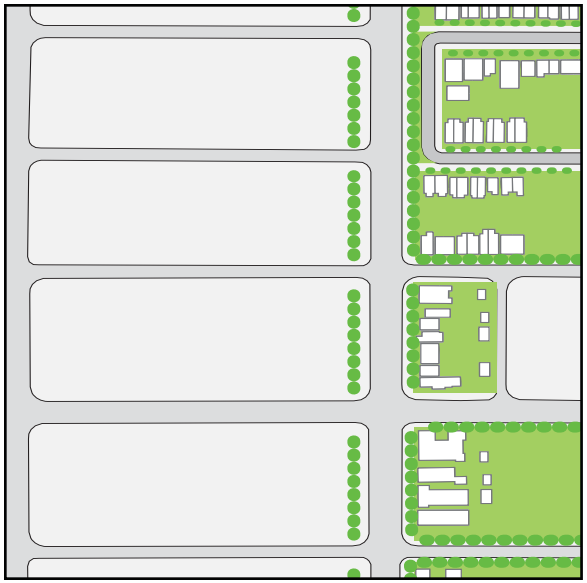
- street pattern
- street hierarchy
- coordination of scales of traffic
- planting & amenity zones
- utilities
- parking

Streets and Blocks

Streets

Guideline SB.01 - *Line up Streets*

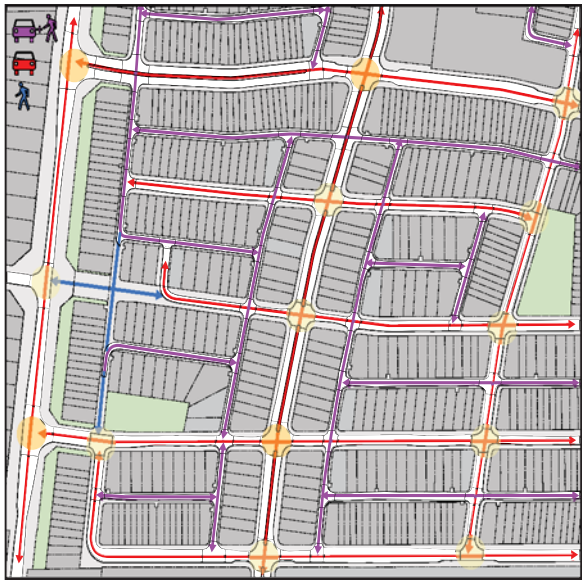
Align local streets on either side of major arterials to allow for future crossing points and connectivity between neighbourhoods. Avoid dead-end streets and cul-de-sacs, which isolate parts of the neigbourhood and fragment pedestrian movement.



0 2 P S

Guideline SB.02 - *Create a Fine Grain Grid*

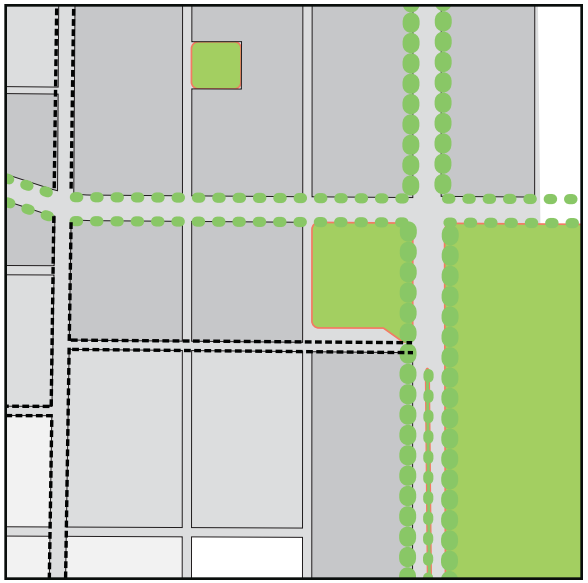
Develop a fine-grain street grid, which offers choices for pedestrian and vehicular movements, and creates more intersections for passive traffic control. "Fine grain" means that a variety of ways of travel are available due to the number of street intersections.



2 P S

Guideline SB.03 - *Define Open Spaces*

Define parks and public open space with public streets. This stimulates public access and promotes security within the park.



2 P S

+PR.05
~BL.06

Streets and blocks

Streets

Guideline SB.04 - *Streets Types*

Design streets and street ROW to reflect the desired adjacent land use, including the intensity of uses, heights, and provision of modal options.

+TR.02
~SB.05

2 P Z S

Guideline SB.05 - *Bike Lanes in Streets*

Dedicate ROW for vehicles, bicycles, and pedestrians. Strongly consider the provision of bicycle lanes or arterial and collector roads.

~SB.04

0 P S

Guideline SB.06 - *Parking near activity*

Allocate lay-by and off-peak parking on-street near activity generators such as community facilities, large open spaces or grade-related retail.

0 2 P Z

Streets and Blocks

Streets

Guideline SB.07 - *Trees and Soil Volume*

Provide sufficient soil volumes in street ROW design for street trees to properly mature. Street trees require large soil volumes to survive and grow. Refer to Markham Streetscape Manual.

P Z S

+PR.16
+PR.17
~APPENDIX A - UTILITIES & STREET ELEMENTS

Guideline SB.08 - *Emphasize crossings*

Emphasize important pedestrian crossing areas through a combination of tactile warnings, changes in materials, contrasting colours and appropriate vehicle signals (crosswalks, etc). These provide greater visibility to motorists and encourage pedestrians to utilize them.

2 P Z

Guideline SB.09 - *Co-locate Utilities*

Locate and consolidate utilities and services in underground tunnels, duct banks or other technologies wherever possible. Consolidation leads to minimization of future disruptions, and relieves pressure on widening streets.

2 P Z

~PR.17
+APPENDIX A - UTILITIES & STREET ELEMENTS

Streets and blocks

Streets

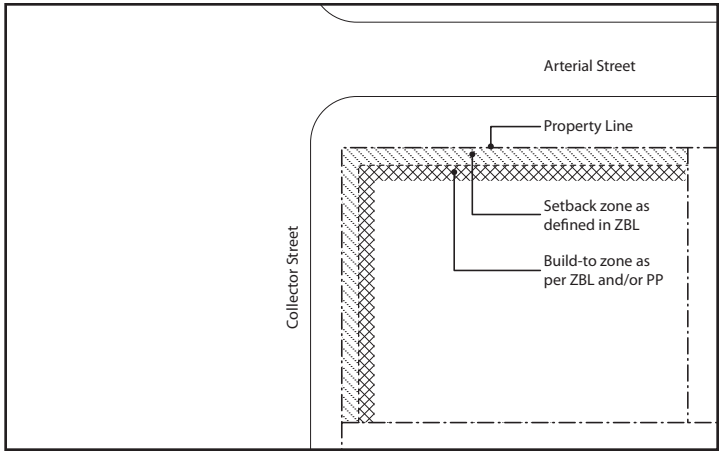
Streets and Blocks

Blocks

Block dimensions relate to intensity, scale, accessibility, and type of use. This section outlines block prototypes, meant to illustrate the likely built form and transition conditions that may be encountered as various areas of Markham intensify. The dimensions quoted are approximate.

Key Concepts:

- block dimensions for different land uses
- subdivision of large blocks with mid-block pedestrian connections
- irregular street and block conditions

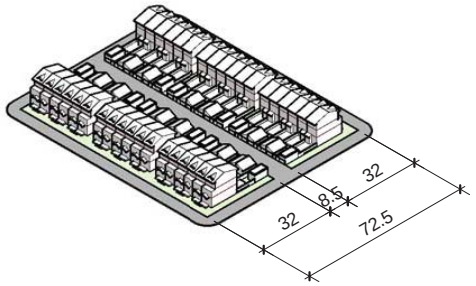


Mid-rise residential neighbourhood with legible , walkable block structure (top); diagram showing property line, setback zone, and build-to-zone (bottom). This diagram is meant to assist in interpreting the guidelines that follow.

Streets and blocks
Blocks

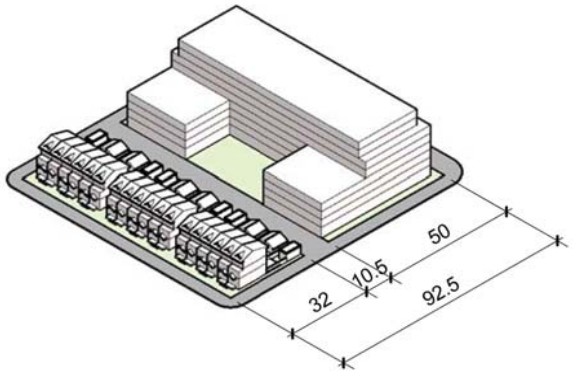
Block Dimensions

Guideline SB.10 - *Low-Rise, Neighbourhood Blocks*
This block type, with a typical minimum depth of 72.5m, maximizes both the density and street frontage of its corresponding low-rise built form. This block depth is appropriate for a variety of low-rise developments (single-family, townhouse, stacked townhouse, low-rise apartment), and includes allowance for front and rear setbacks as well as lane-access garage. The block depth can accommodate 32m lots (minimum depth) on either side of an 8.5m lane. Townhouses with individual street-fronting garages are not appropriate in intensification areas.



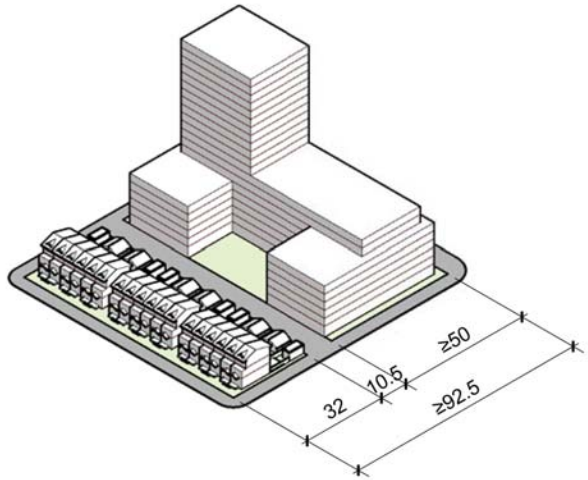
~BF.09

Guideline SB.11 - *Mid-Rise, Main Street:*
Block depth of minimum 92.5m is appropriate for mid-rise development on a main street. This depth accommodates the following: 50m main-street fronting lot, 10.5m wide lane, minimum 32m neighbourhood-fronting lot. The overall 50m depth of the main street portion of the block yields an efficient underground parking layout. This allows for a double-loaded corridor building, and rear-lot open space for amenity and/or loading uses. The 50m depth also provides adequate depth for stepping of the building mass, which may be appropriate in order to relate to the scale of adjacent existing neighbourhood properties.



+SB.12

Guideline SB.12 - *Mid-Rise with Tower*
This block type comprises the same dimensions as those outlined in Guideline SB11. The 50m lot depth is sufficient for tower development but can be increased. Depending on siting, deeper blocks may accommodate larger retail and transit-related amenities at grade, as well as a wider transition zone to handle anticipated high-density high-rise forms.

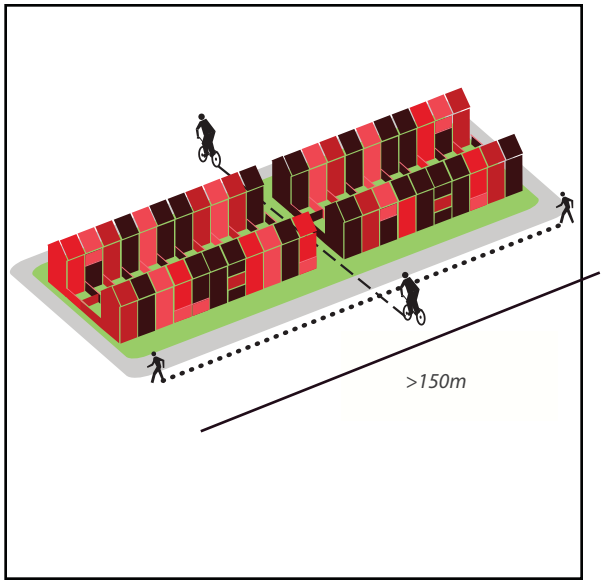


+SB.11

Streets and Blocks
Blocks

Guideline SB.13 - *Mid-Block Connection*

Provide a high quality mid-block pedestrian connection, street, or lane for blocks over 150m in length.

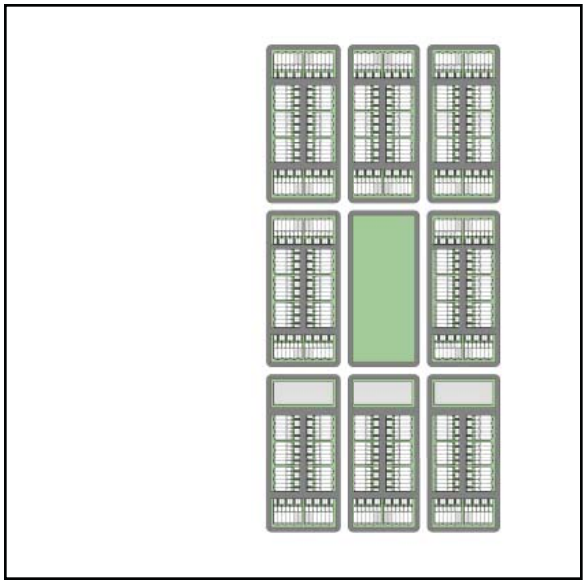


+PR.14
~PR.13

2 P Z S

Streets and blocks
Blocks

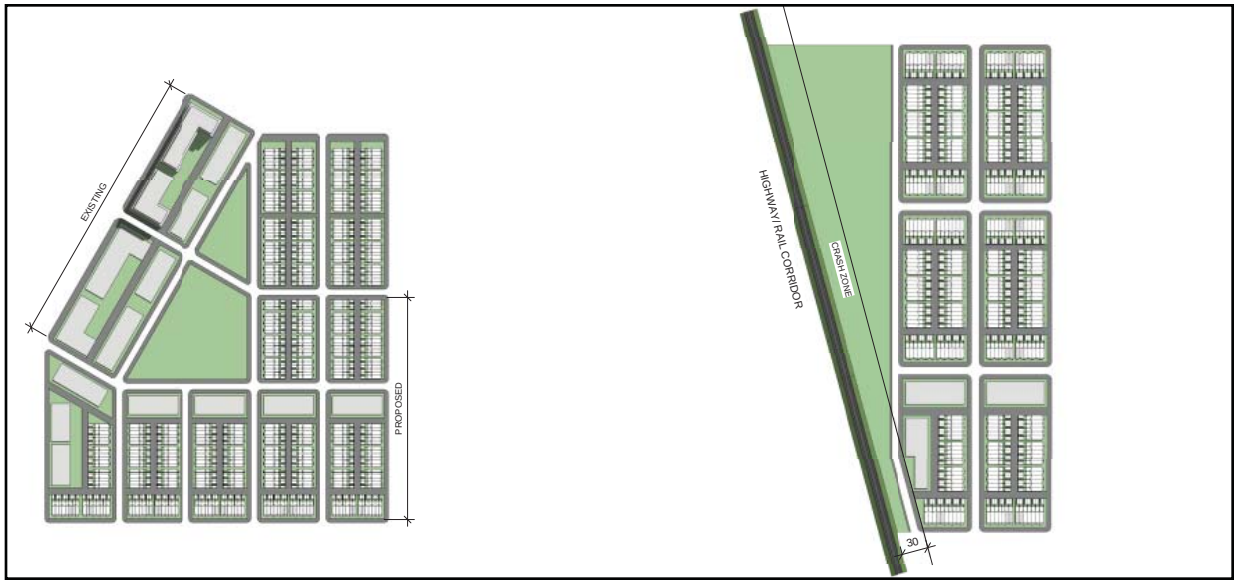
Guideline SB.14 - *Park Edges*
Surround new parks with streets to facilitate public access and surveillance. Avoid creating parks adjacent to the rear yards of existing or proposed development.



+PR.05
~PR.15

2 P S

Guideline SB.15 - *Park as Transition Tool*
Where appropriate, design functional park space as a transition zone in areas where there is a shift in the street and block grid, or where other irregular geometries are formed. Maintain street frontage for new park.



~PR.15

2 P S

Building location

Building alignment defines the edge of a neighbourhood path and creates collective surveillance. Some built form is set back to create a semi-private threshold between the ground floor units and the public park.

Building Location is another vital component to creating desirable streets and neighbourhoods. Buildings should be located to define the public space (streets and parks), while simultaneously creating appropriate thresholds for private space on the building's site.

The coordination of *Building Location* across several sites, or along a street edge, helps create cohesive and attractive streetscapes.

Key Concepts:

- building-to-street relationship
- street frontage and address
- building-to-open-space relationship
- privacy thresholds for at-grade units
- barrier-free access
- relationship to existing single-family neighbourhoods
- building on site

Building Location

Guideline BL.01 - *Uniform Street Edge*

Coordinate building setback with adjacent properties. Consistent setbacks will help create a uniform street edge. "Build to" lines can be incorporated to ensure the desired proportion of the street frontage is created with building(s). Variety can still be incorporated into buildings to create interest and identity.

~APPENDIX A -RETAIL

Guideline BL.02 - *Entrances at Street*

Locate functional primary building entrance(s) along street frontages to encourage security and public activity at street level. The number of entrances and spacing of entrances should be assessed based on successful neighbouring building articulation (if applicable).

+PR.10
+BL.04
~APPENDIX A -RETAIL

Guideline BL.03 - *Corner Frontages*

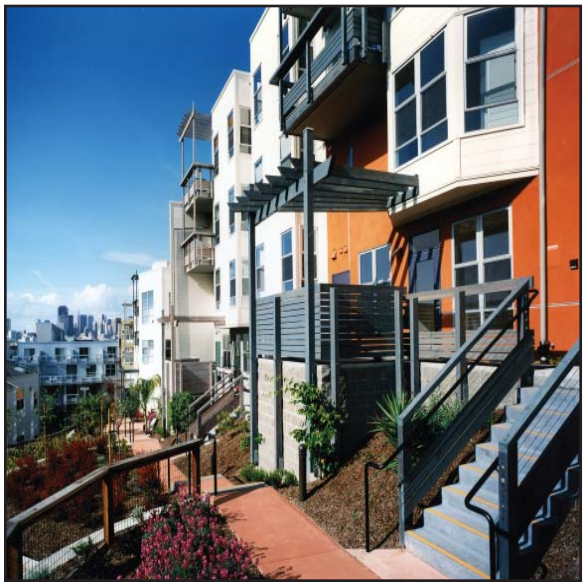
Design corner lot buildings with entries and articulation on both streets to maximize views and maintain an animated street edge.

~APPENDIX A -RETAIL

Building location

Guideline BL.04 - *Ground Floor Residential*

Create entrances to ground floor residential units by providing setbacks, landscape, changes in grade, articulation or structures. It is important to provide a threshold of semi-private space between an entrance and a street/sidewalk to allow for privacy and safety.

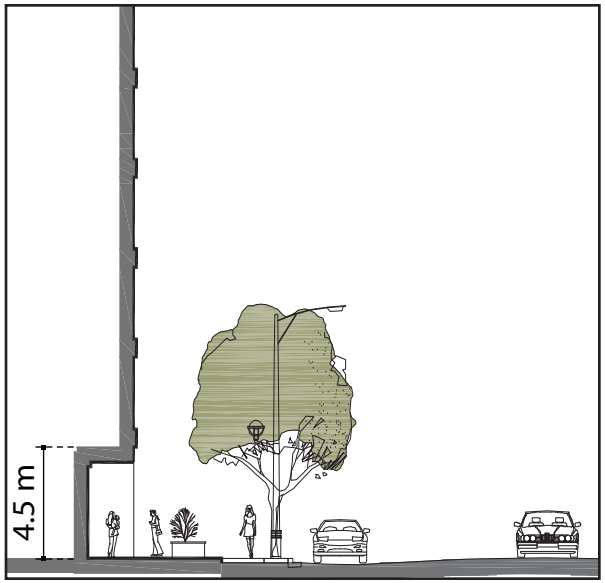


+BL.02
+PR.12

Z S

Guideline BL.05 - *Ground Floor Height*

Design multi-unit, multi-storey buildings on collector and arterial streets with a ground level floor-to-ceiling height to accommodate various uses, including grade-related retail (which might not be immediately viable). A minimum height of 4.5m is recommended.



+APPENDIX A-RETAIL

0 2 Z S

Guideline BL.06 - *Private Open Space Views*

Provide visibility to any private open space in order to increase the surveillance of the open space and improve views.

+PR.06
~PR.05
~SB.03

P S

Building Location

Guideline BL.07 - *Community Focal Points*

Locate community buildings to be accessible from sidewalks. Community buildings are focal points for communities, and should be visible and accessible by all.

~APPENDIX A -RETAIL

O P S

Guideline BL.08 - *Barrier Free*

Incorporate barrier-free access into the site plan design. Refer to the *Accessibility for Ontarians with Disabilities Act* for detail.

+PR.22
+PR.23
~SB.08

O 2 P Z

Guideline BL.09 - *Heritage Retention On-site*

A heritage building should not be relocated from its original site unless there is no other means to preserve it. Change in site diminishes cultural heritage value.

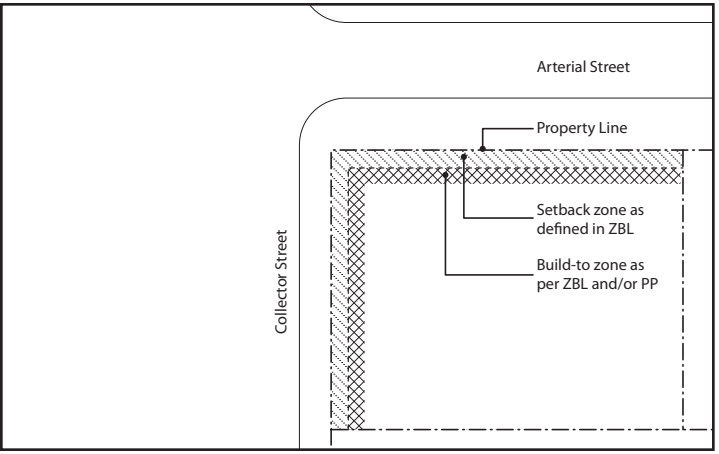
S

Building location

Guideline BL.10 - *Setback from Heritage*

New development should be setback from the heritage resource, if feasible, to allow a view of the principal façade(s). An appropriate setback should be created between an existing heritage building and new development to emphasize the importance and prominence of the heritage resource.

S



Consistent built form principles are maintained among different land owners to create a strong building-to-street relationship (top); diagram showing property line, setback zone, and build-to-zone (bottom). This diagram is meant to assist in interpreting the guidelines that follow.

Built form

The term *Built Form* encompasses building height, massing and setbacks. A coordinated approach to built form contributes to the animation of the street, connectivity, and overall street appearance.

Built Form guidelines ensure that buildings are situated in ways that are appropriate in context. *Built Form* issues are also touched on by other sections of this document: *Building Location, Streets and Blocks,* and *Public Realm*.

Refer to the *Tall Buildings* section (pp 45-47) for additional information.

Key Concepts:

- influence of transit investment
- building-to-street relationship
- human scale in urban environments
- flexible design
- architectural variety
- sustainable construction

Built Form

Guideline BF.01 - *Transit as catalyst*

Support transit hubs by surrounding them with highest densities, a mixture of uses and pedestrian amenities. Ensure appropriate transitions to existing residential development are provided.

0 2 P Z

Guideline BF.02 - *Intensify Major Streets*

Locate higher levels of intensity and height along major arterial roads and highways. Beyond transit hubs, these should be the recipients of major intensification efforts.

0 2 P Z S

Guideline BF.03 - *Visual Markers*

Consider site and/or building treatments at key intersections to help define distinctive areas of the Town. Key intersections could be physical or visual terminus', or gateway markers. Landmarks could result from creative building forms, building or streetscape materiality, signage, or landscape strategy. .

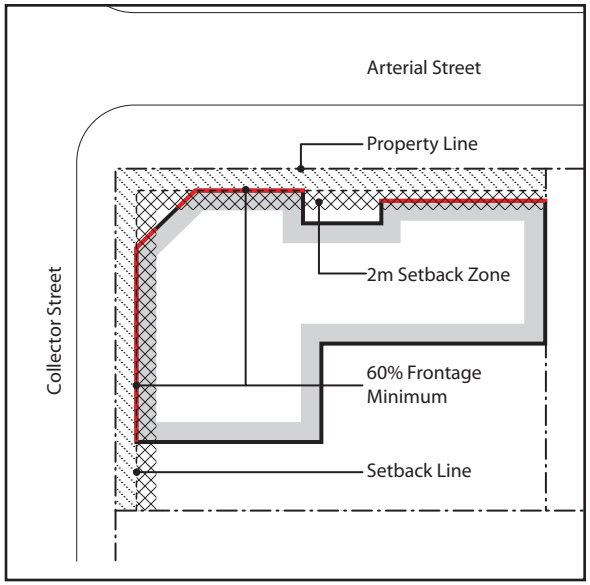
+PR.11

2 P S

Built form

Guideline BF.04 -*Build-to Lines*

Establish build-to requirements for buildings facing arterial and collector streets. Build-to lines help create a cohesive streetscape.

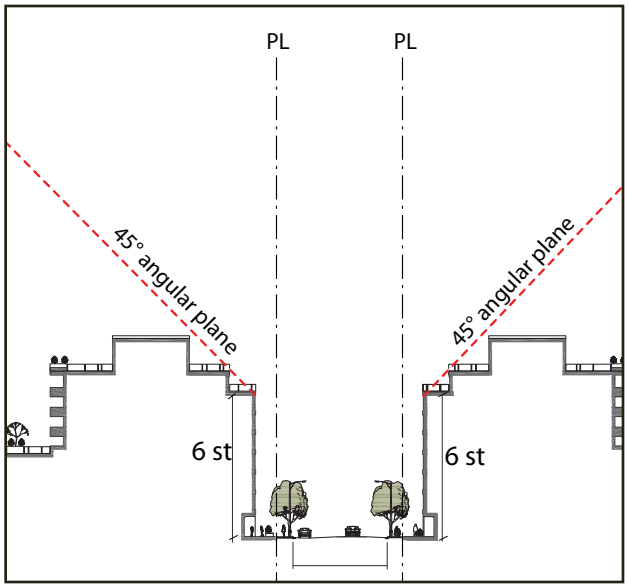


+PR.12

Z S

Guideline BF.05 - *Mid-Rise Street Scale*

As defined in "mid-rise". This scale creates a comfortable pedestrian environment in an urban neighbourhood, and allows for sunlight on the opposite sidewalk. In special conditions and subject to a specific public realm approach, other ratios may be appropriate.



+TB.01

0 2 P Z S

Built Form

Guideline BF.07 - *Long Mid-Rise Buildings*

Design mid-rise buildings on blocks longer than 100m with breaks or as separate buildings to provide street variety, connections, views and opportunity for sunlight penetration to the sidewalk and internal to the block, as well as pedestrian interest.

~SB.13

Z S

Guideline BF.08 - *Private Amenity*

Provide all residential units with sufficient private amenity space, either as a terrace, balcony, or yard.

O Z S

Guideline BF.09 - *Design Variety*

Employ multiple architects to create variety in built form within developments that occupy one or more blocks.

O

Built form

Guideline BF.10 - *Sustainable Practices*

Incorporate sustainable design in built form as per Markham's Sustainable Standards and Guidelines.

0 2 P

Guideline BF.11 - *Heritage - New Massing*

Design the massing and height of new development to respond to and/or respect adjacent heritage building(s). The height of a new building immediately adjacent to a heritage building should transition within one storey of the height of the heritage building(s).

S

Guideline BF.12 - *Heritage - Legibility*

Generally, a heritage building should not be integrated within higher density development and should exist as a significant and independent pavilion structure intended to be experienced and seen in the round.

New work, such as an addition to a heritage building, should be compatible, but distinguishable from the old. Heritage buildings or structures should be recognized as products of their own time.

Refer to the Provincial Policy Statement for details.

Tall Buildings

Area of High Intensity

At the level of intensity that is anticipated under the Growth Plan for the Greater Golden Horseshoe, tall buildings may be proposed in locations and, with an acceptable built form.

Markham has prepared an intensification strategy through the Growth Management Strategy exercise. This highlights areas where intensification is expected, primarily structured around transit infrastructure.

Several areas of Markham are currently being planned to accommodate some tall buildings. Future intensification areas should be considered in detail in order to establish the potential (if any) of supporting tall building locations.

Tall buildings are often desirable built forms for emerging areas, particularly intensifying areas, as they allow for more residents and workers to live in proximity to access to amenities, commercial opportunities and to support transit systems.

Tall Buildings

Guideline TB.01 - *Lower Street Edges*

In residential developments, set back tall buildings from the street edge. Locate low-rise building edges and/or podiums along streets.

+BF.05

P Z S

Guideline TB.02 - *One Tower Per Block*

Within the general approach to block dimensions described in SB.10, SB.11, SB.12, generally limit the distribution of tall buildings to one tower per block to allow views and sunlight onto adjacent open spaces and streets, and to support a comfortable pedestrian realm.

~PR.01
~SB.10
~SB.11
~SB.12

P Z S

Guideline TB.03 - *Minimize Shadows*

Minimize shadows cast by tall buildings on public open spaces and private amenities. Applications involving tall buildings should include shadow studies and analysis by the applicant.

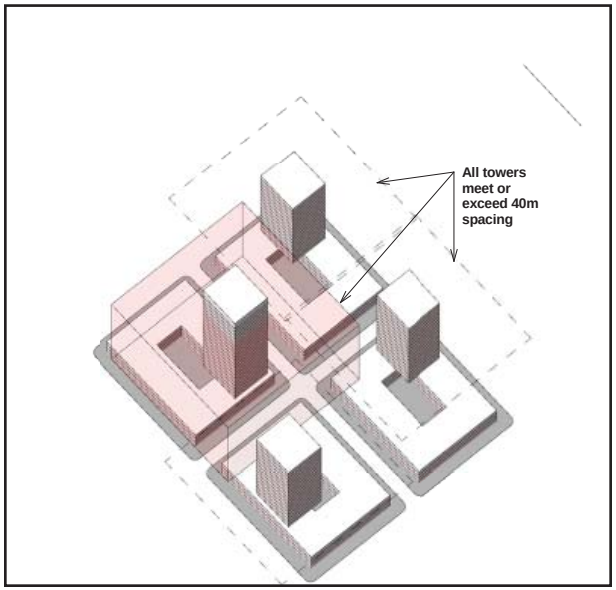
~PR.01
~PR.06

O Z S

Tall Buildings

Guideline TB.04 - *Minimum Tower Spacing*

Tall buildings should be spaced sufficiently far apart to prevent overcrowding of skyviews and skylines. The separation distance between towers should be a minimum of 40m. This distance should also be considered where towers are located on adjacent blocks.

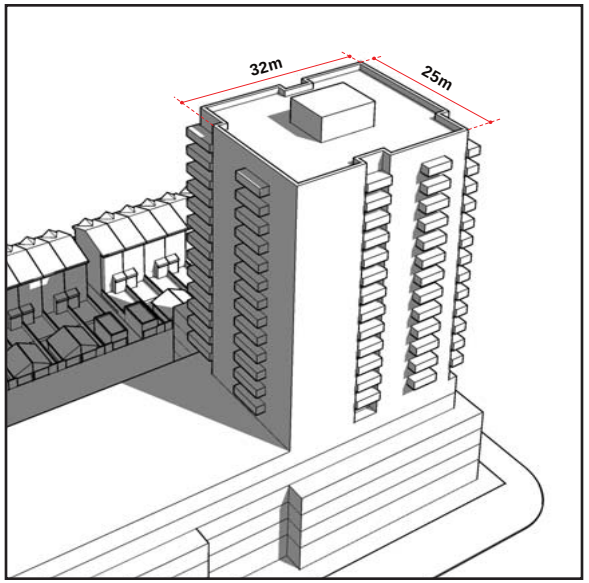


~PR.01

O Z S

Guideline TB.05 - *Maximum Floorplate*

Design tall residential buildings above any podium with a maximum floorplate of 800 m^2 to minimize shadow impacts on surrounding streets, sidewalks neighbouring buildings and private amenities.



O Z S

Transition

Within this high-intensity development , the use of materials, the scale of the base podium, the strong cornice delineated by the overhang, and the fenestration ensure this building sensitively responds to its neighbours.

Transition is a term used to describe the way any new development relates to, or interfaces with, existing developments. Transition is important in between areas of different scales, intensities, and land uses within a new development.

Transitions can be achieved in many ways. The intent is to ensure that development does not overwhelm or negatively affect neighbouring land uses.

Existing context requires different measures of transition. For example, intensification areas may generate taller buildings that require desired separation and buffers to ensure privacy, and adequate light into existing buildings and yards.

These guidelines consider a variety of anticipated transitional responses.

Transition
Existing Low-Rise Residential

Guideline TR.01 - *Adjacent Backyards*

Where new development is adjacent to the back yards and shared property lines of existing single-family or other low-rise residential neighbourhoods, provide a block depth that will accommodate a similar low-rise built form, ranging from 2 – 3 storeys where possible. This would allow for the creation of new single detached, semi-detached, duplexes, triplexes, and townhouses forms, and generate frontage on a new or existing street. Most importantly, a backyard – backyard relationship is created.

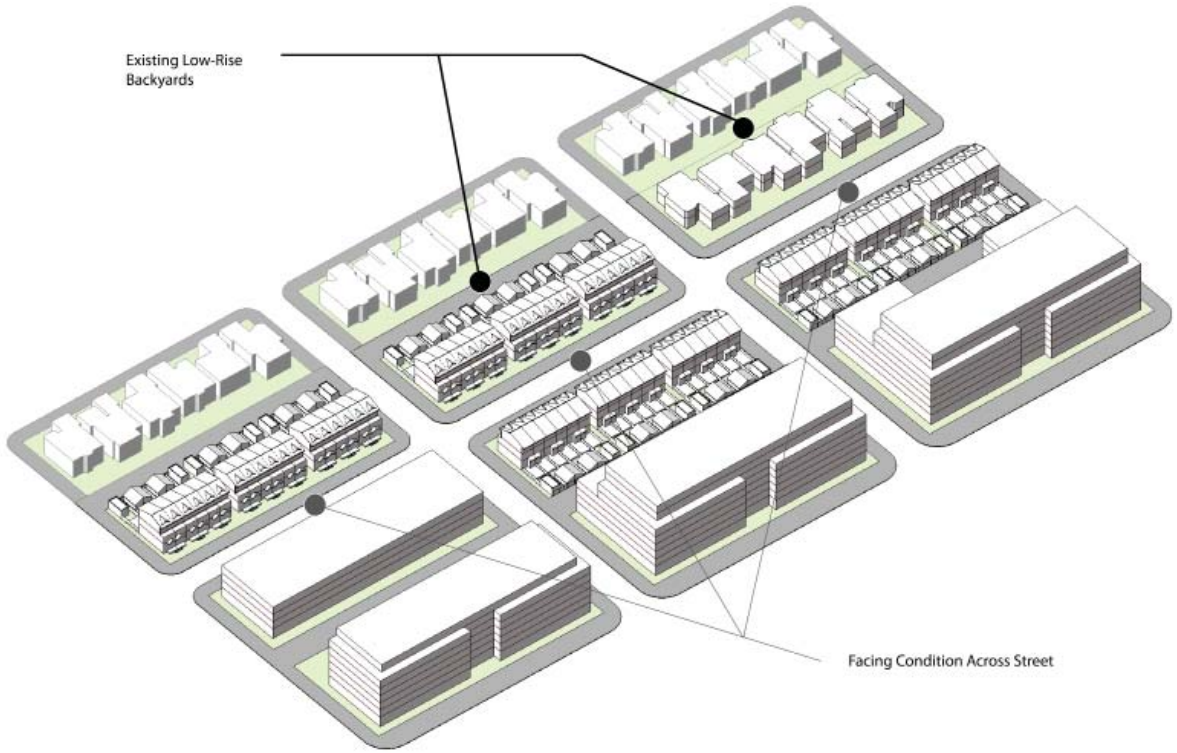
2 P S

Guideline TR.02 - *Across Street*

Where new development is proposed (across a street) opposite an existing low-rise residential neighbourhood, provide a sympathetic low-rise built form, ranging from 2- 4 storeys. This allows for the uses in TR.01, and 4-storey apartment forms to face the existing residential context across a street and create a balanced street proportion.

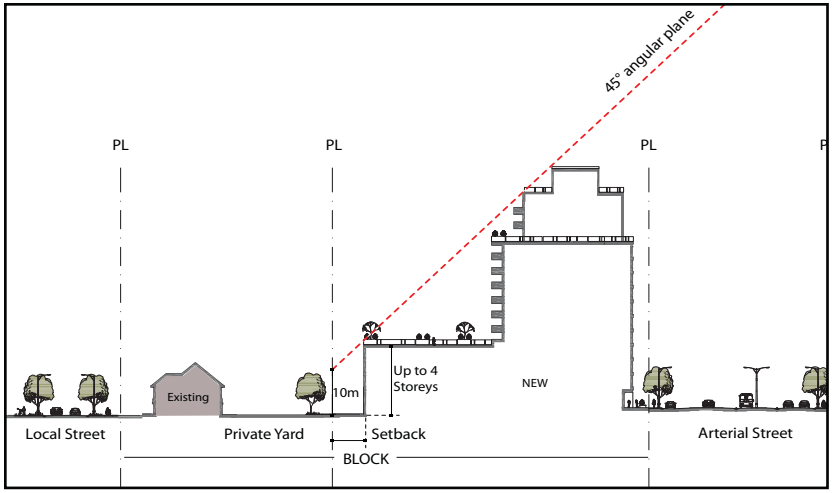
+SB.04

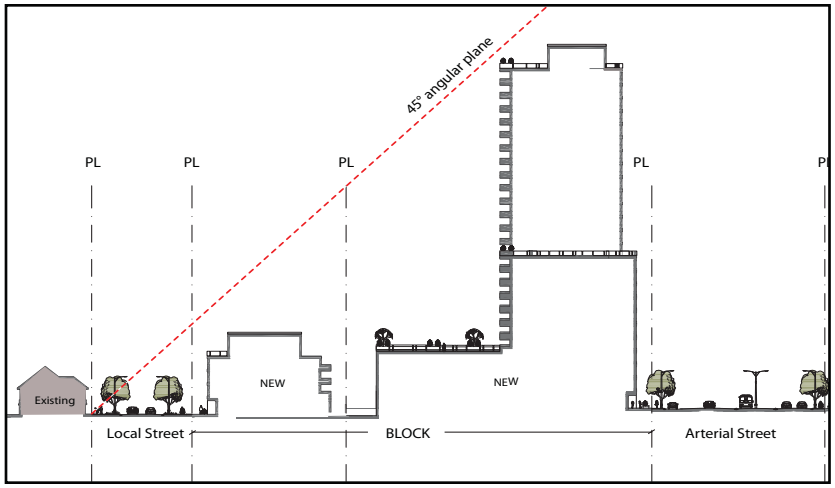
2 P S



Diagrams showing options for transition from new main street mid-rise forms to an existing low-rise neighbourhood.

Transition
Existing Low-Rise Residential





Guideline TR.03 - *One-block Transitions*

On sites near intensification areas, buildings should incorporate low-rise elements up to 4 storeys adjacent to existing low-rise buildings to provide immediate transitions. Any taller elements deeper in the development site should not exceed a 45 degree angular plane projected at 10m in height at the shared property line.

For tall building proposals occupying the entire block depth, the maximum tower height should be governed by the application of a 45-degree angular plane from the front property line.

Guidelines TR.01 and TR.02 continue to apply to lots adjacent to existing properties. Height exceptions may be made at blocks directly at higher order transit stops and/or based on an evaluation and identification of appropriate intensification areas through Secondary Plans and Precinct Plans.

2 P Z S

Parking & Loading

On-street parking on a secondary street

Built form is impacted by, and impacts, automobile use, parking supply and form, servicing needs, access to transit, density, mixture of uses and walkability. This interaction is also pivotal in the sheer amount of valuable land tha servicing functions take up.

Accommodation of parking in an appropriate manner is an important component of intensification. New developments will no longer accommodate parking within the traditional method of surface lots. Efficient distribution of parking - underground and some on-street - will contribute to a successful urban public realm.

Please note that functional and financial issues regarding the supply of parking in intensification areas are the subject of the *Markham Transportation Strategic Plan*.

Parking and Loading

Guideline PL.01 - *Surface Parking - Rear*

Where surface parking is permitted, locate lots to the rear of buildings where possible to maintain consistent street frontage. Where not possible, locate to the side of street-facing buildings. Refer to *Markham Sustainable Development Standards and Guidelines* for surface material recommendations.

P Z S

Guideline PL.02 - *Screening from Side Streets*

Screen parking and loading from any secondary streets using planting, landscaping, decorative walls, and/or fencing.

O P Z S

Guideline PL.03 - *Threshold for Structures*

Provide all parking for buildings 4 storeys or taller in structured garages, preferably below grade.

O Z

Parking and Loading

Guideline PL.04 - *Wrap Parking Structures*

Above-grade parking structures should be wrapped with development facing main streets. This ensures the animation of adjacent street frontages.

0 Z S

Guideline PL.05 - *Shared Parking*

Reduce the total amount of parking provided by adopting shared parking practices in mixed-use areas. Combine parking requirements for different uses based on the intensities for each use at differnt times of the day. Coordinate with *Markham Transportation Strategic*

0 2 Z

Guideline PL.06 - *On-Street Parking*

Maximize on-street paid parking opportunities. Coordinate with *Markham Transportation Plan.*

0 2 P

Parking and Loading

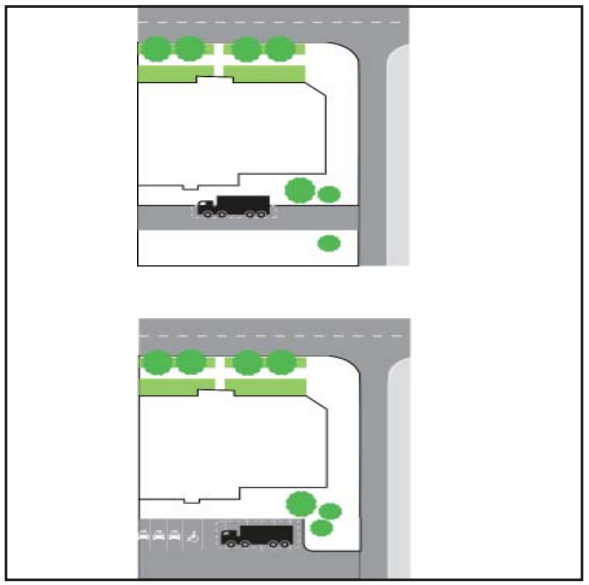
Guideline PL.07 - *Visitor On-street Parking*

Encourage on-street parking on main streets and secondary streets to supplement visitor parking requirements for developments or public facilities, including those found in parks.

O

Guideline PL.08 - *Loading Access*

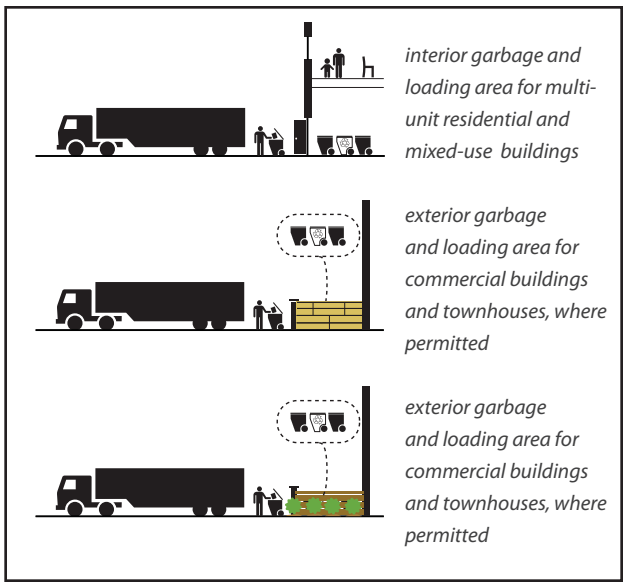
Wherever possible, gain servicing/loading access from secondary streets.



P Z S

Guideline PL.09 - *Enclose Refuse and Loading*

Provide loading, garbage, and recycling areas within multi-unit residential and mixed use buildings.



P Z S

Parking and Loading

Implementation

To give effect to the Built Form Principles contained in this report, the Town should consider adopting a number of implementation measures. These include:

- Official Plan policies to give effect to the Key Principles regarding Public Realm, Streets and Blocks, Building Location, Built Form;
- Creating Secondary Plans and Precinct Plans for each intensification area
- Zoning Bylaw categories that implement the Official Plan policies for intensification areas;
- Design guidelines permitted through Section 41 of the Planning Act;
- A design review panel for the review of significant buildings within intensification areas as well as architectural competitions for prominent public buildings; and
- Examining opportunities for establishing a development permit system that is tailored to meet the needs of the Town's intensification areas;

Each of these is discussed more fully below.

Creation/Amendment of the Official Plan

The Town is undertaking a growth management strategy and reviewing their Official Plan as part of their mandatory 5-year review process. The Markham Built Form, Height and Massing Study can be referenced within the revised Official Plan as a document that provides direction on the overall future built form of Markham intensification areas and Secondary Plans. In addition, the Official Plan revisions should include or revise, where necessary, contrary policies and directions so as to coincide with the Markham Built Form, Height and Massing Study. Both documents should reflect each other.

The new Official Plan will set policies that will provide the Town with maximum development densities and heights for each intensification area and a set of criteria regarding adjacency, fit and service provision that would need to be met for proposals to be approved by City Council. The intent is to provide Council with a set of policies that would not automatically result in development at the maximum densities, but sets out a series of tests that would need to be met to determine the appropriate distribution of density and height on any particular site.

Creation/Amendment of Secondary Plans

Secondary Plans should be reviewed and amended, where necessary to reflect the Markham Built Form, Height and Massing Study.

Creation of Precinct Plans

Precinct Plans are not intended to form the complete detailed built form guidelines for individual developments in the Precinct area. but instead create more specificity within a Secondary Plan area. They can study, in detail, development opportunities or constraints and provide clarity to a Secondary Plan and/or Official Plan.

Implementation

Creation/Amendment of Zoning By-law(s)

The existing zoning by-law(s) should be reviewed and amended to comply with the Markham Built Form, Height and Massing Study. The preparation and approval of zoning categories for the intensification areas should be designed to implement the Official Plan policies. The zoning categories would address, amongst other things;

- mix of uses including most types of residential uses, with the possible exception of single detached and semi detached dwellings, a broad range of office retail, service and institutional uses;
- densities which are based on, but not necessarily the same as the proposed density limits in the Official Plan—density limits should reflect development potential that can be accommodated while achieving the design criteria;
- heights, again not necessarily reflecting the maximum heights in the Official Plan, but that result in building mass that can fit within the design criteria established in the Plan—heights need to be handled very carefully since a lower maximum height limit could result in large slab buildings that have a greater impact on public realm and pedestrian comfort than towers at much higher height limits but within strictly controlled building footprints;
- where appropriate and desirable--tower location zones, for building above 8 storeys;
- ground floor animation areas;
- setbacks, built to lines, minimum heights, based on design guidelines related to light, view, privacy and public realm objectives;
- angular planes based on transition to adjacent neighbourhoods and comfort on the public realm;
- residential amenity spaces including on site provision of open space;
- minimum separation distances between towers, where these are permitted;
- floor plate restrictions for towers above a certain height;
- parking requirements that examines assumptions around modal split for multi residential and mixed use developments adjacent to transit facilities;
- bicycle parking and storage requirements; and
- loading requirements, including the possibility of sharing loading spaces between properties on the same block.

Site Plan Control

The Town currently applies site plan control in accordance with Section 41 of the Planning Act to achieve site improvements, including protection of natural environmental features, stormwater retention objectives, erosion control as well as a number of other design elements.
In intensification areas, it would be appropriate to add to this body of experience by adopting a set of area-specific Design Guidelines to provide development proponents and staff reviewing applications with a comprehensive set of design criteria that are not addressed in the Zoning Bylaw, but support the creation of a good public and private realm. Many of these are outlined in the body of this report.
In general, these guidelines would address the following categories:

- access and location of loading and parking facilities;
- location of building entrances;
- daylighting hours for units in residential buildings;
- location and maintenance of public walkways;
- on site landscaping;
- wind mitigation and sunlight access on public sidewalks and open spaces to achive public comfort criteria;
- improvements to the public realm

Implementation

adjacent to development;
- on site stormwater retention; and
- other sustainability initiatives—e.g. energy related; green roofs

Design Review Panel and Architectural Competitions

In order to encourage design excellence, the Town may wish to explore establishing a Design Review Panel of designers and architects to review design proposals at key locations. Such panels have been successfully established by the City of Toronto, Ottawa, Vancouver, Calgary and Mississauga, as well as for particular development areas in Toronto such as the Toronto Waterfront and the Regent Park Revitalization Areas.

For the most part, the mandate of these panels focuses on how the density is distributed on the site and suggestions to improve the massing, contextual elements, sustainability and urban design features rather than commenting on the intensity of development. If structured properly, these panels can help to improve the design and appearance of buildings and help designers to address some of the challenges presented by unique circumstances in the Town.

A related issue is the use of design competitions for particularly prominent and important public buildings located in areas such as the Markham Centre or Langstaff. Design competitions are helpful for achieving iconic and excellent building designs, and providing opportunities to engage the public and raise awareness of the importance and potential of design and architectural excellence.

Development Permit System

Section 70.2 of the Planning Act provides for the establishment of a development permit system (DPS) within a local municipality subject to Regulation 608/06. The intent of this section is to combine, within one regulatory system, powers now distributed amongst Section 34 dealing with Zoning Bylaws, Section 41 dealing with Site Plan Control and Section 45 dealing with the powers of the Committee of Adjustment. The effect could broaden the range of flexibility within the regulatory regime beyond what is now provided for under Section 34 in order to accommodate unique local circumstances and to streamline the approvals process. Regulation 608/06 requires that a municipality intending to use the development permit system must first adopt provisions in its Official Plan detailing the geographic area(s) to which it would apply, the scope of the authority and the goals, objectives and policies for proposing the Development Permit System.

The Township of the Lake of Bays and Brampton are implementing this system. It appears the DPS would include fixed and flexible elements within a range; with the fixed elements resembling Zoning By laws and the flexible elements more like site plan control, all wrapped up in one package.

Ideally the scope of what is considered within the flexible elements can be greatly expanded over what is normally considered through Site Plan Control. This might include built form, height and even density considerations within a range that is established through the DPS and achieved through performance standards rather than prescribed built form solutions. Thus, the scope of what needs to be specified as fixed elements can be significantly reduced. The challenge is to get the framework right and to get agreement from the Province and private owners on the approach. Unlike the Zoning Bylaw approach, approvals under the DPS can be delegated by Council to staff with appeals of decisions only available to the owners or proponents of development. The implementation of such a system may require quite a bit of effort and a lot of study, but it may be well suited to some of the intensification areas that have been identified. Because there is not now a comprehensive zoning bylaw in place for the Town it may be a good moment to begin exploring how this alternative system to

Implementation

development control through zoning could be implemented to achieve the Town's built form objectives. The outline below identifies how a DPS system could work as a combination of fixed and flexible elements. The chart that follows shows how this system could work compared to the traditional zoning approach.

Fixed Elements (suggested):

- Total residential and non residential density;
- Active uses along grade for designated streets;
- Tower zones with maximum floor plates for tower elements above a certain height ;
- Distancing restrictions between towers;
- Minimum setbacks from property lines other than along a street to ensure light view and privacy from adjacent buildings;
- Minimum distancing restrictions between habitable rooms;
- Minimum and maximum vehicular parking restrictions;
- Bicycle parking ratios.

Flexible Elements—Expressed as Performance Standards (suggested):

- Density transfers to achieve combinations of residential and non residential development on various sites, as appropriate.
- Built form, including heights and angular planes, to be determined by:
- applying sunlight standards along key streets and open spaces expressed as hours of sunlight along sidewalks on the north, east and west sides and on public open spaces during the Spring and Fall equinox to individual buildings;
- wind condition comfort standards that identify maximum acceptable wind speeds at ground level based on activity to be applied to individual buildings;
- protection of view corridors;
- daylighting for units in residential buildings;
- Stepbacks, above a certain height along pedestrian streets;
- Built to line restrictions;
- Minimum street wall heights.
- Loading and parking access;
- Location and maintenance of public walkways;
- Landscaping;
- Improvements to the public realm adjacent to development;
- On site stormwater retention;
- Other sustainability initiatives—e.g. energy related, green roofs.

Implementation

	Traditional Zoning		Development Permit System	
Element	**Zoning Bylaw**	**Site plan Control**	**Fixed**	**Flexible**
Density	√			√
Mix of Uses	√			√
Uses at grade	√		√	
Height Limits	√			√
Angular Planes	√			√
Sunlight standards		√		√
Wind standards		√		√
View corridors	√			√
Tower zones	√		√	
Maximum tower floorplates (above 20 m)	√		√	
Distancing restrictions between towers (above 20 m)	√		√	
Minimum setbacks from property lines other than a street	√		√	
Setback from streets	√			√
Built to lines	√			√
Minimum street wall heights	√			√
Minimum distances between habitable rooms	√		√	
Daylighting access for residential units		√		√
Vehicle parking (minimum & maximum)	√		√	
Bicycle parking	√		√	
Loading spaces (to be shared on same block)	√		√	
Access to loading and parking		√		√
Public walkways (Location and maintenance)		√		√
Landscaping		√		√
Public realm improvements		√		√
On site stormwater treatment		√		√
Energy conservation		√		√
Green roofs		√		√

Comparison of Traditional Zoning and Development Permit System Approaches to Development Control

Next Steps.

The following are measures that the Town of Markham can pursue to provide additional design guidance.

Street Sections

The Town is developing a detailed series of sections for arterial, collector, and local streets. Particular to each of these three road types, the Town should establish standards for lane, sidewalk, and setback widths, bicycle lanes, amenity zones, and utility coordination.

Solar Gain Modelling

Various studies have been conducted around the world that models the amount of solar gain permeability (light penetration) into different building types. This information is important as it provides desirable dimensions for building types in order to achieve maximum amounts of natural sunlight.

Height Contours

Overall building height is determined by relationships from key locations. These contours may be established so that there are no visible towers from a heritage district or landmark, they define flight path restrictions, or specific view corridors that are desired to be protected.

Sunlight Streets

Certain streets, or types of streets can be identified as "sunlight streets" with a specific hourly requirement for the amount of sunlight hitting the sidewalk. This standard will define the heights of buildings (and to some extent, the overall massing) on these streets, particularly on the south side of east-west streets. This is a common approach to built form that tends to lower heights adjacent to sunlight streets to a mid-rise character, and places any taller building elements mid-block away from the streets to ensure sunlight protection.

Microclimate Study

Microclimate refers to local effects that are created that may be different from the overall climate in the area. With respect to built form, microclimate is generally studied as it is affected by buildings, particularly from winds, but also from weather protection, heat loss or heat gain, and shade. Understanding the impacts from different building types helps create advantageous conditions (for example, pedestrian weather protection through a colonnade) and understand harmful ones (for example, wind tunnel effect).

Tall Building Guidelines

Many municipalities have created their own separate documents for analyzing tall buildings. Tall buildings generate different living conditions, as well as impacts, which are helped by the creation of Tall Buildings Guidelines.

Sunlight Access to Open Spaces

Another method of structuring built form is to create standards with respect to sunlight access on open spaces. An hourly standard is usually used which governs adjacent built form and provides a defensible list of criteria to ensure open spaces receive adequate sunlight.

On-Street Parking

The Town should encourage on-street parking on secondary streets to supplement visitor parking requirements for developments or public facilities including those found in parks.

Required Studies Upon Application

The Town should require solar and wind/ microclimate studies for tall buildings as part of any rezoning and/or site plan application.

Next Steps

Green Development

Today we see continued concern about our environment and a movement towards healthy living. Building "green" has become a strong movement within the construction and infrastructure industry recently because of its proven benefits to our world and communities. These benefits now extend beyond ecological & environmental aspects, to address both social and economic realities.

The following guidelines provide an initial set of principles, and practices for the development of new buildings and to encourage overall sustainable community development. In addition, LEED® 2009 and LEED® for Neighbourhood Development are substantial ongoing USGBC & CAGBC initiatives that will be launched in the summer of 2009. The Town of Markham is also in the process of releasing a comprehensive Sustainable Development Standards and Guidelines that will determine appropriate indicators and metrics for Sustainable site design. The Markham Built Form, Height, and Massing Study assumes that these standards will apply to new building sites and future community developments.

Building Green & LEED® concepts:

- Encourage healthy living with compact, vibrant and mixed-use development;
- Emphasize the benefits of walkable, transit-oriented communties;
- Protect threatened species and habitat;
- Promote energy conservation and the enhancement of asset values;
- Reduction of waste and pollution
- Water efficiency

Appendices.

Appendix A

Utilities & Street Elements

Appendix A

Utilities & Street Elements

>SB.09
~PR.17
~SB.07

Trees, lighting, and information kiosks in one utility/ furnishing zone.

There are many items and objects that are found within a street and the *Public Realm* that provide services to a community and surrounding buildings.

Above ground:

- traffic lights
- hydrants
- boxes (cable, hydro and telephone)
- light transformers
- bus shelters
- phone booths
- mailboxes
- newspaper boxes
- garbage and recycling

Underground:

- sewer system
- potable water system
- stormwater system
- television and telephone cable
- hydro

Most often, these items are not coordinated with each other, nor placed in locations that maximize their optimal location or reduce their costs. Most are installed by different service providers and serve individual purposes. Their collective appearance and locations can often clutter and disorganize a street and any intended amenity improvements.

Coordination of these elements can be achieved through the following:

- selective groupings
- incorporating fencing or landscaping as screening
- locating elements within a building

This coordination should be considered a) during streetscape improvements, b) during road repair or reconfiguration, c) during adjacent property building construction, d) during site plan approvals on any adjacent sites, e) as part of any environmental assessments for road evaluations; and f) utility repairs.

Appendix A

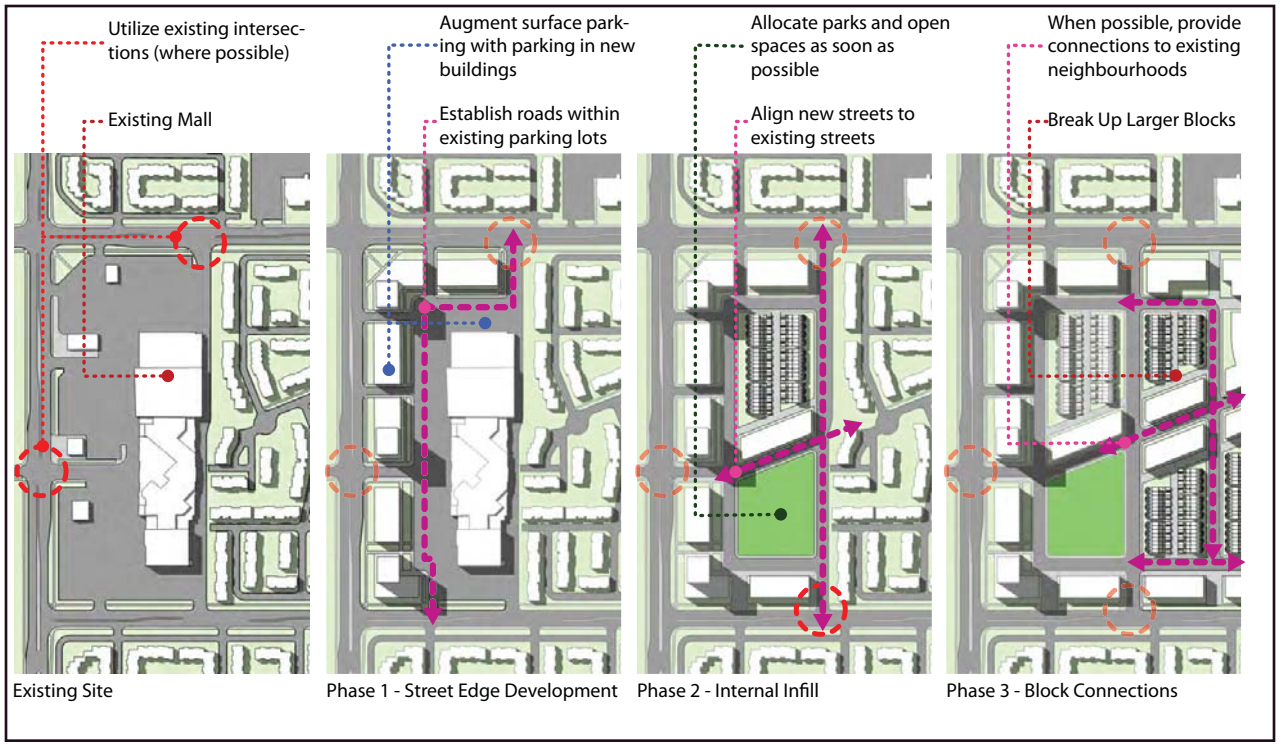
Phasing & Interim Conditions

Development should be phased to ensure major public amenities, open spaces and parks, and streets are created first or in the first few phases. These elements are essential to creating new developments that enhance and provide focal points for new developments, as well as increasing quality of life for both visitors and residents. Generally these elements add economic value to later phases due to the services, access, views, and connectivity that they provide.

Photograph of existing development site(top).
Artist's rendering of the first phase of development along the main street (bottom).

Appendix A

Phasing & Interim Conditions



Phasing allows for the functioning of existing portions of a development site and the incremental inhabitation of new construction.

Key Concepts:

- Lands closest to the main street should be developed first.
- Where possible, existing buildings (ie. Shopping malls) can be retained as edges of sites are developed and reconfigured. These scenarios may produce temporary parking deficiencies as new parking facilities are being constructed, but should be supported wherever possible to allow for sites to be redeveloped and not sterilized as auto-oriented uses. However, reasonable total amounts of parking should be maintained on site to support existing buildings.
- Knock-out panels in underground parking should be provided to allow for future parking connections either on the same lot, or if agreed to, on adjacent lots.
- Streets should align with existing streets, and break up larger blocks.
- In order for future residents to benefit from amenity, open spaces, parks and sports fields should be constructed or allocated within the first few phases.

Appendix A

Retail

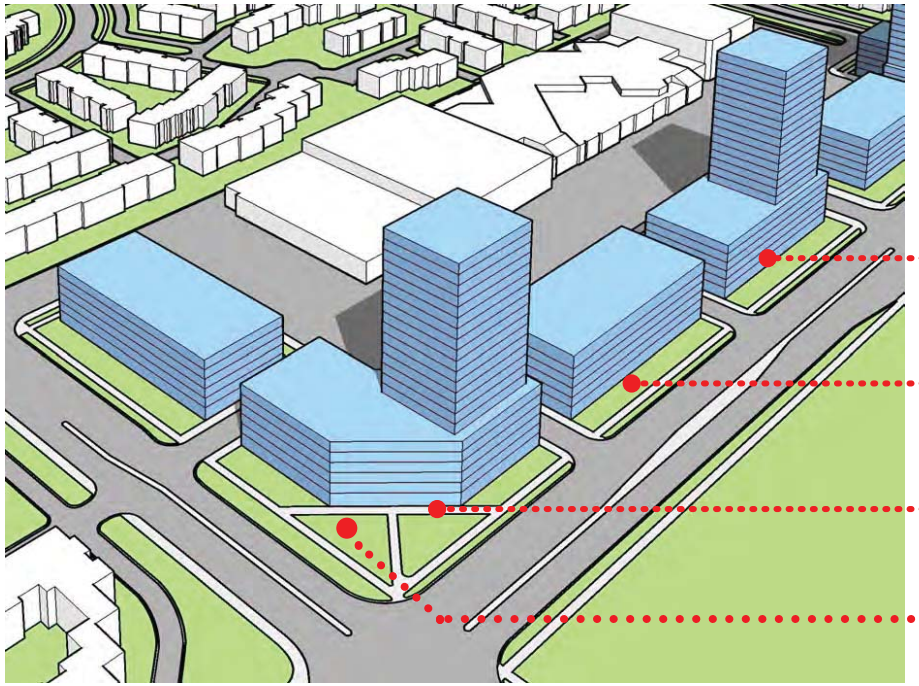
The existence of commercially viable, ground-related retail is an essential part of walkable, active and healthy communities. Ground-related retail with good location, visibility, accessibility, and proximity to large numbers of workers and residents provides activity at the sidewalk, generates shopping trips and animates the public realm and our streets. Retail should be located in the base of mid-rise buildings and towers to allow easy accesses for those working and living there. With good access to sidewalks and cycling networks, retail does not have to rely on vehicular traffic. In turn, the area becomes enhanced and "charged" with life. Many of the best places to live in cities are mixed-use areas with a well-integrated retail component.

Not all areas and streets can support viable retail initially. A commercially viable retail environment at grade requires the right conditions, and most importantly it takes time. These areas evolve over years, and expand and contract based on the demand of retail options around them. Therefore, providing the right flexibility and environment in the built form, particularly suitable ground floors, is an essential ingredient in building communities.

~BF.05

Multi-unit building with retail at grade.

Appendix A
Retail - New Buildings



Rendering of new retail development that includes street-addressing facades, setbacks, and walkways.

P Z S

New buildings or additions to existing auto-oriented retail should be located parallel to main streets, whenever possible:

- Front facades that provide address, doors and windows onto the main street on which the lot is located in order to animate the street and provide access for pedestrians
- Pedestrian areas beside building fronts should be wide enough to accommodate and encourage outdoor uses (ie. small patios, space for signage and sales
- Provide pedestrian walkways that directly connect to sidewalks
- Provide bicycle parking in highly visible areas
- Encourage the combination of uses to generate multiple users throughout the day

Appendix A
Retail - New Buildings

New retail buildings should not:

- Be set back a large distance from the main street
- Be designed with front-of-lot surface parking
- Be in "pod" formats with individual users, parking and drive aisles between each pod
- Be designed with blank walls, few windows or inaccessible doors
- Be only one storey tall

For large, multi-unit sites which expect to have a retail component:

- Retail should be located with direct frontage on streets
- In areas where retail is to be considered, on-street parking should be considered to provide convenient visitor access
- Sites larger than 10 ha should strategically locate retail opportunities in areas to concentrate activity in nodes, either with frontage on higher order streets, and or/adjacent or near open spaces.

Multi-unit building with retail at grade.

P Z S

Appendix A

Retail - Vehicle-Oriented Buildings & Sites

Big-box retailer (above); Drive thru (below).

~BL.01
~BL.02
~BL.03
~BL.07

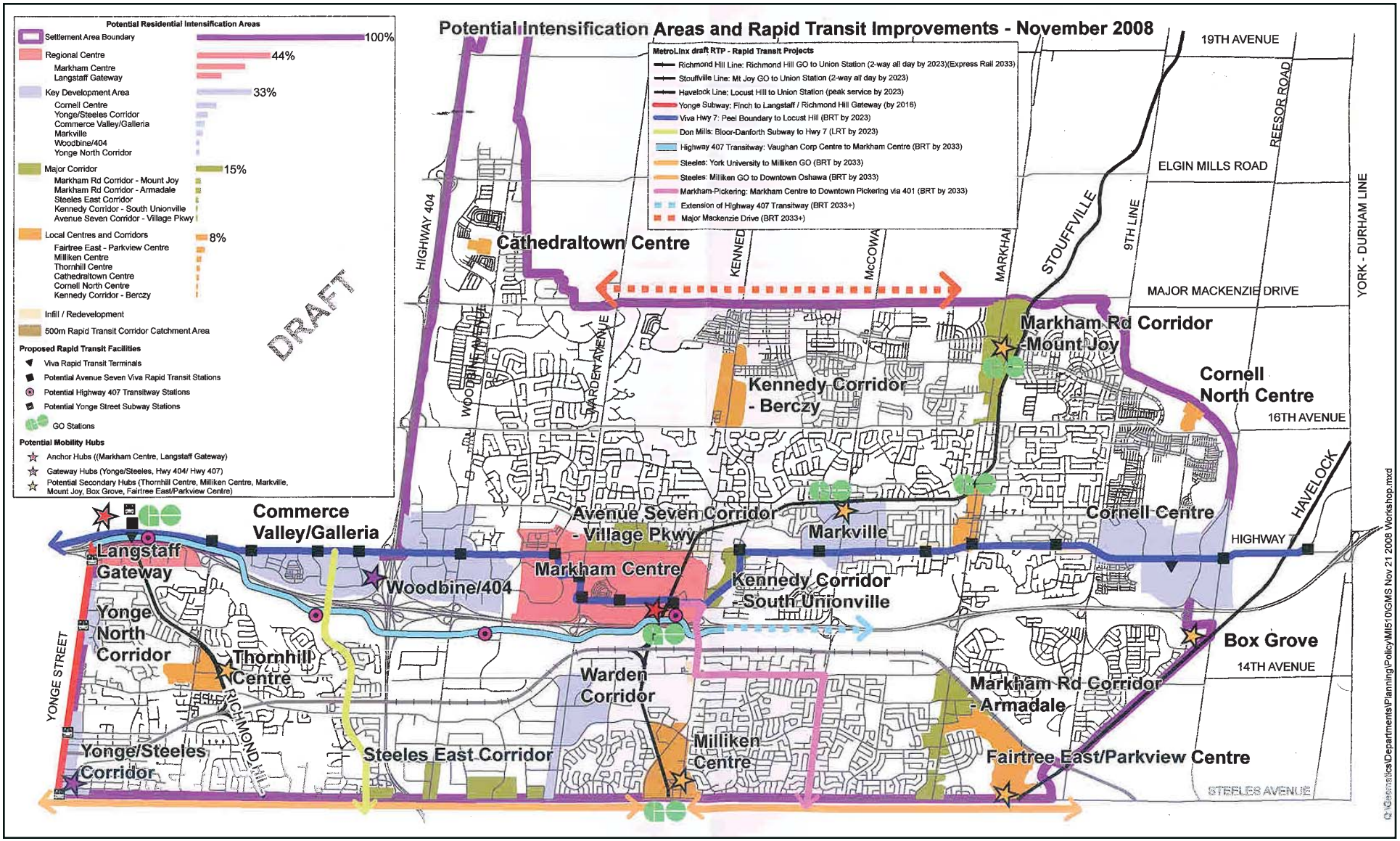
Many of the existing uses in Markham are automobile-related. Markham's intensification areas must be designed in a flexible way that allows them to be be serviced and accessed by vehicles without detracting or inhibiting the function of the street.

It is recognized that some uses will remain primarily auto-oriented due to their primary user, such as gas stations, drive-thrus, car washes, auto dealerships and auto repair businesses. While these uses must still accommodate the automobile, they can be designed to improve the existing characteristics of their site functions and building location. For example, buildings can be located at the street, and any surface parking located behind so that parking is not the dominant and overwhelming feature at the street.

Proposals for new "auto-oriented" uses should be discourage in Regional Centres or Key Development Areas (see Appendix B) within the Town of Markham, because these places will be the densest, most well-served places by transit, and designed to be walkable and pedestrian-friendly.

Appendix B

Appendix B
Intensification Areas



Markham Built Form, Height and Massing Study

Built Form Principles