



**This document has been structured and designed to be AODA compliant to ensure that it is accessible for all readers.**

*While the guidelines are intended to be holistic, they have not been reviewed by health care professionals and the recommendations in these guidelines are not intended to replace guidance from a health care professional. Members of the public should seek advice from appropriate health care professionals and/or building industry professionals to assess the required retrofits to their homes and units, as needed.*

## **City of Markham**

Age-Friendly Design Guidelines, 2022

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# TABLE OF CONTENTS

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<b>Executive Summary</b>	<b>1</b>
<b>Introduction</b>	<b>8</b>
i. Why Markham Needs Age-Friendly Design Guidelines	10
ii. How to Use the Guidelines	13

## **1.0 Neighbourhood Guidelines** **14**

<b>1.1 Key Features of Age-Friendly Neighbourhoods</b>	<b>16</b>
1.1.1 Co-locating Community Amenities	17
1.1.2 Micro-climate	20
1.1.3 Community Safety	21
1.1.4 Maintenance	22
1.1.5 Play-finding + Whimsy	23
1.1.6 Wayfinding	24
1.1.7 Civic Engagement	26
<b>1.2 Mobility and Connectivity</b>	<b>28</b>
1.2.1 Blocks and Street Network	29
1.2.2 Sidewalks	31
1.2.3 Pedestrian Crossings	32
1.2.4 Parking	33
1.2.5 Cycling and Micro-mobility	34
1.2.6 Recreational Trails & Walkways	36
<b>1.3 Parks and Open Spaces</b>	<b>38</b>
1.3.1 Park Access	39
1.3.2 Park Programming	40
1.3.3 Playgrounds + Play Spaces	44
1.3.4 Public Washrooms	46
<b>1.4 Urban Furnishings</b>	<b>47</b>
1.4.1 Seating	48
1.4.2 Weather Protection Features	49

## 2.0 Building and Site Design Guidelines 50

<b>2.1</b>	<b>Ground-Related Residential Buildings</b>	<b>52</b>
2.1.1	Site Design & Access	53
2.1.2	Building Configuration & Design	54
2.1.3	Parking	55
<b>2.2</b>	<b>Multi-Unit Residential Buildings</b>	<b>56</b>
2.2.1	Flexible Building Design & Construction	57
2.2.2	Building Configuration & Site Layout	58
2.2.3	Building Entrances & Lobbies	60
2.2.4	Common Indoor & Outdoor Amenity	62
2.2.5	Common Circulation Spaces	64
2.2.6	Parking Facilities	67
2.2.7	Storage & Utility Needs	68
<b>2.3</b>	<b>Mixed Use Buildings with Commercial Uses</b>	<b>69</b>
<b>2.4</b>	<b>Community Facilities</b>	<b>72</b>

## 3.0 Unit Guidelines 74

<b>3.1</b>	<b>Interior Layout</b>	<b>76</b>
3.1.1	Flexibility & Planning for Future Change	77
3.1.2	Kitchens	78
3.1.3	Bathrooms	80
3.1.4	Entryways & Storage	82
3.1.5	Laundry Rooms	83
3.1.6	Living Rooms	84
3.1.7	Bedrooms	85
3.1.8	Outdoor Spaces	86
<b>3.2</b>	<b>Interior Design &amp; Finishes</b>	<b>87</b>
3.2.1	Lighting	88
3.2.2	Floor Finishes	89
3.2.3	Acoustics	90
<b>3.3</b>	<b>Unit Circulation</b>	<b>91</b>
3.3.1	Stairs	92
3.3.2	Lifts	93

## 4.0 Implementation 94

	<b>Appendices</b>	<b>98</b>
A.	Glossary	99
B.	Best Practices	100
C.	Policy References	104
D.	Image Credits	105

# EXECUTIVE SUMMARY

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Markham is rapidly aging, with seniors becoming the fastest growing segment of Markham's population, a trend that is likely to continue over the next decade. As Markham undergoes these significant demographic changes, it is important to continue to build a city that responds to the needs of all residents, from young children and families to older adults and those requiring increased support as they age.

Building on existing policies and city directions, the City of Markham has developed a set of Age-Friendly Design Guidelines. These Guidelines were endorsed by City Council on November 8, 2022 as 'the Age Friendly Design Standards' and intends to direct how new development in Markham can better function to serve all residents, including households with young children and those looking to age-in-place.

The Age-Friendly Design Guidelines provide recommendations for the design of neighbourhoods, building, site layouts, and residential units that will guide new development and support the retrofit of existing built form into safe, comfortable, and accessible places for people of all ages.

The intent of these City-wide guidelines is to integrate age-friendly design into the built environment in both new and redeveloping communities - including privately-owned low-rise, mid-rise and high-rise residential and mixed use buildings and neighbourhoods.

To support the realization of this vision, the Markham Age-Friendly Design Guidelines provides a lens through which planners, designers, and policymakers can implement age-friendly development practices that positively impact the community.

To advance this work, the City of Markham engaged with the local community, City advisory committee members, representatives from the design and development Industries and other key stakeholders. This process highlighted various ideas, issues and opportunities related to age-friendly design, all of which have informed the development of the Age-Friendly Design Guidelines.

These guidelines are not meant to create barrier-free housing or specialized housing for residents with specific disabilities, but rather provide a lens through which planners, designers, and policy-makers can support age-friendly development practices that have positive intergenerational benefits at the neighbourhood, building/ site, and unit scales.

The Markham Age-Friendly Design Guidelines are a "living document" that will evolve over time to meet best practices and future changes that may be related to standards and requirements from key provincial legislation and municipal policies such as:

- The Planning Act;
- The Provincial Policy Statement and Growth Plan for the Greater Golden Horseshoe;
- The York Region Official Plan
- World Health Organization's Global age-friendly cities: a guide;
- The York Region New Community Guidelines;
- Ontario Building Code (OBC); and
- Site Plan and Architectural Control

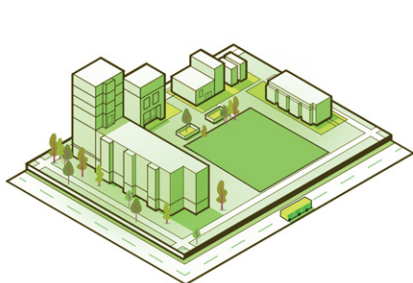
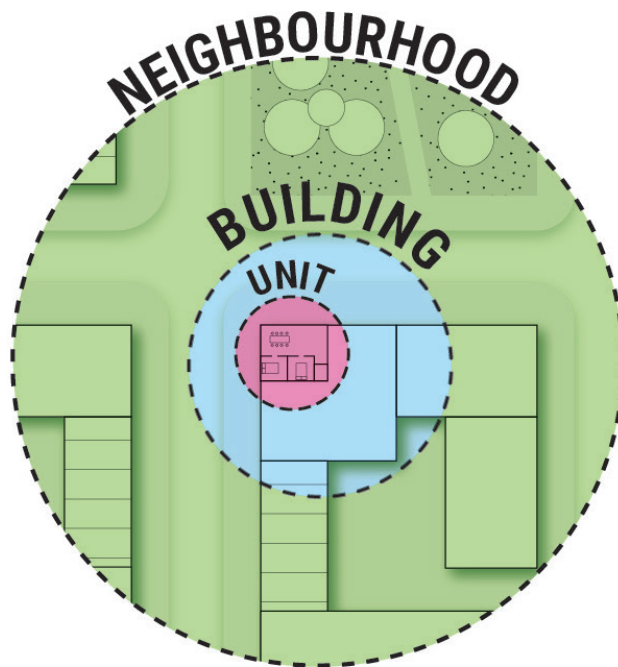
Where there are changes to the above legislation that results in conflicts with the Age-Friendly Design Guidelines, the legislation or legislated regulations would take precedence.

## Summary of the Guidelines

The guidelines are organized into three scales – the **neighbourhood**, the **building and site**, and the **unit** – based on the recognition that each positively contributes to how we live, work and play in our communities.

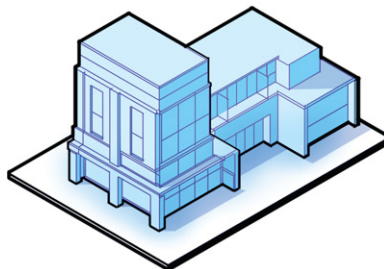
While the primary focus is on the spatial parameters of these domains, it is important to acknowledge the intersectionality of people's experiences when living and interacting in cities, and that a broad lens was applied to this work – ensuring that the other factors that are key to the livability and resiliency of communities were considered when developing the guidelines.

On the following pages, each section of the guidelines is summarized as a resource to be used as a quick reference when consulting this document.



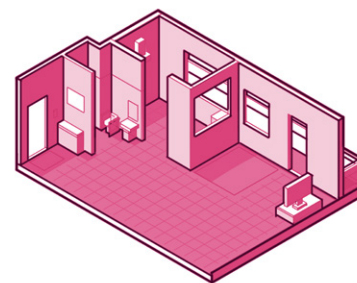
### Neighbourhood

Exploring how neighbourhood design encourages connectivity, mobility, safety and livability - incorporating services and amenities that meet the needs of users of all age groups over time.



### Building & Site Design

Exploring how the design of residential buildings can ensure they meet the changing needs of all residents, of all ages, over time, including places to socialize, play, work and learn.



### Unit

Exploring how the design of individual units can meet the needs of a variety of users of all ages over time, including the needs of different family sizes, types and configurations.

# 1.0 Neighbourhood Guidelines

## 1.1 Key Features of Age-Friendly Neighbourhoods

**Age-friendly neighbourhoods should be comfortable, safe, well-maintained, playful, intuitive, and provide a range of co-located and accessible community amenities linked by a walkable network of connections.**

### 1.1.1 Co-locating community amenities

Find opportunities to co-locate complementary services and facilities with new development to optimize community benefit, promote shared use, improve access, and create hubs for age-friendly uses and intergenerational activities.

### 1.1.2 Micro-climate

Design outdoor spaces to create micro-climates that are comfortable in all seasons and effectively mitigate pedestrian level wind and provide protection from the sun, rain, and snow.

### 1.1.3 Community Safety

Communities should be designed to promote natural surveillance while ensuring a safe and comfortable environment for walking, rolling, and cycling relative to vehicular traffic.

### 1.1.4 Maintenance

Maintain a high-quality public realm that ensures safe, equitable access to community amenities during all four seasons.

### 1.1.5 Play-finding + Whimsy

Create engaging, playful, and liveable communities by incorporating whimsy in public art, building design, streetscapes, parks, and urban furniture.

### 1.1.6 Wayfinding

The design of the public realm should help with intuitive wayfinding systems that reinforce a sense of place and create visual interest.

### 1.1.7 Civic Engagement

Ensure the planning and design process is age-friendly and provides equitable opportunities for civic engagement for people of all ages and abilities living in Markham.

## 1.2 Mobility and Connectivity

**Design mobility networks that encourage active transportation for all ages and abilities with connections that provide universal access to community services and facilities.**

### 1.2.1 Block and Street Network

Design street networks to be safe and walkable with blocks that are porous for pedestrians and cyclists.

### 1.2.2 Sidewalks

Safe, accessible sidewalks are encouraged on both sides of the street in all new communities, and where possible in existing neighbourhoods.

### 1.2.3 Pedestrian Crossings

Design pedestrian crossovers and pedestrian crossings at signalized intersections to be well-lit, with non-slip markings and audible and vibro-tactile cues.

### 1.2.4 Parking

Surface parking lots should be designed to be safe, accessible, and be shared to complement age-friendly uses in the community.

### 1.2.5 Cycling and Micro-mobility

A network for cycling and micro-mobility that is safe and comfortable should be designed to provide access throughout the City and to key age-friendly destinations.

### 1.2.6 Recreational Trails & Walkways

Trails and walkways should be barrier-free and offer places to rest for older adults, young children and people with mobility devices.

## 1.3 Parks and Open Spaces

**Provide a variety of parks and open spaces with programming that caters to the needs of users of all ages and abilities.**

### 1.3.1 Park Access

Provide equitable access to parks and open spaces so users of all ages and abilities can visit and linger. Ensure they are safe, welcoming, and animated.

### 1.3.2 Park Programming

Design parks to allow for flexibility and seasonality with a diversity of activities that cater to all ages and abilities.

### 1.3.3 Playgrounds + Play Spaces

Play spaces should be welcoming and inclusive to a diverse range of users including people who are young and old, caregivers, and people with disabilities.

### 1.3.4 Public washrooms

Public washrooms should be provided in all existing and new Community Parks.

## 1.4 Urban Furnishings

**The public realm should provide amenities such as seating, weather protection, adequate lighting, and access to public wi-fi.**

### 1.4.1 Seating

Seating in the public realm should be designed to accommodate a variety of needs and the ergonomic comfort of all users, from children to older adults.

### 1.4.2 Weather Protection Features

The public realm should include structures that enable year-round use of streets and parks with weather protection strategies for the heat, sun, rain, snow, ice, and wind. Weather protection strategies can include the strategic planting of trees and other landscape elements as well as purpose-built shelters or shade sails.



## 2.0 Building and Site Design Guidelines

### 2.1 Ground-Related Residential Buildings

**Ground-related residential buildings, including single detached homes, townhouses, duplexes, and triplexes should be designed to accommodate the needs of children and to support aging-in-place.**

#### 2.1.1 Site Design & Access

Where possible, ground-related residential buildings should be designed with no-step access to respond to reducing mobility as we age-in-place.

#### 2.1.2 Building Configuration & Design

Primary living spaces should be located on the ground level of buildings to focus all our daily needs on one level as we age-in-place.

#### 2.1.3 Parking

Parking should be designed to have well-lit and weather protected access to the main living unit.

### 2.2 Multi-Unit Residential Buildings

**Multi-unit residential buildings, including mid-rise and high-rise buildings, should be designed to serve the needs of older adults, people with reduced mobility, as well as households with children.**

#### 2.2.1 Flexible Building Design & Construction

Design buildings that allow for future flexibility through unit organization and building systems to support the evolving needs of residents over time.

#### 2.2.2 Building Configuration & Site Layout

Larger units with multiple bedrooms should be focused in the lower portions of the building to serve multi-generational households and households with children.

#### 2.2.3 Building Entrances & Lobbies

Design lobbies and entrances with strong visual connections to the street and with seating at indoor and outdoor waiting areas for residents unable to stand for prolonged periods.

#### 2.2.4 Common Indoor & Outdoor Amenity

Common indoor and outdoor amenity spaces should be universally accessible and provide programmed space for various age groups.

#### 2.2.5 Common Circulation Spaces

Design common circulation spaces for social interaction while fostering independence for children and dignity for older adults.

#### 2.2.6 Parking Facilities

Parking facilities should be designed to have both playful and intuitive way-finding for children and residents coping with memory loss.

#### 2.2.7 Storage & Utility Needs

Include convenient and secure storage for larger items such as strollers, bikes, and mobility scooters in key building locations.

### 2.3 Mixed Use Buildings with Commercial Uses

**Local shops and services should be designed to prioritize the pedestrian experience with no-step access and animated frontages with strong visual connections between interior and exterior spaces that promote community safety.**

### 2.4 Community Facilities

**Community facilities, including community and recreation centres, public libraries, child care, schools, and health clinics should be designed to be universally accessible for all ages and abilities.**

# 3.0 Unit Guidelines

## 3.1 Interior Layout

**The interior layout of residential units should be flexible enough to account for the needs of households with both children and older adults.**

### 3.1.1 Flexibility & Planning for Future Change

Units should be flexible and adaptable with features that afford layout changes to fit the evolving needs of residents over time.

### 3.1.2 Kitchens

Kitchens should be designed to anticipate the needs of aging residents, including adjustable fixtures, shallow sinks, ample storage at mid-level heights, and adequate space for counter-level appliances.

### 3.1.3 Bathrooms

Bathrooms require attention to detail to allow for the changing needs of a resident over time, such as adjustable fixtures, no slip surfaces, and consideration for no-lip access to showers and reinforced walls for future installation of grab bars.

### 3.1.4 Entryways & Storage

Entryways function as daily transition spaces and should be designed to have generous clearances and ample space for storage, such as for strollers, scooters, and other mobility devices.

### 3.1.5 Laundry Rooms

Laundry rooms should be designed to have adequate width, to afford either additional storage space for households with children or side-by-side laundry machines that provide a more accessible format as we age.

### 3.1.6 Living Rooms

Living rooms should be designed to have large windows with visual connections to outside spaces and to have open concept formats that afford flexibility over time.

### 3.1.7 Bedrooms

A unit's primary bedroom should be located on the main level and have access to a full bathroom. Ample space should be provided to allow for ease of movement around furniture.

### 3.1.8 Outdoor Spaces

Outdoor spaces, such as balconies, backyards, porches, terraces and courtyards are an extension of the unit during warmer months and should have no-step access with adequate clearance for mobility devices.



## 3.2 Interior Design & Finishes

**Finishes and interior design features such as lighting, materiality, and acoustics can have a significant impact on how age-friendly units are. The tactile aspects of design should be carefully considered to ensure that day-to-day life stays safe, comfortable, and healthy as one ages.**

### 3.2.1 Lighting

Units should provide ample access to daylight to support resident's health, well-being, and safety, in addition to carefully planned artificial lighting throughout the home to ensure safe movement during low-light hours and to provide guiding lights for residents with impaired vision.

### 3.2.2 Floor Finishes

Floor finishes should be carefully chosen to ensure safe movement through the home, including non-slip and high-grip surfaces as well as materials that provide tactile cues.

### 3.2.3 Acoustics

Acoustic privacy should be provided in the design of new units by taking into consideration the adjacencies of private and shared spaces both within a unit and between adjacent units as well as the needs of various households and their potential sensitivities to noise.

## 3.3 Unit Circulation

**As we age, our range of motion decreases and simple movements can become a daily challenge. The design of circulation spaces in homes should be designed to remove barriers, keeping in mind that removing a barrier for one group, removes a barrier for all.**

### 3.3.1 Stairs

Where possible, stairs should be designed as a straight flight without landings for easier installation of stairlifts. Stairs should also provide colour contrast features for users with reduced depth perception.

### 3.3.2 Lifts

Unit design should always anticipate the potential future need for lifts, such as planning for the location of an elevator during the design of the unit and reinforcing affected walls during construction.

# INTRODUCTION

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- i. Why Markham Needs Age-Friendly Design Guidelines
- ii. How to Use the Guidelines





**Figure 1.** Angus Glen Community Centre.

Markham is changing. The way we live, work, play and gather in our city is directly related to how the city grows, changes and meets the needs of the diverse communities who live here. As Markham undergoes significant growth, complete with new development and a rapidly growing <sup>1</sup> (and aging) population, we must continue to build a city that responds to the needs of all residents, from households with children and young people to older adults and those living with a disability. The Covid-19 pandemic has also accentuated issues of social isolation and has changed the way we work, learn and commute, leading many to rethink how we can create socially inclusive physical environments that centre age-friendly design.

The Guidelines in this document are informed by existing policy and city direction, intended to direct how new development in Markham can better function to serve all residents, from 0 to 99 years of age. In age-friendly design, buildings,

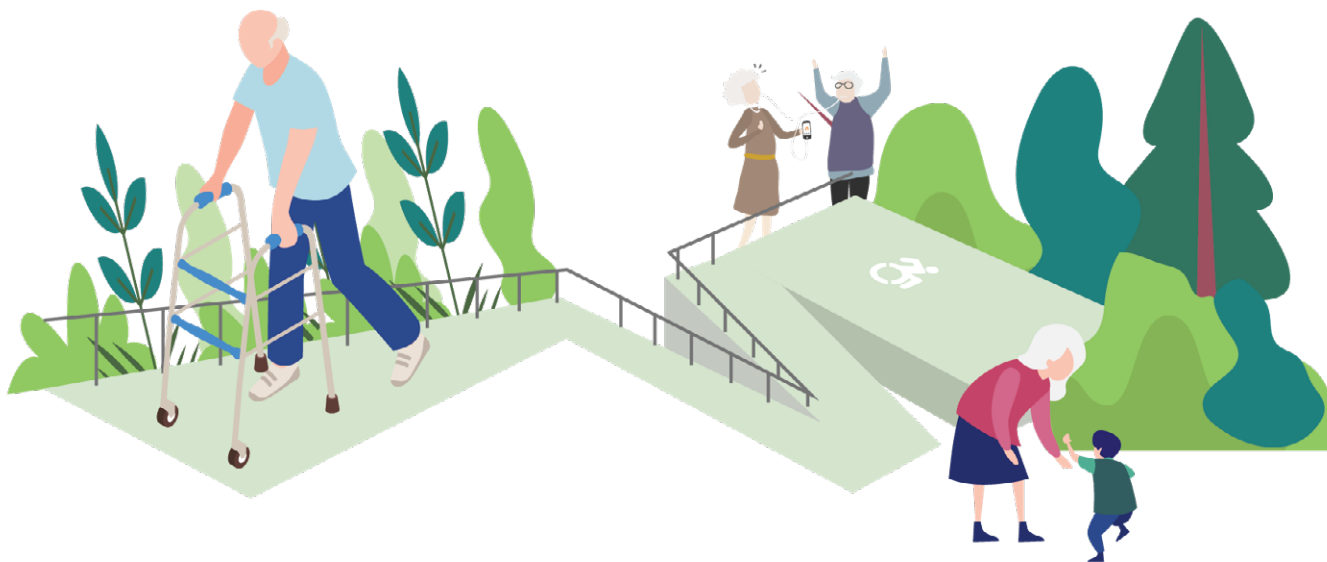
public spaces, and infrastructure related to physical and social environments are designed to address the needs of everyone, regardless of their age or ability - removing barriers to access, enjoyment and resiliency.

Every aspect of how we navigate space is an opportunity for age-friendly design: from going to work, running errands, gathering with friends, crossing the thresholds of our homes, cooking meals for your families, practicing personal hygiene, self-care and wellness, and finally, going to bed.

The goal is to provide design direction for the built environment, particularly related to housing and outdoor spaces, in both ground-oriented and vertical communities, to ensure that new and redeveloping communities in the City of Markham are accessible, inclusive, functional, safe, and adaptable for all households.

<sup>1</sup> Ontario's Action Plan for Seniors. (2017)

## i. Why Markham Needs Age-Friendly Design Guidelines



There are many factors that will have a direct impact on age-friendly design in Markham:

### An Aging Population

By 2041, it is projected that 25% of Ontario's population will be 65 years or older, almost doubling from 2.3 million seniors in 2016 to 4.6 million seniors. Markham is no exception.

Markham is rapidly aging, with seniors becoming the fastest growing segment of Markham's population, a trend that is likely to continue over the next decade. The physical, cognitive and social needs of older adults can change significantly as they age. These changes will have a direct impact on how they live in and move around the community. Meeting the

needs of an aging population accentuates the need for compact urban forms with accessible age-friendly amenities including shopping, transportation, recreation and health and wellness services. Other considerations for an aging population include a focus on designing for those with dementia, vision loss and other conditions that may impact an individual's ability to live independently or to age-in-place<sup>1</sup> in the community of their choosing.

<sup>2</sup> Aging-in-place refers to the ability to live in the same home or community safely, independently and comfortably as you age.

## An Increasingly Diverse Population

One of Markham's great advantages is its diversity. According to Statistics Canada, 78% of Markham residents identify as a visible minority, 61% identify as immigrants or non-permanent residents, and over 63% of Markham residents speak a first language other than English.<sup>3</sup> In order to meet the needs of such a diverse population, culturally supportive and appropriate forms of housing are important, including providing opportunities for multi-generational living.



## A Densifying Urban Area

We know that Markham has been experiencing significant growth—bringing with it new forms of development and new ways of living, particularly for families and those wishing to age-in-place. A shift towards higher-density living will require new thinking about how we design shared spaces, and incorporate highly accessible, welcoming public spaces and amenities. Smaller spaces can be flexible and designed to accommodate the needs of larger families and those with mobility issues.



<sup>3</sup> Statistics Canada (2016 Census)



### Increased Reliance on Technology

Covid-19 has accelerated the impacts of technology on our day-to-day lives. The ability to work, learn and access health and wellness services remotely is changing how we live in our homes, interacting with our peers and how we travel in and around our community. With the increased reliance on technology in our homes, there will be a desire for more flexible, multi-purpose spaces for working and learning, and there will be a demand for more advanced digital connectivity. The shift to working and learning from home, as well as the shift to virtual medical and wellness services are having direct impacts on transportation patterns and the viability of retail, employment and health precincts in communities.



### Climate Change

Warmer, wetter, and wilder weather is in the forecast for Southern Ontario. According to the Ontario Climate Consortium, we can expect much hotter summers, increased year-round precipitation, and an increase in intensity of extreme weather events by 2050.<sup>4</sup> The potential implications of these climate impacts on age-friendly built-form include: increased home energy costs related to heating and cooling, the need for upgrades and additional maintenance and repairs due to extreme weather, impacts on mobility due to flooding and/or snow accumulation, the need for year-round weather protection in parks and open spaces and the environmental, health and social impacts of reduced air quality in the region.



<sup>4</sup> Ontario Climate Consortium. Climate Trends and Future Projections in the Region of Peel (2017)

## ii. How to Use the Guidelines

### Where the Guidelines Apply

The Age-Friendly Design Guidelines may be applied City-wide to ground-related residential developments (such as townhouses and single-family or semi-detached homes) as well as multi-unit residential developments.

The Guidelines are intended to provide guidance for the development industry, designers, and City staff in the preparation and subsequent review of development applications. The Guidelines may also be used by City staff to inform planning frameworks and in the design and construction of new parks, public spaces, community facilities and streetscapes, as well as during public engagement events.

### How to Read the Guidelines

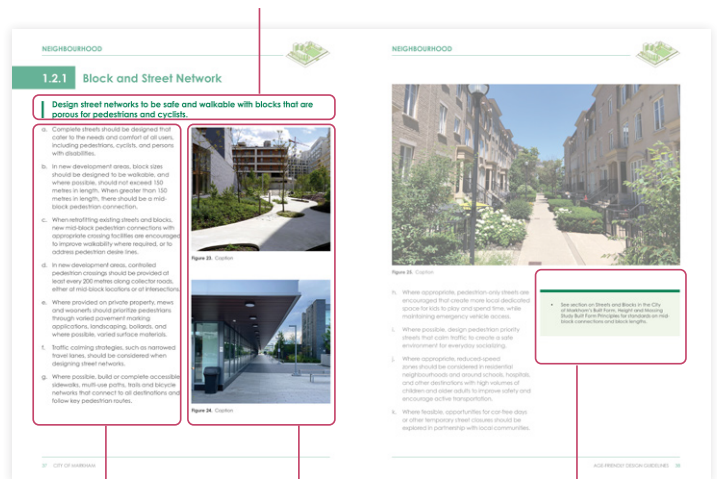
The Age-Friendly Design Guidelines should be read in conjunction with other City-wide design guidelines and standards including, but not limited to the City of Markham's:

- Official Plan,
- Comprehensive Zoning By-Law,
- Active Transportation Master Plan,
- Older Adult Strategy,
- Accessibility Design Guidelines,
- Built Form, Height, and Massing Principles,
- Trees for Tomorrow: Streetscape Manual,
- Generic Architectural Design Guidelines,
- Bird-Friendly Design Guidelines,
- Current urban design best practices, and
- New and emerging standards and guidelines.

If the Age-Friendly Design Guidelines are found to be in conflict with provincial legislation or regulations such as the Ontario Building Code (OBC) or the Accessibility for Ontarians with Disabilities Act (AODA), those minimum requirements will take precedence over the guidelines in this document.

The Guidelines may also be useful for members of the public and community groups, as well as organizations such as condominium boards and rental property managers who are interested in gathering information on age-friendly ideas for both personal interest, use, and advocacy work.

**Guideline Summary** is a brief statement that captures the main point of the guideline.



**Sub-Guidelines** are intended to provide design directions to inform and evaluate future development within

**Precedents** provide visual examples and illustrations of guidelines

**References** provide additional background information on existing city standards

**Figure 2.** A typical section in the Age-Friendly Design Guidelines

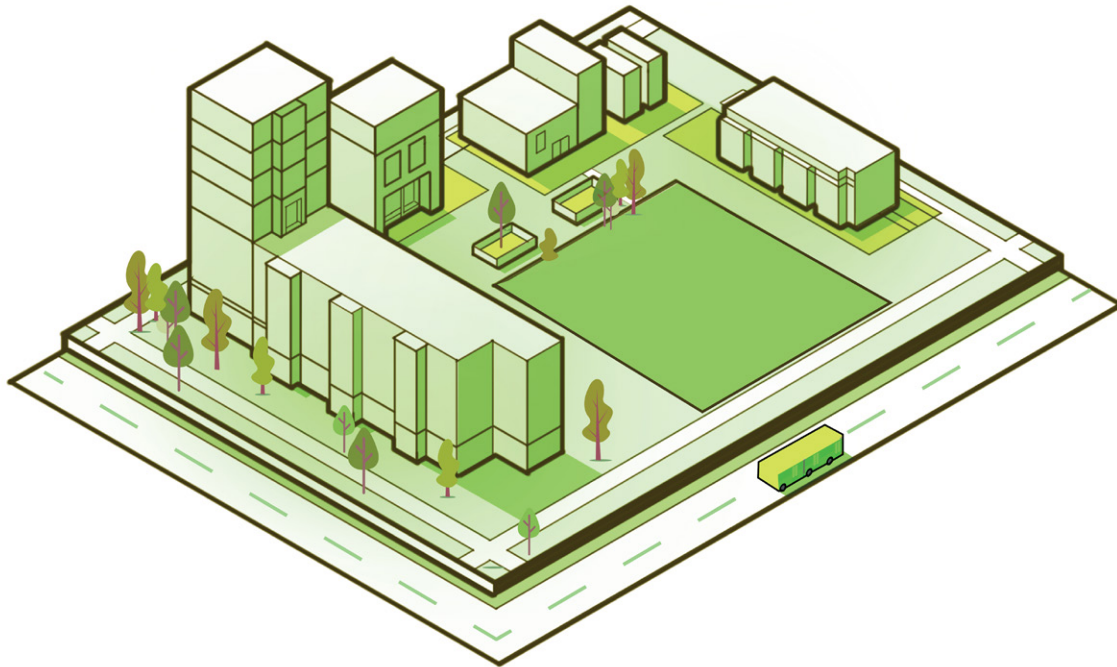
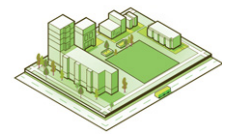


# 1.0 NEIGHBOURHOOD GUIDELINES

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- 1.1 Key Features of Age-Friendly Neighbourhoods
- 1.2 Mobility and Connectivity
- 1.3 Parks and Open Spaces
- 1.4 Urban Furnishings





Neighbourhoods are structured around networks of streets, parks, plazas, natural areas, and community facilities. These spaces are collectively known as the public realm. Age-friendly neighbourhoods rely on an accessible and vibrant public realm that supports residents' daily needs and routines. Each aspect of one's daily journey from home to work, school, social or recreational activity is an opportunity to design an age-friendly community.

The following guidelines provide direction for the planning and design of age-friendly neighbourhoods with recommendations for:

- Co-locating community amenities to meet the needs of diverse users;
- Ensuring comfortable micro-climates;
- Providing safe and well-maintained public spaces;
- Introducing intergenerational programming and opportunities for play for both children and adults;

- Creating equitable and participatory cities; and
- The design of safe and intuitive streets that encourage independent and active transportation during all four seasons.

These guidelines are organized by spaces for movement such as streets, walkways and trails; spaces for recreation and gathering such as parks and open spaces; and spaces for comfort such as urban furnishings like seating and weather protection.

The following guidelines recommend a comprehensive approach to the planning, design and development of neighbourhoods in which all components of a larger network support the needs of residents of all ages and abilities.

# 1.1 Key Features of Age-Friendly Neighbourhoods

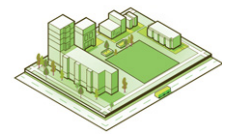
Age-friendly neighbourhoods should be comfortable, safe, well-maintained, playful, intuitive, and provide a range of co-located and accessible community amenities linked by a walkable network of connections.

The following guidelines establish the structure and design qualities of the public realm to promote age-friendly neighbourhoods. They provide direction for co-locating community amenities and supporting a comfortable, year-round microclimate, while highlighting the importance of designing for community safety, providing clear wayfinding, maintaining public spaces, and supporting age-friendly civic engagement.



**Figure 3.** Port Credit Square in Mississauga helps illustrate many key features of age-friendly neighbourhoods.





## 1.1.1 Co-Locating Community Amenities

**Find opportunities to co-locate complementary services and facilities with new development to optimize community benefit, promote shared use, improve access, and create hubs for age-friendly uses and intergenerational activities.**

- a. New master planned communities should co-locate and/or cluster facilities for older adults, schools, parks, child care as well as other community services within a comfortable walking distance. Where possible, community amenities should be provided during early phases of multi-phase developments to coincide with the first residents to settle in a community.
- b. New developments should be designed to prioritize pedestrian connections and minimize the walking distance to existing community facilities such as libraries and community or recreation centres.
- c. Opportunities should be sought early in the development review process to form partnerships that integrate community facilities on a development site.
- d. Partnerships with public landowners such as school boards are encouraged to increase shared access to open spaces and other recreational facilities, especially in areas where there are limited opportunities for new open space.
- e. New developments should deliver social spaces for both older adults as well as children, and consider opportunities for intergenerational programming.



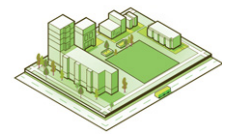
**Figure 4.** Kipling Acres long-term care home is co-located with a child care facility with regular inter-generational programming.

- f. New developments are encouraged to be mixed-use and, where possible, have prioritized pedestrian connections to shops, retail, and social spaces.
- g. Community spaces that provide programs for children, youth, and older adults should be located near major transit routes.
- h. Where identified that new schools are needed:
  - They should be located near major pedestrian, cycling, and transit routes to minimize dependence on vehicles and promote active transportation.
  - Elementary schools should be centrally located within new neighbourhoods and well-connected by a comfortable network of sidewalks, pedestrian walkways and bicycle routes.
  - Wider sidewalks and cycling facilities should be considered to promote safer trips for school children and families.
  - Secondary schools should prioritize well-connected access to bus stops, and where possible, regional transit stations, to promote independence and minimize dependence on private vehicles.
  - Opportunities for co-locating community amenities with schools should be explored to optimize the use of community amenities.
- i. Where child care is an identified need, new development is encouraged to:
  - Co-locate child care within close proximity to long-term care homes or other facilities for older adults to create positive social, economic, and health outcomes.

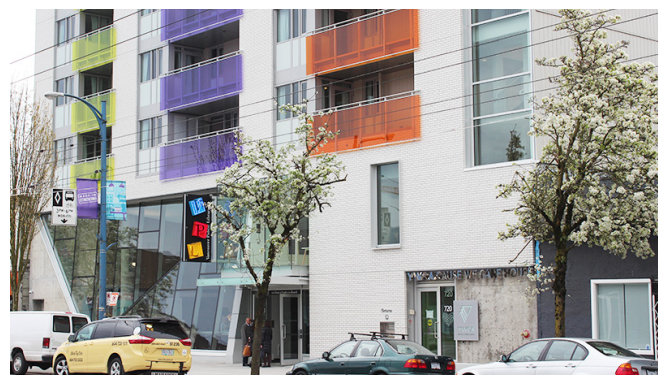


**Figure 5.** Canoe Landing Campus in Toronto co-located two elementary schools, a community centre, child care, and a publicly accessible open space adjacent to a public park.

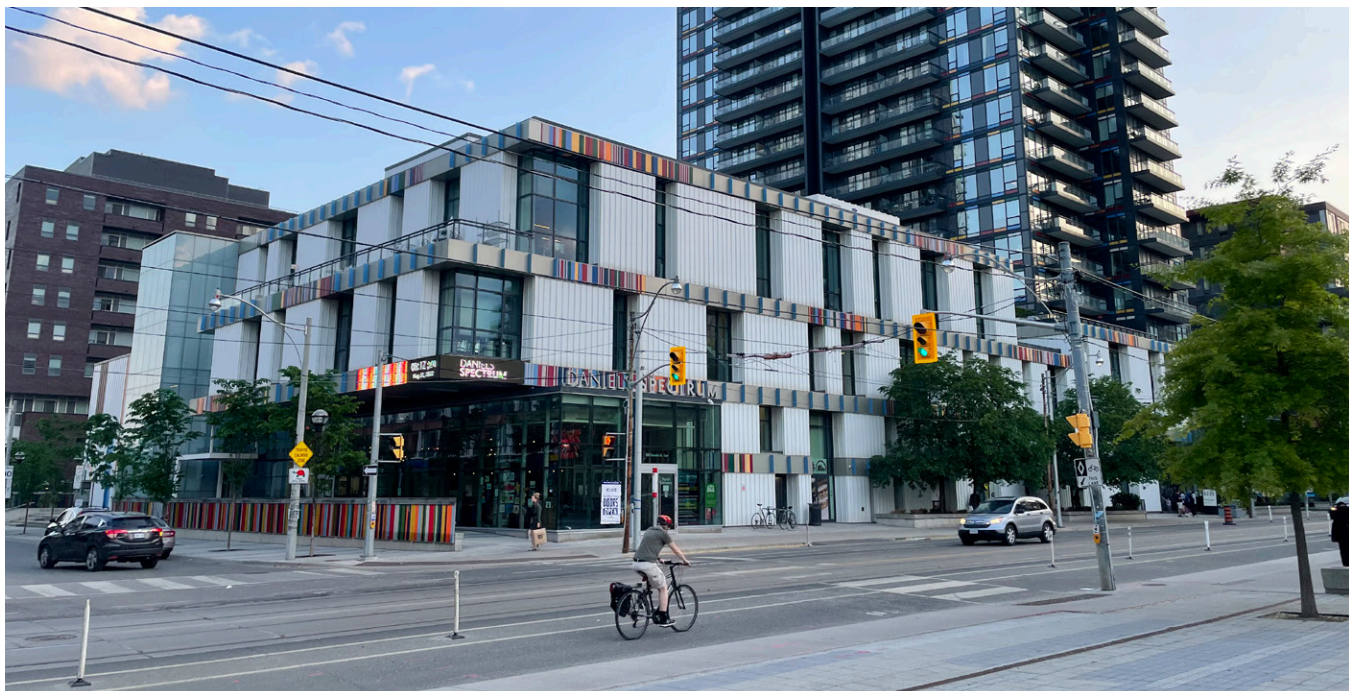




- Consider adjacencies to other community services and facilities such as schools, parks, and recreational centres.
- Locate child care facilities near regional transit stations to align with the daily routines of commuting parents.
- Be well-connected by pedestrian, cycling and transit routes to minimize dependence on vehicles and promote active transportation.
- Be located to have access to a public park within walking distance.



**Figure 6.** The Vancouver Public Library's Strathcona Branch also provides safe, affordable housing for low-income mothers and their children through the YWCA Cause We Care House.



**Figure 7.** The Daniels Spectrum in Toronto's Regent Park neighbourhood is a mixed-use development that has also become a cultural hub providing programs for youths and adults, spaces for special community events, social and study areas, and opportunities for arts and cultural experiences.



## 1.1.2 Micro-Climate

**Design outdoor spaces to create micro-climates that are comfortable in all seasons and effectively mitigate pedestrian level wind and provide protection from the sun, rain, and snow.**



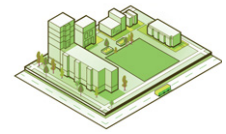
**Figure 8.** These shade structures at Aaniin Community Centre provide weather protection while playing or watching basketball games.



**Figure 9.** Corktown Common in Toronto provides a pavilion for use in both Summer and Winter. During colder seasons, there is a fire pit for community gathering as well as moveable walls to help dampen winter winds.

- a. New parks and open spaces should be designed to optimize the local micro-climate by mitigating inclement weather including solar exposure, wind, snow, and rain.
- b. Streets and buildings should be oriented to maximize micro-climate comfort while minimizing micro-climate impacts on the pedestrian realm
- c. Opportunities to integrate weather protection and warming elements, such as canopies, are encouraged, where appropriate, to provide user comfort and extend the usability of outdoor spaces.
- d. New development should create a comfortable microclimate that responds to the local conditions, provides strategic shading, and promotes solar access throughout the public realm in colder seasons.
- e. Tree planting and landscaping is encouraged to mitigate pedestrian level wind and improve thermal comfort, especially in locations where seating is provided in parks and along streets.
- f. Where provided, tree planting and landscaping should aim to buffer noise and dust.

- See the City of Markham's Streetscape Manual for standards on street trees.



## 1.1.3 Community Safety

**Communities should be designed to promote natural surveillance while ensuring a safe and comfortable environment for walking, rolling, and cycling relative to vehicular traffic.**



**Figure 10.** Dundas Place in London, ON demonstrates a complete street with natural surveillance features.



**Figure 11.** James Canning Gardens in Toronto uses integrated lighting to illuminate a park and pedestrian walkway, thus improving community safety at night.

- a. New development should improve opportunities for natural surveillance, which will help improve the community's sense of safety by:
  - Promoting visibility to the street and ground floor animation through active frontages with glazing at street-level.
  - Providing windows and private outdoor spaces on upper levels of buildings, where possible.
  - Minimizing the impact of blank walls through public art or murals. Where blank walls are unavoidable, they are encouraged to be articulated and/or screened with planting or green features.
  - Providing outdoor seating, patios, and curbside overflow for cafes and restaurants to create street level animation that assists with natural surveillance.
- b. The exposure risk to motorized vehicles should be minimized by designing pedestrian-oriented intersections.
- c. Streets should be well-lit at dawn, dusk, and during the night to benefit the community's sense of safety. All lighting should be dark sky compliant.
- d. Sight lines should be maintained in parks and shared open spaces, as well as along the street, to avoid blind turns and areas where pedestrians could be caught by surprise.

- See the City of Markham's Accessibility Design Guidelines for standards on lighting
- See the City of Markham's Bird Friendly Guidelines on city's standards for lighting treatment.



## 1.1.4 Maintenance

**Maintain a high-quality public realm that ensures safe, equitable access to community amenities during all four seasons.**

- a. Winter maintenance, including snow and ice removal, should be provided for safe, year-round use and enjoyment of sidewalks, bike lanes, and transit stops.
- b. Maintenance of sidewalks, recreational trails and walkways ensures access is maintained without limiting users who have reduced mobility or who use strollers.
- c. Removal of garbage and dog-waste from parks and streets can ensure all users will continue to enjoy shared community amenities, while limiting the risk of attracting nuisance wildlife and insects.
- d. Where new garbage and recycling bins are needed in natural areas, they should be designed to have self-closing apertures to avoid attracting nuisance wildlife, while maintaining accessible handles for ease of use.
- e. Garbage and recycling bins should be provided at regular intervals along sidewalks, recreational trails, and walkways in areas with high pedestrian traffic to limit the amount of litter.
- f. On-going maintenance of landscaping and landscape features can help ensure sidewalks and walkways remain accessible, that sight-lines remain unimpeded and that members of the community feel comfortable in outdoor spaces.



**Figure 12.** These garbage, recycling and compost bins demonstrate self-closing apertures that can avoid attracting nuisance wildlife.



**Figure 13.** Maintained routes in Vancouver encourage active transportation modes in winter.





## 1.1.5 Play-finding + Whimsy

**Create engaging, playful, and liveable communities by incorporating whimsy in public art, building design, streetscapes, parks, and urban furniture.**

- a. Age-friendly elements should be designed at a scale that provokes the imagination and are fun, interactive, educational, musical and brightly coloured.
- b. Playful encounters such as public art or creative bus stop designs should be considered to invite interaction as part of everyday journeys and activities.
- c. Paving patterns are encouraged as engaging elements while also marking transitions between spaces such as active building edges or landscaped areas, for those who are blind, with vision impairments or low vision.
- d. In strategic locations, engaging ground and vertical surfaces are encouraged, such as murals, puzzles, games, and three-dimensional artwork.
- e. Opportunities to incorporate acoustic and/or light play in building facades, landscape features, and public art should be considered.
- f. Opportunities for temporary interventions that trigger playfulness in the community are encouraged.
- g. Where possible, walkways should be designed to have playable features and use colour to bring joy to otherwise transitional spaces.
- h. Construction hoarding should be beautified to become engaging, educational, and fun.

- See the City of Markham's Accessibility Design Guidelines for standards on street furnishings.



**Figure 14.** "21 Swings" in Montreal is part game, part street furniture and delivers all-ages fun.



## 1.1.6 Wayfinding

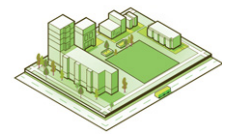
**The design of the public realm should help with intuitive wayfinding systems that reinforce a sense of place and create visual interest.**

The following guidelines should be considered in the development of a future wayfinding strategy to be implemented in key locations throughout the City, such as within intensification areas or heritage districts:

- a. Where provided in the public realm, quality wayfinding systems should indicate walking and cycling times with 5- and 10-minute walking distances to key destinations and larger open space systems.
- b. A hierarchy of space is desirable for wayfinding, with smaller, more private spaces connected to larger public spaces. Areas in the public realm should have edges or boundaries to reduce ambiguity, provide identity, assist in wayfinding.
- c. Where provided, consistent wayfinding standards should be coordinated to create predictable, but distinct, navigation.
- d. Wayfinding elements should be scaled to the human body, eye, and height, including for adults, children, and people using mobility devices. Letter sizing, colour contrast, and symbols should comply with AODA standards. Critical information should be stated in simple language and should be represented proportionally to its importance.
- e. Colour-coded systems that quickly indicate the level of difficulty or challenge associated with access are encouraged where wayfinding signage is provided in natural areas.



**Figure 15.** Centennial Bikeway in Burlington provides colour coded and directional wayfinding.



**Figure 16.** Distinctive and memorable public art provides passive way-finding, such as this example in Ketcheson Neighbourhood Park in Richmond, BC.

- f. Where possible, wayfinding signage is encouraged to be in a format that is accessible to users with different abilities, including audible and tactile information for users who are blind or have low vision, should be cane detectable and provide visual information for users who are deaf, hard of hearing or deafened.
- g. Primary walkways should provide a visual contrast between the ground and the surroundings, to support navigation of customers who have low vision.
- h. Trails, pedestrian walkways, and boardwalks should provide signage located at the beginning of the trail head and at key points of connection with the primary active transportation network.
- i. Clear lines of sight along walkways and recreational trails should be provided to aid with navigation and wayfinding.
- j. Wayfinding features should be provided on recreational trails and on walkways at regular intervals and in strategic locations, depending on the context.
- k. New communities should be designed to have intuitive navigation through:
  - Consideration for a variety and distinctiveness of building forms and colour palettes that help users impacted by dementia to more easily orient themselves.
  - Public art, or other distinctive landmarks, can provide informal wayfinding techniques.
- l. Benches that are numbered or otherwise labelled for identification are encouraged, to provide passive wayfinding.



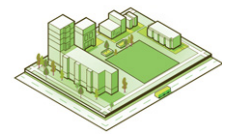
## 1.1.7 Civic Engagement

**Ensure the planning and design process is age-friendly and provides equitable opportunities for civic engagement for people of all ages and abilities living in Markham.**

- a. The planning and design of new development should ensure city initiatives and consultation processes incorporate the perspectives of children, youth, households with children and older adults.
- b. Planning and design engagement processes should leverage social media by using youth focused campaigns and messaging to share information and encourage participation.
- c. Child and youth engagement and outreach opportunities should meet children and youth 'where they are at' by making use of physical spaces where they congregate, such as schools, libraries, malls, coffee shops, recreation centres and parks.
- d. Interactive and creative engagement tools should be utilized when engaging youth in planning and design processes. This could include the use of video, photography, art, LEGO, colouring sheets and interactive activity books.
- e. Older adult engagement and outreach opportunities should meet older adults 'where they are at' by making use of physical spaces where they congregate, including seniors' clubs and centres, recreation facilities, health care hubs, libraries, assisted living facilities and older adult lifestyle communities.



**Figure 17.** Youth engagement on Markham's Strategic Plan.



- f. Accessible and creative engagement tools should be utilized when engaging older adults in planning and design processes. This could include the use of large print, non-digital methods such as paper-based surveys, interactive workbooks, and one-on-one conversations or phone calls.
- g. Communications and engagement materials should be scaled to the human body, eye, and height, including adults, children, and people using wheelchairs and should meet or exceed all AODA requirements.
- h. Engagement events should be held in age-friendly and accessible locations (e.g. with wheelchair access) that are central, familiar and located on or near major public transit routes with safe and accessible vehicle and bicycle parking.
- i. Engagement events should be designed to be welcoming to as many participants as possible, with special consideration given to the time(s) of the events, the provision of childcare and/or child friendly activities, as well as offering asynchronous opportunities to engage on the same material (online).
- j. Communications and engagement materials should be highly-graphic and written in plain language with jargon-free text for those with language and/or literacy barriers to participation.
- k. Construction hoarding should provide opportunities for passive engagement with the city as an educational tool and where possible, a participatory tool with interactive elements.



**Figure 18.** Youth engagement using LEGO.



**Figure 19.** Children's engagement using colouring and activity sheets.



## 1.2 Mobility and Connectivity

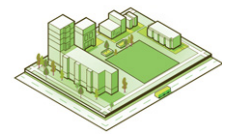
**Design mobility networks that encourage active transportation for all ages and abilities with connections that provide universal access to community services and facilities.**

Limited mobility options may result in difficulty accessing employment, education, healthcare, commercial amenities, and other community services. Traditionally, the users who most often struggle to move freely around their communities are children and youth, older adults, those who lack access to a personal vehicle, and members of the community who may have a disability that reduces their physical mobility.

The Guidelines in this section aim to improve transportation equity for all users by providing streets that are walkable and safe and by improving access to public transit, accessible parking, recreational trails, and micro-mobility options.



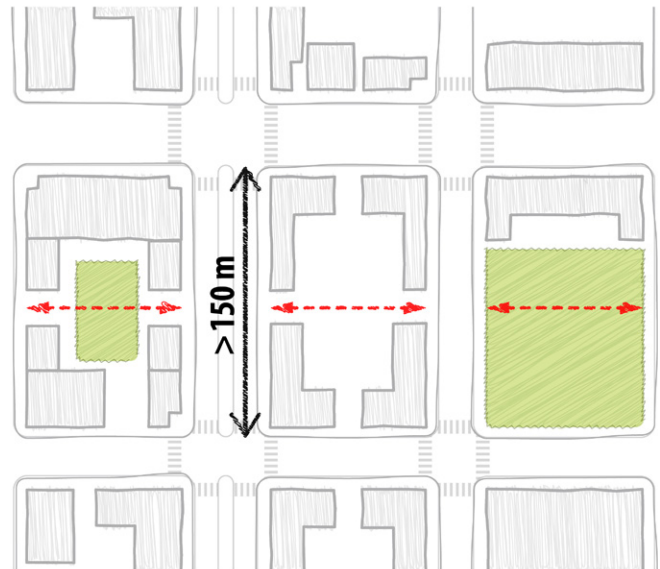
**Figure 20.** Trillium Park and William G. Davis Trail in Toronto.



## 1.2.1 Block and Street Network

### Design street networks to be safe and walkable with blocks that are porous for pedestrians and cyclists.

- a. Complete streets should be designed that cater to the needs and comfort of all users, including pedestrians, cyclists, and persons with disabilities.
- b. Where possible, in new development areas, block sizes should be designed to be walkable, and where possible, should not exceed 150 metres in length. Where blocks greater than 150 metres in length are unavoidable, there should be at least one mid-block pedestrian connection.
- c. When retrofitting existing streets and blocks, new mid-block pedestrian connections with appropriate crossing facilities are encouraged to improve walkability, or to address pedestrian desire lines where appropriate.
- d. If warranted, in new development areas, controlled pedestrian crossings should be provided at least every 200 metres along collector roads, either at mid-block locations or at intersections.
- e. Where provided on private property, mews and woonerfs should prioritize pedestrians through varied pavement marking applications, landscaping, bollards, and where possible, varied surface materials.
- f. Traffic calming strategies, such as narrowed travel lanes, should be considered when designing street networks.
- g. Where possible, accessible sidewalks, multi-use paths, trails and bicycle networks should connect to destinations and follow key pedestrian routes.



**Figure 21.** Mid-block pedestrian connections should be provided when blocks are greater than 150 metres in length.



**Figure 22.** This multi-building development in North York provided a direct pedestrian connection through the block to improve walkability.



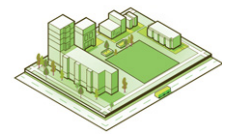


**Figure 23.** This pedestrian mews in Toronto provides access to townhouse units while providing a safe neighbourhood connection for pedestrians.

- h. Where appropriate, pedestrian-only streets are encouraged that create more local dedicated space for kids to play and spend time, while maintaining emergency vehicle access.
- i. Where possible, pedestrian priority streets should calm traffic to create a safe environment for everyday socializing.
- j. Where appropriate, reduced-speed zones should be considered in residential neighbourhoods and around schools, hospitals, and other destinations with high volumes of children and older adults to improve safety and encourage active transportation.
- k. Where feasible, opportunities for car-free days or other temporary street closures should be explored in partnership with local communities.

- See the City of Markham's Built Form, Height and Massing Study Built Form Principles for standards on mid-block connections and block lengths.
- See Building Markham's' Future Together 2020-2023 Strategic Plan and the City of Markham's Integrated Leisure Master Plan for additional directions to the planning, design and achievement of vibrant neighbourhoods and complete communities.





## 1.2.2 Sidewalks

**Safe, accessible sidewalks are encouraged on both sides of the street in all new communities, and where possible in existing neighbourhoods.**

- a. Sidewalks on streets with high pedestrian volumes should be proportionately wider and separated from traffic with a sufficient boulevard and buffering.
- b. An unobstructed clear width for pedestrian movement of 1.8 metres is recommended in low-density residential areas. A minimum clear width of 2.4 metres is recommended in residential settings on streets with higher levels of pedestrian traffic.
- c. In downtowns, school zones, or commercial areas with heavy pedestrian volumes, an unobstructed clear width for pedestrian movement of at least 2.4 metres is recommended to ensure there is space for users of mobility devices or strollers to comfortably pass one another. A clear width for pedestrian movement of at least 4.5 metres is recommended on primary retail streets and on streets near major transit stations or community facilities.
- d. Sidewalks should have limited changes in level and gaps in surfaces. Sidewalks intersecting with streets should have curb cuts or rolled curbs to support wheelchair, walker, stroller and scooter accessibility.

- See the City of Markham's Accessibility Design Guidelines for standards on curb design and clear widths.
- See the City of Markham's Engineering Standards for current standard sidewalk clear widths.



**Figure 24.** Sidewalks with trees and landscaping, like Simcoe Promenade in Downtown Markham, provide more comfortable walking environments.

## 1.2.3 Pedestrian Crossings

**Design pedestrian crossovers and pedestrian crossings at signalized intersections to be well-lit, with non-slip markings and audible and vibro-tactile cues.**

- a. If warranted, controlled pedestrian crossings should be provided at least every 200 metres on local and collector streets to ensure a permeable walking network.
- b. Crossing distances should be minimized through the application of tighter corner radii, narrowed travel lanes, and limited turn lanes.
- c. Where provided, a pedestrian crosswalk should be at least 2.5 metres wide, or as wide as the sidewalk it is connected to.
- d. Where appropriate, consider providing refuge islands at intersections consisting of more than 4 lanes to effectively reduce the crossing distance for users who need more time to safely cross the street.
- e. Where provided, refuge islands should be designed to have a waiting area that uses contrasting colours from the surrounding environment.
- f. Accessible pedestrian signals should provide audible and vibro-tactile cues to help persons with low or no vision know when they have the right-of-way to cross the street.
- g. Provide adequate pedestrian signal crossing times at marked crosswalks. Required crossing speeds should be 1.0 m/s, however reduced to 0.8 m/s in areas frequented by large numbers of older adults or young children.
- h. Where appropriate, tactile features or other distinctive materials should help to visually and tactilely distinguish the locations of pedestrian crossings.
- i. Pedestrian lighting, reflective crossing signs, and reflective surface markings should be provided to increase visibility of crosswalks during low-light hours and reduced daylight hours in winter, especially in school zones and areas with large numbers of older adults and children.
- j. All crosswalks should be designed with non-slip markings.

- See City of Markham's Accessibility Design Guidelines for city standards on slopes and pedestrian signals.



**Figure 25.** This refuge island in New York helps to shorten the crossing distance while providing a place to rest.





## 1.2.4 Parking

**Surface parking lots should be designed to be safe, accessible, and be shared to complement age-friendly uses in the community.**

- The use of 'limited mobility' parking is encouraged with clear signage to complement the supply of accessible parking spaces.
- Where appropriate, opportunities to co-locate facilities for shared use parking is recommended, such as for schools, community centres, and parks.
- Optimizing the shared use of parking by matching complimentary uses with the different daily routines of users should be considered.
- Where surface parking is provided, pedestrian walkways should be provided that are clearly marked, protected, and well-lit with rest areas included at regular intervals along the walkway to entrances and exits of the building.

- See the City of Markham's Comprehensive Zoning By-Law for standards on the provision for shared parking.
- See the City of Markham's Accessibility Design Guidelines for standards on parking and exterior paths of travel.



**Figure 26.** Feeling safe and oriented are essential in surface parking lots, such as this example in San Diego that provides seating, lighting, and landscaping.



**Figure 27.** Family parking stalls, such as this example at an IKEA, help support households with children.

## 1.2.5 Cycling and Micro-mobility

**A network for cycling and micro-mobility that is safe and comfortable should be designed to provide access throughout the City and to key age-friendly destinations.**

- The network should be designed to connect safe routes to key child, youth and senior-focused destinations.
- Where appropriate, facilities should be physically separated and protected from pedestrian walkways, vehicular lanes and parking to minimize risks and provide a comfortable experience for all users.
- Safe and secure parking should be provided at bus stops and other transit connections, as well as at all schools and community facilities.
- Parking should be provided in areas of high-visibility and high pedestrian traffic to ensure natural surveillance to deter bike theft.

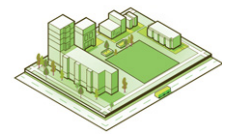


**Figure 28.** Scooter charging stations in Austin, Texas.



**Figure 29.** A cycling roundabout is playful while reducing the risk of accidents in Montreal.





- e. Where multi-use paths or cycle tracks intersect with an on-street cycling facility, they should be accessible by a curb-cut and ramp to ensure barrier-free access for users.
- f. Where appropriate, material and colour surface distinction should be considered in transitional areas to passively cue to a reduction in speeds.
- g. Positive drainage from any path surface should be carefully considered in the design phase. Pooled or standing water represents a danger to users at all times, and especially on curves or turns.
- h. Bicycle access ramps, also known as runnels, should be installed on public stairs where a ramp is not feasible.
- i. Where feasible, bicycle repair stations should be located at recreational trail heads as well as in proximity to schools and other community facilities.
- j. Opportunities to re-purpose underutilized spaces within surface parking lots and vehicular lanes should be explored to enhance the pedestrian environment and support active transportation.
- k. Shared facilities should have the requisite signage and pavement markings to provide proper guidance and separation for cyclists and pedestrians using the facility.

- See the City of Markham's Accessibility Design Guidelines for standards on slopes.
- See the City's Active Transportation Master Plan for standards on cycling facilities.

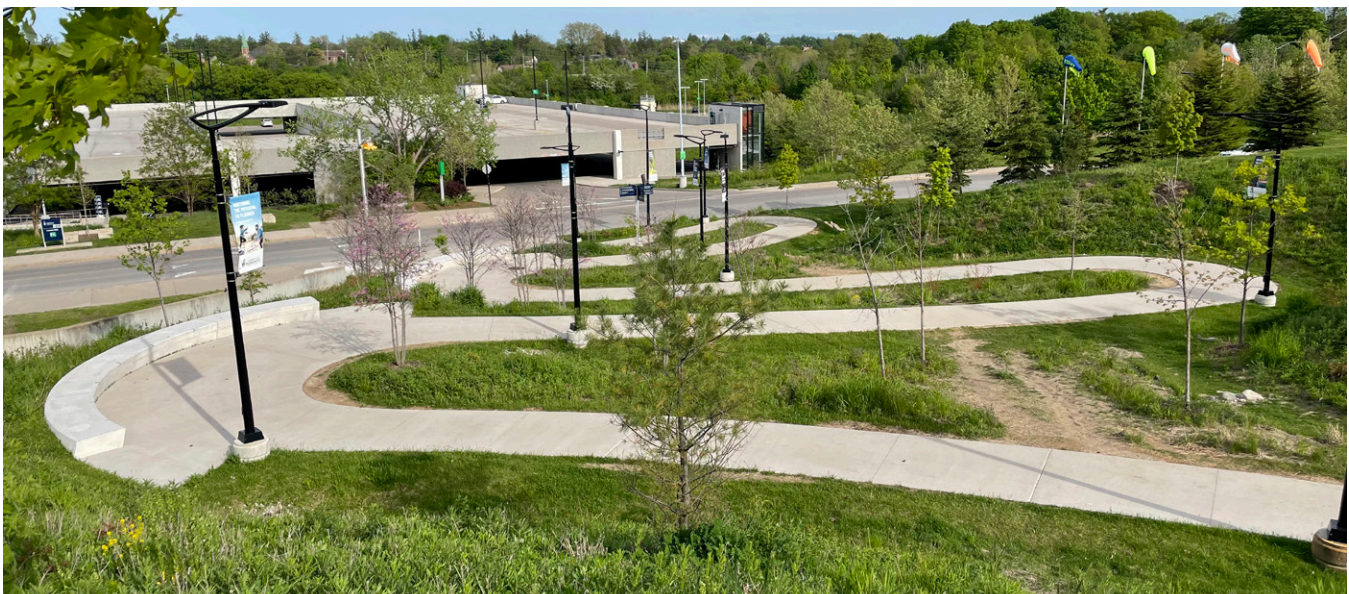


**Figure 30.** This intervention in the roadway on Shaw Street in Toronto improved safety for cyclists while also calming traffic.

## 1.2.6 Recreational Trails & Walkways

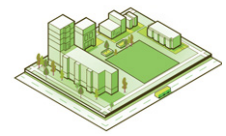
**Trails and walkways should be barrier-free and offer places to rest for older adults, young children and people with mobility devices.**

- a. Multi-use trail surfaces should be no less than 3 metres in width to provide adequate space for bi-directional travel. Larger widths are encouraged, and smaller widths should only be considered when no other alternative is viable based on existing site constraints.
- b. Trails and walkways should provide surfaces that are level, firm, stable, and slip-resistant with pavement markings, where appropriate, to provide guidance for bi-directional travel.
- c. Where paths of travel to building entrances and exits are greater than 30 metres, walkways are recommended to provide rest areas 30 metres apart, where possible.
- d. Rest areas should be provided at regular intervals along recreational trails and at more frequent intervals along walkways within parks.
- e. Positive drainage from the path surface should be carefully considered in the design of recreational trails, walkways, and multi-use paths. The slope of trails and walkways up to 3% is desirable for drainage, as areas where water pools will present an obstacle for users in mobility devices or users with reduced mobility who are unable to manoeuvre around pooled water. Slopes greater than 5% should be avoided as ice and slipping hazards can become an issue.
- f. Detectable warning surfaces should be included in designs that are cane-detectable and visually contrasting to indicate a pedestrian transition zone.
- g. If it is necessary to have a grate in a trail or walkway, consideration should be given to the spacing of grate opening in the direction of travel to not provide a hazard for mobility devices, bicycles, and cane tips.



**Figure 31.** This meandering path at the University of Toronto campus in Mississauga helps provide an accessible path up a steep slope.





**Figure 32.** Willingdon Linear Park in Burnaby, BC provides a spacious pedestrian walkway that is separated from traffic and travels 13 blocks.

- h. Where stairs are being designed, in conjunction with a ramp, the design of the stairs should consider whether a mid-point rest area with seating should be included.
  - i. Sudden grade changes should be signalled visually and texturally to account for users who may have reduced depth perception.
  - j. When adjacent to a sudden change of grade, handrails along trails and walkways are encouraged to help provide a visual cue to older adults and those with limited depth perception.
  - k. Pedestrian bridges and tunnels should be explored to enhance connectivity and accessibility in areas where there are major barriers such as waterways, railways or highways that limit pedestrian connectivity and neighbourhood walkability.
  - l. Where there is a desire to discourage vehicle access, bollards are preferred with adequate spacing for a mobility device to comfortably pass. Cables or chains strung across a trail or walkway present significant obstructions and should be avoided. Removable bollards should also be considered where temporary/emergency vehicle access may be necessary or desirable.
  - m. Where permitted, recreational trails and walkways should be adequately illuminated during low-light hours. Special consideration should be given to lighting strategies in areas which may impact local wildlife.
  - n. Primary trail networks should be designed to be universally accessible leading to key destinations, supplemented by secondary or tertiary routes of varying degrees of difficulty, such as steeper hiking routes or meandering gravel routes, for recreational variety.
- See the City of Markham's Accessibility Design Guidelines for city standards on slopes, rest areas and surfaces.



## 1.3 Parks and Open Spaces

Provide a variety of parks and open spaces with programming that caters to the needs of users of all ages and abilities.

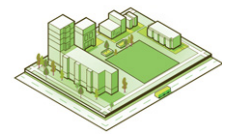
For many, parks and open spaces are an extension of the home. As a result, they play an important role in promoting a complete community by providing age-friendly amenities that reinforce the character of neighbourhoods while providing shared spaces for recreation, active living, mental health, and social gathering.

These guidelines provide direction for the design of accessible, age-friendly parks and open spaces that are thoughtfully integrated into the neighbourhood, and provide the diversity of activities required to meet the needs of residents of all ages and abilities.



Figure 33. Harper's Playground in Washington.



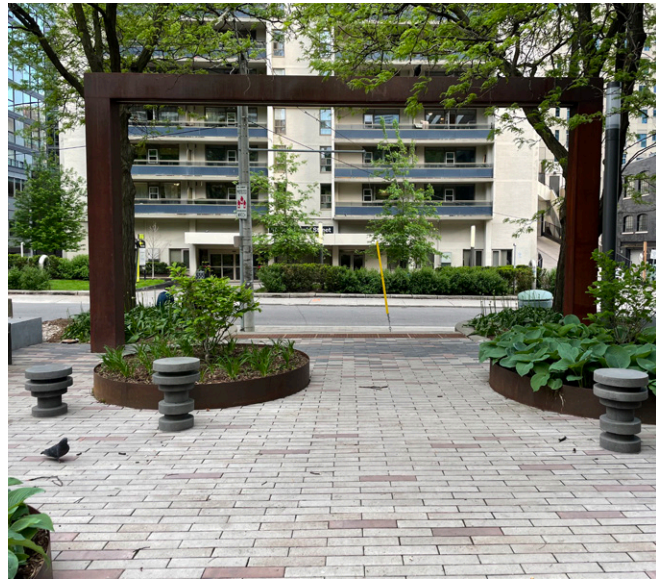


## 1.3.1 Park Access

**Provide equitable access to parks and open spaces so users of all ages and abilities can visit and linger. Ensure they are safe, welcoming, and animated.**

- New development should be sited to provide enhanced connections to existing or new parks, especially when within a 5-10 minute walking distance.
- Welcoming landscape features to parks and open spaces are encouraged to improve the pedestrian experience, provide passive way-finding, and create places to linger.
- Where appropriate, parks should provide adequate lighting at night, dawn, and dusk for users who have reduced vision. Where applicable, lighting should respect wildlife in the surrounding natural areas by utilizing down-lighting and other light reduction measures. All lighting fixtures should be dark sky compliant.
- Where provided, rest area nodes and trail heads should be designed with consideration for seating for users with different abilities, as well as wayfinding signage, bike repair stations, and refuse and recycling bins.
- Where appropriate, parks and parkettes should offer walkways that provide options for both internal circulation and connections to external walkways along the perimeter.
- Parks should be designed to be proximal to retail destinations that offer food and beverage, as a way to attract users to the park and create a more animated pedestrian realm.

- See the City of Markham's Bird Friendly Guidelines for standards on dark sky compliance.
- See Markham's Gateway Master Plan Study for additional directions on gateways.
- See Engineering Standards for additional directions on road standards.



**Figure 34.** The gateway to James Canning Gardens in Toronto is welcoming through landscaping, distinctive archways, and seating to promote socializing.



**Figure 35.** Trails Heads in Unionville provide a range of amenities that improve access to natural areas.

## 1.3.2 Park Programming

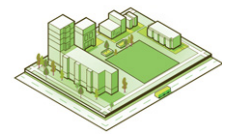
**Design parks to allow for flexibility and seasonality with a diversity of activities that cater to all ages and abilities.**

- a. Programming options in parks should provide a diversity of activities for a broad range of potential users from different age groups and different community groups.
- b. Parks and open spaces should include passive programming zones that are flexible enough to serve multiple community groups' needs, such as spaces that could facilitate markets, festivals, or performances, as well as to support temporary interventions.
- c. Spaces that support children's play activities in ways that maximize intergenerational interaction should be considered. For instance, co-locating play spaces and exercise equipment is encouraged.
- d. Communities should have access to opportunities for growing fruits and vegetables within walking distance, especially in denser urban areas where fewer residents have access to private backyards.
  - As an intergenerational activity, community gardens may be considered in parks, where appropriate.
  - Seek opportunities to provide community gardens in unused or underused open spaces, other than parks.
  - Where community gardens are planned, raised planting beds should be provided as a more age-friendly alternative for users with a reduced range of motion.



**Figure 36.** Spaces designed for gathering help promote community events like morning tai chi at Kariya Park in Mississauga.

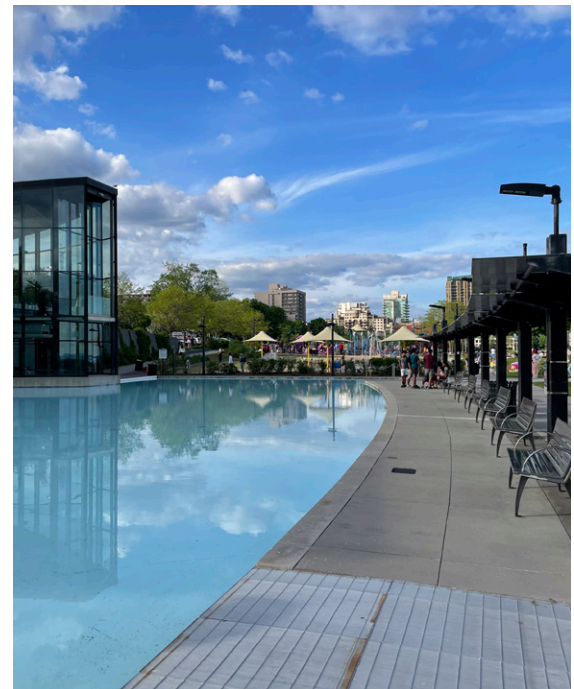




- e. Where possible, design spaces within parks to be flexible for year-round use and events.
- f. Park amenities for older adults and/or users with reduced mobility such as seating arrangements that accommodate mobility devices, are encouraged for playing games and/or socializing.
- g. Park amenities should be proactively designed to serve youth and teenagers by providing spaces for them to socialize.
- h. The provision of defensive, or hostile, design features in parks and open spaces can signal that some users are not welcomed, and such features should be avoided.
- i. Walking paths should be accessible and designed to meander or offer multiple options for travel rather than a closed oval or repetitive loop.



**Figure 37.** The Cornell Community Garden makes use of underused land and provides a community gathering space next to the Yee Hong Ho Lai Oi Wan Centre and retirement home. [Source: Cornell Community Garden](#)



**Figure 38.** Park amenities should be flexible in different seasons, like the Rotary Centennial Pond at Discovery Landing in Downtown Burlington that's also a skating rink in the winter.



- j. Where appropriate, potential locations for seasonal or temporary food vendors, such as food trucks and food carts, should be explored as an integrated use within the park to promote foot traffic and natural surveillance while attracting a greater range of users.
- k. Opportunities for structured play, games and seasonal activities in parks should be encouraged through partnerships with private and/or non-profit organizations that provide rental equipment, such as cross-country skiing, kite flying, kids' curling, and ice skating.
- l. Fenced or otherwise separated off-leash dog areas should be provided in more dense, urban settings to limit conflicts between dog-owners and other park users, while ensuring all users are still able to feel safe.



**Figure 39.** This off-leash dog area at St. Andrew's Playground Park is located next to a play area for children with appropriate fencing so all park users can enjoy the space.

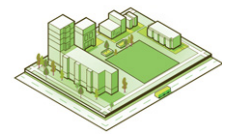


**Figure 40.** This seasonal food kiosk at Mariano Park in Chicago invites users in to the park with flexible seating while promoting natural surveillance and animation.



**Figure 41.** Community groups in Montreal help animate their parks with seasonal games, like Ski Ball.





- m. Open space programming that tends to attract youth such as skateboard parks and mountain biking zones should be purpose-built and sited to provide natural surveillance with adequate lighting and access to other park amenities.
- n. Outdoor gym equipment is encouraged in parks to ensure community members have access to exercise opportunities in all seasons.
- o. Opportunities for active park uses that are outdoors but sheltered should be considered on a case-by-case basis to increase opportunities for exercise during inclement weather. Where deemed appropriate, integrated electrical outlets should be considered in the design of shelters to support music during exercise programs or other special event requirements.



**Figure 42.** This outdoor gym in Riverdale Park East in Toronto provides an amenity that improves access to exercise equipment and promotes healthy living for all age-groups.



**Figure 43.** This skateboard park was integrated in the design of the Stanley Greene Park in North York. It is well-lit at night and afforded sight-lines from adjacent sidewalks.



## 1.3.3 Playgrounds + Play Spaces

**Play spaces should be welcoming and inclusive to a diverse range of users including people who are young and old, caregivers, and people with disabilities.**

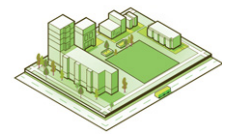
- a. Where feasible, playgrounds should be provided within an approximate 400-metre service radius in new communities, without needing to cross any major barriers such as waterways, railway lines, or highways.
- b. Playgrounds and play spaces should be designed to provide degrees of difficulty and challenge for user groups of different ages and abilities. For instance, “tot lots” should be considered for toddlers and younger children.
- c. Playground and play spaces should not be located in areas with poor air quality, and they should be sited to have adequate separation and buffering from arterial roads and highways.
- d. Generally, playground equipment that requires participation or group play should be located toward the entrance of a playground, as the presence of groups contribute to the natural surveillance of the space.
- e. Older children often require larger green spaces for participatory games. These spaces should be considered within close proximity to playground equipment in cases where families have children in various age groups.
- f. Play spaces should offer a variety of active and passive play experiences, landscape settings and opportunities to connect with others.
- g. Play spaces should provide surfaces that have impact attenuating properties for injury prevention.



**Figure 44.** Expression Swings provide an opportunity for multi-generational play.



**Figure 45.** This playful tunnel is integrated in to a stormwater wetland at Hinge Park in Vancouver.



**Figure 46.** Nature-centred play spaces help improve kids' ecological literacy.

- See the City of Markham's Accessibility Design Guidelines for standards on inclusive play spaces.

- h. Multi-generational play spaces and playground equipment are encouraged by centering design strategies around nature, inclusion, and fitness.
- i. Where possible, shelter from rain, sun, and wind should be provided in outdoor play areas and there should be seating provided for adults to facilitate supervision and socialization.
- j. Playgrounds must be designed to include accessible play equipment that serves the needs of children with disabilities.
- k. Adventure playgrounds and nature-centred playgrounds should be considered as innovative alternatives and destination amenities that also help improve children's ecological literacy.



**Figure 47.** Accessible playground equipment, such as this barrier-free merry-go-round in California helps to make play spaces inclusive for all abilities.



## 1.3.4 Public washrooms

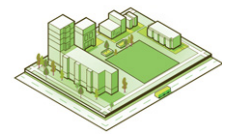
**Public washrooms should be provided in all existing and new Community Parks.**

- a. Washrooms should be fully accessible and provided in parks and open spaces that have high volumes of pedestrian traffic. Consider extending operating hours of washrooms during shoulder seasons in key locations.
- b. Where seasonal portables are provided, they should be accessible.
- c. Accessibility features should be installed in all public washrooms, such as grab bars, wide doorways, and automatic doors.
- d. Public washrooms should have baby changing stations that have sufficient clearance space on either side as well as areas for storing strollers.
- e. Where public washrooms are integrated with community facilities, outdoor entrances are encouraged to provide the community with access when the community facility is closed.



**Figure 48.** These washrooms in Stanley Greene Park in North York also provide a water station and weather protected seating.





## 1.4 Urban Furnishings

The public realm should provide amenities such as seating, weather protection, adequate lighting, and access to public wi-fi.

Amenities such as street furniture, lighting, pet friendly spaces and other pedestrian-focused amenities within the public realm are important to provide gathering and recreational space that promotes health, outdoor comfort, and a sense of community.

These guidelines provide direction for the design of flexible and accessible urban furnishings that accommodate the varying needs of residents of all ages and abilities.



**Figure 49.** Lake Wilcox Park in Richmond Hill provides a range of different seating options and weather protection features to improve comfort in outdoor spaces.



## 1.4.1 Seating

**Seating in the public realm should be designed to accommodate a variety of needs and the ergonomic comfort of all users, from children to older adults.**

- a. Seating should be located at regular intervals along blocks to provide opportunities to sit, pause, or take a rest.
- b. In addition to benches, consider integrating seating at varying heights to accommodate a range of users and abilities such as the needs of children or older adults.
- c. Where possible, seating should be designed to encourage social interaction, such as by clustering benches.
- d. Space to pull up wheelchairs, strollers, or other flexible seating next to fixed seating should be considered in the design of public spaces.
- e. Where possible, seating designs that incorporate shapes, forms, and colours that invite play and interaction with children are encouraged.
- f. Benches are encouraged to have colour contrast with the ground, to avoid becoming a hazard for users who have reduced vision.

- See the City of Markham's Accessibility Design Guidelines for standards on benches and seating.



**Figure 50.** Seating integrated into the landscape is an opportunity to provide varying heights for the needs of different users.



**Figure 51.** These playful apple stools offer seating options for children while providing public art to the community.





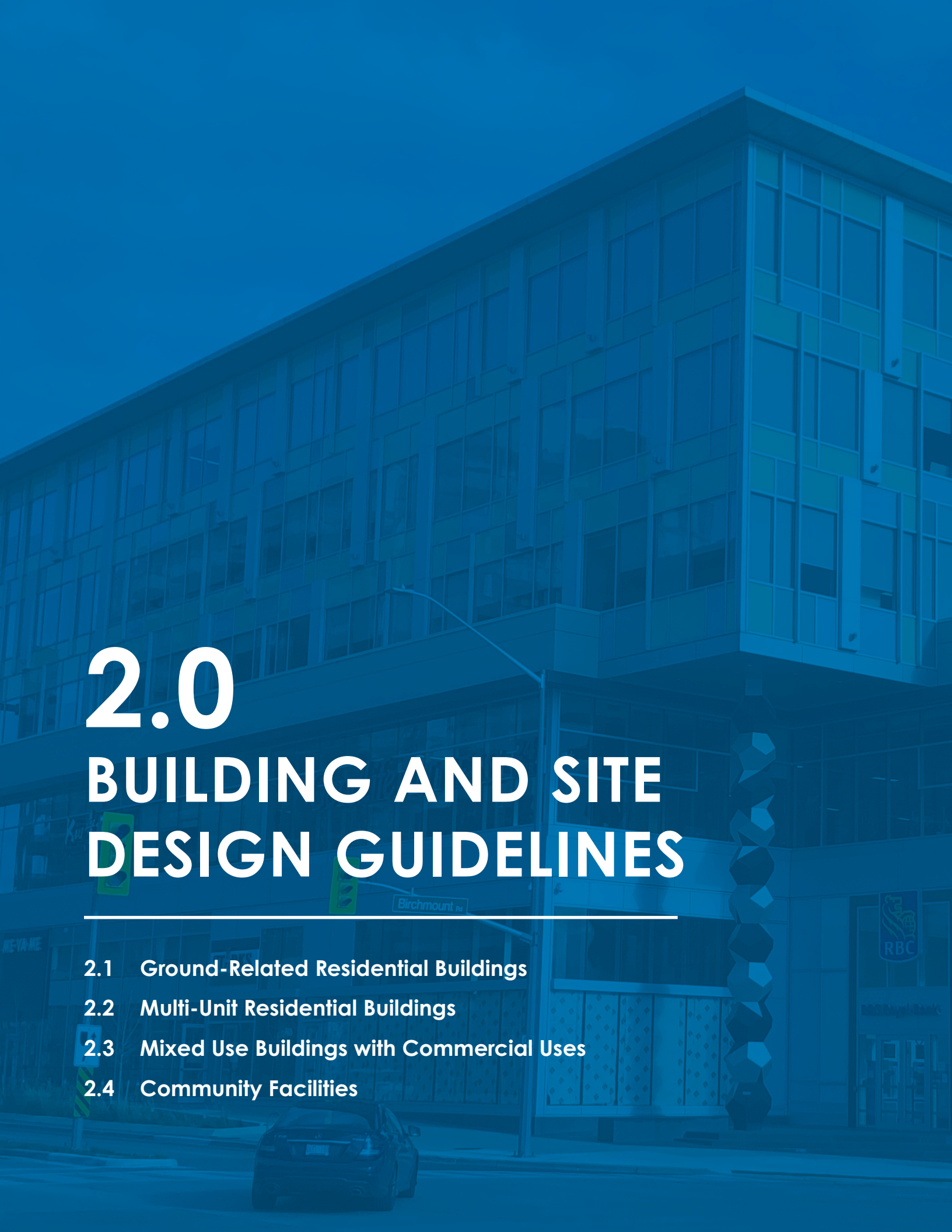
## 1.4.2 Weather Protection Features

The public realm should include structures that enable year-round use of streets and parks with weather protection strategies for the heat, sun, rain, snow, ice, and wind. Weather protection strategies can include the strategic planting of trees and other landscape elements as well as purpose-built shelters or shade sails.

- a. Weather protection features should be considered in the design of public spaces to complement other amenities such as playgrounds, picnic areas, or other zones designed for public gathering and socializing.
- b. The planting of deciduous trees south of an area to be shaded will optimize sunlight exposure in winter months and limit sun exposure in the summer months. Dense planting of trees should be avoided where summer breezes are desirable.
- c. Evergreen trees located on the north and west side of gathering areas are encouraged to help screen winter winds.



**Figure 52.** Weather protection pavilions provide refuge from inclement weather as well as areas for community gatherings and social interaction.



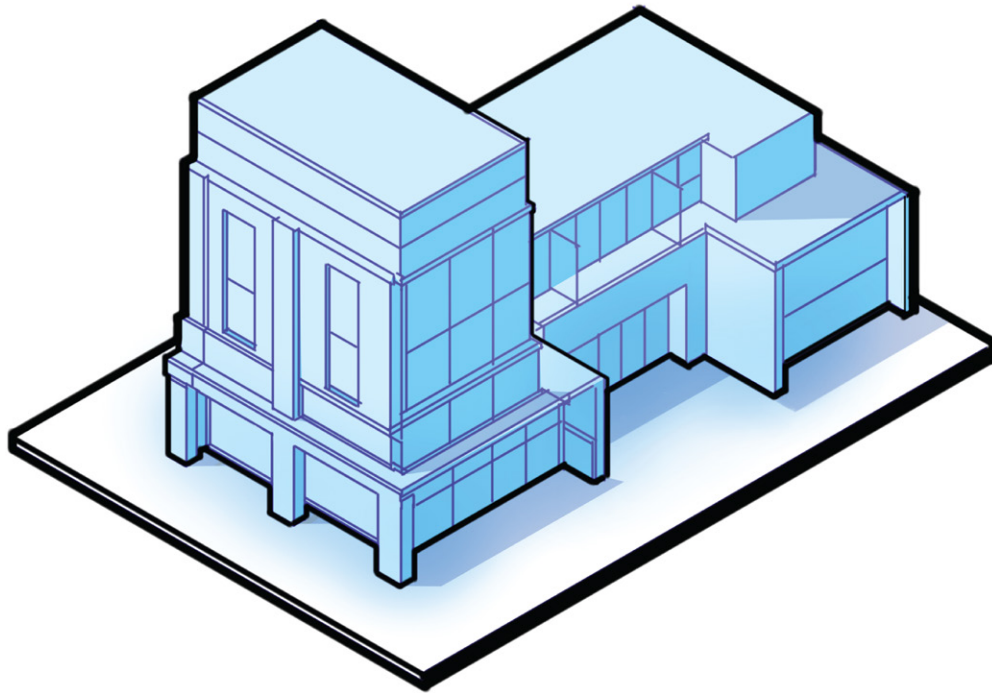
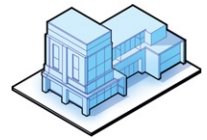
# 2.0

## BUILDING AND SITE DESIGN GUIDELINES

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- 2.1 Ground-Related Residential Buildings
- 2.2 Multi-Unit Residential Buildings
- 2.3 Mixed Use Buildings with Commercial Uses
- 2.4 Community Facilities





The building and site design guidelines provide direction on age-friendly design for new buildings, including recommendations for site design as well as building orientation and typology. These guidelines are intended to meet the changing needs of residents of all ages and abilities, including the needs of households with children and the needs of older adults who wish to age-in-place.

These guidelines are structured around four specific building types, including ground-related residential buildings, multi-unit residential buildings, mixed use residential buildings with commercial uses, and community facilities. Detailed guidelines for the interior living spaces of homes and apartments are found in Section 3.0 Unit Guidelines.

The building and site design guidelines give specific consideration for common circulation spaces, indoor and outdoor amenity spaces as well as building lobbies and entrances. These guidelines also provide direction on shared spaces such as parking facilities, storage, and utility needs in multi-unit residential buildings.

The intent of these guidelines is to promote a coordinated form of development that is accessible, cohesive and comfortable, with attention to the day-to-day experience of residents, workers and visitors. While this section provides specific design direction, these guidelines are intended to allow for flexibility and to promote creativity in the design of individual buildings, while establishing the overarching vision of Markham as an age-friendly city.

## 2.1 Ground-Related Residential Buildings

Ground-related residential buildings, including single detached homes, townhouses, duplexes, and triplexes should be designed to accommodate the needs of children and to support aging-in-place.

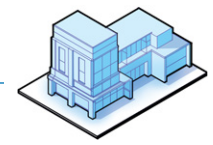
An important component of age-friendly design is ensuring that new development better supports the needs of households with children and older adults at various life stages to ensure that residents can more easily age-in-place. While many of the accommodations related to aging-in-place are addressed within the unit guidelines, there are key provisions that can be secured at the building scale to support this objective.

The following guidelines provide directions on ground-related residential buildings, which include single-detached homes, townhouses, duplexes, and triplexes that have private entrances accessed from the street.



Figure 53. These townhouses are an example of ground-related residential buildings.





## 2.1.1 Site Design & Access

**Where possible, ground-related residential buildings should be designed with no-step access to respond to reducing mobility as we age-in-place.**

- a. Where possible, a no-step, or zero threshold should be provided to the main entry of new homes. Where this is not possible, a no-step, or zero, threshold is encouraged through a garage.
- b. The width of the walkway to the entry of any unit should be sufficient to allow for an individual using a mobility device, and another person who may be providing assistance, to travel side-by-side.
- c. Site access and entryways to both the main unit and where applicable, additional accessory units, should be well-lit to avoid risks of slipping during low-light hours.
- d. Where provided, shared outdoor amenity spaces should be designed to be centrally located within the development in order to promote safety and ease of access for young children and older adults.
- e. When ground-related homes are sited on slopes, consideration should be given to providing a secondary suite that is accessed at the rear of the building. Combined with a sloping walkway to the rear, these units can be designed to have no-step access by taking advantage of grade differences.

- See the City of Markham's Accessibility Design Guidelines for standards on accessible entrances.
- See City of Markham's Comprehensive Zoning By-Law for standards on additional accessory units and minimum amenity size for shared outdoor amenity spaces.
- See Ontario Building Code for standards on exterior walks and entrances.



**Figure 54.** Gently sloping ramps can provide no-step access to grade-related homes.



**Figure 55.** This house sited on a slope is afforded a no-step access to a basement level that has high ceilings and ample light.

## 2.1.2 Building Configuration & Design

**Primary living spaces should be located on the ground level of buildings to focus all our daily needs on one level as we age-in-place.**

- a. Where possible, new homes should be designed such that primary living spaces, including the kitchen, living room, and primary bedroom and bath, are located on the ground floor.
- b. New buildings should be oriented with windows of primary living spaces facing the street to promote natural surveillance and reinforce the community's sense of security.
- c. Secondary suites are encouraged. These accessory suites support multi-generational living as well as provide opportunities for potential rental incomes that support aging-in-place.
- d. Overhangs, including verandas, porches and other partial enclosures, should be included in the design of new homes as they provide for outdoor areas for older adults with reduced mobility, vantage points for parents who are supervising young children, and weather protected social spaces during inclement weather.
- e. Where provided, porches should be wide enough to allow for seating as well as circulation for users with a mobility device.
- f. Sun rooms and other transitional or semi-outdoor spaces are encouraged in the design of new homes to provide opportunities for increased access to sunlight and views to the street for residents who have limited mobility, especially during the winter months.
- g. New buildings should provide site prep & rough-in for building systems such as HVAC, plumbing, structural, and electrical for easy tie-in of future additions and/or secondary suites which promote multi-generational households.
- h. Intentional variety is encouraged in new developments. The use of colour palettes and distinctive styles for public-facing features like facade materials, doors and balconies facilitate wayfinding for children and orientation for users with dementia and/or memory loss.

- See the City of Markham's Comprehensive Zoning By-Law for standards on additional accessory units.

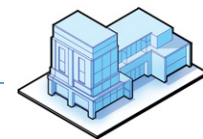


**Figure 56.** Front porches promote views and engagement with the street.



**Figure 57.** Secondary suites, like this one in Cornell, provide opportunities for multi-generational housing.





## 2.1.3 Parking

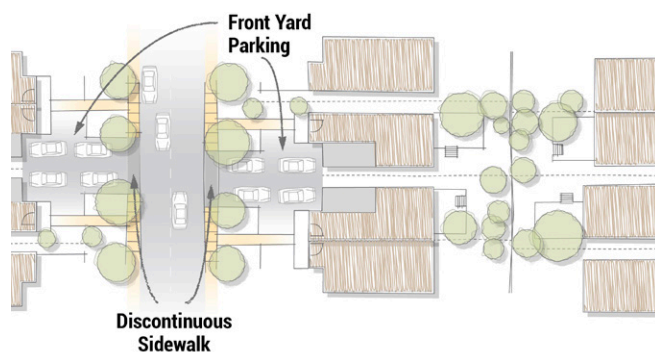
### Parking should be designed to have well-lit and weather protected access to the main living unit.

- Where possible, detached parking garages accessed from a laneway should be prioritized over attached parking garages accessed at the front. This helps to minimize conflicts between pedestrians and vehicles, to improve access to sunlight on the ground floor, and to ensure more liveable space on the ground floor for aging-in-place.
- Where provided, detached parking garages are encouraged to provide weather protected access to the main residence in order to protect from rain, snow, and ice.
- Access to parking garages and driveways should be well-lit to reduce the risk of tripping during low-light hours.
- Attached parking garages accessed at the front should be recessed relative to the main building facade to create a more friendly streetscape for younger and older residents who rely on walking, while promoting informal supervision of children and natural surveillance of the street that contributes to the community's overall sense of safety.
- Where provided, the extent of driveway areas should be minimized to reduce the amount of winter maintenance, including snow removal and de-icing.

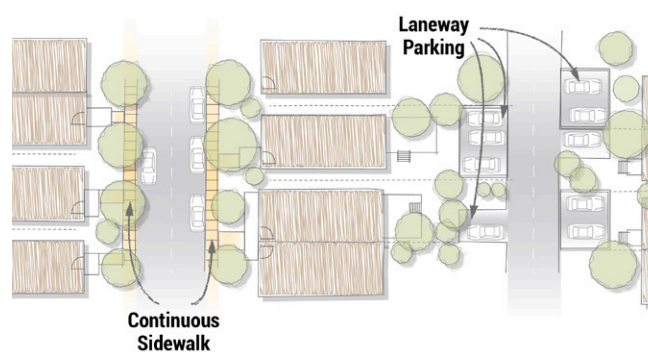


**Figure 58.** Integrated lighting on this walkway guides the way between the parking and the home's main entrance.

*Attached parking garages accessed at the front*



*Detached parking garages accessed from a laneway*



**Figure 59.** Detached parking garages accessed from a laneway help minimize conflicts between pedestrians and vehicles, improve access to sunlight on the ground floor, and to ensure more liveable space on the ground floor for aging-in-place.



## 2.2 Multi-Unit Residential Buildings

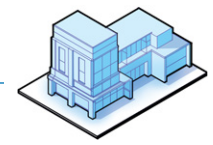
Multi-unit residential buildings, including mid-rise and high-rise buildings, should be designed to serve the needs of older adults, people with reduced mobility, as well as households with children.

To ensure that Markham's housing stock will be more dynamic and better able to respond to the needs of a changing demographic, a range of unit sizes and types will need to be considered. For instance, these guidelines encourage new development to concentrate larger units with multiple bedrooms in the lower portions of the building in order to serve households with children. To support various age groups, common indoor and outdoor amenity spaces should be universally accessible and provide programmed space that considers the needs of both older adults and kids. These guidelines also make recommendations for designing circulation spaces that enable independence for children and dignity for older adults while creating spaces for social interaction.



**Figure 60.** The Wesley Tower in Mississauga is geared toward families with a focus on 3-bedroom units and shared amenities to serve families such as a kids' zone, an indoor basketball court, a co-working space for parents working from home, and an outdoor terrace for exercise, play and group activities.





## 2.2.1 Flexible Building Design & Construction

**Design buildings that allow for future flexibility through unit organization and building systems to support the evolving needs of residents over time.**

- a. New buildings should be designed to allow for future flexibility through unit organization and construction systems. For instance, by prioritizing columns over shear walls or by providing 3-5 metre demisable partitions near the corridor if shear walls are unavoidable.
- b. Flexible units should be designed to anticipate change by locating vertical risers in the core (rather than within units) and by distributing services along each corridor.
- c. Wood-frame construction should be considered when constructing low or mid-rise apartment buildings to provide added flexibility.
- d. Moving/service elevators should be designed to be larger to accommodate building materials for unit renovations.
- e. New buildings should ensure there is sufficient power in each unit's electrical panel to allow for a change of items such as appliances, stairlifts or lighting upgrades.



**Figure 61.** Wood-frame construction affords added flexibility when designing low or mid-rise apartment buildings.

## 2.2.2 Building Configuration & Site Layout

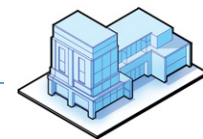
**Larger units with multiple bedrooms should be focused in the lower portions of the building to serve multi-generational households and households with children.**

- a. Multi-bedroom units with larger shared living spaces should be considered in all new developments. More than two bedrooms are encouraged to better support the needs of multi-generational households and households with children.
- b. Generally, large units should be grouped together in the lower portions of buildings to encourage socializing between kids and for convenient access to outdoor areas.
- c. Larger units geared towards multi-generational households and households with children should be clustered near indoor and outdoor amenity spaces.
- d. Grade-related residential units should be designed to have private outdoor amenity space in the form of patios or terraces that help to animate the streetscape. The interface with the public realm should consider landscaping and architectural features that provide sufficient noise mitigation, privacy but also promote social engagement.
- e. The massing and orientation of a building should be designed to maximize useable outdoor space so residents with limited mobility and households with young children have easy access to nearby open space.



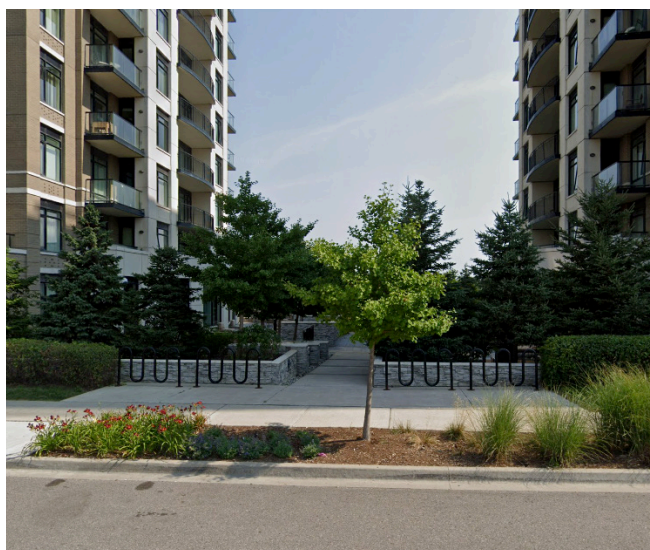
**Figure 62.** Larger units, like these units integrated at grade in the base of a multi-use development provide housing options for families as well as barrier-free, no-step access which is more easily achieved in multi-unit residential buildings.





- f. New buildings should be sited to improve the local pedestrian network. New development should provide publicly accessible mid-block pedestrian connections where needed, especially where access to critical community services and facilities that serve children, youth, and older adults are identified.
- g. Mid-rise buildings, and the podiums of tall buildings, should be designed to frame streets, parks, as well as public and private outdoor amenity spaces in order to promote community safety through natural surveillance. Where provided, larger podiums afford more flexible floor plans that are suitable for larger units for multi-generational households and households with children.
- h. Where provided, terraces or balconies should provide overlook on public parks, open spaces and outdoor amenity areas to support informal supervision of young children.
- i. Purpose-built units for wheelchair accessibility or other special needs, where provided, should be located in the lower portions of multi-unit residential buildings.
- j. Deeper floor plates are encouraged when providing wider corridors and/or additional space within the unit for expanded laundry rooms and storage areas for households requiring more space.
- k. Active frontages should be designed at-grade to animate the public realm with community spaces, retail uses, or grade-related residential units in order to promote natural surveillance and foster a sense of community safety. Community-serving uses such as health clinics, child care, grocers, and other community facilities on the ground level of multi-unit residential buildings ensure easy access to key amenities for older adults and families.
- l. Where feasible, heated walkways may be explored on streets with high pedestrian volumes to improve safety and accessibility during the winter months.

- See City of Markham's Comprehensive Zoning By-law for standards for minimum amenity size for outdoor amenity spaces.
- For grade-related residential units in multi-unit residential buildings, see Section 2.2.1. for design guidelines on ground-related residential.



**Figure 63.** The space between the buildings in this development functions as a generously landscaped mid-block pedestrian connection.



**Figure 64.** The site design for this development oriented the buildings to provide a landscaped forecourt and generous entry plaza.

## 2.2.3 Building Entrances & Lobbies

**Design lobbies and building entrances with strong visual connections to the street and with seating at indoor and outdoor waiting areas for residents unable to stand for prolonged periods.**

- a. Entrance lobbies should be designed to be welcoming with direct physical and visual connections to the street that promote community safety through natural surveillance.
- b. Lobbies should provide indoor seating and space to linger, rest and socialize, taking into consideration the various equipment that might be needed for households with children and older adults, such as areas to temporarily park strollers, mobility devices, walkers, and grocery carts without blocking the pedestrian walkway.
- c. Lay-by parking is encouraged to be in close proximity to building entrances for convenient and accessible pick-up, drop off, and deliveries for older residents and families who often rely on these services.

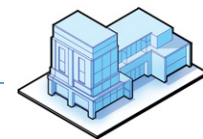


**Figure 65.** Lobby furniture should be flexible and take into account the various equipment that may be needed by families or users of mobility devices.



**Figure 66.** This lobby provides strong visual connections to the sidewalk and passenger pick-up and drop-off area with indoor seating areas.





- d. Indoor seating in lobbies should maintain sight-lines to pick-up and drop off zones so residents can comfortably wait indoors during winter months or in inclement weather.
  - e. Generally, pick-up and drop-off areas are best located in close proximity to the rear or side entrances of the building to improve the pedestrian environment and minimize conflicts between vehicles and older adults or children. Where this is the case, a thru-lobby that connects to both the primary street entrance and the pick-up and drop-off area is encouraged.
  - f. Pick-up and drop-off areas should be designed to have outdoor waiting areas with seating to accommodate residents unable to stand for prolonged periods. A range of seating types is encouraged to accommodate a variety of users, such as older adults who may have issues with rising from a seated position.
  - g. Overhangs or other weather protection features should complement seating in waiting areas at building entrances. Features should be designed to ensure full weather protection for at least two people to comfortably wait together.
  - h. Dedicated barrier-free and/or automatic power door operators are encouraged at building entrances.
  - i. Exterior walkways and highly-travelled pedestrian paths are encouraged to have snow melt systems to mitigate risks of slipping and falling.
  - j. Short-term bike and mobility scooter parking should be located near main entrances on public streets to promote natural surveillance and ease of access, as teenagers and older adults are more likely to rely on micro-mobility alternatives as their primary means of transportation.
  - k. Washrooms and/or wash-up areas are encouraged near the entrance for the convenience of older adults and children. Barrier-free standards are encouraged.
  - l. Mail rooms should consider the needs of residents who may rely on mobility devices, and mailbox heights should be located at mid-level heights to minimize the reaching distance for older adults.
- See the Ontario Building Code for standards on exterior walks and entrances.



**Figure 67.** This building entrance is well-lit, weather protected and provides higher bench seating heights suitable for older adults.



**Figure 68.** This development provides bicycle parking with clear sight lines to the seating area in the lobby for natural surveillance.

2.2.4

Common Indoor & Outdoor Amenity

Common indoor and outdoor amenity spaces should be universally accessible and provide programmed space for various age groups.

- a. Common amenity areas should be designed to be universally accessible.
- b. Where possible, common amenity areas should be planned through co-design with existing or future residents to ensure programming and facilities align with the needs of families and older residents.
- c. New multi-unit buildings should include amenity spaces for age-friendly programming, such as play spaces for children, study areas for students and teenagers, co-working spaces for parents who work from home, multi-purpose spaces for activities such as tai chi or a cooperative daycare, pet amenities, and fitness and health-focused zones. The total amenity area designed for children should be proportional to the number of large units included in a new development.
- d. Common amenity areas should be designed as open-concept to promote informal supervision of children and foster social interaction between households.
- e. All areas designed with children as the main user group, such as spaces for children's activities like arts and crafts, floor and wall materials should be durable and washable.
- f. Where possible, shared outdoor amenity spaces are encouraged to be provided at-grade and be contiguous to building entrances in order to promote safety and ease of access for young children and older adults.
- g. Dedicated barrier-free and/or automatic power door operators should be provided at the entrance of all common indoor and outdoor amenity areas.

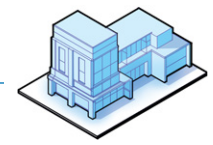


**Figure 69.** This new development is providing an interactive playroom to help make the building more family friendly.



**Figure 70.** This shared library amenity space, located within a public housing building, provides space for learning independently or collaboratively.



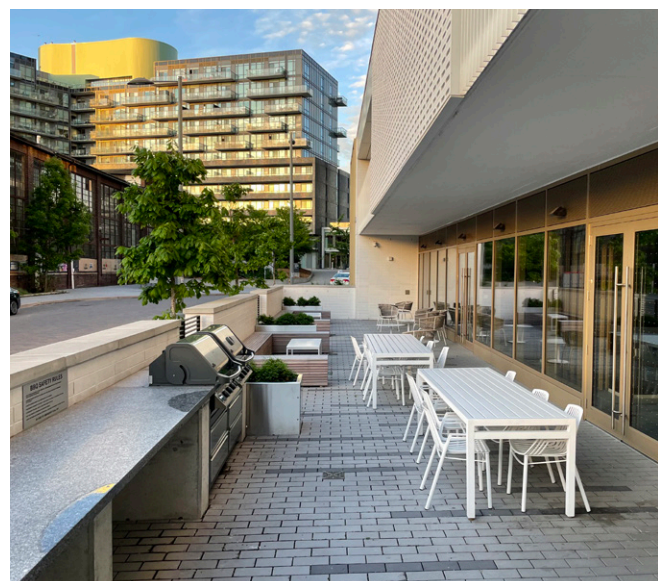


- h. Outdoor amenity spaces should be designed to provide micro-climates that mitigate winds, optimize solar exposure in the winter and access to shade in the summer so that residents with limited mobility still have comfortable year-round options for getting outdoors. Consideration should also be given to micro-climate impacts on amenity spaces from potential future development.
- i. Walking circuits and trails should be considered in the design of amenity areas to encourage active lifestyles for older adults and young children.
- j. Where party rooms or multi-purpose rooms are provided as a common indoor amenity, counters or common kitchen appliances should be universally accessible for residents who use wheelchairs or other mobility devices. Consideration should be given to installing hydraulic or other moving counter surfaces to accommodate a range of users.
- k. Flexible child-friendly features such as whimsical and playful landscape elements or play-ground equipment should be prioritized in new developments that are not within walking distance of a public playground. “Tot lots” should be considered for toddlers and younger children.
- l. Common washrooms are encouraged in amenity areas, especially those designed for children.
- m. Purpose-built pet-relief areas for dogs should help mitigate impacts on the public realm while assisting pet owners who may have reduced mobility and families with busy schedules.

- See the City of Markham’s Comprehensive Zoning By-law for standards for minimum amenity size for shared outdoor amenity spaces.



**Figure 71.** This outdoor amenity space is both a pet-relief area and dog play space, benefiting both families and older adults with reduced mobility.



**Figure 72.** Common outdoor amenity areas that are provided at-grade and contiguous with building entrances can function as both extensions of the street as well as the lobby.

## 2.2.5 Common Circulation Spaces

### Design common circulation spaces for social interaction while fostering independence for children and dignity for older adults.

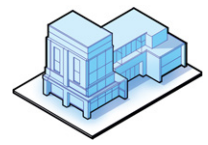
- a. New buildings should be designed to accommodate at least two elevators to ensure redundancy in case of maintenance issues. In addition, beyond Ontario Building Code (OBC) requirements, at least one elevator is encouraged to be large enough to accommodate a stretcher in a horizontal position.
- b. Where double-loaded corridors are provided, unit entrances should be staggered to increase privacy and minimize acoustic impacts for both households with children and older adults.
- c. High visibility safety features, including bird-friendly treatment and other forms of decorative or patterned etching are encouraged on fully glazed transparent doors or screens to aid residents with reduced vision.
- d. Increased light levels should be considered to emphasize areas of potential hazards such as stairs and ramps or areas with information such as signage and the location of exits.
- e. Intentional variety is encouraged. The use of colour palettes and distinctive styles for corridor-facing features like doors promote wayfinding for children and orientation for users with dementia and/or memory loss.
- f. Elevators are encouraged to:
  - Provide additional time to enter and exit the elevator safely where a high proportion of older adults or persons using mobility devices or strollers are anticipated.
  - Be designed to utilize audible, visual and operational features to enhance the experience of all users.

- See Ontario Building Code for general elevator requirements and dimensional requirement for elevator that can accommodate a stretcher.
- See the City of Markham’s Bird Friendly Guidelines for high visibility safety features.



**Figure 73.** The doors to private apartment units in this building are playfully coloured to support passive way-finding.





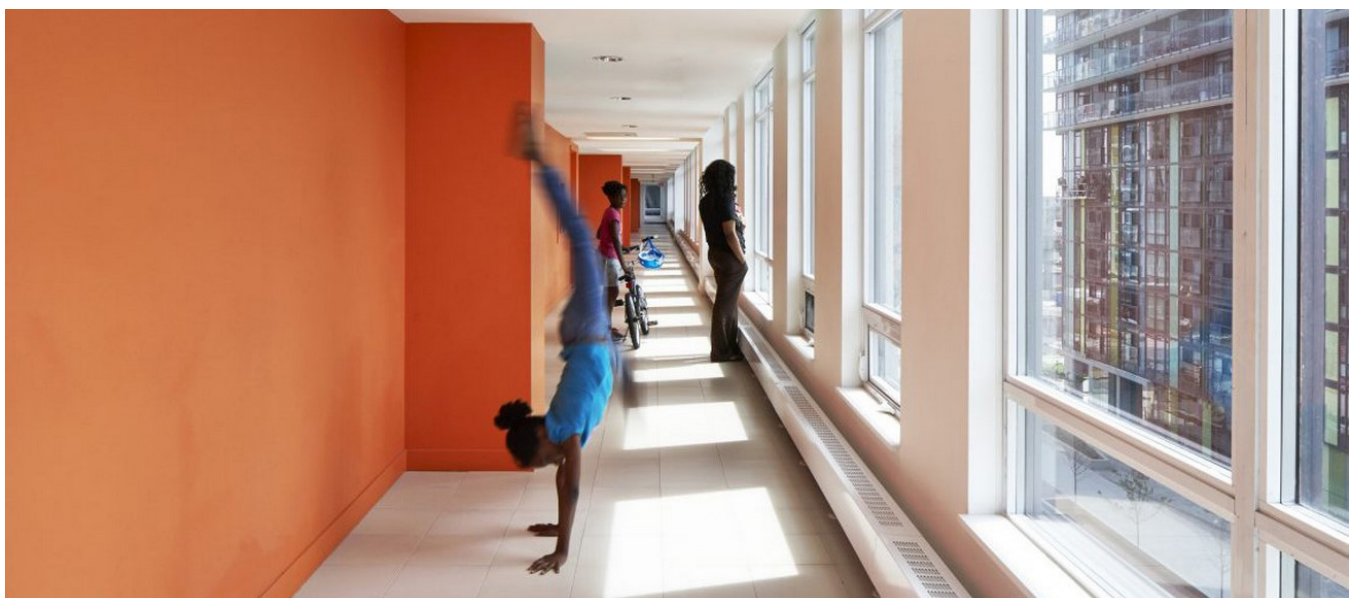
g. Common Corridors are encouraged to:

- Be designed as indoor streets to encourage opportunities for casual, social interaction for children.
- Include generous turning spaces at key decision-making points to enable residents who use mobility devices to make 360 degree turns and/or easily change direction.
- Have additional social spaces where large units are clustered and children are more likely to gather.
- Be designed with sufficient width to enable a person to comfortably travel from one place to another with a companion by their side while maintaining space for a person walking in the opposite direction to pass comfortably.
- Provide seating or rest areas in strategic locations, particularly on long paths of travel to common areas like amenity spaces.

h. Common Thresholds are encouraged to:

- Use lever type handles on doors to allow for maximum ease for users who may have limited dexterity, including young children and older adults.
- Provide wide doorways and/or openings to allow for ease of movement and passage of mobility devices and strollers.

- See Ontario Building Code for standards on barrier free paths of travel.



**Figure 74.** This development, designed with family-sized units, provides wider corridors that were naturally lit to serve as informal play spaces. Wider corridors were achieved by using a skip-stop building typology that required there to be a common corridor only on every second level.

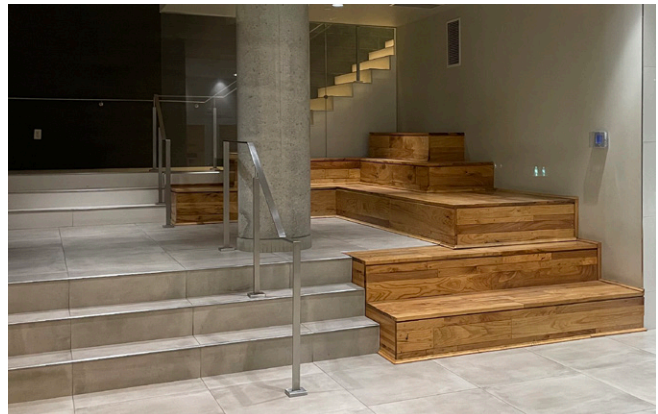
i. Common Stairs are encouraged to:

- Be well designed, spacious and well-lit, especially in storeys closer to the ground level, in base buildings, and when connecting common amenity areas. Generous common stairs also encourage households with children living on the lower floors to take the stairs, which promotes an active lifestyle. More generous common stairs promote an attractive alternative to elevators for able-bodied residents while also relieving elevator congestion.
- Integrate tactile finishes with colour contrast or distinctive patterns on nosing and leading edges of landings to demarcate level changes, for residents who may have diminished depth perception.
- Integrate more generous landings with rest areas for residents who may need moments of rest, while providing informal social spaces to foster a sense of community, designed with sufficient width to not obstruct the clear path of travel.
- Have material surfaces that are stable, firm, slip-resistant and non-glare; allowing for gentle, low risers, and long runs for maximum stability.
- Continuous handrails are encouraged on both sides of common stairs. Both handrails should be easy to grasp for either small or large hands and should extend beyond the top and bottom of the stairs.

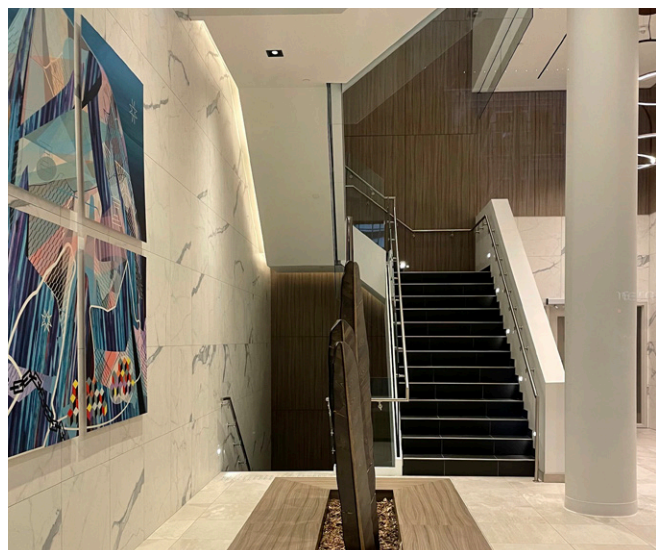
- See the Ontario Building Code for standards on handrails



**Figure 75.** Tactile features at the top of a common stairway with integrated wayfinding.

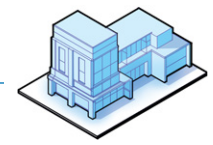


**Figure 76.** Common stairs in a residential condo building promote social interaction and lingering through integrated seating areas.



**Figure 77.** Well-lit and comfortable common stairs in the lower levels of a residential building encourages active living.





## 2.2.6 Parking Facilities

**Parking facilities should be designed to have both playful and intuitive way-finding for children and residents coping with memory loss.**

- a. Parking garages can provide disorienting environments for children as well as residents with memory loss or dementia. As a result, way-finding should be large, easily legible, and carefully considered through the use of colours, symbols and numbering.
- b. Where surface parking is provided in new developments, pedestrian walkways should be provided that are clearly marked, protected, and well-lit. Rest areas should be provided on longer paths of travel with seating designed for older adults (see section 2.4.1 Seating).
- c. Murals and other forms of artwork should be used as informal landmarks to orient residents and visitors, supporting way-finding and creating visual interest.
- d. Where feasible, sensors and smart-navigation systems should be considered as way-finding features while reducing the risk of getting lost.
- e. Higher-security parking and storage solutions for bikes and scooters should be considered:
  - In the design of parking garages.
  - In locations providing weather protection near main building entrances that afford natural surveillance.



**Figure 78.** Numbered and coloured wayfinding at Town Pavilion Parking Garage.



**Figure 79.** This parking garage in Downtown Markham provides informal way-finding and orientation.

## 2.2.7 Storage & Utility Needs

**Include convenient and secure storage for larger items such as strollers, bikes, and mobility scooters in key building locations.**

- Enclosed private spaces are encouraged for storing and recharging electric or battery-powered scooters and e-bikes.
- Wash-up rooms for bikes, pets, and strollers are encouraged.
- Secure, short-term storage space should be provided on the ground level of multi-residential buildings for daily use items like strollers, wagons, and bikes. Alternatively, short-term storage space should be considered as a design feature accessed by common corridors on each level.
- In proximity to child-focused amenity areas, additional space should be considered for storing strollers near the entrance without creating unforeseen barriers.
- All intake doors for the waste chute system should be designed to be accessible for users in wheelchairs and other mobility devices. All intake doors should also be designed with automatic, child-proof locking features.



**Figure 80.** Designated stroller parking areas help families live more comfortably in multi-unit residential buildings.

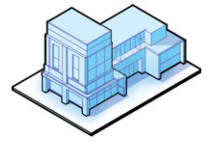


**Figure 81.** Wash-up stations help make living in smaller units much more manageable for pet owners, and households with children.



**Figure 82.** This residential building provides secure storage and parking areas for bikes and mobility scooters.





## 2.3 Mixed Use Buildings with Commercial Uses

Local shops and services should be designed to prioritize the pedestrian experience with no-step access and animated frontages with strong visual connections between interior and exterior spaces that promote community safety.

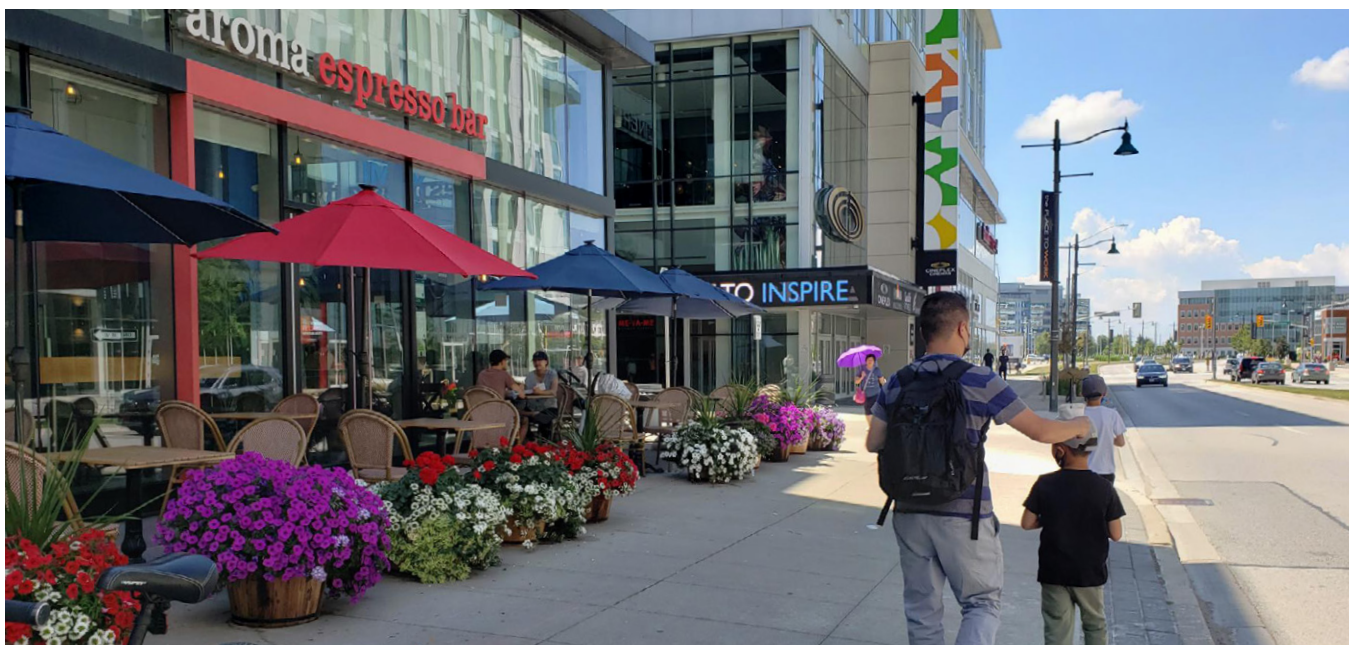
These guidelines provide direction for the age-friendly design of commercial uses that are accessible and visible from the street. Commercial uses, when part of mixed use developments, contribute to active and animated street life that encourages chance encounters, social connectivity and helps foster a sense of community.



**Figure 83.** This image of a restaurant located at the ground floor of a building demonstrates how commercial uses help animate the public realm.

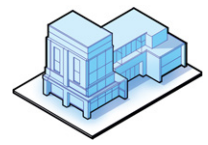


- a. Entrances to retail units should be accessed directly from adjacent public sidewalks to prioritize walkability while minimizing conflicts between vehicles and older adults or children.
- b. A no-step, or zero, threshold should be provided to the main entry of new commercial spaces to improve access for older adults and groups who use mobility devices or strollers.
- c. Barrier-free parking facilities that serve commercial uses should be located to minimize walking distance to the main entrance of the building.
- d. Commercial spaces should be designed with continuous active frontages without blank walls in order to support street life and natural surveillance.
- e. Where appropriate, building setbacks should account for expanded sidewalks and/or entry plazas that can be used for seating areas, landscaping, or planters and seasonally for active uses such as patios that support the retail streetscape, promote community safety and provide additional rest areas for people with reduced mobility.
- f. Glazing larger than 2 sq.m should have high-visibility safety features, such as a bird-friendly treatment, which also helps enhance the visibility of glass and prevent accidents for older adults, children, and users with reduced vision.
- g. Where provided, ramps should be integrated into the design of the building and landscape as a more accessible alternative to steps. Ramps should be designed with sufficient width to enable a person to comfortably travel from one place to another with a companion by their side.



**Figure 84.** These commercial uses located at the street level of a mixed use development in Markham Centre help contribute to an animated and walkable retail environment as well as natural surveillance.





- h. Where more fine-grained retail character is desired at-grade, large format commercial spaces, such as grocery stores, are encouraged on the second storey, with vertical circulation provided through elevators and escalators. Second storey commercial spaces should provide a visual connection to the street, and where possible, overlook on adjacent parks or open spaces to support community safety through natural surveillance.
- i. Vacant commercial spaces should consider short-term adaptive use by community groups, especially in new neighbourhoods or emerging development areas where the market potential for the commercial space has not yet materialized.

- See the Ontario Building Code for standards on barrier-free paths of travel; treads and risers; ramp slope; and access to parking areas
- See Markham's Bird Friendly Design Guidelines



**Figure 85.** This bird-friendly treatment at the Markham Pan Am Centre is also helpful for retail uses with expansive glazing to reduce the risk of injuries for older adults and children.



**Figure 86.** A supermarket in this multi-use development is located on the second level of the building, while smaller commercial units and the residential lobby are accessed from the street.



**Figure 87.** This mixed use development in Unionville is setback further from the street to afford an expanded sidewalk for additional landscaping and seating.

## 2.4 Community Facilities

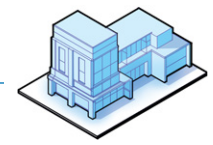
**Community facilities, including community and recreation centres, public libraries, child care, schools, and health clinics should be designed to be universally accessible for all ages and abilities.**

- a. Community facilities should be designed to frame the street as well as adjacent parks or open spaces, through expanded sidewalks, forecourts and entry plazas. There should be no parking between the primary entrance and the sidewalk to ensure safe access with as few obstacles as possible.
- b. In high density urban environments, community facilities may be planned to be co-located on new development sites to minimize walking distance for children and older adults.
- c. When co-located on the same site as a multi-unit residential building, community facilities should be designed to provide an active frontage with adequate glazing at-grade to promote community safety through natural surveillance. Where not possible to be located entirely on the ground floor, community facilities can also be located on the second level with a visual connection to the street and a prominent entrance at the street level and adjacent parks or open spaces.
- d. Community facilities should be designed to maintain flexible and adaptable building layouts to allow for future retrofit and/or expanded facilities to accommodate changing demographics and the evolving needs of residents.

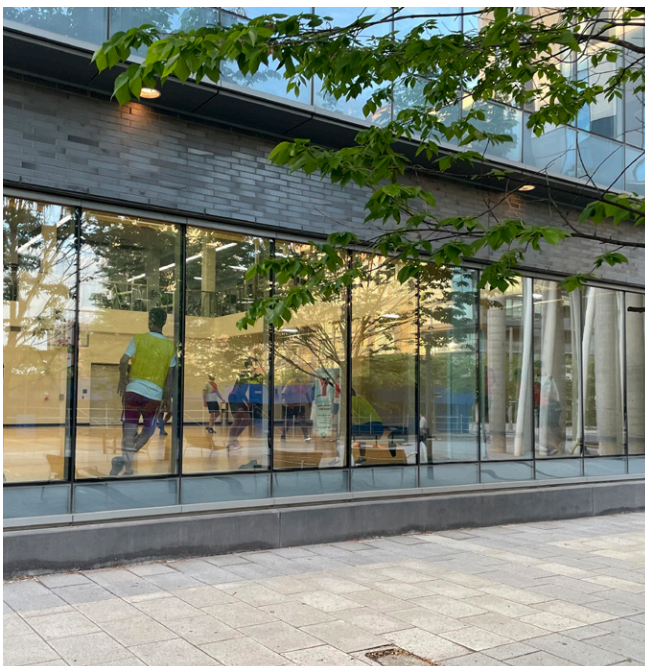


**Figure 88.** An animated edge with seating, weather protection, bicycle parking, and recreational facilities at Aaniin Community Centre.

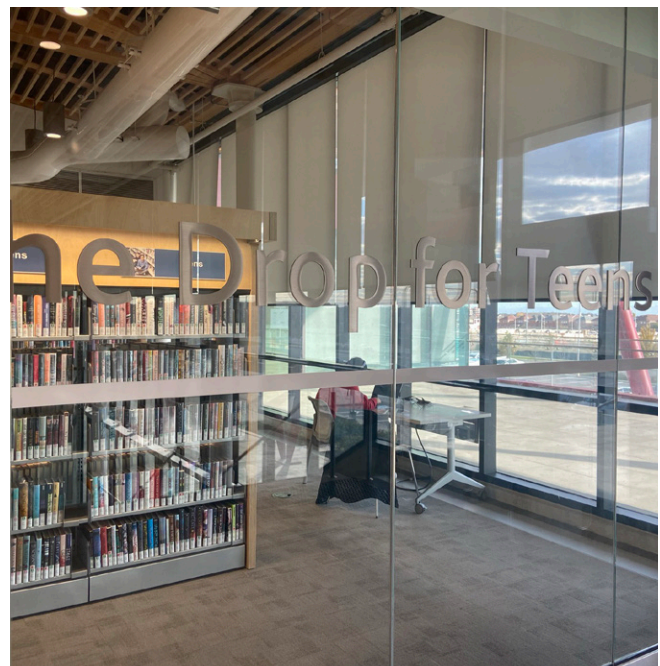




- e. Primary entrances should be designed to be clearly marked and to minimize walking distances to parking facilities, transit stations as well as key pedestrian and cycling routes.
  - f. Consider how community facilities can be co-located with schools to cater to a broad range of age groups including children and older adults. For instance, schools and other facilities that have restricted use during certain hours should consider entering into shared use agreements for expanded public access during off-hours. Shared use agreements should have a time/use plan with detailed maintenance requirements and should be developed early on in order to guarantee operational success.
  - g. Pick-up and drop-off areas are encouraged at the side or rear of the building, or underground in order to minimize negative impacts on the public realm and potential conflicts between vehicles and older adults or children.
  - h. Temporary parking areas for strollers and wheelchairs should be included within community facilities near the building entrance.
  - i. Where appropriate and sustainable, heated outdoor areas for community facilities should be provided to maximize use during the year.
  - j. Programmed spaces in recreation centres and libraries should account for all ages and user groups, including spaces designed for:
    - Older adults' programming such as tai chi,
    - Teenagers, such as indoor and outdoor spaces with wi-fi for students to study.
    - Children, such as indoor play spaces that provide parents and young children a place to gather during the winter months.
- See the City of Markham's Accessibility Design Guidelines for standards on recreational and community facilities.



**Figure 89.** The Cherry Street YMCA in Toronto provides visual connections from the street with the programming taking place indoors.



**Figure 90.** 'The Drop for Teens' is an example of youth-targeted community programming at the Aaniin Community Centre.



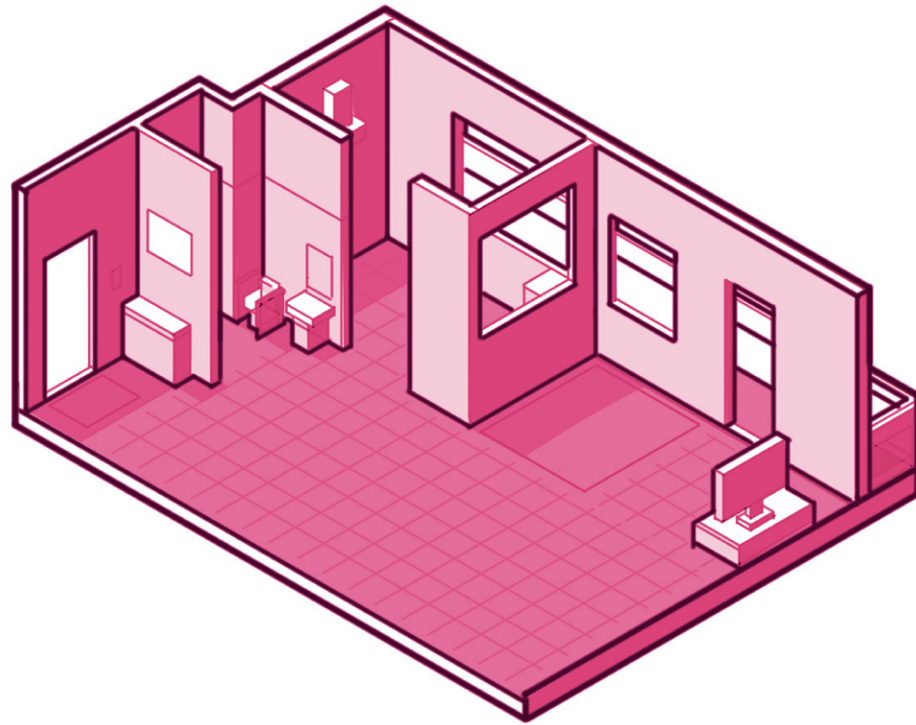
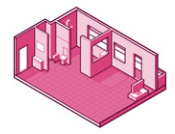
# 3.0

## UNIT GUIDELINES

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- 3.1 Interior Layout
- 3.2 Interior Design & Finishes
- 3.3 Unit Circulation





Every aspect of your daily routine as you move through your home is an opportunity for age-friendly design. Crossing the threshold of your home, climbing stairs to retrieve your glasses, having a shower, cooking a meal with your family, and going to bed for the night. These guidelines address the many ways in which interior adjustments to the unit layout, fixtures, and finishes can assist in providing comfortable, efficient, and supportive unit design - allowing people of all ages and abilities to live in their homes as they move through different cycles of life.

The guidelines aim to reflect the day-to-day experiences of residents while affording flexibility to adapt to the changing needs of households over time, including strategies for future-proofing new construction in a way that minimizes the cost of retrofits at a later date, while ensuring that residents are able to comfortably age-in-place and that units are able to support multi-generational configurations if desired.

These guidelines focus specifically on the interior living spaces of units for both ground-related residential buildings as well as multi-unit residential buildings. Guidelines that focus on site design and access, building orientation, and parking can be found Section 2.0 Building and Site Design Guidelines.

These guidelines are intended to create more flexibility in market units during design and construction, and to provide direction for retrofits by home owners as their needs change. These guidelines are not intended to require all units be custom built for residents with specific long term disabilities.

While the guidelines are intended to be holistic, they have not been reviewed by health care professionals and the recommendations in these guidelines are not intended to replace guidance from a health care professional. Members of the public should seek advice from appropriate health care professionals and/or building industry professionals to assess the required retrofits to their homes and units, as needed.

## 3.1 Interior Layout

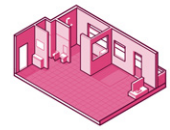
The interior layout of residential units should be flexible enough to account for the needs of households with both children and older adults.

The following guidelines provide direction on the design and planning of interior living spaces in residential units, whether in ground-related residential buildings or multi-unit residential buildings. A unit's interior organization and layout can impact its livability by considering spatial adjacencies, paths of travel, and how different spaces are used. Design and construction considerations can also impact how easily a unit can adapt to the changing needs of residents over time.



**Figure 91.** This open concept apartment provides ample light and opportunities for passive supervision of young children.

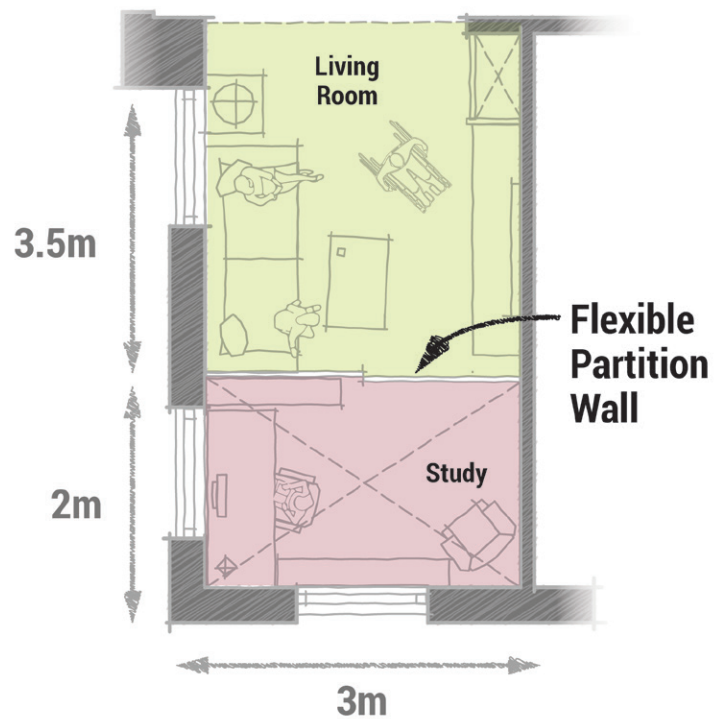
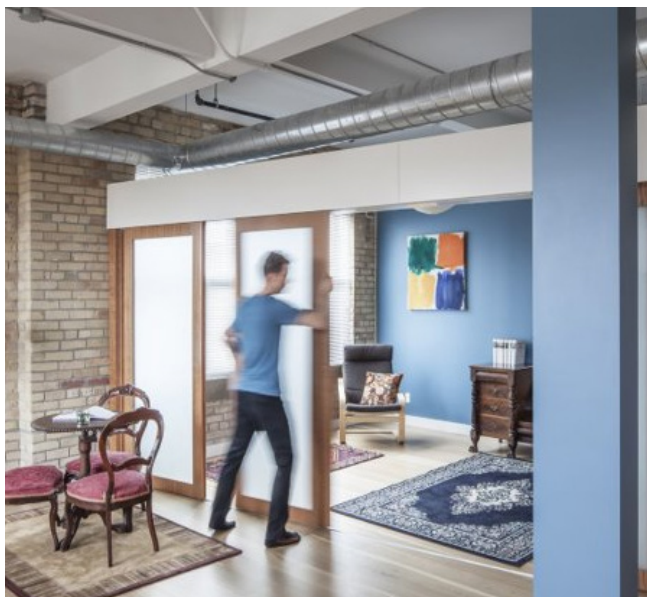




### 3.1.1 Flexibility & Planning for Future Change

Units should be flexible and adaptable with features that afford layout changes to fit the evolving needs of residents over time.

- Open concept floor plans with few obstructions are encouraged as they afford the greatest flexibility.
- The placement of interior structural walls should be carefully considered to not limit future retrofits or expansions of residential units. Likewise, flexible partition walls are encouraged to allow for future adaptation of units, including combining units in multi-unit residential buildings to accommodate growing or multi-generational households. This also allows for units to be reduced in the case of shrinking families
- Unit layouts should be planned such that walls designed to be removable don't interfere with building systems (i.e. HVAC, plumbing, electrical).
- Where appropriate, units should be designed to be adaptable to resident's daily needs by using integrated or fold-away furniture for easy space modifications and/or movable walls to provide additional privacy
- Where possible, multi-level units should have a "flex" room, such as a study or den, on the main floor which could become an accessible bedroom in the future for aging-in-place. Building systems (i.e. HVAC, plumbing, electrical) should be designed to allow for a change of use from a flex space to a bedroom.



**Figure 92.** Flexible partition walls allow the user to adapt the space to their changing needs throughout the day, benefiting multi-generational households and households who require added privacy such as parents who work from home.

## 3.1.2 Kitchens

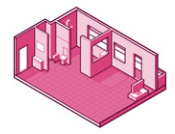
**Kitchens should be designed to anticipate the needs of aging residents, including adjustable fixtures, shallow sinks, ample storage at mid-level heights, and adequate space for counter-level appliances.**

- a. The design of kitchens should allow individuals, who may develop the need for mobility devices, to manoeuvre around millwork, work surfaces, sinks and appliances with ease.
- b. Countertops and/or kitchen islands that have two heights are encouraged; one height is for food preparation while standing, and another height is for dining as well as an accessible alternative. Pull out, or flip up, countertops should be considered for added flexibility while providing options for extendable dining space for visitors.
- c. Shallow sinks are encouraged to allow for ease of use for residents with diminished reach as they age.
- d. The sink, stove, and refrigerator should be located close to each other.
- e. Appliances should be assessed for age-friendliness, such as front-mounted control on the cook top and easily accessible storage in the refrigerator door.
- f. Under cabinet lighting is strongly encouraged to provide illuminated working surfaces that will reduce the risk of accidents for residents with reduced vision.



**Figure 93.** Multi-height countertops or kitchen islands are beneficial for older adults as mobility is reduced, but also practically provides added flexibility and additional seating for other households.





- g. The design of countertops should anticipate where typical appliances will be placed to limit the reach required for aging residents, leaving adequate space for added flexibility. The location of heavy counter top appliances like microwaves should be considered but are preferred at, or near, counter height, such as mounted under the cupboards.
- h. Ample storage at mid-level heights is encouraged, such as pull-out pantries and large drawers installed on full-extension glides beneath the counter top for maximum access.
- i. Countertops should be easy to clean, have rounded edges, and have high colour contrast with appliances to aid users with reduced vision.
- j. Ergonomic and age-friendly hardware is encouraged, such as faucets that are hands-free, adjustable, and with temperature monitors to avoid scalding. Handles such as D-shaped cabinet pulls are encouraged.
- k. Flexible cabinetry is encouraged, such as pull-down shelving that allows for adjustability.
- l. Kitchen and dining areas should be designed to be large enough for households to cook, socialize and eat together as well as promote engagement of children in meal preparation.
- m. Where possible, the kitchen should maintain visual connections with the living room and/or play area to support informal supervision of children. Windows to outdoor play areas are also encouraged.
- n. In kitchens, electrical outlets and light switches should be located in front of countertops. Where possible, mount at least two electrical outlets on lower cabinetry.
- o. Non-slip and high-grip flooring materials should be considered for the kitchen area.



**Figure 94.** Under cabinet lighting is a valuable safety feature to reduce the risk of injury while preparing food.



**Figure 95.** Pull-out shelving keeps the pantry and other kitchen storage within arms reach for aging adults.

- See the City of Markham's Accessibility Design Guidelines for standards on kitchen design.

### 3.1.3 Bathrooms

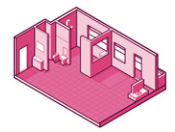
**Bathrooms require attention to detail to allow for the changing needs of a resident over time, such as adjustable fixtures, no slip surfaces, and consideration for no-lip access to showers and reinforced walls for future installation of grab bars.**

- a. Main floor bathrooms should be designed as either a 3 or 4 piece bathroom to support aging-in-place. Alternatively, a half bathroom is acceptable with additional space and rough-in to facilitate the future installation of either a shower or bathtub. Additional space in a half bathroom can be used for supplementary storage until future installation of a shower or bathtub, which is especially useful for households with children.
- b. Main floor bathrooms should provide adequate space for manoeuvring mobility devices in front of, and beside, all utilities, including the sink, shower, bathtub, and toilet.
- c. If floor space on the main level is limited because of other space requirements, and a bathroom is not viable in the short-term, consideration should be given for a potential future location for a main floor bathroom, and plumbing rough-in should be provided to facilitate future aging-in-place renovations.
- d. The installation of roll-in and no-lip showers is preferred in bathrooms, especially when located on the main floor. Showers should have non-slip and high-grip flooring, and sliding glass doors should be avoided as they may obstruct access. If glass screens or doors are included in the design of a shower, they should be transparent and have contrasting visual decals to aid with visibility.
- e. Where space permits, a high integrated bench is encouraged in showers for older adults who may need to sit while bathing. The high integrated bench can double as shelving for other households. Alternatively, consider providing a larger shower in the primary bathroom that could accommodate a bench in the future.
- f. When space constraints are an issue, pocket doors or outward opening doors should be used to optimize the space within the bathroom.



**Figure 96.** Roll-in, no-lip, showers provide a comfortable shower for older adults as well as other age groups.





- g. Walls should be reinforced near the toilet, shower and/or bath to allow for future installation of grab bars and/or handrails. Parallel grab bars with attractive finishes provide an opportunity to seamlessly integrate safety and decoration.
- h. Ergonomic and age-friendly hardware is encouraged, such as faucets and handles on doors and drawers. Automatic or sensor-based controls should be considered for added flexibility, and temperature monitors on faucets are encouraged to avoid scalding.
- i. Handheld shower heads on a grab bar slider are encouraged for flexible use for residents with reduced mobility as well as children during baths.
- j. Contrasting colours help older adults with reduced depth perception and are encouraged in the bathroom where the risk of slipping is increased.
- k. Bathrooms are where accidents are more likely to occur because of moisture build-up. As a result, bathrooms are encouraged to have non-slip flooring.
- l. Flexible cabinet spaces should be included to afford a variety of storage needs, especially for households with children.
- m. Bathroom counters and vanities are encouraged to have adequate space beneath the countertop for someone to sit within reach of the counter and sink.

- See the City of Markham's Accessibility Design Guidelines for standards on bathroom design.



**Figure 97.** Handheld shower heads on grab bar sliders provide the flexibility to be useful for many types of households.



**Figure 98.** Bathroom counters and vanities that allow residents to comfortably sit in the bathroom offer an added level of flexibility.

## 3.1.4 Entryways & Storage

**Entryways function as daily transition spaces and should be designed to have generous clearances and ample space for storage, such as for strollers, scooters, and other mobility devices.**

- Entryways should provide ample storage for large-format mobility equipment or strollers. This storage area should be located outside of any primary paths of travel.
- Entryways should be designed to have flexible closet spaces with ample storage. Multiple hanging heights should be considered for different users and storage needs. Some shelving nearer the floor should be considered to accommodate users with a limited range of reach.
- Larger closets for seasonal items and long-term storage should be considered in the design of units with multiple bedrooms, to better serve the storage needs of multi-generational households and households with children.
- Where possible, hallways should have a minimum clear width beyond OBC minimums in order to better accommodate a wider range of users. Wider hallways are encouraged for flexible storage space and seating.
- Age-friendly hardware such as lever type handles should be installed on doors to allow for minimum effort of use.

- See the City of Markham's Accessibility Design Guidelines for standards on entrances.
- See Ontario Building Code for standards on barrier-free path of travel.

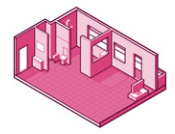


**Figure 99.** This entryway provides generous clearances with no-step access as well as ample storage and seating.



**Figure 100.** This unit provides additional clearance space in the entry corridor for temporary storage of strollers or scooters.





## 3.1.5 Laundry Rooms

**Laundry rooms should be designed to have adequate width, to afford either additional storage space for households with children or side-by-side laundry machines that provide a more accessible format as we age.**

- a. As an essential space in any unit, laundry rooms and/or laundry facilities are encouraged to be located on the same floor as the main bedroom to support aging-in-place. Where possible, provide enough space in front of each appliance for users to easily load and unload each appliance.
- b. Where appliances are provided, front-loading washers and dryers should be over top-loaded machines that require an extended reach, which can become a struggle for older adults.
- c. Stacked washer-dryer units are great space-savers but are not always user-friendly for children, older adults and people using mobility devices. Laundry rooms should be planned to provide enough width for side-by-side units, or if stacked units are required, they should be front-loading.
- d. Where possible, side-by-side appliances which are raised slightly off the floor are encouraged to avoid having to bend over.
- e. In ground-related residential units with secondary entrances, laundry rooms are encouraged to be near that entrance and to include a sink so that the space can double as a mud room for washing up, benefiting households with children.
- f. A range of shelving heights should be provided with primary storage at mid-level heights to ensure storage space remains accessible as a reduced reach is typical as one ages. Pull-down shelving is encouraged.



**Figure 101.** Front-loaded laundry appliances that are side-by-side and slightly off the ground represent an ideal configuration.



**Figure 102.** Pull-down shelving is a great option for older adults with limited reach as well as additional storage space for families.

## 3.1.6 Living Rooms

**Living rooms should be designed to have large windows with visual connections to outside spaces and to have open concept formats that afford flexibility over time.**

- a. Where possible, living rooms should have a visual connection and direct access to outdoor spaces, allowing the primary living space to extend outdoors during favourable weather and to offer informal supervision for households with children, or adults that need care, whether it's backyards, balconies, porches, or terraces.
- b. Living rooms should always have access to natural light, preferably through large windows, to ensure older adults have access to ample sunlight when mobility is reduced and more time is spent indoors.
- c. Open concept layouts for living rooms are encouraged as they allow greater flexibility for the changing needs of residents over time while promoting informal supervision for households with young children.
- d. Where possible, units are encouraged to include a flexible space adjacent to the living room that could be used as a play space for small children and then re-purposed for different age-groups and needs, such as a study, home office, small home gym, or bedroom.

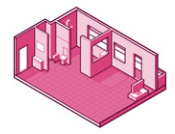


**Figure 103.** Ample natural sun light in the living room is beneficial to aging adults as their mobility is reduced and leaving the house becomes more challenging.



**Figure 104.** This open concept layout affords parents the benefit of informal supervision of children while multi-tasking.





## 3.1.7

## Bedrooms

**A unit's primary bedroom should be located on the main level and have access to a full bathroom. Ample space should be provided to allow for ease of movement around furniture.**

- a. Where possible in multi-level units, at least one bedroom with a full bathroom should be provided on the main level to facilitate aging-in-place.
- b. Bedrooms should be large enough to allow for adequate clearance around beds. There should be enough space on at least one side to accommodate the turning radius and storage of a mobility device.
- c. Primary bedrooms should be located within close proximity to a bathroom to support aging-in-place and easy access as mobility is reduced.
- d. Built-in closets should consider age-friendly features such as D-shaped handles, pull-down closet rods, ample storage at mid-level heights and sufficient lighting. Multiple hanging heights should be considered to accommodate children and a person in a seated position.



**Figure 105.** This unit demonstrates the interior layout of a bedroom with space to allow for ease of movement around furniture.

## 3.1.8 Outdoor Spaces

**Outdoor spaces, such as balconies, backyards, porches, terraces and courtyards are an extension of the unit during warmer months and should have no-step access with adequate clearance for mobility devices.**

- a. Outdoor living spaces should be accessed directly from the primary living space, whether that's the kitchen or an "extended living room".
- b. Where possible, outdoor spaces should provide barrier-free access, without either steps or lips.
- c. Consideration should be given to creating comfortable micro-climates, such as screening prevailing winds and strategic shading so that access to fresh air can be maintained in all seasons as one ages and there is a loss of mobility.
- d. Balconies and/or terraces should be included in the design of units in multi-unit buildings as they provide private outdoor space that contributes to the health and well-being of residents who have limited mobility especially during winter seasons and during inclement weather.
- e. Where possible, multi-unit residential buildings should provide inset balconies for a more comfortable outdoor space that is naturally shielded from poor weather while offering improved privacy.
- f. Adequate clearance and turning radii for mobility devices should be accounted for on balconies and other small format outdoor spaces.
- g. Where provided, built-in planters are encouraged to be raised for more accessible gardening.

- See the City of Markham's Accessibility Design Guidelines for standards on outdoor spaces such as balconies, and terraces.

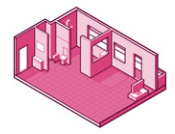


**Figure 106.** This unit provides a roll-out, no-lip access to the outdoor space accessed directly from the living room.



**Figure 107.** This balcony provides adequate space to easily manoeuvre around as well as to furnish for improved use and comfort.





## 3.2 Interior Design & Finishes

Finishes and interior design features such as lighting, materiality, and acoustics can have a significant impact on how age-friendly units are. The tactile aspects of design should be carefully considered to ensure that day-to-day life stays safe, comfortable, and healthy as one ages.

These guidelines provide direction on the key aspects of interior design and material finishing within a unit to ensure safe circulation throughout a home for older adults who are aging-in-place and recommendations for how large households can live together more comfortably.



**Figure 108.** This kitchen provides both natural and artificial lighting with age-friendly material finishes.

## 3.2.1 Lighting

**Units should provide ample access to daylight to support resident’s health, well-being, and safety, in addition to carefully planned artificial lighting throughout the home to ensure safe movement during low-light hours and to provide guiding lights for residents with impaired vision.**

- a. The height of window sills should be designed to ensure usability by a person in a seated position as well as older children.
- b. Where glass doors and partitions are included in the design of a unit, they should have safety strips to avoid the risk of accidents for children as well as residents with reduced vision.
- c. Artificial lighting should be carefully positioned for even distribution in the unit while reducing glare and shadow. This will help ensure adequate visibility for older adults with reduced vision and to mitigate potential risks associated with shadowed areas for those with diminished depth perception.
- d. Increased light levels should be considered in areas that emphasize potential hazards and where there is a higher likelihood for a slip or fall such as along stairs, entrances and exits, as well as in both kitchens and bathrooms.
- e. Light switches and electrical outlets should be provided at mid-level heights for easy access by older adults while also keeping out of reach of small children.

- See the Ontario Building Code for standards on barrier-free controls

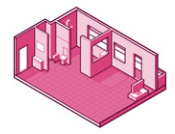


**Figure 109.** Access to ample natural light in children’s bedrooms helps boost mood, concentration and delivers vitamin D.



**Figure 110.** Electrical outlets and light switches at mid-level heights provide the most flexibility over time.





## 3.2.2 Floor Finishes

**Floor finishes should be carefully chosen to ensure safe movement through the home, including with non-slip and high-grip surfaces as well as materials that provide tactile cues.**

- Floor finishes should be level, smooth, slip-resistant, and glare-free. Material options include hardwood, low-pile carpet, and ceramic tile. The slip resistance of the floor should be reviewed by the designer upon completion of the floor, to ensure intended use.
- Tactile finishes that provide clear differentiations between spaces are encouraged at landings, stair edges and between different living areas to aid residents experiencing varying degrees of vision loss.
- Contrasting colours should be encouraged on stairs as well as when choosing materials that will be side by side to mark spatial transitions to help older adults with reduced depth perception.



**Figure 111.** This image provides examples of three types of floor finishes.

### 3.2.3 Acoustics

**Acoustic privacy should be provided in the design of new units by taking into consideration the adjacencies of private and shared spaces both within a unit and between adjacent units as well as the needs of various households and their potential sensitivities to noise.**

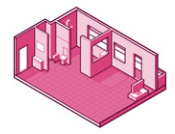
- a. The design of units should carefully consider the transition between rooms that are likely to be noise sources (such as living rooms and kitchens) and the rooms that are likely to be noise sensitive (such as bedrooms). Generally, noise sensitive rooms should be designed to be distanced from the noise source. Alternatively, noise sensitive rooms can be buffered by more neutral spaces such as bathrooms, closets, studies, or guest rooms.
- b. In multi-level units, secondary bedrooms should be located on a different level from the main living area for added separation from noise producing spaces, acknowledging that parents and children will have different schedules.
- c. Where possible, enclosed hallways with additional doors are recommended for added privacy from potential noise. This is especially helpful for households with young children.
- d. Sound mitigating materials should be included in the design of shared spaces in multi-bedroom units to limit disruptions between members of the household. For instance, materials with high noise absorption on walls and ceilings can help dampen travelling sound. Consider acoustic ratings above the minimum required to provide greater privacy and comfort.
- e. In multi-unit residential buildings and ground-related residential buildings that share party walls with neighbours, adequate sound-attenuation should be installed in the floors and walls between units to provide acoustic privacy that benefits multi-generational households and households with children.

- See Section 3.1.1. Flexibility & Planning for Future Change for guidelines on movable walls and partitions.



**Figure 112.** Bedrooms in this unit are separated from the noise producing living spaces, like the kitchen and living room, by a hallway.



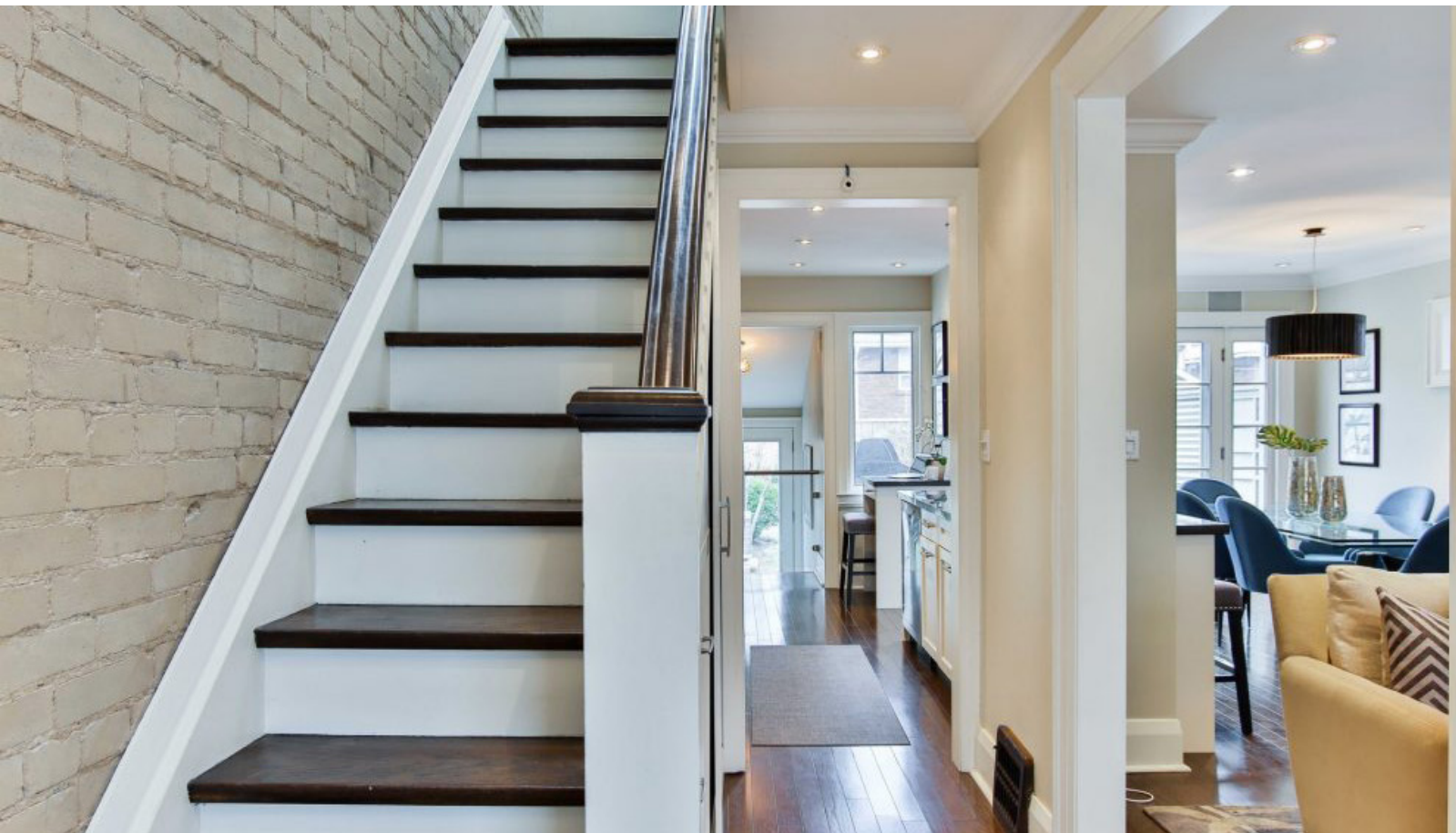


## 3.3 Unit Circulation

As we age, our range of motion decreases and simple movements can become a daily challenge. The design of circulation spaces in homes should be designed to remove barriers, keeping in mind that removing a barrier for one group, removes a barrier for all.

The following guidelines address safe and accessible circulation within a unit with an emphasis on hallways, doorways, stairs and lifts.

These guidelines provide recommendations for the design of new units as well as provide direction on retrofitting existing units to enhance circulation within a home.



**Figure 113.** Contrasting stairs and clear sight lines help make this unit age-friendly.

### 3.3.1 Stairs

**Where possible, stairs should be designed as a straight flight without landings for easier installation of stairlifts. Stairs should also provide colour contrast features for users with reduced depth perception.**

- a. Where possible, stairs should have reinforced walls to facilitate future installation of additional support rails, stairlifts and/or platform lifts.
- b. Where possible, stairs should be designed as a straight flight for easier and more economical installation of stairlifts and/or platform lifts. Mid-flight landings are encouraged to reduce the risk of injury in case of a fall. Where a straight flight is not practical, stairs should be designed with a simple geometry and a single landing.
- c. Tactile finishes and contrasting colours should be used on nosing and leading edges of landings to demarcate level changes for aging adults with limited vision or depth perception.
- d. Stair surfaces should be stable, firm, slip-resistant and non-glare to minimize the risk of a slip or fall.
- e. Where stair landings are provided, a functional rest area mid-flight is encouraged. Landings that are sized to incorporate seating areas can be combined with additional storage space.
- f. Continuous handrails should be installed, and are suggested to be easy to grasp for both small and large hands. Handrails should extend beyond the top and bottom of the stairs.



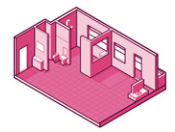
**Figure 114.** This straight flight of stairs shows how high contrast nosing on the steps can improve safety for some older adults with reduced eye-sight or limited depth perception.



**Figure 115.** This staircase landing provides a rest area for aging adults who require it, while providing storage space and a reading nook for households with children.

- See Ontario Building Code Section for standards on barrier-free doors and doorway opening sizes





## 3.3.2

## Lifts

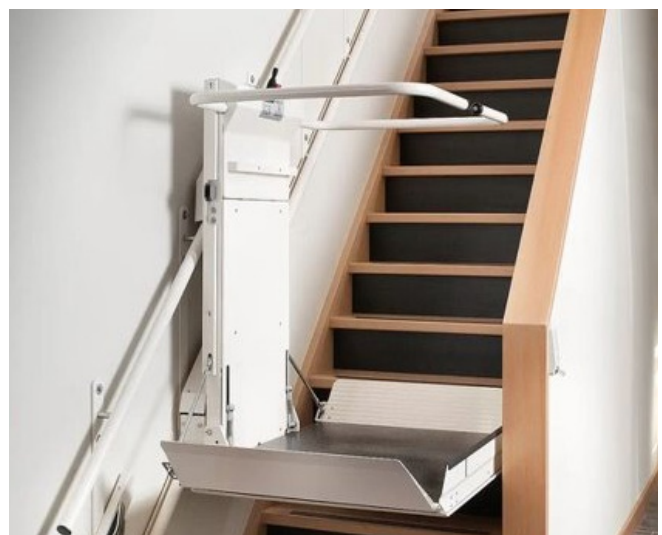
**Unit design should always anticipate the potential future need for lifts, such as planning for the location of an elevator during the design of the unit and reinforcing affected walls during construction.**

- a. Anticipating the future installation of additional support rails, stairlifts and/or platform lifts provides flexibility to homeowners. The following should be considered:
  - Straight run stairs or stairs of a simple geometry with as few landings as possible.
  - Reinforced walls on stairs provide for ease of construction.
  - Access to a power supply at the top and bottom of stairs.
- b. Multi-level units should consider the potential for future installation of limited-use, limited-application ("LULA") elevators. Strategies such as stacking closets on upper and lower levels are a way to future-proof a unit for elevator installation. In such cases, closets should have reinforced walls, structural footings, and conduit rough-in for future integration of a LULA elevator. Closets should be located to have access on existing hallways and ceiling heights should accommodate LULA overrun requirements, and hoist beams. Closet doors should be wide enough to accommodate passage of mobility devices.

- See the City of Markham's Accessibility Design Guidelines on standards for elevators and lifts.



**Figure 116.** This elevator was retrofitted in an existing unit by making use of two closets stacked on top of each other on both levels.



**Figure 117.** Platform lifts, as well as stairlifts, provide a more economical alternative than an elevator for navigating the stairs in one's home.



# 4.0 IMPLEMENTATION



## An integrated planning and design process is key to the successful implementation of Markham's Age-Friendly Design Guidelines.

The Age-Friendly Design Guidelines were developed to **achieve best outcomes** for improving the quality of life for people of all ages living in Markham. While the guidelines are intended to be applied holistically, the City of Markham recognizes that development is contextual and that opportunities to implement these guidelines may happen on a **project-by-project basis** led by Markham's staff in collaboration and consultation with all relevant stakeholders as required.

### Inspiring change

The implementation of Markham's Age-Friendly Design Guidelines requires many different actors to come together and work towards a common set of goals. Continued communication, education and consultation will be needed to ensure that the intent and aspirations of Markham's Age-Friendly Design Guidelines is understood and to build support for their gradual implementation.

### EFFECTIVE PUBLIC CONSULTATION

Continue to ensure that public and stakeholder consultation and outreach is designed and delivered in ways that incorporate the perspectives and scales of children, youth, families and older adults.

### PUBLIC AND PRIVATE SECTOR PARTNERSHIPS

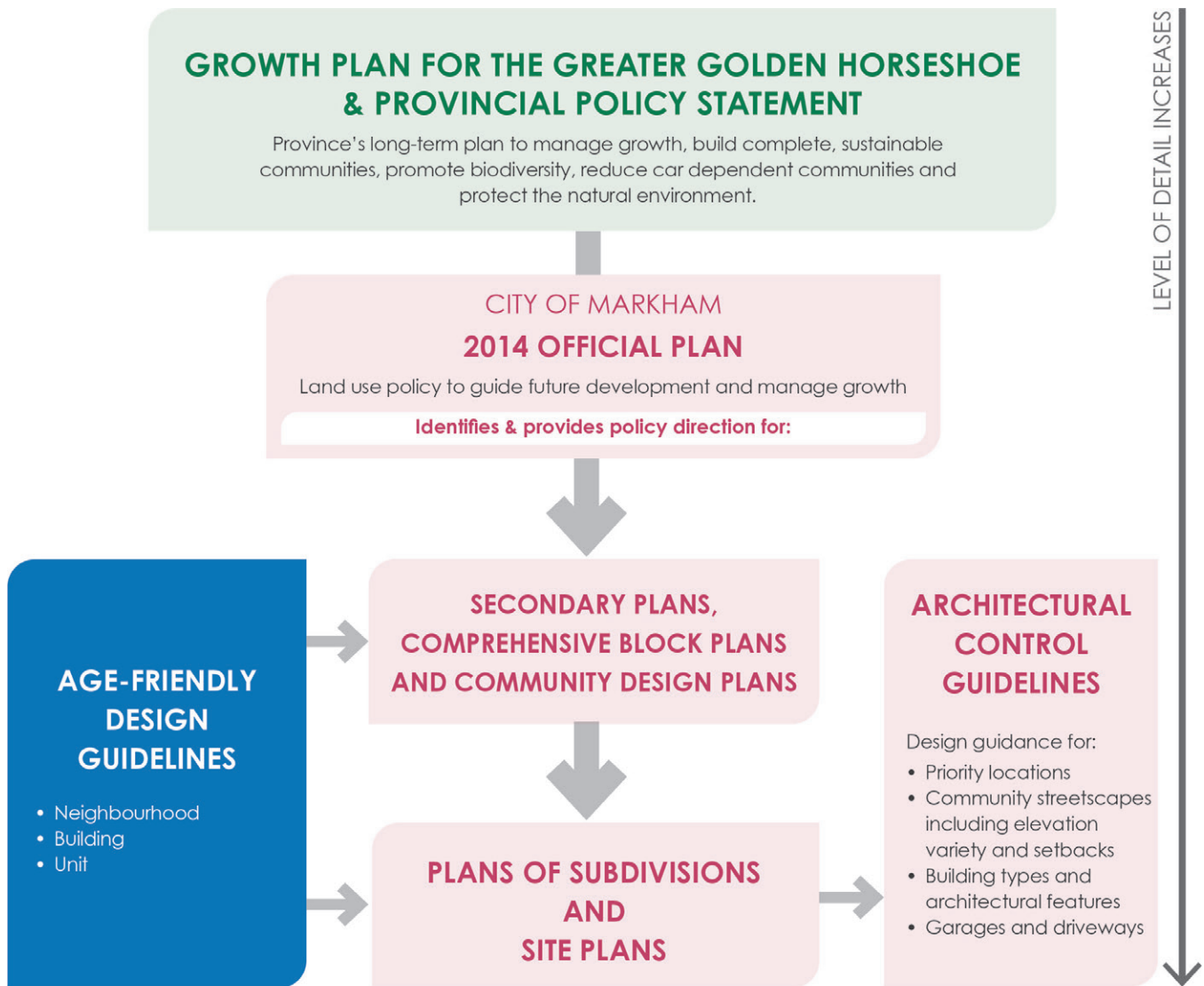
The participation of the private sector, especially the development community, is essential to the successful implementation of the guidelines. The market for age-friendly environments that support aging will grow as our community continues to age, so it will be important to leverage common objectives on all aspects of the guidelines.

### STAGGERED IMPLEMENTATION

To give effect to the application of the objectives and design directions within these guidelines, decision makers should integrate the Markham Age-Friendly Design Guidelines at appropriate stages of the planning and design approval process in accordance with provisions of the Planning Act, including subdivision approval, zoning by-law amendment, architectural control and site plan approval.

Age-friendly designs and features may also be considered as part of capital improvement projects and retrofits to existing streets, parks and public open spaces, with due considerations to maintenance and life-cycle needs.

There will be opportunities to increase the reach of the Age-Friendly Design Guidelines by incorporating elements of the guidelines into existing and new planning policy when able such as during statutory reviews, policy updates and amendments.



**Figure 118.** Phases in the planning and development process that the Age-Friendly Design Guidelines could be implemented



The Planning Act provides the basis for consideration of matters of provincial interest in provincial and municipal planning decisions. It requires that all planning decisions be consistent with the Provincial Policy Statement (PPS) and conform and not conflict with applicable provincial plans.

Guidelines must have regard to matters of provincial interest in Section 2 of the Planning Act, such as the orderly development of safe and healthy communities, the accessibility for persons with disabilities to all facilities, services and the adequate provision and distribution of educational, health, social, cultural, and recreational facilities. Other matters of provincial interest to have regard for include the adequate provision of a full range of housing including affordable housing, the promotion of development that is designed to be sustainable, to support public transit and to be oriented to pedestrians. The Planning Act also requires decision makers to have regard for the promotion of built form that is well-designed, encourages a sense of place and provides for public spaces that are of high quality, safe, accessible, attractive, and vibrant.

The implementation of these guidelines may also be considered as part of the mandatory 5-year review of the **City of Markham's Official Plan**. The Official Plan sets out land use policies to guide future development and manage growth in Markham. Revisions to the Official Plan should reference these Age-Friendly Design Guidelines as a document that provides directions on the overall future development of the City of Markham as an age-friendly place. The Official Plan revisions should include or revise where necessary contrary policies and directions to align with the Age-friendly design guidelines ensuring that both documents reflect similar objectives and intent.

### **Secondary Plans and Community Design Plans**

should also be reviewed and amended, where necessary, to reflect Markham's Age-friendly Design Guidelines. While Secondary Plans provide directions on using land within Markham, Community Design Plans provide more specific directions on implementing draft plans of subdivision, zoning bylaw and criteria for the more detailed review of site plan applications.

**Markham's Zoning By-Laws** contain standards that govern the development of land and the construction of buildings including permitted uses, size, height and location of structures. Opportunities to implement these guidelines should consider revisions and amendments to existing zoning by-laws to comply with Markham's Age-Friendly Guidelines where appropriate.

**Site plan control and plan of subdivision** can help facilitate more age-friendly buildings and the spaces surrounding the buildings on a development site. City staff have the opportunity to review development proposals through the lens of age-friendly design. Integral to the successful implementation of Markham's Age-Friendly Guidelines, is a **commitment from the development industry** to achieve excellence in design for new age-friendly units, buildings and neighbourhoods. To achieve this goal, the City may require, as a condition of draft plan approval, that the developer agree to prepare **Architectural Control Guidelines** for residential subdivisions that contain ground-related low-rise residential developments, to promote best practices in age-friendly built form/architectural design.

- See Section 41 Site Plan Control Area and Section 51 Plan of Subdivision Approvals of the Planning Act

# APPENDICES

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- A Glossary
- B Best Practices
- C Policy References
- D Image Credits



## A. Glossary

**Age-friendly Design** refers to the design of physical and social environments to address the needs of all residents, from young children and families to older adults.

**AODA Standards** refers to standards outlined in the Accessibility for Ontarians with Disabilities Act

**Defensive (Hostile) Design Features** refers to an urban-design strategy that uses elements of the built environment to purposefully deter or restrict certain behaviors and activities.

**Ground-Related Residential Building** refers to a form of residential dwellings that includes single detached, semi-detached or townhouses typically accessed from the street.

**Household** refers to a social unit composed of those living together in the same dwelling.

**Mews** refers to narrow, intimate streets that balance the access and service functions of a lane with active building frontages, accessory uses, and a street space shared by cars and pedestrians.

**Micro-Climate** refers to the atmospheric conditions in a small area that are different from its surrounding areas.

**Micro-Mobility** refers to transportation over short distances provided by lightweight vehicles such as bicycles or scooters, that may be borrowed as part of a self-service rental program in which people rent vehicles for short-term use within a town or city.

**Mobility Device** refers to any assistive technology that aids the movement of people with physical disabilities such as lift chairs, scooters, or wheelchairs.

**Multi-Generational Play** refers to an activity for enjoyment and recreation that involves more than one generation.

**Multi-Unit Residential Building** refers to an apartment building, condominium complex, townhouse complex, co-operative housing complex consisting of two or more residential units.

**Multi-use Path** refers to a path or trail designated for multiple, non-motorized uses such as bicycle or pedestrian use.

**Natural Surveillance** refers to an urban design, architecture and landscaping technique that seeks to deter crime with social and highly visible spaces.

**Pedestrian Crossing** refers to a marked part of a road where pedestrians have right of way to cross; a crosswalk.

**Pedestrian Crossover** refers to a designated crossing area that allows pedestrians to safely cross the road where vehicles must yield to the pedestrian.

**Porous or Permeable Pedestrian Networks** describes the extent to which urban forms permit movement of people or vehicles in different directions.

**Public Realm** refers to external urban spaces that are publicly accessible

**Refuge Islands** refers to raised areas constructed within the roadway to establish physical channels through which the vehicular traffic may be guided.

**Secondary Suites** and/or **Accessory Units** refers to a second residential unit in a detached house, semi-detached house or townhouse that consists of one or more rooms designed, occupied or intended for use, including occupancy, by one or more persons as an independent and separate residence in which a facility for cooking, sleeping facilities and sanitary facilities are provided for the exclusive use of such person or persons.

**Signalized Crossing** refers to a designated crossing area with controlled by traffic signals.

**Thresholds** refers to a point of entry or beginning.

**Woonerfs** refers to a road that is designed with special features to reduce the amount of traffic using it, or to make the traffic go slower.

**Zero or No Step Threshold** refers an entrance that does not have any level changes and allows unobstructed access into interior spaces for trolleys, strollers and mobility devices.

## B. Best Practices

The Best Practice review was completed prior to the preparation of these guidelines, which included 20 local, national and international case studies - including guidelines, strategies, and policies related to age-friendly communities and age-friendly design. The table below provides an overview of the best practice guidance in relation to the contents of these guidelines. A summary of best practices and be found in the Stage 2 Background Report.

Local	Growing Up Guidelines, Toronto, ON
	City of Hamilton Age-Friendly Strategy, Hamilton, ON
	Housing Options for Older Adults in Hamilton, Hamilton, ON
	Planning for Age-Friendly Communities A Call to Action, ON
	The City of Toronto Accessibility Design Guidelines, Toronto, ON
National	City of Richmond Age-Friendly Assessment and Action Plan, Richmond, BC
	City of New Westminster Family Housing Policy, New Westminster, BC
	Township of Langley Age-Friendly Strategy, Langley, BC
	Child in the City: Planning Communities for Children and their Families, Vancouver, BC
	Zero to one hundred – Planning for an Aging Population: A Toolkit for Planners and Designers, Vancouver, BC
Access Design Guide, Edmonton, AB	
International	GrowingUp: Boulder, Colorado
	Accessible London: Achieving an Inclusive Environment, London, UK
	Making London Child-friendly: Designing Places for Children and Young People, London, UK
	Place-Age: Place-Making with Older Adults Towards Age-Friendly Cities & Communities, Edinburgh, UK
	Arnsberg's Future Aging Department, Germany
	Elderly-friendly Design Guidelines, Hong Kong, China
	Creating Parks and Public Spaces for People of All Ages, Global
	Designing Streets for Kids, Global
	Global Street Guide, Global
Cities Alive: Designing for Urban Childhoods, Global	


**Table 1.** List of Global Best Practices / Case Studies Categorized into Five Key Focus Areas






## Global Case Studies

Based on policy, built form, and demographic contexts applicable to Markham, 20 local, national and international case studies related to age-friendly communities and age-friendly design were selected to showcase how good design at the unit, building and neighbourhood scales can improve the livability for current and future households with older adults and children residing in ground-related and vertical communities.



**Zero to one hundred – Planning for an Aging Population: A Toolkit for Planners and Designers**  
Vancouver, British Columbia (2018)


**Ground-related community – Older Adults**



This document provides policy and design recommendations directed toward community planning and site-specific development projects to help local municipalities collaborate with architects, developers, and residents to support age-friendly communities.

**Growing Up Boulder**  
Boulder, Colorado (2009)


**Ground-related and Vertical communities – Children**



Using participatory planning methods with young people, Growing Up Boulder's vision is to lead a global movement in child-friendly cities, resulting in more equitable and sustainable communities for all.

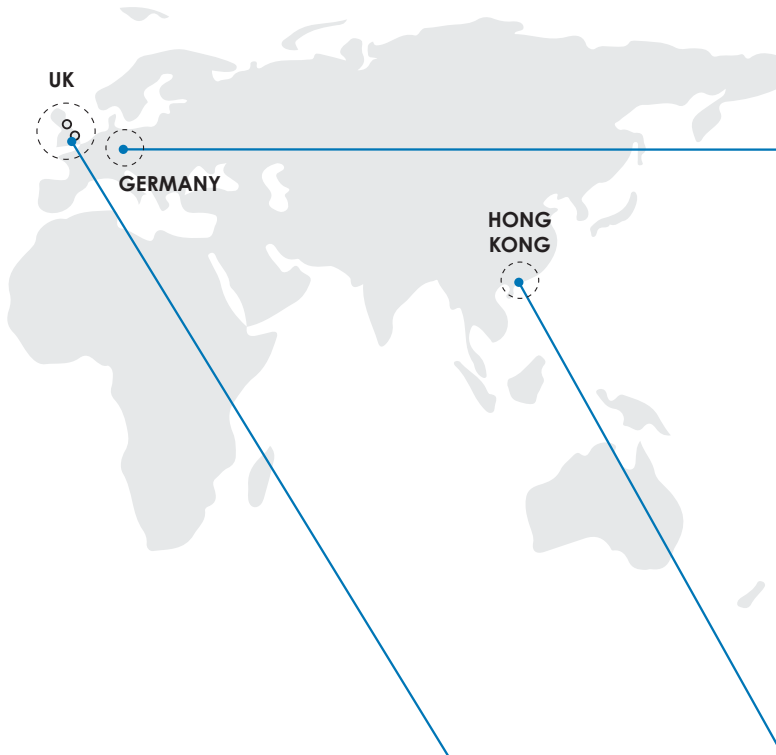
**GrowingUP Guidelines**  
Toronto, Ontario (2020)

**Vertical community – Children**



These guidelines contain useful tools and recommendations to help developers plan for children in new vertical communities, focusing on three scales: neighbourhood, buildings and units.





**Arnsberg's Future Aging Department**  
Arnsberg, Germany (2004)

**Age-Friendly Neighbourhood Structure – Older Adults**

This initiative focuses on people experiencing dementia and their caregivers through improving social services and the physical design of the city. For example, wayfinding amenities such as numbered benches every 200 meters in some markets and on the promenade along the River Ruhr are provided for people to rest or call for assistance quoting the bench number if lost.



**Making London Child-Friendly: Designing Places and Streets for Children and Young People**  
London, UK (2020)

**Age-Friendly Neighbourhood Structure – Children**

Design recommendations can help improve safety in play and open spaces at the scale of the neighbourhood and building.



**Elderly-friendly Design Guidelines**  
Hong Kong, China (2019)

**Vertical Communities – Older Adults and Age-Friendly Neighbourhood Structure**

Design recommendations focusing on safety, accessibility, convenience and wayfinding help Older Adults to move around with ease and participate in various physical activities and social interaction.

# C. Policy References

A policy review was completed prior to the preparation of these guidelines, which included relevant policy from all four levels of government. The table below provides an overview of the policy documents that were reviewed in relation to the preparation of the Age-Friendly Design Guidelines. A detailed summary of policy review can be found in the Stage 2 Background Report.

RELATED POLICY DOCUMENTS
<b>Federal</b>
Accessible Canada Act (S.C.2019, c. 10)
<b>Provincial</b>
Planning Act, R.S.O. 1990, c. P.13
Ontario Human Rights Code
Ontario Building Code (OBC 1997)
Ontarians with Disabilities Act, 2001, S.O. 2001, C.32
Accessibility for Ontarians with Disabilities Act, 2005, S.O. 2005, c. 11
<b>Regional</b>
York Region Official Plan
York Region Seniors Strategy, 2016
York Region Women’s Foundation Inclusive Age-Friendly Community (AFC) Plan
<b>Municipal</b>
City of Markham Official Plan
City of Markham Accessibility Design Guidelines, 2011
City of Markham Older Adult Strategy, 2017
City of Markham Greenprint Community Sustainability Plan, 2011
City of Markham Integrated Leisure Master Plan Update, 2019

Table 2. List of policy documents reviewed.



## D. Image Credits

Figure	Page	Credit
Introduction		
1	9	Urban Strategies Inc.
<b>1.0 Neighbourhood Guidelines</b>		
3	16	Urban Strategies Inc.
4	17	Toronto Star
5	18	ZAS Architects + Interiors
6	19	YWCA
7	19	Urban Strategies Inc.
8	20	Urban Strategies Inc.
9	20	Nicole Betts/ASLA
10	21	London.ca
11	21	Janet Rosenberg & Studio
12	22	Urban Strategies Inc.
13	22	CTV News
14	23	Quartier des Spectacles
15	24	Urban Strategies Inc.
16	25	PWL Partnership
17	26	Urban Minds
18	27	Urban Strategies Inc.
19	27	Urban Strategies Inc.
20	28	LANDinc
21	29	Urban Strategies.
22	29	Urban Strategies.
23	30	Urban Strategies Inc.
24	31	Urban Strategies Inc.
25	32	New York City Street Design Manual
26	33	Decorative Stone Solutions
27	33	WomenAdvaNCe
28	34	Swift Mile
29	35	Bicycle Club Blog
30	35	Urban Strategies Inc.

Figure	Page	Credit
31	36	Urban Strategies Inc.
32	37	Blue Pine Enterprises Ltd.
33	38	City of Vancouver
34	39	Urban Strategies Inc.
35	39	Urban Strategies Inc.
36	40	Ji Hong Tai Chi & Qi Gong
37	41	Cornell Community Garden
38	41	Burlington Downtown (right)/ Urban Strategies Inc.(left)
39	42	Urban Strategies Inc.
40	42	Urban Strategies Inc.
41	42	La Pépinière
42	43	TrekFit
43	43	Scott Noseworthy
44	44	Game Time Canada
45	44	PechetStudio
46	45	Evergreen
47	45	City of Palo Alto
48	46	Forrec
49	47	Dillon Consulting
50	48	City of Markham
51	48	Urban Strategies Inc.
52	49	Urban Strategies Inc.

## APPENDICES

Figure	Page	Credit
<b>2.0 Building and Site Design Guidelines</b>		
53	52	Urban Strategies Inc.
54	53	City of Missoula
55	53	Urban Strategies Inc.
56	54	Urban Strategies Inc.
57	54	Urban Strategies Inc.
58	55	Urban Strategies Inc.
59	55	This Old House
60	56	The Daniel's Corporation
61	57	BDP Quadrangle
62	58	Urban Strategies Inc.
63	59	Urban Strategies Inc.
64	59	Urban Strategies Inc.
65	60	Dundee Kilmer Developments Limited
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