

BALANCED AND BOLDER:

RECOMMENDATIONS FOR STRENGTHENING TORONTO'S OFFICIAL PLAN

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1.0 EXECUTIVE SUMMARY

The recommendations contained within this Policy Research Paper are intended to highlight potential revisions and additions to Official Plan policies. The recommendations defined in this report are drawn from a review of planning strategies adopted in municipalities and regions around the world. Recommendations for action and policy are accompanied by an analysis of the City's current status, which will draw attention to gaps in the current framework and assess the City's "readiness" for pursuing the proposed initiatives.

These recommendations will be forwarded to City Planning staff for their consideration during the review process and will be used to encourage and engage public discussion about challenges and opportunities, with a view to possible solutions that can be implemented.

The Statutory Review provides an opportunity for the City, in partnership with stakeholders, to address shortfalls in policy and outcomes and pursue new and innovative initiatives. A set of priorities have been defined by Councillor Peter Milczyn, Chair of the Planning & Growth Management Committee, to guide this international practice review. These priorities are listed below:

- Achieving true mixed use and balanced growth;
- Encouraging excellence in design;
- Transit-supportive intensification;
- Protecting the City's cultural heritage; and
- Plan evaluation and monitoring strategies.

In addition to those priorities listed above, this report has been prepared with an effort to reflect international trends in municipal policy and concerns identified through public consultation. Several of the priorities explored in this report are linked to matters of Provincial interest within the *Planning Act* (1990), including the protection of cultural heritage resources, the appropriate location of growth and development, and the promotion of sustainable, transit-supportive, and pedestrian-oriented development.

Among the key recommendations in this paper are;

- Requiring a minimum of 25% of Gross Floor Area in certain types of mixed use development to be dedicated to employment uses
- Requiring the replacement of non-residential Gross Floor Area in mixed uses on site
- Encouraging pedestrian-only or priority streets
- Encouraging laneway developments
- A strategic lighting scheme to enhance the night-time experience in certain parts of the City
- Requiring competitive design processes for all significant projects throughout the city
- Establish Transit Oriented Zoning Districts to align intensification with higher order transit
- Protect heritage and key view corridors
- Provide incentives for Heritage Preservation

The research findings offered in this report are aligned with the following priority areas: True Mixed Use, Excellence in Design, Transit-Oriented Design, Heritage Resource Protection, Planning for Resilience, and Monitoring and Evaluation. Each of these six sections contains a list of objectives, a summary of lessons learned from practice, implementation opportunities for the City, and recommendations for policy and actions. The recommended policies can be classified as either those calling for an expansion of an current policy or those for which no precedent exists within the current *Official Plan*.

1.1 Background

Approved by the Ontario Municipal Board in 2006, Toronto's *Official Plan* (2006) contains land use policies that guide the extent, location, and nature of physical growth within the City with respect to corresponding social, environmental, economic and built form considerations. As required under Ontario's *Planning Act* (1990), the *Plan* is currently undergoing a mandatory 5-year Review that will focus on matters to be considered under Provincial legislation, issues advised by Council, and priorities arising during the public consultation phase. A Municipal Comprehensive Review will also be completed to evaluate the City's employment lands designations and protection policies.

The purpose of the mandatory Review is to evaluate the success of existing policy and pinpoint policy areas that require improvement, revision, or expansion. The Review also presents an opportunity for staff to draw inspiration from international best practice to enrich the City's policy framework.

2.0 INTRODUCTION

An assessment of development trends and Provincial growth targets indicates that current *Plan* policies have been largely successful. Since the *Plan's* inception, the bulk of residential development has occurred in those areas targeted for growth, including the *Downtown, Centres, Avenues, and Mixed Use Areas*, while low-rise Neighbourhoods are maintaining stability.

Although the *Plan* is succeeding with regard to the location and extent of residential growth, a number of policies have been identified for revisions, additions and updates. Among the matters requiring major revisions is the City's cultural heritage protection initiative, which will be updated to reflect enhanced powers and resources granted to the City since the drafting of these policies in 2000.

The City has identified a remaining need to expand efforts for retaining valuable employment lands. A report published by the Canadian Urban Institute¹ noted a dwindling supply of office space that is serviced by high-capacity transit. The scarcity of development-ready office sites is reinforced by both the rapid employment growth in the outer Greater Toronto Area and the development of residential uses on quality employment sites in the City. The policy revision will focus on revitalizing and diversifying the City's stock of transit-serviced mixed use and employment areas. The City will review the following matters within the context of the Review:

- The availability of land to accommodate future growth in the office, institutional, manufacturing, retail and warehousing sectors;
- Strategies for reserving employment lands for employment purposes, particularly those business activities that are permitted only in employment lands;
- Policies to prevent sensitive residential land uses from locating close to industries where those business operations may be affected.

The Review provides an opportunity for the City, in partnership with stakeholders, to address shortfalls and pursue new and innovative initiatives. A set of priorities have been defined by Councillor Peter Milczyn, Chair of the Planning & Growth Management Committee, to guide this international practice review. The priorities are listed below:

- Achieving true mixed use and balanced growth;
- Encouraging excellence in design;
- Transit-supportive intensification;
- Protecting the City's cultural heritage; and
- Plan evaluation and monitoring strategies.

In addition to those priorities listed above, this report has been prepared with an effort to reflect international trends in municipal policy and concerns identified through public consultation. Several of the priorities explored in this report are linked to matters of Provincial interest within the *Planning Act* (1990), including the protection of cultural heritage resources, the appropriate location of growth and development, and the promotion of sustainable, transit-supportive, and pedestrian-oriented development.

3.0 METHODS AND STRUCTURE

The discussions and recommendations contained within this report are intended to advance existing policy and enrich the scope of stakeholder dialogue. In an effort to highlight potential revisions and expansions for the City, the recommendations defined in this report are drawn from a review of planning strategies adopted in municipalities and regions around the world. Recommendations for action and policy are accompanied by an analysis of the City's current status, which will draw attention to gaps in the current framework and assess the City's "readiness" for pursuing the proposed initiatives.

The selection of more than fifty cities and districts explored in this report was guided by planning reports, liveability, sustainability and creativity rankings, and world-class standing. In-depth reviews of municipal comprehensive plans, visions, master plans, and strategy documents were conducted with specific reference to the priorities defined above. International examples of municipal policy and strategies were evaluated with regard to their applicability within the context of the City.

The research findings offered in this report are aligned with the following priority areas: True Mixed Use, Excellence in Design, Transit-Oriented Design, Heritage Resource Protection, Planning for Resilience, and Monitoring and Evaluation. Each of these six sections contains a list of objectives, a summary of lessons learned from practice, implementation opportunities for the City, and recommendations for policy and actions. The analyses of lessons and opportunities serve to highlight potential weaknesses in the City's planning framework as well as methods for achieving greater specificity in policy and by extension, more focused results. The recommended policies can be classified as either those calling for an expansion of an current initiative or those for which no precedent exists within the *Plan*. Recommendations for which there is either precedential support or an opportunity to expand current *Plan* policy have been linked to the relevant clause(s) from the existing *Plan*. Footnotes have been provided to illustrate potential support for the recommended policies within Provincial legislation.

4.0 THE BIG PICTURE

In addition to highlighting weaknesses and opportunities, this broad scan of practice offers an indication of the City's standing in the global domain of planning and development. The City's commitment to the integration of transit and development, liveability, green space preservation, and balanced growth is closely aligned the overarching goals of many world-class cities, such as London, New York, and San Francisco. Interestingly, the *Plan* mirrors Auckland's Regional Growth Strategy², which likewise stipulates intensive development in targeted areas and the protection of stable neighbourhoods.

Despite the noted success, the City suffers a comparative disadvantage with regard to the conveyance of boldness, creativity, and clarity in municipal policy. To illustrate the role of boldness and creativity, the City of Melbourne has written a commitment to building a "bold and inspirational city" into the city plan³, while the City of Singapore has committed to enhancing the significance of the creative sector⁴. Through the adoption of a Transit First Policy in 1999⁵, the City of San Francisco has given weight to transit investment as a clear priority. The theme of boldness is echoed in a global movement towards the definition of inspirational and aspirational city-wide goals – particularly those that call for international distinction and garner civic pride. For instance, the City of Auckland aims to create "the most liveable city"⁶, Copenhagen aspires to become the "eco-metropolis of the world"⁷, and New York City asserts to be the "most ambitious city in the world"⁸. To succeed in fostering focused results, the City is encouraged to consider a more precise incentivization of desired outcomes and a bolder ranking of public priorities.

It is imperative that the City work to maintain a planning framework that is capable of delivering long-term global competitiveness. As an essential component for achieving sustained success, the planning framework must give credence to the urban acupuncture concept through the support of local projects that will leverage buy-in and showcase innovation; priority should be granted to initiatives that will lead to the widest scope of positive impacts and thus serve a keystone role in the community. Most importantly, the Plan must demonstrate a stronger commitment to periodic monitoring. A regular review of international planning approaches to maintain an awareness of global trends is also necessary for Toronto to continue to be in the forefront of emerging global cities. This commitment to global responsiveness should be complemented by clear on-the-ground support for innovation and piloting of new ideas.

5.0 TRUE MIXED USE

5.1 Objectives

Balancing Residential/Employment Growth

3-D Mixed Use: Horizontal, Vertical, and 24-hour

Complete Neighbourhoods

5.2 Lessons from Practice

This section will summarize the key tools and considerations for achieving land use diversity and balanced growth with regard to the relationship between residential and employment activities. Among the efforts to support balanced growth are diversification of use within mono-functional business districts⁹, land use swaps and credits¹⁰, and impact-based zoning¹¹. Nodal development, involving both vertical and horizontal mixed use schemes, is recognized by multiple municipalities and regions. Representative strategies to encourage nodal mixed use include an Urban Village Strategy¹², stratified development and vertical mixed use¹³, and mandatory floor areas ratios (FAR) for commercial space¹⁴.

Urban Village Strategy

Seattle's Urban Village Strategy is an approach to neighbourhood improvement whose aim is to strengthen connections between the community and the greater urban fabric. Among the priorities of this strategy are access to intermodal transportation, increased density and mixed use within neighbourhoods, pedestrian-sensitive design, and citizen empowerment.

5.2.1 Trip Generator Diversity

The review of international urban policies demonstrates the significance of uses as potential trip generators. A range of real trip generators is essential to ensure that mixed use areas perform as vital urban centres. In order for activities to serve as true trip generators, they must attract activity by a range of user groups throughout the day, week and year by providing a balance of needs, service, and leisure.

5.2.2 Stratified Development

Achieving true mixed use is most successful through a balance of both horizontal (inter-development) and vertical (intra-development) mixed use. Vertical mixed use, in which different uses are stacked within the same building, is often referred to as "podium" or stratified development. This fine-grained mixed of trip generators, such as residences, offices, leisure and recreational facilities, medical services, and public space, can help sustain 24-hour street activity. Vertical mixed use is highly suited to the areas above mass transit stations.

5.2.3 Impact-based (Performance) Zoning

Impact-based zoning is concerned with the effects of proposed land use, in contrast to Euclidean¹⁵ and form-based codes. Impact-based, or performance zoning is a system whereby permissions are granted or denied with reference to a defined set of land use externalities. The focus of this system is the end-goal and the anticipated performance of the proposed development with regard to the surrounding urban fabric. The enhanced flexibility permitted through impact-based zoning may encourage greater private sector creativity in achieving public priorities; however, successful application of this principle must be achieved in light of a strong, clear vision. As such, strategic implementation of impact-based zoning can be a valuable instrument for achieving a residential/employment balance.

Euclidean Zoning

Euclidean zoning is the model that has most commonly been applied in traditional municipal land use schemes within the United States. The primary objective of this model is the segregation of uses and the efficient movement of vehicles, owing to its emergence during a time of urban industrialization. This type of zoning is typically associated with stringent density, lot, height controls, and the familiar pattern of disconnected commercial, industrial and residential districts. Contemporary interest in mixed use and transit-supportive development has led to a backlash against the rigidity of this model.

5.3 Opportunities for the City

The City of Toronto is committed to encouraging transit-supportive, mixed use development through the designation of *Centres*, *Mixed Use Areas* and *Employment Districts* in the *Plan*. There is prior market support within the City with regard to a vertical mix of uses and transit-integrated development (i.e. North York Centre Station). Further, the City currently features examples of compact urban nodes and relaxed zoning provisions, such as the Yonge-Eglinton Centre and the Regeneration of the "Kings" project¹⁶, respectively. However, current legislative support for these directions is either limited or absent. Moreover, there is a demonstrated lack of strategic guidance within the current *Plan* concerning *how* mixed use and balanced growth will be achieved.

The scan of planning practice illustrates a range of possibilities for strengthening *Plan* policies and providing greater support to private sector initiatives. The following policy and action recommendations are intended to identify options for diversifying the City's toolkit for achieving true mixed use.

Regeneration of the "Kings"

In an effort to spark reinvestment, Toronto Council approved a motion to establish a flexible planning approach, allowing almost any commercial, light industrial, and residential use, within in the historically-significant Kings-Spadina and King-Parliament areas. Highlights of the Official Plan and Zoning By-law amendments included as-of-right development permissions for proposals meeting general height criteria, a rescinding of density criteria, a revised set of built form regulations, and a relaxation of parking provisions. Results of this decision were positive, with a demonstrated increase in development activity and substantial growth of the local tax base.

5.4 Policy Recommendations

5.4.1 Link Residential and Employment Growth

Recommended Policy	City of Toronto Official Plan (2006) Precedent	Revision
<p><i>Further integrate City employment lands into the urban fabric to encourage improved accessibility and maintain a healthy mix of residential and employment growth throughout the City :</i></p> <ul style="list-style-type: none"> <i>Support the establishment of mixed use centres on the fringes of existing employment lands, focusing on areas that currently demonstrate poor connectivity and limited accessibility.</i> 	<p>Section 2.2.4, <i>Employment Districts: Supporting Business and Employment Growth, Policy 6^A</i></p>	<p>Expand Existing Policy</p>
<p><i>Offer land use and housing credits to developers proposing multi-use developments in transit-supportive areas to encourage a balance between employment and residential growth.</i></p>		<p>New Policy</p>
<p><i>Implement impact-based zoning in designated employment and mixed-use areas throughout the City:</i></p> <ul style="list-style-type: none"> <i>Any and all non-polluting uses are permitted on Zone 1 ("white zone"), while polluting uses, permitted on Zone 2, are segregated accordingly</i> 		<p>New Policy</p>

5.4.2 Strengthen Centres and Neighbourhood Hubs

Recommended Policy	City of Toronto Official Plan (2006) Precedent	Revision
	<p>Section 2.3.1,</p>	<p>Expand</p>

^A "Development adjacent to or nearby Employment Districts will be appropriately designed, buffered and/or separated from industries as necessary to mitigate adverse effects from noise, vibration, traffic, odour and other contaminants, and to promote safety and security."

<p><i>Apply an Urban Village Strategy¹⁷ within the City's Neighbourhoods:</i></p> <ul style="list-style-type: none"> • <i>While maintaining the stability of City neighbourhoods, designate neighbourhood-scale centres and develop individual density and design guidelines for each;</i> • <i>Identify vacant or underutilized lots for neighbourhood gateway projects, community agriculture, and energy farms</i> 	<p><i>Healthy Neighbourhoods, Policy 6^B</i></p>	<p><i>Existing Policy</i></p>
<p><i>Encourage stratified or "podium" developments that feature a vertical mix of uses in high activity centres and areas served by mass transit:</i></p> <ul style="list-style-type: none"> • <i>Developments with a FSI greater than 5.0 that are located with a [defined number of] metres of higher order transit or a designated area must include a minimum of 25% of employment uses¹⁸;</i> <ul style="list-style-type: none"> ○ <i>Density transfers or credits may be permitted if there is a demonstrated need for the transfer;</i> ○ <i>Where a minimum of 2,000 m² of non-residential GFA existed on the site prior to redevelopment, the proposal must make provisions to retain or exceed this non-residential GFA.</i> 		<p><i>New Policy</i></p>

5.5 Additional Recommendations

- *Monitor the intensity, location, and quality of defined mixed use development on an annual basis¹⁹*

6.0 EXCELLENCE IN DESIGN

6.1 Objectives

Pedestrian Priority

Inspiring Design

^B "Community and neighbourhood amenities will be enhanced where needed by:

a) *improving and expanding existing parks, recreation facilities, libraries, local institutions, local institutions, local bus and streetcar services and other community services; and*

b) *creating new community facilities and local institutions, and adapting existing services to changes in the social, health and recreational needs of the neighbourhoods."*

Wayfinding

Repurposing of Utility Spaces

Active Nightscape

6.2 Lessons from Practice

This section will address the design considerations of built form and the public realm, which will be discussed in relation to the themes of accessibility, architectural quality, lighting, climatic factors, and ecological sensitivity. Predominant themes in achieving excellence in design hinge on attention to "dead" and underutilized urban spaces, flexible use of existing rights-of-way, pedestrian prioritization, celebration of iconic buildings as placemakers, and consideration of climatic context in design. Promotion of excellence in design, particularly through the designation of Special Design Districts noted below, presents an opportunity to apply the "Lighting, Quicker, Cheaper" approach proposed by the non-profit Project for Public Spaces organization²⁰. This strategy, similar to urban acupuncture, recommends a targeted investment within districts that will deliver tangible benefits without requiring staggering costs or lengthy timelines.

A number of cities and districts are making a commitment, through the provision of dedicated policy and guidelines, to the dissemination of information that both advances policy implementation and establishes the significance of design. Among the examples of design initiatives are a mandatory competitive design process for proposals meeting specific height criteria²¹, High Performance Landscape Guidelines²², and an Urban Design Policy²³.

6.2.1 Pedestrianization

The pedestrianization of existing rights-of-way offers a viable strategy to revitalize urban areas and bring people into the core. When planned strategically, dedicating routes or portions of routes to pedestrian use is a primary step in enhancing vibrant *Downtown* districts, while incentivizing transit use and active modes of transportation. Pedestrianization also contributes to an inviting and well-use public realm through the provision of sidewalk cafes, playspace, and street furniture.

6.2.2 Climate-Sensitive Design

Climate-sensitive design represents an effort to recognize the interaction of physical form and climate, such as wind, temperature and water elements. Directing attention to the role of seasonal factors in determining how pedestrians use and experience the public realm is essential in "winter" cities like Montreal, Minneapolis, and Toronto.

6.2.3 Reclaiming Underutilized Space

A critical component in creating compact and functional urban centres is the effort to redesign interstitial spaces along existing rights-of-way. The aim of this initiative is to reinvent marginal space as a City asset – including, but not limited to, the City's stock of alleyways, parking lots, and pockets of unproductive space. These underutilized spaces can be updated to balance their functional capacity with beautification elements and ecological design features. This approach will assist in establishing a fine-grained streetscape through increased visual interest and innovative use of existing spaces.

6.2.4 Strategic Lighting

Well-designed lighting can create the impression of activity, safety, and warmth. Thus, building a beautiful nightscape has been recognized as a key strategy in encouraging 24-hour activity. Strategic lighting schemes can be designed to enhance iconic buildings and civic landmarks, natural and architectural water features, squares, and streets and walkways. Strategic lighting schemes may also incorporate elements of the "dark skies" approach²⁴, which focuses on decreasing night time light pollution in urban regions.

Dark Skies

Major urban regions around the world are a significant source of light pollution from bright street and path lights, as well as from exterior and interior lighting on buildings. An overabundance of light on a regional scale may lead to excessive glare, energy and financial waste, and harm to sensitive ecological systems, including nocturnal wildlife. In an effort to reduce the negative impacts of over-illumination, the "dark skies" approach encourages the minimization of excess lighting through strategic timing, angle, and design of lighting elements.

6.3 Opportunities for the City

The current *Plan* demonstrates a commitment to the reinforcement of quality urban design within the public realm, built form, including tall buildings, and economic efforts through instruments such as the Urban Design Awards and competitions. Current *Plan* policy also echoes the significance of views, natural feature preservation, architecture, and accessibility considerations. However, there are instances of progress in the City, such as the discussions of "woonerfs" for the West Don Lands²⁵, that remain unsupported by strong *Plan* policy. Although the *Plan* addresses both pedestrian comfort in the public realm and the climatic impacts of new developments, current policies do not adequately attend to seasonal variation of the pedestrian experience and the need to design public spaces that remain attractive throughout the year. Thus, opportunities for enhancing the *Plan's* commitment to strong urban design include enhanced support for incentivization, innovative reuse, and role of seasonal conditions in influencing the experience of built form. In response to these identified opportunities, the recommendations below are intended to provide options for the City to introduce greater precision and boldness in policy.

6.4 Policy Recommendations

6.4.1 General

Recommended Policy	City of Toronto Official Plan (2006) Precedent	Revision
<i>Establish Special Design Districts within the City that will provide special urban design guidelines that are tailored to neighbourhood character and reinvestment needs.</i>	Section 3.1.5, <i>Heritage Conservation Districts, Policy</i>	Extend Existing Policy

	1(b) ^c	
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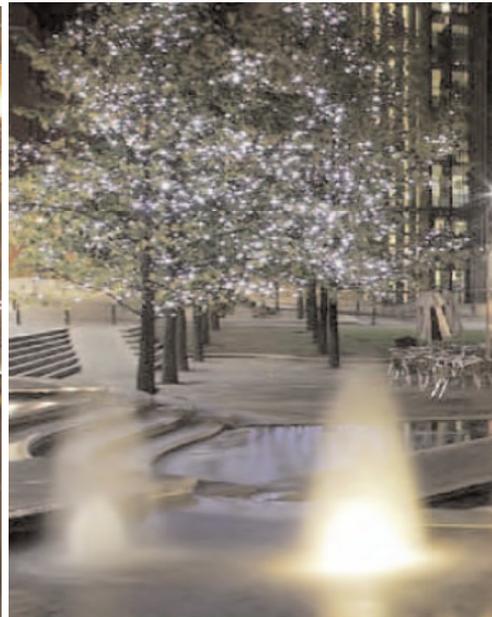
6.4.2 Reactivate Streets and Public Spaces

Recommended Policy	City of Toronto Official Plan (2006) Precedent	Revision
<i>Prioritize the experience of the pedestrian in the design of streets and public space.</i>		New Policy
<i>Encourage, where appropriate, the transformation of active thoroughfares to car-free pedestrian boulevards, shared (or "home") zones, and transit malls.</i>		New Policy
<i>Plan the development of a Pedestrian Spine, or Pedestrian</i>	Section 2.2.1,	Expand Existing

^c "Significant heritage resources, will be conserved by:

b) designating areas with a concentration of heritage resources as Heritage Conservation Districts and adopting conservation and design guidelines to maintain and improve their character."

<p><i>Network, that links pedestrianized streets, shared zones, transit malls, plazas, parks, and pedestrian-friendly streets throughout the City.</i></p>	<p><i>Downtown: The Heart of Toronto, Policy 11^D</i></p>	<p>Policy</p>
<p><i>Identify underutilized spaces as candidates for the location of pocket parks and urban plazas that connect to pedestrian malls and transit malls.</i></p> <ul style="list-style-type: none"> • <i>Explore opportunities to encourage flexible or temporary use schemes for active streets and avenues throughout the City, such as:</i> <ul style="list-style-type: none"> ○ <i>A Pop-Up Café Program²⁶;</i> ○ <i>Temporary or flexible use of the parking lane for pedestrians, vendors, cafes, kiosks, and festivals.</i> 		<p>New Policy</p>
<p><i>Encourage laneway-based development where on-site infrastructure, services, and physical design permit intensified activity and access.</i></p>		<p>New Policy</p>
<p><i>Enhance the night time experience of the City through a strategic lighting scheme that draws people to the Downtown:</i></p> <ul style="list-style-type: none"> • <i>Encourage a scheme that highlight's the City's focal points, landmarks, streetscape, and water features, both natural and constructed;</i> • <i>The scheme should be prepared to support a dark skies approach that minimizes light pollution while activating public spaces.</i> 		<p>New Policy</p>



^D "A program of street improvements will be developed to enhance the pedestrian environment and measures undertaken to make it safer to walk and cycle in the Downtown."



Birmingham's *Lighting Places* initiative features a mix of aesthetic and utility lighting to support a safe, active and inspiring public realm (Lighting Places. 2008. The Birmingham Plan. City of Birmingham)..

6.4.3 Reinvent (Utility) Spaces

Recommended Policy	City of Toronto Official Plan (2006) Precedent	Revision
<p><i>Re-develop "dead" urban space, including alleys, passageways, parking lots, utility corridors, and other underutilized interstitial spaces as active and functional components of the urban fabric:</i></p> <ul style="list-style-type: none"> <i>• Where possible, prioritize alleys, passageways and spaces that may be connected to the Pedestrian Spine;</i> <i>• Encourage pedestrian-scaled development to front onto alleys, passageways and redesigned spaces to support active use;</i> <i>• Partner with the design community to test innovative architecture, design, and landscape concepts within the redesign of alleys, passageways, and spaces;</i> 	<p>Section 3.1.1, <i>The Public Realm</i>, Policy 2^E</p>	<p>Extend Existing Policy</p>

^E "Creativity and excellence in architecture, landscape and urban design will be encouraged in private developments through programs such as the Urban Design Awards."

<ul style="list-style-type: none"> • Investigate opportunities to implement environmental design features, such as lighting, water management, and urban agriculture in redesigned spaces ; • Support the addition of special design features in utility spaces, such as parking lots, that provide visual interest during inactive periods, particularly in areas of high pedestrian activity. 		
Encourage temporary functional components, such as scaffolding, to contribute to street design and liveability.		New Policy



Urban alleyways and interstitial spaces can be redeveloped as active and beautiful elements of the urban fabric (Downtown Seattle: Public Places & Public Life. 2009.City of Seattle).

6.4.4 Reinforce the Role of Tall and Gateway Buildings

Recommended Policy	City of Toronto Official Plan (2006) Precedent	Revision
<p>Encourage the construction of iconic and identifiable buildings as gateway elements throughout the City:</p> <ul style="list-style-type: none"> • Encourage both new and existing transit stations to act as iconic and identifiable architectural components; • Provide specific design, redevelopment and maintenance guidance for corner and gateway properties. • Encourage the collaboration of artists and developers during the design and inception phase of major development projects, particularly those with an impact on the public realm and skyline. 	Section 3.1.1, The Public Realm, Policy 10 ^F	Expand Existing Policy

^F " Public buildings will be located and designed to promote their public status on prominent, visible and accessible sites, including street intersections, and sites that end a street view or face an important nature/cultural feature. Open space associated with public buildings will be designed to enhance the quality setting for the building and support a variety of public functions associated with its program."

<p>Require a competitive design process for development proposals involving a building that has, or will have, a height above ground level greater than²⁷:</p> <ul style="list-style-type: none"> • 55 metres in the Downtown; • 25 metres on any other land; • Developments having a capital value of more than \$50 million. 	Section 3.1.3, <i>Built Form- Tall Buildings</i>	Expand Existing Policy
<p>Redefine the "base building" and "middle (shaft)" elements of Tall Buildings as a "streetwall zone" and "pedestrian zone", respectively, to reinforce the defining role of the street²⁸:</p> <ul style="list-style-type: none"> • Ensure that Tall Buildings establish a distinct "streetwall zone" to define the street realm at a comfortable height of not more than 1.25 times the width of the street. • Establish a "pedestrian zone" through the use of façade treatments, such as building projections, changes in materials, setbacks, or other such architectural articulations. 	Section 3.1.3, <i>Built Form-Tall Buildings, Policy 1</i> ^G	Expand Existing Policy
<p>Within areas of high pedestrian activity, limit the street frontage of lobbies to 12 metres in width or 25% of the street frontage of the building, whichever is larger, and require the remaining frontage to be occupied with public-oriented uses, including commercial and public open space²⁹.</p>		New Policy

6.4.5 Design with Climate in Mind

Recommended Policy	City of Toronto Official Plan (2006) Precedent	Revision
<p>Design the City's public and open spaces to reflect the principles of Climate Sensitive Design Criteria:</p> <ul style="list-style-type: none"> • Maximize solar access and shelter from the wind in the design of pedestrian walkways, squares, and public open spaces; • Design open spaces to benefit from reflective and sheltering 	Section 3.1.2, <i>Built Form, Policy 3 (c), (d) & (e)</i> ^H	Expand Existing Policy

^G "Tall buildings should be designed to consist of three parts, carefully integrated into a single whole:

a) base building –provide definition and support at an appropriate scale for adjacent streets, parks, and open spaces, integrate with adjacent buildings, minimize the impact of parking and servicing areas;

b) middle (shaft) –design the floor plate size and shape with appropriate dimensions for the site, locate and orient it on the site and in relationship to the base building and adjacent buildings in a manner that satisfies the provisions of this Section; and
c) top –design the top of tall buildings to contribute to the skyline character and integrate roof top mechanical systems into the design."

^H "New development will be massed to fit harmoniously into its existing and/or planned context, and will limit its impacts on neighbouring streets, parks, open spaces and properties by:

c) providing for adequate light and privacy;

d) adequately limiting any resulting shadowing of, and uncomfortable wind conditions on, neighbouring streets, properties and open spaces, having regard for the varied nature of such areas; and

b) minimizing any additional shadowing and uncomfortable wind conditions on neighbouring parks as necessary to preserve their utility."

<p><i>effects of neighbouring buildings;</i></p> <ul style="list-style-type: none"> • <i>Ensure that public squares and pedestrian walkways provide multiple access points to a mix of vibrant indoor activities;</i> • <i>Encourage snow removal and storage practices that permit safe walking and cycling during winter months.</i> 		
<p><i>Encourage park and open space designs that incorporate, support, and showcase ecological processes and elements.</i></p>		New Policy

6.5 Additional Recommendations

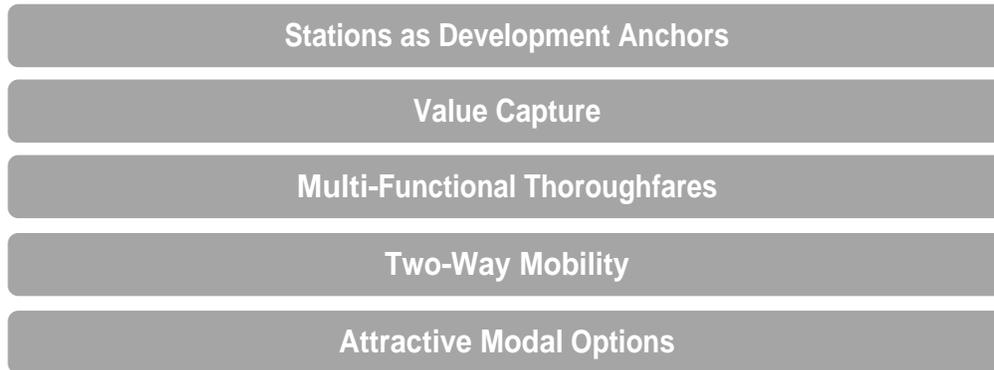
- *Update the City's Zoning By-law to support the Official Plan through "streetwall zone" and "pedestrian zone" guidelines that are consistent with the provisions of the Avenues and Mid-Rise Building Study (2010) and the Design Criteria for Review of Tall Building Proposals (2006).*
- *Develop a park and open space design guideline modelled on New York City's High Performance Landscape Guidelines: 21st Century Parks for NYC³⁰.*
- *Establish a comprehensive Urban Design Policy to be used in conjunction with the Official plan³¹.*
- *Lead annual open space forums for architects, planners, developers and property owners to assist in developing co-operative and creative approaches to planning and management of the open space network³²*

High Performance Landscape Guidelines: 21st Century Parks for NYC

In 2010, New York City introduced this ground-breaking manual for building a sustainable park system as part of a larger effort to revolutionize its notorious network of parks and open spaces. The document includes guidelines for the sustainable design, construction, and maintenance of the city's green spaces. Recognizing the significance of urban parks as valuable social and ecological elements, the Guidelines feature a review of best practices, a planning, design, and construction toolkit, and a suite of **recommendations for building a vibrant and resilient park system.**

7.0 TRANSIT-ORIENTED DEVELOPMENT

7.1 Objectives



7.2 Lessons from Practice

There is a wealth of global support for efficient transportation systems and transit-oriented development. Among the most prominent activities are station-area planning and investment, the designation of stations as placemakers, parking caps, and above-station development, including joint development agreements. The overall lesson to be drawn from these findings is the need to more directly align development with both existing and planned transportation infrastructure. Attendant to this objective, there is a call to distinguish between transit-oriented and transit-adjacent development and to create policies that realign private sector momentum toward the latter scenario. Further, transit must not only represent a planning priority, but should serve a primary structuring role (armature) for the City, in tandem with topographical features and major thoroughfares.

7.2.1 Station-Area Planning

Station-area planning represents an effort to recognize the latent potential for mass transit stations to serve as development anchors. A station-area planning scheme permits a focused approach to urban planning through the uses of density and employment targets, urban design specifications, and development incentives.

7.2.2 Development-Funded Transit (Joint Venture)

This model of funding for transit capital expenditure and operation relies on a direct link between the intensity and location of development and the construction of transportation infrastructure. As development and transit are co-planned, this model offers a greater incentive for development to capture land value more efficiently. The most recognizable example of the transit-development joint venture agreement is Hong Kong's Rail + Property Development model³³, whereby the Mass Transit Railway Corporation (MTRC) represents a key player in the sale and release of property for development. The profits generated from property sales are earmarked for transit operation and expansion.

Rail + Property Development Model

Hong Kong's Rail + Property Development Model refers to an agreement, whereby publically-owned land is sold at a reduced cost to the municipal government and the Metropolitan Transit Railway Corporation for resale and development. Through an on-site integration of transit and development, this model establishes a fiscal link between service provision and the intensity of use. With a full recovery of operation costs, the expansion, operation, and maintenance of the mass transit system is funded through a combination of fares and revenue from development. The role of the municipal government as a major shareholder ensures that public interests are prioritized.

7.2.3 Nodal Development

A concentration of true trip generators in compact, urban centres is an important ingredient in achieving successful transit-oriented development and true mixed use. The concept of nodal development is highly suited to station-area planning objectives, with the potential for stations to serve as node "anchors". When coupled with mass transit service, development nodes present highly lucrative economic and social opportunities due to the frequency and intensity of use. The presence of trip generators and vertical mixed use developments at node sites further enhances their roles within the urban armature.

7.3 Opportunities for the City

The current *Plan* supports growth management objectives through an integrated transit and development strategy. These policies direct population and job growth to areas serviced by transit, specifically in those areas designated as *Centres, Avenues, Downtown* and *Employment Districts*. The maintenance of the transit network and the prioritization of transit investment are also supported within the *Plan's* growth management policies. The *Plan's Progressive Agenda of Transportation Change* includes statutory provisions for traffic demand management (TDM), surface parking restrictions, and maximizing multi-modal capacity.

The *Plan* demonstrates many of the pivotal concepts with regard to transit-oriented urban form and connectivity. Furthermore, the concentration of new growth in the *Centres, Avenues, and Downtown* confirms that market forces are aligned with the City in building a transit-oriented future. The commitment to the Sheppard subway expansion and introduction of the Big Move further confirms that the City, along with the Greater Toronto Area, is on board to improve urban connectivity. The existing Secondary Plan provisions in the *Plan* may serve as the precursor to a future City station-area planning framework. Principles within the Big Move, such as mobility hub concept, may also demonstrate applicability at the local scale. Although not explicitly directed by *Plan* policy, the recent interest in the sale of air rights above the City's transit stations may lead to a viable means of value-capture investment and transit-oriented development.

Despite the celebrated level of development activity in the city, there is a demonstrated need to catalyze transit-oriented development, improve connectivity of Priority Neighbourhoods, and expand accessibility to areas of employment. Addressing these concerns will require a robust vision for the location of future transit corridors and clear policy direction for the development of planned and existing stations.

7.4 Policy Recommendations

7.4.1 General

Recommended Policy	City of Toronto Official Plan (2006) Precedent	Revision
<p><i>Prioritize improvements to City transit, pedestrian environment, and public realm to areas in which efforts are likely to produce tangible, short-term results, such as³⁴:</i></p> <ul style="list-style-type: none"> • <i>Congestion "hot spots" ;</i> • <i>Areas demonstrating "pent-up" potential for either transit improvements to serve existing density or intensification to support existing transit.</i> 		New Policy

7.4.2 Advance Station-Area Planning

Recommended Policy	City of Toronto Official Plan (2006) Precedent	Revision
<p><i>Establish maximum parking standards within a 500m radius of mass transit stations for retail, office, institutional, industrial, and public facilities.</i></p>	<p><i>Section 2.4, Bringing the City Together: A Progressive Agenda of Transportation Change, Policy 4 (b)^I</i></p>	Expand Existing Policy
<p><i>Expand City's Secondary Plan framework to include all mass transit stations^J.</i></p>	<p><i>Section 5.2.1, Secondary Plans: Policies for Local Growth Opportunities, Policy 2 (c)^K</i></p>	Expand Existing Policy
<p><i>Explore the feasibility of restructuring City zoning categories around</i></p>	<p><i>Section 2.2,</i></p>	Expand Existing

^I "For sites in areas well serviced by transit, such as locations around key subway stations and along major surface transit routes, consideration will be given to the establishment of:

b) minimum and maximum parking requirements;"

^J Growth Plan for the Greater Golden Horseshoe (2006), Section 2.2.5, Major Transit Station Areas and Intensification Corridors, Policies 1 & 2

^K "Secondary Plans will generally be prepared, in consultation with the community, for areas demonstrating one or more of the following characteristics:

c) areas where development occurring, or proposed, at a scale, intensity or character which necessitates reconsideration or reconfiguration of local streets, block plans, public works, open space or other public services or facilities;and"

<p><i>transit stations:</i></p> <ul style="list-style-type: none"> • <i>Establish a Transit Oriented Development Zoning Overlay District to address more specific needs in the immediate areas surrounding mass transit stations.</i> 	<p><i>Structuring Growth in the City: Integrating Land Use and Transportation, Policy 2 (b)^L</i></p>	<p>Policy</p>
<p><i>Establish a system of Transit Revitalization Investment Districts to encourage density increases, redesigns, and infrastructural improvements in the areas surrounding mass transit stations.</i></p>		<p>New Policy</p>
<p><i>Take advantage of opportunities to establish all mass transit stations and surrounding areas as distinct destinations to encourage two-way transit journeys and reverse commuting:</i></p> <ul style="list-style-type: none"> • <i>Stations and multi-modal interchanges that support the functional and physical integration of transit and development will be supported, while the construction of stand-alone facilities will be discouraged;</i> • <i>Ensure a seamless connection between mass transit stations and an established pedestrian spine;</i> • <i>Ensure that pedestrians and transit riders are granted prioritized access to active districts, public space, and pedestrianized routes to maximize the attractiveness and feasibility of transit ridership.</i> <ul style="list-style-type: none"> ○ <i>Where appropriate, locate pedestrian malls, boulevards and shared zones in areas served by higher order transit;</i> ○ <i>Areas designated as pedestrian malls, boulevards, and shared zones should demonstrate existing potential to serve as trip generators within the City.</i> 		<p>New Policy</p>
<p><i>Incentivize the location of major, mixed use development over and above mass transit stations to maximize site development potential and catalyze future intensification.</i></p> <ul style="list-style-type: none"> • <i>Tailor a Transfer of Development Rights (TDR) scheme that focuses receiving zones around and above transit stations to encourage intensification within station-areas.</i> 		<p>New Policy</p>
<p><i>Investigate the feasibility of a City-led land-value capture investment strategy to fund transportation infrastructural expansions^M.</i></p>		<p>New Policy</p>

7.4.3 Guide Urban Form

<p>Recommended Policy</p>	<p>City of Toronto</p>	<p>Revision</p>
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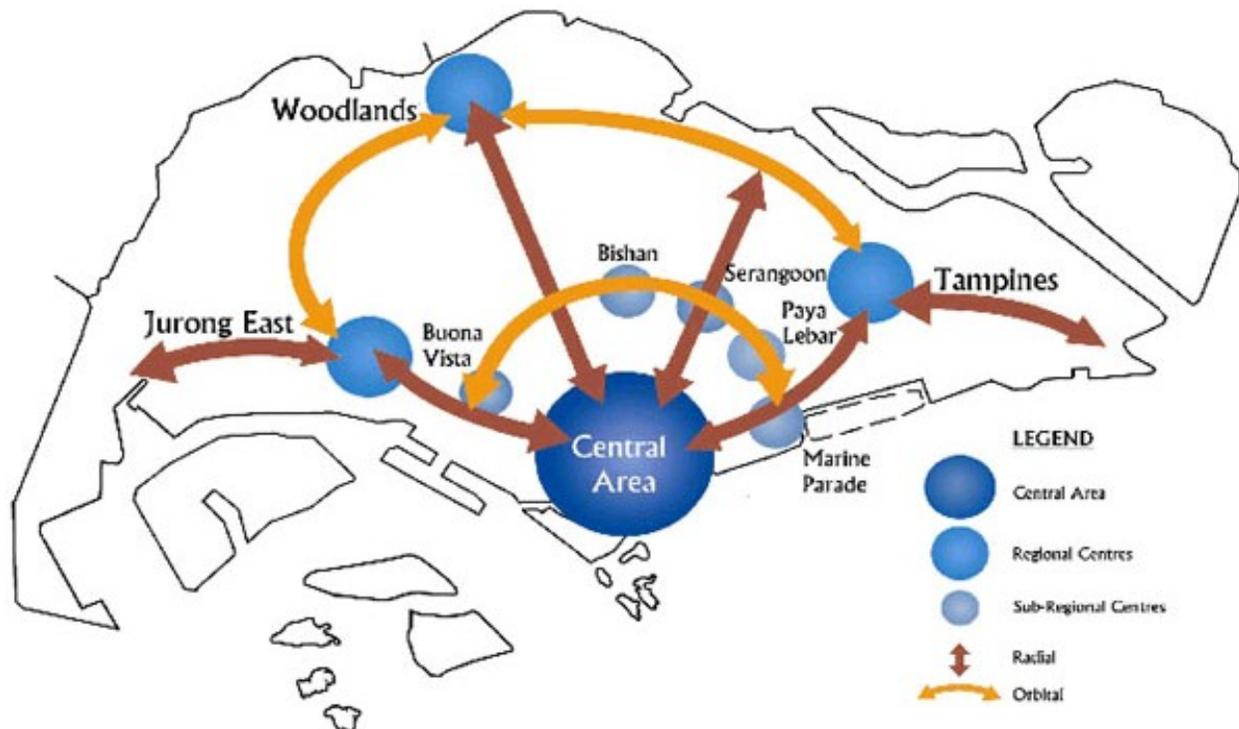
^L "Growth will be directed to the Centres, Avenues, Employment Districts and the Downtown as shown on Map 2 in order to:
b) concentrate jobs and people in areas well served by surface transit and rapid transit stations;"

^M Provincial Policy Statement (2005), Section 1.6.5, Transportation Systems, Policy 1.6.5.2

Designate 3-5 major City avenues as primary corridors or axes that will support the greatest development intensities and future mass transit lines³⁵.

- Axes should be planned to provide maximum connectivity between residential neighbourhoods (including designated Priority Neighbourhoods), employment centres, and the Downtown core^N.

New Policy



Singapore's Concept Plan (2001) proposes an extensive transit network that features both radial and orbital lines to maximize city-wide connectivity. (Concept Plan 2001. Urban Redevelopment Authority. Singapore Government. <http://www.ur.gov.sg/conceptplan2001/index.html>).

8.0 HERITAGE RESOURCE PROTECTION

8.1 Objectives

Celebrated Views and Gateways

Preservation as a Financial Opportunity

Cultural and Built Heritage

^N Provincial Policy Statement (2005), Section 1.8, Energy and Air Quality, Policy 1.8.1 c)

8.2 Lessons from Practice

The scan of built heritage preservation practice indicates that conservation efforts are best achieved through community and stakeholder collaboration. Closely linked with consultative initiatives is the need for effective and transparent dissemination of resources to the development community through workshops and guidelines. The focus on community is further extended by the use of a View Management Framework³⁶, whereby preservation is achieved through the lens of the urban experience. Lastly, the review of practice confirms the role of cross referencing between preserving goals and other *Plan* objectives, such as industrial revitalization, in strengthening the policy framework and highlighting emerging opportunities.

8.2.1 Incentives and Support

Heritage preservation policies must be planned with reference to the needs and requirements of the private sector. Thus, it is imperative that policies are advanced to increase the financial feasibility and attractiveness of conserving structures of heritage significance. Incentives should be provided in conjunction with the dissemination of practical information to developers, through such mediums as workshops, guidelines and case studies.

8.2.2 Repurposing of Buildings

Reinforcing the link between conservation objectives with both Provincial and municipal employment targets in policy presents a lucrative opportunity for mutual success. This initiative builds on the value of conserving industrial heritage, while revitalizing obsolete districts, maintaining a non-residential tax base, and supporting sustainability objectives. The availability of existing industrial space and its proximity to required infrastructure and services, such as railways, may represent a marketable opportunity for the private sector.

8.2.3 Cultural Experience of Heritage

Buildings and landmarks are selected for preservation not only for their aesthetic qualities, but also for their roles in supporting local identity and the celebration of place. Thus, the benefits of preservation are most broadly realized by extending the scope of conservation beyond a the establishment of the City's *Inventory of Heritage Properties*, whereby the success of this conservation strategy is measured numerically. Alternatively, preservation efforts should place stronger emphasis on the recognition of historical people, events, views, and beliefs and the significance of these elements in enriching the urban experience.

8.3 Opportunities for the City

The City's cultural heritage protection policies have been identified for a full revision. With the introduction of the Ontario Heritage Act in 2005, the *Plan's Heritage Resources* policies no longer account for the tools and resources most recently available to the City. In addition to an alignment with Provincial legislation, the revised *Heritage Resources* section should reflect lessons learned from best planning practices, including the themes of transparency, cross-referencing of objectives, and urban experience. There is an overarching need to collaborate with developers, property owners and project managers through the use of incentives and the dissemination of clear and constructive information. A carefully prepared toolkit of incentives and guidelines should exemplify a value-added approach for developers to capture the advantages conferred through preservation.

The *Plan* endorses the protection of views and focal points in support of the "City of Beauty" principle. View corridors, sightlines, vistas and significant features are granted further recognition as valuable elements by several policy sections within the *Plan*. However, the value of these elements has not been recognized within the City's *Heritage Resources* policies. While existing policies are largely

focused on the practice of conservation, the recognition of views and vistas of heritage significance underscores the vital significance of the urban experience in rationalizing preservation.

As part of the Review, the City should be encouraged to build a stronger policy framework through cross-referencing of objectives. In particular, the revised *Heritage Resources* section should lend support to the preservation of industrial heritage, which might be linked to the fulfillment of employment targets, growing the non-residential tax base, and revitalizing obsolete districts. Enthusiasm for the Distillery District, Evergreen Brickworks, and Wychwood Barns projects confirms that the advantages of industrial heritage preservation are acknowledged within the private sector. Such successful experiences in the field highlight an opportunity for the City to champion and direct existing momentum for the preservation and renewal of industrial heritage.

8.4 Policy Recommendations

8.4.1 General

Recommended Policy	City of Toronto Official Plan (2006) Precedent	Revision
<p><i>Explore the feasibility of a Transfer of Development Rights (TDR) scheme to incentivize preservation within the private sector.</i></p>	<p>Section 3.1.5, <i>Heritage Resources, Policy 3^O</i></p>	<p>Expand Existing Policy</p>

8.4.2 Protect Views and Gateways

Recommended Policy	City of Toronto Official Plan (2006) Precedent	Revision
<p><i>Develop a View Management Framework to support the preservation of significant views and vistas within the urban landscape^P:</i></p> <ul style="list-style-type: none"> • <i>Designate a list of protected views and vistas of cultural, historical, aesthetic or architectural significance within the City;</i> 	<p>Section 3.1.1, <i>The Public Realm, Policy 8</i></p>	<p>Extend Existing Policy</p>

^O "Public incentives to encourage the conservation and long-term protection of heritage resources will be created."

^P "Scenic routes with public views of important natural or human-made features should be preserved and, where possible, improved by:

- a) maintaining views and vistas as new development occurs;
- b) creating new scenic routes or views when an opportunity arises; and
- c) increasing pedestrian and cycling amenities along the route."

<ul style="list-style-type: none"> Identify buildings, landmarks, and environmental features which contribute to the form or value of the protected view or vista. 		
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8.4.3 Link the Economic and Environmental Benefits of Revitalization

Recommended Policy	City of Toronto Official Plan (2006) Precedent	Revision
<p><i>Focus preservation efforts on sites that demonstrate the potential to act as area-wide economic and development catalyst projects.</i></p>		New Policy
<p><i>Direct heritage protection efforts to the identification, rehabilitation, and innovative reuse of decommissioned and obsolete industrial sites and complexes:</i></p> <ul style="list-style-type: none"> <i>Where appropriate, facilitate land parcel reorganization to jumpstart infill and incremental site reuse.</i> 	<p>Section 4.7, <i>Regeneration Areas</i>, Policy 1 (c)^Q</p>	Expand Existing Policy

^Q "Regeneration Areas will provide for a broad mix of commercial, residential, light industrial, parks and open space, institutional, live/work and utility uses in an urban form to:
 c) restore, re-use and retain existing buildings that are economically adaptable for re-use, particularly heritage buildings and structures through the use of incentives;"

9.0 PLANNING FOR RESILIENCE

9.1 Objectives



9.2 Lessons from Practice

As a complement to the priorities identified by Council, the scan of international practice has highlighted recurring priorities and approaches that the City is encouraged to consider. These "fringe" areas reflect emerging strategies that are expected to gain momentum as the global commitment to resilience and adaptation continues to grow. Among the most relevant examples for the City are urban agriculture and the sustainable district concept. Urban agriculture, while allowing local food production and delivery, may help in building capacity and community cohesion.

Working models of the sustainable district concept include Vauban³⁷, HafenCity³⁸, Jurong Lake District and Marina Bay³⁹, and Hammarby⁴⁰, while policy examples include Birmingham's Sustainable Urban Neighbourhood policy⁴¹, Portland's ecodistrict approach⁴², and Stockholm's eco-profile initiative⁴³. Establishing sustainable districts creates opportunities for the regeneration of greyfields and brownfields to support compact, mixed use communities. Sustainable districts may also serve as test beds for innovative development proposals.

9.2.1 Model Pilots

Sponsoring model pilot projects is especially important for the promotion of "bold" initiatives that may require incremental application. Leading incremental achievement is of particular importance for land use proposals that call for major structural and/or behavioural shifts within the community. Model pilots of innovative concepts and practices allow a particular proposal to be tested at a reduced risk; if successful, benefits of the proposal become visible to the wider community.

9.2.2 Building Local Capacity

Increasing the supply of arable urban land offers an opportunity to leverage local talent, reduce transportation pressures, and maximize productivity on underutilized sites. Planning for food production at the community-level can assist in improving the availability and affordability of healthy food options, while opening up opportunities for resident collaboration and empowerment.

9.2.3 District Energy Systems

The financial and environmental benefits of district energy are achieving recognition in the development community. District energy systems allow excess heat or electricity (cogeneration), which are produced at a central plant, to be distributed and shared amongst users in the district. Renewable energy generation may be used in the place of conventional power sources to further enhance the benefits of district energy agreements. As the benefits of district energy systems are most efficiently realized in a compact urban environment, there is an opportunity to couple infill and intensification objectives with district energy goals.

9.3 Opportunities for the City

The current *Plan* lends support for a range of urban sustainability goals, such as renewable energy systems, green buildings, green industry, and conservation of ecological features. In 2000, the City introduced a Food Charter to ensure that affordable and nutritious food sources would be available in the City. The *Plan* supports the land use component of the Charter through anti-sprawl policies and community gardens as a potential use in greenspaces. However, in comparison to international examples of municipal policy, the role of the current *Plan* in supporting resilience and innovation is limited.

While existing policies confirm the City's commitment to urban sustainability, there is considerable room to provide greater specificity and more focused direction. In particular, consideration should be given to support for a district-scale approach to urban sustainability, where forward-looking and innovative concepts can be tested and showcased. There is also a call to expand the City's political sway with regard to community gardens and urban agriculture, which are only weakly supported not in the statutory sections of the current *Plan*.

Agricultural land represents one of the most significant resources within the Greater Toronto Area. However, despite the protective efforts of the *Greenbelt Act* (2005), pressures created by rapid fringe development and "leapfrogging" are straining the capacity of existing agricultural lands to meet demand. In consideration of these pressures, the addition of a detailed food planning and urban agriculture policy within the *Plan* would strengthen the City's regional role as a source of affordable and quality food.

9.4 Policy Recommendations

9.4.1 General

Recommended Policy	City of Toronto Official Plan (2006) Precedent	Revision
<i>Link intensification and sustainability initiatives by encouraging the co-location of mass transit infrastructure, activity nodes and district energy systems^R.</i>		New Policy

^R Provincial Policy Statement (2005), Section 1.8, *Energy and Air Quality*, Policy 1 (a)

9.4.2 Sustainable Districts

Recommended Policy	City of Toronto Official Plan (2006) Precedent	Revision
<p><i>Establish local areas within the City as Sustainable Urban Neighbourhoods that connect to the surrounding urban fabric, while showcasing and piloting sustainable urban practices, such as:</i></p> <ul style="list-style-type: none"> • <i>Green energy systems;</i> • <i>Car-free zones;</i> • <i>Non-traditional housing arrangements that cater to a range of household types;</i> • <i>Sustainable architecture;</i> • <i>Urban Agriculture;</i> • <i>Real-time monitoring of environmental features.</i> 		New Policy
<p><i>Capitalize on the opportunities offered by large development sites, commercial and industrial sites, and activity nodes to encourage economically viable renewable energy production⁴⁴.</i></p>	<p>Section 3.4, <i>The Natural Environment</i>, Policy 22^S</p> <p>Section 3.5.1, <i>Supporting the Foundations of Competitiveness</i>, Policy 3 (c)^T</p>	Expand Existing Policy

^S "Redevelopment of large industrial sites, including brownfield sites, should receive special attention to achieve high standards of pollution abatement, green roof technology and/or alternative energy production, such as co-generation, hydrogen energy or renewable energy."

^T "Investment on the part of public agencies or through partnership agreements will ensure that key competitive infrastructure will be maintained, improved and extended in the following areas:

c) reliable supply of energy sources included electricity, natural gas and district heating and cooling;"

9.4.3 Urban Food Policy

Recommended Policy	City of Toronto Official Plan (2006) Precedent	Revision
<i>Expand the urban food production capacity of the City to support the resilience of communities and local economic systems.</i>		New Policy
<p><i>Develop a detailed food policy for the City to encourage the growth of an accessible, resilient and sustainable City food system, ensuring that:</i></p> <ul style="list-style-type: none"> • <i>The opportunity for food production is increased on private and public lands;</i> • <i>The local food system infrastructure is strengthened;</i> • <i>Citizens have access to affordable, healthy, and local food;</i> • <i>More food waste is recovered and re-used for productive purposes⁴⁵.</i> 	Section 3.1.1, <i>The Public Realm</i> , Policy 17 (c) ^U	Expand Existing Policy

9.5 Additional Recommendations

- *Develop a city-wide Heat Demand Map (kW/m²/year) to illustrate areas demonstrating the greatest potential for the efficient implementation of district energy systems⁴⁶.*

10.0 MONITORING AND EVALUATION

10.1 Objectives

Frequent Evaluation

^U "New parks and open spaces will be located and designed to:

c) provide appropriate space and layout for recreational needs, including forms of productive recreation such as community gardening; and"

Responsive Policy

Transparency and Accountability

Clear Benchmarks

10.2 Lessons from Practice

International examples of monitoring strategies demonstrate the need for frequent and timely evaluation and reporting, which is mandated to occur on an annual basis in several cities. This level of monitoring frequency places municipalities in a position to become aware of and respond to needs and concerns as they arise. The importance of achieving transparency in the development and delivery of municipal policy was also highlighted by the research. For instance, the Chicago Metropolitan Agency for Planning⁴⁷ publishes current data related to specific benchmarks, targets, and indicators that demonstrate the progress of municipal objectives and programs. In addition to highlighting areas of concern within the policy framework, annual reporting of indicator status provides a tangible rationale for policy.

10.2.1 Adaptive Management

Cities are not static. As such, it is imperative that visions and development plans reflect a commitment to assess and adequately respond to emerging conditions, priorities, and risks. The adaptive management strategy must include an effective method for evaluating not only the efficacy of policy, but also the social, economic, and environmental implications of specific statutes. The evaluation phase must be followed by a timely redress of policy identified for revision.

10.2.2 Regular Reporting

A schedule of predictable and regular reporting is essential to achieving transparency and accountability. The formal review cycle timeline must balance the value of frequent monitoring with the need to ensure sufficient time for the collection of representative data. While annual reporting has been demonstrated as feasible and effective, an adaptive management strategy must account for those objectives where a representative revision may require data collected across multiple years.

10.2.3 Qualitative and Quantitative Indicators

Building an accurate picture of weaknesses and successes in the policy framework is essential. Numerical data is useful in providing a clear and understandable overview of conditions; however, quantitative data may be insufficient to reveal shortfalls or concerns in experiential and subjective matters, particularly those concerning equity. A comprehensive review, therefore, requires indicators that capture measurable conditions and those concerning experience and perceptions of satisfaction.

10.3 Opportunities for the City

Statutory support for monitoring and assessment within the current *Plan* is comparatively narrow and offers little direction with regard to annual or bi-annual review. Rather, the *Plan* is aligned with Provincial legislation in specifying a 5-year review cycle and calls for more frequent revision only "as circumstances warrant". As demonstrated through international examples, and in consideration of the City's experiences of shifting conditions, the mandatory 5-year revision schedule may be too infrequent to allow adequate policy response. In addition to consideration of policy efficacy and issues raised through

consultation, a thorough and consistent monitoring strategy must ensure that Municipal non-statutory strategies are strengthened within the *Plan* through appropriate land use considerations. Moreover, the existing policy calls for the development of relevant targets and indicators to demonstrate the progress of *Plan* policy, which may be developed concurrently with the Review. Examples of international precedent, including indicators and adopted targets, have been provided alongside those recommended indices that have been derived directly from practice. These index recommendations are intended to provide the foundation for a future monitoring framework, which should be expanded and modified to maintain an alignment with amended policy and stakeholder priorities.

10.4 Policy Recommendations

Recommended Policy	<i>City of Toronto Official Plan (2006) Precedent</i>	Revision
<i>The City will conduct an Adaptive Management Program to ensure that progress is made towards the objectives and goals contained in the</i>		New Policy

<p><i>Official Plan, while adapting to evolving needs and conditions within the City and broader context.</i></p>		
<p><i>The Adaptive Management Program will ensure that:</i></p> <ul style="list-style-type: none"> • <i>Risks are assessed and mitigated, as possible;</i> • <i>Implementation follows a detailed strategy that is regularly reviewed and updated;</i> • <i>Implementation responds to change and promotes learning;</i> • <i>Progress towards goals and broad objectives is measured, evaluated and shared;</i> • <i>New knowledge is incorporated into policy and practice⁴⁸.</i> 		<p>New Policy</p>
<p><i>The Adaptive Management Program will be supported by an annual monitoring and evaluation program, including:</i></p> <ul style="list-style-type: none"> • <i>Outcomes and targets;</i> • <i>Measurable key performance indicators;</i> • <i>Methods of data collection and analysis;</i> • <i>Considerations for data interpretation;</i> • <i>Methods and guidelines for reporting⁴⁹.</i> 	<p>Section 5.4, <i>Monitoring and Assessment,</i> Policy 1^V</p>	<p>Expand Existing Policy</p>
<p><i>Each annual review of the Official Plan will result in an Annual Report, containing:</i></p> <ul style="list-style-type: none"> • <i>An assessment of Official Plan Policy with regard to the key performance indicators;</i> • <i>Encountered and foreseeable risks;</i> • <i>An analysis of new knowledge, opportunities, and needs;</i> • <i>A strategy for addressing new findings and mitigating identified risks.</i> 	<p>Section 5.4, <i>Monitoring and Assessment,</i> Policy 2^W</p>	<p>Expand Existing Policy</p>
<p><i>Develop a strategy for the reporting and dissemination of evaluation results that reflects a commitment to transparency and accountability⁵⁰</i></p>		<p>New Policy</p>

^V "Appropriate targets and indicators will be established to serve as a basis for assessing progress toward achieving the objectives of this Plan. Progress will be assessed periodically and will be informed by an analysis of:

- a) the social, economic, environmental and fiscal trends affecting the City, the region, the province and the country;
- b) population, employment and housing trends;
- c) changing travel patterns;
- d) changes in the legislative environment; and
- e) social and physical infrastructure improvements required and provided to serve growth in population and employment."

^W "The need to review and revise this Plan will be considered every five years to ensure the continued relevance of the Plan's policies and objectives in light of changing social, economic, environmental, legislative and fiscal circumstances. This assessment will examine achievements in the Plan's growth management strategy, the quality of the living and working environments created, the impact of growth in population and employment upon the services and quality of life enjoyed by residents and works and Toronto's evolving relationship with the broader urban region, among other matters. The need for new implementation initiatives will also be considered at least every five years, or sooner as circumstances warrant."

10.5 Index Recommendations

10.5.1 Achieving True Mixed Use

Recommended Index	International Precedent
<i>Number proposals that fail to comply with mixed use performance</i>	
<i>Number of children living Downtown</i>	<i>"Number of children living in the city centre"¹⁵¹</i>
<i>Number and size of play spaces</i>	<i>"Number and size of play spaces increases"¹⁵²</i>
<i>Number of affordable, family-friendly units</i>	<i>"Increase in number of 3+ bed residential units"¹⁵³</i>
<i>Land Use Diversity Index</i>	<i>Land Use Diversity Index⁵⁴</i>
<i>Jobs Per Household</i>	
<i>Percent of population living within [defined distance] of a park</i>	<i>"% of New Yorkers that live within a 1/4 mile of a park"¹⁵⁵</i>

10.5.2 Excellence in Design and Public Realm

Recommended Index	International Precedent
<i>Creation of public spaces and squares</i>	
<i>Use frequency and intensity of public spaces and squares</i>	

Number of Design Competitions

10.5.3 Transit-Oriented Development

Recommended Index	International Precedent
<i>Percent of population living and working within [defined distance] of a mass transit station</i>	<i>"Per cent of population and jobs within 400m of Primary Transit Network"⁶⁶</i>
<i>Percent of population living within a Centre, Mixed Use Area, or Avenue and [defined distance] of urban and neighbourhood corridors</i>	<i>"Per cent of population within Major and Community Activity Centres, and 600m of Urban and Neighbourhood Corridors"⁶⁷</i>
<i>Increase in transit ridership and active transportation as percentages of total trips (Modal Share)</i>	<i>"8% increase in public transit ridership by 2012 as recommended in the Politique québécoise du transport collectif"⁶⁸</i> <i>"26% increase in public transit ridership by 2021"⁶⁹</i>
<i>Percent of population living in designated Transit Secondary Plan Areas</i>	<i>"Proportion of total population within TOD development areas"⁶⁰</i>
<i>Density of development within designated Transit Secondary Plan Areas</i>	<i>"Square feet of new development within 1/4 mile of rail station"⁶¹</i>
<i>Ratio of average public transit journey time to average car journey times</i>	<i>"Average public transport journey times will be reduced from 1.7 times of that by car today to 1.5 times by 2020"⁶²</i> <i>" By 2020, we aim for at least 85% of public transport commuters to complete their journey within 60 minutes during the morning peak hours, from the time they set out on their journey to their destination (i.e. 'door-to-door' journey time), up from 71% today".⁶³</i>

<i>Decrease in the distance driven per resident</i>	<i>"Reduce distance driven per resident 20% from 2007 levels"⁶⁴</i>
<i>Percent of population reporting that they can walk or bike to local services to meet basic needs</i>	<i>"By 2035, create complete 20-minute neighborhoods where 90 percent of Portlanders can safely and easily walk or bike to local services and amenities to meet their household needs."⁶⁵</i>

10.5.4 Heritage Resource Protection

Recommended Index	International Precedent
<i>Number of historically- and culturally-significant buildings registered under the Inventory of Heritage Properties</i>	
<i>Number of buildings returned to productive re-use</i>	<i>"Number of formerly industrial buildings reused for residential or community uses"⁶⁶</i> <i>"Total linear feet (for railroad corridors and utility rights of way) and/or total acreage (for parcel-based industrial facilities) returned to productive use"⁶⁷</i>

10.5.5. Planning for Resilience

Recommended Index	International Precedent
<i>Percent land with densities capable of supporting district energy systems</i>	<i>"Per cent of land area with densities supportive of district energy systems"⁶⁸</i>

10.6 Action Recommendations

- *Work in partnership with planning staff, stakeholders, community members, and the private sector to develop a detailed Implementation Plan that will complement the Official Plan through identification of opportunity areas and recommended actions.*
 - *The Implementation Plan should include:*
 - *Objectives;*
 - *Actions;*
 - *Schedules; and*
 - *Participating Agencies.*
- *Launch a City-wide, publically-accessible monitoring interface modelled on Chicago's Metropulse Regional Indicators Project website: <http://www.metropulsechicago.org/>*

11.0 CONCLUSION

The City has experienced a rapid boom in residential development and population growth over the past decade. With the introduction of the *Plan* in 2006, the bulk of this development and urbanization has been successfully channelled into those areas targeted for growth – namely, the City's *Downtown, Centres, Avenues, and Mixed Use Areas*. In accordance with the *Growth Plan for the Greater Golden Horseshoe* (2006), the City is on schedule to meet population and employment growth targets for 2031. While these observations demonstrate that the *Plan* has been largely successful to date, completion of the Comprehensive Review for the achievement of long-term global competitiveness. The purpose of this exploratory report is to offer opportunities for revising, expanding and enriching the City's policy framework, with particular reference to those priorities defined by City staff and Council, that are drawn from a global overview of municipal planning practices and policies.

The results of the best practice overview confirm that the City is in good standing on the international stage of urban planning and development. Among the City's successes are strong commitments to transit-oriented development, liveability, green space protection, and balanced growth, which are championed by a large share of world-class cities. However, the analyses of policies and strategies adopted around the world indicate that the City may require improvements in the conveyance and explicit support of boldness, creativity, and precision in municipal land use policy. As such, the policy

recommendations prepared for this report are intended to offer concrete examples for the City to expand, enrich, and strengthen existing policy. Although the City has adopted a strong set of objectives, the long-term competitiveness of the City will depend on a policy framework that is both highly responsive and capable of delivering focused results.

12.0 REFERENCES

Cover Page Images:

Café: World Class Streets: Remaking New York City's Public Realm. New York City Department of Transportation. New York City.

Pedestrian Street: West Don Lands Public Realm: Don Lands Progress Summary. Waterfront Toronto.
http://www.waterfrontoronto.ca/uploads/documents/2_wt_james_roche_1.pdf

Light Rail: Business Overview. July 2011. MTR Corporation Ltd.

Building Interior: The New Geography of Office Location and the Consequences of Business as Usual in the GTA. March 2011. Canadian Urban Institute.

Content:

¹ The New Geography of Office Location and the Consequences of Business as Usual in the GTA. March 2011. Canadian Urban Institute.

² Auckland Regional Growth Strategy: 2050. November 1999. Auckland Regional Growth Forum. Auckland Regional Council.

³ Future Melbourne 2020. Consultation Draft. 2008. City of Melbourne. futuremelbourne.com.au

⁴ Dsg-II: Strategic Blueprint for the Design Singapore Initiative. 2009. Design Singapore Council. Ministry of Information, Communications and the Arts. www.designsingapore.org

⁵ City and County of San Francisco Municipal Code. 1996 Charter. September 2006. Municipal Code Corporation.

⁶ Draft Auckland Plan. Auckland Council. www.theaucklandplan.govt.nz

⁷ Eco-Metropolis: Our Vision for Copenhagen 2015. 2007. City of Copenhagen. Technical and Environmental Administration. www.kk.dk/ecometropolis

⁸ PLANYC: A Greener, Greater New York. April 2011. City of New York.

⁹ Plan Amsterdam-Structural Vision: Amsterdam 2040. January 2011. Department of Physical Planning. City of Amsterdam.

Perspective Munich: Shaping the future of Munich. Development Report. 2005. Department of Urban Planning and Building Regulation. City of Munich.

¹⁰ The London Plan: Spatial Development Strategy for Greater London. July 2011. Greater London Authority.

¹¹ Concept Plan 2001. Urban Redevelopment Authority. Singapore Government.
<http://www.ura.gov.sg/conceptplan2001/index.html>

¹² City of Seattle Comprehensive Plan: A Plan for Managing Growth 2004-2024. January 2005. Department of Planning and Development. City of Seattle.

¹³ Hong Kong Planning Standards and Guidelines. August 2011. Hong Kong Government
Minneapolis Comprehensive Plan. 2000. Community Planning and Economic Development Department, Planning Division. City of Minneapolis
Sacramento 2030 General Plan: Land Use and Urban Design. March 2009. City of Sacramento

-
- ¹⁴ Transit Center District Plan. Draft for Public Review. November 2009. San Francisco Planning Department. San Francisco Redevelopment Agency
- ¹⁵ Case Studies for Transit Oriented Development. Briefing report No. 3. March 2009. LISC Phoenix. Reconnecting America.
- ¹⁶ Regeneration in the Kings: Directions and Emerging Trends. November 2002. Urban Development Services. City Planning Division. City of Toronto.
- ¹⁷ City of Seattle Comprehensive Plan: A Plan for Managing Growth 2004-2024. January 2005. Department of Planning and Development. City of Seattle.
- ¹⁸ Transit Center District Plan. Draft for Public Review. November 2009. San Francisco Planning Department. San Francisco Redevelopment Agency.
- ¹⁹ Draft Auckland Plan. Auckland Council. www.theaucklandplan.govt.nz
- ²⁰ Lighter, Quicker, Cheaper: A Low-Cost, High-Impact Approach. Project for Public Spaces. <http://www.pps.org/articles/lighter-quicker-cheaper-a-low-cost-high-impact-approach/>
- ²¹ Sydney Local Environmental Plan 2011. December 2010. Minister for Planning.
- ²² High Performance Landscape Guidelines: 21st Century Parks for NYC. 2010. Design Trust for Public Space. City of New York Parks & Recreation.
- ²³ Atlanta Comprehensive Development Plan (CDP). 2011. City of Atlanta.
- ²⁴ Dark Sky Lighting. Muskoka Watershed Council Technical Bulletin. Muskoka Watershed Council. <http://www.muskokaheritage.org/watershed/PDFs/DarkSkyLighting.pdf>
- ²⁵ West Don Lands Public Realm: Don Lands Progress Summary. Waterfront Toronto. http://www.waterfronttoronto.ca/uploads/documents/2_wt_james_roche_1.pdf
- ²⁶ PLANYC: A Greener, Greater New York. April 2011. City of New York.
- ²⁷ Sydney Local Environmental Plan 2011. December 2010. Minister for Planning.
- ²⁸ Transit Center District Plan. Draft for Public Review. November 2009. San Francisco Planning Department. San Francisco Redevelopment Agency.
- ²⁹ Transit Center District Plan. Draft for Public Review. November 2009. San Francisco Planning Department. San Francisco Redevelopment Agency.
- ³⁰ High Performance Landscape Guidelines: 21st Century Parks for NYC. 2010. Design Trust for Public Space. City of New York Parks & Recreation.
- ³¹ Atlanta Comprehensive Development Plan (CDP). 2011. City of Atlanta.
- ³² Linking People + Spaces: A Strategy for Melbourne's Open Space Networks. 2002. Parks Victoria.
- ³³ Business Overview. July 2011. MTR Corporation Ltd.

-
- ³⁴ Jersey City Master Plan: Circulation Element. April 2009. T & M Associates. The City of Jersey City. Transit-Oriented Development in the United States: Experiences, Challenges, and Prospects. 2004. Transit Cooperative Research Program. Report 102. Federal Transit Administration. Transportation Research Board.
- ³⁵ Hong Kong 2030: Planning Vision and Strategy. October 2007. Hong Kong Special Administrative Regional Government. Development Bureau & the Planning Department.
- ³⁶ The London Plan: Spatial Development Strategy for Greater London. July 2011. Greater London Authority.
- ³⁷ Green City Freiburg: Approaches to Sustainability. Sustainability Office. City of Freiburg.
- ³⁸ HafenCity Hamburg – The Master Plan. 2006. HafenCity.
- ³⁹ A Lively and Liveable Singapore: Strategies for Sustainable Growth. 2009. Ministry of the Environment and Water Resources & Minister of National Development.
- ⁴⁰ The Walkable City: Stockholm City Plan. March 2010. Stockholm City Council.
- ⁴¹ Birmingham Core Strategy. Final Draft. October 2010. Birmingham City Council.
- ⁴² The Portland Plan Phase III: Healthy Connected Neighborhoods Strategy. Draft. 2011. City of Portland. www.pdxplan.com
- ⁴³ The Walkable City: Stockholm City Plan. March 2010. Stockholm City Council.
- ⁴⁴ North Vancouver 100 Year Sustainability Vision. May 2009. The Design Centre for Sustainability. City of North Vancouver. www.cnv.org/100YearVision
The Comprehensive Plan for the National Capital: District Elements (Washington, DC). December 2006. District of Columbia.
- ⁴⁵ Draft City of Victoria Official Community Plan. April 2011. City of Victoria Planning and Development Department, Community Planning Division. City of Victoria. www.ShapeYourFutureVictoria.ca
- ⁴⁶ The London Plan: Spatial Development Strategy for Greater London. July 2011. Greater London Authority.
- ⁴⁷ Metropulse Regional Indicators Project: <http://www.metropulsechicago.org/>
- ⁴⁸ Draft City of Victoria Official Community Plan. April 2011. City of Victoria Planning and Development Department, Community Planning Division. City of Victoria. www.ShapeYourFutureVictoria.ca
- ⁴⁹ Draft City of Victoria Official Community Plan. April 2011. City of Victoria Planning and Development Department, Community Planning Division. City of Victoria. www.ShapeYourFutureVictoria.ca
- ⁵⁰ Draft City of Victoria Official Community Plan. April 2011. City of Victoria Planning and Development Department, Community Planning Division. City of Victoria. www.ShapeYourFutureVictoria.ca
- ⁵¹ Draft City Centre Master plan. September 2011. Auckland Council.
- ⁵² Draft City Centre Master plan. September 2011. Auckland Council.
- ⁵³ Draft City Centre Master plan. September 2011. Auckland Council.
- ⁵⁴ Municipal Development Plan. September 2009. The City of Calgary.

-
- ⁵⁵ PLANYC: A Greener, Greater New York. April 2011. City of New York.
- ⁵⁶ Municipal Development Plan. September 2009. The City of Calgary.
- ⁵⁷ Municipal Development Plan. September 2009. The City of Calgary.
- ⁵⁸ Transportation Plan. 2008. Infrastructure, Transport and Environment Services. City of Montreal.
- ⁵⁹ Transportation Plan. 2008. Infrastructure, Transport and Environment Services. City of Montreal.
- ⁶⁰ Philadelphia 2035 Comprehensive Plan. PHILATool: The Planning & Health Indicator List & Assessment Tool. City of Philadelphia.
- ⁶¹ Philadelphia 2035 Comprehensive Plan. PHILATool: The Planning & Health Indicator List & Assessment Tool. City of Philadelphia.
- ⁶² LT Masterplan: A People-Centred Land Transport System. 2006. Land Transport Authority. Singapore Government.
- ⁶³ LT Masterplan: A People-Centred Land Transport System. 2006. Land Transport Authority. Singapore Government.
- ⁶⁴ Greenest City 2020 Action Plan (GCAP). July 2011. City of Vancouver.
- ⁶⁵ Portland Plan: Draft Action Area Goals and Objectives. Phase III. March 2011. City of Portland.
- ⁶⁶ Philadelphia 2035 Comprehensive Plan. PHILATool: The Planning & Health Indicator List & Assessment Tool. City of Philadelphia.
- ⁶⁷ Philadelphia 2035 Comprehensive Plan. PHILATool: The Planning & Health Indicator List & Assessment Tool. City of Philadelphia.
- ⁶⁸ Municipal Development Plan. September 2009. The City of Calgary.