

5. Addressing Waterloo Region's Infrastructure Needs

This Plan recognizes that successfully planning and managing *infrastructure* is an essential element of achieving the vision for a *sustainable* and *liveable* Waterloo Region. This Plan also recognizes that *infrastructure* planning and management requires the Region to consider opportunities to reduce the demand for additional *infrastructure* and to optimize the use of existing *infrastructure*. In addition, *infrastructure* can be used to help reshape Waterloo Region's urban form, create healthy, *sustainable*, safe and accessible communities and maximize the potential to capitalize on economic opportunities. In accordance with the provision of the Municipal Act, the responsibilities for planning and managing *infrastructure* are shared among the Federal and Provincial governments, the Region, Area Municipalities and other agencies.

The policies in this Chapter address the region's *infrastructure* needs, including the transportation system, *municipal drinking-water supply systems*, *municipal wastewater systems*, waste management and the provision of utility services. The transportation system policies seek to improve connectivity among transportation modes for the efficient movement of people and goods. The Region's transit system is a particular focus for this Chapter because of the strong link between land use and transportation planning, and the fact that the Region is the municipal transit authority. This Chapter also includes policies relating to Region of Waterloo International Airport to further support the transportation needs of the community.

Infrastructure master plans are used to plan and develop initiatives requiring significant *infrastructure* investment and/or having multiple stakeholders. These master plans will support the Planned Community Structure of this Plan and will also be used to set Regional and Area Municipal priorities for decisions on *infrastructure* investments in order to promote a coordinated approach to managing urban development.

The policies in this Chapter also set out requirements regarding the review of *development applications* relating to the assessment of the potential impacts that development can have on existing or planned *infrastructure*.

Overall Goal – Undertake *infrastructure* planning, development and asset management which optimizes the use of existing *infrastructure*, accommodates forecast growth, and promotes *sustainability* and a healthy population.

Objectives:

- 5.1 Plan and manage integrated, accessible and safe *multi-modal* transportation systems that provide transportation choice, and promote *sustainability*, a healthy population and the effective movement of goods.
- 5.2 Plan and manage *municipal drinking-water supply systems* using a comprehensive, integrated approach that reduces water demand, achieves

efficiency of water use and protects, improves or restores the water quality and quantity.

- 5.3 Plan and manage *municipal wastewater systems* to reduce future treatment capacity requirements, optimize the use of existing wastewater treatment plants and protect, improve or restore water quality and quantity in receiving waters.
- 5.4 Plan and manage waste management facilities and operations to reduce future landfill capacity requirements, optimize the use of existing landfill sites and consider alternatives to the disposal of waste at landfill sites.
- 5.5 Coordinate with utility providers to ensure that utilities are planned and managed in a manner that supports the overall goals and objectives of this Plan.

5.A Transportation Systems Planning

General Policies

- 5.A.1 The Region, in collaboration with Area Municipalities, will update the Regional Transportation Master Plan to inform and implement the policies in this Plan and guide the operation of the Region's day-to-day transportation programs.
- 5.A.2 The Region, in collaboration with Area Municipalities and community stakeholders, will prepare and regularly update the Regional Transportation Corridor Design Implementation Guideline, Regional Cycling Master Plan, Regional Pedestrian Master Plan, Regional Transportation Impact Study Implementation Guideline, Regional Road Access By-law Implementation Guideline and the Region of Waterloo International Airport Business Plan to inform and implement the policies in this Plan.
- 5.A.3 The Region and Area Municipalities will secure the following requirements prior to, or as a condition of approval of a *development application* or *site plan*, in order to support the development and operation of the Regional transit system and/or Regional Roads:
 - (a) the granting of easements and the dedication of land for sidewalks, bicycle pathways, *rapid transit* stations, transit terminals, *transit stops*, public transit rights-of-way, Regional Roads, roundabouts, rideshare facilities and utilities;
 - (b) the provision of associated amenities such as transit shelters, pads, energy efficient lighting and bicycle racks. The provision of such amenities will be the financial responsibility of the owner/applicant, unless funding is available through other sources satisfactory to the Region;

- (c) *site plan* designs that meet the needs of *pedestrians*, cyclists and transit users, thereby promoting physical activity.
- 5.A.4 The Region, Area Municipalities and other agencies will seek to protect and, wherever feasible, acquire abandoned rail corridors for their possible inclusion in walking, cycling and transit networks, and future utility corridors.
- 5.A.5 The Region, in collaboration with the *Province* and Area Municipalities will promote and plan commuter parking and drop-off facilities to reduce single occupancy vehicle trips.

Regional Transit System

- 5.A.6 The Regional transit system will be improved on an on-going basis through the addition of *rapid transit* service and the preparation and implementation of the Transit Business Plan.
- 5.A.7 The Region will partner with the *Province* and other key stakeholders to improve the linkages between the Regional transit system and existing or planned inter-regional transit systems such as GO Transit.
- 5.A.8 Transit Corridors are Regional or Area Municipal Roads or dedicated rights-of-way outside of mixed traffic that accommodate existing or planned high frequency transit service. Wherever appropriate, Area Municipalities will adopt policies, by-laws and/or guidelines that apply the Transit Oriented Development provisions outlined in Policy 2.D.2 for *development* along Transit Corridors.
- 5.A.9 Existing and Planned Transit Corridors are designated as shown on Map 5a. Changes to the Transit Corridors as shown on Map 5a will require an amendment to this Plan.
- 5.A.10 The *Central Transit Corridor Environmental Assessment Study Area* is designated as shown on Map 3a. This Corridor identifies the study area within which an alignment for the proposed *rapid transit* system will be selected, and the area that may be directly and/or indirectly affected by the system. Following the completion of the Rapid Transit Environmental Assessment, the Region will delineate the alignment of the *rapid transit* system shown on Map 3a through a future amendment to this Plan.
- 5.A.11 The Region, in collaboration with Area Municipalities, will implement transit priority measures such as reserved bus lanes and bus priority at traffic signals on roads where appropriate.
- 5.A.12 Area Municipal parking strategies will, to the extent feasible, support existing and planned transit service levels and Transit Oriented Development.

- 5.A.13 New passenger rail terminals will be located and designed so as to promote safe and convenient access by *pedestrians*, cyclists, transit users and motorists.

Walking and Cycling Networks

- 5.A.14 Regional cycling routes are designated as shown on Map 5c. These regional-scale routes have been identified within the Regional Cycling Master Plan and will be developed in association with ongoing Regional and Area Municipal Road improvements and other activities.
- 5.A.15 The Region, in collaboration with Area Municipalities, will regularly update the Regional Cycling Master Plan to review the Regional cycling routes as shown on Map 5c and further develop policies and strategies to facilitate cycling for both recreational and everyday activities.
- 5.A.16 Regional Council will maintain a Cycling Advisory Committee to advise the Region on the implementation of the cycling policies in this Plan and the Regional Cycling Master Plan, in accordance with the Terms of Reference adopted and periodically reviewed by Regional Council.
- 5.A.17 Wherever feasible, sidewalks will be provided on both sides of streets where transit service currently exists or is planned, and on a minimum of one side of all other through-streets or streets that interconnect with the walking network.
- 5.A.18 The Region, in collaboration with Area Municipalities, will prepare and update a Regional Pedestrian Master Plan that identifies the *pedestrian* network component of the region's transportation system that will be developed in association with Regional and Area Municipal road improvement projects and other activities.

Region of Waterloo International Airport

- 5.A.19 The Region of Waterloo International Airport is designated as shown on Map 3a. Permitted land uses within this designation will be related to aviation and associated uses consistent with the Region of Waterloo International Airport Business Plan. Any future adjustments to the boundaries of the Region of Waterloo International Airport will not require an amendment to this Plan, but will be reflected as part of the five-year *municipal comprehensive review* of this Plan, or the completion of a *municipal comprehensive review* as otherwise initiated by Regional Council.
- 5.A.20 In planning for land uses in the vicinity of the Region of Waterloo International Airport, Area Municipalities will establish policies in their official plans that:
- (a) support the long-term operation and economic role of the Airport;

- (b) protect the Airport from development that would preclude or hinder its expansion or continued use, or which would be incompatible for reasons of public health, public safety or environmental concerns;
- (c) ensure that the Airport and *sensitive land uses* are designed, buffered and/or separated from each other to prevent *adverse effects* from odour, noise and other contaminants;
- (d) provide for the inclusion of warning clauses advising property owners in the vicinity of the Airport of potential outdoor lighting and height restrictions, and of the potential for occasional noise-related impacts;
- (e) prohibit any land uses that may cause a potential aviation safety hazard; and
- (f) be in conformity with Transport Canada's Region of Waterloo International Airport Zoning Regulations.

5.A.21 The Region will plan and stage improvements to the Region of Waterloo International Airport and related facilities in accordance with updates to the Region of Waterloo International Airport Business Plan.

Road Network

5.A.22 The road network that will be developed and maintained to support the policies in this Plan includes:

- (a) Existing and Planned Transit Corridors as shown on Map 5a;
- (b) Existing and Planned Regional Roads as shown on Map 5b;
- (c) Existing and Planned *Provincial Highways* as shown on Map 5b; and
- (d) Proposed Road Corridors as shown on Map 5b.

5.A.23 Regional Roads provide safe, direct, accessible and *multi-modal* transportation links for moving people and goods throughout Waterloo Region, and to adjacent municipalities. Regional Roads will be planned and constructed in accordance with the provisions of the Regional Transportation Corridor Design Implementation Guideline.

5.A.24 The Region will update the Regional Road Access By-law as required for the purposes of classifying Regional Roads as either:

- (a) Controlled Access – Prohibited: no access to these roads is generally

permitted in recognition of their need to facilitate the efficient movement of high volumes of traffic within and between Area Municipalities and to *Provincial Highways*. Exemptions to permit access to these roads require the approval of Regional Council through amendment to the Controlled Access By-law.

- (b) Controlled Access – Regulated: in recognition of the need to protect the regional transportation function served by these roads, the number and design of access points to the road system is regulated by the Regional Access Permit process.
- 5.A.25 Where a proposed *development* is likely to generate significant traffic as defined in the Regional Transportation Impact Study Implementation Guideline, the Region will require the owner/applicant to undertake a Transportation Impact Study in accordance with the provisions of the guideline to assess the impact of the *development* on the regional transportation system. In addition to determining the impact of private vehicles, the Transportation Impact Study will examine ways of encouraging alternative forms of transportation such as walking, cycling and public transit, and recommend necessary improvements. Such studies and measures will be the financial responsibility of the owner/applicant.
- 5.A.26 In addition to the applicable Regional and Area Municipal requirements, all development applications adjacent to Provincial Highways are subject to the requirements and permits of the Province under the Public Transportation and Highway Improvement Act. New entrances or the upgrading of entrances, location of buildings, signs and encroachments within the Ministry of Transportation's permit control area of a Provincial Highway will be subject to the approval of the Ministry. Development applications proposing large traffic generators within the permit control area will require the submission of a Transportation Impact Study in accordance with the Ministry's "General Guidelines for the Preparation of Traffic Impact Studies". The Ministry of Transportation may identify the need for other information and materials through the pre-submission consultation meeting with the Region and/or applicable Area Municipality.
- 5.A.27 Where a proposed *development application* may compromise the Environmental Assessment Act requirements for a Proposed Regional Road Corridor as shown on Map 5b, a future Proposed Transit Corridor, Proposed *Provincial Highway*, or Proposed Provincial Transit Corridor not shown on Map 5b, the Region and/or Area Municipalities may, in consultation with the *Province*, whenever appropriate, consider the proposed *development application* to be premature until transportation planning and Environmental Assessment studies are completed.

- 5.A.28 Where a proposed *development application* is affected by road improvements that are subject to a Municipal Class Environmental Assessment, the Environmental Assessment will be completed to the extent required before approval of the *development application* by the Region or Area Municipality.
- 5.A.29 The following changes to the designations of roads as shown on Map 5b may be made without amendment to this Plan:
- (a) to recognize the construction of a Planned Regional Road or *Provincial Highway*; and
 - (b) to implement the alignment of a Proposed Regional Road consistent with the corridor as shown on Map 5b.
- 5.A.30 All Regional Roads will be classified as truck routes unless prohibitions or time restrictions are imposed on particular sections based on the following:
- (a) the section of roadway is not designed or constructed for heavy truck traffic or long vehicles;
 - (b) there are critical height or weight restrictions on the section of roadway;
 - (c) the land uses adjacent to the roadway are primarily front-lotted urban residential and a suitable alternate route is available; or
 - (d) other considerations as determined by Regional Council.

Regional Road Design, Construction and Operation

- 5.A.31 The design, construction and operation of Regional Roads, and *development applications* or *site plans* that affect Regional Roads, will be in accordance with the provisions of the Regional Transportation Corridor Design Implementation Guideline, the Regional Transportation Impact Study Implementation Guideline, the Regional Road Access By-law Implementation Guideline, the Regional Cycling Master Plan, the Regional Pedestrian Master Plan and applicable Area Municipal design guidelines.
- 5.A.32 In general, direct access to Regional Roads will be managed to maintain the integrity of the Regional Road system as follows:
- (a) *development* along a Regional Road will have access provided from Area Municipal roads, wherever feasible. The need for, and feasibility of, providing access to a Regional Road will be determined by the Region in consultation with the Area Municipality;
 - (b) access locations will be discouraged in close proximity to intersections, at-
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grade railway crossings, road abutments, along lanes specifically identified for the purpose of exclusive vehicular turning movements, or where minimum sight distance requirements are not met; and

- (c) openings in a centre median for a private access will only be permitted where there will be substantial trip generation or transit movements, and appropriate traffic control strategies can be implemented.

5.A.33 Where a safe access cannot be provided, or where any proposed new access, either alone or in combination with existing accesses, is determined by the Region to be detrimental to the operation of the Regional Road, such access may be denied.

Designated Regional Road Allowances

5.A.34 Designated Regional Road Allowances are shown in Schedule 'A'. An amendment to Schedule 'A' will be required where there is a proposal to change a designated Regional Road Allowance.

5.A.35 The Region will require road widenings from all lands contained within *development applications* and/or *site plans*, where the existing road allowance is less than the designated Regional Road Allowance, or where an additional widening is required in accordance with Policy 5.A.36. Any such road widenings will be obtained by dedication prior to, or as a condition of, the approval of the *development application* and/or *site plan*, in accordance with the provisions of the Planning Act, the Regional Implementation Guideline on the Dedication of Land for Regional Roads, and the Regional Implementation Guideline for Road Allowance Dedications On or Adjacent to Known and Potentially Contaminated Sites.

5.A.36 In addition to requiring road widenings to secure the Designated Road Allowance shown in Schedule 'A', the Region may require road widenings as a condition of approval of a *development application* and/or *site plan*, for the following purposes:

- (a) to provide for transit and *rapid transit infrastructure*, *pedestrian* facilities and cycling lanes;
- (b) at Regional Road intersections to accommodate roundabouts, turning lanes, daylighting triangles, channelization and locations for traffic control devices;
- (c) to provide suitable access to major traffic generators or attractors; and
- (d) to accommodate cut and fill slopes.

- 5.A.37 For the purposes of the *site plan* control provisions of the Planning Act, each Regional Road described in Schedule 'A' will constitute a "highway to be widened", and the designated Regional Road Allowance plus the road widenings specified in Policy 5.A.36 will constitute the "extent of the proposed widening".
- 5.A.38 The boundaries of the designated Regional Road Allowance will generally be equidistant from, and parallel to, the centre line of the original road allowance. However, unequal widenings may be required as a result of inaccuracies in the original surveys, legal encroachments, topographic features, historic building locations, significant environmental concerns or other unique conditions.
- 5.A.39 The Region may, where special circumstances warrant, without amendment to this Plan, reduce the required road widenings for any specific *development application* and/or *site plan*, or road section in accordance with the provisions of the Regional Implementation Guideline on the Dedication of Land for Regional Roads and the Regional Implementation Guideline for Road Allowance Dedications On or Adjacent to Known and Potentially Contaminated Sites.

Rail Network

- 5.A.40 The Region will collaborate with agencies and rail service providers to plan and stage improvements to railway *infrastructure* and services to facilitate the movement of people and goods into and out of Waterloo Region, and improve the safety and efficiency of the regional transportation system.
- 5.A.41 The Region will review and endeavour to protect the potential for future rail transportation through strategic planning for the land use and transportation needs of the community.

5.B Wastewater Treatment

General Policies

- 5.B.1 The Region will prepare and update a Regional Wastewater Treatment Master Plan that supports the policies in this Plan, provides direction for planning and staging of investments in the Region's wastewater treatment plants and related facilities, guides the operation of the Region's day-to-day wastewater treatment programs, and protects human health and the natural environment.
- 5.B.2 The Region will evaluate wastewater servicing options for *development applications*, based on the following order of priority:
- (a) extension of servicing from a *municipal wastewater system*, unless it can be demonstrated to the satisfaction of the Region that such a servicing option is not feasible; and

- (b) new individual wastewater treatment systems, except where such systems are not permitted in accordance with Policy 5.B.6.
- 5.B.3 A wastewater treatment surcharge may be assessed to specific businesses as a means of recovering additional costs associated with the treatment of high concentration effluent at a Regional wastewater treatment plant.
- 5.B.4 Area Municipalities are responsible for monitoring inflow and infiltration associated with Area Municipal wastewater collection systems, except in the Townships of North Dumfries and Wellesley where the Region has assumed responsibility for the wastewater collection systems. The Region and Area Municipalities, as applicable, will complete Inflow and Infiltration, and Sanitary Capacity Studies, and establish a program to implement recommendations of the approved studies prior to consideration being given to the expansion of Regional wastewater treatment plants.
- 5.B.5 The nature or concentrations of wastewater from non-residential sources will be regulated by the Region through the Sewer Use By-law, which may be periodically amended by Regional Council.

Individual Wastewater Treatment Systems

- 5.B.6 Notwithstanding Policy 5.B.2, *development applications* proposing the use of new individual wastewater treatment systems will not be permitted within:
 - (a) Wellhead Protection Sensitivity Area 1, High Microbial Risk Management Zones and Surface Water Intake Protection Zone 1, as described in the policies in Chapter 8; and
 - (b) the Urban Area designation, except as provided for in Policies 2.D.28 and 2.D.29; and
 - (c) the Township Designated Greenfield Areas designation.
- 5.B.7 Prior to the approval of any *development applications* proposing the use of individual wastewater treatment systems, studies prepared in accordance with the provisions of the Regional Implementation Guideline for Source Water Protection Studies and approved by the Region, must have demonstrated that such system(s) can operate satisfactorily on the site and will not have a negative impact on groundwater resources.
- 5.B.8 *Development applications* proposing alternative individual wastewater treatment systems will only be permitted where the proposed lot size would accommodate a conventional individual wastewater treatment system.

5.C Water Supply

General Policies

- 5.C.1 The Region will implement the Regional Long-Term Water Supply Strategy to support the policies in this Plan, provide direction for the planning and staging of investments in the Region's *municipal drinking-water supply systems*, guide the operation of the Region's day-to-day water supply programs, and protect human health and the natural environment. When planning for the establishment of new *municipal drinking water-supply systems*, among other considerations as part of the associated Environmental Assessment process, consideration will be given to the potential impacts on *mineral aggregate resources*.
- 5.C.2 The Region will implement the Regional Water Efficiency Master Plan and continue to develop and collaborate with community stakeholders on a range of water efficiency and demand reduction programs.
- 5.C.3 The Region will evaluate water supply servicing options for *development applications*, based on the following order of priority:
- (a) extension of servicing from a *municipal drinking-water supply system*, unless it can be demonstrated to the satisfaction of the Region that such a servicing option is not feasible;
 - (b) new private wells, except where such wells are not permitted in accordance with Policy 5.C.4.

Private Wells

- 5.C.4 Notwithstanding Policy 5.C.3, *development applications* proposing the use of private wells will not be permitted within:
- (a) Wellhead Protection Sensitivity Area 1, High Microbial Risk Management Zones and Surface Water Intake Protection Zone 1, as described in Chapter 8; and
 - (b) the Urban Area designation, except as provided in Policy 2.D.29; and
 - (c) the Township Designated Greenfield Areas designations.
- 5.C.5 Prior to the approval of any *development applications* that propose the use of private wells as a servicing option, studies undertaken in accordance with the provisions of the Regional Implementation Guideline for Source Water Protection Studies, must have demonstrated that such wells can operate satisfactorily on the site and not negatively affect groundwater resources.
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5.C.6 Where a *development application* proposes the use of private wells to supply potable water, only drilled wells with appropriate surface casing will be permitted.

5.D Regional Infrastructure Planning Agreements and Monitoring

5.D.1 The Regional servicing requirements for planned development and projected growth will be monitored to ensure that the total system capacities are not exceeded, and to provide sufficient lead time for the planning, design, approval, financing and construction of new facilities.

5.D.2 The Region, in collaboration with Area Municipalities, will specify procedures for the allocation of drinking-water supply and wastewater capacity for *development applications* approved under the Planning Act. Such procedures will include reserved capacity allocations for *reurbanization* within the Built-Up Area and new *development* within Urban and Township Designated Greenfield Areas, in conformity with the policies in Chapter 2, and consistent with applicable Area Municipal staging of development policies. Specific allocations for non-residential *development* will be provided as required.

5.D.3 The commitment of existing drinking-water supply and wastewater capacity to *development* will take place through an agreement specifying services between the Region and the owner/applicant for a specified time period. The Region will, in collaboration with Area Municipalities, review the potential for the *development* to achieve final approval prior to granting an extension of an agreement for services.

5.E Waste Management

5.E.1 The Region will prepare and update a Regional Waste Management Master Plan that supports the policies in this Plan, provides direction for planning and staging of investments in the Region's waste management facilities and guides the operation of the Region's day-to-day waste management programs.

5.E.2 The Region will design, operate and monitor waste management facilities in such a manner as to promote *sustainability* and public health and, wherever feasible, provide for future adaptive re-use opportunities in accordance with applicable Area Municipal official plan policies and Provincial requirements.

5.E.3 The Region will coordinate the collection and haulage of materials for recycling and composting to Regional waste management facilities and maximize opportunities for local composting and waste recycling.

5.E.4 Pursuant to the Environmental Protection Act, written approval from the *Province* will be required prior to consideration of a *development application* within areas formerly used as waste management facilities.

- 5.E.5 The Region will encourage the *Province* to use its regulatory authority to restrict landowners from discarding waste in private waste management facilities.
- 5.E.6 All Regional departments and agencies are encouraged to select products that have the least environmental impact, including products that:
- (a) contain a high proportion of recycled materials;
 - (b) contain the least amount of packaging;
 - (c) can be readily recycled or re-used; and
 - (d) contain no *hazardous chemicals and/or substances* and minimal toxic substances.

5.F Utilities

- 5.F.1 The Region will review and comment on Environmental Assessment Studies, and may participate in the Environmental Assessment process for major utilities related projects to ensure that potential impacts on matters of Regional and Provincial interest are addressed.
- 5.F.2 Utility providers proposing to locate, relocate, or replace a facility within a Regional Road Allowance will require Regional approval and be subject to the provisions of all applicable Regional by-laws and Regional Implementation Guidelines.
- 5.F.3 Prior to receiving approval to locate, relocate, or replace a facility within a Regional Road Allowance or on other land owned by the Region, the utility provider may be required to conduct a public information meeting in an effort to identify and resolve the concerns of adjacent residents.
- 5.F.4 The Region will continue to advise utility providers of the need to:
- (a) review the region-wide inventory of *cultural heritage resources* and areas of *archaeological potential* prior to undertaking construction, demolition or maintenance projects;
 - (b) consult with the Region and Area Municipalities;
 - (c) mitigate any impacts on *cultural heritage resources* including *archaeological resources* through acceptable conservation measures; and

- (d) place equipment and devices in locations which do not detract from the visual character of cultural heritage resources and do not have a negative impact on the architectural integrity of these resources.

5.F.5 The Region and Area Municipalities will confirm, as part of the *development* review process, that utility providers are able to provide services to support the proposed *development* in a timely manner and that, if required, appropriate locations for large utility equipment and utility cluster sites have been determined.