

GRAND NIAGARA SECONDARY PLAN

Background Analysis Report



Source: Google Maps

Prepared for:



Prepared by:



The Planning Partnership



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- Appendix D: Phase One Environmental Site Assessment (MMM Group)

1.0 Introduction and Purpose

MMM Group Limited (MMM) in conjunction with The Planning Partnership (TPP), Savanta and Novus (the team) was retained by the Grand Niagara Co-Owners to prepare a Secondary Plan for Grand Niagara. The Grand Niagara Secondary Plan area is located south-west of the City's tourist area and is bounded in the east by the Queen Elizabeth Way (QEW), the north by the Welland River, the south by Biggar Road, and the west by Crowland Road (see Figure 1).

The Co-Owner's Group has retained MMM and TPP to act on their behalf as consultants leading the Secondary Plan process. The Secondary Plan project will be led by the City of Niagara Falls' Planning, Building and Development staff in conjunction with the consultants acting on behalf of the major landowner. A Technical Advisory Team has been formed and includes the City of Niagara Falls, the Niagara Peninsula Conservation Authority, Region of Niagara, and the landowner's consultants. This Committee will provide the technical input throughout the preparation of the Secondary Plan.

The Secondary Plan will establish a framework for the future development of the area working within the context of the site's physical characteristics, including natural heritage features, floodplain, stormwater management, servicing capabilities and transportation. The Secondary Plan will support and be consistent with the City's Growth Strategy and projected housing needs, the Region's Official Plan, the Provincial Policy Statement and Growth Plan for the Greater Golden Horseshoe. The Secondary Plan will establish a land use plan and supporting policies to guide future development of the area. The draft vision and objectives for the Secondary Plan are outlined in Section 3.0, and will be further refined through consultation with the community, the City, Region and other key stakeholders.

The Secondary Plan process has been divided into two key phases, including:

- **Phase 1: Background Analysis Report:** including Community Vision and Design Principles, a summary of the existing planning policy framework, summary of the findings of the technical studies, and a development limits plan, illustrating 1) areas where there will be no development, 2) areas where development may occur subject to specific considerations; 3) areas of unconstrained development..
- **Phase 2: Secondary Plan:** including policies relating to land use, including, low, medium, high density residential, institutional, community centres, open spaces, commercial, mixed use, employment, open space system; environmental protection and/or conservation areas; proposed housing mix, lot and block sizes, densities, schools, parks and community facilities; infrastructure, including sanitary, water, and utilities; natural heritage; urban design; growth strategy, including phasing of development; transportation, including road hierarchy, and implementation.

More specifically, the Secondary Plan will:

- Be consistent with Provincial, Regional and City policies and growth strategies;
- Provide a range of housing types and densities to meet the Growth Plan for the Greater Golden Horseshoe and City of Niagara Falls target of 53 residents and jobs per hectare;
- Incorporate and leverage the new Niagara Regional Hospital and associated support uses;
- Establish a complete community that will include residential uses, schools, trails, active transportation, parks and open spaces, as well as mixed use and hospital supportive offices, commercial, and residential uses in closer proximity to the future hospital site;

- Offer a range of housing and lots sizes to appeal to a broad demographic, and designed to provide parks within close walking distances to residents;
- Be designed as an attractive, safe, walkable and vibrant community through the creation of “complete streets” that will accommodate vehicles, pedestrians, cyclists and streetscaping and address long term traffic needs, while providing an integrated network of trails to promote an active and healthy lifestyle for its residents;
- Protect of the natural environment and features;
- Utilize and leverage the recent Ontario Municipal Board settlement and existing approvals for the site;
- Consider for the context of the area, including proximity to the Welland River, the Queen Elizabeth Way, CP railway, Cytec Industries Canada and other adjacent industrial uses, and natural heritage features;
- Balance development and phasing approach to ensure short and long term project financial viability;
- Provide full municipal services consistent with the needs of the proposed community and the surrounding land uses; and
- Outline appropriate staging of development.

The purpose of this Phase 1 Report is to provide a background analysis of the preliminary findings of the technical studies, provide an overview and analysis of the existing policy framework, establish a vision and objectives for the Secondary Plan, establish the development limit, and establish the next steps to develop the Secondary Plan.

Applications for an Official Plan Amendment, Zoning By-law Amendment and Plan of Subdivision will be required to implement the proposed development. The Official Plan Amendment (OPA) is being undertaken through this Secondary Plan process. This will be followed by the Zoning By-law Amendment and Draft Plan of Subdivision processes.

This report and the associated supporting studies have been prepared in accordance with the City of Niagara Falls Pre-Consultation Meeting on August 6, 2015, and based upon subsequent discussions with City, Regional and Conservation Authority staff to finalize a Terms of Reference.

2.0 Site Location and Description

2.1 Subject Lands

The “Secondary Plan area” or “Subject Lands” are located north of Biggar Road, south of the Welland River, east of Crowland Road, and west of the Queen Elizabeth Way (QEW), in the City of Niagara Falls (Figure 1). The Subject Lands have a total area of 330 hectares (815 acres). The majority of the lands are currently occupied by a golf course, with some residential uses along Grassy Brook Road and Biggar Road, and employment uses along the east and west sides of Montrose Road. A Canadian Pacific (CP) railway line runs diagonally through the Subject Lands.

The majority of the Subject Lands were initially developed as a championship golf course, which remains in operation, with the intention to develop a future resort community. As noted in Section 4.6 and 4.7 of this report, site specific Official Plan and Zoning By-law Amendments were undertaken to permit residential and resort land uses. Since obtaining those approvals, the site development plans have been modified. The current proposal will replace the existing golf course with a complete community containing residential, commercial, institutional, employment, community facilities, park and open space uses.

The majority of the Subject Lands are owned by the Grand Niagara Co-Owners including select properties along the north side of Biggar Road and the west and east sides Montrose Road (Figure 2). The remaining lands are owned by other property owners who have been notified of the Secondary Plan process by way of public meeting notifications.

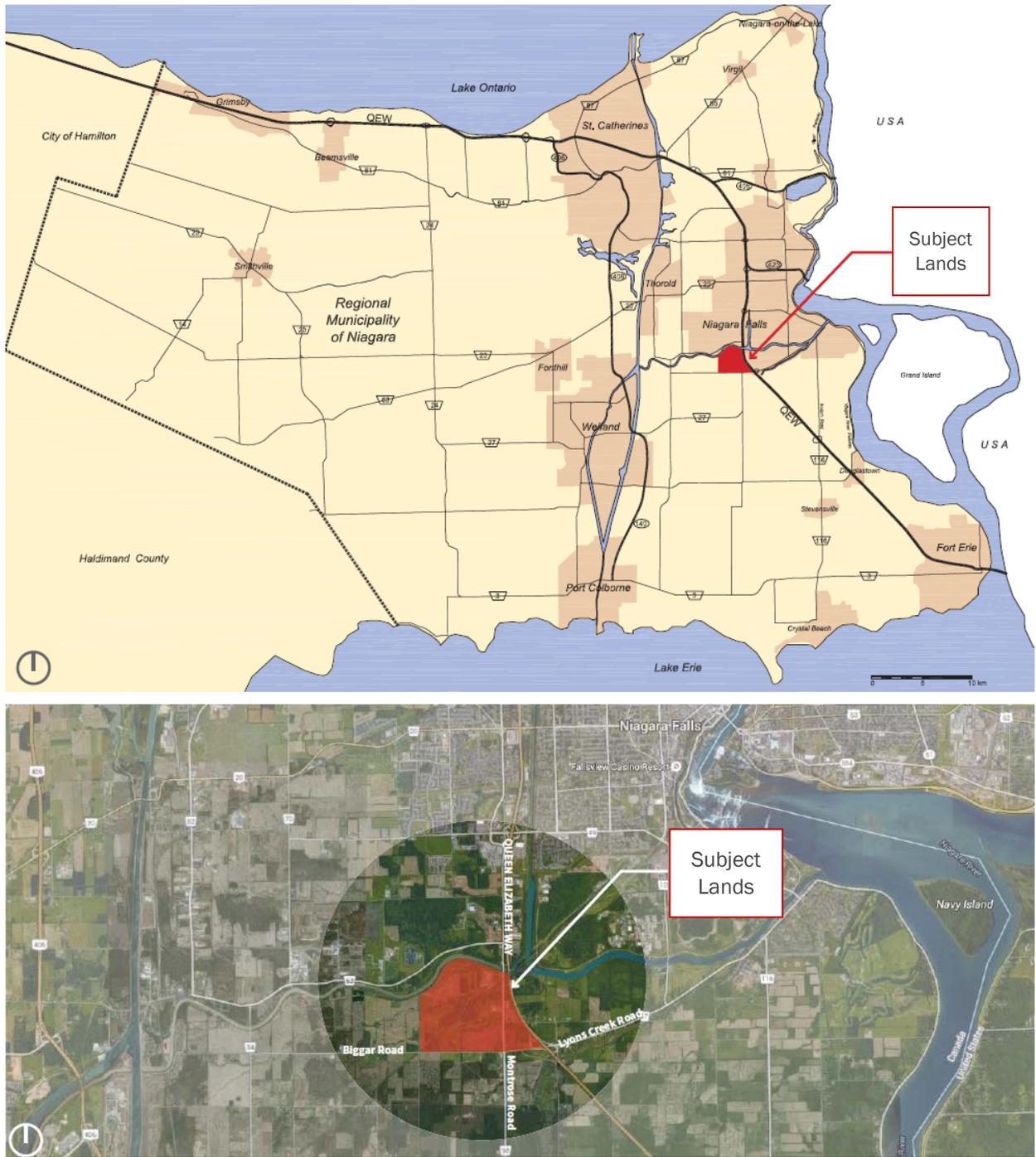


Figure 1: Secondary Plan Area and “Subject Lands”

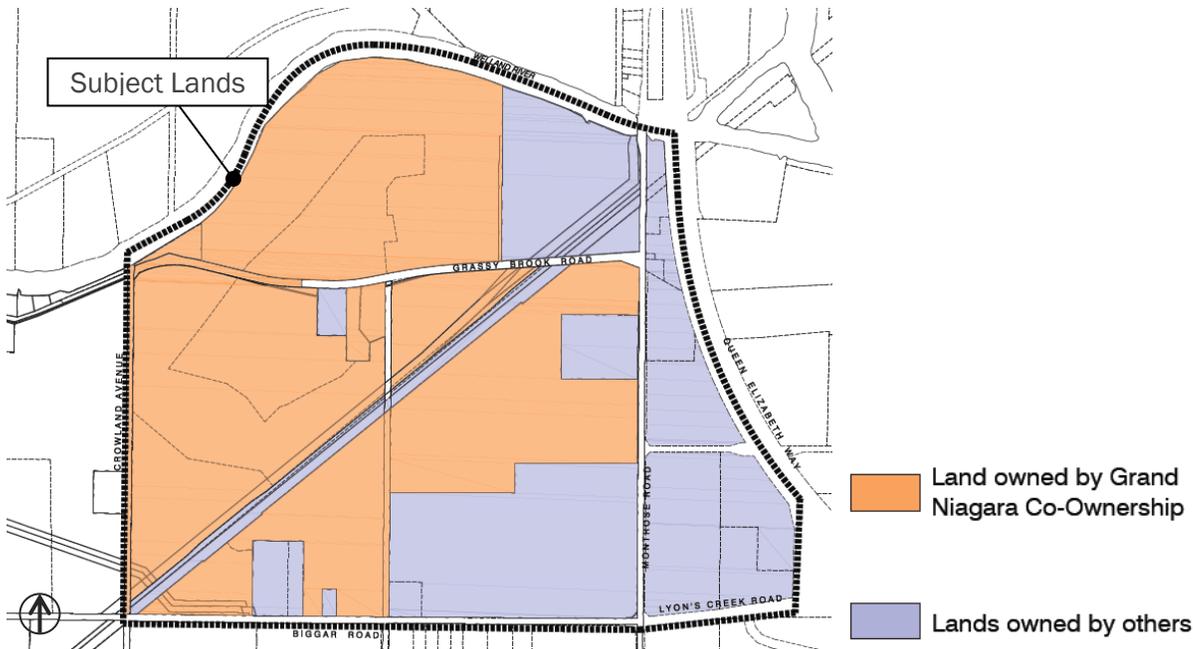


Figure 2: Grand Niagara Land Ownership

Note: This map is based on preliminary information.

2.3 Surrounding Area

The Subject Lands are surrounded by a broad range of uses as illustrated in Figure 3. Specifically, the Subject Lands are surrounded by the following land uses and businesses:

North The Welland River forms the northern boundary of the Secondary Plan area. Further north are industrial uses, including Oxy Vinyls, Cytec Canada, Regional Bio-solids facility, Courtice Auto Wreckers, agricultural, commercial (Niagara Square Mall), rural residential and residential uses within the Garner South Secondary Plan area. North of Subject Lands and east of the QEW is an area which is the subject of another ongoing Secondary Plan process, referred to as the Thundering Waters Secondary Plan.

East The QEW forms the eastern boundary of the Secondary Plan area. Further east of the QEW are agricultural uses, the Baden Powell Park, and rural residential uses along Lyons Creek Road Reixinger Road.

South Biggar Road forms the southern boundary of the Secondary Plan area. Further south are agricultural uses. Biggar Road is the southern edge of the City's Urban Boundary and as such, lands on the south side of Biggar Road are outside of the City's Urban Boundary.

West Crowland Road forms the western boundary of the Secondary Plan area. Further west are agricultural uses, and residential uses. Crowland Road is the western edge of the City's Urban Boundary and as such, lands on the west side of Crowland Road are outside of the City's Urban Boundary.



Figure 3: Surrounding Land Uses

3.0 Secondary Plan Vision and Planning Principles

3.1 Vision

The following is the draft Vision for the Grand Niagara Secondary Plan area:

It is intended that the Secondary Plan Area will develop as an environmentally sustainable and healthy community with distinctive, liveable neighbourhoods, integrated and connected green spaces, efficient transportation and transit systems, and employment opportunities.

The Vision will be refined through discussion with the City, Region, Conservation Authority and consultation with the public, stakeholders and key agencies.

3.2 Planning Principles and Objectives

To achieve the long-term vision for a complete community the Secondary Plan will be based on the following draft principles and objectives. These principles and objectives were presented at the first Public Information Meeting in December 2015, and will be presented again at future public meetings to obtain further input and refine the principles and objectives as the Secondary Plan process progresses.

Principle 1: Protect and restore natural heritage features.

To grow and develop in an environmentally appropriate manner that protects and restores the natural environment, and promotes the creation of a comprehensive and linked natural heritage and open space system.

Objectives:

- To provide a functional and highly interconnected greenlands system for the community that is accessible and visible to residents and the public.
- To integrate natural features into the design of the community and the public realm as aesthetic amenities.

- To ensure that development does not negatively impact on natural heritage features by providing appropriate separation distances and buffers.
- To provide a continuous greenlands system within the community that incorporates links of varying character and function, among natural heritage features, public parks, storm water management facilities, and a full array of community amenities.

Principle 2: Promote the responsible use of resources.

To encourage the responsible use of resources to ensure long-term sustainability, reduce greenhouse gas emissions, and reduce demands on energy, water, and waste systems.

Objectives:

- To ensure that municipal services are provided in a cost effective and efficient manner.
- To utilize Low Impact Design Standards that emphasize the use of bio-swales, innovative stormwater practices, at-source infiltration, greywater re-use system, and alternative water conservation measures.
- To utilize opportunities for passive solar gains through building orientation.
- To create opportunities for local food production.
- To ensure the reduction of air pollution through the development of 'complete' communities that are characterized by greater densities placed at neighbourhood centres and mixed use nodes; mix and diversity of housing types; and connected and walkable road patterns that are designed to encourage active transportation;
- To ensure that storm water management facilities are designed to fulfill their functional purpose, are treated as aesthetic components of the greenlands system, and that they do not negatively impact on natural heritage features or cultural heritage landscapes.

Principle 3: Promote place-making

To promote and strengthen a community structure that provides a range of housing, a strong pedestrian realm, and businesses and services in a manner that respects the community's cultural heritage and history.

Objectives:

- To create an urban form that supports an interconnected street system that is transit supportive and pedestrian friendly to effectively transport people and vehicles.
- To provide for vistas and view sheds to the natural heritage features and the Welland River to assist in the creation of a sense of place.
- To promote place-making that instills a sense of civic pride.
- To improve the quality of the living environment through the distribution and access to parks and recreational facilities.
- To integrate the Welland River into the design of the open space and trail system.

Principle 4: Create a diverse community.

To create a well-designed and connected community of residential neighbourhoods that provide for a range of housing types and densities that meet the needs of a diverse population, a mix of uses, and a diversity of open spaces and parks.

Objectives:

- To provide for a range and mix of housing opportunities, choices, and accessibility for all income levels and needs.

- To provide for a range of affordability, consistent with targets established by the Region of Niagara.
- To create opportunities for life-cycle housing and assisted living.
- To provide for neighbourhood commercial uses, schools, a diverse range of open spaces, and community facilities to support the needs of the community.
- To support the mix and diversity of land uses in a compact, active transportation supportive development form to ensure a proper balance of residential, employment, and services to shorten distances between homes, workplaces, schools, and amenities.
- To plan for a density of development that will help to support transit and neighbourhood commercial activity.

Principle 5: Promote active transportation.

To develop a connected, multi-modal, active transportation system that promotes walking, cycling, and transit usage, to not only encourage daily physical activity, but to provide an efficient road network for motor vehicles.

Objectives

- To create walkable and connected neighbourhoods with sufficient destinations within walking distance of residents.
- To create a highly interconnected network of complete streets with pedestrian supportive streetscapes that provide for ease of access, orientation and safety for pedestrian, cyclists, and motor vehicles.
- To provide a variety of economical, safe, and accessible mobility options through the provision of a connected network of streets, sidewalks, bicycle lanes, trails, and a public transit system to ensure all members of society have transportation options while reducing automobile dependence.
- To ensure that pedestrian connections adjacent to significant natural heritage features are planned to anticipate use and to avoid impact on the features and their environmental functions.
- To ensure all roads will be designed as important components of the public realm to provide a network that is appealing for pedestrians, cyclists, transit facilities, and motor vehicles

Principle 6: Create a connected and integrated open space and trails system

To create a linked open space and trails system composed of roads, lanes, parks, sidewalks, off road trails, and bicycle lanes that are integrated with the natural heritage features.

Objectives

- To utilize the existing natural heritage system as key trail elements to link the community. To provide open space close to medium density development.
- To ensure access to parks by placing parkettes within 200 metres (2-3 minute walk) and neighbourhood parks within 400 metres (5 minute walk) of residents.
- To ensure that all parks, open spaces, and trails are visible and accessible.
- To integrate schools and parks with the trail system.
- To provide a variety of trails and pathways such as on-road bike lanes, boulevard multi-use pathways, and off-road multi-use pathways.

Principle 7: Support employment opportunities.

The provision of employment opportunities within the Secondary Plan Area is essential to creating a complete community.

Objectives:

- To create a sufficient opportunity for employment in the Secondary Plan Area to be balanced with population, with a ratio of approximately one job for every two residents.
- To ensure employment lands are available to permit an appropriate balance of employment opportunities in conjunction with the development of the residential neighbourhoods.
- To allow for a variety of employment uses throughout the community to provide opportunities for employment close to home.
- To provide for live/work opportunities within the mixed use area along Biggar Road.
- To achieve an overall density of 53 persons and jobs per hectare within the residential and employment lands.
- To promote office uses and services associated with the Regional Hospital.
- To ensure land use compatibility between non-residential and residential buildings through high quality urban design on employment lands.
- To provide active transportation connections between residential and employment areas.

Principle 8: Manage growth.

To manage growth over time in a manner that respects existing residents, is logical, efficient and cost-effective, balanced with employment opportunities, and is reflective of the financial and administrative capabilities of the City of Niagara.

Objectives:

- To ensure that growth and development is fiscally sustainable.
- To create jobs concurrent with residential growth to ensure a long-term balanced economy while encouraging closer live work proximity.
- To ensure the Grand Niagara is designed to achieve a minimum net density of 53 residents and/or jobs per hectare, as defined by the City of Niagara Falls Official Plan, and which exceeds the minimum net density of 50 residents and/or jobs per hectare required through the Growth Plan.

Principle 9: Promote green infrastructure and building.

To promote leadership in sustainable forms of green technologies and building design that is architecturally attractive, accessible, energy efficient, and environmentally healthy for future residents and occupants.

Objectives:

- To encourage plans and building designs to maximize solar gains and ensure that buildings are constructed in a manner that facilitates future solar installations (i.e. solar ready).
- To utilize green infrastructure to make use of the absorbing and filtering abilities of plants, trees, and soil to protect water quality, reduce runoff volumes, and recharge groundwater supplies.

4.0 Planning Context

The following section outlines the existing planning policy context and land use permissions for the Subject Lands.

4.1 Provincial Policy Statement, 2014

The Provincial Policy Statement (PPS) provides policy direction on matters of Provincial interest related to land use planning and development, and is issued under the authority of Section 3 of the *Planning Act*. The PPS came into effect April 30, 2014.

Section 1.0 of the PPS sets out policies associated with efficient land use and development patterns that support healthy, liveable and safe communities, protect the environment and public health and safety, and facilitate economic growth. Section 2.0 addresses the wise use and management of resources, including the protection of natural heritage, water, agricultural and cultural heritage resources. The following summarizes the key policies contained in these sections of the PPS in reference to the Grand Niagara Secondary Plan.

4.1.1 Building Strong Communities

Within the context of Niagara Falls, key directives from Section 1 of the PPS are applied to the Subject Lands.

Section 1.1.1 states:

Healthy, liveable and safe communities are sustained by:

- a. *promoting efficient development and land use patterns which sustain the financial well-being of the Province and municipalities over the long term;*
- b. *accommodating an appropriate range and mix of residential (including second units, affordable housing and housing for older persons), employment (including industrial and commercial), institutional (including places of worship, cemeteries and long-term care homes), recreation, park and open space, and other uses to meet long-term needs;*
- c. *avoiding development and land use patterns which may cause environmental or public health and safety concerns;*
- d. *avoiding development and land use patterns that would prevent the efficient expansion of settlement areas in those areas which are adjacent or close to settlement areas;*
- g. *ensuring that necessary infrastructure, electricity generation facilities and transmission and distribution systems, and public service facilities are or will be available to meet current and projected needs.*

The Secondary Plan will be consistent with the policies relating to healthy, liveable and safe communities, as outlined in the PPS.

4.1.2 Settlement Areas

Section 1.1.3 of the PPS provides policies relating to settlement areas, which are defined as urban and rural areas that are either built up areas where development is concentrated and which have a mix of land uses, and lands which have been designed for development over the long term planning horizon.

Section 1.1.3.2 states that:

Land use patterns within settlement areas shall be based on:

- a. *densities and a mix of land uses which:*

1. *efficiently use land and resources;*
 2. *are appropriate for, and efficiently use, the infrastructure and public service facilities which are planned or available, and avoid the need for their unjustified and/or uneconomical expansion;*
 3. *minimize negative impacts to air quality and climate change, and promote energy efficiency;*
 4. *support active transportation;*
 5. *are transit-supportive, where transit is planned, exists or may be developed; and*
 6. *are freight-supportive; and*
- b. *a range of uses and opportunities for intensification and redevelopment in accordance with the criteria in policy 1.1.3.3, where this can be accommodated.*

Section 1.1.3.3 states that:

Planning authorities shall identify appropriate locations and promote opportunities for intensification and redevelopment where this can be accommodated taking into account existing building stock or areas, including brownfield sites, and the availability of suitable existing or planned infrastructure and public service facilities required to accommodate projected needs.

Intensification and redevelopment shall be directed in accordance with the policies of Section 2: Wise Use and Management of Resources and Section 3: Protecting Public Health and Safety.

Section 1.1.3.4 states that:

Appropriate development standards should be promoted which facilitate intensification, redevelopment and compact form, while avoiding or mitigating risks to public health and safety.

Section 1.1.3.5 requires that planning authorities “establish and implement minimum targets for intensification and re-development within built-up areas”. Within the City of Niagara Falls, this target has been set at 53 persons and jobs per hectare. Furthermore, Section 1.1.3.6 states:

New development taking place in designated growth areas should occur adjacent to the existing built-up area and shall have a compact form, mix of uses and densities that allow for the efficient use of land, infrastructure and public service facilities.

The Secondary Plan policies for Grand Niagara will be consistent with the above stated Settlement Area policies.

4.1.3 Land Use Compatibility

With respect to Land Use Compatibility, PPS Section 1.2.6.1 states:

Major facilities and sensitive land uses should be planned to ensure they are appropriately designed, buffered and/or separated from each other to prevent or mitigate adverse effects from odour, noise and other contaminants, minimize risk to public health and safety, and to ensure the long-term viability of major facilities.

The Land Use Compatibility policies contained in the PPS have been reviewed given the presence of industrial facilities on the north side of the Welland River.

4.1.4 Employment

The PPS Section 1.3.1 encourages municipalities to promote economic development and competitiveness by:

- a. *providing for an appropriate mix and range of employment and institutional uses to meet long-term needs;*
- b. *providing opportunities for a diversified economic base, including maintaining a range and choice of suitable sites for employment uses which support a wide range of economic activities and ancillary uses, and take into account the needs of existing and future businesses;*
- c. *encouraging compact, mixed-use development that incorporates compatible employment uses to support liveable and resilient communities; and*
- d. *ensuring the necessary infrastructure is provided to support current and projected needs.*

In reference to the protection of employment areas, the Section 1.3.2.1 of the PPS states:

Planning authorities shall plan for, protect and preserve employment areas for current and future uses and ensure that the necessary infrastructure is provided to support current and projected needs.

And Section 1.3.2.2 states:

Planning authorities may permit conversion of lands within employment areas to non-employment uses through a comprehensive review, only where it has been demonstrated that the land is not required for employment purposes over the long term and that there is a need for the conversion.

As will be noted in Sections 4.5 and 4.6 of this report, a portion of the Subject Lands are designed employment.

4.1.5 Housing and Public Spaces

Section 1.4 of the PPS relates to the provision of an “appropriate range and mix of housing types and densities required to meet projected requirements of current and future residents”. The following policies are relevant to this Secondary Plan process:

Section 1.4.1 states that planning authorities shall:

- a. *maintain at all times the ability to accommodate residential growth for a minimum of 10 years through residential intensification and redevelopment and, if necessary, lands which are designated and available for residential development; and*
- b. *maintain at all times where new development is to occur, land with servicing capacity sufficient to provide at least a three-year supply of residential units available through lands suitably zoned to facilitate residential intensification and redevelopment, and land in draft approved and registered plans.*

Section 1.4.3 requires that planning authorities provide the appropriate range and mix of housing types and densities by:

- a. *establishing and implementing minimum targets for the provision of housing which is affordable to low and moderate income households. However, where planning is conducted by an upper-tier municipality, the upper-tier municipality in consultation with the lower-tier municipalities may identify a higher target(s) which shall represent the minimum target(s) for these lower-tier municipalities;*
- b. *permitting and facilitating:*

1. *all forms of housing required to meet the social, health and wellbeing requirements of current and future residents, including special needs requirements; and*
 2. *all forms of residential intensification, including second units, and redevelopment in accordance with policy 1.1.3.3;*
- c. *directing the development of new housing towards locations where appropriate levels of infrastructure and public service facilities are or will be available to support current and projected needs;*
 - d. *promoting densities for new housing which efficiently use land, resources, infrastructure and public service facilities, and support the use of active transportation and transit in areas where it exists or is to be developed; and*
 - e. *establishing development standards for residential intensification, redevelopment and new residential development which minimize the cost of housing and facilitate compact form, while maintaining appropriate levels of public health and safety.*

Section 1.5 of the PPS provides policies relating to the promotion of healthy, active communities by:

- a. *planning public streets, spaces and facilities to be safe, meet the needs of pedestrians, foster social interaction and facilitate active transportation and community connectivity;*
- b. *planning and providing for a full range and equitable distribution of publicly-accessible built and natural settings for recreation, including facilities, parklands, public spaces, open space areas, trails and linkages, and, where practical, water-based resources;*
- c. *providing opportunities for public access to shorelines; and*
- d. *recognizing provincial parks, conservation reserves, and other protected areas, and minimizing negative impacts on these areas.*

The Secondary Plan will provide additional housing types and densities to the Region of Niagara and the City of Niagara Falls. The draft vision and principles provide the framework for establishing future Secondary Plan policies that are consistent with these PPS policies.

4.1.6 Infrastructure and Public Facilities

PPS Section 1.6 provides policies relating to the provision of infrastructure that is coordinated, efficient and cost effective, and the promotion of green infrastructure. Section 1.6.6 specifically outlines policies for sewage and water services stating that growth and development should be directed to promote the efficient and optimal use of existing services, ensuring that these systems are provided in a manner that is feasible, financially viable, and complies with all regulatory requirements, and that protects human health and the natural environment. It further states that municipal sewage and water services are the preferred form of servicing within settlement areas (section 1.6.6.2). Finally, section 1.6.6.7 states:

Planning for stormwater management shall:

- a. *minimize, or, where possible, prevent increases in contaminant loads;*
- b. *minimize changes in water balance and erosion;*
- c. *not increase risks to human health and safety and property damage;*
- d. *maximize the extent and function of vegetative and pervious surfaces; and*

- e. *promote stormwater management best practices, including stormwater attenuation and re-use, and low impact development.*

PPS policies relating to Transportation Systems promote the provision of systems that are “safe, energy efficient, facilitate the movement of people and goods and are appropriate to address projected needs” (Section 1.6.7). Furthermore, a “land use pattern, density and mix of uses should be promoted that minimize the length and number of vehicle trips and support current and future use of transit and active transportation.” The Secondary Plan policies and land use plan for Grand Niagara] will be consistent with the PPS policies relating to infrastructure and transportation facilities.

4.1.7 Natural Heritage

Section 2.0 of the PPS sets out policies associated with wise use and management of resources. Within the context of Niagara Falls, key directives from Section 2 are applied to the Subject Lands. Section 2.1.2 states:

The diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between natural heritage features and areas, surface water features and ground water features.

Section 2.1.3 states:

Natural heritage systems shall be identified in Ecoregions 6E & 7E, recognizing that natural heritage systems will vary in size and form in settlement areas, rural areas, and prime agricultural areas.

Section 2.1.7 states:

Development and site alteration shall not be permitted in habitat of endangered species and threatened species, except in accordance with provincial and federal requirements.

Section 2.2.1.d states:

Maintaining linkages and related functions among ground water features, hydrologic functions, natural heritage features and areas, and surface water features including shoreline areas.

Given the existing natural heritage features within the Subject Lands and the Welland River feature, policies relating to natural heritage features will be examined in the context of the future Secondary Plan policies and land use plan to ensure consistency. Furthermore, the review and analysis of the site’s natural heritage, as summarized in Section 5.5 of this Report, has been undertaken in reference to the policies of the PPS.

4.1.8 Summary

The Secondary Plan will promote efficient development and land use patterns which will contribute towards the wise use and management of natural heritage resources with Niagara Falls for the long term. The Secondary Plan will support the objective of development within built-up and greenfield areas.

This Background Report and the future Secondary Plan are considered within the context of the surrounding uses through a review of the existing land uses, and the supporting technical analysis, including the Traffic Impact Study, Environmental Impact Study, Noise Study, Vibration Study, Air Quality Study, and Servicing Analysis. Section 5.0 of this report provides a summary of the existing conditions with respect to the studies noted above and will identify any key issues and opportunities to be considered and addressed through the Secondary Plan process in order to ensure that the plan is consistent with the policies of the PPS. Mitigation measures as appropriate will be implemented.

4.2 Growth Plan for the Greater Golden Horseshoe, 2006

The Growth Plan for the Greater Golden Horseshoe (2006) Office Consolidation January 2012 (Growth Plan) contains population and employment projections that form the basis for planning growth within municipalities within the Greater Golden Horseshoe Area, including the Region of Niagara. The Growth Plan guides decisions on a wide variety of issues, including transportation, infrastructure planning, land use planning, urban form, housing, natural heritage and resource protection in the interest of promoting economic prosperity. As further described in the following sections, the Subject Lands are located within the built boundary for the Region of Niagara, and include lands designated as “Built Up Areas” and “Designated Greenfield Areas.”

4.2.1 Managing Growth

The Growth Plan encourages municipalities to focus a significant portion of new growth within the built boundary through development greenfield areas for mixed-use, transit supportive, and pedestrian-friendly environments.

2.2.2.A. Managing Growth: Population and employment growth will be accommodated by –

- a. directing a significant portion of new growth to the built-up areas of the community through intensification*
- c. building compact, transit supportive communities in designated greenfield areas*
- d. reducing dependence on the automobile through the development of mixed-use, transit-supportive, pedestrian-friendly urban environments*
- f. ensuring the availability of sufficient land for employment to accommodate forecasted growth to support the GGH's economic competitiveness*
- g. planning and investing for a balance of jobs and housing in communities across the GGH to reduce the need for long distance commuting and to increase the modal share for transit, walking and cycling*
- h. encouraging cities and towns to develop as complete communities with a diverse mix of land uses, a range and mix of employment and housing types, high quality public open space and easy access to local stores and services*
- j. directing major growth to settlement areas that offer municipal water and wastewater systems and limiting growth in settlement areas that are serviced by other forms of water and wastewater services*

4.2.2 Built-up Areas

A portion of the Subject Lands are located within the built boundary of the Region of Niagara (Figure 4). The remaining lands are Designated Greenfield Area.

The Growth Plan encourages municipalities to plan for general intensification within the built-up area. Niagara Region has been directed to plan for an ultimate population of 610,000 residents and 265,000 jobs by 2041 (Amendment 2, Schedule 3 – Distribution of Population and Employment for the Greater Golden Horseshoe to 2041), and a significant portion of new growth within the built boundary.

In order to support the intensification objectives, the Growth Plan states that:

2.2.3.6. All municipalities will develop and implement through their official plans and other supporting documents, a strategy and policies to phase in and achieve intensification and the intensification target. This strategy and policies will –

- b. encourage intensification generally throughout the built up area*
- c. identify intensification areas to support achievement of the intensification target*
- d. incorporate the built boundary*
- f. facilitate and promote intensification*
- g. identify the appropriate type and scale of development in intensification area.*

Additional policies related to intensification include the following:

2.2.3.7. All intensification areas will be planned and designed to –

- a. cumulatively attract a significant portion of population and employment growth*
- b. provide a diverse and compatible mix of land uses, including residential and employment uses, to support vibrant neighbourhoods*
- c. provide high quality public open spaces with site design and urban design standards that create attractive and vibrant places*
- e. generally achieve higher densities than the surrounding areas*
- f. achieve an appropriate transition of built form to adjacent areas.*



Figure 4: Built Boundary, Growth Plan for the Greater Golden Horseshoe, Region of Niagara

4.2.3 Designated Greenfield Area

A portion of Subject Lands are within the “Designated Greenfield Areas” (Figure 4), defined as “the area within a settlement area that is not built-up area.” Within the Subject Lands, Designated Greenfield Areas are generally on the east and west side of Montrose Road, directly north of Biggar Road, and includes the future Regional Hospital site.

Section 2.2.7.1 provides policies for new development within designated greenfield areas, ensuring that it is “planned, designated, zoned and designed in a manner that:”

- b. *contributes to creating complete communities*
- c. *creates street configurations, densities, and an urban form that support walking, cycling, and the early integration and sustained viability of transit services*
- d. *provides a diverse mix of land uses, including residential and employment uses, to support vibrant neighbourhoods*

- e. *creates high quality public open spaces with site design and urban design standards that support opportunities for transit, walking and cycling.*

Furthermore, Section 2.2.7.3 states:

The designated greenfield area of each upper- or single-tier municipality will be planned to achieve a minimum density target that is not less than 50 residents and jobs combined per hectare.

The minimum density target is to be measured over the entire designated greenfield area of, in the case of the Region of Niagara, the upper-tier municipality. The measurement is to exclude specific natural features that are identified in the Region of Niagara or City of Niagara Falls' Official Plans, or a provincial plan, and where the applicable provincial plan or policy statement prohibits development in such features. These areas would include "wetlands, coastal wetlands, woodlands, valley lands, areas of natural and scientific interest, habitat of endangered species and threatened species, wildlife habitat, and fish habitat", as defined in the applicable provincial plan or policy statement (Section 2.2.7.3).

4.2.4 Employment Lands

Consistent with the PPS, the Growth Plan also contains policies relating to the protection and adequate supply of employment lands. Specifically, the Growth Plan states:

2.2.6.2 Municipalities will promote economic development and competitiveness by –

- a. *providing for an appropriate mix of employment uses including industrial, commercial and institutional uses to meet long-term needs*
- b. *providing opportunities for a diversified economic base, including maintaining a range and choice of suitable sites for employment uses which support a wide range of economic activities and ancillary uses, and take into account the needs of existing and future businesses;*
- c. *planning for, protecting and preserving employment areas for current and future uses; and*
- d. *ensuring the necessary infrastructure is provided to support current and forecasted employment needs.*

In reference to the conversion of lands designated for employment uses, the Growth Plan states:

2.2.6.5 Municipalities may permit conversion of lands within employment areas, to non-employment uses, only through a municipal comprehensive review where it has been demonstrated that –

- a. *there is a need for the conversion*
- b. *the municipality will meet the employment forecasts allocated to the municipality pursuant to this Plan*
- c. *the conversion will not adversely affect the overall viability of the employment area, and achievement of the intensification target, density targets, and other policies of this Plan*
- d. *there is existing or planned infrastructure to accommodate the proposed conversion*
- e. *the lands are not required over the long term for the employment purposes for which they are designated*
- f. *cross-jurisdictional issues have been considered.*

For the purposes of this policy, major retail uses are considered non-employment uses.

Finally, the Growth Plan recognizes the importance of cross-border trade with the United States (US), and identifies a “Gateway Economic Zone” along the border of the US and Canada. The Gateway Economic Zone is conceptually illustrated and identified due to its proximity to the international border and the unique economic importance associated with that. Section 2.2.6.7 states that “planning and economic development in these areas will support economic diversity and promote increased opportunities for cross-border trade, movement of goods and tourism”.

As further stated in Sections 4.5 and 4.6 of this Report, the Region of Niagara and City of Niagara Falls have identified Employment Lands within the Grand Niagara Secondary Plan area and provided policies which are consistent with the Employment Lands policies of the Growth Plan.

4.2.5 Community Infrastructure

Section 3.2.6 speaks to the provision of community infrastructure as follows:

1. *Community infrastructure planning, land-use planning, and community infrastructure investment will be co-ordinated to implement this Plan.*
2. *Planning and growth will take into account the availability and location of existing and planned community infrastructure so that community infrastructure can be provided efficiently and effectively.*
3. *An appropriate range of community infrastructure should be planned to meet the needs that result from population changes to foster complete communities.*

4.2.6 Summary

The Secondary Plan will promote appropriate development by directing growth within the built boundary to built-up areas and designated greenfield areas. The Secondary Plan will also support development along existing and planned municipal infrastructure and services. It creates an opportunity to establish a new complete community which incorporates and supports the Employment Lands policies of the PPS and the Growth Plan. The Secondary Plan will include policies that are consistent with the planning objectives and policies of the Growth Plan. Given the Subject Lands’ location within the built boundary, and a designated greenfield area, the proposed Secondary Plan area represents an ideal example of the type of development envisioned in the Growth Plan for this area.

4.3 Ministry of the Environment D-Series Guidelines

The Ministry of the Environment (MOE) D-Series Guidelines are commonly used planning tools in Ontario to evaluate the effects of certain facilities of industrial character on nearby sensitive uses. The objectives of these guidelines are to minimize or prevent the exposure of people and property to adverse effects associated with the operation of certain facilities. These land use compatibility guidelines (Guideline D-1) and accompanying procedures for implementation, specific applications and definitions (Guidelines D-1-1, D-1-2, and D-1-3, respectively) apply when sensitive land uses are proposed near an existing industrial facility or when an industrial facility is being proposed near an existing sensitive land use. More specifically, Guideline D-6 “Compatibility between Industrial Facilities and Sensitive Land Uses” is applicable to this Secondary Plan process. Guideline D-6 is intended to apply when a change in land use is proposed and to ensure the adequate buffering of incompatible land uses is provided as a supplement to controls that are required by legislation for point source and fugitive emissions at a facility source.

Sensitive land uses may include recreational uses, and /or any building associated with an amenity area (indoor or outdoor spaces) which is not directly associated with the industrial use, and where humans or the environment may be adversely affected by emissions from the operation of a nearby facility. These include amenity areas associated with residences, senior’s homes, schools, daycares, hospitals, churches and other similar institutional uses.

Given the presence of lands with “Industrial” Official Plan designations within the Subject Lands, as well as industrial within those in proximity to the Subject Lands, an analysis of the D-6 Guidelines has been undertaken. Furthermore, and as noted in Sections 4.6 and 4.7, there are properties within the Subject Lands that are designated and zoned to permit heavier industrial uses. The current land uses on the lands that are designated and zoned for industrial use are illustrated in Figure 5. Some of the properties are vacant or currently contain uses that are not considered to be heavy industrial in nature (i.e., office, warehouse, trucking facility, vacant, or residential) and which may be compatible with the future surrounding sensitive land uses proposed through the Secondary Plan.

The “areas of influence” and “recommended minimum setback distance” for each industrial classification are outlined in Table 1. To assist in the classification of specific types of industrial uses, and to determine the appropriate separation distances, the D-6 Guidelines provide classification criteria for industrial uses, which are outlined in Table 7 (Section 5.4 of this report).

Table 1: Guideline D6 - Potential Influence Areas and Recommended Minimum Setback Distances for Industrial Land Uses

Industry Classification	Area of Influence	Recommended Minimum Setback Distance
Class I – Light Industrial	70 m	20 m
Class II – Medium Industrial	300 m	70 m
Class III – Heavy Industrial	1000 m	300 m

When measuring the recommended setback distances, consideration is given to the uses permitted within the particular zone, as well as operational aspects, as outlined in Table 7. The following guidance is provided with respect to measuring separation distances (Guideline 4.4):

- Measurement shall normally be from the closest existing, committed or proposed property/lot line of the industrial land use to the property/lot line of the closest existing / committed or proposed sensitive land use.
- Where site-specific zoning or site plan control precludes the use of the setback for any activity associated with the industrial use, then that setback can be included as part of the measurement, rather than the industrial property line.
- Uses ancillary to a sensitive land use (i.e., parking lot servicing a hospital), may be included within the separation distance.
- Where land is currently vacant, the potential area of influence may be based on the hypothetical “worst case scenario” for which the property is zoned.

In instances where an industrial use may change and where an influence area has been established, a municipality is responsible for restricting, through zoning or other means, the type of future industrial uses that can occur, so that they are compatible with the influence area used.

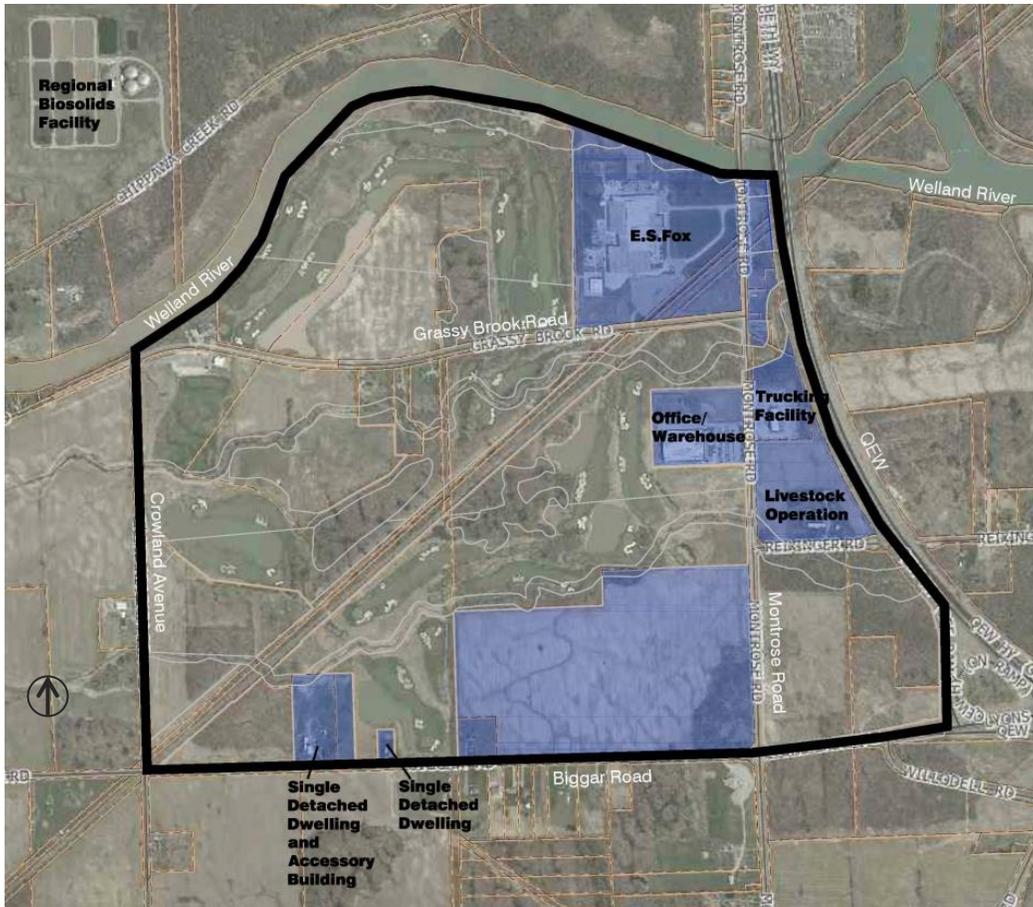


Figure 5: Lands Designated or Zoned Industrial through the City's Official Plan and Zoning By-law – See Sections 4.6 and 4.7 for Specific Permissions

The D-Series Guidelines are addressed in further detail with respect to Cytec Industries and the Regional Bio-solids Facility in Section 5.4 of this Report. These uses are outside of the Subject Lands; however, are being reviewed in the context of compatibility from an air quality (dust and odour) perspective. Section 5.7 of this Report reviews the E.S. Fox Facility, which is within the Secondary Plan area, in terms of noise impacts. Section 6.0 addresses the D-6 guidelines in relation to land use compatibility considerations in the Secondary Plan.

4.4 Minimum Distance Separation (MDS) Formulae

The Minimum Distance Separation (MDS) Formulae is a land use planning tool provided by the Ministry of Agriculture, Food and Rural Affairs (OMAFRA) that determines the recommended separation distance between a livestock barn or manure storage and another land use. The objective of MDS is to prevent land use conflicts and minimize nuisance complaints, specifically from odour. An initial review of land uses within the Subject Lands has identified a potential livestock facility located on the east side of Montrose Road at 7473 Reixinger Road. Should this facility be in operation currently, then proposed new development within proximity to this property must conform to the recommended separation distance between the livestock facilities as calculated using MDS I Formula. The MDS I Formula calculates the minimum distance separation between proposed new development and existing livestock facilities in areas where the keeping of livestock is permitted. The Region of Niagara Falls and City of Niagara Falls Official Plans contain policies relating to the application of MDS. More specifically, the Region of Niagara's policy 5.B.16 states:

Where urban areas boundaries have been established closer to an existing livestock operation, new urban development must still comply with the separation distance as determined by the Minimum Distance Separation Formula of the Agricultural Code of Practice for Ontario.

The City of Niagara Falls Official Plan policy 7.10 states that

MDS [...] shall be applied where a new development or land use change is proposed within the Good General Agriculture Area designation or through a site specific zoning amendment. New dwellings on existing lots of record must also comply with the MDS.

MDS will be further reviewed in the context of the operations on this property and the land uses proposed in proximity to the property through the Secondary Plan process.

4.5 Niagara Region Official Plan, August 2015 Consolidation

The Niagara Region Official Plan (ROP) is a long range policy document that provides Regional Council with a policy framework for decision making. The ROP sets a Regional context for detailed planning including: environmental protection, the management of resources, the directing of growth, and providing Regional services in an effective and efficient manner.

The Region of Niagara commenced an Official Plan Comprehensive Review process in Fall 2015. The *Planning Act* requires that municipalities undertake a comprehensive review of their Official Plans once every five years to ensure that the Plan is consistent with provincial policy and has regard for matters of provincial interest. Further, through the Municipal Comprehensive Review process, the *Planning Act* allows municipalities to designate areas of employment in the Official Plan and provide policies relating to the removal of land from areas of employment.

Managing Growth

The Subject Lands are located within the “Urban Area Boundary” and are designated as “Built-Up Area” and “Designated Greenfield Area” in the ROP (Figure 6). Built-up Areas are defined as all land within the built boundary. The Built Boundary is the limit of the developed “Urban Areas” (areas within the Urban Areas Boundary) as defined in accordance with Policy 2.2.3.5 in the Provincial Growth Plan for the Greater Golden Horseshoe. Designated Greenfield Areas are lands located within the settlement area that are not a Built-up Area.

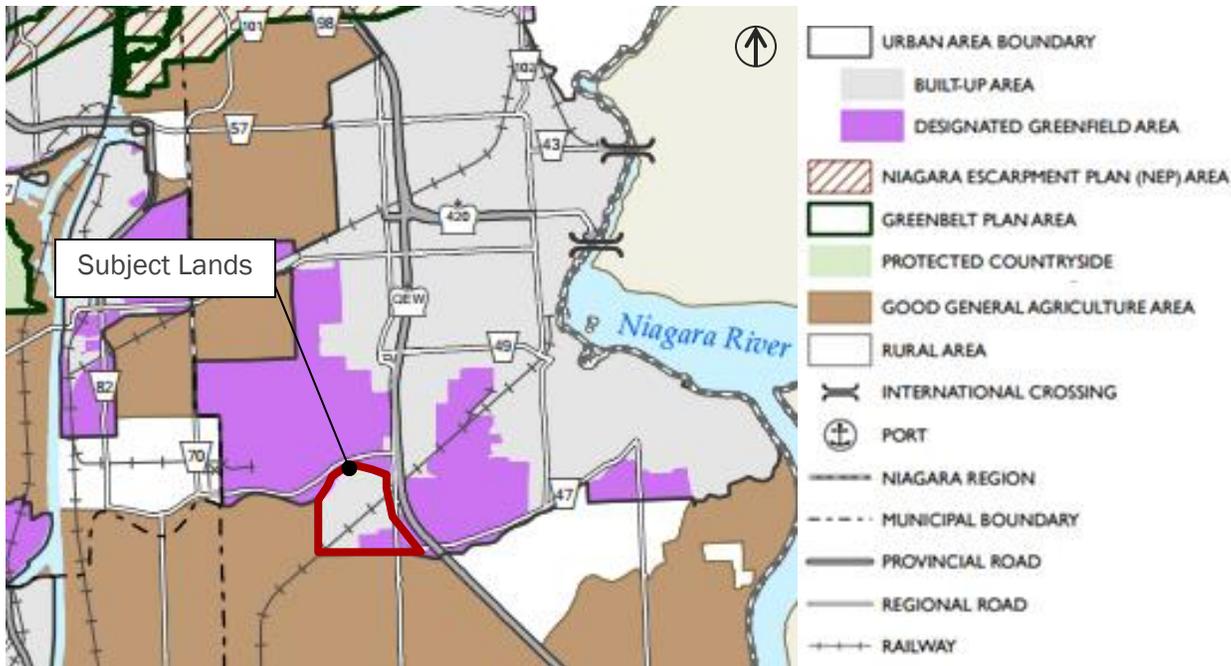


Figure 6: Niagara Region Official Plan, Schedule A – Regional Structure

Within the context of the City of Niagara Falls, key directives from Section 4.A.1 – Growth Management Objectives are applied to the Subject Lands, as follows:

- 2 *Direct a significant portion of Niagara’s future growth to the Built-up Area through intensification.*
- 4 *Prevent urban development in inappropriate areas, thus contributing to the conservation of resources such as the Niagara Escarpment, the Greenbelt, aggregate areas, Core Natural Areas, and prime agricultural land.*
- 6 *Build compact, mixed use, transit supportive, active transportation friendly communities in the Built-up Area and in Designated Greenfield Areas.*
- 7 *Reduce dependence on the automobile through the development of compact, mixed use, transit supportive, active transportation friendly urban environments.*
- 9 *Ensure the availability of sufficient employment and residential land to accommodate long term growth in Niagara to the year 2031.*
- 10 *Provide a framework for developing complete communities all across Niagara, including a diverse mix of land uses, a range of local employment opportunities and housing types, high quality public open spaces, and easy access to local stores and services via automobile, transit and active transportation.*
- 12 *Direct growth in a manner that promotes the efficient use of existing municipal sewage and water services.*

4.5.1 Built-up Areas

The ROP provides the following policy specifically in relation to the “Built-Up Area”. Section 4.G.8.1 states that:

Built-up Areas will be the focus of residential and employment intensification and redevelopment within the Region over the long term.

As such, Section 4.C.1.1 states:

Intensification includes all forms of development that occur within the Built-up Area as identified on Schedule A of this Plan. The Region will promote intensification by:

- a. *Providing a Regional framework for measuring intensification.*
- b. *Supporting infrastructure development and improvements in Local Municipally Designated Intensification Areas where upgrades or improvements to Regional infrastructure works are required.*
- c. *Working with local municipalities to develop intensification strategies including but not limited to coordination between growth management and the maintenance and expansion of utility infrastructure, both in terms of technological advancement and service provision.*
- d. *Monitoring intensification rates across the Region on an annual basis.*

Section 4.C.2.1 states:

Each municipality will develop and implement through its local official plan and other supporting documents, a strategy and policies for promoting intensification and achieving the intensification targets set out in Sub-section 4.C.4 of this Plan. Local official plans shall:

- b. *Generally encourage intensification throughout the Built-up Area.*
- d. *Plan Intensification Areas to attract a significant portion of population and employment growth, relative to the shape and character of the community.*
- e. *Plan Intensification Areas to provide a diverse mix of land uses that complement and support the overall residential intensification objective. These may include, employment, commercial, recreation, institutional and other compatible land uses in relative proportions dependent on area characteristics and the intended critical mass of residential development.*
- g. *Plan Intensification Areas so as to reduce traffic congestion, improve circulation, and encourage active transportation. Where opportunities exist, best efforts should be made to establish fine grain, grid street patterns with active transportation facilities and linkages.*

Section 4.C.3.1 provide the Regional Residential Intensification target and states:

By the year 2015 and for each year thereafter, a minimum of 40% of all residential development occurring annually within Niagara will occur within the Built-up Area of Niagara’s communities.

The rate of intensification in the Region will be measured “by calculating the total number of residential units created on an annual basis within the Built-up Areas of Niagara in relation to the total number of units created within Niagara Region (Section 4.C.3.2).

4.5.2 Designated Greenfield Areas

The ROP provides the following policy specifically in relation to “Designated Greenfield Areas”. A smaller portion of the Subject Lands are designated as Greenfield Area. As noted above, these are “lands within a settlement area that are not within the Built-up Area” (Section 4.G.9.1).

Section 4.C.5.1 provides policies for Designated Greenfield Areas stating that they will be “planned as compact, complete communities” by:

- a. *Where permitted by scale, accommodating a range of land uses including residential, commercial, institutional, recreational, employment and other uses.*
- b. *Where limited by scale or configuration, making a significant contribution to the growth of the respective Urban Areas as a complete community.*
- c. *Providing opportunities for integrated, mixed land uses.*
- d. *Creating street patterns that are fine grain and in grid pattern, supporting transit and active transportation within the area and to adjacent areas.*
- e. *Ensuring that Greenfield development is sequential, orderly and contiguous with existing built-up areas.*
- f. *Ensuring that the provision of municipal servicing is in accordance with the water and wastewater servicing master plans.*

The Region’s Official Plan provides requirements for minimum gross density targets within Designated Greenfield Areas. Specifically, it states in Section 4.C.6.1 that:

The Region will require a minimum combined gross density target of 50 people and jobs per hectare across all Designated Greenfield Areas, excluding the following features within the Environmental Protection Areas and Environmental Conservation Areas in the Region’s Core Natural Heritage System and any non-developable features designated in local official plans:

- a. *Wetlands;*
- b. *Coastal wetlands;*
- c. *Significant woodlands;*
- d. *Significant valley lands;*
- e. *Areas of natural and scientific interest;*
- f. *Habitat of endangered species and threatened species;*
- g. *Publically owned conservation lands;*
- h. *Significant wildlife habitat;*
- i. *Fish Habitat; and,*
- j. *Floodplain areas.*

Despite the minimum gross density established by the Region, local municipalities may, through the policies in their Official Plans, require that a higher residential and employment density be achieved (Section 4.C.7.1.b). Further, the

Region will work in collaboration with local municipalities to identify minimum Greenfield density targets that will achieve the overall Regional density target (Section 4.C.6.2).

4.5.3 Natural Heritage

Portions of the Subject Lands are identified as “Environmental Protection Area”, “Environmental Conservation Area”, “Fish Habitat” and “Potential Natural Heritage Corridor” on the Region’s Core Natural Heritage schedule (Figure 7). Investigations of natural features within the Subject Lands has been undertaken by Savanta and will be compiled in an Environmental Impact Study (EIS). The Report will address the Provincial and Regional and City Official Plan policies and designations with respect to Natural Heritage and the identification and evaluation of Natural Heritage Features. A summary of the key findings is included in Section 5.5 of this Report and the natural features mapping has been incorporated into the Development Limit Plan included in Section 6 of this Report.

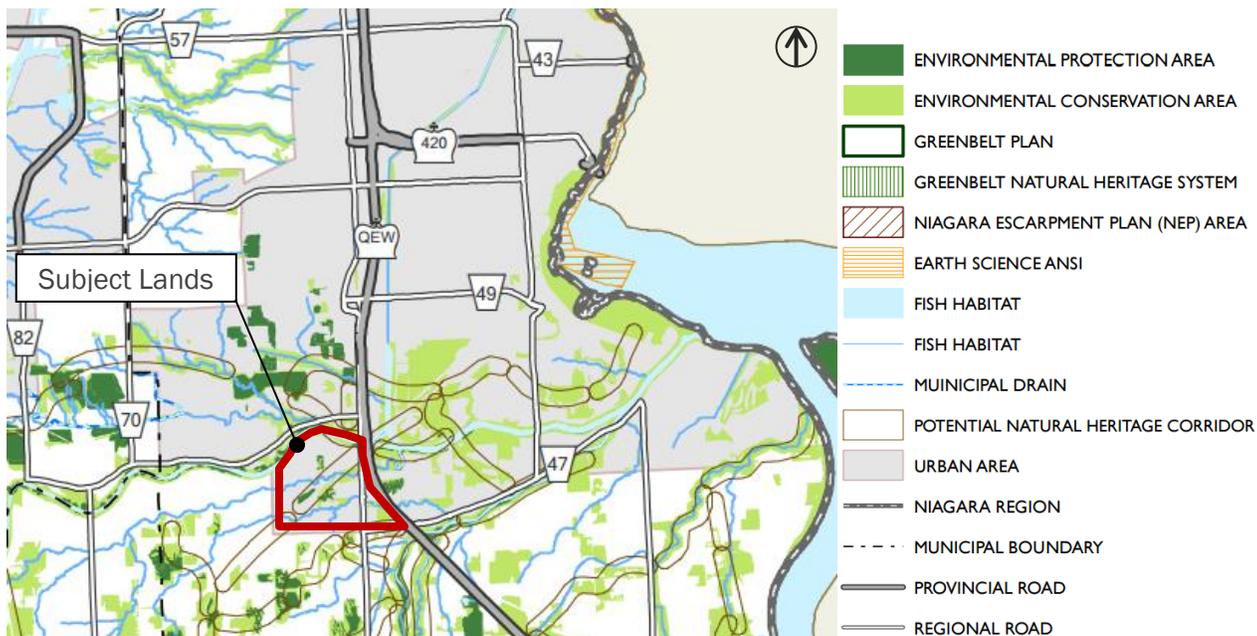


Figure 7: Niagara Region Official Plan, Schedule C – Core Natural Heritage

Within the context of the City of Niagara Falls, key directives from Section 7.B.1 – The Core Natural Heritage System are applied to the Subject Lands, as follows:

7.B.1 To maintain, restore and, where possible, enhance the long term ecological health, integrity and biodiversity of the Core Natural Heritage System and its contributions to a Healthy Landscape.

The ROP contains policies with respect to criteria for identifying the specific Natural Heritage Features, which

7.B.1.2 Development and site alteration within the Core Natural Heritage System, where potentially permitted by policies elsewhere in this Plan, shall be subject to the Healthy Landscape Policies in Chapter 7.A as well as the Core Natural Heritage System Policies.

Hazard Lands

The ROP contains policies relating to development or site alteration within “Hazard Lands” or those lands which are considered to be unsafe for development due to naturally occurring processes, such as along rivers, streams and small lakes, the land, including that covered by water, to the furthest landward extent of the flooding or erosion

hazard limits. As part of this study, MMM obtained mapping from the Niagara Peninsula Conservation Authority (NPCA) illustrating the 100-year floodplain. ROP Section 7.A.6.8 states that:

Where under this Plan development and site alteration may be permitted on portions of hazardous lands or sites the Conservation Authority must be satisfied that the effects and risk to public safety are minor and can be managed or mitigated so that: a) Development and site alteration will be in accordance with provincial floodproofing standards, protection works standards and access standards; b) Vehicles and people have a way of safely entering and exiting the area during times of flooding, erosion and other emergencies; c) New on-site or off-site hazards will not be created or existing ones aggravated; and d) No adverse environmental impacts will result.

In order to protect uses that are considered to be more sensitive, the ROP states that the following uses shall not be permitted on hazardous lands and sites:

- a. *institutional uses associated with hospitals, nursing homes, pre-school, school nurseries, day care or schools;*
- b. *essential emergency services such as that provided by fire, police and ambulance stations and electrical substations; and*
- c. *uses associated with the disposal, manufacture, treatment or storage of hazardous substances. (Section 7.A.6.7)*

The Region also protects the valleylands with a valley bank height is equal to or greater than 3 metres and provides specific policies relating to development in proximity to those, specifically requiring that”

- a. *A minimum setback of 7.5 metres from the stable top of the valley slope, as identified by the Conservation Authority, shall be required for all new structures, including swimming pools and subsurface sewage disposal systems, and for site alterations;*
- e. *New lots created through plan of subdivision, plan of condominium or consent shall not extend below the top of the valley slope as determined by the Conservation Authority. Lands below the top of the valley slope in plans of subdivision and plans of condominium shall be maintained as one block. The Region shall encourage dedication of these lands for conservation purposes either to the appropriate local municipality or to another public agency where there is a willing recipient.*

4.5.4 Economic Gateway

The Subject Lands have been identified as the “Gateway Economic Zone” (Figure 8). In relation to the Subject Lands, the Niagara Economic Zone is comprised of all Settlement Areas within Niagara Falls and Fort Erie, and the Queen Elizabeth Way Corridor between Fort Erie and Niagara Falls. The vision for the Gateway Economic employment lands is to “attract investment and promote employment growth in strategic locations”.

Section 3.A.3.2 states:

Lands within the Gateway municipalities and within settlement areas shall also be a focus for employment land and development. The Strategic Locations for Investment are a focus for financial incentives through Community Improvement Plans. Other areas of employment within local municipalities and their Official Plans that are within a settlement area shall be recognized as Gateway employment lands. [...]

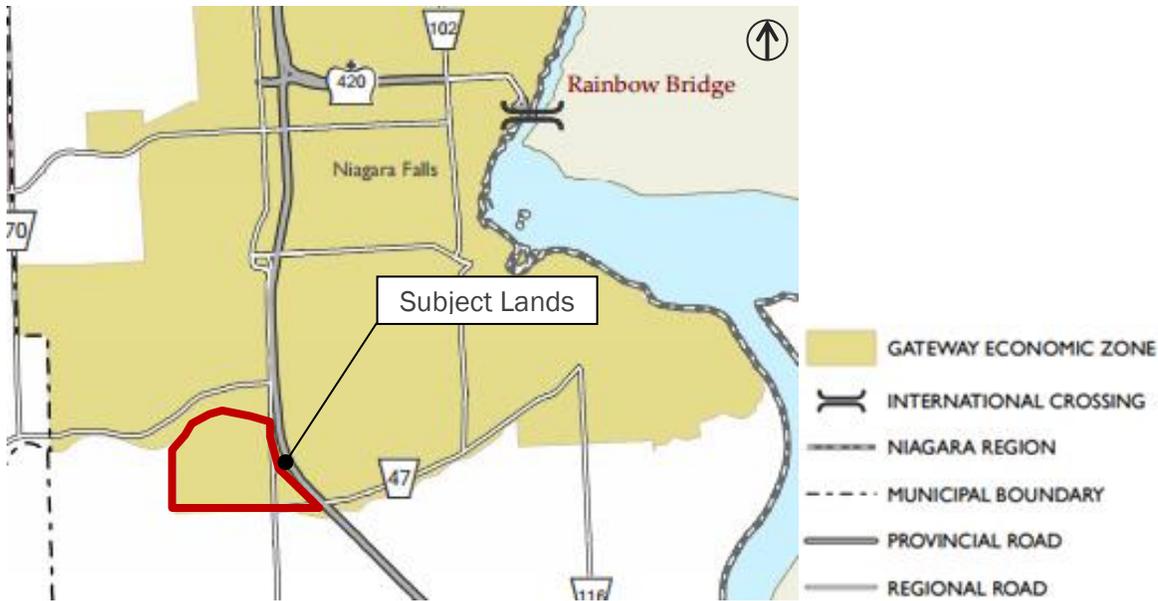


Figure 8: Niagara Region Official Plan, Schedule G1 – Niagara Economic Gateway

Section 3.A.3.9 provides policies specifically relating to the Niagara Falls QEW Business Park, which the Subject Lands form a part. The Niagara Falls QEW Business Park is approximately identified as being on the east and west sides of the QEW from south of Thorold Stone Road to Biggar Road / Lyons Creek Road. The policy states that:

The concept for the Niagara Falls QEW Business Park is to capitalize on long-term opportunities for business and services in close proximity to 400 series highways focusing on manufacturing, warehousing and other employment land uses. In order to address challenges, capitalize on opportunities and transform the concept into reality, the following tools will be utilized:

- a. *Preparation of a master plan or secondary plan to coordinate development and refine the concept;*
- b. *Preparation of supporting plans for servicing and transportation (including active transportation and transit);*
- c. *Preparation of urban design guidelines;*
- d. *Preparation of an investment strategy to attract target industries;*
- e. *Updating relevant local plans, policies and zoning by-laws.*

Within focused areas of the Niagara Economic Gateway Zone, tourism uses and tourism economic development is considered to be a priority (Section 3.A.3.24). These areas, in proximity to the Subject Lands, are generally within the Niagara Falls Tourist Area; however, there are some lands within the Secondary Plan area on the east side of Montrose Road, north of Biggar Road, which are designated in the City's Official Plan for Tourist Commercial uses.

Implementation of the employment lands policies is to be primarily through local Official Plans and Zoning By-laws. More specifically, Section 3.A.3.12 states that:

Local Official Plans shall be updated to reflect the vision, strategy and action plan articulated in this Amendment. It is expected that the Region and local municipalities will also undertake a variety of implementation items, including, but not limited to, Community Improvement Plans, secondary plans and master plans and infrastructure studies and plans.

Secondary Plans and Master Planning processes will provide more detail to facilitate change and development within Employment areas. Section 3.A.3.13 states that the Region will:

[...] work with local municipalities and support secondary planning efforts within the Gateway. The terms of reference for new secondary plans or master plans should be prepared jointly, in a coordinated manner to ensure that key areas, including land use, urban design, the environment, phasing of development, infrastructure and transportation are adequately addressed.

With respect to the conversation of Employment Areas, and consistent with the Growth Plan, consideration will only be given during a municipal comprehensive review process (Section 3.A.3.17). This further described in the following Section of this report.

4.5.5 Employment Lands

A portion of the Subject Lands, primarily located south of the CP railway line and west of Montrose Road, are identified as “Employment Land” in the ROP (Figure 9). Employment Lands also exist on the east side of Montrose Road and north of the CP railway line, on the west side of Montrose Road, where the current ES Fox offices are located. The Employment Land, as identified on the Region’s Schedule G2, encompasses approximately 142 hectares of the total Secondary Plan area (330 hectares total).

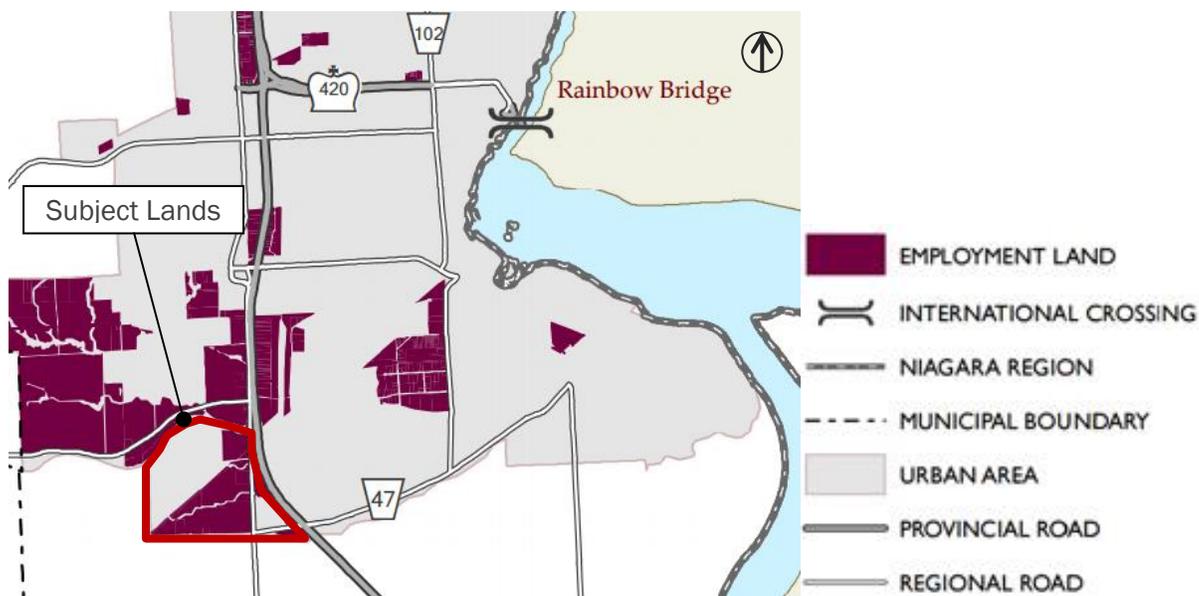


Figure 9: Niagara Region Official Plan, Schedule G2 – Niagara Gateway Economic Employment Lands

Section 3.C.1 provides policies in relation to the continued economic competitiveness within the Region and its local municipalities, which will be achieved by:

- Providing an appropriate mix of employment uses, including industrial, commercial and institutional uses to meet long term needs.*
- Providing opportunities for a diversified economic base, including maintaining a range and choice of suitable sites for employment uses which support a wide range of economic activities and ancillary uses, and take into account the needs of existing and future businesses.*
- Planning for, protecting and preserving employment areas for current and future use.*

- e. *Ensuring that the necessary infrastructure and services are provided to support current and forecasted employment needs including transit and active transportation facilities.*

Section 3.C.2 states:

Local municipalities should designate and preserve lands within Urban Areas which are adjacent to or in close proximity to existing major highway interchanges, ports or rail yards as employment areas providing for manufacturing, warehousing, transportation and associated retail, office and ancillary employment uses, where appropriate.

The ROP Section 3.C.6 provides policies relating to the introduction of sensitive land uses adjacent to or in proximity to employment areas, stating that an

[...] analysis is required to assess any constraints the introduction of such uses will have on the types of uses which could locate within all or portions of the employment area and/or on any existing employment uses.

Through this Secondary Plan process, sensitive land uses may be introduced adjacent to either existing or proposed employment uses. As part of the Background Study, noise and vibration analyses as well as an air quality assessment are being undertaken to address any issues of compatibility.

In addition to the Employment Conversion policies of ROP Section 3.A.3.17, Section 4.E.1.1 states that:

Municipalities may permit the conversion of lands within employment areas to non-employment uses only through a municipal comprehensive review where it has been demonstrated that:

- a. *There is a need for the conversion.*
- b. *The municipality will meet the employment targets allocated to the municipality pursuant to this Plan.*
- c. *The conversion will not adversely affect the overall viability of the employment area and the achievement of the municipal intensification target, density targets and other policies of this Plan.*
- d. *There is existing or planned infrastructure in place to accommodate the proposed use.*
- e. *The lands are not required over the long term for employment purposes for which they are designated.*
- f. *Cross jurisdictional issues have been considered.*

Furthermore, and consistent with the employment lands policies of the Growth Plan, major retail uses are considered to be non-employment uses and are not permitted within the employment lands. A development application for major retail uses within employment lands also need to be undertaken in the context of a municipal comprehensive review process, and are subject to the considerations noted in Section 4.E.1.1 (Section 4.E.1.2)

4.5.6 Summary

The Subject Lands are within the urban boundary, and the majority of the lands are designed as Built-Up Area. Lands south of the CP railway line are designated Employment Lands and form part of the Niagara Economic Gateway Zone. The Employment Lands designation encompasses approximately 142 ha of the total Secondary Plan area (330 ha). The Secondary Plan process will determine the type and location of various land uses, including employment, residential, institutional and open spaces. Through the Secondary Plan process consideration will be

given to the existing employment lands designation, as well as the existing employment uses in terms of compatibility.

This Secondary Plan process presents an opportunity to redevelop the lands as a complete community that is consistent with the Regional Official Plan policies. Given the location of the Subject Lands within the Built Boundary and with access to municipal infrastructure and services, the proposed Secondary Plan represents the type of development envisioned in the ROP for this area.

4.6 Niagara Falls Official Plan, Amended to January 2015

The City of Niagara Falls Official Plan (OP) provides a comprehensive framework for the development and redevelopment of lands within its municipal boundaries. The OP guides growth and development in the City in an orderly and efficient manner. The Subject Lands are located within the “Urban Area Boundary” and designated on the Urban Structure Plan (Schedule A2) as “Built-up Area”, “Greenfield Area”, “Protected Natural Heritage Area”, and “QEW Employment Corridor” (Figure 10).

The OP’s Land Use Plan (Schedule A) designates the lands as “Open Space”, with a site specific policy #34, “Environmental Protection Area”, “Industrial”, and “Tourist Commercial” (Figure 10). The Urban Structure Plan provides a higher-level overview of the land use framework within the City, whereas, the Land Use Plan provides additional detail with regards to land use designations and associated permissions.

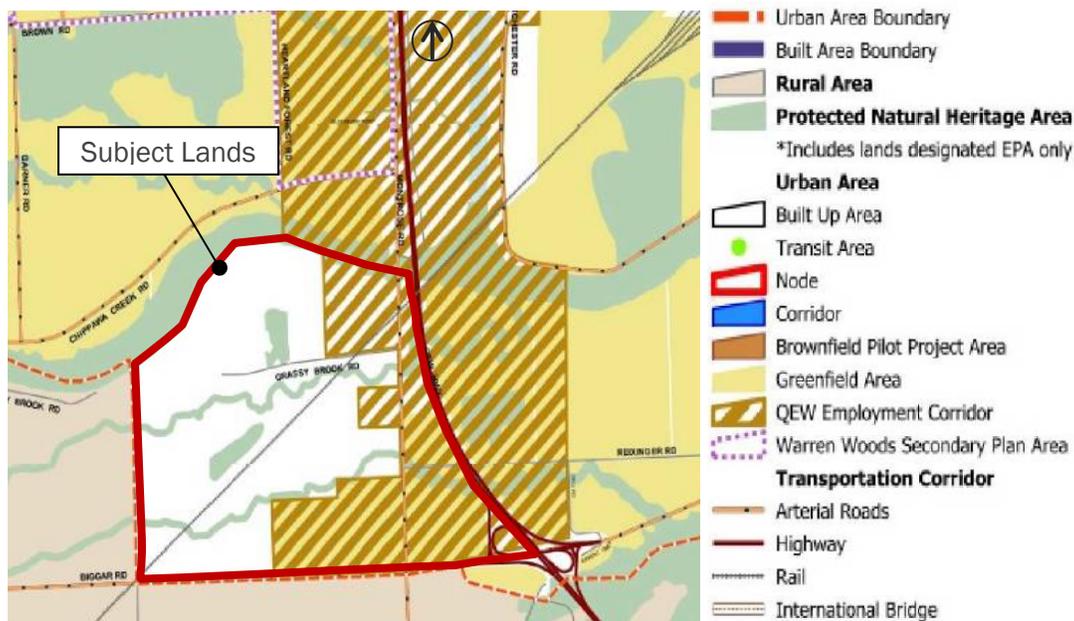


Figure 10: Niagara Falls Official Plan, Schedule A2 – Urban Structure Plan

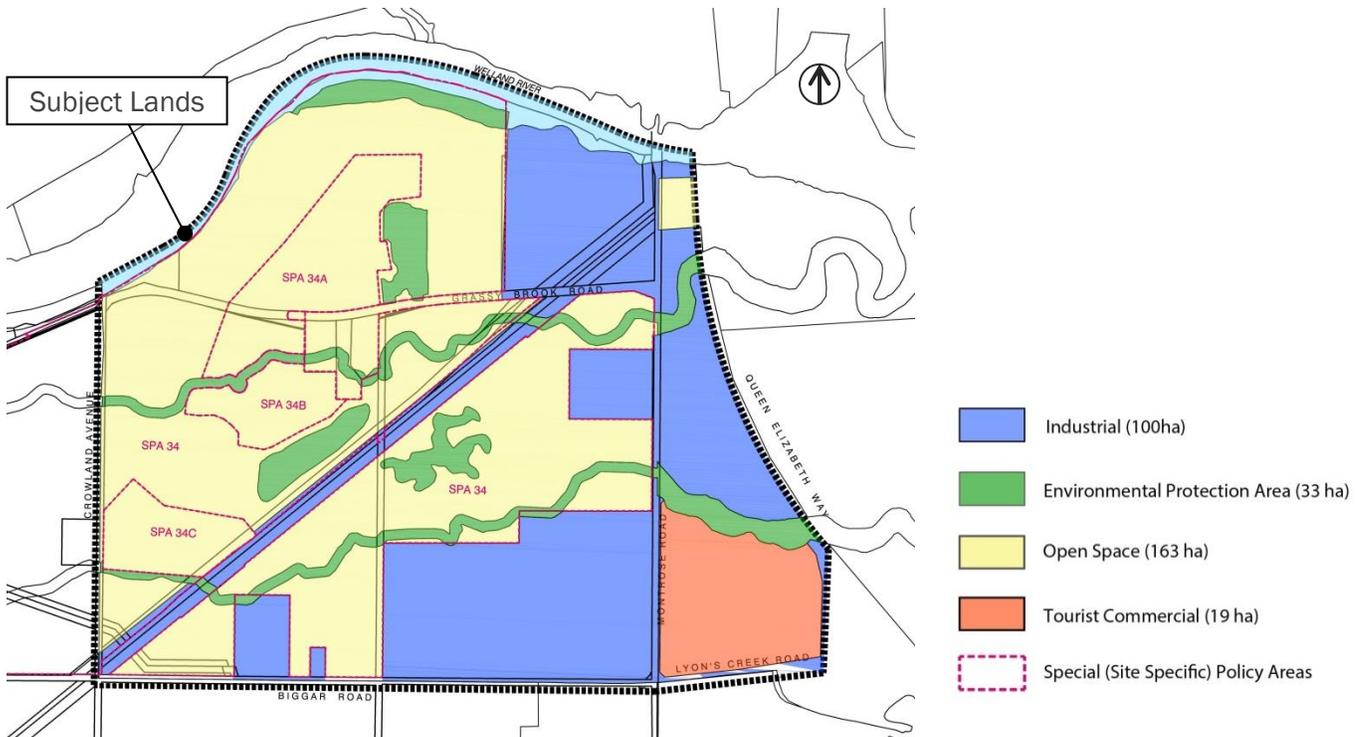


Figure 11: Adapted from Niagara Falls Official Plan, Schedule A – Future Land Use (with approximate land areas)

4.6.1 Urban Structure Plan

Built-up Area

The majority of the Subject Lands are designated as “Built-up Area” (Figure 10). Section 1.15 states that it is recognized that opportunities exist for redevelopment through unification and maximizing density exist within the Built-up Area. The following policies relate to development within Built-up areas; however, given that the majority of the lands are currently golf course, the following policies should be considered in relation to the introduction of new land uses on these lands, particularly adjacent to existing employment and/or single family dwellings.

Section 1.15.1 states:

The character of the existing neighbourhoods within the Built-up Area shall be retained. Accordingly residential development intensification and infilling shall blend into the lot fabric streetscape and built form of a neighbourhood.

Section 1.15.2 states:

A gradation of building heights and densities will be encouraged together with sufficient horizontal separation distances between taller buildings and low rise dwellings in order to ensure a complementary arrangement of residential uses.

Section 1.15.3 states:

Generally development within the Built up Area should be at a higher density that what currently exists in the neighbourhood A harmonious mix of single and multiple accommodation will be encouraged throughout the Built up Area so that at any one time a variety of housing types will be available suitable for different age groups household sizes and incomes.

Section 1.15.5 states:

Single detached housing is the dominant housing form in existing residential neighbourhoods. Increasing the amount of various types of multiple residential accommodation is encouraged in order to provide for an overall mix of housing within all communities.

Greenfield Area

A portion of Subject Lands located at the north-west corner of Montrose Road and Biggar Road are designated as “Greenfield” (Figure 9). OP Section 1.16 states that Secondary Plans shall be the primary implementation tool for development of the Greenfield Area.

Section 1.16.1 states:

The target density of development shall be no less than 53 people and jobs per hectare. The calculation shall be made over the gross developable land area at a secondary plan scale which is defined as total land area net of natural heritage areas identified for protection under this Plan, the Regional Policy Plan, any provincial plan or Niagara Peninsula Conservation Authority regulation.

Section 1.16.2 states:

A diverse range of uses is to be provided including neighbourhood commercial facilities and community services and employment. These uses shall be located and designed such that they compatibly integrate with the built and natural environments.

Section 1.16.3 states:

It is the intent of this Plan that the Greenfield Area develop with a mix of housing types and at transit supportive densities in order to utilize urban land efficiently and support public transit. To accomplish this, a range of housing types is to be provided in terms of both form and affordability.

Section 1.16.5 states:

Street configurations and urban design are to support walking, cycling and the early integration and sustained viability of public transit.

As noted above, although the majority of the lands are designed as “Built-up Areas”, the lands are generally of the land use character expected in a Greenfield Area. As such, the City of Niagara Falls has requested that the overall Secondary Plan area achieve a gross density of 53 persons and jobs per hectare. This density is to be calculated based on the total land area net of the natural heritage areas. Furthermore, this density is higher than the minimum Greenfield density of 50 person and jobs per hectare required under the Provincial Growth Plan.

Protected Natural Heritage Area

The lands designated as “Protected Natural Heritage Area” in the Urban Structure Plan (Figure 10) are further classified as “Open Space” and “Environmental Protection Area” in the Future Land Use Plan (Figure 11). These designations are further detailed in the latter sections of this report.

QEW Employment Corridor

A portion of the Subject Lands are designated as “QEW Employment Corridor” (Figure 10). The City’s OP focuses the QEW Employment Corridor lands those that are located on the east and west sides of Montrose Road, and adjacent to the QEW. The location of the future Regional Hospital at Montrose Road and Biggar Road is designated as QEW Employment Corridor..

The OP requires a total of 53,640 jobs by 2031 (per Table 1 – Forecast of Household, Population and Employment) throughout all of the City’s Employment Lands.

Table 1. Forecast of Households, Population and Employment

Forecast Period	Total Households	Total Population	Household Size (ppu)	Total Employment
2011	34070	89100	2.62	45690
2016	36170	94000	2.6	48560
2021	38590	99100	2.57	50820
2026	40870	103100	2.52	52240
2031	42740	106800	2.5	53640

* This table can be amended by Niagara Region without amendment to this Plan.

The OP provides the following policies in relation to the QEW Employment Corridor.

- 8.8.1 *The lands within the QEW Employment Corridor are intended to provide a long term base for the future development of uses that require access and exposure to the QEW.*
- 8.8.2 *The QEW Employment Corridor shall be protected from conversion to and encroachment from non-employment uses.*
- 8.8.3 *These lands are to be targeted for manufacturing warehousing wholesaling and logistics uses In addition offices and large scale institutional uses that require QEW access are also to be permitted.*
- 8.8.5 *Automotive uses service commercial including restaurants printing shops fitness and recreation and convenience stores and other uses that do not require QEW exposure and access are not to be permitted.*

QEW Employment Corridor policies emphasize that these areas are to be protected from conversion to and from encroachment of non-employment uses, and policies consider the development of large-scale institutional uses, such as a Regional Hospital lands within that designation.

4.6.2 Land Use Designations

Open Space

A portion of the Subject Lands are designated as “Open Space” (Figure 11). The majority of the Open Space lands were the subject of an Official Plan Amendment (OPA 69) process, in which Special Policy Area 34 (Section 13.34) was established.

Special Policy Area 34

Section 13.34.1 states that the majority of the land in Special Policy Area 34 is intended to be developed for golf courses, and driving range, including a golf course club house and accessory buildings or structures. Section 13.34.2 states that the development of a comprehensive golf course resort is permitted on the lands north of the CP railway line, as well as the development of a golf course. Special Policy Area 34 is further defined as areas 34A, 34B and 34C, with corresponding land use permissions (Figure 11). The following uses are permitted within Special Policy Area 34A:

- a maximum of 650 hotel (full service or apartment), and vacation dwelling units,

- a resort clubhouse up to 2-storey in height,
- conference centre,
- fitness centre/spa,
- administration office,
- recreation centre, and
- ancillary uses.

Full service and/or apartment hotels are permitted a maximum building height of 5-storeys, and may contain vacation dwelling units; however, buildings with vacation dwelling units are limited to a maximum of 3-storeys. Lands designated Special Policy Area 34A, 34B and 34C permit the development of up to 225 resort dwelling units, in form of single detached, townhouse or other similar multiple unit dwellings (Figure 11). Resort dwelling units are to be a maximum of 2-storeys in height.

Section 13.34.3 establishes a 1.09 km separation distance (measured from the intersection of Garner Road and Chippawa Creek Road) from the heavy industrial facility located directly north and west of the Subject Lands. Within the separation distance buffer area, low intensity recreational uses including golf course facilities and ancillary uses are permitted. Uses permitted in Special Policy Areas 34A, 34B, and 34C will be restricted to areas beyond the 1.09 km separation distance, including residential or resort buildings that provide places of assembly or overnight accommodations.

The Site Specific policies also provide direction on the development approvals at this site. These policies state that development of the land will be subject to site specific zoning including the use of a Holding “H” provision to:

- demonstrate availability of municipal sanitary, water, stormwater management and transportation facilities;
- to require an environmental study to address protection methods and mitigation measures necessary to address the watercourse system and wetland areas;
- undertake a noise impact study to determined impacts from the railway line on nearby dwelling units; and
- tree preservation plan to determine the extent of the significant trees areas outside of the Environmental Protection Areas, and associated mitigation.

Development of lands designated Special Policy Areas 34A, 34B, and 34C will require that plan(s) of subdivision, plan(s) of condominium, and/or site plan agreement(s) be established and associated mitigation measure identified. Agreements from these approvals will include a clause to notify owners and potential purchasers of the potential odour, air and noise emissions from nearby industrial and transportation facilities.

Policies noted above will be amended through the Secondary Plan process to provide for new land use designations associated with the proposed complete community.

Open Space Designation

The remaining lands within the Secondary Plan area that are designated “Open Space” permit major public parks, conservation areas, cemeteries, golf courses, private clubs, and recreational areas (Section 12.1). The plan further states that:

Where land designated Open Space is under private ownership it is not intended that this land will necessarily remain so designated indefinitely nor will this Plan be construed as implying that these are free and open to the general public. In this respect when an application is made requesting a change of land use and a public agency does not wish to purchase the land for open space purposes due consideration shall be given by Council to the most desirable use. (Section 12.2)

As such, the City' OP contemplates the re-designation of privately owned Open Space to another land use designation. The Secondary Plan will explore these opportunities further, and in relation to the environmental analysis that is being undertaken as part of this process.

Industrial

Lands designated "Industrial" are located along the east and west side of Montrose Road, and on the north side of Biggar Road (Figure 11). The Industrial lands consist of approximately 100 ha of the total Subject Lands and are generally consistent with those lands designated QEW Employment Corridor on the City's Urban Structure Plan. Section 8.1 encourages redevelopment and intensification of industrial land supply for industrial and employment uses that are compatible with surrounding land uses. The "Industrial" designation permits: manufacturing, assembly, fabricating, processing, reclaiming, recycling, warehousing, distribution, laboratory and research, and storage uses (Section 8.2). Furthermore, Section 8.3 states:

Several categories of industrial land use will be established in the Zoning By law to accommodate a variety of industrial activities ranging from heavy to prestige use. Moreover, industrial zones will be arranged in a gradation with the lighter more prestige type industries located near residential areas and other sensitive land uses.

The Industrial land use designation does not specifically permit institutional or hospital uses or any supportive office uses. Hospitals are only specifically permitted within some Site Specific Policy Areas in the Official Plan. The Industrial designation does permit "laboratory and research uses", which could support the future hospital. As noted in Section 4.5.1, QEW Employment Corridor policies allow for the development of large-scale institutional uses that benefit from direct access to the QEW corridor.

Given the future proposed Regional Hospital, the Secondary Plan will further define appropriate Employment Uses that support the Regional Hospital, as well as the secondary and supportive health care-oriented (i.e., clinics or laboratories), professional services, and office uses. The policies will further ensure appropriate compatibility between the future hospital and the surrounding employment uses.

Tourist Commercial

A smaller portion of the Subject Lands, at the north-east corner of Biggar Road and Montrose Road, are designated "Tourist Commercial" (Figure 10). The Subject Lands are not located within a tourist district or satellite district, and as such, there are limited policies relating specifically to this Tourist Commercial designation. Section 4 states that the overall objectives of Tourist Commercial areas are:

- "to preserve and protect the primary tourism resource the Falls and the quality of its viewing experience
- to ensure that future development builds upon and complements existing good tourism development and respects the built and natural heritage of the Tourist Area to establish Tourist Districts which complement and support each other
- to ensure that future development occurs in a manner which enhances the attractiveness of the tourism environment and promotes pedestrian friendly streetscapes
- to ensure that the new Casino Development supports the objectives of this Plan and enhances the existing tourism product
- to ensure that the People Mover system supports the objectives of this Plan enhances the existing tourism product and is constructed in a manner which improves future development opportunities and
- to ensure that tourism development does not adversely affect the quality of life enjoyed in residential neighbourhoods."

The Secondary Plan will more clearly define the type of land use permitted within this Tourist Commercial area to ensure that it is compatible with the surrounding land uses, including the Regional Hospital.

Environmental Protection Area

Portions of the Subject Lands are identified as “Environmental Protection Area” with a Wetland Buffer (Figure 12). The OP provides the following policies in relation to Natural Heritage.

11.1.1 The City supports an ecosystem approach to the identification protection and enhancement of our natural heritage resources that addresses:

- a. the interrelationships between air land water plant and animal life and human activities;*
- b. the health and integrity of the overall landscape within and beyond the City s boundaries; and*
- c. the long term and cumulative impacts on the ecosystem.*

11.1.2 The City shall encourage and support the efforts of the Ministry of Natural Resources the Niagara Peninsula Conservation Authority and the Region of Niagara to protect maintain rehabilitate or improve the quality of the natural heritage features resources within the municipality in accordance with environmental and natural resource management legislation.

11.1.5 When considering development or site alteration within or adjacent to a natural heritage feature the applicant shall design such development so that there are no significant negative impacts on the feature or its function within the broader ecosystem Actions will be undertaken to mitigate any unavoidable negative impacts.

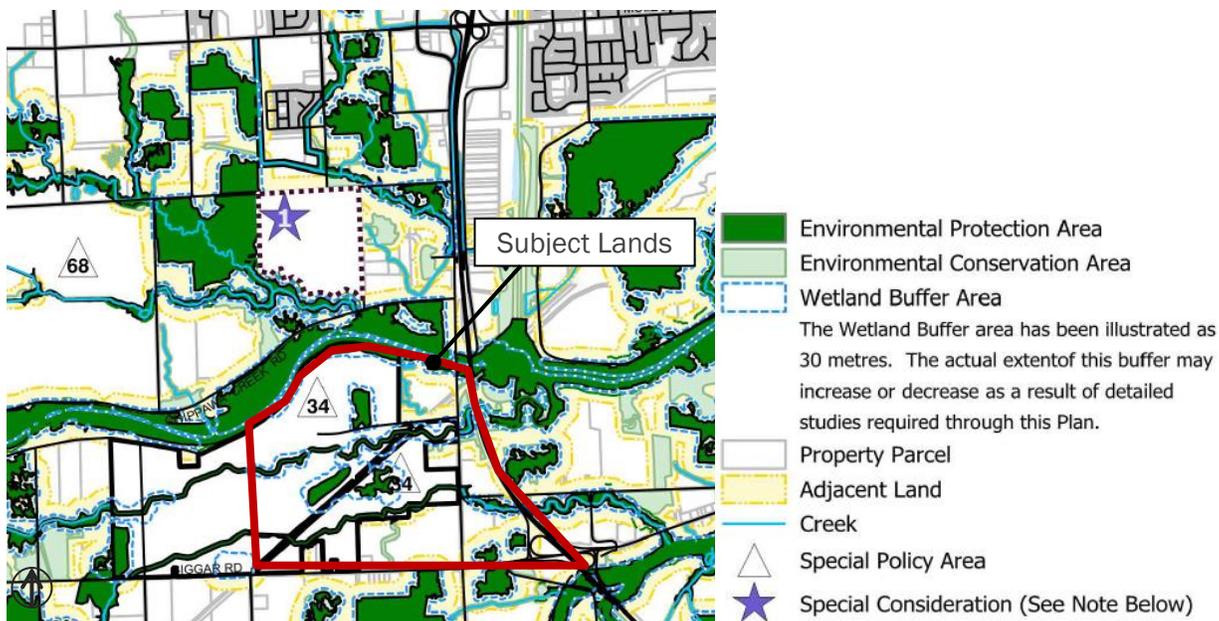


Figure 12: Niagara Falls Official Plan, Schedule A-1 – Natural Heritage Features and Adjacent Lands

The City adopted OPA 96 in November 2010, which amended Environmental Policies and consolidates these into one section of the OP, entitled “Natural Heritage Systems”. The Grand Niagara Co-owners appealed OPA 96 to the Ontario Municipal Board (OMB). A settlement to the appeal was reached in 2014, stating that the policies of OPA 96

Sections 12.1 and 12.2 do not apply to development of the lands subject to OP Section 13.34 (Site Specific Policy Area 34).

4.6.3 Urban Design

In addition to the broader urban design direction of the Greenfield Policies, Section 5 – Urban Design Strategy Preamble of the Official Plan outlines an approach to urban design that encompasses the following objective;

It is the intent of this Plan to create a compact and inter-connected, pedestrian-oriented and transit-supportive community. The built environment consists of the public realm and private properties, both of which have to be designed to work harmoniously together. The policies of this section are to provide guidance to both the public and private sector

While there are several policies related to the relationship of new development to adjacent existing buildings, this development does not have that context. However, there are a number of policies that do apply including;

- 5.5.1.2 *Development shall be designed and oriented to the pedestrian. As such buildings shall be set as close to the street as possible. Moreover, where development includes multiple buildings, the buildings should be deployed in such a manner that allows pedestrians to move between buildings with a minimum of interference from vehicular traffic. To this end, designated walkways through parking areas and to other buildings are to be provided.*
- 5.1.4 *In prominent landmark locations such as gateway entrances to the City or along important roadway corridors, special attention to high quality design and landscaping shall be encouraged. Furthermore, new development and redevelopment should be designed and sited to minimize the obstruction of scenic views and vistas.*
- 5.2 *Streets are a public space that, while conveying motorized traffic, should be designed as a safe, comfortable and convenient environment for the pedestrian and cyclist. Streetscaping should serve to improve the pedestrian experience of an area through the use of amenities such as widened sidewalks, decorative street lighting, rest areas, tree planting and other landscaping features.*
- 5.2.1 *The provision of adequate and accessible space for pedestrians, cyclists and transit are to be considered in the design of streets.*

These policies will form an important component of the planning and design of the Grand Niagara community.

4.6.4 Summary

The Secondary Plan will amend certain policies in the City's OP on an area-wide and/or site-specific basis, including the land use designations, open space policies, infrastructure, and urban design policies. The Secondary Plan will achieve the required gross density of 53 person and jobs per hectare and will be developed as a complete community with consideration for the natural features, and providing a range of uses that are supportive of the employment areas, and the development of the future Regional Hospital.

4.7 Niagara Falls Zoning By-law

4.7.1 Niagara Falls Zoning By-law 79-200

The City of Niagara Falls Zoning By-law provides detailed regulations that implement the objectives and policies of the Official Plan. The Zoning By-law serves as a land use and implementation tool providing additional detail with regards to permitted land uses, and built form, and guides the City's growth and development in an orderly and efficient matter. The City is in the process of developing a comprehensive zoning by-law (Draft January 2015) that

would replace the four (4) existing zoning by-laws. The Subject Lands are subject to the Niagara Falls Zoning By-law 79-200 as well as the Former Township of Crowland By-law No 1538 and the Township of Willoughby By-Law 395.

The majority of the Subject Lands are zoned “Open Space (OS)” and “Environmental Protection Area (EPA)”. A portion of the OS lands are zoned with an “H” hold which relates to the site specific zoning by-law amendment associated with the golf course development. The site specific zoning by-law amendment identified three zones: OS-774, OS-775(H), and OS-776(H), as illustrated on Figure 13. The property on the north-east corner of Montrose Road and Biggar Road is zoned “Tourist Commercial (TC)” with a hold.

Properties located on the west side of Montrose Road and the north side of Biggar Road are subject to By-law No. 1538 of the Former Township of Crowland and properties along the east side of Montrose are subject to the Township of Willoughby By-Law 395 (Figure 13). These properties are primarily zoned “Rural Agricultural” and “Industrial”.

The general OS zone permits the following uses: boating club; cemetery; hospital; private club; recreational uses; religious institution; riding stable; sanatorium; school; and accessory buildings/structures. The site specific zone provisions associated with OS 774, OS (H)775, and OS (H)776 are outlined in Table 2.

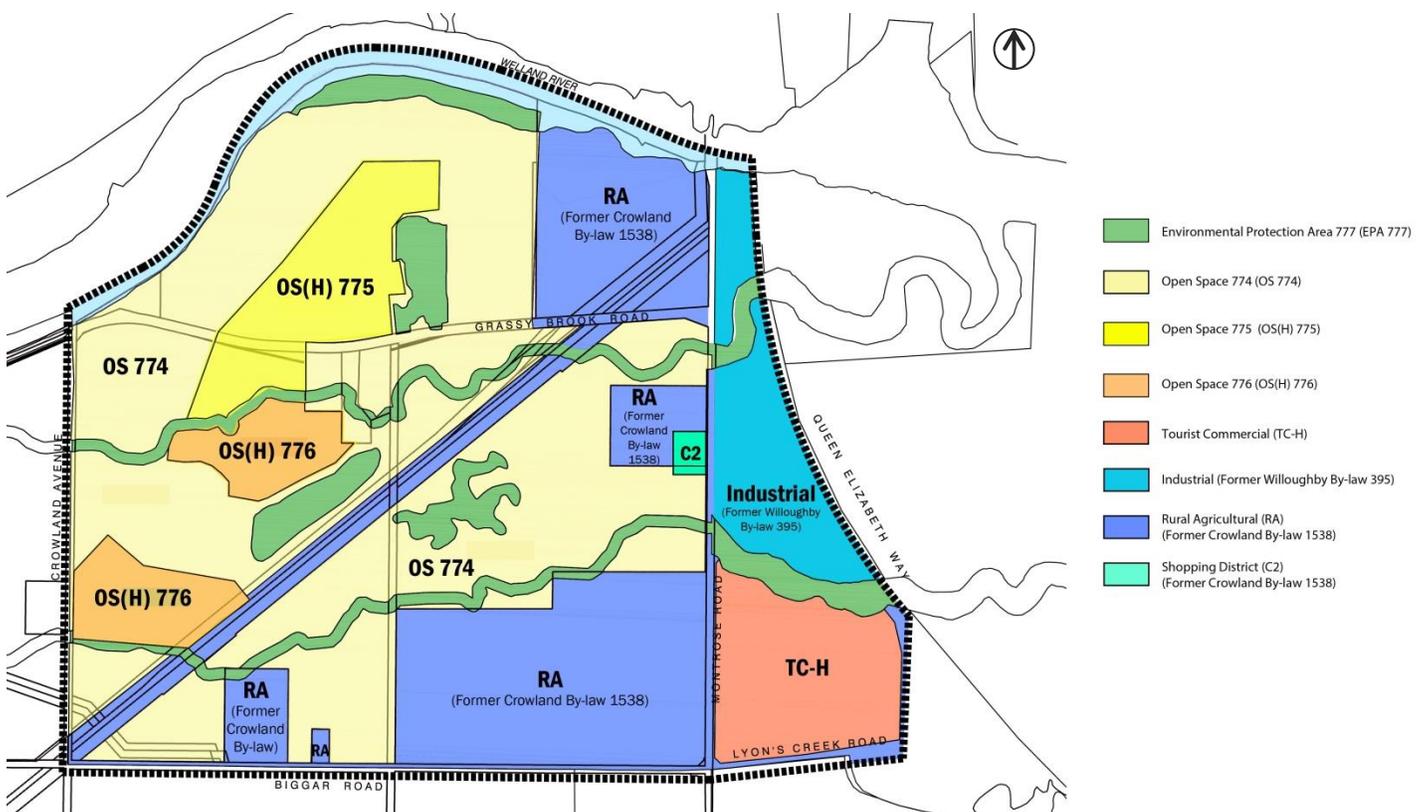


Figure 13: City of Niagara Falls Zoning By-Law Schedule (Sheet B7, B8, C7 & C8), Township of Crowland By-Law 1538 and Township of Willoughby By-Law 395

Table 2: Summary of Zone Regulation from By-Law No. 2007-162

	OS(H) 775	OS(H) 776	OS 774
Permitted Uses	<ul style="list-style-type: none"> • hotel(s) • apartment hotel(s) • vacation dwelling units • resort dwelling units 	<ul style="list-style-type: none"> • resort dwelling units, consisting of one family detached dwelling and/or units in a on-street townhouse dwelling 	<ul style="list-style-type: none"> • up to 2 golf courses • accessory and accessory buildings including: • not more than 1 golf clubhouse • existing clubhouse building • maintenance building • not more than one dwelling unit
Max. Number of Units	<ul style="list-style-type: none"> • 350 hotel and/or vacation dwelling units, in one or more hotels or apt. hotels • 300 vacation dwelling units, not included in apt. hotels. • 225 resort dwelling units for combined parcels OS(H) 775 and 776 	<ul style="list-style-type: none"> • 225 resort dwelling units for combined parcels OS(H) 775 and 776 	
Setback from EPA	<ul style="list-style-type: none"> • 15 m 		<ul style="list-style-type: none"> • 15 m
Max. Lot Coverage	<ul style="list-style-type: none"> • 25% 		<ul style="list-style-type: none"> • 5,000 m²
Max. Floor Area	<ul style="list-style-type: none"> • 4,000 m² resort clubhouse • 1,900 m² conference centre within resort clubhouse • 1,900 m² fitness centre within resort clubhouse 		<ul style="list-style-type: none"> • 2,325 m²
Max. Height	<ul style="list-style-type: none"> • 18 m or 5 storeys for hotel / apt. hotel • 12 m or 3 storeys for apt. hotel with vacation dwelling units • 10 m or 2 storeys for resort dwellings • 12 m or 3 storeys for all other buildings 	<ul style="list-style-type: none"> • 10 m or 2 storeys 	<ul style="list-style-type: none"> • 10 m or 2 storeys
Parking	<ul style="list-style-type: none"> • In accordance with parent by-law 79-200 	<ul style="list-style-type: none"> • 1 space per dwelling unit 	<ul style="list-style-type: none"> • Max. 50 spaces for every 9 holes, plus • parking requirements for clubhouse and existing buildings

The EPA zone permits the following uses: conservation; existing agricultural; wildlife management and works of a conservation authority. The property zoned Tourist Commercial (TC), was the subject of a site specific zoning by-law amendment (TC-H-739). Zoning By-law Amendment 2006-045 changed the zone from “Rural” and “Highway Commercial” to “Tourist Commercial” to facilitate the development of a future tourist commercial use. The Amendment was passed in February 2006.

The portion of the lands within By-law No. 1538 of the Former Township of Crowland are zoned “Rural Agricultural (RA)”. The RA zone permits residential uses (one single family dwelling) and industrial uses on lands north Biggar Road and east of Crowland. The RA zone also permits agricultural uses including crops, trucks, storing of farm machinery and vehicles use on the farm.

One property along Montrose Road is zoned Shopping District “C2”.

The portion of the lands within By-law No. 395 of the former Township of Willoughby are zoned “Industrial” and “Open Space”. The industrial zone permits: manufacturing, converting, altering, finishing, fabricating or assembling of products which do not emit obnoxious sound, odour, dust, fumes, vibration or smoke and which are not hazardous to the surrounding uses. The open space zone permits: agricultural uses.

4.7.2 Comprehensive Zoning By-Law (Draft, January 2015)

The draft Comprehensive Zoning By-Law (Draft January 2015) identifies the following zones within the Subject Lands: “Open Space (OS)”, “Light Industrial (LI)”, “Environmental Conservation (EC)”, “Environmental Protection (EP)”, “Future Development (FD)”, and Tourist Commercial-3 (TC-3). The majority of the lands are zoned “Open Space (OS)” with site-specific provisions and “Light Industrial (LI)”.

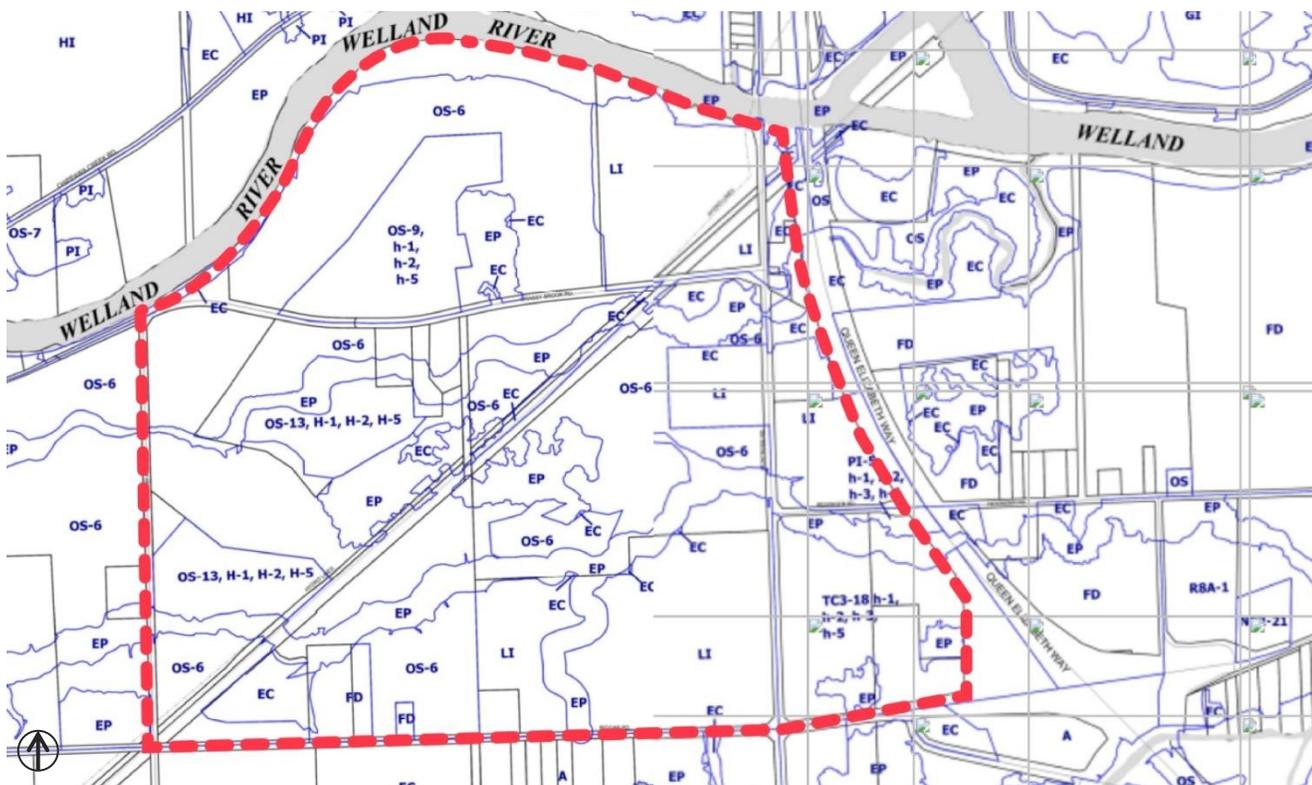


Figure 14: Comprehensive Zoning By-Law (Draft, January 2015), Maps 18 and 19

The OS zone permits existing agricultural uses, golf courses and driving ranges, assembly halls, private or public parks, and recreational facilities (indoor and outdoor). Site-specific provisions, identified as OS-6, OS-9, and OS-13, exist as they relate to the golf course development. The following h-hold provisions are in place for a portion of the Subject Lands zoned OS-9 and OS-13:

- H-1 – Prior to removal, servicing issues must be addressed in consultation with the Region and/or City
- H-2 – Prior to removal, the proponent shall prepare an EIS to demonstrate development or site alteration on land within or adjacent to a natural feature will not have a negative impact on the feature or function. Following completion and approval of the EIS, an agreement shall be entered with the City to ensure protection and maintenance of the features in perpetuity, and/or the completion of any mitigation measures.
- H-5 – Prior to removal, transportation and traffic issues shall be addressed.

The LI zone permits a variety of light industrial uses including: automobile related uses, commercial, convenience, garden centres and home improvement stores, indoor and outdoor recreational facilities, offices, service shops, storage, winery, warehousing and wholesale. The LI zone includes a provision that restricts the emission of noxious odours, smoke, noise or effluent.

The TC-3 zone permits a range of uses including financial institution, gas bar, hotel, convenience store, indoor recreation, office, museum, night club, restaurant, retail store, automobile rental, and service, and car wash (section 16.2). In addition to the uses permitted in the TC-3 zone, the site-specific TC-3-18 zone also permits clinics, laboratory, and garage, with site-specific provisions.

The EC zone permits uses such as, conservation works /use, existing agricultural, and wildlife management. A dwelling may be permitted within the EC zone, subject to review and approval by the NPCA. The EP zone permits uses similar to those in the EC zone, but does not permit dwellings. The FD zone permits only existing uses, buildings or structures.

The Comprehensive Zoning By-law includes an “Institutional-3 (I-3)” zone which permits hospitals, in addition to clinics, long term care home, and nursing home, amongst other uses. The Subject Lands are not zoned “I-3”; however, a similar zone may be considered for a portion of the lands through the future amendment process.

Following completion of the Secondary Plan, a zoning by-law amendment will be submitted for those lands where the current zoning by-law permissions are not consistent with the vision, objectives, land use designations and policies contained within the Secondary Plan.

5.0 Technical Studies

5.1 Site Servicing Analysis

The following provides a summary of the background servicing information related to the lands within the Grand Niagara Secondary Plan area. Specifically, information has been compiled related to existing conditions and infrastructure, as well as preliminary opportunities and constraints relating to sanitary servicing, water distribution, storm drainage, stormwater management, and utilities. Following the completion of the Background and Analysis Report and once the Secondary Plan land use plan has been established, a more detailed site servicing analysis will be undertaken to determine an approach to servicing the Subject Lands.

5.1.1 Sanitary Servicing

Sanitary Sewage Jurisdiction/Responsibilities

The municipal sanitary sewage collection and treatment system is a two-tiered responsibility. Niagara Region owns and operates the municipal wastewater treatment plants, trunk sewers and forcemains up to and including sanitary pumping stations. The City of Niagara Falls owns and maintains the local gravity collection systems that drain to each respective pumping station.

Existing Sanitary Sewer System

There are existing sanitary sewers located along Montrose Road and along Grassy Brook Road. Pipe diameters range from 300mm to 450mm. These two sewers connect at the Grassy Brook Road and Montrose Road intersection and drain to the Grassy Brook Sanitary Pumping Station (SPS) located on the east side of Montrose Road, approximately 50 metres north of the intersection.

The existing gravity sewer was constructed in 2007/2008 to service parts of the lands within the Grand Niagara golf course development. The existing commercial/industrial properties fronting onto Montrose Road and the existing Grand Niagara golf clubhouse and maintenance building either connect to the existing sewers or have allocation to connect to them. An additional leg of gravity sewer connects to the Grassy Brook SPS, providing sanitary service to the E.S. Fox factory north of the SPS. The overall sanitary drainage plan for the gravity sewers that drain to Grassy Brook SPS is illustrated in Figure 15 and attached in full in Appendix A.

The Grassy Brook SPS pumps sewage flow north via a 150mm diameter forcemain. A section of the forcemain was constructed using the directional boring tunneling method under the Welland River. For this section of the forcemain, a 200 mm O.D. DR11 HDPE pipe was used. The forcemain pumps sewage to a 750 mm reinforced concrete gravity sewer near the Montrose Road / Brown Road intersection. The gravity sewer drains to Canadian Drive and then diverts across the QEW to the South Side Highlift SPS.

From the South Side Highlift SPS, the sewage flow is ultimately conveyed to the Niagara Falls Wastewater Treatment Plant (WWTP). Section 1.2.3, "Wastewater Treatment Master Plan", below further details how the sewage is conveyed from the South Side Highlift SPS to the Niagara Falls WWTP.

Grassy Brook Pumping Station

The Grassy Brook SPS receives sewage from the gravity sewers, as discussed above, and pumps sewage to a gravity sewer north via approximately 1.8 km of 150 mm diameter forcemain. Record drawings, MOE C-of-A, and the Regional Master Plan have been reviewed to gather information for the SPS, as outlined below.

The SPS's wet well is currently equipped with two pumps, each with rated capacity of approximately 20.9 L/s at a total dynamic head (TDH) of 33.62 m. Based on the existing piping layout and pump rating point, analysis shows one

pump operation can provide approximate 18-22 L/s at about 33 m TDH. With two pumps running, the output increases to about 25-29 L/s at about 45 m TDH. This is based on theoretical Hazen-Williams based calculations; actual performance is based on field conditions and actual flow and pressure measurements.

According to the Regional Servicing Master Plan, Grassy Brook SPS will require a full buildout capacity of 47 L/s. With some structural and process modifications, up to 4 pumps can be accommodated in the wet well allowing for this capacity to be met. A sewage flow demand analysis must be done to confirm the future required capacity of the SPS.

The system curve and pump rating point for existing condition are shown in Figure 16. The rapid increase in TDH as flow increases clearly demonstrates the forcemain is undersized for future projected increases in sewage flow from the serviced area.

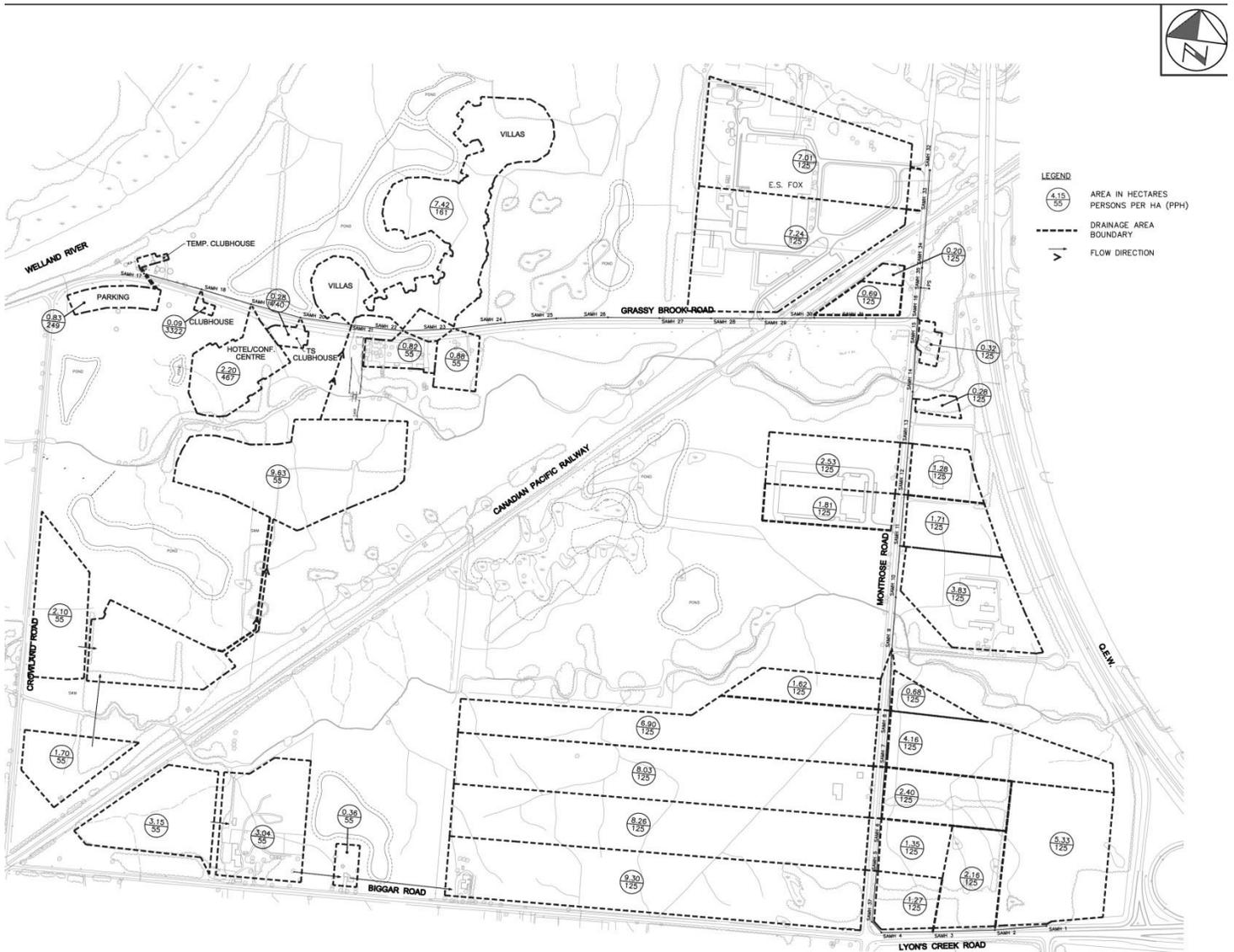


Figure 15: Grassy Brook Pumping Station Sanitary Sewer Drainage Area (full scale drawing included in Appendix A)
Source: City of Niagara Falls

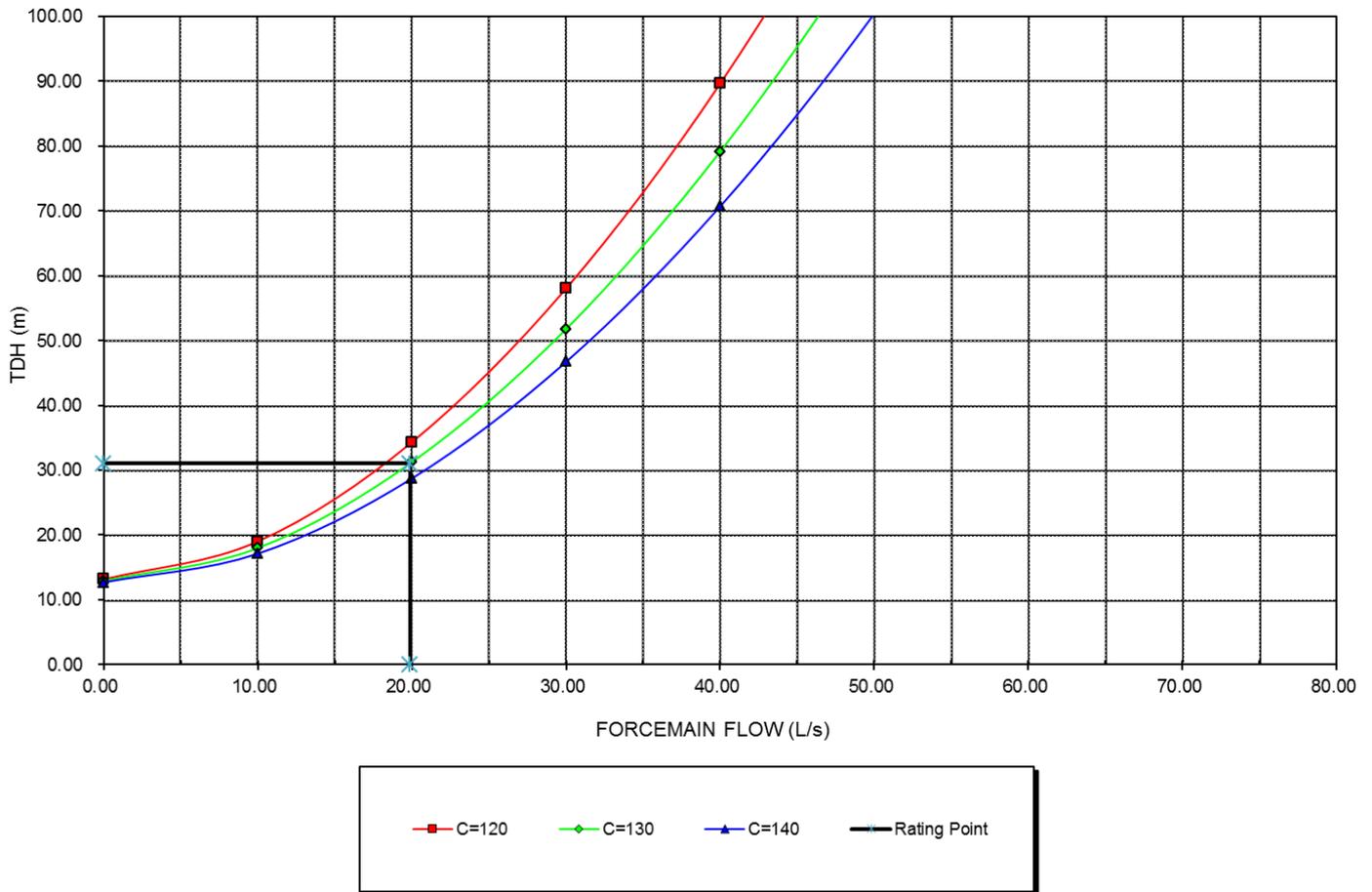


Figure 16: Grassy Brook Pumping Station - Existing System and Pump Rating Point

The original design of the wet well incorporated a divider wall which provides some added flexibility in operating the wet well and in developing effective liquid level control strategies for proper pump cycling. In addition, even though the inlet sewer is quite deep (11.3 m), there is still over 3.5 m of liquid level to work with in establishing new and optimized pumping configurations. The wet well is also large enough (4m by 4m) to physically accommodate installation of additional pumps.

In general, upgrades to the existing pumping system to achieve larger firm capacities to satisfy interim and long term sanitary servicing requirements for the Grassy Brook Service Area are possible. With larger pumps and more extensive piping modifications including a second larger forcemain, even greater capacities can be achieved.

Region of Niagara Water and Wastewater Master Plan

The Niagara Region Water and Wastewater Master Plan (2011, AECOM) provides detailed information about the sanitary sewage network for the City of Niagara Falls. Once sewage from the study area arrives at the South Side Highlift SPS, it is then pumped into a forcemain north along the Niagara hydro corridor to a series of SPSs: Royal Manor SPS, Dorchester Rd. SPS, and Drummond Rd. SPS. Each SPS outlets to its respective gravity trunk sewer. Sewage continues north and ultimately along the hydro corridor to the Niagara Falls WWTP. Information about the SPSs and the Niagara WWTP are limited to sewage flow capacities, and suggested upgrades to sanitary infrastructure for buildout targets. These figures are included in Appendix A to this report and they provide a layout

of the Niagara Falls sanitary sewage network, along with the current and future sewage capacities for the SPSs and WWTP related to the study area.

Some key points relevant to the study area from the Master Plan are listed below:

1. Grassy Brook SPS currently operates at 21 L/s and has an ultimate capacity of 138 L/s.
2. Grassy Brook Forcemain must be upgraded with the Grassy Brook SPS.
3. Peak wet weather flows are high at South Side Highlift SPS. Upgrades are planned to be completed for buildout in 2031.
4. The Niagara Falls WWTP currently has capacity for 789 L/s and treats sewage flow of 579 L/s as of 2011. The Master Plan anticipates that sewage flows will exceed 80% of the plant's capacity by 2026 and upgrade planning will be triggered for a full build-out target flow of 885 L/s. It is unlikely that proposed development in the study area will affect the need to upgrade the Niagara WWTP, but further analysis will need to be undertaken to confirm.

The timing and staging for the various upgrades will be reviewed as part of the Secondary Plan recommendations. We also note that the Region is currently undertaking a Water and Wastewater Servicing Plan review. This Secondary Plan will coordinate with that review where feasible.

Sanitary Sewage Design Standards

The proposed sanitary sewers will be designed in accordance with the City of Niagara Falls City Standards for Site Planning (April 1992) and Ministry of the Environment (MOE) criteria. The sanitary design criteria to be used to determine the timing and staging for the various upgrades will be established as part of the Secondary Plan recommendations.

5.1.2 Water Distribution

Water Distribution Jurisdiction/Responsibilities

Niagara Region has jurisdiction over the potable drinking water supply for homes and businesses throughout the Region. Water servicing in the Region is based on a two-tier approach. The Region is responsible for water treatment, storage, pumping and the larger water distribution mains. The City of Niagara Falls is responsible for the distribution mains 300 mm in diameter and below.

Existing Water Distribution System

The Grand Niagara study area is supplied with municipal water through a distribution system, which sources water east of the site at the Niagara Falls Water Treatment Plant (WTP) along the Niagara River. The existing water infrastructure within the Subject Lands includes:

- 300 mm diameter PVC watermain along Montrose Road which crosses the Welland River;
- 300 mm diameter PVC watermain along Grassy Brook Road; and
- 300 mm diameter HDPE watermain which crosses the Welland River and connects watermain from Grassy Brook Road to Chippawa Creek Road.

These watermain pipes are part of a well-looped municipal distribution network, which connects to Regional watermain to the north (on McLeod Road and Brown Road). Section 1.3.3, "Wastewater Treatment Master Plan", below further details how water is distributed on a Regional level.

Region of Niagara Water and Wastewater Master Plan

The Niagara Region Water and Wastewater Master Plan (2011, AECOM) provides detailed information about the water distribution network for the City of Niagara Falls.

Some key points relevant to the study area from the Master Plan are listed below:

1. There is only one pressure zone for Niagara Falls, NF1. The study area falls within this pressure zone.
2. There is sufficient flow and pressure within the site's vicinity for domestic and fire flow demands, with static pressure measured at approximately 100 psi.
3. The watermain system is expected to meet long-term demands for the City and the Secondary Plan area. The Niagara Falls WTP has the capacity to supply 145.50 million litres per day (MLD) and the anticipated full buildout scenario will require 112.81 MLD.

Design Standards

The design standards for the study area come from the MOE Design Guidelines for Drinking Water Systems (2008). The watermain design criteria to be used to determine the suitability of the existing watermain network and determine required upgrades will be established as part of the Secondary Plan recommendations.

5.1.3 Storm Drainage

Storm Drainage Jurisdiction/Responsibilities

Stormwater drainage has a three-tier jurisdiction for the study area. The City of Niagara Falls is responsible for and has design guidelines for stormwater conveyance to an outlet point. Niagara Peninsula Conservation Authority (NPCA) and the Ministry of Environment (MOE) have jurisdiction over the stormwater management prior to releasing stormwater to a natural water body. Quality and quantity targets from both governing bodies must be met. Please refer to Section 5.2- "Stormwater Management" in this background report for more details of the stormwater management guidelines.

Existing Conditions

There are three natural water bodies within or adjacent to the study area:

1. The Welland River to the north
2. Grassy Brook Creek
3. Lyons Creek

Currently, all of the study area drains to one of these three water bodies. There is currently a golf course within the study area which makes use of storm water drainage for irrigation purposes.

For more details of the existing conditions for storm water management, please refer to Section 5.2- "Stormwater Management" in this background report.

Design Standards

The proposed storm sewers will be designed in accordance with the City of Niagara Falls City Standards for Site Planning (April 1992) and Ministry of the Environment (MOE) criteria. The storm sewer system will be designed to convey the 5 year return storm. For details about the stormwater management design guidelines applicable to the study area, please refer to Section 5.2.2., "Stormwater Management – Review of Background Studies", in this background report.

5.1.4 Utilities

Niagara Peninsula Energy, Bell Canada, Cogeco Cable and Enbridge Gas have existing plant in the surrounding area. Confirmation of adequate capacity for the proposed development will be sought from each of the Utilities.

The extent of system improvements, if any, will be determined upon completion of feasibility studies by each of the Utilities once detailed loading information is available.

Utility servicing of the study area will be designed and constructed per each utility's respective design standards and will be located within the municipal right-of-way in accordance with the Utility and Municipal Standards.

5.1.5 Overall Servicing Constraints

The study area may require phasing based on the timeline that sanitary sewage upgrades can be planned and constructed for the Grassy Brook SPS and its forcemain, the South Side Highlift SPS, and the Niagara Falls WWTP. Currently, the Grassy Brook SPS operates at a dry weather flow of 21 L/s and has capacity for up to 44 L/s, as is. With sewage pump upgrades, Grassy Brook SPS has an ultimate capacity of 138 L/s.

Servicing strategies will be examined and proposed within the next stages of the work.

5.2 Stormwater Management

5.2.1 Scope and Objectives

To support the Grand Niagara Secondary Plan, a Stormwater Management Study on a sub-watershed basis is needed. The Niagara Peninsula Conservation Authority (NPCA) issued a Stormwater Management Guidelines document in 2010 emphasizing that the ultimate goal of Stormwater Management is to reduce, and eventually eliminate if possible, the undesirable impacts of stormwater, erosion and sediment on the built and natural environment, re-establish the benefits of precipitation, and protect and enhance water quality in the Niagara Region and the NPCA's water sources.

The key objectives of the Stormwater Management Study are:

- To control flows to existing levels to maintain existing watershed hydrological features, and avoid downstream flooding and potential erosion problems;
- To provide water quality control to acceptable levels;
- To evaluate the site conditions and develop potential Low Impact Development (LID) strategy for the proposed site, in order to maintain the existing water balance to a feasible degree ;
- To integrate the stormwater management system with the overall grading and storm drainage plan for the site;
- To carry out a preliminary design of the stormwater management facilities on the subject secondary plan area; and
- To ensure that the design of the stormwater management facilities conform to the stormwater management objectives and criteria outlined in Section 5.2.4.

5.2.2 Review of Background Studies

The background studies/reports and technical guidelines reviewed to support the subject Grand Niagara Secondary Plan are listed as follows:

- Floodline Analysis for the Grand Niagara Resort - Grand Niagara Resort Corporation Floodline Study, Burnside Golf Services, Updated April 2004
- South Niagara Falls Watershed Report, NPCA, 2008

- NPCA Stormwater Management Guidelines, AECOM, January 2010
- Flood Plain Mapping for Lyons Creek including Tee Creek, NPCA, March 2011
- Lower Welland River Characterization Report, NPCA, May 2011

5.2.3 Stormwater Management Opportunities

The majority of the existing uses within the Subject Lands consist of golf course, green /open spaces, as well as residential and employment uses. The future development that will be determined through the Secondary Plan process will change the physical characteristics of land cover and increase the degree of imperviousness. This will result in a significant increase in the amount of runoff and a decrease in overall infiltration. Impervious surfaces collect pollutants from traffic and urban activities on the land and aerial fallout. The drainage system delivers these pollutants to the receiving watercourses (namely, the associated sections of Grassy Brook, Lyons Creek and Welland River).

In developing the land, opportunities are available to meet water quality and other objectives at the source, via the drainage conveyance system, and at the end of the pipe prior to discharge. NPCA’s Stormwater Management Guidelines (2010) defines “Treatment Train” as a preferable approach to utilize more than one BMPs (Best Management Practices) in series to achieve SWM objectives. The “Treatment Train” approach is one well-known Low Impact Development (LID) strategy to maintain existing hydrological conditions of the development. Priority is given to source control methods, e.g., infiltration or retention, since they satisfy multiple SWM control objectives. In sizing end-of-pipe elements, consideration should be given to reductions in flow volume or pollutant loadings that occur upstream in the drainage system. This approach will result in cost savings for the structural end-of-pipe measures such as SWM ponds. It should be noted that infiltration-based source and conveyance control measures will be evaluated in conjunction with the natural heritage system in addition to the hydrogeological characteristics of the Subject Lands.

5.2.4 Stormwater Management Criteria

Applicable Stormwater Management (SWM) policies and guidelines issued and administered by Niagara Region and the Niagara Peninsula Conservation Authority (e.g., SWM Stormwater Management Guidelines approved by approved by NPCA on March 2010) and the MOE Stormwater Management Planning and Design Manual (2003) will form the foundation of the preliminary SWM strategy. Table 3 presents a summary of identified Stormwater Management Criteria for the subject Grand Niagara Secondary Plan area.

Table 3: Summary of SWM Criteria for Grand Niagara Secondary Plan

Topic	Criteria
Flooding / Quantity Control	The SWM controls required are to match or reduce post-development peak flows to pre-development peak flows for a range of design storm events (2, 5, 25 and 100-year storm events).
	Different design storm distributions and durations shall be assessed in order to determine the critical storm that yields the lowest pre-development peak flow and the highest post-development peak flow. The 3-hour Chicago, 12-hour AES and 24-hour SCS distributions should be considered.
	Major overland flow routes are to be designed to have sufficient capacity for

Table 3: Summary of SWM Criteria for Grand Niagara Secondary Plan

Topic	Criteria
	the Regulatory event (100-year or Regional storm event, as applicable).
Erosion Control	Detain and release of the 25mm, 4-hour Chicago design storm over a 24-hour period shall be provided for all receiving systems.
Quality Control	“Enhanced” level of water quality treatment (80% TSS reduction) will be required on all development area draining to the receiving watercourses (e.g., Grassy Brook, Lyons Creek and associated section of Welland River)
	Oil/grit separators for stormwater treatment may be considered for commercial, industrial, or infill developments.
Water Balance	Water balance impacts should be evaluated during the design of a site stormwater management system. All efforts should be made to match pre- and post-development infiltration volumes in order to maintain groundwater recharge.
	Hydrogeologically sensitive areas shall be identified as part of the SWM plan.
	Untreated stormwater shall be prevented from being directly infiltrated.
Construction Erosion and Sediment Control	An Erosion and Sediment Control plan must be developed based on the Erosion and Sediment Control Guidelines for Urban Construction manual (Greater Golden Horseshoe Area Conservation Authorities, 2006) to demonstrate that fish habitat and water quality are not affected by sediment from the property during or following site construction.

5.2.5 Watershed Constraints: Stream Corridor Protection – Flooding Hazard Limit

Stream corridor protection limits define the limit of development within the fill regulated areas of existing watercourses, and are identified to protect the natural watercourses from urban development. Watercourses within the Subject Lands include the associated sections of Grassy Brook, Lyons Creek and Welland River. As one important component of the riverine hazard limits, flooding hazard limits will be defined by the Regulatory flood lines of these study watercourses. The current regulatory flood lines for the study water courses were obtained from NPCA and have been incorporated into the overall Development Limit Plan (Figure 26). Table 4 provides a summary of background information was used for the development of current floodplain maps for the watercourses within the study area.

Table 4: Summary of Information on Current Floodplain Maps Associated with Grand Niagara Secondary Plan

Location	Category	Modeling Technique	Date
Grassy Brook	Hydrology	SWMHYMO	June 2000
	Hydraulics	HEC-RAS	June 2000
	Floodplain Mapping	GIS format Floodplain Map	September

Table 4: Summary of Information on Current Floodplain Maps Associated with Grand Niagara Secondary Plan

Location	Category	Modeling Technique	Date
			2000
Lyons Creek	Hydrology	HEC-HMS	January 2010
	Hydraulics	HEC-RAS / HEC-GeoRAS	March 2011
	Floodplain Mapping	GIS format Floodplain Map	March 2011
Welland River	Hydrology	QUALHYMO	1989
	Hydraulics	HEC-2	1989
	Floodplain Mapping	GIS format Floodplain Map	1989

5.3 Traffic Impact Study

5.3.1 Existing Transportation Conditions

The Existing Transportation Conditions chapter documents the existing multi-modal transportation infrastructure in place in the study area and analyzes the performance of study area intersections, using recent data collected for this study. The existing transportation network is described in the sub-sections below.

5.3.2 Road Network

There are six main roads in the study area:

- **Grassy Brook Road** is a two-lane east-west road that will provide access through the northern portion of the Grand Niagara development. The speed limit in the study area is posted at 40 kilometres per hour (km/h);
- **Biggar Road / Lyons Creek Road** is a rural two-lane east-west road that forms the southern boundary of the Grand Niagara development. It provides a connection to the QEW. It has a posted speed limit of 80 km/h;
- **The Queen Elizabeth Way** is a Provincial Highway that connects the Canada / United States border at Fort Erie with Toronto. The highway includes two lanes in each direction and is posted 100 km/h;
- **Montrose Road** is a two-lane north-south road that forms the eastern boundary of the development. Its speed limit is posted at 80 km/h; and
- **Crowland Avenue** is a rural two-lane north-south road with a posted speed limit of 50 km/h. Crowland Avenue forms the western boundary of the study area.
- **Reixinger Road** is a short gravel cul-de-sac road running east of Montrose Road north of Lyons Creek Road. It provides access to one farm property. Prior to the construction of the QEW it continued east to Lyon's Creek Road.

5.3.3 Transit Routes

The study area lies approximately 2.5 km from Niagara Square, a shopping centre and transit hub. Niagara Square provides a platform for transit users to connect to other areas of Niagara Falls. The study area is served by the following transit operators:

- **Niagara Region Transit:** The transit service operates Route 60 / 65: Welland – Niagara Falls along Montrose Road, a route which would likely have stops added to serve the proposed development. The route connects

Wellington to Niagara Falls, stopping at Niagara Square to provide opportunities to transfer to Niagara Falls Transit routes; and

- **Niagara Falls Transit:** Niagara Falls Transit does not currently operate routes in the vicinity of the study area; however, the transit service runs the TransCab service which shuttles passengers from areas in the proposed development to the bus terminal at Niagara Square.

5.3.4 Active Transportation Facilities

No major multi-use trails or active transportation facilities exist in the study area. The Regional Niagara Bicycling Committee has emphasized Chippawa Creek Road and Oakville Drive as roads equipped with cycling facilities due to their paved shoulders. The Bicycling Committee has also published various popular cycling routes that utilize the paved rural roads within the vicinity of the study area; however, these routes are not officially recognized by Niagara Region or the City of Niagara Falls and the availability or suitability of the route is not guaranteed.

5.3.5 Traffic Data Collection

Traffic data collection took place between August and October 2015. Turning movement counts were conducted at 18 intersections in the study area for the weekday a.m. and p.m. peak hours as well as the Saturday weekend peak hour. The dates of the counts and the determined peak hour after review of count data are provided in Table 5. The study area intersections are shown in Figure 17.

Table 5: Intersection Peak Demand Hours

Intersection	Number	Date(s)	Weekday AM	Weekday PM	Weekend SAT
Grassy Brook Road at Morris Road	1	Sep 17, 2015 Oct 31, 2015	8:00-9:00	16:00-17:00	11:15-12:15
Biggar Road at Morris Road	2	Sep 17, 2015 Oct 31, 2015	7:30-8:30	16:30-17:30	11:30-12:30
Biggar Road at Crowland Avenue	3	Sep 17, 2015 Oct 31, 2015	7:30-8:30	16:15-17:15	11:30-12:30
Lyons Creek Road at Willodell Road	4	Sep 17, 2015 Oct 31, 2015	7:30-8:30	16:30-17:30	12:00-13:00
McLeod Road at Montrose Road	5	Sep 02, 2015 Sep 05, 2015	8:00-9:00	16:15-17:15	11:45-12:45
McLeod Road at Oakwood Drive	6	Sep 02, 2015 Sep 05, 2015	Estimated ¹	16:00-17:00	12:45-13:45
Niagara Square Drive at Montrose Road	7	Sep 03, 2015	7:45-8:45	16:00-17:00	Estimated ¹
Chippawa Creek Road at Montrose Road	8	Sep 03, 2015 Sep 05, 2015	7:30-8:30	16:15-17:15	12:15-13:15
Oakwood Drive at Montrose Road	9	Sep 03, 2015 Sep 05, 2015	7:15-8:15	16:30-17:30	11:45-12:45
Grassy Brook Road at Montrose Road	10	Sep 17, 2015 Oct 31, 2015	7:45-8:45	16:30-17:30	12:15-13:15
Biggar Road / Lyons Creek Road at Montrose Road	11	Aug 26, 2015 Sep 05, 2015	7:30-8:30	16:30-17:30	12:30-13:30
Lyons Creek Road at Stanley Avenue	12	Sep 03, 2015 Sep 05, 2015	7:30-8:30	16:15-17:15	12:00-13:00
Carl Road at Montrose Road	13	Sep 17, 2015 Oct 31, 2015	7:30-8:30	16:45-17:45	12:00-13:00

Table 5: Intersection Peak Demand Hours

Intersection	Number	Date(s)	Weekday AM	Weekday PM	Weekend SAT
McLeod Road at QEQ Southbound Off-Ramp	14	Aug 29, 2015 Sep 02, 2015	8:00-9:00	16:00-17:00	13:00-14:00
McLeod Road at QEW Northbound Off-Ramp	15	Aug 29, 2015 Sep 02, 2015	8:00-9:00	16:00-17:00	13:00-14:00
Lyons Creek Road at QEW Southbound Off-Ramp	16	Aug 29, 2015 Sep 02, 2015	7:30-8:30	16:15-17:15	12:15-13:15
Lyons Creek Road at QEW Northbound Off-Ramp	17	Aug 29, 2015 Sep 02, 2015	7:30-8:30	16:15-17:15	12:15-13:15
Carl Road at Crowland Avenue	18	Sep 30, 2015 Oct 31, 2015	7:45-8:45	16:30-17:30	12:30-13:30

Note: ¹ Due to equipment error, these counts were estimated based on surrounding intersections and other peak period trends



Figure 17: Study Area Intersections

5.3.6 Traffic Analysis Methodology

Intersections are the critical capacity control points for a transportation network. Key intersections in the study area have been analyzed to determine the average vehicle delay (level of service) as well as capacity constraints in select traffic movements (as measured by volume to capacity ratio).

Intersection Capacity Analysis

Intersection capacity analysis has been undertaken using Synchro 8 traffic analysis software. The collected traffic count data as well as signal timing and phasing plans that were received from the City of Niagara Falls and Niagara Region were input into the software for the intersection analysis. The overall level of service has been reported for each intersection. Individual turning movements with volume to capacity ratios of 0.85 or greater have been reported at intersections on the arterial road network. At highway off ramps, Individual turning movements with volume to capacity ratios of 0.75 or greater have been reported.

5.3.7 Existing Traffic Conditions

Existing traffic volume data and signal timing and phasing plans were analyzed to set a baseline to help determine the impacts of the proposed Grand Niagara development on the existing transportation network. The existing lane configurations are shown in Figure 18. Existing traffic volumes used in the analysis are shown in Figure 19. The analysis of existing conditions is summarized in Table 6. Synchro output sheets detailing the analyses are provided in Appendix B.

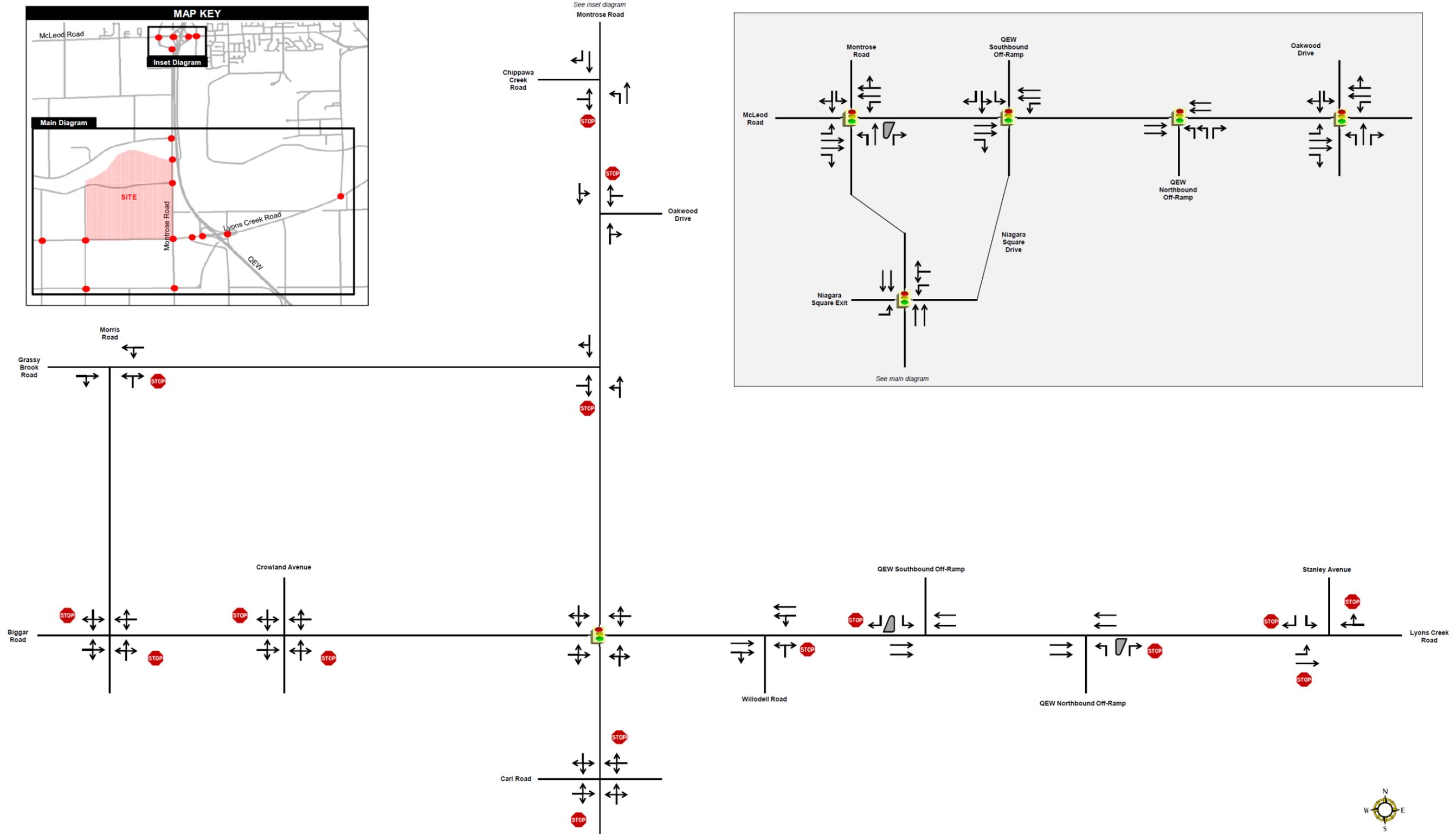


Figure 18: Existing Lane Configurations (Full Size Figures contained in Appendix B)

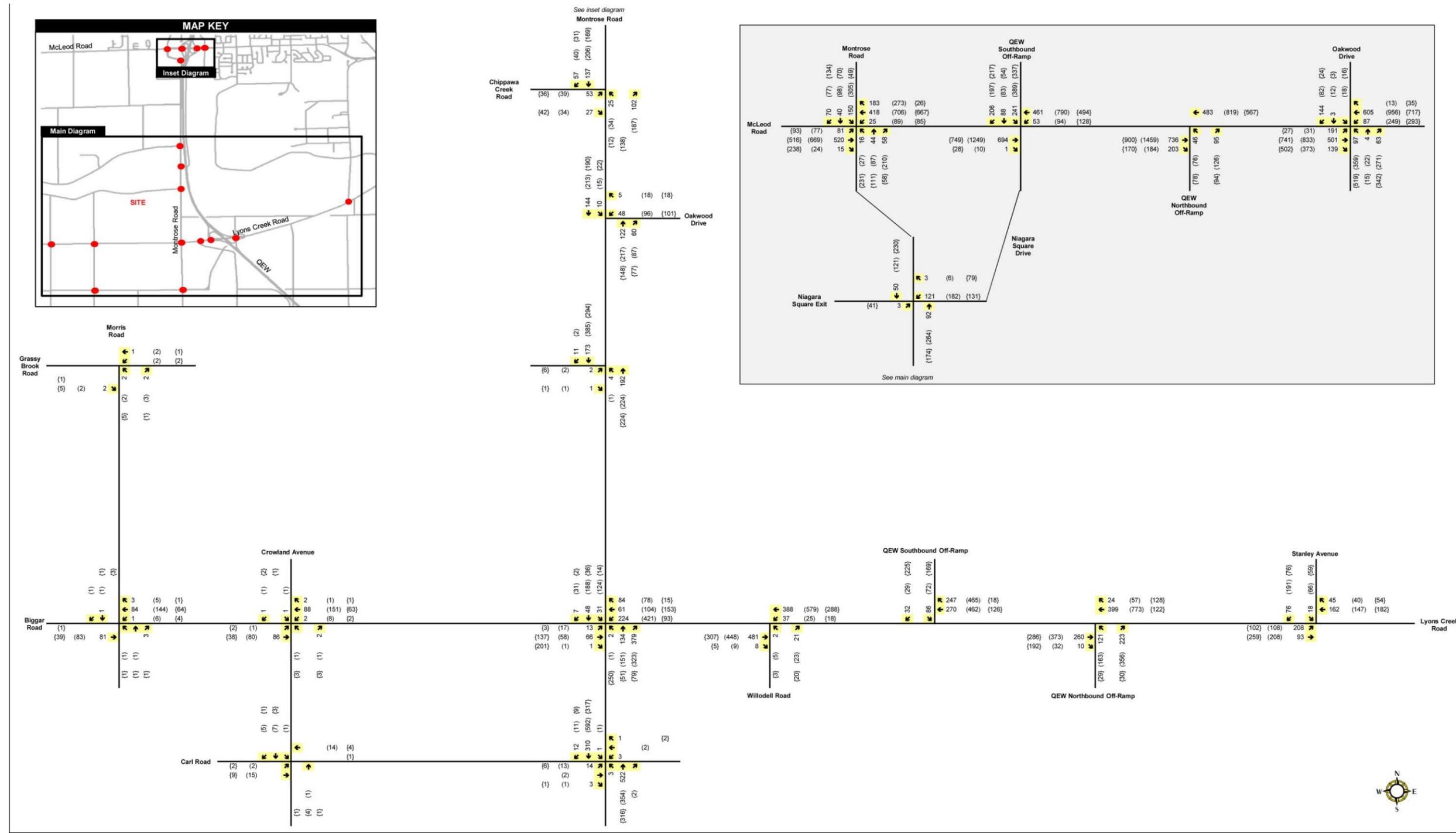


Figure 19: Existing Traffic Volumes (Full Size Figures contained in Appendix B)

Table 6: Level of Service Analysis for Existing Traffic Conditions

Intersections	Control Type	AM Peak Hour		PM Peak Hour		SAT Peak Hour	
		LOS (Delay in seconds) ¹	Critical Movements ²	LOS (Delay in seconds) ¹	Critical Movements ²	LOS (Delay in seconds) ¹	Critical Movements ²
McLeod Road at Montrose Road	Signalized	B (19)	--	C (21)	--	B (12)	--
McLeod Road at Oakwood Drive	Signalized	C (21)	--	C (28)	NB-L (0.90)	D (43)	WB-L (1.56) NB-L (1.03)
	<i>Signalized (optimized)</i>	<i>B (19)</i>	--	<i>C (23)</i>	--	<i>C (29)</i>	<i>WB-L (0.97)</i> <i>NB-L (0.90)</i>
Niagara Square Drive at Montrose Road	Signalized	A (8)	--	A (8)	--	B (19)	--
Biggar Road / Lyons Creek Road at Montrose Road	Signalized	C (22)	--	E (61)	WB-LTR (1.02) SB-LTR (1.12)	B (13)	--
	<i>Signalized (optimized)</i>	<i>B (16)</i>	--	<i>C (33)</i>	<i>WB-LTR (0.96)</i>	<i>A (8)</i>	--
McLeod Road at QEQ Southbound Off-Ramp	Signalized	B (16)	--	C (20)	--	B (12)	--
McLeod Road at QEW Northbound Off-Ramp	Signalized	B (15)	--	B (18)	--	B (11)	--
Grassy Brook Road at Morris Road	Unsignalized	A (8)	--	A (8)	--	A (9)	--
Biggar Road at Morris Road	Unsignalized	B (11)	--	B (11)	--	A (9)	--
Biggar Road at Crowland Avenue	Unsignalized	A (9)	--	A (10)	--	A (9)	--
Lyons Creek Road at Willodell Road	Unsignalized	B (11)	--	B (12)	--	A (10)	--

Intersections	Control Type	AM Peak Hour		PM Peak Hour		SAT Peak Hour	
		LOS (Delay in seconds) ¹	Critical Movements ²	LOS (Delay in seconds) ¹	Critical Movements ²	LOS (Delay in seconds) ¹	Critical Movements ²
Chippawa Creek Road at Montrose Road	Unsignalized	B (10)	--	B (11)	--	B (11)	--
Oakwood Drive at Montrose Road	Unsignalized	B (11)	--	B (14)	--	B (13)	--
Grassy Brook Road at Montrose Road	Unsignalized	B (11)	--	B (13)	--	B (12)	--
Lyons Creek Road at Stanley Avenue	Unsignalized	A (10)	--	B (11)	--	B (11)	--
Carl Road at Montrose Road	Unsignalized	C (18)	--	C (22)	--	B (12)	--
Lyons Creek Road at QEW Southbound Off-Ramp	Unsignalized	B (13)	--	C (17)	--	B (12)	--
Lyons Creek Road at QEW Northbound Off-Ramp	Unsignalized	B (15)	--	C (33)	--	B (11)	--
Carl Road at Crowland Avenue	Unsignalized	A (7)	--	A (7)	--	A (7)	--

Notes:

1. The LOS at an unsignalized intersection is defined by the movement with the highest delay.
2. Critical movements are those with a volume-to-capacity ratio exceeding 0.85 for a signalized intersection or with an LOS of 'E' or 'F' for an unsignalized intersection.

The analysis of existing conditions indicates that:

- Most existing intersections exhibit acceptable delays and acceptable levels of service (LOS), defined as LOS D or better, in the a.m., p.m. and Saturday peak hours;
- The intersections of McLeod Road at Oakwood Drive and Biggar Road/Lyons Creek Road at Montrose Road are reported to have movements which are above capacity in the p.m. and Saturday peak hours.
 - Optimization of the signal timings and the addition of a lost time adjustment address these overcapacity movements and brings them back within, albeit approaching, capacity.
- No intersections in the study area exhibit capacity constraints in the weekday a.m. peak hour.

5.3.8 Future Transportation Network

The existing conditions will be used as a base to consider future impacts to the road network that may be brought on by the Grand Niagara development or other developments in the area. This analysis will be undertaken once the scale and type of the future land uses have been determined through the Secondary Plan process.

Grand Niagara Transportation Network

The Grand Niagara development transportation network is planned to focus on the pedestrian and active transportation but still provides functionality for automobiles. Most of the roads will be local roads, with a few collector roads that connect to the arterial road network that bounds the development. The City's Official Plan indicates that collector road should have a right-of-way of between 20-23m and generally include two lanes, landscaping, sidewalks, bicycle lanes, utility corridors, and turning lanes at intersections. For this community, it is expected that Collector Roads will have one travel lane in each direction with turning lanes at key intersections. Local roads are to have a right-of-way of 20 m; however, a narrower right-of-way may be considered and would require Council approval. Local roads are designed to accommodate on-street parking, sidewalks, and landscaping. Appropriate active transportation facilities will be nominated for all roads.

External Transportation Network

It is expected that transit will be extended to service the planned new hospital in the southeast corner of the study area. This may also open the possibility of transit servicing the broader Grand Niagara development, especially the portion of the development near Montrose Road. The Transportation Impact Study will describe future transportation conditions by first providing information on future multi-modal transportation improvements, then considering background corridor growth as well as new developments that are expected to add traffic to the study area, and then adding the traffic associated with the future build out of the Subject Lands. Given the rapidly developing nature of this part of the city, additional future transportation network improvements may be needed in the study area; however, these will be determined through the analysis of future traffic conditions.

5.4 Air Quality Study

5.4.1 Scope

The Grand Niagara Co-Owners have retained Novus to undertake a technical review of the surrounding land uses from an air quality perspective to determine the compatibility of the proposed developments with the existing industrial uses. The following provides a summary of the governing environmental regulations and guidelines as they pertain to environmental air quality.

5.4.2 Surrounding Industries

There are three industries in the area immediately surrounding the Subject Lands, which include:

- Cytec Canada Inc. (Cytec), a private company that manufactures phosphines in large-scale operations is to the north-east of the Subject Lands, and north of the Welland River.
- The Niagara Region central biosolids storage facility on Garner Road which is operated as part of the Region's wastewater treatment master plan and is located north of the Subject Lands, on the north side of the Welland River.
- E.S. Fox Ltd. has a facility on the west side of Montrose Road within the Subject Lands.

Figure 20 illustrates the Subject Lands along with the three main identified industrial land uses.

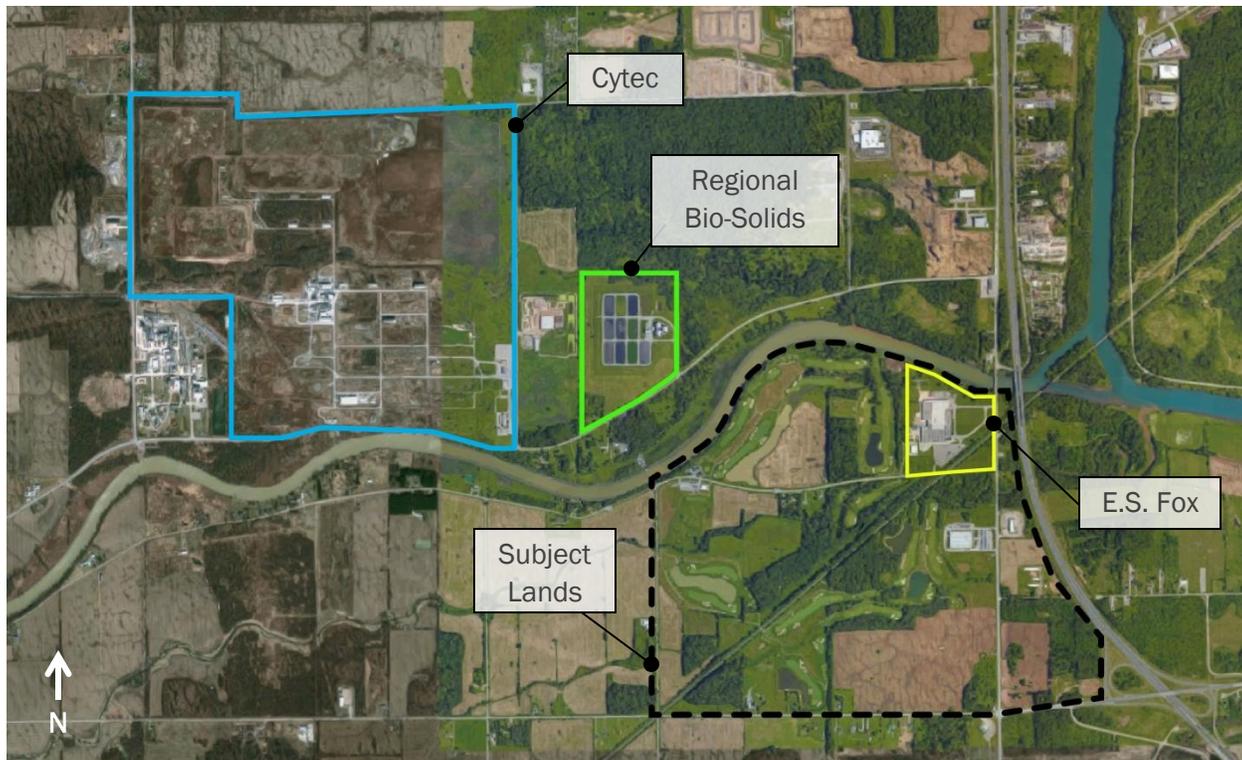


Figure 20: Subject Lands Surrounding Uses Reviewed in the Background Air Quality Assessment

In Ontario there are a variety of regulations and guidelines that govern how land use planning and compatibility assessments are performed, including:

- Ontario Regulation 419/05 (O.Reg. 419) and associated Schedules of air quality standards; and
- Ministry of the Environment and Climate Change (MOECC), Guideline D-6, Compatibility between Industrial Facilities and Sensitive Land Uses.

These documents regulate air quality in Ontario from both an industrial (O.Reg. 419) and land-use compatibility (Guideline D-6) perspective, and are summarized below.

5.4.3 Ontario Regulation (O.Reg.) 419

Air Quality Contaminants

Under O.Reg. 419, a facility is required to meet prescribed standards for air quality contaminants at any location off-site. Impacts are assessed irrespective of the contribution of other facilities and are compared against standards that were developed to account for the potential for cumulative impacts between multiple uses. The MOECC does not require industries to assess their emissions at elevated points off-site if a receptor does not exist at that location. This means that a facility may exceed the provincial guidelines in the airspace above a land use, provided the ground-level concentrations meet the requirements of O.Reg. 419. Therefore, the introduction of elevated receptors will require a facility to assess their emissions at these locations, and could lead to issues with compliance. The generally accepted method in Ontario to assess any high-rise features exposed to the environment (e.g. windows, balconies) is to add elevated receptors in the air quality dispersion model used for compliance testing.

For new developments near industrial sources, the implications of this regulation are that the development must consider the existing land uses and their approvals. An industry has the right to object to a land use which may impact their ability to operate under their provincial approval. A developer can typically foster compliance through design such as removing elevated receptors or providing mitigation on elevated point of reception (sealed windows, filtration systems, etc.) or negotiating with the industry to provide for at-source mitigation.

Freedom of Information (FOI) requests relating to the Environmental Compliance approvals for the surrounding industries, including Cytec and the Regional Biosolids Facility, have been made to the Province of Ontario. The FOI request allows for the gathering and reviewing of the supporting studies and other documentation provided to the MOECC in support of the permitting applications. A review of this information will provide more detailed data, testing and analysis of the air quality emissions in relation to the nearby industries.

Odour

There are a select few compounds that are provincially regulated from an odour perspective and there is no formal regulation with respect to mixed odours. The MOECC has decided to apply odour-based standards to locations “where human activities regularly occur at a time when those activities regularly occur,” which is generally accepted to be places that would be considered sensitive such as residences and public meeting places.

As stated by the Environmental Commissioner of Ontario, impacts from mixed odours produced by industrial facilities are generally only considered and regulated by the MOECC in the presence of persistent complaints (ECO 2010). Regardless, there are draft policies and guidelines that have been released by the MOECC to help assess odours, and which consider both the intensity and frequency of impacts.

The MOECC typically considers odours based on:

- Frequency: how often the odour occurs.
- Intensity: how strong is the odour?
- Duration: for how long does the odour last?
- Offensiveness: subjectively, how off-putting is the odour?
- Location: where does the odour occur?

Similarly, the FOI request relating to Cytec will provide further details on the odours from that use.

5.4.4 D6 Guideline

The D-series of guidelines were developed by the Ontario Ministry of the Environment and Climate Change in 1995 as a means to assess recommended separation distances and other control measures for land use planning proposals in an effort to prevent or minimize ‘adverse effects’ from the encroachment of incompatible land uses where a facility either exists or is proposed. These guidelines specifically address issues of odour, dust, noise and litter.

Adverse effect is a term defined in the *Environmental Protection Act* and “means one or more of:

- impairment of the quality of the natural environment for any use that can be made of it,
- injury or damage to property or to plant or animal life,
- harm or material discomfort to any person,
- an adverse effect on the health of any person,
- impairment of the safety of any person,
- rendering any property or plant or animal life unfit for human use,
- loss of enjoyment of normal use of property, and

- interference with the normal conduct of business”.

To minimize the potential for adverse effects, areas of influence and recommended minimum setback distances were developed within the guidelines. An area of influence is the buffer within which there is the potential for impacts from a facility. The recommended minimum setback distance represents the distance from a facility within which it is not recommended that potentially incompatible land uses be built. Guideline D-6 “Compatibility between Industrial Facilities and Sensitive Land Uses” is specific to industrial uses in proximity to more sensitive land uses. The areas of influence and recommended separation distances from the guidelines are summarized in Table 1.

Industrial categorization criteria are supplied in Guideline D-6-2, and are provided in Table 7. Based on these categories and a conservative assumption of the emissions to air from the two industries, Cytec is likely a Class III industry, the Region’s biosolids facility is likely a Class II industry and the E.S. Fox Facility likely has the characteristics of a Class I industry. The future Air Quality Report will describe the activities on this site in more detail with respect to Air Quality. The E.S. Fox Facility is further described in Section 5.7 with respect to the analysis of noise impacts.

Table 7: Guideline D6 - Industrial Categorization Criteria

	Class 1	Class 2	Class 3
Outputs	<ul style="list-style-type: none"> • Noise: Sound not audible off-property • Dust: Infrequent and not intense • Odour: Infrequent and not intense • Vibration: No ground-borne vibration on plant property 	<ul style="list-style-type: none"> • Noise: Sound occasionally heard off-property • Dust: Frequent and occasionally intense • Odour: Frequent and occasionally intense • Vibration: Possible ground-borne vibration, but cannot be perceived off-property 	<ul style="list-style-type: none"> • Noise: Sound frequently audible off property • Dust: Persistent and/ or intense • Odour: Persistent and/ or intense • Vibration: Ground-borne vibration can frequently be perceived off-property
Scale	<ul style="list-style-type: none"> • No outside storage • Small-scale plant or scale is irrelevant in relation to all other criteria for this Class 	<ul style="list-style-type: none"> • Outside storage permitted • Medium level of production allowed 	<ul style="list-style-type: none"> • Outside storage of raw and finished products • Large production levels
Process	<ul style="list-style-type: none"> • Self-contained plant or building which produces/ stores a packaged product • Low probability of fugitive emissions 	<ul style="list-style-type: none"> • Open process • Periodic outputs of minor annoyance • Low probability of fugitive emissions 	<ul style="list-style-type: none"> • Open process • Frequent outputs of major annoyances • High probability of fugitive emissions
Operations / Intensity	<ul style="list-style-type: none"> • Daytime operations only • Infrequent movement of products and/ or heavy trucks • 	<ul style="list-style-type: none"> • Shift operations permitted • Frequent movements of products and/ or heavy trucks with the majority of movements during daytime hours 	<ul style="list-style-type: none"> • Continuous movement of products and employees • Daily shift operations permitted

	Class 1	Class 2	Class 3
Possible Examples	<ul style="list-style-type: none"> • Electronics manufacturing and repair • Furniture repair and refinishing • Beverage bottling • Auto parts supply • Packaging and crafting services • Distribution of dairy products • Landry and linen supply 	<ul style="list-style-type: none"> • Magazine printing • Paint spray booths • Metal command • Electrical production • Manufacturing of dairy products • Dry cleaning services • Feed packing plants • 	<ul style="list-style-type: none"> • Paint and varnish manufacturing • Organic chemical manufacturing • Breweries • Solvent recovery plants • Soaps and detergent manufacturing • Metal refining and manufacturing

In addition to the above mentioned guidelines, Section 1.2.6 (Land Use Compatibility) of the Ontario Provincial Policy Statement states:

Major facilities and sensitive land uses should be planned to ensure they are appropriately designed, buffered and/or separated from each other to prevent or mitigate adverse effects from odour, noise and other contaminants, minimize risk to public health and safety, and to ensure the long-term viability of major facilities.

In summary, Guideline D-6 provides a framework for determining compatibility between land uses with guidance as to when further assessments should be considered.

Figure 21 shows the Subject Lands with the recommended setbacks and potential areas of influence for both industries for current operations. The D-6 Guidelines provide direction with respect to measuring the separation distances stating that setbacks may be measured “from the closest existing, committed or proposed property/lot line of the industrial land use to the property/lot line of the closest existing, committed or proposed sensitive land use”, however, the guidelines also state that:

Where site-specific zoning or site plan control precludes the use of the setback for any activity associated with the industrial use that could create an adverse effect such as shipping and receiving or outside storage/stockpiling of materials (e.g. front yard must be landscaped, and functions as a buffer), then the setback can be included as part of the measurement, rather than measuring from the industrial property line (Section 4.4.3).

The recommended setbacks and potential areas of influence for the purpose of Cytec and the Regional biosolids facility have been measured assuming that the undeveloped lands surrounding the existing facilities are not currently planned for expansion of operations, allowing the measurement to include those lands. Under Guideline D-6 if the proposed lands were within the area of influence further air quality studies would be required.

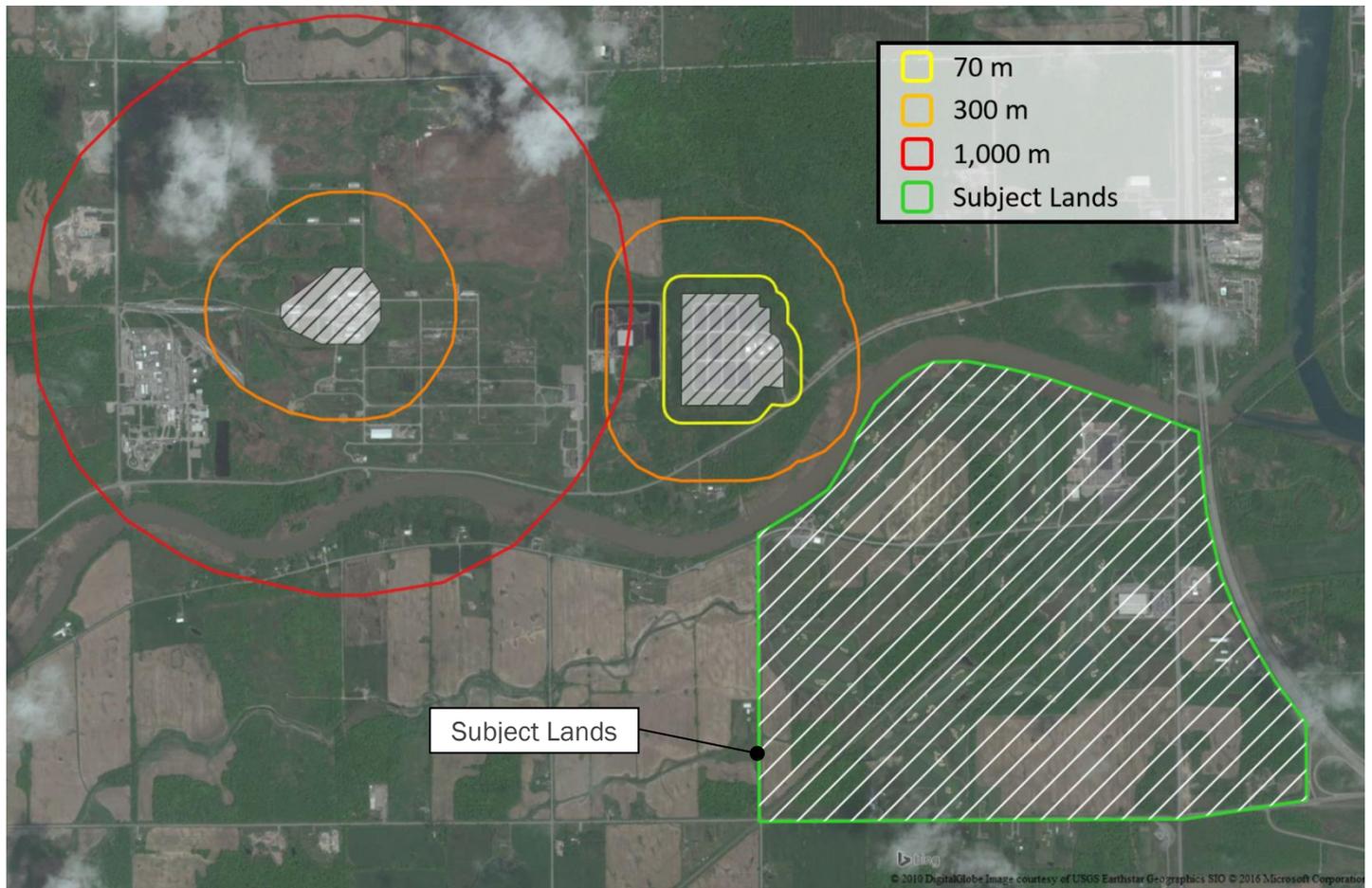


Figure 21: Study Area (Blue) and Nearby Industries with Setback Distances

5.4.4 Environment Canada Environmental Emergencies

From Environment Canada: “The Environmental Emergencies Program protects Canadians and their environment from the effects of environmental emergencies through the provision of science-based expert advice and regulations.” This program focuses on the release of hazardous substances due to either environmental or industrial emergencies. A review of the Environmental Emergencies database showed that Cytec is registered through the program; an Access to Information request has been made to obtain documents relevant to this registration.

5.4.5 Conclusion

This section outlines the pertinent air quality regulations and guidelines that are applicable to the Subject Lands and the Secondary Planning process. A detailed air quality study will be performed with consideration for these regulations and guidelines as well as the industrial activities in the area as part of the next phase of work and once the documents obtained through the FOI and Access to Information requests have been reviewed.

5.5 Natural Heritage

5.5.1 Introduction

The Subject Lands have been investigated since the late 1990s in response to proposed development. The earliest environmental work responded to the proposed golf course itself and to associated facilities. Construction was initiated on the golf course areas of the proposed Grand Niagara Resort in 2002, after considerable multi-season and multi-disciplinary investigations. Supplementary natural heritage studies were completed from 2012 to 2014 as development options were explored and a draft Environmental Impact Study (EIS) (Savanta Inc., July 24, 2014) was prepared.

In response to proposed development of residential and hospital land uses, Savanta was retained by Grand Niagara in 2015, to complete an updated Ecological Studies Baseline Report. Detailed natural heritage studies were conducted in 2015 to update ecological data, to interpret the significance of natural features and functions associated with the Subject Lands, and to present preliminary information regarding natural heritage features, constraints and opportunities. It should be noted, that the ecological investigations have generally been focused on the lands that are under the ownership of the Grand Niagara Co-owners, as well as some investigations on the future hospital site (see Figure 22).

The updated Ecological Studies Baseline Report provides a baseline of information that serves as input to the Secondary Planning process and will also serve as the baseline from which an EIS will be produced. An EIS is required in order to comply with the Regional Official Plan. Portions of the Region's Core Natural Heritage System occur on the Subject Lands (Section 7 and Schedule C; Region, 2015 – see Figure 7 in this Report); development adjacent to these natural features triggers the need for an EIS. The Subject Lands are located outside the Greenbelt Plan Area. The site is subject to the Provincial Policy Statement (PPS) (2014), Ontario Endangered Species Act (2007) and Niagara Peninsula Conservation Authority (NPCA) regulations.

A complete impact assessment is forthcoming, pending finalization of the development plan and ongoing discussions with Niagara Region (Region), the City and the NPCA.

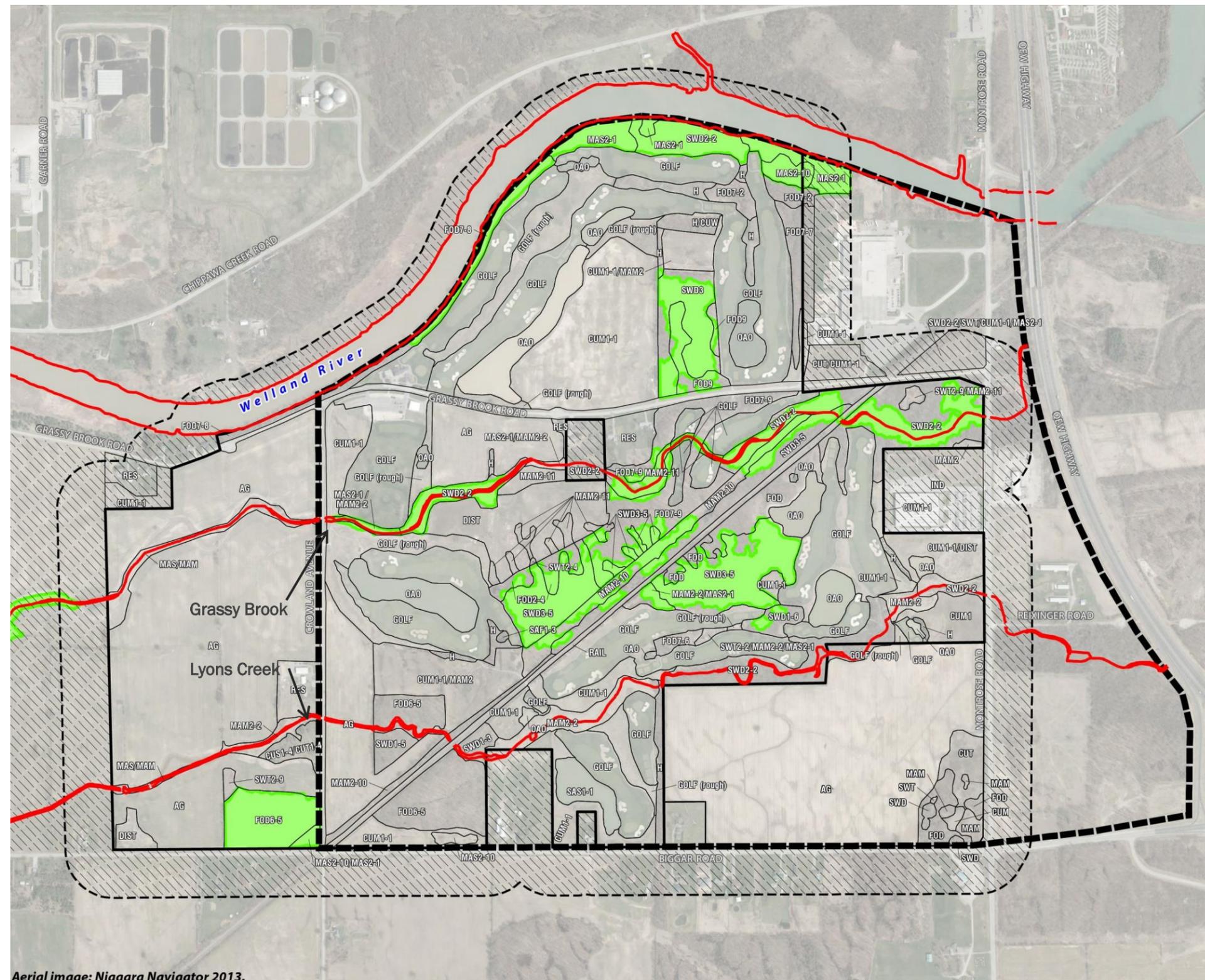
5.5.2 Summary of Natural Heritage Features

Figure 22 illustrates the Ecological Land Classifications (ELC) associated with majority of the Subject Lands. The Subject Lands contain a variety of tableland, wetland and riparian natural areas along with anthropogenically created features (i.e., hedgerows, golf course rough areas and ponds), some of which have been colonized by native flora and fauna. Riparian vegetation is discontinuous along the Lyon's Creek and Grassy Brook watercourses on-site. A vegetated buffer remains along the extent of the Welland River at the north end of the site. The larger blocks of natural areas often include units of the Lower Grassy Brook provincially significant wetland complex. Areas outside of the naturally vegetated areas are disturbed and have been previously farmed, utilized as an active golf course and/or cleared of vegetation in preparation for development.

The Subject Lands contain significant wetlands, significant wildlife habitat, significant woodlands and some foraging habitat for a threatened species, Barn Swallow (*Hirundo rustica*). In addition, Grassy Brook and Lyon's Creek contain Fish Habitat and the naturally vegetated portions of the Welland River valley would reasonably meet thresholds for determination as significant valleyland.

Natural heritage features were ranked on the Subject Lands to provide input into the planning process underway. Natural heritage features and associated functions defined by the PPS as generally unavailable for development which includes Provincially Significant Wetlands (PSWs), Critical Fish habitat and Significant habitat for Endangered and Threatened Species were given the highest ranking and are protected from development according to the

Proposed Development Limit Plan included in Section 6 of this Report. Other features and associated functions where development may be considered subject to meeting the PPS test of “no negative impact” were also identified. The removal of these natural features and associated functions will be subject to compensation and mitigation discussions with the NPCA in order to meet the PPS test. These discussions are currently underway.



ELC Legend

FOREST

- FOD Deciduous Forest
- FOD2-4 Dry-Fresh Oak-Hardwood Deciduous Forest
- FOD6-5 Fresh-Moist Sugar Maple-Hardwood Deciduous Forest
- FOD7-2 Fresh-Moist Ash Lowland Deciduous Forest
- FOD7-6* Fresh-Moist Red Maple Lowland Deciduous Forest
- FOD7-7* Fresh-Moist Ash-Elm Lowland Deciduous Forest
- FOD7-8* Fresh-Moist Walnut-Ash-Willow Lowland Deciduous Forest
- FOD7-9* Fresh-Moist Pin Oak-Green Ash Lowland Deciduous Forest
- FOD9 Fresh-Moist Oak-Maple-Hickory Deciduous Forest
- SWAMP**
- SWD1-3 Pin Oak Mineral Deciduous Swamp
- SWD1-5* Green Ash-Pin Oak Mineral Deciduous Swamp
- SWD1-6* Pin Oak-Ash-Maple Mineral Deciduous Swamp
- SWD2-2 Green Ash Mineral Deciduous Swamp
- SWD3 Maple Mineral Deciduous Swamp
- SWD3-5* Maple Mineral Deciduous Swamp
- SWT Thicket Swamp
- SWT2-2 Willow Mineral Thicket Swamp
- SWT2-4 Buttonbush Mineral Thicket Swamp
- SWT2-9 Grey Dogwood Mineral Thicket Swamp

MARSH

- MAM Meadow Marsh
- MAM2 Mineral Meadow Marsh
- MAM2-2 Reed-canary Grass Mineral Meadow Marsh
- MAM2-10 Forb Mineral Meadow Marsh
- MAM2-11* Mixed Mineral Meadow Marsh
- MAS Shallow Marsh
- MAS2-1 Cattail Mineral Shallow Marsh
- MAS2-10* Common Reed Mineral Shallow Marsh

OPEN WATER

- OAO Open Aquatic
- SHALLOW WATER**
- SAS1-1 Pondweed Submerged Shallow Aquatic
- SAF1-3 Duckweed Floating-leaved Shallow Aquatic

CULTURAL

- CUW Cultural Woodland
- CUST-4* White Pine Cultural Savanna
- CUT Cultural Thicket
- CUT1-4 Grey Dogwood Cultural Thicket
- CUM1-1 Fresh-Moist Old Field Meadow
- *not listed in Southern Ontario ELC Guide
- RES Residence
- H Hedgerow

- Grand Niagara Holdings
- Non-participating land
- 120m adjacent lands
- Secondary Plan Area
- Ecological Land Classification
- Provincially Significant Wetland
- Critical Fish Habitat Type 1

Natural Heritage Features

0 200 M SAVANTA

Aerial image: Niagara Navigator 2013.

Figure 22: Ecological Classifications and Natural Heritage Features

5.6 Vibration Impact Study

A Vibration Impact Study was undertaken to ensure that ground-borne vibration resulting from passing freight trains on the Canadian Pacific Railway (CPR) right-of-way complies with applicable ISO (International Organization for Standardization) vibration criteria. The complete Vibration Impact Study has been included as Appendix C to this Report. The report assesses the impacts of the vertical vibration displacement originating from the tracks that bisect the Subject Lands from south-west to north-east. The results of the study will assist in determining whether there are any limitations to locating residential uses adjacent to the railway tracks and whether these would be impacted by ground-borne vibration generated by passing trains.

CPR establishes guidelines relating to ground-borne vibration criteria that were used in this analysis and are based on criteria set by the International Organization for Standardization (ISO). The guidelines state that the measured vibration velocity or equivalent acceleration should not exceed the vibration velocity limit of 0.10 mm/sec (rms) for trains on the railway line, from 4 Hz to 200 Hz over the one-third octave band frequency, at a reasonably short integration time of one second or less. The suggested railway vibration limit applies directly to the measured outdoor and indoor ground-borne vibration levels. If the measured vibration levels exceed these limits, then vibration control measures must be investigated and considered to ensure that vibration velocity limits are not exceeded in living areas on and above the first floor of the dwelling.

The railway tracks that bisect the Subject Lands are approximately 2.3 km in length and travel north from a railway in Brookfield approximately 8.2 km south of the Subject Lands. The railway line continues north-east of the Subject Lands, across the Welland River and towards a few industrial uses located at the south end of the City of Niagara Falls. The railway line connects with a separate rail spur directly north of Marineland Parkway, and then terminates south of the Niagara Falls central tourist district. The railway line that connects originates from the south and appears to connect with an industrial facility west of Portage Road and directly north of the Welland River (Figure 23).

Based on our research and observations by employees at the Grand Niagara Golf Course, a short freight train only passes-by along this railway approximately one to three times per week and there are weeks where no trains pass-by. The train from which vibration levels were measured was comprised of 12 rail cars. Vibration measurements were taken at two locations approximately

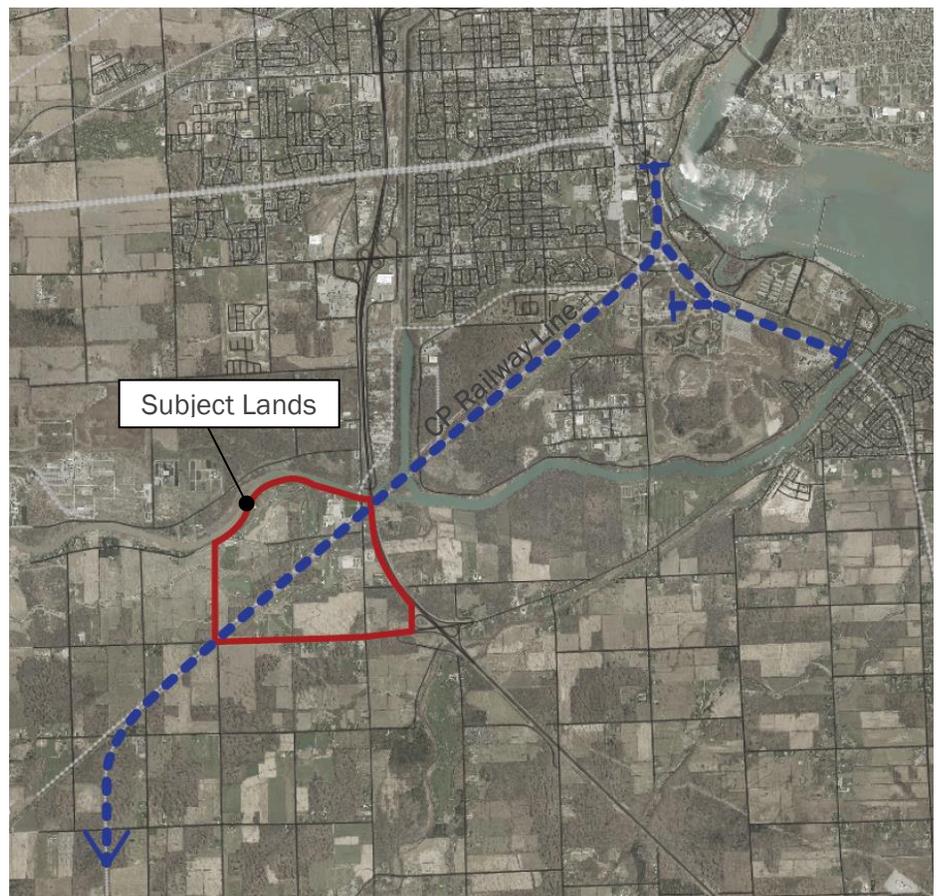


Figure 23: CP Railway Line Through the Subject Lands

30 metres from the railway corridor. The Vibration Impact Study, included as an appendix to this Report, contains the detailed measurements taken from the two locations.

The results demonstrated that the maximum vibration levels due to the CPR train pass-bys on the railway lines exceed the applicable vibration criteria. The vibration exceedances were observed in the 6.3 Hz, 8 Hz, 10 Hz and 12.5 Hz third-octave bands; however, given the low frequency of vibration, we note that mitigation may not be practical or effective.

These exceedances are considered marginal and range from only 0.5 to 4 decibels above the ISO criteria. In general, these exceedances manifested themselves as short 1-second exceedances totaling 5 and 11 non-consecutive seconds out of the 90-second observed train pass-by duration for locations 1 and 2, respectively. The measured vibration levels are several orders of magnitude lower than vibration levels that could cause damage to any structures in the vicinity of the railway.

Furthermore, based on discussions with CPR and field observations, trains operate on the railway only a very limited number of times per week. Consequently, vibration levels above the ISO criteria are expected to occur for less than half of one minute in total during a typical week. Many weeks, this would be less than 10 seconds per week given the infrequent use of this rail spur.

Rail unevenness, roughness and corrugation are very important factors causing vibration in train pass-bys and can increase vibration levels by up to 20 dB in the most extreme cases. Large gaps between rails were observed during the site visit (Figure 24). The poor condition of the tracks is likely to exacerbate the vibration caused by the trains.

It is our opinion that the vibration impacts due to train traffic along the CPR railway will be negligible and, as such, will not pose constraints on the redevelopment of the adjacent Subject Lands.



Figure 24: Image of Condition of Railway Line within Subject Lands

5.7 Noise Impact Study

A preliminary noise analysis has been undertaken in support of the Background and Analysis Report. Further analysis, including the impacts from transportation noise on the surrounding road network will be completed as part of the Secondary Plan process, once the future traffic volumes have been calculated.

Rail Traffic

The CP Montrose railway line is identified as a Secondary Branch Line. This classification is based on the function of the railway line and the train volumes. In areas where the railway line is adjacent to potential sensitive land uses, a safety setback from the rail right-of-way (ROW) of 15 metres in conjunction with a safety berm is required. This rail safety setback is measured from the edge of the rail ROW to the adjacent building façade. The safety berm shall be adjoining and parallel to the railway ROW with returns at the ends. It may be located within the 15 metre ROW setback. The safety berm is to be a minimum of 2.0 metres above grade at or before the property line, with side slopes not steeper than 2.5 to 1. The safety setback is required in areas where large groups of people congregate, as well as residential uses. Uses generally permitted within the safety setback may include public and private roads;

parkland and other outdoor recreational space including backyards, swimming pools, and tennis courts; unenclosed gazebos; garages and other parking structures and storage sheds, for example. These will be evaluated in more detail during the Secondary Plan process, once general land uses have been identified for lands in proximity to the railway line.

As a detailed site plan and proposed building setbacks are not yet available stage, assumptions were made during the site reconnaissance. A critical façade noise receptor was conservatively assumed to be located approximately 7.5 metres from the rail safety setback and fully exposed to the rail traffic on the CP railway line. The outdoor living area (OLA) noise receptor for the dwellings adjacent to the railway line was conservatively assumed to be located 4.5 metres from the rail safety setback and fully exposed to the railway traffic on the CP railway line.

The future (Year 2026) projected daytime and nighttime façade sound levels were determined to be 61 dBA and 65 dBA, respectively. It should be noted that the train whistle noise was included in the façade sound levels analysis. The façade sound levels for the dwellings adjacent to the railway tracks will exceed the MOECC objective sound levels. Therefore, in order to ensure acceptable indoor sound level environment for the first row dwellings adjacent to the railway tracks, provision of air conditioning and upgraded windows/doors will be required. Also, the first row of dwellings next to the rail tracks are to be built to a minimum of brick veneer or masonry equivalent construction, from the foundation to the rafters.

The future projected OLA sound levels for the dwellings adjacent to the railway tracks were determined to be 48 dBA. At this stage in the study site grading information is not yet available. As a result, a flat gentle slope was assumed between the railway tracks and OLA receptor location. Also, as per the MOECC guideline NPC-300, rail whistle noise was not included in the determination of sound levels at the OLA receptors. As the future projected OLA sound levels due to the rail traffic are determined to be below the MOECC criteria of 55 dBA, no physical outdoor noise control measures are required to protect the outdoor living areas of the dwelling located adjacent to the railway track.

E.S. Fox Facility

A site visit to the E.S. Fox facility was conducted on November 18, 2015 which included a conversation with the facility manager. During this site visit, it was confirmed that facility is used as the E.S. Fox head offices, as well as for warehousing and maintenance purposes. There are no manufacturing operations taking place at this facility. The facility hours are between 7 a.m. to 5 p.m. There are three loading areas within the facility. These loading areas are located in the north-west corner of the site and along the western and southern facades of the building (see Figure 25). During the site visit it was confirmed that the loading areas located along the western and southern sides of the building are used infrequently (once a month).



Figure 25: E.S. Fox Loading Areas

The potentially significant sources of stationary sound identified at the E.S. Fox facility include truck engine idling and truck pass-by noise associated with the delivery trucks. As per the MOECC guideline NPC-300, the infrequent truck activities associated with the loading areas located along western and southern facades of the building were

dismissed as sources of stationary noise. Therefore, only the loading bays at the north-west corner of the building were assessed.

A stationary noise receptor was assumed at the nearest Grand Niagara site property line where stationary sound from the E.S. Fox facility may intrude on an occupant. The projected sound levels at the nearest property line due to truck activities (engine idling and truck pass-by) at the north-west loading bays were determined to be approximately 46 dBA, which is below the MOECC daytime criteria for the stationary sound. It should be noted that there are no truck activities during the evening and night-time hours.

Therefore, it is concluded that under current operations, the sources of stationary sound at the E.S. Fox facility will not have any significant noise impact on the proposed redevelopment of Grand Niagara Golf Course lands.

5.8 Phase One Environmental Site Assessment

A Phase One Environmental Site Assessment (ESA) has been undertaken for the lands directly owned by the Grand Niagara Co-Owners; however, the study area extends beyond, encompassing the majority of the Secondary Plan area. The Phase One ESA has been included in Appendix E of this Report. The Phase One ESA was undertaken under the assumption that the Secondary Plan proposes a residential community, which is not considered a more stringent land use. As such, filing of a Record of Site Condition (RSC) is not mandatory. The Phase One ESA was conducted in accordance with Ontario Regulation (O. Reg.) 153/04 to support a Secondary Plan for the Phase One Property.

The Phase One ESA was to assess the Subject Lands and the surrounding lands for potentially contaminating activities (PCAs) to identify areas of potential environmental concern (APECs). Possible environmental concerns were also investigated and identified through site reconnaissance, interviews, and a review of records including, aerial photographs, a city directories search, and an Ecology Environmental Risk Information Services (ERIS) database search.

As a result of this review, four APECs have been identified with the potential to impact soil and/or groundwater conditions within Subject Lands. APECs 1 and 2 are attributed to on-site PCAs while APECs 3 and 4 are attributed to off-site PCAs. The APECs are summarized as follows:

- **APEC-1 (Sand traps within the golf course):** Based on the site reconnaissance and the interviews, sand of unknown origin and quality was reportedly imported for the sand traps within the golf course. The sand traps are collectively referred to as APEC-1 for the purpose of this report. The MOECC considers the importation of sand to be a PCA which would require chemical testing of a representative number of the sand traps to demonstrate that the sand is not impacted.
- **APEC-2 (Golf Club Maintenance Area):** The following current on-site operations have the potential to impact the soil and groundwater at the Phase One Property:
 - Based on the site reconnaissance, one 2,200 litre diesel above ground storage tank (AST), one 2,200 litre gasoline AST and one 1,360 litre waste oil AST were observed outside of the smaller barn in the maintenance area of the Phase One Property;
 - Based on the site reconnaissance and the interviews, general repair and maintenance of golf course equipment (i.e., tractors, lawn mowers, etc.) is undertaken at the Phase One Property. Three drums (approx. 200 L each) of used motor oil were observed inside the smaller barn in the maintenance area of the Phase One Property; and
 - Based on the site reconnaissance, bulk storage of pesticides and fertilizers along with a mixing station with a 1,000 L (approx.) tank was observed in the larger barn in the maintenance area of the Phase One Property.

- APEC-3 (Adjacent to the railway corridor): Based on a review of aerial photographs and the site reconnaissance, an active railway divides the central-east and central west portions of the Phase One Property.
- APEC-4 (Northeast portion of the Phase One Property): Based on a review of City Directories and aerial photographs, Ford Motor Company of Canada and ES Fox Limited (a steel fabrication company) have operated at 9127 Montrose Road, an adjoining property to the east of the Phase One Property. Four ASTs were observed on this adjoining property in aerial photographs. These former and current off-site operations have the potential to impact soil and groundwater.

Given that four APECs have been identified through the Phase One ESA, it is recommended that a Phase Two ESA be undertaken to investigate soil and groundwater quality at the identified APECs.

6.0 Development Limit and Next Steps

6.1 Development Limit

The purpose of this Phase 1 Report is to provide a background analysis of the preliminary finding of the technical studies, provide an overview and analysis of the existing policy framework, establish a vision and objectives for the Secondary Plan, establish the development limit and determine next steps in the Secondary Plan process. A Development Limit Plan has been developed that incorporates input from the previous sections of this Report, and identifies:

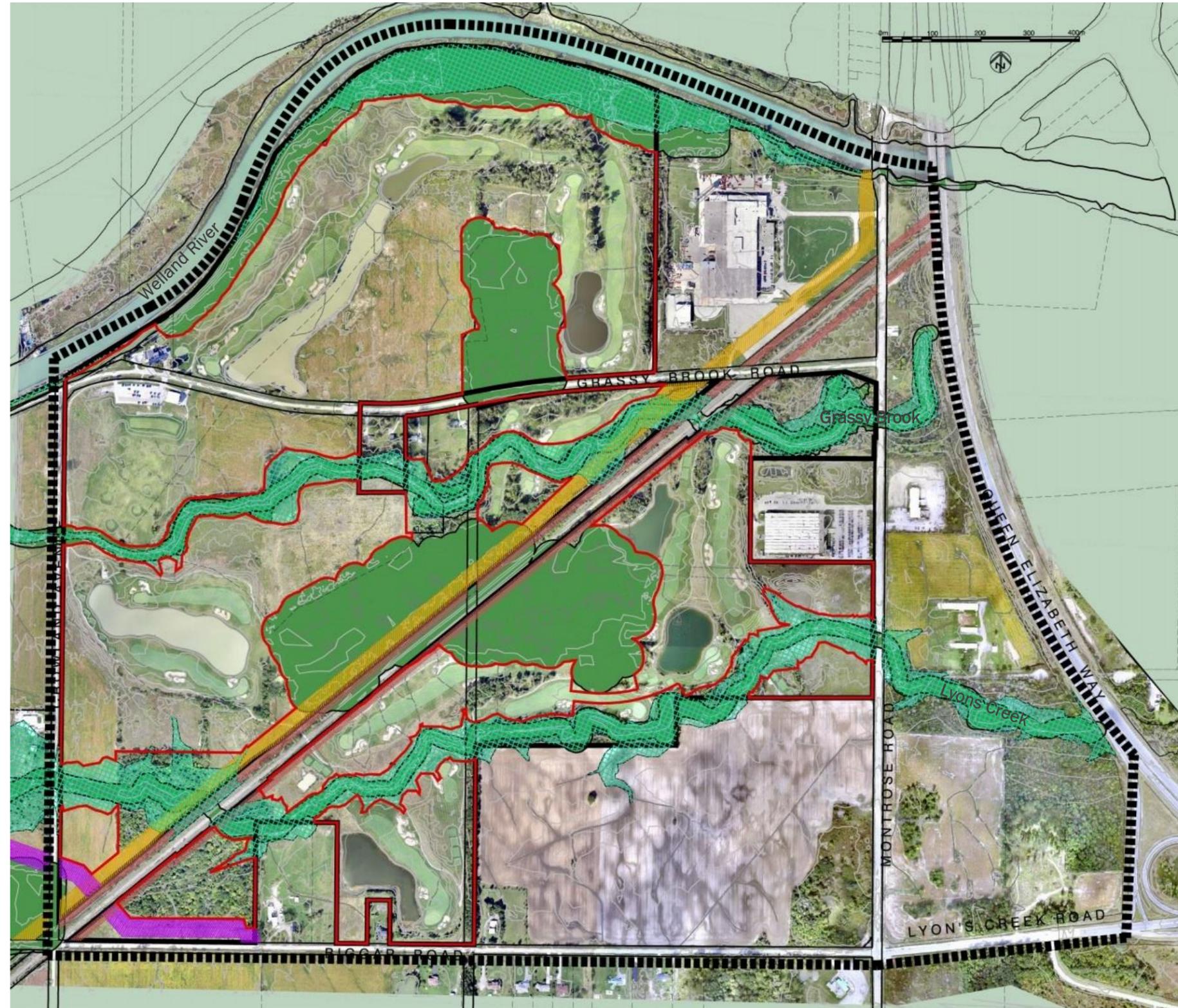
- Areas where development cannot occur;
- Areas where development may occur, subject to constraints or appropriate mitigation; and
- Areas of unconstrained development.

The Development Limit Plan is illustrated in Figure 26. The Development Limit was generally delineated based on the locations of the highest ranking natural features as identified in Section 5.5 of this report and their associated buffers, the floodplain of the Welland River, Lyons Creek and Grassy Brook, and the buffering safety requirements from the CP railway line. Lands within the Development Limit are areas where development cannot generally occur. The proposed development limit is identified on the lands that are currently owned by the Grand Niagara Co-Owners. The development limit was not specifically delineated for the lands on the eastern side of Montrose Road, the proposed hospital lands, and the properties at 9515 Montrose Road, 9127 Montrose Road, 8264 Grassy Brook Road, 8243 Biggar Road, and 8365 Biggar Road. Areas outside of the Development Limit include areas of unconstrained development, as well as some areas where development may occur, but that may be subject to appropriate mitigation. These are further described in the sections below.

The following section provides a summary of the key findings of the Background Analysis, and the rationale for the proposed development limit, as well as considerations and next steps for the Secondary Plan.

Grand Niagara Secondary Plan Background Analysis Report

Proposed Development Limits



-  Natural Heritage Features
-  Floodplain (100 Year)
-  15m Setback from Railway
-  Hydro Corridor
-  Pipeline Easement
-  Proposed Development Limits
-  Secondary Plan Area

Prepared by:



Date: April 20, 2016

Proj. No. 1415039.001

Scale: 1 : 8,000

Figure No.

Figure 26: Proposed Development Limit Plan

Land Use Compatibility

The compatibility of new sensitive land uses with existing employment uses within the Subject Lands will need to be addressed in detail through the Secondary Plan process. This Background Analysis Report reviewed the MOE D-Series Guidelines in the context of existing land uses on the Subject Lands and in the context of land uses outside of the Secondary Plan area, such as Cytec Industries and the Regional Bio-Solids Facility.

Within the Secondary Plan area, there are lands that are currently designated in the City's Official Plan as "Industrial" and zoned as "Rural Agricultural" (RA) in the Former Crowland By-law (see Figure 5, Figure 10, and Figure 13). As noted in Sections 4.6 and 4.7 of this Report, heavy industrial uses are permitted on lands designated "Industrial" and zoned "Rural Agricultural". The MOE D-Series Guidelines recommend areas of influence and setbacks in order to minimize and prevent exposure of people and property to adverse effects associated with the operation of certain facilities that are industrial in nature. When a change in land use is proposed, the guidelines outline adequate buffering between the potentially incompatible land uses.

The review of existing land uses on lands that are currently designated and zoned to permit heavier industrial uses is summarized below:

- **9127 Montrose Road** - Currently operates as a head office for E.S. Fox's operations with limited truck movement at the rear of the site. The current operations may be categorized as a Class 1 Industrial use (as per Table 7); however, a preliminary review of the potential noise sources on-site has determined that these will not impact the proposed redevelopment. A further Air Quality analysis will be conducted as part of the next phase of study to confirm whether there may be impacts from an air quality perspective.
- **9515 Montrose Road** - currently operates as a call centre, and other office-type uses. No manufacturing or heavy industrial activities occur on the site. Some truck movements may be associated with the loading areas at the rear (west) side of the building.
- **7473 Reixinger Road** - agricultural use with barns.
- **North-west corner of Montrose Road and Biggar Road** - Vacant land that is the location for the new Regional Hospital.
- **8365 Biggar Road** - Residential Property
- **8243 Biggar Road** - Residential Property

Although the existing uses on these properties are not currently industrial in character, heavy industrial uses are permitted and as such, could be introduced in the future. For the purposes of this Background Analysis Report, and the development limit, it has been assumed that the uses of these properties will not change significantly in the short term from what they are currently. Furthermore, with the introduction of the new Regional Hospital at the north-west corner of Biggar Road and Montrose Road, land uses in proximity to that property should be supportive of and compatible with the hospital. It is not recommended that a setback and/or area of influence be applied to the properties that are currently designated and zoned for heavier industrial uses. It is recommended that through the Secondary Plan and future site specific Zoning By-law Amendment, permitted uses on these properties include those which are compatible with the proposed hospital.

Outside of the Secondary Plan area, and as further detailed in Section 5.4 of this report, there exists a Regional Bio-solids Facility, as well as Cytec Industries (Figure 20). A technical review from an air quality perspective was undertaken to determine the compatibility of the proposed future developments with these existing industrial uses. Based on the preliminary evaluation, setbacks and potential areas of influence have been recommended for Cytec and the Niagara Region Bio-solids storage facility based on the current site operations (see Figure 21). The setback and area of influence of these facilities have been measured assuming that the undeveloped lands surrounding the

facilities are not currently planned for expansion of operations. As such, the areas of areas of influence and setbacks do not encroach into the Subject Lands.

Both Freedom of Information (FOI) and Access to Information requests have been submitted to the Provincial and Federal governments, respectively. A detailed air quality study will be performed with consideration for these regulations and guidelines as well as the industrial activities in the area as part of the next phase of work and once the documents obtained through the FOI and Access to Information requests have been reviewed.

Planning Context

Niagara Region Official Plan

The Subject Lands are within the urban boundary, and the majority of the lands are designed as Built-Up Area. Lands south of the CP railway line are designated Employment Lands and form part of the Niagara Economic Gateway Zone. The Employment Lands designation encompasses approximately 142 ha of the total Secondary Plan area (330 ha). Much of the Employment Lands are currently being used as such or will be part of the future Regional Hospital site. The Secondary Plan will recognize the importance of continued economic competitiveness within the Region and the City of Niagara Falls and will be consistent with the Employment Lands policies of the Region's Official Plan.

South of the CP railway line, a portion of the lands designated Employment Land in the Region's Official Plan are designated Open Space, with site specific policies to permit the development of golf course uses, in the City of Niagara Falls Official Plan. The Development Limit Plan illustrates natural features, associated buffers and the floodplain within the Subject Lands. The Development Limit Plan illustrates that lands located between the CP railway line and the Lyons Creek may be constrained for use as Employment Lands due to presence of natural features, the floodplain limit, the limited direct collector road access and land configuration of the developable land. As such, it is recommended that the Secondary Plan consider the opportunity for alternative land uses in this area, such as residential or retail commercial, where appropriate.

The Region requires that the conversion of Employment Lands only occur through a Municipal Comprehensive Review (MCR) process, and subject to specific criteria (ROP Section 4.E.1.1). It is further understood that no net loss in Employment Land is to be achieved through the conversion. The Region is currently undertaking a MCR process. Through the Secondary Plan process, the gross and net areas that are proposed to be converted will be provided to the Region for input into MCR.

City of Niagara Falls Official Plan

The Secondary Plan will amend certain policies in the City's OP on an area-specific basis in order to implement the vision and planned land uses within this area. The Secondary Plan will include amendments to the land use designations, open space policies, infrastructure, and urban design policies. The Secondary Plan will define the land uses on an area-specific basis that will achieve a gross density of 53 person and jobs per hectare. Policies will support the development of a complete community that respects the natural environment and supports the employment areas and the development of the future Regional Hospital. More specifically, the following should be considered with respect to the existing and potential future land use designations:

- **Open Space:** A large portion of the Subject Lands are designated as "Open Space" with site specific policies relating to the golf course development. The current Open Space designation permits a limited type and number of residential units, which are specific to the golf course development. As such, through the Secondary Plan process, these lands will be re-designated to a designation that permits additional land uses, such as residential or a mixed-use designation with area-specific policies that support the proposed "complete community". The

Development Limit Plan also illustrates that some of the lands will remain designated Open Space or may be re-designated Environmental Protection Area to ensure enhanced protection for specific features. The City's Official Plan contemplates the re-designation of privately owned Open Space to another land use designation.

- **Industrial:** Approximately 100 ha of the Subject Lands are designated Industrial. The Industrial designation permits manufacturing, assembly, warehousing, distribution laboratory and research and storage uses. Although the Industrial designation does permit "laboratory and research uses", it does not permit institutional, hospital or hospital-supportive office or medical uses. Furthermore, the uses permitted within the Industrial designation are not generally compatible with a large-scale hospital use. Many of the lands designated Industrial, are also located within the QEW Employment Corridor on the City's Structure Plan (Figure 10). The QEW Employment Corridor policies allow for the development of large-scale institutional uses that benefit from direct access to the QEW corridor. Through the Secondary Plan process, these lands should be redesignated to an employment designation that permits uses such as hospital and the supportive health care-oriented, professional service, and office. The policies will ensure protection of the employment lands while ensuring appropriate compatibility between the future hospital and the surrounding employment uses. The Secondary Plan will contain policies to address the existing uses and the continued operation of those uses.
- **Tourist Commercial:** The Secondary Plan will more clearly define the type of land use permitted within this Tourist Commercial area to ensure that it is compatible with the surrounding land uses, including the Regional Hospital.

In addition to those land use designations noted above, the Secondary Plan will designate lands for public parks, schools and commercial uses.

Railway Corridor Safety, Noise and Vibration

The following recommendations are provided with respect to development of residential land uses in proximity to the railway corridor:

- **Safety:** A 15m buffer is to be provided on either side of the railway line to act as a safety buffer. The buffer is to be measured from the railway right of way to the façade of a future building. A 2.0m tall safety berm is to be provided within this buffer. This safety setback is required in areas where large groups of people congregate, as well as residential uses.
- **Noise:** The façade sound level for the dwellings adjacent to the railway tracks is expected to exceed the MOECC objective sound levels and as such, the first row dwellings adjacent to the railway tracks will be designed to include air conditioning and upgraded windows/doors. The first row of dwellings are to be built to a minimum of brick veneer or masonry equivalent construction, from the foundation to the rafters. No noise mitigation is required for outdoor amenity areas.
- **Vibration:** Vibration exceedances measured along the railway corridor are infrequent due to the limited operation of trains along this railway. Furthermore, the poor state of the railway likely exacerbates the vibration caused by the trains. The observed vibration levels are several orders of magnitude below vibration levels that could cause damage to any structures in proximity to the railway. As a result, vibration impacts due to train traffic along the CP railway line are anticipated to be negligible and do not pose any constraint on the re-development of these lands.

The Development Limit Plan illustrates that only a portion of developable lands are directly adjacent to the railway line. These lands are located along the south side of the railway line. The Hydro Corridor that runs parallel to the railway line on the north side acts as a buffer between the railway line and any future adjacent development to the north.

Natural Heritage

The natural heritage review and analysis was a key input into the Development Limit Plan. The natural heritage features and associated functions defined by the PPS are considered to be most significant and are identified on the Development Limited Plan as “Natural Heritage Features”. These areas are generally unavailable for development and include Provincially Significant Wetlands, Critical Fish habitat and Significant habitat for Endangered and Threatened Species.

Buffers will be applied to protect the function of natural heritage features identified within the Subject Lands (i.e. wetlands, woodlands, fish habitat, etc.). Buffers are proposed to remain in a natural state, and will be protected from development except for the minor intrusion of stormwater ponds and potential recreational trails which may be permitted in some areas subject to appropriate assessment and/or mitigation of impacts within the EIS.

The following summarizes the general natural feature setbacks to be applied:

- A 30 m buffer is proposed to PSW units as defined by the Ministry of Natural Resources and Forestry (MNR) and as mapped on the Region’s Official Plan Schedule C. Where development is proposed within buffers, and general catchments should consider feature-based water balances to ensure the balancing of pre- and post-development wetland hydrology.
- A 30 m buffer is proposed along the Welland River to provide protection the significant valleyland, fish habitat and PSW’s associated with this feature.
- A 15 m buffer is proposed along Grassy Brook Creek and Lyon’s Creek given the presence of Type 1 or critical fish habitat. In many areas the buffer will be greater than 15 m in order to capture the 100-year floodplain limits.
- A 10 m is proposed for significant woodlands (measured from drip line).

Applicable buffers have been applied to the natural heritage features identified on the Development Limit Plan. In most instances, the Development Limit on Figure 26 was delineated from the buffer limit associated with a natural feature, or from the floodplain, whichever is greater.

In addition to those features identified on Figure 26, there may be natural features and associated functions where development may be permitted subject to meeting the no negative impact test (e.g., Significant Woodlands, Significant Wildlife Habitat). The removal of/or portions of these natural features and functions will be subject to compensation and mitigation discussions with the NPCA in order to meet the PPS test. Furthermore, there exist some features that are anthropogenic and where wildlife habitat is present that if removed can be mitigated through replication of this habitat.

Servicing

Future Secondary Plan phasing should consider the timelines associated with sanitary sewage upgrades to ensure that they can be planned and constructed at the Grassy Brook SPS and its forcemain, the South Side Highlift SPS, and the Niagara Falls WWTP. Currently, the Grassy Brook SPS operates at a dry weather flow of 21 L/s and has capacity for up to 44 L/s, as is. With sewage pump upgrades, Grassy Brook SPS has an ultimate capacity of 138 L/s. Any upgrades to Regional servicing infrastructure will be discussed in the context of the Region’s ongoing Water and Wastewater Master Plan.

Additional and more detailed servicing strategies will be examined and proposed within the next stages of the work.

Stormwater Management

Given that the majority of the existing uses within the Subject Lands consist of golf course, green /open spaces, as well as some residential and employment uses, the future development as determined through the Secondary Plan

process will change the physical characteristics of land cover and increase the degree of imperviousness. This will result in an increase in the amount of runoff and a decrease in overall infiltration. The approach to stormwater management will be determined through the next phases of the Secondary Plan process and will be developed with reference to the NPCA's Stormwater Management Guidelines (2010), including seeking opportunities for Low Impact Development (LID) strategies. Furthermore, the infiltration-based source and conveyance control measures will be evaluated in conjunction with the natural heritage systems as well as the hydrogeological characteristics of the Subject Lands.

The current regulatory flood lines for the study water courses were obtained from NPCA and have been incorporated into the constraints plan. They are identified as the 100 year floodplain and are included on the Development Limit Plan as areas where development cannot occur.

Traffic Impact Study

The analysis of existing traffic conditions indicate that:

- Most existing intersections exhibit acceptable delays and acceptable levels of service (LOS), defined as LOS D or better, in the a.m., p.m. and Saturday peak hours;
- The intersections of McLeod Road at Oakwood Drive and Biggar Road/Lyons Creek Road at Montrose Road are reported to have movements which are above capacity in the p.m. and Saturday peak hours.
- Optimization of the signal timings and the addition of a lost time adjustment address these overcapacity movements and brings them back within, albeit approaching, capacity.
- No intersections in the study area exhibit capacity constraints in the weekday a.m. peak hour.

A further analysis of internal and external transportation network will be undertaken once the Secondary Plan land use plan has been more clearly developed. The internal network will focus on the pedestrian and active transportation but will also provide adequate functionality for automobiles. The majority of the road network will be comprised of local roads used by residents. The local roads will connect to a few collector roads that will link to the existing arterial road network of Montrose Road and Biggar Roads. Collector roads will have a right-of-way width of between 20m and 23m. Road cross sections will be determined through the Secondary Plan process and will include the provision of active transportation, adequate pedestrian amenities and streetscaping.

6.2 Next Steps

Following submission of the Background Analysis Report, next steps will include:

- Public Information Centre #2: A second PIC will be held to present the background information collected and key considerations for the Secondary Plan.
- Respond to comments: Comments on the Background Analysis Report will be addressed
- Phase 2 – Secondary Plan: The Secondary Plan will provide a land use planning and policy framework for the development of a complete community that incorporates employment uses supportive of the future regional hospital. As part of the Phase 2 Secondary Plan, the detailed studies and analyses will be undertaken to assess future conditions and provide recommendations in relation to the following:
 - Site Servicing;
 - Stormwater Management;
 - Traffic Impact;
 - Air Quality;
 - Noise Impact Study; and
 - Natural Heritage through an Environmental Impact Assessment.