

OCTOBER 2015

City of Thorold

BROCK BUSINESS PARK AREA SECONDARY PLAN

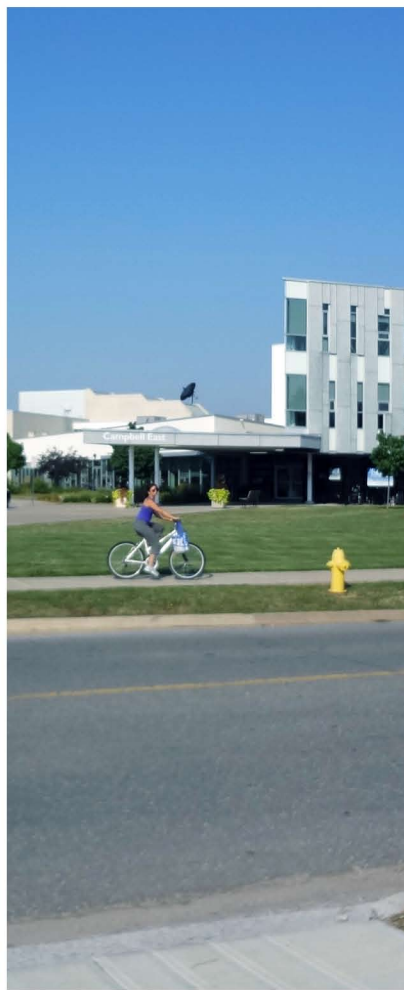


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BASIS FOR THE PLAN

The planned function and design of business parks is evolving. The traditional approach of separating employment uses from other uses such as residential and commercial is evolving in a number of communities, as governments and private sector land developers are looking to be more competitive and respond to emerging market demands. Increased interest in mixed-use



development and sustainability has opened up the possibility, in some unique circumstances, of re-designing and improving traditional business parks to meet both civic and market-oriented objectives. Furthermore, some members of labour force have increased flexibility and are choosing to live and work in more dynamic places. In order to attract top talent, businesses are seeking out competitive advantages and are recognizing the importance of dynamic working environments. The development industry is looking to capitalize on these new trends and, as a result, the suburban models of development, including those for traditional business parks, are evolving. The City of Thorold has undertaken a secondary planning exercise for the Brock Business Park to guide the revitalization of the Park in a manner that supports and enhances the employment uses while providing opportunities for new uses that integrate surrounding areas, encourage mixed use and improved urban design, and meet the current market demands.

1.1. POLICY CONTEXT

The Brock Business Park was originally contemplated as a traditional greenfield business park in the mid-1980s. The first plan for developing the Business Park was prepared in 1988. The plan recognized that, due to its location, the Brock Business Park was well suited to develop as a key employment area in Niagara Region. The existing Business Park is approximately 43 gross hectares, is visible and accessible from Highway 406, and is situated across from Brock University.

In 2009, the City completed its *Employment Lands Comprehensive Review*¹. The *Review* examined the City's overall employment land needs and provided recommendations for improving Thorold's competitiveness. One of the key findings of the *Review* was a recommendation for balancing the demand for conversion within the Brock Business Park. In response to an individual application for new student housing in the Business Park, the *Review* suggested that the conversion could be warranted, but that the City prepare a new plan to proactively deal with the potential long term implications of introducing housing into what was supposed to be an employment area.

Following the *Employment Lands Comprehensive Review*, the Region of Niagara (the Region) completed the *Niagara Economic Gateway Strategy* in 2011. The *Gateway Strategy* built upon the recommendations of the City's *Employment Lands Comprehensive Review* and provided stronger direction for redevelopment within the Brock



Looking north across parking lot and two storey office building off of Schmon Parkway.

¹ *Employment Lands Comprehensive Review*, Dillon Consulting, 2009.

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Business Park. The *Gateway Strategy* identified a number of opportunities for revitalizing the Brock Business Park in order to re-energize the area, balance potential residential uses with the need for employment uses, and attract new investment. The *Gateway Strategy* was implemented through Regional Official Plan Amendment 1-2012.

Policy 3.A.3.4 speaks directly to the Brock Business Park and provides the following direction:

- “The concept for the Brock Business Park Revitalization is to capitalize on market opportunities for research and development and the close proximity to Brock University and Highway 406 by transforming the area into an integrated, mixed use, campus-style setting which caters to incubators, innovators, limited office uses, and related uses.
- In order to address the challenges, capitalize on opportunities and transform the concept into reality, the following tools will be utilized:
 - a) Preparation of a joint secondary plan to coordinate development and refine the concept;
 - b) Preparation of a public realm improvement program to re-energize the area and attract new investment;
 - c) Preparation of supporting plans for servicing and transportation (including active transportation and transit);
 - d) Preparation of urban design guidelines; and,
 - e) Updating relevant local plans, policies, and zoning by-laws”².

NIAGARA ECONOMIC GATEWAY VISION

The vision for the Niagara Economic Gateway employment lands is to attract investment and promote employment growth in strategic locations. By addressing the challenges in a strategic and coordinated manner and by taking advantage of the unique locational opportunities and linking them with Niagara’s market opportunities, Niagara will attract new investment to support its existing employment base and further develop its emerging employment clusters. The vision is to transform the collection of vacant lands into a diversified mix of vibrant, attractively designed, accessible and sustainable employment areas.

² Consolidated Official Plan, Region of Niagara, August 2013

1.2. BROCK BUSINESS PARK MASTER PLAN

In 2013, the City of Thorold completed a comprehensive master planning exercise to address a number of aspects related to the previously-noted items. The Brock Business Park Master Plan³ examined several alternative land use and physical design alternatives for revitalizing the Park. Through a collaborative exercise which included engagement with the public, as well as a number of agencies and stakeholders, a recommended land use plan was presented to Council in December 2013. Council adopted the recommended land use concept, along with the key recommendations of the Master Plan Study report. Key recommendations included:

- The need to prepare a formal Secondary Plan for the Park (statutory plan under the Planning Act);
- The need to confirm municipal servicing requirements based on the recommended land use concept; and,
- The need to prepare a financial strategy to implement the plan.

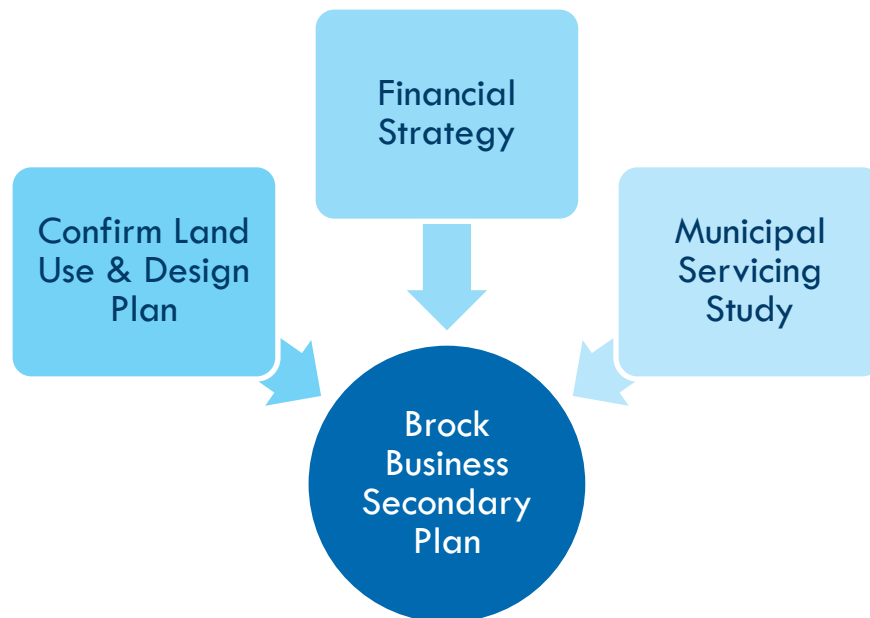


³ Brock Business Park Master Plan, Dillon Consulting, 2013

1.3. Secondary Plan Process

In 2014, the City of Thorold launched the statutory planning process under the *Planning Act* to prepare a formal secondary plan for the Brock Business Park. In parallel to the secondary plan process, the City also completed a municipal servicing study and financial strategy. Aspects of the financial strategy and the servicing study have been considered in the finalization of the Secondary Plan. In addition to the above, several details related to land use, urban design and public realm improvement have also been addressed, including:

- Potential alignment for the linear park feature;
- Incorporation of latest environmental data from Niagara Peninsula Conservation Authority; and,
- Confirmation and incorporation of various site specific permissions.



The overall process for the Secondary Plan is displayed on the following page, illustrating the connection to the Master Plan process.

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1.4. CONVERSION CONTEXT

The Brock Business Park Secondary Plan has been prepared concurrently with the City’s Official Plan project. In considering the potential need for conversion within the Secondary Plan, relevant aspects of the City’s Official Plan review have been taken into consideration, along with the Regional Official Plan policies (and by extension the Growth Plan for Greater Golden Horseshoe) which provides the tests for evaluating potential conversions. Table 1.1 on the following page summarizes the collective results of the conversion analysis. The results presented in Table 1.1 draw upon a variety of sources, including the Employment Lands Comprehensive Review (2009), the subsequent Conversion Justification memo prepared by the Altus Group (2009 and 2013, as well as associated peer reviews conducted by Watson and Associates) and the Brock Business Park Master Plan (2013). The proposed Secondary Plan includes 22 hectares of land which are to be converted from an employment designation to a non-employment designation (including approximately 19 hectares of existing and established institutional, hospitality, residential and commercial uses).

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Table 1.1: Conversion Assessment	
Conversion Criteria	Commentary
a) There is a need for the conversion.	<ul style="list-style-type: none"> • There is demand for off-campus student housing in close proximity to Brock University in Thorold • Allocation of lands for mixed uses resolves neighbourhood conflicts elsewhere in the City, and more efficiently locates student housing within walking distance to the campus • The re-designation formally recognizes a number of non-employment uses already in the Brock Business Park, including institutional, commercial, hospitality and existing student housing located in the north end of the Park • Provides opportunities for denser forms of development which will help to support transit and public realm enhancements
b) The municipality will meet the employment targets allocated to the municipality pursuant to this Plan.	<ul style="list-style-type: none"> • Thorold will meet its employment land targets <ul style="list-style-type: none"> ○ 2031 Demand for Employment Land = 34 ha. ○ 2011 Estimated Vacant Supply = 433 ha.
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.	<ul style="list-style-type: none"> • The conversion is not expected to adversely affect the overall viability of the employment area, provided the conversion maintains a distinct division between mixed use areas and stable employment areas (refer to Land Use and Urban Design policies of the Secondary Plan) • The associated public realm enhancements are expected to improve the attractiveness of the Business Park, which should help to improve the viability and marketability of the area as a whole • The conversion supports the intensification target and increases overall densities throughout the Business Park
d) There is existing or planned infrastructure in place to accommodate the proposed use.	<ul style="list-style-type: none"> • There is planned infrastructure to accommodate the growth (refer to Servicing Section of Secondary Plan)
e) The lands are not required over the long term for employment purposes for which they are designated.	<ul style="list-style-type: none"> • The lands to be converted are not required over the long term. • The amount of vacant land which is being converted is less than 3 hectares – the remaining 19 hectares is presently occupied with a mixture of institutional and commercial uses. These lands are targeted for intensification.
f) Cross jurisdictional issues have been considered.	<ul style="list-style-type: none"> • Cross jurisdictional issues have been addressed and are covered in the Secondary Plan (see Implementation policies for more detail). • Brock University was involved throughout the Master Plan and Secondary Plan process, and the City will continue to

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Conversion Criteria	Commentary
	<p>work with Brock University to prepare a new Campus Master Plan.</p> <ul style="list-style-type: none">• The City corresponded with the City of St. Catharines through the process to ensure alignment with their Official Plan policies.• The City supports the Region’s undertaking of the Brock District Plan that includes opportunities for linking active transportation networks, improving way-finding, lighting for pedestrian safety and an integrated approach to transportation and infrastructure planning.

1.5. PURPOSE OF THE SECONDARY PLAN

The purpose of this Secondary Plan is to provide a planning framework that will guide future development and redevelopment in the Brock Business Park, and in particular accommodating mixed uses within a portion of Brock Park, as well as respond to the recommendations of previous studies/amendments completed by the City and the Region. Brock University was identified as a major economic driver for the area as one of the largest employers in the Niagara Region, additionally through partnerships with local businesses and also as a result of local spending by students. Providing additional housing opportunities for students within the mixed use areas of the plan allows the University to focus on expanding their academic facilities which in turn has the potential to supply additional employment opportunities within the overall Brock District area. The addition of mixed uses within the Secondary Plan area provides the opportunity to further reduce negative impacts in established residential neighborhoods including issues related to parking, access, noise, garbage and general deterioration of housing in some areas.

The Secondary Plan provides a vision for revitalizing the Park and sets out recommendations for the appropriate land uses. The Plan provides direction on four key areas:

1. Future land use and opportunities for intensification;
2. Public realm and urban design improvements;
3. Transportation and infrastructure improvements, including pedestrian connections and circulation; and,
4. Balancing the needs for employment and non-employment uses.

1.6. ORGANIZATION OF THE PLAN

The Secondary Plan document is organized into four main sections:

- Chapter 1 provides the basis and context for the Secondary Plan (Chapter 1 is not considered to be a formal part of the plan and is provided for explanatory purposes only);
- Chapter 2 contains the formal Secondary Plan;
- Chapter 3 contains the Schedules for the Plan; and,
- Chapter 4 provides descriptions of relevant definitions.

Footnotes, graphics and images are provided for explanatory purposes only. Alterations to policies of Chapter 2, the Schedules in Chapter 3 and/or the Definitions in Chapter 4 will require an Official Plan Amendment. Alteration of the content in Chapter 1 and/or any graphics, images or footnotes are not subject to an Official Plan Amendment.

1.7. AUTHORITY OF THE PLAN

This Secondary Plan has been prepared under the Planning Act and aligns with the policies of the City of Thorold Official Plan, the Niagara Region Official Plan and the 2014 Provincial Policy Statement.

2 SECONDARY PLAN POLICIES

2 | SECONDARY PLAN POLICIES

2.1. VISION & OBJECTIVES

2.1.1. Vision

The Brock Park is an attractive, dynamic, high quality mixed use area that is home to some of the City's premier employers. The area houses a collection of live-work activities, which help to support innovation and business incubation associated with Brock University. The Brock Park's campus-like setting, along with its attractive and accessible public spaces and streetscapes, provide a unique sense of place that makes the Brock Park one of the most innovative and interesting mixed use areas in the GGH.



Visualization of integrated live-work development on vacant parcels in Brock Park (looking north-west)

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2.1.2. Objectives

The objectives of the Brock Park Secondary Plan are to:

1. Promote economic development and provide basic amenities which support revitalization and investment.
2. Provide a framework for mixed-use development and redevelopment.
3. Support and enhance the employment function for the Brock Business Park Area.
4. Improve pedestrian safety & connectivity within the Park and adjacent areas.
5. To provide a range of housing opportunities that supports Brock University.
6. Maintain and enhance the campus-like setting.
7. Balance the needs of all users.
8. Make best use of existing and planned infrastructure.
9. Provide opportunities for transit supportive development.
10. Promote sustainable development and redevelopment throughout the Brock Business Park Area.
11. Encourage a high standard of site and building design, landscaping and streetscape through urban design standards.

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2.2. PLAN LIMITS

The limits for this Secondary Plan extend west of Highway 406 and south-east of Brock University in the City of Thorold. The Plan area is bounded by Sir Isaac Brock Way to the north, Decew Road to the south, Merrittville Highway to the west and Highway 406 to the east. **Schedule 1** illustrates the limits of the Secondary Plan.

2.3. LAND USE

2.3.1. Land Use Plan

The land use plan for the Brock Park is illustrated on **Schedule 2** and is organized around four major land use designations:

- Mixed use areas;
- Employment areas;
- Residential; and,
- Environmental Protection & Conservation Areas.

This mix is meant to facilitate clustering of business and economic activities in a campus style setting, whereby uses benefit from proximity/co-location.

2.3.2. Mixed Use Areas

Planned Function

Mixed use areas are intended to provide a location for a range of complementary uses that are dynamic, vibrant and have a high degree of integration, such as business incubators and certain types of R&D facilities. This designation is also intended to recognize a number of existing uses and also provides a framework for future redevelopment and intensification.

Permitted Uses

Permitted uses within the mixed use designation include office, commercial, medium and high density residential and hospitality uses. Existing institutional uses are permitted, as well as new smaller scale institutional uses which are complementary and supportive to the overall planned function of the Park, such as day-cares, government offices, etc. Larger scale institutional uses which are related to Brock University and/or have a research and development function are also permitted. Uses are encouraged to be mixed within a single building, whereby ground-level uses including commercial uses and upper stories accommodate complementary uses – such as residential or office activities. Expansions to existing stand-alone buildings are permitted.



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Scale

The maximum building height for buildings within the mixed use area is six stories. The minimum height for new development is three stories.

Commercial Uses

Commercial uses permitted within the Mixed Use designation are limited to those activities which serve the employees and residents of the Brock Park and should include, but are not limited to, cafes, restaurants, banks, food stores and a range of personal services, such as fitness clubs, pharmacies, hair salons and convenience stores. Large scale, destination retail commercial activities, such as “big box”, highway commercial activities, such as auto repair and auto sales businesses and night-clubs are not permitted. To facilitate a pedestrian friendly environment, and discourage idling of automobiles, drive-throughs shall not be permitted within the Mixed Use designation as they are intended to be located in other commercial designations elsewhere in the City.

Maximum Thresholds for New Residential Development

Where new residential uses are proposed within a mixed use designation, the ground floor areas of buildings which front onto a street and/or public square shall be comprised of non-residential uses, such as commercial or employment uses. The intent of this policy is to ensure that new development which is located in highly visible areas contributes to a vibrant and dynamic street environment and also helps to support a balance between residential and non-residential uses.

New additional residential uses that are proposed within the mixed use designation will require a market study to confirm market demand for the proposed activity.

Land Use Compatibility

To ensure land use compatibility, all new sensitive land uses which are within 70 metres of an existing employment use shall be required to complete a land use compatibility assessment. The assessment shall examine potential issues and prescribe appropriate mitigation measures, including but not limited to appropriate building setbacks, landscaping treatments and other measures. Minimum setbacks between employment and non-employment uses are 20 metres, which can be reduced depending on the outcomes of site specific assessments and prescribed mitigation measures. The above-noted policy also applies to any development within 70 metres of the Region of Niagara’s Environmental Laboratory which is located on Schmon Parkway.

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2.3.3. Employment Areas

Planned Function

Employment Areas are intended to provide a location for stand-alone, stable employment uses which are distinct from the more dynamic formats located in the Mixed Use designation. The Employment Area designation will ensure that the original employment function of the Brock Park is maintained over the longer term (for a portion of the Park), allowing for the potential to capitalize on unique employment opportunities.



Permitted Uses

Permitted uses within the Employment Area designation include office, research and development, laboratories and other knowledge-based businesses. A limited range of light manufacturing and assembly uses are also permitted, whereby the activity has no adverse impacts on any adjacent or nearby sensitive uses. No outdoor storage is permitted. New institutional uses are not permitted, except those uses which are ancillary or associated with a proposed or existing development (such as a day care which is part of a larger office development).

Scale

The maximum height for buildings within the Employment Area designation is four stories. Buildings which are immediately adjacent to Gateway Areas are permitted up to six stories. The minimum height for new development

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is one storey, except for redevelopment in Gateway Areas (see Schedule 3), where the minimum height is three stories.

2.3.4. Residential Area

Planned Function

The Residential Area designation is intended to recognize the approved permissions for Part Lots 37, 38 and 39 located at the southern limits of the Plan Area. These lands have historically not been considered to be part of the Brock Business Park.

Permitted Uses

On the lands located in Part Lots 37, 38 and 39, residential uses are permitted, including single detached, semi-detached, townhouse and low-rise apartment dwellings.

Scale

The maximum height for new development is four stories. The minimum height is one storey.

2.3.5. Environmental Protection 1

Planned Function

The EP1 limits are associated with a Provincially Significant Wetland. The limits of these areas have been delineated based on mapping provided by the Niagara Region and the Niagara Peninsula Conservation Authority.

The Environmental Protection One designation contains natural heritage features and functions of special importance to the character of the City and the Niagara Region. These areas are significant because of their size, location, outstanding quality, or ecological functions. They contribute to the health of the broader landscape and may contain features of local, provincial or even national significance.

The Environmental Protection One designation is intended to identify significant natural heritage features including Provincially Significant Wetlands (PSW) and also includes habitat of endangered species and threatened species.

Lands designated Environmental Protection One are shown on Schedule 2 (Land Use). The individual components of the Environmental Protection One designation are identified as Provincially Significant Wetlands (PSW) in this Secondary Plan. It should be noted that mapping of the significant habitat of endangered species and threatened species is not specifically identified on the Schedules to this Secondary Plan. Significant habitat of endangered species or threatened species will be identified through the Planning and Development review process. Where such habitat is identified, development and site alteration shall be subject to the policies of this Section of the Secondary Plan.

Permitted Uses

Permitted uses on lands designated Environmental Protection One are limited to the following:

- a) Forest, fish and wildlife management uses,

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- b) Conservation, flood control projects,
- c) Small-scale, passive recreational uses such as trails that will have no negative impact on natural features or on the ecological functions of such features,

General Conditions for Development and Site Alteration

Given the sensitive nature of features within the Environmental Protection One designation, where development of permitted uses is proposed, the proponent shall prepare an Environmental Impact Study (EIS) to the satisfaction of the Region, in consultation with the City and NPCA.

Where development or site alteration is proposed in proximity to lands in the Environmental Protection One designation, efforts should be made to identify and create, maintain and where possible enhance linkages amongst lands designated Environmental Protection One and Environmental Protection Two.

Adjacent Lands

Adjacent lands are the lands adjacent to a natural heritage feature within which impacts and compatibility must be considered and addressed. For the purposes of this Secondary Plan, adjacent lands are defined as all lands within:

- a) 120 metres (393.7 feet) from the boundary of a Provincially Significant Wetland (PSW);
- b) 50 metres (164 feet) from the significant habitat of an endangered species or threatened species.

No development or site alteration shall be permitted on adjacent lands unless an Environmental Impact Study (EIS) demonstrates that, there will be no negative impact on the feature or its ecological functions. The Region, in consultation with the City and the NPCA, shall approve any Environmental Impact Study prepared to address impacts of development or site alteration within adjacent lands.

Lot Creation

Where lot creation is proposed in a parcel comprised of lands designated Environmental Protection One, the proposed lot(s) shall not be comprised of any land in the Environmental Protection One designation. The retained lands shall be retained as a single lot in a natural state and shall be zoned or identified through a Site Plan Agreement to protect ecological functions and natural features. Notwithstanding, where a public agency is securing land with critical habitat or features, such applications may be exempted from this policy requirement.

Infrastructure

New or expanding infrastructure is not permitted in the Environmental Protection One designation with the exception of linear infrastructure constructed by a public authority or agency through an Environmental Assessment process. Where infrastructure is permitted to cross or encroach into such areas, it shall minimize negative impacts and disturbance on the feature or its related functions and, where reasonable, maintain or improve connectivity among such areas and vegetative protection buffers.

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Other Areas Identified Through a Planning Process

There may be areas where a planning approval process identifies a currently non-designated natural heritage feature that meets the criteria of the Environmental Protection One designation that should be protected from development. Such areas may be incorporated into the Secondary Plan by separate Official Plan Amendment, and shall be subject to the policies of this Plan.

Minor refinements to the extent of the Environmental Protection One designation shall not require a further Amendment to this Plan, provided such refinements are undertaken in consultation with the Ministry of Natural Resources (MNR), where such refinements affect Provincially Significant Wetlands or the significant habitat of endangered species or threatened species.

Use of Lands in Private Ownership

Where any land within the Environmental Protection One designation is held under private ownership, this Plan shall not be construed as implying that such areas are free and open to the general public.

Zoning By-law Implementation

The boundaries of the Environmental Protection One designation were derived from mapping provided by the Niagara Region and are shown on Schedule B-5 (Land Use) to this Secondary Plan. Lands within the Environmental Protection One designation will be placed in an appropriate environmental zone in the Implementing Zoning By-law and shall incorporate appropriate setbacks for lot lines, buildings, structures, parking areas and other similar facilities from lands within the Environmental Protection One designation.

2.3.6. Environmental Protection 2

Planned Function

The purpose of the Environmental Protection Two designation is to recognize and maintain other natural heritage features not included in the Environmental Protection One designation. Features within the Environmental Protection Two designation represent Environmental Conservation Areas under the Core Natural Areas of the Regional Policy Plan.

Lands designated Environmental Protection Two are shown on Schedule B-5 (Land Use). The individual components of the Environmental Protection Two designation are identified as Significant woodlands in this Secondary Plan.

Permitted Uses

The principal uses of land in the Environmental Protection Two designation shall be:

- a) Forest, fish and wildlife management uses;
- b) Conservation and flood control projects where it has been demonstrated that they are necessary, in the public interest and other alternatives are not available; and,
- c) Small-scale, passive recreational uses such as trails that will have no negative impact on natural features or the natural heritage features or on the ecological functions of such features.

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General Conditions for New Development

New development and site alteration may be permitted in the Environmental Protection Two designation provided it has been demonstrated through an Environmental Impact Study (EIS) that there will be no negative impact to the natural heritage feature or its ecological functions. An Environmental Impact Study submitted in accordance with this section of the Secondary Plan shall be approved by the Region in consultation with the City and NPCA. Where a proposal addresses the requirement of no negative impact, the adjacent official plan designation will apply and a Zoning By-law Amendment will be required to identify those lands where site alteration and development will be permitted.

Where development or site alteration is proposed in proximity to lands in the Environmental Protection Two designation, efforts should be made, to maintain and where possible enhance linkages amongst lands designated Environmental Protection One and Environmental Protection Two.

In addition, where development or site alteration is proposed, a Tree Preservation Plan shall be required to provide recommendations with respect to the protection or enhancement of existing trees. The Plan shall be prepared in accordance with the Niagara Region Tree and Forest Conservation By-law and implementation of the plan should be authorized and monitored by a member of the Ontario Professional Forestry Association.

Adjacent Lands

Adjacent lands are the lands adjacent to a natural heritage feature within which impacts and compatibility must be considered and addressed. For the purposes of this Secondary Plan, adjacent lands are defined as all lands within 50 metres of land designated Environmental Protection Two.

Development and site alteration may be permitted on adjacent lands, subject to the completion of an Environmental Impact Study (EIS). The EIS will be required to demonstrate that there will be no negative impact on the natural heritage feature or its ecological function. The EIS will be approved by the Region in consultation with the City and the NPCA.

Lot Creation

Where lot creation is proposed in the Environmental Protection Two designation, the new lot(s) shall not be comprised of any land in the Environmental Protection Two designation. The retained lands shall be retained as a single lot in a natural state and shall be zoned to protect ecological functions and natural heritage features. Notwithstanding, where a public agency is securing land with critical habitat or features, such applications may be exempt from this policy requirement.

In conjunction with the pre-consultation and processing of any application, the City will ensure the Region and NPCA are provided an opportunity to review and provide comments on such applications.

2.3.7. Existing Watercourses & Ontario Power Generation Easement

The Secondary Plan area includes two watercourses at the southern limit of the Plan Area. One of the watercourses drains into Lake Gibson and is regulated by Ontario Power Generation (OPG). For this watercourse,

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OPG maintains easements at the south end of park, extending from the edge of the existing developed Business Park toward DeCew Road. The easement allows OPG to raise, lower, divert, alter and fluctuate the level and flow of waters on the lands. Any new proposed development and site alternation within this area will require consultation with OPG. The other watercourse runs east-west and may be subject to Niagara Peninsula Conservation Authority regulation, depending on the scope and scale of the proposed development.

2.3.8. Special Policy Area

Planned Function

The purpose of the Special Policy Area designation is to provide guidance for future decision-making related to the lands at the south end of the Brock Business Park Area. The following policies apply to the lands designated as “Special Policy Area” on Schedule 3.

Land Use Policies

Refer to the applicable polices in Section 2.3. of the Secondary Plan for the policies and permissions associated with the lands designated as Employment Area, Residential Area and Environmental Protection 1 and Environmental Protection 2 within the Special Policy Area. The policies of Section 2.3 shall continue to apply to the lands within the Special Policy Area until it can be demonstrated through further study that there is justification for any non-employment uses.

Need for Additional Studies

The justification for the conversion shall be based on the outcomes of the following additional studies as follows

a) Residential Market Demand Study

The study needs to consider long term demand and supply for new residential uses within the context of city-wide needs and area specific needs (up to a maximum of 20 years). The study should also include analysis of Thorold’s unique housing needs, considering the relationship between Brock University and the City of Thorold. Further, demonstration that additional non-employment uses will not adversely affect the overall viability of the employment area including land use compatibility and an assessment of the impact to existing employment uses and to overall employment growth potential.

b) Commercial Market Study

The study needs to consider long term demand and supply for new commercial uses within the context of neighbourhood needs (i.e. Brock Business Park Area and environs).

c) Planning Justification Report

The report will discuss how the criteria for employment land conversion identified in the Growth Plan for the Greater Golden Horseshoe Section 2.2.6 5. a)-f) has or has not been satisfied. The report will also address land use compatibility issues (i.e. the Ministry of the Environment and Climate Change D-series guidelines, noise, air quality, etc.).

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d) Urban Design Compatibility Study

The study must consider urban design needs including public and private realm improvements associated with the proposed development. Further, the study should identify need and location of pedestrian connections and infrastructure.

e) Municipal Servicing Study

The study needs to identify servicing demands for water, sanitary and stormwater, as well as identify the cost of servicing upgrades for proposed development. The study should also consider the impacts of any proposal on local and Regional services and identify any special measures required to satisfy flood-proofing.

f) Environmental Impact Study

Refer to Niagara Region's guidelines for preparing Environmental Impact Studies.

g) Transportation Impact study

The Transportation Impact Study must assess and confirm potential impacts to all modes of transportation on road networks and identify any potential improvements to the transportation network.

h) Record of Site Condition

Required for any properties proposed for residential use in accordance with the Environmental Protection Act.

i) Archaeological Assessment

The assessment should determine whether the site contains significant archaeological resources or areas of archaeological potential and recommend appropriate conservation methods to satisfy that all archaeological resource concerns have met licensing and resource conservation requirements.

j) Noise Study

The study should identify any potential impacts from nearby transportation or stationary noise sources and determine potential mitigation that may be required

k) Other studies

Any other studies required as part of the pre-consultation process

Implementation

- a) The City may adopt an Official Plan Amendment to change employment land uses to mixed use land uses within the Special Policy Area, provided that:
 - i. The proposed amendment addresses the tests for conversion as outlined in the Growth Plan for the Greater Golden Horseshoe, as amended being:
 - ii. There is a need for the conversion
 - iii. The municipality will meet the employment forecasts allocated to the municipality

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- iv. The conversion will not adversely affect the overall viability of the employment area and achievement of the intensification target, density targets and other policies
 - v. There is existing or planned infrastructure to accommodate the proposed conversion
 - vi. The lands are not required over the long term for employment purposes for which they are designated
 - vii. Cross-jurisdictional issues have been considered
- b) Lands with highway frontage and/or visibility on the 406, which are currently designated as Employment, are maintained as employment areas
 - c) All of the above-noted studies are completed to the satisfaction of the City, Region and relevant agencies
 - d) The amendment and proposed application align with all other relevant policies of the Brock Business Park Area Secondary Plan, such as, but not limited to, the urban design, transportation and infrastructure policies of the plan, as well as the City's Official Plan
 - e) The amendment conforms to Provincial and Regional policies

2.4. URBAN DESIGN

2.4.1. Urban Design Plan

The recommended urban design plan for the Brock Park is illustrated on **Schedule 3**.

2.4.2. Gateways

Planned Function

Gateways are intended to function as formal entranceways into Brock Park and should create a strong sense of place and arrival.

Location of Gateway Areas

There are three main Gateway Areas in the Brock Park:

- Schmon Parkway & Sir Isaac Brock Way (north)
- Schmon Parkway & Merrittville Highway (south)
- Merrittville Highway & Sir Isaac Brock Way (north)

Urban Design Elements

Gateway areas should be designed to include a range of elements, including but not limited to:



2 | SECONDARY PLAN POLICIES

- Intensive planting and landscaping that uses a mixture of native and ornamental species and, where possible, incorporate other natural elements, such as stone;
- Seasonal floral displays;
- Enhanced streetscaping, including but not limited to street furniture, decorative paving and other treatments which help to enhance the attractiveness of the street area;
- Public art;
- Lighting; and,
- Flags, banners and signage.

Adjacent Development

Where possible, gateways should be designed to consider the broader context of the area, which includes Brock University and lands on the north side of Sir Isaac Brock Way. Where new development or redevelopment is planned near a Gateway Area, the proposed development/redevelopment should be designed in a manner which complements the function of the Gateway Area, through:

- Architectural detailing;
- Use of colour and materials;
- External site landscaping and lighting; and,
- Building heights, massing and scale.

2.4.3. Streetscape Improvement Areas

Planned Function

Streetscape improvement areas are intended to provide direction for future streetscape works. Two general types of streetscaping improvements are proposed for the Brock Park:

- Major Streetscaping Improvements; and,
- Minor Streetscaping Improvements.

Major Streetscape Improvement Area

The Major Streetscape Improvement Area is proposed for Sir Isaac Brock Way. As the main entranceway into the broader district (which includes Brock University, the Brock Business Park and the lands within the City of St. Catharines), Sir Isaac Brock Way provides a unique opportunity to establish a strong visual and functional profile. Accordingly, the designation of this corridor as a Major Streetscaping Area is intended to enhance the attractiveness of the exterior limits of the Brock Park (and the overall entranceway to Brock University) on both sides of Sir Isaac Brock Way and address opportunities for cross-jurisdictional collaboration. Major Streetscaping elements should include, but are not limited to:

- Shade tree plantings on both sides of the street;
- Gateway improvements at the two major intersections (see 2.4.2);
- Consistent landscaping treatments on both sides of the street;

2 | SECONDARY PLAN POLICIES

- Improved active transportation infrastructure, including continuous sidewalks on both sides of the street;
- Street furniture such as benches/seating and improved/upgraded transit shelters; and,
- Signage and way-finding cues.

The City also encourages the Province to consider active transportation improvements on the Sir Isaac Brock Way/Highway 406 overpass which will improve network connectivity and safety. Improvements should consider both cyclists and pedestrians.

Minor Streetscape Improvement Areas

Minor Streetscape Improvement Areas are proposed for portions of Schmon Parkway, Merrittville Highway and any new local roads. Minor streetscaping elements should include, but are not limited to:

- Active transportation infrastructure, such as shared lane markings (painted bike iconography for shared spaces), bike parking, painted/textured crosswalks and lighting;
- Consistent tree plantings on both sides of the street;
- Where possible, continuous sidewalks on both sides of the street; and,
- Enhanced lighting and street furniture which builds upon the campus themes.

A sample of minor streetscape improvements are shown below (provided for illustrative purposes).

2 | SECONDARY PLAN POLICIES

Minor Streetscape Improvement: Before



Minor Streetscape Improvement: After



2 | SECONDARY PLAN POLICIES

2.4.4. Linear Park & Connectivity

Planned Function

The linear park illustrated on Schedule 3 is intended to fulfill two functions:

- Improve pedestrian safety;
- Provide improved internal pedestrian connectivity within the Park and to Brock University; and,
- Provide a formal location for leisure and recreational space.

Location of the Linear Park

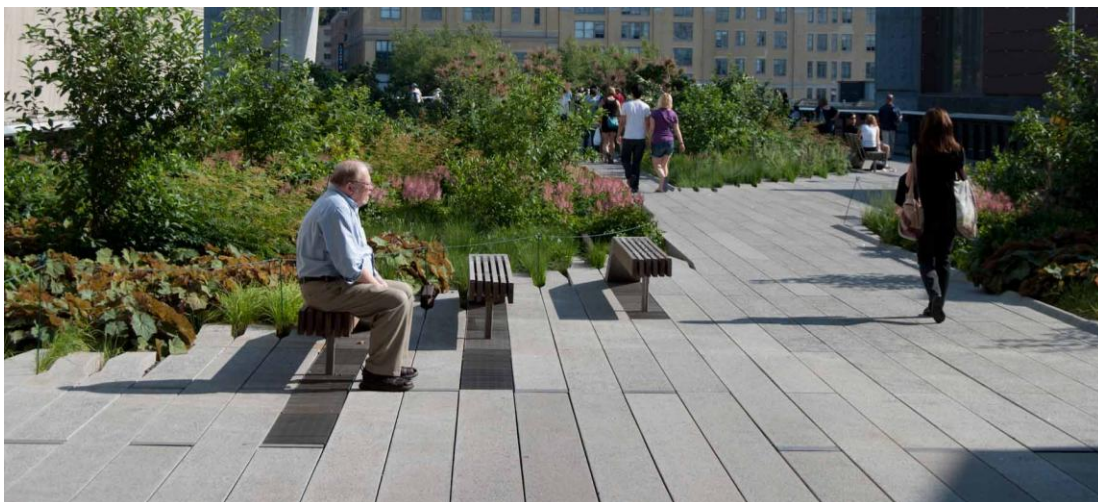
The location illustrated on Schedule 3 illustrates the general alignment of the Linear Park. The actual alignment may alter slightly than the one presented, provided the connection is at least 10 metres wide and includes the design elements outlined below.

Design Elements

The Linear Park should be designed to include the following key elements, which are to be accommodated with the 10 metre right of way:

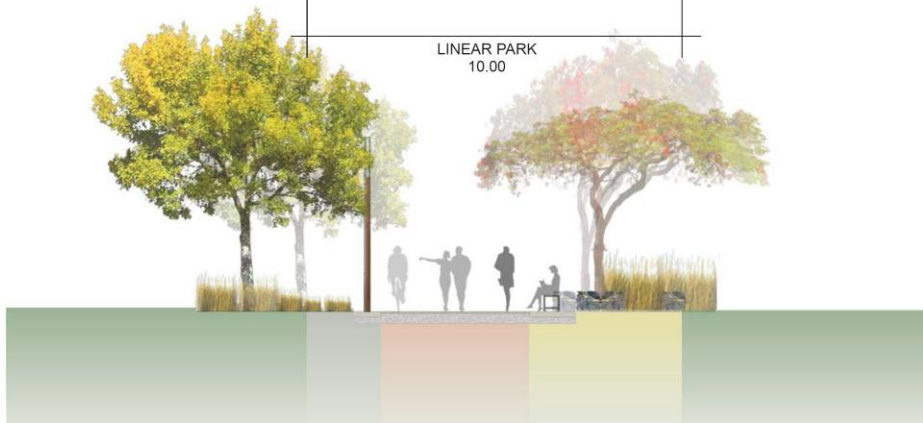
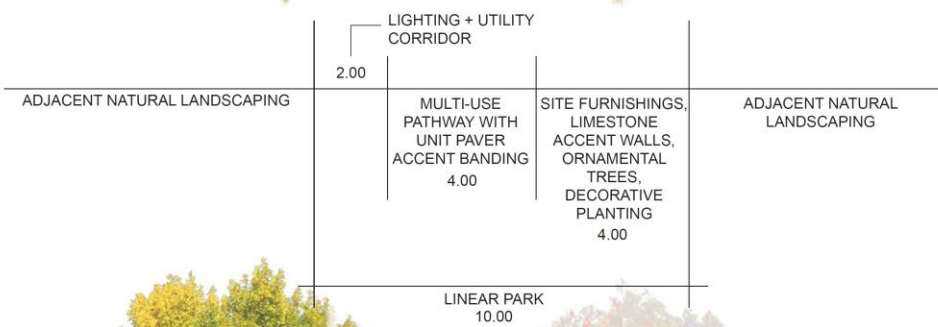
- Occasional locations for sitting and gathering (both large and smaller seating areas)
- Adjacent natural landscaped area, including trees, shrubs, grasses, etc;
- A multi-use pathway and active transportation infrastructure;
- Public art; and,
- Lighting.

Four sample cross sections are provided for illustration purposes and show how the various elements could be organized. Upon adoption of the Secondary Plan, the City will work collaboratively with associated landowners to undertake a detailed design of the linear park.



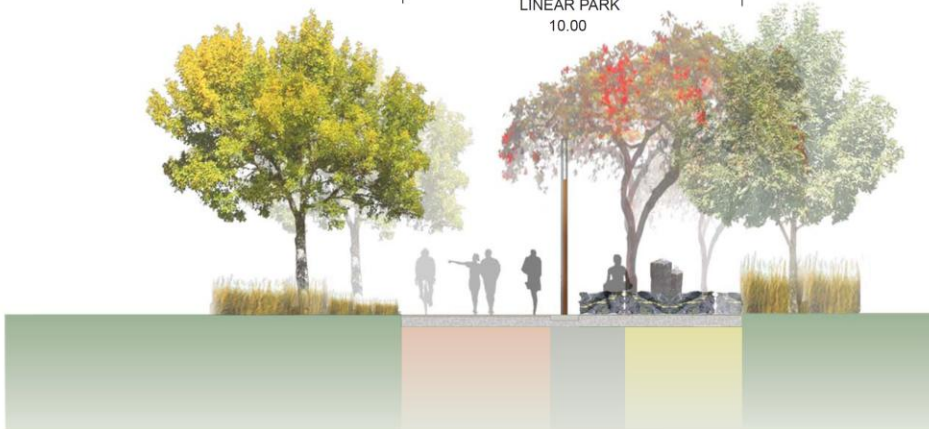
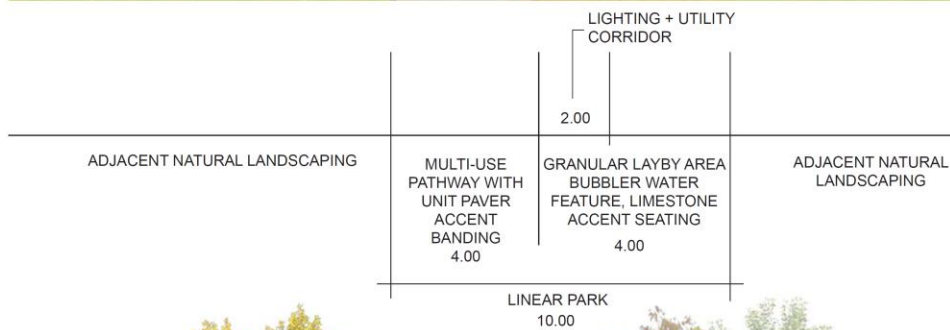
2 | SECONDARY PLAN POLICIES

Linear Park Concept, Small Seating and Gathering Area



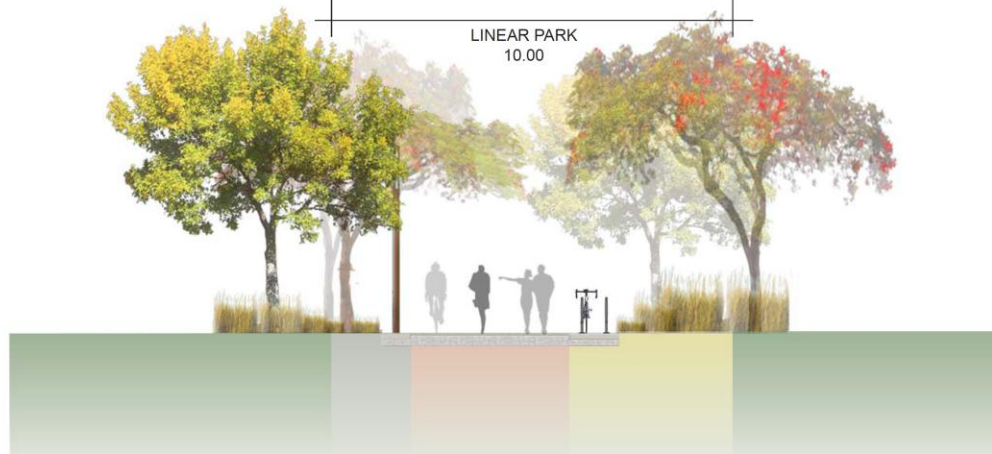
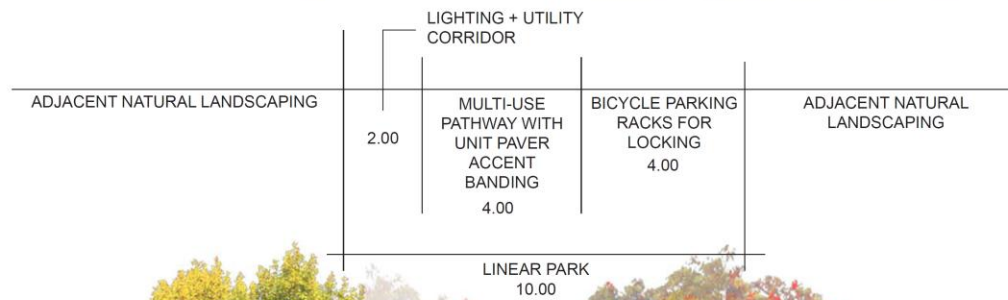
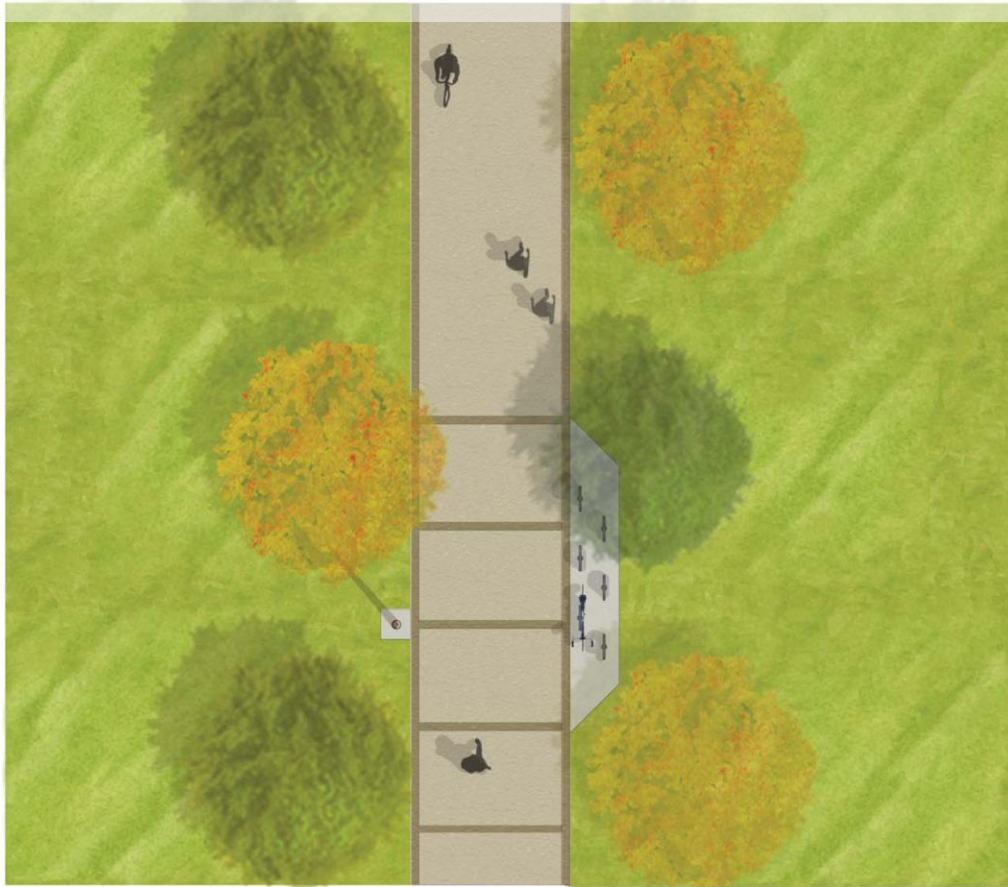
2 | SECONDARY PLAN POLICIES

Linear Park Concept, Large Seating and Gathering Area



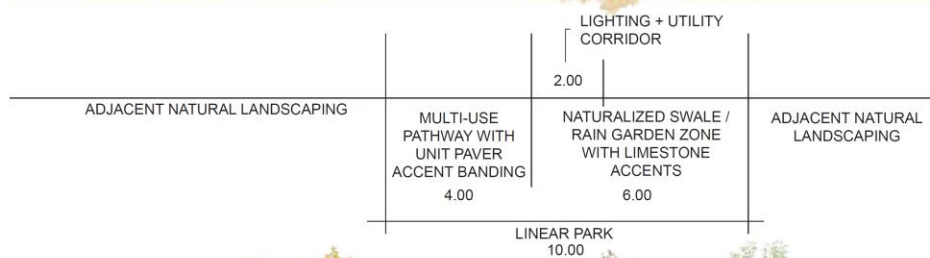
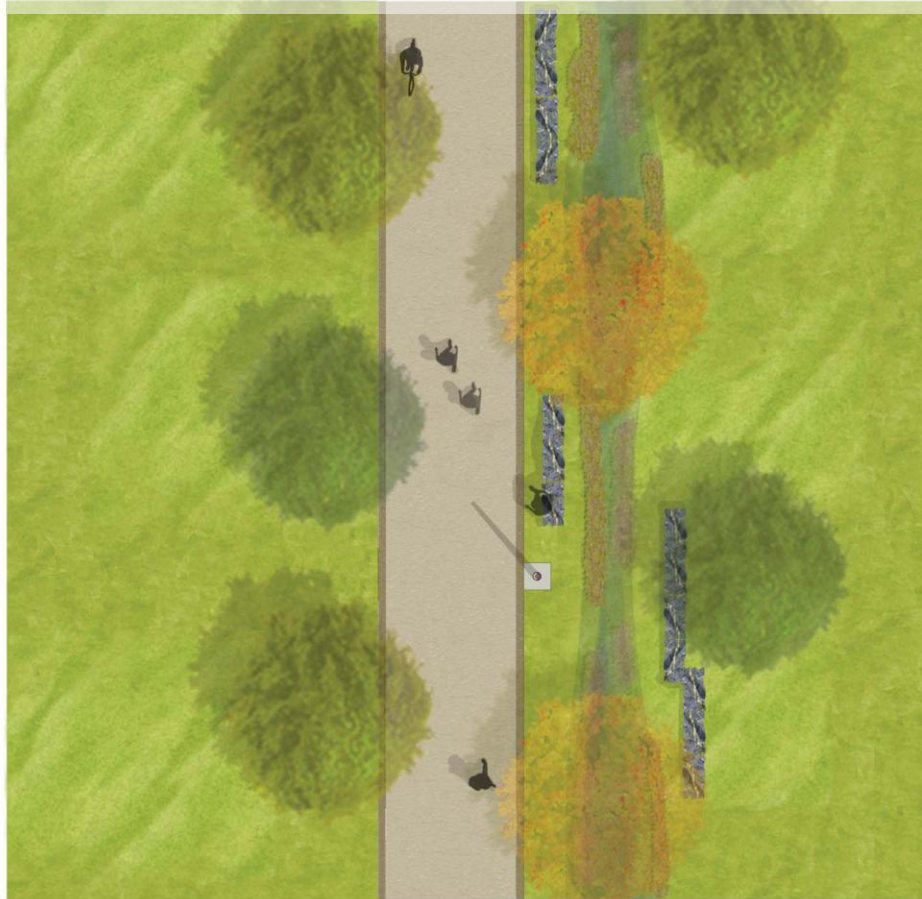
2 | SECONDARY PLAN POLICIES

Linear Park Concept, Active Transportation Infrastructure



2 | SECONDARY PLAN POLICIES

Linear Park Concept, Public Art



2 | SECONDARY PLAN POLICIES

2.4.5. Private Realm Urban Design Guidelines

Private Realm Guidelines

The private realm urban design guidelines are intended to:

- Provide flexibility for site development; and,
- Ensure a consistent treatment of the overall campus theme through architecture and landscaping.

Mixed Use Areas

Within Mixed-Use areas, new buildings shall be street-oriented, with parking located at the side or rear of the lot. The building façade should cover a minimum of 75% of the frontage and ensure that adequate space for access and side-yard landscaping treatments are provided. Street-oriented buildings should be activated with a range of elements, including generous space for pedestrians, shade trees, seating and other elements which enhance the pedestrian realm.



Employment Areas

Generally, new buildings should be set-back from the street-edge and include a generous landscaped strip separating the building from the sidewalk. The majority of parking should be located at the side or rear of the building(s). A small amount of parking (10% of the total number of spaces) may be provided in the front, provided that the landscaped treatments provide sufficient buffering and screening from the street. Where parking space is provided at the front, enhancements to the private landscaped area are to be provided to activate the street interface area, including space for seating, water features, public art, enhanced landscaping, etc.

Building Facades

Building facades which front onto the street should have a high degree of glazing, with primary access from the front of the building.

Building Materials & Architectural Styles

Development and redevelopment within the Brock Park should feature a variety of architectural styles - from traditional, to modern and post-modern. Buildings should attempt to incorporate materials which help to reinforce the campus theme, including, but not limited to:

2 | SECONDARY PLAN POLICIES



- Limestone and masonry;
- Red brick;
- High degree of glazing; and,
- Other natural elements.

The use of corrugated steel as a finishing material should be avoided. Buildings should also avoid the use of dark, non-reflective surfaces for roofs (to reduce potential for urban heat island effect).

Blank Facades

Visible components of buildings should be treated with a high degree of design. Blank facades which front onto a public street, private laneway or are visible from a Highway are not permitted.

Building Rooftops

Rooftop mechanical systems should be incorporated into the overall building's architecture and should be screened from view. Planted or green roofs are encouraged.

2 | SECONDARY PLAN POLICIES

Building Landscaping

Landscaped areas should use a variety of local elements, including native trees, shrubs, grasses, flowers, stones and other materials. Landscaped areas should also include a mixture of formal and informal seating areas for employees, visitors and residents (as the case may be). Seating areas should be shaded and include lighting (where appropriate).



Green Building & Site Layout Elements

Buildings are encouraged to promote sustainable design practices and should include a variety of “green” building elements, including but not limited to:

- Green roofs and green/planted walls;
- Community gardens (as appropriate);
- Energy efficient thermal and energy systems, such as metering, passive and active solar gain, etc.;
- Potable water conservation techniques such as efficient fixtures, water reuse systems (e.g. irrigation), metering, etc.; and,
- Other elements derived from best practices or LEED certified program.



2 | SECONDARY PLAN POLICIES

Exterior Building Lighting

Landscape and exterior building lighting should be used to highlight architectural accents and to also illuminate linkages. Accent lighting should be designed to avoid any unnecessary spill-over.

Landscape Buffers

Areas adjacent to internal paths or the Linear Park should include a 3 metre landscape zone to ensure a smooth transition between public and private realm. Where appropriate and required, enhanced landscaped buffer areas which are beyond the 3 metres may be required to provide for transition between different types of lands use. Landscape Buffer Areas identified on Schedule 3 which are located between the Mixed Use areas and Employment Areas shall include enhanced landscaping treatments.

Parking Areas

Parking areas should be safe, well lit, and include clear paths for pedestrians. Parking areas should also be designed to reduce their environmental footprint and include landscaping around the periphery and the interior of the site. Landscaped areas should include trees, shrubs and, where appropriate, bio-swales and permeable surfaces. Barrier free parking should be located as close to the main entrance as possible. Where parking structures are provided, the architectural detailing should be attractive and consistent with the overall site design. Inter-connected parking areas and shared parking areas are also encouraged (where appropriate and feasible).

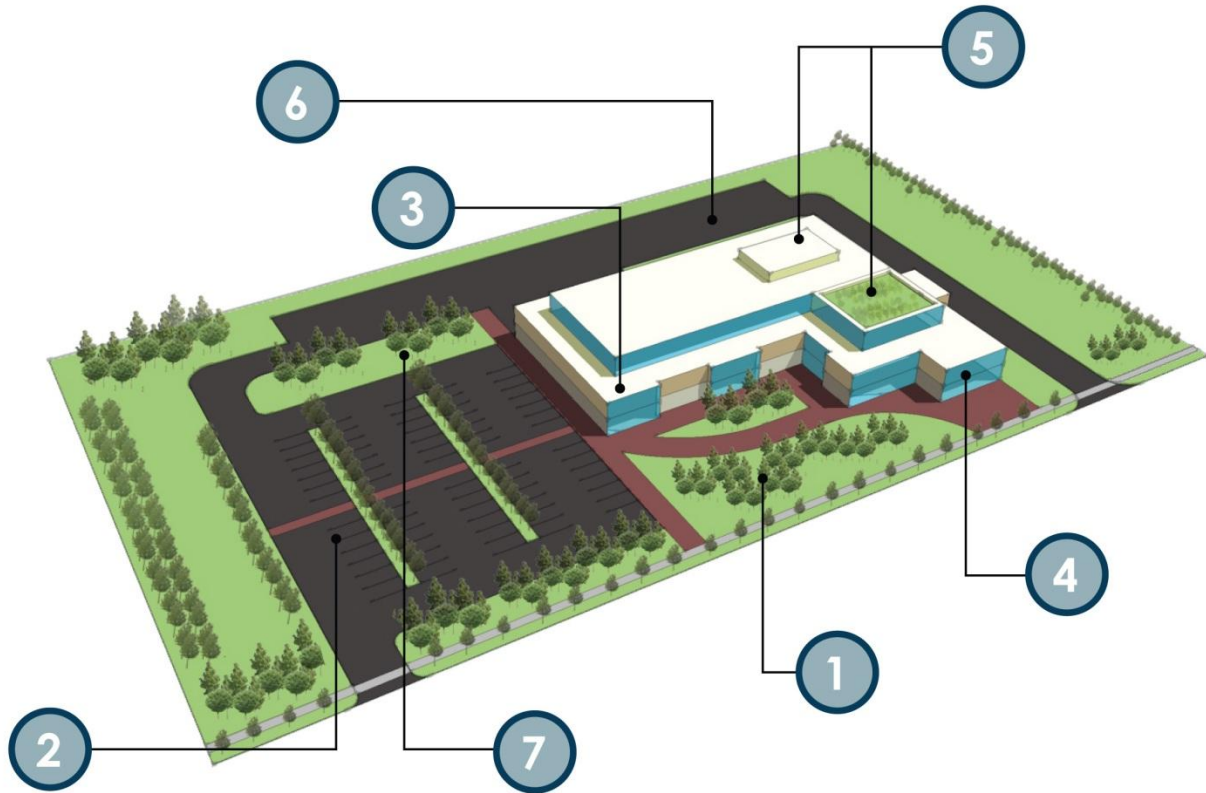
Loading and Outdoor Storage

No outdoor storage of raw materials or finished products is permitted. Loading and garbage enclosures should be located at the rear of the building. Garbage enclosures should also be screened with landscaping.



2 | SECONDARY PLAN POLICIES

Employment Area Example

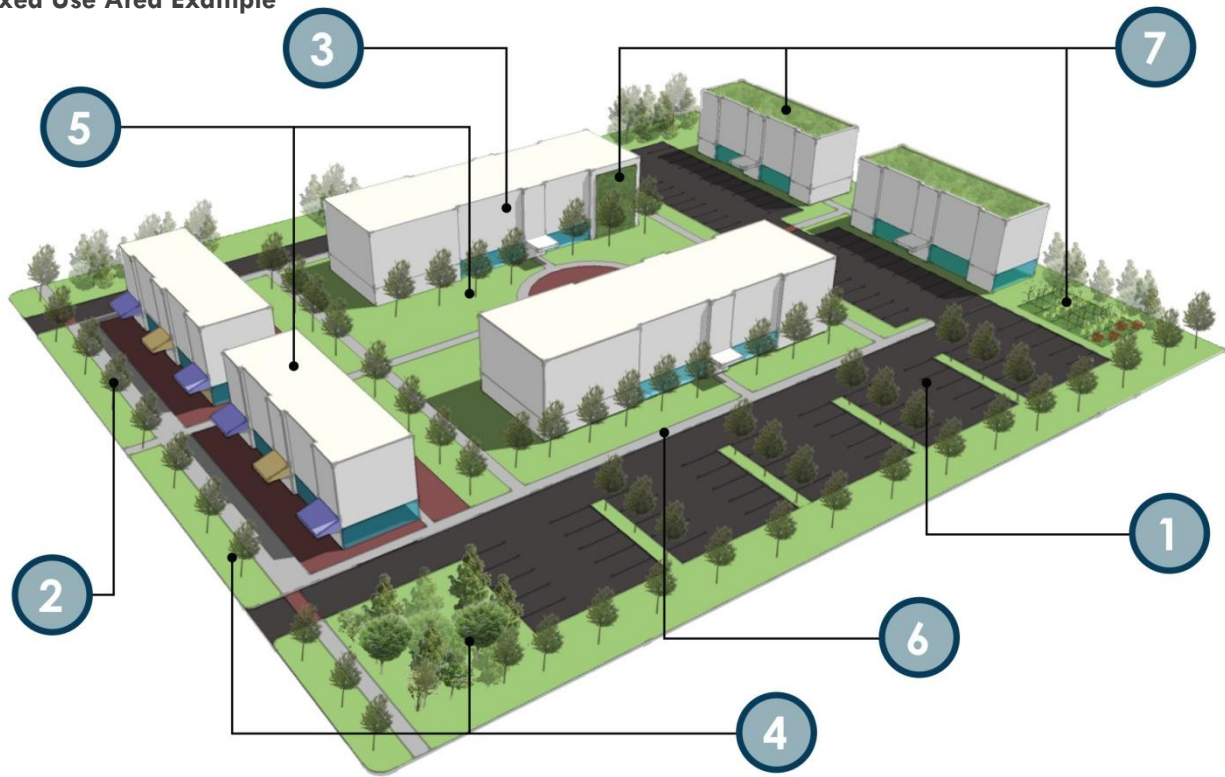


LEGEND

1. New buildings should be set back from the street-edge and include a landscaped strip separating the building from the sidewalk.
2. Majority of the parking should be located at the side or rear of the building(s).
3. Buildings should attempt to incorporate materials which help to reinforce the campus theme, including but are not limited to: limestone & masonry, red brick, high degree of glazing and, other natural elements.
4. Visible components of buildings should be treated with a high degree of design. Blank façades which front onto a public street, private laneway or are visible from a Highway are not permitted.
5. Rooftop mechanical systems should be incorporated into the overall building's architecture and should be screened from view. Planted or green roofs are encouraged.
6. Loading and outdoor storage to be located in the rear, and be screened from street views.
7. Parking areas should be designed to reduce their environmental footprint and include landscaping around the periphery and the interior of the site.

2 | SECONDARY PLAN POLICIES

Mixed Use Area Example



LEGEND

1. All parking shall be located at the side and/or rear of the buildings.
2. Landscaped treatments should provide sufficient buffering and screening from the street. Wide sidewalk and promenade allow for enhanced pedestrian activity and opportunities for business to utilize the space.
3. Buildings should attempt to incorporate materials which help to reinforce the campus theme, including but are not limited to: limestone & masonry, red brick, high degree of glazing and, other natural elements.
4. Landscaped areas should be designed to reinforce the campus setting and use a variety of local elements, including native trees, shrubs, grasses, flowers, stones and other materials.
5. Amenity areas should also include a mixture of formal and informal seating areas for employees, visitors and residents (as the case may be). Seating areas should be shaded and include lighting (where appropriate).
6. Parking areas should be safe, well lit, and include clear paths for pedestrians. They should also be designed to reduce their environmental footprint and include landscaping around the periphery and the interior of the site. Treatments could include: trees, shrubs and where appropriate bio-swailes and permeable surfaces.
7. Buildings are encouraged to promote sustainable design practices and could include a variety of “green” building elements including but not limited to: green roofs/walls; community gardens; energy efficient thermal and energy systems; potable water conservation techniques; and, other elements derived from best practices or LEED certified program.

2 | SECONDARY PLAN POLICIES

2.4.6. Accessibility

Alignment of Public Spaces with Accessibility for Ontarians with Disabilities Act (AODA)

All new public spaces (as defined in the Act) shall be designed and constructed to meet Ontario's Design of Public Spaces Standards (Accessibility Standards for the Built Environment, Part IV.1 of Ontario Regulation 191/11). All applicable aspects of the Act should be met.

2.5. TRANSPORTATION & INFRASTRUCTURE

2.5.1. Transportation

Proposed Transportation Network

The proposed transportation network for the Brock Park is designed to accommodate all modes of transportation, including automobiles, transit, cycling and pedestrians.

Proposed Improvements & Enhancements to Transportation Network

The existing road infrastructure, along with proposed improvements for Sir Isaac Brock Way are expected to be sufficient to accommodate the proposed land use plan within the existing built-up area of the Park. As the Park matures and approaches build-out, improvements to the active transportation network should include, but are not limited to:

- Completion of a continuous sidewalk network along Schmon Parkway, Sir Isaac Brock Way and Merrittville Highway
- Cycling infrastructure to promote improved internal circulation and external connectivity; and,
- Increased transit services in-line with development pattern and user needs (along with transit supportive infrastructure such as bus shelters, lay-bys, etc.).

Transit Supportive Development

The proposed land use plan promotes infilling and intensification at a scale which would support increased transit ridership throughout the Brock Park.

Complete Streets

The urban design improvements presented in this Plan are intended to support complete streets and are targeted to areas which are deficient, namely pedestrian and cycling infrastructure. The expectation is that a complete streets approach will be undertaken for the Major and Minor Streetscape improvement areas depicted on Schedule 3.

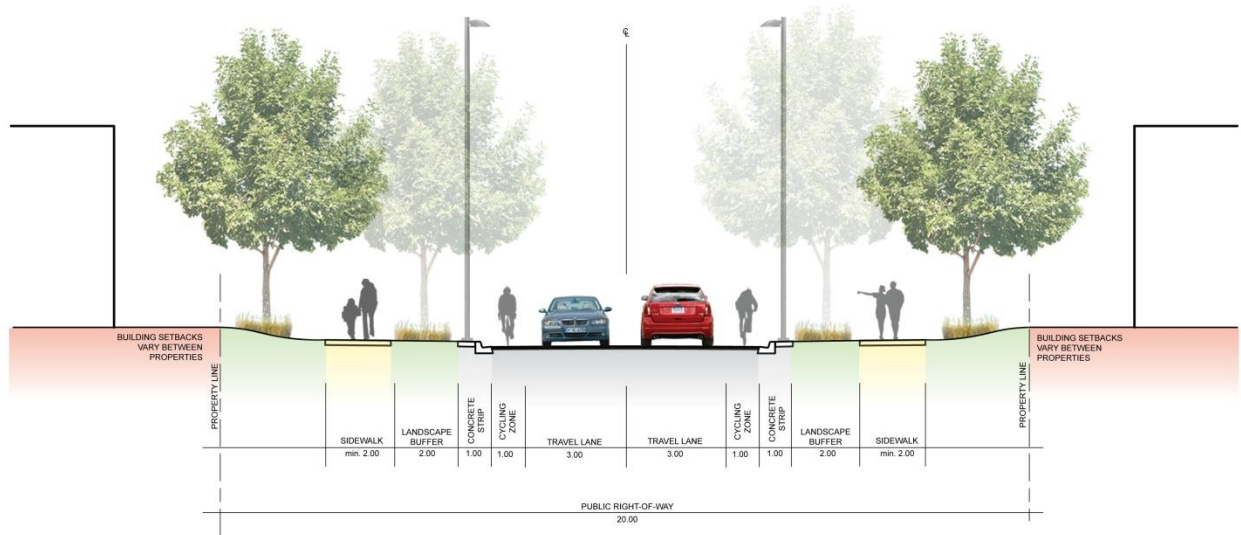
All new streetscape and road improvements will designed and constructed to:

- Accommodate safe and accessible spaces for all users;

2 | SECONDARY PLAN POLICIES

- Be context-sensitive, considering the road function (speed, traffic, capacity, etc.) for all modes (automobiles, pedestrians, cycling and transit); and,
- Enhance the overall attractiveness of the Brock Business Park.

An illustrative example is shown below:



Sample cross section of Schmon Parkway (north end)

2.5.2. Infrastructure

Sanitary Sewer

To allow for future, and potentially intensified development in the Brock Park, the sanitary sewer system needs to be upgraded. The system downstream of the Highway 406 crossing, in the Confederation Heights development must be up-sized, as well as the crossing under Highway 406. A number of sections of sanitary sewer within the Brock Business Park also require up sizing.

The anticipated infrastructure required to service the redevelopment of the Brock Park is illustrated on Schedule 4.

The Confederation Heights pumping station is expected to require upgrading to handle the increased flows associated with intensification within the Brock Park. The pumping station is not currently at capacity and contribution from development (development charges) to the Region will be needed to fund future upgrades to the pumping station.

Water conservation and other sustainable design considerations should be included as part of development criteria for any future developments to reduce the increase in flows to the Brock Park sanitary sewer infrastructure.

Any proposed development on Decew Road or south of the existing business park needs to be reviewed with respect to the ability to service the proposed development by the construction of new infrastructure. A review of existing topography is needed to confirm if pumping of the sanitary sewage is required.

2 | SECONDARY PLAN POLICIES

Water Supply

A 900mm trunk watermain exists on Sir Isaac Brock Way adjacent to the business park and upgrades to Regional infrastructure are not expected associated with intensification in the business park. Following the determination of future water demand associated with planned intensification in the business park, confirmation of available capacity with the existing Regional water infrastructure should be undertaken.

Based on infrastructure records that were available that do not show a connection from the watermain on Merritville Highway to Sir Isaac Brock Way it is recommended that the existing watermain stub on Merritville Highway south of Sir Isaac Brock Way be extended and connected to the existing watermain at the intersection of Merritville Highway and Sir Isaac Brock Way.

Hydrant flow testing should be undertaken in the park to confirm the availability of fire flows once the business park revised planning densities have been confirmed.

Storm Water

Storm water management design criteria for storm water quality should be reviewed and / or developed for new development.

The proposed area of impermeability needs to be reviewed with the proposed development plan. If the area of impermeability increases with the proposed plan, then, storm sewer sizing will need to be reviewed and a storm water servicing plan developed for the business park.

Redevelopment or development of vacant and existing lots will need to produce a storm water management plan which may include on site storage to address any increased storm flows to the existing storm sewer system.

Any proposed development on Decew Road or south of the existing business park needs to be reviewed with respect to the ability to service the proposed development for storm water by the construction of new infrastructure. A review of existing topography is needed to confirm available outlets that may not be the storm sewers in the existing business park. Existing drainage channels and road side ditches would be included in this review

2.6. IMPLEMENTATION

2.6.1. Financing Improvements

In preparing the Secondary Plan, the City has identified capital planning requirements for the proposed improvements for the Brock Park. The capital requirements will be used to finalize the Brock Park financial strategy, which will be implemented upon adoption of the Secondary Plan. The financial strategy considers:

- Cost-sharing opportunities for the implementing improvements;
- The eligibility of proposed improvements as potential “growth-related” projects which can be incorporated in the City’s Development Charges program;
- Opportunities to leverage provincial and federal funding programs to implement sustainable design practices;
- Opportunities to harmonize the City’s Gateway Community Improvement Plan with the Brock Park Secondary Plan; and,
- The timing and potential phasing for proposed improvements.

2.6.2. Urban Design Plan Implementation

Major Streetscaping improvements along Sir Isaac Brock Way and Minor Streetscaping improvements along Merrittville Highway are the responsibility of the Region of Niagara. Minor Streetscaping improvements along Schmonn Parkway are the responsibility of the City of Thorold. The Linear Park will be prepared and executed as a joint exercise led by the City of Thorold, with collaboration from private landowners and the Region of Niagara. The Linear Park lands are to be conveyed to the City and the City will maintain the linear park upon completion of construction. Gateway improvements within the public realm are the responsibility of the City of Thorold and the Region of Niagara (depending on location of features). Gateway improvements within the private realm will be addressed through site plan control when development/re-development is occurring.

2.6.3. Other Supporting Studies

Other supporting studies may be requested in support of individual development applications within the Brock Park. Supporting studies may include, but are not limited to the following areas:

- Transportation and active transportation;
- Land Use compatibility;
- Natural environment;
- Urban design;
- Land use planning;
- Infrastructure; and,
- Market and economics.

2 | SECONDARY PLAN POLICIES

2.6.4. Zoning

The City will update its zoning by law to align the zoning regulations within the Brock Park with the policies of the Secondary Plan. The City should also consider the use of a Holding designation to address any interim issues.

2.6.5. Site Plan Control

The urban design guidelines are intended to be flexible and should be implemented through site plan control.

2.6.6. Coordination with Brock University & City of St. Catharines

The City will work closely with Brock University as it prepares a new Campus-wide Master Plan to ensure that alignment between this Secondary Plan and the new Campus Master Plan. The City of Thorold will also work closely with the City of St. Catharines to ensure consistent policy direction between both Cities' plans. The City of Thorold supports opportunities for more comprehensive and collaborative district-wide planning effort of the broader area (Brock Park, Brock University and the lands around the Hotel Dieu Shaver), including opportunities for:

- Linking active transportation networks;
- Improving way-finding, lighting and pedestrian safety; and,
- Integrated long range transportation and infrastructure planning.

2.6.7. Coordination with Region of Niagara

The Niagara Region is undertaking a district planning exercise. The district planning exercise will examine the broader geographic area, including the Brock Business Park Area, Brock Campus and other lands in St. Catharines. The City supports the Region's district planning initiative and it is understood that this Secondary Plan provides direction for managing change within the Brock Business Park Area. The policies of this Plan should be used as a foundation element within the Region's district plan. The City will continue to work with the Region in the development of the District Plan and will consider necessary modifications to this Secondary Plan, upon completion of the Niagara Region's district planning exercise.

The City also encourages the Region to also consider leveraging ongoing and future environmental assessment (EA) projects to implement the transportation and urban design objectives of this plan (along with the specific environmental assessment requirements as per the Ministry of the Environment and Climate Change Class EA process). The City further encourages the Region to prepare a Site Plan for the Regional Headquarters site to address opportunities for intensification, infilling, active transportation and urban design improvements.

2.6.8. Gateway Economic Zone & Centre Community Improvement Plan

Applicants considering new employment development within the Brock Business Park Area should consider opportunities for accessing development incentives available under the City's Gateway Economic Zone & Centre Community Improvement Plan. Additional information is available through the City of Thorold and Niagara Region.

2 | SECONDARY PLAN POLICIES

2.6.9. Additional Tools

Upon adoption and approval of the Secondary Plan, the City will consider the need for additional implementation tools, including but not limited to:

- A development permit program;
- Comprehensive urban design performance standards for the area;
- The use of the Environmental Assessment process as a means of addressing and implementing urban design and active transportation solutions for Sir Isaac Brock Way (and other areas where appropriate);
- Where a development permit system is not undertaken, the City will also consider opportunities for the use of Section 37 of the Planning Act (“bonusing” and community benefits) as a means of implementing the various Park-wide public improvements recommended in the Secondary Plan, such as:
 - Enhancements to planned active transportation network;
 - Enhancement to planned transit infrastructure;
 - Enhancements to gateway areas, including signage, public art and landscaping;
 - Other community or public benefits deemed appropriate by the City; and,
- A business incubator/research and development sector feasibility study should be conducted in cooperation with Brock University and the Region of Niagara.

2.6.10. Monitoring

The City will monitor the progress and implementation of the Brock Business Park Area Secondary Plan and make periodic updates to the Plan as required. At a minimum, the Secondary Plan will be reviewed at updated as part of the City’s regular Official Plan review cycle.

3 SCHEDULES



**BROCK BUSINESS PARK AREA
SECONDARY PLAN**

SCHEDULE 1 : SECONDARY PLAN LIMITS



LAND USE, LANDSCAPE & URBAN DESIGN ELEMENTS LEGEND

■ MAJOR INSTITUTIONAL	■ OPEN SPACE
■ MEDIUM DENSITY RESIDENTIAL	■ EXISTING TREES
■ LOW DENSITY RESIDENTIAL	■ PAVED AREAS
■ TOURIST COMMERCIAL	- - - SECONDARY PLAN LIMITS
■ EMPLOYMENT	
■ COMMUNITY COMMERCIAL	

NOTE:

LIMITS OF SURROUNDING USES WHICH ARE ADJACENT TO THE BROCK PARK ARE PROVIDED FOR CONTEXT ONLY, AND ARE NOT PART OF THIS PLAN.

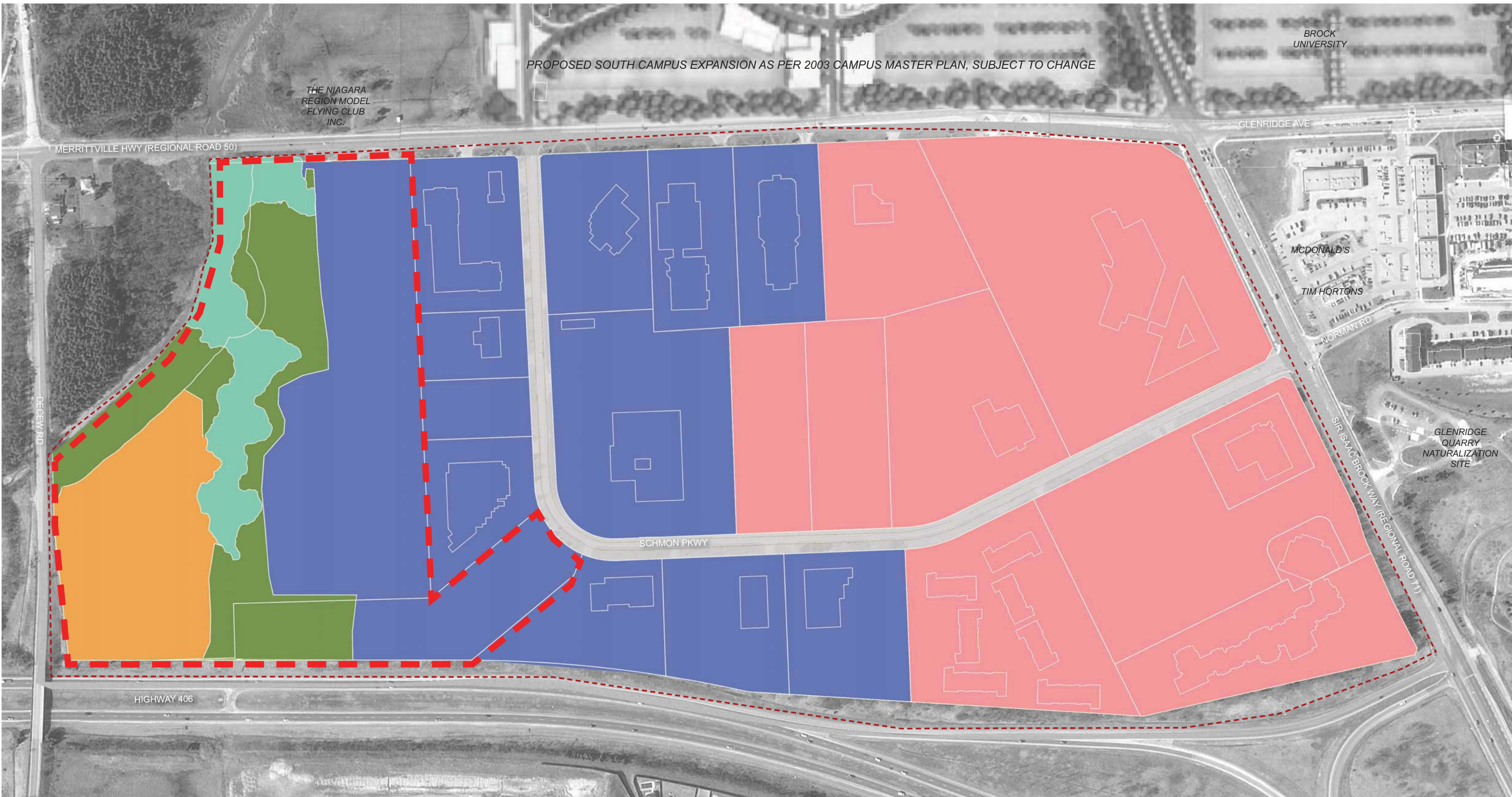
ALSO NOTE THAT OTHER DETAILS DEPICTED ON THIS SCHEDULE ARE PROVIDED FOR CONTEXT PURPOSES ONLY AND ARE GENERAL IN NATURE.

NOT TO SCALE



PROJECT: 141018
STATUS: FINAL
DATE: 8/20/2015

PROPOSED SOUTH CAMPUS EXPANSION AS PER 2003 CAMPUS MASTER PLAN, SUBJECT TO CHANGE



**BROCK BUSINESS
PARK AREA
SECONDARY PLAN**
SCHEDULE 2: LAND USE PLAN



LAND USE

- MIXED USE
- EMPLOYMENT
- RESIDENTIAL
- ENVIRONMENTAL PROTECTION 1
- ENVIRONMENTAL PROTECTION 2

- PLAN AREA
- SPECIAL POLICY AREA

SCALE



PROJECT: 141018
STATUS: FINAL
DATE: 9/22/2015

PROPOSED SOUTH CAMPUS EXPANSION AS PER 2003 CAMPUS MASTER PLAN, SUBJECT TO CHANGE






**BROCK BUSINESS PARK AREA
SECONDARY PLAN**

SCHEDULE 3: ACTIVE TRANSPORTATION AND PUBLIC REALM IMPROVEMENTS

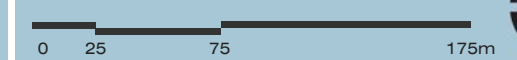


LEGEND

-  GATEWAY IMPROVEMENT AREA
-  MINOR STREETScape IMPROVEMENTS
-  MAJOR STREETScape IMPROVEMENTS
-  LINEAR PARK
-  TRAIL/ACTIVE TRANSPORTATION CONNECTION

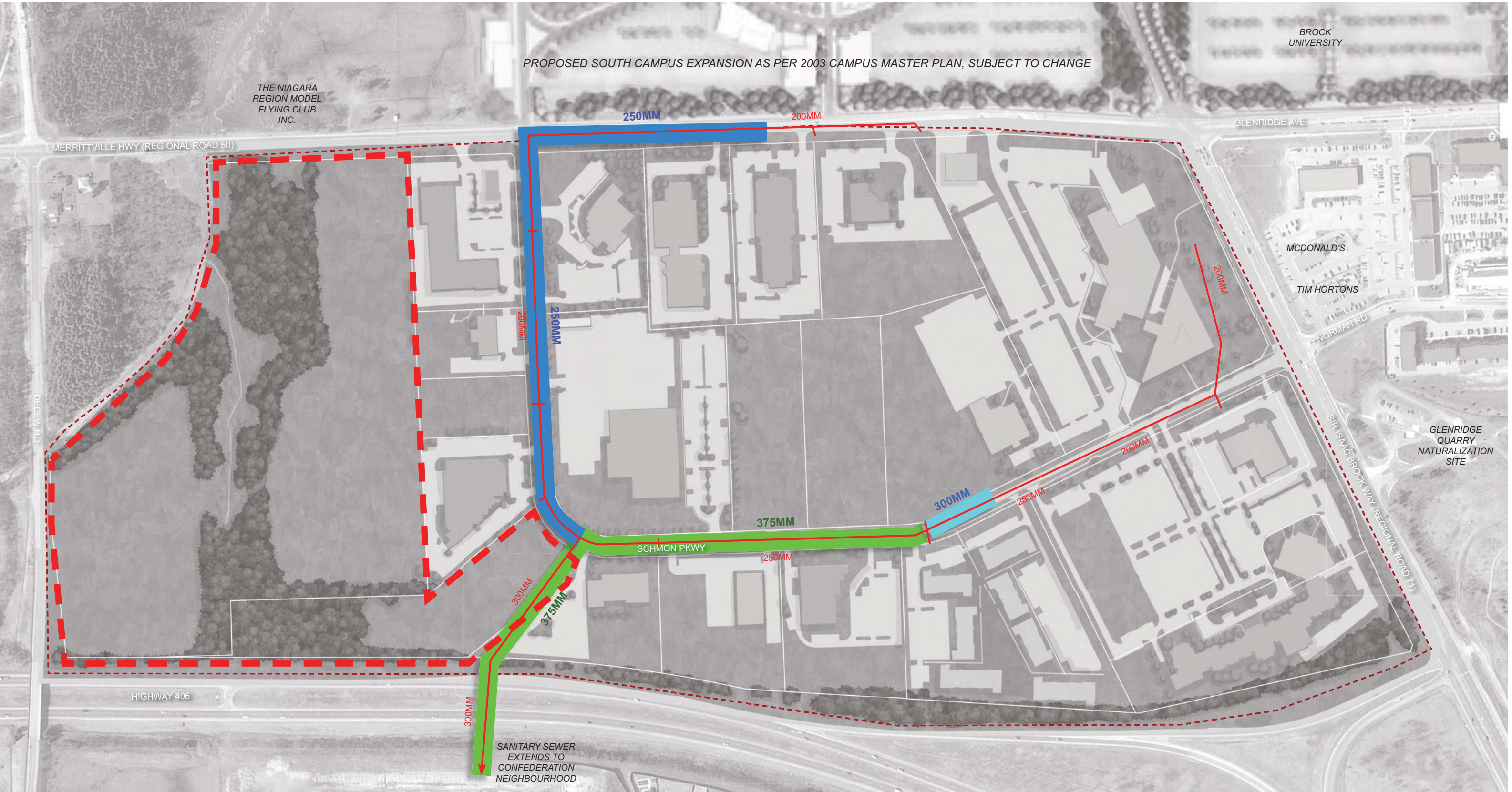
-  LANDSCAPE BUFFER
-  PLAN AREA
-  SPECIAL POLICY AREA

SCALE



PROJECT: 141018
STATUS: FINAL
DATE: 9/22/2015

PROPOSED SOUTH CAMPUS EXPANSION AS PER 2003 CAMPUS MASTER PLAN, SUBJECT TO CHANGE



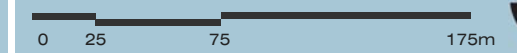
BROCK BUSINESS PARK AREA
SECONDARY PLAN
 SCHEDULE 4: INFRASTRUCTURE



LEGEND

- 250MM UPGRADE
- 300MM UPGRADE
- 375MM UPGRADE
- EXISTING SANITARY SEWER
- PLAN AREA
- SPECIAL POLICY AREA

SCALE



PROJECT: 141018
 STATUS: FINAL
 DATE: 9/22/2015

4 DEFINITIONS

4 | DEFINITIONS

All definitions provided in the City's Official Plan apply. Additional, plan specific definitions are provided below.

Complete Streets: A complete street is a public right-of-way where the transportation facilities and adjacent land uses are planned, designed and constructed to accommodate users of all ages and abilities including pedestrians, bicyclists, transit vehicles, automobiles and freight traffic.

APPENDIX A



Memorandum

Organization: City of Thorold	BluePlan Project No: T003-0042
Attention: Sean Dunsmore	Date: February 27, 2014
Project: Brock Business Park Build Out Capacity Analysis	
RE: Analysis Brief	

1. Background

The City of Thorold (City) retained BluePlan Engineering Consultants Limited, (BluePlan), to perform a hydraulic modelling capacity analysis to determine what sanitary sewer capacity upgrades are required to accommodate the ultimate future build-out conditions within the Brock Business Park (BBP) area as defined in the *Brock Business Park Master Plan (Master Plan) (Dillon Consulting, 2013)*. This report provides a planning framework that supports the current and future developments in the area while providing opportunities for new land uses within the BBP area.

The study area, **Figure 1**, consists of the area bounded by St. David's Road to the North, Merritville Highway to the West, Decew Road to the South and Highway 406 to the East. The existing landuse within the BBP is primarily employment and also includes institutional, residential, mixed use and environmental protection areas.

In addition to the preceding City Staff requested that the BluePlan examine the potential impacts of:

- The development of Brock University lands to the West of the BBP. Given the site proximity to Brock University and Hwy 406, there is an expectation that the area will redevelop and will require servicing via the BBP.
- The proposed development of a medical office building at 3310 Schmon Pkwy

1.1. Analysis Objectives

The basis for the BBP capacity analysis is to review and identify required sanitary sewer system upgrades to accommodate full build-out conditions in the BBP service area. This analysis is confined to City owned wastewater collection system infrastructure.

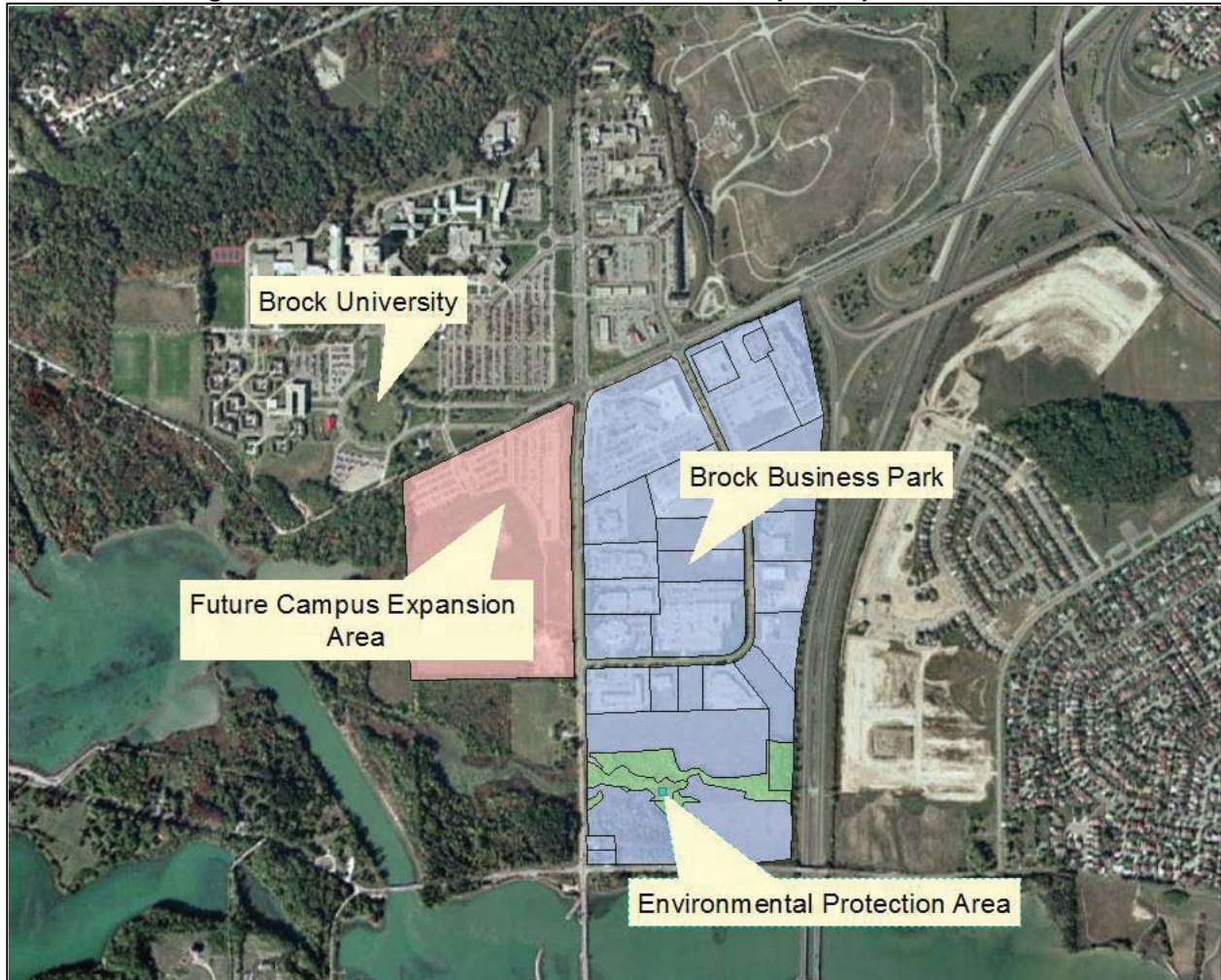
Figure 1 highlights the potential development areas that would impact the existing and proposed sanitary sewer servicing.

The key elements of the BBP capacity analysis consists of:

- Estimating BBP build-out flows
- Reviewing system performance under various I&I scenarios.
- Determining the required sanitary sewer sizing base on build-out conditions.

The system analysis was completed by employing the existing City of Thorold InfoSWMM (Innovyze) model. System capacity analysis was limited to a review and conceptual sizing of the gravity sewer system within City owned infrastructure

Figure 1 – Brock Business Park and Future Campus Expansion Areas



2. Current Conditions – Existing Infrastructure

The BBP area is service by four local gravity sewer mains that generally follow the local road alignments and ultimately drain to the Confederation Heights Pump Station. **Figure 2** highlights the local area infrastructure.

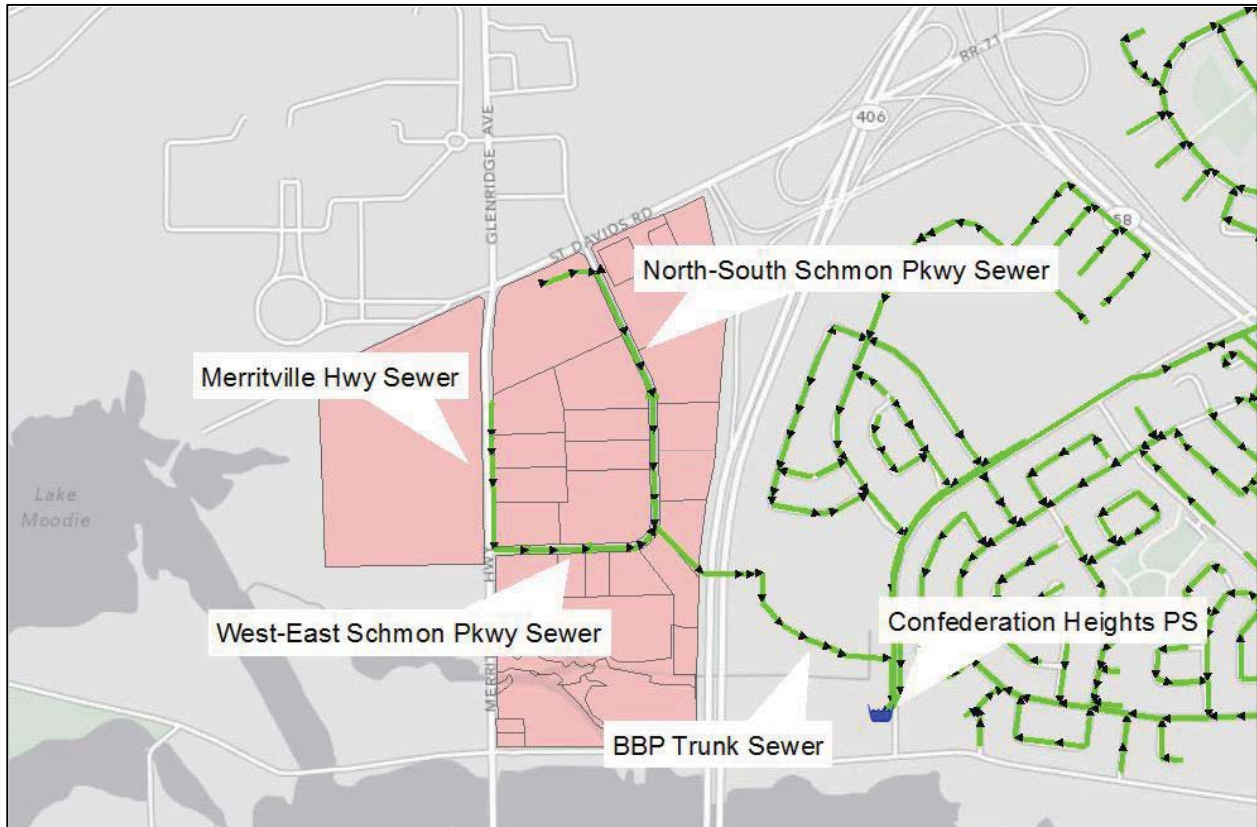
Merritville Highway Sewer - 200 mm diameter gravity sewer going from North to South along Merritville Highway

West-East Schmon Parkway Sewer - 200 mm diameter gravity sewer going from West to East along Schmon Parkway

North-South Schmon Parkway Sewer - 250 mm diameter gravity sewer going from North to South along Schmon Parkway

Brock Business Park Trunk Sewer - 300 mm diameter gravity sewer that directs the wastewater flow from the BBP to the Confederation Heights Pump Station.

Figure 2 - Brock Business Park Existing Infrastructure



3. Estimated system build out flows

3.1. Background Studies

An in depth review of applicable background studies and documentation was conducted to bring context to this assignment and aid in estimating appropriate build-out flows.

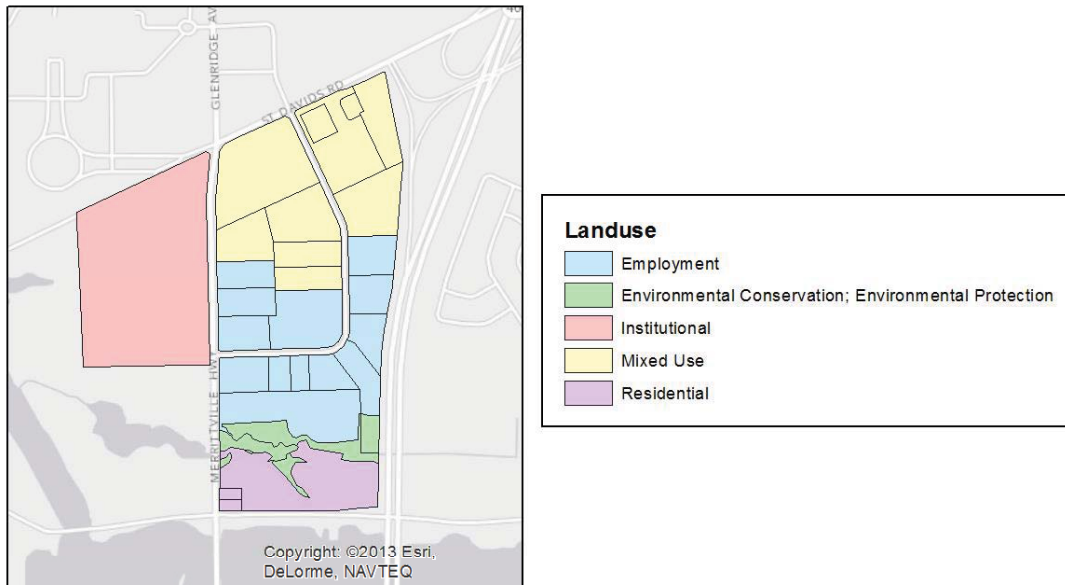
3.1.1. Brock Business Master Plan, 2013

The *Brock Business Park Master Plan* (Dillon Consulting, 2013) document was utilized to identify the future land uses within the BBP. **Figure 3** summarizes the future BBP landuse as illustrated in the document.

3.1.2. Servicing Feasibility Study, Proposed Thorold Student Housing, RVA, 2009

This report provides a servicing feasibility study for a proposed student residence located in a vacant lot within the BBP area. The Student Housing noted in the R.V. Anderson report has since been constructed. In consultation with the City it was determined that the existing student housing development represented the probable growth scenario, w.r.t. peak sanitary flows and density, for “Mixed Use” areas. The existing student housing density and sanitary flow generation rates were used to estimate flows for all Mixed Use areas within the BBP area.

Figure 3 – Brock Business Park Landuse



3.1.3. Region of Niagara Project Design and Technical Specifications Manual, 2005

This manual provided the basis for determining equivalent population densities and unit flow rates for Residential and Employment land uses for the purposes of generating loads within the model.

3.1.4. The City of Thorold Pollution Control Plan, 2013

A key deliverable of the City’s Pollution Control Plan (PCP) was an all pipe InfoSWMM model of the City sanitary sewer system, which was calibrated against in sewer low flow metering data. The City’s existing model was utilized to determine the appropriate sanitary flow peaking factors, groundwater infiltration (GWI) rates, and rainfall inflow and infiltration coefficients, (RDI&I) to estimate the peak wet weather flows within the BBP area.

3.2. Growth Scenarios

The current BBP Master Plan does not make any reference to the potential development of the Brock University lands located South West of the intersection of St Davids Road and Merritville Highway. Further, there is uncertainty regarding the exact timing and type of development. As such, the City requested that a sensitivity analysis be conducted to determine what impacts the development of the University lands to the West would have on the proposed BBP sanitary sewer servicing plan.

The potential impact of the University lands was assessed via 3 demand scenarios:

- Scenario 1: Baseline Scenario, landuse as outlined in the BBP Master Plan
- Scenario 2: Scenario 1 + high sanitary use development of the University lands
- Scenario 3: Scenario 1 + moderate sanitary use development of the University lands

In addition to the preceding, the City has a potential development application for a new medical office unit for the 3310 Schmon Pkwy property with a 300 persons/ha density. As such, an additional 2 scenarios were reviewed to assess the impact of this development on the proposed servicing strategy:

- Scenario 4: Scenario 1 + the new medical development
- Scenario 5: Scenario 2 + the new medical development

3.3. Population densities for build-out conditions

Table 1 below, provides a summary of population densities assuming full build-out conditions for Mixed Use, Residential and Employment lands.

Table 1 – Confederation Heights Population Density for Build-out Conditions

Land Use Type	Equivalent Population Density (persons/ha)
Mix Use ¹	336
Employment ²	125
Residential ²	55

¹ Servicing Feasibility Study, Proposed Thorold Student Housing, 2009

² Region of Niagara Project Design and Technical Specifications Manual, 2005

3.3.1. Institutional Land Use and Density

Table 2 summarizes the various Institutional landuse densities employed for the purposes of this study.

Table 2 – Institutional Landuse Population Density

Land Use Type	Equivalent Population Density (persons/ha)
Institutional – Scenario 1	0
Institutional – Scenario 2	125
Institutional – Scenario 3	25

3.4. Estimated Dry Weather Flows

Table 3 below, provides a summary of the estimated population, at build out, based on potential landuse for the BBP area. Dry weather flows were estimated using a per capita sewage flow rate of 275 L/cap/day.

Table 3 – Brock Business Park Population Estimates and Flow Rates

Landuse	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Population Estimates (persons)					
Mix Use	7,648	7,648	7,648	7,648	7,648
Employment	2,673	2,673	2,673	2,604 ²	2,604 ²
Residential	383	383	383	383	383
Institutional	0	2,474	495	0	2,474
3310 Schmon Pkwy	0 ¹	0 ¹	0 ¹	166	166
Total	10,704	13,178	11,199	10,802	13,275
Average Dry Weather Flow					
DWF (L/s)	34.1	42.0	35.7	34.4	42.3

1 – Site included in Employment Numbers

2 – Excludes 3310 Schmon Pkwy site

4. Capacity Analysis

4.1. Inflow & Infiltration Analysis

As part of the previous PCP Study, a flow monitoring program was undertaken. The objective of the program was to validate and calibrate model flows and to quantify actual RDI&I coefficients within defined monitoring sanitary sewer catchments. As part of the model calibration process, area specific RDI&I parameters were applied to the system to simulate the observed system response. While completing this process, it was observed that the RDI&I rate varied significantly across the City with several areas exhibiting RDI&I rates that exceeded the MOE standard of 0.286 L/s/ha. Recognizing this fact and that the City needs to ensure that the final sewer design recommendations represent a conservative and feasible servicing alternative, the project team employed a wet weather sensitivity analysis to effectively mitigate risks associated with wet weather flows.

The following scenarios were developed for the sensitivity analysis:

- I&I MOE Standard wet weather allowance of 0.286 L/s/ha
- 2 year design storm with existing model I&I parameters for the Confederation Heights Area as established in PCP.

Table 4 summarizes the modeled peak flows within the BBP area. Results from this analysis show that I&I MOE Standard scenario had higher peak flows, as such the more conservative MOE design I&I rates was carried forward to the sewer sizing analysis and evaluation.

Table 4 - Brock Business Park Trunk Sewer Modeled Peak Flows

Sewer	Peak Flow (L/s)	
	I&I MOE Standard	Existing Model I&I Parameters for Confederation Heights Area
Merritville Highway	7.2	3.3
West-East Schmon Parkway	13.9	6.4
North-South Schmon Parkway	8.7	4.4
BBP Trunk	51.2	42.8

5. Upgrade Recommendations

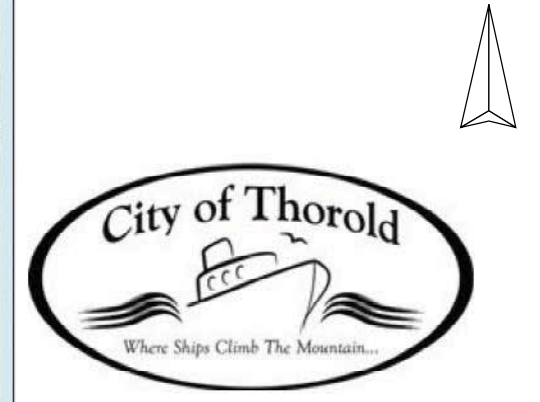
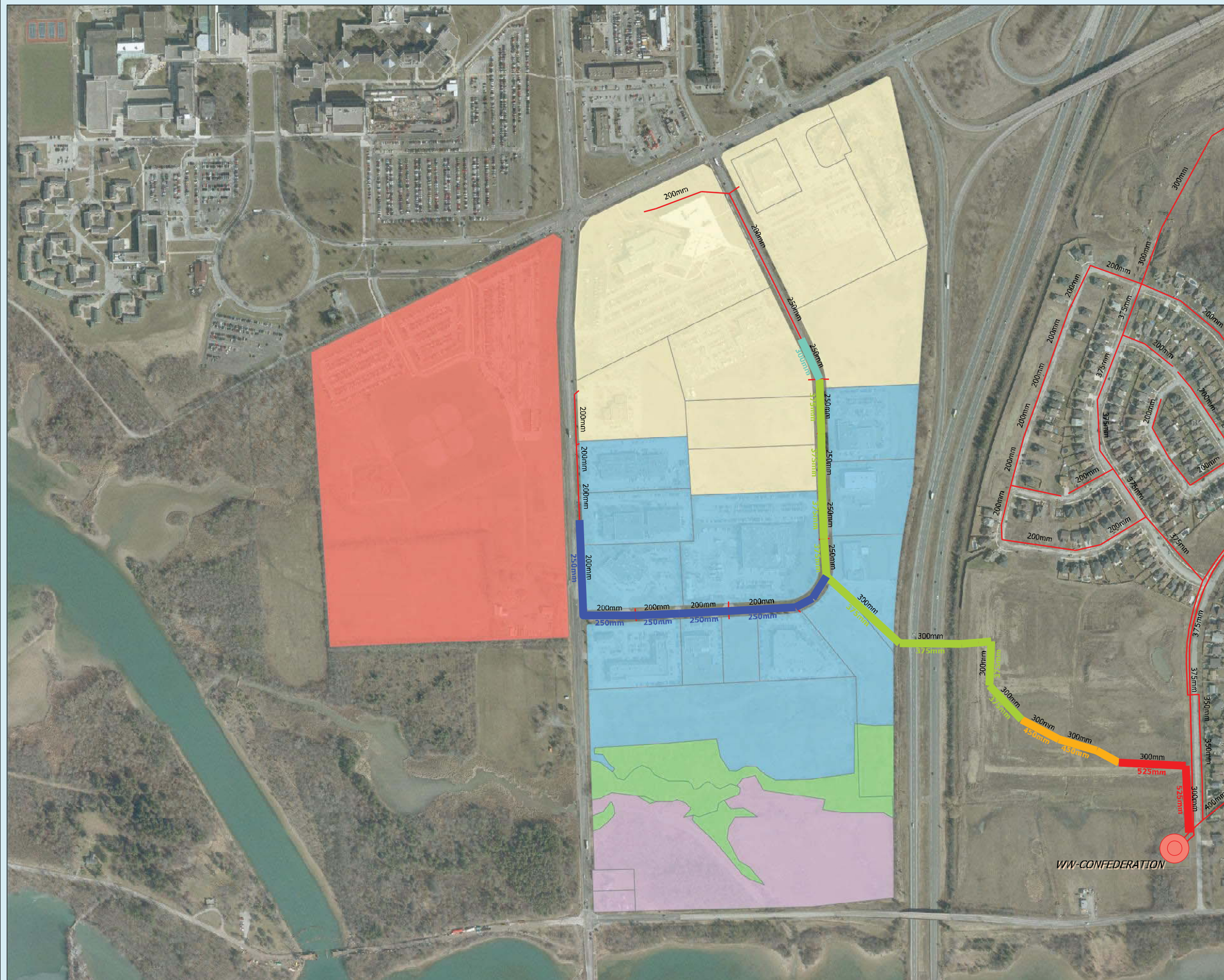
5.1. Level of Service and Design Criteria

The hydraulic level of service and design criteria assumptions for this analysis are as follows:

- Residual / remaining capacity under build out conditions within new sanitary sewer based on maintaining a d/D of 0.7 under peak wet weather flows.

5.2. Model Results

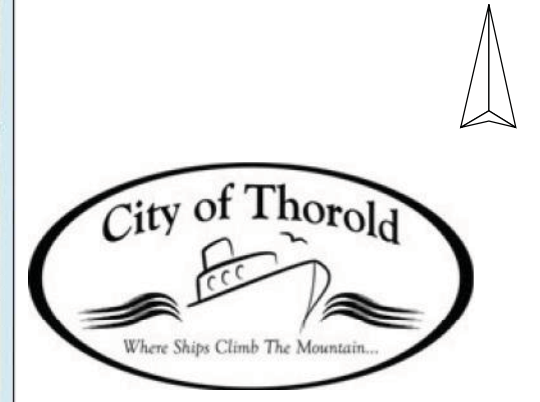
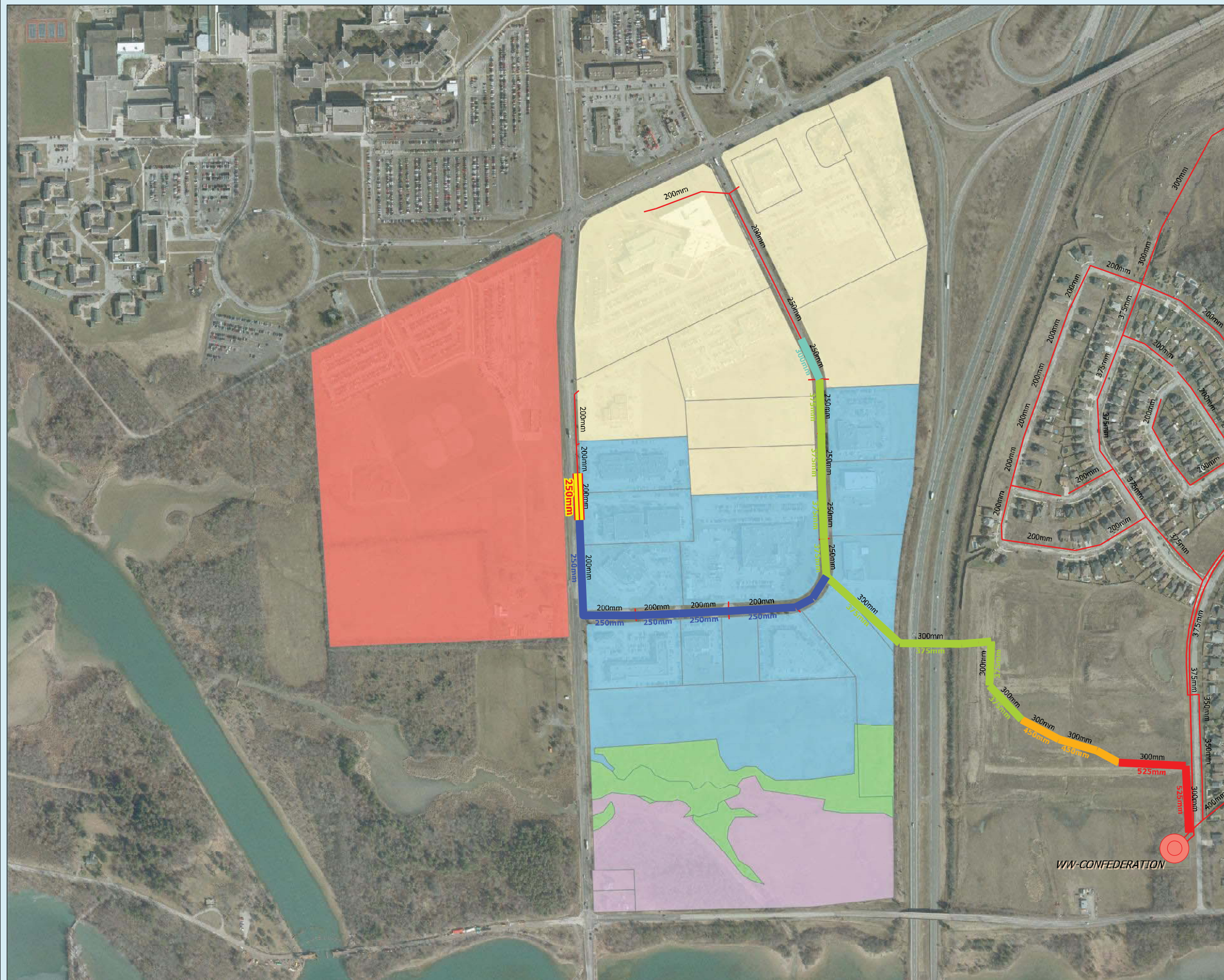
Table 5 summarizes the estimated peak flows in each sewer. **Figures 4** and **5** illustrate the recommended sewer sizing for scenario 1 & 3 & 4 and 2 & 5 respectively.



**City of Thorold
Brock Business Park
Build-Out Capacity Analysis**

Figure 4
Scenario 1, 3 & 4
Full Build-Out Sewer Upgrades

- Wet Well
- Existing Sanitary
- Final Sanitary Upgrade Diameter
- 250mm
- 300mm
- 375mm
- 450mm
- 525mm
- Land Use**
- Employment
- Environmental Conservation/Protection
- Institutional
- Mixed Use
- Residential



**City of Thorold
Brock Business Park
Build-Out Capacity Analysis**

Figure 5
Scenario 2 & 5
Full Build-Out Sewer Upgrades

- Wet Well
- Existing Sanitary
- Final Sanitary Upgrade Diameter
- Scenario 2 250mm upgrade
- 250mm
- 300mm
- 375mm
- 450mm
- 525mm
- Land Use
- Employment
- Environmental Conservation/Protection
- Institutional
- Mixed Use
- Residential

Table 5 - Model Estimated Peak Flows

Peak Flow (L/s)					
Sewer	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Merritville Highway	12.2	26.3	15.0	12.2	26.3
West-East Schmon Parkway	28.6	42.8	31.4	29.2	43.3
North-South Schmon Parkway	47.0	47.0	47.0	47.0	47.0
BBP Trunk	128.4	136.3	129.4	129.0	136.9

Modelling results show that there is no significant difference in the flows between scenarios 1 (baseline), scenario 3 (limited Brock development) and scenario 4 (scenario 1 + the new medical development), with neither limited development of the Brock lands nor the higher density development of 3310 development triggering any additional sewer oversizing.

Scenario 2 (high Brock development) presents a substantial increase in flows in comparison with other scenarios (1,3,4), and would require additional sewer oversizing of 71m of sewer along the Merritville Highway Sewer, **Figure 5** highlights the required sewer oversizing along with existing sewer sizing. The model results show that there is no significant difference between Scenario 2 and 5, and that the higher density development of the 3310 Schmon Pkwy site is not expected to trigger any additional sewer upgrades.

It is apparent from the model results, that development of the University of Brock lands to the West of the BBP will have a significant impact on the performance of the sewer system based on the assumptions used in this analysis. These results should be re analyzed if and when the extent, type and density of the development are known, to better estimate the true magnitude of required sewer upgrades.

The BluePlan team recommends, based on the analysis performed that the City proceed with the system upgrades shown under Scenario 5. This option will provide adequate capacity in both the short and long term while providing capacity to accommodate moderate development of the Brock University lands to the West.

Table 6 provides a summary of the estimated system flows and recommended sewer upgrades

6. Costing

Table 7 summarized the estimate cost for the recommended upgrades along with budget level approximate costing. These costs do not incorporate site specific restoration, constructability constraints and phasing of improvements

Table 6 - Brock Business Park Upgrade Recommendations Scenario 5

Sewer	Pipe ID	Peak Flow (L/s)	Existing Diameter (mm)	Proposed Diameter (mm)	Length (m)
Merritville Highway	SAL5897	25.0	200	250	70.8
	SAL5898	26.3	200	250	144.9
West-East Schmon Pkwy	SAL5900	37.3	200	250	79.6
	SAL5350	37.4	200	250	65.9
	SAL5209	39.5	200	250	75.4
	SAL5352	40.8	200	250	102.3
	SAL5355	41.9	200	250	28.7
	SAL5354	43.3	200	250	39.9
North-South Schmon Pkwy	SAL5221	32.6	250	300	67.1
	SAL5218	38.7	250	375	84.3
	SAL5215	42.4	250	375	85.7
	SAL5212	45.8	250	375	73.6
	SAL5353	47.0	250	375	56.6
BBP Trunk Sewer	SAL5210	90.8	300	375	150.9
	SAL5206	90.8	300	375	93.9
	SAL5205	90.8	300	375	56.5
	SAL6324	90.8	300	375	19.6
	SAL5204	90.8	300	375	66.5
	SAL5344	93.8	300	375	71.4
	SAL5343	104.5	300	450	63.8
	SAL5341	105.0	300	450	60.2
	SAL5203	108.4	300	450	38.6
	SAL5342	117.2	300	525	101.3
	SAL5806	136.5	300	525	101.8

Table 7 – Cost Estimate

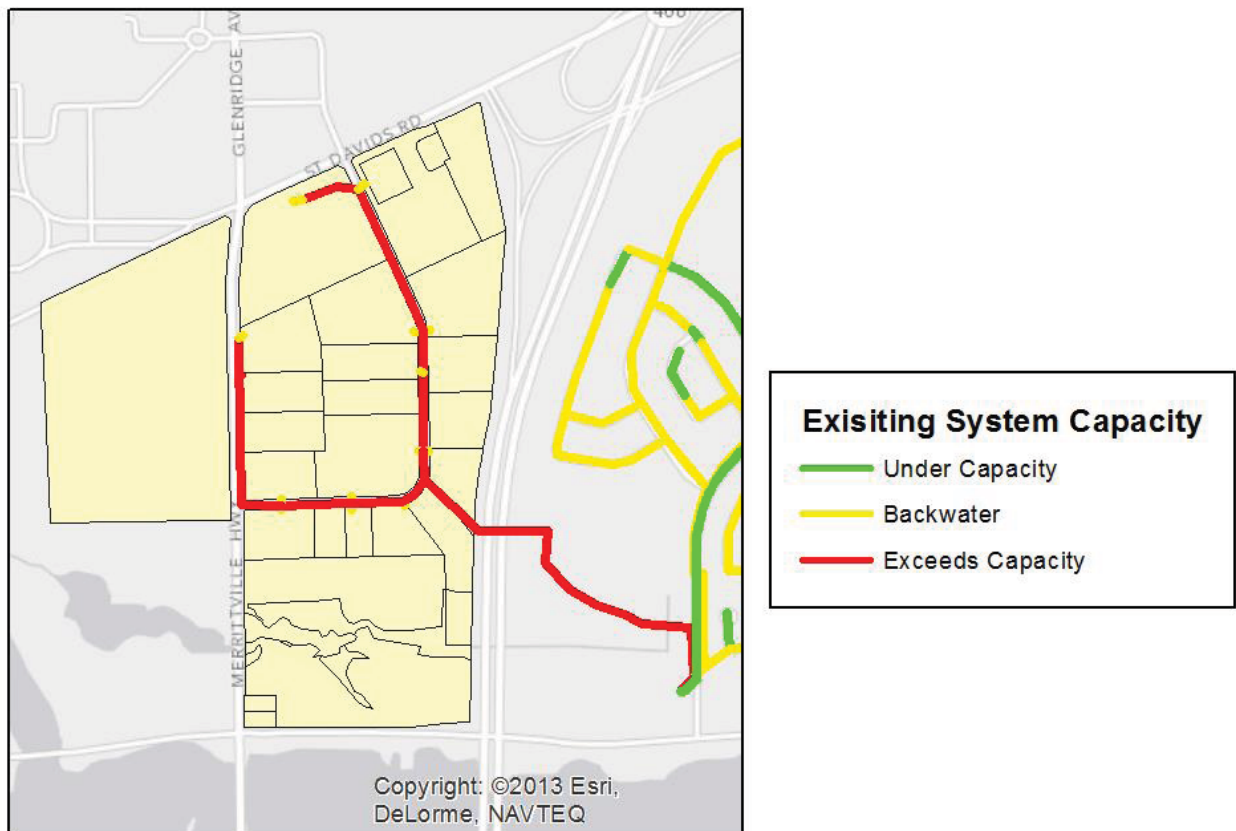
Sewer	Pipe Class	Unit Cost	Total Length (m)	Total Cost
Merritville Highway	250-375mm	\$500/l.m	220	\$110,000
West-East Schmon Pkwy	250-375mm	\$500/l.m	395	\$198,000
North-South Schmon Pkwy	250-375mm	\$500/l.m	370	\$185,000
BBP Trunk Sewer	250-375mm	\$500/l.m	460	\$230,000
	450-525 mm	\$750/l.m	370	\$278,000
Hwy 406 Crossing		\$500,000 e.a	1	\$500,000
Total Cost				\$1,502,000

7. Additional Inflow & Infiltration Analysis

Recognizing that the City has a wide range of existing RDI&I rates, additional sensitivity analysis of the recommended sewer design was conducted ensure adequate conveyance capacity within the BBP sewer system. The recommended sewer design was re-evaluated utilizing the RDI&I parameters observed in the City's other business and commercial sewer systems under a 2 year design storm.

Under these increased RDI&I rates, there was a significant increase in estimated peak flows such that the capacity was exceeded in all pipes within the BBP system. **Figure 6** presents the results of the sensitivity analysis. This analysis shows the importance of ensuring that proper installation practices are observed and that appropriate Inflow & Infiltration reduction measures are implemented to avoid exceeding the capacity of the proposed sewer system.

Figure 6 – System Capacity under Worst Case Model I&I Parameters

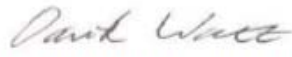


8. Conclusion and Recommendations

The analysis of the impacts of the planned growth to build-out conditions for the service area has led to the following conclusions:

- The Inflow & Infiltration analysis shows the recommended sewer upgrades are highly sensitive to the estimate RDI&I. This highlights the importance:
 - Conducting a local flow monitoring program to determine actual RDI&I rates within the existing BBP system.
 - That the City of Thorold needs to ensure that proper installation practices are observed and that appropriate Inflow & Infiltration reduction measures are implemented to avoid exceeding the capacity of the proposed sewer system.
- The City should proceed with the system upgrades shown under Scenario 5. This option will provide adequate capacity in both the short and long term while providing capacity for future Brock University expansion within the prescribed capacity
- The proposed Medical Office development on the 3310 Schmon Pkwy site is not expected to trigger any additional sewer oversizing relative to the baseline buildout scenario
- These results should be re analyzed to better estimate the true magnitude of required sewer upgrades when the extent, type and density of the development within the University lands to the West of the BBP are known.

We trust the above analysis meets your current needs. Should you have any questions, please do not hesitate to contact us.


David Watt O.L.S., C.E.T.


Julien Bell, P.Eng.

APPENDIX B

December 2013

City of Thorold

BROCK BUSINESS PARK MASTER PLAN



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1

INTRODUCTION

The function, purpose and design of business parks today is changing. The traditional approach of separating employment uses from other uses such as residential and commercial is being challenged in a number of communities, as governments and private sector land developers are looking to be more competitive and respond to emerging market demands.



Increased interest in mixed-use development and sustainability has opened up the possibility of re-designing and improving traditional business parks to meet both civic and market-oriented objectives. Furthermore, some employees have increased flexibility and are choosing to live and work in more dynamic places. In order to attract top talent, businesses are seeking out competitive advantages and are recognizing the importance of dynamic working environments. The development industry is looking to capitalize on these new trends and, as a result, the suburban models of development, including those for traditional business parks, are evolving. The City of Thorold has undertaken this Master Planning exercise for the Brock Business Park to guide the revitalization of the Park in a manner that supports and enhances the employment uses while providing opportunities for new uses that integrate surrounding areas, encourage mixed use and improved urban design, and meet the current market demands.

1.1. Master Plan Study Context

The City of Thorold (the City) initiated a Revitalization Master Plan for the Brock Business Park to help guide decision making as the Business Park evolves. The Brock Business Park was originally contemplated as a traditional greenfield business park in the mid-1980s. The first plan for developing the Business Park was prepared in 1988. The plan recognized that, due to its location, the Brock Business Park was well suited to develop as a key employment area in Niagara Region. The existing Business Park is approximately 43 gross hectares, is visible and accessible from Highway 406, and is situated across from Brock University. Today, over 75% of the Business Park is built-out, although there remain a number of opportunities for intensification and infilling.

An examination of the current tenants suggests that the Business Park has generally fulfilled its mandate – it has attracted a number business and service-oriented uses, as well as a number of higher profile institutional uses. However, increasingly, there are also a number of emerging issues related to how the Business Park connects to surrounding areas, traffic circulation, pedestrian safety, under-utilized land and pressure for employment land conversion to other uses. In particular, there has been increased pressure to develop student residential apartments in certain locations of the Business Park which is tied to its proximity to Brock University.

In 2009, the City completed its *Employment Lands Comprehensive Review*. The Review examined the City's overall employment land needs and provided recommendations for improving Thorold's competitiveness. One of the key findings of the Review was a recommendation for balancing the demand for conversion within the Brock Business Park. In response to an individual application for new student housing in the Business Park, the Review



Looking north across parking lot and two storey office building off of Schmon Parkway.

1 | INTRODUCTION

suggested that the conversion could be warranted, but that the City prepare a new plan to proactively deal with the potential long term implications of introducing housing into what was supposed to be an employment area.

In addition to the *Employment Lands Comprehensive Review*, the Region of Niagara (the Region) completed the *Niagara Economic Gateway Strategy* in 2011. The *Gateway Strategy* built upon the recommendations of the City's *Employment Lands Comprehensive Review* and provided stronger direction for redeveloping the Brock Business Park. The *Gateway Strategy* identified a number of opportunities for revitalizing the Brock Business Park in order to re-energize the area, balance potential residential uses with the need for employment uses, and attract new investment in Research and Development. The *Gateway Strategy* recognizes the asset of the Business Park in relation to its proximity to Brock University and Highway 406. These features are critical to the strategic location of the Park.

Brock University is located west of the Business Park and for a decade Brock has had the second-highest growth of students of any Ontario university.¹ Brock University had a student enrollment of 18,190 for 2011/2012 school year, including 15,467 full time students and 2,733 part time students. Brock also has 1,504 employees. In recent years more than \$300 million in construction has been committed or commissioned to expand the campus. As Brock continues to grow it is important to consider how the Business Park and the University can better integrate and develop synergies. This includes considerations such as employment uses that compliment university research, physical connections between the two areas for pedestrians and other modes, and opportunities for student housing which is already taking shape in the Business Park to accommodate students close to the university campus. Although Brock University is not in the immediate study area for the Master Plan, the relationship between the two is being considered as part of this study.

The changing policy context, combined with the opportunities for physical improvement and connectivity with Brock University and the expected pressure for conversion, point towards the need for a new long term vision for the Brock Business Park.

1.2. Purpose of the Study

The purpose of this Master Plan Study is to provide a planning framework that will guide future development and redevelopment in the Brock Business Park and respond to the recommendations of previous studies/amendments completed by the City and the Region. This Master Plan Study provides a vision for revitalizing the Brock Business Park and sets out recommendations for the appropriate land uses. This study provides direction on four key areas:

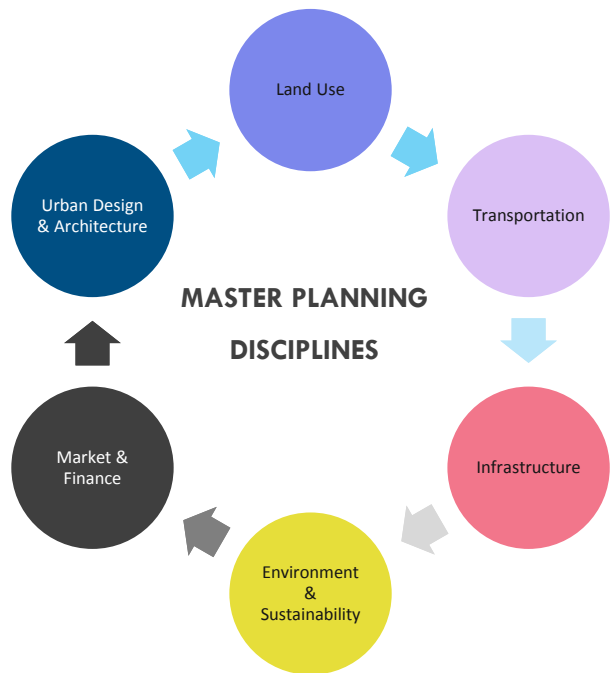
1. Future land use and opportunities for intensification;
2. Public realm and urban design improvements;
3. Transportation and infrastructure improvements, including pedestrian connections and circulation; and,
4. Balancing the needs for employment and non-employment uses.

¹ Brock University Website < <http://www.brocku.ca/about/why> > Retrieved 5 September 2013.

1.3. What is a Master Plan?

A Master Plan is typically undertaken as a non-statutory, multi-disciplinary plan which lays out a strategy for developing or redeveloping an area. Most Master Planning processes deal with a range of topics in an integrated fashion, covering land use, transportation and traffic, infrastructure and servicing, environment and sustainability, market and financial drivers, urban design and architecture.

In Ontario, most master plans are considered to be non-statutory plans, as they technically are not regulated by the Planning Act (such as an Official Plan or Community Improvement Plan). However, master plans are useful tools for decision-making and can be easily implemented through a formal Planning Act process, such as an Official Plan amendment, Secondary Plan or Community Improvement Plan.



The Brock Business Park Master Plan Study is being undertaken as a non-statutory planning exercise; however, this study will provide detailed policy guidance to ensure that the City is in a position to implement the recommendations through its Official Plan Review exercise (which is currently under way).

1.4. Study Area

The study area limits for the Brock Business Park Master Plan Study cover approximately 55 gross hectares² extending west of Highway 406 and south-east of Brock University in the City of Thorold. The study area is bounded by St. David’s Road to the north, to Decew Road to the south, Merrittville Highway to the west and Highway 406 to east. **Figure 1.1** illustrates the study area and some of major land uses in the surrounding area.

1.5. Structure of the Document

This document is organized into five sections. The opening section provides a brief introduction, explaining the background and purpose of the Master Plan Study. Section 2.0 describes the policy context, existing and planned conditions and identifies key issues, opportunities and constraints. Section 3.0 outlines the Vision for the Brock

² The broader Study Area is estimated to be 55 gross hectares, which includes roads, environmental areas and lands which are south of the existing Business Park on the north side of Decew Road. The lands traditionally understood as the Brock Business Park are estimated to be approximately 43 gross hectares.

1 | INTRODUCTION

Business Park and draws up the issues and opportunities identified in the previous section to formulate the proposed guiding principles for revitalization. Section 4 presents three alternative development concepts, which attempt to test out the principles and address some of the key issues and opportunities. Section 5.0 provides the recommended land use concept and urban design concept and outlines key elements of the preferred Master Plan Concept.



**BROCK BUSINESS
PARK REVITALIZATION
MASTER PLAN**

FIGURE 1.1 | STUDY AREA
LOCATION



LEGEND

- HIGHWAY
- MAJOR/REGIONAL ROAD
- ROADS
- STUDY BOUNDARY
- CITY OF THOROLD BOUNDARY
- CANADA/USA BOUNDARY

NOT TO SCALE



CREATED BY:
MELISSA KOSTERMAN
CHECKED BY:
PADDY KENNEDY

PROJECT: 1308060
STATUS: DRAFT
DATE: 9/09/2013

2 ISSUES & OPPORTUNITIES

There are a number of existing and planned conditions which provide direction for the revitalization of the Brock Business Park. Provincial, Regional and local policies and plans provide policy direction for the long term, while constraints and opportunities on



the ground related to infrastructure, transportation, urban design and land use provide an understanding of the outlook for future redevelopment. This section describes both the policy and the existing conditions context in an effort to illustrate the range of issues, opportunities and constraints, which in turn provide the basis for the revitalization concepts explored in Section 3.

2.1. Planning Policy

This section provides an overview of the policies that are relevant to revitalization of the Brock Business Park.

2.1.1. Provincial Policy

Land use planning in Ontario is undertaken in a top-down process, whereby the Province provides direction to upper and lower tier municipalities through a series of plans and policies. In the context of this Master Plan, there are three main documents of relevance at the Provincial level:

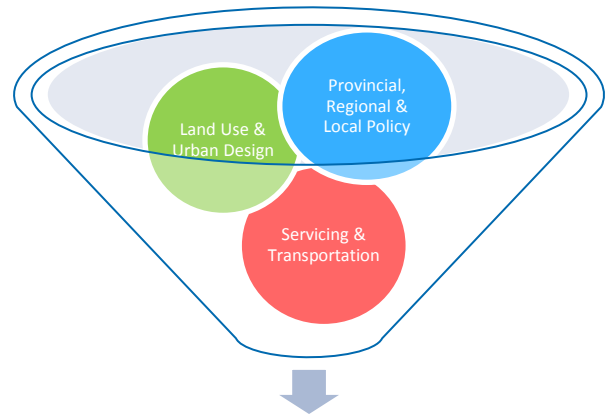
- The Planning Act
- The Provincial Policy Statement
- Places to Grow: The Growth Plan for the Greater Golden Horseshoe.

All three documents are inter-related. The *Planning Act* (the Act) provides the legislative basis for land use planning in Ontario. The Act makes provision for the provincial policy-led land use planning system, requiring all decision-makers to be consistent with the *Provincial Policy Statement (PPS)*. The Act provides a basic definition of employment uses, which are areas designated for employment in a local official plan for:

- a. manufacturing uses;
- b. warehousing uses;
- c. office uses;
- d. retail uses that are associated with uses mentioned in clauses (a) to (c); and
- e. facilities that are ancillary to uses (above).

The PPS directs municipalities to plan for employment growth and also plan for regeneration and revitalization of all areas – including employment areas. The PPS also provides a general framework for protecting employment lands from conversion to non-employment uses which could undermine the viability of employment areas. These basic principles

Figure 2.1: Approach



Issues, Opportunities & Constraints

– protecting employment lands, planning for long term employment growth and revitalization – are to be addressed through local municipal official plans and further implemented through other planning processes, secondary plans and community improvement plans.

The *Places to Grow Plan for the Greater Golden Horseshoe (P2G)* provides a more detailed framework for considering employment land use conversion. The framework for employment land conversions includes a series of criteria:

- There is a need for the conversion (as defined by the City and not the applicant for a development, whose needs are different than those of the City);
- The City will meet the employment forecast allocated by P2G and the Region of Niagara’s growth management strategy, *Niagara 2031*;
- 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 the P2G (i.e. what

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are the impacts of the application on surrounding land uses and the overall viability of the Business Park?);

- There is existing or planned infrastructure to accommodate the proposed conversion (presence of water and waste water services, transportation services);
- The lands are not required over the long term for the employment purposes for which they are designated; and,
- Cross-jurisdictional issues have been considered.

The Growth Plan also recognizes the strategic importance of Niagara by identifying a portion of south Niagara as an Economic Gateway Zone and Centre (see below for additional details).

The above-noted criteria should be satisfied when municipalities are considering conversions within designated employment areas.

2.1.2. Regional Policy

Niagara Region is responsible for delivering a number of services across the 12 local municipalities in Niagara. In the case of land use planning, Regional jurisdiction is shared, whereby local municipalities take direction from the Region's Policy Plan and incorporates general land use planning directions and policies into local plans. The key planning policies which are of relevance for Brock Business Park Revitalization Master Plan are:

- Amendment 2-2009 (Niagara 2031)
- Amendment 1-2012 (Niagara Economic Gateway Employment Lands Strategy)

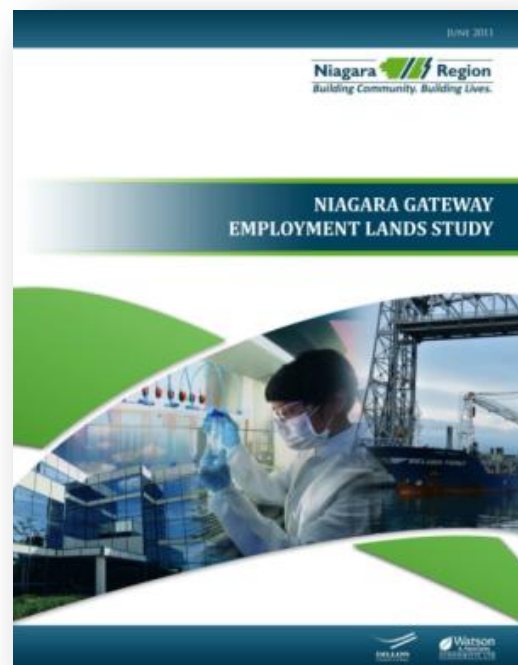
Amendment 1-2012 (Niagara Economic Gateway Employment Lands Strategy) *Niagara 2031* provides updated regional policies on employment lands, to bring the Region's Plan into alignment with the P2G and the PPS. *Niagara 2031* provides an analysis of the employment land needed to accommodate projected job growth; and, addresses the suitability

of the vacant lands available in each municipality to accommodate projected growth and to achieve the long-term Regional economic and employment objectives.

To implement the recommendations of *Niagara 2031* related to employment lands, the Region completed the *Niagara Economic Gateway Strategy* in 2011 and adopted the final strategy in 2012 as Amendment 1-2012. The purpose of the Amendment was to identify a long range strategy for developing Niagara's strategically located employment lands in the five Gateway municipalities (Welland, Fort Erie, Niagara Falls, Port Colborne and Thorold).

Amendment 1-2012 identifies the Brock Business Park as one of the strategic economic gateway locations as it occupies land along a 400 series highway, the 406. The Amendment provides a concept for the Brock Business Park revitalization:

The concept for the Brock Business Park Revitalization is to capitalize on market opportunities for research and development and the close proximity to Brock University and Highway 406 by transforming the area into an integrated, mixed-use, campus-style setting



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which caters to incubators, innovator, limited office uses, and related uses.

In order to address the challenges, capitalize on opportunities and transform the concept into reality, the following tools will be utilized:

a) Preparation of a joint secondary plan to coordinate development and refine the concept;

b) Preparation of a public realm improvement program to re-energize the area and attract new investment;

c) Preparation of supporting plans for servicing and transportation (including active transportation and transit);

d) Preparation of urban design guidelines; and,

e) Updating relevant local plans, policies, and zoning by-laws.

Amendment 1-2012 provides the legislative basis for this Master Plan and identifies a number of important principles and directions which are to be considered in the preparation of the Master Plan.

2.1.3. Local Policy – Official Plan, Zoning By-Law & Employment Lands Comprehensive Review

The City of Thorold is in the process of updating its Official Plan. As part of the OP Review process, the City undertook an employment lands study back in 2009. While Amendment 1-2012 suggests that there will be opportunities to revisit the function of the Brock Business Park through this assignment and the City's Official Plan review process, the current planning permissions for the Brock Business Park are noted below.

The Brock Business Park is designated Serviced Industrial in the OP. The serviced industrial designation allows for a variety of uses and states:

- The predominant use shall be for industrial uses within enclosed buildings including manufacturing, fabrication, assembly, processing and storage of raw materials and goods; repair and service operations; and warehousing and wholesaling.
- Ancillary office uses and a limited amount of certain public, institutional, and commercial uses which serve the industrial area or which are compatible with and complimentary to the industrial uses may also be permitted.
- Existing and future public utilities may be permitted.

The associated zoning by-law further refines the uses permitted in the OP and designates the parcels within the Business Park as either Prestige Office (PO) or Prestige Industrial (PI). Under Section 4.3.2(e) Serviced Industrial in the Official Plan, permitted uses for the Brock Business Park PI and PO land include business offices, education and institutional facilities, research laboratories and light industrial and manufacturing.

In addition to the PI and PO designations, there are four unique permissions in the Business Park. Details of these permissions are provided in **Appendix A**.

Of critical importance to the Master Plan Study is that the permissions allow for residential and commercial developments on specific parcels in the Business Park. These residential permissions include student residential and seniors' retirement housing. The commercial permissions allow for a hotel and bingo hall. As a result, there is some initial mixing of uses in the Business Park that are outside the traditional employment uses.

This Master Plan sets out to determine how the rest of the Business Park should develop with consideration for how the existing conditions may influence the

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future. The key land use challenge for this Master Plan is to determine the balance of uses appropriate for the employment area.

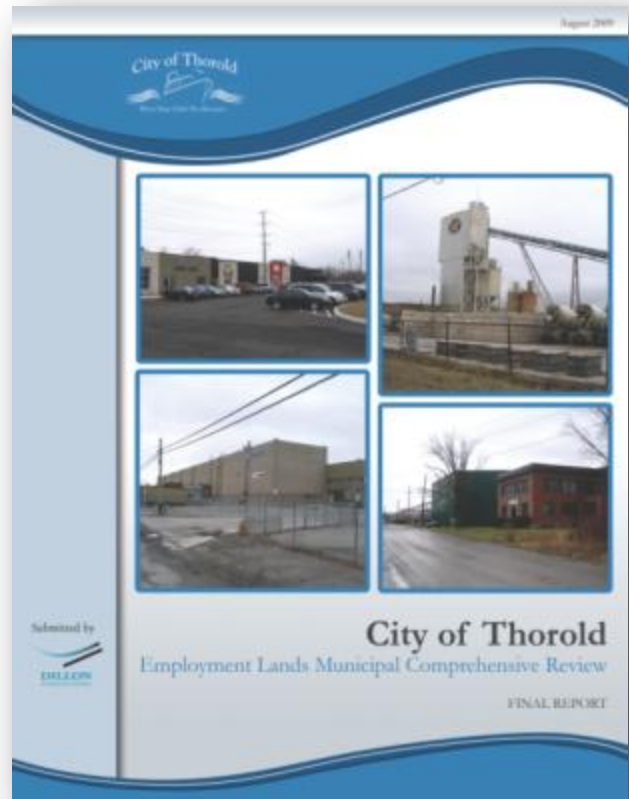
In addition to the Official Plan and Zoning By-Law, the City's *Employment Lands Comprehensive Review*, completed in 2009, also speaks to the Brock Business Park. The *Employment Lands Study* was completed to bring the Official Plan into conformity with the Regional and Provincial requirements for planning employment lands. The *Employment Lands Study* predates the Region's Gateway Strategy and recognizes the existing permissions in the Brock Business Park and its strategic location. The study examines the employment land inventory in Thorold and provides recommendations for how to develop the available lands in a strategic manner that will improve the City's economic competitiveness.

The Employment Lands Study also acknowledges that there is a surplus of employment land in Thorold and that conversion of employment lands may be warranted in some instances.

When addressing the Brock Business Park, the study notes that, "should the City decide that broader strategic objectives can best be met through conversion of lands within the Brock Business Park, then **it is recommended that the City develop a new land use plan for the area.** A broader land use planning exercise which examines the function of the Business Park within the context of the broader area could yield positive outcomes for all stakeholders."

The *Employment Lands Study* further supports the need for this Master Plan for Brock Business Park. It is clear from the existing policy in the Region and the City that consideration for new and innovative ways for development and redeveloping the Brock Business Park are warranted. All of the policies speak to the importance of planning employment lands. The Province requires clear justification for employment land conversion. The Region and City require a comprehensive plan for the Business Park prior to any further conversions in order to ensure the Park is

developed in the best possible way for future generations.



This Master Plan builds from the policy recommendations of the Region and City to provide a new vision for the Brock Business Park. This new vision will need to meet the requirements of Provincial policy to be implemented.

2.2. Land Use

The Brock Business Park includes a variety of traditional employment uses, as well as a number of non-employment uses. Uses found in the Park today include a range of institutional, office, residential, and commercial uses, as well as several vacant properties. There is also a large environmental protection area at the south end of the Business Park that includes a protected wetland. The existing land

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uses found in the surrounding area are shown on **Figure 2.2**. **Figure 2.3** and Table 2.1 presents the existing uses within the Brock Business Park.

Table 2.1 Existing Land Use		
Land Use	hectares	% of total area
Major Institutional	9.4	20%
Office (employment)	18.1	38%
Residential	3.33	7%
Commercial	3.88	8%
Vacant	12.77	27%
Park Land	0.0	0%
Total Net Area <i>(less Environmental Protection Area and Roads)</i>	47.3	100%
Total Gross Area <i>(including Environmental Protection Area and Roads)</i>	54.7	100%

Some observations related to current land use conditions include:

- The Brock Park is surrounded by a number of destination uses and includes Brock University and the Glenridge Quarry Naturalization site.
- Traditional employment uses make up the majority of activities within the Park, comprising 38% of existing uses.
- Major institutional uses are the second most prominent activity in the Park, comprising 20%, although it should be noted that some of the smaller scale employment uses located in the Park function as office uses for an

institutional tenant (such as the Catholic Archdioceses offices).

- Over a quarter of the Business Park is vacant, demonstrating that there is still a significant amount of land available for development.
- The commercial and the residential categories only make up a marginal



proportion of the Business Park today.

- There is no formal park/leisure areas located within the Park.
- As a whole, the Business Park appears to function as a mixed-use area, with some areas being more mixed than other.
- Uses are mixed across the Park, with few examples of uses mixed within individual buildings (i.e. most buildings are stand-alone uses, with a few exceptions).
- In addition to the vacant lands, there appear to be a number of site-specific opportunities for infilling and intensification. Approximately, 33% of the site area is paved, including a relatively high ratio of surface parking.
- A number of high-profile locations are under-utilized, including the Niagara Region's headquarters, which is set back approximately 55 metres from the edge of St. David's Road and 75 metres from Merrittville Highway). The site also has a

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large area of surface parking which, overtime, could be accommodated in a single parking structure, freeing up land for further expansion/redevelopment.

- A large area of land at the south end of the Business Park is undeveloped and could potentially accommodate a significant level of new development in a unique setting (with views of Lake Gibson and surrounding environmental areas).
- There is not a significant concentration of commercial services/activities to support the sizable employment, student and living populations which reside in and around the Brock Business Park.
- None of the employment and institutional uses in the Brock Business Park pose land use compatibility issues. There are no known uses with activities that emit noise, odour, dust and/or vibrations that would prevent other uses in the Business Park.
- However, there is a small Regional office on the west side of Schmon Parkway, just south of the regional headquarters that includes environmental labs. These labs complete soil and water testing for the Region. Development of this site or the adjacent properties may require further investigation with the Region as to whether any of the activities undertaken on the property could constitute a compatibility issue. This should be addressed by the Region and the City as the Business Park redevelops and this site becomes a potential location for other uses.



Vacant lot on Schmon Parkway



Looking east towards the Four Points hotel



BROCK BUSINESS PARK REVITALIZATION MASTER PLAN

FIGURE 2.2: LAND USE CONTEXT MAP



LAND USE

- MAJOR INSTITUTIONAL
- MEDIUM DENSITY RESIDENTIAL
- LOW DENSITY RESIDENTIAL
- TOURIST COMMERCIAL
- EMPLOYMENT
- COMMUNITY COMMERCIAL

LANDSCAPE & URBAN DESIGN ELEMENTS

- OPEN SPACE
- EXISTING TREES
- PAVED AREAS

NOT TO SCALE



CREATED BY:
MELISSA KOSTERMAN
CHECKED BY:
PADDY KENNEDY

PROJECT: 1308060
STATUS: DRAFT
DATE: 9/16/2013



***NOTE: THERE ARE A NUMBER OF SMALL INSTITUTIONAL ACTIVITIES (E.G. BETHESDA, CATHOLIC DIOCESES, BROCK UNIVERSITY, ETC.) LOCATED IN THE BUSINESS PARK. FOR GENERALIZATION PURPOSES, SMALLER INSTITUTIONAL USES ARE SHOWN AS EMPLOYMENT. WHILE SOME OF THESE ACTIVITIES HAVE AN OFFICE TYPE-FUNCTION, IT IS UNDERSTOOD THAT FOR TAX-PAYING PURPOSES, THEY ARE CLASSIFIED AS INSTITUTIONAL USES.

BROCK BUSINESS PARK REVITALIZATION MASTER PLAN

FIGURE 2.3: EXISTING LAND USE



LAND USE	LANDSCAPE & URBAN DESIGN ELEMENTS
■ MAJOR INSTITUTIONAL	■ OPEN SPACE
■ MEDIUM DENSITY RESIDENTIAL	■ EXISTING TREES
■ LOW DENSITY RESIDENTIAL	■ PAVED AREAS
■ TOURIST COMMERCIAL	
■ EMPLOYMENT	
■ COMMUNITY COMMERCIAL	



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2.3. Urban Design

Overall Design Theme

The Brock Business Park was designed to fit within the broader campus setting which characterizes Brock University. The key design elements of this campus theme are exemplified through public and private realm considerations. The following section provides a brief overview of the urban design conditions within the Brock Park, and presents observations within the context of the campus theme (for public and private realm considerations).

Public Realm

The public realm within the Brock Business Park is predominantly defined by the streetscape environment, as there are no formal public spaces located within the Business Park. Highlights include:

- There are no formal public gateway areas

signifying the importance of the overall area (most gateway features are in the private realm and relate to the individual use).

- Portions of the streetscape environment include sidewalks, although the majority of the pedestrian network is concentrated in a few small areas at the north end of the Business Park.
- The streetscape environment along Schmon Parkway, St. David's and Merrittville Highway is quite minimal and absent of any formal public street trees, landscaping and theming. The reconstruction of St. David's Road presents an opportunity to improve the environment along this key route.
- Major intersections are demarcated with basic pavement treatments (such as curb cuts, painted crosswalks).
- There are no formal public walkways connecting the Brock Park internally and external connections could benefit from



Looking across St. David's Road towards Regional headquarters

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improvements.

- There is no formal way-finding, signage or programming within the public realm.
- There are no formal public spaces within the Brock Business Park.

Private Realm

The private realm within the Brock Park is defined by the edge treatments, buildings, setbacks and general landscaping for individual properties. Highlights include:

- Many of the existing properties have generously planted green spaces along property edges, featuring berming, shade trees and ornamental lighting.
- The buildings set-backs range from 20 to 30 metres for most buildings. The combination of generous landscaping with larger setbacks helps to replicate a greenfield campus-feel for the area.
- The majority of buildings are single and two storey buildings. Some of the buildings include details that are consistent with the architectural theming found at Brock University, such as the use of red-brick (as found in older structures) or the use a high degree of glazing for some of the modern and post-modern structures.
- Of the total Business Park area, 11% is occupied by building footprints, 20% is vacant parcels, 33% is paved areas, and 36% is landscaped open space. The majority of this space falls within the private realm and most of the paved area is made up of surface parking.
- The predominance of large areas of surface parking compete directly with the smaller landscaped areas and, in some spaces, the campus-feel is less evident (due to the predominance of paved areas).



- Some of the newer areas have a higher degree of urban design, which help to reinforce the elements of the campus-setting.
- One recent example is the Lofts development, which features red-brick, front facing building facades and attractive edge treatments. The transit shelter in front of the Lofts also features some art-deco elements.

Summary

There are many opportunities within the Park to enhance the current urban design conditions. These opportunities include:

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- Improvements to pedestrian connections with extensions of sidewalks on Schmon Parkway and on Merrittville Highway as well as the creation of new pedestrian connections within the Park.
- Applying consistent streetscaping improvements to Schmon Parkway, including trees, signage and street furnishings.
- Providing a boulevard treatment on St. David's Road as an extension of the Isaac Brock Boulevard.
- Creating gateway treatments to identify the Business Park at the corners of St. David's Road and Schmon Parkway, and at St. David's Road and Merrittville Parkway.

2.4. Transportation

2.4.1. Roadway Network

Schmon Parkway is the main road running through the Brock Business Park. It is a two-lane municipal roadway under the jurisdiction of the City of Thorold. There is no posted speed limit (City speed limit is 50km/hr).

St. David's Road (Regional Road 71) acts as the northerly limit of the Business Park. It provides the primary access route to the Park as it connects to Highway 406 and Highway 58. St. David's is a four-lane arterial class 2 road and is under the jurisdiction of the Region of Niagara. The posted speed limit is 50km/hr. The intersection of Schmon Parkway and St. David's Road is signalized, with the following lane configuration:

- Northbound/Southbound – A left-turn lane and a shared through/right-turn lane.
- Eastbound/Westbound – A left-turn lane, a through lane and a shared through/right-turn lane.

Merrittville Highway is on the western border of the study area. It is a two-lane arterial road under the jurisdiction of the Region. The posted speed limit is 70km/hr. Regional Council has approved a reduction in the speed limit to 50/km/hr between St. David's Road and just south of Schmon Parkway. South of Schmon Parkway on Merrittville Highway, the speed limit south of there will be reduced to 60km/hr.

The intersection of Merrittville Highway and Schmon Parkway is un-signalized. There is a stop sign control on the westbound approach of Schmon Parkway, with the following lane configuration:

- Westbound approach: A right-turn lane and a left-turn lane.
- Northbound approach: A shared through/right-turn lane.
- Southbound approach: A through lane and a left-turn lane.

Brock University to the west of the study area has plans to develop the west side of Merrittville Highway, south of St. David's Road. This may include a new road access for northbound vehicles coming up from Merrittville Highway. Depending on the location of a new access road, it may result in the signalization of an intersection near Schmon Parkway and Merrittville Highway. If this occurs, it will reduce the number of northbound left turns at the intersection of Merrittville Highway and St. David's Road.

A Traffic Impact Study completed for the student residence that now exists on Schmon Parkway looked at the intersection of Schmon Parkway and St. David's Road. It concluded that the development of student residences on Schmon Parkway would not result in any significant delay and that the intersection would continue to operate at an acceptable operational capacity by 2018. No improvements to the intersection were required. This is primarily due to the high number of pedestrian trips generated by the new student residents (not adding significantly to the road network volume). The implementation of other more traditional uses

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may require improvements to the intersection of Schmon Parkway and St. David's Road. The prominent flow is on St. David's Road.

St. David's Road is under four separate jurisdictions near the study area (the Region of Niagara, Ministry of Transportation, City of Thorold, and City of St. Catharines). The Region's Engineering Group is conducting an Environmental Assessment on St. David's Road to resurface the road. This will include a bike lane on the Region's portion of the road and a bus bay on both sides of the road.

Based on discussions with the Region, there are no traffic issues at intersections of St. David's and Merrittville and St. David's and Schmon Parkway. However, from a pedestrian safety and urban design perspective, there may be opportunities to enhance treatments in and around the three major intersections.

2.4.2. Active Transportation Network

Active Transportation (AT) refers to pedestrian, bicycling and other forms of active transport. Infrastructure to support AT typically includes sidewalks, bicycle lanes, multi-use pathways and trails. In terms of the AT network in the study area, there are sidewalks on both sides of St. David's Road between Schmon Pkwy and Glenridge Avenue/Merrittville Highway.

Schmon Parkway has sidewalks on both sides between St. David's Road and the Region of Niagara's office entrance. The sidewalk on the east side of the road has recently been constructed as a result of the new student residences. The east sidewalk extends from St. David's Road to just past the student residences.

There are no sidewalks on Schmon Parkway south of the student residences on either side of the street.



The student residence is what is drawing the greatest amount of pedestrian traffic within the Business Park. However, it is for a very short distance within the Park. The student residences are located approximately 900 metres (walking) from Brock University. The majority of pedestrian movement is on the east side of the Schmon Parkway, north of the City of Thorold City Hall and Sheraton Four Points Driveway. As alternative route to the campus, some students also cross the Region of Niagara's parking lot area.

There are high pedestrian (coming from the Lofts) crossing volumes on:

- North leg of Schmon Parkway at City of Thorold (Four Points) Driveway (52 AM Peak hour)
- East leg of Schmon Parkway at City of Thorold (Four Points) Driveway (73 AM Peak Hour)
- West leg of St. David's Road at Schmon Parkway (141 PM peak hour)
- East leg of St. David's Road at Schmon Parkway (85 PM peak hour)

Figure 2.4 illustrates the preferred walking route between the student residences and Brock University. This route provides students access to a number of retail amenities in the commercial plaza west of Norman Road on the north side of St. David's Road.

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Figure 2.4 Preferred Walking Route between Student Residences and Brock University



In terms of the bicycling network, there is no visible cycling network along Schmon Parkway. While the road does not carry a lot of traffic volume, it is fairly narrow.

The Draft Bike Lane Feasibility Study conducted by the City of Thorold did not recommend bike lanes on Schmon Parkway.

A request was made by a local business owner for the installation of bike lanes and sidewalks on Schmon Parkway in 2011, but there was no commitment from Council to implement them (apart from the individual owners providing the capital). The cost of installing a bicycle lane is noted in **Table 2.2** and would be subject to a Local Improvement Charge. A Local Improvement Charge is a special fee charged to the land owners who directly benefit from the expansion of municipal service.

Table 2.2 Estimated Costs of Sidewalks and Bicycle Lanes on Schmon Parkway

Description	Estimated Cost
Sidewalk only on one side	\$125,000
Sidewalk only but on both sides	\$250,000
Sidewalk both sides and on street Bike Lanes	\$720,000
Sidewalk both sides and off street Bike Path	\$425,000
Sidewalk one side and off street Bike Path on the other	\$300,000

Source: Schmon Parkway Sidewalks and Bike Lanes Director of Operations Report DOR2011-112

Merrittville Highway has been identified as a Scenic Bicycle Route in the *Regional Niagara Bikeways Master Plan* and by the Regional Niagara Bicycling Committee.

The *Regional Niagara Bikeways Master Plan* recommends on-road bike lanes for both Merrittville Road/Glenridge Avenue and St. David's Road. These will provide good active transportation connections to and from the Brock Business Park and the rest of the Region.

An Environmental Assessment (EA) for bike lanes on St. David's Road was completed by the City of St. Catharines and the City of Thorold; however, the recommendations were not approved by the Ministry of Transportation (MTO) and, therefore, were not implemented. This was largely due to the treatment of the AT corridor proposed on St. David's Road across the interchanges of Highway 406 just east of the study area. No one has since picked up the study due to jurisdictional and funding issues (i.e. determining who pays on a road that is at different points under four separate jurisdictions).

A new EA being conducted by the Region for St. David's Road may include bicycle lanes; however, this is only on a small segment of the road. Cycling on St. David's Road is not considered safe and there has been a lot of push by the public and cycling

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groups to implement cycling lanes or other cycling specific connections.

2.4.3. Local Transit

The Brock Business Park is directly serviced by St. Catharines Transit. All routes converge at the Brock University Transit Centre (a 1.2 km walk from the student residence on Schmon Parkway).



Transit on St. David's Road.

Route 21 provides service on Schmon Parkway connecting to Brock University and a Transfer Point at Sullivan Avenue at Pine Street. There are four stops on Schmon Parkway in each direction, including a stop at the Regional Municipality Headquarters and Thorold City Hall.

Route 16 operates between Brock University and the downtown terminal in St. Catharines via Glenridge Avenue. The closest stop to the study area is on Glenridge Avenue, north of St. David's Road.

Route 4 is an express service that operates on St. David's Road between Brock University and Downtown St. Catharines. There are no stops along St. David's Road near the study area. The closest stop is at the Brock University Transit Terminal.

The 25 Brock Bullet provides an express link between Brock University and the Downtown St. Catharines terminal. The service operates during the fall and

winter semesters only during the weekday peak periods.

Route 24 (Tupper Extra) is a Brock University special that operates in the fall and winter semesters only every 30 minutes between Brock University and Tupper Drive.

Route 122 is a Brock University special shuttle that operates only in the fall and winter semesters, every 30 minutes between Brock University and St. Catharines Terminal (Pen Centre).

There is a significant amount of bus traffic on St. David's Road (up to 275 buses a day during peak season). As a result, some new bus bays are being built on St. David's Road.

The Transit system map is provided in **Figure 2.5** and route frequencies are noted in **Table 2.3**.

Niagara Region Transit has stops on Glenridge Avenue to service Brock University, and stops on St. David's Road to service Niagara Region Headquarters/St. David's. The service provides connections to St. Catharines Terminal (Pen Centre), Niagara Falls (Bridge Street Terminal) and Welland (Downtown terminal and Seaway Mall).

Brock Link Service provided by Welland Transit stops at the Transit Centre at Brock University and connects to Niagara College in Welland (Fall and Winter Semesters only).

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Figure 2.5: St. Catharines Transit System Map

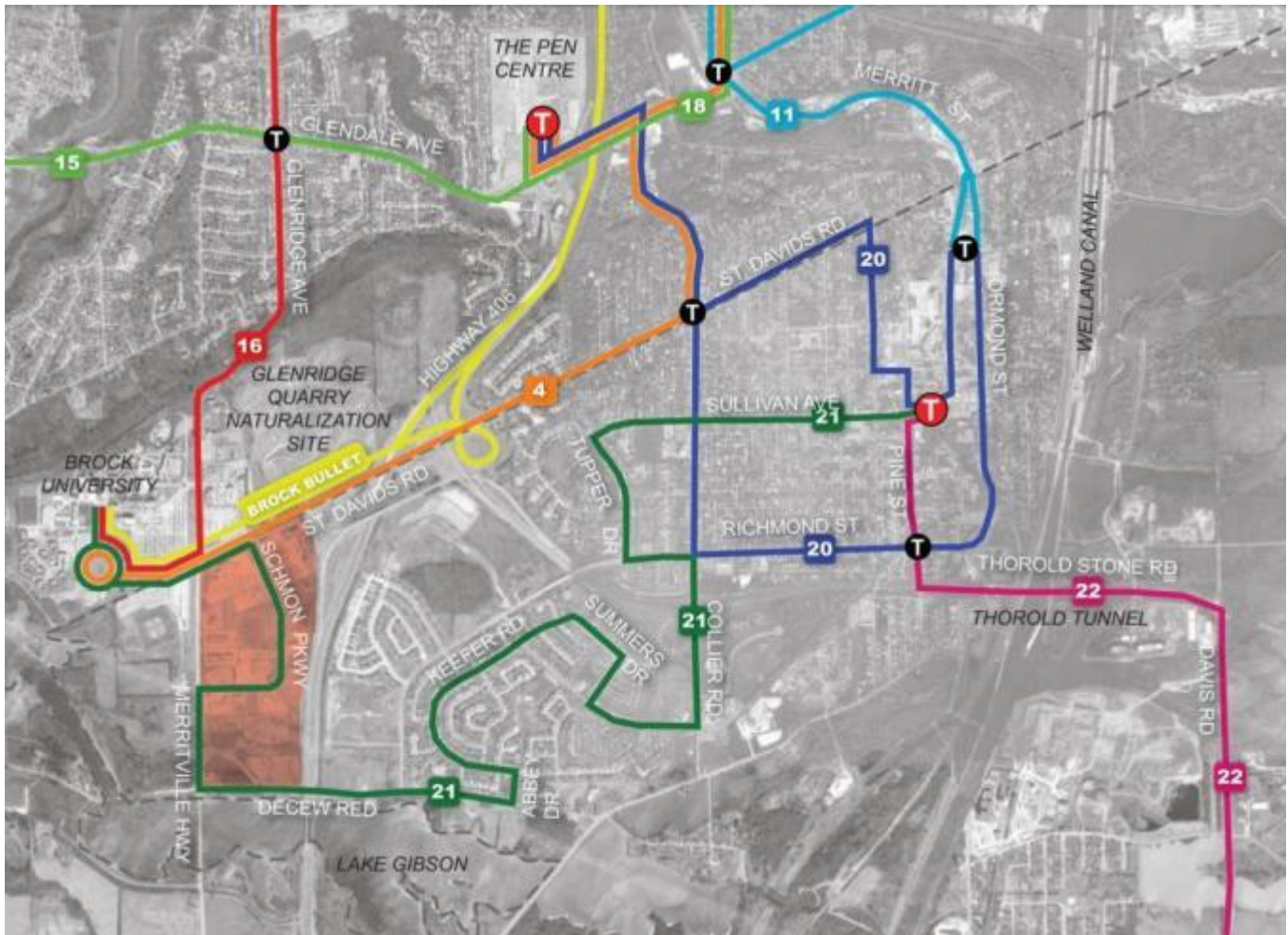


Table 2.3 Frequency of St. Catharines Bus Service (minutes)

Route	Weekday Days	Weekday Evening	Saturday	Sunday
Route 21 (fall/winter)	60	60	60	60
Route 21 (summer)	60			
Route 4	30			
Route 16 (fall/winter)	15	30	30	30
Route 16 (summer)	30	30	30	30
Route 25 Brock Bullet (fall/winter)	10 – 15 (AM/PM peak only)			

Note: Transit information reflects schedule information as of July 2013.

2.5. Servicing

The Brock Business Park is serviced by sanitary sewers, storm sewers, and watermains constructed in 1987. The capacity of the servicing at the time of construction was sized to provide sufficient servicing to the development proposed for the business park. Proposed changes in land use within the Business Park have prompted the review of servicing to determine if the existing infrastructure has sufficient capacity to meet the revised Business Park demand.

The properties within the Business Park are serviced by a system of sanitary pipes with diameters ranging from 200-250mm in diameter. These flows are conveyed from the Business Park through a 300mm sanitary sewer located within an easement at the south-east corner of the Business Park. This sanitary sewer crosses under Highway 406 and eventually discharges into a sanitary pumping station within the Confederation Heights development, together with sanitary flows from the remainder of the Confederation Heights development. The Confederation Heights development is located east of the study area on the east side of Highway 406, south of Highway 58. Since the original design of servicing to the Business Park, a student residence was developed within the park. As the student housing density exceeded the original design parameters, the theoretical capacity of the sanitary sewers within the park, under fully developed conditions, are at maximum, or above maximum for a few segments of sewer. Based on the available R. V. Anderson report, the pumping station appears to have sufficient capacity for the existing land use, but could require upgrades for any further increase in flow. The as-built drawings indicate that each lot within the Business Park is serviced with 200mm sanitary connections.

The watermain within the Business Park is a 300mm watermain, connected to a trunk 900mm watermain

on St. David's Road and a 300mm diameter watermain on Merrittville Highway. The as-built drawings indicate that each lot within the Business Park is already serviced with a water service to lot line. The capacity of the existing watermain system to service additional development within the Business Park would need to be confirmed with the Regional Municipality of Niagara. Field testing may also be required to complete this capacity confirmation.

The Business Park is also serviced by storm sewers running within the Schmon Parkway right-of-way. The storm sewers range in size from 375mm to 1650mm in diameter and discharge into a 2200mm diameter sewer running southerly along Merrittville Highway. The calculations for the sizing of the storm flows, including run-off coefficients were not available for review at this time.

Based on the design of the sanitary system, any unexpected increase in flows, including intensification and storm wet weather inflow are likely to cause surcharge of the sanitary sewers and overloading of the pumping station. Since the sewers are already noted as theoretically surcharged under full development conditions, the sanitary servicing of the Business Park appears to be the greatest threat to additional development.

Should the storm water management criteria used during the design of the storm sewers be maintained for further development and, should the Regional Municipality of Niagara confirm available capacity within the water supply system, the sanitary sewer system would remain as the servicing limitation to meeting increased servicing requirements of future developments. Any increased impermeability or storm drainage run off associated with the remaining development would need to be controlled.

However, there exists opportunities to increase the capacity of the system, or to decrease the impact of future development on the system.

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The first opportunity to improve capacity is to increase the conveyance of the existing sanitary sewer infrastructure. A previous study has indicated that the sanitary sewers within the Confederation Heights development are likely to be reconstructed to better align with the proposed road network. During the relocation, the sewers could be upsized to handle additional flow from the Brock Business Park. The 300mm sewer crossing of Highway 406 and the 300mm sewer between Lots 6 and 7 would also need to be upsized. This would increase the sanitary capacity of the park. A few sections of 250mm diameter sewer within the Business Park should also be upsized since they are calculated to be approaching, or over the maximum theoretical capacity. It is likely that the capacity of the downstream pumping station would also need to be increased, either with larger pumps, or by replacing the impellers on the existing pumps. The sizes of these new pipes could all be calculated based on proposed development increases within the Business Park. This option would increase the servicing capacity within the park. The intensification of planned development would be controlled by the limitations of the pumping station upgrades and MOE approvals along with a confirmation of the capacity of the pumping station forcemain.

Another opportunity to manage any intensification of development may be to revise the development within the park by applying conservation standards on new development. This option was explored and recommended for the development of a student residence on Lot 3 of the Business Park. By employing LEED design guidelines, the development is able to reduce water consumption, and consequently, the generation of sewage to reduce the impacts to the existing Business Park servicing. Future development of typically higher service use could employ LEED (or other standard) conservation guidelines to minimize impacts associated with future development to the Business Park existing servicing.



The increased servicing needs of a lot to be developed could be addressed by reducing the servicing needs of another undeveloped lot. Under this scenario, the servicing potential of an undeveloped lot could be reduced by restricting its future use and the servicing capacity needs associated with this undeveloped lot assigned to another lot to be developed that has additional servicing capacity needs. A final way to potentially increase the development within the park is to review the servicing based on existing conditions and land development. The theoretical analysis to date has been completed using typical ranges of infiltration and design densities. The analysis of the park could be re-calculated using actual developed land use and by calculating the actual infiltration within the sanitary sewer system. Unused capacity within the system could be reallocated to new development. The disadvantage of this review is that, if a development's servicing needs are reduced, then this development may not be able to be redeveloped within the original design potential that the existing servicing was based on.

2.6. Summary of Issues, Opportunities and Constraints

The opportunities and constraints for land use, urban design, transportation and servicing are summarized in **Table 2.4**. A detailed list of opportunities and constraints is provided in **Appendix B**.

Table 2.4 Summary of Opportunities and Constraints

Lens	Component	Opportunities	Issues & Constraints
Land Use	Policy	<ul style="list-style-type: none"> Local and Regional policy supports rethinking the purpose and uses in the Brock Business Park. There may be opportunities to promote additional mixed use development in the Brock Park, provided it helps to advance the vision put forth in the Regional Policy Plan Amendment 1-2012. 	<ul style="list-style-type: none"> Employment lands require justification for conversion under Provincial Policy. The inclusion of any future non-employment uses in the Park will require a justification under the Province's/Region's conversion policies.
	Land Use	<ul style="list-style-type: none"> Existing employment uses are compatible with a variety of other uses including residential and commercial. Mixed use is already occurring in the Business Park. There are ample opportunities for infilling and intensification. 	<ul style="list-style-type: none"> Balancing uses in the Business Park so that the overall employment function is not threatened. There are few ancillary/supportive commercial amenity type uses in and around the Brock Business Park.
Urban Design	Public Realm and Built Form	<ul style="list-style-type: none"> Current campus design provides ample open space and a consistent feel to the Business Park. Private realm is relatively well defined 	<ul style="list-style-type: none"> There are no formal public spaces within the Brock Park Overall treatment of the public realm has largely been ignored - lack of gateways, streetscaping, etc.
Transportation	Active Transportation	<ul style="list-style-type: none"> The Region has strong policies on promoting active transportation and there is increased interest in the Business Park to improve sidewalks and bicycle access. 	<ul style="list-style-type: none"> The Business Park was not designed with pedestrian and cyclists in mind and the design favours the automobile which can provide safety challenges for active modes.
	Transit	<ul style="list-style-type: none"> Variety of transit routes accessible from Brock University which is in close proximity to the 	<ul style="list-style-type: none"> Transit is dependent on ridership which currently comes from Brock University, the Business Park lacks the passenger support for more

2 | EXISTING & PLANNED CONDITIONS

Lens	Component	Opportunities	Issues & Constraints
		Business Park.	transit at this time.
	Road Network	<ul style="list-style-type: none"> The road network is functioning well and can handle increased capacity. The direct access to Highway 406 is an asset for the Business Park. 	<ul style="list-style-type: none"> Increased pedestrian traffic may impact auto travel times and left turns into and out of the Business Park.
Servicing	Sanitary and Watermain Servicing	<ul style="list-style-type: none"> Majority of vacant sites are serviced or serviceable. Sustainable design, including LEED design, can be implemented to support increased development with less impact on servicing and stormwater management. 	<ul style="list-style-type: none"> Servicing will be at capacity before full development potential is reached for the site if development includes intensification beyond what is currently approved for the area. There is a need to better understand the impacts of intensification on Regional and City infrastructure.
Market		<ul style="list-style-type: none"> Businesses in the park are stable with some undergoing expansion. There is increased market interest in student residential. 	<ul style="list-style-type: none"> There is a surplus in employment land in Thorold and a lack of new businesses looking to come into the park. Student residential development could push out some employment uses in the future.

3 A VISION FOR THE FUTURE

The Brock Business Park is entering a period of transition. Pressure for new uses not contemplated in the original plan, along with broader changes in the labour market, suggests that there is a need to establish a new long-term vision to guide development and redevelopment in the Brock Park. This section outlines the key findings of the stakeholder engagement activities that were undertaken as part of the Study and the proposed Principles for revitalizing the Brock Business Park.



3 | VISION FOR THE FUTURE

3.1. Consultation

Two stakeholder consultation exercises were held in the summer of 2013 to assist with the revatailization plans for the Brock Business Park. The first stakeholder session was held on July 17, 2013. The purpose of the session was to set the context for the study, examine precedents where business parks and employment areas are being redeveloped, review the strengths, weaknesses, opportunities and threats to the Brock Business Park Revitalization, and identify priorities for the Master Plan Study and discuss potential principles to guide the study. The second consultation event was held on August 20, 2013 and was open to both stakeholders and the public. This session was a workshop to explore ideas for land use and development concepts for the Business Park.



Appendix C is the Consultation Record for the study and includes the consultation materials and meeting notes from the July 17, 2013 and August 20, 2013 sessions.

The two tangible outcomes of the Stakeholder events were:

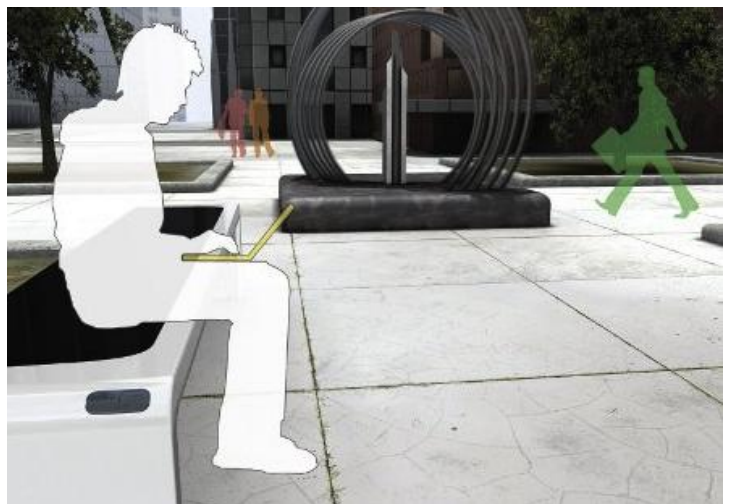
1. Guideline principles for revitalizing the Brock Business Park; and
2. Potential alternative development concepts.

The proposed future development principles are presented below. The development concepts are presented in the next section.

3 | VISION FOR THE FUTURE

3.2. Guiding Principles

- 1. Promote mixed use development** – Mixed use development supports the sustainable development of a community. Mixing uses, such as employment, residential and commercial, within an area or in a building, can result in reduced distances for commuting, more compact development, stronger neighbourhood character and more pedestrian and bicycle-friendly design.
- 2. Maintain and enhance the employment function of the Brock Business Park** – The Brock Business Park is a strategic employment area for the City and Region. It has strong and stable office uses today and this should continue to be the case in the future. Integrating other uses into the Park should support and enhance the employment uses.
- 3. Improve pedestrian safety & connectivity between the Business Park and Brock University** – the proximity of the Business Park to Brock University should be leveraged through improved connections that support start-ups and incubator businesses, live-work environments and some student residential. Pedestrians should be able to move freely and safely between the university campus and the Business Park in all seasons.
- 4. Introduce basic amenities** – the Business Park is lacking amenities for the people who work and live in the area. Providing basic amenities, such as recreational space(s), restaurants, cafes, banks, appropriately sized food stores and other supportive uses, will allow people to travel less and improve the overall desirability of the area for new firms.



3 | VISION FOR THE FUTURE

5. **Promote high quality urban design and sustainability to tie the Business Park together** – Improving the urban design and sustainability of the Business Park will support its longevity and attract new investment.
6. **Maintain the campus-like design characteristics (green, open, scale, etc.)** – the current campus feel of the Business Park was planned and is part of the broader vision for the area. This should be maintained and enhanced with future development and redevelopment.



7. **Balance the needs of all users** – as the users in the Business Park evolve, including the introduction of students living in the area, the needs of these different users requires support. This includes providing sidewalks for pedestrian movement through the Business Park to connect to Brock University.
8. **Make best use of existing infrastructure** – the sustainable development and redevelopment of the Business Park requires consideration for the existing infrastructure. Revitalization of the Business Park should consider how the infrastructure can be best utilized to sustain long term development.



4 MASTER PLAN CONCEPTS

Master Plan Concepts were developed to test the potential options for revitalization of the Business Park. The concepts look at a variety of options including new land uses, pedestrian connections, park spaces, and amenities. The following section presents three concepts along with the results of our assessment of the concepts.

4.1. Alternative Concepts

Three alternative development concepts for the Brock Business Park were considered.

4.1.1. Concept 1: Mixed Use (with Central Park)

Concept 1 is intended to illustrate how the Brock Business Park might develop if a greater emphasis was placed on promoting intensification and mixed use development. Highlights include:

- **Land Use:** Includes a range of uses, with a greater emphasis on attracting non-employment uses at the north and south ends of the Business Park. The central portion of the Business Park maintains its employment function. Stand-alone commercial uses are proposed for high-profile locations at St. David's and Merrittville Highway and a high level intensification is proposed on the Regional property (necessitating a structured parking lot). Concept 1 illustrates some commercial infilling outside of the Study to emphasize the potential for street-oriented development along St. David's Road.
- **Transportation:** Proposes a new internal east-west local road, emphasizing the physical connectivity with Brock University.
- **Urban Design and Public Realm:** Features a distribution of small and medium-sized public squares and plazas throughout, linked with smaller pedestrian trails (internal to the Business Park).

4.1.2. Concept 2: Employment Focus

Concept 2 is intended to illustrate how the Brock Business Park might develop if a greater emphasis is placed on preserving the employment land designations, but allows, to a minor degree, for non-employment uses in the northern portion of the Park. Highlights include:

- **Land Use:** Emphasized employment uses throughout – with a small level of residential uses in the north and end of the Business Park. The central portion of the Business Park maintains its employment function.
- **Transportation:** No additional formal transportation connections are provided for. Active transportation improvements are provided along the one side of Schmon Parkway and one additional internal pedestrian connection is provided at the mid-block level.
- **Urban Design and Public Realm:** No additional public spaces are provided. Enhanced streetscaping is provided along St. David's Road.

4.1.3. Concept 3: Live-Work (with Linear Park)

Concept 3 is intended to provide a balance between Concept 1 and 2, allowing for a more modest level of non-employment uses, including some live-work developments in the central portion. Highlights include:

- **Land Use:** Includes a range of uses, with a greater emphasis on attracting live-work uses at the north and south ends of the Business Park. The central portion of the Business Park maintains its employment function. A modest level intensification on the Regional property (necessitating a structured parking lot). Assumes stand-alone commercial uses would occur off-site.

4 | MASTER PLAN CONCEPTS

- **Transportation:** Proposes a strong east-west linear park/pedestrian connection, emphasizing the physical connectivity with Brock University.
- **Urban Design and Public Realm:** Uses a linear park to provide a basic level of public space/leisure area for both employment and non-employment users. Enhanced streetscaping is provided along St. David's Road.

Concepts 1-3 are illustrated on **Figures 4.1, 4.2 and 4.3**. **Table 4.1** provides a statistical comparison of the Concepts.

Table 4.1: Comparison of Concepts

Concept	Total Area (ha)	Area Less EP (ha)	Major Institution		Employment		Residential		Commercial/ Mixed Use		Vacant		Park Land	
			Ha.	%	Ha.	%	Ha.	%	Ha.	%	Ha/	%	Ha.	%
Existing Conditions	54.7	47.3	9.4	20%	18.1	38%	3.3	7%	3.8	8%	12.7	27%	0.0	0%
Concept 1	53.7	46.3	7.2	16%	23.2	50%	9.9	21%	4.4	10%	0.0	0%	1.4	3%
Concept 2	54.5	47.0	8.3	18%	30.8	65%	4.3	9%	3.7	8%	0.0	0%	0.0	0%
Concept 3	54.5	47.0	8.8	19%	23.8	51%	9.3	20%	4.5	10%	0.0	0%	0.6	1%



PROPOSED SOUTH CAMPUS EXPANSION AS PER 2003 CAMPUS MASTER PLAN, SUBJECT TO CHANGE

THE NIAGARA REGION MODEL FLYING CLUB INC.

BROCK UNIVERSITY

BROCK BUSINESS PARK REVITALIZATION MASTER PLAN

FIGURE 4.1 | CONCEPT 1: MIXED USE (WITH CENTRAL PARK)



LAND USE

- MAJOR INSTITUTIONAL
- MEDIUM DENSITY RESIDENTIAL
- LOW DENSITY RESIDENTIAL
- TOURIST COMMERCIAL
- EMPLOYMENT
- COMMUNITY COMMERCIAL

LANDSCAPE & URBAN DESIGN ELEMENTS

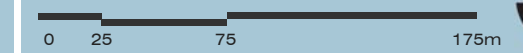
- OPEN SPACE
- RAIN GARDENS & SWALES
- PARK AREA
- EXISTING TREES
- STREET TREES
- PARKING LOT TREES

- CULTURAL/ORNAMENTAL TREES
- CULTURAL LANDSCAPE | GATEWAY
- PAVED AREAS
- PERMEABLE PAVED AREAS
- ||||| CROSSWALK

PLANNING ELEMENTS

- DEVELOPMENT PROPOSAL

SCALE




CREATED BY:
MELISSA KOSTERMAN
CHECKED BY:
PADDY KENNEDY

PROJECT: 1308060
STATUS: DRAFT
DATE: 9/11/2013

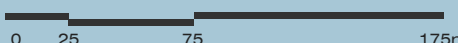



BROCK BUSINESS PARK REVITALIZATION MASTER PLAN
 FIGURE 4.2 | CONCEPT 2: EMPLOYMENT FOCUSED




LAND USE	LANDSCAPE & URBAN DESIGN ELEMENTS	PLANNING ELEMENTS
MAJOR INSTITUTIONAL	OPEN SPACE	DEVELOPMENT PROPOSAL
MEDIUM DENSITY RESIDENTIAL	RAIN GARDENS & SWALES	PAVED AREAS
LOW DENSITY RESIDENTIAL	PARK AREA	PERMEABLE PAVED AREAS
TOURIST COMMERCIAL	EXISTING TREES	CROSSWALK
EMPLOYMENT	STREET TREES	
COMMUNITY COMMERCIAL	PARKING LOT TREES	

SCALE

CREATED BY:
MELISSA KOSTERMAN
 CHECKED BY:
PADDY KENNEDY

PROJECT: 1308060
 STATUS: DRAFT
 DATE: 27/08/2013



PROPOSED SOUTH CAMPUS EXPANSION AS PER 2003 CAMPUS MASTER PLAN, SUBJECT TO CHANGE



BROCK BUSINESS PARK REVITALIZATION MASTER PLAN

CONCEPT 3 | LIVE-WORK (WITH LINEAR PARK)



LAND USE

- MAJOR INSTITUTIONAL
- MEDIUM DENSITY RESIDENTIAL
- LOW DENSITY RESIDENTIAL
- TOURIST COMMERCIAL
- EMPLOYMENT
- COMMUNITY COMMERCIAL

LANDSCAPE & URBAN DESIGN ELEMENTS

- OPEN SPACE
- RAIN GARDENS & SWALES
- PARK AREA
- EXISTING TREES
- STREET TREES
- PARKING LOT TREES

PLANNING ELEMENTS

- DEVELOPMENT PROPOSAL
- CULTURAL/ORNAMENTAL TREES
- CULTURAL LANDSCAPE | GATEWAY
- PAVED AREAS
- PERMEABLE PAVED AREAS
- ||||| CROSSWALK

SCALE



CREATED BY:
MELISSA KOSTERMAN
CHECKED BY:
PADDY KENNEDY
PROJECT: 1308060
STATUS: DRAFT
DATE: 29/08/2013

4.2. Concept Evaluation Matrix

Table 4.2 provides the evaluation of the three concepts.

Each concept was evaluated in terms of:

- Ability to meet the Guiding Principles identified in section 4.1 for the Vision for the Future;³
- Land Use, including ability to meet policy objectives and compatibility;
- Transportation, including active transportation, transit, and road network;
- Urban design, including public realm, built form and streetscaping;
- Servicing, including consideration of serviceability and available or required infrastructure; and
- Market, the consideration of market potential.

While each concept has a number of advantages and disadvantages, the findings provide some direction for recommending a policy framework for the Brock Business Park.

³ Guiding Principles include: Promote mixed use development; maintain basic employment function; improve connectivity; introduce basic amenities; promote high quality urban design and sustainability; maintain campus like setting; balance the needs of all users; make the best use of existing infrastructure.

4 | MASTER PLAN CONCEPTS

Table 4.2 Concept Evaluation Matrix

	Evaluation Criteria ⁴	CONCEPT 1 – Mixed Use (with central park)	CONCEPT 2 – Employment Focus	CONCEPT 3 – Live Work (with linear park)
LAND USE	Alignment with Provincial Policy	<ul style="list-style-type: none"> Provincial policy states that conversion of employment lands requires justification and new set of policies. This concept would require justification for further conversion of employment lands beyond what is there today. 	<ul style="list-style-type: none"> Provincial policy states that conversion of employment lands require justification and a new set of policies. This concept does not include additional residential beyond what is currently proposed. 	<ul style="list-style-type: none"> Provincial policy states that conversion of employment lands requires justification and a new set of policies. This concept would require justification for further conversion of employment lands beyond what is there today.
	Alignment with Regional Policy Plan and Gateway Strategy	<ul style="list-style-type: none"> Regional policies permit contemplation of new uses in the business park as long as they are compatible. This concept presents an option for mixed use that compliments the existing uses. There are no heavy industrial uses located near residential. 	<ul style="list-style-type: none"> This concept is aligned with the Regional policies as it focuses on further intensifying the employment uses. The concept also includes some commercial space which improves the mixed use conditions in the Park. 	<ul style="list-style-type: none"> Regional policies permit contemplation of new uses in the business park as long as they are compatible. This concept presents an option for mixed use that compliments the existing uses. There are no heavy industrial uses located near residential.
	Alignment with City of Thorold Official Plan	<ul style="list-style-type: none"> The City Official Plan designates the Business Park serviced industrial and allows some mixed uses. This concept would require an Official Plan Amendment, as it requires conversion of employment lands beyond what is currently proposed. 	<ul style="list-style-type: none"> This concept is aligned with the City policies as it focuses on further intensifying the employment uses. There is no additional employment conversion required in this concept beyond what is currently proposed. The ancillary commercial is permitted in the current designation. 	<ul style="list-style-type: none"> The City Official Plan designates the Business Park serviced industrial and allows some mixed uses. This concept would require an Official Plan Amendment, as it requires conversion of employment lands beyond what is currently proposed.
	Minimizes Potential for Land Use Compatibility Issues	<ul style="list-style-type: none"> The additional residential proposed may lead to compatibility challenges. However, due to the fact that the Brock Business Park is concentrated primarily with office uses and not heavy industry, it is unlikely that compatibility issues will arise. 	<ul style="list-style-type: none"> This concept to further intensify the employment uses while adding some commercial presents an option that minimizes compatibility issues. 	<ul style="list-style-type: none"> The additional residential proposed may lead to compatibility challenges. However, due to the fact that the Brock Business Park is concentrated primarily with office uses and not heavy industry, it is unlikely that compatibility issues will arise.
	Potential to Improve and Enhance the Employment Function of the Business Park (includes ability to accommodate amenities – commercial & public, etc.)	<ul style="list-style-type: none"> This concept will enhance the employment function by adding uses to complement prestige employment uses such as office space. This includes commercial and residential. This concept also provides significant new park space that will serve the employment uses as passive and active recreation space. 	<ul style="list-style-type: none"> This concept will enhance the employment function by adding commercial uses to complement the employment uses. 	<ul style="list-style-type: none"> This concept will enhance the employment function by adding uses to complement prestige employment uses such as office space. This includes commercial and residential. This concept also provides some new park space that will serve the employment uses as passive recreation space. This includes a signature linear park space to provide pedestrian connections east-west through the Business Park.
TRANSPORTATION	Opportunities to Improve Active Transportation Network (GP)	<ul style="list-style-type: none"> Addition of a new east-west road allows for improved opportunity for walking and cycling and connections to the southern expansion of Brock University. Intensification will support the construction of sidewalks in the south end of the Business Park, which will support pedestrian modes. Signalization of intersections at Merrittville Highway supports pedestrian and cycling modes. New residential area on west side of Schmon Pkwy may increase cut-through traffic through the Regional Headquarters to the University Campus and the proposed commercial infill property on northwest corner of the property. 	<ul style="list-style-type: none"> Addition of a new east-west connection allows for improved opportunity for walking. However, path is not direct or does not lead to a specific destination, which means it may be used less than the roadway in Option 1. Intensification will support the construction of sidewalks in the south end of the Business Park, which will support pedestrian modes. Does not support a pedestrian/cycling connection to the southern expansion of Brock University from the residence on the east side of Schmon Pkwy. Limits cut-through opportunities through the Regional Headquarters. 	<ul style="list-style-type: none"> Addition of a new linear park and multi-use pathway east-west through the Business Park allows for improved opportunity for walking and cycling and connections to the southern expansion of Brock University. Intensification will support the construction of sidewalks in the south end of the Business Park, which will support pedestrian modes. Signalization of intersections at Merrittville Highway supports pedestrian and cycling modes. New residential area on west side of Schmon Pkwy may increase cut-through traffic through the Regional Headquarters to the University Campus. Addition of the new pedestrian bridge over Highway 406 would greatly enhance pedestrian connections the rest of Thorold.
	Opportunities to Improve the	<ul style="list-style-type: none"> Addition of a new east-west road allows for improved 	<ul style="list-style-type: none"> Emphasis on employment uses will see an increase in traffic 	<ul style="list-style-type: none"> This option involves the highest square footage of housing

⁴⁴ Guiding Principles denoted with “(GP)”.

4 | MASTER PLAN CONCEPTS

	Evaluation Criteria ⁴	CONCEPT 1 – Mixed Use (with central park)	CONCEPT 2 – Employment Focus	CONCEPT 3 – Live Work (with linear park)
	Road Network	<p>connectivity in the road network.</p> <ul style="list-style-type: none"> This option involves the highest square footage of housing geared to students. Students are more likely to walk or take transit to Brock University, which will limit the increase in traffic volume and potential issues. Parking issues may need to be addressed with the commercial infill on the northwest corner of the site (potential conflict and overflow with the Regional Headquarters parking). The signalized intersection at Schmon Pkwy and Merrittville Hwy will improve operations of the intersection. 	<p>generated to/from the site, particularly at the intersection of Schmon Pkwy and St. David's Rd.</p> <ul style="list-style-type: none"> The signalized intersection at Schmon Pkwy and Merrittville Hwy will improve operations of the intersection. Does not improve connectivity in the Business Park. 	<p>geared to students. Students are more likely to walk or take transit to Brock University, which will limit the increase in traffic volume and potential issues.</p> <ul style="list-style-type: none"> The signalized intersection at Schmon Pkwy and Merrittville Hwy will improve operations of the intersection. Does not improve connectivity in the Business Park.
	Opportunities to Improve Transit Connections & Service (GP)	<ul style="list-style-type: none"> Transit will likely increase with increased development growth in the area. Given the higher percentage of students, this may only occur during the fall and winter semesters. The transit option may not be financially sustainable if the majority of passengers pay using the Brock University U-Pass. An agreement would need to be reached with the University. 	<ul style="list-style-type: none"> The emphasis on employment will increase ridership on the existing transit route for longer distance trips. An increase in fare-paying passengers may allow for an increase in service all year round. Will have the biggest impact on reducing vehicle trips due to the higher number of employees (the mode shift from options with a higher number of students will likely be from walking to transit instead of from driving to transit given the close proximity of the University). 	<ul style="list-style-type: none"> Transit will likely increase with increased development growth in the area. Given the higher percentage of students, this may only occur during the fall and winter semesters. The transit option may not be financially sustainable if the majority of passengers pay using the Brock University U-Pass. An agreement would need to be reached with the University.
URBAN DESIGN	Potential to Improve the Overall Attractiveness of the Business Park	<ul style="list-style-type: none"> Generally, the opportunities to improve the overall attractiveness of the Business Park are not limited by a particular development concept. 	<ul style="list-style-type: none"> Generally, the opportunities to improve the overall attractiveness of the Business Park are not limited by a particular development concept. 	<ul style="list-style-type: none"> Generally, the opportunities to improve the overall attractiveness of the Business Park are not limited by a particular development concept.
	Potential to Maintain Campus Setting (GP)	<ul style="list-style-type: none"> All options have the potential to maintain the campus-like setting. 	<ul style="list-style-type: none"> All options have the potential to maintain the campus-like setting. 	<ul style="list-style-type: none"> All options have the potential to maintain the campus-like setting.
	Opportunities to Improve Public and Pedestrian Realm	<ul style="list-style-type: none"> The inclusion of a strong pedestrian edge along the proposed new local road provides a good opportunity to improve the connectivity and pedestrian realm. 	<ul style="list-style-type: none"> The inclusion of a pedestrian trail provides a good opportunity to improve the connectivity and pedestrian realm. 	<ul style="list-style-type: none"> The inclusion of a linear park provides a good opportunity to improve the connectivity and pedestrian realm.
SERVICING	Potential to Make Best Use of Existing Municipal Infrastructure	<ul style="list-style-type: none"> Intensification of development is likely to have a greater demand on existing infrastructure since greater water demands and discharges are expected based on increased densities. An increase in park space would reduce the demand on existing servicing. Increased park space combined with conservation measures for proposed development could provide additional capacity for the increased development within the current business park limits. Impacts to existing storm sewer infrastructure may be affected if storm water controls are not a requirement of any new development that has the potential to increase run off (increase impermeability). Due to a large adjacent trunk watermain, potable water demands are not likely to be greater than available adjacent capacity. Drainage area of the Confederation Heights pumping station needs to be confirmed with respect to impacts associated with any increased drainage area associated with this development. 	<ul style="list-style-type: none"> Additional flows from any increase in proposed development may be partially offset by imposing conservation requirements on the adjacent employment buildings which have not been constructed at this time. The prestige employment area to the south of the business park may not be serviced by the sewers within the park without pumping and would need both a review of design grades and sizing of the existing infrastructure within the park. Alternatively, the construction of new servicing on Decew Road, south of the park could be reviewed. Any increase in impermeable areas over and above what was allowed for in the design of the existing storm sewer infrastructure would need to be addressed by stormwater management controls as part of and new development designs. Due to the existence of a large adjacent trunk watermain, potable water demands are not likely to be greater than available adjacent capacity. Drainage area of the Confederation Heights pumping station needs to be confirmed with respect to impacts associated with any increased drainage area associated with this development. 	<ul style="list-style-type: none"> Intensification of development is likely to have a greater demand on existing infrastructure since greater water demands are expected based on increased densities of development. The reduced park space in comparison to Concept 1 will likely entail greater servicing demand. Low density residential parcels to the south of the business park are unlikely to be serviced by the sewers within the park. Pumping may be required for this portion of the development. Alternatively, servicing could be from the construction of new infrastructure on Decew Road south of the park. Any increase in impermeable areas over and above what was allowed for in the design of the existing storm infrastructure would need to be addressed by stormwater management controls as part of the development designs. Due to the existence of a large adjacent trunk watermain, potable water demands are not likely to be greater than available adjacent capacity. Drainage area of the Confederation Heights pumping station needs to be confirmed with respect to impacts associated with any increased drainage area associated with this development.

4 | MASTER PLAN CONCEPTS

	Evaluation Criteria ⁴	CONCEPT 1 – Mixed Use (with central park)	CONCEPT 2 – Employment Focus	CONCEPT 3 – Live Work (with linear park)
	Potential for Additional Servicing Improvements & Upgrades	<ul style="list-style-type: none"> • Low density residential parcels to the south of the business park are unlikely to be serviced by the sewers within the park. Pumping may be required for this portion of the proposed business park development. The construction of new servicing on Decew Road could be reviewed; however, topography and depth of the high end of existing sewer infrastructure would need to be reviewed for grade and capacity to confirm opportunities for connection. • Additional watermain infrastructure will need to be constructed for the proposed development which is located outside of the existing business park development limits. If required, additional sanitary sewer capacity could be provided by reconstruction of the sewers between Schmon Parkway and the downstream pumping station. The pumping station may require capacity upgrades in the future. • A few segments of sewers within the business park would also need to be reconstructed. • Upgrades to the downstream sewer and pumping station could be recovered as part of development charges since the proposed development is likely to have a greater demand on the system than originally designed for. 	<ul style="list-style-type: none"> • Servicing upgrades would be subject to the degree of increased development densities beyond what was anticipated at the time of the design of the existing sanitary sewer infrastructure. Discharge criteria can likely be imposed on new developments which would reduce the need for upgrades to the sanitary sewer system. Any required upgrades could be funded wholly, or in part, by development charges. 	<ul style="list-style-type: none"> • If required, additional sanitary sewer capacity could be provided by reconstruction of the sewers between Schmon Parkway and the downstream pumping station. The pumping station may require capacity upgrades in the future. • A few segments of sewers within the business park would also need to be reconstructed. • Upgrades to the downstream sewer and pumping station could be recovered as part of development charges since the proposed development is likely to have a greater demand on the system than originally designed for.
MARKET	Potential Alignment with Perceived Market Trends	<ul style="list-style-type: none"> • Includes a mixture of employment and non-employment uses. The inclusion of increased levels of non-employment uses in a concentrated location may provide the catalyst for transforming the overall image of the Park and may also provide the basis for increased amenities. 	<ul style="list-style-type: none"> • The relatively small range of non-employment uses may limit the potential to provide increased amenities in the Park. The overall timeframe for redevelopment may take longer, given the focus on traditional employment land uses. 	<ul style="list-style-type: none"> • Includes a mixture of employment and non-employment uses. The inclusion of increased levels of non-employment uses in a concentrated location may provide the catalyst for transforming the overall image of the Park and may also provide the basis for increased amenities.

5

RECOMMENDED POLICIES & CONCEPTS



The following section outlines a policy framework for the Brock Park. This section provides the basis for a formal secondary plan which can be prepared and included as part of the City's Official Plan Review. The policies presented in this section are not intended to be the final version, as it is understood that the formal secondary plan process will allow for some additional adjustments and enhancements. The policy framework is organized around the following key elements:

- Vision & Objectives
- Land Use
- Urban Design
- Infrastructure & Transportation

5 | RECOMMENDED P&C'S

• Implementation

5.1. Vision & Objectives

5.1.1. Vision

The Brock Park is an attractive, dynamic, high quality mixed use area that is home to some of the City's premier employers. The area houses a collection of live-work activities, which help to support innovation and business incubation associated with Brock University. The Brock Park's unique campus-like setting, along with its attractive and accessible public spaces and streetscapes, provide a unique sense of place that makes the Brock Park one of the most innovative and interesting mixed use areas in the GGH.



5 | RECOMMENDED P&C'S

5.1.2. Objectives

The objectives of the Brock Park Revitalization Master Plan are to:

1. Promote economic development.
2. Provide a framework for mixed-use development and redevelopment.
3. Protect and enhance the employment function for the Brock Park.
4. Improve pedestrian safety & connectivity within the Park and adjacent areas.
5. Introduce basic amenities which support revitalization and economic investment.
6. Maintain the campus-like setting.
7. Balance the needs of all users.
8. Make best use of existing infrastructure.
9. Promote sustainable development throughout the Brock Park.

5.2. Land Use

5.2.1. Land Use Plan

The proposed land use plan for the Brock Park is illustrated on **Figure 5.1** and is organized around four major land use designations:

- Mixed use areas;
- Employment areas;
- Residential; and,
- Environmental Protection & Conservation Areas.

5.2.2. Mixed Use Areas

Planned Function

Mixed use areas are intended to provide a location for a range of complementary uses that are dynamic, vibrant and have a high degree of integration, such as business incubators and certain types of R&D facilities. This designation is also intended to recognize a number of existing uses and also provides a framework for future redevelopment and intensification.

Permitted Uses

Permitted uses within the mixed use designation include institutional, office, commercial, medium and high density residential and hospitality uses. Uses are encouraged to be mixed within a single building, whereby ground-oriented uses might include commercial uses and upper stories accommodate complementary uses – such as residential or office activities.

Scale

The maximum building height for buildings within in the mixed use area is six stories. The minimum height for new development is three stories.

Commercial Uses

Commercial uses permitted within the Mixed Use designation are limited to those activities which serve the employees and residents of the Brock Park and should include, but are not limited to, cafes, restaurants, banks, food stores and a range of personal services, such as fitness clubs, pharmacies, hair salons and convenience stores. Large scale, destination retail commercial activities (e.g. big box), highway commercial activities, such as auto repair and auto sales business, and night-clubs are not permitted.



PROPOSED SOUTH CAMPUS EXPANSION AS PER 2003 CAMPUS MASTER PLAN, SUBJECT TO CHANGE

THE NIAGARA
REGION MODEL
FLYING CLUB
INC.

BROCK
UNIVERSITY

MCDONALD'S

TIM HORTONS

GLENRIDGE
QUARRY
NATURALIZATION
SITE



BROCK BUSINESS PARK REVITALIZATION MASTER PLAN

FIGURE 5.1 | PROPOSED
LAND USE CONCEPT



LAND USE

- MIXED USE
- EMPLOYMENT
- RESIDENTIAL
- ENVIRONMENTAL CONSERVATION AREA | SIGNIFICANT WOODLANDS
- ENVIRONMENTAL PROTECTION AREA | SIGNIFICANT WETLANDS

SCALE



CREATED BY:
MELISSA KOSTERMAN
CHECKED BY:
PADDY KENNEDY

PROJECT: 1308060
STATUS: DRAFT
DATE: 9/17/2013

5 | RECOMMENDED P&C'S

Maximum Thresholds for New Residential Development

Where new residential uses are proposed, the ground floor areas of buildings which front onto a street shall be comprised of non-residential uses, such as commercial or employment uses. The intent of this policy is to ensure that new development which is located in highly visible areas contributes to a vibrant and dynamic street environment.

New additional residential uses that are proposed within the mixed use designation will require a market study to justify the market demand for the proposed activity.

5.2.3. Employment Areas

Planned Function

Employment Areas are intended to provide a location for stand-alone, stable employment uses which are distinct from the more dynamic formats located in the Mixed Use designation. The Employment Area designation will ensure that the basic and original employment function of the Brock Park is maintained over the longer term (for a portion of the Park).



5 | RECOMMENDED P&C'S

Permitted Uses

Permitted uses within the Employment Area designation include office, research and development, laboratories and other knowledge-based businesses. A limited range of light manufacturing and assembly uses are also permitted, whereby the activity has no adverse impacts on any adjacent or nearby sensitive uses. No outdoor storage is permitted. New institutional uses are not permitted, except those uses which are ancillary or associated with a proposed or existing development (such as a day care which is part of a larger office development).

Scale

The maximum height for buildings within the Employment Area designation is four stories. Buildings which are immediately adjacent to Gateway Areas are permitted up to six stories. The minimum height for new development is one storey, except for redevelopment in Gateway Areas, where the minimum height is three stories.

5.2.4. Residential Areas

Planned Function

The Residential Area designation is intended to recognize existing residential development at the south end of the Brock Park Master Plan area which is separate and segregated from the formal Brock Park area. The designation is also intended to provide an alternative land use opportunity for lands which are believed to be constrained but also provide a unique and attractive setting.

Permitted Uses

Permitted uses within the Residential Area designation include stand-alone low and medium density development.

Scale

The maximum height for new development is three stories. The minimum height is one storey.

5.2.5. Environmental Protection and Conservation Areas

Planned Function

The Environmental Protection and Conservation Areas are intended to recognize the limits of lands which have significant environmental features and functions. The limits of these areas have been delineated based on mapping provided by the Region of Niagara. Refer to Regional Policy Plan and/or the City's Official Plan for additional details.

Environmental Mapping

Environmental Protection and Conservation Area mapping is to include the most recent mapping available from the



5 | RECOMMENDED P&C'S

City and the Region and is to be incorporated into the future secondary plan for the Brock Park.

5.3. Urban Design

5.3.1. Urban Design Plan

The recommended urban design plan for the Brock Park is illustrated on **Figure 5.2**.

5.3.2. Gateways

Planned Function

Gateways are intended to function as formal entranceways into Brock Park and should create a strong sense of place and arrival.

Location of Gateway Areas

There are three main Gateway Areas in the Brock Park:

- Schmon Parkway & St. David's Road (north)
- Schmon Parkway & Merrittville Highway (south)
- Merrittville Highway & St. David's Road (north)

Urban Design Elements

Gateway areas should be designed to include a range of elements, including but not limited to:

- Intensive planting and landscaping that uses a mixture of native and ornamental species and, where possible, incorporate other natural elements, such as stone;
- Seasonal floral displays;
- Enhanced streetscaping;
- Public art;
- Lighting; and,
- Flags, banners and signage.

Adjacent Development

Where possible, gateways should be designed to incorporate surrounding buildings. Where new development or redevelopment is planned near a Gateway Area, the proposed development/redevelopment should be designed in a manner which complements the function of the Gateway Area, through:

- Architectural detailing;
- Use of colour and materials;
- External site landscaping and lighting; and,
- Building heights, massing and scale.



BROCK BUSINESS PARK REVITALIZATION MASTER PLAN
 FIGURE 5.2 | RECOMMENDED URBAN DESIGN AND PUBLIC REALM IMPROVEMENTS



- LEGEND**
- GATEWAY IMPROVEMENT AREA
 - MINOR STREETScape IMPROVEMENTS
 - MAJOR STREETScape IMPROVEMENTS
 - LINEAR PARK
 - TRAIL/ACTIVE TRANSPORTATION CONNECTION



CREATED BY:
MELISSA KOSTERMAN
 CHECKED BY:
PADDY KENNEDY
 PROJECT: 1308060
 STATUS: DRAFT
 DATE: 9/23/2013

5 | RECOMMENDED P&C'S

5.3.3. Streetscape Improvement Areas

Planned Function

Streetscape improvement areas are intended to provide direction for future streetscape works. Two general types of streetscaping improvements are proposed for the Brock Park:

- Major Streetscaping Improvements; and,
- Minor Streetscaping Improvements.

Major Streetscape Improvement Area

The Major Streetscape Improvement Area is proposed for St. David's Road. Major Streetscaping is intended to enhance the attractiveness of the exterior limits of the Brock Park (and the overall entranceway to Brock University) on both sides of St. David's Road and address opportunities for cross-jurisdictional collaboration. Major Streetscaping elements should include, but are not limited to:

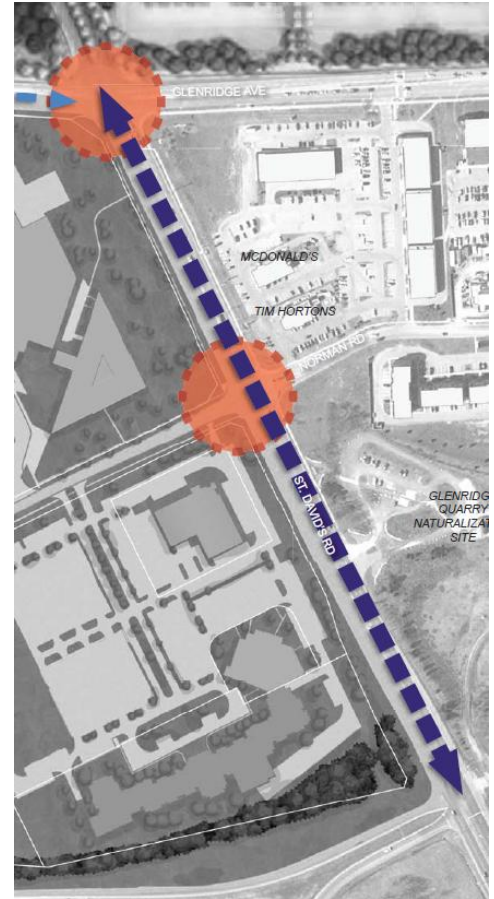
- Shade tree plantings on both sides of the street;
- Urban design improvements at the three major intersections;
- Consistent landscaping treatments on both sides of the street; and,
- Improved active transportation infrastructure;
- Street furniture such as benches and improved/upgraded transit shelters; and,
- Signage and way-finding cues.

Minor Streetscape Improvement Areas

Minor Streetscape Improvement Areas are proposed for portions of Schmon Parkway, Merrittville Highway and any new local roads required to service the lands at the south end of the Brock Park. Minor streetscaping elements should include, but are not limited to:

- Active transportation infrastructure, such as shared lane markings (painted bike iconography for shared spaces), bike parking, painted/textured crosswalks and lighting;
- Consistent tree plantings on both sides of the street;
- Continuous sidewalks on at least one side of the street; and,
- Enhanced lighting and street furniture which builds upon the campus themes.

A sample of minor streetscape improvements are shown on the following page.



5 | RECOMMENDED P&C'S

Minor Streetscape Improvement: Before



Minor Streetscape Improvement: After



5 | RECOMMENDED P&C'S

5.3.4. Linear Park & Connectivity

Planned Function

The linear park illustrated on Figure 5.2 is intended to fulfill two functions:

- Provide improved internal pedestrian connectivity within the Park and to Brock University; and,
- Provide a formal location for leisure and recreational space.

Location of the Linear Park

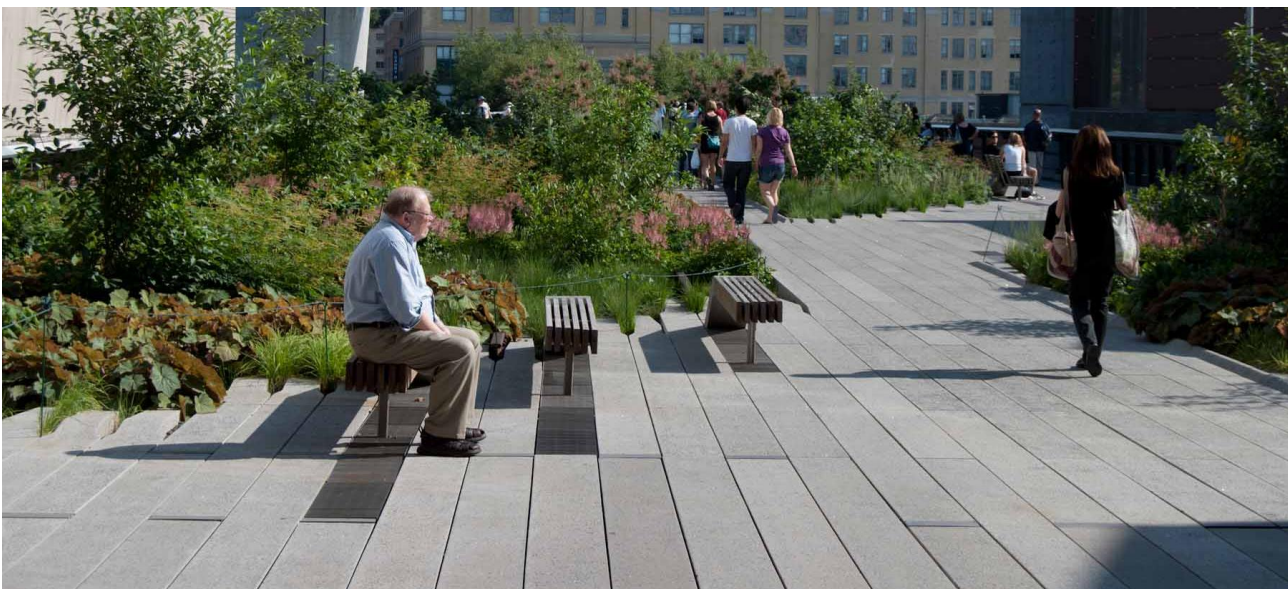
The location illustrated on Figure 5.2 (excerpt is adjacent) is intended to be conceptual. The actual alignment may alter slightly than the one presented, provided the connection is sufficiently wide and it includes the basic outline below.

Design Elements

The Linear Park should be designed to include the following key elements:

- Adjacent natural landscaped area;
- A multi-use pathway and AT infrastructure;
- Lighting; and,
- Occasional locations for sitting and gathering.

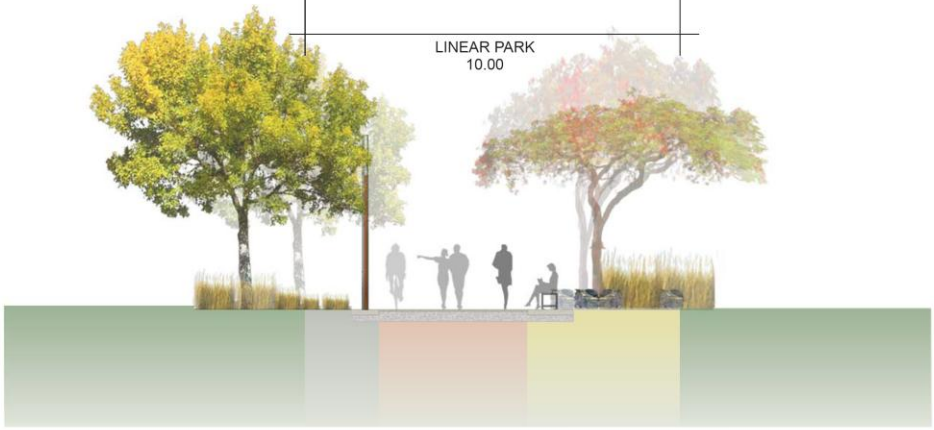
Sample cross sections are provided for illustration purposes and show opportunities for other enhanced elements, such as bio-swales, rain garden zones, water features and limestone seating areas.



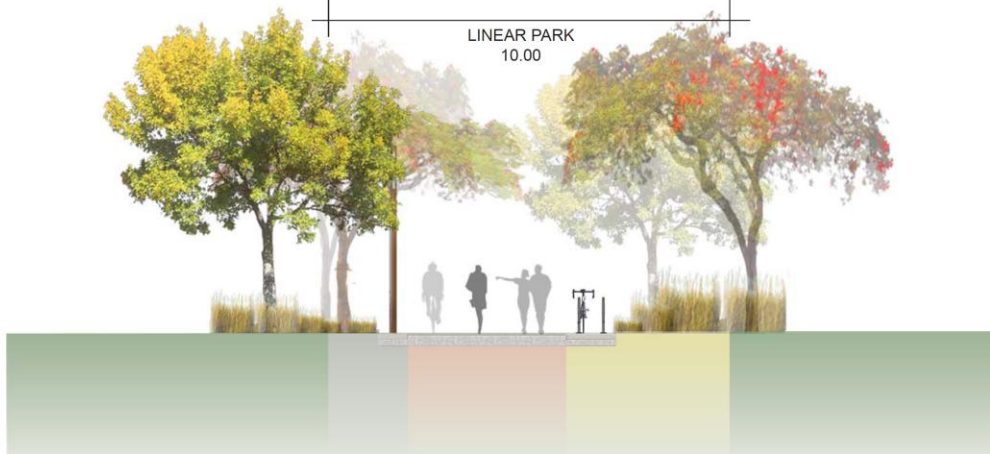
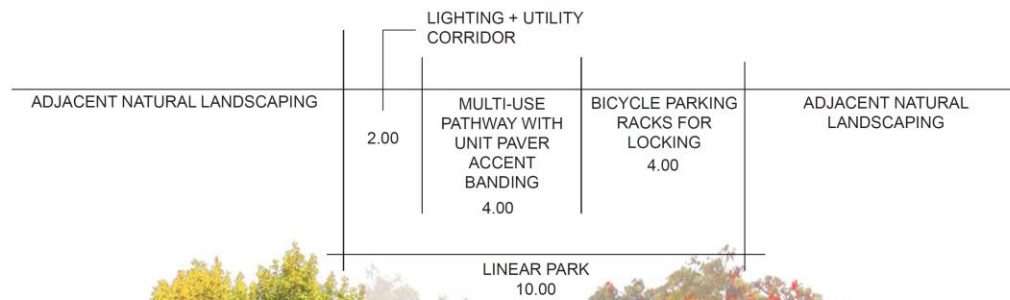
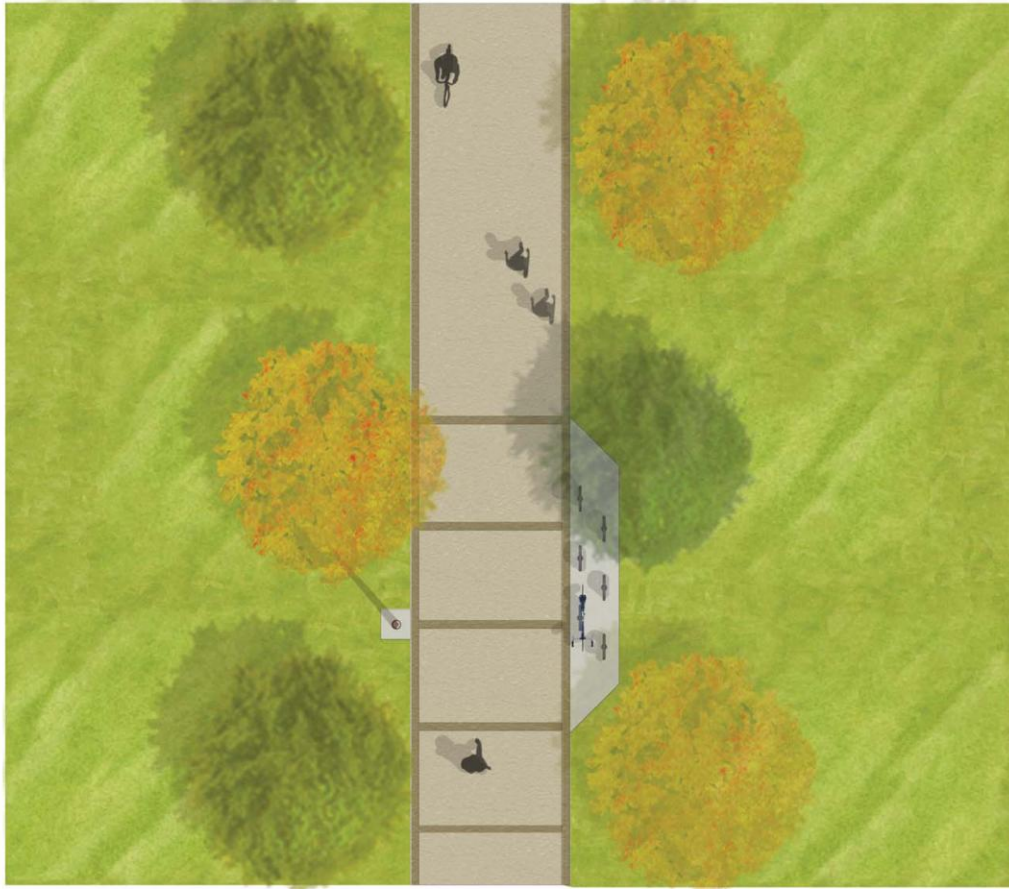
5 | RECOMMENDED P&C'S



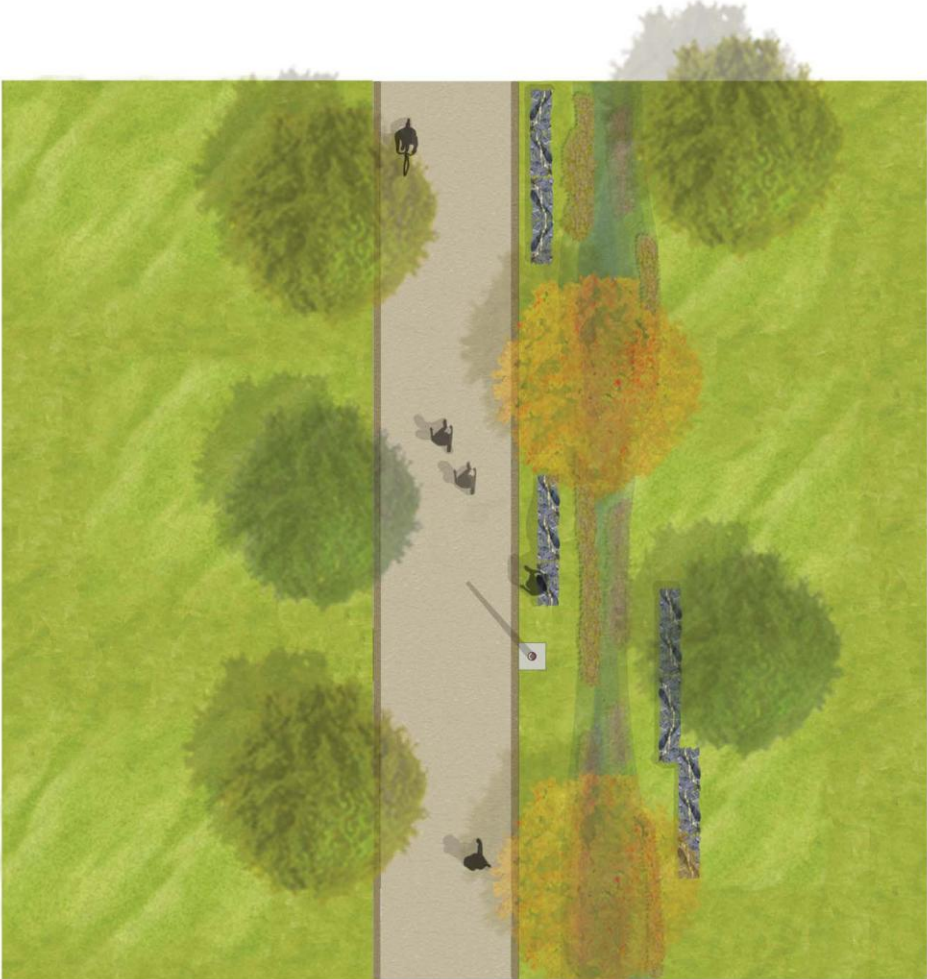
	LIGHTING + UTILITY CORRIDOR 2.00		
ADJACENT NATURAL LANDSCAPING	MULTI-USE PATHWAY WITH UNIT PAVER ACCENT BANDING 4.00	SITE FURNISHINGS, LIMESTONE ACCENT WALLS, ORNAMENTAL TREES, DECORATIVE PLANTING 4.00	ADJACENT NATURAL LANDSCAPING
LINEAR PARK 10.00			



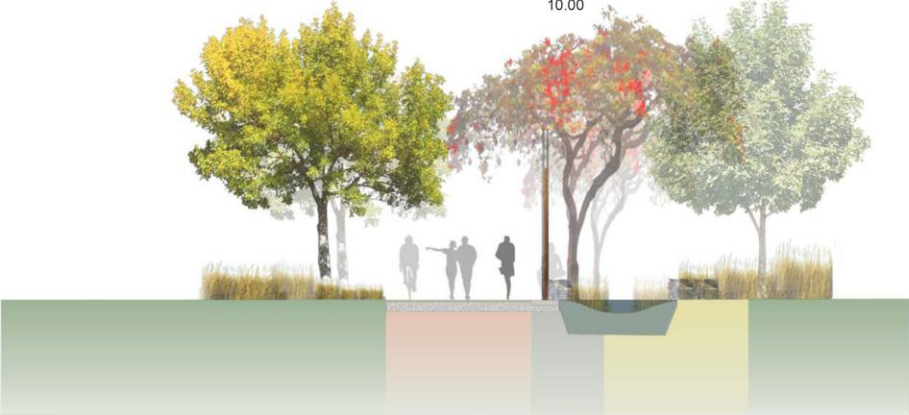
5 | RECOMMENDED P&C'S



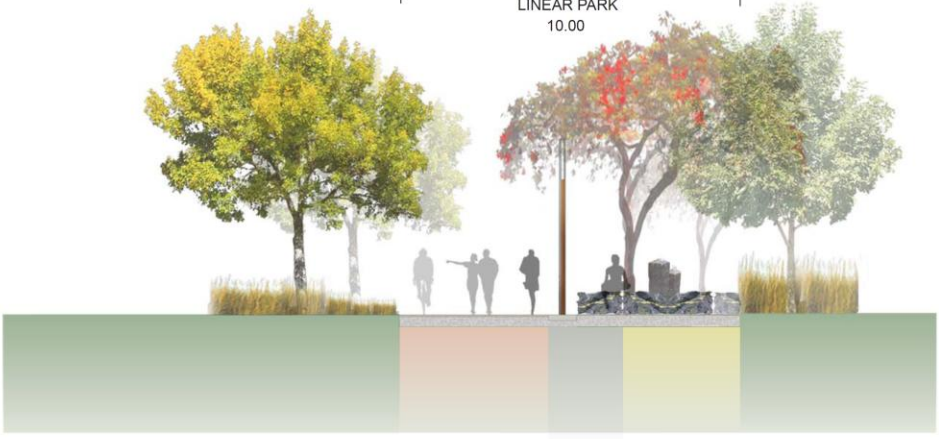
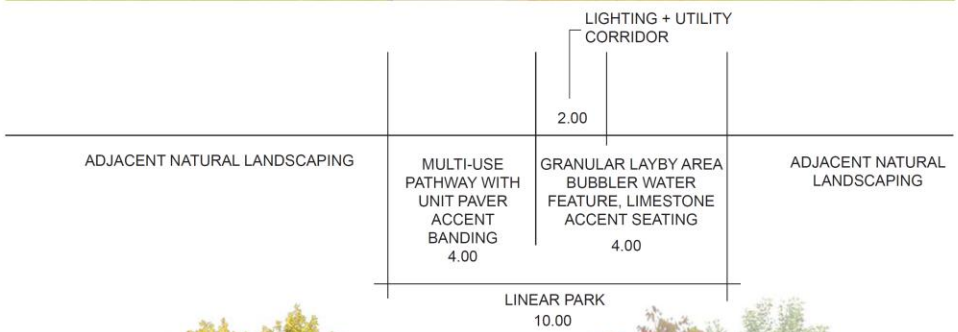
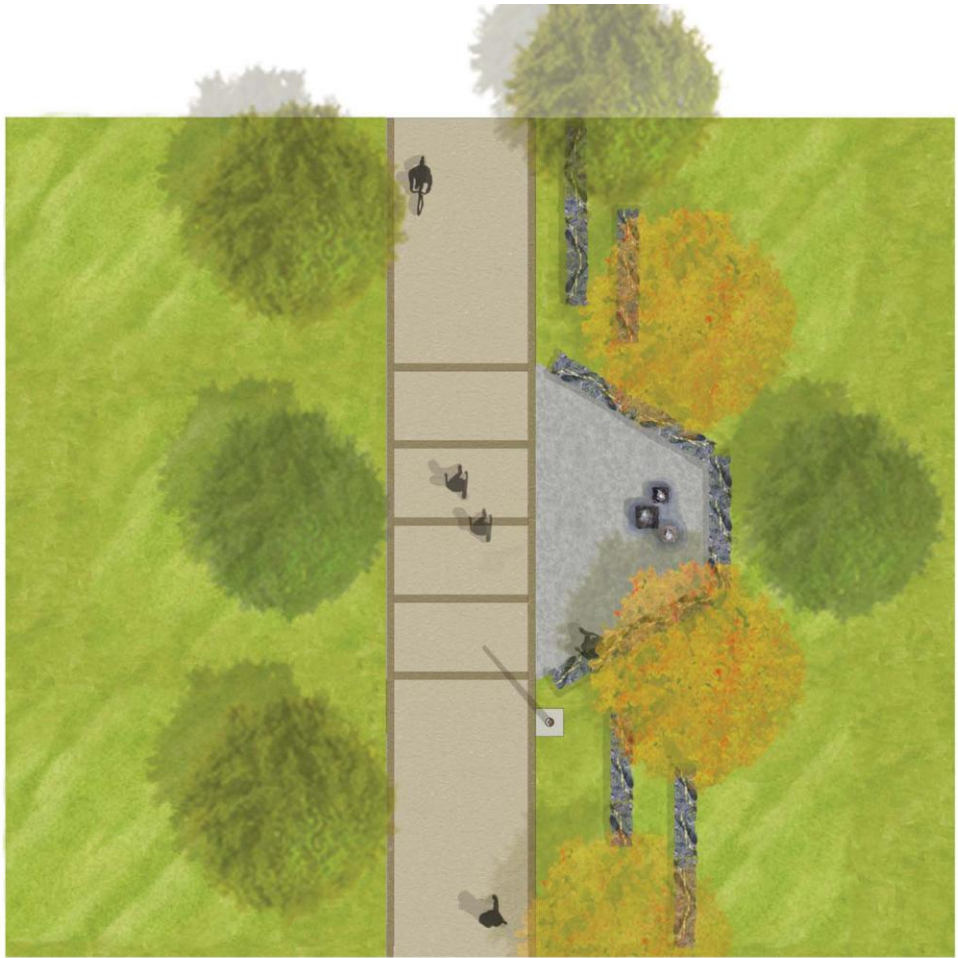
5 | RECOMMENDED P&C'S



		LIGHTING + UTILITY CORRIDOR	
		2.00	
ADJACENT NATURAL LANDSCAPING	MULTI-USE PATHWAY WITH UNIT PAVER ACCENT BANDING	NATURALIZED SWALE / RAIN GARDEN ZONE WITH LIMESTONE ACCENTS	ADJACENT NATURAL LANDSCAPING
	4.00	6.00	
LINEAR PARK 10.00			



5 | RECOMMENDED P&C'S



5 | RECOMMENDED P&C'S

5.3.5. Private Realm Urban Design Guidelines

Private Realm Guidelines

The private realm urban design guidelines allow for two alternative approaches for new development which are intended to:

- Provide flexibility for site development; and,
- Ensure a consistent treatment of the overall campus theme through architecture and landscaping.

Two Approaches

Two alternative approaches include:

- Traditional campus style layout
- Street-oriented campus style layout



Traditional Campus Style Layout

Generally, new buildings should be set-back from the street-edge and include a landscaped strip separating the building from the sidewalk. The majority of parking should be located at the side or back of the building(s). A small amount of parking (10% of the total number of spaces) may be provided in the front, provided that the landscaped treatments provide sufficient buffering and screening from the street. In this instance, the landscaped area should be designed to provide elements which help to activate the street area, such as seating, water features, public art, etc.

Street-Oriented Campus Style Layout

Where buildings are proposed to be closer to the street-edge, all parking should be located at the side or rear of the building(s). The building façade should cover no more than 75% of the lot frontage, to ensure that adequate space is provided for access and some landscaping treatments. Buildings which are located close to the street should have a high degree of glazing and have a primary building access should front onto the sidewalk/street. A secondary access may be provided at the side or rear of the building for convenience purposes.

Building Materials & Architectural Styles

Development and redevelopment within the Brock Park should feature a variety of architectural styles - from traditional, to modern and post-modern. Buildings should attempt to incorporate materials which help to reinforce the campus theme, including, but not limited to:

5 | RECOMMENDED P&C'S



- Limestone and masonry;
- Red brick;
- High degree of glazing; and,
- Other natural elements.

The use of corrugated steel as a finishing material should be avoided. Buildings should also avoid the use of dark, non-reflective surfaces for roofs (to reduce potential for urban heat island effect).

Blank Facades

Visible components of buildings should be treated with a high degree of design. Blank facades which front onto the street or are visible from the Highway are not permitted.

Building Rooftops

Rooftop mechanical systems should be incorporated into the overall building's architecture and should be screened from view. Planted or green roofs are encouraged.

5 | RECOMMENDED P&C'S

Building Landscaping

Landscaped areas should use a variety of local elements, including native trees, shrubs, grasses, flowers, stones and other materials. Landscaped areas should also include a mixture of formal and informal seating areas for employees, visitors and residents (as the case may be). Seating areas should be shaded and include lighting (where appropriate).



Green Building & Site Layout Elements

Buildings are encouraged to promote sustainable design practices and could include a variety of “green” building elements, including but not limited to:

- Green roofs and green/planted walls;
- Community gardens (as appropriate);
- Energy efficient thermal and energy systems, such as metering, passive and active solar gain, etc.;
- Potable water conservation techniques such as efficient fixtures, water reuse systems (e.g. irrigation), metering, etc.; and,
- Other elements derived from best practices or LEED certified program.



5 | RECOMMENDED P&C'S

Exterior Building Lighting

Landscape and exterior building lighting should be used to highlight architectural accents. Accent lighting should be designed to avoid any unnecessary spill-over.

Landscape Buffers

Areas which are adjacent to internal paths or the Linear Park should include a 3 metre landscape zone to ensure a smooth transition between public and private realm. Where appropriate and required, enhanced landscaped buffer areas which are beyond the 3 metres may be required to provide for transition between different types of lands use.

Parking Areas

Parking areas should be safe, well lit, and include clear paths for pedestrians. Parking areas should also be designed to reduce their environmental footprint and include landscaping around the periphery and the interior of the site. Landscaped areas should include trees, shrubs and, where appropriate, bio-swales and permeable surfaces. Barrier free parking should be located in convenient and accessible locations. Where parking structures are provided, the architectural detailing should be attractive and consistent with the overall site design. Inter-connected parking areas and shared parking areas are also encouraged (where appropriate and feasible).

Loading and Outdoor Storage

No outdoor storage of raw materials or finished products is permitted. Loading and garbage enclosures should be located at the rear of the building. Garbage enclosures should also be screened with landscaping.



5.4. Transportation & Infrastructure

5.4.1. Transportation

Proposed Transportation Network

The proposed transportation network for the Brock Park is designed to accommodate all modes of transportation, including automobiles, transit, cycling and pedestrians.

Proposed Improvements & Enhancements to Transportation Network

The existing road infrastructure is expected to be sufficient to accommodate the proposed land use plan within the existing built-up area of the Park. A new local road extension will be required to integrate the vacant lands at the south end of the Park. As the Park matures and approaches build-out, improvements to the active transportation network may be required and should include, but are not limited to:

- Pedestrian infrastructure to promote internal circulation and external connectivity for pedestrian (e.g. sidewalks and trail connection presented in the urban design section);
- Cycling infrastructure to promote improved internal circulation and external connectivity; and,
- Increased transit services in-line with development pattern and user needs.

Transit Supportive Development

The proposed land use plan promotes infilling and intensification at a scale which would support increased transit ridership throughout the Brock Park.

Complete Streets

The urban design improvements presented in Section 5.3 are intended to support complete streets and are targeted to areas which are deficient, namely pedestrian and cycling infrastructure.

5.4.2. Infrastructure

Sanitary Sewer

To allow for future, and potentially intensified development in the Brock Park, the sanitary sewer system needs to be upgraded. The system downstream of the Highway 406 crossing, in the Confederation Heights development must be up-sized, as well as the crossing under Highway 406. A number of sections of sanitary sewer within the Brock Business Park would also require up sizing.

A planned development and servicing strategy or review needs to be completed for the business park to quantify development densities which would be used to determine;

- (i) future development sanitary design flows;
- (ii) the associated sewer sizing; and,
- (iii) the scope for the replacement of existing sewers servicing for the Brock Park.

5 | RECOMMENDED P&C'S

The Confederation Heights pumping station is expected to require upgrading to handle the increased flows associated with intensification within the Brock Park. The pumping station is not currently at capacity and contribution from development (development charges) to the Region will be needed to fund future upgrades to the pumping station.

Water conservation and other sustainable design consideration should be included as part of development criteria for any future developments to reduce the increase in flows to the Brock Park sanitary sewer infrastructure.

Any proposed development on Decew Road or south of the existing business park needs to be reviewed with respect to the ability to service the proposed development by the construction of new infrastructure. A review of existing topography is needed to confirm if pumping of the sanitary sewage is required.

Water Supply

A 900mm trunk watermain exists on St. David's Road adjacent to the business park and upgrades to Regional infrastructure are not expected associated with intensification in the business park. Following the determination of future water demand associated with planned intensification in the business park, confirmation of available capacity with the existing Regional water infrastructure should be undertaken.

Based on infrastructure records that were available that do not show a connection from the watermain on Merritville Highway to St. David's Road it is recommended that the existing watermain stub on Merritville Highway south of St. David's Road be extended and connected to the existing watermain at the intersection of Merritville Highway and St. David's Road.

Hydrant flow testing should be undertaken in the park to confirm the availability of fire flows once the business park revised planning densities have been confirmed.

Storm Water

Storm water management design criteria for storm water quality should be reviewed and / or developed for new development.

The proposed area of impermeability needs to be reviewed with the proposed development plan. If the area of impermeability increases with the proposed plan, then, storm sewer sizing will need to be reviewed and a storm water servicing plan developed for the business park.

Redevelopment or development of vacant and existing lots will need to produce a storm water management plan which may include on site storage to address any increased storm flows to the existing storm sewer system.

Any proposed development on Decew Road or south of the existing business park needs to be reviewed with respect to the ability to service the proposed development for storm water by the construction of new infrastructure. A review of existing topography is needed to confirm available outlets that may not be the storm sewers in the existing business park. Existing drainage channels and road side ditches would be included in this review

5.5. Implementation

5.5.1. Preparation of a Secondary Plan

The City will work with agencies and stakeholders to implement the recommended policy framework through a formal secondary plan for the Brock Park. The basis and detailed content for the secondary plan are provided in this report and may be subject to adjustments and revisions, based on feedback from stakeholders and the public.

5.5.2. Servicing Study and Financial Strategy

In an effort to plan for the orderly, cost-effective, sustainable and logical phasing of development and redevelopment, the City should complete a servicing study and financial strategy which assesses the growth and intensification implications for the Brock Park. The findings and recommendations of the servicing study and financial strategy should be incorporated into the Secondary Plan.

5.5.3. Financing Improvements

The City will identify capital planning requirements for the proposed improvements for the Brock Park and develop a financial strategy for implementing the improvements. The financial strategy should consider:

- Cost-sharing opportunities for the implementing improvements;
- The eligibility of proposed improvements as potential “growth-related” projects which can be incorporated in the City’s Development Charges program;
- Opportunities to leverage provincial and federal funding programs to implement sustainable design practices;
- Opportunities to harmonize the City’s existing Community Improvement Plan with the Brock Park master plan;
- Opportunities to provide financial incentives for private developers willing to implement comprehensive sustainable design solutions; and,
- The timing and potential phasing for proposed improvements.

5.5.4. Other Supporting Studies

Other supporting studies may be requested in support of individual development applications within the Brock Park. Supporting studies may include, but are not limited to:

- Transportation and Active Transportation;
- Natural environment;
- Urban design;
- Land use planning;
- Infrastructure; and,
- Market and economics.

5 | RECOMMENDED P&C'S

5.5.5. Zoning

The City will update its zoning by law to align the zoning regulations within the Brock Park with the policies of the master plan. The City should also consider the use of a Holding designation to address any interim servicing and financial issues.

5.5.6. Site Plan Control

The urban design guidelines in Section 5.3 are intended to be flexible and should be implemented through site plan control.

5.5.7. Coordination with Brock University & City of St. Catharines

The City will work closely with Brock University as it prepares a new Campus-wide Master Plan to ensure that alignment between the Brock Park Master Plan (and future secondary plan) and the new Campus Master Plan.

5.5.8. Coordination with Region of Niagara

The City will work closely with the Region of Niagara to implement the policies and recommendations of the Master Plan. The City encourages the Region to also consider leveraging ongoing and future environmental assessment (EA) projects to implement the transportation and urban design objectives of this plan. The City further encourages the Region to consider updating the Site Plan for the Regional Headquarters site to address opportunities for intensification, infilling, active transportation and urban design improvements.

5.5.9. Additional Tools

Through the Secondary Plan process, the City will consider additional implementation tools, including but not limited to:

- A development permit program and urban design guidelines for the Brock Park (to be rolled out as a pilot project);
- The use of the Environmental Assessment process as a means of addressing and implementing urban design and active transportation solutions for St. David's Road (and other areas where appropriate);
- Where a development permit system is not undertaken, the City will also consider opportunities for bonusing as a means of implementing the various Park-wide public improvements recommended in the Master Plan, such as:
 - Completion of sidewalk network;
 - Completion of linear park;
 - Completion of gateway network, including signage, public art and landscaping; and,
 - Completion of other elements deemed appropriate by the City.
- A business incubator/research and development sector feasibility study should be conducted in cooperation with Brock University and the Region of Niagara.

5.6. Feedback on the Draft Master Plan Report

A draft version of the Brock Business Park Master Plan report was presented to Thorold City Council on October 15, 2013. The draft document was circulated to key stakeholders and made available to the public for comment. Appendix C includes a detailed summary of comments received on the draft Business Park Master Plan. Comments of minor nature have been incorporated in the final Master Plan report. Comments which require additional analysis can be addressed through the secondary plan process.

APPENDIX A

Official Plan and Zoning By-Law

APPENDIX A

City of Thorold Official Plan Policies for Brock Business Park

The City's zoning by-law refines the uses permitted in the Official Plan and designates the parcels within the Brock Business Park as either Prestige Office (PO) or Prestige Industrial (PI) as illustrated in **Figure A**. Under Section 4.3.2(e) Serviced Industrial in the Official Plan, permitted uses for the Brock Business Park PI and PO land include business offices, education and institutional facilities, research laboratories and light industrial and manufacturing.

In addition to the PI and PO designations, there are four unique permissions in the Business Park. These are based on Official Plan Amendments (OPAs) 7, 32, 65 and 70.

These are based on Official Plan Amendments (OPAs) 7, 32, 65 and 70.

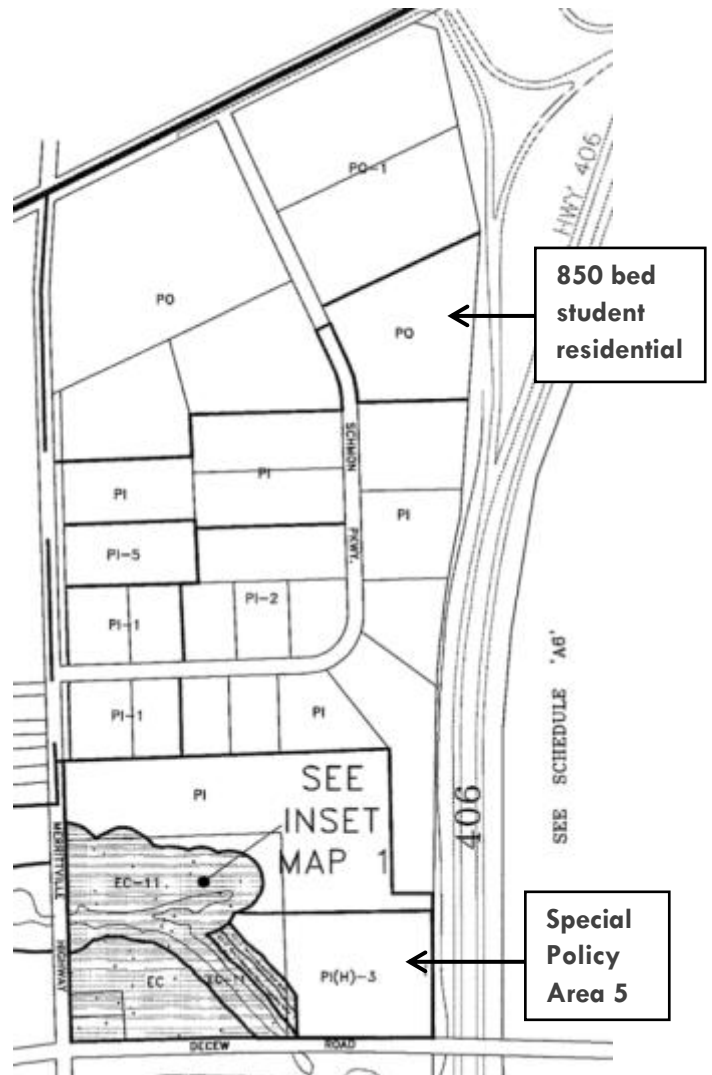
OPA 7 applies to Section 4.3.2(f) of the Official Plan and permits a hotel and convention centre in the Business Park. OPA 32, Section 4.3.2(g), permits a bingo establishment.

OPA 65 includes Special Policy Area 5 (SPA 5). SPA 5 applies to approximately 3.6 hectares of land between Merrittville Highway and Highway 406, north of Decew Road. Section 4.3.2(h) of the Official Plan states:

While the Industrial Land Use Policies of this plan will continue to apply to this area, the Special Policy Area 5 designation will permit development of the land subject to:

- (i) The property is intended to be developed for senior's retirement home and long term care facilities.

Figure A: Brock Business Park Zoning By-Law Schedule A5



- (ii) In order to ensure protection of abutting Provincially Significant Wetlands and the archaeological site the following criteria shall apply:
 - a. A minimum undisturbed natural vegetative buffer from the Provincially Significant Wetland of 30m (98.42 ft.).
 - b. A minimum setback from the westerly water channel of 30m for any buildings or structures consisting of a

APPENDIX A

- 15m undisturbed natural vegetative buffer adjacent to the water channel and a 15m landscaped open space.
- (iii) Holding provision.

OPA 70 as stated in Section 4.3.2(i) of the Official Plan, permits student residences consisting of a maximum of 850 beds with ancillary office and/or commercial uses built to LEED Standard. Figure A indicates the location of the permitted student residential.

APPENDIX B

Detailed Opportunities and
Constraints for Revitalization of the
Brock Business Park

APPENDIX B | OPPORTUNITIES & CONSTRAINTS

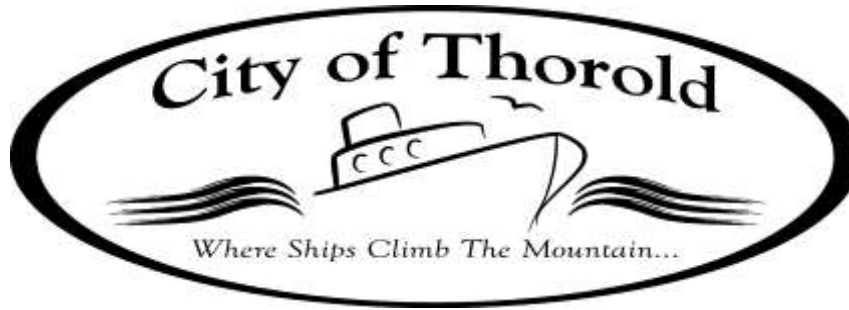
Table 2.2 Summary of Opportunities and Constraints

Lens	Component	Opportunities	Constraints
Land Use	Policy	<ul style="list-style-type: none"> Designated Service Industrial land is attractive for new businesses as it is ready to go and requires very little site preparation; The Region's Gateway Strategy and City's Employment Lands Comprehensive Review identify Brock Business Park as being situated in a strategic location but recognize that there may be opportunities to rethink the Business Park. 	<ul style="list-style-type: none"> Changing uses in the Brock Business Park requires an Official Plan Amendment which can take time and are able to be appealed. Provincial Policy protects employment lands and discourages employment land conversion without justification.
	Land Use	<ul style="list-style-type: none"> There are no heavy industrial uses in the Business Park, most uses centre around office uses. As a result the current uses are compatible, including the student residential; The existing uses within the Park are well established and well recognized. This includes the Region of Niagara office and the City of Thorold offices; The size of the vacant properties allows for the opportunity to rethink the area before it gets too built up; There is interest in the market to rethink the uses in the business park as evident from the new student residential development; The proximity of the Business Park to Brock University presents opportunities to build stronger connections between the two. Building stronger physical connections to Brock University would enhance a research and development cluster and student residential development opportunities; A surplus of employment lands in Thorold provides opportunity to consider other uses for the site. Proximity to natural areas and trails along Lake Moodie and Lake Gibson. 	<ul style="list-style-type: none"> The existing industrial and institutional uses have large lots and building footprints. It is unlikely that these will be redeveloped in the short to medium term and as such any new plan for the area must incorporate what currently exists; The large surface parking lots dominate the landscape. Parking requirements will need to be revisited should the Master Plan recommend a further mix of uses; The new student residential development is not well integrated with surrounding uses; There is the potential for resistance from property owners within the existing employment uses to see the City alter the current uses on neighbouring properties; The current uses are compatible but compatibility requirements may restrict a mix of different uses in the Business Park, particularly additional residential; Student residential would be appropriate in this area due to proximity to the university but not other forms of residential as the Business Park is on the outskirts of the urban area; and There are no planned park spaces, passive recreation or civic spaces within the Business Park. This is further addressed under urban design.
Transportation	Active Transportation	<ul style="list-style-type: none"> The Region has strong policies on promoting active transportation. Sidewalks have been recently developed on Schmon Parkway between the student residence and St. David's Road. Merrittville Highway/Glenville Avenue is a Scenic Bicycle Route. Merrittville Highway/Glenville Avenue and St. David's Road identified as a future On-Road Bicycle Route. The speed limit on Merrittville Highway will be reduced to 50/60 km/hr, which will increase comfort for cyclists using the road. New development will help increase walkability of the area. 	<ul style="list-style-type: none"> There are no cycling routes or amenities in place. There are no sidewalks on Schmon Parkway south of student residences. There is currently a high speed limit on Merrittville Highway (70km/hr), which is uncomfortable for cyclists. St. David's Road is not a very good cycling route, particularly when crossing the Highway 406 on- and off-ramps. There are issues with the implementation of bicycle lanes on St. David's that have not been addressed which contributes to reducing the cycling mode share to/from the study area.
	Transit	<ul style="list-style-type: none"> Access to Regional Transit services from St. David's Road. University Transit terminal provides access to other parts of St. Catharines and the Region. A bus stop located on both sides of St. David's Road provides proximity to St. Catharines transit services. 	<ul style="list-style-type: none"> There are limited transit passenger amenities in the area. Local Transit service in the study area is limited (60 min frequency) and concentrated during Brock University semesters (i.e. do not operate in the summer). This does not properly serve the employment uses in the Business Park. The primary transit terminal at Brock University to access Downtown St. Catharines is located approximately 1.3 km from the student residence. Potential loss of Regional Transit Service (pilot program may end) next year.
	Road Network	<ul style="list-style-type: none"> No delay or capacity issues on Schmon Parkway, or at its intersection of St. David's Road and Merrittville Highway. Mixed use development within the Business Park will not add to the peak direction of travel. Enhanced live/work connections would minimize automobile traffic. 	<ul style="list-style-type: none"> A signalized intersection may be required at Merrittville Highway and Schmon Road with increased development in Business Park. Increased pedestrian traffic will add to north-south green time at the intersection of Schmon Parkway and St. David's Road, which will limit opportunities for southbound left turns, northbound right-turns and green time for east-west traffic.
Urban Design	Public Realm and Built Form	<ul style="list-style-type: none"> Improvements to pedestrian connections with extensions of sidewalks on Schmon Parkway and on Merrittville Highway as well as the creation of new pedestrian connections within the Park 	<ul style="list-style-type: none"> Lack of community or public park space. Lack of an internal pedestrian network, including sidewalks.

Lens	Component	Opportunities	Constraints
		<ul style="list-style-type: none"> • Opportunity to apply consistent streetscaping improvements to Schmon Parkway, including trees, signage and street furnishings. • Providing a boulevard treatment on St. David's Road as an extension of the Isaac Brock Boulevard. • Opportunity to develop Urban Design Guidelines for the Business Park through the Master Plan Study. • Opportunity to create gateway treatments to identify the Business Park at the corners of St. David's Road and Schmon Parkway, and at St. David's Road and Merrittville Parkway 	<ul style="list-style-type: none"> • Lacking a gateway entrance marking the Business Park. • Large block pattern with disconnected parcels. • Large surface parking lots, often with street frontage rather than tucked behind buildings. • Large building setbacks that do not support the creation of a street edge. • Lacking a sense of place: no visual connections and inconsistent signage, building facades and materials.
Servicing	Sanitary and Watermain Servicing	<ul style="list-style-type: none"> • Site was originally serviced with reasonable sized infrastructure. • Municipal sewer and watermain systems are located adjacent to the site and the site is within the catchment area of these municipal services. • 900 mm diameter watermain which is located just north of the site may have available capacity for potential supplemental future water needs. • Housing study notes that lots are already serviced with water services. • As-built drawings contained in the Housing Study indicates that lots are already serviced with 200mm sanitary services. • As-built drawings contained in the Housing Study indicates that storm flows are conveyed westerly towards a 2200mm storm sewer on Glenridge Avenue. • As-built drawings contained in the Housing Study indicates that lots are already serviced with storm sewer services of varying sizes. • Housing study has noted that the standby power generator to the downstream pumping station is adequate to address temporary power loss and that the existing forcemain has sufficient capacity. • LEED Platinum certification design standards can be used on future development to lower water usage and discharge to the sewer system. • Pump station modifications could be reviewed to look at the opportunity to address increased flows beyond the current design discharge flows. • Field hydrant flow testing could be undertaken to confirm available fire flows. • There may be an opportunity to replace existing sanitary sewer under Hwy 406 to increase capacity to the business park by using the existing casing. This would need to be reviewed along with any downstream or upstream infrastructure improvements needed to accommodate revised flows from increased densities. • A previous study identifies that the sewers within the Confederation Heights development lands will be relocated to align with the proposed road network. These sewers could be upsized at that time to mitigate some potential capacity issues. • Should land use within the park require a lower level of service than originally anticipated, the level of servicing for other parcels could be increased. 	<ul style="list-style-type: none"> • Past available study noted that remaining pumping station and sanitary sewer capacity to reach 100% theoretical design would be used for that development. Based on this no available capacity would be available without pumping station modifications and surcharging the sewers. Municipal infrastructure design should not be based on 100% of theoretical sewer capacity. • Past study work assumed that there were no wet weather flows into the system and that the sanitary sewer system was independent of wet weather flows. • Past study work has assumed that sanitary sewers greater than 100% full capacity are acceptable. Other municipalities restrict their sanitary sewer capacity to 75% of full. • Study notes that if any proposed developments within the Business Park or the remaining residential community are revised both the sewer and pumping station capacities will need to be reviewed again. • Past study reviewed the theoretical fire flow needs but fire hydrant flow testing should be undertaken. • As constructed infrastructure data should be confirmed for infrastructure that is downstream of the Business Park (as constructed plan information is available for business park) • Condition assessment of existing infrastructure was not reviewed as part of the past study work. Need to confirm that no infrastructure improvements are needed. • New service laterals may be needed to individual lots if they have been constructed and are not sized adequately for any revised proposed development. • Review of servicing needs for infrastructure (south of the Business Park and north of Decew Road)is needed. • Past study work indicated that the existing sanitary sewer crossing Hwy. 406 would be theoretically undersized for increased development densities from original business park sanitary sewer servicing design. • Cross connections that direct storm flows into the sanitary sewer could cause considerable concerns as the sanitary sewers are already expected to be surcharged.
Market		<ul style="list-style-type: none"> • The anchor office uses already in the park have the potential to attract complimentary businesses. • Proximity to major highway providing connections throughout Niagara, the U.S. and the Greater Golden Horseshoe. • Currently experiencing market interest in student residential. • Some of the existing business tenants are expanding and looking to develop more property in the Business Park. • Clustering of research and development companies that leverage proximity and relationships with Brock University to promote investment in the area. 	<ul style="list-style-type: none"> • With the surplus in employment land in Thorold there are not a lot of new businesses looking to come into the park. • Development is vulnerable to overall market trends in Ontario and requires stable market conditions.

APPENDIX C

Consultation Record



NOTICE OF STAKEHOLDER SESSION

Brock Business Park Revitalization Master Plan

PROJECT

The City of Thorold has initiated the development of the Brock Business Park Revitalization Master Plan to develop a vision for the future development in the Brock Business Park. Currently, the Business Park includes a mix of institutional, office and commercial uses with access to full municipal services. An overview of the project is attached for your information.

YOUR INPUT IS WANTED

Input on this project is welcome and encouraged. You can provide input by attending this Stakeholders session or by attending the public stakeholder event to be held later this summer.

STAKEHOLDER SESSION

Date: July 17, 2013

Time: 11:30 AM - 2:00 PM (Lunch will be included)

Place: Region of Niagara
Administrative Offices
Committee Room 4
2201 St. David's Road
Thorold, ON L2V 4T7

RSVP:

Please RSVP as soon as possible with the number of people attending as we need to order lunch.

Please contact Adele Arbour, Director of Planning and Building Services, Lola Emberson, Senior Planner or Elaine Munro, Planning Clerk at 905-227-6613 x252.

BROCK BUSINESS PARK REVITALIZATION



City of Thorold

A master plan to help revitalize an area in transition

PURPOSE OF THE PROJECT

The City of Thorold recently initiated the development of the **Brock Business Park Revitalization Master Plan**. Brock Business Park covers approximately 47 ha and is located at the St. David's Road interchange on Highway 406, immediately east of Brock University. The Business Park includes a mix of institutional, office and commercial uses and has access to full municipal services. While most of the Business Park is built-out with first generation buildings, there remain a number of opportunities for intensification and infilling. Recently, the Business Park has come under pressure to accommodate non-employment uses, including a recently constructed multi-storey private-sector student residence.

The purpose of this project is to prepare a master plan study to guide decision-making as the Park evolves. The Master Plan Study will:

- Provide a new vision for the Brock Business Park;
- Identify existing and potential issues and opportunities for improvement;
- Consider a range of future redevelopment concepts;
- Recommend a new land use and urban design plan for the area;
- Recommend an implementation strategy.

The overall project process is shown in the diagram on the back of the page.



As one of the key project stakeholders, the City and our master planning consulting team would like to invite you to attend a stakeholder session to be held on July 17, 2013 at the City of Thorold. Please RSVP:

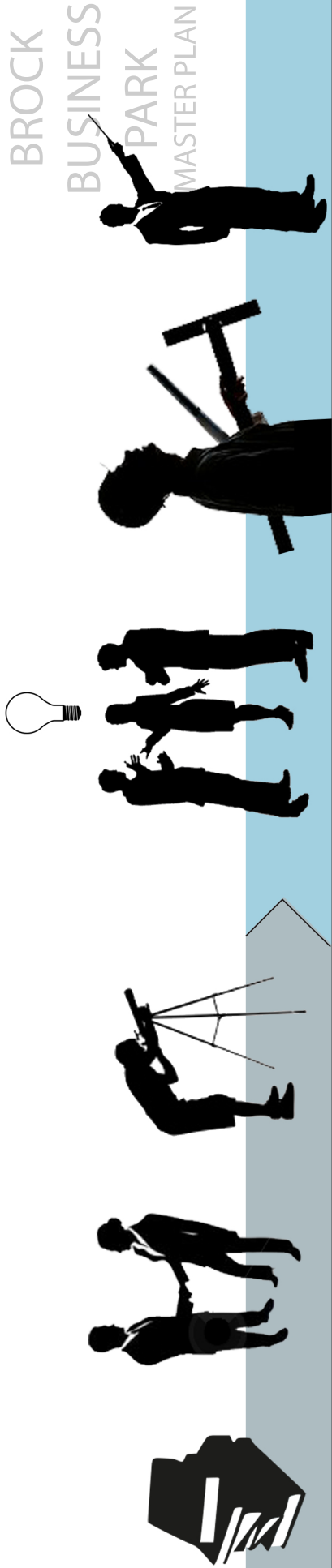
Adele Arbour, MCIP, RPP,
Director of Planning and Building Services.
3540 Schmon Parkway, PO Box 1044
Thorold, Ontario, L2V 4A7
Email: aarbour@thorold.com

JULY 2013



BROCK BUSINESS PARK REVITALIZATION MASTER PLAN

CITY OF THOROLD



PHASE 1 PHASE 2

EXISTING CONDITIONS REVIEW & SWOT ANALYSIS PREPARATION OF MASTER PLAN

- EXISTING CONDITIONS AND BACKGROUND DOCUMENT REVIEW
- STAKEHOLDER SESSION
- STRENGTHS, WEAKNESSES, OPPORTUNITIES & THREATS (SWOT) ANALYSIS

- PREPARE REVITALIZATION CONCEPTS
- EVALUATION OF CONCEPTS
- STAKEHOLDER WORKSHOP
- PREPARE RECOMMENDED REVITALIZATION CONCEPT
- PREPARE IMPLEMENTATION STRATEGY

- PREPARE DRAFT MASTER PLAN
- PRESENT DRAFT FINDINGS TO CITY COUNCIL

- PREPARE FINAL MASTER PLAN AND CONSULTATION REPORT

BACKGROUND REVIEW

RECOMMENDED REVITALIZATION CONCEPTS

DRAFT REPORT

FINAL REPORT

SUMMER 2013

FALL 2013

Brock Business Park Revitalization Master Plan
July 17, 2013 Stakeholder Workshop
Meeting Notes

Represented Attendee Organizations

Brock University, Niagara College, Mountainview, KLM Planning, Lofts Residences, AMEC, Region of Niagara, City of Thorold, Dillon Consulting Limited

Item	Discussion and Actions
Introductions and Presentation	<ul style="list-style-type: none"> - Dillon Consulting Limited provided a presentation on the purpose of the study, schedule, existing conditions, precedents, SWOT analysis, and discussion questions.
General Questions: Study Area	<ul style="list-style-type: none"> - Can or should the study area extend further south? - Why is the southern boundary where it is? The study area includes lands all within the urban boundary. The current south boundary is based on the natural edge. - Dillon can accommodate changes in the boundary. <p>Action: City to confirm study area boundary.</p>
Comment: History of the Business Park	<ul style="list-style-type: none"> - Original plans for the business park wanted to achieve a campus like open park setting which is why today we see a significant amount of landscaping and open space.
Discussion Question #1	<p>Question #1: If you could change one thing about the business park today what would it be:</p> <ul style="list-style-type: none"> - More amenities – lunch spots. - Better design. - Improved connections to areas outside the park. - Complete streets – provisions for all modes of transportation. - Allow more mixed use. - More pedestrian friendly routes within the business park. - Build on what already exists rather than trying to change the existing uses. - Be more flexible in zoning and land use policies. - Improve parking – doesn't need to be black paved pads. - Allow more student residences. - Provide park or common space. - Do something to enhance relationship and connections with Brock. - Support potential for incubator businesses and start-up opportunities for grad students. Potential to incorporate Innovate Niagara (innovateniagara.com). - Leverage student housing opportunities in the park to mitigate student housing challenges that currently exist in other areas. <p>Action: Dillon to speak with Altus about the math for retail / commercial to determine the requirements to be viable.</p>
General Comments	<ul style="list-style-type: none"> - Agree that planned function of the park has changed and that area should be considered to accommodate other uses. - Need more adaptive spaces to attract new businesses. Companies are far smaller now than what the park was designed for.

	<p>Role that design plays (less about function and more about form):</p> <ul style="list-style-type: none"> - Type of design is critical for student residential – high rise versus low rise (height); amenity space and common space (open space); access needs for pedestrian connections (access); and building management – need professionally run facilities. - Having student residential presents an opportunity to support University and the business park and solve issues in surrounding residential areas. - History of plan identified “Architectural Control” and that is carried on now with the Lofts development – blend student residents with the park. - Lofts development has 850 beds that will all be occupied in September 2013.
Comments on Brock University	<ul style="list-style-type: none"> - Limited space to do more campus student housing – 2003 Master Plan is in process of renewal. The 2003 Campus Plan suggested development on Brock’s land to the south may include a Research Park or a Stadium. - Revised Campus Plan will not be ready until 2014 but it will be informed by this Master Plan. - Brock is creating a third campus entrance at Merrittville and Schmon Parkway. This will take some traffic volume off the northbound left-turn at Merrittville and St. David’s. - As Brock grows, students may start taking different paths through the business park, particularly if the southwest parcel at the corner of Merrittville and St. David’s is developed.
Student Residential Mix	<ul style="list-style-type: none"> - Is there a threshold for a maximum number of students? Is there a critical mass? - Students only want to travel as far as they have to. Very few will have ever gone all through the business park. - Students will generally stay in the area if the amenities are there. <p>Action: Dillon to review if there is a critical mass of student residential for the area.</p>
Discussion Question #2	<p>Question #2: What are the pit falls, issues or concerns that people want to make sure are addressed in the Master Plan:</p> <ul style="list-style-type: none"> - Don’t scare away existing uses – what we propose needs to accommodate new development but retain the existing land uses. - Don’t interfere with existing users’ ability to operate. - Don’t want to see a nightclub here. - Don’t focus on attracting one big user as that is not a successful model. - Don’t want too many retail uses (e.g. big box) as there is enough supply of spaces for retail uses in the surrounding area that retail here likely won’t be successful. - Timeframe of the Master Plan could slow down the current student residential application, would like the current timeline to be met for the study completion. - Do not restrict range of uses too much because you want to attract more and keep the area vibrant – expand on range of uses already here. - Provide some level of protection for employment so that employment can continue to locate in the area. Encourage mix but do not have another use take over.
Discussion Question #3	<p>Question #3: What Principles should be applied to the Master Plan</p> <ul style="list-style-type: none"> - Retain the park-like appearance versus being industrial looking. - Keep the area green and open. - More efficient use of spaces: e.g. Consider a different approach and format for surface parking lots – look at options for encouraging other modes of transportation. - Improve connections within the Park and to the surrounding communities.

	<ul style="list-style-type: none"> - Attract development that can support improved transit service. - Vision of mixed use to achieve more fully functional and vibrant area – expand and control mixed use. - Clear and segregated transit pickups/drop-offs to serve students. - Encourage sustainable design – don’t mandate it but provide recommendations.
Next Steps	<p>Summary of Action Items:</p> <ul style="list-style-type: none"> - City to confirm study area boundary. - Dillon to speak with Altus about the math for retail / commercial to determine the requirements to be viable. - Dillon to review if there is a critical mass of student residential for the area. - Dillon to prepare summary notes that will be circulated. - Dillon to establish the Principles of the Master Plan and start physical plans. - Come back together – a workshop will be scheduled by the City later this summer (August).

These meeting notes were prepared by Merrilees Willemse of Dillon Consulting Limited. Please contact Merrilees at mwillemse@dillon.ca for any errors or omissions.



BROCK BUSINESS PARK REVITALIZATION

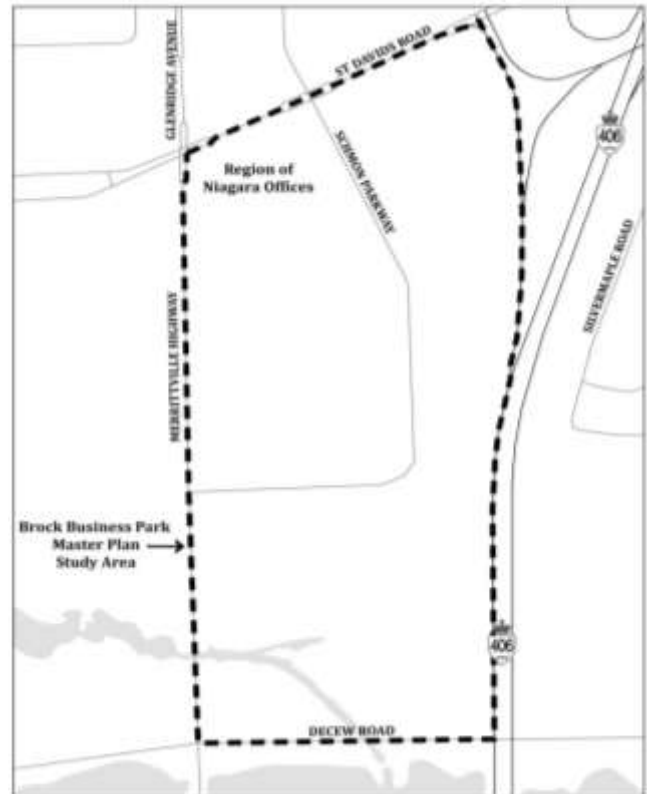
A Master Plan to help revitalize an area in Transition

PURPOSE OF THE PROJECT

The City of Thorold recently initiated the development of the **Brock Business Park Revitalization Master Plan**. Brock Business Park covers approximately 47 ha and is located at the St. David's Road interchange on Highway 406, immediately east of Brock University. The Business Park includes a mix of institutional, office and commercial uses and has access to full municipal services. While most of the Business Park is built out with first generation buildings, there remain a number of opportunities for intensification and infilling. Recently, the Business Park has come under pressure to accommodate non-employment uses, including a recently constructed multi-storey private-sector student residence.

The purpose of this project is to prepare a master plan study to help guide decision-making as the Park evolves. The Master Plan Study will:

- Provide a new vision for the Brock Business Park;
- Identify existing and potential issues and opportunities for improvement;
- Consider a range of future redevelopment concepts;
- Recommend a new land use and urban design plan for the area;
- Recommend an implementation strategy.



OPPORTUNITY TO GET INVOLVED

The City of Thorold would like to hear from you. **How do you think the park should evolve?** Help us identify opportunities for new development, park spaces, and pedestrian, cycling and transit connections. Provide your input through hands on involvement with our planning team at our upcoming public and stakeholder consultation session.

When: August 20, 2013, 10am-12pm

**Where: Region of Niagara offices,
2201 St. David's Road**

**RSVP: Lola Emberson, Senior Planner
lemberson@thorold.com**

BROCK BUSINESS PARK REVITALIZATION



City of Thorold

A master plan to help revitalize an area in Transition

PURPOSE OF THE PROJECT

The City of Thorold recently initiated the development of the **Brock Business Park Revitalization Master Plan**. Brock Business Park covers approximately 47 ha and is located at the St. David's Road interchange on Highway 406, immediately east of Brock University. The Business Park includes a mix of institutional, office and commercial uses and has access to full municipal services. While most of the Business Park is built out with first generation buildings, there remain a number of opportunities for intensification and infilling. Recently, the Business Park has come under pressure to accommodate non-employment uses, including a recently constructed multi-storey private-sector student residence.

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- Consider a range of future redevelopment concepts;
- Recommend a new land use and urban design plan for the area;
- Recommend an implementation strategy.



As one of the key project stakeholders we would like to invite you to a stakeholder and public **consultation session** on **August 20, 2013, 10am-12pm** at the Region of Niagara Training Office (3550 Schmon Parkway, 2nd Flr). We would like your input on plans to identify opportunities and locations for new development, park spaces, and pedestrian, cycling and transit connections. Please RSVP to:

Adele Arbour, MCIP, RPP,
Director of Planning and Building Services.
3540 Schmon Parkway, PO Box 1044
Thorold, Ontario, L2V 4A7
Email: aarbour@thorold.com


AUGUST 2013



**Brock Business Park Revitalization Master Plan
August 20, 2013 Stakeholder and Public Workshop
Meeting Notes**

Represented Attendee Organizations

Brock University, Niagara College, Mountainview, Lofts Residences, AMEC, Region of Niagara, City of Thorold, Dillon Consulting Limited

Item	Discussion and Actions
Introductions and Presentation	- Dillon Consulting Limited provided a presentation on the purpose of the study, objectives and revitalization principles for Master Plan, existing conditions, initial Concept 1 for revitalization, and evaluation next steps.
Round Table Workshop	- Three workshop tables worked for 1 hour on generating revitalization concepts.  A photograph showing a workshop table covered with various planning documents, maps, and markers. The documents include a large map of a park area with green spaces and blue water features, and several smaller maps showing site plans and building footprints. There are several colored markers (yellow, orange, blue, green) and a blue pen scattered on the table. The background shows a computer monitor and a chair.



Summary Discussion of Round Table Results

- Table 1 Concept: enhance connections and introduce mixed use



- Table 2 Concept: maintain employment focus with minimal new residential



	<p>- Table 3 Concept: linear park space and introduce mixed use</p> 
<p>Discussion on Concepts Results</p>	<ul style="list-style-type: none"> - Intensification is welcome. - Improving the connections to and from Brock University is important. - Improve connections to the natural areas and trails surrounding the Business Park rather than adding significant new park space within the Business Park (e.g. Glenridge Quarry Natural Park and Open Space north of the Business Park). - Focus the majority of the new employment growth in the south end of the Business Park. - Allow residential on the southern most property on Decew Road. - Allow some mixed use and some commercial in the north half of the Business Park, closer to St. David’s Road and Brock University. - Consider the parking requirements and related intensification, in particular parking required at the Region of Niagara and how the Region’s offices may expand. - Stakeholders would like to see the Master Plan Report by the end of September, beginning of October. 
<p>Next Steps</p>	<ul style="list-style-type: none"> - Dillon to review Workshop Concepts and generate three concepts for evaluation in the Master Plan. - Dillon to prepare draft Master Plan report with concepts for revitalization and a recommended Land Use plan.

These meeting notes were prepared by Merrilees Willemse of Dillon Consulting Limited. Please contact Merrilees at mwillemse@dillon.ca for any errors or omissions.

Comment	Response/Suggestion
<p>Niagara Region Economic Development, Policy Planning and Public Works Group (Collectively) November 19, 2013</p>	
<p>Vision and Objectives</p> <ul style="list-style-type: none"> • This section of the report does not make specific reference to this area meeting demands for University housing. • The objectives do not clearly speak to a desire to encourage retention and support expansion of existing employment uses. • Objective #2 of the report, “Protect and support a basic employment function for the Brock Park”, suggests that there is a risk to employment land and therefore a need to protect employment land; the risk being the continued conversion of employment to residential. However, the word “basic” suggests that there is a minimum amount of employment land that is necessary for Brock Business Park to be successful. <i>Has this been determined and if so how?</i> 	<ul style="list-style-type: none"> • The Vision references mixed uses and residential uses – the specific type of housing should not be signaled out in this section. However, further enhancements to the vision wording can be made through the Secondary Plan process. • Objective 2 has been strengthened to highlight the importance of the employment function of the Brock Park
<p>Mixed Use</p> <ul style="list-style-type: none"> • The minimum requirement of 25% floor area to be employment use for every new residential development is helpful in ensuring that mixed use actually occurs; however, this doesn’t appear to be the model for the housing that is being proposed for this park. • Further, there appears to be guidance to allow a reduction in this 25% provided a market study justifies an increase in housing and a decrease in employment area. <ul style="list-style-type: none"> ○ It is suggested that the plan could contain direction to ensure that the mixed use area remains mixed use, and that any required market study demonstrates that conversion will not adversely affect the overall viability of the employment area and meets the objectives of the Brock Business Park Plan. 	<ul style="list-style-type: none"> • Based on land use and urban design Floor-space targets have been revised to focus on requirements for ground –floor commercial/ employment uses and upper storey residential for buildings with street frontage (as a result of objections to the seemingly arbitrary nature of the percentages). • Enhancements to the market study requirements have been made. • Additional enhancements can be made through the secondary plan process.

<p>Residential</p> <ul style="list-style-type: none"> In general, adding some more residential, particularly the live-work spaces and mixed commercial/residential that are proposed could make the entire Brock Business Park more attractive to the employment uses contemplated. It is suggested that the Master Plan address the desired mix of “student residence” versus medium density and low density housing keeping in mind that to achieve a true mixed use and live-work, a core of permanent residents who work in the Business Park is ideal. 	<ul style="list-style-type: none"> A separate study (beyond the specific market studies required for individual applicants) would be required to quantify/define the appropriate mix of housing types within the Brock Park. This level of analysis is not warranted and we believe that the requirements for a market study in combination with the urban design policies provide sufficient direction for addressing new development. Enhancements/fine-tuning of the residential permissions can be considered through the secondary plan process.
<p>Servicing and Related Financial Matters</p> <ul style="list-style-type: none"> The Region has identified several significant concerns with the proposed intensification of the Brock Business Park from a servicing standpoint. The report states that “The Confederation Heights pumping station is expected to require upgrading to handle the increased flows associated with intensification within the Brock Park. The pumping station is not currently at capacity and contribution from development (development charges) to the Region will be needed to fund future upgrades to the pumping station.” The report also states that “the pumping station appears to have sufficient capacity for the existing land use, but could require upgrades for any further increase in flow.” And further, that “Since the sewers are already noted as theoretically surcharged under full development conditions, the sanitary servicing of the Brock Business Park appears to be the greatest threat to additional development.” <ul style="list-style-type: none"> <i>These statements identify a situation that needs to be more fully understood.</i> 	<ul style="list-style-type: none"> Comments noted. The Master Plan recommends that the City complete a servicing and financial study to develop a comprehensive solution for servicing development in the Brock Park.

<ul style="list-style-type: none"> ○ It is known that the existing servicing in this area is not able to accommodate the proposed intensification/conversion. The information provided in the Plan does not explain how the servicing demands will be met including sizing of pipes, cost of upgrades, timing and issues related to constraints such as approvals from MTO; nor does it address phasing of development. ○ <i>How much development can proceed today?</i> ○ <i>Is capacity to be allocated on a “first come, first served” basis regardless of the proposed type of development?</i> ● Another concern is that the development charges may not provide the funding required for the infrastructure improvements needed to support the increased demands on the sanitary system. There are several applicable programs available which would waive development charges for development in the Park, including: <ul style="list-style-type: none"> ○ Industrial Development Charge Grant; ○ Smart Growth Reduction of Development Charges; ○ Gateway Development Charge Grant, and; ○ Industrial Expansion Exemption. ● The Plan should include direction that development should absorb the cost for providing services to new development or redevelopment. ● It is suggested that the City and Region work collaboratively to understand the servicing requirements, impacts to the infrastructure and both City and Regional costs, and that an accepted financial strategy be completed prior to the preparation of an OPA implementing the Secondary Pan in support of the preferred concept. 	
<p>Transportation</p> <ul style="list-style-type: none"> ● This section (5.4.1) doesn't reference the EA that the Region is doing for this area on St. David's and Merrittville Hwy. Preliminary comments have 	<ul style="list-style-type: none"> ● Reference to the EA process has been incorporated.

<p>suggested that a dedicated northbound right turn lane is required on Schmon Parkway. The report should identify the potential need for improvements consistent with this EA.</p>	
<p>Use of the Term “Student Residences”</p> <ul style="list-style-type: none"> Throughout the plan, student residences are identified as a land use. While targeted/marketed to students, these units could be occupied by anyone. It is suggested that the term “student residences” be replaced with “apartments” or “apartment units”. 	<ul style="list-style-type: none"> We do not concur with this observation. Student residences have not been designated on the land use plan – nor do the policies in section 5 reference student housing as a land use category (land use categories are commercial, residential, employment, etc.). Also note that City has described the student residences as “purpose built apartment buildings geared towards student”.
<p>Impact on Employment Land</p> <ul style="list-style-type: none"> The impacts of introducing residential and other sensitive land uses into an employment area are not fully explored. For example, land use compatibility issues need to be addressed for the Region’s environmental laboratory. Setbacks for sensitive uses should be established. 	<ul style="list-style-type: none"> Specific set-back requirements should be addressed through the secondary plan process.
<p>Other Tools</p> <ul style="list-style-type: none"> Rather than a market study on incubators, this study could be expanded to attracting research and development and professional/technical/scientific businesses within the Brock Business Park. A market study on ideal types of commercial development that would complement both the residential and businesses uses contemplated could also be undertaken. Finally, a comment – we can’t assume a “plan it and they will come” approach will work. This area will need a marketing plan that leverages participation by Brock University, the Region and Thorold, if it is going to be successful. Otherwise, 	<ul style="list-style-type: none"> Revisions to Section 5.5.9 regarding a business incubator feasibility study have been made to reference opportunities for research and development activities.

<p>the area may default to a student village within a few years.</p>	
<p>Mountain View Homes November 1, 2013</p>	
<ul style="list-style-type: none"> • 1. Section 4, Master Plan Concepts provides three different concepts for the overall Brock Business Park that were developed through a stakeholder workshop held on August 20th. None of these concepts envision the redesignation of existing buildings within the subdivision. However, what would be the eventual secondary plan schedule takes the liberty of providing alternative land uses on existing buildings even though it was our understanding that the intent of this study was primarily to encourage the development of the vacant parcels of land that remain in the business park. • We appreciate that an overall vision is being sought for the business park, and we support the broad application of mixed use provisions within the business park, but the inclusion of residential uses among the mixed use provisions, and by extension, the redesignation of residential uses within half of the business park we believe was both unintended, and unforeseen. • We believe as per the enclosed schedule that the mixed uses excluding residential should be permitted within the area outlined black, and the area outlined in red should permit all of the mixed uses including residential. 	<ul style="list-style-type: none"> • The intent of the study was to promote both intensification of existing areas and development of vacant lots (refer back to July stakeholder session presentation, slide 6). • The mixed use land use vision for the north half of Brock Park provides a balanced and rational organization of land uses. • The market study and urban design policies are appropriate tools for controlling the quality and quantity of non-employment development and redevelopment in the Brock Park. • Enhancements to these policies could be considered through the Secondary Plan process.
<ul style="list-style-type: none"> • 2. Section 5, Recommended Policies and Concepts and in particular section 5.2.2 within the Mixed Use Area, the policies seek to provide a minimum of 15% of a residential development's floorspace to accommodate commercial uses, 25% of a residential development's floorspace to accommodate employment uses and no more than 60% of the residential development's floor space should be dedicated to residential uses. • In our opinion these targets are not only arbitrary, but much too restrictive and not economically viable to achieve. The ability to provide mixed use 	<ul style="list-style-type: none"> • We undertook an analysis of various mixed-use policy frameworks in a selection of other municipalities and have included a revised approach. The revised approach focuses on at-grade requirements for non-residential uses where buildings have street-frontage. • Fine-tuning of the policy

<p>projects should be encouraged through policies without having specific thresholds that must be achieved in order to allow the business park to grow and be successful. By creating such aggressive targets with residential and commercial/employment splits, this will discourage development thereby undermining the objective this process.</p> <ul style="list-style-type: none"> • It is our opinion there should not be any required splits and as such the market should be able to dictate what percentage of residential and commercial/employment split can be successfully accommodated. This being said, if the City requires some minimum proportional requirement to be included in mixed use developments which contain a residential component, than something between 3% - 5% of the developable area would likely be manageable. 	<p>wording can be addressed through the secondary plan process.</p>
<ul style="list-style-type: none"> • Notwithstanding the above comments, given that our Official Plan and Zoning By-law Amendment applications are in process and are due to come before Council for a decision in the very near future, it is our expectation that should a minimum split ultimately be required, it would not apply to these applications. 	<ul style="list-style-type: none"> • Comment noted.

Enclosed Schedule Provided by Mountain view Homes



 AREAS TO BE MIXED USE EXCLUDING RESIDENTIAL.
 AREAS TO INCLUDE RESIDENTIAL COMPONENT WITHIN MIXED USE DESIGNATION

APPENDIX C

City of Thorold Brock Business Park Financial Strategy

Final

September 1, 2015



Plaza Three
101-2000 Argentia Rd.
Mississauga, Ontario
Canada L5N 1V9

Phone: (905) 272-3600

Fax: (905) 272-3602

e-mail: info@watson-econ.ca

www.watson-econ.ca

 Planning for growth

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List of Acronyms and Abbreviations

D.C.	development charges
D.C.A.	Development Charges Act
e.p.n.h.	employees per net ha
F.S.W.	floor space per worker
ha	hectare
mm	millimetres
P.P.U.	persons per unit
sq.ft.	square feet
u.p.n.h.	units per net ha

Executive Summary

Introduction

Watson & Associates Economists Ltd. (Watson) and Dillon Consulting Limited were retained by the City of Thorold to prepare a financial strategy for the Brock Business Park located within the City of Thorold, Ontario. This strategy has been prepared as a component of the Brock Business Park Secondary Plan process which was initiated in the fall of 2014.¹

In 2013, the City of Thorold completed a comprehensive master planning exercise for the Brock Business Park.² As part of this exercise a recommended land use plan was presented to City Council in December 2013. Council adopted the recommended land-use concept, along with the key recommendations of the Master Plan Study report which included:

1. The need to prepare a formal Secondary Plan for the park (statutory plan under the Planning Act);
2. The need to confirm municipal servicing requirements based on the recommended land-use concept; and
3. The need to prepare a financial strategy to implement the plan.

In accordance with the above, recommendation #3 forms the basis for the need to complete the financial strategy provided herein.

Description of Brock Business Park Secondary Plan Area

The Brock Business Park Secondary Plan Area, hereafter referred to as the Brock Business Park, is bounded by St. David's Road to the North, Merrittville Highway to the West, Decew Road to the south and Highway 406 to the West (refer to Figure 1). The subject lands encompass the existing and formerly designated employment lands within the Brock Business Park (approximately 43 ha), as well as additional residential lands and an environmental conservation area/significant woodlands to the south (10.5 ha). The total land area of the Brock Business Park is approximately 56.7 gross ha. In addition, a total of 20 ha of land has been identified directly west of Merrittville Highway for the future south campus expansion of Brock University.

¹ Draft Brock Business Park Secondary Plan. March 2015.

² Brock Business Park Master Plan, Dillon Consulting, 2013.

Anticipated Development

The ultimate development potential of the Brock Business Park has been determined based on a review of the anticipated development yield by land use in accordance with the Secondary Plan for this area. At full urban buildout, the Brock Business Park is anticipated to accommodate an additional 1,660 persons and 809,500 sq.ft. of non-residential G.F.A.

Financial Strategy

The objective of this financial strategy is to identify the capital costs required to develop the Brock Business Park Secondary Plan. Specific consideration has also been given to potential capital recovery options and a recommended funding strategy for the developing landowners within the Business Park.

Identified Capital Costs and Recovery Options

The identified capital costs associated with the development of the Brock Business Park total \$4.47 million. Potential recovery options associated with the capital cost identified for the Brock Business Park include:

- Area-specific D.C. – \$1.07 million (24%);
- Local Developer Costs – \$2.46 million (55%);
- Non-D.C. Recoverable City Costs – \$397,500 (9%); and
- City-wide D.C. – \$540,000 (12%).

Recommended Funding Strategy for Developing Landowners within the Business Park

As summarized above, approximately 79% of the identified capital costs for the Brock Business Park would be borne directly by the developing landowners. An area-specific D.C. is recommended to fund the \$1.07 million in capital costs identified for wastewater collection. This approach is similar to what the City has done for other development areas. The remaining capital costs which have been identified as a direct developer responsibility are not D.C. eligible under the City's existing local service policy. It is recommended that these capital costs be funded through a cost sharing agreement (best efforts) with local developers. Other potential funding approaches could also be explored through Part 12 of the *Municipal Act*.

1. Introduction

1.1 Terms of Reference

Watson & Associates Economists Ltd. (Watson) and Dillon Consulting Limited were retained by the City of Thorold to prepare a financial strategy for the Brock Business Park located within the City of Thorold, Ontario. This strategy has been prepared as a component of the Brock Business Park Secondary Plan process which was initiated in the fall of 2014.³

1.2 Background

In 2009, the City of Thorold completed its Employment Lands Comprehensive Review. The review examined the City's overall employment land needs and provided recommendations for improving Thorold's competitiveness. One of the key findings of the Review was a recommendation for balancing the demand for employment conversion to non-employment uses within the Brock Business Park. In response to an individual application for new student housing in the park, the Review suggested that the conversion could be warranted, but that the City should prepare a new plan to proactively deal with potential long-term implications of introducing housing into the area.

Following the Employment Lands Comprehensive Review, the Region of Niagara (the Region) completed the Niagara Gateway Strategy in 2011. The Gateway Strategy builds upon the recommendations of the City's Employment Lands Comprehensive Review and provides stronger direction for development within the Brock Business Park. Further details regarding the policy direction for the Brock Business Park are provided in the Draft Brock Business Park Secondary Plan.

In 2013, the City of Thorold completed a comprehensive master planning exercise for the Brock Business Park.⁴ As part of this exercise a recommended land use plan was presented to City Council in December 2013. Council adopted the recommended land-use concept, along with the key recommendations of the Master Plan Study report which included:

1. The need to prepare a formal Secondary Plan for the park (statutory plan under the Planning Act);

³ Draft Brock Business Park Secondary Plan. March 2015.

⁴ Brock Business Park Master Plan, Dillon Consulting, 2013.

2. The need to confirm municipal servicing requirements based on the recommended land-use concept; and
3. The need to prepare a financial strategy to implement the plan.

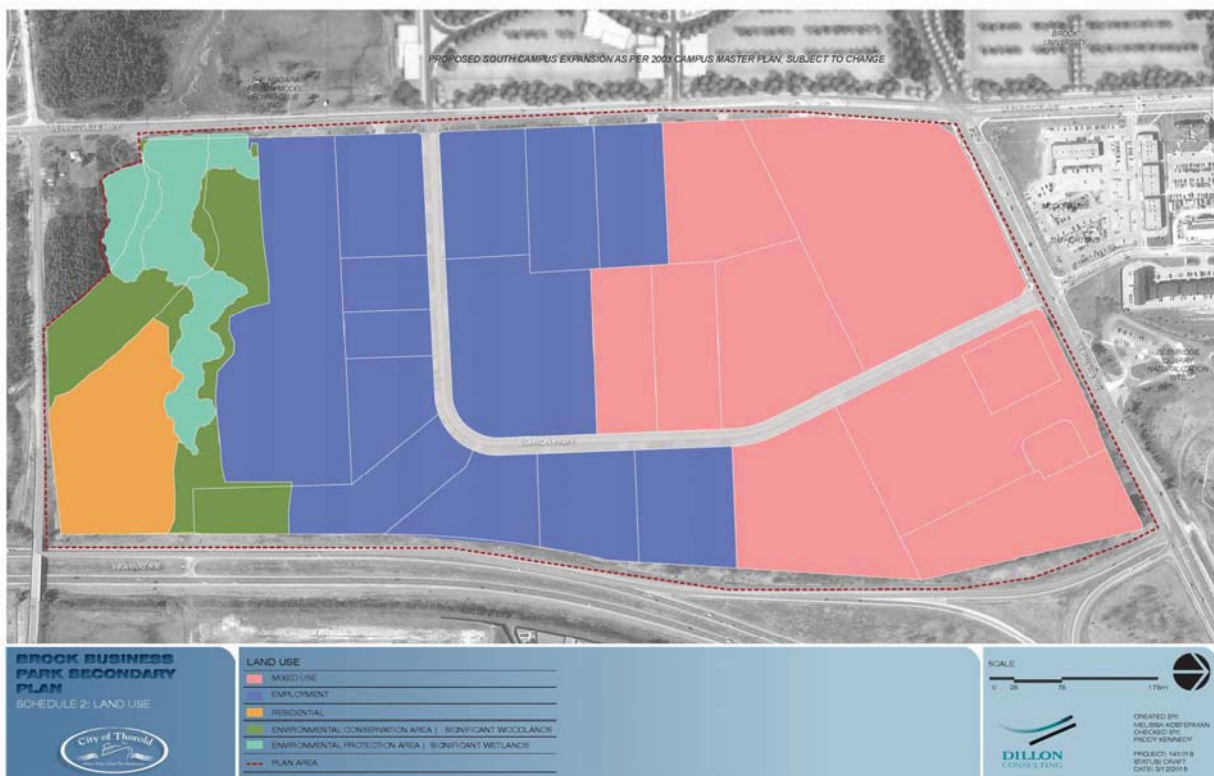
In accordance with the above, recommendation #3 forms the basis for the need to complete the financial strategy provided herein.

2. Anticipated Development

2.1 Description of Brock Business Park Secondary Plan Area

The Brock Business Park Secondary Plan Area, hereafter referred to as the Brock Business Park, is bounded by St. David's Road to the North, Merrittville Highway to the West, Decew Road to the south and Highway 406 to the West (refer to Figure 1). The subject lands encompass the existing and formerly designated employment lands within the Brock Business Park (approximately 43 ha), as well as additional residential lands and an environmental conservation area/significant woodlands to the south (10.5 ha). The total land area of the Brock Business Park is approximately 56.7 gross ha. In addition, a total of 20 ha of land has been identified directly west of Merrittville Highway for the future south campus expansion of Brock University (not depicted in Figure 1).

Figure 1: Brock Business Park Secondary Plan Area



2.2 Residential and Non-Residential Growth Forecast

The ultimate development potential of the Brock Business Park has been determined based on a review of the anticipated development yield by land use in accordance with the Secondary Plan for this area. In developing the total housing and population yield by land use, the following assumptions were made:

Mixed-use Area – Total Land Area, 22.6 ha; Net Vacant Land Area, 5.52 ha

Residential Development Assumptions

- A total of 40% of the land area is available for residential; the remaining 60% of the land area is available for non-residential development.
- The proposed student housing residence (student development #3) is estimated to accommodate 1,100 students with an average person per unit (P.P.U.) of 4.0. This translates into a total of 275 student residents.
- Approximately 1.08 ha of land is currently identified as vacant for residential development with an assumed development yield of 75 units per net ha (u.p.n.h.). This generates a total of approximately 81 units.
- Overall, 15% of the mixed-used area will accommodate additional intensification over the long term. This translates into approximately an additional 108 units.
- The average new unit P.P.U. for apartments (permanent dwellings) is 1.71, which translates into 325 persons.

Non-Residential Assumptions

- The net vacant developable industrial land available for commercial/institutional development is 3.31 ha.
- The average employment density on vacant developable employment lands is 125 employees per net ha.
- The total employment yield in the mixed-use area is 400, split evenly between commercial and institutional uses.

Residential Area, 4.4 ha

Development Assumptions

- A four-storey seniors' complex is planned for this site.

- The site area measures 2.9 ha (29,000 m²). At 20% lot coverage, the total residential gross floor area (G.F.A.) is calculated at 23,200 m² (29,000 X 20% X 4 storeys).
- The estimated useable space of the seniors' complex is 13,920 m² (60% of total G.F.A.).
- The average size per unit is 65 m², which generates a total of 214 units.
- The average P.P.U. for the proposed seniors' complex is 1.1. This generates a yield of 235 additional persons within the residential area.

Employment Area, Total Land Area, 21.5 ha; Net Vacant Land Area, 5.77 ha

Development Assumptions

- The vacant lands within the employment area will be accommodated as follows: 45% commercial; 45% institutional; and 10% industrial.
- The average employment density, measured in employees per net ha (e.p.n.h.), is 80 (commercial), 60 (institutional) and 30 (industrial). This generates a yield of 210 (commercial), 160 (institutional), 20 (industrial) and a total employment yield of 390 additional employment.
- The average floor space per worker (F.S.W.) for commercial, institutional and industrial employment is 400 sq.ft./employee, 550 sq.ft./employee and 1,200 sq.ft./employee, respectively. This generates a total of 257,400 sq.ft. of additional non-residential G.F.A. for the lands designated employment area in the Brock Business Park.

Institutional Area (Brock University Expansion), 20 net Ha

Development Assumptions

- There is no existing formal plan or development concept for these lands.
- Based on site area, the Brock University expansion area could ultimately accommodate just over 420,000 sq.ft. (G.F.A.) of additional institutional building space at full buildout. The timing of such development is considered to be long term (i.e. post-2031).

A summary of the residential and non-residential growth potential for the subject lands is provided in Tables 2-1 and 2-2. It is noted that the growth forecast provided in Tables 2-1 and 2-2 represent incremental population and employment growth between 2015 and ultimate buildout of the Business Park.

**Table 2-1
Brock Business Park
Estimated Residential Development Yield**

Development Type/Location	Single/Semi-Detached	Townhomes	Apartments ¹	Seniors' Housing ²	Total Residential Units	Total Student Housing ³	Total Residential Units Including Student Housing	Gross Population in New Units
Mixed Use	-	-	190		190	275	465	1,425
Residential				214	214	-	214	235
	-	-	190	214	404	275	679	1,660

Source: Watson & Associates Economists Ltd.

1. Average PPU for Apartments is 1.71.
2. Average PPU for Seniors' housing is 1.1.
3. Average Persons Per Unit (PPU) for Student Housing Units is 4.0.

**Table 2-2
Brock Business Park
Estimated Non-Residential Development Yield**

Development Location					Gross Floor Area (GFA) ¹			
	Industrial	Commercial	Institutional	Total Employment	Industrial (GFA Sq.ft.)	Commercial (GFA Sq.ft.)	Institutional (GFA Sq.ft.)	Total (GFA Sq.ft.)
Mixed Use	-	200	200	400	-	80,000	110,000	190,000
Employment	20	210	160	390	24,000	84,000	88,000	196,000
Institutional							423,500	423,500
Total	20	410	360	790	24,000	164,000	621,500	809,500

Source: Watson & Associates Economists Ltd.

1. Square feet per employee assumptions:
 Industrial 1,200
 Commercial 400
 Institutional 550

3. Financial Strategy

3.1 Financial Strategy Context

The objective of this financial strategy is to identify the capital costs required to develop the Brock Business Park Secondary Plan. Specific consideration has also been given to potential capital recovery options and a recommended funding strategy for the developing landowners.

The City of Thorold Development Charges (D.C.) Local Service Policy⁵ identifies what capital costs are to be included in the D.C. background study versus those costs which are deemed to be a direct developer responsibility. Local service policy guidelines are based on size and nature of engineered infrastructure (e.g. sanitary sewers greater than 300 mm are to be included in the City-wide D.C.). Accordingly, the City's local service policy guidelines form a key document regarding the potential capital cost recovery options for the subject lands.

3.2 Capital Costs

Total capital costs associated with the redevelopment of the Brock Business Park have been summarized by Watson through a variety of sources. Capital costs associated with wastewater collection are based on a 2014 memo prepared by BluePlan Engineering Consultants Limited.⁶ Capital costs associated with water distribution, roads and parkland development have been determined based on discussions with the City of Thorold as well as background information provided in the 2013 Brock Business Park Master Plan.

The proposed capital works to service the Brock Business Park are a mix of new and replacement projects. Some of the projects are located within the Business Park, while others are external. Funding of these works needs to be considered within the context of the Development Charges Act, 1997 (D.C.A.), the City's development charges background study, the Municipal Act, 2001 and the City's development policies. The estimated project costs by service are as follows:

⁵ Appendix E of the City of Thorold 2014 DC Background Study.

⁶ Brock Business Park Buildout Capacity Analysis. February 27, 2014.

Capital Cost Item	Total
Wastewater - Sewers	\$ 2,022,909
Water Distribution	\$ 200,000
Roads (Sidewalks, Streetscaping Improvements)	\$ 1,650,000
Parkland Development	\$ 600,000
Total	\$ 4,472,909

3.3 Potential Capital Cost Recovery Options

Potential recovery options associated with the capital cost identified for the subject lands can be categorized into four broad categories, including Area-specific D.C., Direct Development Responsibility for Local Services, Non-D.C. Recoverable City Costs and City-wide D.C. Additional details regarding each of these potential recovery options are discussed below.

- **Area-specific D.C.** – The City’s policy is to undertake an area-specific D.C. for very localized services. This would be considered for a portion of the major sanitary sewers.
- **Direct Developer for Local Services** – Many of the road improvements, water and wastewater servicing are deemed to be a local service under the City’s D.C. policy (see Appendix E of the City-wide D.C. Background Study). These costs may be funded by the landowners constructing the works and/or by paying the funds directly to the City to undertake. Note that some local service costs are not directly adjacent to developing properties. Even though these works are required to benefit the internal developments, landowners may be apprehensive to pay these charges – a portion may require a recovery from the benefitting landowners via a capital charge under Part 12 of the Municipal Act, 2001.
- **Non-D.C. Recoverable City Costs:**
 - Sewer Mains – Some sewer costs are replacement costs and, as per the D.C.A., would be considered an existing benefit. The existing sewer infrastructure was installed in 1987, approximately 28 years to date. Based on a useful life of 100 years, a 28% benefit to existing deduction has been applied to the replacement costs of the existing sewer mains.
 - Parkland Development – Under the D.C.A., parkland development has a mandatory 10% dedication. Accordingly, 10% of the total parkland development cost (\$600,000) has been identified as a non-D.C. recoverable City cost.

- City-wide D.C.** – Parkland development is recommended to be included within the City’s municipal-wide D.C. We have reviewed the D.C. eligible capital cost allocation for parkland development provided in the 2014 City of Thorold Development Charges (D.C.) Background Study.⁷ A total of \$1.59 million in D.C. eligible capital costs have been identified for parkland development over the 10 year forecast period (2014-2023). Based on discussions with City staff regarding the timing of the various parkland development projects identified in the 2014 D.C. Background Study, it has been determined that several of these projects may not proceed on schedule. As such, it is reasonable to assume that there will be sufficient room to accommodate the identified parkland development costs for the Brock Business Park as a City-wide D.C. recoverable capital cost.

Based on the above, the allocation of costs is as follows:

Table 3-1: Summary of Capital Cost Summary

Capital Cost Item	Development Charge ¹	Non-DC Recoverable City Costs ²	Local Developer Costs ³	Total
Wastewater - Sewers	\$ 1,073,908	\$ 337,494	\$ 611,507	\$ 2,022,909
Water Distribution	\$ -	\$ -	\$ 200,000	\$ 200,000
Roads (Sidewalks, Streetscaping Improvements)	\$ -	\$ -	\$ 1,650,000	\$ 1,650,000
Parkland Development	\$ 540,000	\$ 60,000	\$ -	\$ 600,000
Total	\$ 1,613,908	\$ 397,494	\$ 2,461,507	\$ 4,472,909

1. Area-specific for Wastewater and City-wide for Parkland.

2. Includes replacement costs (benefit to existing) for sewers and 10% statutory deduction for parkland development.

3. Some costs will be emplaced by landowners directly and other costs may be built by the City with a recovery from landowners via a capital charge.

3.4 Recommended Funding Strategy for Developing Landowners

In accordance with the above capital cost recovery options, approximately 9% of the estimated capital costs will be borne by the City (i.e. a portion of sewer costs and parkland development costs). In addition, the remaining D.C.-eligible parkland development costs (approximately 12% of estimated capital costs) will be included within the City of Thorold’s municipal-wide D.C. The residual 79% of costs are borne by developing landowners. These costs can be secured as follows:

⁷ City of Thorold Development Charges (D.C.) Background Study. May 6, 2014. Pg. 5-7. Watson & Associates Economists Ltd.

Area-specific D.C.

- Capital costs associated with wastewater collection would be funded through an area-specific D.C., which is consistent to the approach used in other areas of the City for very localized services.

Cost Sharing Agreement

- The City can develop a cost sharing agreement (best efforts) with local developers for all localized costs which are not eligible under the D.C.A. Under this scenario, capital costs would be cash flowed and paid for by the developing landowners. Other potential funding approaches could also be explored through Part 12 of the *Municipal Act*.

The cost allocations and the charges to be imposed and recovered from developing landowners are as follows:

Capital Cost Item	Local Developer Costs	Residential Share (58%)	Non-Residential Share (42%)
Wastewater - Sewers	611,507	354,674	256,833
Water Distribution	200,000	116,000	84,000
Roads (Sidewalks, Streetscaping Improvements)	1,650,000	957,000	693,000
Total	2,461,507	1,427,674	1,033,833

Area Specific Costs (Sewers)	1,073,908	622,867	451,042
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Total	3,535,415	2,050,541	1,484,874
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The calculated per unit and per square foot charges for local services (i.e. capital charge) and area-specific D.C.s are presented below:

Capital Cost Item	DC - Large Apartment	DC - Small Apartment	DC - Non-Res (Sq. Ft.)
Local Services:			
Wastewater - Sewers	421	284	0.32
Water Distribution	138	93	0.10
Roads (Sidewalks, Streetscaping Improvements)	1,136	767	0.86
Total	1,695	1,144	1.28

Area Specific Costs (Sewers)	739	499	0.56
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Total	2,434	1,643	1.84
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4. Conclusions

The identified capital costs associated with the development of the Brock Business Park total \$4.47 million. Potential recovery options associated with the capital cost identified for the Brock Business Park include:

- Area-specific D.C. – \$1.07 million (24%);
- Local Developer Costs – \$2.46 million (55%);
- Non-D.C. Recoverable City Costs – \$397,500 (9%); and
- City-wide D.C. – \$540,000 (12%).

As summarized above, approximately 79% of the identified capital costs for the Brock Business Park would be borne directly by the developing landowners. An area-specific D.C. is recommended to fund the \$1.07 million in capital costs identified for wastewater collection. This approach is similar to what the City has done for other development areas. The remaining capital costs which have been identified as a direct developer responsibility are not D.C. eligible under the City's existing local service policy. It is recommended that these capital costs be funded through a cost sharing agreement (best efforts) with local developers. Other potential funding approaches could also be explored through Part 12 of the *Municipal Act*.

Appendix A - Detailed Breakdown of Wastewater Collection Capital Cost Recovery

Appendix A – Detailed Breakdown of Wastewater Collection Capital Cost

Sewer	Pipe ID	Peak Flow (L/s)	Existing Diameter (mm)	Proposed Diameter (mm)	Length (m)	Main Cost (\$/l.m)	Total Cost to Construct Main	Oversizing (DC Credit)	Allocated Costs	DC Recovery (for works Outside of Subdivision)	Benefit to Existing Cost (City)	Developer Costs (local)	DC Credit Recovery	City Replacement Costs	Developer Local Costs	Summary
Merrittville Highway	SAL5897	25	200	250	70.8	\$ 678	\$ 48,002	\$ -	\$ 48,002			\$ 48,002	\$ -	\$ -	\$ 48,002	
	SAL5898	26.3	200	250	144.9	\$ 678	\$ 98,242		\$ 98,242			\$ 98,242	\$ -	\$ -	\$ 98,242	
	SAL5900	37.3	200	250	79.6	\$ 678	\$ 53,969		\$ 53,969			\$ 53,969	\$ -	\$ -	\$ 53,969	
	SAL5350	37.4	200	250	65.9	\$ 678	\$ 44,680		\$ 44,680			\$ 44,680	\$ -	\$ -	\$ 44,680	
West-East Schmon Pkwy	SAL5209	39.5	200	250	75.4	\$ 678	\$ 51,121		\$ 51,121			\$ 51,121	\$ -	\$ -	\$ 51,121	
	SAL5352	40.8	200	250	102.3	\$ 678	\$ 69,359		\$ 69,359			\$ 69,359	\$ -	\$ -	\$ 69,359	
	SAL5355	41.9	200	250	28.7	\$ 678	\$ 19,459		\$ 19,459			\$ 19,459	\$ -	\$ -	\$ 19,459	
	SAL5354	43.3	200	250	39.9	\$ 678	\$ 27,052		\$ 27,052			\$ 27,052	\$ -	\$ -	\$ 27,052	
North-South Schmon Pkwy	SAL5221	32.6	250	300	67.1	\$ 791	\$ 53,076		\$ 53,076			\$ 53,076	\$ -	\$ -	\$ 53,076	
	SAL5218	38.7	250	375	84.3	\$ 791	\$ 66,681	\$ 9,526	\$ 57,155	\$ 16,004	\$ 16,004	\$ 41,152	\$ 9,526	\$ 16,004	\$ 41,152	
	SAL5215	42.4	250	375	85.7	\$ 791	\$ 67,789	\$ 9,684	\$ 58,105	\$ 16,269	\$ 16,269	\$ 41,835	\$ 9,684	\$ 16,269	\$ 41,835	
	SAL5212	45.8	250	375	73.6	\$ 791	\$ 58,218	\$ 8,317	\$ 49,901	\$ 13,972	\$ 13,972	\$ 35,929	\$ 8,317	\$ 13,972	\$ 35,929	
BBP Trunk Sewer (Outside of Subdivision - Include in DC)	SAL5353	47	250	375	56.6	\$ 791	\$ 44,771	\$ 6,396	\$ 38,375	\$ 10,745	\$ 10,745	\$ 27,630	\$ 6,396	\$ 10,745	\$ 27,630	
	SAL5210	90.8	300	375	150.9	\$ 791	\$ 119,362	\$ 15,090	\$ 104,272	\$ 75,076	\$ 29,196	\$ -	\$ 90,166	\$ 29,196	\$ -	
	SAL5206	90.8	300	375	93.9	\$ 791	\$ 74,275	\$ 9,390	\$ 64,885	\$ 46,717	\$ 18,168	\$ -	\$ 56,107	\$ 18,168	\$ -	
	SAL5205	90.8	300	375	56.5	\$ 791	\$ 44,692	\$ 5,650	\$ 39,042	\$ 28,110	\$ 10,932	\$ -	\$ 33,760	\$ 10,932	\$ -	
	SAL6324	90.8	300	375	19.6	\$ 791	\$ 15,504	\$ 1,960	\$ 13,544	\$ 9,751	\$ 3,792	\$ -	\$ 11,711	\$ 3,792	\$ -	
	SAL5204	90.8	300	375	66.5	\$ 791	\$ 52,602	\$ 6,650	\$ 45,952	\$ 33,085	\$ 12,866	\$ -	\$ 39,735	\$ 12,866	\$ -	
Hwy 406 Crossing	SAL5344	93.8	300	375	71.4	\$ 791	\$ 56,477	\$ 7,140	\$ 49,337	\$ 35,523	\$ 13,814	\$ -	\$ 42,663	\$ 13,814	\$ -	
	SAL5343	104.5	300	450	63.8	\$ 1,074	\$ 68,489	\$ 18,024	\$ 50,466	\$ 36,335	\$ 14,130	\$ -	\$ 54,359	\$ 14,130	\$ -	
	SAL5341	105	300	450	60.2	\$ 1,074	\$ 64,625	\$ 17,007	\$ 47,618	\$ 34,285	\$ 13,333	\$ -	\$ 51,292	\$ 13,333	\$ -	
	SAL5203	108.4	300	450	38.6	\$ 1,074	\$ 41,437	\$ 10,905	\$ 30,533	\$ 21,883	\$ 8,549	\$ -	\$ 32,888	\$ 8,549	\$ -	
	SAL5342	117.2	300	525	101.3	\$ 1,074	\$ 108,746	\$ 28,617	\$ 80,128	\$ 57,692	\$ 22,436	\$ -	\$ 86,310	\$ 22,436	\$ -	
	SAL5806	136.5	300	525	101.8	\$ 1,074	\$ 109,282	\$ 28,759	\$ 80,524	\$ 57,977	\$ 22,547	\$ -	\$ 86,736	\$ 22,547	\$ -	
Total							\$ 2,022,909	\$ 183,113	\$ 1,839,796	\$ 890,796	\$ 337,494	\$ 611,507	\$ 1,073,908	\$ 337,494	\$ 611,507	

* also includes 700mm casing

Diameter	Cost Per Metre Pipe Costs			Total
	Base Cost	Road Re-instatement	13% Contingency	
200mm or 250mm	400	200	78	678
300mm or 375mm	500	200	91	791
450mm or 525mm	750	200	123.5	1073.5

Assumptions

Existing Pipe Size	Cost	Date Installed
200	\$ 400.00	1987
250	\$ 400.00	Useful Life
300	\$ 400.00	Replacement Year
		Life Used
		Benefit to Existing
		Growth

New Pipe Size	Cost
250	\$ 500.00
300	\$ 500.00
375	\$ 500.00
450	\$ 750.00
525	\$ 750.00