TO: Chair and Members Economic Development and Planning Committee

WARD(S) AFFECTED: WARD 15

COMMITTEE DATE: September 7, 2010

SUBJECT/REPORT NO:
Waterdown South Secondary Plan, Urban Design Guidelines and South Waterdown Subwatershed Study (PED10171) (Ward 15)

SUBMITTED BY:
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RECOMMENDATION:

(a) That Official Plan Amendment No. _______ to the Regional Municipality of Hamilton-Wentworth Official Plan, to amend Map No. 4, and Official Plan Amendment No. _______ to the former Town of Flamborough Official Plan be approved to adopt the Waterdown South Secondary Plan, and that the By-law, attached as Appendix “A” to Report PED10171, which has been prepared as a By-law of adoption in a form satisfactory to the City Solicitor, be enacted by Council.

(b) That the Waterdown South Urban Design Guidelines, of which only the Table of Contents and Introduction have been attached as Appendix “B” to Report PED10171 for context, be approved and adopted.

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(c) That Official Plan Amendment/Modification No. [date] to the Urban Hamilton Official Plan be approved to adopt the Waterdown South Secondary Plan, attached as Appendix “C” to Report PED10171; and should Council’s decision on these amendments occur prior to the final decision on the Urban Hamilton Official Plan by the Province, the City requests the Ministry of Municipal Affairs and Housing to include these amendments in the Urban Hamilton Official Plan and defer it until the Official Plan Amendment to the former Town of Flamborough is final and binding.

(d) That the South Waterdown Subwatershed Study, of which the Table of Contents and the Executive Summary for Phase 1, Phase 2, and Phase 3 are attached as Appendix “D” to Report PED10171 for context, be endorsed, with the following exceptions:

(i) The implementation of minimum 15 metre buffers adjacent to the Natural Heritage/Core Areas, including Environmentally Significant Areas and Areas of Natural and Scientific Interest, in any development approval processes under the Planning Act, whereas the South Waterdown Subwatershed Study recommends 5 metre buffers; and,

(ii) The retention of supporting Natural Heritage System features, such as hedgerows, that are important elements of a linked natural heritage system providing opportunities for movement of some wildlife and plant species, and that retention of such features be negotiated through any development approval processes under the Planning Act.

(e) That the General Manager of the Planning and Economic Development Department be authorized and directed to file the Subwatershed Study, upon resolution of any outstanding issues with Conservation Halton and the City of Burlington and endorsement from the respective approval authority, as per the Municipal Class Environmental Assessment (October 2000, as amended in 2007), on public record with the Municipal Clerk for a thirty day appeal period.

Note: Due to the bulk of the South Waterdown Subwatershed Study and the Waterdown South Urban Design Guidelines, the entire documents have not been included as part of Report PED10171. An extract of the Waterdown South Urban Design Guidelines, Table of Contents and Introduction, has been included as Appendix “B” to Report PED10171. An extract of the South Waterdown Subwatershed Study, Table of Contents, and Executive Summary, has been included as Appendix “D” to Report PED10171.
EXECUTIVE SUMMARY

The Waterdown South Secondary Plan area is located south of Dundas Street East, north of Mountain Brow Road, east of Renwood Park subdivision (Flanders Drive), and west of Kerns Road (see Appendix “E”). The study area was brought into the urban area of Waterdown through Official Plan Amendment (OPA) 28 to the former Town of Flamborough Official Plan. The process to expand the urban boundary commenced in 1991, and was appealed to several judiciary boards, finally receiving approval through an Executive Council of the Provincial Government of Ontario (Cabinet) decision in 2002. As part of this approval, the Town of Flamborough, the City of Burlington, and the landowners signed a Memorandum of Agreement in 1997, as part of the Joint Board hearing which set out the terms in which development can occur. The terms of the Memorandum of Agreement for Waterdown South required the municipality to undertake a Secondary Plan, a Subwatershed Study, and a Transportation Master Plan. Phase 2 of the Transportation Master Plan determined the preferred alignment of the Arterial Road through Waterdown South, and was completed in February, 2008. Following the completion of Phase 2, City staff proceeded to Phases 3 and 4 (detailed design) of the Waterdown Road Corridor Class Environmental Assessment, and the Environmental Study Report was brought forward to the Public Works Committee (Report PW10010) for approval in February, 2010. City staff is resolving some outstanding issues with the Conservation Authority prior to submitting the Environmental Study Report to the Ministry of the Environment.

This Report (PED10171) is recommending approval of the Secondary Plan and associated Urban Design Guidelines, as well as the South Waterdown Subwatershed Study. These are summarized as follows:

**Waterdown South Secondary Plan**

The purpose of the Waterdown South Secondary Plan is to establish land uses, the basic transportation network, community facilities, infrastructure requirements, and development standards to guide the development and re-development of lands located in the Waterdown South Secondary Plan area for the next 20 years. At the same time, the Secondary Plan provides protection to the neighbourhood’s natural areas and environmental and heritage resources, including the Grindstone Creek, Niagara Escarpment Natural Area and Protection Area, and areas with potential heritage/archaeological significance.
The Secondary Plan provides a detailed land use plan and related policies for the regulation of land use and development of the Secondary Plan area in accordance with the applicable policies of the Official Plan of the former Town of Flamborough and the Council adopted Urban Official Plan. It is anticipated that the Secondary Plan area will accommodate approximately 3,850 dwelling units and approximately 9,500 residents, as well as employment in the institutional uses, and up to approximately 25,000m$^2$ of commercial floor space, when development has been fully completed.

The City, and a team of consultants, engaged key stakeholders and the broader community in a series of consultation events aimed at identifying common principles, opportunities and constraints, and a preferred land use strategy for the area, which became the basis for the Waterdown South Secondary Plan. Additional studies related to traffic and visual impacts on the escarpment were completed prior to finalizing the land use plan and policies.

Once the Official Plan Amendment is adopted by City Council, the policies and Secondary Plan will become part of the Flamborough Official Plan. Staff is also recommending that Committee adopt this Secondary Plan into the Urban Hamilton Official Plan once it has been approved.

**Urban Design Guidelines**

Accompanying the Secondary Plan is a set of Urban Design Guidelines, which are to be adopted by Council and will assist in creating a strong urban community. The objectives of the Urban Design Guidelines are to ensure the development of an attractive, compact, safe, and pedestrian-oriented urban environment for the Waterdown South community; including a high quality of design for public parks and open spaces, appropriate streetscape standards, the development of attractive buildings with appropriate relationships between buildings and streets, parks, and other public spaces. Of specific interest is the incorporation of guidelines for Character Roads (Mountain Brow Road and Kerns Road), and demonstration plans for the pedestrian prominent/main street retail area, and neighbourhood nodes.

The Urban Design Guidelines will not form a part of the Official Plan, but will be adopted by Council to guide the urban form and design of development within the Secondary Plan Area. Development applications will be required to demonstrate how the proposed community design meets the intent of the Urban Design Guidelines as a condition of development approval.

**Subwatershed Study**

The purpose of the South Waterdown Subwatershed Study (“Subwatershed Study”) was to develop a management plan for the features and functions of the portions of the Grindstone Creek, Falcon Creek, Indian Creek, and Hagar-Rambo Creek watersheds.
that might be affected by urban development of the South Waterdown lands. The Study is intended to inform planning and decision-making (including the preparation of the Secondary Plan) so that changes in land uses are compatible with natural systems.

The South Waterdown Subwatershed Study was conducted in three stages. In Stage 1, the subwatersheds of the study area were described through a review of background literature and field investigations to address data gaps. In Stage 2, the study team completed a detailed analysis of the potential impacts of urban development on the South Waterdown lands, and developed a management strategy to ensure that the significant natural features and functions are protected. In Stage 3, an implementation and monitoring plan was developed to describe how the management strategies developed in Stage 2 will be implemented (i.e. construction phasing, contingency measures, habitat restoration, and monitoring).

A Technical Steering Committee (TSC) was established, which consisted of stakeholders who developed the Terms of Reference for the study, reviewed the draft and final reports, and guided study progress. The Stage 1 Report was reviewed, revised, and adopted by the TSC following its final submission in March, 2006. The Stage 2 and 3 Reports were completed in December, 2009, and were accepted by the TSC in July, 2010.

The Subwatershed Study was completed by Ecoplans Limited and McCormick Rankin Corporation, with a study team of more than 20 staff from consulting firms with expertise in aquatic and terrestrial ecology, karst, fluvial geomorphology, surface and ground water, stormwater management, and erosion processes. Because of the complex nature of the site, the Subwatershed Study, which began in 2004, provides a detailed and thorough examination of the subject site and surrounding area, with extensive input from the agencies, landowners, and residents.

Staff has reviewed the Stage 1, 2, and 3 Reports, and recommends endorsement of the South Waterdown Subwatershed Study, with the exception of the following:

- The minimum 5 metre buffers recommended in the Subwatershed Study from some of the natural features (i.e. Environmentally Significant Areas, Areas of Natural and Scientific Interest) in the Subwatershed Study were considered inadequate by City staff and Conservation Halton. More appropriate minimum 15 metre buffers are provided in the Secondary Plan.

- The Natural Heritage System in the Subwatershed Study does not include supporting features, such as hedgerows. Staff recommends that these features are important elements of a linked natural heritage system and provide opportunities for movement of some wildlife and plant species. Policies to protect supporting features, such as hedgerows, are provided in the Secondary Plan.
With the exception of the items listed above, staff is satisfied with the information, analysis, and recommendations in the South Waterdown Subwatershed Study. The detailed information in the Subwatershed Study has been incorporated into the Secondary Plan policies and mapping.

Alternatives

There are no alternatives for consideration given the previous approvals through the Cabinet, the recommendations of the associated studies, and direction from the relevant authority.

FINANCIAL / STAFFING / LEGAL IMPLICATIONS (for Recommendation(s) only)

Financial: As development occurs, the City will receive development charges for the residential units (approximately 3,850), as well as commercial and institutional development. Development Charges will be collected at the time of development, at the applicable DC rate.

The City will receive additional tax assessment from the developing areas after development occurs. This will be dependent on the market value and type of development (residential, commercial, etc.) and the tax rate in place.

As part of the Memorandum of Agreement (MOA) for OPA 28, that was signed by the Town of Flamborough (now City of Hamilton), City of Burlington, and Waterdown South Landowners in 1997, and received approval by the Cabinet on July 12, 2002, the following condition was included:

“In recognition of the evidence received by the Joint Board concerning the financial constraints to development and, specifically, to the expansion of the Urban Area of the town of Flamborough, it is agreed that, in addition to the Town’s regular Development Charge, a charge will be paid to the Town of $800.00 per unit at the time of issuance of building permits. This charge shall be indexed to the Consumer Price Index commencing on the date of the issuance of the first building permit for those lands to be designated Urban or on January 1, 2000, whichever comes first.”

Staffing: There are no staffing implications.

Legal: As required by the Ontario Planning Act, Council shall hold at least one (1) formal Public Meeting to consider an Official Plan Amendment.
The Secondary Plan has not incorporated some of the exact requirements of the Memorandum of Agreement in regards to the 30 metre landscape buffer along Mountain Brow Road and Kerns Road. The Secondary Plan has incorporated Character Road policies and guidelines in lieu of these buffers. This change was discussed with the signatories of the Memorandum of Agreement (City of Burlington and the landowners) to gain support for this action. The landowners have advised that they are supportive of this alternative and the City of Burlington will bring forward a recommendation on this item at the Burlington Community Development Committee (BCDC) meeting on August 30th and Burlington City Council on September 7th. Due to report timing, this information will not be provided in this report. If the BCDC does not support Burlington’s staff position, this position would be presented and would allow Hamilton’s Economic Development and Planning Committee to table the item (if Committee so chooses) to provide opportunity for further discussion between the municipalities. Due to the importance of the Memorandum of Agreement, this course of action was vetted through Legal staff. Legal staff supports this action.

HISTORICAL BACKGROUND (Chronology of events)

Official Plan Amendment No. 28

The Waterdown South area is part of an Urban Expansion that was initiated in 1991 by the Town of Flamborough, and is generally referred to as OPA 28 (Official Plan Amendment No. 28 to the Flamborough Official Plan). This expansion was referred to the Ontario Municipal Board (OMB), and in March, 1997, a decision by the Joint Board was issued to bring the subject lands into the Urban Area with a number of conditions attached. This decision was subsequently appealed to the Ontario Government Cabinet in 1997. After a lengthy course of action, the Executive Council of the Provincial Government of Ontario (“Cabinet”) approved OPA 28 on June 19, 2002, on the basis of a written Memorandum of Agreement (MOA). This MOA was signed by the Town of Flamborough (now City of Hamilton), the City of Burlington, and the landowners, and set out the terms in which development can occur. The terms for Waterdown South required the municipality to undertake a Secondary Plan, a Subwatershed Study, and a Transportation Master Plan. Phase 2 of the Transportation Master Plan determined the preferred alignment of the Arterial Road through Waterdown South, and was completed in February, 2008. Following the completion of Phase 2, City staff proceeded to Phases 3 and 4 (detailed design) of the Waterdown Road Corridor Class Environmental Assessment, and the Environmental Study Report was brought forward to the Public Works Committee (Report PW10010) for approval in February 2010. City staff is resolving some outstanding issues with the Conservation Authority prior to submitting the Environmental Study Report to the Ministry of the Environment.
This Report is recommending approval of the Secondary Plan and associated Urban Design Guidelines, as well as the South Waterdown Subwatershed Study.

Background Reports/Studies

As part of the formulation of the Secondary Plan policies, the following reports were completed:

- **Waterdown North and South Background Report** (2003) was prepared by City of Hamilton, Development and Real Estate Division, Community Planning Section.

- **Waterdown South Secondary Plan Study, Phase 2: Development Options Evaluation and Preferred Concept Plan** (January, 2008) was prepared by Sorensen Gravely Lowes Planning Associates Inc., in association with Brook McIlroy Inc. and iTrans Consulting Inc.

- **Stage 1, 2, and 3 Reports of the South Waterdown Subwatershed Study** were prepared by Ecoplans Limited and McCormick Rankin Corporation in March, 2006, April, 2010, and April, 2010, respectively.

- **Viewshed Analysis** (2009) was prepared by City of Hamilton staff in Strategic Services and Special Projects Division and Planning Division. Subsequent **Line of Sight Cross Sections** (2009) were prepared by Cartographic and Graphic Services, Finance and Administration Division.

- **Waterdown South Secondary Plan Area Transportation Study Report** (February, 2010) prepared by iTrans Consulting Inc.

- **Waterdown South Urban Design Guidelines** (March, 2010) prepared by Brook McIlroy Inc.

- **Flood Report - Old Waterdown Road in Burlington** (May, 2009) prepared by SNC Lavalin.

- **Waterdown Aldershot Transportation Master Plan and Master Engineering Class Environmental Assessment** (2009) prepared by Dillon, and project managed by Environmental Planning in the Public Works Department.

A discussion of the Secondary Plan and supporting studies follow below:

**Waterdown South Secondary Plan**

The Waterdown South Secondary Plan area (see Appendix “E”) has essentially been divided into three areas as a result of the proposed road network. The land uses...
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contained as Schedule “D” of Appendix “A” to Report PED10171 indicates areas designated for each land use type. These proposed land uses are summarized below:

Low Density Residential 1 (LDR1) - this low density residential area reflects older density standards and was created specifically for two areas of the Secondary Plan: the first area is abutting existing residential lots in the Renwood Subdivision at the western edge of the plan area; and the second area is adjacent to the Escarpment Protection Area and Natural Area towards the eastern side of the plan area. The LDR1 permits single-detached dwellings, second dwelling units or accessory apartments, and home businesses at a maximum density of 22 units per net residential hectare and a maximum building height of 2 storeys. The Secondary Plan also contains policies which direct that new residential lots adjacent to those on Flanders Drive be of similar lot width as the estate lots along Flanders Drive.

Low Density Residential 2 and 3 (LDR2 and LDR3) - the low density residential 2 and 3 are the predominant land use in this Secondary Plan. The Low Density Residential 2 designation ranges between 22 to 40 units per net residential hectare and a building height of 2.5 to 3 storeys, while the Low Density Residential 3 designation ranges between 30 to 60 units per net residential hectare with a building height of 3 storeys. Single-detached dwellings, semi-detached dwellings, duplexes, and townhouses are planned for these lands. The principle difference between the two designation categories is in the built form. The Low Density Designation 3 is primarily located along Collector Roads and includes a provision which requires no more than 60% of the housing within this designation to be single-detached dwellings. The purpose of this provision is to ensure a variety of dwelling types within each future plan of subdivision.

Medium Density Residential - the medium density residential designation is predominantly located along the Arterial Road and around the intersection of the Collector Road A and Skinner Road (see Appendix “A”, Schedule D). This designation permits a wide range of dwelling types, including all forms of townhouses, low-rise apartments, other forms of multiple attached dwellings, and a limited amount of single-detached and semi-detached dwellings. Medium Density Residential permits 60 to 75 units per net residential hectare with a building height of 3 storeys for single-detached and semi-detached dwellings, and 4 storeys for all other permitted housing forms. In addition, the Secondary Plan policies require that single-detached dwellings shall not exceed 25% of the housing units in each plan of subdivision within this designation.

Medium Density Residential Site Specific Policy Area - the medium density special policy area is intended to permit an active lifestyle/retirement community that promotes “aging-in-place”, and has been applied to the lands south of
Dundas Street and west of Kerns Road. The permitted uses include those permitted in the regular medium density residential designation, as well as mid-rise apartments, assisted living and retirement housing, along with accessory recreational and local convenience uses. The density range is the same as the medium density residential designation. However, this designation allows for building heights of up to 8 storeys on lands north of Shalem Boulevard, and for lands south of Shalem Boulevard building heights of up to 6 storeys, as-of-right, with the ability to increase building heights up to 8 storeys through the completion of a Visual Impact Assessment. The policies also encourage clustering of residential units to maximize the provision of open space areas.

**Neighbourhood Park** - there are three neighbourhood parks, one serving each sub-area of the Secondary Plan area. Two of the neighbourhood parks will be located adjacent to elementary schools so that there may be opportunity to share facilities. The parkland needs of Waterdown South are based on the projected population of the study area and Official Plan policy, which directs parkland size requirements. A water tower will be located adjacent to, but not within, the neighbourhood park on the east side of Collector Road A. Any area required for the water tower will not be factored into the parkland dedication requirements.

**Natural Heritage System** - the Natural Heritage System comprises three designations: the Grindstone Creek Natural Heritage Area, the Escarpment Natural Area, and the Escarpment Protection Area. There are detailed policies for protection and preservation of these areas included in the Secondary Plan. The Subwatershed Study undertook a detailed review of the Natural Heritage System and stormwater management requirements for the site, and provides detail on the protection of these features and the size and number of stormwater management facilities required for drainage of the Secondary Plan area. A Natural Heritage Appendix has been prepared for incorporation into the Official Plan to demonstrate the limits of Karst Hazardous and Karst Constraint areas, the Environmentally Significant Areas (ESA), Areas of Natural and Scientific Interest (ANSI), floodplain, wetlands, and streams. These features were identified through the Subwatershed Study.

**Institutional** - there are two sites that have been designated for future schools. The site on the west side of Collector Road A will be for a future elementary school for the Separate School Board, which has obtained approvals to proceed ahead of the Secondary Plan. The site on the west side will be for a future elementary school for the Public School Board. Should the school sites be deemed surplus, or not required in the future, the lands will be permitted to be developed for Low Density Residential 2 or other permitted institutional uses. An existing Place of Worship has also been recognized at the corner of Kerns Road and Dundas Street. This use may continue or may be re-developed as part of the Medium Density Residential Site-Specific Policy.
District Commercial - the intent of the District Commercial area (approximately 11 hectares) is to provide for the shopping needs of both the Waterdown South residents and the broader community, as well as provide for higher density residential uses. This location for the District Commercial designation will benefit from pass-by traffic on Dundas Street, as well as provide a gateway into the new community. Permitted uses in the District Commercial designation include offices, retail stores, personal service uses, service commercial, restaurants, supermarkets, live-work units, stand alone residential, places of worship, day care centres, and public community uses. The Secondary Plan includes policies for a minimum of 10,000 square metres to a maximum of 25,000 square metres of retail and service commercial uses within this designation, regardless of the ultimate lotting fabric. The ultimate amount and timing of commercial would be determined through a Market Impact Study. The commercial area designated along Collector Road A has special policies to encourage a Retail Main Street area with a mix of uses at a pedestrian scale. Building heights up to 8 storeys are permitted in the District Commercial designation. Provisions have been made to allow for consideration of additional building height up to 12 storeys subject to a Visual Impact Assessment, to the satisfaction of the City in consultation with the Niagara Escarpment Commission.

Neighbourhood Nodes - are generally located at the intersection of two Collector Roads, and are intended to function as focal points that meet the convenience commercial needs of the residents in the surrounding neighbourhood. These nodes have been located to encourage walkability and social meeting places for the neighbourhood. There are three Neighbourhood Nodes proposed in the Waterdown South area. The permitted uses include medium density residential and live-work units, convenience retail uses, personal services, professional offices, institutional uses, community facility service uses, and public spaces.

Arterial Commercial - has been included to recognize the existing development. Staff has not proposed any changes to what is currently permitted and has limited the uses to what is permitted in the existing site-specific zoning on site.

Utility - the Utility designation is meant to recognize the existing pumping station, hydro, water tower, and pipeline corridors within the Secondary Plan area, as well as the proposed stormwater management pond locations. The stormwater management ponds locations have been determined by the Subwatershed Study. The size and location of the ponds may change subject to detailed design.

**Viewshed Analysis**

A viewshed analysis was undertaken to test building heights in excess of 6 storeys within the District Commercial area and the Medium Density Site Specific Policy Area.
The purpose of a viewshed analysis is to objectively and accurately identify where proposed structures or built form would be visible from existing and proposed roads, public lands, and from the Bruce Trail. The result of the analysis is intended to guide, eliminate, or mitigate negative impacts to the skyline and natural area of the Niagara Escarpment.

As a result of comments provided by the Niagara Escarpment Commission regarding concerns with building heights in certain locations within the study area, Community Planning staff, in conjunction with the City’s Geographic Information System staff and Cartographic and Graphic staff, prepared a Viewshed Analysis to determine maximum building heights in the District Commercial area and the Medium Density Site-Specific Policy Area. Five areas were analyzed to determine acceptable building heights: three locations in the Medium Density Site-Specific Policy Area (two south of Shalem Boulevard, one north of Shalem Boulevard), and two locations in the District Commercial designation (one on either side of Collector Road A). These locations were chosen because the policies in these designations would permit a maximum building height of 8 storeys.

Through the Viewshed Analysis, it was determined that there were two areas that were of concern to the Niagara Escarpment Commission. Both these areas were located south of Shalem Boulevard within the Medium Density Residential Site-Specific Policy Area. The viewshed mapping provides a high level analysis and, therefore, staff undertook a Line of Sight Cross Section for the developable area at the southwest corner of Kerns Road and Shalem Boulevard to determine the amount of building that would be visible. The Line of Sight Cross Section was prepared for the different building heights up to 8 storeys or 25 metres. The results of this exercise confirmed that 8 storeys could be considered acceptable to the Niagara Escarpment Commission as the amount of building above the line of sight was minimal.

The second location was identified as an area of concern due to its location nestled between two Environmentally Significant Areas/Niagara Escarpment Natural Areas. Policies have been included in the Secondary Plan for the next step of visual assessment, which is a Visual Impact Assessment. The proposed Secondary Plan policies require that this step will be done by the future developer once exact building locations have been determined and the buildings can be simulated to determine the impact to the natural area of the Niagara Escarpment.

Road Network

The Waterdown/Aldershot Transportation Master Plan (Phase 2) and Waterdown Road Corridor Class Environmental Assessment (Phase 3 and 4) is a separate project that was completed by Dillon Consulting and led by Environmental Planning staff in the Public Works Department. The Environmental Study Report was brought forward and approved by the Public Works Committee (Report PW10010) in February, 2010. There
are some outstanding environmental issues that Public Works staff is resolving, and it is anticipated that the Environmental Study Report should be filed with the Ministry of the Environment later this year.

The purpose of the north south portion of this Transportation Master Plan is to determine a new location for the major Arterial Road linking Dundas Street to Highway 403. Specifically, it was this study that determined the location of the extension of Burke Street in the Secondary Plan study area. Public Works staff presented the recommendations of Phases 3 and 4 of the Environmental Assessment to Public Works Committee for the North-South corridor (Report PW10010) earlier this year, and intends to file the project with the Ministry of the Environment for public review later this year. Based on the information from this study, the final Secondary Plan reflects the location of the Arterial Road, as determined through this engineering study.

Traffic impacts were also reviewed as part of the Secondary Plan study. Consultants iTrans/HDR was hired as part of the consulting team to analyze the internal Collector Road network and to identify the road network infrastructure necessary to accommodate development objectives of the Secondary Plan. The analysis also assessed the appropriateness of elements of the network such as the internal collector road system, right-of-way designations, intersection treatments, and required infrastructure. This review included justification for each of the Collector Roads based on trip generation. Following comments from the City of Burlington, the study also reviewed and commented on the need for a road connection to Kerns Road. It was determined that a connection from the Waterdown South Secondary Plan area to Kerns Road was desirable from both a connectivity perspective and traffic circulation. As such, this connection has remained in the Secondary Plan as Shalem Boulevard.

**Removal of the roadside buffers**

Through OPA 28, the Waterdown South lands were brought into the urban boundary and were subject to a number of requirements and studies. One of these requirements was the direction to provide 30 metre buffers along Mountain Brow Road (to be conveyed/purchased by the former Town of Flamborough, now the City of Hamilton) and Kerns Road (to be provided through landscaped open space). As part of the OPA 28 policies, the land owners west of Burke Street were required to convey to the Town of Flamborough (now City of Hamilton), free of charge, 2.0 acres of land along Mountain Brow Road as part of the 30 metre buffer. East of Burke Street, to the north-south leg of Skinner Road, the buffer was to be obtained through parkland dedication to the Town of Flamborough (City of Hamilton). East of Skinner Road, the lands were to be obtained through setbacks and landscaped open space. The former Town of Flamborough (City of Hamilton) was not required to purchase or obtain the buffers along Kerns Road.
Through the review of documentation available, City staff and the City’s planning consultant could not confirm the purpose or rationale for a 30 metre buffer strip along these roads. Based on consultation with other City Divisions and Departments, it appears that there would be limited funding available to purchase the buffers that were required through OPA 28. Further, the City would prefer not to maintain strips of land which would have limited parkland benefit due to their narrow configuration. Finally if the City was to acquire the buffers, it would impact the ability to obtain and provide centrally located, adequately sized parkland within the community. Therefore, staff determined that the buffers should be removed in order to facilitate greater public benefit from the inclusion of three 2.0 hectare centrally located neighbourhood parks to serve the Waterdown South area.

The Memorandum of Agreement and OPA 28 documents were written some time ago, and while addressing certain principles, were prepared without the benefit of the detailed planning analysis. This detailed planning analysis has, subsequently, occurred and informed the preparation of the Secondary Plan. In addition, these documents pre-dated current and more refined Provincial Planning requirements. The Secondary Plan process is meant to refine the land use and implement sound planning. As the City moves forward with Planning Approvals today, it must ensure that planning documents are consistent with current Planning Policy (i.e. PPS (2005), Places to Grow, etc.) which requires cities to plan for complete communities. “Complete communities meet people’s needs for daily living throughout an entire lifetime by providing convenient access to an appropriate mix of jobs, local services, a full range of housing, and community infrastructure including affordable housing, schools, recreation, and open space for their residents. Convenient access to public transportation and options for safe, non-motorized travel is also provided” (Growth Plan, 2006, and Council Adopted City of Hamilton Urban Official Plan). By removing one or more centrally located and easily accessible parks to provide a buffer to Mountain Brow Road, which provides minimal recreational benefit, Waterdown South is not achieving the goal of creating a complete community. Therefore, it was determined that the buffer should be removed to facilitate the incorporation of the more appropriately located park blocks to serve the public interest.

In lieu of the buffers, the draft policies of the Secondary Plan have been sensitive to the transition of the natural area to the urban area with the incorporation of Character Road policies (A.9.4.6) for Mountain Brow Road and Kerns Road. Also, through the review of the Secondary Plan with the City’s Transportation Master Plan team, it was determined that Collector Road A should be shifted northerly so that it meets the new Arterial Road north of Mountain Brow Road. This new configuration will shift traffic from Mountain Brow Road and allow for the possibility of a local road classification. The closure of Mountain Brow Road west of the Stormwater Management Pond will further reduce traffic along this road. The land use designation has also been amended from Low Density Residential 2 to Low Density Residential 1, which will permit lower density development along Mountain Brow Road. With the incorporation of the Character Road
policies and the Low Density Residential 1 designation, staff is of the opinion that this will provide an appropriate transition from natural area to urban area along Mountain Brow Road. This is consistent with the intent of the 30 metre buffer to protect the natural area of the Escarpment.

Additionally, special Character Road Urban Design Guidelines have been incorporated to provide direction as to how this area is to be developed. The Character Road provides an innovative and unique opportunity to protect the rural, natural area, while sensitively integrating urban development. The cross section contemplates a multi-use trail, low impact development (e.g. bioswales, grassed berms, etc.), special design requirements, and enhanced landscaping. It is the intent that the Character Road would provide the transition that was envisioned through the buffer. The Niagara Escarpment Commission was also consulted and a viewshed analysis was completed to analyze building heights to ensure there were no negative impacts. Urban design elements for the development of the area adjacent to Kerns Road have also been included in the Character Road Guidelines.

Based on consultation with the South Waterdown Subwatershed Study team, staff has concluded that the buffer is not providing any significant ecological function or area for wildlife movement. Through the Character Road Guidelines, Mountain Brow Road is intended to maintain its rural cross section, and provide low impact development techniques such as road side ditches or bioswales to maintain flood storage and drainage patterns that will retain current ecological functions of the existing road configuration.

In regards to the 2.0 acres of “free” land that was to be conveyed to the City, as provided in the Memorandum of Agreement, it is not recommended that the City obtain the land in this location. Mountain Brow Road has a rural cross section of approximately 20 metres (currently). In order to accommodate the elements of the Character Road, an additional 3 metres would be required. This additional road allowance would be taken from the 2.0 acres of “free” land. The remainder of the 2.0 acres would be added to the westerly and easterly neighbourhood parks.

Staff has discussed this approach with the City of Burlington and the Niagara Escarpment Commission, and an agreement was reached at the staff level that this approach was considered acceptable. Both the NEC and the City of Burlington will be bringing a report forward to their respective Board and Council recommending the removal of the buffer.

**Niagara Escarpment Protection Area**

As part of the Subwatershed Study, the Natural Heritage System was reviewed to identify Niagara Escarpment Protection Areas. Two of these areas of the Niagara Escarpment Protection Area have been challenged by the land owners. The first area is
known as “Old Field”, and is along Kerns Road at the eastern edge of the Secondary Plan area. This area has been farmed for a number of years, and the land owners argued that it should be considered for development. Through the Subwatershed Study, it was determined that these lands were part of the overall Environmentally Significant Area and should be protected. In addition to the Environmentally Significant Area, it has recently been determined that the lands are part of the Jefferson Salamander habitat, and are required to remain protected for this endangered species in accordance with the Ministry of Natural Resources regulations. Therefore, this area will be shown as Escarpment Protection Area on the Land Use Plan (see Appendix “A”, Schedule D).

The second area that was challenged was the “finger” area that dips between the Escarpment Natural Area almost to the southern edge of the study area, just east of the eastern most part. Through discussions and negotiations with the Niagara Escarpment Commission, it was determined that this area could be developed subject to special requirements; including, generous size lots (minimum 15 metre lot frontage) on a single cul-de-sac, fencing, width of buffers, and building height limits. At its meeting of July 15, 2010, the Niagara Escarpment Commission reviewed the position negotiated by NEC staff, and accepted the recommendation to have this area designated Urban and permit limited, sensitive, development, as outlined above. Therefore, this area has been shown as Low Density Residential 1, and is subject to special policy requirements in the Secondary Plan.

**Correspondence from the City of Burlington**

Staff received a letter from the City of Burlington, dated July 19, 2010 (see Appendix “G”), regarding items related to the Secondary Plan. In particular, the items related to:

- The Memorandum of Agreement requirement for buffers along Mountain Brow Road and Kerns Road;
- The widening of Kerns Road;
- Stormwater management related to the Subwatershed Study;
- Traffic review; and,
- Environmental matters related to Jefferson Salamander habitat.

The key issue to the City of Burlington was the removal of the roadside buffers, as agreed to in the 1997 Memorandum. A response was provided by City of Hamilton staff to the City of Burlington, which addressed these matters. Based on past discussions with the City of Burlington staff, it is understood that Burlington staff endorse the City of
Hamilton’s approach to the removal of the buffers from the Secondary Plan, and that a favourable report is to be presented to Burlington’s Community Development Committee (BCDC) on August 30, 2010. The BCDC is comprised of all members of Burlington Council. Since all members of Council would be present at the BCDC, and likely the majority of the discussion would happen on August 30, City of Hamilton staff will be able to advise on the BCDC position at the Economic Development and Planning Committee meeting on September 7, 2010. Due to report timing, this information will not be provided in this Report. If the BCDC does not support Burlington’s staff position, this position would be presented and would allow Hamilton’s Economic Development and Planning Committee to table the item (if Committee so chooses) to provide opportunity for further discussion between the municipalities. Due to the importance of the Memorandum of Agreement, this course of action was vetted through Legal staff. Legal staff supports this action.

**Urban Design Guidelines**

Urban Design Guidelines were prepared in conjunction with the Secondary Plan to ensure that development will proceed in a manner that ensures a healthy public realm. The Guidelines provide direction for how the area should be developed. Demonstration plans were created for the District Commercial and Neighbourhood Node areas.

The principle design objective for Waterdown South is to create a sustainable and healthy community that has a distinct character. Design principles focus on configuring the key structure elements of the community (roads, open spaces, and built form) to create a lively and human experience. The vision and design principles for Waterdown South are:

- To provide integrated community design that coordinates land use, open space, the street network and built form elements to achieve and reinforce a high quality, integrated community vision.

- To incorporate elements of Waterdown South’s distinct natural and cultural heritage in the establishment of design characteristics that will promote and achieve unique community design.

- To establish gateways at strategic locations to function as entranceways to Waterdown and the community of Waterdown South.

- To create an urban fabric characterized by an interconnected street network that is responsive to existing natural heritage, surrounding land uses, and cultural heritage elements.

- To integrate views of natural heritage features within the community design.
• To promote public transit, walking, and recreational connections through a well connected system of streets, walkways, and trails.

• To design streets and built form that promote personal safety through natural surveillance opportunities.

• To promote building forms that address the street and which locate and orientate on-site parking, garages, and service/loading areas to minimize the impact to the streetscape.

• To create street and building design that promotes pedestrian comfort and vitality at the grade level of buildings.

• To promote design variety within the streetscape.

• To promote a variety of housing with diverse architecture for individuals and families of all ages.

• To encourage mixed-use development along strategic corridors and within walking distance of residential neighbourhoods.

• To integrate community and institutional uses at visible, highly accessible locations.

The vision is to form a community with well-structured neighbourhoods that allow residents maximum accessibility to local community services and inter-connected open spaces. Built form and landscape will create a cohesive urban edge with well-proportioned streets and enhanced open spaces. The location of buildings and landscape treatment, combined with well-coordinated street furniture, will reinforce the pedestrian nature of the community. Development applications will be required to demonstrate how the community design meets the intent of the Urban Design Guidelines as a condition of development approval.

**South Waterdown Subwatershed Study**

Prepared pursuant to the Municipal Class Environmental Assessment, the purpose of the South Waterdown Subwatershed Study (“Subwatershed Study”) was to develop a management plan for the features and functions of the portions of the Grindstone Creek, Falcon Creek, Indian Creek, and Hagar-Rambo Creek watersheds that might be affected by urban development of the South Waterdown lands. The study was intended to inform planning and decision-making (including the preparation of the Secondary Plan) so that changes in land uses are compatible with natural systems.
The South Waterdown Subwatershed Study was conducted in three stages:

- Stage 1 Report (Characterization of the Subwatersheds), completed in March, 2006.
- Stage 2 Report (Management Strategy), completed in April, 2010.
- Stage 3 Report (Implementation and Monitoring Plan), completed in April, 2010.

**Stage 1 Report (Characterization of the Subwatersheds)**

In Stage 1, the existing conditions in the subwatersheds of the study area (Grindstone Creek, Falcon Creek, Indian Creek, and Hagar-Rambo Creek) were described through a review of background literature and field investigations. The study area is a complex site, which contains many significant natural features and has existing flooding and erosion issues. Due to the complex nature of the site, the study was completed by a study team consisting of more than 20 consulting staff from seven consulting firms. The Stage 1 Report documented the existing physiography, geology, karst geomorphology, hydrogeology (groundwater), hydrology (surface water, flooding), erosion analysis, and aquatic and terrestrial ecology. The Stage 1 Report was approved by the TSC members in 2006.

It described the environmental features of the site, including:

- Karst features that occur throughout the site, as it is near the Niagara Escarpment;

- The four subwatersheds on site; the main tributaries are part of the Grindstone Creek watershed; and,

- Significant Natural Features, including two Environmentally Significant Areas, a Provincial Life Science Area of Natural and Scientific Interest (ANSI), Provincially Significant Wetlands (PSWs), Significant Wildlife Habitat, warm and downstream cold water fish habitat, and Habitat of Endangered, Threatened, and Special Concern Species.

The Stage 1 Report also identified constraints to urban development on the site, including:

- Proposed development could potentially contaminate springs and water supplies of existing properties along Old Waterdown Road, Rennick Road, west of Kerns Road, and at King Road;

- The springs on the Niagara Escarpment which are fed by the Grindstone Creek cause flooding at a number of properties along Old Waterdown Road and Rennick Road during spring runoff and after heavy rainfall events. Flows into sinkholes occasionally exceed their capacity and flood over the brow of the escarpment;
• The karst features on site present some constraints to development. Karst Area A has been identified as a hazardous area, and is considered as un-developable;

• Proposed development will require road crossings of Grindstone Creek. Potential impacts include loss of fish habitat, bank erosion, loss of riparian vegetation, and channel realignment;

• Snakes and salamanders currently suffer relatively high levels of mortality attempting to cross Mountain Brow Road and Kerns Road. Increased traffic could exacerbate this impact; and,

• Proposed development will result in increased use of Waterdown Woods ESA and Grindstone Creek ESA. Urbanization also results in impacts such as clearing vegetation, introduction of invasive exotic plants, predation of wildlife by pets, and dumping and litter.

Stage 2 Report (Management Strategy)

The Stage 2 Report assessed the potential impacts of the urban development of the South Waterdown lands, and developed a management strategy to ensure that the significant natural features are protected. The South Waterdown Subwatershed Stage 2 Report recommends a number of management strategies for the protection and management of the area’s natural heritage features and functions. It provided recommendations on:

• The best road crossing location for Grindstone Creek (from an environmental perspective);

• Stormwater management (erosion, sediment and flood control, water quality);

• Secondary Plan land use options;

• Bridge design;

• Grindstone Creek realignment;

• Karst mitigation (identification of a hazardous site; excavation measures, maintaining ground water flow and infiltration through karst features); and,

• Buffers from natural features.
Due to the complexities of the study area, there were many challenges which had to be addressed during the Stage 2 Report. There are karst features along Grindstone Creek and the Niagara Escarpment which presented a challenge in terms of maintaining ground water flow, protecting ground water quality, and managing storm water. Also, the area has existing erosion and flooding problems, below the Niagara Escarpment in Burlington, and along Flanders Drive in Waterdown.

When the Stage 2 Report was being reviewed by the Technical Steering Committee, a number of issues arose, where there was a difference of opinion between the consultant preparing the Subwatershed Study (Ecoplans-MRC) and the Committee. The majority of these issues were resolved, with the exception of the recommended width of the buffers from natural features and the retention of supporting natural features (such as hedgerows). These unresolved issues will be discussed further in the Analysis/Rational for Recommendation section of this Report.

Stage 3 Report (Implementation and Monitoring Plan)

In Stage 3, an implementation and monitoring plan was developed which included recommendations on construction phasing, monitoring, habitat enhancement, and contingency plans if an undesirable impact is detected during monitoring.

These management strategies will be applied at various stages of the future development in the South Waterdown lands, including the Secondary Plan, Draft Plan and Site Plan stages, design, construction, and post-construction occupation. The Implementation Plan outlined in the Stage 3 Report identifies how to implement these strategies and who is responsible for their implementation.

The Implementation Plan is required to ensure that:

- Management recommendations are carried out;
- The proponents (landowners) are aware of their responsibilities;
- The role of the municipalities and agencies in the ongoing process is clearly identified;
- Local residents are aware of the process and have the ability to become involved in the ongoing process; and,
- The Plan is subject to ongoing evaluation (adaptive management) and changes are made, as necessary.
This Plan will be implemented through the planning approval process, with the participation of all agencies with an interest in the environmental protection of the features on site (City of Hamilton, Conservation Halton, Niagara Escarpment Commission, and Ontario Ministry of Natural Resources).

POLICY IMPLICATIONS

Waterdown South Secondary Plan

Provincial Policy Statement (2005)

The Provincial Policy Statement, 2005 (PPS, 2005) provides policy direction on matters of provincial interest related to land use planning, conservation, and development. In regard to the growth and development of these urban lands, the PPS requires municipalities to focus growth in settlement areas and implements Policies 1.1.3.2 and 1.4.1, which speak to the provision of densities that efficiently use land, and to provide a mix of housing types. The Secondary Plan “avoids development and land use patterns which may cause environmental or public health and safety concerns” (Policy 1.1.1 c), and provides for “a full range and equitable distribution of publicly-accessible built and natural settings for recreation, including facilities, parklands, open space areas, and trails” (PPS Policy 1.5.1.b). In addition to efficiently using land, the proposed plan is also consistent with PPS Policies 2.1.1 and 2.1.2, which require that natural features/areas shall be protected for the long term, and ecological function and biodiversity of natural heritage features should be maintained, restored or, where possible, improved.

As such, the Waterdown South Secondary Plan policy direction is consistent with the Provincial Policy Statement.

Places to Grow Growth Plan (2006)

The Places to Grow Growth Plan is required to manage growth and development in a way that supports economic prosperity, protects the environment, and helps communities achieve a high quality of life across the province.

The Growth Plan directs municipalities, such as Hamilton, to manage growth by encouraging compact, transit-supportive communities in designated Greenfield areas; reducing dependence on the automobile through the development of mixed-use, transit supportive, pedestrian-friendly urban environments, and by encouraging the development of a diverse mix of land uses, a range and mix of employment and housing types, high quality public open space, and easy access to local stores and services.
The Waterdown South Secondary Plan is defined as a “Designated Greenfield Area” in the Growth Plan, and subject to Policy 2.2.7 of the Growth Plan. These policies require new development to be planned, designated, zoned, and designed in a manner that:

"a) Contributes to creating complete communities.

b) Creates street configurations, densities, and an urban form that support walking, cycling, and the early integration and sustained viability of transit services.

c) Provides a diverse mix of land uses, including residential and employment uses, to support vibrant neighbourhoods.

d) Creates high quality public open spaces, with site design and urban design standards that support opportunities for transit, walking, and cycling."

The Waterdown South Secondary Plan conforms with these policies, as demonstrated in the proposed policies and land use schedule.

In addition, the Growth Plan requires that Greenfield areas be planned to achieve a minimum density target that is not less than 50 residents and jobs combined per hectare (on average). The proposed Secondary Plan satisfies the provincial target and achieves approximately 72 persons and jobs per hectare. This density is based on the total area of Waterdown South, less the Environmentally and Provincially Significant lands. The proposed density target would also aid in the creation of a transit supportive community and implement transit-oriented design.

**Niagara Escarpment Plan**

The Niagara Escarpment Commission (NEC) is responsible for protection of the escarpment and lands within its vicinity. The Waterdown South Secondary Plan area is designated as Urban, Escarpment Protection Area and Escarpment Natural Area, and subject to the Waterdown Policy Area in the Niagara Escarpment Plan. The NEC has been involved in commenting on the Secondary Plan.

Lands within the Waterdown Policy Area contain lands designed as Urban Area, Escarpment Natural Area and Escarpment Protection Area, and are subject to the following policy of the Urban Area designation (Section 1.7 Development Objective #10) of the Niagara Escarpment Plan, which states:

> The boundaries of the Escarpment Natural Area and Escarpment Protection Area within the “Waterdown Policy Area” on Map 2 to the Niagara Escarpment Plan are determined by Order in Council 1262/2002.
A portion of the Waterdown Policy Area is subject to Development Control, and would be subject to a Development Permit from the Niagara Escarpment Commission, as shown in Appendix “F”. The NEC considers the boundaries of the Niagara Escarpment Protection Area and the Niagara Escarpment Natural Area to be determined through the South Waterdown Subwatershed Study, and the exact boundaries may be incorporated into the Niagara Escarpment Plan through housekeeping amendment during the next Plan Review. Until this time, the lands will continue to be subject to Development Control.

The Urban designation means that lands may be developed in accordance with specific development criteria. A development permit is not required from the NEC for the development within the Urban designation as it is not within their defined development control area; however, development should be compatible with the visual and natural environment of the Escarpment.

Through environmental and site line work, staff has worked with NEC staff to ensure that the Waterdown South Secondary Plan is consistent with Policies 1.7 (Urban Area) and 2.2 (General Development Criteria) of the Niagara Escarpment Plan, and the Visual Assessment Guidelines approved by the Niagara Escarpment Commission.

**Hamilton-Wentworth Official Plan**

The Hamilton-Wentworth Official Plan (HWOP) designates the Waterdown South Secondary Plan area as “Urban”. The Urban designation provide for:

“A wide range of urban uses are permitted on lands designated “Urban” if full municipal services are available. The HWOP land use strategy for the Urban Area consists of a compact urban form and a firm Urban Area boundary. Infrastructure and Services are key components to supporting development.”

The Regional Official Plan also requires that Area Municipalities undertake Secondary Plans to target density, population/employment ratio, and intensification. The land use designations outlined in the Secondary Plan will result in opportunities for intensification through increased density in the urban area. This, in turn, will make efficient use of existing and proposed services and infrastructure. Accordingly, the proposal complies with the land use and infrastructure policies of the Hamilton-Wentworth Official Plan.

A Regional Official Plan Amendment is required, in conjunction with the Waterdown South Secondary Plan, to amend Map 4 (Environmentally Significant Areas). The map will be amended to reflect the more detailed and refined information obtained through the Subwatershed Study.
Flamborough Official Plan

The purpose of the former Town of Flamborough Official Plan (OP) is to provide a comprehensive policy framework to direct an orderly, efficient, and economical pattern of growth. OPA 28 recognizes Waterdown South as “Urban” within the Waterdown Urban Area, and designates it as Urban Residential and Hazard Lands. The Waterdown South Secondary Plan will provide land uses, a transportation network, and policies to guide development. The Waterdown South Secondary Plan introduces new density provisions for new residential development. The proposed Secondary Plan will be implemented through an Official Plan Amendment to the Flamborough Official Plan.

Urban Hamilton Official Plan (Council Adopted June 2009)

On July 9, 2009, City Council adopted the Urban Hamilton Official Plan for the City. This Plan is presently awaiting Ministerial approval. Lands in the Waterdown South Secondary Plan area are designated as follows in this Plan:

- Schedule “B” - Natural Heritage System - Core Areas, Linkages, Parks and General Open Space;
- Schedule “B-1” - Detailed Natural Heritage Features - Life Science ANSI;
- Schedule “B-2” - Detailed Natural Heritage Features - Significant Woodlands;
- Schedule “B-4” - Detailed Natural Heritage Features - Wetlands;
- Schedule “B-6” - Detailed Natural Heritage Features - Environmental Significant Areas;
- Schedule “B-8” - Detailed Natural Heritage Features - Streams;
- Schedule “E” - Urban Structure
- Schedule “E-1” - Urban Land Use Designations - Neighbourhoods and Open Space;
- Appendix F-4 - Archaeological Potential
- Volume 3 - Urban Area Specific Policy - UF-2 - Area north of Mountain Brow Road, west of Kerns Road, south of Parkside Drive, and east of the developed areas of Waterdown.

Schedule “E-1” is required to be amended to reflect the changes in Open Space and the District Commercial area proposed by the Secondary Plan.
Schedules “B”, “B-1”, “B-4”, “B-6”, and “B-8” are to be amended to reflect the detailed information from the Subwatershed Study.

Sections e) and f) of Urban Area Specific Policy (UF-2) are to be deleted. The Secondary Plan has further reviewed and refined these policies, and the studies completed satisfy the requirements of these sections of the area specific policy.

Mountain Brow Road will also be downgraded from a Collector Road to a Local Road. This will facilitate the implementation of the Character Road concept, and would be more appropriate given the potential closure of a portion of the road south of the stormwater management pond.

An amendment/modification to the new Urban Hamilton Official Plan is required to include the new designations and policies of the Waterdown South Secondary Plan.

The Urban Hamilton Official Plan has been sent to the Ministry of Municipal Affairs and Housing for approval. Once a final decision is given by the Province, the Official Plan can no longer be modified. The timing of the final decision is unknown and, therefore, it affects how and when changes to the Urban Hamilton Official Plan can be made. Further description of the approval process is provided below:

Prior to a final decision on the Urban Hamilton Official Plan:

If Council makes a decision before the final decision from the Ministry, staff, through the Council decision, can request the Province to incorporate the changes but defer the changes until such time as the changes to the former Official Plans are final and binding. Since the modification process is not a public process, and appeals are limited to persons who requested notification of the final decision, it is preferable to ensure the Official Plan Amendments to the existing plans have completed the appeal process. In addition, should there be any appeals to the Ontario Municipal Board and changes made to the Official Plan policies or designations, then such changes could be incorporated into the new Urban Hamilton Official Plan.

After the final decision on the Urban Hamilton Official Plan:

If Council approves the Official Plan amendments after the final decision is made on the Urban Hamilton Official Plan, then staff would hold these changes in abeyance until such time as we could request the Ontario Municipal Board to amend the Urban Hamilton Official Plan, based on prior Council approval, or incorporate them through a future housekeeping amendment if the Urban Hamilton Official Plan is not appealed to the Board.
It is prudent and part of natural justice to identify any changes to the Urban Hamilton Official Plan as part of the public notice, in the staff report, and notice of adoption. It is anticipated that staff will advise the public, at the Economic Development and Planning Committee meeting on September 7, 2010, as to how the new Urban Hamilton Official Plan is being dealt with.

**Zoning By-law**

The lands within the Waterdown South Plan Area will have to be rezoned through applications for development to reflect the Secondary Planning policies.

**South Waterdown Subwatershed Study**

In addition to the policies outlined above, the South Waterdown Subwatershed Study addressed legislation and policies relating to the natural environment, including the *Endangered Species Act*, the *Fisheries Act*, the Hamilton Harbour Remedial Action Plan, and the Conservation Authorities Ontario Regulation 162/06 (regulation of development, interference with wetlands, and alterations to shorelines and watercourses).

**RELEVANT CONSULTATION**

**Public Information Centres**

Public consultation was a key component of the planning process for Waterdown South. Extensive formal public consultation for the Waterdown South Secondary Plan began in June, 2004, and continued through 2009. In addition, staff met and/or spoke with residents on an informal basis throughout the process. It was important to engage the residents, landowners, and other stakeholders from the beginning of the process. The study team undertook key steps in the public consultation process to ensure that the outcome of the Waterdown South Secondary Plan reflected the interests and concerns of potentially affected people and parties.

The Waterdown South public consultation involved several public events throughout the study process. As well, to encourage public participation, notices were advertised in the “At Your Service” Section of the Hamilton Spectator, as well as the Flamborough Review. An invitation notice was mailed to surrounding residents and interested parties. The following is an outline of the Public Information Centres that have occurred to date:

- June 17, 2004 - A Public Information Centre was held to introduce the Waterdown North and Waterdown South Secondary Planning areas, process, and integrated studies.
- January 24, 2006 - A Public Information Centre was held to present three Concept Plans for land use options for the Waterdown South Study Area. Upon review of all the comments received on each of the three conceptual land use options for Waterdown South, the land use options were evaluated against a set of criteria grouped under the headings; Natural Environment, Social Environment and Economic Environment. Subsequently, two of these concepts were abandoned due to the preferred location of the North/South Arterial Road location, as determined through the Transportation Master Plan.

- January 23, 2008 - A Public Information Centre was held to present the preferred land use plan and policies for the Waterdown South Study Area. The Preferred Land Use plan was also circulated to staff, agencies, and other stakeholders for comment. The Secondary Plan is a refinement of the Preferred Plan based on comments received, as well as input from the Transportation Master Plan, the Subwatershed Study, and the Collector Road review.

- November 10, 2009 - A Public Information Centre was held to present the Preferred Plan and Urban Design concepts, as well as the results and recommendations of the Subwatershed Study.

**Community Advisory Committee**

A Community Advisory Committee was assembled to inform the Secondary Plan process. The CAC was composed of residents in the area, interested parties, and land owners.

**Agency Consultation**

The following agencies were circulated for comments on the Secondary Plan study:

- City of Burlington
- Cogeco Cable
- Conservation Halton
- Department of Fisheries and Oceans
- Enbridge Pipelines
- Hamilton Community Energy
- Hamilton Hydro Incorporated
- Hamilton Utilities Corporation
- Hamilton-Wentworth Catholic District School Board
- Hamilton-Wentworth District School Board
- Hydro One
- Region of Halton
- Bell Canada
- MPAC
- Ministry of Culture
- Mississaugas of the New Credit First Nation Elected Chief and Council
- Six Nations of the Grand River Territory First Nation Elected Chief and Council
- Ministry of Natural Resources
- Ministry of the Environment – Environmental Assessment and
Approved Branch, West Central Region
- Ministry of Transportation
- Niagara Escarpment Commission

The following City of Hamilton departments were circulated for comments on the Secondary Plan study:

- Culture Division
- Emergency Services (Fire)
- Hamilton Police Services
- Hamilton Street Railway
- Open Space and Development
- Planning and Economic Development (including the following Divisions/Sections):
  - Business Development;
  - Community Planning and Design;
  - Development Planning;
  - Downtown and Community Renewal;
  - Municipal Parking; and,
  - Strategic Planning and Special Projects.
- Transit
- Public Health
- Community Services
- Public Works (including the following Divisions/Sections):
  - Operations and Maintenance;
  - Open Space Development;
  - Strategic and Environmental Planning;
  - Traffic Engineering and Operation; and,
  - Waste Management.

Web Page

As part of the public consultation process, City staff created a site on the City of Hamilton’s Web page titled Waterdown South (www.hamilton.ca/waterdownsouth). The website also includes information on the South Waterdown Subwatershed Study. The site provided members of the community, external agencies, and other stakeholders, information on the project, the study process, Public Open House dates, information that was posted at the Open Houses, relevant reports, and other related information. The website was updated when new information was made available. This was one key method of providing participants with information they needed to participate in a meaningful way.
The Technical Steering Committee for the Subwatershed Study (TSC) was responsible for developing the study’s terms of reference, providing overall study direction, meeting regularly to guide the study, and approving the subwatershed study.

The Subwatershed Study was guided by a Technical Steering Committee (TSC), which included the following members:

- City of Hamilton (Public Works, Planning and Economic Development).
- City of Burlington (engineering, natural heritage, planning).
- Conservation Halton.
- Region of Halton.
- Ministries of Natural Resources and Transportation.
- Niagara Escarpment Commission.
- South Waterdown landowners and their consultants.
- City of Hamilton Secondary Plan consultant.

Information on the Subwatershed Study was provided at the Public Information Centres held for the Secondary Plan listed above and on the City web site.

**ANALYSIS / RATIONALE FOR RECOMMENDATION**

(include Performance Measurement/Benchmarking Data, if applicable)

The Ontario Government Cabinet decision from 2002 established the Waterdown South lands as Urban and required that a Secondary Plan be completed for this new urban area. The intent of the Secondary Plan is to establish a detailed land use framework and policies for the Waterdown South Area and to incorporate these into the Flamborough Official Plan.

The policy rationale for City staff’s support for the Secondary Plan is as follows:

- The Secondary Plan is consistent with the Provincial Policy Statement and the Hamilton-Wentworth Official Plan, as it accommodates a range of densities and uses to meet residents’ long-term needs and provides for a full range and equitable distribution of publicly accessible built and natural settings for recreation.
- The proposed Secondary Plan does not detract from the general intent and objectives of the Greenbelt Plan as the lands that are subject to the Amendment are within the Urban Area.
- The recommended Secondary Plan conforms with the policies and minimum density targets established in the June, 2006, Growth Plan for the Greater Golden Horseshoe.

- The proposed policy framework for lands in the Waterdown South Secondary Plan area is in conformity with the principles and objectives of the former Town of Flamborough Official Plan.

- The proposed policy framework is in compliance with the new Urban Official Plan, and further meets the increased density targets at 72 persons and jobs per hectare required to ensure overall targets are met. The Urban OP identified 38 jobs per hectare for employment lands, and states that for non-employment lands, the persons and jobs per hectare (p/jph) will need to exceed 50 p/jph (Section A.2.3.3 of the new Urban OP). The Province, in its draft decision on the Urban Hamilton Official Plan, is requiring the City to identify a specific target for non-employment lands. The City of Hamilton is proposing 70 p/jph based on an analysis of the City's remaining Greenfield land base.

- Approval of the Secondary Plan will allow for the construction of additional housing stock in accordance with the Provincial Policy Statement.

- Approval of the Secondary Plan reinforces the natural areas of the Niagara Escarpment and protects environmentally significant areas and areas of natural and scientific interest.

- The associated Urban Design Guidelines will aid in the creation of a complete community with an interesting streetscape that boasts alternative transportation options, walkable destinations, and a variety of housing options and designs.

Staff recommends approval of the attached Waterdown South Secondary Plan and Urban Design Guidelines.

Endorsement of the South Waterdown Subwatershed Study

Staff recommends endorsement of the Subwatershed Study because:

- It protects natural features of Provincial significance under the Provincial Policy Statement, 2005, including a Provincial Life Science Area of Natural and Scientific Interest (ANSI), Provincially Significant Wetlands (PSWs), fish habitat, Habitat of Threatened Species, Significant Wildlife Habitat, Significant Woodlands, Niagara Escarpment Plan Natural and Protection Areas, and a karst hazardous site. It also protects two Environmentally Significant Areas (ESAs) - the Grindstone Valley ESA and Waterdown Escarpment Woods ESA, which are locally significant features.
- It identifies other supporting features (unevaluated wetlands, intermittent streams, ponds, and hedgerows). Portions of the site are also adjacent to the Niagara Escarpment. The study area contains portions of the Grindstone Creek, Falcon Creek, Hagar-Rambo Creek, and Indian Creek watersheds.

- It assesses potential impacts of the development on natural features and functions, recommends measures to avoid and reduce these impacts, and provides detailed direction on monitoring, habitat restoration, and construction phasing.

- It examines a variety of stormwater management options, and recommends a strategy which mitigates existing flooding and erosion problems in the area.

- It provides detailed, valuable information which staff has incorporated in the Secondary Plan, and will use to implement draft plans of subdivision, as they are submitted.

While staff is satisfied with the majority of the Subwatershed Study, there are two issues that were not resolved to the City’s satisfaction. These issues are:

- The buffers recommended for some of the natural features (i.e. Environmentally Significant Areas, Areas of Natural and Scientific Interest) in the Subwatershed Study were considered inadequate by City staff and Conservation Halton. The Subwatershed Study recommends 5-metre buffers from ESAs and ANSIs on site. Instead of this, staff recommends a minimum 15-metre buffer from both ESAs and ANSIs; this is reflected in the policies of the Secondary Plan. The Urban Hamilton Official Plan requires a minimum 15-metre buffer from the boundary of ESAs, Life Science ANSIs, and Significant Woodlands. Also, based on site specific conditions, staff recommends the 15-metre buffer width based on the following:
  - The site is a Provincial Life Science ANSI;
  - The site meets three of the three ESA criteria in the Regional Official Plan;
  - The site contains an area identified as a Significant Woodland;
  - The site provides habitat for a variety of rare, threatened, and endangered plant, reptile, amphibian, butterfly, and bird species;
  - The ESA is only slightly to moderately disturbed when compared with the condition of other woodlands in Hamilton.

Vision: To be the best place in Canada to raise a child, promote innovation, engage citizens and provide diverse economic opportunities.
Values: Honest, Accountability, Innovation, Leadership, Respect, Excellence, Teamwork
The Natural Heritage System identified in the Subwatershed Study does not include supporting features, such as hedgerows, which staff considers to be important elements of the South Waterdown Natural Heritage System. There are a number of hedgerows on the South Waterdown lands, which run north-south or east-west between existing agricultural fields. The Subwatershed Study assessed these hedgerows, and recommended that they not be included in the Natural Heritage System as they do not facilitate significant wildlife movement. City staff does not agree with this recommendation, as some of the north-south hedgerows are contiguous and appear to provide movement opportunities for urban-adapted wildlife between the Niagara Escarpment and the Grindstone Creek tributary, which runs parallel to Dundas Street. These features also are remnants of the agricultural landscape adjacent to the Niagara Escarpment, and should be preserved where possible. Staff is of the opinion that these features are important parts of a linked natural heritage system. As a result, staff has included a policy in the Secondary Plan, which requires that hedgerows be evaluated as part of Environmental Impact Statements to identify hedgerows worthy of protection.

Therefore, staff recommends endorsing the South Waterdown Subwatershed Study, with the exception of the issues described above, which are addressed in the Secondary Plan.

Compliance with the Endangered Species Act: Jefferson Salamander

The escarpment lands to the south of Mountain Brow Road (outside of the Secondary Plan area) provide breeding habitat for the Jefferson Salamander, which is an Endangered Species regulated under the Endangered Species Act (2007). These salamanders require breeding ponds or wetlands, fed by ground or surface water. For foraging and hibernation, they are most often found in leaf litter and soft soil in deciduous or mixed woodlands. In Hamilton, Jefferson Salamanders typically occur along the Niagara Escarpment.

While there are no breeding ponds located on the South Waterdown lands, the Recovery Strategy (prepared by the Ministry of Natural Resources) for the Jefferson Salamander protects terrestrial habitat within 300 metres of the edge of breeding ponds that provide conditions required for foraging, dispersal, migration, and hibernation. In addition, lands which contain suitable habitat and provide connections between breeding locations up to one kilometre from the edge of breeding ponds are regulated under the Endangered Species Act. Staff has been working with the Ontario Ministry of Natural Resources to identify the breeding locations and the regulated areas of South Waterdown. All of the areas within 300 metres of breeding ponds, which are affected by the regulation, have been protected as part of the Natural Heritage System, as shown in Appendix 1 of the Secondary Plan.
The *Endangered Species Act* ensures that the habitat of species at risk is protected and is not degraded by changes in land use. As part of the review of development applications within the South Waterdown Secondary Plan area, it will be important to ensure that stormwater management does not alter natural water levels, periods of seasonal water ponding, water balance, wetland function, and soil moisture. To accomplish this, City staff will work closely with the Ontario Ministry of Natural Resources (the agency responsible for administering the *Endangered Species Act*) and Conservation Halton to ensure that vernal pools required by this species are protected.

**ALTERNATIVES FOR CONSIDERATION:**

(include Financial, Staffing, Legal and Policy Implications and pros and cons for each alternative)

There are no reasonable alternatives for consideration as the planning of the subject lands has been determined by multi-party agreement and provincial direction.

**CORPORATE STRATEGIC PLAN** (Linkage to Desired End Results)


**Skilled, Innovative and Respectful Organization**
- More innovation, greater teamwork, better client focus.

**Financial Sustainability**
- Effective and sustainable Growth Management.
- Delivery of municipal services and management capital assets/liabilities in a sustainable, innovative and cost effective manner.

**Intergovernmental Relationships**
- Maintain effective relationships with other public agencies.

**Growing Our Economy**
- Newly created or revitalized employment sites.

**Social Development**
- Everyone has a home they can afford that is well maintained and safe.
Vision: To be the best place in Canada to raise a child, promote innovation, engage citizens and provide diverse economic opportunities.
Values: Honest, Accountability, Innovation, Leadership, Respect, Excellence, Teamwork

Environmental Stewardship
- Natural resources are protected and enhanced.
- Aspiring to the highest environmental standards.

Healthy Community
- Plan and manage the built environment.

APPENDICES / SCHEDULES

- Appendix A: By-law and Official Plan Amendment No. to the former Town of Flamborough Official Plan and the Regional Hamilton Wentworth Official Plan ~ Waterdown South Secondary and Regional Official Plan

- Appendix B: Waterdown South Urban Design Guidelines (Table of Contents and Introduction)

- Appendix C: Amendment/Modification No. to the Urban Hamilton Official Plan

- Appendix D: South Waterdown Subwatershed Study (Table of Contents and Executive Summary)

- Appendix E: Waterdown South Location Map

- Appendix F: Niagara Escarpment Plan - Development Control Area (Map 56)

- Appendix G: City of Burlington comments (Author: G. Simon)

:KM/CP Attachs. (7)
CITY OF HAMILTON

BY-LAW NO. 10-XXX

To Adopt:

Official Plan Amendment No. XXX to the former Regional Municipality of Hamilton-Wentworth Official Plan
Official Plan Amendment No. XXX to the former Town of Flamborough Official Plan

Respecting:

Waterdown South Secondary Plan Area

NOW THEREFORE the Council of the City of Hamilton enacts as follows:

1. Amendment No. XX to the Official Plan of the former Regional Municipality of Hamilton-Wentworth, consisting of Schedule 1, hereto annexed and forming part of this by-law, is hereby adopted.

2. Amendment No. XX to the Official Plan of the former Town of Flamborough, consisting of Schedule 1, hereto annexed and forming part of this by-law, is hereby adopted.

PASSED this X day of X, 2010.

__________________________________________  ____________________________________________
Fred Eisenberger  Rose Caterini
Mayor  City Clerk
Amendment No. X to the former Regional Municipality of Hamilton-Wentworth Official Plan; and,
Amendment No. X to the former Town of Flamborough Official Plan

The following text, together with:

Regional Municipality of Hamilton-Wentworth Official Plan
  - Schedule “A” (Map No. 4 – Environmentally Significant Areas);

Town of Flamborough Official Plan
  - Schedule “B” (Schedule ‘A’ – Waterdown Urban Area - Land Use Plan);
  - Schedule “C” (Schedule ‘B’ – Town of Flamborough – Rural Land Use Plan);
  - Schedule “D” (Schedule ‘A-5’ – Waterdown South Secondary Plan – Land Use Plan); and,
  - Schedule “E” (Appendix ‘G’ – Waterdown South Secondary Plan – Natural Heritage and Natural Hazard Features);

attached hereto, constitute Official Plan Amendment No. XX to the Regional Municipality of Hamilton-Wentworth Official Plan and Official Plan Amendment No. XX to the Town of Flamborough Official Plan.

Purpose and Effect:
The purpose of these Amendments is to provide for minor changes to the Environmentally Significant Area mapping in the Regional Municipality of Hamilton-Wentworth Official Plan and to adopt the Waterdown South Secondary Plan comprised of text and schedules into the Town of Flamborough Official Plan.

The purpose of the Waterdown South Secondary Plan is to provide a land use planning framework to guide development for this community over a 20-year planning period. This largely residential community will include supporting neighbourhood-scale commercial uses, community uses, and extensive natural areas associated with existing woodlots, wetlands and stream valleys within the community. At full build-out the Secondary Plan Area is expected to accommodate approximately 9,600 residents at different stages of their life cycle, in roughly 3,800 dwelling units. Commercial uses will be accommodated in a District Commercial area, which includes a “main street” style shopping area, and within three neighbourhood nodes.
The Secondary Plan provides a detailed land use plan and related policies for the regulation of land use and development within the Plan Area in accordance with the applicable policies of the Regional Municipality of Hamilton-Wentworth Official Plan and Official Plan of the former Town of Flamborough, while having regard for the City's adopted new Urban Hamilton Official Plan.

**Location:**

The lands comprising Official Plan Amendment No. XXX encompass approximately 180 ha (446 acres) bounded by Dundas Street East/Highway 5 to the north, Kerns Road to the east, Mountain Brow Road to the south, and Flanders Drive/Rosecliffe Place to the west.

**Basis:**

The basis for permitting these Amendments is as follows:

The subject Official Plan Amendment covers a portion of the area approved for the urban expansion of Waterdown under Official Plan Amendment (OPA) 28, adopted by Town of Flamborough Council in May 1992 and approved in revised form by Cabinet in June 2002. In approving OPA 28, Cabinet concurrently approved a related Memorandum of Agreement requiring development to await completion of: a Class Environmental Assessment for the Dundas Waste Water Treatment Plant expansion/diversion; a Master Environmental Assessment Transportation Study; a Waterdown South Sub-watershed Study; and, completion of secondary plans for the urban expansion area.

The findings and recommendations of these various studies and processes have been reflected in the land use pattern, goals, objectives and policies of the Waterdown South Secondary Plan.

Minor changes to the Regional Municipality of Hamilton-Wentworth Official Plan Map No. 4 are being made to accommodate redefined boundaries for two Environmentally Significant Areas.

**Actual Changes:**

**A. Former Regional Municipality of Hamilton-Wentworth Official Plan**

**A.1 - Map Changes:**

(a) Map No. 4 – Environmentally Significant Areas is amended by:
i) adding lands to the “Environmentally Significant Area – 9 – Waterdown Woods”;
and,

ii) adding lands to the “Environmentally Significant Area – 10 – Grindstone Valley”;
as shown on the attached Schedule “A” of this Amendment.

B. Former Town of Flamborough Official Plan

A.1 - Map Changes:

(a) Schedule ‘A’ – Waterdown Urban Area - Land Use Plan is amended by:

i) identifying lands as OPA # X;
ii) redesignating lands from “Residential” to “Urban Commercial”;
iii) redesignating lands from “Parks and Open Space” to “Residential”;
iv) redesignating lands from “Residential” to “Institutional”;
v) redesignating lands from “Parks and Open Space” to “Natural Open Space”
as shown on the attached Schedule “B” of this Amendment.

(b) Schedule ‘B’ – Rural Land Use Plan is amended by deleting “Site Specific Area No. 10” as shown on the attached Schedule “C” of this Amendment.

(c) The Town of Flamborough Official Plan is amended by adding a new schedule, “Schedule ‘A-5’ - Waterdown South Land Use Plan” as shown on the attached Schedule “D” to this Amendment.

(d) The Town of Flamborough Official Plan is amended by adding a new appendix, “Appendix ‘G’ - Waterdown South – Natural Heritage and Natural Hazard Features” as shown on the attached Schedule “E” to this Amendment.

B.2 - Text Changes:

The text of the Official Plan of the Town of Flamborough Planning Area is hereby amended as follows:

(a) The General Policies to Part Two, Section A.1 – The Urban Area is amended by adding the following as a new policy between Policies A.1.2 and A.1.3:

“While the URBAN AREA policies apply to lands shown on Schedule ‘A’, the growth and development of the WATERDOWN SOUTH PLANNING AREA shall be guided by the policies contained in Amendment No. ___ to this Plan. In the
case of a discrepancy in policies, those policies contained in Amendment No. ___ and set out in Section A.9 of this plan, shall prevail upon lands within the defined area of the WATERDOWN SOUTH PLANNING AREA.”

(b) Sections A.1.12 and A.1.13 are hereby deleted.

(c) Section B.8.4.4 is hereby deleted.

(d) Section A – The Urban Area is revised by adding a new section as follows:

A.9 WATERDOWN SOUTH SECONDARY PLAN

The policies of this Section, in conjunction with Schedule ‘A-5’ Land Use Plan, constitute the Waterdown South Secondary Plan. It establishes land uses, basic transportation network, community facilities, infrastructure requirements and development standards to guide the development and/or redevelopment of lands located in the South Waterdown Area. The principles, objectives and policies of the Waterdown South Secondary Plan, as well as the general policies in the Official Plan, provide guidance and direction for the future development of the Secondary Plan Area.

A.9.1 GENERAL

a. Development Concept

The Waterdown South Secondary plan comprises roughly 180 ha of land located in the east end of Waterdown, extending between Dundas Street to the north and Mountain Brow Road to the south, the municipal boundary along Kerns Road to the east and the Renwood Park subdivision to the west. The Secondary Plan has been designed to respect and enhance a number of prominent natural areas throughout the community, including Grindstone Creek, Falcon Creek, Hager Creek, the Waterdown Escarpment Woods and Grindstone Creek Valley Environmentally Significant Areas (ESAs), and the Falcon Creek Provincially Significant Wetland Complex, each of which has been incorporated into a natural heritage system.

Waterdown South is located within the Niagara Escarpment Plan Area. The community should be developed with a streetscape and built form character that is compatible with the natural environment and key visual characteristics of the Niagara Escarpment. Where appropriate, this urban character may be required to incorporate height restrictions, adequate setbacks, landscape screening, boulevard treatments, and alternative road design to minimize the visual impact of urban development on the Escarpment Landscape.

Kerns Road and a part of Mountain Brow Road should be maintained as character roads in order to create a sense that the community is well connected to the Niagara Escarpment’s natural environment.
Development should be designed and located so as not to have a negative impact on the Escarpment Natural Area, Escarpment Protection Area and other designated natural heritage features, as well as on water quality and quantity, wildlife, visual attractiveness and cultural heritage features.

The Waterdown South community is intended to offer a full range of housing opportunities from large lot residential homes through to apartment and adult lifestyle (retirement) living in an urban context. Block patterns, school, park and commercial locations should create walkable neighbourhoods. A central neighbourhood node should be within walking distance of each neighbourhood. Small-scale commercial and live-work uses along with community facilities/services will be encouraged to locate within each neighbourhood node.

Large lot residential housing will occur along the western limits of the study area of the Waterdown South community to complement and provide a transition to the established Renwood Park subdivision. The extent of natural areas and features within the Waterdown South community affords excellent opportunities for establishing other areas of large lot housing, particularly adjacent to Waterdown Woods.

The Waterdown South Secondary Plan provides the opportunity to create an ‘aging in place’ adult lifestyle community, in the northeast portion of the community, containing a variety of ground-related and medium-rise housing forms, recreational uses and small scale commercial uses serving the immediate residents.

Medium density housing is directed to occur along the arterial and collector roads through the community, and within the vicinity of each neighbourhood node. Higher density housing is planned for the District Commercial area situated between Dundas Street and Grindstone Creek in the north/central portion of the community. This area will support residential, institutional, office, retail and service commercial uses and will include a pedestrian-oriented “main street” shopping area along the key entrance to the community where shops and restaurants will be encouraged to face directly onto the street.

A.9.2 GENERAL DEVELOPMENT PRINCIPLES AND OBJECTIVES

A.9.2.1 Residential

a. To promote compact urban form that creates varied and distinguishable residential neighbourhoods.

b. To encourage a mix of uses and housing types that meet the housing needs of residents throughout their life cycles and allow them to remain within the community.
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c. To create residential communities which incorporate a high standard of community planning and urban design practices while protecting and enhancing the natural environment.

d. To support future public transit service by locating commercial and higher intensity residential uses along Dundas Street West, the north-south arterial road, the collector road spine, and within neighbourhood nodes located at the intersections of such roadways.

e. To promote live/work opportunities in appropriate locations within walking distance of neighbourhood residents.

f. To encourage pedestrian travel, cycling, and other forms of active transportation as alternative modes of movement by introducing safe, well connected pedestrian and cycling networks in the community that link to external systems.

g. To promote urban design that is compatible with the natural environment and visual character of the Niagara Escarpment.

h. To limit the height of development to ensure that there will be no substantial visual impact on the Niagara Escarpment.

A.9.2.2 Commercial

a. To designate a District Commercial area and neighbourhood nodes at strategic locations to promote live-work relationships, create neighbourhood identity and focal points, reduce commuting and support future public transit services.

b. To locate retail shops along a pedestrian oriented 'main street' within the District Commercial designation with on-street parking.

c. To recognize an existing and developed arterial commercial block located along Dundas Street.

d. To limit the amount and scale of new retail development to ensure that it complements and does not impact on the planned function of established commercial areas including Downtown Waterdown.

e. To ensure that commercial areas incorporate a high standard of community planning and urban design and, where applicable, integrate with nearby significant natural heritage features.

A.9.2.3 Natural Heritage System and Open Space

a. To establish a natural heritage system within the context of an urban setting that protects, preserves and, where appropriate, enhances significant natural heritage features, functions and linkages over the long-term.
b. To maintain wildlife movement corridors along the Niagara Escarpment and through the Grindstone Creek valleylands.

c. To maintain or enhance, to the greatest extent possible, the predevelopment surface water and ground water quality and quantity in accordance with municipal and Conservation Authority standards in order to protect and enhance on-site and downstream fisheries and wetlands, on-site and off-site karst features and functions, as well as drinking water for those residences on well-based systems downstream.

d. To employ, where appropriate, naturalized forms of stormwater management that minimize stormwater run-off and impervious surfaces, and reduce the need for, and size of stormwater management ponds.

e. To respect and maintain the existing drainage boundaries within the Waterdown South Planning Area, to the satisfaction of the City of Hamilton in consultation with Conservation Halton.

f. To ensure, through appropriate studies and mitigation measures, that public safety is not compromised and property damage does not result from building and infrastructure construction within the vicinity of known karst features.

g. To provide, where feasible, a passive recreational trail system through the Natural Heritage System.

h. To provide adequate public access to the Niagara Escarpment by such means as pedestrian trails (e.g. the Bruce Trail) and associated parking areas.

i. To respect the objectives and policies of the Niagara Escarpment Plan and to ensure that the cumulative impact of development will not have a serious detrimental effect on the Escarpment environment, including its water quality, vegetation, wildlife, and the unique Escarpment landscape.

j. To ensure that development is compatible with, and provides for, the protection of unique ecological areas, significant wildlife habitat, and water quality and quantity both inside and adjacent to the Waterdown South Planning Area.

A.9.2.4 Transportation/Transit/Pedestrian/Cycling Linkages

a. To create a system of roads and transportation corridors that promotes the safe, efficient and timely circulation of vehicular and non-vehicular traffic, and contributes to the public realm through a street, block and land use pattern that encourages walking and other forms of active transportation, creates pedestrian-oriented streetscapes, and links the components of the community.

b. To create a grid system of arterial, collector and local roads and discourage cul-de-sacs, wherever possible.
c. To create a linked pedestrian and cycling network consisting of cycleways, paths, walkways and sidewalks on local and collector roads, through parks and schools, the hydro corridor, along Grindstone Creek and through stormwater management facilities and natural heritage features in a manner that has regard for the ecological function of the area and minimizes impacts.

d. To provide pedestrian network connections to the historic centre of Waterdown, the surrounding residential neighbourhoods and to the existing natural open space systems external to the Waterdown South Secondary Plan area.

e. To design the east-west collector road as a pedestrian and bicycle-oriented spine of the community linking all significant land uses within the community.

f. To plan residential development and its road network so that residents are predominantly within a 400 metre walking distance of neighbourhood parks, commercial facilities and future public transit services.

g. To employ traffic calming measures on collector roads in order to reduce traffic speeds and make streets conducive to pedestrian and bicycle travel.

h. To promote future public transit opportunities through land use arrangements, building orientation and streetscape design.

i. To orient streets so as to promote energy conservation.

j. To ensure that all new and reconstructed roads will be designed and located to minimize the impact on the Escarpment environment.

k. To create road and boulevard designs that transition and blend into the surrounding Escarpment landscape, along Mountain Brow Road, and Kerns Road and other new roads abutting the Escarpment Natural and Escarpment Protection Areas.

l. To maintain and enhance natural vegetation within the Mountain Brow Road, and Kerns Road right of way where possible.

m. To provide a secure route for the Bruce Trail where it exists in the Waterdown South Planning Area.

n. To protect views of the Escarpment landscape from Mountain Brow Road and Kerns Road, and provide opportunities for views from new local roads abutting the Escarpment Natural and Protection Areas.

A.9.2.5 Infrastructure

a. To provide for the extension of water and wastewater services in a timely, and efficient manner throughout the Waterdown South Planning Area.
b. To provide for drainage and stormwater management facilities in accordance with the recommendations of the South Waterdown Subwatershed Study, and in locations which can complement the natural heritage system.

c. To design stormwater services so as not to adversely affect downstream water quality, quantity, and the Escarpment environment.

A.9.2.6 Urban Design

a. To provide integrated community design that coordinates land use, open space, the street network and built form elements to achieve and reinforce a high quality, integrated community vision.

b. To incorporate elements of Waterdown South’s distinct natural and cultural heritage in the establishment of design characteristics that will promote and achieve unique community design.

c. To establish gateways at strategic locations to function as entranceways to Waterdown and the community of Waterdown South.

d. To create an urban fabric characterized by an interconnected street network that is responsive to existing natural heritage, surrounding land uses and cultural heritage elements.

e. To integrate views of natural heritage features within the community design.

f. To promote public transit, walking and recreational connections through a well connected system of streets, walkways and trails.

g. To design streets and built form that promote personal safety through natural surveillance opportunities.

h. To promote building forms and site layouts that address the street and which locate and orientate on-site parking, garages and service/loading areas to minimize the impact to the streetscape.

i. To create street and building design that promotes pedestrian comfort and vitality at the grade level of buildings.

j. To promote design variety within the streetscape.

k. To promote a variety of housing with diverse architecture for individuals and families of all ages.

l. To encourage mixed-use development along strategic corridors and within walking distance of residential neighbourhoods.

m. To integrate community and institutional uses at visible, highly accessible locations.
n. To create streetscapes and built form that are compatible in design with the visual and natural environment of the Niagara Escarpment, where they abut the Escarpment Natural Area and Escarpment Protection Area designations.

A.9.3 LAND USE DESIGNATIONS

A.9.3.1 Residential Designations

Lands designated Residential shall be developed in accordance with Schedule ‘A-5’: Waterdown South Secondary Plan - Land Use Plan and the following policies.

A.9.3.1.1 General Residential Policies

a. Residential development in the Waterdown South Planning Area shall have a compact urban form that encourages walkability.

b. A variety of housing opportunities suitable to a wide range of housing needs shall be encouraged through a variety of tenure options, housing prices and housing forms, including adult lifestyle housing and innovative housing ideas.

c. A broad range and mix of housing types are promoted between and within residential density categories. The City shall strive to achieve a variety of building types within each density category, such that no portion of the Secondary Plan Area is dominated by one housing type, and to provide an interesting streetscape.

d. Where townhouses are proposed, a mix of townhouse block lengths is encouraged to provide variety to the streetscape. The creation of long townhouse blocks should be avoided and building setbacks and/or alternate building facades will be encouraged to prevent long stretches of monotonous elevation. The zoning by-law shall contain standards controlling setbacks and the number of units within a block.

e. Where a net density range is specified in a residential designation, a net residential hectare density may be averaged over each plan of subdivision within the designation.

f. The provision of housing with supports shall be encouraged. As such, group homes, residential care facilities, nursing homes and long-term care facilities, and retirement homes shall be permitted in all residential designations where deemed appropriate subject to the implementing zoning, provided the size and scale of such facilities shall be similar to, and oriented to the built form permitted in each designation.

g. Community facilities and institutional uses such as schools, places of worship, day care centres and other related community and institutional uses, shall be permitted in all residential designations, subject to the
implementing zoning, provided the lot to accommodate the use is located along an arterial or collector roadway and is of a sufficient size to accommodate the use as determined through the requisite zoning, subdivision and site plan approval processes.

h. Garage protrusion shall be discouraged to create more attractive streetscapes and provide interactive outdoor space for pedestrians. The implementing Zoning By-law shall contain provisions restricting the extent of garage protrusions.

i. Direct vehicle access to individual dwelling units from arterial roads shall be discouraged.

j. Direct access to individual street townhouse units from collector roads shall be discouraged and alternative forms of access such as use of shared or common access points and rear lane arrangements shall be encouraged.

k. Reverse frontage lotting patterns shall be discouraged, and may only be permitted under certain circumstances or where the owner satisfies the City that no other alternative development form or street patterns are feasible. The use of long stretches of acoustical walls adjacent to arterial roads shall also be discouraged.

l. The arrangement of collector roads, land uses and densities should be planned so that residential units are predominantly located within a 400 metre walking distance of a commercial facilities or neighbourhood nodes.

m. A variety of housing elevations shall be encouraged within each residential block to provide an interesting streetscape. In support of this policy, demonstration of how the development will meet the Secondary Plan Urban Design Guidelines shall be required as a condition of draft plan of subdivision approval.

A.9.3.1.2 Low Density Residential 1

a. The Low Density Residential 1 designation shall permit single detached dwellings, second dwelling units and home businesses. The maximum permitted density shall be 22 units per net residential hectare (upnrh), and the maximum building height shall be 2 storeys.

b. The new lots along the western limit of the Secondary Plan Area shall serve as a transition area between the established homes and new residential development internal to the Waterdown South community. The implementing zoning by-law shall ensure that all new lots immediately opposite those on Flanders Drive and Rosecliffe Place have a similar lot width at the point where the new lots are opposite to the existing lots.

c. New lots within the Low Density Residential 1 area which extend into Waterdown Woods shall be required to conform to the following:
i) Lot width shall not be less than 15.24 metres (50 feet) at any point.

ii) The maximum height of the dwelling to the mid-point of roof between peak and eves shall be 10.5 metres (34 feet) to prevent houses from exceeding the height of the trees.

iii) Rear yards shall be fenced with 1.2 metre (4 feet) black chain link fence to prevent encroachment into the woodlands and wetlands.

A.9.3.1.3 Low Density Residential 2

a. The Low Density Residential 2 designation shall permit single detached dwellings, semi-detached dwellings, duplex dwellings, street townhouses and home businesses. Single detached and semi-detached dwellings shall be the primary form of housing in this designation, but limited areas of street townhouses shall be encouraged in each plan of subdivision. Second dwelling units may be permitted in single detached and semi-detached dwellings subject to the requirements of the zoning by-law.

b. The overall density of lands designated Low Density Residential 2 shall range from 22 to 40 units per net residential hectare (upnrh). Development at the higher end of the density scale is expected to occur in small clusters to facilitate a range of housing types and sizes in each neighbourhood. The higher density housing units should be integrated with other housing forms on the same street.

c. A maximum building height of 2.5 storeys shall be permitted.

A.9.3.1.4 Low Density Residential 3

a. The Low Density Residential 3 designation permits single detached dwellings, semi-detached dwellings, duplex dwellings, all forms of townhouses, and home businesses. Second dwelling units may be permitted in single detached and semi-detached dwellings subject to the requirements of the zoning by-law.

b. The overall density of lands designated Low Density Residential 3 shall range from 30 to 60 units per net residential hectare (upnrh).

c. A maximum building height of 3 storeys shall be permitted for all housing forms.

d. Single detached dwellings shall generally comprise a maximum of 60% of the housing units within the Low Density Residential 3 designated area.
A.9.3.1.5 Medium Density Residential

a. The Medium Density Residential designation permits a range of housing types consisting of: street townhouses, other townhouse forms, low-rise apartments, other forms of multiple attached dwellings, and a limited amount of single detached and semi-detached dwellings.

b. The overall density of lands designated Medium Density Residential will be in the range of 60 to 75 units per net residential hectare (upnrh).

c. A maximum building height of 3 storeys shall be permitted for single and semi-detached dwellings, with a maximum height of 4 storeys permitted for all other permitted housing forms.

d. Single detached dwellings shall generally comprise a maximum of 25% of the housing units within the Medium Density Residential designated area.

A.9.3.1.6 Medium Density Residential – Site Specific Policy Area

a. The Medium Density Residential - Site Specific Policy Area designation is intended to permit an adult lifestyle community that promotes ‘aging in place’.

b. Permitted uses within this designation include those uses permitted in the Medium Density Residential 2 designation as set out in Section A.9.3.1.5, as well as mid-rise apartments, and various forms of housing with supports, along with accessory recreational and commercial uses servicing the needs of the surrounding residents.

c. The overall density of lands designated Medium Density Residential – Site Specific Policy Area shall be in the range of 60 to 100 units per net residential hectare (upnrh).

d. A maximum building height of 8 storeys shall be permitted north of Salem Boulevard. For the lands located between the Natural Area and the Protection Area/Storm Water Management Facility, the maximum permitted building height shall be 6 storeys, but building heights may be increased up to 8 storeys subject to a Visual Impact Assessment in accordance with Section A.9.9.1.j.

e. The clustering of residential units is encouraged to maximize the provision of generous open space areas within this designation.

f. Lands designated Medium Density Residential – Site Specific Policy Area shall be the subject of a site-specific implementing zoning by-law which may address such matters as performance standards related to building setbacks, height, separation distances, landscape and open space requirements, parking standards, and ancillary uses.
A.9.3.2 Commercial Designations

The Waterdown South Secondary Plan provides for three commercial designations consisting of District Commercial, Arterial Commercial and Neighbourhood Node areas. The District Commercial designation is intended to function as a neighbourhood commercial centre meeting the weekly and daily retail and service commercial needs of residents both north and south of Dundas Street. The Arterial Commercial designation recognizes an established commercial development on Dundas Street. Neighbourhood Nodes are intended to serve as small-scale neighbourhood focal points serving the convenience commercial needs of immediate residents and are generally located within walking distance of patrons.

In appropriate locations, the development of “live/work” housing units, which are principally residential dwellings but also accommodate small scale commercial uses on the ground floor are encouraged.

A.9.3.2.1 Commercial General Policies

a. Commercial areas shall be developed in a co-ordinated and comprehensive manner. Access points along arterial and collector roads shall be limited and regard shall be given to the sharing of access points, adequate internal traffic circulation, and adequate off-street parking, loading and manoeuvring facilities.

b. Open storage of goods and materials shall not be permitted except where otherwise permitted in the Arterial Commercial designation and in the implementing zoning by-law for that designation.

c. Loading and unloading areas shall be located so as to minimize adverse effects to adjacent residential areas and shall be screened from view.

d. Landscaping shall form an integral part of all developments and screening and buffering shall be provided between commercial and other sensitive adjacent land uses.

A.9.3.2.2 District Commercial

a. The District Commercial designation is intended to accommodate a range of residential, commercial, institutional and service uses. Such designated areas may be developed primarily for commercial use in the initial stage, but it is envisioned that over time these areas will evolve into truly mixed-use areas with residential and commercial uses mixed either within the same building or in certain locations within separate buildings on the same or abutting lots.
b. Uses permitted within the District Commercial designation include:
   
i. offices, service commercial uses including personal service uses and restaurants, and retail stores including supermarkets except that a single user over 10,000 square metres shall not be permitted;
   
ii. live-work units and residential uses above commercial units;
   
iii. apartments subject to Section A.9.3.2.2 e); and
   
iv. places of worship, day care centres, libraries, fire and police stations, post offices, recreational facilities, community centres, meeting spaces and similar uses.

   
c. The District Commercial area is intended to serve a neighbourhood shopping function which meets the weekly and day-to-day retail and service commercial needs of residents in the secondary plan area and adjacent neighbourhoods.

   
d. The designation shall permit a maximum of 10,000 square metres of retail and service commercial floor space without the requirement for a market impact study. Additional retail and service commercial floor space up to a total maximum of 25,000 square metres may be permitted subject to a market impact study submitted prior to future planning approvals. The market impact study shall demonstrate that the proposed uses will not adversely impact the planned function of any existing or designated commercial areas, particularly the Waterdown downtown area and may set out appropriate phasing and maximum unit floor area for retail stores including supermarkets. Office and service commercial uses above the ground floor shall not be included in the total floor space limitations.

   
e. Sole residential buildings may be permitted within the District Commercial designation provided such buildings are generally located on the periphery of the designation; such buildings are not located on Collector Road A; and the total amount of land occupied by such buildings does not limit the ability of the designated lands to provide for the initial maximum retail and service commercial floor space set out in Section A.9.3.2.2 d).

   
f. It is expected that a municipal fire hall, as permitted by Section A.9.3.2.2 b)(iv), occupying a site of up to 0.8 ha will be required in this area along Dundas Street at a future signalized intersection. To create the main street character, a location on Collector Road A is discouraged.

   
g. The density of lands within the District Commercial designation shall be a maximum of 2.5 times the lot area (Floor Space Index (FSI)) or generally a range of 60 to 150 upnrh for exclusive residential developments.

   
h. A maximum building height of 8 storeys shall be permitted, but building heights may be increased up to 12 storeys, subject to a Visual Impact Assessment which demonstrates to the satisfaction of the City and the Niagara Escarpment Commission that the matters set out in Section A.9.9.1.j are addressed.
i. Within the District Commercial area, it is envisioned that the larger non-residential uses will seek Dundas St. frontage and visibility.

j. Single use stores greater than 5,000 square metres may be situated in the interior or at the rear of the site with smaller footprint buildings located close to the street. Alternatively, larger stores could be located up to the streetline along a collector road provided they are lined with smaller stores, multiple entrances, or other similar means to animate the streetscape along the collector road.

k. Offices uses in the same lot shall not exceed 2,000 square metres.

l. Along Collector Road A, through the District Commercial designation, the retail space and buildings shall be oriented in a ‘retail main street’ configuration with storefronts located close to the street and principal entrances facing the sidewalk so as to create a pleasant pedestrian shopping environment. The built form may include stand-alone stores, multiple unit commercial buildings or mixed-use buildings.

m. Along Collector Road A, no parking, driveways, lanes or aisles shall be permitted between buildings and the public sidewalk. Drive-thrus, car washes, services stations and gas bars shall be prohibited adjacent to Collector Road A.

n. For buildings located along Collector Road A, the principle public entrance shall provide direct access onto the public sidewalk. The windows and signage shall also face the street. Buildings should have a consistent minimal setback in accordance with the Urban Design, Streetscape and Open Space Guidelines required in Section A.9.4.

o. The Urban Design, Streetscape and Open Space Guidelines, as required in Section A.9.4, and the implementing Zoning By-law shall establish build-to-lines and a minimum frontage per-block to be occupied by buildings within the District Commercial designation. A lesser requirement may be established on Dundas Street and other streets outside of the ‘retail main street’ area.

p. On-street parking shall be provided, wherever possible, in the District Commercial designation.

q. Parking lots abutting the street shall be screened with low walls, and/or landscape material so to provide a sense of enclosure along the setback line.

r. The specific location and configuration of the ‘retail main street’ area may be changed without amendment to this plan provided a detailed concept plan of the ‘retail main street’ area, as set out in Section A.9.3.2.2 u., is submitted to the satisfaction of the City.

s. The implementing zoning by-law shall establish a minimum proportion of retail space to be provided along the ‘retail main street’ area.
t. The implementing zoning by-law for the District Commercial designation shall consider lower commercial parking standards, which take into account the intended pedestrian nature of the ‘retail main street’ oriented uses and the role of on-street parking in meeting parking demands.

u. A detailed concept plan for this designation will be required before approval of any zoning, subdivision or site plan application. The concept plan shall demonstrate to the satisfaction of the City:

i. How the policies of this plan are being implemented;

ii. The location and configuration of the ‘retail main street’ area;

iii. Means to accommodate traffic flows through the area including access points and the private and public street network;

iv. The treatment of intersections within the designation to ensure pedestrian comfort while also ensuring an appropriate flow of traffic;

v. An appropriate build-to-line for each street;

vi. An appropriate minimum frontage-per-block for each street;

vii. The proportion of retail space to be provided along the retail main street;

viii. The location of initial and potential future residential and mixed-use buildings; and

ix. How the area can evolve and intensify over time to a fully mixed-use area.

A.9.3.2.3 Neighbourhood Node Designation

a. Neighbourhood Nodes are to function as neighbourhood focal points that meet the day-to-day commercial needs of nearby residents and are located within walking distance of patrons. They are intended to accommodate small scale retail and service uses in small nodes along with medium density residential housing.

b. Neighbourhood Nodes are generally located at the intersection of two collector roads or collector and arterial roads and are spaced throughout the community to provide maximum accessibility to pedestrians.

c. Uses permitted within the Neighbourhood Node designation include: medium density residential and live/work buildings as set out in section A.9.3.1.5 a); convenience retail uses, personal services, professional offices; institutional uses; community facilities/services; and public spaces such as a village or neighbourhood square. Drive-thrus and motor vehicle service stations are not permitted.

d. The permitted net residential density shall generally range from 50 to 75 upnrh.

e. A maximum building height of 4 storeys shall be permitted.
f. Live-work buildings shall take the form of townhouses consisting of ground floor commercial or office uses with a residential unit above.

g. Buildings shall face the street with a minimal consistent setback and the principal public entrance shall provide direct access onto the public sidewalk. The primary windows and signage shall also face the street.

h. On-street parking shall be permitted on the adjacent collector roads. In most circumstances, it is the intent that all parking needs for commercial uses can be achieved through on-street parking.

i. The implementing zoning by-law shall establish a maximum floor area for small scale commercial uses in recognition of the limited retail function of this designation.

j. The implementing zoning by-law shall also give consideration to establish lower parking standards which take into account the intended pedestrian nature of these uses, shared parking opportunities within live-work buildings, and the contribution of on-street parking to meet parking demand.

k. Required on-site parking and loading areas are encouraged to locate to the rear of buildings to achieve an attractive streetscape and a pedestrian-friendly built-form environment. Where parking lots abutting the street are unavoidable due to unique circumstances, they shall be screened with low walls, and landscape materials, but shall not be located in front of the buildings.

A.9.3.2.4 Arterial Commercial Designation

a. Lands designated Arterial Commercial are intended to accommodate uses which are directed to the travelling public or drive-by consumer.

b. The Arterial Commercial designation applies to the area already developed for such purpose along Dundas Street, east of the Grindstone Creek.

c. Permitted uses on lands designated Arterial Commercial shall be limited to convenience retail store, garden supply centre, fruit and vegetable market, florist establishment, butcher shop, motor vehicle service station, equipment sales/rental/service establishment, motel or hotel, recreational uses, and restaurants.

A.9.3.3 Institutional Designation

a. Uses permitted on lands designated Institutional shall include schools, day care centres, places of worship, nursing homes, residential care facilities, community facilities, government services and other similar institutional uses.
b. Schedule ‘A-5’ identifies the general location and size of two elementary schools, as requested by the Hamilton-Wentworth Roman Catholic Separate School Board and the Hamilton-Wentworth District School Board. The location of these school sites may be moved and the size may change without amendment to this plan. The specific location and size of each designated school site shall be determined as part of the approval process of the draft plan of subdivision in which each school site is located. The need for a particular school site shall also be confirmed by the School Board as part of the approval process, and the timing for which the site is reserved will also be established at that time.

c. All schools shall be located adjacent to designated Parks to provide opportunities to share facilities.

d. Should any or all of the designated school sites not be required by the appropriate school board, such lands may be used for the following purposes without an Official Plan Amendment:
   i. Uses permitted in the Low Density Residential 2 designation; and/or
   ii. Other Institutional uses.

e. Institutional buildings should be accessible by all modes of transportation, and designed as neighbourhood focal points, which create a distinctive community identity and sense of place and serve as landmarks for orientation and local identity.

f. At the time of subdivision approval, school sites may be zoned for both institutional and residential purposes having regard to the abutting density and form of development.

g. A maximum building height of 15 metres is permitted.

A.9.3.4 Neighbourhood Park Designation

a. Lands designated Neighbourhood Park on Schedule A-5 shall constitute neighbourhood level parks that provide a variety of recreational opportunities for the residents of the Waterdown South Planning Area. Permitted uses shall include both active and passive recreational uses.

b. Lands designated Neighbourhood Park shall be visible and accessible to the public, with unobstructed views provided to improve surveillance of such areas.

c. A pedestrian and bicycle trail network shall be established to link parks and open space with adjacent residential areas. Appropriate trail linkages shall be made with the hydro corridor crossing the Secondary Plan Area, the Bruce Trail system through the Niagara Escarpment lands to the south, and neighbourhoods to the north. It is intended that the network will use public streets, sidewalks and public open space lands. The network shall be identified through the Streetscape Manual as set out in
section A.9.7.2 b. and, more specifically, delineated during the processing of subsequent plans of subdivision.

d. Municipal infrastructure such as water towers and pumping stations may be located within part of a Neighbourhood Park. However, the lands required for the facility will be in addition to the parkland obtained through parkland dedication, as required by policy A.9.9.5.

e. Neighbourhood parks shall be located no more than 800 metres apart and the majority of residential uses within the Secondary Plan Area shall generally be located within a 400 metre distance (5 minute walk) of a park.

f. Neighbourhood parks are encouraged to be located adjacent to and in conjunction with school sites, however, school sites shall not be considered to satisfy any parkland dedication requirements. Where appropriate, neighbourhood parks will be located adjacent to other greenspace areas such as the hydro corridor, stormwater management ponds, and the Natural Heritage System in order to augment the natural heritage and open space system throughout the Waterdown South community.

g. Neighbourhood parks are generally intended to be square or rectangular in shape, have a significant street frontage and be approximately 2.0 ha in size. However, to provide flexibility in the design of Draft Plans of Subdivision, the specific location, size and shape of the neighbourhood parks may vary subject to the approval of the City without an amendment to this Plan.

h. In co-operation with the respective utility companies, the City shall establish a pedestrian and bicycle trail network along the hydro corridor that traverses the Waterdown South Secondary Plan Area and extends beyond the community.

A.9.3.5 Natural Heritage System

The Waterdown South Planning Area contains a number of significant natural heritage features, including two Environmentally Significant Areas: Waterdown Escarpment Woods and Grindstone Creek Valley. The Planning Area also contains a Provincial Life Science Area of Natural and Scientific Interest, the Falcon Creek Provincially Significant Wetland Complex, and other woodland, stream, wetland, and hedgerow features. The area also contains significant vegetation communities, which provide habitat for significant plant and wildlife species.

The predevelopment landscape within the Waterdown South Planning Area consists largely of cultivated farmland bisected by the Grindstone Creek and its valleylands. The Planning Area is divided into three watersheds associated with the Grindstone, Falcon and Hager Creeks. The western portion of the Planning Area drains into the Grindstone
Creek, the eastern portion into the Falcon Creek and a small area of the south-eastern portion into the Hager Creek.

A sub-watershed planning study has been completed to the satisfaction of the Cities of Hamilton and Burlington and Conservation Halton. The study was undertaken to identify and evaluate the significance of all natural heritage features and functions within the Waterdown South Secondary Plan area, and to establish a framework for more detailed levels of evaluation at succeeding stages of the planning process.

Within portions of the Waterdown South Planning Area, the creeks noted above have created karst conditions consisting of sinkholes, sinking streams, and springs. Within the Planning Area, some of the surface karst is located within the Natural Heritage System and, as such, is already outside of the developable area. However, there are several areas outside of the Natural Heritage System that also contain karst topography. Section A.9.3.6 provides direction with regards to development within these karst areas that are outside of the Natural Heritage System, as shown on Appendix G, and as per recommendations of the South Waterdown Subwatershed Study – Stage 2 Report.

### A.9.3.5.1 General Policies

a. Based on the Subwatershed Study, a Natural Heritage System is proposed to maintain, restore and enhance the natural heritage features, areas and functions within the Planning Area. These natural heritage features are linked by natural corridors, which are necessary to maintain biological diversity within the Waterdown South Secondary Plan Area. Wherever possible and feasible, development within the Waterdown South Secondary Plan Area should promote a net gain within the Natural Heritage System by restoring, enhancing, and linking habitat. The natural heritage features comprising the Natural Heritage System are delineated on Appendix G.

b. Where the lands within the Natural Heritage System are under private ownership, nothing in this plan implies that the lands will be secured for public ownership. Where the use of the lands is deemed appropriate for public ownership by the City or other public agency, suitable acquisition options shall be considered.

c. The Natural Heritage System shall be comprised of three designations:

   i. The Grindstone Creek Natural Area,
   ii. The Escarpment Natural Area, and
   iii. The Escarpment Protection Area.
A.9.3.5.2 Grindstone Creek Natural Area

a. The Grindstone Creek Natural Area designation represents the significant natural heritage features and natural hazard areas within the Grindstone Creek portion of the Secondary Plan area. The designation shall consist of:

i. Grindstone Valley ESA;

ii. The valley corridors and associated riparian areas of Grindstone Creek Tributary 1 as identified in the South Waterdown Subwatershed Study; and

iii. The greater of the floodplain, meander belt or stable top of bank of the Grindstone Creek. As set out in the South Waterdown Subwatershed Study, the boundary of the floodplain and top of bank may change through cut and fill permitted by Conservation Halton.

b. Development and site alteration within the Natural Heritage System shall be prohibited with the exception of the following limited uses:

i. Forest, wildlife and fisheries management;

ii. Low intensity passive recreation uses where they do not impact sensitive natural features or functions;

iii. Existing agricultural operations and other existing uses;

iv. Infrastructure, roads, and utilities, which may be permitted to cross the Natural Heritage System where a scoped Environmental Impact Statement (EIS) or Environmental Assessment demonstrates no negative impacts on the natural features or the ecological functions for which the area was identified and demonstrates that there are no reasonable alternative location(s); and,

v. Flood and erosion control, and channel modifications, including site alteration to accommodate a stormwater outfall, to deepen channels (where critical fish habitat does not exist) or to stabilize steep, eroding slopes, subject to an approved EIS and obtaining permission from Conservation Halton pursuant to Ontario Regulation 162/06, as may be amended.

c. Storm water management facilities shall generally not be permitted. However, in cases where there is no alternative location, encroachment into buffers may be permitted if it can be demonstrated, through an Environmental Impact Statement, that there will be no negative impacts on the ecological features and functions of the adjacent natural feature. No encroachment will be permitted within 30 metres of a Provincially Significant Wetland.
d. Development and site alteration on adjacent lands shall not be permitted unless the ecological function of the adjacent lands has been evaluated through the preparation of a scoped EIS that demonstrates that the features and/or functions for which the area has been identified are not negatively impacted.

e. Notwithstanding, A.9.3.5.2 b. and c., within lands subject to Ontario Regulation 162/06, as may be amended, a permit is required from Conservation Halton for development and site alteration.

f. Design and construction activities related to the extension of utilities under the Grindstone Creek Natural Area shall be evaluated by a geotechnical engineer in collaboration with a karst specialist.

A.9.3.5.3  Escarpment Natural Area

a. The Escarpment Natural Area includes escarpment features and associated stream valleys, wetlands and forests, which are relatively undisturbed. This area contains important plant and animal habitats and geological features and cultural heritage features and are the most significant natural and scenic areas of the Escarpment. The policy aims to maintain these natural areas and protect them from the impacts of adjacent development.

b. The Niagara Escarpment Plan sets out the following objectives for this designation:

i. To maintain the most natural Escarpment features, stream valleys, wetlands and related significant natural areas and associated cultural heritage features;

ii. To encourage compatible recreation, conservation and educational activities; and,

iii. To maintain and enhance the landscape quality of Escarpment features.

c. The Escarpment Natural Area is intended to represent the most significant ANSI (Life Science), the most significant stream valleys and wetlands associated with the Escarpment and forested lands 300 metres from the brow of the Escarpment slope. As such, the Escarpment Natural Area designation shall consist of:

i. Escarpment slopes and related landforms associated with the underlying bedrock, which are in a relatively natural state;

ii. The Waterdown Escarpment Woods ESA;

iii. The Provincially Significant Falcon Creek Wetland Complex;

iv. The significant valley corridors and associated riparian areas of Falcon Creek as identified in the South Waterdown Subwatershed Study;
v. The Floodplain of Falcon Creek; and
vi. Habitat of Threatened and Endangered Species.
d. Development within the Escarpment Natural Area shall be prohibited with the exception of the following limited uses:
i. Existing agricultural operations and other existing uses;
ii. Non-intensive recreation uses such as nature viewing and trail activities except motorized vehicle trails or the use of motorized trail vehicles;
iii. Forest, wildlife and fisheries management;
iv. Archaeological activities;
v. Essential transportation and utility facilities where an EIS or Environmental Assessment demonstrates no significant negative impacts on the natural features or the ecological functions for which the area was identified;
vi. Uses permitted in Park or Open Space Master/Management Plans, which are not in conflict with the Niagara Escarpment Plan;
vii. Essential watershed management and flood and erosion control projects carried out or supervised by a public authority including site alteration to accommodate stormwater management pond outfall;
viii. The Bruce Trail corridor including the pedestrian footpath and, where necessary, bridges, boardwalks and other trail-related constructions and unserviced Overnight Rest Areas and Access Points for Bruce Trail users; and
ix. Nature preserves owned and managed by an approved conservation organization.
e. Storm water management facilities shall generally not be permitted. However, in cases where there is no alternative location, encroachment into buffers may be permitted if it can be demonstrated, through an Environmental Impact Statement, that there will be no negative impacts on the ecological features and functions of the adjacent natural feature. No encroachment will be permitted within 30 metres of a Provincially Significant Wetland.
f. Development and site alteration on adjacent lands shall not be permitted unless the ecological function of the adjacent lands has been evaluated through the preparation of an EIS and it has been demonstrated that the features and/or functions for which the area has been identified are not negatively impacted.
g. Notwithstanding, A.9.3.5.3 d) and e), within lands subject to Ontario Regulation 162/06, as may be amended, a permit is required from Conservation Halton for development and site alteration.
h. The Regional floodlines for the Falcon Creek system shall be verified through additional study at the subdivision planning stage.
A.9.3.5.4 Escarpment Protection Area

a. Escarpment Protection Areas are important because of their visual prominence and their environmental significance. They are often more visually prominent than Escarpment Natural Areas. Included in this designation are Escarpment features that have been significantly modified by land use activities such as agriculture or residential development, land needed to buffer prominent Escarpment Natural Areas, and natural areas of regional significance. The policy aims to maintain the remaining natural features and the open, rural landscape character of the Escarpment and lands in its vicinity.

b. The Niagara Escarpment Plan sets out the following objectives for this designation:
   i. To maintain and enhance the open landscape character of Escarpment features;
   ii. To provide a buffer to prominent Escarpment features;
   iii. To maintain natural areas of regional significance and cultural heritage features; and,
   iv. To encourage agriculture, forestry and recreation.

c. The Escarpment Protection Area designation shall consist of:
   i. Escarpment slopes and related landforms where existing land uses have significantly altered the natural environment (e.g. agricultural lands or residential development);
   ii. Areas in close proximity to Escarpment slopes, which visually are part of the landscape unit; and
   iii. Regionally Significant Areas of Natural and Scientific Interest (Life Science) or areas designated as environmentally sensitive by municipalities or conservation authorities.

d. Development within the Escarpment Protection Area shall be prohibited with the exception of the following uses:
   i. Existing agricultural operations and other existing uses;
   ii. Recreational uses oriented towards the land which require minimal modification of the existing natural, topographic and landscape features and which do not require the building of major structures;
   iii. Forest, wildlife and fisheries management;
   iv. Archaeological activities;
   v. Transportation and utility facilities;
   vi. Uses permitted in Park or Open Space Master/Management Plans, which are not in conflict with the Niagara Escarpment Plan;
vii. Watershed management and flood and erosion control projects carried out or supervised by a public authority including a stormwater management pond outfall;

viii. The Bruce Trail corridor including the pedestrian footpath and, where necessary, bridges, boardwalks and other trail-related constructions and unserviced Overnight Rest Areas and Access Points for Bruce Trail users;

ix. Nature preserves owned and managed by an approved conservation organization.

e. Storm water management facilities shall generally not be permitted. However, in cases where there is no alternative location, encroachment into buffers may be permitted if it can be demonstrated, through an Environmental Impact Statement, that there will be no negative impacts on the ecological features and functions of the adjacent natural feature. No encroachment will be permitted within 30 metres of a Provincially Significant Wetland.

A.9.3.5.5 Vegetation Protection Zones

a. The specific natural heritage features within the Natural Heritage System, as identified in Appendix G and based on the South Waterdown Subwatershed Study, shall be retained and protected from adjacent development by appropriate vegetation protection zones. Such vegetation protection zones should be based on the ecological sensitivity of the feature, and the type and nature of adjacent uses, and shall as a minimum provide for a buffer of:

i. 15 m. measured from the dripline of woodlots or from the boundary of the Waterdown Woods ESA and the Area of Natural and Scientific Interest (ANSI);

ii. 15 m. adjacent to the greatest hazard associated with Grindstone Creek (i.e. flood plain, meander belt or stable top of bank);

iii. 15 m. adjacent to the greatest hazard associated with Falcon and Hager Creeks (i.e. flood plain, meander belt or stable top of bank);

iv. 30 m. from the boundary of all Provincially Significant Wetlands (PSW).

b. No grading shall be permitted within 30 metres of all units of the Falcon Creek Wetland Complex, and within the vegetation protection zones described in subsections (i), (ii) and (iii) above, with the exception of minor grading that may be necessary for adjacent stormwater management pond outfalls.

c. These vegetation protection zones are not shown on Schedule A-5 or Appendix G but once established, shall be subject to the policies and permitted uses for the Natural Heritage System.
d. The adequacy of the minimum vegetation protection zones set out in subsection a) shall be confirmed through a scoped Environmental Impact Statement (EIS) submitted prior to draft plan of subdivision or other requisite planning approvals. The EIS may recommend larger vegetation protection zones and/or different buffer treatments.

e. In addition to confirming vegetation protection zones, the EIS shall confirm the boundaries of natural features, to the satisfaction of the City in consultation with Conservation Halton.

f. Grading, lot lines, and impervious surfaces shall not be permitted within the buffer. Storm water management facilities shall generally not be permitted within the buffer, except for required stormwater management pond outfalls. However, in cases where there is no alternative location, encroachment of storm water management facilities into buffers may be permitted if it can be demonstrated, through an Environmental Impact Statement, that there will be no negative impacts on the ecological features and functions of the adjacent natural feature.

g. Vegetation protection zones shall remain in or be returned to a naturally vegetated state.

h. Lands subject to Ontario Regulation 162/06, as may be amended, require a permit from Conservation Halton for development and site alteration.

A.9.3.5.6 Hedgerows

a. Hedgerows, as identified in the South Waterdown Subwatershed Study provide valuable corridors for some wildlife and plant species to move between the Niagara Escarpment and Grindstone Creek. There may be hedgerows that are worthy of protection, especially where:

   i. They link natural areas;
   ii. There is evidence that wildlife regularly use them as movement corridors;
   iii. They are composed of mature, healthy trees and generally provide a wide, unbroken linkage between natural areas;
   iv. They contain trees which are rare, unique, culturally important, or old (more than 100 years); or,
   v. They represent an important cultural feature and contribute to the aesthetics of the landscape, particularly adjacent to the Niagara Escarpment.

b. Hedgerows shall be evaluated through an Environmental Impact Statement by the applicant prior to draft plan approval. Those that are worthy of protection should be identified for protection in the plans of
subdivision. The applicant shall identify means to implement the protection.

A.9.3.6 Karst Areas

A.9.3.6.1 Karst Hazard Area

a. The Karst Hazard Area, as schematically identified on Schedule A-5, and as Area A on Appendix G, is an area with known surface and subsurface karst features. The area is considered to have a moderate potential for risk to public safety and property damage as a result of bedrock instability and soil subsidence. As well, the karst features conduct subsurface flows to springs in the Grindstone Valley ESA. These springs provide important baseflow to downstream coldwater fisheries and potentially contribute groundwater to downstream residents that are on well-based systems.

b. Due to these safety and environmental concerns, development shall not be permitted within this area with the possible exception of water and sanitary services, and utilities. Such infrastructure shall be subject to detailed geological, hydrogeological and geotechnical analysis, as outlined in the Stage 3 report of the South Waterdown Subwatershed Study to the satisfaction of the City in consultation with Conservation Halton, which demonstrates that karst hazards can be appropriately mitigated and there will be no adverse impacts to downstream springs and stream flows.

c. Where infrastructure is contemplated, subject to A.9.3.6.1 b), such infrastructure shall be designed and constructed in accordance with a geotechnical engineer’s recommendations, in consultation with a karst specialist at the detailed design stage, having regard for appropriate standards and protocols for building in karst terrain so as to mitigate potential impacts on the underground infrastructure.

d. Notwithstanding A.9.3.6.1.a) and b), safety and environmental risks are low along the south edge of the Karst Hazard Area. Some limited development related to stormwater management facility infrastructure, such as environmental setbacks, an access road, and a sediment drying area are considered to be acceptable activities within that portion of the Karst Hazard Site, provided that any excavations are shallow and generally do not extend into the bedrock.

e. Where new Karst Hazard Areas are found, in addition to the Karst Hazardous Area identified on Schedule A-5 and Appendix G, sections A.9.3.6.1.a), b), c), and d) shall apply.

f. Development within karst areas requires a permit from Conservation Halton pursuant to Ontario Regulation 162/06, as may be amended.
A.9.3.6.2 Karst Constraint Areas

- Development and site alteration may be permitted in the Karst Constraint Areas identified in Appendix G where:
  - i. The effects and risk to public safety are minor so as to be managed or mitigated;
  - ii. A risk assessment is undertaken;
  - iii. New karst hazards are not created and existing karst hazards are not aggravated;
  - iv. The quality and quantity of surface water draining from the Planning Area in the post-development condition does not significantly impact downstream karst processes or features;
  - v. No adverse environmental impacts will result; and
  - vi. If karst features are encountered during subsurface excavation work, karst mitigation measures are undertaken, in accordance to the Karst Implementation Plan in Stage 3 of the South Waterdown Subwatershed Study.

- Development within karst areas requires a permit from Conservation Halton pursuant to Ontario Regulation 162/06, as may be amended.

- Within Karst Constraint Area ‘B’, as identified on Appendix G, a site-specific investigation of groundwater management concerns and karst remediation requirements will be required where the installation of servicing infrastructure involves excavation into bedrock and karst conditions are encountered. The use of grouting techniques will be minimized to limit potential impacts to spring flow or baseflow.

- For the construction of basements in Karst Constraint Area ‘B’, excavation into the bedrock should be minimized where possible. If building base grades extend down to the top of the bedrock, or into bedrock, and karst features are encountered, the features should be remediated as a function of the specific construction-related activity. Facility design and construction activities should be evaluated by a geotechnical engineer in collaboration with a karst specialist at the detailed design stage.

- Within Karst Constraint Area ‘C’, as identified on Appendix G, a geotechnical study should be undertaken to determine the load bearing capacity of the bedrock at the proposed Burke Street crossing of the Grindstone Creek Natural Heritage Area. The design of the proposed crossing structure should minimize the footprint of the footings required for it to be safely constructed and operated. This will minimize potential interference with surface water flow and groundwater flow into the bedrock below the stream-bed and the adjacent area.
f. Within Karst Constraint Area ‘D’, as identified on Appendix G, the existing outcrop should be retained as a landscape feature, where feasible, or if removal is necessary, then shall be covered with fill during site grading.

g. Within Karst Constraint Area ‘E’ and ‘F’, as identified on Appendix G, where development is contemplated, additional study is required at the time of plan of subdivision, and shall involve a subsurface investigation to determine specific design, construction and operating concerns that could result from the karst. This would include an assessment of construction options for a stormwater management facility. Components of this study would include:

i. Additional karst feature mapping,

ii. Observations of surface hydrology and spring monitoring,

iii. An evaluation of overburden type and thickness,

iv. Limited bedrock coring and associated downhole testing, and

v. The excavation of exploration trenches down to the bedrock surface.

The required study shall satisfy the requirements of Stages 4 and 5 of the Checklist for Development in Karst Terrain of the South Waterdown Subwatershed Stage 2 Report.

A.9.3.7 Utility

a. The Utility designation shall permit pipelines, hydroelectric transmission facilities, petroleum pipelines, and municipal water tower, and sewer and stormwater management facilities. Secondary uses that are complementary to the utility functions of these lands, such as recreational uses, trails, and community gardens, shall be permitted subject to consultation with the applicable utility agency.

b. A major hydro-electric utility corridor traverses the Waterdown South Planning Area, and a petroleum pipeline corridor exists along the west side of Kerns Road as shown on Schedule A-5. The City shall work in consultation with Hydro One and Enbridge Pipelines Inc., or their successor companies in order to establish pedestrian/bicycle path/trail linkages along these corridors.

c. Improvements to create trail linkages within the hydro-electric utility corridor that traverses the Planning Area shall be subject to the approval of Hydro One or its successor company.

d. Proposed crossings of the petroleum pipeline corridor along the west side of Kerns Road by roads, pedestrian/bike paths, services and utilities shall be subject to the approval of Enbridge Pipelines Inc. or its successor company.
e. Grading and drainage of lands within and/or adjacent to hydro-electric utility corridor shall be designed to ensure there are no adverse impacts on these lands and shall have regard for comments from Hydro One or its successor company.

f. Stormwater management facilities are identified schematically on Schedule A-5, but are permitted in all land use designations except for the Natural Heritage System designation. However, stormwater pond outfalls may be allowed within the Natural Heritage System designations contained in Policy A.9.3.5 subject to approval of a scoped Environmental Impact Study by the City in consultation with Conservation Halton. Such stormwater pond outfalls will require a Permit from Conservation Halton pursuant to Ontario Regulation 162/06, as may be amended.

g. The location and size of stormwater management facilities on Schedule A-5 are approximate and can be changed without amendment to this plan. Where a stormwater management pond is moved or reduced in size, the adjacent or nearest urban land use designation shall apply to the area where the stormwater management facility was formerly located on Schedule A-5.

h. The specific size and location of stormwater management facilities shall be established through a Functional Servicing Plan, consistent with the South Waterdown Subwatershed Study, prior to draft plan of subdivision approval as set out in Sections A.9.6.2.

i. Lands required for stormwater management facilities, including those schematically shown on Schedule A-5 or other locations identified through detailed review associated with future development applications, shall be conveyed to the City and are subject to repayment for both land and construction costs in accordance with the City’s financial policies.

j. Where possible, stormwater management facilities should be located adjacent to other open space areas.

k. A water tower is approximately located adjacent to a Neighbourhood Park as shown on Schedule A-5. The specific location and size of the lands for this water tower may be changed without amendment to this Plan.

l. An existing sewage pumping station is situated in the west corner of the Planning Area on City-owned land. The site size may be altered, if it is deemed necessary, without amendment to this Plan.

A.9.4 URBAN DESIGN

A.9.4.1 General

Urban Design, Streetscape and Open Space Guidelines have been prepared to implement the design intentions of this Plan. The guidelines shall further the vision and
concept plan for the Waterdown South community and identify means of achieving the concept through the planning process. These guidelines have been prepared in conjunction with this Secondary Plan. As part of a complete application, land owners shall be required to submit an Urban Design brief demonstrating how development applications meet the intent of the policies contained in this Secondary Plan and the Urban Design Guidelines.

The following policies set out the matters that the Urban Design, Streetscape and Open Space Guidelines shall address as well as the key urban design elements.

**A.9.4.2 Streetscapes**

The Urban Design Guidelines shall address the streetscape character and design of each of the main arterial roads within and bordering the community as well as the collector roads within the Secondary Plan area. The following policies provide additional direction on key streetscape design elements.

a. Dundas Street, west of Street ‘B’, shall have a strong built edge, wide sidewalks and tree planting with native species, which will lend it a more urban, developed character that reflects its significance as the community main street of Waterdown. East of Street ‘B’, it shall reflect a more rural setting in respect of the rural designation north of Dundas Street. The tributary of Grindstone Creek, on the south side of Dundas in this area, can be used as a greenspace buffer to the development areas south of Dundas Street.

b. Collector roads through the Waterdown South community should be designed with dwellings and buildings facing onto the street with direct access. Frequent block spacing and intersecting roads shall be accommodated along collector roads.

c. The streetscape appearance of arterial and collector roads shall be enhanced by requiring flankage lots to present their main building facades or a second front facade to these roads and to enhance their treatment to avoid the appearance of blank building walls and service entrances.

d. A small village square should be incorporated into each Neighbourhood Node and a larger urban square incorporated in the District Commercial designation.

e. Where higher density housing forms are planned along collector roads, vehicular access via a rear lane will be encouraged. On-street parking shall be provided within the District Commercial designation and the Neighbourhood Nodes where adjacent commercial or live-work uses are developed.
f. Local roads should be developed as a system of interconnected streets and relatively short blocks to promote pedestrian activity within neighbourhoods. To promote walking, these streets should be developed in the form of a modified grid pattern responding to the collector street network and open space lands.

g. Development shall foster streets as interactive outdoor space for pedestrians.

h. The implementing Zoning By-law shall contain provisions restricting the extent of garage protrusions.

i. Reverse frontage lotting patterns shall be discouraged and may only be permitted under certain circumstances where the owner satisfies the City that no other alternative development form or street patterns are feasible. Access via laneways, service roads, parallel lanes and window streets will be encouraged as alternatives to reverse frontage or noise walls.

j. Consideration shall be given to the location of telecommunications and utility equipment within the public right of way as well as on private property. The City encourages innovative methods of containing utility equipment on, or within streetscape features such as gateways, lamp posts, transit shelters, etc. Telecommunication utility equipment shall be clustered or grouped wherever possible to minimize visual impact.

k. Along Mountain Brow Road, stormwater management facilities may provide the opportunity for landscaped gateways into the community.

l. Streetscape design should utilize traffic calming measures to promote pedestrian safety.

m. All intersections should be designed to support safe pedestrian crossing. Major intersections should support pedestrian crossings, by providing safe crossing points, and connection to public walkways. Boulevard tree planting should be closely spaced in the vicinity of such intersections.

n. Minor intersections should continue to feature landscape treatment through street tree selection with an increased density of boulevard tree planting.

A.9.4.3 Gateways

Gateways are nodal locations within the Waterdown South community coinciding with major intersections which also function as entry points into the area.

a. Urban design guidelines shall address streetscape, landscape and built form elements at the following gateways:

i. Dundas Street and Kerns Rd;

ii. Dundas Street and Collector Road A;
iii. Dundas Street and Burke Street; and
iv. Burke Street and Collector Road A.

b. A landscape plan, to the satisfaction of the approval authority, identifying the specific design elements of the gateway features shall be prepared as a condition of draft plan of subdivision approval.

A.9.4.4 District Commercial Areas

a. Along Dundas Street, urban design guidelines shall provide direction on how to achieve an intensified urban environment with a strong pedestrian orientation.

b. The ultimate development of the District Commercial area should create a retail main street along Collector Road A and a built form presence along Dundas Street. Although it is not the intent to have Dundas Street serve as a retail main street in this location, some buildings should be oriented to and face directly onto Dundas Street to achieve a built form presence. Building envelope provisions and the creation of a build-to zone through setback provisions and block frontages should be addressed in the urban design guidelines and set out in the implementing zoning by-law. The urban design guidelines, however, shall also provide guidance for interim uses and provisions that should encourage and facilitate intensification over time.

c. Urban design guidelines shall also provide guidance on the development of the ‘Retail Main Street’ area within the District Commercial designation. The orientation of the stores along the ‘Retail Main Street’ area should create a strong pedestrian retail connection. The principle public entrance should provide direct access onto the public sidewalk along the ‘Retail Main Street’ area. The primary windows and signage should also face the street. Buildings facing the street should be encouraged to have awnings, canopies, arcades or front porches to provide weather protection. Buildings should have a consistent setback and parking lots abutting the street should be screened with low walls, and landscape materials to provide a sense of enclosure along the setback line.

A.9.4.5 Neighbourhood Nodes

a. Neighbourhood Nodes should be designed as small scale pedestrian-oriented areas. In addition to accommodating medium density housing forms, these node areas may be characterized by small pedestrian-oriented shopping areas that provide the opportunity for grade-related commercial uses with the potential for residential uses on upper storeys.
A.9.4.6 Special Character Roads

a. Kerns Road and the portion of Mountain Brow Road between Burke Street and the major hydro-electric utility corridor are recognized as special character roads. These roads and the areas adjacent to them provide a unique and attractive environment due to:

i. Their location adjacent to the Niagara Escarpment Plan Area;

ii. Their ability to provide transition between the natural area of the Niagara Escarpment and the urban area of Waterdown South; and,

ii. Their rural cross-section.

b. The existing rural road cross-section including existing mature vegetation fronting onto the street will be maintained where feasible. This action may require unique approaches to grading and to the preservation of trees along the road.

c. Development adjacent to special character roads will be sensitive to the protection or enhancement of views towards the Niagara Escarpment.

d. The character of this section of Mountain Brow Road, and of Kerns Road shall be protected by minimizing changes to the existing road right-of-way and ensuring that development is compatible with, and sympathetic in design to the character of the existing streetscape.

e. Direct access for new uses will be permitted, although there may be some restrictions in specific locations related to specific forms of development or the use of alternative designs.

f. Existing viewsheds along Mountain Brow Road and Kerns Road will be maintained and enhanced through various landscape measures so that the new built form does not dominate the viewsheds as one travels along these roads.

g. Where Kerns Road or Mountain Brow road require reconstruction such works shall be designed to minimize the impact on the Escarpment environment and to ensure the least possible change occurs in the natural landscape. This will include road and boulevard design that blends into the surrounding Escarpment landscape, using landscape planting, vegetative screens and vegetation protection zones around the natural heritage features where feasible.

A.9.5 HERITAGE

The Secondary Plan Area is characterized by a number of cultural heritage attributes including archaeological sites, areas of archaeological potential and built heritage features. The study, protection and/or incorporation of cultural heritage resources within
the Waterdown South Secondary Plan area shall be subject to the policies of Section E.2 of the Official Plan and the following additional policies.

a. Prior to approval of draft plans of subdivision, a detailed cultural heritage impact assessment shall be undertaken if deemed necessary through formal consultation with the applicant to identify and analyze potential heritage buildings and structures of architectural interest. The cultural heritage impact assessment shall be undertaken by a qualified professional with demonstrated expertise in cultural heritage assessment, mitigation and management according to the requirements of the City’s Cultural Heritage Impact Assessment Guidelines. The cultural heritage impact assessment shall contain the following:

i. identification and evaluation of all potentially affected cultural heritage resource(s), including detailed site(s) history and a cultural heritage resource inventory containing textual and graphic documentation;

ii. a description of the proposed development or site alteration and alternative forms of the development or site alteration;

iii. a description of all cultural heritage resource(s) to be affected by the development and its alternative forms;

iv. a description of the effects on the cultural heritage resource(s) by the proposed development or site alteration and its alternative forms; and,

v. a description of the measures necessary to mitigate the adverse effects of the development or site alteration and its alternatives upon the cultural heritage resource(s).

b. It is the intention of this Secondary Plan to encourage the retention and conservation of historical buildings, structures or features on their original sites and to promote the integration of these resources into new development proposals in their original use or an appropriate adaptive re-use. Potential adaptive re-use strategies for built heritage resources are required to be addressed in the cultural heritage impact assessment report. Notwithstanding the permitted uses within the designation in which these heritage buildings may be located, a broad range of residential, commercial and institutional uses shall be permitted subject to the findings of the cultural heritage impact assessment report.

c. An archaeological assessment may be required prior to the submission of the following applications:

i. plans of subdivision;

ii. site plan approval when it involves soil disturbance or site alteration;
iii. plans of condominium when it involves soil disturbance or site alteration;
iv. minor variances when it involves soil disturbance or site alteration; and
v. consents / severances when it involves soil disturbance or site alteration.

d. Any required archaeological assessment must be conducted by an archaeologist licensed under the Ontario Heritage Act and shall be submitted to the City for final approval and to the Province for review and compliance to licensing provisions and archaeological assessment standards and guidelines. The archaeological assessment:

i. Shall be prepared following the terms and conditions set out in the provincial guidelines; and,

ii. Shall provide conservation-related recommendations, including, but not restricted to subsequent processes and procedures for the conservation and management of archaeological resources prior to, during and post development and/or site alteration-related activities. This may address further archaeological test-excavation and evaluation prior to the determination of a final resource management strategy and the submission of any further reports required by the Province or City. Such recommended processes and procedures for archaeological management shall be implemented through a variety of measures including but not limited to the mitigation, preservation, and/or resource excavation, removal and documentation, of all archaeological resources, to the satisfaction of the City and approval by the Province.

A.9.6 INFRASTRUCTURE POLICIES

A.9.6.1 Recharge/Discharge

a. Where soil conditions permit, proponents of development within the secondary plan area should investigate means to maintain recharge and base flows. This shall be determined and implemented through the Functional Servicing Plans as set out in section A.9.9.1 b. on an individual Plan of Subdivision basis to achieve the stormwater management objectives set out in the South Waterdown Subwatershed Study.

A.9.6.2 Stormwater Management

Stormwater management is an important component of urban development. Stormwater management facilities shall be used to control stormwater flow rates and
improve stormwater quality. As well, such facilities may provide for trail connections in accordance with the policies of this Plan.

a. A Stormwater Management Plan shall be prepared as part of the Functional Servicing Plan, which provides supporting technical analyses for sizing and design of proposed stormwater management facilities.

b. The Stormwater Management Plan shall demonstrate conformity with the recommendations of the *South Waterdown Subwatershed Study*; identify where deviations are warranted, if any; and shall have regard to current provincial stormwater management practices and design guidelines, the requirements and adopted standards of the City of Hamilton, the policies of this Plan and the requirements of Conservation Halton, and Provincial Ministries.

c. The Stormwater Management Plan shall also incorporate a naturalized design with appropriate native trees, shrubs, sedges and wildflowers, as well as accommodate a trail system where possible without compromising public safety.

d. The water quality draining into the Grindstone, Falcon and Hager Creeks shall be maintained or improved principally with respect to water temperature mitigation and sediment load through stormwater management techniques both during and following construction. Wherever possible and feasible, naturalized stormwater management techniques shall be employed.

e. The water quantity draining into the Grindstone, Falcon and Hager Creeks shall generally maintain the pre-development hydrological regime in accordance with applicable municipal stormwater management policies of the City of Hamilton, and the requirements of the *South Waterdown Subwatershed Study*.

f. Stormwater management facilities shall be lined where required to prevent loss of surface flow to Grindstone, Falcon and Hager Creeks, and/or to prevent leakage into the underlying karstic bedrock.

g. Any stormwater management facility proposed within Karst Constraint Area ‘C’ as identified on Appendix G, shall be constructed with minimal risk of aggravating existing karst features or potentially creating new hazards.

h. In the preparation of the Functional Servicing Plans, management of peak flows from the Waterdown South Secondary Plan Area, will be addressed consistent with the *South Waterdown Subwatershed Study* to avoid potential off-site flooding problems over the Niagara Escarpment brow, farther downstream and at Escarpment springs.

i. Development shall not be permitted which would require stormwater drainage excavation or other related work south of Mountain Brow Road.
j. A sedimentation and erosion control plan shall be submitted when detailed engineering is undertaken, prior to site alteration and/or prior to registration of plans of subdivision, whichever comes first, which addresses how sedimentation will be controlled during construction stages.

k. The City may consider the establishment of interim stormwater management facilities on a temporary basis within the Waterdown South Secondary Plan Area, notwithstanding the underlying land use designation for the lands, except for areas within the Natural Heritage System described in Policy A.9.3.5. The interim stormwater management facility shall not preclude or prejudice future development on the basis of the land use designations shown on Schedule A-5. All temporary facilities must be stabilized with vegetative cover.

l. Infiltration of runoff may assist in the control of erosion, maintenance of baseflows, and reduce inflows to storm sewers and overland flow paths. However, the low permeability of the soils (Halton Till) within the Planning Area represents a constraint to the implementation of widespread infiltration measures. Furthermore, the occurrence of epikarst where overburden is shallow could potentially aggravate karst features leading to the development of karst-related hazards. As such, measures to promote infiltration and their feasibility should be investigated as a condition of draft plan of subdivision for the following areas, as recommended by the South Waterdown Subwatershed Study:

i. The area south of the hydro-electric utility corridor, and south of Skinner Road;

ii. Within the Grindstone Creek Tributary 1 catchment area on the south side of the creek;

iii. Lands draining to Grindstone Creek Tributary 3 and Falcon Creek through infiltration of roof runoff and backlot drainage; and,

iv. Areas adjacent to Environmentally Significant Areas, where karst is present, as identified on Appendix G through infiltration of roof runoff.

m. Areas where karst is present often have overburden that is less than two metres thick where infiltration into underlying karst features may already be established through soil pipes and desiccation fractures in the overburden. Development of infiltration measures must assess the potential to aggravate existing karst features. In such areas, widespread or diffused infiltration measures may be more acceptable than concentrated infiltration.

n. The development area located adjacent to Dundas Street, between the Grindstone Creek Natural Area and Skinner Road will drain to the relocated Branch 3 of the Grindstone Creek Tributary 1 as shown on Appendix G. This area shall be serviced by privately owned and operated on-site stormwater management facilities. These facilities will control
water quality, quantity and erosion of post-development runoff to pre-
development levels. The on-site stormwater management facilities will be
designed to meet the standards and criteria set out in the Ministry of

o. The ultimate configuration and design of the relocated Branch 3 of the
Grindstone Creek Tributary 1, as illustrated on Appendix G will be based
on Conservation Halton requirements. The relocated branch will be fully
contained within public lands and shall be maintained by the City of
Hamilton.

A.9.6.3 Municipal Services

a. The provision of municipal sanitary sewers and watermains shall comply
with the approved Waterdown Water and Wastewater Class
Environmental Assessment, the City’s Development Guidelines, and the
City-wide Water/Wastewater Master Plan.

b. Existing residential dwellings on properties not subject to a development
application are encouraged to connect to municipal piped water and
sanitary sewers as services are extended.

c. Where a private well(s) and/or private on-site septic system(s) is
abandoned in favour of connection to the City’s water and wastewater
system, the property owner shall properly plug the well and decommission
the septic tank in accordance with pertinent legislation and guidelines so
as to reduce or eliminate potential safety hazards.

d. It is intended the Planning Area will be serviced by a required water tower
located in the Planning Area, as approximately shown on Schedule A-5.

A.9.7 TRANSPORTATION

The City shall provide a safe and efficient transportation network which includes bike
lanes, sidewalks, off-street walking trails and an arterial, collector, and local road
network for the Waterdown South Planning Area, in accordance with Schedule ‘A-5’ and
the following policies:

A.9.7.1 General Policies

a. All new roads within the Planning Area shall be designed and constructed
in accordance with the Standard Drawings for Urban Roads contained
with the adopted standards of the City of Hamilton. The City may consider
alternative Development Standards where, in the opinion of the City, they
are appropriate and do not compromise public safety or the efficiency of
the transportation network or the ability to locate the required services.
b. As a condition of development or redevelopment approval, all lands required for new internal public roads, road widenings for existing public roads in accordance with Section A.9.4.6, traffic calming measures, roundabouts and/or daylighting triangles shall be dedicated free of charge and free of all encumbrances to the satisfaction of the City, except where the City’s development charge policy provides otherwise.

c. The applicable portion of growth-related costs related to the design and construction of all new public roads and the appropriate upgrading of the adjacent existing public roads required as a result of development within the Waterdown South Planning Area shall be paid for by development, and shall be subject to the financing and cost-sharing provisions of A.9.9.7 of this Plan.

d. In some areas, and for some development such as street townhouses along arterial and collector roads, access to development serviced by lanes may be appropriate and encouraged to contribute to an improved streetscape, urban character and enhance road safety.

e. On-street parking shall be discouraged on arterial roads where the main function of the roadway is to provide capacity for longer-distance trips. On-street parking on collector and local roads will be permitted.

f. It is a policy of the City of Hamilton to consider roundabouts where a study confirms they are feasible, appropriate and advantageous in terms of traffic flow, traffic safety, community design or environmental considerations. The Waterdown South Secondary Plan Area Traffic Impact Study recommended roundabouts along Burke Street at Collector Road A and Skinner Road. It also found that either stop controls or roundabouts are appropriate options for the intersections at Collector A/Street ‘B’/Street ‘A’, Collector A/Skinner Road, and Skinner Road/Salem Boulevard.

g. Notwithstanding A.9.7.1 f., within the District Commercial area further detailed study through a Streetscape Manual as per section A.9.7.2 b. vii, shall be undertaken to assess the feasibility of a roundabout at the intersection of Collector Road A, Street ‘A’, and Street ‘B’, which shall address the following matters:

i. Ability to mitigate high delays or long vehicle queues;

ii. Ability to balance traffic flows between approaches;

iii. Ability to provide a safe environment for pedestrians, as well as bicyclists;

iv. Ability to accommodate on-street parking;

v. Ability to accommodate on-street bike lanes;

vi. Ability to achieve a pedestrian-oriented retail main street area; and

vii. Ability to provide for buildings to be built up to the street line.
h. To facilitate the potential for signalization, the proposed intersections on Dundas Street have been located opposite existing and proposed roadways on the north side of Dundas Street to provide improved north-south connectivity and minimize the number of intersections on Dundas Street except as set out in Section A.9.7.3 e.

i. To minimize traffic infiltration through the residential neighbourhoods in Burlington to the south, Kerns Road and Salem Boulevard shall form a continuous connection to Dundas Street with traffic calming measures where appropriate.

j. Any reconstruction of Mountain Brow Road and Kerns Road shall have regard for section A.9.4.6 and A.9.7.2 b) viii.

A.9.7.2 Streetscape

Streetscape is a key element of a successful public realm. Roads are the principal interface between built form and the public realm and as such play a dominant role in determining the character of any given neighbourhood. The elements that shape the streetscape include adjacent architectural design, the relationship of buildings to the street, yards and boulevards, roads, sidewalks, lighting, planting of trees, fences and utilities. Streetscape policies are intended to guide the planning and design of public roadways including the spaces extending across the road.

a. Where roads within the Planning Area abut the Niagara Escarpment Natural Area and Protection Area, the planning and design of public roadways shall be located and designed to minimize the impact on the Escarpment environment and to ensure the least possible change occurs in the natural landscape. This will include road and boulevard design that blends into the surrounding Escarpment landscape, using landscape planting, vegetative screens and vegetation protection zones around the natural heritage features where feasible.

b. A comprehensive Streetscape Manual shall be prepared by the landowners, to the satisfaction of the City, for the overall Waterdown South Planning Area as a condition of draft plan approval. The Streetscape Manual shall reflect the streetscape principles and objectives in Section A.9.2 of this Plan, the Urban Design Guidelines, and the Council endorsed International Charter for Walking. The Streetscape Manual shall address the following:

i. The function, design and treatment of road types (i.e. sidewalks and crosswalks, landscaping/boulevard plantings including use of native species, intersection treatments, on-street parking, signage, street lighting and utility wires, etc.) with differing requirements for residential verses commercial and mixed-use areas;

ii. A continuous bicycle trail system and appropriate means to accommodate the system on arterial and collector roads;
iii. The location and design of a continuous pedestrian trail system, and public sidewalks and including matters of width, materials and lighting;

iv. Requirements for the mobility impaired, such as safety features, standards for the placement of street furniture, sidewalk maintenance and design, including curb cuts so as to provide a continuous barrier free path to transportation services;

v. Requirements for boulevard tree planting including spacing and canopy density with differing requirements for residential verses commercial and mixed-use areas;

vi. The design of special entry points or gateway features where arterial and collector roads intersect with perimeter arterial roads;

vii. The design of intersections including roundabouts where required; and

viii. The compatibility of the design of Mountain Brow Road, and Kerns Road and other roads which abut Escarpment Natural Area and Escarpment Protection Area designations, with the visual and natural environment of the Niagara Escarpment, in consultation with the Niagara Escarpment Commission.

c. The design of all streetscape elements must be consistent with the Streetscape Manual so that the roads are cohesive and attractive places for pedestrians and persons travelling through them. Where the City agrees to initiate alternative development standards at draft plan of subdivision approval, the Streetscape Manual shall be updated to reflect this standard.

A.9.7.3 Arterial Roads

a. Arterial roads shall be designed to carry high volumes of longer distance traffic within and through the Waterdown South community, with only limited or no direct access to adjacent properties permitted.

b. Dundas Street shall have a maximum designated right-of-way width of 45.72 m.

c. Burke Street shall have a designated right-of-way width of 30 m. to 36 m., as per the Waterdown/Aldershot Transportation Master Plan.

d. Burke Street, as shown on Schedule A-5 is based on the results of the Waterdown/Aldershot Transportation Master Plan. The alignment of Burke Street may be moved without amendment to the Secondary Plan, subject to a Class EA process and evaluation.

e. If the Waterdown/Aldershot Transportation Master Plan confirms that Burke Street is to align with Burke Road to the north, the intersection shall
be designed to avoid direct northbound access to Burke Road from Burke Street.

f. Reverse lot frontage development shall generally not be permitted along arterial roads except as provided for in Section A.9.4.2.i of this Plan.

A.9.7.4 Collector Roads

a. Collector Roads are intended to carry moderate traffic volumes and provide direct, but controlled access to adjacent properties.

b. The right-of-way width of Collector Roads shall be 20 metres, but may be increased up to 26 metres to accommodate bike paths, on-street parking, other traffic calming measures, streetscape features and bus bays (for future public transit) as identified in the Streetscape Manual.

c. Bicycle facilities may be included within collector road right-of-ways, where required in accordance with the Streetscape Manual.

d. Collector roadways through the Planning Area shall contain a maximum of two through lanes and provide for on-street parking on at least one side.

e. Salem Road may be changed to a local road, and the road alignment may be altered without amendment to this Plan, provided that:

i) It facilitates the eventual connection between Skinner Road and Kerns Road; and

ii) It is demonstrated through a detailed transportation study submitted in support of a zoning by-law amendment or draft plan of subdivision application to the satisfaction of the City.

f. Streets ‘A’ and ‘B’ may be changed to local roads, and the road alignments may be altered without amendment to this Plan, provided that:

i) The streets facilitate a connection between Dundas Street and Collector Road A;

ii) These public streets serve to break-up the District Commercial designated area into smaller development blocks; and

iii) It is demonstrated appropriate through a detailed transportation study submitted in support of a zoning by-law amendment or draft plan of subdivision application to the satisfaction of the City.

g. Mountain Brow Road shall be downgraded to a local road and consideration shall be given to the future closure of a portion of Mountain Brow Road east of the western limit of the stormwater management pond.

A.9.7.5 Local Roads

A Local Road is an internal street that is inter-linked to the neighbourhood network.
a. Local Roads are intended to carry local traffic and provide direct access to adjacent properties.

b. The right-of-way width of Local Roads shall be 18 m., but may increase to accommodate bike paths, on-street parking, traffic calming measures, and streetscape features, as identified in the Streetscape Manual.

c. As set out in Section A.9.7.1.a, alternative development standards and road widths may be considered. The details regarding appropriate rights-of-way widths shall be addressed prior to draft plan of subdivision approval.

d. On-street parking shall be required on at least one (1) side of the road.

e. A local road connection shall be provided from Collector Road A to Mountain Brow Road/King Road internally in the Secondary Plan area. The road connection shall be illustrated in the draft plan of subdivision that is adjacent to Mountain Brow Road, and the road network shall be designed to create an indirect route to King Road so that traffic flow to King Road is not promoted.

A.9.7.6 Sidewalks and Bicycle Paths

Sidewalks are places for pedestrian movement, children’s play and neighbours’ socializing. Sidewalks encourage walking as urban transportation, walking to public transit and walking for pleasure. Sidewalks improve the liveability of a community, enhance safety and are vital to children, older adults, and people with disabilities.

a. The Streetscape Manual, as required in Section A.9.7.2, shall identify the location of sidewalks, their widths and design elements within the Waterdown South Secondary Plan Area.

b. Sidewalks should be provided on both sides of arterial and collector roads, and one side of local roads, or, as set out in a new City of Hamilton sidewalk policy.

c. The width of public sidewalks shall be sufficient to accommodate required utilities, provide adequate visibility from the street and promote public safety, and shall be determined prior to draft plan approval.

d. A continuous bicycle trail system shall be identified as part of the Streetscape Manual in Section A.9.7.2. The bicycle trail system shall include both on-street and off-street routes linking the parks and community facilities. Off-street routes will use public open space lands including Neighbourhood Parks, school sites, a potential route along the hydro corridor and a dedicated bike lane within the east-west Skinner Road, and potentially other collector roads where feasible. Any off-street bike paths shall be constructed by the developer and dedicated to the City as a public right-of-way.
A.9.7.7 Public Transit

Good public transit service is an asset to all communities. The ability to support public transit is largely dependent upon the density and arrangement of land uses as well as the design of the streetscape and the relationship of adjacent buildings to the street.

a. The City shall ensure the design of the Waterdown South Planning Area, including the location of higher density land uses and streetscape design, provides for the ability to accommodate future public transportation within the community. As well, the long term potential for higher order public transit such as express bus service along the arterial road network internal and external to the Planning Area should be planned for.

b. Neighbourhood design should minimize pedestrian walking distance to future public transit service. Within the Waterdown South Planning Area, 90% of all residential dwellings shall generally be within approximately 400 metres of a potential public transit stop.

c. The future public transit system shall be integrated into the community design and be a key component of community focal points including commercial areas.

A.9.7.8 Pedestrian Trails

a. Pedestrian trails shall be established, in consultation with the Niagara Escarpment Commission along the hydro-electric utility corridor that traverses the Planning Area, along the utility corridor at the western edge of the Planning Area, along Grindstone Creek, through stormwater management facilities, and through natural heritage areas to create a connected network that integrates the Planning Area with the surrounding community and the Niagara Escarpment. Any off-street pedestrian trails shall be constructed by the developer and dedicated to the City as a public right-of-way.

b. Trail locations shall be based on field assessments of habitat sensitivity and consideration of potential linkages to the Bruce Trail.

c. Opportunities to formalize two existing informal parking areas and access points to the Bruce Trail located in the vicinity of the Waterdown Woods ESA shall be investigated. One opportunity is located where the Bruce Trail crosses Kerns Road; the second is located where the Bruce Trail crosses Mountain Brow Road / King Road. The establishment of other Bruce Trail access points from the Planning Area between the hydro-electric corridor and Kerns Road shall generally be discouraged, in consultation with the Niagara Escarpment Commission and the Bruce Trail Conservancy.
A.9.8 UTILITIES

a. Public and private utilities shall be permitted in all land use designations subject to the policies of this Plan including those for the Natural Heritage System designations as set out in section A.9.3.5, the Karst Hazardous Area as set out in section A.9.3.6.1, and the Karst Constraint Areas as set out in section A.9.3.6.2, where specific policies of this Plan provide further direction.

b. Wiring for electrical power distribution, telecommunication, cable television and any similar systems shall be coordinated, planned and installed in common trenches, wherever feasible, within public road allowances or within appropriate easements to avoid unnecessary over digging and disruption of municipal right of ways.

c. Large utility infrastructure shall be located and designed to minimize visual impact and ensure compatibility with surrounding land uses, where practical.

d. The City shall ensure that the adequate utilities and/or communication/telecommunications facilities are, or will be, established to serve the anticipated development and that these facilities can be phased in a manner that is cost-effective, fiscally feasible, and efficient.

e. New and expanded utility facilities shall be designed and located to minimize impact on the Niagara Escarpment and be consistent with the objectives of the Niagara Escarpment Plan.

A.9.9 IMPLEMENTATION AND REVIEW

The provisions of the Official Plan regarding implementation shall apply with regards to this Secondary Plan, except as specifically set out herein.

A.9.9.1 Study Requirements

The following studies may be required to be submitted with any application for plan of subdivision or rezoning in accordance with the requirements for a complete application:

a. Environmental Impact Statement (EIS) as per the City of Hamilton and Conservation Halton EIS guidelines and any additional requirements as outlined in the Subwatershed Study. Such EIS may be scoped subject to the approval of the City and Conservation Authority;

b. Functional Servicing Plan which addresses:
   i. Servicing design requirements;
ii. Internal and external sanitary and storm drainage areas;
iii. A water demand and sanitary sewage generation study in support of preliminary sizing of water and wastewater infrastructure;
iv. Layout of roads and other transportation systems including trails;
v. Preliminary sizing, design and location of stormwater management facilities;
vi. Preparation of a Stormwater Management Plan in conformity with the recommendations of the South Waterdown Subwatershed Study and the policies of Section A.9.6.2;
vii. General conformity with the recommendations of the Waterdown Water and Wastewater Class Environmental Assessment;
viii. Incorporation of mitigation measures recommended in the Environmental Impact Statement and Karst Geological / Hydrogeological / Geotechnical studies;
ix. Preliminary grading requirements; and,
ix. Any additional requirements as outlined in the South Waterdown Subwatershed Study;
c. Retail Market Impact Study for any proposed commercial development in excess of 10,000 square metres of retail and service commercial floor area within the District Commercial designation;
d. Detailed Concept Plan for any application within the District Commercial designation;
e. Geological, hydrogeological and geotechnical studies of karst features in areas identified in Appendix G of this Plan, and the South Waterdown Subwatershed Study – Stage 2 Report as potentially containing karst features or for those areas where karst is discovered through subsequent studies;
f. Transportation analysis of intersection requirements and timing of external road improvements;
g. Cultural Heritage Impact Assessment;
h. Archaeological Assessment;
i. Streetscape Manual;
j. Visual Impact Assessment, where required, to the satisfaction of the City, in consultation with the Niagara Escarpment Commission which:
  i. Establishes the maximum building height, minimum building setbacks, and building material so that no component of the building mass is visible above the skyline of the Niagara Escarpment from below the Escarpment brow (edge);
  ii. Establishes an appropriate buffer between the Escarpment Natural Area and Escarpment Protection Area and adjacent roads and built
form to protect the visual and landscape character of the Escarpment; and

iii. Assesses the visual impact of municipal infrastructure such as water towers and pumping stations on the skyline of the Niagara Escarpment;

k. Confirmation of the Falcon Creek Regional floodlines to the satisfaction of the City and Conservation Halton;

l. Urban Design Brief that includes text, plans, details, and/or elevations, as necessary, to demonstrate:

i. Compliance with the urban design policies of this Plan, the Niagara Escarpment Plan policies and the Waterdown South Urban Design Guidelines; and

ii. How the intent of the Secondary Plan policies, the Niagara Escarpment Plan policies and the Waterdown South Urban Design Guidelines have been met.

m. Detailed noise control study; and,

n. Other studies which may be identified through the formal consultation process.

A.9.9.2 Conditions of Development

Notwithstanding any other provision of this Plan, and except for expansions of existing uses, the following matters shall be addressed as conditions to be fulfilled prior to registration of plans of subdivision, prior to lifting of a ‘Holding’ provision on a site specific zoning, or prior to site plan approval.

a. Water distribution and storage facilities, as set out in the Waterdown Water and Wastewater Class Environmental Assessment and the implementing functional servicing plans, required to service specific stages of development are committed to be in place and operative prior to or coincident with occupancy and use of the land.

b. Wastewater facilities required for conveyance and treatment, as set out in the Waterdown Water and Wastewater Class Environmental Assessment, required to service specific stages of development are committed to be in place and operative prior to or coincident with occupancy and use of the land.

c. All transportation infrastructure required to support the specific phases of development are in place or have been programmed in respective jurisdictional capital budgets, or otherwise financially committed. The approved phasing strategy is to be based on traffic impact studies that identify which infrastructure improvements identified in the approved
Waterdown/Aldershot Transportation Master Plan class EA and South Waterdown Traffic Impact Study need to be in place to support growth.

d. Storm drainage facilities, as set out in the Functional Servicing Plan, and as approved by the municipality in consultation with Conservation Halton are committed to be in place and operative prior to or coincident with the occupancy and use of the land.

e. Other identified local infrastructure needs as well as community use lands such as schools, parks and stormwater management facilities, are secured through a cost sharing agreement, as further set out in Section A.9.9.7, in accordance with municipal policies and the provisions of the Development Charges Act.

f. All other urban services and utilities required to service specific stages of development are committed to be in place and operative prior to or coincident with occupancy and use of the land, except as otherwise approved.

g. A well survey monitoring plan shall be a condition of draft plan approval.

h. A program to periodically inspect the stormwater management facility adjacent to the Karst Hazardous Area, to check for leaks or weak spots in the liner, shall be a condition of draft plan approval.

i. An alternative access to the three properties along a private lane south of George Street shall be made available for purchase. Erosion at the Grindstone Creek Tributary 1 Waterfall immediately downstream of the Planning Area could eventually interrupt access to these properties.

j. In the context of this policy, “committed to be in place” shall mean identified within an approved Capital Budget, and a development agreement executed with the City or any other satisfactory arrangement with the City.

k. Notwithstanding the Conditions of Development of A.9.9.2, a maximum of 250 residential units in the northwest portion of the Plan Area are permitted to be developed prior to satisfying the requirements for new infrastructure and/or infrastructure improvements as required in sections A.9.9.2 (a), (b), (c), and (f).

A.9.9.3 Zoning By-law

The zoning by-laws for this area may include provisions for bonusing and holding zones where deemed appropriate and where they are in accordance with Section F.6 of the Official Plan of the former Town of Flamborough, and the provisions of the Planning Act and do not conflict with the requirements of the Niagara Escarpment Plan or any other Provincial Plan.
A.9.9.4 Staging of Development

In addition to Section D.4 to the Official Plan of the former Town of Flamborough, and the City of Hamilton’s Staging of Development Program, the following policies shall guide the staging of development within the Waterdown South Secondary Plan Area.

a. Development will occur in a sequence that ensures an orderly yet flexible pattern of development in accordance with the objectives and policies contained in the Waterdown South Secondary Plan.

b. Development shall proceed in a manner that ensures that service levels established by this plan as well as those contained in the Official Plan of the former Town of Flamborough and in the City of Hamilton in general are achieved within each stage of development, and the provision of infrastructure and services is within the fiscal capabilities of the City of Hamilton and the School Boards. Where the fiscal capabilities of any one government or agency are limited to the extent that infrastructure or facilities may be delayed, front-ending of infrastructure and facilities by the landowners may be an option.

c. Staging should ensure that the matters and infrastructure identified through section A.9.9.2 are provided in an efficient and cost effective manner.

d. Until Burke Street is in place, a maximum of 250 residential units located north of the intersection of Burke Street and Skinner Road can be constructed within the Waterdown South Plan Area subject to a study demonstrating servicing and transportation capacity to the satisfaction of the Hamilton Public Works Department. Additional development beyond 250 units may be permitted subject to section A.9.9.2 c. Lands east of Skinner Road shall not be affected by the timing of construction of Burke Street, and do not need to be included in any traffic impact studies pertaining to lands west of Skinner Road until such time as the lands east of Skinner Road can directly access Burke Street through the Secondary Plan road network.

e. In accordance with Section D.4 of the Official Plan of the former Town of Flamborough, development will generally follow a logical and orderly sequence. The District Commercial area shall not be subject to a specific phasing and can proceed once the required water and sanitary services are available to this area.

f. Development within these stages shall proceed in a manner that recognizes that infrastructure such as underground services, roads, schools, parks, health care facilities and public emergency services are to be provided in a timely manner.
g. The provision of Educational and Provincial services and infrastructure will be encouraged to be in accordance with the phasing policies of the Plan. These agencies shall make every effort to provide their respective services in conjunction with the pace of development.

h. In no case will one owner or group of owners be allowed to unreasonably delay the normal progression of residential growth. Where a landowner is not proceeding with development in a timely manner and withholding the possible completion of a collector road or arterial road linkage, and/or the extension of water and wastewater services, the City may consider its powers of expropriation to complete the infrastructure.

A.9.9.5 Neighbourhood Parks and Open Space Implementation

a. Parkland requirements shall be calculated on a net basis excluding any natural heritage features, vegetation protection zones, valleys, floodplains, stream corridors or linkages that are protected from development.

A.9.9.6 Development Charges

Costs for the applicable portion of growth related infrastructure and service improvements required to service development within the Secondary Plan area including roads, sanitary, storm and water services shall be paid for by development. To implement this principle and to ensure that such infrastructure is available in a timely manner:

a. The City will update the Municipal Development Charges By-law to include all growth related improvements required by the development.

b. In addition to development charges referred to in A.9.9.6 a., Council may also employ:

i. Front-ending agreements, development charge credit agreements and prepayment of development charge agreements under the Development Charges Act;
ii. Public/private partnerships;
iii. Conditions of subdivision approval;
iv. Creation of one foot reserves;
v. Cost sharing agreements or best effort agreements to recover costs from benefiting landowners;
vii. Any of the above singly or in combination with any others; or
vii. Any other mechanism Council considers appropriate in the circumstances.
A.9.9.7 Cost Sharing

a. The locations of park sites and sites for other community facilities have been selected without regard to property ownership. In order to ensure that property owners contribute equally towards the provision of these community facilities (both for the cost of land and the construction cost of works and facilities) as well as towards infrastructure and local service improvements, which benefit more than one individual development, but which are not paid for through development charges or other municipal funding mechanisms, the costs of these facilities and works shall be equitably apportioned among landowners within the Waterdown South Secondary Plan Area. Such costs may include, but are not limited to, the costs of community use lands and facilities, front-ended Secondary Plan component studies, other area-wide studies, schools, parks and open space, and local infrastructure, facilities or works including roads, sanitary, hydro, water and stormwater facilities.

b. To apportion the costs referred to above, where not otherwise included in the parkland requirement, development charges or front-ending agreement, property owners shall be required to enter into one or more cost sharing agreements and submit such agreements to the City prior to registration of the first plan of subdivision within the Waterdown South Secondary Plan Area. Where one or more landowners has not entered into a cost sharing agreement by this time, the approval authority may employ one or more of the following mechanisms when draft plans are submitted for approval in an effort to implement the policies of this section:

i. Conditions of subdivision approval;

ii. Creation of one-foot reserves;

iii. Any one of the above singly or in combination with any others; or

iv. Any other mechanism Council considers appropriate in the circumstances

c. Where a cost sharing agreement is being entered into amongst landowners, the City will not be a party to such agreement but will ensure through the imposition of conditions of subdivision approval or other mechanism cited herein that any benefiting owners to any service funded through the cost sharing agreement will be required to contribute its fair share of the costs as set out in the agreement. The City will not issue any final approvals (i.e. clearance for registration) for development until it has been satisfied that these policies have been met, and the proponent of such development has executed a cost sharing agreement for its share of the services funded through the cost sharing agreement.
A.9.9.8 Environmental Monitoring

a. As a condition of draft plan of subdivision approval, a monitoring plan shall be prepared by the land owner which sets out a program for regular monitoring of the health of the natural heritage/open space system within the Waterdown South Secondary Plan Area. The indicators to be monitored and the nature of the monitoring program(s) are set out in Phase 3 of the South Waterdown Subwatershed Study.

A.9.9.9 Existing and Temporary Land Uses

a. Existing land uses within the Secondary Plan area shall be permitted to remain without an amendment to the Official Plan. New development shall integrate those elements of existing built form intended to remain within the community in a complementary manner.

b. Prior to urban development occurring on the lands, low intensity temporary uses may be permitted provided these uses are outside of the Natural Heritage System and associated vegetation protection zones.

A.9.9.10 Urban Design Guidelines

a. Comprehensive Urban Design guidelines shall be prepared for the entire Waterdown South Planning Area. The principles and objectives in Section A.9.2 along with other policies of this Plan provide an overall guiding framework for the preparation of Urban Design guidelines. The Urban Design guidelines shall be consistent with this framework. These guidelines shall be prepared on a single comprehensive basis for the entire Secondary Plan Area prior to the approval of any development applications for Draft Plan Approval or amendments to the Zoning By-law to implement this Plan.

A.9.10 INTERPRETATION

a. The boundaries of the residential designations and the alignment of arterial and collector roads are intended to be flexible and may be modified in the interest of achieving a desirable urban pattern without amendment to this plan, provided the aggregate land areas of each residential designation are not significantly altered and the recommendations within the South Waterdown Subwatershed Study are met.
A.9.11 DEFINITIONS

Community Facilities/Services means lands, buildings, and structures that support a high quality of life for people and communities by providing services for health, education, recreation, social or cultural activities, security and safety. Community facilities/services may include but not be limited to community and recreation centres, arenas, parks, health care facilities, day care centres, senior’s centres, emergency medical services, fire services, police services, cultural facilities, places of worship, museums, schools, and libraries. Community facilities/services may be publicly or privately owned and/or operated.

Housing With Supports means public, private or non-profit owned housing with some form of support component, beyond economic support, intended or people who need support services to live independently in the community, where providers receive funding for support services. The tenure may be long term. Housing with supports includes special needs housing as defined by the Provincial Policy Statement (2005).

Net Residential Hectare means all of the lands comprising the principal and accessory residential uses, and includes all of the buildings, structures, driveways, parking areas and other amenities for these uses. Net residential hectare excludes public lands comprised of streets, parkland and other open space, and stormwater management facilities.

Vegetation Protection Zone means a vegetated buffer area surrounding a Core Area which is of sufficient size to protect the features and functions from the impacts of the proposed change and associated activities that will occur before, during, and after construction. Where possible, the buffer should restore or enhance the features and/or functions of the Core Area. The width of the vegetation protection zone is to be determined when new development or site alteration is proposed within the adjacent lands to the Core Area.
Implementation:

An implementing Zoning By-law, Plan of Subdivision and Site Plan Control shall give effect to this Amendment.

This is Schedule ‘1’ to By-law No. _____ passed on the X\textsuperscript{th} day of X, 2010.

The
City of Hamilton

______________________________  _______________________
Mayor                        Clerk
Fred Eisenberger             Rose Caterini
Schedule A

DRAFT Amendment ___

Appendix "A" to Report PED10171

Page 58 of 62
Legend

Lands identified as to OPA # ____
Lands to be redesignated from "Residential" to "Urban Commercial"
Lands to be redesignated from "Parks and Open Space" to "Residential"
Lands to be redesignated from "Residential" to "Natural Open Space"
Lands to be redesignated from "Residential" to "Institutional"
Lands to be redesignated from "Parks and Open Space" to "Natural Open Space"

Appendix "A" to Report PED10171

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DRAFT Amendment No. ___
To the Official Plan
for the
former Town of Flamborough

Date: July 14, 2010

Legend

Delete "Site Specific Area # 10"

Appendix "A" to Report PED10171
Page 60 of 62
Appendix G: Natural Heritage and Natural Hazard Features

Wetland South Secondary Plan

Schedule E

DRAFT Amendment No.

To the Official Plan

Date: July 22, 2010

Revised By: KM/NB

Reference File No.: OPA___(F)

Appendix F: Natural Heritage and Natural Hazard Features to be adopted into the former Town of Flamborough Official Plan

Appendix G

Core Areas

Areas of Natural and Scientific Interest (ANSI)

Environmentally Significant Areas (ESAs)

Appendix "A" to Report PED10171

Page 62 of 62
WATERDOWN SOUTH SECONDARY PLAN
URBAN DESIGN GUIDELINES

FINAL - July 2010

Brook Mcllroy Inc. Planning + Urban Design

in association with:
   Sorensen Gravely Lowes Planning Associates Inc.
   iTrans Consulting Inc.
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Please Note: This document contains images and sketches which are intended to indicate the vision of this plan and are for illustrative purposes only. They are not intended for construction and therefore may not reflect the final product constructed.
1.0 INTRODUCTION

The City of Hamilton has recognized an important need for a new form of community growth that balances the preservation of natural resources with new forms of land use emerging from more sustainable, community conscious development initiatives. The planning and urban design framework for Waterdown South is based on an integrated network of natural and neighbourhood places and a multi-use street system that supports future transit, walkable neighbourhoods and the creation of vital, well connected neighbourhoods. Waterdown South should be developed to reflect the village character of historic Waterdown through the development of its neighbourhoods and streetscape design.

The natural beauty of the Waterdown South lands, strategically located at the Grindstone Creek valleylands, the Niagara Escarpment and Bruce Trail, represents an opportunity for the City of Hamilton to create a new progressive community that is closely linked to its natural and cultural heritage.

Photo 1.1: An aerial photograph of the Study Area.
1.1 The Study Area of Waterdown South

Waterdown South is bounded by Dundas Street West to the north, Mountain Brow Road to the south, Kerns Road to the east and Flanders Drive / Rosecliffe Place to the west. The Study Area is approximately 180 hectares (445 acres) and is bisected northwest to southeast by a 30 metre wide hydro corridor. The existing community of Waterdown is located in the northern part of the City of Hamilton. Kerns Roads, the study area's east boundary, is the municipal boundary between the Cities of Hamilton and Burlington.

Waterdown South is located next to existing and emerging ‘urban’ development to the north and west, and on its south and east by ‘rural’ and natural areas. The yet undeveloped Upcountry lands located on the north side of Dundas Street are currently designated for residential with a mixed use area designated along Dundas Street.

The character and fabric of Waterdown South is generally defined by the following elements:

1. Agricultural uses

2. Natural Heritage System:
   - The study area encompasses the Falcon Creek Provincially Significant Wetland Complex and two ESA’s: the Waterdown Woods ESA located in the southeast corner as it extends north and east from south of Mountain Brow Road; and the Grindstone Valley ESA in the northwest corner of the study area.
   - Grindstone Creek extends east-west through the northerly half of the study area.
   - Six portions of different watersheds are located within the study area. The Waterdown South Subwatershed Study will evaluate the effects on the subwatersheds.

3. Cultural Features:
   - A number of native archaeological sites have been identified by the Ministry of Culture, both of which are associated with Grindstone Creek.
1.2 Waterdown South: The Urban Design Approach + Objectives

The Urban Design approach includes the development of a community vision articulated by the land use plan of the Waterdown South Secondary Plan. The Urban Design Guidelines are intended to support this vision.

Urban Design Vision:

The combination of residential, mixed-use, commercial, retail main street, institutional, and open space uses will contribute to the area’s evolution as a comprehensive developing urban area that is integrated with its surrounding natural context.

The natural environment should be the primary framework of the community, which links the proposed neighbourhoods with existing development, and provides places to recreate and interact. The Open Space Network including, parks, trails (leading to the Bruce Trail) and roads will integrate the individual neighbourhoods and help to express the natural environment as the dominant community image.

The Urban Design Guidelines:

The objective of the following Urban Design Guidelines is to provide a common urban design direction for the City of Hamilton, public agencies, property owners, developers, consultants and utilities and others involved in the development of the Waterdown South Secondary Plan Area.

These Guidelines have been developed as the result of an extensive and thorough background research and consultation process that has engaged many diverse community stakeholders. The Guidelines should assist those involved in property development at the beginning of the design process and should be used as an ongoing reference resource during the processes of municipal and agency review of applications.

The Guidelines have been developed through guiding principles (Section 2.0) developed to guide a high quality form of development. Waterdown South should endeavour to achieve the standards set forth in this document, while recognizing that market and site conditions will require flexibility and judgment in the application of the Guidelines.
Waterdown South Secondary Plan  
Urban Design Guidelines

The Urban Design Guidelines are intended to:

1. Provide Waterdown South with design direction in the assessment of development applications during the draft plan of subdivision, rezoning and site plan approval process;

2. Provide design parameters for both the private and public sector in preparing development plans; and,

3. Provide design direction for community design and development, site planning and building projects.

The Urban Design Guidelines will serve as a basis from which to implement the Waterdown South Secondary Plan. The Secondary Plan illustrates the community framework including the hierarchy and distribution of road connections, land use, open space, trails and environmentally significant areas. The Urban Design Guidelines further describe how built form and open space should be treated within the public and the private realm.

Photo 1.5: An example of a vibrant public urban space.
1.3 Report Framework

The report is structured into the following sections:

Section 1: Introduction

Section 1 outlines the document structure, and the community vision and urban design approach for the preparation of the Urban Design Guidelines.

Section 2: Guiding Urban Design Principles and Preferred Option Plan

Section 2 outlines the Guiding Urban Design Principles and the Preferred Option Plan.

Section 3: Public Realm Guidelines

Section 3 outlines guidelines for the public realm, including:

- Community Structure: open spaces, parks, streets and blocks, gateways and relationships to land use.
- Streetscape Treatments: a hierarchy of roads including arterials, collectors (neighbourhood parkways and neighbourhood connectors) and local roads. Streetscape treatments include the design and placement of landscape elements, lighting, above grade utilities, etc.
- Parking: design and location of on and off-street parking areas, landscape treatments, pedestrian and vehicular access, lighting and safety.

Section 4: Private Realm Guidelines: Residential

Section 4 outlines the Residential Design Principles, general and specific guidelines and architectural controls.

Section 5: Private Realm Guidelines: Commercial and Institutional

Section 5 outlines the Commercial and Institutional Design Principles, general and specific guidelines and architectural controls.

Photo 1.6: High quality design and mixed-use development creates an active public realm with attractive streets, parks and civic open space.
Lands to be changed from "Neighbourhoods" to "Major Open Space".

Lands to be changed from "Major Open Space" to "Neighbourhoods".

Appendix "C" to Report PED10171

PLANNING & ECONOMIC DEVELOPMENT DEPARTMENT

June 2009

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THIS IS NOT A PLAN OF SURVEY
Lands to be reidentified as "Secondary Plan Area" from Pending Secondary Plan Areas

Reference File No.: OPA4-U-___(F)
Revised By: KM/LMM
Date: July 2010

Schedule L
DRAFT Amendment ___
to the Urban Hamilton Official Plan

Legend
- Secondary Plan Area
- Pending Secondary Plan Area
- Lands to be reidentified as "Secondary Plan Area" from Pending Secondary Plan Areas
- Other Features
- Reference File No.
- Date
- Revised By
- KM/LMM
The following text, together with:

- Schedule “A” – (Schedule B – Natural Heritage System);
- Schedule “B” – (Schedule B-1 – Detailed Natural Heritage Features - Key Natural Heritage Feature - Life Science ANSI);
- Schedule “C” – (Schedule B-2 – Detailed Natural Heritage Features - Key Natural Heritage Feature – Significant Woodlands);
- Schedule “D” – (Schedule B-4 – Detailed Natural Heritage Features - Key Natural Heritage Feature and Key Hydrologic Feature – Wetlands);
- Schedule “E” – (Schedule B-6 – Detailed Natural Heritage Features – Local Natural Area – Environmentally Significant Areas);
- Schedule “F” – (Schedule B-8 – Detailed Natural Heritage Features - Key Hydrologic Feature – Streams);
- Schedule “G” – (Schedule C – Functional Road Classification);
- Schedule “H” – (Schedule E – Urban Structure);
- Schedule “I” – (Schedule E-1 – Urban Land Use Designations);
- Schedule “J” – (Waterdown South Secondary Plan – Land Use Plan – Volume 2: Map B.4.3-1);
- Schedule “K” – (Waterdown South Secondary Plan – Natural Heritage System and Natural Hazard Features – Volume 2: Map B.4.3-2); and,
- Schedule “L” – (Volume 2: Appendix A – Secondary Plans Index Map);

attached hereto, constitutes Official Plan Amendment No. X to the Urban Hamilton Official Plan;

1.0 **Purpose:**

The purpose of this Amendment is to adopt the Waterdown South Secondary Plan into the Urban Hamilton Official Plan.

The purpose of the Waterdown South Secondary Plan is to provide a land use planning framework to guide development for this community over a 20-year planning period. This largely residential community will include supporting neighbourhood-scale commercial uses, community uses, and extensive natural areas associated with existing woodlots, wetlands and stream valleys within the community. At full build-out the Secondary Plan Area is expected to accommodate approximately 9,600 residents at different stages of their life cycle, in roughly 3,800 dwelling units. Commercial uses will be accommodated in a District Commercial area, which includes a “main street” style shopping area, and within three neighbourhood nodes.
The Secondary Plan provides a detailed land use plan and related policies for the regulation of land use and development within the Plan Area in accordance with the applicable policies of the Official Plan of the former Town of Flamborough while having regard for the City’s adopted new Urban Hamilton Official Plan.

2.0 Location:
The lands comprising Official Plan Amendment No. XXX encompass approximately 180 ha (446 acres) bounded by Dundas Street East/Highway 5 to the north, Kerns Road to the east, Mountain Brow Road to the south, and Flanders Drive/Rosecliffe Place to the west.

3.0 Basis:
The basis for permitting this Amendment is as follows:

The subject Official Plan Amendment covers a portion of the area approved for the urban expansion of Waterdown under Official Plan Amendment (OPA) 28, adopted by Town of Flamborough Council in May 1992 and approved in revised form by Cabinet in June 2002. In approving OPA 28, Cabinet concurrently approved a related Memorandum of Agreement requiring development to await completion of: a Class Environmental Assessment for the Dundas Waste Water Treatment Plant expansion/diversion; a Master Environmental Assessment Transportation Study; a Waterdown South Sub-watershed Study; and completion of secondary plans for the urban expansion area.

The findings and recommendations of these various studies and processes have been reflected in the land use pattern, goals, objectives and policies of the Waterdown South Secondary Plan.

4.0 Changes:

4.1 Volume 1 - Maps

4.1.1 Schedule ‘B’ – Natural Heritage System is amended by:

a) adding ‘Core Area’;
b) deleting ‘Core Area’;
c) deleting ‘Linkage’;
d) adding ‘Parks and General Open Space’;
e) deleting ‘Parks and General Open Space’;
f) adding ‘Streams’; and,
g) deleting ‘Streams’;

as shown on the attached Schedule ‘A’ of this Amendment.

4.1.2 Schedule B-1 – Detailed Natural Heritage Features - Key Natural Heritage Feature Life Science ANSI is amended by:

a) adding ‘Key Natural Heritage Feature Life Science ANSI’; and,

b) deleting ‘Key Natural Heritage Feature Life Science ANSI’;

as shown on the attached Schedule ‘B’ of this Amendment.

4.1.3 Schedule B-2 – Detailed Natural Heritage Features - Key Natural Heritage Feature – Significant Woodlands is amended by:

a) adding ‘Key Natural Heritage Feature – Significant Woodlands’; and,

b) deleting ‘Key Natural Heritage Feature – Significant Woodlands’;

as shown on the attached Schedule ‘C’ of this Amendment.

4.1.4 Schedule B-4 – Detailed Natural Heritage Features - Key Natural Heritage Feature and Key Hydrologic Feature – Wetlands is amended by:

a) adding ‘Key Natural Heritage Feature and Key Hydrologic Feature - Wetlands’; and,

b) deleting ‘Key Natural Heritage Feature and Key Hydrologic Feature - Wetlands’;

as shown on the attached Schedule ‘D’ of this Amendment.

4.1.5 Schedule B-6 – Detailed Natural Heritage Features – Local Natural Area – Environmentally Significant Areas is amended by:

a) adding ‘Local Natural Area – Environmentally Significant Areas’; and,

b) deleting ‘Local Natural Area – Environmentally Significant Areas’;

as shown on the attached Schedule ‘E’ of this Amendment.

4.1.6 Schedule B-8 – Detailed Natural Heritage Features - Key Hydrologic Feature – Streams is amended by:
a) adding ‘Key Hydrologic Feature - Streams’; and,
b) deleting ‘Key Hydrologic Feature - Streams’;
as shown on the attached Schedule ‘F’ of this Amendment.

4.1.7 Schedule C - Functional Road Classification is amended by:

a) deleting ‘Collector’ road classification; and,
b) deleting ‘Major Arterial’ road classification;
as shown on the attached Schedule ‘G’ of this Amendment.

4.1.8 Schedule E - Urban Structure is amended by:

a) changing lands from ‘Neighbourhoods’ to ‘Major Open Space’; and,
b) changing lands from ‘Major Open Space’ to ‘Neighbourhoods’;
as shown on the attached Schedule ‘H’ of this Amendment.

4.1.9 Schedule E-1 - Urban Land Use Designations is amended by:

a) redesignating lands from ‘Neighbourhoods’ to ‘District Commercial’;
b) redesignating lands from ‘Open Space’ to ‘Neighbourhoods’;
c) redesignating lands from ‘Neighbourhoods’ to ‘Open Space’;
d) redesignating lands from ‘Neighbourhoods’ to ‘Utility’;
as shown on the attached Schedule ‘I’ of this Amendment.

4.2 Volume 2 - Secondary Plans - Maps

4.2.1 The Urban Hamilton Official Plan is amended by adding a new map “Volume 2: Map B.4.3-1 - Waterdown South Secondary Plan – Land Use Plan” as shown on the attached Schedule ‘J’ of this Amendment.

4.2.2 The Urban Hamilton Official Plan is amended by adding a new map “Volume 2: Map B.4.3-2 - Waterdown South Secondary Plan – Natural Heritage System and Natural Hazard Features” as shown on the attached Schedule ‘K’ of this Amendment.
4.2.3 Volume 2: Appendix A - Secondary Plans Index Map is amended by re-identifying lands as ‘Secondary Plan Area’ from ‘Pending Secondary Plan Areas’ as shown on the attached Schedule ‘L’ of this Amendment.

4.3 Volume 2 - Secondary Plans - Text

B.4.3 Waterdown South Secondary Plan

The Vision:

Waterdown South is planned as a compact, pedestrian-oriented, urban community containing a broad range of housing opportunities ranging from executive housing on large lots to mid-rise apartment buildings and retirement-style living. The character and pattern of the community is designed around a natural heritage system that protects abundant natural features within and beyond the community while providing for passive recreational use. This natural heritage system is complemented by adjacent parks, school sites, storm water management ponds and other public and private open space. A trail system will connect the community to the natural heritage system and the existing Bruce Trail. Innovative storm water management practices and alternative development standards are required to maintain groundwater quality and quantity, to minimize erosion below the Escarpment, and to deal with the special challenges presented by the karst system.

The Waterdown South community shall consist of distinct neighbourhoods characterized by walkable streets and centrally located neighbourhood nodes containing small scale retail, service, live-work, and institutional uses as well as residential units and a village square. These nodes will be popular neighbourhood meeting places and are situated generally within a five minute walk of the neighbourhood they serve.

Dundas Street shall be an urbanized mixed use street with people living, working, and shopping along this main corridor. These higher order uses are intended to support future public transit initiatives along Dundas Street. An intimate, pedestrian-oriented ‘main street style’ shopping area shall form the northern gateway to the Waterdown South community extending south from Dundas Street. New housing in the western portion of the Waterdown South community will consist of large-lot housing planned to respect and complement the established character of the Renwood Park subdivision.
The neighbourhood block pattern, neighbourhood nodes, mixed use area, and linkages to the natural heritage system will create a healthy, sustainable community where people choose to walk.

A primary gateway into Waterdown shall be developed at the Dundas Street/Kerns Road intersection. Secondary gateways, planned to develop a sense of community identity and connection to the surrounding areas, shall be introduced at other entry points into the Waterdown South community.

The Waterdown South Secondary plan comprises roughly 180 ha of land located in the east end of Waterdown, and is bounded by Dundas Street to the north and Mountain Brow Road to the south, the municipal boundary along Kerns Road to the east and the Renwood Park subdivision to the west.

The Waterdown South Secondary Plan establishes land uses, basic transportation network, community facilities, infrastructure requirements and development standards to guide the development and redevelopment of lands located in the Waterdown South Area. The principles, objectives and policies of the Waterdown South Secondary Plan, as well as the policies in the Official Plan, provide guidance and direction for the future development of the Secondary Plan Area.

Section B.4.3 - Waterdown South Secondary Plan, Map B.4.3-1 - Waterdown South Secondary Plan - Land Use Plan, Map B.4.3-2 - Waterdown South Secondary Plan - Natural Heritage System and Natural Hazard Features, constitute the Waterdown South Secondary Plan.

4.3.1 Development Concept

The Secondary Plan has been designed to respect and enhance a number of prominent natural areas throughout the community, including Grindstone Creek, Falcon Creek, Hager Creek, the Waterdown Escarpment Woods and Grindstone Creek Valley Environmentally Significant Areas (ESAs), and the Falcon Creek Provincially Significant Wetland Complex, each of which has been incorporated into a Natural Heritage System.

Waterdown South is located within the Niagara Escarpment Plan Area. The community shall be developed with a streetscape and built form character that is compatible with the natural environment and key visual characteristics of the Niagara Escarpment. Where appropriate, to create this urban character height restrictions, adequate setbacks, landscape screening, boulevard treatments, and alternative road design may be required to minimize the visual impact of development on the Escarpment Landscape.
Kems Road and part of Mountain Brow Road shall be maintained as special character roads to create a sense that the community is well connected to the Niagara Escarpment’s natural environment.

Development should be designed and located as specified in the South Waterdown Subwatershed Study to ensure no negative impact on the Natural Open Space - Natural Area, the Natural Open Space - Protection Area, and other designated natural heritage features, as well as on water quality and quantity, wildlife, visual attractiveness, and cultural heritage features.

The Waterdown South community shall offer a full range of housing forms from large lot residential homes to apartment and adult lifestyle living in an urban context. Block patterns, and school, park and commercial locations shall create walkable neighbourhoods. A central neighbourhood node should be within walking distance of each neighbourhood. Small-scale commercial uses, live-work uses, and community facilities/services shall be encouraged within each neighbourhood node.

Large lot residential housing is planned in the western portion of the Waterdown South community to complement and provide a transition to the established Renwood Park subdivision. The extent of natural areas and features within the community affords excellent opportunities for other areas of large lot housing, particularly adjacent to Waterdown Woods.

The Waterdown South Secondary Plan provides the opportunity to create an ‘aging in place’ adult lifestyle community in the northeast portion of the community, containing a variety of ground-related and medium-rise housing forms, recreational uses, and small scale commercial uses serving the immediate residents.

Medium density housing is planned along arterial and collector roads through the community, and within the vicinity of each neighbourhood node. Higher density housing is planned for the District Commercial designated area situated between Dundas Street and Grindstone Creek in the north/central portion of the community. The District Commercial area shall support residential, institutional, office, retail, and service commercial uses. The area shall contain a pedestrian-oriented ‘retail main street’ shopping area along the key entrance to the community where shops and restaurants face directly onto the street.

4.3.2 Principles and Objectives

The following principles and objectives provide the framework for the planning
and development of the Waterdown South Secondary Plan area and shall be achieved through the policies and mechanisms set out in this Secondary Plan and the Official Plan.

4.3.2.1 Residential

a) Encourage a mix of uses and housing types that meet the housing needs of residents throughout their life cycles and allows them to remain within the community.

b) Create residential communities which incorporate a high standard of community planning and urban design practices while protecting and enhancing the natural environment.

c) Support future public transit service by locating commercial and higher intensity residential uses along Dundas Street West, the north-south arterial road, the collector road spine, and within neighbourhood nodes located at the intersections of such roads.

d) Promote live-work housing forms in appropriate locations within walking distance of neighbourhood residents.

e) Promote urban design that is compatible with the natural environment and visual character of the Niagara Escarpment.

f) Limit the height of development to ensure that there will be no substantial visual impact on the Niagara Escarpment.

4.3.2.2 Commercial

a) Identify a district commercial area and neighbourhood local commercial nodes at strategic locations to promote live-work relationships, create neighbourhood identity and focal points, reduce commuting, and support future public transit services.

b) Locate retail shops along a pedestrian oriented ‘main street’ within the district commercial area with on-street parking.

c) Recognize an existing and developed arterial commercial block located on Dundas Street.
d) Limit the amount and scale of new retail development to ensure that it complements and does not impact the planned function of established commercial areas, including Downtown Waterdown.

e) Ensure commercial areas incorporate a high standard of community planning and urban design and, where applicable, integrate with nearby significant natural heritage features.

4.3.2.3 Natural Heritage System and Open Space

a) Maintain wildlife movement corridors along the Niagara Escarpment and through the Grindstone Creek valleylands.

b) Maintain or enhance, to the greatest extent possible, the predevelopment surface water and ground water quality and quantity, to protect and enhance on-site and downstream fisheries and wetlands, on-site and off-site karst features and functions, as well as drinking water for those downstream residences on well-based systems.

c) Employ, where appropriate, naturalized forms of storm water management that minimize storm water run-off and impervious surfaces, and reduce the need for, and size of storm water management ponds.

d) Respect and maintain the existing drainage boundaries within the Waterdown South Planning Area.

e) Ensure public safety is not compromised and property damage does not result from building and infrastructure construction within the vicinity of known karst features.

f) Provide, where feasible, a passive recreational trail system through the natural heritage system.

g) Provide adequate public access to the Niagara Escarpment by such means as pedestrian trails (e.g. the Bruce Trail) and associated parking areas.

h) Ensure the cumulative impact of development shall not have a serious detrimental effect on the Escarpment environment, including its water quality, vegetation, wildlife, and the unique Escarpment landscape.
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i) Ensure development is compatible with, and provides for, the protection of unique ecological areas, significant wildlife habitat, and quality and quantity of water, both inside and adjacent to the Waterdown South Planning Area.

4.3.2.4 Transportation/Transit/Pedestrian/Cycling Linkages

a) Create a grid system of arterial, collector, and local roads and discourage cul-de-sacs.

b) Create a linked pedestrian and cycling network consisting of bicycle lanes, paths, walkways, and sidewalks on local and collector roads, through parks and schools, the hydro corridor, along Grindstone Creek, and through storm water management facilities and natural heritage features in a manner that has regard for the ecological function of the area and minimizes impacts.

c) Provide pedestrian network connections to the historic centre of Waterdown, the surrounding neighbourhoods, and the existing natural open space systems outside the Waterdown South Secondary Plan area.

d) Design the east-west collector road as a pedestrian and bicycle-oriented community spine linking all significant land uses within the community.

e) Plan residential development and its road network so residents are generally within a 400 metre walking distance of neighbourhood parks, commercial facilities, and future public transit services.

f) Employ traffic calming measures on collector roads to reduce traffic speeds and make streets conducive to walking and cycling.

h) Orient streets to promote energy conservation.

i) Ensure that all new and reconstructed roads are designed and located to minimize the impact on the Escarpment environment.
j) Design Mountain Brow Road, Kerns Road and other new roads and boulevards abutting the Escarpment Natural and Escarpment Protection Areas to transition and blend into the surrounding Escarpment landscape.

k) Maintain and enhance natural vegetation within the Mountain Brow Road, and Kerns Road rights-of-way where possible.

l) Provide a secure route for the existing Bruce Trail in the Waterdown South Planning Area.

m) Protect views of the Escarpment landscape from Mountain Brow Road and Kerns Road, and provide opportunities for views from new local roads abutting the Escarpment Natural and Protection Areas.

4.3.2.5 Infrastructure

a) Provide for the extension of water and wastewater services in a timely and efficient manner throughout the Waterdown South Secondary Plan area.

b) Provide for drainage and storm water management facilities in locations which can complement the natural heritage system.

c) Design storm water management facilities that do not negatively impact downstream water quality, water quantity, and the Escarpment environment.

4.3.2.6 Urban Design

a) Provide integrated community design that coordinates land use, open space, the transportation network, and built form elements to achieve and reinforce a high quality, integrated community vision.

b) Incorporate elements of Waterdown South’s distinct natural and cultural heritage into design characteristics that will promote and achieve unique community design.

c) Establish gateways at strategic locations to function as entranceways to Waterdown and the community of Waterdown South.
d) Create an urban fabric characterized by an interconnected transportation network that is responsive to existing natural heritage, surrounding land uses, and cultural heritage elements.

e) Integrate views of natural heritage features into the community design.

f) Promote public transit, walking, cycling, and recreational connections through a well connected system of streets, walkways, and trails.

g) Design streets and built form that promote personal safety through natural surveillance opportunities.

h) Promote building forms and site layouts that address the street and locate and orientate on-site parking, garages, and service/loading areas to minimize the impact to the streetscape.

i) Create street and building design that promotes pedestrian comfort and vitality at the grade level of buildings.

j) Promote design variety within the streetscape.

k) Promote a variety of housing forms with diverse architecture for individuals and families of all ages.

l) Encourage mixed use development along strategic corridors and within walking distance of neighbourhoods.

m) Integrate community and institutional uses into neighbourhoods at visible, highly accessible locations.

n) Create streetscapes and built form that are compatible in design with the visual and natural environment of the Niagara Escarpment, where they abut the Natural Open Space - Natural Area and Natural Open Space - Protection Area designations.

4.3.3 Residential Designations

The Waterdown South community shall be primarily a residential area that includes a wide range of housing types and a mix of housing forms. The residential policies shall define the location and scale of each type of residential use, and shall help ensure that a variety of residential types are provided to meet the needs of all area residents.
4.3.3.1 The residential areas are designated Low Density Residential 1, 2, and 3, and Medium Density Residential 2, as shown on Map B.4.3-1 - Waterdown South Secondary Plan - Land Use Plan. The following policies are applicable to each of these land use designations.

4.3.3.2 General Residential Policies
In addition to Section E.3.0 – Neighbourhoods Designation of Volume 1, the following general policies shall apply to all residential land use designations identified on Map B.4.3-1 – Waterdown South - Land Use Plan:

**Function**

a) A variety of housing forms, tenure options, and prices, including adult lifestyle housing and other innovative housing types, shall be encouraged to meet a wide range of housing needs.

b) A broad range and mix of housing types shall be promoted, both between and within residential designations. The City shall strive to achieve a variety of building types within each designation, such that no portion of the Secondary Plan Area is dominated by one housing type, and to provide an interesting streetscape.

c) Residential development in the Waterdown South Planning Area shall have a compact urban form that encourages active transportation.

**Permitted Uses**

d) Second dwelling units may be permitted in single detached and semi-detached dwellings in all residential designations subject to the requirements of the Zoning By-law, in accordance with Policy B.3.2.4.4 of Volume 1.

e) Home businesses may be permitted accessory to a dwelling unit in all residential designations in accordance with Policy B.3.2.2 a) of Volume 1 and subject to the requirements of the Zoning By-law.

f) Community facilities and institutional uses such as schools, places of worship, day care centres and other related community and institutional uses, shall be permitted in all residential designations, in accordance with Section B.3.5 – Community Facilities/Services Policies of Volume 1 and subject to the implementing Zoning By-law, provided:
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i) the lot to accommodate the use is located on an arterial or collector road; and,

ii) the lot is of a sufficient size to accommodate the use.

Scale

g) In accordance with Policy B.1.6 b) of Volume 1, density shall be calculated on a net residential basis. Net residential density may be averaged over each plan of subdivision within the designation.

h) In addition to Policy B.3.2.4.3 of Volume 1, the size and scale of housing with supports, including residential care facilities, long-term care facilities, and retirement homes shall be similar to, and oriented to the built form permitted in each designation.

Design

i) Garage protrusion shall be discouraged to create more attractive streetscapes and provide interactive outdoor space for pedestrians. The implementing Zoning By-law shall contain provisions restricting the extent of garage protrusions.

j) Where townhouses are proposed, a mix of townhouse block lengths is encouraged to provide variety to the streetscape. The creation of long townhouse blocks should be avoided and building setbacks and/or alternate building facades will be encouraged to prevent long stretches of monotonous elevation.

k) The Zoning By-law shall contain standards controlling the massing of long townhouse blocks.

l) A variety of housing elevations shall be encouraged within each residential block to provide an interesting streetscape. In support of this policy, architectural/design guidelines shall be required as a condition of draft plan of subdivision approval.

m) Direct vehicle access to individual dwelling units from major arterial roads shall be discouraged.

n) Direct access to individual street townhouse units from collector roads shall be discouraged and alternative forms of access such as use of shared or common access points and rear lane arrangements shall be encouraged.
o) Reverse frontage lotting patterns shall be discouraged, and may only be permitted under certain circumstances or where the owner satisfies the City that no other alternative development forms or street patterns are feasible.

p) The use of long stretches of acoustical walls adjacent to arterial roads shall also be discouraged.

q) The arrangement of collector roads, land uses, and densities should be planned so that residential units are predominantly located within a 400 metre walking distance of commercial facilities.

4.3.3.3 Low Density Residential 1 Designation
In addition to the policies of Section E.3.4 – Low Density Residential of Volume 1, the following policies shall apply to the lands designated Low Density Residential 1 on Map B.4.3-1 – Waterdown South - Land Use Plan:

a) Notwithstanding Policy E.3.4.3 – Low Density Residential of Volume 1, only single detached dwellings shall be permitted.

b) Notwithstanding Policy E.3.4.4 – Low Density Residential of Volume 1, the maximum permitted density shall be 22 units per net residential hectare.

c) Notwithstanding Policy E.3.4.5 – Low Density Residential of Volume 1, the maximum building height shall be 2 storeys.

d) The lands adjacent to the Renwood Park subdivision, in the southwest corner of the Secondary Plan area, shall serve as a transition area between the established homes and new residential development internal to the Waterdown South community. The implementing Zoning By-law shall ensure new lots immediately opposite those on Flanders Drive and Rosecliffe Place have a similar lot width at the point where the new lots are opposite to the existing lots.

4.3.3.4 Low Density Residential 2 Designation
In addition to the policies of Section E.3.4 – Low Density Residential of Volume 1, the following policies shall apply to the lands designated Low Density Residential 2 on Map B.4.3-1 – Waterdown South - Land Use Plan:
a) Notwithstanding Policy E.3.4.3 - Low Density Residential of Volume 1, single detached dwellings, semi-detached dwellings, duplex dwellings, and street townhouse dwellings shall be permitted. Single detached and semi-detached dwellings shall be the primary form of housing in this designation, but limited numbers of street townhouse dwellings shall be encouraged in each plan of subdivision.

b) Notwithstanding Policy E.3.4.4 - Low Density Residential of Volume 1, the overall density shall range from a minimum of 22 to a maximum of 40 units per net residential hectare. Development at the higher end of the density scale shall be encouraged in small clusters to facilitate a range of housing types and sizes in each neighbourhood. The higher density housing units should be integrated with other housing forms on the same street.

c) Notwithstanding Policy E.3.4.5 - Low Density Residential of Volume 1, the maximum building height shall be 2.5 storeys.

4.3.3.5 Low Density Residential 3 Designation
In addition to the policies of Section E.3.4 - Low Density Residential of Volume 1, the following policies shall apply to the lands designated Low Density Residential 3 on Map B.4.3-1 - Waterdown South - Land Use Plan:

a) Notwithstanding Policy E.3.4.3 - Low Density Residential of Volume 1, single detached dwellings, semi-detached dwellings, duplex dwellings, and all forms of townhouses shall be permitted.

b) Notwithstanding Policy E.3.4.4 - Low Density Residential of Volume 1, the overall density shall range from a minimum of 35 to a maximum of 60 units per net residential hectare.

c) Notwithstanding Policy E.3.4.5 - Low Density Residential of Volume 1, the maximum building height shall be 3 storeys.

d) Single detached dwellings shall generally comprise a maximum of 60% of the housing units within a Low Density Residential 3 designated area.

4.3.3.6 Medium Density Residential 2 Designation
In addition to the policies of Section E.3.5 - Medium Density Residential of Volume 1, the following policies shall apply to the lands
designated Medium Density Residential on Map B.4.3-1 - Waterdown South - Land Use Plan:

a) Notwithstanding Policy E.3.5.2 – Medium Density Residential of Volume 1, single detached dwellings, semi-detached dwellings, street townhouse dwellings, low-rise apartments, other forms of multiple dwellings, and live-work units shall be permitted subject to the implementing Zoning By-law.

b) The overall density shall range from a minimum of 60 to a maximum of 75 units per net residential hectare.

c) Notwithstanding Policy E.3.5.8 – Medium Density Residential of Volume 1, the maximum building height shall be 4 storeys.

4.3.4 Commercial Designations

4.3.4.1 The commercial areas are designated District Commercial, Arterial Commercial and Local Commercial, as shown on Map B.4.3-1 - Waterdown South Secondary Plan - Land Use Plan. The following policies shall apply to each of these land use designations.

4.3.4.2 Commercial General Policies
In addition to Section E.4.0 – Commercial and Mixed Use Designation of Volume 1, the following policies shall apply to all commercial and mixed use land use designations identified on Map B.4.3-1 - Waterdown South - Land Use Plan:

a) Commercial areas shall be developed in a co-ordinated and comprehensive manner.

b) Access points along arterial and collector roads shall be limited and regard shall be given to the sharing of access points, adequate internal traffic circulation, and adequate off-street parking, loading and manoeuvring facilities.

c) Open storage of goods and materials shall not be permitted except where otherwise permitted in the Arterial Commercial designation and in the implementing Zoning By-law.

d) Landscaping shall form an integral part of all developments and screening and buffering shall be provided between commercial and sensitive adjacent land uses.
4.3.4.3 District Commercial Designation

In addition to the policies of Section E.4.7 – District Commercial Designation of Volume 1, the following policies shall apply to lands designated District Commercial on Map B.4.3-1 – Waterdown South - Land Use Plan:

**Function**

a) The District Commercial designated area is planned to function as a neighbourhood commercial centre meeting the weekly and daily retail and service commercial needs of residents both north and south of Dundas Street. The area will benefit from traffic on Dundas Street, and serves a gateway function to the Waterdown South community.

b) The area designated District Commercial is planned to accommodate a range of residential, commercial, institutional, and service uses. The lands may be developed primarily for commercial use in the initial stage, but it is envisioned that over time the area will evolve into a truly mixed use area with residential and commercial uses mixed, either within the same building, or in certain locations within separate buildings on the same or abutting lots.

**Permitted Uses**

c) In addition to the uses permitted in E.4.7.2 of Volume 1, the following uses shall be permitted:

i) commercial uses including personal services, restaurants, retail stores including supermarkets, studios, art galleries, tradespersons shops, and veterinary services;

ii) office uses including professional offices, business offices, medical offices, medical clinics, and veterinary services;

iii) live-work units, with small scale commercial uses on the ground floor and residential above, and other forms of residential uses above commercial units;

iv) apartment buildings in accordance with Policy B.4.3.4.3 d);

v) places of worship, day care centres, libraries, fire and police stations, post offices, recreational facilities, community centres, meeting spaces, and similar uses, in accordance with Section B.3.5 – Community Facilities/Services Policies of Volume 1; and,

vi) accessory uses;
d) Notwithstanding Policies E.4.7.2 c) and E.4.7.5 - District Commercial Designation of Volume 1, stand alone residential buildings may be permitted provided:

i) they are generally located on the periphery of the designation;
ii) they are not located on Collector Road A;
iii) the total amount of land occupied by stand alone residential uses does not limit the ability of the designated lands to provide for the initial maximum retail and service commercial floor space set out in Policy B.4.3.4.3 g).

Prohibited Uses

e) Notwithstanding Policy 4.3.4.3 c) the following uses shall be prohibited:

i) vehicle dealerships;
ii) garden centres as a primary use; and,
iii) a single use over 10,000 square metres in floor area.

f) Notwithstanding Section 4.7.14 of Volume 1, the following uses shall be prohibited adjacent to Collector Road A:

i) drive-through facilities;
ii) car washes;
iii) motor vehicle service stations; and,
iv) gas bars.

Scale and Location

g) A maximum of 10,000 square metres of retail and service commercial floor space shall be permitted in the entire District Commercial designated area without the requirement for a market impact study.

h) Additional retail and service commercial floor space up to a total maximum of 25,000 square metres may be permitted subject to a market impact study submitted prior to future planning approvals. The market impact study shall demonstrate that the proposed uses will not adversely effect the planned function of any existing or designated commercial areas, particularly the Waterdown downtown area and may set out appropriate phasing and maximum unit floor area for retail stores including supermarkets. Office and service commercial uses above the ground floor shall not be included in the total floor space limitations.
i) The permitted density shall be a maximum of 2.5 times the lot area [Floor Space Index (FSI)] or range from a minimum of 60 to a maximum of 150 units per net residential hectare for stand alone residential developments.

j) The maximum permitted building height shall be 8 storeys, but building heights may be increased up to 12 storeys provided a Visual Impact Assessment demonstrates to the satisfaction of the City and the Niagara Escarpment Commission that the matters set out in Policy B.4.3.14.1 j) have been addressed; and,

k) A municipal fire station, as permitted by Policy B.4.3.4.3 c) v), will be required on Dundas Street at a future signalized intersection, on a site of up to 0.8 hectares. To create the main street character, a location on Collector Road A shall be discouraged.

Design

l) Larger non-residential uses shall be encouraged to seek Dundas Street frontage and visibility.

m) Development shall comply with the Urban Design, Streetscape and Open Space Guidelines required in Section B.4.3.10 in addition to other urban design policies of Volume 1, such as Section B.3.3.

n) The following policies shall apply to buildings and lands located adjacent to Collector Road A:

i) Retail space and buildings shall be oriented in a ‘retail main street’ configuration with storefronts located close to the street and principal entrances facing the sidewalk to create a pleasant pedestrian shopping environment.

ii) For buildings located along Collector Road A, the principal public entrance shall face the street and provide direct access onto the public sidewalk. The windows and signage shall also face the street.

iii) Buildings should have a consistent minimal setback.

iv) The implementing Zoning By-law shall establish a minimum proportion of retail space along Collector Road A, the ‘retail main street’.

v) No parking, driveways, lanes or aisles shall be permitted between buildings and the public sidewalk.

vi) The built form may include stand-alone stores, multiple unit commercial buildings, or mixed use buildings with commercial
uses on the ground floor adjacent to the street and residential or office uses above or behind.

vii) The Urban Design, Streetscape and Open Space Guidelines, as required in Section B.4.3.10 shall provide more detailed direction and demonstrate how the ‘retail main street’ and pedestrian character of the street shall be developed, and Policies B.4.3.4.3 n) i) through vi) inclusive shall be implemented.

viii) An urban design brief shall be required to be submitted as part of a complete Planning Act application, demonstrating how the proposal meets the intent of the guidelines notes above in Policy B.4.3.4.3 r) vii).

viii) The specific location and configuration of Collector Road A and the adjacent the ‘retail main street’ area may be changed without amendment to this Plan provided a detailed concept plan of the ‘retail main street’ area is completed to the satisfaction of the City in accordance with Policy B.4.3.4.3 r).

o) The Urban Design, Streetscape and Open Space Guidelines, as required in Section B.4.3.10, and the implementing Zoning By-law shall establish build-to-lines and a minimum built frontage per-block for the entire District Commercial designation. A lesser requirement may be established on Dundas Street and other streets outside of the Collector Road A ‘retail main street’ area.

p) On-street parking shall be provided wherever possible, and may contribute to parking requirements.

q) The implementing Zoning By-law shall consider lower commercial parking standards, which take into account the intended pedestrian nature of the ‘retail main street’ area and the contribution of on-street parking in meeting parking demands.

r) A detailed concept plan for the entire District Commercial designated area shall be required to be completed to the satisfaction of the City before approval of any zoning, plan of subdivision, or site plan application. The concept plan shall demonstrate:

i) How the policies of this Plan are to be implemented;

ii) The location and configuration of the Collector Road A ‘retail main street’;
iii) The methods to accommodate traffic flows through the area including access points and the private and public street network;
iv) The treatment of intersections to ensure pedestrian comfort while also ensuring an appropriate flow of traffic;
v) An appropriate build-to-line for each street;
vi) An appropriate minimum frontage-per-block for each street;
vii) The proportion of retail space to be provided along the Collector Road A ‘retail main street’;
viii) The location of initial and potential future residential and mixed use buildings and;
ix) How the area can evolve and intensify over time to a fully mixed use area.

4.3.4.4 In addition to the policies of Section E.3.8 – Local Commercial of Volume 1, the following policies shall apply to lands designated Local Commercial on Map B.4.3-1 – Waterdown South - Land Use Plan:

**Function**

a) Local Commercial designated areas shall function as small scale pedestrian oriented neighbourhood focal points or nodes that meet the day-to-day commercial needs of nearby residents and are located within walking distance of residents. They are planned to accommodate small scale retail and service uses in small nodes at ground level with residential or office uses above, and stand alone medium density housing.

b) Local Commercial designated areas are generally located at the intersection of two collector roads or a collector and arterial roads and are spaced to provide maximum accessibility to pedestrians.

**Permitted Uses**

c) Notwithstanding Policy E.3.8.2 – Local Commercial of Volume 1, the following uses shall be permitted:

i) small scale retail and service uses such as retail, restaurant, personal service, professional office, business office, medical office, day care centre, financial establishment, studio, art gallery, tradespersons shop, and veterinary service;

ii) stand alone medium density residential uses in accordance with Policy 4.3.3.6 and provided the total amount of land occupied by stand alone residential uses does not limit the ability of the designated lands to provide for the planned retail and service commercial uses;
iii) live-work buildings in the form of townhouses with ground floor commercial or office uses with a residential unit above;
iv) small scale community facilities/services; and,
v) public spaces such as a village or neighbourhood square.

Prohibited Uses
d) Notwithstanding Policy E.3.8.3 – Local Commercial of Volume 1, drive-through facilities and motor vehicle service stations shall be prohibited.

de) The permitted net residential density shall range from a minimum of 50 to a maximum of 75 units per net residential hectare.

d) The maximum permitted building height shall be 4 storeys.

g) The implementing Zoning By-law shall establish a maximum floor area for small scale commercial uses in recognition of the limited retail function of this designation.

Design
h) Buildings shall face the street with a minimal consistent setback.

i) The principal public entrance shall face the street and provide direct access onto the public sidewalk. The primary windows and signage shall also face the street.

j) On-street parking shall be permitted on the adjacent collector roads. In most circumstances, all parking needs for commercial uses should be achieved through on-street parking.

k) The implementing Zoning By-law shall give consideration to lower parking standards which take into account the intended pedestrian nature of these uses, shared parking opportunities within live-work buildings, and the contribution of on-street parking to meet parking demand.

l) Required on-site parking and loading areas shall be encouraged to be located to the rear of buildings to achieve an attractive streetscape and a pedestrian-friendly built-form environment. Where parking lots abutting the street are unavoidable due to unique circumstances, they shall be screened with low walls and landscape materials, but shall not be located in front of buildings.
4.3.4.5 Arterial Commercial Designation

In addition to the policies of Section E.4.8 – Arterial Commercial Designation of Volume 1, the following policies shall apply to lands designated Arterial Commercial on Map B.4.3-1 – Waterdown South -Land Use Plan:

a) Notwithstanding Policy E.3.2.3 d) of Volume 1, Section E.4.8 –Arterial Commercial Designation shall apply to the lands designated Arterial Commercial on Map B.4.3-1 – Waterdown South -Land Use Plan.

b) The Arterial Commercial designation shall apply to the area already developed for such purposes along Dundas Street, east of the Grindstone Creek.

c) Notwithstanding the permitted uses in Policy E.4.8.2 of Volume 1, the uses permitted on lands designated Arterial Commercial shall be limited to a small scale retail store, a garden supply centre, a fruit and vegetable market, a florist establishment, a butcher shop, a motor vehicle service station, an equipment sales/rental/service establishment, a motel or hotel, recreational uses, and restaurants.

4.3.5 Parks and Open Space Designations

4.3.5.1 In addition to Sections B.3.5.3 – Parkland Policies and C.3.3 - Open Space Designations of Volume 1, the following policies shall apply to the lands designated Neighbourhood Park, Natural Open Space – Grindstone Creek Natural Area, Natural Open Space –Natural Area, and Natural Open Space – Protection Area on Map B.4.3-1 – Waterdown South - Land Use Plan:

a) The parks and open space system within the Waterdown South Secondary Plan area shall include the following:

i) Three Neighbourhood Parks,
ii) Natural Open Space – Grindstone Creek Natural Area;
iii) Natural Open Space – Natural Area;
iv) Natural Open Space – Protection Area; and,
v) Trail links.

b) Lands designated Neighbourhood Park and Natural Open Space shall be visible and accessible to the public, with unobstructed views to the neighbourhood parks provided to improve surveillance of such areas.
c) A pedestrian and bicycle trail network shall be established to link parks and open space with adjacent residential areas as follows:

i) Appropriate trail linkages shall be made with the hydro corridor crossing the Secondary Plan area, the Bruce Trail system through the Niagara Escarpment lands to the south, and the neighbourhoods to the north.

ii) It is intended that the network will use public streets, sidewalks, and public open space lands.

iii) The network shall be identified through the Streetscape Manual in accordance with Policy B.4.3.12.2 a) and, more specifically delineated during the processing of subsequent plans of subdivision.

d) Municipal infrastructure such as water towers and pumping stations may be located within part of a Neighbourhood Park; however, the lands required for the facility shall not contribute to parkland dedication requirements.

e) Neighbourhood Parks shall be located no more than 800 metres apart, and the majority of residential uses within the Secondary Plan area shall generally be located within a 400 metre distance (5 minute walk) of a park.

f) Neighbourhood Parks shall be encouraged to be located adjacent to and in conjunction with schools sites; however, school sites shall not be considered to satisfy any parkland dedication requirements. Where appropriate, Neighbourhood Parks shall be located adjacent to other greenspace areas such as the hydro corridor, storm water management ponds, and the Natural Heritage System to augment the natural heritage and open space system throughout the Waterdown South community.

g) Neighbourhood Parks shall be generally be square or rectangular in shape, have a significant street frontage, and be approximately 2.0 hectares in size. To provide flexibility in the design of draft plans of subdivision, the specific location, size and shape of the designated Neighbourhood Parks may vary subject to the approval of the City without an amendment to this Plan.

h) In co-operation with the respective utility companies, the City shall establish a pedestrian and bicycle trail network along the hydro corridor that traverses the Waterdown South Secondary Plan area and extends beyond the community.
4.3.6 Institutional Designation

4.3.6.1 In addition to the policies of Sections E.6.0 - Institutional Designation and B.3.5 - Community Facilities/Services Policies of Volume 1, the following policies shall apply to lands designated Institutional on Map B.4.3-1 - Waterdown South - Land Use Plan:

a) The permitted uses on lands designated Institutional shall include schools, day care centres, places of worship, long term care facilities, residential care facilities, government services, and other similar institutional uses.

b) All schools shall be located adjacent to designated Parks to provide opportunities to share facilities.

c) Map B.4.3-1 identifies the general location and size of two elementary schools, as requested by the Hamilton-Wentworth Roman Catholic Separate School Board and the Hamilton-Wentworth District School Board. The location of these school sites may be moved and the size may be changed without amendment to this Plan as follows:

i) The specific location and size of each designated school site shall be determined as part of the approval process of the draft plan of subdivision in which each school site is located.

ii) The need for a particular school site shall also be confirmed by the School Board as part of the approval process, and the timing for which the site is reserved shall also be established at that time.

d) At the time of subdivision approval, school sites may be zoned for both institutional and residential purposes having regard to the abutting density and form of development.

e) Notwithstanding Policy E.6.2.4 b) of Volume 1, should any or all of the designated school sites not be required by the appropriate school board, the lands may be used for Low Density Residential 2 purposes without amendment to this Plan.

f) The maximum permitted building height shall be 15 metres.

g) In accordance with Section B.3.5 of Volume 1, Institutional buildings should be accessible by all modes of transportation, and designed as neighbourhood focal points, which create a distinctive community identity and sense of place, and serve as landmarks for orientation and local identity.
4.3.7 **Natural Heritage System**

The Waterdown South Secondary Plan area contains a number of significant natural heritage features, including two Core Areas, Waterdown Escarpment Woods and Grindstone Creek Valley; a Provincial Life Science Area of Natural and Scientific Interest; the Falcon Creek Provincially Significant Wetland Complex; and other woodland, stream, wetland, and hedgerow features. The area also contains significant vegetation communities which provide habitat for significant plant and wildlife species.

The predevelopment landscape within the Waterdown South Secondary Plan area consists largely of cultivated farmland bisected by the Grindstone Creek and its valleylands. The area is divided into three watersheds associated with the Grindstone, Falcon, and Hager Creeks. The western portion drains into Grindstone Creek, the eastern portion into Falcon Creek and a small area of the south-eastern portion into Hager Creek.

A sub-watershed planning study has been completed to the satisfaction of the Cities of Hamilton and Burlington and Conservation Halton. The study was undertaken to identify and evaluate the significance of all natural heritage features and functions and to establish a framework for more detailed levels of evaluation at succeeding stages of the planning process. This Secondary Plan implements the recommendations of the sub-watershed study to maintain, restore and enhance the natural heritage features, areas and functions within the Planning Area.

Within portions of the Waterdown South Secondary Plan area, the creeks noted above have created karst conditions consisting of sinkholes, sinking streams, and springs (see South Waterdown Subwatershed Study – Stage 2 Report by EcoPlans et. al.). Some of the surface karst is located within the Natural Heritage System shown on Map B.4.3-2 and is already outside of the developable area; however, there are several areas outside of the Natural Heritage System that also contain karst topography. Section B.4.3.8 provides direction for development within the karst areas that are outside of the Natural Heritage System, in accordance with recommendations of the South Waterdown Subwatershed Study – Stage 2 Report.

4.3.7.1 **General Policies**

a) The Natural Heritage System shall include the following:

i) lands designated Natural Open Space – Natural Area on Map B.4.3-1 – Waterdown South – Land Use Plan;
ii) lands designated Natural Open Space – Protection Area on Map B.4.3-1 – Waterdown South – Land Use Plan;

iii) Core Areas as shown on Map B.4.3-2 – Waterdown South – Natural Heritage System and Natural Hazard Features; and,

iv) streams as shown on Map B.4.3-2 – Waterdown South – Natural Heritage System and Natural Hazard Features.

b) The same lands may be both designated on Map B.4.3-1 – Waterdown South – Land Use Plan and identified as Core Area on Map B.4.3-2 – Waterdown South – Natural Heritage System and Natural Hazard Features. The policies of both the designation and the Core Area identification shall apply.

c) Core Areas are comprised of several natural heritage features which are independently shown on Schedules B-1 through B-8 of Volume 1.

d) The natural heritage features are linked by natural corridors, which are necessary to maintain biological diversity. Wherever possible and feasible, development within the Waterdown South Secondary Plan area should promote a net gain within the Natural Heritage System by restoring, enhancing, and linking habitat.

e) Where the lands within the Natural Heritage System are under private ownership, nothing in this Plan shall imply that the lands will be secured for public ownership. Where the use of the lands is deemed appropriate for public ownership by the City or other public agency, suitable acquisition options shall be considered as set out in Section B.4.3.14.4 of this Plan.

f) Prior to development, a scoped Environmental Impact Statement shall be completed in accordance with Section F.3.2.1 – Environmental Impact Statements (EIS) of Volume 1.

4.3.7.2 Natural Open Space - Grindstone Creek Natural Area

In addition to Sections B.3.5.3 – Parkland Policies, C.2.0 – Natural Heritage System, and C.3.3 - Open Space Designations of Volume 1, the following policies shall apply to the lands designated Natural Open Space - Grindstone Creek Natural Area on Map B.4.3-1 – Waterdown South - Land Use Plan:
a) The Natural Open Space - Grindstone Creek Natural Area designation is comprised of significant natural heritage features and natural hazard areas within the Grindstone Creek portion of the Secondary Plan area. The designation shall consist of:

i) Grindstone Valley ESA;
ii) The valley corridors and associated riparian areas of Grindstone Creek Tributary 1 as identified in the South Waterdown Subwatershed Study; and,
iii) The greater of the floodplain, meander belt or stable top of bank of the Grindstone Creek. As set out in the South Waterdown Subwatershed Study, the boundary of the floodplain and top of bank may change through cut and fill permitted by Conservation Halton.

b) Development and site alteration shall be prohibited with the exception of the following limited uses:

i) Forest, wildlife and fisheries management;
ii) Low intensity passive recreation uses where they do not impact sensitive natural features or ecological functions;
iii) Existing agricultural operations and other existing uses;
iv) Infrastructure, roads, and utilities, which may be permitted to cross the Natural Heritage System where a scoped Environmental Impact Statement or Environmental Assessment demonstrates no negative impacts on the natural features or the ecological functions for which the area was identified and demonstrates that there are no reasonable alternative location(s); and,
v) Flood and erosion control, and channel modifications, including site alteration to accommodate a storm water outfall, to deepen channels (where critical fish habitat does not exist) or to stabilize steep, eroding slopes, subject to an approved Environmental Impact Statement and obtaining permission from Conservation Halton pursuant to Ontario Regulation 162/06, as may be amended.

c) Storm water management facilities shall generally not be permitted. However, in cases where there is no alternative location, encroachment into vegetation protection zones may be permitted if it can be demonstrated, through an Environmental Impact Statement, that there will be no negative impacts on the ecological features and functions of the adjacent natural feature.
d) Development and site alteration on lands adjacent to the Natural Open Space - Grindstone Creek Natural Area shall not be permitted unless the ecological function of the adjacent lands has been evaluated through the preparation of a scoped Environmental Impact Statement that demonstrates that there will be no negative impacts on the natural features for which the area has been identified or on their ecological functions.

e) Notwithstanding Policies B.4.3.7.2 b) and c), on lands subject to Ontario Regulation 162/06, as may be amended, a permit shall be required from Conservation Halton for development and site alteration.

f) Design and construction activities related to the extension of utilities under the Natural Open Space - Grindstone Creek Natural Area shall be evaluated by a geotechnical engineer in collaboration with a karst specialist.

4.3.7.3 Natural Open Space - Natural Area Designation

In addition to Sections B.3.5.3 – Parkland Policies, C.2.0 – Natural Heritage System, and C.3.3 - Open Space Designations of Volume 1, the following policies shall apply to the lands designated Natural Open Space - Natural Area on Map B.4.3-1 – Waterdown South - Land Use Plan:

a) The Natural Open Space - Natural Area includes escarpment features and associated stream valleys, wetlands, and forests, which are relatively undisturbed. This area contains important plant and animal habitats, and geological features, as well as cultural heritage features. These are the most significant natural and scenic areas of the Niagara Escarpment. The policies below ensure these natural areas are maintained and protected from the impacts of adjacent development.

b) The Natural Open Space - Natural Area represents the most significant ANSI (Life Science), the most significant stream valleys and wetlands associated with the Escarpment, and forested lands 300 metres from the brow of the Escarpment slope. The Natural Open Space - Natural Area designation shall include:

i) Escarpment slopes and related landforms associated with the underlying bedrock, which are in a relatively natural state;
ii) the Waterdown Escarpment Woods ESA;
ili) the Provincially Significant Falcon Creek Wetland Complex;
iv) the significant valley corridors and associated riparian areas of Falcon Creek as identified in the South Waterdown Subwatershed Study;
v) the Floodplain of Falcon Creek; and,
vi) habitat of threatened and endangered species.

c) Storm water management facilities shall generally not be permitted; however, in cases where there is no alternative location, encroachment into vegetation protection zones may be permitted if it can be demonstrated, through an Environmental Impact Statement, that there will be no negative impacts on the ecological features and functions of the adjacent natural feature.

d) Development and site alteration on adjacent lands shall not be permitted unless the ecological function of the adjacent lands has been evaluated through the preparation of an Environmental Impact Statement and it has been demonstrated that there will be no negative impacts on the features or functions for which the area has been identified.

e) Notwithstanding Policies B.4.3.7.3 d) and e), on lands subject to Ontario Regulation 162/06, as may be amended, a permit shall be required from Conservation Halton for development and site alteration.

f) The Regional floodlines for the Falcon Creek system shall be verified through additional study at the subdivision planning stage.

4.3.7.4 Natural Open Space - Protection Area Designation
In addition to Sections B.3.5.3 – Parkland Policies, C.2.0 – Natural Heritage System, and C.3.3 - Open Space Designations of Volume 1, the following policies shall apply to the lands designated Natural Open Space - Protection Area on Map B.4.3-1 – Waterdown South - Land Use Plan:

a) Natural Open Space - Protection Areas are important because of their visual prominence and their environmental significance. They are often more visually prominent than Natural Open Space - Natural Areas. Included in this designation are Escarpment features that have been significantly modified by land use activities such as agriculture or residential development, land needed to buffer prominent Natural Open Space - Natural Areas,
and natural areas of regional significance. The policies below ensure the remaining natural features and the open, rural landscape character of the Escarpment and lands in its vicinity are maintained.

b) The Natural Open Space - Protection Area designation shall include:

i) Escarpment slopes and related landforms where existing land uses have significantly altered the natural environment (e.g. agricultural lands or residential development);

ii) Areas in close proximity to Escarpment slopes, which are visually part of the landscape unit; and,

iii) Regionally Significant Areas of Natural and Scientific Interest (Life Science) or areas designated as environmentally significant by the City.

c) Storm water management facilities shall generally not be permitted. However, in cases where there is no alternative location, encroachment into vegetation protection zones may be permitted if it can be demonstrated, through an Environmental Impact Statement, that there will be no negative impacts on the ecological features and functions of the adjacent natural feature. A permit shall be required from Conservation Halton for development and site alteration.

4.3.7.5 Vegetation Protection Zones

The natural heritage features within the Natural Heritage System, as defined in Policy 4.3.7.1, shall be retained and protected from adjacent development by appropriate vegetation protection zones in accordance with Section C.2.0 – Natural Heritage System of Volume 1 and the following policies:

a) The width of vegetation protection zones should be based on the ecological sensitivity of the feature, and the type and nature of proposed adjacent uses, and shall be, as a minimum:

i) 15 metres measured from the dripline of woodlands or from the boundary of the Waterdown Woods ESA and the Area of Natural and Scientific Interest (ANSI);

ii) 15 metres adjacent to the greatest hazard associated with Grindstone Creek (i.e. flood plain, meander belt or stable top of bank);

iii) 15 metres adjacent to the greatest hazard associated with
Falcon and Hager Creeks (i.e. flood plain, meander belt or stable top of bank);
iv) 30 metres from the boundary of all provincially significant wetlands.

b) No grading shall be permitted within 30 metres of any provincially significant wetlands.

c) Minor grading necessary for adjacent storm water management pond outfalls may occur within the vegetation protection zones described in Policy 4.3.7.5 a) subsections i), ii) and iii). A permit shall be required from Conservation Halton for development and site alteration.

d) These vegetation protection zones are not shown on Map B.4.3-1 or Map B.4.3-2 but shall be subject to the policies and permitted uses for the Natural Heritage System.

e) The adequacy of the minimum vegetation protection zones set out in Policy B.4.3.7.5 a) shall be confirmed through a scoped Environmental Impact Statement submitted prior to draft plan of subdivision or other requisite planning approvals. The Environmental Impact Statement may recommend larger vegetation protection zones and/or different buffer treatments.

f) In addition to confirming vegetation protection zones, the Environmental Impact Statement shall confirm the boundaries of natural features, to the satisfaction of the City in consultation with Conservation Halton.

g) Grading, lot lines, and impervious surfaces shall not be permitted within the vegetation protection zone.

h) Storm water management facilities shall generally not be permitted within the vegetation protection zone, except for required storm water management pond outfalls. However, in cases where there is no alternative location, encroachment of storm water management facilities into vegetation protection zones may be permitted if it can be demonstrated, through an Environmental Impact Statement, that there will be no negative impacts on the ecological features and functions of the adjacent...
natural feature. In no case shall encroachment occur into the vegetation protection zone of a Provincially Significant Wetland.

i) Vegetation protection zones shall remain in or be returned to a naturally vegetated state using only non-invasive plant species native to Hamilton.

4.3.7.6 Hedgerows

Hedgerows, as identified in the South Waterdown Subwatershed Study, provide valuable corridors for wildlife and plant species to move between the Niagara Escarpment and Grindstone Creek, and shall be evaluated through an Environmental Impact Statement by the applicant prior to draft plan approval. Those that are worthy of protection should be identified for protection in the plans of subdivision. The applicant shall identify means to implement the protection.

4.3.8 Natural Hazard Features

4.3.8.1 Hazard Lands - Karst Area

Hazard Lands - Karst Area are identified on Map B.4.3-2 – Waterdown South – Natural Heritage System and Natural Hazard Features. These lands contain known surface and subsurface karst features, and the area is considered to have a moderate potential for risk to public safety and property damage as a result of bedrock instability and soil subsidence. As well, the karst features conduct subsurface flows to springs in the Grindstone Valley ESA. These springs provide important baseflow to downstream coldwater fisheries and potentially contribute groundwater to downstream wells.

4.3.8.2 In addition to Section B.3.6.5 of Volume 1, the following policies shall apply to the lands identified as Hazard Lands - Karst Area on Map B.4.3-2:

a) Due to safety and environmental concerns, development shall not be permitted within the Hazard Lands - Karst Area with the possible exception of water and wastewater services, and utilities. Such infrastructure shall be subject to detailed geological, hydrogeological, and geotechnical analyses, as outlined in the Stage 3 report of the South Waterdown Subwatershed Study, to the satisfaction of the City in consultation with Conservation Halton, which demonstrates that karst hazards can be
appropriately mitigated and there will be no negative impacts on downstream springs and stream flows.

b) Where infrastructure is contemplated, subject to Policy B.4.3.8.2 a), it shall be designed and constructed in accordance with a geotechnical engineer’s recommendations, in consultation with a karst specialist, at the detailed design stage, having regard for appropriate standards and protocols for building in karst to mitigate potential impacts on the underground infrastructure.

c) Notwithstanding Policies B.4.3.8.2 a) and b), safety and environmental risks are low along the south edge of the Hazard Lands - Karst Area. Some limited development related to storm water management facility infrastructure, such as environmental setbacks, an access road, and a sediment drying area are considered to be acceptable activities within that portion of the Hazard Lands - Karst Area, provided any excavations are shallow and generally do not extend into the bedrock.

e) Any newly identified karst hazardous areas not currently shown as Hazard Lands - Karst Area on Map B.4.3-2, shall comply with the policies of this Plan, including Sections B.4.3.8.2 a), b), c), and d).

4.3.8.3 Karst Constraint Areas
The following policies shall apply to Karst Constraint Areas identified on Map B.4.3-2 – Waterdown South – Natural Heritage System and Natural Hazard Features:

a) Development and site alteration may be permitted in the Karst Constraint Areas provided all of the following are met:

i) The effects and risk to public safety are sufficiently minor as to be managed or mitigated;

ii) A risk assessment is undertaken;

iii) New karst hazards are not created and existing karst hazards are not aggravated;

iv) The quality and quantity of surface water draining from the Secondary Plan area in the post-development condition does not significantly impact downstream karst processes or features;

v) No negative impacts on the karst features and functions will result; and,

vi) If karst features are encountered during subsurface excavation
work, karst mitigation measures shall be undertaken, in accordance to the Karst Implementation Plan in Stage 3 of the South Waterdown Subwatershed Study.

b) Development or site alteration within Karst Constraint Areas shall require a permit from Conservation Halton pursuant to Ontario Regulation 162/06, as may be amended.

c) The following policies shall also apply to lands identified as Karst Constraint Area ‘B’ on Map B.4.3-2:

i) A site-specific investigation of groundwater management concerns and karst remediation requirements shall be required where the installation of servicing infrastructure involves excavation into bedrock and karst conditions are encountered;

ii) The use of grouting techniques shall be minimized to limit potential impacts to spring flow or baseflow;

iii) For the construction of basements, excavation into the bedrock shall be minimized where possible. If building base grades extend down to the top of the bedrock, or into bedrock, and karst features are encountered, the features shall be remediated as a function of the specific construction-related activity.

iv) Facility design and construction activities shall be evaluated by a geotechnical engineer in collaboration with a karst specialist at the detailed design stage.

e) The following policies shall also apply to lands identified as Karst Constraint Area ‘C’ on Map B.4.3-2:

i) A geotechnical study shall be undertaken at the owner’s expense by a qualified professional to determine the load bearing capacity of the bedrock at the proposed Burke Street crossing of the Natural Open Space - Grindstone Creek Natural Area.

ii) The design of the proposed crossing structure shall minimize the footprint of the footings required for it to be safely constructed and operated. This design shall minimize potential interference of the footings with surface water flow and groundwater flow into the bedrock below the stream-bed and the adjacent area.
f) Within Karst Constraint Area ‘D’, as identified on Map B.4.3-2, the existing outcrop should be retained as a landscape feature, where feasible. If removal is necessary, then the outcrop shall be covered with fill during site grading.

g) The following policies shall also apply to lands identified as Karst Constraint Area ‘E’ and Karst Constraint Area ‘F’ on Map B.4.3-2:

i) Where development is contemplated, an additional study that satisfies the requirements of Stages 4 and 5 of the Checklist for Development in Karst Terrain of the South Waterdown Subwatershed Stage 2 Report shall be required at the time of plan of subdivision;

ii) This additional study shall include:
   1. a subsurface investigation to determine specific design, construction, and operating concerns that minimize impact to the karst;
   2. an assessment of construction options for a storm water management facility;
   3. additional karst feature mapping;
   4. observations of surface hydrology and spring monitoring;
   5. an evaluation of overburden type and thickness;
   6. limited bedrock coring and associated downhole testing; and,
   7. Excavation of exploration trenches down to the bedrock surface.

4.3.9 Utility Designation

4.3.9.1 In addition to the policies of Section C.3.4 – Utility Designation of Volume 1, the following policies shall apply to lands designated Utility on Map B.4.3-1 – Waterdown South - Land Use Plan:

a) The following uses shall be permitted:

   i) pipelines, including petroleum pipelines;
   ii) hydroelectric transmission facilities;
   iii) municipal water towers, and wastewater and storm water management facilities; and,
   iv) secondary uses that are complementary to the utility functions of these lands, such as recreational uses, trails, and community gardens, subject to consultation with the applicable utility agency.
b) A major hydro-electric utility corridor traverses the Waterdown South Secondary Plan area, and a petroleum pipeline corridor exists along the west side of Kems Road as shown on Map B.4.3-1. The City shall work in consultation with Hydro One and Enbridge Pipelines Inc., or their successor companies to establish pedestrian/bicycle path/trail linkages along these corridors.

c) Improvements to create trail linkages within the hydro-electric utility corridor that traverses the Secondary Plan area shall be subject to the approval of Hydro One or its successor company.

d) Proposed crossings of the petroleum pipeline corridor along the west side of Kems Road by roads, pedestrian/bicycle paths, services, and utilities shall be subject to the approval of Enbridge Pipelines Inc. or its successor company.

e) Grading and drainage of lands within and/or adjacent to the hydro-electric utility corridor shall be designed to ensure there are no adverse effects on these lands and shall have regard for comments from Hydro One or its successor company.

f) Storm water management facilities, water towers, sewage pumping stations, and utility uses not currently designated shall comply with Section B.4.3.13 - Infrastructure.

4.3.10 Urban Design Policies

Comprehensive Urban Design Guidelines have been prepared to implement the design directions of the Waterdown South Secondary Plan. The guidelines shall further the vision and concept plan for the Waterdown South community and identify means of achieving the concept through the planning process.

The following policies set out the matters the Urban Design, Streetscape and Open Space Guidelines shall address as well as the key urban design elements.

General Urban Design Policies

4.3.10.1 General Urban Design Policies

In addition to Section B.3.3 - Urban Design Policies and all other urban design policies of Volume 1, and the Council adopted Urban Design Guidelines, the following policies shall apply to all development in the Waterdown South Secondary Plan area:
a) Development shall foster streets as interactive outdoor space for pedestrians.

b) A small village square should be incorporated into each Local Commercial designated area and a larger urban square incorporated in the District Commercial designation.

c) The implementing Zoning By-law shall contain provisions restricting the extent of garage protrusions and governing the size of garages proportionate to lot size.

d) Reverse frontage lotting patterns shall be discouraged and may only be permitted under certain circumstances where the owner satisfies the City that no other alternative development form or street patterns are feasible. Access via laneways, service roads, parallel lanes and window streets shall be encouraged as alternatives to reverse frontage or noise walls.

e) Consideration shall be given to the location of telecommunications and utility equipment within the public right of way as well as on private property. The City encourages innovative methods of containing utility equipment on, or within streetscape features such as gateways, lamp posts, transit shelters, etc. Telecommunication utility equipment shall be clustered or grouped wherever possible to minimize visual impact.

f) To enhance the streetscape appearance of arterial and collector roads, flankage lots shall be required to present their main building façades or a second front façade to these roads and to enhance their design and landscaping treatments to avoid the appearance of blank building walls and service entrances.

g) Where higher density housing forms are planned along major arterial or collector roads, vehicular access via a rear lane shall be encouraged.

h) On-street parking shall be provided within the District Commercial and Local Commercial designations where adjacent commercial or live-work uses are developed.

i) Collector roads should be designed with dwellings and buildings facing the street with direct access from the street. Frequent block spacing and intersecting roads shall be accommodated along collector roads.
j) Local roads should be developed as a system of interconnected streets and relatively short blocks to promote pedestrian activity within neighbourhoods. To promote walking, these streets should be developed in the form of a modified grid pattern responding to the collector street network and open space lands.

k) Dundas Street, west of Street A, shall have a strong built edge, wide sidewalks and tree planting with native species, which will lend it a more urban, developed character that reflects its significance as the community main street of Waterdown.

l) Dundas Street, east of Street A, shall reflect a more rural setting in respect of the Rural designation north of Dundas Street. The tributary of Grindstone Creek, on the south side of Dundas Street in this area, can be used as a greenspace buffer to the development areas south of Dundas Street.

m) All intersections should be designed to support safe pedestrian crossing. Major intersections should support pedestrian crossings, by providing safe crossing points, and connection to public walkways. Boulevard tree planting should be closely spaced in the vicinity of such intersections.

n) Minor intersections should continue to feature landscape treatment through street tree selection with an increased density of boulevard tree planting.

4.3.10.2 Gateways
Gateways are prominent sites located at entry points into an area, and coincide with major intersections. In addition to Section B.3.3.4 – Gateways of Volume 1, the following policies shall apply to Gateways in the Waterdown South community:

a) The Urban Design Guidelines have identified the following gateways:

i) Dundas Street and Kerns Rd;
ii) Dundas Street and Collector Road A;
iii) Dundas Street and Burke Street; and,
iv) Burke Street and Collector Road A.

b) Urban design briefs as submitted as part of a plan of subdivision application shall address streetscape, landscape, and built form elements within these gateways.
c) A landscape plan identifying the specific design elements of the gateway features shall be prepared to the satisfaction of the City as a condition of draft plan of subdivision approval.

d) Along Mountain Brow Road, storm water management facilities may provide the opportunity for landscaped gateways into the community.

4.3.10.3 District Commercial Designated Areas

a) The Council adopted Urban Design Guidelines shall provide direction on how an intensified urban environment with a strong pedestrian orientation shall be achieved along Dundas Street.

b) The ultimate development of the District Commercial area should create a ‘retail main street’ along Collector Road A.

c) Although it is not the intent for Dundas Street to serve as a ‘retail main street’, where feasible buildings should be oriented to and face directly onto Dundas Street to achieve a built form presence.

d) Along Collector Road A, building envelope provisions and the creation of a build-to zone through setback provisions and block frontages should be addressed in the urban design guidelines and set out in the implementing zoning by-law.

e) The Council adopted Urban Design Guidelines shall ensure the ‘retail main street’ and pedestrian character of the street in accordance with Section B.4.3.4.3 n) vii).

f) The portion of Collector Road A designated District Commercial shall be developed as a ‘retail main street’ and pedestrian oriented street in accordance with the Council adopted Urban Design Guidelines required in Policy e) above and the following policies:

i) The orientation of the stores along the ‘retail main street’ should create a strong pedestrian retail connection.

ii) The principal public entrance shall face the ‘retail main street’ and provide direct access onto the public sidewalk.

iii) The primary windows and signage should also face the street.

iv) Buildings facing the street should be encouraged to have awnings, canopies, arcades or front porches to provide weather protection.

v) Buildings should have a consistent setback.
vi) Parking lots abutting the street should be screened with low walls, and landscape materials to provide a sense of enclosure along the setback line.

4.3.10.4 Special Character Roads
In addition to Section C.4.5.3 of Volume 1, the following policies shall apply to Kems Road and the portion of Mountain Brow Road between Burke Street and the major hydro-electric utility shown as Special Character Roads on Map B.4.3-1 – Waterdown South - Land Use Plan:

a) These roads and the lands adjacent to them provide a unique and attractive environment and cultural heritage value and interest due to their:

i) location adjacent to the Niagara Escarpment Plan Area;
ii) transition between the rural and urban character of Waterdown; and,
ii) rural cross-section.

b) The existing rural road cross-section including existing mature vegetation fronting the street shall be maintained where feasible. This action may require unique approaches to grading and to the preservation of trees along the road.

c) Development adjacent to the Special Character Roads shall be sensitive to the protection of views towards the Niagara Escarpment.

d) The existing character of this section of Mountain Brow Road, and of Kems Road shall be protected by minimizing changes to the existing road right-of-way and ensuring that development is compatible with, and sympathetic in design to the character of the existing streetscape.

e) Direct access to the road for new uses shall be permitted, although there may be some restrictions in specific locations related to specific forms of development or the use of alternative designs in accordance with the Urban Design Guidelines.

f) Existing viewsheds along Mountain Brow Road and Kems Road shall be maintained and enhanced through landscape measures.
to ensure the new built form does not dominate the viewsheds as one travels these roads.

g) Where Kems Road or Mountain Brow road require reconstruction, such works shall be designed and constructed to minimize the impact on the Escarpment environment and to ensure the least possible change occurs in the natural landscape. Such design shall include road and boulevard design that blends into the surrounding Escarpment landscape, landscape planting, vegetative screens where feasible, and vegetation protection zones around the natural heritage features.

4.3.11 Cultural Heritage Resources

4.3.11.1 The Secondary Plan area contains a number of cultural heritage attributes including archaeological sites, areas of archaeological potential, and built heritage resources. In addition to Section B.3.4 – Cultural Heritage Resources Policies of Volume 1, the following policies shall apply to the study, protection and/or incorporation of cultural heritage resources within the Waterdown South Secondary Plan area:

a) The retention and conservation of historical buildings, structures or features on their original sites shall be encouraged.

b) The integration of cultural heritage resources into new development proposals in their original use or an appropriate adaptive reuse shall be promoted.

c) Potential adaptive reuse strategies for built heritage resources shall be addressed in the cultural heritage impact assessment. Notwithstanding the permitted uses within the designation in which these heritage buildings may be located, a broad range of residential, commercial, and institutional uses shall be permitted subject to the findings of the cultural heritage impact assessment and provided they are appropriate and compatible.

4.3.12 Transportation Policies

The City shall provide a safe and efficient transportation network which includes bicycle lanes, sidewalks, off-street walking trails and an arterial, collector, and local road network for the Waterdown South Planning Area, in accordance with Map 4.3-1 – Waterdown South Secondary, Section C.4.0 – Transportation Policies of Volume 1, and the following policies:
4.3.12.1 General Policies

The following policies shall apply to the transportation network throughout the Secondary Plan area:

a) All new roads within the Planning Area shall be designed and constructed in accordance with the Standard Drawings for Urban Roads contained with the adopted standards of the City. The City may consider alternative development standards where, in the opinion of the City, they are appropriate and do not compromise public safety or the efficiency of the transportation network or the ability to locate the required services.

b) As a condition of development or redevelopment approval, all lands required for new internal public roads, road widenings for existing public roads in accordance with Section B.4.3.10.4, traffic calming measures, roundabouts and/or daylighting triangles shall be dedicated free of charge and free of all encumbrances to the satisfaction of the City, except where the City’s development charge policy provides otherwise.

c) The applicable portion of growth-related costs related to the design and construction of all new public roads and the appropriate upgrading of the adjacent existing public roads required as a result of development within the Waterdown South Planning Area shall be paid for by development, and shall be subject to the financing and cost-sharing provisions of Sections B.4.3.14.4 and B.4.3.14.5 of this Secondary Plan.

d) In some areas, and for some forms of development such as street townhouses along arterial and collector roads, access serviced by laneways may be appropriate and encouraged to contribute to an improved streetscape and urban character, and to enhance road safety.

e) On-street parking shall be discouraged on arterial roads where the main function of the roadway is to provide capacity for longer-distance trips. On-street parking on collector and local roads shall be permitted.

f) The City should consider roundabouts where a study confirms they are feasible, appropriate, and advantageous in terms of traffic flow, traffic safety, community design, or environmental considerations. The Waterdown South Secondary Plan Area Traffic Impact Study recommended roundabouts along Burke Street at Collector Road A and Skinner Road. The study also found that
either stop controls or roundabouts are appropriate options for the intersections at Collector A/Street A/Street B, Collector A/Skinner Road, and Skinner Boulevard/Shalem Boulevard.

g) Notwithstanding Policy B.4.3.12.1 f), within the District Commercial designated area further detailed study, through the completion of a Streetscape Master Plan in accordance with Policy B.4.3.12.2 a), shall be undertaken by the landowner(s) to assess the feasibility of a roundabout at the intersection of Collector Road A, and Streets A and B. The detailed study shall address the ability of a roundabout:

i) to mitigate high delays or long vehicle queues;
ii) to balance traffic flows between approaches;
iii) to provide a safe environment for pedestrians, as well as bicyclists;
iv) to accommodate on-street parking;
v) to accommodate on-street bicycle lanes;
vi) to achieve a pedestrian-oriented ‘retail main street’ area; and,

j) Reconstruction of Mountain Brow Road and Kems Road shall have regard for Sections B.4.3.10.4 and B.4.3.12.2 a) viii).

4.3.12.2 Streetscape
Streetscape is a key element of a successful public realm. Roads are the principal interface between built form and the public realm and as such play a dominant role in determining the character of any given neighbourhood. The elements that shape the streetscape include adjacent architectural design, the relationship of buildings to

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the street, yards and boulevards, roads, sidewalks, lighting, planting of trees, fences, and utilities.

The following Streetscape policies shall apply to the planning and design of public roadways including the spaces extending across the road:

a) A comprehensive Streetscape Manual shall be prepared by the landowners, to the satisfaction of the City, for the overall Waterdown South Secondary Plan area as a condition of draft plan approval. The Streetscape Manual shall reflect the streetscape principles and objectives in Section B.4.3.2 of this Plan, the Urban Design Guidelines, and the Council endorsed International Charter for Walking. The Streetscape Manual shall address the following:

i) The function, design and treatment of road types (i.e. sidewalks and crosswalks, landscaping/boulevard plantings including use of native species, intersection treatments, on-street parking, signage, street lighting and utility wires, etc.) with differing requirements for residential versus commercial and mixed-use areas;

ii) A continuous bicycle trail system and appropriate means to accommodate the system on arterial and collector roads;

iii) The location and design of a continuous pedestrian trail system, and public sidewalks and including matters of width, materials and lighting;

iv) Requirements for the mobility impaired, such as safety features, standards for the placement of street furniture, sidewalk maintenance and design, including curb cuts so as to provide a continuous barrier free path to transportation services;

v) Requirements for boulevard tree planting including spacing and canopy density with differing requirements for residential versus commercial and mixed-use areas;

vi) The design of special entry points or gateway features where arterial and collector roads intersect with perimeter arterial roads;

vii) The design of intersections including roundabouts where required; and,

viii) The compatibility of the design of Mountain Brow Road, and Kems Road and other roads which abut Natural Open Space - Natural Area and Natural Open Space - Protection Area designations, with the visual and natural environment of the
Niagara Escarpment, in consultation with the Niagara Escarpment Commission.

b) The design of all streetscape elements shall be consistent with the Streetscape Manual so the roads are cohesive and attractive places for pedestrians and persons travelling through them. Where the City agrees to initiate alternative development standards at draft plan of subdivision approval, the Streetscape Manual shall be updated to reflect this standard.

4.3.12.3 Major Arterial Roads
In addition to Policy C.4.5.2 c) of Volume 1, the following policies shall apply to major arterial roads as shown on Map 4.3.1 – Waterdown South Secondary Plan – Land Use Plan:

a) Notwithstanding Policy C.4.5.2 c) iii) of Volume 1, Burke Street shall have a designated right-of-way width of 30 to 36 metres, in accordance with the Waterdown/Aldershot Transportation Master Plan.

b) If the Waterdown/Aldershot Transportation Master Plan confirms that Burke Street is to align with Burke Street to the north, the intersection shall be designed to avoid direct northbound access to Burke Street from Burke Street.

c) Reverse lot frontage development shall generally not be permitted along arterial roads except as provided for in Policy B.4.3.10.1 d) of this Secondary Plan.

4.3.12.4 Collector Roads
In addition to Policy C.4.5.2 e) of Volume 1, the following policies shall apply to collector roads as shown on Map B-4.3.1 – Waterdown South Secondary Plan – Land Use Plan:

a) Notwithstanding Policy C.4.5.2 e) ii) of Volume 1, the right-of-way width of collector roads shall be 20 metres, but may be increased up to 26 metres to accommodate bicycle lanes, on-street parking, other traffic calming measures, streetscape features, and bus bays (for future public transit) as identified in the Streetscape Manual.

b) Bicycle facilities may be included within collector road right-of-ways, where required by the Streetscape Manual.
c) Collector roads that travel through the Planning Area shall contain a maximum of two through lanes and provide for on-street parking on at least one side.

4.3.12.5 Local Roads

A Local Road is an internal local street that is inter-linked to the neighbourhood network. In addition to Policy C.4.5.2 f) of Volume 1, the following policies shall apply to local roads as shown on Map B-4.3.1 - Waterdown South Secondary Plan - Land Use Plan:

a) Notwithstanding Policy C.4.5.2 f) ii) of Volume 1, the right-of-way width of Local Roads shall be 18 metres, but may increase to accommodate bicycle lanes, on-street parking, traffic calming measures, and streetscape features, as identified in the Streetscape Manual.

b) In accordance with Policy B.4.3.12.1 a), alternative development standards and alternative road widths may be considered. The details regarding appropriate right-of-way widths shall be addressed prior to draft plan of subdivision approval.

c) On-street parking shall be required on at least one side of the road.

d) A local road connection shall be provided from Collector Road A to Mountain Brow Road/King Road within the Secondary Plan area. The road connection shall be illustrated in the draft plan of subdivision for lands adjacent to Mountain Brow Road. The road network shall be designed to create an indirect route to King Road so traffic flow to King Road is not promoted.

4.3.12.6 Active Transportation Network

Sidewalks are places for pedestrian movement, children’s play and neighbours’ socializing. Sidewalks encourage walking as urban transportation, walking to public transit and walking for pleasure. Sidewalks improve the liveability of a community, enhance safety and are vital for the quality of life of children, older adults, and persons with disabilities.

In addition to Section C.4.3 - Active Transportation Network of Volume 1, the following policies shall apply to the entire Secondary Plan area:

**Sidewalks**
a) The Streetscape Manual, as required in Section B.4.3.12.2 a), shall identify the location of sidewalks, their widths and design elements.

b) Sidewalks should be provided on both sides of arterial and collector roads, and one side of local roads, or in accordance with a new City of Hamilton sidewalk policy.

c) Public sidewalks shall be of sufficient width to accommodate utilities, provide adequate visibility from the street and promote public safety, and shall be determined prior to draft plan approval.

**Bicycle Trails**  
d) A continuous bicycle trail system shall be identified as part of the Streetscape Manual required by Policy B.4.3.12.2 a).

e) The bicycle trail system shall include both on-street and off-street routes linking the parks and community facilities. Off-street routes shall use public open space lands including Neighbourhood Parks, school sites, a potential route along the hydro corridor, and a dedicated bicycle lane within the east-west Skinner Boulevard, and potentially other collector roads where feasible. Any off-street bike paths shall be constructed by the developer and dedicated to the City as a public right-of-way.

**Pedestrian Trails**  
f) Pedestrian trails shall be established, in consultation with the Niagara Escarpment Commission, along the hydro-electric utility corridor that traverses the Secondary Plan area, along the utility corridor at the western edge of the Plan area, along Grindstone Creek, through storm water management facilities, and through natural heritage areas to create a connected network that integrates the Plan area with the surrounding community and the Niagara Escarpment. Any off-street pedestrian trails shall be constructed by the developer and dedicated to the City as a public right-of-way.

g) Trail locations shall be based on field assessments of habitat sensitivity and consideration of potential linkages to the Bruce Trail.
h) Opportunities to formalize two existing informal parking areas and access points to the Bruce Trail located in the vicinity of the Waterdown Woods ESA shall be investigated. One opportunity is located where the Bruce Trail crosses Kems Road; the second is located where the Bruce Trail crosses Mountain Brow Road / King Road.

i) The establishment of other Bruce Trail access points from the Plan area between the hydro-electric corridor and Kems Road shall generally be discouraged, in consultation with the Niagara Escarpment Commission and the Bruce Trail Conservancy.

4.3.12.7 Public Transit Network
Good public transit service is an asset to all communities. The ability to support public transit is dependent on the density and arrangement of land uses as well as the design of the streetscape and the relationship of adjacent buildings to the street.

In addition to Section C.4.4 – Public Transit Network of Volume 1, the following policies shall apply to the entire Secondary Plan area:

a) The City shall ensure the design of the Waterdown South Secondary Plan area, including the location of higher density land uses and streetscape design, provides for the ability to accommodate future public transit. The long term potential for higher order public transit such as express bus service along arterial roads internal and external to the Secondary Plan area should be planned for.

b) Neighbourhood design should minimize walking distance to future public transit service. Within the Waterdown South Planning Area, 90% of all residential dwellings shall generally be within 400 metres of a potential public transit stop.

c) The future public transit network shall be integrated into the community design and be a key component of community focal points including commercial areas.

4.3.13 Infrastructure Policies
4.3.13.1 Lake-Based Municipal Water and Wastewater Systems
In addition to Section C.5.3 - Lake-Based Municipal Water and Wastewater Systems of Volume 1, the following policies shall apply to the entire Secondary Plan area:
a) The provision of municipal sanitary sewers and watermains shall comply with the approved Waterdown Water and Wastewater Class Environmental Assessment, the City's Development Guidelines, and the City-wide Water/Wastewater Master Plan.

b) Existing residential dwellings on properties not subject to a development application shall be encouraged to connect to municipal water and wastewater services as they are extended.

c) It is intended for the Plan area to be serviced by a required water tower located in the Plan area, as approximately shown on Map 4.3-1.

d) A water tower is approximately located within a Neighbourhood Park as shown on Map B.4.3-1. The specific location of this water tower may be changed without amendment to this Plan.

e) An existing sewage pumping station is situated in the west corner of the Secondary Plan area on City-owned land. The site size may be altered, if it is deemed necessary by the City, without amendment to this Plan.

4.3.13.2 Recharge/Discharge
Where soil conditions permit, proponents of development within the Secondary Plan area should investigate means to maintain recharge and base flows, in accordance with the Functional Servicing Plans as set out in Policy B.4.3.14.1.b), and on an individual plan of subdivision, basis to achieve the storm water management objectives of the South Waterdown Subwatershed Study.

4.3.13.3 Storm Water Management
In addition to Section C.5.5 – Storm Water Management Facilities of Volume 1, the following policies shall apply to the entire Secondary Plan area:

Storm Water Management Plans
a) A Storm Water Management Plan shall be prepared as part of the Functional Servicing Plan, which provides supporting technical analyses for sizing and design of proposed storm water management facilities.

b) The Storm Water Management Plan shall:
i) demonstrate conformity with the recommendations of the South Waterdown Subwatershed Study;
ii) identify where deviations are warranted, if any;
iii) shall have regard to current provincial storm water management practices and design guidelines, the requirements and adopted standards of the City, the policies of this Plan, and the requirements of Conservation Halton, and the Province; and,
iv) incorporate a naturalized design with appropriate native trees, shrubs, sedges and wildflowers, and accommodate a trail system where possible without compromising public safety.

c) Storm water management facilities are identified schematically on Map B.4.3-1, but shall be permitted in all land use designations except for the Natural Open Space designations.

d) Notwithstanding Policy 4.3.13.2 c), storm water pond outfalls may be allowed within the Natural Open Space designations subject to approval of a scoped Environmental Impact Statement by the City in consultation with Conservation Halton. Such storm water pond outfalls shall require a Permit from Conservation Halton pursuant to Ontario Regulation 162/06, as may be amended.

e) Where possible, storm water management facilities should be located adjacent to other open space areas.

f) Storm water management facilities may provide for trail connections in accordance with the policies of this Plan.

g) The specific size and location of storm water management facilities shall be established through a Functional Servicing Plan, consistent with the South Waterdown Subwatershed Study, prior to draft plan of subdivision approval as set out in Policy B.4.3.14.1 b).

h) The location and size of storm water management facilities on Map B.4.3-1 are approximate and may be changed without amendment to this Plan. Where a storm water management pond is moved or reduced in size, the adjacent or nearest urban land use designation shall apply to the area where the storm water management facility was formerly located on Map B.4.3-1.

i) Lands required for storm water management facilities, including those shown on Map B.4.3-1 or other locations identified through...
detailed review of development applications, shall be conveyed to the City and shall be subject to repayment for both land and construction costs in accordance with the City’s financial policies.

j) Development shall not be permitted which would require storm water drainage excavation or other related work south of Mountain Brow Road.

**Detailed Storm Water Management Requirements**

k) Creeks shall be maintained or improved principally with respect to water temperature mitigation and sediment load through storm water management techniques both during and following construction. Wherever possible and feasible, naturalized storm water management techniques shall be employed.

l) The water quantity draining into the Grindstone, Falcon and Hager Creeks shall generally maintain the pre-development hydrological regime in accordance with applicable municipal storm water management policies of the City, and the requirements of the South Waterdown Subwatershed Study.

m) Storm water management facilities shall be lined where required to prevent loss of surface flow to Grindstone, Falcon and Hager Creeks, and/or to prevent leakage into the underlying karstic bedrock.

n) Any storm water management facility proposed within Karst Constraint Area ‘C’ as identified on Map B.4.3-2, shall be constructed with minimal risk of aggravating existing karst features or potentially creating new hazards.

o) In the preparation of the Functional Servicing Plans, management of peak flows from the Waterdown South Secondary Plan Area, will be addressed consistent with the South Waterdown Subwatershed Study to avoid potential off-site flooding problems over the Niagara Escarpment brow, farther downstream and at Escarpment springs.

p) An erosion and sediment control plan shall be submitted when detailed engineering is undertaken, prior to site alteration and/or prior to registration of plans of subdivision, whichever comes first, which addresses how sedimentation will be controlled during construction stages.
q) The City may consider the establishment of interim storm water management facilities on a temporary basis within the Waterdown South Secondary Plan Area, notwithstanding the underlying land use designation for the lands, except for areas within the Natural Open Space designations as shown on Map B.4.3-1. The interim storm water management facility shall not preclude or prejudice future development on the basis of the land use designations shown on B.4.3-1. All temporary facilities shall be stabilized with vegetative cover.

r) Infiltration of runoff may assist in the control of erosion, maintenance of baseflows, and reduce inflows to storm sewers and overland flow paths. However, the low permeability of the soils (Halton Till) within the Secondary Plan area presents a constraint to the implementation of widespread infiltration measures. Furthermore, the occurrence of epikarst where overburden is shallow could potentially aggravate karst features leading to the development of karst-related hazards. As such, measures to promote infiltration and their feasibility shall be investigated as a condition of draft plan of subdivision for the following areas, as recommended by the South Waterdown Subwatershed Study:

i) The area south of the hydro-electric utility corridor, and south of Skinner Boulevard;
ii) Within the Grindstone Creek Tributary 1 catchment area on the south side of the creek;
iii) Lands draining to Grindstone Creek Tributary 3 and Falcon Creek through infiltration of roof runoff and backlot drainage; and,
iv) Areas adjacent to Core Areas, where karst is present, as identified on Map B.4.3-2 through infiltration of roof runoff.

o) Areas where karst is present often have overburden that is less than 2 metres thick where infiltration into underlying karst features may already be established through soil pipes and desiccation fractures in the overburden. Development of infiltration measures must assess the potential to aggravate existing karst features. In such areas, widespread or diffused infiltration measures may be more acceptable than concentrated infiltration.

p) The development area located adjacent to Dundas Street, between the Grindstone Creek Natural Area and Skinner
Boulevard will drain to the relocated Branch 3 of the Grindstone Creek Tributary 1 as shown on Map B.4.3-2. This area shall be serviced by privately owned and operated on-site storm water management facilities. These facilities shall control water quality, quantity and erosion of post-development runoff to pre-development levels. The on-site storm water management facilities shall be designed to meet the standards and criteria set out by the Province.

q) The ultimate configuration and design of the relocated Branch 3 of the Grindstone Creek Tributary 1, as illustrated on Map B.4.3-2 shall be based on Conservation Halton requirements. The relocated branch shall be fully contained within public lands and shall be maintained by the City.

4.3.13.4 Utilities

a) Public and private utilities shall be permitted in all land use designations subject to the policies of this Plan including those for the Natural Heritage System designations as set out in Section B.4.3.7, the Natural Hazard Lands as set out in Section B.4.3.8, and where specific policies of this Plan provide further direction.

b) Wiring for electrical power distribution, telecommunication, cable television and any similar systems shall be coordinated, planned and installed in common trenches, wherever feasible, within public road allowances or within appropriate easements to avoid unnecessary over digging and disruption of municipal rights-of-way.

c) Large utility infrastructure shall be located and designed to minimize visual impact and ensure compatibility with surrounding land uses, where practical.

d) The City shall ensure that the adequate utilities and/or communication/telecommunications facilities are, or will be, established to serve the anticipated development and that these facilities can be phased in a manner that is cost-effective, fiscally feasible, and efficient.

e) New and expanded utility facilities shall be designed and located to minimize impact on the Niagara Escarpment and shall be consistent with the objectives of the Niagara Escarpment Plan.
4.3.14 Implementation

In addition to Chapter F - Implementation of Volume 1, the following policies shall apply to the entire Secondary Plan area:

4.3.14.1 Study Requirements
The following studies shall be required to be submitted prior to or at the time of application for any plan of subdivision, official plan amendment, or zoning by-law amendment, in accordance with Section F.1.19 - Complete Application Requirements and Formal Consultation, and the relevant section of Section F.3.0 - Other Implementation Tools of Volume 1:

a) Environmental Impact Statement (EIS) in accordance with the City of Hamilton and Conservation Halton EIS guidelines and any additional requirements as outlined in the Subwatershed Study. This EIS requirement may be scoped subject to the approval of the City and Conservation Authority;

b) Functional Servicing Plan which addresses:

   i) Servicing design requirements;
   ii) Internal and external sanitary and storm drainage areas;
   iii) A water demand and sanitary sewage generation study in support of preliminary sizing of water and wastewater infrastructure;
   iv) Layout of roads and other components of the transportation system including trails;
   v) Preliminary sizing, design and location of storm water management facilities;
   vi) Preparation of a Storm Water Management Plan in conformity with the recommendations of the South Waterdown Subwatershed Study and Section B.4.3.13.3;
   vii) General conformity with the recommendations of the Waterdown Water and Wastewater Class Environmental Assessment;
   viii) Incorporation of mitigation measures recommended in the Environmental Impact Statement and Karst Geological / Hydrogeological / Geotechnical studies;
   ix) Preliminary grading requirements; and,
   x) Any additional requirements as outlined in the South Waterdown Subwatershed Study.
c) Retail Market Impact Study for any proposed commercial development in excess of 10,000 square metres of retail and service commercial floor area within the District Commercial designation;

d) Detailed Concept Plan for any application within the District Commercial designation;

e) Geological, hydrogeological and geotechnical studies of karst features in areas identified in Map 4.3-2, and the South Waterdown Subwatershed Study – Stage 2 Report as potentially containing karst features, or for those areas where karst is discovered through subsequent studies;

f) Transportation analysis of intersection requirements and timing of external road improvements;

g) Cultural Heritage Impact Assessment;

h) Archaeological Assessment;

i) Streetscape Manual;

j) Visual Impact Assessment, where required, to the satisfaction of the City, in consultation with the Niagara Escarpment Commission which:

  i) Establishes the maximum building height, minimum building setbacks, and building material so that no component of the building mass is visible above the skyline of the Niagara Escarpment from below the Escarpment brow (edge);

  ii) Establishes an appropriate buffer between the Escarpment Natural Area and Escarpment Protection Area and adjacent roads and built form to protect the visual and landscape character of the Escarpment; and,

  iii) Assesses the visual impact of municipal infrastructure such as water towers and pumping stations on the skyline of the Niagara Escarpment;

k) Confirmation of the Falcon Creek Regional floodlines to the satisfaction of the City and Conservation Halton;
l) Urban Design Brief that includes text, plans, details, and/or elevations, as necessary, to demonstrate:

i) Compliance with the urban design policies of this Plan, the Niagara Escarpment Plan policies and the Waterdown South Urban Design Guidelines; and

ii) How the intent of the Secondary Plan policies, the Niagara Escarpment Plan policies and the Waterdown South Urban Design Guidelines have been met.

m) Detailed noise control study; and,

n) Other studies which may be identified through the formal consultation process.

4.3.14.2 Conditions of Development

Notwithstanding any other provision of this Plan, and except for expansions of existing uses, the following conditions shall be fulfilled prior to registration of plans of subdivision, lifting of a ‘Hold’ on a site specific zoning, or site plan approval.

a) Water distribution and storage facilities, as set out in the Waterdown Water and Wastewater Class Environmental Assessment and the implementing functional servicing plans, required to service specific stages of development are committed to be in place and operative prior to or coincident with occupancy and use of the land.

b) Wastewater facilities required for conveyance and treatment, as set out in the Waterdown Water and Wastewater Class Environmental Assessment, required to service specific stages of development are committed to be in place and operative prior to or coincident with occupancy and use of the land.

c) All transportation infrastructure required to support the specific phases of development are in place or have been programmed in respective jurisdictional capital budgets, or otherwise financially committed. The approved phasing strategy is to be based on traffic impact studies that identify which infrastructure improvements identified in the approved Waterdown/Aldershot Transportation Master Plan class EA and South Waterdown Traffic Impact Study need to be in place to support growth.
d) Storm drainage facilities, as set out in the Functional Servicing Plan, and as approved by the municipality in consultation with Conservation Halton are committed to be in place and operative prior to or coincident with the occupancy and use of the land.

e) Other identified local infrastructure needs as well as community use lands such as schools, parks and storm water management facilities, are secured through a cost sharing agreement, as further set out in Section B.4.3.14.5, in accordance with municipal policies and the provisions of the Development Charges Act.

f) All other urban services and utilities required to service specific stages of development are committed to be in place and operative prior to or coincident with occupancy and use of the land, except as otherwise approved.

g) A well survey monitoring plan shall be a condition of draft plan approval.

h) A program to periodically inspect the storm water management facility adjacent to the Hazardous Lands - Karst Area, to check for leaks or weak spots in the liner, shall be a condition of draft plan approval.

i) An alternative access to the three properties along a private lane south of George Street shall be made available for purchase. Erosion at the Grindstone Creek Tributary 1 Waterfall immediately downstream of the Secondary Plan area could eventually interrupt access to these properties.

j) In the context of this policy, “committed to be in place” shall mean identified within an approved Capital Budget, and a development agreement executed with the City or any other satisfactory arrangement with the City.

k) Notwithstanding the Conditions of Development of Policy B.4.3.14.2, a maximum of 250 residential units in the northwest portion of the Plan Area shall be permitted to be developed prior to satisfying the requirements for new infrastructure and/or infrastructure improvements as required in Sections B.4.3.14.2 a), b), c), and f).
4.3.14.3 Staging of Development

In addition to Section F.3.6 – Staging of Development of Volume 1, and the City’s Staging of Development Program, the following policies shall guide the staging of development within the Waterdown South Secondary Plan area:

a) Development shall progress in a logical and orderly sequence that ensures an orderly yet flexible pattern of development in accordance with the objectives and policies of this Plan.

b) Development shall proceed in a manner that ensures that service levels established by this Plan, Volume 1, and in the City of Hamilton in general are achieved within each stage of development, and the provision of infrastructure and services is within the fiscal capabilities of the City and the School Boards. Where the fiscal capabilities of any one government or agency are limited to the extent that infrastructure or facilities may be delayed, front-ending of infrastructure and facilities by the landowners may be considered.

c) Staging should ensure that the matters and infrastructure identified through Section B.4.3.14.2 are provided in an efficient and cost effective manner.

d) Until Burke Street is in place, a maximum of 250 residential units located north of the intersection of Burke Street and Skinner Road Skinner Road may be constructed within the Waterdown South Secondary Plan area subject to a study demonstrating servicing and transportation capacity to the satisfaction of the City. Additional development beyond 250 units may be permitted subject to Policy B.4.3.14.2 c).

e) Lands east of Skinner Road shall not be affected by the timing of construction of Burke Street, and do not need to be included in any traffic impact studies pertaining to lands west of Skinner Road until such time as the lands east of Skinner Road can directly access Burke Street through the Secondary Plan road network.

f) The District Commercial area shall not be subject to a specific phasing and development can proceed once the required water and wastewater services are available to this area.

g) Development within these stages shall proceed in a manner that recognizes that infrastructure such as underground services, roads,
schools, parks, health care facilities, and public emergency services are to be provided in a timely manner.

h) The provision of educational and provincial services and infrastructure shall be encouraged to comply with the phasing policies of this Plan. School Boards and the Province shall make every effort to provide their respective services in conjunction with the pace of development.

i) In no case shall one owner or group of owners be allowed to unreasonably delay the normal progression of residential growth. Where a landowner is not proceeding with development in a timely manner and withholding the possible completion of a collector road or arterial road linkage, and/or the extension of water and wastewater services, the City may consider its powers of expropriation to complete the infrastructure.

4.3.14.4 Development Charges
Costs for the applicable portion of growth related infrastructure and service improvements required to service development within the Secondary Plan area, including roads, storm water services, water and wastewater services, shall be paid for by development. To implement this policy and ensure such infrastructure is available in a timely manner the following policies shall apply:

a) The City shall update the Municipal Development Charges By-law to include all growth related improvements required by the development.

b) The City may also employ:

i) front-ending agreements, development charge credit agreements, and prepayment of development charge agreements under the Development Charges Act;
ii) public/private partnerships;
iii) conditions of subdivision approval;
iv) creation of one foot reserves;
v) cost sharing agreements or best effort agreements to recover costs from benefiting landowners;
vi) any of the above singly or in combination with any others; and,
vii) any other mechanism the City considers appropriate in the circumstances.
4.3.14.5 Cost Sharing

a) The locations of park sites and sites for other community facilities have been selected without regard to property ownership. In order to ensure that property owners contribute equally towards the provision of these community facilities (both for the cost of land and the construction cost of works and facilities) as well as towards infrastructure and local service improvements, which benefit more than one individual development, but which are not paid for through development charges or other municipal funding mechanisms, the costs of these facilities and works shall be equitably apportioned among landowners within the Waterdown South Secondary Plan area. Such costs may include, but are not limited to:

i) the costs of community use lands and facilities;
ii) front-ended Secondary Plan component studies;
iii) other area-wide studies;
iv) schools, parks and open space; and,
v) local infrastructure, facilities or works including roads, hydro, water, wastewater, and storm water facilities.

b) To apportion the costs referred to above, where not otherwise included in the parkland requirement, development charges, or a front-ending agreement, property owners shall be required to enter into one or more cost sharing agreements and submit such agreements to the City prior to registration of the first plan of subdivision within the Waterdown South Secondary Plan area. Where one or more landowners has not entered into a cost sharing agreement by this time, the City may employ one or more of the following mechanisms when draft plans are submitted for approval in an effort to implement the policies of this section:

i) Conditions of subdivision approval;
ii) Creation of one-foot reserves;
iii) Any one of the above singly or in combination with any others; and,
iv) Any other mechanism Council considers appropriate in the circumstances.

c) Where a cost sharing agreement is being entered into amongst landowners, the City shall not be a party to such agreement but shall ensure through the imposition of conditions of subdivision approval or other mechanism cited herein that any benefiting
owners to any service funded through the cost sharing agreement shall be required to contribute its fair share of the costs as set out in the agreement. The City shall not issue any final approvals (i.e. clearance for registration) for development until it has been satisfied that these policies have been met, and the proponent of such development has executed a cost sharing agreement for its share of the services funded through the cost sharing agreement.

4.3.14.6 Environmental Monitoring
As a condition of draft plan of subdivision approval, a monitoring plan shall be prepared by the land owner which sets out a program for regular monitoring of the health of the natural heritage/open space system within the Waterdown South Secondary Plan area. The indicators to be monitored and the nature of the monitoring program(s) are set out in Phase 3 of the South Waterdown Subwatershed Study.

4.3.14.7 Existing and Temporary Land Uses

a) Existing land uses within the Secondary Plan area shall be permitted to remain without an amendment to this Plan.

b) New development shall integrate those elements of existing built form intended to remain within the community in a complementary manner.

c) Prior to urban redevelopment of these lands, low intensity temporary uses may be permitted provided these uses are outside of the Natural Heritage System and associated vegetation protection zones.

4.3.14.8 Interpretation
The boundaries of the residential designations and the alignment of arterial and collector roads are intended to be flexible and may be modified in the interest of achieving a desirable urban pattern without amendment to this Plan, provided the aggregate land areas of each residential designation are not significantly altered and the recommendations within the South Waterdown Subwatershed Study are met.

4.3.15 Area and Site Specific Policies

Area Specific Policy - Area A
4.3.15.1 In addition to Section E.3.5. - Medium Density Residential of Volume
1, the following policies shall apply to the lands designated Medium Density Residential and identified as Area Specific Policy - Area A on Map B.4.3-1 - Waterdown South - Land Use Plan:

a) Area Specific Policy - Area A is planned to permit an adult lifestyle community that promotes ‘aging in place’.

b) Notwithstanding the built forms permitted in Policy E.3.5.1 - Medium Density Residential of Volume 1, permitted uses shall include those uses permitted in the Medium Density Residential designation (Policy B.4.3.3.6), as well as street townhouses, mid-rise apartments, various forms of housing with supports, and ancillary recreational and commercial uses serving the needs of the surrounding residents.

c) Notwithstanding Policy E.3.5.7 - Medium Density Residential of Volume 1, the density shall range from a minimum of 60 to a maximum of 100 units per net residential hectare.

d) Notwithstanding Policy E.3.5.8 - Medium Density Residential of Volume 1, the maximum permitted building height shall be 8 storeys. For the lands located between the Natural Area and the Protection Area/Storm Water Management Facility, the maximum permitted building height shall be 6 storeys, but building heights may be increased up to 8 storeys subject to a Visual Impact Assessment in accordance with Policy B.4.3.14.1 j).

e) The clustering of residential units shall be encouraged to maximize generous open space areas.

f) A site-specific implementing zoning by-law shall address such matters as building setbacks, height, separation distances, landscaping requirements, open space requirements, parking standards, and ancillary uses.

**Area Specific Policy - Area B**

4.3.15.2 In addition to the policies of Section E.3.5 - Medium Density Residential of Volume 1, the following policies shall apply to the lands designated Medium Density Residential and identified as Area Specific Policy - Area B on Map B.4.3-1 - Waterdown South - Land Use Plan:

a) Notwithstanding Policy E.3.5.2 - Medium Density Residential of Volume 1 and Policy B.4.3.3.6 a) of this Secondary Plan, multiple
dwellings, street townhouses and a limited number of single
detached and semi-detached dwellings shall be permitted.

b) The maximum height for single and semi-detached dwellings shall
be 3 storeys.

c) Single detached and semi-detached dwellings permitted in
accordance with Policy 4.3.3.5 a) shall generally comprise a
maximum of 25% of the housing units.

**Area Specific Policy - Area C**

4.3.15.3 In addition to the policies of Section B.4.3.8 – Natural Hazard Features, the limit of Area Specific Policy - Area C identifies the extent of the Hazard Lands – Karst Area. The policies of Section B.4.3.8.1 and B.4.3.8.2 of this Secondary Plan shall apply.

**Area Specific Policy - Area D**

4.3.15.4 In addition to the policies of Section E.3.4 – Low Density Residential of Volume 1 and Policy B.4.3.3.3 of this Secondary Plan, the following policies shall apply to the lands designated Low Density Residential 1 and identified as Area Specific Policy - Area D on Map B.4.3-1 – Waterdown South - Land Use Plan:

a) Lot width shall not be less than 15.24 metres (50 feet).

b) Notwithstanding Policy B.4.3.3.3 c), the maximum height of the
dwelling to the mid-point of roof between peak and eves shall be
10.5 metres (34 feet) to prevent houses from exceeding the height
of the trees.

c) Rear yards shall be fenced with 1.2 metre (4 feet) black chain link
fence to prevent encroachment into the woodlands and
wetlands.

**4.4 Volume 3 - Special Policy Areas, Area Specific Policies, and Site Specific Policies - Text**

4.4.1 Volume 3: Area Specific Policy UF-2, Area north of Mountain Brow Road, west of Kems Road, south of Parkside Drive and east of the developed areas of Waterdown, is hereby amended by deleting Policies 1.0 e) and 1.0 f) in their entirety.
5.0 Implementation:

An implementing Zoning By-Law Amendment shall give effect to this Amendment.

This is Schedule “1” to By-law No. ____ passed on the day of, 2010.

The
City of Hamilton

_________________________  ____________________________
Fred Eisenberger            Rose Caterini
MAYOR                      CLERK
South Waterdown Subwatershed Study

Stage 1 Final Report

March 2006

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EXECUTIVE SUMMARY

INTRODUCTION

Waterdown is located in the former Town of Flamborough (now the City of Hamilton) along Highway 5 between Highway 6 and Evans Road. In 1992, Flamborough Town Council adopted Official Plan Amendment 28 (OPA 28) to extend the urban boundary of Waterdown to incorporate three proposed expansion areas, including South Waterdown, a 180 ha block of land south of Highway 5 generally bound by Kerns Road to the east, the Flanders Drive subdivision to the west and Mountain Brow Road to the south.

Following its adoption by Flamborough Town Council, OPA 28 was circulated to commenting agencies. During this review process, a number of concerns were raised about OPA 28, ultimately leading to its referral to the Ontario Municipal Board (OMB). The resulting decision of the Joint Board was subsequently appealed to the Provincial Cabinet. After extensive negotiations, the parties to the OMB hearing agreed to settle the appeal based on a written Memorandum of Agreement. This agreement granted an urban designation to the South Waterdown expansion area, subject to certain conditions. Among these, the parties agreed that a subwatershed study would be completed to the satisfaction of the Town of Flamborough (now the City of Hamilton), City of Burlington and Conservation Halton prior to any development of the South Waterdown lands.

In 2003, discussion between City of Hamilton staff and representatives of the South Waterdown landowners resulted in the formation of a Technical Steering Committee (TSC) to implement the agreed-upon study, now termed the South Waterdown Subwatershed Study. The TSC developed the South Waterdown Subwatershed Study’s Terms of Reference (TOR) and meets on a regular basis to monitor and guide the study’s progress.

The overall purpose of the South Waterdown Subwatershed Study is to develop a management plan for the features and functions of those portions of the Grindstone Creek, Falcon Creek, Indian Creek and Hager-Rambo Creek watersheds that are potentially affected by urban development of the South Waterdown lands. The study is intended to inform planning and decision-making (including preparation of a South Waterdown Secondary Plan) so that changes in land use are compatible with natural systems.
Study Organization

The TSC defined the study area of the South Waterdown Subwatershed Study based on the boundaries of six surface water catchments, including those associated with Falcon Creek, Indian Creek, Hager Creek Branch 1 and three tributaries of Grindstone Creek, termed GS-1, GS-2 and GS-3. Generally, these catchments were incorporated into the study area in their entirety. However, in recognition of the existing commercial, industrial and residential development along the Lake Ontario shoreline, the TSC established Plains Road in Burlington as the study area’s downstream boundary.

The study area of the South Waterdown Subwatershed Study is divided into three zones for discussion purposes. Zone 1 includes those lands north of Highway 5, Zone 2 consists of the area between Highway 5 and the brow of the Niagara Escarpment and Zone 3 includes those lands between the brow of the Niagara Escarpment and the study area’s downstream boundary at Plains Road.

The South Waterdown Subwatershed Study is being conducted in three stages. In Stage 1, the six subwatersheds of the study area were characterized through a review of background literature and field investigations. In Stage 2, the study team will complete a detailed analysis of the potential impacts of the urban development of the South Waterdown lands and develop a management strategy to ensure that the critical elements of the component subwatersheds are protected. In Stage 3, an implementation and monitoring plan will be developed to describe how management strategies developed in Stage 2 will be implemented. This report, reviewed and approved by the TSC as required by the study’s TOR, provides the results of Stage 1.

Stage 1 of the South Waterdown Subwatershed Study was conducted by a study team consisting of more than 20 staff from seven consulting firms, including Ecoplans Limited, McCormick Rankin Corporation, JTB Environmental Systems Incorporated, DBH Soil Services Incorporated, Marcus J. Buck Karst Solutions, Schroeter & Associates and Worthington Groundwater.

During Stage 1, the study team characterized the natural heritage features and functions of the study area. Information was obtained through three levels of investigation, including (i) a review of more than 50 secondary sources; (ii) reconnaissance-level fieldwork; and (iii)
detailed fieldwork. The level of investigation varied by study component and across zones as prescribed by the TOR, but in all cases was sufficient to provide the required level of detail to meet the study’s goals and objectives and to support its decision making process.

**Overview of Study Area**

The study area of the South Waterdown Subwatershed Study lies in the deciduous forest region of Canada. Like much of the rest of southern Ontario, most of the area’s natural forest cover was cleared during European settlement, resulting in a general pattern of isolated, remnant woodlots in the midst of agricultural fields and urban areas. The Niagara Escarpment is the study area’s predominant natural feature.

Zone 1 is the largest of the study area’s three zones. The majority of Zone 1 occurs within the City of Burlington/Halton Region, although a small portion extends into the City of Hamilton. The natural heritage features of Zone 1 generally consist of deciduous and mixed forest blocks interspersed with culturally influenced vegetation such as hedgerows.

Zone 2 lies completely within the City of Hamilton. Zone 2 consists of the entire GS-2 subwatershed and portions of each of the other five surface water catchments that together comprise the study area. Most of the area between Highway 5 and Mountain Brow Road is in agricultural production, although areas of culturally influenced vegetation (i.e. hedgerows and fallow fields) are also present. Most of the lands south of Mountain Brow Road consist of deciduous forest.

Zone 3 lies entirely within the City of Burlington/Halton Region and consists of the central portions of four surface water catchments, including those associated with GS-3, Falcon Creek, Indian Creek and Hager Creek Branch 1. North of Highway 403, Zone 3 consists of a mosaic of natural vegetation communities, primarily deciduous forest, and an assortment of commercial, industrial and residential developments.

Land use within the study area is regulated by three provincial plans, including the Parkway Belt West Plan, the Niagara Escarpment Plan and the Greenbelt Plan, as well as the Official Plan for the Regional Municipality of Hamilton-Wentworth, the Official Plan for the Regional Municipality of Halton and two local municipal official plans.
Five previously unevaluated wetlands are located within the South Waterdown lands. Two of these do not meet provincial criteria for evaluation, but the other three were evaluated together as the Falcon Creek Wetland Complex and found to be Provincially Significant. There are no other wetlands designated Provincially Significant within the study area, but two small (less than 20 ha) non-Provincially Significant wetlands are found in Zone 1.

The provincially significant Sassafras-Waterdown Woods life science Area of Natural and Scientific Interest (ANSI) is located in Zones 2 and 3 of the study area. A portion of the regionally significant Waterdown Moraines earth science ANSI is also found in Zone 1. Six provincially significant ANSI's and two regionally significant ANSI’s are also located adjacent to the study area.

Three areas, termed Environmentally Significant Areas by the Regional Municipality of Hamilton-Wentworth (now the City of Hamilton) and Environmentally Sensitive Areas by the Regional Municipality of Halton (both abbreviated to ESA’s) fall wholly or partly within the study area. These include the Grindstone Valley ESA, Waterdown Woods ESA and the Sassafras Woods ESA. Five other ESA’s are located adjacent to the study area.

**PHYSIOGRAPHY**

The study area of the South Waterdown Subwatershed Study is located within the physiographic region known as the Niagara Escarpment. In the vicinity of the South Waterdown lands, the Escarpment is marked by steep vertical cliffs composed of dolostone of the Amabel Formation. It runs diagonally through Halton Region in a north-south direction, splitting the Region into two distinctive areas. West of the Escarpment, the terrain slopes very gently down into the Counties of Hamilton-Wentworth and Wellington. East of the Escarpment, the terrain slopes more steeply below the dolostone cliffs towards Lake Ontario. A predominant feature in this physiographic region is the Waterdown Moraine. The Waterdown Moraine is a group of seven morainic ridges that parallel the edge of the Niagara Escarpment from north of the Town of Dundas to Mount Nemo. All are narrow ridges and most are composed of silty till (Halton Till). Two ridges enter the South Waterdown lands at the northeast corner and trend to the southwest to the kames at the head of the Dundas Valley. The Waterdown Moraines were formed during the time of glacial Lake Whittlesey and they mark the northerly extent of the Halton ice advance of the Lake Ontario lobe of the
Wisconsinan glacier. This ice advance also deposited the Halton Till sheet that forms a nearly continuous blanket over most of the study area.

**GEOLOGY**

**Regional Overburden Geology**

The South Waterdown lands are characterized by deposits of Halton Till, which is a reddish-brown silt till with a varying clay content. This till occurs at the surface over most of the area above and below the brow of the Escarpment, on portions of the valley walls, and on the floodplain areas. Deposits of sand and gravel likely exist as lenses or isolated pockets along the east portion of the lands. These deposits would be consistent with the composition of the Waterdown Moraine, as well as localized outwash or ponded deposits; the result of local reworking of the Halton Till during ice sheet advance, or incorporation with deposits of Wentworth Till (typically sandy and stony). In addition, accumulations of stream deposits (i.e. sands, gravels and silts) exist in the vicinity of the surface watercourses on the South Waterdown lands.

**Regional Bedrock Geology**

The region is underlain by a sequence of near-horizontal sedimentary rocks that can be broadly divided into five groups. The oldest and lowest unit is the Georgian Bay Formation, an interbedded shale and dolostone that is found closest to Lake Ontario. Above this unit is the Queenston Formation, a red shale that stretches to the base of the Niagara Escarpment. The Queenston Formation is overlain by a series of predominantly clastic rocks belonging to the Cataract and Clinton Groups, a relatively thin sequence of sandstone, dolostone and shale that outcrop at the base of the Escarpment. From bottom to top, these include the Whirlpool, Manitoulin, Cabot Head, Grimsby, Thorold, Reynales, Irondequoit and Rochester Formations. Overlying the Clinton Group, the Amabel Formation is an erosionally-resistant dolostone that forms the caprock at the Niagara Escarpment in this area. It outcrops in the cliffs at the brow of the Escarpment and is the bedrock unit immediately underlying the South Waterdown lands.
Overburden Geology of the South Waterdown Lands

Interpretation of the overburden geology of the South Waterdown lands was based on information collected from subsurface investigations completed by Ecoplans Limited and by other consultants. Significant findings of each are summarized below.

Ecoplans Limited Subsurface Investigation

Ecoplans’ subsurface investigation involved the drilling of 11 boreholes across the site, each equipped with a groundwater monitor. Based on this investigation, the overburden geology of the site generally consists of a surficial layer of topsoil underlain by silt to clayey silt till (Halton Till) deposits overlying bedrock. However there are significant local variations in the overburden geology. Interpretation of the local overburden stratigraphy based on Ecoplans Limited subsurface investigation is discussed below.

Along the Waterdown Moraine Ridge (Central Portion of South Waterdown Lands) - the ridge is highest at the east end of the site with a surface elevation of 252.82 mAMSL and descends to the east to an elevation of 245.37 mAMSL. Bedrock was encountered at depths between 13.41 and 9.13 metres below ground surface (bgs). The ridge predominantly consists of a thick deposit of silt to clayey silt till with occasional interspersions of sand and silt seams, overlying bedrock. On top of the till is a thin veneer of topsoil. A thin stratum of saturated sand and gravel was encountered at the west and east ends of this area.

Along the GS-1 Tributary (North Portion of South Waterdown Lands) - the ground surface is highest at the east portion of this area (242.92 mAMSL) and drops to the west to 239.10 mAMSL. Bedrock was encountered at depths between 4.58 and 2.73 m bgs. The relatively shallow overburden consists predominantly of silt to clayey silt till with scattered interspersions of sand and silt seams, overlying bedrock. On top of the till is a thin veneer of topsoil. A thin stratum of saturated sand and gravel overlying bedrock was encountered next to GS-1 in the central portion of this area. At other locations along GS-1, moist sand and silt seams were encountered close to the base of the overburden.

In the Vicinity of the Meadow Marsh and GS-3 Tributary (Southwest Portion of South Waterdown Lands) - the ground surface is highest at the east portion of this area (238.97 mAMSL) and drops to the west to 234.86 mAMSL. Bedrock was encountered at depths between 4.02 and 4.02 m bgs. The relatively shallow overburden consists predominantly of
silt to clayey silt till overlying bedrock. On top of the till is a thin veneer of topsoil. A narrow zone of moist sand and silt seams was encountered at the east end of this area.

South-central Portion of South Waterdown Lands - the ground surface elevation is 243.48 mAMSL and bedrock was encountered at a depth of 2.74 m bgs. The shallow overburden consists predominantly of silt to clayey silt till overlying bedrock. On top of the till is a thin veneer of topsoil. A thin moist sand stratum on top of bedrock was encountered in this area.

**Subsurface Investigation – By Others**
Soil-Eng Limited (Soil-Eng) completed a subsurface investigation across the west and central portions of the South Waterdown lands. The investigation consisted of the advancement of 17 boreholes. No monitoring wells were installed as part of the investigation, nor were any ground surface elevations taken. Based on interpretations of their borehole logs, the overburden site geology generally consists of silty clay till deposits. Occasional sand and silt seams were encountered in most boreholes, with larger lenses of fine to coarse-grained sand in the vicinity of GS-1. These more permeable deposits were reported as being wet.

To ensure consistency with the areas described above (based on Ecoplans subsurface investigation), these areas have been described based on Ecoplans Limited interpretation of the borehole logs included in the Soil-Eng report.

Along the Waterdown Moraine Ridge (Central Portion of South Waterdown Lands) – the Soil-Eng investigation encountered a thin veneer of topsoil overlying a silty clay till. A zone of occasional sand and silt seams with cobbles and boulders was noted at all borehole locations.

Along Tributary GS-1 (North Portion of South Waterdown Lands) – the Soil-Eng investigation encountered a thin veneer of topsoil overlying a silty clay till. Along the south side of the central portion of GS-1, a fine to coarse sand stratum was encountered below the silty clay. On the north side of the tributary at the west end of the South Waterdown lands, a thin layer of sand on top of bedrock was encountered. All of the borehole logs showed a zone of occasional sand and silt seams with cobbles and boulders near the bottom of the boreholes or above the sand strata encountered above.
In the Vicinity of the Meadow Marsh and GS-3 Tributary (Southwest Portion of South Waterdown Lands) – the Soil-Eng investigation encountered a thin veneer of topsoil overlying a silty clay till. Occasional sand and silt seams with cobbles and boulders were encountered at depth at the west and east ends of this area.

South-central Portion of South Waterdown Lands - at the west end of this area, a silty clay till was encountered overlain by a thin veneer of topsoil. A zone of occasional sand and silt seams with cobbles and boulders was noted near the bottom of the borehole. At the east end of this area, only a thin veneer of topsoil was encountered overlying bedrock.

Candec Consultants Limited (Candec) completed a subsurface investigation at the east portion of the South Waterdown lands (specifically the northeast portion). Their investigation consisted of the advancement of eight boreholes with three of them instrumented with groundwater monitors. Based on interpretations of their borehole logs, the overburden geology generally consists of clayey sandy silt overlying grey silt till along the north portion of the east side of the lands. Thin sand seams were encountered at depth at the north portion of this area. The central portion of the east portion of the South Waterdown lands is characterized by relatively shallow clayey sandy silt to clayey till overlying bedrock. The south portion of the east portion of the lands is characterized by 0.5 m of topsoil overlying bedrock.

Overburden Thickness

Overburden thickness varies significantly across the South Waterdown lands. The overburden is thinnest at the east central portion of the South Waterdown lands with topsoil overlying bedrock. South of this there are scattered patches of shallow overburden and bedrock outcrops. Along the ridge that traverses the South Waterdown lands, overburden thickness ranges between 6.3 to 13.4 m. North and west of GS-1 overburden thickness is between 2.0 to 4.5 m bgs. Within the south and southwest portion of the South Waterdown lands, the overburden thickness varies between 2.0 to 4.0 m bgs.
KARST GEOMORPHOLOGY

The study area of the South Waterdown Subwatershed Study is underlain by a sequence of nearly horizontal sedimentary rocks. The uppermost unit is the Amabel Formation, a pure dolostone that forms the erosion-resistant caprock of the Niagara Escarpment and is commonly karstified. The Amabel Formation underlies the study area northwest of the Niagara Escarpment. Where this dolostone is exposed and where the overlying overburden is < 3m thick an extensive surface karst has formed, occupying a broad, irregular band that extends up to 500 m from the brow of the Niagara Escarpment. Elsewhere, thicker glacial deposits of Halton Till, especially at the Waterdown Moraines, have prevented the development of surface karst. The somewhat convoluted outline of the surface karst on plan maps results from the undulating nature of the bedrock surface, which was glacially eroded to form ridges and valleys with several metres of relief.

Detailed mapping of karst features was conducted within a “karst study area” that extends from Highway 5 to the Niagara Escarpment slope and from Grindstone Creek to the Highway 5 roadcut. Within the karst study area, key karst features documented include 12 sinking streams, 48 stream sinkpoints, 104 dolines (sinkholes) and 88 springs. The dolines are formed by two mechanisms, suffosion and collapse. There are 95 suffosion dolines that formed in thin overburden by downwashing of the unconsolidated sediment into underlying bedrock channels. The remaining nine are collapse dolines that formed by collapse of bedrock into underlying voids or caves along the path of subsurface streams.

The surface karst can be broadly divided into mantled karst and a much smaller proportion of bare karst (= 25%). In the bare karst, exposed dolostone exhibits a variety of well developed karren, such as solution pitting and grikes. However, the majority of the karst is mantled with thin glacial deposits. Here, suffosion dolines are ubiquitous and range in size up to 15 m across and 3 m deep.
HYDROGEOLOGY

Regional Hydrogeology

Characterization of the regional hydrogeology of the study and surrounding areas was based on a review of Ministry of the Environment (MOE) Water Well Records and background geological reports and maps.

A total of 516 water well records within one kilometre of the South Waterdown lands were reviewed. Of the 516 water well records reviewed, approximately 58 wells were identified as being located within 500 m of the South Waterdown lands. Based on these records, over 80% of the wells installed within the study and surrounding areas encountered the water table less than 15 m bgs, and the average depth to bedrock is 7.42 m bgs. This is consistent with the physiography of the area (i.e. drift thickness averages 6.6 m). Overall, the well records indicate that the water table is located within the dolostone bedrock unit; however, shallow/perched aquifers may exist above the bedrock throughout the area as isolated or discontinuous lenses of sand and gravel.

Overburden Aquifers

Overburden aquifers exist throughout the region where sand and gravel deposits are located at or near the surface, and are bounded by clay/silt aquitards. These aquifers would be most common in the post-glacial material deposited above the bedrock surface between knobs, ridges, and sinkholes. The most prevalent type of overburden deposits within and surrounding the South Waterdown lands are the Halton Till and sand and gravel deposits.

Due to the significant clay and silt content of the Halton Till, groundwater flow in the till is slow. Available groundwater in this till unit likely occurs in fractures caused by wetting and drying, and in silty/sandy zones. The extent and composition of the silty/sandy zones vary significantly and commonly exist as narrow bands or seams that frequently “pinch-out” in the predominantly clay matrix. These silty/sandy zones can store and transmit relatively significant quantities of groundwater on a local scale providing baseflow to surface watercourses; however they generally do not yield sufficient groundwater for human exploitation. Due to the generally fine-textured composition of the Halton Till, infiltration and recharge is expected to be low compared to more permeable granular deposits.
Sand and gravel deposits have a much higher permeability, and therefore higher groundwater flux than that through the Halton Till. They provide storage capacity for infiltrating groundwater and therefore act as a sponge for water that is later transmitted to surface watercourses and the bedrock aquifer. Deposits of sand and gravel are expected to be most significant along surface watercourses, bedrock valleys, and in the vicinity of the Waterdown Moraine.

**Bedrock Aquifers**

Bedrock aquifers are the most widely used aquifers for human consumption in the region surrounding the South Waterdown lands. Groundwater is obtained from three different aquifers/hydrogeological units: Queenston, Cataract Group and Amabel-Lockport-Guelph.

The Queenston Hydrogeological Unit consists predominantly of Queenston shale and is generally regarded as a poor source of groundwater. Only the top 3 to 5 m of the Queenston shale is considered weathered and water-bearing, and any groundwater pumped from this aquifer was likely recharged above the Escarpment.

All of the formations that make up the Cataract Group are buried under thick sequences of younger rocks. Permeabilities within this bedrock group are generally low; however, yields can be sufficient for limited domestic use. Water supplies are obtained from fractures at an average depth of 8 m bgs.

The Amabel Formation (i.e. dolostone) is considered an excellent aquifer of regional extent; extending from the Niagara Peninsula to the Bruce Peninsula. The permeability of this aquifer is highly variable. Most domestic wells obtain adequate water supplies with penetrations less than 3 m bgs, and the potential for developing high capacity wells is good. The general groundwater flow direction within the Amabel Formation is south-southeast.

**Overburden Hydrogeology of South Waterdown Lands**

Characterization of the overburden hydrogeology of the South Waterdown lands was based on Ecoplans’ interpretation of the information collected from the three subsurface investigations (Ecoplans Limited, Soil-Eng and Candec), groundwater monitoring program, stream bed piezometer monitoring program, stream flow measurements, stream temperature survey, and site inspections. This data clearly demonstrates that the geology and
hydrostratigraphy of the site is highly variable and heterogeneous. However, it is evident that there are three shallow overburden aquifers at the site: sand and gravel aquifer, sand and silt seams aquifer and the overburden/bedrock interface aquifer.

**Sand and Gravel Aquifer**

A sand and gravel aquifer was encountered at or close to the bedrock surface at the northwest portion of the South Waterdown lands in the general vicinity of GS-1. The elevation of the aquifer ranges from 240.63 to 236.19 mAMSL. Due to the similar elevations of the aquifer and GS-1 stream bed, the aquifer likely discharges into GS-1 providing stream baseflow. This baseflow is likely most significant during the spring melt when the aquifer yields higher hydraulic pressure resulting in a steeper hydraulic gradient driving groundwater flow into GS-1. As the season progresses towards low flow conditions (August and September) groundwater discharge to GS-1 significantly drops, only occurring as discrete seeps along the tributary. Although there was no direct evidence of any groundwater seeps along the tributary during any site inspections, there were small isolated pools of surface water along the tributary which could be the result of groundwater discharge zones. It is likely that the ridge running along the central portion of the South Waterdown lands may be acting as a shallow groundwater divide, i.e. north of the ridge groundwater flows to the north toward GS-1, and south of the ridge groundwater flows to the south.

With respect to the hydraulic connection between the sand and gravel aquifer and the underlying karst bedrock aquifer, it is likely that some groundwater recharge does occur over the bedrock surface referred to as “diffuse-recharge”.

**Sand and Silt Seams Aquifer**

A sand and silt seams aquifer was encountered sporadically across the site at varying depths. This type of aquifer is the most difficult to correlate hydrostratigraphically. This is primarily because the seams appear not to be continuous across the South Waterdown lands (i.e. only some of the boreholes completed by Ecoplans Limited, Soil-Eng and Candec encountered these conditions) and therefore they likely represent localized areas of groundwater transmission in the overburden. These seams also act as diffuse sources of groundwater recharge into the underlying karst bedrock.
Overburden/Bedrock Interface Aquifer

The area in the vicinity of the meadow marsh and GS-3 at the southwest portion of the South Waterdown lands is underlain by an overburden/bedrock interface aquifer. However, based on the significant elevation difference between the aquifer and the meadow marsh and GS-3, it is unlikely that this aquifer provides baseflow into either the meadow marsh or GS-3. It appears that this surface water system is sustained through spring meltwaters and storm events; providing surface water storage and slow release into the subsurface and underlying overburden/bedrock aquifer and karst bedrock. This is further supported by the fact that the stream bed piezometers installed in the meadow marsh and GS-3 showed relatively significant downward hydraulic gradients indicating groundwater recharge.

At the northeast portion of the South Waterdown lands, obvious evidence of saturated soil strata was observed by Candec at the overburden/bedrock interface, and the two boreholes instrumented with groundwater monitors consistently showed groundwater in the wells during the groundwater monitoring events. This aquifer likely acts as a diffuse source of groundwater discharge into the underlying karst bedrock.

Southeast Portion of the South Waterdown Lands

There were no boreholes completed at the southeast portion of the South Waterdown lands because the surficial geology of the area is either exposed bedrock or covered with a very thin blanket of overburden. As such the only overburden aquifer would be confined to the overburden/bedrock interface and it is likely that most of the groundwater recharges the underlying karst bedrock. The north portion of this area is covered by a marsh meadow. This wet area was identified as a capture for surface water flows from the neighbouring residential home and church. A surface water drainage ditch exists along the west side of the property and discharges surface water to a concrete grated culvert, and eventually through a piped PVC section to the wet area. A small pond exists at the immediate discharge point of the pipe. The overflow of this pond enters the wet area during high flow periods where it eventually recharges the underlying aquifers.

Areas of Groundwater Recharge and Discharge

Since most of the South Waterdown lands are covered with a clay and silt till (Halton Till), groundwater recharge of the shallow aquifer system through soil infiltration is expected to be low. There is however one area where groundwater recharge is expected to be moderate, i.e. at the meadow marsh located at the southwest portion of the South Waterdown lands. This
wet area collects, stores and slowly releases surface water into both the overburden/bedrock interface aquifer and into GS-3.

In the context of groundwater recharge into the underlying karst bedrock from the overburden aquifers, it is more variable across the site. The most significant are at the northwest portion of the South Waterdown lands in the vicinity of GS-1. In this area the sand and gravel aquifer exists on top of or just above the bedrock surface. This likely results in some loss of groundwater into the karst bedrock and into the bedrock aquifer or through solution channels. Other significant areas would be at the east portion of the South Waterdown lands where the overburden is thinnest and at the southwest portion of the South Waterdown lands in the vicinity of the meadow marsh and GS-3. Groundwater storage and movement in these areas would be along the overburden/bedrock interface, resulting in the loss of groundwater into the karst bedrock and into the bedrock aquifer or through solution channels.

Groundwater discharge areas are typically associated with lowland areas, wetlands, surface water courses, drainage features and as seeps along slopes and cliffs. The only area in the South Waterdown lands where the overburden aquifer likely discharges into surface water courses is along GS-1.

**Bedrock Hydrogeology**

The Amabel Formation dolostone forms the uppermost bedrock in the study area of the South Waterdown Subwatershed Study. It is underlain by the Rochester, Irondequoit and Reynales Formations that consist primarily of pure and impure dolostones. Together, they form the principal bedrock aquifer beneath the South Waterdown lands and are referred to here as the “Amabel-Reynales aquifer”. Field measurements at outcrops indicate that the combined thickness of the dolostones within the Amabel-Reynales aquifer ranges from about 9 m in the southwest (GS-1 waterfall) to 29 m in the northeast (Highway 5 roadcut). The dolostones are underlain by siltstone, sandstone and shale of the Thorold, Grimsby and Cabot Head Formations. The low permeability of the shale limits the downward movement of groundwater. As a result, the overwhelming majority of groundwater within the overlying dolostone aquifer moves laterally to discharge at numerous karst springs, both above and below the Niagara Escarpment. The prevalence of surface karst, sinking streams and karst springs demonstrates the significant role of solutionally-enhanced secondary permeability.
within the aquifer. This is supported by the results of groundwater tracing at four sites. Measured flow velocities ranged from 15 to 323 m/hour, typical of conduit flow in karst. Many of the springs emerge from near the base of the Reynales Formation, thus demonstrating that karstification extends to the base of the aquifer. There is evidence that solutionally-enhanced secondary permeability plays a significant role beneath the thicker glacial deposits, since a number of karst springs are recharged from these areas.

The dissolitional enlargement of fractures in the dolostones has led to the formation of continuous networks of bedrock channels and conduits that permit the “pirating” of surface streams. All three major creeks within the South Waterdown lands (GS-1, GS-3 and Falcon Creek) have significant streamflow losses to the subsurface where they encounter karst. Typically, streamflow is lost at discrete sinkpoints where the streams intersect solutionally-enlarged fractures and small dolines. At the GS-1 Tributary, karst has developed all along the channel in the final 400 m upstream from the GS-1 waterfall. Although most streamflow losses occur within the first 100 m of the karst, a smaller amount is lost farther upstream, probably in the central portion of the South Waterdown lands. During a typical annual flood, the total streamflow loss was measured to be about 130 l/s. From groundwater tracing, it was determined that the subsurface flow travels to a series of 10 or more distributary springs located farther downstream near the Niagara Escarpment. This distributary pattern of flow to multiple neighbouring springs is common in karst and has been demonstrated at a number of locations along the Niagara Escarpment, including at GS-3 and Falcon Creek. All of the flow from the GS-1 springs feeds back into the GS-1 Tributary. It is interpreted that the combined capacity of the sinkpoints is limited by the network of interconnected conduits within the dolostone, suggesting that the karst here is relatively immature.

The GS-3 Tributary does not encounter karst until it approaches the Niagara Escarpment, about 400 m downstream from the South Waterdown lands. Here, it sinks at a series of small sinkpoints all the way along the channel to the brow of the Escarpment. About 400 l/s were observed sinking during a typical annual flood. Observations suggest that the stream only flows over the Escarpment during much larger floods. Groundwater tracing revealed that all of the flow lost to the subsurface flows to a series of 11 or more nearby springs located along a 400 m stretch of the Niagara Escarpment, located above Old Waterdown and Rennick Roads. Each year, the residential properties along these roads are inundated with water discharging from these springs during floods and it is not uncommon for the discharge to
flood over the roads. The flow from these resurgences joins two tributaries of GS-3 farther downstream and, therefore, remains within the GS-3 watershed.

Most of Falcon Creek lies within a broad band of surface karst. There are sinkpoints and karst springs all along the watercourse from near its headwaters east of Kerns Road all the way to where it crosses the Niagara Escarpment. Even during moderate floods, the watercourse is discontinuous on the surface. Observations suggest that much of the flow lost to the subsurface likely resurges farther downstream and, therefore, remains within the Falcon Creek watershed. Groundwater tracing from a sinkpoint east of Kerns Road confirmed a subsurface connection to two springs located 100 m farther downstream within the South Waterdown lands. Farther downstream, there are several reaches of the creek that flow only briefly during floods. Monitoring along the creek at sinkpoints and springs suggests that most flow lost along the channel simply flows to springs located farther downstream. However, it is possible that some of the water sinking along Falcon Creek may flow to springs in the Indian and Hager Creek watersheds. Farther downstream at the Niagara Escarpment, Falcon Creek has been reported to occasionally flow over the brow of the Niagara Escarpment during larger floods. However, more commonly its surface flow ends at sinkpoints 50 to 100 m farther upstream where as much as 220 l/s were observed sinking during a typical annual flood. Groundwater tracing revealed that all of the flow lost here flows to a series of 10 nearby springs located over a distance of 250 m along the Niagara Escarpment slope. These distributary springs form the headwaters for Falcon Creek below the Escarpment.

Surface waters throughout the karst study area were monitored periodically for discharge, temperature and electrical conductivity, especially at sinking streams and springs. The results clearly indicate that about half of the springs are “resurgences”, or springs dominated by point recharge from sinking streams. However, many of these same springs also receive significant components of diffuse recharge. The remaining springs are “exsurgences”, or springs dominated by diffuse recharge. Most of this diffuse recharge enters the aquifer at the extensive surface karst above the Escarpment, primarily at grikes within bare karst, and by infiltration through weathered soil, soil cracks and suffosion dolines within the mantled karst. Some of the karst springs must be recharged from the moraines. Much of the base flow discharging at the karst springs is probably derived from water stored in the overburden at the mantled karst and adjacent moraines. Sand and gravel aquifers within the thicker glacial deposits may also be important reservoirs for base flow discharge.
Within the Indian and Hager Creek watersheds, the few small springs emerging from the Niagara Escarpment appear to be fed primarily by diffuse recharge from the adjacent, narrow band of karst above the Escarpment. Three small sinking streams likely provide some point recharge to the Indian Creek springs as well. Within the Rambo Creek watershed, six sinking streams above the Escarpment provide point recharge to a number of springs along the Escarpment slope. The largest sinking stream has a surface catchment of about 40 ha, and about 70 l/s were observed sinking into the karst during a typical annual flood. Surface karst and the glacial deposits also provide a significant component of diffuse recharge to the springs. Observations at the marsh in the Old Nelson Quarry indicate that it is fed by groundwater discharge from the Amabel-Reynales aquifer. The amount of outflow from the marsh suggests that some of this groundwater is likely derived from the surface watershed for Falcon Creek (Branch 1). However, the amount of groundwater diverted to Rambo Creek springs from the Falcon Creek watershed is not that significant. It is concluded that the karst in the Rambo Creek watershed does not significantly influence the hydrogeology of the South Waterdown lands.

Springs issuing from the dolostone aquifer are widely distributed all along the Niagara Escarpment, although there are clusters of springs where the major sinking streams resurge. The springs were monitored after an extended period of dry weather when relatively few of the springs were still flowing. At this time, the combined base flow of three closely spaced perennial springs (locations 9, 11 and 19) accounted for 76 % of the total base flow discharging from the Amabel-Reynales aquifer within the karst study area. The groundwater catchment for the GS-1 springs is estimated to be between two and four square kilometers in area, which suggests that much of the groundwater flow in the dolostone aquifer beneath the South Waterdown lands may be directed to these springs. The remaining base flow was more evenly dispersed among numerous smaller springs, with the largest contributions from two springs in the Rambo Creek Watershed.

Groundwater from the Amabel-Reynales aquifer is currently utilized by a number of residents along the Niagara Escarpment in the study area, primarily for residential water supplies and to a lesser extent for agriculture. About 10 water wells have been drilled into the aquifer along the brow of the Niagara Escarpment. Along the Escarpment slope, at least three residents use spring water directly for household use and there may be as many as 16 other residents that indirectly use the spring water. Although some of these may have drilled
wells, several have dug wells that are strategically placed next to springs to opportunistically capture discharge from the dolostone aquifer.

Groundwater quality in the Amabel-Reynales aquifer is expected to range from very good to very poor, depending mostly on the mode of recharge and the nature of any contaminants. Resurgences typically have poor water quality. Urban and agricultural contaminants, including suspended sediment, are introduced into the aquifer by sinking streams. There is little filtration, dilution or degradation of these contaminants as they are rapidly conveyed along bedrock conduits to the resurgences. On the other hand, many of the exsurgences likely have good water quality since the diffuse recharge is filtered through soils and overburden and because there are few agricultural and urban contaminants at the recharge areas. The water quality in some of the drilled wells may be susceptible to surface contaminants, especially when runoff is high. Measurements of electrical conductivity at regional springs suggest that road salt may be a persistent contaminant at larger springs and springs located close to roads.

**HYDROLOGY**

The hydrologic response of the study area under existing land use conditions was characterized by delineating the existing drainage system, conducting hydrologic modelling of event and continuous hydrology and conducting hydraulic modelling to define the floodplains of surface watercourses. The resulting baseline data is intended to set goals for maintaining and enhancing (where possible) the quantity and quality of the study area’s surface and groundwater resources under proposed future land uses.

*Characterization of the Existing Drainage System*

A large ridge bisects the South Waterdown lands. Lands north of the ridge drain to Grindstone Creek Tributary 1 (GS-1). Lands south of the ridge generally drain to one of the three smaller creeks, including Grindstone Creek Tributary 2 (GS-2), Grindstone Creek Tributary 3 (GS-3) and Falcon Creek. The movement of surface runoff (flows) within the South Waterdown lands was divided into a drainage mosaic consisting of 22 subcatchments. This drainage mosaic was used for both the event and continuous hydrologic modelling work to determine runoff flows at various points of interest.
Characterization of the existing drainage system also included identification of (i) the local and regional hydrogeology of the study area, (ii) significant karst features and key subsurface flow paths within the karst, and (iii) the functional relationships and interactions of surface watercourses (Grindstone, Falcon and Indian Creeks) with groundwater, particularly with respect to karst topography.

**Event Hydrology**

The Storm Water Management Hydrologic Model (SWMHYMO) was used to assess the hydrologic response of the South Waterdown lands to single rainfall events. The objective of the event hydrologic modelling was to determine the peak flows from the 22 delineated subcatchments for the 2yr, 5yr, 10yr, 25yr, 100yr and Regional Storm recurrence intervals.

The Town of Flamborough rainfall parameters (locally derived Intensity-Duration-Frequency curves) and the Chicago 4-hour storm distribution were used to generate the design storms (i.e. 2yr rainfall event, 100yr rainfall event). For each rainfall event SWMHYMO then used the empirically based SCS Soil Conservation Service method to simulate runoff hydrographs and peak flows.

Within SWMHYMO the NASHHYD routine was selected to simulate the existing conditions peak flows. This routine uses an algorithm that is designed to simulate runoff from rural areas. The NASHHYD routine requires the drainage area, composite curve number, time to peak, and available storage as inputs. These hydrologic parameters were determined for each subcatchment through consideration of the existing soils, topography and land use.

**Continuous Hydrology**

Continuous hydrologic models are capable of simulating the dynamic interactions that occur between hydrologic processes over time. For example, running a hydrologic model with continuous rainfall data allows the cumulative impacts of dry and wet cycles on hydrologic processes to be considered.

The Guelph All-Weather Sequential-Events Runoff (GAWSER) computer model was utilized for both event and continuous hydrologic modelling. GAWSER was run as an event model to determine existing conditions flows for comparison with SWMHYMO determined
flows. GAWSER was additionally run as a continuous model to provide the water balance quantities, low flow analysis, and flow duration curves.

For the continuous simulation 43-years of continuous rainfall data was collected using information from the two closest long-term weather stations. To confirm that the adjusted rainfall values (from the two weather stations) were indicative of actual rainfall at the study area a data, a new logging tipping-bucket rain gauge was installed in the northeast portion of the property from April to November 2004.

**Karst Topography**

To account for the karst topography of the study area, hydrologic models incorporated interaction of surface and groundwater. GAWSER uses physically based (rather than empirical) routines and is capable of simulating complex physical process such as groundwater contributions, losses to karst sinkholes and evaporation. Qualitative observations made by members of the study team as to where surface water enters the karst environment were used in the set-up of the model.

The fraction of flows that is maintained within the watercourses, versus the fraction that is lost to the sinkholes was calculated on a monthly basis for all watercourses within the South Waterdown lands. Losses to the karst environment were highest along Falcon Creek - about 18% of the mean annual precipitation that falls within the subcatchments drained by Falcon Creek is lost to karst.

**Model Calibration**

The GAWSER model developed for this study has been calibrated for events ranging from the 25mm event up to the Regional Storm with data from more than 30 watershed modelling studies in Ontario and using streamflow data from more than 120 gauges.

**Model Validation**

The model validation procedures were divided into two parts. First, the model was run for a 43-year period (November 1, 1960 to October 31, 2003) to confirm the monthly parameter adjustment factors through a comparison of the computed mean annual water balance quantities with previous estimates. Second, the model was run in event mode using the same rainfall data that was used in the SWMHYMO event modelling and the results of the two models were compared.
Water Balance

The mean annual precipitation over the entire study area is about 873 mm, of which 537 mm (or 61.5%) is returned to the atmosphere through evapotranspiration/sublimation. Approximately 32.5% of the mean annual precipitation is converted to total flow (284 mm), of which 47% is surface runoff (133 mm), and 53% is baseflow (150 mm). Approximately 6.0% (53 mm) of the mean annual precipitation is lost to groundwater storage.

Low Flows

The existing conditions GAWSER model also provided a low flow analysis at nine locations within the South Waterdown Lands. The reported low flows were determined by conducting frequency analyses of the annual maximum and minimum (7-day) flow time-series generated by the model.

Comparison of Results

The mean annual water balance quantities determined using GAWSER compare well to estimates given in previous studies. The streamflow estimates determined by GAWSER along GS-1 compare well to available guage data and, the estimates of flood flows for various return periods determined by GAWSER compare well with similar estimates made using SWMHYMO.

Existing Conditions - Floodplain Mapping

The objective of the existing conditions floodplain mapping was to determine the 100-year and the Regional Storm flood levels for all the watercourses within the South Waterdown lands.

The two major watercourses in the study area are Grindstone Creek (and its tributaries) and Falcon Creek. Floodplain mapping for Grindstone Creek was completed by Conservation Halton in 1994 as part of the Grindstone Creek Subwatershed Study. Flood elevations for Falcon Creek downstream of the Escarpment were also established by a previous study.

Floodplain mapping for Falcon Creek upstream of the Escarpment and within the South Waterdown Lands was prepared as part of this Subwatershed Study. Separate HEC-RAS models were developed for the main branch of Falcon Creek, from its origin upstream of Kerns Road to the south boundary of South Waterdown lands, and for the West Tributary of the...
Falcon Creek, from its origin within the South Waterdown lands to immediately downstream of the property’s southern boundary. Both models were created using detailed topographic data and survey data for wetlands within the creek system.

**EROSION ANALYSIS**

As part of Stage 1 of the South Waterdown Subwatershed Study, JTB Environmental Systems Incorporated completed an erosion analysis (also known as a tractive force analysis) and reach assessment for Falcon Creek, Grindstone Tributaries 1 and 3, and sections of the main channel of Grindstone Creek.

The South Waterdown lands are located atop the Niagara Escarpment; the subject creeks drain the tablelands and flow through Queenston Shale along a steep gradient to flat lands in the City of Burlington. The tractive force assessment included detailed investigation of the form and processes operating on several reaches of each of the subject watercourses. The purpose of the analysis was to determine their sensitivity to erosion along both the tablelands and below the Escarpment. Results from the analysis characterize the existing conditions and sensitivities of the watercourses and provide guidance for environmental remediation in the event of any alterations.

There is considerable concern for erosion along the downstream reaches of these systems. Standard fluvial assessments of spring runoff accept the fact that high sediment concentrations (suspended and tractive) during these periods reflects flushing of accumulated sediment and organics, and does not reflect erosion in the truer sense. However these results indicate that acceptance of spring flushing may not be prudent as lower than bankfull flows are clearly able to flush fine sediment along the system over a wide range of flows. The implications of this are there may be more bed and bank erosion in spring flows than would be normally expected because the fines are continually flushed from the system. A longer term fluvial assessment would be required to refine this theory.

The cause of erosion on watercourses is usually attributed to fluvial erosion caused by excess flows or rates-of-change of flow. This is however not the entire picture on these watercourses. It can be accepted that the high slopes of the channel as it moves down the Escarpment contributes to competent flow velocities, which moves material along the bed
and may contribute to sidewall erosion. However there are two further conditions which are at work in this situation.

First, the relatively impervious surface at the Escarpment reaches (soft shales of the Queenston Formation) coupled with high slopes causes rapid Saturated Overland Flow conditions whereby little infiltration into the upper surfaces of the clays blocks further infiltration potential. This situation results in near-immediate overland delivery of precipitation off the surface of the landscape as sheetflow, which then erodes the banks of the watercourses as it topples over into the channels. This was observed during a high energy storm event in July 2004.

Second, the exposed clay is soft and easily weathered by chemical processes (in this case addition and removal of water). The thin interbeds of clay allow water to infiltrate into the spaces between the layers of clay. As the water is in contact with the clay it combines to undergo a chemical transformation (in this case isomorphous replacement, whereby mineral ions are removed from the structure of the clay and enter the water, which then transfers other mineral ions to the clay which are weaker or poorly fitting). This weakens the clay. If the water that was in contact with the clay were to remain in contact, the chemical reaction would equilibrate, and no further chemical weathering would occur. But because the water flows out of the clay and is replaced with ‘new’ water during the next rain period, the chemical equilibration is not allowed to occur, and chemical weathering continues. This continual wetting and drying accelerates the weathering process and makes the material available for erosion. Since the clay is naturally weak to start with, and since replacements of ions with the water further weakens the clay, it is easily eroded by sheetwash process as indicated above.

The only way to mitigate the erosion of the land surface in the upper reaches (and at varied other clay exposures along the Escarpment) is to either revegetate the entire exposed surface with ground vegetation or to prevent the continual wetting and drying of the clay surfaces. Neither of these options are feasible.

In the reaches of Falcon Creek upstream of Highway 403 erosion is a function of higher-energy input from the Escarpment coupled with a change in the shear strength of the bank/floodplain material (sandy loam as opposed to shale). Potential remediation options relating to erosion along this site include removal of woody debris accumulations and
placement of a series of energy dissipaters as flow leaves the steeper sections of the watercourse.

Our data indicates that at all of the sites there is excessive mobilization of the median fraction of the bed material. This in and of itself would be cause for concern, however we take the position that it may not be overly disconcerting (except perhaps in the case of the upper sites where the boundary to critical relationship at bankfull is >100) for the simple reason that there is no apparent limit of sediment supply in the upstream reaches of these sites. If there were restrictions on sediment moving into the reaches, then bed erosion would clearly result at bankfull stage. We note from field evidence that this is not the case as sediment removed from the bed in those reaches is replaced by material upstream. If for some reason the upstream supply were to diminish (for instance if someone hardened the banks to restrict lateral migrations of the channel), then there would not be that replacement component and the bed would suffer severe erosion. In some gravel-bed rivers this results in an armouring of the bed, creating resistance to additional erosion, however we caution that this is not always the case and each stream systems needs to be assessed independently.

Streamflow at the study streams are capable of transporting most of the sizes of material that make up the bed and some of the banks. This can be determined qualitatively by observing the materials along the channel after the spring snowmelt. Recently moved particles on bars are often loose, imbricated and fresh in appearance lacking attached organic material. Recently moved particles can often be seen collected behind obstructions such as large rocks, organic debris or other flow obstacles. Scour and fill in the absence of long-term aggradation and degradation also indicates that sediment transport of the material that makes up the bed and banks has occurred.

While these systems are steep, there are terraces on the watercourses where the floodplain widens out and flow energy decreases significantly. These channel/floodplain relationships are of extreme importance to flow storage and need to be maintained. This floodplain ponding also allows for slower infiltration of water into groundwater reserves, which would not be possible on the higher gradient slopes. Allowing less water to enter the watercourses through stormwater management at the 2/3 or 1/3 scenario would alter this opportunity and could have serious implications for groundwater recharge, which would be felt in other areas of the watershed where groundwater discharge occurs.
The data clearly indicates that certain locations within this study area are prone to erosion and will require intervention if there are changes to either land use practices or hydrological variables within the watersheds.

**AQUATIC ECOLOGY**

**Methodology**
To characterize the aquatic ecology of the study area a comprehensive review of background information was completed, including the collection, assessment and integration of the results of previous studies, regulatory agency database information and other relevant data. This background information review was used to identify data gaps and guide a thorough, multi-faceted aquatic field programme that included the entire study area, but focused on the South Waterdown lands. The field programme included the following components:

**Aquatic habitat and Fisheries**
A comprehensive aquatic habitat survey of GS-1, GS-3 and Falcon Creek was conducted. Detailed data on channel dimensions, depth profile, flow regime, stream morphology, instream cover, riparian vegetation and other parameters were collected. A qualitative population survey was conducted in select reaches of GS-1 within the South Waterdown lands. Fish were caught using an electrofisher and dipnets.

**Benthic Invertebrates**
The benthic macroinvertebrate community of GS-1 was inventoried using the Before/After/Control/Impact (BACI) experimental design and sampling techniques prescribed by the Ontario Benthos Biomonitoring Network Protocol Manual. Reference and test sites were sampled in the spring of 2004 using a kick net.

**Water Quality Sampling**
The water quality of GS-1 immediately upstream and downstream of the South Waterdown lands was assessed. Sampling was conducted during wet and dry weather conditions; samples were tested for seven groups of water quality parameters, including water temperature, dissolved oxygen, general chemistry and metals, bacteria, nutrients, organochlorine pesticides, and total suspended solids. Insufficient flow conditions precluded water quality sampling of GS-3.
Altogether, Ecoplans Limited staff conducted fieldwork relating to aquatic resources during five days in 2004 and one day in 2005, for a total of more than 100 person-hours in the field.

Results

Aquatic Habitat and Fisheries
The following is a summary of the aquatic habitat and fisheries of the watercourses that flow through the South Waterdown lands.

GS-1 Tributary
GS-1 is an intermittent tributary draining to the main channel of Grindstone Creek, which is located downstream (west) of the South Waterdown lands. GS-1 is classified as warmwater upstream of George Street and throughout the South Waterdown lands. GS-1 is also classified as a potential coldwater stream downstream of the large perennial spring located in the vicinity of George Street.

Six distinct reaches of GS-1 were identified within the South Waterdown lands during field surveys. Reaches 1 and 2 have relatively good habitat quality. These reaches have deeper areas that maintain water throughout the summer and act as fish refuge pools. Reach 4 is the poorest in terms of habitat quality due to poor riparian areas, historical alterations to channel morphology and intermittent flow regime. Reaches 3, 5 and 6 have good cover and substrate characteristics, however, fish refuge pools are lacking. In Reach 5 and to a lesser extent in Reach 4, water is lost to underground karst features. Reach 6 is fed partially by groundwater entering the watercourse from a large ephemeral spring, however this reach dried up in mid summer of 2004.

Based on 2004 field surveys the fish species inhabiting GS-1 within the South Waterdown lands include Creek Chub, Brook Stickleback and Largemouth Bass.

GS-3 Tributary
GS-3 is an intermittent ditched swale located within the southern portion of the South Waterdown lands. The watercourse is heavily disturbed and the riparian area is regularly ploughed through in this location. At the brow of the escarpment (Zone 2) there is a sinkpoint that receives GS-3 flow; GS-3 resurfaces at the base of the Niagara Escarpment in Zone 3. The escarpment and the sinkpoint represent complete barriers to fish migration.
No fish were observed in GS-3 in Zone 2 during field investigation. The watercourse was determined not to contain fish habitat on the South Waterdown lands due to its intermittent nature, lack of fish refugia, and low quality riparian zone due to agricultural disturbances.

**Falcon Creek**

Falcon Creek originates from four seasonal drainage swales from wetlands and agricultural areas in Zone 2. Falcon Creek and its tributaries are intermittent watercourses that flow through poorly defined channels and ditches within the South Waterdown lands.

The main branch of Falcon Creek flows through subsurface karst features (sinks and springs) along its course to the escarpment brow (Zone 2). This portion of Falcon Creek does not likely support an *in situ* fish community due to its intermittent flow regime, rapid loss of water (when present) through karst, and distinct lack of fish refugia during low flow and dry periods. However, this section of Falcon Creek (within Zone 2) likely contributes indirectly to fish habitat further downstream in Zone 3.

Within Zone 3, Falcon Creek is classified as Type 2 fish habitat due to the presence of fish, however, the Niagara Escarpment prevents fish from migrating upstream into Zone 2.

**Indian Creek**

The headwaters of Indian Creek originate in karst features in Zone 2. There was no observed surface water feature on the South Waterdown lands or in Zone 2.

Within Zone 3, Indian Creek flows as two branches that eventually join south of Highway 403 to form the main branch of Indian Creek. Branch 1 is a permanent watercourse in the vicinity of Highway 403 and is classified as Type 2 fish habitat as it supports Creek Chub, Common Shiner and White Sucker. Branch 2 is an intermittent tributary and supports a remnant population of Creek Chub in the vicinity of Highway 403.

**Benthic Invertebrates**

The benthic invertebrate community of GS-1 was sampled at five stations within the South Waterdown Lands (B1-B5) and at three “reference” stations located on two branches of GS-1 in Zone 1. Of the benthic invertebrate communities sampled within the South Waterdown lands, the community at Station B1 (furthest upstream) suggests the best overall water and habitat quality. As GS-1 traverses the South Waterdown lands the watercourse becomes
increasingly impaired by anthropogenic disturbances to the channel or the riparian zones. This is reflected in a decrease in benthic invertebrate community diversity and an increase in disturbance tolerant taxa.

**Water Quality**

As GS-1 flows through the South Waterdown lands, mean water temperature decreases by 3°C and dissolved oxygen increases by about 7 mg/L. This likely reflects the influence from karst features and groundwater discharge from springs just upstream of the downstream sampling site. Total coliform and *E. coli* counts are generally above Provincial Water Quality Objectives (PWQO) and are consistently higher at the downstream sampling site. This contamination likely originates from non-point sources such as agricultural and/or urban runoff. Of the metals tested, only aluminium, iron and zinc were found at levels above PWQO. Total phosphorous levels also remain elevated at both sampling sites. Organochlorine pesticides were undetected in all samples. Levels of total suspended solids were consistently lower at the upstream sampling location; levels at the downstream site exceeded Canadian Water Quality Guidelines (CWQG).

**TERRESTRIAL ENVIRONMENT**

**Methodology**

To characterize the terrestrial ecology of the study area a comprehensive review of background information was completed, including the collection, assessment and integration of the results of previous studies, regulatory agency database information and other relevant data. This background information review was used to identify data gaps and guide a thorough, multi-faceted terrestrial field programme that included all three zones of the study area, but focused on the South Waterdown lands. Altogether the project team conducted fieldwork relating to terrestrial resources during four seasons over three years, including eight days in 2003, twenty-two days in 2004 and six days in 2005, with a total of more than 275 person-hours in the field.

The characterization of the terrestrial ecology of the study area included the following components:
Soils
DBH Soil Services Incorporated completed a detailed soil survey of the South Waterdown lands, with a focus on the existing natural environment features. The soil survey was completed in accordance with guidelines provided by the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA). Additional soils information from boreholes was integrated into the review process.

Botanical Inventories
A comprehensive (180 person hours) four season botanical inventory was completed within the South Waterdown lands from 2003 to 2005. Plant species significance was evaluated using current status lists.

Terrestrial Habitats
Habits within the South Waterdown lands were delineated and classified using the Ecological Land Classification for Southern Ontario (ELC). Habitats in Zones 1 and 3 were identified to ELC Community Class by aerial photograph interpretation and reconnaissance-level surveys.

Wetland Evaluations
Five wetlands were delineated within the South Waterdown lands, confirmed by Conservation Halton and mapped. Three wetlands were evaluated together as the Falcon Creek Wetland Complex using the Ontario Wetland Evaluation System – Southern Manual (OWES). The wetland evaluation was reviewed and approved by the MNR.

Wildlife Inventories
At the request of Conservation Halton, specific surveys were conducted for breeding birds, snakes, spring breeding amphibians, butterflies and odonates (dragonflies and damselflies). Surveys were restricted to the South Waterdown lands and immediately adjacent portions of Zone 2. Information on the wildlife species of Zones 1 and 3 was obtained through a review of background material.

Significant Wildlife Habitat
Significant wildlife habitat is broadly categorized by the MNR as (i) seasonal concentration areas, (ii) rare vegetation communities or specialized habitats for wildlife, (iii) habitats of species of conservation concern, excluding the habitats of endangered and threatened species
and (iv) animal movement corridors. Using background information sources and the results of 2003-2005 fieldwork, Ecoplans Limited assessed the presence of 15 of these habitat types in Zones 1, 2 and 3, with a particular emphasis on the South Waterdown lands.

**Assessment of Terrestrial Habitats**

The South Waterdown lands were partitioned into five Terrestrial Habitat Units and evaluated using a matrix of 10 evaluation criteria defined by Table 2 of the South Waterdown Subwatershed Study TOR.

**Results**

**Soils**

Results from 76 hand auger inspection stations were recorded. Soils were characterized using a number of factors including horizons, texture, moisture, depth to groundwater and depth to bedrock. Additional hand auger inspections were conducted but results were not described because bedrock was encountered within 12 cm of the surface.

Overall, the South Waterdown lands are relatively consistent with respect to surficial soils. The majority of inspection sites are characterized by soils within the Oneida Catena (Chinguacousy and Jeddo series loams and clay loams) over shallow bedrock.

The site is dominated by imperfectly drained Chinguacousy Series loam/silt loam/clay loam, with poorly drained Jeddo Series loam/silt loam/clay loam in low lying areas. Evidence of mottling within 20-25 cm of the surface was recorded at most inspection stations with Jeddo Series soils and many sites with Chinguacousy Series soils (indicative of seasonally wet conditions).

**Botanical Inventories**

Nine botanical inventories have previously been conducted in study areas that include all or part of the study area of the South Waterdown Subwatershed study.

Altogether, 880 species have been recorded from the study area of the South Waterdown Subwatershed Study, including 280 species from lands in or adjacent to Zone 1, 276 species from Zone 2 and 807 species from Zone 3. Of these, four species have both federal and provincial status. These include two species (Butternut and Red Mulberry) considered to be
endangered, one species (American Chestnut) considered to be threatened and one species (American Columbo) considered to be a species of special concern. A further 18 of these 880 species are designated S1-S3.

As part of the current study, 267 vascular plant species were recorded in the South Waterdown lands. Most of these are considered common and secure in Ontario (provincial S rank of S4 or S5); 31% are not native to Ontario. Five of the 267 plant species are considered significant: one Nationally/Provincially Endangered species (Butternut); and four species considered Regionally Rare (MNR Central Region) or Uncommon in Hamilton (Asa Gray Sedge, Necklace Sedge, Blue Beech, Tall Blue Lettuce)

**Terrestrial Habitats and Ecological Land Classification**

The South Waterdown lands are dominated by agricultural land use and culturally influenced vegetation communities.

Seventeen primary vegetation units were identified in the South Waterdown lands, with 49 component ELC vegetation types. Twenty-nine unique ELC vegetation types were identified in and immediately adjacent to the South Waterdown lands, including 11 cultural types (two meadow; six thicket; and three woodland/plantation); eight forest types; six marsh types (five meadow marsh and one shallow marsh); and four swamp types.

One provincially rare habitat type was identified within the South Waterdown lands in the GS-1 valley: *Fresh-Moist Black Walnut Lowland Deciduous Forest*.

The South Waterdown lands have an anthropogenic land use history and habitats are culturally influenced (e.g. tree cutting, trails, dumping, exotic/invasive species) to varying degrees. As a result, there is an overall moderate to high level of disturbance (including within the treed ESA’s)

Twenty-one hedgerows were delineated within the South Waterdown lands. These hedgerows are typically narrow and vary in age, species composition and level of disturbance. These hedgerows do not function as important wildlife movement corridors and there is minimal linkage between natural areas via hedgerows.
Twenty-eight terrestrial habitat units in Zones 1 and 3 of the study area were identified and mapped.

**Wetland Evaluations**

Five wetland units within the South Waterdown lands were delineated and classified using the ELC system, incorporating a review of background information, aerial photography and detailed field surveys. Wetland boundaries were confirmed by Conservation Halton staff. Three of these five wetland units were complexed and evaluated using OWES as the Falcon Creek Wetland Complex. The other two wetlands did not meet OWES criteria for evaluation.

The Falcon Creek Wetland Complex scored below the threshold for designation as Provincially Significant Wetland (PSW). However, because Jefferson Salamander (a threatened species) is known to breed within a portion of the wetland complex (in woodland vernal pools south/east of Mountain Brow Road), the MNR has designated the complex as PSW. The total wetland area of the Falcon Creek Wetland Complex is 7 ha, including meadow marsh, thicket swamp and deciduous swamp habitat types.

**Wildlife Inventories**

Thirteen wildlife inventories have previously been conducted in study areas that include all or portions of the study area of the South Waterdown Subwatershed Study.

Ecoplans Limited staff and other project team members documented a total of 139 wildlife species from the South Waterdown lands, including six mammals, 65 birds, two reptiles, four amphibians, 40 butterflies and 22 odonates. Together with the results of previous studies, 198 wildlife species have been recorded from the South Waterdown lands and other portions of Zone 2. Most of these species are designated S4 or S5 by the NHIC and are thus believed to be common and secure in Ontario.

Six species of conservation concern have been observed within the South Waterdown lands, including Cerulean Warbler, Red-headed Woodpecker and Monarch Butterfly (species of special concern) and Wild Indigo Dusky-wing (S1), Delaware Skipper (S3/S4) and Hickory Hairstreak (S3/S4). These species have largely been observed in habitats that comprise portions of the Falcon Creek Wetland Complex or the Waterdown Woods ESA.
Altogether, 205 wildlife species have been recorded in or adjacent to Zone 1 and 140 wildlife species have been recorded in or adjacent to Zone 3. Seven of these species have both federal and provincial status. Two are considered to be threatened, including the Eastern Hognose Snake and Jefferson Salamander. Five others are designated species of special concern, including Cerulean Warbler, Red-headed Woodpecker, Red-shouldered Hawk, Eastern Milk Snake, Monarch Butterfly and West Virginia White.

**Significant Wildlife Habitat**

Significant wildlife habitat within the South Waterdown lands includes (i) habitat for area-sensitive species, (ii) forest providing a high diversity of habitats, (iii) amphibian woodland breeding ponds, (iv) specialized raptor nesting habitat, (v) habitat of species of conservation concern, and (vi) regional animal movement corridors. Most of the 23 vegetation units defined by Ecoplans Limited that meet the criteria of significant wildlife habitat as defined by the MNR comprise portions of the riparian areas of GS-1, the Falcon Creek Wetland Complex or the Waterdown Woods ESA.

Zones 1 and 3 of the study area likely contain many examples of significant wildlife habitat. However, very few of these areas have been formally recognized and/or mapped.

**Assessment of Terrestrial Habitats**

The ecological quality of the five terrestrial habitat units within the South Waterdown varies. The ecological quality of habitat unit 2 (vegetation units 9 and 11) is considered to be low because it is dominated by heavily disturbed and anthropogenically influenced cultural communities of low species diversity. The ecological quality of Habitat units 3 and 4 (vegetation units 2, 4, 5, 6, 7 and 8) is considered to be moderate to high because these units are comprised of less disturbed communities of greater species diversity, including several species designated Endangered, Threatened or of Special Concern. These higher quality units comprise large portions of the Falcon Creek Wetland Complex and/or the Waterdown Woods ESA.
South Waterdown Subwatershed Study

Stage 2
Management Strategy

FINAL REPORT

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Processes and Studies Impacting the South Waterdown Subwatershed Study

Since commencement of the Stage 1 of the Subwatershed Study in 2004, several other planning and environmental studies have been completed or remain active (July 2010). These separate processes occurring outside of the subwatershed study have influenced the findings and recommendations of this subwatershed study and have greatly contributed to its dynamic nature. For several of the parallel study processes, the Subwatershed Study Group provided information and evaluation input. These studies are identified in the following list. In particular the reader should refer to the following:

1. The Waterdown-Aldershot Transportation Master Plan (Dillon Consulting 2003 - 2006) (direct input provided)
   - Determined the location of the north south arterial road within the South Waterdown lands linking Dundas Street and Mountain Brow Road;

2. The South Waterdown Secondary Plan Study (Sorensen Gravely Lowes – Secondary Plan - ongoing) (direct input provided)
   - Information from Stage 1 Report was provided to the Secondary Plan Study Group
   - The Stage 2 Report provided an evaluation of alternative land use concepts
   - A draft Preferred Secondary Plan option was first released by the City of Hamilton for public review in July 2006. A second PIC was held in November 2009.

   - Provided a preliminary preferred SWM strategies for the watershed areas within the City of Hamilton including the South Waterdown lands.

   - Addressed the configuration of the sanitary and wastewater collection system and domestic water distribution network.
   - Visual impact assessment was completed positioning a proposed water tower on South Waterdown lands

   - Characterized Falcon Creek, Indian Creek and Hager Creek watersheds

6. OMB Hearing of August 2008 (direct input provided)
   - August 2008, Phase 1A of the South Waterdown Community was appealed to the Ontario Municipal Board by the applicant. The OMB issued the Decision in October 2008
7. Grindstone Creek Tributary 3 Flow Monitoring Study (SNC Lavalin, 2008)
   - Flow monitoring and SWM options to address existing flooding at 1861 Old Waterdown Road.

The Subwatershed Study process has been dynamic and interactive. It has provided information to other parallel study programmes and has been influenced in turn by these other studies.
1 INTRODUCTION

1.1 Overview

The South Waterdown Subwatershed Study was conducted in three distinct stages. In Stage 1, the six subwatersheds of the study area were characterized through a review of background literature and field investigations to address data gaps. In Stage 2, the study team completed a detailed analysis of the potential impacts of the urban development of the South Waterdown lands and developed a management strategy to ensure that the critical elements of the component subwatersheds are protected. In Stage 3, an implementation and monitoring plan was developed to describe how management strategies developed in Stage 2 will be implemented.

This report summarizes the results of Stage 2 of the Study. For the sake of consistency, it utilizes the same terminology as that used in the Stage 1 Report.

The Stage 2 Report presents a Management Strategy to guide the future development and management of the South Waterdown lands. The Strategy was developed in accordance with the goals and objectives of the South Waterdown Subwatershed Study and reflects the complex natural heritage features and functions of the South Waterdown lands, the land uses proposed for these lands, and the influence of the larger regional context on the South Waterdown Subwatershed area.

1.2 Summary of Stage 1 Report: Existing Conditions

The Stage 1 Report (March 2006) provides an overview of the entire study area of the South Waterdown Subwatershed Study as well as a detailed characterization of the South Waterdown lands, including both the biological systems (aquatic and terrestrial) and the physical systems (geology, hydrogeology, water quality and quantity) on which the biological systems are based. This characterization was based on a framework provided by the Study’s Terms of Reference, developed in consultation with the Technical Steering Committee (TSC). The Stage 1 Report was reviewed, revised and adopted by the TSC following its final submission in March 2006. Final confirmation that Stage 1 is fully complete was received from the Niagara Escarpment Commission on February 18, 2009.

The Stage 1 Report is divided into the following major sections:

- Section 1: General Introduction
- Section 2: Introduction to Stage 1
- Section 3: Physiography
The Executive Summary of the Stage 1 Report is provided as Appendix 1A to this report.

1.3 Stage 2 Report: Management Strategy

1.3.1 Introduction to Stage 2 Report

The Goals and Objectives of the South Waterdown Subwatershed Study are detailed in Section 1 of the Stage 1 Report. Stage 2 was initiated only after Stage 1 was reviewed and approved in principle by the Technical Steering Committee.

Stage 2 was undertaken in accordance with the South Waterdown Subwatershed Study Terms of Reference. The Stage 2 Report provides a Management Strategy for the South Waterdown lands. This strategy reflects opportunities and constraints to development and provides a tool kit of management strategies to guide future land use changes within the South Waterdown lands. Land use will change, but the change must be guided to ensure that it does not exceed the capacity of the supporting ecological systems to sustain it.

The Stage 2 Report is organized into the following major sections:

- Section 1: Introduction
- Section 2: Opportunities and Constraints to Development
- Section 3: Existing and Proposed Land Use
- Section 4: Potential Impacts of Proposed Land Use
- Section 5: Drainage
- Section 6: Storm Water Management
- Section 7: Other Mitigation Measures
- Section 8: Enhancement and Compensation
- Section 9: Evaluation of Secondary Plan Options
- Section 10: Summary of Subwatershed Management Strategies
- Section 11: References
1.3.2 Goals and Objectives of the Stage 2 Report

As described in Section 3.0 of the South Waterdown Subwatershed Study Terms of Reference, the intent of Stage 2 is to develop a Management Strategy for the South Waterdown lands that meets seven main objectives. These objectives have been addressed as follows:

Objective 1: Protect the critical elements of the subwatershed and prevent environmental degradation.

The Stage 2 Report addresses this objective by identifying opportunities and constraints to development within the South Waterdown lands. As described in Section 2, significant constraints to development include the Grindstone Creek Tributary 1 (GS-1) corridor, the Falcon Creek Wetland Complex, the Waterdown Woods Environmentally Significant Area (ESA), the Grindstone Valley ESA and a hazardous site associated with karst bedrock. All of these features, with the exception of a very small part of the karst hazardous site are recommended for incorporation in a proposed Natural Heritage System.

The Stage 2 Report also addresses this objective by outlining measures that will mitigate the potential impacts of proposed development on the natural heritage features and functions of the South Waterdown lands. As described in Sections 6 and 7, recommended mitigation measures include the development and implementation of a storm water management strategy, the use of buffers and setbacks, application of construction Best Management Practices and environmental stewardship measures and the preparation of more detailed plans (e.g. a sediment and erosion control plan) at subsequent planning stages.

The proposed Natural Heritage System has been incorporated in three South Waterdown Secondary Plan options (see Section 3.2). In Section 9, the Stage 2 Report assesses these options based on their relative potential to affect the natural heritage features and functions of the South Waterdown lands. The results of this assessment are being applied to the development of the Secondary Plan that will guide the development of the South Waterdown lands.

Objective 2: Provide adequate flexibility for integration with adjacent development and redevelopment areas.

The Stage 2 Report addresses this objective by incorporating the results of the South Waterdown Subwatershed Study into two land use planning studies, the Waterdown-Aldershot Transportation Master Plan Study and the South Waterdown Secondary Plan Study. These studies are described in further detail in Section 3.2.
Objective 3: Assist in the establishment of open space linkages.

The Stage 2 Report addresses this objective by identifying opportunities and constraints to development within the South Waterdown lands. As described in Section 2, significant constraints to development, including the GS-1 corridor, the Falcon Creek Wetland Complex, the Waterdown Woods ESA and the Grindstone Valley ESA are recommended for incorporation in a proposed Natural Heritage System. These features provide a network of open space linkages.

Objective 4: Identify opportunities and constraints to development

The Stage 2 Report addresses this objective by identifying opportunities and constraints to development within the South Waterdown lands. The opportunities and constraints were identified based on the comprehensive background data review, and the field surveys and analyses presented in the Stage 1 Report. As described in Section 2, this comprehensive evaluation has been further refined by additional assessment work, leading to the identification of constraints to development and the formulation of a Natural Heritage System within the SWS.

Objective 5: Provide a strategy to manage existing land uses.

The Stage 2 Report addresses this objective by describing the existing uses of the South Waterdown lands and their impacts on the property’s natural heritage features and functions. Potential mitigation measures and management opportunities for compensation, restoration and/or enhancement of these areas are also described.

Objective 6: Identify location and area requirements for storm water management facilities.

Section 6 of the Stage 2 Report identifies the location and area requirements of the proposed storm water management (SWM) facilities based on a number of factors including topography and the maintenance of the current hydrologic regime (no interbasin transfer). Six SWM ponds are proposed. These ponds will discharge to existing watercourses as follows:

- Two SWM ponds will service the drainage area of Grindstone Creek Tributary 1 (GS-1) located north of the east-west drainage divide that traverses the South Waterdown lands;

- One SWM pond will service the existing drainage area of Grindstone Creek Tributary 2 (GS-2) south of the drainage divide. The pond will outlet where GS-2 is currently intercepted by an existing urban storm sewer system north of Mountain Brow Road. Capacity increase of the existing storm sewer is recommended;
• One SWM pond will service the existing drainage area of Grindstone Creek Tributary 3 (GS-3) south of the drainage divide. The pond will outlet to GS-3 north of Mountain Brow Road;

• One SWM pond will service the proposed development area south of the drainage divide. The area currently drains to Wetlands 2 and 3 within the Falcon Creek catchment area. This SWM pond will outlet to both wetland areas to maintain the existing wetland drainage; and

• One SWM pond will service the eastern portion of the South Waterdown lands. Under existing conditions the majority of this area drains to Wetland 1. A small northeast area drains to Wetland 2. Both wetlands are within the Falcon Creek catchment basin.

The proposed SWM ponds are located in lower elevation sites to maximize gravity inflow from municipal storm sewers. To minimize rock excavation and potential impacts to karst, detailed karst assessments and overburden drilling will be required at Draft Plan stage to determine the final construction and location of the ponds.

Objective 7: Identify restoration and enhancement opportunities.

Section 8 of the Stage 2 Report identifies opportunities for natural heritage restoration and enhancement within the South Waterdown lands based on the comprehensive background data review, field surveys and analyses presented in the Stage 1 Report.

1.4 Stage 3: Implementation and Monitoring Plan

1.4.1 Introduction to Stage 3

Section 4 of the South Waterdown Subwatershed Study Terms of Reference states that, during Stage 3 of the Study, an implementation and monitoring plan will be developed that sets out the requirements for phasing, financing, operation of facilities and monitoring to ensure compliance with both the subwatershed and watershed studies. The Stage 3 Report will outline the following:

• Timing for the construction of any required facilities with respect to future development;
• Funding formula for the construction of these facilities;
• Recommendations for future studies, if required;
• The operation and maintenance responsibilities for the recommended facilities;
• A monitoring program to ensure compliance with the watershed study and the subwatershed study, and a strategy for corrective actions which may be necessary based on results of the monitoring program;
• Time frame for the review/update of the subwatershed plan; and
• The estimated cost of the monitoring program.

The Implementation and Monitoring Plan will also outline the phasing for future development. This will permit changes to the recommended mitigation measures/management strategies for future phases of development should the results of monitoring from the initial phases suggest that changes are warranted (i.e. adaptive management).

1.4.2 Purpose of Stage 3

The South Waterdown Subwatershed Stage 2 Report recommends a suite of management strategies for the protection and management of the SSWS area’s natural heritage features and functions. These management strategies will be applied at various stages of the development in the South Waterdown lands, including the Secondary Plan, Draft Plan and Site Plan stages, design, construction and post-construction occupation. The Implementation Plan outlined in this report identifies the approaches that should be employed to implement these strategies and identifies who is responsible for their implementation.

The Implementation Plan is required to ensure that:

• Management recommendations are applied;
• The proponents (landowners) are aware of their responsibilities;
• The role of the municipalities and agencies in the ongoing process is clearly identified;
• Local residents are aware of the process and have the ability to become involved in the ongoing process; and
• The Plan is subject to ongoing evaluation (adaptive management) and changes are made as necessary.

The Stage 3 report was not initiated until the Stage 2 Report was nearing completion in the early months of 2008. The initial draft was submitted in February 2009.
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EXECUTIVE SUMMARY

The South Waterdown Subwatershed Study Stage 2 Report recommends a suite of management strategies for the protection and management of the natural heritage features and functions of the South Waterdown lands. This Report forms the final stage (Stage 3) of the South Waterdown Subwatershed Study. It consists of an implementation plan that identifies the approaches that will be employed to implement the management strategies outlined in the Stage 2 Report. It also describes a number of monitoring programs to ensure that the South Waterdown lands are developed in full compliance with the management strategies and that these strategies function as intended.

The Stage 3 Report is divided into 12 sections. These sections are summarized below.

Section 1 summarizes Stages 1 and 2 of the South Waterdown Subwatershed Study and states the purpose of Stage 3. Section 2 provides a summary the overall planning process. The South Waterdown Subwatershed Study has not been completed independently of other land use planning studies. Concurrent with the Subwatershed Study, a Secondary Plan Study, Water and Wastewater Class Environmental Assessment (EA) and a Transportation Class EA have all been conducted more or less concurrently with the Subwatershed Study. These related studies are described in the Stage 3 Report.

Section 3 describes the implementation process for the management strategies developed during Stage 2 of the Subwatershed Study. This section outlines the approaches that will be employed to implement recommendations that address storm water management, development phasing, sediment and erosion control, karst management, restoration and enhancement and the long term management of the Natural Heritage System.

Sections 4, 5, 6, 7, 8 and 9 describe a comprehensive and reliable system for documenting the effects of future development within the South Waterdown Community. It consists of monitoring programs for surface water flows, weather conditions, water quality, stream channel morphology and realignment impacts, groundwater, terrestrial ecology and aquatic ecology.

Section 10 describes an approach to the administration of these monitoring programs.

Section 11 details the comments of a comprehensive contingency response plan. It identified an array of potential impacts and for each impact factor outlines a contingency response system should an unanticipated or unacceptable change be detected trigging the need for a response.

The Stage 3 Report concludes in Section 12 with a description of an approach that will permit the regular review and update of the recommendations contained in the South Waterdown Subwatershed Study. A change in planning policy, proposed land use and/or natural conditions could trigger a need to review and update aspects of the Study’s management strategies. The factors that could indicate the need for a review are also identified.
1 INTRODUCTION

The South Waterdown Subwatershed Study was completed in three stages. The results of each Stage were submitted to the Technical Steering Committee (TSC) as separate reports. In Stage 1, the six subwatersheds within the study area of the South Waterdown Subwatershed Study were characterized through a review of background literature and the completion of extensive field assessments. In Stage 2, a detailed analysis of the potential impacts associated with the future development of the South Waterdown lands was completed and management strategies were recommended to ensure that the critical elements of the component subwatersheds are protected. In Stage 3, the subject of this Report, an implementation and monitoring plan is provided to describe how the management strategies developed in Stage 2 will be implemented.

Each of the three stages of the South Waterdown Subwatershed Study conforms to and, in the opinion of the participants, exceeds the level of investigation anticipated by the Study’s Terms of Reference.

1.1 Summary of Stage 1 Report

The Stage 1 Report provides an overview assessment of the watershed features included in an expanded South Waterdown Subwatershed Study (Zone 1 and 3) as well as a detailed characterization of the Subwatershed features contained in the South Waterdown lands (Zone 2), including both the biological systems (aquatic and terrestrial) and the physical systems (geology, hydrology, water quality and quantity) on which the biological systems are based. This characterization was based on a framework provided by the Study’s Terms of Reference, developed in consultation with the TSC. The Stage 1 Report was reviewed, revised and received by the TSC following its final submission in March 2006.

The Stage 1 Report is divided into the following major sections:
- Section 1: General Introduction
- Section 2: Introduction to Stage 1
- Section 3: Physiography
- Section 4: Geology
- Section 5: Karst Geomorphology
- Section 6: Hydrogeology
- Section 7: Hydrology
- Section 8: Erosion analysis
- Section 9: Aquatic Ecology
- Section 10: Terrestrial Environment
- Section 11: Issues and Opportunities
- Section 12: References
1.2 Summary of Stage 2 Report

Stage 2 of the South Waterdown Subwatershed Study was initiated only after Stage 1 had been reviewed by the TSC and was considered complete in accordance with the Terms of Reference.

The Stage 2 Report provides a Management Strategy for the South Waterdown lands. This strategy describes the opportunities and constraints to urban development and provides a tool kit of management strategies to guide future land use change within the South Waterdown lands. The first draft of the Stage 2 Report was submitted to the TSC in two parts on April 7 and 28, 2006. These submissions were reviewed and revisions were made in response to comments received from the TSC. A second draft of the Stage 2 Report was submitted to the TSC on April 23, 2007. Additional comments were received from the TSC and the second draft of the Stage 2 Report was further revised to reflect these comments. A third version of the Stage 2 Report was submitted to the TSC on March 14, 2008. The outstanding issues relating to the Stage 2 Report as well as the Stage 3 Report were finally resolved in the spring of 2009 in meetings with technical Subcommittees of the Technical Steering Committee including the Natural Heritage, Storm Water Management and Implementation Subcommittees.

The Stage 2 Report is organized into the following major sections:

- Section 1: Introduction
- Section 2: Opportunities and Constraints to Development
- Section 3: Existing and Proposed Land Use
- Section 4: Potential Impacts of Proposed Land Use
- Section 5: Drainage
- Section 6: Storm Water Management
- Section 7: Other Mitigation Measures
- Section 8: Enhancement and Compensation
- Section 9: Evaluation of Secondary Plan Options
- Section 10: Summary of Subwatershed Management Strategies
- Section 11: References

1.3 Introduction to Stage 3

Section 4 of the South Waterdown Subwatershed Study Terms of Reference states that, during Stage 3 of the Study, an implementation and monitoring plan will be developed that sets out the requirements for phasing, financing, operation of facilities and monitoring to ensure compliance with both the subwatershed and watershed studies. The Stage 3 Report will describe the following components:

- Timing for the construction of any required facilities with respect to future development;
• Funding formula for the construction of these facilities;
• Recommendations for future studies, if required;
• Operation and maintenance responsibilities for the recommended facilities;
• Monitoring program(s) to ensure compliance with the watershed study and the subwatershed study, and a strategy for corrective actions which may be necessary based on results of the monitoring program;
• Time frame for the review/update of the subwatershed plan; and
• Estimated cost of the monitoring program.

The implementation and monitoring plan will also outline the proposed phasing of future development. Phasing will permit changes to the recommended mitigation measures/management strategies for future phases of development if the results of monitoring from the initial phases suggest that changes are warranted (i.e. adaptive management).

1.4 Purpose of Stage 3

The South Waterdown Subwatershed Stage 2 Report recommends a suite of management strategies for the protection and management of the Subwatershed’s natural heritage features and functions. These management strategies will be applied at various stages of the planning and development of the South Waterdown lands, including planning decisions at the Secondary Plan, Draft Plan and Site Plan stages, and detailed design stages and during construction, and post-construction occupation. The Implementation Plan outlined in this report identifies the approaches that will be employed to implement these strategies and identifies who is responsible for their implementation.

The Implementation and Monitoring Plan will ensure that:

• Management recommendations are applied;
• The proponents (landowners) are aware of their responsibilities;
• The role of municipalities and agencies in the ongoing process is clearly identified;
• Local residents are aware of the process and have the ability to become involved in the ongoing process; and
• The Plan is subject to ongoing evaluation (adaptive management) and changes are made as necessary.
• The lands in the City of Burlington are not negatively impacted as a result of developments in South Waterdown. If any impacts are incurred they will be mitigated through negotiations with the City of Hamilton.
1.5 Review of Background Information

As part of the process leading to preparation of the Stage 3 Report, the South Waterdown Subwatershed Study Project Team reviewed a number of recent Subwatershed Studies and Master Plan Studies, most of which were conducted within the same time frame as the South Waterdown Subwatershed Study (completion dates range from 1999 to 2007). This review was undertaken to establish current reporting standards and expectations for Subwatershed Studies in terms of approach and content and more specifically to the implementation plan content of similar reports.

Studies reviewed by the Project Team include the following:

Region of Peel: Water and Wastewater Servicing Master Plan for the Lake Based System (KMK et al. 1999)

Philips Engineering: Sixteen Mile Creek Area 2 and 7 Subwatershed Planning Study. (Section 8: Implementation Plan). (January 2000)

City of Cambridge: Forbes Creek Subwatershed Study (Section E Subwatershed Study: Section E 1.0 Subwatershed Management Requirements: Section E 2.0 Implementation Framework). (August 16, 2002)

North Oakville Landowners Group: North Oakville East Subwatershed Study Town of Oakville (Draft 3) (Stantec et al. 2004)

Credit Valley Conservation: Silver Creek Subwatershed Study Subwatershed II. (Phase III Implementation Report) (July 2003)


Philips Engineering Limited: Davis Creek Subwatershed Study (Section 9 Implementation Plan) (October 2006)

Philips Engineering Limited: Waterdown North Master Drainage Plan (February 2007)


Within the Subwatershed Studies and equivalent undertakings listed above, there is considerable variation in the level of analysis and detail included in the Implementation Plan section.
July 19, 2010

Ms. Kirsten McCauley  
Community Planning and Design Section, Planning Division  
Planning and Economic Development Department  
City of Hamilton  
71 Main Street West, 6th Floor  
Hamilton, Ontario  
L8P 4Y5

Dear Ms. McCauley:

RE: Draft Waterdown South Secondary Plan  
Draft Waterdown South Urban Design Guidelines  
Waterdown South Transportation Study  
Waterdown South Subwatershed Study  
Our File: 160-19

Burlington staff has provided comments throughout the Waterdown South review process including the Public Information Centre meeting on November 10, 2009 and the more recent meetings attended by Hamilton and Burlington staff on April 9 and June 11, 2010.

Burlington staff is pleased to provide the following supplementary comments.

1. Burlington Council Comments Regarding Waterdown South

As indicated at the meeting on June 11, 2010, Burlington City Council must provide a response to Hamilton on matters concerning Waterdown South given that Burlington was a signatory to the Memorandum of Agreement (MOA) approved by the Ontario Cabinet in 2002. The MOA addresses the Waterdown urban expansion area, which is discussed in Section 2.

Burlington staff plan to report to the next available Community Development Committee (CDC) meeting scheduled for August 30, 2010. Burlington Council would consider CDC’s recommendation on September 7, 2010. This timeframe allows Burlington staff to consider your e-mail of July 7, 2010 which contained comments from technical agencies as well as Conservation Halton’s comments received just a few days ago on July 14, 2010.

Hamilton staff advised on July 7, 2010 that a report would be presented to the Hamilton Economic Development and Planning Committee (EDP) on September 7, 2010 regarding the Official Plan amendment, secondary plan, urban design guidelines and subwatershed study for Waterdown South.
There have been ongoing meetings and discussions between Hamilton, Burlington and technical agencies that have allowed the Waterdown South matter to move forward. Burlington is of the opinion that it is premature for the Hamilton EDP Committee to deal with a Hamilton staff report on September 7, 2010 regarding Waterdown South given that some significant issues remain to be resolved and Burlington Council will be dealing with these matters on the same day (September 7, 2010). Burlington staff requests Hamilton staff withhold its report to the EDP regarding Waterdown South until Hamilton staff has had the opportunity to consider Burlington Council’s comments.

2. Background – Waterdown South Planning Process

The planning history for the Waterdown urban expansion area is summarized below which confirms the significant historical relationship between Burlington and Flamborough (now Hamilton) regarding the Waterdown urban expansion area. The City of Hamilton took over the responsibility of the matter from Flamborough in January 2001 with the amalgamation of Hamilton and five neighbouring municipalities, which included Flamborough.

Waterdown Urban Expansion History

- Flamborough Town Council adopted Official Plan Amendment No. 28 (OPA 28) in 1992 to allow approximately 6,500 units within the three Waterdown urban expansion areas:
  - Upcountry Estates (54 ha)
  - Waterdown North (133 ha)
  - Waterdown South (180 ha)

- OPA 28 was appealed to the Ontario Municipal Board (OMB) by two landowners in the Waterdown urban expansion area (Paletta International & Upcountry) and the Niagara Escarpment Commission (NEC). The appeal came under the jurisdiction of the Consolidated Hearings Act since the NEC was one of the appellants.

- A Joint Board decision was issued on March 10, 1997.

- The Joint Board decision was appealed to the Ontario Cabinet by two landowners in the Waterdown urban expansion area (Paletta International & Upcountry).

- A settlement was reached among the parties which was confirmed in a signed Memorandum of Agreement (MOA).

- The Ontario Cabinet rescinded the Joint Board’s decision and approved the MOA and a revised OPA 28 on June 19, 2002. These documents allowed an urban designation on the three expansion areas and established a strategy to resolve land use planning issues between Burlington, the Town of Flamborough (now Hamilton), the Region of Halton and numerous landowners in the Waterdown South.
urban expansion area. The approval of these documents also avoided a potentially lengthy and costly hearing before the OMB.

Burlington staff recognizes the OPA 28 policies were prepared at a general level and not supported by technical studies. The proposed Waterdown South Secondary Plan policies are supported by technical studies.

Burlington staff support in principle the introduction of updated planning policies and new urban design guidelines for Waterdown South provided the underlying principles of the MOA and OPA 28 are carried forward. Burlington’s key interests regarding Waterdown South are stormwater management, transportation and open space buffers along Mountain Brow Road and Kerns Road.

There have been numerous meetings and discussions to advance the Waterdown South Secondary Plan and related matters; however Burlington considers the review process to be incomplete since key issues have not been resolved to Burlington’s satisfaction. Therefore, Burlington considers it premature for Hamilton staff to present a report to the Hamilton Economic Development and Planning (EDP) Committee on September 7, 2010.

3. Burlington’s Preliminary Comments - Secondary Plan and Design Guidelines

Burlington staff provides the following preliminary comments. The following matters will be presented to the Burlington CDC on August 30, 2010 and Burlington’s position will be provided to Hamilton by way of a resolution from Burlington City Council who will deal with the matters on September 7, 2010. It should be noted that all members of Burlington Council are members of the CDC.

3.1 Ontario Cabinet’s 2002 Memorandum of Agreement (MOA)

The Ontario Cabinet approved the MOA in 2002 which established a strategy to resolve issues among various parties, including the Town of Flamborough (now Hamilton) and Burlington. The MOA also contained land use principles that were incorporated into OPA 28 which represents the current planning strategy for the Waterdown urban expansion area.

Burlington Council must consider whether the proposed Waterdown South planning policies and urban design guidelines address Burlington’s interests that were established through the Cabinet-approved MOA and OPA 28. If Council believes Burlington’s interests are protected then modifications to the Memorandum of Agreement recommended in the Waterdown South Secondary Plan can be endorsed. Burlington staff is of the opinion that Hamilton cannot unilaterally undertake certain actions, such as removing 30 metre open space buffers, as such measures conflict with the intent and spirit of the MOA approved by Cabinet.
3.2 Stormwater Management

North Aldershot is located at the westerly end of Burlington and situated directly south of the Waterdown South planning area. A significant amount of stormwater from Waterdown South flows into North Aldershot. North Aldershot experienced significant stormwater flows in recent years that resulted in damage to private and public lands.

The MOA and OPA 28 recognize the relationship between Waterdown South and North Aldershot and both documents require future development in Waterdown South to address stormwater impacts upon North Aldershot.

Technical research has been undertaken to understand the stormwater issues in Waterdown South, which includes environmentally sensitive areas and Karst topography.

Burlington has been a participant in the review of the subwatershed study. Burlington staff agrees the proposed stormwater pond at the south end of the study area appears to be acceptable. However, Burlington staff request written assurance the pond will be sized and designed to provide the level of stormwater management outlined in the subwatershed study if the 30 metre buffer along north side of Mountain Brow Road is reduced or eliminated.

Sections A.9.6.1 and A.9.6.2 of the Secondary Plan refer to the recommendations of the South Waterdown Subwatershed Study. We expect the stormwater management measures to be implemented in Waterdown South will conform to the Subwatershed Study under interim conditions. We recommend the following action be taken to ensure lands in Burlington are not negatively impacted by stormwater:

i) Evaluation and verification of the hydrologic and hydraulic / GAWSER models

Burlington staff must apprise Burlington Council on the stormwater issues and Burlington Council must determine whether the MOA and OPA 28 stormwater management criteria are reflected in the Waterdown South OPA, secondary plan and subwatershed study.

3.3 Mountain Brow Road – 30 Metre Open Space Buffer

The MOA and OPA 28 state unequivocally that a 30 metre wide open space buffer will be provided along the north side of Mountain Brow Road. The MOA also states that 0.8 hectares of land "...shall be conveyed at no cost to the Town..." along the westerly portion of Mountain Brow Road. The 0.8 hectares of land would now be conveyed free of charge to the City of Hamilton.

Section 3.3 of Hamilton’s draft Official Plan amendment for Waterdown South recommends deletion of Section A.1.13 in OPA 28 that would result in deletion of the 30 metre open space buffer along Mountain Brow Road. Burlington staff is very concerned with Hamilton’s proposal to delete the 30 metre open space buffer along Mountain Brow Road. Burlington expressed its concern with this amendment at the Public Information Centre meeting on November 10, 2009 and in correspondence to Hamilton dated January 13, 2010.
Burlington staff reviewed the Hamilton staff responses of February 2, 2010 and April 19, 2010 explaining the removal of the open space buffer (e.g. inefficient use of the buffer, relocation of land to more practical public parks, lack of funds to purchase buffers). Although a precise rationale for the 30 metre buffer along the north side of Mountain Brown Road has not been provided, it is clear that Cabinet and the signatories approved a 30 metre open space buffer along the north side of Mountain Brow Road.

Burlington staff supports Hamilton's approach to utilize the 0.8 hectares of land to be dedicated at no cost to Hamilton for use in the Character Road section of Mountain Brow Road between Arterial Road A and the hydro corridor. Staff also supports polices and urban design guidelines that identify Mountain Brow Road, east of Collector Road A, as a Character Road that will have a non-urban design, discussed further in Section 3.5.

In summary, Burlington staff looks favourably on Hamilton staff’s proposal to replace the 30 metre open space buffer with a modified buffer that will maintain a rural setting along the Character Road and provide a transition between the rural setting of North Aldershot and the urban setting of Waterdown South. Burlington Council must be apprised of this strategy and decide if it is acceptable to Burlington.

### 3.4 Kerns Road – Open Space Buffer & Road Allowance

#### 3.4.1 - 30 Metre Open Space Buffer

The MOA and OPA 28 policies state unequivocally that a 30 metre wide open space buffer will be provided along the west side of Kerns Road on lands located within what is now the City of Hamilton. Burlington staff consider it appropriate to establish an open space, rural setting along the west side of Kerns Road to be consistent with the substantial open space, rural setting created by the City of Burlington through it’s City Park located on the east side of Kerns Road which implements the Niagara Escarpment Plan.

Section 3.3 of Hamilton’s draft Official Plan amendment for Waterdown South recommends deletion of Section A.1.13 in OPA 28, which would delete the 30 metre open space buffer along Kerns Road. Burlington staff is very concerned with the deletion of the 30 metre buffer along Kerns Road. Burlington expressed its concerns at the Public Information Centre meeting of November 10, 2009 and through correspondence to Hamilton dated January 13, 2010.

Hamilton staff drafted supplementary wording for the Kerns Road urban design guidelines which is discussed in Section 3.5.

#### 3.4.2 Road Allowance (Width & Widening)

Burlington Council approved the southbound closure of Kerns Road (located entirely within the City of Burlington) in February 2010 for operational and safety reasons outlined in Burlington Engineering Department’s Report E-4-10. Burlington recommends the intersection configuration at Kerns Road / Collector Road ‘D’ shown in Burlington Report E-4-10. Report E-4-10 was circulated to Hamilton for comment prior
to being dealt with by Burlington’s Community Services Committee on January 15, 2010 and Hamilton staff agreed in principle to this configuration, as confirmed in the e-mail from Hamilton dated January 12, 2010 contained in Appendix I.

On July 12, 2010 the City of Burlington Committee of the Whole (which is comprised of all members of Burlington City Council) approved Engineering Department report E-64-10 and amendments to stop up and close a part of Kerns Road. Burlington Council approved the revised report on July 15, 2010 which is contained in Appendix II.

The Kerns Road right of way is currently 12 metres wide whereas the Waterdown South OPA and secondary plan identify Kerns Road as a collector road having a width of 20 metres. Burlington staff recommended at the June 11, 2010 meeting that Kerns Road be widened to 26 metres to accommodate the necessary road works, including the prohibition of southbound traffic from Waterdown South and Burlington’s City Park.

Immediately adjacent to the west side of Kerns Road is an 18 metre wide pipeline easement which must be encroached into by 4 metres in order to satisfy the Kerns Road collector designation in the draft Waterdown South Official Plan amendment and secondary plan. The 4 metres would be added to the existing 12 metre right of way and the 7 metre widening on the Burlington side of Kerns Road resulting in an overall road allowance of 23 metres. It is Burlington’s opinion that a 23 metre wide road allowance could accommodate a 3 lane cross section for Kerns Road and the road works recommended by Burlington.

Hamilton and Burlington agreed at the June 11, 2010 meeting that further discussion is required with Enbridge regarding the easement along the west side of Kerns Road. We are concerned that Hamilton staff is moving forward with a report on September 7, 2010 prior to the Kerns Road easement, design, timing and funding issues being resolved.

Hamilton staff advised at the June 11, 2010 meeting that a widening of Kerns Road is not scheduled at this time and that Hamilton staff consider Kerns Road to be a local road in terms of land use. Hamilton staff also commented there does not appear to be any benefit to Hamilton to widen Kerns Road, notwithstanding that Kerns Road will be designated a collector road and recognized as a municipal boundary road. Hamilton staff positions provided on June 11, 2010 are contradictory to the draft Hamilton Official Plan amendment and Hamilton’s position provided in January 2010 (Appendix I).

There are various outstanding, significant issues regarding Kerns Road. Burlington Council needs to be apprised of these matters and consider various means to achieve a resolution regarding road width and design.

3.5 Waterdown South Urban Design Guidelines

Generally, Burlington staff found the Urban Design Guidelines to be comprehensive, well organized and very detailed.

The Character Road policies are contained in the secondary plan and urban design guidelines. The policies and guidelines state Kerns Road and Mountain Brow Road
provide a unique environment due to their rural cross section and close proximity to the Escarpment. The two roads are discussed separately below.

Mountain Brow Road

Staff support the polices and urban design guidelines that identify Mountain Brow Road, east of Collector Road A, as a Character Road that will have a non-urban design. Staff also supports the supplementary urban design guidelines provided on April 19, 2010 consisting of detailed design goals, road cross sections and sample diagrams that collectively provide a clear expression of how the easterly section of Mountain Brow Road will be designed and function. The special treatment of this road is the basis for Burlington staff supporting a reduction of the 30 metre open space buffer contained in the MOA.

Kerns Road

The initial urban design guidelines for Kerns Road lacked detail as to how the existing open space character of Kerns Road will be maintained given that the draft OPA proposes to remove the Cabinet-approved 30 metre buffer abutting Kerns Road.

Hamilton staff provided supplementary urban design detail for Kerns Road on April 19, 2010 which identified Kerns Road, between Dundas Street and the Niagara Escarpment protection area, as a Character Road. The supplementary information for Kerns Road is not as detailed as the Mountain Brow Road design goals. Burlington staff recommends the Kerns Road design goals be enhanced to provide a comprehensive strategy and clear expression of how Kerns Road will be designed to maintain and provide an open space setting as envisioned in the MOA and OPA 28, such as was provided for Mountain Brow Road.

Section 4.2.3 (Guidelines For Development Adjacent To The Natural Heritage System) identifies Mountain Brow Road and Kerns Road fronting onto natural features and states development on these roads shall be compatible with the natural setting. Burlington staff is satisfied with the changes proposed for Mountain Brown Road as discussed in Section 3.3. It is not clear how Kerns Road will satisfy this policy if the 30 metre open space buffer is removed from the west side of Kerns Road and comprehensive open space / road details are not provided.

4. Waterdown South Transportation Study – Final Report (iTrans)

Burlington staff reviewed the iTrans traffic study for Waterdown South who concluded the study conflicted with Burlington’s recommendations regarding Kerns Road (Section 3.4.2.). It is recommended that the iTrans Traffic Study be revised to recognize Burlington’s recommendation regarding Kerns Road. Further discussion is recommended between Hamilton and Burlington on this matter. Staff will report to the
CDC on August 30, 2010 and Burlington Council will deal with this matter on September 7, 2010.

5. Environmental Matters

Burlington Planning Department provided the following comments to Hamilton on January 14, 2010 regarding the subwatershed study phase 3 final report:

1. "The City of Burlington must be added to the list of recipients for future monitoring reports.
2. The Jefferson Salamander regulation applies retroactively to the South Waterdown development approvals. A letter report should be prepared that addresses the final regulation issued by the province for this species. Similarly the City of Hamilton may be concerned about Butternut which is also found in the study area.
3. The use of Floristic Quality Assessment (a non-standard methodology) is a significant issue. The concern is that vegetation monitoring essentially relies entirely on this subjective and qualitative method when other more robust methods exist and should be used."

Burlington Planning staff provided an update to Hamilton staff by e-mail on June 22, 2010 on the resolution of the three outstanding matters.

- Burlington accepts resolution of #1 as Burlington has been added as a recipient of future monitoring reports.
- Point #2 is not fully resolved. It is our understanding that the MNR has produced a map of Jefferson Salamander Habitat who is in discussions with the City of Hamilton regarding its impact. Burlington Planning requests this information be shared and would like to review with Hamilton and the MNR how Jefferson Salamander are to be integrated into the final subwatershed plan and future monitoring reports.
- Point #3 has been resolved.

Conclusions:

Burlington staff acknowledges significant progress has been made between Hamilton, Burlington and various technical agencies regarding the proposed Waterdown South policies, urban design guidelines and subwatershed study. A limited number of issues are outstanding, all of which affect Burlington.

Burlington Council must be apprised of the proposed changes to the planning, transportation and environmental strategies for Waterdown South given that Burlington is a signatory to the Memorandum of Agreement approved by the Ontario Cabinet in 2002. The Memorandum of Agreement established a strategy to resolve issues
between various parties, including Burlington and the Town of Flamborough (now Hamilton) and avoided a potentially lengthy and costly hearing before the Ontario Municipal Board. The Memorandum of Agreement also provided a comprehensive development framework for the Waterdown urban expansion area, which includes Waterdown South.

Staff will present a report to the Community Development Committee on August 30, 2010 on the matters contained in this letter and Burlington City Council will consider Committee’s recommendation on September 7, 2010. At that time, Burlington Council can indicate whether or not it supports the proposed modifications to the Memorandum of Agreement.

Burlington staff requests Hamilton staff reconsider its intention to present a report to the Economic Development and Planning Committee on September 7, 2010. Burlington staff considers the September 7, 2010 meeting to be premature given that Hamilton staff and Hamilton Council will not have had the opportunity to consider Burlington Council’s position. Burlington would prefer to resolve these matters collaboratively rather than having to seek a remedy through an appeal process or other means.

Should Hamilton staff proceed with a report to the Hamilton Economic Development and Planning (EDP) Committee on, before or after September 7, 2010 regarding the Official Plan amendment, secondary plan, urban design guidelines and subwatershed study for Waterdown South, Burlington requests this letter be presented to the Hamilton Economic Development and Planning Committee and Hamilton Council to ensure Committee and Council are aware of Burlington’s position and ensure this letter is included in the public record.

Yours truly,

Greg Simon
Senior Planner

c.c. (Sent via e-mail)
S. Stewart – Acting General Manager D&I
T. Eichenbaum – Engineering Department
P. Kelly – Engineering Department
B. Hurley – Legal Department
V. Tolone – Transportation Department
R. van de Lande – Planning Department
J. Lawrence – Conservation Halton
N. Mott-Allen – Niagara Escarpment Commission

Ltr4HamiltonReWatSouthOPJuly10.doc
Appendix I

City of Hamilton Response Regarding Kerns Road, Dated January 12, 2010

From: Banuri, Syeda [Syeda.Banuri@hamilton.ca]
Sent: Tuesday, January 12, 2010 2:58 PM
To: Tolone, Vito
Cc: Norman, Gavin; McCauley, Kirsten; Khes, Brenda; Lee-Morrison, Christine
Subject: FW: E4-10 Report (Draft City of Burlington Report for Waterdown Road ESR/ King Road Rehabilitation/ Kerns Road Traffic Management

Importance: High

Hi Vito,

We discussed your the wording regarding Kern's Road in your Staff Report here with our Development Engineering and Community Planning staff. Based on that, it is requested that:

"The Burlington report should indicate that the final design of Kerns Road will require further consultation and coordination with the City of Hamilton, however an agreement in principle was reached with Hamilton to address Burlington's residents concerns with respect to traffic infiltration".

Hope this helps. Please, let me know if you have any questions.

Thanks.

Syeda Basira Banuri, M.Eng, P.Eng
Senior Project Manager
Environment & Sustainable Infrastructure Division
Public Works Department, City of Hamilton
Phone: (905) 546-2424 x 4101 Fax: (905) 546-4435

-----Original Message-----

From: Tolone, Vito [mailto:tolonev@burlington.ca]
Sent: Monday, January 11, 2010 7:51 PM
To: Lee-Morrison, Christine
Cc: Eichenbaum, Tom; Banuri, Syeda
Subject: RE: E4-10 Report (Draft City of Burlington Report for Waterdown Road ESR/ King Road Rehabilitation/ Kerns Road Traffic Management

Christine: Further to our telephone conversation today, we have the following responses to your comments:

Comment - Kerns Rd. general - the report should clarify that his is a boundary road and there is an agreement in place with Hamilton. Works require agreement with Hamilton.

Response - We will provide comment in the report indicating that Kerns is a boundary road and we need Hamilton's agreement.

Comment - Pg. 15 - concerning the Kerns Road recommendations - Hamilton hasn't agreed in principle, particularly to the concept for the collector road intersection restrictions. Further discussions will be required. The report indicates that the intersection scheme for the collector is "recommended". The report does not indicate a strategy, should an agreement not be reached with Hamilton.
Response - As I indicated on the phone, we took the initiative to produce a draft functional plan of the Kerns Rd/Collector Rd 'D' intersection based on the comments in Hamilton's Waterdown South Secondary Plan. On page 39 it states that in order to address traffic infiltration concerns from the existing Burlington residential neighbourhood to the south of the secondary plan that Collector Road 'D' and Kerns Road will form one continuous roadway with turn restrictions if required. The functional drawing was our interpretation of the verbiage in your secondary plan. At our November 26/09 meeting be believe Hamilton staff concurred that the plan did in fact meet the intent of the wording in the secondary plan. We can add more to the report stating that the final layout of the intersection will involve more dialogue with Hamilton staff before a final decision on the design is made, however, we would like to indicate that an agreement in principle was reached with Hamilton. You indicated that you would follow-up with your Engineering staff on this issue and we will await a response.

Comment - King Road - The report needs to clarify that a portion of the works are within Hamilton boundaries. The report should state that agreements with Hamilton will be necessary to allow the construction.

Response - We clarify this in our report

Comment - Pg.18 - concerning reconstruction of Kerns from escarpment to Dundas - City of Hamilton does not have improvements to Kerns road forecasted in our roads program. Furthermore, there have been no discussions regarding potential cost sharing.

Response - We will include a sentence in the report indicating that this work will require consultation and coordination with Hamilton as well as a cost sharing agreement.

Christine, as you know, our report is scheduled for February 10/09 and any further delays will put this date in jeopardy. This will mean that approval of the Waterdown ESR will be further delayed since we have been directed to address Waterdown, King and Kerns Road issues in one report. In order to keep this report on track we need a response to this e-mail from Hamilton by the end of the day on Tuesday Jan 12th so that the report can be signed off.

Not to add any further complications, but, there is still the issue of the comments from Conservation Halton which remain unresolved. In a previous conversation you indicated that Syeda was going to be in touch with me so we can have a sense of how these issues were going to be addressed by Dillon. I understand that she will be back in the office on Tuesday, so I will await her call.

Regards

Vito
Appendix II

Engineering Department

TO: Community Services Committee

SUBJECT: Restriction of Southbound Traffic for part of Kern's Road

Report Number: E-64-10  File Number(s): 795-01
Report Date: June 22, 2010  Ward(s) Affected:  1 □ 2 □ 3 □ 4 □ 5 □ 6 □ All □
Date to Committee: July 14, 2010  Date to Council: July 15, 2010

Recommendation: APPROVE the one way southbound restriction of Kern’s Road starting approximately 850 metres south of Dundas Street and continuing for approximately 100 metres, as shown on Appendix "A",

APPROVE the amendment to Traffic By-Law 86-2007, Schedule “9”, Section 15 – One-Way Streets as shown on Appendix “B”,

APPROVE a copy of this report be circulated to the City of Hamilton, Conservation Halton, the Niagara Escarpment Commission, and an information notice be sent to all of the affected residents in the Tyandaga area and all the participants and contacts from previous Kern’s Road Public Information Centers (PIC’s).

Purpose:

☐ Address goal, action or initiative in strategic plan
☐ Establish new or revised policy or service standard
☐ Respond to legislation
☒ Respond to staff direction
☒ Address other area of responsibility

Reference to Strategic Plan: Managed Growth

Background: At its regular meeting held on February 22 2010, City of Burlington Council approved the following recommendations as presented in Report No. E-4-10 (Council # 4-10):

APPROVE the recommended traffic management scheme (one way restriction) on Kern’s Road at the top of the escarpment for implementation in 2010.
Discussion:
Council Report E-4-10 provided a comprehensive transportation network strategy for the north-south corridors between Aidershot and Waterdown. The strategy includes a staged upgrade and widening of Waterdown Road, the rehabilitation of King Road and a traffic management scheme for Kern's Road.

The Kern's Road Environmental Assessment (EA) Study reviewed the section of Kern's Road between Dundas Street and Bonfield Court to determine what options were appropriate to address issues related to cut-through traffic, vehicle speeds and road safety. The study assessed the feasibility of alternative solutions including partial or full closure of Kern's Road.

Kern's Road - Alternative Options Considered

Five alternative options including cost implications were evaluated and presented to the public that included:

1. Do Nothing;
2. Geometric Improvements to Kern's Road at the Escarpment Crossing;
3. Turn Restrictions at Waterdown South Subdivision & New City Park;
4. Southbound Closure of Kern's Road at the Escarpment Crossing; and
5. Full Closure of Kern's Road at the Escarpment Crossing.

Preferred Option

After reviewing the above options in detail, the preferred option of a southbound closure of Kern's Road at the escarpment crossing was selected.

The rationale for the recommendation

- eliminates southbound cut-through traffic.
- restricts southbound and northbound traffic to Waterdown South subdivision through Tyandaga.
- resolves the issues related to existing substandard road geometrics with the one-way operation across the escarpment.
- helps to address the southbound speeding and traffic enforcement issues.
- maintains northbound access to New City Park and Dundas Street.
- does not impact other north-south roads in the northbound direction and has minimal impact in the southbound direction.
- effectively reduces the existing AADT on Kern's Road by half, and maintains traffic volumes in the future.
- decreases future traffic volumes on Tyandaga Park Drive from developments in Waterdown.

Kern's Road is a Hamilton/Burlington boundary road and as such, an agreement is in place which requires both municipalities to agree with any modifications prior to construction. Appendix F in Report E-4-10 illustrating the preferred option has been shared with Hamilton staff and has been approved in principle. Burlington is in the process of submitting detailed designs to the City of Hamilton, Conservation Halton, Niagara Escarpment Commission and other parties involved for review and comment.

Strategy/Process

The overall process follows the principles of the Province's Environmental Assessment Act and City of Burlington Council resolutions. The actual implementation of the one-way restriction with signs, pavement markings, etc. is expected to take place in Fall 2010.
Public Consultation

Three Public Information Centres (PIC's) were held at key milestones during the EA Study. Newspaper notices were placed in the Burlington Post for all PIC's. Notification was also provided by mail to all residents in the Tyandaga area.

Financial Matters:

Funding for the southbound restriction at the top of the escarpment in the amount of $75,000 was provided previously in the 2009 capital budget.

Environmental Matters:

Draft detail designs have been circulated to the Niagara Escarpment Commission and Conservation Halton for their review. Any recommended alterations will be incorporated into the final design.

Communication Matters:

Several Open Houses have been held for the Kern's Road traffic management proposal. Informational signs will be erected in late summer to notify the public of the planned one-way restriction. This report will be available on the City's WEB site and hard copies will also be distributed upon request.

Conclusion:

Staff are recommending the approval of the traffic management scheme for Kern's Road as presented in this report.

Respectfully submitted,

J. Setterfield
Transportation Engineering Technologist
905-335-7600 Ext. 7497

Appendices:

A. Schedule “A”
B. Traffic By-Law 86-2007 Amendment

Notifications: (after Council decision)

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<thead>
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<th>Name</th>
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<td>City of Hamilton</td>
<td>71 Main Street West Hamilton, ON L8N 3T4</td>
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<tr>
<td>Niagara Escarpment Commission</td>
<td>232 Guelph Street Georgetown, ON L7G 4B1</td>
</tr>
<tr>
<td>Conservation Halton</td>
<td>2596 Britannia Road West R.R. #2 Milton, ON L9T 2X6</td>
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### Approvals:

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<th>General Manager</th>
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## COLUMN 1

**Highway**

ADD:
Kern's Road from 850 metres south of Dundas Street continuing for 100 metres

## COLUMN 2

**Direction Permitted**

North