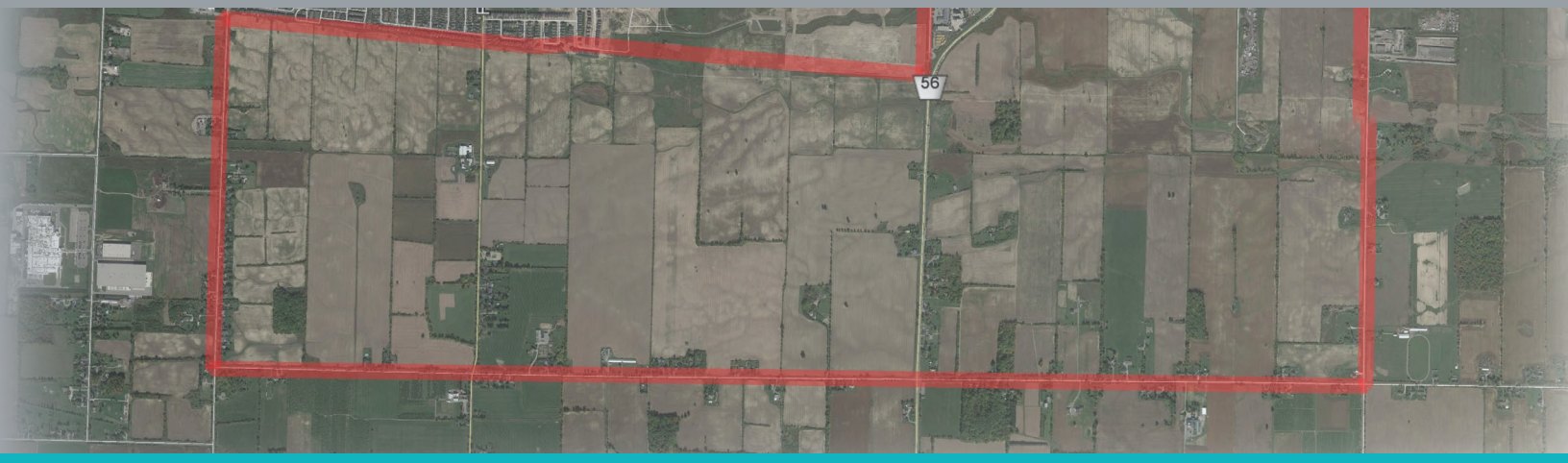
Hamilton

ELFRIDA GROWTH AREA STUDY

Existing Conditions Report



City of Hamilton
Planning and Economic Development Department

September 20, 2017

Alissa Mahood, Senior Project Manager
City of Hamilton
Planning Division, Planning and Economic Development Department
Phone: (905) 546-2424 ext. 1250
Fax No: (905) 540-5611

Dear Ms. Mahood:

Subject: Elfrida Growth Area Study
Existing Conditions Report

WSP Group Canada Ltd. is part of a team commissioned by the City of Hamilton to develop a future urban vision for the study area—Elfrida—that would guide any future development in this area. This report consolidates our team's understanding of the existing conditions within the study area, comprising a mix of data, inventories of features and conditions, policy, and components of various plans and strategies—all to identify a number of key directions for the project team to consider in developing a vision for how growth in Elfrida should occur.

Please do not hesitate to contact us if you have any questions regarding our analysis and conclusions. I can be reached at 289.835.2566.

Yours sincerely,

Joe Nethery, MCIP, RPP
Senior Project Manager
Planning, Landscape Architecture, and Urban Design

WSP ref.: 17M-00642-00

QUALITY MANAGEMENT

Issue/ revision	First issue	Revision 1	Revision 2	Revision 3	Revision 4
Remarks	Draft for TAC review	New Draft Report for Review	Final Draft Report	Final Draft Report	Final Draft Report (minor edits from City of Hamilton)
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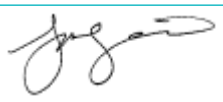
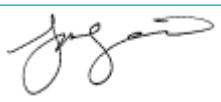
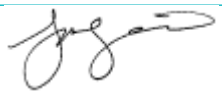
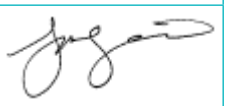
Signature					
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Project number	17M-00642-00	17M-00642-00	17M-00642-00	17M-00642-00	17M-00642-00
Report number	A	B	C	D	E

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1.0 INTRODUCTION

1.1 BACKGROUND

WSP is leading a multi-disciplinary team commissioned by the City of Hamilton to develop a future urban vision for the Elfrida Growth Study area ('Elfrida' and 'study area'). The results of this work will establish clear direction and guidance for future development in this community by setting out contemplated uses, design objectives, development policies and infrastructure and transportation master planning. This report is one of the initial steps in that process; it documents the current context, service levels, strategies and guidelines for the study area. It further provides an analysis of relevant documents, policies and existing conditions, from the lens of transportation, the public realm, natural environment and resource and waste management. These will influence the design, policy planning and master planning components of this study.

It is important to note that the City is still completing its update of the 2006 Growth Related Integrated Development Strategy (GRIDS II). This work will determine how much land is required to accommodate growth to 2041. Previous Council decisions have identified Elfrida to be the preferred area for future growth.

Additional studies which will contribute to the development of this study include:

- GRIDS II
- MCR and Land Budget Analysis
- Subwatershed Study
- Transportation Master Plan
- Water and Wastewater (W&WW) Servicing Master Plan
- Agricultural Impact Assessment
- Commercial Lands Review

Additional Supporting Studies including a Phasing Strategy, Urban Design Guidelines, Natural Heritage Review, Cultural Heritage Assessment, Archaeological Resource Assessment, and Financial Investment Strategy will also contribute to this study.

This work will provide the framework to accommodate future growth and the creation of this new community through a new Secondary Plan applying to the Elfrida Growth Study area.

The Elfrida Growth Area Study, like most planning projects, is being completed in three phases:

Phase 1: Background study and baseline mapping, high level visioning, design principles and information analysis.

Phase 2: Land use options for consideration with input from the various aligning studies.

Phase 3: Preferred land use plan and policies and phasing/ implementation strategy.

1.2 THE STUDY AREA

The study area consists of approximately 1,256 hectares of land and 223 individual properties situated along the south-eastern urban boundary of the City of Hamilton. It lies within a boundary formed by Mud Street East to the north; Hendershot Road to the east; Golf Club Road to the south; Trinity Church Road to the west; following the Hydro Corridor south of Rymal Road East to the North; Swayze Road to the West; Rymal Road to the North; and Upper Centennial Parkway to the West. Elfrida also encompasses portions of Highland Road East, First Road East, Regional Road 20 (east end of Rymal Road), Highway 56 (south end of Upper Centennial Parkway) and Fletcher Road. **Figure 1** illustrates this area.

The study area also features the headwater features of five creek systems: Hannon Creek, Stoney Creek, Twenty Mile Creek, Upper Davis Creek and Sinkhole Creek. Elfrida is within 10 kilometres of John C. Munro Hamilton International Airport, and at certain points is within three kilometers from Red Hill Valley Parkway, connecting the area to the QEW and Highway 403.

1.3 AREA CONTEXT

Hamilton is comprised of a combination of unique natural landscapes and communities steeped in culture. It also features the industrial heritage that helped to build Canada, as well as bustling arts, education, and health care sectors which are driving current growth.

Elfrida is nestled against the southeastern edge of the current urban boundary of Hamilton, one of Ontario's fastest growing metropolitan areas. Since 1981, Hamilton

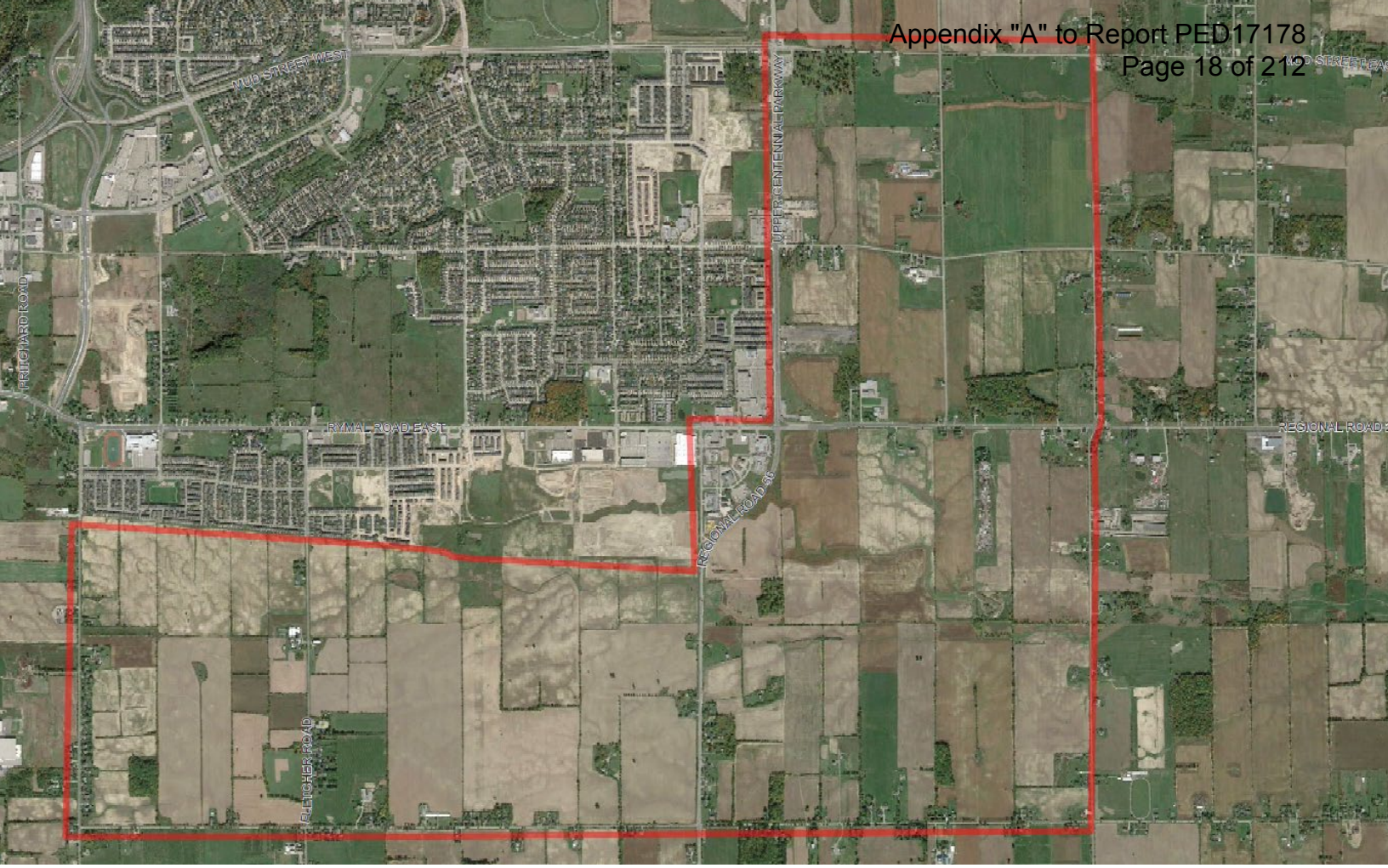


Figure 1: Elfrida Growth Study Area

has been listed as the ninth largest metropolitan area in Canada and the third largest in Ontario. Spurred by this growth, City Council endorsed the Growth Related Integrated Development Strategy (GRIDS) on May 18, 2006. GRIDS evaluated a number of alternatives for urban growth within and beyond the existing urban boundary. Through public consultation and extensive review, an alternative structured around a system of 'Nodes and Corridors' was identified as the preferred structure for future growth for the City up to 2031. A settlement area boundary expansion to include Elfrida within the urban area of Hamilton was part of the preferred growth scenario; this was removed from the Urban and Rural Hamilton Official Plans by the Province of Ontario and remains subject to appeal. Currently, a second iteration of GRIDS (GRIDS II) is underway to further analyze growth needs for the City up to a planning horizon of 2041. More information on GRIDS, GRIDS II and the policy framework in Hamilton can be found in Section 2.2 of this report.

A site visit was conducted on March 20, 2017, to observe and document current uses within the Elfrida Growth Study area. The area is predominantly being used for agricultural fields and residential purposes, with some fragmented commercial and industrial developments. These include a Tim Horton's and TD Canada Trust Bank, U-Haul Co. Ltd. and Cooper Equipment Rentals, Skyway Lawn Equipment Ltd (Golf Cart Dealer), Bill's Mushroom Farm, Dorr Foods and Satellite Equipment Rentals (Tool Rental Service), as well as salvage yards. Current agricultural uses vary from crop production to livestock and horse farms. Natural heritage features present include woodlots and hedgerows, along with some areas prone to ponding during storm events. There are linear ribbons of rural residential development fronting onto Trinity Church Road, Fletcher Road, Golf Club Road, Highway 56 (Upper Centennial Parkway), Regional Road 20 and Highland Road East, with scattered single detached dwellings throughout the Elfrida Growth Study area typically associated with existing farms. A small employment park can also be found along the Elfrida Growth Study area boundary of Swayze Road, centered on Portside Street. Immediately north of the employment park is a strip of commercial development fronting onto Rymal Road East. There are also institutional uses along Regional Road 20: Our Lady of the Assumption Catholic Elementary School and Our Lady of the Assumption Roman Catholic Church.

Additional landmarks and community features have been identified near the study area, which were shared at the first public information centre. Refer to **Figure 2**, for this map.

1.4 DEMOGRAPHICS

The following analysis has been provided by Metro Economics. Over the last decade the population of the Hamilton census metropolitan area (CMA) grew by 74,100 with the component contributions being 45,300 from Hamilton, 25,400 from Burlington and 3,400 from Grimsby. The CMA's population is projected to grow by 160,000 over the next decade or at a pace more than double that of the past decade (74,000). Hamilton is likely to receive the majority of that population growth. The expected accelerated pace of population growth in the area reflects the rate of growth in job opportunities both nearby and in Hamilton itself, the latter confirmed by the expanding pace of new commercial, institutional and industrial construction.

Residential space is expanding rapidly in the City as well. Housing starts vary from year to year, as do commercial, institutional and industrial construction. According to Metro Economics, over the last 15 years, the underlying pace of new dwelling starts has been remarkably strong, averaging 1,948 per year from 2001 to 2006, 1,622 per year from 2006 to 2011 (a period that included the economic downturn in 2009) and 1,934 per year from 2011 to 2016.

The underlying pace of residential construction activity can be expected to increase over the short term as more and more people move to the City to fill the jobs being created both in the City and in nearby centres.

This increased pace of population growth that will occur in tandem means the City's community based jobs will need to grow faster to meet the growing needs of the new residents. While the number of jobs in manufacturing are expected to continue to erode in the years ahead, an increase in the number of jobs in exportable service industries (i.e. health, education and business services) is expected to more than offset the declines in manufacturing. These trends will continue to radically transform the industrial profile of the Hamilton economy.

From both an export base and a community base perspective, the City's economy can be expected to grow faster over the next five to ten years than it did over the last five to ten years, thus supporting stronger population growth in the years ahead.

Table 1: Population Growth within the Greater Golden Horseshoe by Municipality (top 30)

Ranked by Absolute Change from 2011 to 2016

	2011	2016	Change	% Change
Toronto	2,615,060	2,731,571	116,511	4.5
Brampton	523,906	593,638	69,732	13.3
Markham	301,709	328,966	27,257	9.0
Milton	84,362	110,128	25,766	30.5
Vaughan	288,301	306,233	17,932	6.2
Hamilton	519,949	536,917	16,968	3.3
Kitchener	219,153	233,222	14,069	6.4
Oakville	182,520	193,832	11,312	6.2
Guelph	121,688	131,794	10,106	8.3
Ajax	109,600	119,677	10,077	9.2
Oshawa	149,607	159,458	9,851	6.6
Richmond Hill	185,541	195,022	9,481	5.1
Whitchurch-Stouffville	37,628	45,837	8,209	21.8
Mississauga	713,443	721,599	8,156	1.1
Burlington	175,779	183,314	7,535	4.3
Clarington	84,548	92,013	7,465	8.8
Bradford West Gwillimbury	28,077	35,325	7,248	25.8
Caledon	59,460	66,502	7,042	11.8
Whitby	122,022	128,377	6,355	5.2
Waterloo	98,780	104,986	6,206	6.3
Barrie	136,063	141,434	5,371	3.9
Niagara Falls	82,997	88,071	5,074	6.1
King	19,899	24,512	4,613	23.2
Newmarket	79,978	84,224	4,246	5.3
New Tecumseth	30,234	34,242	4,008	13.3
Brantford	93,650	97,496	3,846	4.1
Innisfil	32,727	36,566	3,839	11.7
Cambridge	126,748	129,920	3,172	2.5
Wasaga Beach	17,537	20,675	3,138	17.9
Pickering	88,721	91,771	3,050	3.4
Top 30	**7,329,687**	**7,767,322**	**437,635**	**6.0**
(% Share)	**83.7**	**84.0**	**90.0**	

Source: Metroeconomics

1.4.1 RECENT TRENDS IN POPULATION GROWTH

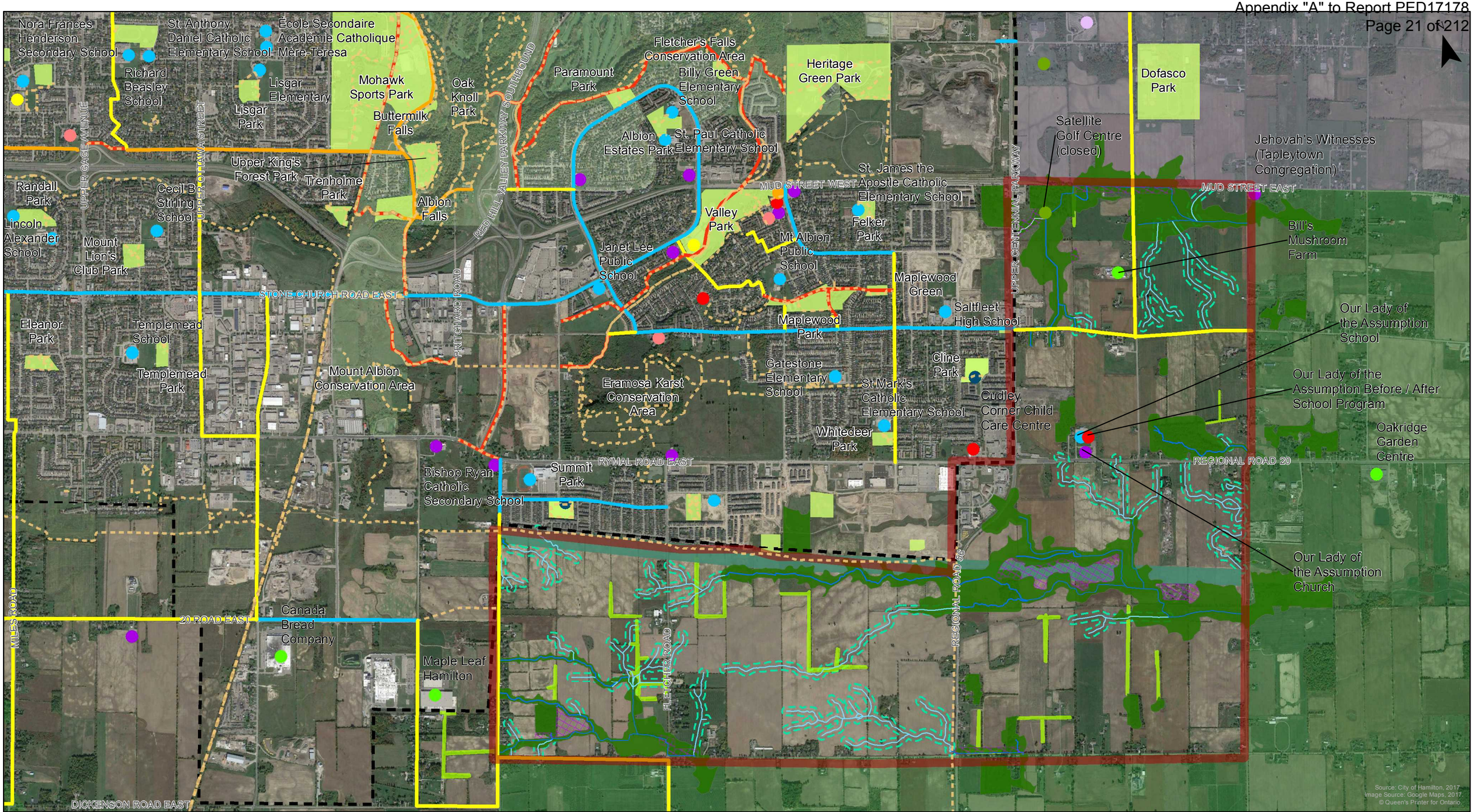
The population of the City of Hamilton grew by almost 17,000 people (or 3.3 percent) between 2011 and 2016 according to recently released census data (2016).

Among the 112 municipalities that collectively define the Greater Golden Horseshoe (GGH), Hamilton ranks sixth in terms of absolute population growth over that span. **Table 1** summarizes the population growth for the top 30 of 112 municipalities within the GGH.

The top ten cities on this list of 112 municipalities collectively accounted for two-thirds of the population growth of the GGH over the last five years, while the top thirty (out of 112) collectively accounted for 90 percent of its growth over that span.

The population of the City of Burlington, Hamilton's most populated partner within the Hamilton census metropolitan area (CMA), grew by just over 7,500 (or 4.3 percent) between 2011 and 2016, placing Burlington fifteenth on this list. The population of Grimsby grew by almost 2,000 (or by 7.9 percent), significant for Grimsby but not enough to put it in the top 30 municipalities for growth. Overall, between 2011 and 2016 the population of the Hamilton CMA grew by 26,500 people (or by 3.7 percent).

The Hamilton CMA is surrounded by seven other metropolitan areas, most notably the CMAs of Toronto-Oshawa, Kitchener-Waterloo, St. Catharines-Niagara, Brantford and Guelph. As a result, workers living in the Hamilton CMA can readily commute to jobs located in Hamilton itself or to jobs in these nearby areas. Hamilton-located businesses can readily deal with businesses in the City and throughout the GGH. For both workers and businesses, the 'local economy' is vast.



Legend

- Trails
- Trans Canada Trail
- Study Area

TYPE

- Designated Bike Lane
- Cautionary Un-Signed Bike Route
- Multi-Use Trail
- Signed On-Street Bike Route
- Urban Boundary
- Child Care
- Community Centre
- Drive In
- Fire Hall
- Golf Centre & Courses
- Long Term Care
- Places of Worship
- Schools
- Others Points of Interest
- Parks
- Watercourse

Enhancement & Supporting Features

- Restoration Areas
- Watercourses + Protection/ Conservation Headwater Drainage Feature
- Mitigation Headwater Drainage Features

Natural Heritage Features

- Natural Heritage System
- Linkage –Hydro Corridor
- Hedgerow
- Mitigation Headwater Drainage Features – Vegetation Protection Zone (30m)
- Greenbelt Specialty Crop
- Niagara Escarpment Plan
- Protected Countryside

* Study Area boundary has been extended outwards from roads

0 250 500 1,000 Meters
1:25,000

Client: **City of Hamilton**

Title: **Elfrida Study Area Context**
Figure 2: Existing Conditions

Prepared by: WSP, Metro Economics, ASI, The Planning Partnership, CUSHMAN & WAKEFIELD

17M-00642-00 | Date: 22/08/2017 | Review: JS

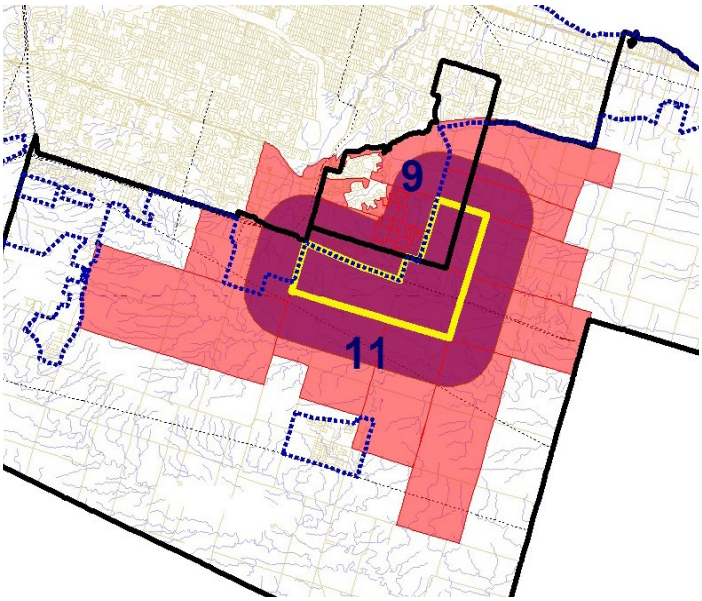
1.4.2 ELFRIDA AREA

The Elfrida Growth Study area can be compared to Hamilton overall by examining census data for dissemination areas (DAs) that fall within Elfrida. Refer to **Figure 3** for a map of the DAs within the Elfrida Growth Study area.

According to the 2011 and 2016 census data, Elfrida is among the highest growth nodes within the City, with an increase of approximately 5,000 people, or 21.2% growth, far above the City average of 3.3%, as shown in **Table 2**.

Additionally, Wards 9 and 11 (as seen in **Figure 3**) when compared to Hamilton overall include; a slightly lower proportion of older persons (65+), fewer single parent families, lower unemployment rate, higher household incomes, and fewer commutes by active transportation—typical of relatively new communities on the edge of existing urban areas.

Figure 3: Elfrida Growth Study Area (yellow), Census Dissemination Areas (red), and Wards 9 and 11



Source: City of Hamilton, GIS Department

Table 2: Population and Dwellings by Area from 2011 to 2016

	Population				Dwellings			
Geographic Area	2011	2016	Change	% Change	2011	2016	Change	% Change
Hamilton City	519,950	536,920	16,970	3.3%	214,545	222,920	8,375	3.9%
Ward 9	27,170	30,015	2,845	10.5%	10,065	11,015	950	9.4%
Ward 11	36,110	45,180	9,070	25.1%	13,205	16,050	2,845	21.5%
Elfrida DAs	**23,395**	**28,335**	**4,960**	**21.2%**	**7,639**	**9,076**	**1,437**	**18.8%**
Ward 12	34,825	38,745	3,920	11.3%	11,770	13,160	1,390	11.8%
Ward 15	25,280	28,475	3,195	12.6%	8,735	9,890	1,155	13.2%
Ward 8	49,660	52,220	2,560	5.2%	18,060	19,060	1,000	5.5%

Source: City of Hamilton, GIS Department

1.5 GOALS AND OBJECTIVES

The importance of this project at a City-wide level will be to identify how growth can be accommodated to the year 2031 (and potentially longer, depending upon the results of the GRIDS II and MCR projects) in a sustainable and purposeful way that encourages a community identity and meets the needs of the City and the policies of the province over the long term.

The preliminary goals of this study are to:

- Create a vibrant, complete community that will be a desirable place to live, work, play and learn, and that will be viewed as a model in innovative greenfield development;
- Identify opportunities and constraints for land use within the study area;
- Review existing land uses and ensure sensitive and sympathetic interface between urban and agricultural/rural land uses;
- Establish a policy framework to support the recommended land use designations and implementation strategy accommodate planned growth to the year 2041;
- Identify an internal transportation network, including roads, transit, bike lanes, pedestrian walkways and trails, taking into consideration the City's overall Transportation Master Plan;
- Integrate a comprehensive stormwater management/ drainage plan for the lands, in alignment with and as directed by the Elfrida Subwatershed Study;
- Provide a comprehensive water and wastewater servicing strategy (including infrastructure location and sizing), in accordance with the City's Integrated Water and Wastewater Master Plan for the Lake Based Systems. Capacity and need for a water tower and/or sewage pumping station shall be considered through development of this strategy;
- Preserve and protect natural heritage areas, as identified in the Natural Heritage System in accordance with the Subwatershed Study;
- Preserve and protect cultural heritage resources and landscapes, where identified and feasible, in accordance with the recommendations of this study;
- Identify locations for open space designations, park and recreational amenities and opportunities for a comprehensive trail system that effectively serves the community, integrating parkland and stormwater management facility locations, as appropriate;
- Identify the amount and type of commercial area to meet the needs of the community;
- Identify and prepare a strategy for appropriate phasing of development that will ensure minimal impact to agricultural operations in the area;
- Prepare a financial strategy and cost sharing agreements with 1 to 5 year capital budget plan.

The preliminary objectives of this study will be:

- Prepare an existing conditions report to document background information;
- Establish a short, medium and long term vision for the future community;
- Meet Provincial legislation and regulations (e.g. Places to Grow: Growth Plan for the Greater Golden Horseshoe 2017, Provincial Policy Statement 2014);
- Review proposed future community designs to ensure consistency with a potential Official Plan Amendment, Transportation Master Plan, and Water/Wastewater Master Plan that will inform the potential Secondary Plan policy;
- Develop a Transportation Master Plan;
- Review input from and provide input into concurrent studies such as the Subwatershed Study and GRIDS II;
- Develop and execute an effective and innovative community consultation strategy;
- Identification and consideration of a minimum of three (3) land use plan options;
- Prepare a development phasing plan, identifying the boundary of the required Block Servicing Studies and their functional scope, and the optimal sequencing and timing of development to guide development to 2031 and beyond;
- Prepare an implementation plan which includes a financing plan for infrastructure;
- Consult with the community, potentially affected parties, agencies, landowners, and a community focus group; and,
- Encourage a strong, comprehensive urban design direction through the development of Urban Design Guidelines.

A Secondary Plan would be required to implement the policy direction to support future growth in Elfrida. The overall purpose of a Secondary Plan is to detail land use, infrastructure and design policies for specific geographic

areas. Secondary plans provide consistent rules and key directions that guide development in a way that supports the goals and objectives of the City and its citizens. The need for additional land for urban purposes will be determined through GRIDS II and the MCR.

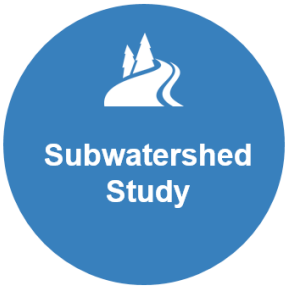
1.6 CONCURRENT STUDIES UNDERWAY

There are several additional studies being carried out concurrently with this study.

1.6.1 MUNICIPAL COMPREHENSIVE REVIEW AND LAND BUDGET ANALYSIS

The MCR and Land Budget Analysis are being led by the Policy Planning, Planning and Economic Development Departments at the City of Hamilton. The MCR and Land Budget Analysis are required to ensure the City's Official Plans remain in conformity or consistency with new Provincial Policy Statement (2014) and various Provincial Plans, including a determination as to the supply of urban land available to accommodate growth and meet minimum density targets up to the year 2041. The information that comes as a result of these studies will be incorporated in future work.

1.6.2 SUBWATERSHED STUDY



This Subwatershed Study is being led by the Growth Management, Planning and Economic Development Department at the City of Hamilton. The Subwatershed Study began in 2015 and is being conducted in three phases as outlined below. The Elfrida Growth Study will review and implement the findings of the Subwatershed Study to ensure that natural heritage and environmental constraints are considered, negative impacts are mitigated and core areas and linkages are afforded the protection they require.

Phase 1 of the Subwatershed Study is a review of the environmental constraints and will include all required modelling for the watershed as well as an inventory of the natural environment. Phase 1 of the Study aims to record the general character of the subwatershed area and provide a clear understanding of the major issues and opportunities. The Draft report on Phase 1 was released in February 2017.

Phase 2 of the Subwatershed Study will assess the impacts of future land use changes as identified in the Elfrida Growth Study on the natural environment through the review of background information sources and supplementary fieldwork. Phase 2 aims to develop a subwatershed management strategy that:

- Protects the critical elements of the subwatershed and prevents environmental degradation;
- Provides adequate flexibility for integration with adjacent development and redevelopment areas;
- Assists in the establishment of open space linkages;
- Identifies opportunities and constraints to development;
- Provides a strategy to manage existing land uses;
- Details location, functional design and area requirements for stormwater management facilities; and,
- Identifies restoration and enhancement opportunities.

Phase 3 of the Subwatershed Study is intended to outline the preferred subwatershed management strategy. It will also provide the framework for implementation and monitoring with requirements for appropriate phasing, financing, operation of facilities, monitoring, mitigation and contingency plans in compliance with the Subwatershed Study.

1.7 CONCLUSIONS AND NEXT STEPS

Through this review of existing conditions, 27 key directions in 8 thematic areas were identified:

- Transportation
- Planning and Urban Design
- Cultural Heritage
- Natural Heritage
- Agriculture
- Water and Wastewater
- Stormwater
- Retail-Commercial

The key directions are listed in full in Section 11.1 of this report. This study is intended to flow in an iterative and integrated manner alongside other studies and in coordination with a detailed and meaningful consultation process. Changes will be made to conceptual land use plans and objectives as the project works toward an ultimate conceptual land use recommendation.

2.0 RELEVANT PROVINCIAL AND MUNICIPAL POLICIES AND GUIDELINES

With developable land supply becoming increasingly scarce across the Greater Golden Horseshoe, Elfrida is well positioned for urban development. This is strengthened by its adjacency to the City of Hamilton's urban boundary, the Elfrida Community Node, and proximity to planned higher-order transit networks (refer to Section 4.0, Transportation for more information) and planned infrastructure improvements.

The following section outlines the legislative documents that govern the City of Hamilton and the Elfrida Growth Study area. In Ontario, the *Planning Act* is the primary legislative framework for land use planning. When dealing with planning matters, municipalities in Ontario must also consider other related legislation such as the 2014 Provincial Policy Statement (PPS), the *Places to Grow Act*, a number of growth policies including the 2017 Greenbelt Plan, and the 2017 Growth Plan for the Greater Golden Horseshoe, as well local planning frameworks.

2.1 PROVINCIAL PLANNING FRAMEWORK

2.1.1 PLANNING ACT

The Planning Act governs how municipalities in Ontario may plan and regulate the use of land. In particular, the *Act* outlines the Province's key land use concerns, identifies other provincial policy documents that provide further direction on each of the key concerns and establishes the tools available to municipalities for regulating the use of land within their boundaries.

The Province's key land use concerns are identified as matters of provincial interest in Section 2 of the *Act*. Planning decision-makers are required to have regard to, among other matters:

- Protection of ecological systems and agricultural resources;
- Conservation of natural and cultural resources;
- Efficient provision and use of infrastructure, energy and water;
- Adequate provision and distribution of community facilities;
- Provision of a full range of housing and employment opportunities;
- Financial and economic sustainability;
- Protection of public health and safety;
- Appropriate location and orderly development of growth and communities; and,
- The mitigation of greenhouse gas emissions and adaptation to a changing climate (as added by Bill 68, the *Modernizing Ontario's Municipal Legislation Act*, which received Royal Assent on May 30, 2017).

Section 3 of the *Act* allows the Province to issue Provincial Policy Statements as well as Provincial Plans with which all municipal planning decisions must be consistent. These documents articulate how the Province expects municipalities to address matters of Provincial interest.

2.1.2 PROVINCIAL POLICY STATEMENT (2014)

The 2014 Provincial Policy Statement (PPS) was issued under Section 3 of the *Planning Act* and came into effect April 30, 2014. The PPS provides Provincial direction related to key land use planning principles, including: building strong communities, wise use and management of resources, and protecting public health and safety. All development and decisions made by a municipality on planning matters must be consistent with the PPS.

Section 1.0 of the PPS sets out policies associated with efficient land use and development patterns that support healthy, liveable and safe communities, protects the environment and public health and safety, and facilitates economic growth.

Section 1.1.3 Settlement Areas, governs the practises of urban boundary adjustments or settlement area expansions. An expansion is only permitted at the time of a comprehensive review and only where it has been demonstrated that significant opportunities for growth within the settlement area cannot be accommodated over the identified planning horizon (2031), and the planned services (infrastructure and public service facilities) will be financially viable and protect the public and the natural environment. Additionally, in prime agricultural areas, alternative locations must be evaluated and determined to be unsuitable, the expansion must comply with the minimum distance separation formulae (MDS) and must mitigate impacts from proposed development on agricultural operations. Required studies for potential

settlement area expansion are currently underway, both as part of the Municipal Comprehensive Review and the agricultural assessment associated with this study.

The core essence of Section 1 of the PPS is to ensure municipalities are planning for complete communities that contain a wide range of amenities, services, and features to cater to a broad range of residents. Many of these principles are found throughout this report and existing policies and design guidelines applying in the study area:

- Section 1.1.3.6 provides policies on new development in designated growth areas and indicates that this growth is to occur in a manner that is compact in form and provides a mix of uses and densities that allow for the efficient use of land, infrastructure and public service facilities adjacent to existing built-up areas.
- Section 1.4.1 on housing includes policies on providing a range and mix of housing types and densities required to meet projected requirements for current and future residents.
- Section 1.5.1 states that healthy and active communities should be promoted by planning and providing a full range of built and natural settings for recreation, including trails and parklands, as well as recognizing protected areas and minimizing negative impacts on these areas.
- Section 1.6.3, which speaks to infrastructure, states that before consideration is given to developing new infrastructure and public service facilities, use of existing facilities should be optimized and opportunities for adaptive re-use should be considered, wherever feasible.

Section 2.1 notes Natural Heritage features are to be protected for the long term, emphasizing ecological function and biodiversity of natural heritage systems. Protections for various features, such as significant wetlands, woodlands and valleylands are provided for and protected under these policies. The development of the Elfrida Growth Study area will adhere to these regulations and seek to enhance the natural heritage systems where possible.

Section 2.2, which speaks to Water, directs that planning authorities are bound to protect, improve or restore the quality and quantity of water through various means. It is the intent of this study, and the related Water and Wastewater Servicing Master Plan, to enhance and protect water quality and quantity through this process.

Section 3.1, Natural Hazards, directs development away from areas of erosion or flooding hazards or that would be made inaccessible due to flooding, and encourages development to avoid being adjacent to these areas. This will be an important consideration in the future development and design of Elfrida.

These policies will be given thorough consideration and will help to guide the development of land use explorations through this study.

2.1.3 GROWTH PLAN FOR THE GREATER GOLDEN HORSESHOE (2017)

On May 18, 2017, the Government of Ontario released the 2017 Growth Plan for the Greater Golden Horseshoe (Growth Plan). Resulting from two years of consultation and draft policy development, the Plan works to support the achievement of complete communities through support for economic development, protection of the natural environment, coordination of infrastructure planning and development and preservation of land for forecasted population and employment growth over the Plan's horizon.

As the study area is not within the current delineated built boundary for the City of Hamilton, a settlement area boundary expansion is required to allow for future urban development within the area. Section 2.2.8 of the Growth Plan states that a municipality may only allow an expansion to a settlement area boundary through a Municipal Comprehensive Review (MCR). By definition, an MCR is "*a new official plan, or an official plan amendment, initiated by an upper- or single-tier municipality under Section 26 of the Planning Act that comprehensively applies the policies and schedules of this Plan".* Although the policies dictating when a settlement area expansion is warranted have not significantly changed (s.2.2.8(2)), new policies which further dictate how the most appropriate location will be determined for the proposed expansion have been included (s.2.2.8(3)). Whereas the previous Growth Plan only looked to Section 2 and 3 of the PPS for guidance, new criteria in determining appropriate

locations are related to planned infrastructure and community facilities; servicing capacities; and natural heritage systems and agricultural lands. In this regard, the Growth Plan (2017) allows for opportunities to build a case for expansion in ways that were not permitted by the 2006 Plan, such as within the Protected Countryside of the Greenbelt Plan (s.2.2.8(3)(m)).

Effective July 1, 2017, the new Growth Plan replaced the original Growth Plan, which was first released 11 years ago in 2006. Now in effect, all decisions on planning matters must conform to the updated Plan. Upper- and single-tier municipalities' conformity work is to be completed by 2022. Approved growth targets will continue to apply until the next MCR is approved and in effect (s.2.2.2). The settlement area boundary expansion that is anticipated as part of the MCR and Land Budget Analysis would be subject to provisions of the 2017 Growth Plan.

With this update, and the array of planning reforms expected to take effect within this year, it is important to understand exactly how the changes to the Growth Plan will affect the desires and capabilities of Hamilton, specifically in regards to lands within the Elfrida Growth Study area. The updated Growth Plan contains largely more detail in its policies than its predecessor, while also covering a wider range of topics. The following section outlines key updates that are most important when considering growth scenarios proposed for the Elfrida Growth Study area.

2.1.3.1 DESIGNATED GREENFIELD AREAS

The definition of *'Designated Greenfield Areas'* has been altered within the new Growth Plan (2017):

> *"Lands within settlement areas but outside of delineated built-up areas that have been designated in an official plan for development and are required to accommodate forecasted growth to the horizon of this Plan. Designated greenfield areas do not include excess lands."*

The new definition states that these areas are required to accommodate growth. Section 2.2.7 goes further in outlining the manner of growth and development within Designated Greenfield Areas. From a high level perspective, new development in these areas is to be planned, designated, zoned and designed to support the achievement of complete communities, active transportation, and viable integration of transit services (s.2.2.7(1)). On a quantitative level, the Plan sets out density targets for these areas, which are outlined below.

INTENSIFICATION AND DENSITY TARGETS

All intensification and density targets have been increased by the 2017 update to the Growth Plan. **Table 3** outlines the previous and updated intensification and density targets.

Natural heritage features and areas, and natural heritage systems and floodplains will be excluded from the measurement of density targets for designated greenfield areas, provided development is prohibited in these areas (s.2.2.7(3)). Under the 2017 Growth Plan, additional uses will also be excluded from this density calculation:

- Rights-of-way for electrical transmission lines, energy transmission pipelines, freeways, and railways;
- Employment areas; and
- Cemeteries.

These exclusions will affect the City's ability to meet their designated greenfield targets. However, despite these minimum requirements, Councils may still request alternative targets through the next MCR, if the municipality can demonstrate that this target cannot be achieved and that the alternative target will meet a list of requirements. All of these changes influence the manner in which development must be addressed within the Elfrida Growth Study area, in order to validate the proposed settlement area boundary expansion.

2.1.3.2 EMPLOYMENT LANDS

The protection of employment lands is a key objective of the updated Growth Plan (2017). As stated in Section 2.2.5(6), all upper- and single-tier municipalities are responsible for designating employment areas, including prime employment areas, in official plans and protecting them for appropriate employment uses for the long-term.

The Growth Plan (2017) indicates how municipalities must plan these areas, based on the type of employment use. For instance, numerous other policies have been included regarding office parks, employment areas which cross a municipal boundary, and development of an employment strategy that establishes a minimum density target for all employment areas.

Table 3: Intensification and Density Targets

Target	2013 Consolidation	2017 Update
Intensification Target (s. 2.2.2.(1)) Minimum % of residential development occurring annually within each upper- or single-tier municipality within the delineated built-up area	**40%**	**60%** Transition policy: prior to the next municipal comprehensive review, and each year until 2031, only a minimum of **50%** will be required.
Density Target – Designated Greenfield Areas (s.2.2.7(2)) Within each upper- or single-tier municipality within the designated greenfield areas	**50** residents and jobs combined per hectare	**80** residents and jobs combined per hectare *Note: this applies over the entire designated greenfield area; new greenfield development will be required at higher densities to achieve this overall average.*
Density Target – Employment (s.2.2.5(5)(a)) Jobs per hectare within employment areas	Not previously required – however, these areas were previously included under the greenfield density target.	Upper- and single-tier municipalities must develop an employment strategy that establishes minimum density targets for all employment areas.

Source: Growth Plan for the Greater Golden Horseshoe, 2013 Office Consolidation & 2017 Update

The Growth Plan (2017) defines 'Prime Employment Areas' as:

"Areas of employment within settlement areas that are designated in an official plan and protected over the long-term for uses that are land extensive or have low employment densities and require locations that are adjacent to or near major goods movement facilities and corridors. These uses include manufacturing, warehousing, and logistics, and appropriate associated uses and ancillary facilities."

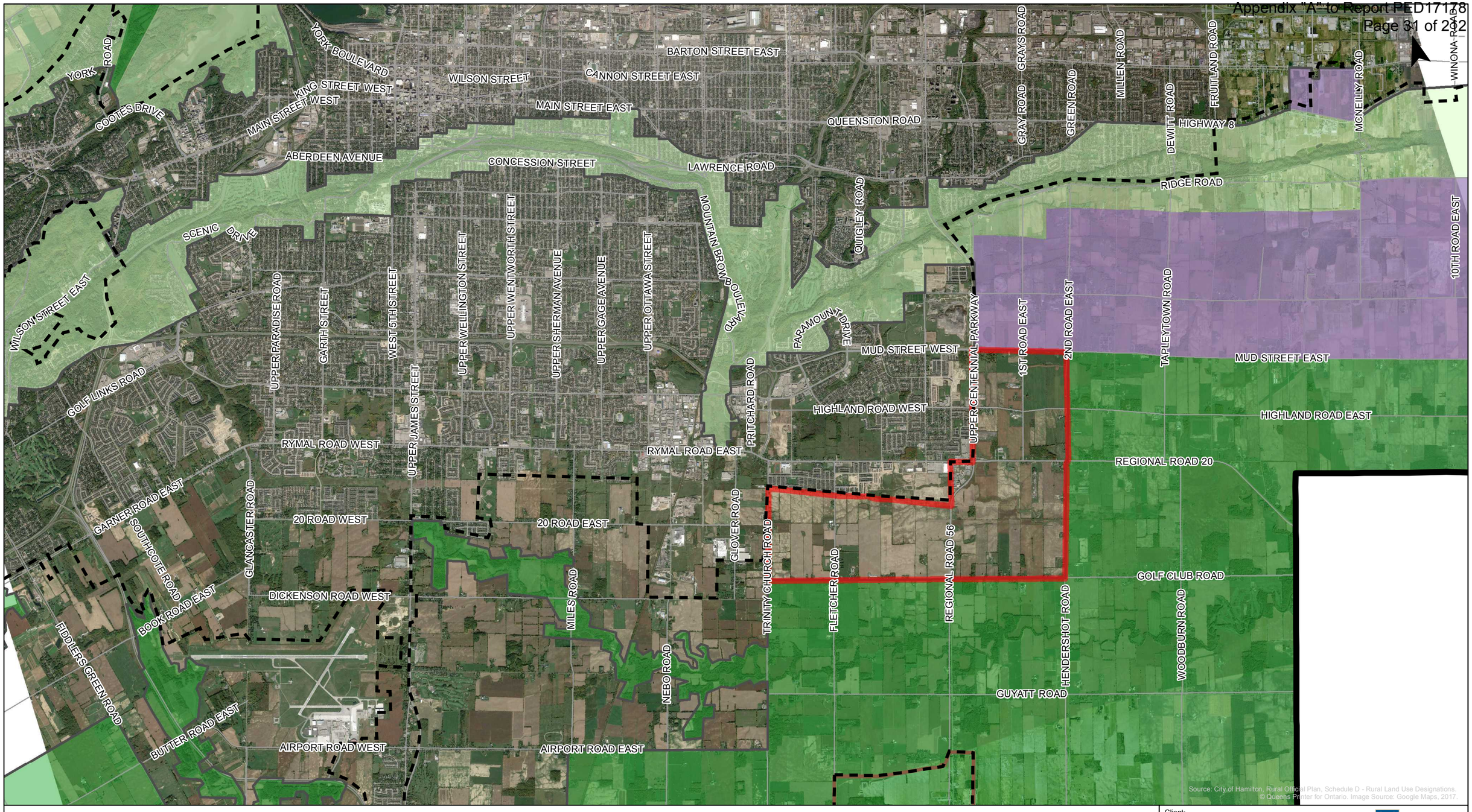
This distinction addresses the need to preserve larger, less intensive employment lands, regardless of their density outputs. As previously noted, all identified Employment Areas will be excluded from density target calculations for Designated Greenfield Areas.

It is important to consider planning for employment lands as part of this study, in conjunction with the MCR and Land Budget Analysis work on accommodating projected employment growth to 2041, and with the presence of a small industrial subdivision within the study area.

2.1.4 GREENBELT PLAN (2017)

The Greenbelt Plan was adopted by the Province of Ontario to protect environmentally sensitive land and farmlands in Ontario's Golden Horseshoe area from urban development. The Elfrida Growth Study area is outside of the Greenbelt Area and is not subject to the policies of this Plan. Refer to **Figure 4** for a map of adjacent Greenbelt Plan Designations.

The surrounding lands are all designated as part of the Protected Countryside. The Natural Heritage System designation applies to lands to the south of the Elfrida Growth Study area. The Protected Countryside designation is broken down into several subcategories, one of which being the Agricultural System (prime agricultural areas and rural areas) applies to the surrounding lands. The potential for further urban expansion into these areas is extremely limited. Future urban development within the Elfrida Growth Study area should consider edge treatments and transition to agriculture.



Source: City of Hamilton, Rural Official Plan, Schedule D - Rural Land Use Designations.
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Legend

- Municipal Boundary
- Urban Boundary
- Study Area
- Greenbelt Outer Boundary
- Greenbelt Towns & Villages
- Greenbelt Specialty Crop
- Niagara Escarpment Plan
- Protected Countryside

0 500 1,000 2,000 Meters

Client: **City of Hamilton**

Title: **Elfrida Study Area Context**
Figure 4: Greenbelt Plan Designations

Prepared by: WSP, metro economics, ASI, The Planning Partnership, CUSHMAN & WAKEFIELD

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The Greenbelt Plan has been recently updated, expanding on the protections afforded under the previous Greenbelt and emphasizing the development of complete communities, as defined in the plan. For example, there are new goals with regard to agriculture; planning for local food and near-urban agriculture and consideration for impacts of development are promoted. Consideration of climate change has also been added to the plan; planning and managing natural heritage systems to improve resilience and reducing greenhouse gas emissions are also goals of the plan. The updated Greenbelt Plan will be considered in the design of the Elfrida Growth Study area. This will include appropriate transition and edge planning where the Elfrida Growth Study area is adjacent to lands within the Greenbelt Plan.

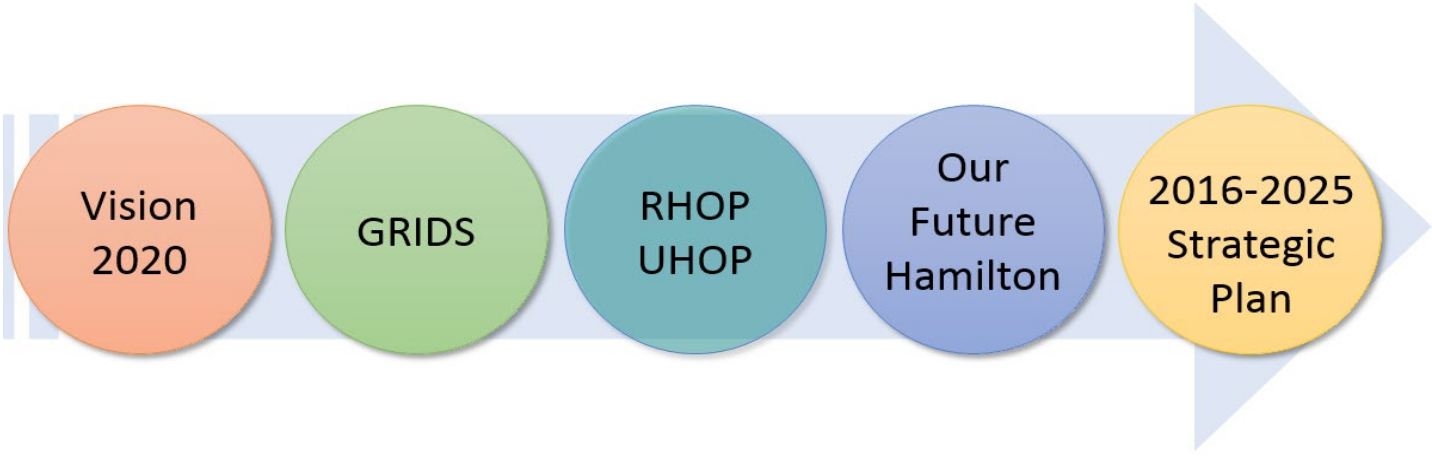
2.2 MUNICIPAL PLANNING FRAMEWORK

2.2.1 VISION 2020 (1997)

In 1992, Hamilton residents were asked to envision what their City would look like in 25 years. The result of this engagement exercise was Vision 2020, a community-driven vision for the future of Hamilton. The four main principles that Vision 2020 builds on are:

- Fulfilling human needs, including peace, access to clean air, water food, shelter, and education, arts, culture and employment;
- Maintaining and restoring the environment, including careful management and planning, reducing waste and protecting nature;
- Inviting the public to identify problems and solutions; and
- Finding the best way to use today's resources to meet current and future needs.

The implementation of Vision 2020 has been monitored through 14 key theme areas for the last 25 years. These themes and progress reports were used to measure how well Hamilton has done at obtaining the goals and objectives of Vision 2020. The results of the ongoing monitoring of this plan point to a need for balance, including weighing new lands for housing, industry and job creation vs. the need to keep green space and preserve agricultural lands. This balance is integral to Elfrida, and serves as the foundation which GRIDS was built on.



Vision 2020 has since been reviewed to help build the next visioning document for the City, Our Future Hamilton. Refer to Section 2.2.4 for more information on Our Future Hamilton.

2.2.2 GROWTH RELATED INTEGRATED DEVELOPMENT STRATEGY (GRIDS) (2006)

The direction for growth in the Elfrida Growth Study area comes from the original Growth Related Integrated Development Strategy (GRIDS) which reviewed options to accommodate Hamilton's future population and employment growth. The City of Hamilton initiated the original GRIDS process in 2003 to identify a broad land use structure, including the associated infrastructure, economic development and financial implications, to serve the City over the next 30 years. The City's three infrastructure Master Plans were undertaken as part of the GRIDS process (transportation, water and wastewater, and stormwater).

The GRIDS strategy determined that roughly 75% of planned growth could be provided within the existing built boundary in the Downtown, Sub-Regional and Community Nodes and along Primary and Secondary Corridors, but with some growth anticipated to occur on new greenfield lands within an urban boundary expansion to satisfy the anticipated demand for a full range of housing needs, particularly semi- and single detached homes. In addition to this, populations in rural areas are anticipated to experience a slight decline over the next 15 years to 2031, along with declining household sizes, aging populations and an increase in immigration and migration. These major trends will impact not only where to grow, but how.

2.2.2.1 ELFRIDA GROWTH STUDY AREA AND COMMUNITY NODE

In reviewing opportunities for potential future growth areas, Elfrida was selected as the preferred growth option, amongst other factors, because of its potential to use existing infrastructure more efficiently and with current infrastructure having capacity to accommodate growth. The presence of commercial uses and lands to the west of Upper Centennial Parkway were also noted as having capacity to serve a greater population. The original GRIDS identified Elfrida as a preferred location for a potential urban boundary expansion under the Nodes and Corridors approach, noting this approach has *"the best opportunity to enhance delivery of social services through greater economies of scale, foster more vibrant neighbourhoods through the creation of mixed use, live-work environments and protect human health through transit improvements and more walkable built environments".* Refer to **Figure 5** for the preferred growth option identified by GRIDS.

Figure 5: Preferred Growth Option and Elfrida – GRIDS (2006)

The recommended Nodes and Corridors structure identified for the Elfrida Growth Study area included a new Community Node at Upper Centennial Parkway and Regional Road 20, with transit corridors along Upper Centennial Parkway and Rymal Road.

The proposed community node at Upper Centennial Parkway and Regional Road 20 is intended to be a central focus and core of the Elfrida community, containing a mix of commercial, residential and civic buildings, and open spaces. This node will be important in defining the area and serving as a future transit hub, linked with other areas through higher-order transit and accessible by a variety of modes, including walking and cycling.

The original GRIDS was approved by Hamilton Council in 2006 and formed the basis of the Urban Hamilton Official Plan. The recommendations of the original GRIDS study and associated Official Plan policies are currently under appeal. GRIDS is being updated (GRIDS II) as part of the MCR and Land Budget Analysis happening concurrently with this study.

2.2.3 CITY OF HAMILTON OFFICIAL PLANS

Hamilton has two official plans for guiding development and managing change: an Urban Hamilton Official Plan (UHOP) and a Rural Hamilton Official Plan (RHOP), and the Elfrida Growth Study area falls within the rural area of the City, under the RHOP.

Elfrida was included as a special policy area in the RHOP adopted by Council on September 27, 2006. This special policy area outlined the process and studies required to incorporate the lands into the urban boundary. When the RHOP was approved by the Province on December 24, 2008, the Province removed the special policy area. The UHOP, adopted July 9, 2009, included a more general set of policies that addressed urban boundary expansion, and a policy reference to Elfrida as a future growth area. When the UHOP was approved, the Province removed the references to Elfrida as a growth area, but the policies on urban boundary expansion were left in the Plan.

The modifications that removed the references to Elfrida were appealed to the OMB by the City and landowners in the area. Those appeals remain open and no hearing dates are currently scheduled.

The study area is currently subject to the policies of the RHOP, but through the MCR and Land Budget Analysis, parts of the area are anticipated to be brought into the urban boundary and will be subject to the UHOP.

2.2.3.1 LAND USE POLICIES

According to Schedule D of the RHOP, Rural Land Use Designations, lands within the study area are currently designated as Agriculture, Rural, and Open Space (see **Figure 7**).

Agricultural and agricultural-related uses are the predominant uses contemplated in the Agriculture designation (Section D.2.1). Additional permitted uses identified include mushroom operations, tree farms, farm greenhouses, farm-related industrial and commercial uses and on-farm secondary uses, agri-tourism, a winery, brewery or cidery, and nursery and (secondary) landscape contracting, subject to the conditions of the Official Plan and in accordance with the Zoning By-law.

The Rural designation also permits agricultural and agricultural-related uses, as well as other resource-based rural uses and institutional uses serving the rural community, such as commercial water-taking for bottling or bulk transport, resource-based recreation and tourism, tree farm or nursery, retail greenhouse, kennel, and institutions serving the rural community in accordance with the provisions of the Official Plan and Zoning By-law (Section D.4.1).

The Open Space designation applies to the closed Satellite Golf Centre and Tim Hortons coffee shop located at the southeast corner of Upper Centennial Parkway and Mud Street. According to Section C.3.3 of the RHOP, Open space designations are meant to recognize *"public or private areas where the predominant use of, or function of the land is for recreational activities, conservation management and other open space uses".* Contemplated uses include uses such as parks, resource-based recreational and tourism uses, recreation/community centres, trails and pathways, seasonal campgrounds, woodlots, forestry and wildlife management areas, hazard lands and cemeteries.

Many of the policies in the RHOP state the intention to leave agricultural lands, particularly prime agricultural lands, as agricultural lands (RHOP, Sections D.0, D.1.3, D.1.4, D.2.0, D.2.2.1, D.3.1 and D.4.0). It is important to note under the RHOP, Section D.2.2.1 (Other Provisions), which is currently under appeal, it states *"lands designated Agriculture shall not be redesignated for non-agricultural uses. [Mod 24] Policy D.2.2.1 still under appeal – Multiple Parties".*

It is additionally important to note that Council has identified a potential need for additional lands to support the forecasted growth for the City. The Province prepared growth forecasts for Hamilton from 2001-2031 with an anticipated growth of an additional 170,000 people, 80,000 new households and 100,000 new jobs in that time frame (RHOP Section A.2.2, and Schedule 3 of the 2006 Growth Plan, 2013 Office Consolidation). The new Growth Plan (2017) has increased these numbers further: an additional 150,000 residents from 2031 to 2041, and 40,000 new jobs from 2031 to 2041 (Schedule 3 of the 2017 Growth Plan). The City is reviewing these figures through GRIDS II, the component of the MCR that will ensure conformity with the 2017 Growth Plan.

Sections B.2.1 to B.2.3 of the UHOP are under appeal to the Ontario Municipal Board and not yet in effect, however, the existing policy (B.2.2.2) notes *"[t]he exact limits of the lands to be included as part of the urban boundary expansion shall be determined as part of a municipally initiated comprehensive review and secondary plan"* (Urban OP, Section B.2.2.1). Additionally, one of the policies under appeal notes that this may occur "*in prime agricultural areas, [if] the lands do not comprise specialty crop areas, there are no reasonable alternatives that avoid prime agricultural areas and there are no reasonable alternatives on lower priority agricultural lands [Mod 4(c)]"* (Urban OP, Section B.2.2.3.d). The policy that was previously in effect (B.2.2.3.d) notes "*an assessment of agricultural capability which considers directing urban growth onto those lands which are or are not on lower priority lands, which are designated Agriculture"* is required as part of a municipal comprehensive review (MCR).

2.2.3.1.1 SITE SPECIFIC DESIGNATIONS

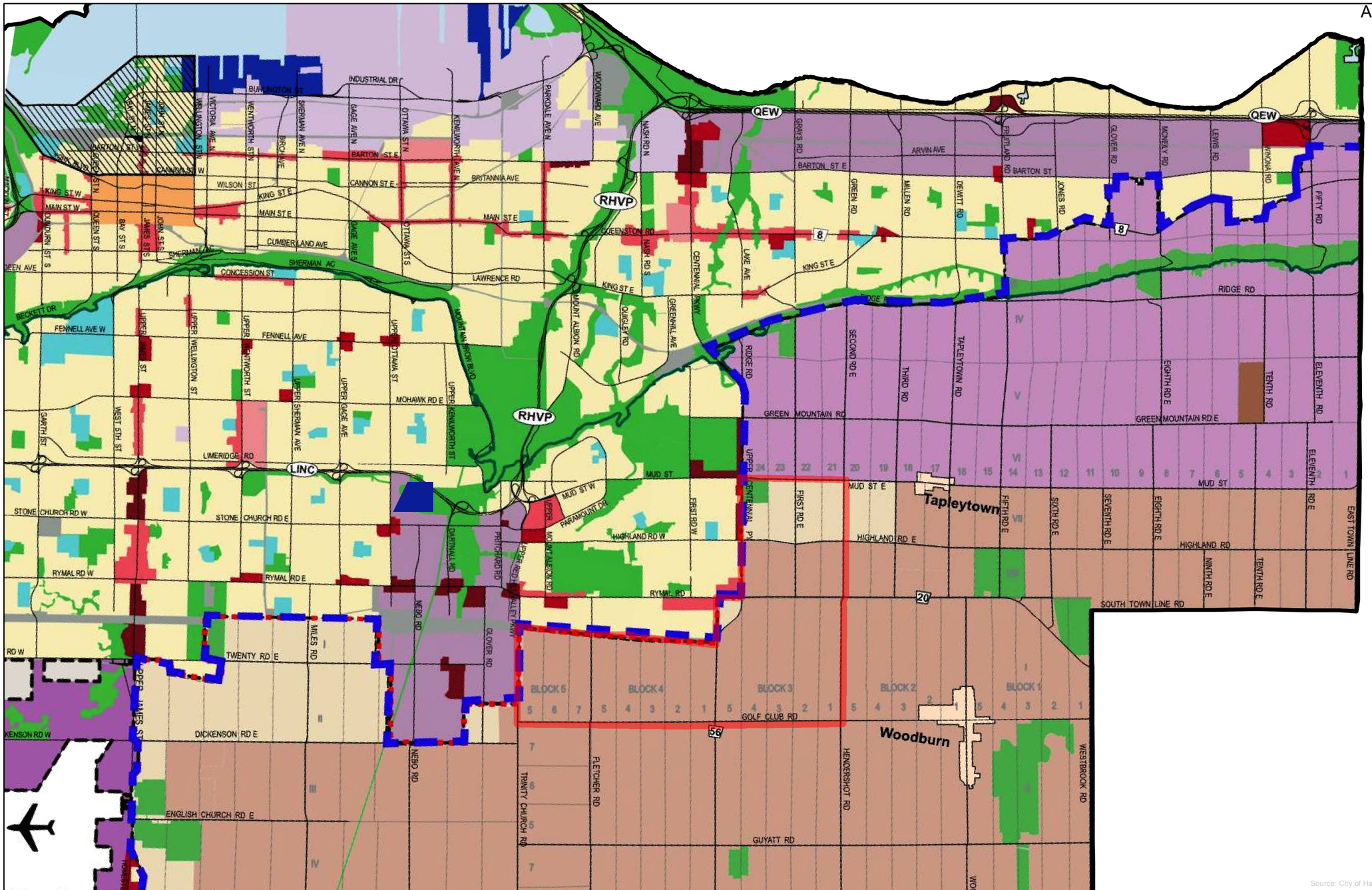
A Rural Site-Specific Policy, R-21, in the RHOP applies to the lands inside the northwest edge of the Elfrida Growth Study area, surrounded by Rymal Road East, Swayze Road and Regional Road 56. These properties are also known as 2200, 2250 and 2260 Rymal Road East; Portside Street; and 51,101, 151 and 175 Swayze Road. Refer to **Figure 6** for a map of the area.

Figure 6: Rural Site-Specific Designation, RHOP Vol. 3 Chapter B

Industrial uses that do not require large amounts of water and have low waste emissions (i.e. 'dry' industrial uses) and accessory uses that serve the industrial and business uses, such as commercial uses, public utilities and limited residential uses, are permitted in this site-specific designation.

These lands are to be serviced on municipal water and sanitary services and development is required to be undertaken in a comprehensive manner. All development will be subject to Site Plan Approval and several site-specific design policies apply, such as limiting the number of internal access points, providing adequate off-street parking, screening loading areas and achieving landscaping requirements.

A policy also exists to require a landscape entrance feature area at the north-east corner of the site to identify a gateway entrance to the former Township of Glanbrook.



Source: City of Hamilton, Rural Official Plan, Schedule D - Rural Land Use Designations

Legend

- Municipal Boundary
- Study Area
- Urban Boundary

Urban Hamilton Offical Plan

- Airport Employment Growth District
- Arterial Commercial
- Business Park
- District Commercial
- Downtown Mixed Use Area
- Industrial Land
- Institutional
- Mixed Use - High Density
- Mixed Use - Medium Density
- Neighbourhoods
- Open Space
- Shipping & Navigation
- Utility

Rural Hamilton Official Plan

- Agriculture
- Open Space
- Rural
- Specialty Crop
- Mineral Aggregate Resource Extraction Areas
- Urban Area
- Utility

0 500 1,000 2,000 Meters

Client: City of Hamilton

Title: **Elfrida Study Area Context**
Figure 7: Land Use

Prepared by: WSP, The Planning Partnership, metro economics, ASI, CUSHMAN & WAKEFIELD

17M-00642-00 | Date: 21/08/2017 | Review: JS

2.2.3.2 URBAN EXPANSION POLICIES

Under Section B.2.0 of the UHOP, Defining Our Communities, Section B.2.1.1 notes that the *"urban boundary defines the area where all urban development occurs".* Lands within the urban boundary are intended to represent a 20 year supply of designated urban land for the City's projected growth. The City has explored growth options and directed a significant amount of intensification to the urban nodes and corridors within the existing urban boundary. However, the MCR, Land Budget Analysis and GRIDS II currently underway are being used to determine what additional lands are required to meet the increased projected growth for the City to 2041.

To accommodate future growth, it is anticipated that an expansion of the urban boundary will be required. Section B.2.2 of the UHOP notes that the expansion of the Urban Boundary will require a MCR and secondary plan. It is also required that the exact limits of lands to be included as part of an urban boundary expansion be determined. These required processes are currently underway, and this study will incorporate the results of these additional studies.

2.2.3.3 NATURAL HERITAGE SYSTEM

The City of Hamilton uses a systems-based approach to identify and assess natural features and their functions. Through the RHOP and UHOP, a Natural Heritage System (NHS) has been identified for the City of Hamilton.

Table 4 outlines the Natural Heritage System Categories and Feature Types.

The Study Area is currently governed by the RHOP. As lands are anticipated to be brought into the urban area and the boundary between the UHOP and RHOP would be adjusted, consideration must also be given to the UHOP and its policies. More specifically, consideration for how any differences in these policies are addressed through land use planning and secondary plan development as lands transition into the urban area will be an important component of this study.

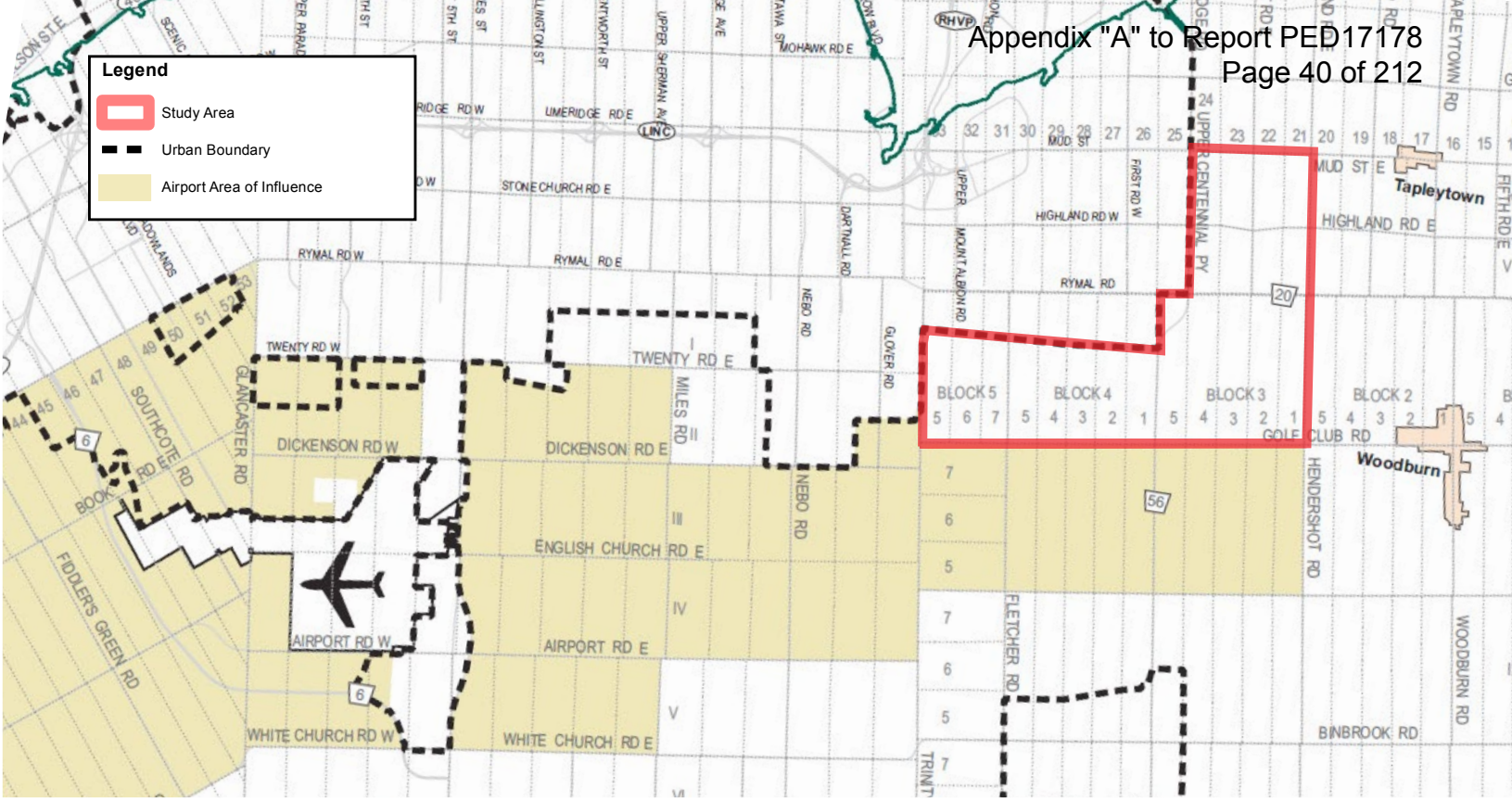
Both the RHOP and UHOP provide consistent goals with respect to the Natural Heritage System:

- Protect and enhance biodiversity and ecological functions;
- Achieve a healthy, functional ecosystem;
- Conserve the natural beauty and distinctive character of Hamilton's landscape;
- Maintain and enhance the contribution made by the Natural Heritage System to the quality of life of Hamilton's residents;
- Restore and enhance connections, quality and amount of natural habitat;
- Provide opportunities for recreational and tourism uses where they do not impact natural heritage features; and
- Monitor and periodically assess the condition of Hamilton's natural environment.

Table 4: NHS Category and Feature Types

NHS Category	Feature Types
Key Natural Heritage Features	Significant habitat for endangered and threatened species Fish habitat Wetlands Life Science Areas of Natural and Scientific Interest Significant Valleylands Significant Wildlife Habitat Sand barrens, savannahs and tallgrass prairies Alvars
Key Hydrologic Features	Permanent and intermittent streams Lakes and their littoral zones Seepage areas and springs Wetlands
Local Natural Areas	Environmentally Significant Areas Unevaluated wetlands Earth Science Areas of Natural and Scientific Interest

Note: Provincially Significant Features are contained within Key Natural Heritage Feature and Key Hydrologic Features categories.



Source: City of Hamilton, RHOP Volume 1, Schedule F

Figure 8: Airport Influence Area

The NHS within the City of Hamilton consists of two major components: Core Areas and Linkages. Core Areas within the City of Hamilton NHS are consistent between the RHOP and UHOP and include several natural heritage feature types in four categories: key natural heritage features, key hydrologic features, provincially significant features and local natural areas, as well as any Vegetation Protection Zones associated with the feature. Features included within these categories are listed below. Direction regarding the size of these zones is provided in the UHOP and RHOP and refined through more detailed studies, as appropriate. The NHS within the Elfrida Growth Study area can be seen in **Figure 9**.

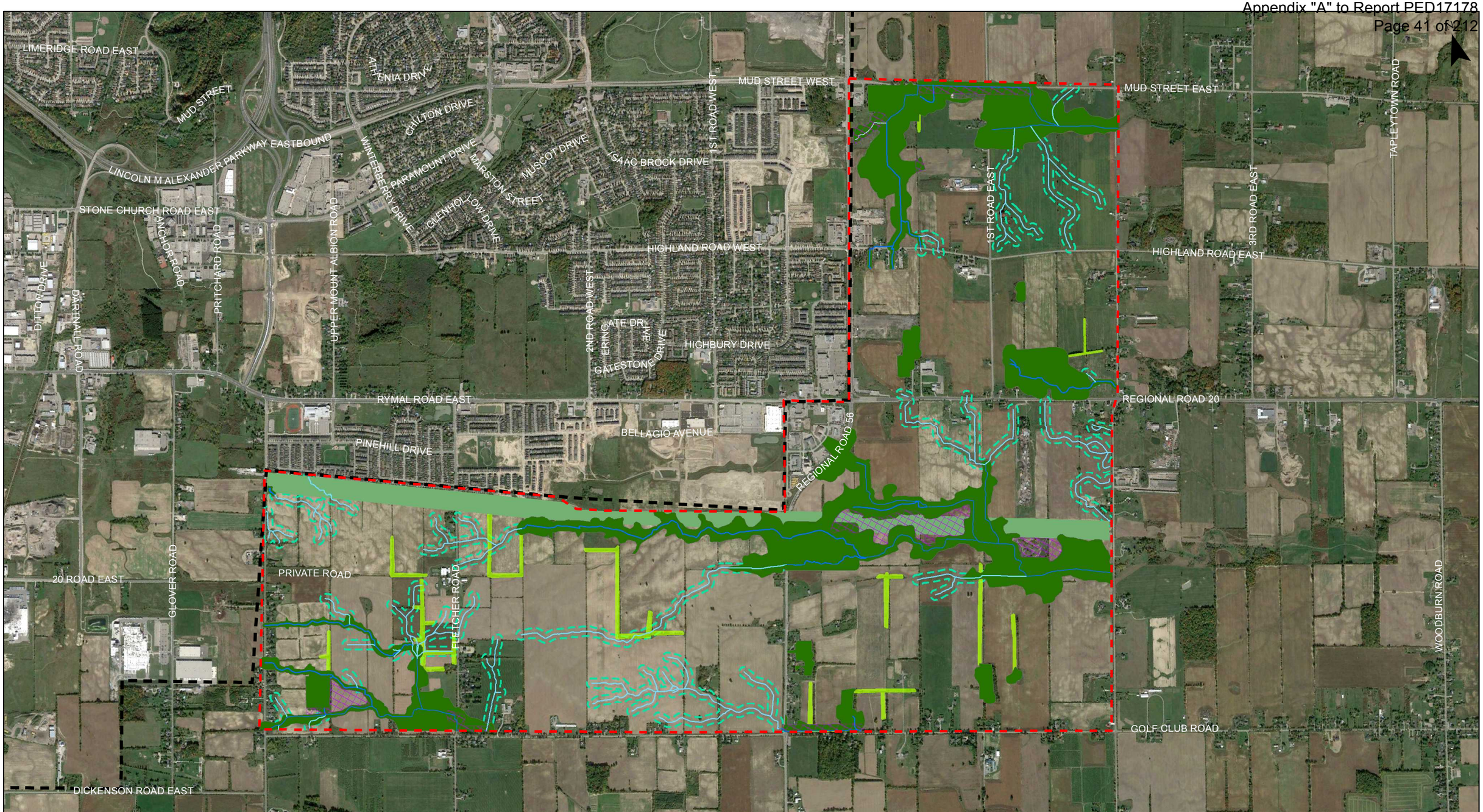
Linkages provide important ecological connections between natural areas allowing for the movement and transfer of plants, animals and can provide other important hydrological and ecological processes. As such, linkages form an important component of a functional systems-based NHS. The UHOP additionally provides direction with respect to the protection of hedgerows that demonstrate an ecological or additional linkage function. In addition to Core Areas and Linkages, the Greenbelt NHS and Protected Countryside are included in the RHOP NHS and the Niagara Escarpment Plan Area within the UHOP NHS.

Within the Elfrida Growth Study area, the RHOP has identified a NHS that includes Core Areas and Linkages. For the purposes of this project, the RHOP identifies the Natural Heritage System (NHS) within the study area at a high level, providing an overview but not intricate levels of detail. The draft Subwatershed Study builds upon the NHS defined in the RHOP to confirm and, where appropriate, add further detail or features to the NHS. This Study will further refine the boundaries, based on the findings of this and other concurrent studies.

Natural Heritage is reviewed in greater detail under Section 6.0 of this report.

2.2.3.4 AIRPORT AREAS OF INFLUENCE

The Rural Hamilton Official Plan (RHOP) shows that the Elfrida Growth Study area is outside of, but still adjacent to the Airport Influence Area south of Golf Club Road and west of Trinity Church Road, as shown in **Figure 8**. The Airport Influence Area provides additional policy direction to protect for the operation of the John C. Munro Hamilton International Airport. Additional design criteria may apply related to tall buildings (e.g. requirement for rooftop signal lighting).



Legend

- Elfrida Study
- Urban Boundary
- Watercourses + Protection/ Conservation Headwater Drainage Feature
- Mitigation Headwater Drainage Features

Natural Heritage Features

- Natural Heritage System
- Linkage –Hydro Corridor

Enhancement & Supporting Features

- Restoration Areas
- Mitigation Headwater Drainage Features – Vegetation Protection Zone (30m)
- Hedgerow

Note: The Natural Heritage System and Natural Heritage Features are draft and subject to change.

0 240 480 960 metres

Client: City of Hamilton

Title: **Elfrida Study Area Context**
Figure 9: Natural Heritage Constraints

Prepared by: WSP, Urbanecomics, ASI, The Planning Partnership, Cushman & Wakefield

17M-00642-00 | Date: 22/08/2017 | Review: JS

The Elfrida Growth Study area is not located in or near any Source Protection Vulnerable Areas as identified on Volume 1: Schedule G of the RHOP – Source Protection Vulnerable Areas.

2.2.4 OUR FUTURE HAMILTON (2015)

Our Future Hamilton was a visioning exercise for the City which connected with over 54,000 people through various means, including online videos and surveys, social media, lemonade stands at events and festivals, interviews, workshops and presentations. The aim of this process was to gather ideas from the community and residents about their vision for the future of Hamilton over the next generation, creating opportunities to learn from best practices and educate the public. The key priorities are a reflection of the City of Hamilton, its communities and people, their values and future goals. These priorities will be carried forward into the design for the Elfrida Growth Study area.

2.2.5 HAMILTON STRATEGIC PLAN (2016-2025)

Hamilton's Strategic Plan identifies a vision for the City as a whole to *"be the best place to raise a child and age successfully".* As part of that vision, the 2016-2025 Strategic Plan aims to encourage high quality public services in an effort to create a healthy, safe, prosperous and sustainable community. The Plan's mission is *"to provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner".* The Strategic Plan incorporates the Our Future Hamilton principles, using them to help set the future goals and vision for the City as a whole.

Key objective areas for the Strategic Plan which apply to the Elfrida Growth Study area include creating healthy and safe communities, being clean and green, embracing culture and diversity, and building infrastructure and environment that promotes the visions and goals of the Strategic Plan. Community engagement and participation ranks highest of the key objectives for the Strategic Plan, and all key objectives will be considered in the review of the Elfrida Growth Study area.

2.2.6 CULTURAL PLAN (2013)

The City of Hamilton's Cultural Plan (2013) was the result of the 'Love Your City' Project initiated in 2008 (formerly known as the Our Community Culture Project in Phase 1). The Cultural Plan's aim is to provide a basis for planning a sustainable and vibrant City through Municipal Cultural Planning, a practice which is gaining international attention. Eight Transformational Goals for the Cultural Plan, founded on best practice research and stakeholder input, outline the key qualities of Municipal Cultural Planning:

- Culture as an Economic Engine (culture attracts new businesses, investment, jobs, and talent);
- Downtown Renewal (culture is core to downtown renewal);
- Quality of Life Quality of Place (culture is a cornerstone in vibrant, competitive and unique communities);
- Build Tourism (people want to visit places that offer exciting, authentic experiences);
- Neighbourhood Revitalization (culture supports neighbourhood transition and vitality);
- Build Community Identity, Pride and Image (culture gives the community vitality and a sense of identity); and
- Creativity for All (creative expression helps people to grow, prosper and innovate).

These goals will inform the incorporation of culture and cultural engagement into future designs.

2.2.7 HAMILTON FOOD STRATEGY (2016)

The Hamilton Food Strategy is a strategic document to identify access to healthy food for all residents. The Food Strategy is divided into 4 main goals:

- Support food friendly neighbourhoods to improve access to healthy food for all;
- Increase food literacy to promote healthy eating and empower all residents;
- Support local food and help grow the agri-food sector; and
- Advocate for a healthy sustainable and just food system with partners and at all levels of government.

Within these 4 goals there are 14 recommendations, and 46 actions which tie into the recommendations. **Table 5** summarizes key recommendations that will be considered in designing Elfrida.

2.2.8 AGGREGATE ASSESSMENT (2017)

The City of Hamilton has conducted an assessment of the aggregate resources within the Elfrida Growth Study area to evaluate the future development potential of Elfrida in relation to identified aggregate resources and Policy 2.5.2.5 of the PPS (under 2.5 - Mineral Aggregate Resources). While selected bedrock resources are available in 37% of the total Elfrida Growth Study area, that amount accounts for less than 3% of the total selected bedrock resources available throughout the City of Hamilton's rural area. This means there are other locations available for the protection and extraction of this rock.

The assessment concludes that blasting will be required to allow for residential development in Elfrida. Policy direction can be provided in the Secondary Plan to promote the recovery of blasted material for reuse elsewhere.

2.2.8.1 AGGREGATE RESOURCE INVENTORY (2010)

The Aggregate Resources Inventory (ARI), completed in 2010, is an inventory and evaluation of the aggregate resources in the City, based on 2007 field assessments and previous studies of the area. The investigation outlines the quantity and quality of aggregate within the City overall, and is part of the Aggregate Resource Inventory Program for areas designated under the *Aggregate Resources Act* (ARA).

Bedrock Resource Areas 3 and 4 have been identified within the Elfrida Growth Study area. Paleozoic bedrock covered by 1-8m of drift and 8-15m of drift, where some bedrock outcrops may occur, cover the entirety of the Elfrida Growth Study area. It also shows that other surficial deposits may be present, but no sand and gravel resource areas (primary, secondary or tertiary) are identified in the Elfrida Growth Study area.

Table 5: Food System Recommendations

System-wide	Ensure that food system enabling policies, tools, and other approaches are in place.
Food Production	Support and create diverse ways for people to grow food in the urban landscape and support participation in urban agriculture activities.
Food Access and Consumption	Promote physical access to healthy, local foods in all neighbourhoods.
Food Access and Consumption	Integrate food literacy and food systems education and training where residents live, learn, work, and play.
Food Access and Consumption	Support the physical and social infrastructure needed to empower citizens to take action

Source: Hamilton Food Strategy (2016)

Refer to **Figure 10** for a map of the bedrock resource areas, as shown in the ARI (2010). Resource areas may be identified wholly or partially for extractive development or resource protection, depending on the feasibility of extraction which is influenced by existing uses among other things.

To date, no interest in aggregate extraction has been identified within the Elfrida Growth Study area. Consideration of the existing resources, and sensitivity and compatibility with the existing licensed quarry northwest of the Elfrida Growth Study area, will be key to the phasing of future development in Elfrida.

2.2.9 ZONING AND SITE PLAN CONTROL

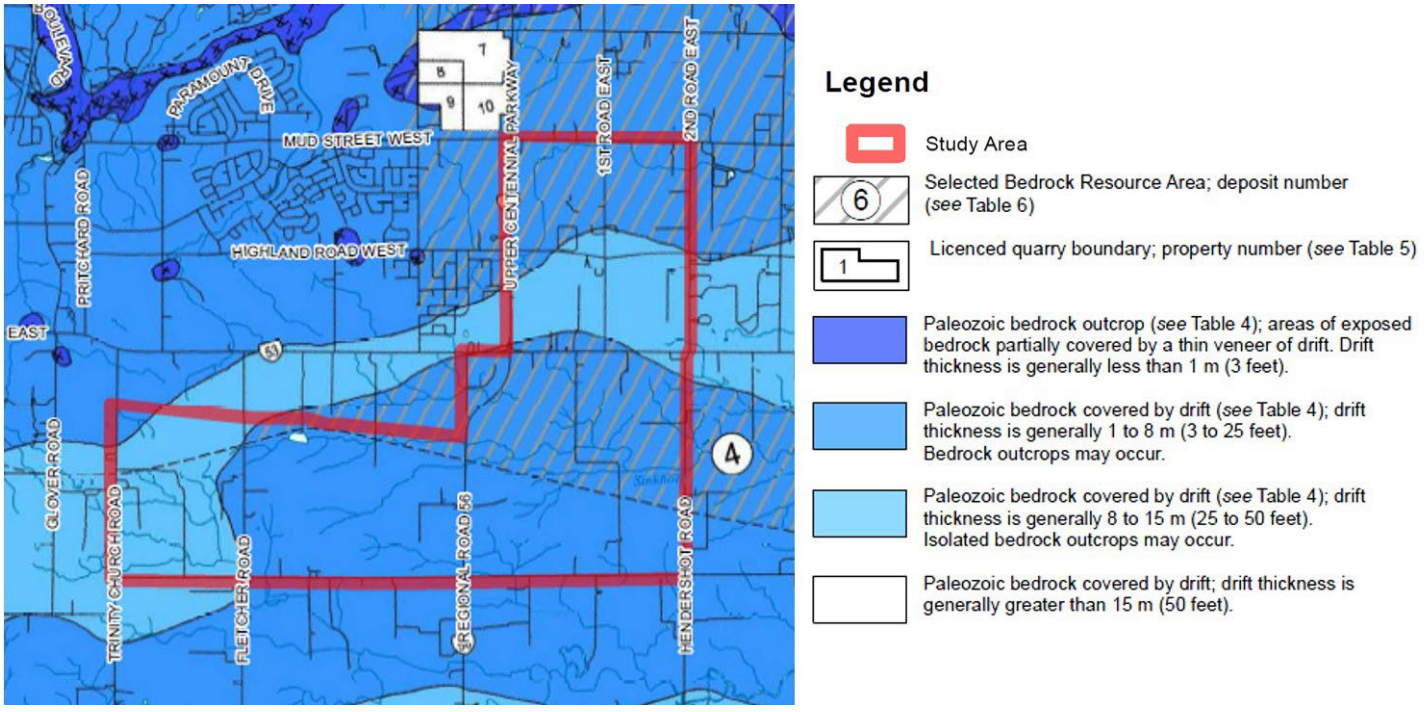
The existing zoning designations in the study area are rural and institutional in nature. Zoning By-laws 3692-92 (Stoney Creek), 464 (Glanbrook) and 05-200 were reviewed, as they apply within or adjacent to the study area. In general, lands within the study area are zoned:

- A – Agricultural
- HC - Highway Commercial
- IS - Small Scale Institutional
- M - Business Park
- MR - Rural Industrial
- OS- Open Space
- RC- Rural Commercial
- RR- Rural Residential

Refer to **Figure 12** for a map of the current zoning. Urban development within Elfrida would require an amendment to the Zoning By-law to implement the use permissions, zone standards, and parking requirements for the new community.

Site Plan Control By-law 15-176 already applies City-wide to specific types of development, exempting agricultural buildings and small-scale residential uses (e.g. single or semi-detached, or duplex dwellings). New lands brought into the urban boundary would remain subject to that By-law, with applicable development automatically subject to Site Plan Control.

Figure 10: Bedrock Resource Areas



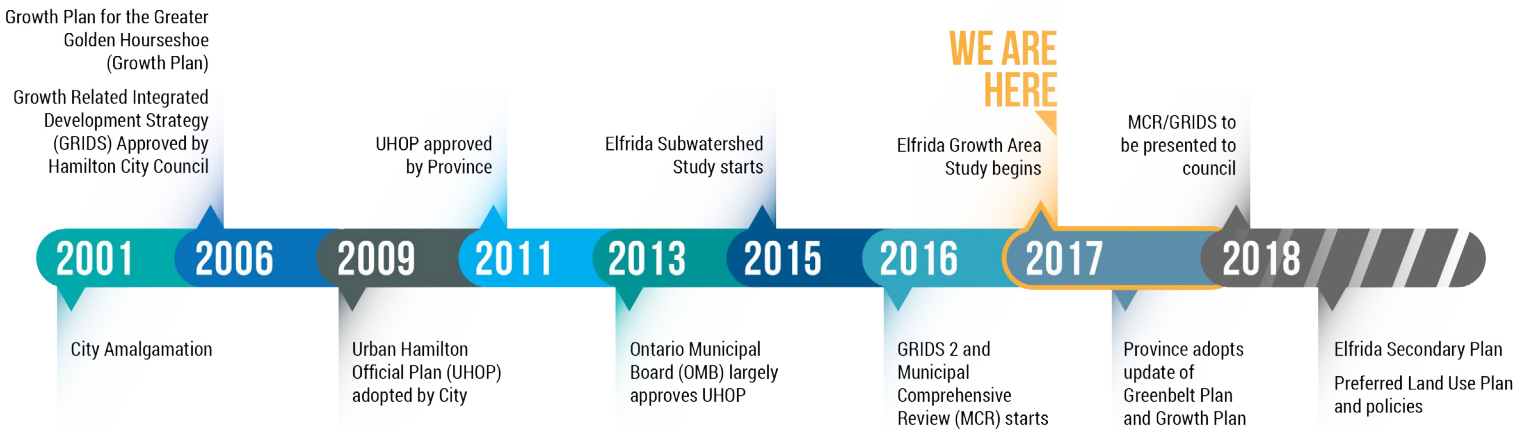
Source: City of Hamilton, Aggregate Resource Inventory (2010)

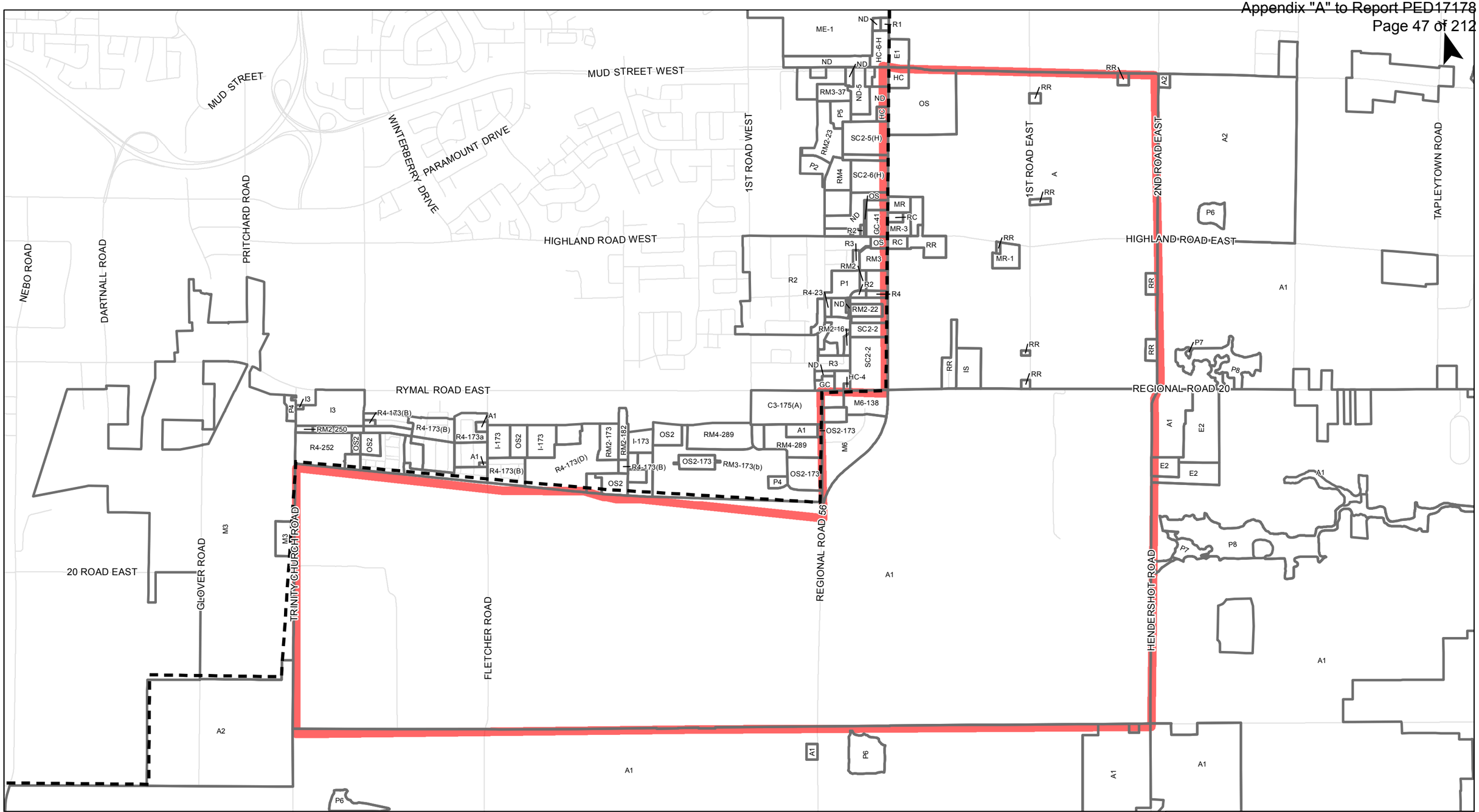
2.2.10 THE ELFRIDA GROWTH STUDY WITHIN THIS CONTEXT

This project is moving forward in concert with a number of other City studies, including GRIDS II, the Municipal Comprehensive Review and Land Budget Analysis. The Elfrida Growth Area Studies are a key component of how the City will accommodate growth to 2041. **Figure 11** below outlines the timeline of these associated studies and other inputs and influences on this study.

Additionally, the study area is adjacent to several existing Secondary Plans; these include the West Mountain (Heritage Green), the Rymal Road, and the Nash Neighborhood Secondary Plan Areas. The Trinity West Secondary Plan is also in close proximity to Elfrida. Consideration of these adjacent communities and their planned design is important to ensure connectivity, continuity and compatibility. Refer to **Figure 13** for a map showing adjacent Secondary Plan designations.

Figure 11: Previous Studies Timeline Overview





Legend

- Municipal Boundary
- Urban Boundary
- Zone Boundaries
- Study Area

A	-	Agricultural	MR	-	Rural Industrial
HC	-	Highway Commercial	OS	-	Open Space
IS	-	Small Scale Institutional	RC	-	Rural Commercial
M	-	Business Park	RR	-	Rural Residential

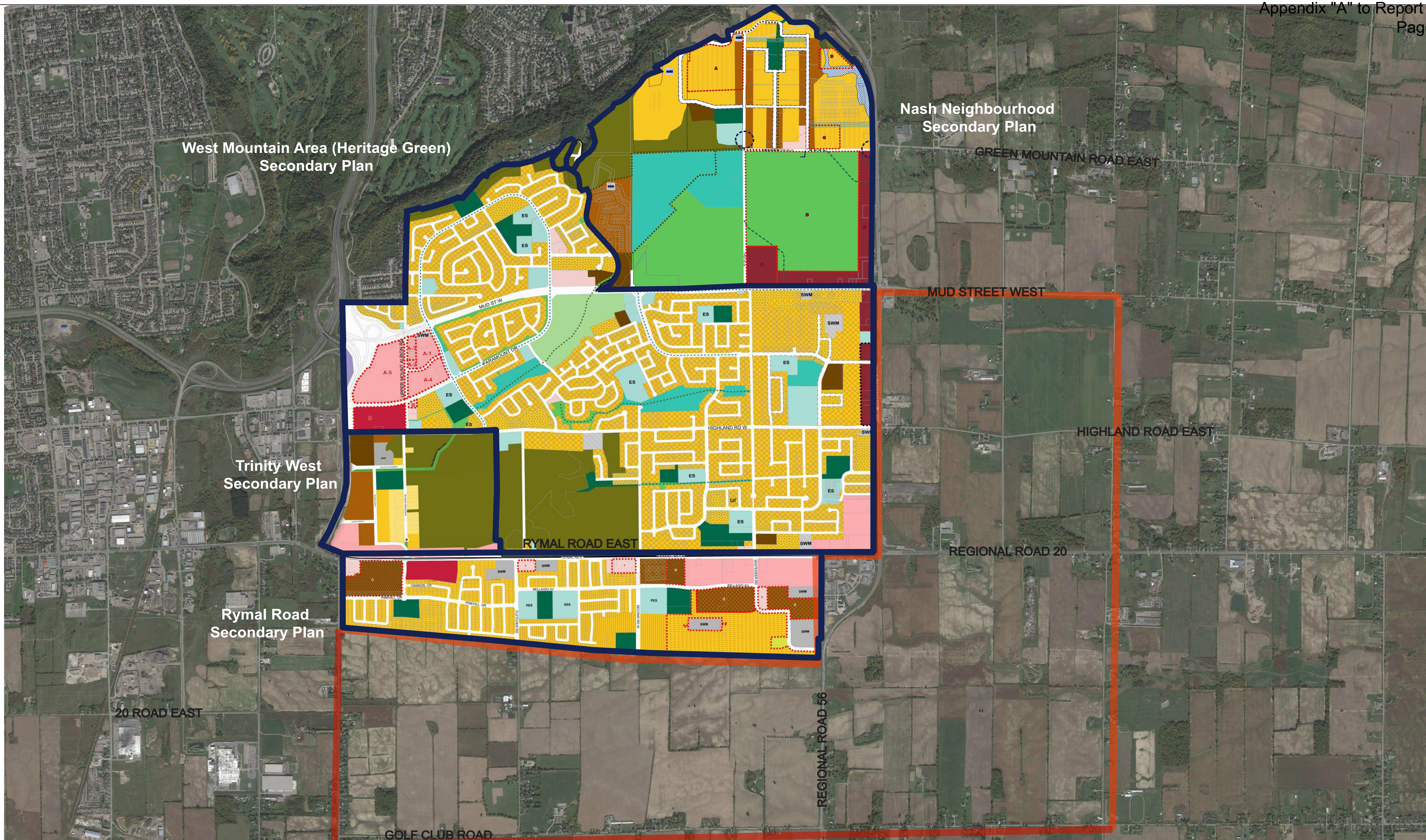
0 125 250 500 Meters

Client: **City of Hamilton**

Title: **Elfrida Study Area**
Figure 12: Zoning

Prepared by: WSP, Watson Economics, ASI, The Planning Partnership, Cushman & Wakefield

17M-00642-00 | Date: 21/08/2017 | Review: JS



Legend

Residential Designations
- Low Density Residential 1
- Low Density Residential 2
- Low Density Residential 2b
- Low Density Residential 3c
- Medium Density Residential 2
- Medium Density Residential 3

Commercial and Mixed Use Designations
- Local Commercial
- Mixed Use - Medium Density
- District Commercial
- Arterial Commercial

Parks and Open Space
- Neighbourhood Park
- Community Park
- City Wide Park
- General Open Space
- Natural Open Space

Other Designations
- Institutional
- Employment
- Utility

Other Features
- Area or Site Specific Policy
- Flood Plains
- Hedge Row
- Gateway
- Trail Links
- Proposed Road Realignment
- Escarpment
- Proposed Roads
- Secondary Plan Boundary

NTS

Client: **City of Hamilton**

Hamilton

Title: **Elfrida Study Area**
Figure 13: Secondary Plans

Prepared by: wsp, The Planning Partnership, metro economics, ASI, CUSHMAN & WAKEFIELD

17M-00642-00	Date: 16/06/2017	Review: JS

3.0 PLANNING AND URBAN DESIGN

This section identifies any policy directions relating to urban design considerations. These policies will inform the recommended urban design framework for the Elfrida Growth Study area.

It is important to note that while the study area is covered by the RHOP, there are interrelated issues and a few key differences between the two Official Plans that are prudent to consider. For urban development to occur within the study area, the boundaries of the UHOP would be extended and a new secondary plan applying to Elfrida would be adopted.

3.1 RURAL HAMILTON OFFICIAL PLAN (RHOP)

3.1.1 INTRODUCTION

The RHOP's introduction clearly states the importance that geographic and cultural context has within the City, and the urban design recommendations for the Study Area should support this statement as well: *"Hamilton is a City of many communities: diverse by nature of geography and history; united by a common future… A vision for a vibrant, healthy, sustainable City".*

The Official Plan recognizes the importance of the geographic setting of the City, as well as the characteristics of its built environment, stating: *"surrounding the urban area is a strong rural community comprised of agricultural and environmental areas, mineral aggregate resources, 19 rural settlement areas and a variety of recreational and tourism uses that support both the City and the surrounding regions. Woven throughout the rural and urban areas is a rich and diverse natural heritage system"* (s.A1.1). The design recommendations for the evolution of the Elfrida Growth Study area should build on these characteristics.

Section A.1.3, Role and Function of the Official Plan, states:

> *"the City and its residents aspired to have a City that has: compact urban communities to provide live, work and play opportunities; a strong rural community protected by firm urban boundaries; protected and enhanced environmental systems - land, air and water; balanced transportation networks that offer choice so people can walk, cycle, take the bus or drive and recognizes the importance of goods movement to our local economy; and strategic and wise use of its infrastructure services and existing built environment".*

This vision should be expressed throughout this study when dealing with design decisions that affect the rural lands outside of the study area.

In addition to the vision, the original GRIDS identified nine 'Directions' to guide development decisions. These directions inform the requirements for background studies and were used as the basis for creating development options and growth policy concepts. Direction #3 is noted and expanded on in the RHOP, and will be a key consideration as the project progresses:

> *"Protect rural areas for a viable rural economy, agricultural resources, environmentally sensitive recreation and enjoyment of the rural landscape. The rural landscape is truly distinctive with its farming areas, resource based industries, rural settlement areas, cultural heritage landscapes and features, and extensive natural systems and many recreational uses… In particular, agricultural lands and natural heritage features are non-renewable resources and must be protected, preserved and enhanced for the economic well-being of the City in the province".*

3.1.2 COMPLETE COMMUNITIES

Section B.3.0, Quality of Life and Complete Communities, states that improvements to the City's quality of life directly improves the lives of residents, but also improves the City's image and identity in the local economy by attracting and retaining people, business and investment. In this section, the RHOP also recognizes the importance of tourism and arts and culture, both of which have

potential design implications, all of which will feed into the urban design principles for this study.

Section B.3.3 Design Policies identifies a number of barrier free design policies that need to be considered. Section B.3.3.2 specifically identifies; *"parks and open spaces, infrastructure, and any other space that are accessible to the public, shall comply with the City of Hamilton barrier-free design guidelines".* Also within this section, it notes that public art is a *"vital component of the built environment, creating and enhancing a sense of community pride and identity"* (Section B.3.3.4). Public art which interprets local history, traditions and culture is encouraged and potential locations for public art (in addition to those identified in the Public Art Master Plan), are to be identified where appropriate in the Study Area (Section B.3.3.4.4).The study area should have an overall public realm design that fulfills these policies to facilitate the integration of public art into the area. Section B.3.5.2 General Policies, Community Facilities/Services Policies, also identifies the importance of designs that provide accessibility for walking and cycling, including barrier-free facilities and appropriate lighting.

Section B.3.4.6 Cultural Heritage Landscapes identifies the importance that distinctive rural roads, and rural and agricultural landscapes have within this framework. Recognizing this can help when defining vistas or framing distant views, all of which enhance character and help to distinguish a community. There will be opportunities to integrate these opportunities along the applicable study area edges.

Placemaking and community vibrancy can be supported through urban design, and the RHOP provides policy direction underscoring how public facilities contribute. Section B.3.5.2.6 states: *"Public buildings and public community facilities/services provide a focal point, image and sense of identity for communities. Clustering/co-locating of new facilities which support a range of services on a shared site or in a shared building optimizes efficiency and improves convenience and accessibility. Clustering also creates a major destination that facilitates service integration, and provides flexibility for program or use change as community needs change".* Section B.3.5.2.7 continues this theme, noting that public buildings and facilities shall reflect/enhance local character, identity and sense of place in their design.

3.1.3 CITY WIDE SYSTEMS AND DESIGNATIONS

The Policy Goals for C.2.0 the Natural Heritage System clearly express the importance of access to nature in making Hamilton a highly livable City. The Goals include:

- C.2.1.3 To conserve the natural beauty and distinctive character of Hamilton's landscape.
- C.2.1.4 To maintain and enhance the contribution made by the Natural Heritage System to the quality of life of Hamilton's residents.
- C.2.1.5 To restore and enhance connections, quality and amount of natural habitat.

Design in Elfrida should seek to ensure that the open spaces, public realm, and parks form part of an integrated system. Section C.3.3, Open Space, states: *"This system contributes to a healthy, environmentally sound, and economically diverse community by providing benefits critical for good quality of life".* Linkages with other open space lands, walkways, bicycle /multi-use paths and trails is encouraged and can act as a feature that identifies Elfrida as a community.

The specific needs of rural areas in terms of transportation are identified in Section C.4.0, Integrated Transportation Network, noting the unique transportation needs of rural communities. As this area progresses towards a more urban base, consideration for the connections between the existing urban area and development of the study area will need to be considered; this will be looked at in coordination with the Transportation Master Plan component of this study.

3.2 URBAN HAMILTON OFFICIAL PLAN (UHOP)

3.2.1 INTRODUCTION

The UHOP's introduction is similar to the RHOP, reinforcing the importance of cultural context within the City. It recognizes the importance of enabling change and transformation, while *"balancing and respecting the sense of place, history and culture that makes Hamilton a special place to live, visit and experience".*

Section A.2.1 notes that Phase 1 of the original GRIDS program identified the following directions for City building (in addition to the expanded Direction #3, outlined in the RHOP):

- Direction #1 - Encourage a compatible mix of uses in neighbourhoods that provide opportunities to live, work, and play.
- Direction #2 - Concentrate new development within existing built-up areas and within a firm urban boundary.
- Direction #3 - Protect rural areas for a viable rural economy, agricultural resources, environmentally sensitive recreation and enjoyment of the rural landscape.
- Direction #4 - Design neighbourhoods to improve access to community life.
- Direction #5 - Retain and attract jobs in Hamilton's strength areas and in targeted new sectors.
- Direction #6 - Expand transportation options that encourage travel by foot, bike and transit and enhance efficient inter-regional transportation connections.
- Direction #7 - Maximize the use of existing buildings, infrastructure and vacant or abandoned land.
- Direction #8 - Protect ecological systems and improve air, land and water quality.
- Direction #9 - Maintain and create attractive public and private spaces and respect the unique character of existing buildings, neighbourhoods and settlements.

These directions will inform the urban design guidelines, emphasizing the importance of design in creating new neighbourhoods which uphold and enhance the character and quality of living that is associated with the City of Hamilton.

3.2.2 COMMUNITIES

Section B.3.3 of the UHOP lists Urban Design Goals which apply to the urban area. These goals include creating high-quality, pedestrian-oriented places that are safe, accessible, connected and easy to navigate for people of all abilities (Section B.3.3.1). General policies and principles are outlined in Section B.3.3.2 with built-in flexibility; not all design directions will apply to every proposed development.

Section B.3.3 of the UHOP further notes that the design and placement of *"buildings, infrastructure, open spaces, landscaping and other community amenities, as well as how these features are connected and work together, affects how people live and interact with each other".* The creation of attractive, livable and safe communities are achievable through careful urban design in the creation of compact, connected, pedestrian-oriented and transit-supportive communities. The connections between urban and rural areas is highlighted as being of particular importance. Planning and design of roads, sidewalks, plazas, parks, and open spaces owned by the City and other public agencies, as well as private lands which are visibly connected to the public realm, will be guided by the urban design guidelines for Elfrida to be developed as part of this study.

Section B.3.3.2.4 states important elements for quality spaces that connect the public and private realms. These include a logical organization of space, through the design, placement, and construction of new buildings, streets, structures, and landscaping; recognizing each structure contributes to a greater whole and using consistent materials to fit into the adjacent context; creating human-scale environments, including continuous and animated urban street edges, and accessible spaces for all; transitioning between different areas; emphasizing important public views and vistas; and minimizing issues of noise / nuisance through the design of buildings and landscaping. An overall visual cohesion of future development is a goal of this study. The elements above feed into this and will be incorporated into the urban design guidelines.

Other sections of the UHOP (s.B.3.3.2.5 to B.3.3.2.10) aim to create safe, accessible, connected and easy to navigate places which are environmentally sustainable, compatible with surrounding areas, adaptable to future change, and enhance and support community well-being through a number of design principles. Under Section B.3.7, of the UHOP, it notes that the City is supportive of energy efficient, low impact and environmental designed development. These principles will be incorporated into the urban design guidelines as appropriate.

The UHOP further describes Built Form (s.B.3.3.3), Gateways (s.B.3.3.4), Urban Services and Utilities (s.B.3.3.6), Signage, Display Areas and Lighting

(s.B.3.3.8), Access and Circulation (s.B.3.3.9), Parking (s.B.3.3.10), Barrier Free Design (s.B.3.3.11) and Public Art (s.B.3.3.12) policies. These policy sections will inform the development of detailed urban design guidelines for Elfrida.

3.2.3 URBAN SYSTEMS AND DESIGNATIONS

Chapter E – Urban Systems and Designations establishes the framework for a nodes and corridors-based urban structure that forms the basis of urban Hamilton. Compact urban form following a 'nodes and corridors' structure, mixed use and proximity of locations (i.e. work and home) support active transportation and transit. Section E.2.3.3.18 and E.2.4.15 further state that a gradation in building heights will help to respect the adjacent neighbourhoods built form, as will locating and designing new development to ensure development is compatible with adjacent neighbourhoods (for example, minimizing the effects of shadowing and overview on lower density neighbourhoods). A future urban structure within Elfrida will treat such transitions sensitively, both within and outside of the study area—and will identify opportunities to complete the Community Node planned for Elfrida in Section E.2.3.3.1(c) of the UHOP.

This study will also consider opportunities to integrate and promote community design principles and objectives in the area's urban design policies and guidelines as outlined in Section E.3.7, Residential Greenfield Design policies, in the UHOP.

Complete streets are important to the design of new secondary plans. Several key elements are noted under Section C.4.2.8 of the UHOP:

- A grid road network to support pedestrian, cyclist, and automobile traffic with efficient layout and spacing;
- A layout of higher density land uses around existing and planned transit stops (this also supports the new 2017 Growth Plan directions for higher density at transit hubs); and,
- Street design/layout that precludes the need for future traffic calming/control.

These, in addition to the policies related to transportation under Volume 1 of the UHOP (particularly Section B.3.3) will apply to the urban design of the road network and will be implemented through the urban design guidelines.

3.3 URBAN DESIGN

3.3.1 COMMUNITY DESIGN BEST PRACTICES/PRECEDENTS

The following are a selection of the most common and well known best-practices for smart growth and healthy communities, which will inform the future development of Elfrida. Examples of best practices and precedent images can be seen in **Figure 14** through **Figure 26**. These will be implemented through the urban design guidelines to be prepared. These practices combine physical design, policy, economics and community organization to create vibrant cities with equal opportunities for all to access the services and facilities required for life.

3.3.1.1 TRADITIONAL NEIGHBOURHOOD DEVELOPMENT

The concepts central to Traditional Neighbourhood Development (TND) are based around diversifying land uses to create dense, walkable communities at a neighbourhood scale with compact, mixed-use neighbourhoods with a distinct centre. It is an urban design and planning tool that encourages a work-live-play approach to development, creating clusters that incorporate multiple modes of transportation including pedestrian and transit, as well as ample open and public spaces within a short walking distance of every residence. Other principles of TND include preservation/reutilisation of structures with historic or architectural significance; integrating nature into the form of development, creating pedestrian-friendly streets that encourage all modes of transportation; emphasizing transit; and encouraging economic diversity. A TND approach encourages an interconnected network of streets with rear lanes and front porches, with parking at the rear. Future development leads to denser 'urban' and walkable centres which could reduce residents' reliance on their cars and create areas that generate economic benefit while at the same time supporting a healthy residential population.

Figure 14: Mixed Use and Housing Types

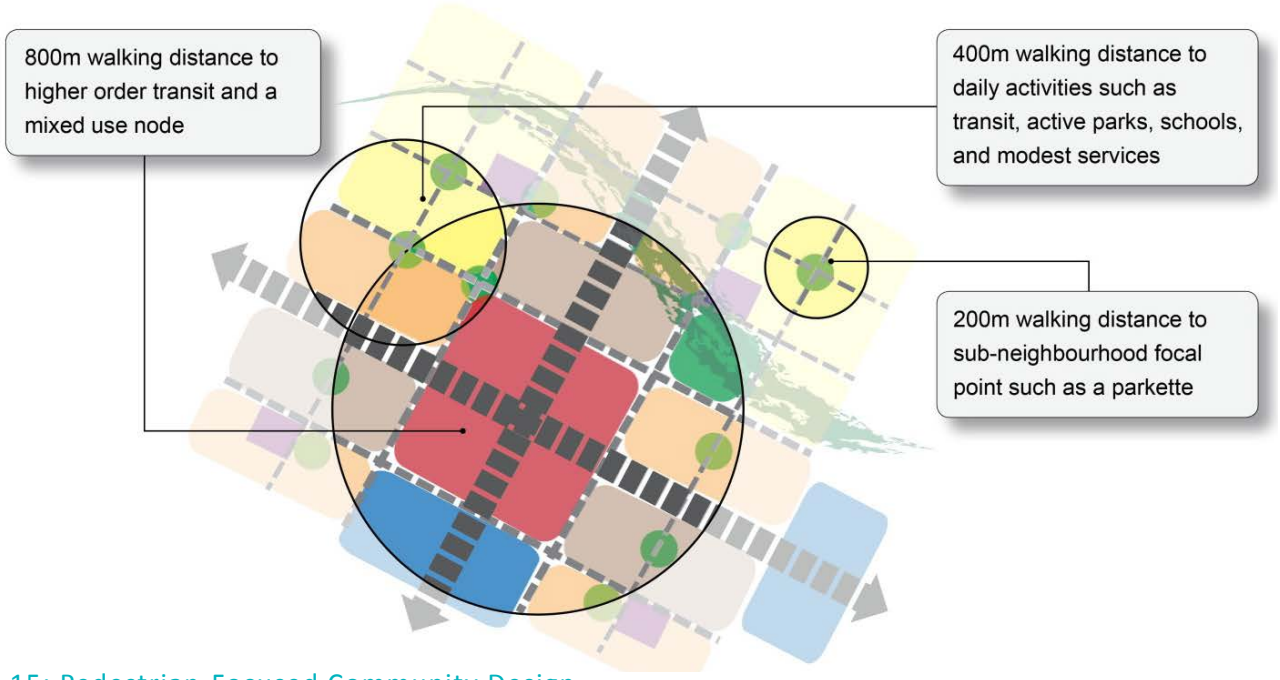


Figure 15: Pedestrian-Focused Community Design

Figure 16: Connected and Permeable Streets

3.3.1.2 NEW URBANISM

According to the Congress for the New Urbanism, *"New Urbanism is a planning and development approach based on the principles of how cities and towns had been built for the last several centuries: walkable blocks and streets, housing and shopping in close proximity, and accessible public spaces. In other words: New Urbanism focuses on human-scaled urban design".* The approach focuses on putting pedestrians first by providing improved transit options, accessible travel ways, increasing density and mixing land uses. By doing so, communities are enhanced and strengthened as there is a greater diversity and a finer grain of development which is carefully designed, with public spaces as an important element. New Urbanism is a planning and urban design approach which encompasses a range of scales and community design best practices, such as traditional neighbourhood development, transit-oriented development, and complete streets. New urbanism incorporates the idea of a 'transect' or sequence of development patterns, ranging from rural to urban. This is applicable to Elfrida, which borders Greenbelt Plan-protected countryside and requires careful thinking about the nature of the urban edge and transition to higher density areas.

3.3.1.3 TRANSIT-ORIENTED DEVELOPMENT

Transit-oriented development (TOD) is a development approach centred around concentrating clusters of mixed land uses, including residential, around transit, particularly rapid transit systems such as BRT or LRT. The goals of TOD are to create compact and walkable communities where one is not reliant on a car to carry out daily activities;

Figure 17: Transit-Oriented Development Example

to reduce traffic congestion and energy consumption, and generally improve quality of life. This approach has many of the same goals as TND and New Urbanism, with refinements to create transit-supportive neighbourhoods. The transit system is an essential element and driver of the development patterns. With the expected population growth in Elfrida and aspirations for higher-order transit adjacent to the study area, this approach is very relevant and should be integrated with the overall development patterns, land use strategy and interior circulation and transit network.

3.3.1.4 NEIGHBOURHOOD RETAIL/MIXED USE/LIVE-WORK

Mixed-use neighbourhoods which include retail and possibly live-work spaces allow a diversity of uses and a density of development. When implemented in conjunction with other similar best practices and

Figure 18: Ground Floor Retail / Apartments

Figure 19: Neighbourhood Retail and Live/Work Spaces

approaches like TND, TOD and New Urbanism, mixed-use communities can become significant economic generators that at the same time reduce the negative impacts of sprawl. Retail and commercial spaces mixed with residential uses at a finer grain can reduce the need for personal vehicles and provide a 'built-in' market for the retailers, increasing stability and resiliency in these areas.

3.3.1.5 AGE-FRIENDLY DESIGN

The concept of age-friendly design or lifelong neighbourhoods is centred around a culture of inclusion and the encouragement of well-being for people of all ages, particularly on the far ends of the age spectrum whose specific needs may otherwise be overlooked in traditional design. Age-friendly design considers a number of elements within a community, including outdoor spaces, transportation, housing, social inclusion and participation, communication and availability of information, employment and civic participation, education and health services. A prevalence of walkable destinations, social and economic diversity, presence of transit, programming and events, parks and public art all contribute to healthy communities for all. Age-friendly cities are

Figure 20: Walkable and Accessible Destinations Enhance Social Inclusion

vibrant places that encourage interaction and a positive environment for people of all ages.

Age-friendly design integrates more seamlessly populations of different ages by being more attentive to their needs, and can not only improve quality of life for residents of all ages, but can result in a more connected community. Age-friendly design ensures that individuals and families can be comfortable and engaged in the community as children and youth, and remain in the community as they age. Many of the elements of TND, TOD, mixed-use neighbourhoods and New Urbanism contribute to age friendly design, which can be further expanded through the design and policy stages.

3.3.1.6 LOW IMPACT DEVELOPMENT/ GREEN INFRASTRUCTURE NETWORKS

Low impact development (LID) is a set of sustainable approaches to stormwater management through community design. These approaches utilize green infrastructure strategies to take an ecosystem-based approach to stormwater management. The strategies encompass a range of scales, from community planning (e.g. cluster development to reduce impervious surface area) and reducing the disturbance of existing functioning hydrology patterns, to very site-specific 'green infrastructure' such as vegetated swales, green roofs and pervious pavement to slow runoff and increase infiltration.

LID includes five core requirements:

- Conserve natural areas;
- Use a watershed approach to minimize the impact on hydrology;
- Maintain flow rate and duration to pre-development levels;
- Use decentralized green infrastructure and source controls throughout; and
- Control pollution and promote education on LID values.

When these strategies are effectively implemented (at various scales), the result can be a significant decrease in the quantity of runoff, and an increase in the quality of stormwater as well as a healthy environment within the development. From an environmental and economic perspective, the long-term benefits of LID for a development such as Elfrida are significant in that this approach can contribute to sustainability and resilience while reducing construction and long-term maintenance costs associated with municipal stormwater management systems.

3.3.1.7 SUSTAINABLE CITIES

Sustainable community design takes a holistic approach to sustainability at all levels of community development. Sustainable cities seek to reduce their overall environmental impact, through minimizing outside inputs of food, water and energy while reducing outputs of heat, pollution, waste, carbon dioxide and methane. Sustainable community design focuses on the three pillars of sustainability: environment, economics and

Figure 21: Examples of LID Green Infrastructure

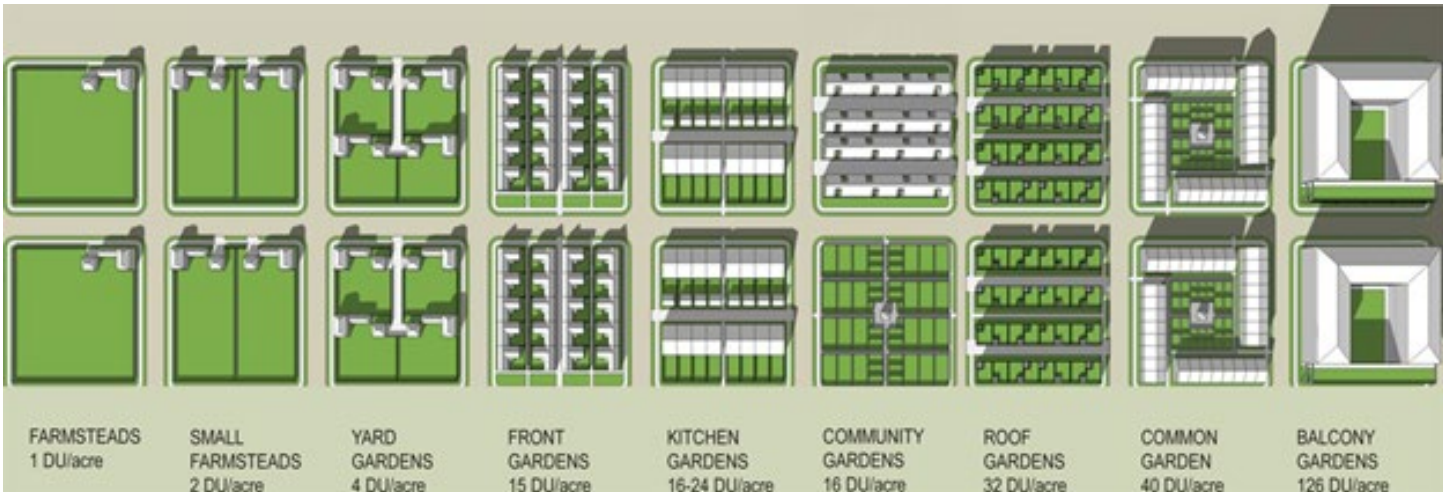
Figure 22: Sustainability Precedents

society/culture. Sustainable cities also seek to be resilient and adaptable to cope with climate and social change. These approaches incorporate all of the previous design principles and best practices, while also emphasizing energy independence and district energy programs, urban agriculture, technology and 'smart city' design, and City-wide recycling, composting and waste-management approaches. Certification programs such as Leadership in Energy and Environmental Design - Neighbourhood Development (LEED ND) can also contribute to sustainability in urban design.

3.3.1.8 URBAN AGRICULTURE

To achieve the goals of sustainability and resilience, supporting and developing local food sources is vital to success. Modern approaches are re-integrating agriculture into urban form, incorporating a range of agricultural uses throughout all density levels. Integrated agriculture contributes to the economy, environment and culture of a community. From reducing the carbon footprint of food imports, providing food security, encouraging active lifestyles and creating a local economy, the benefits of urban agriculture are significant enough to place it as one of the most important best-practices in the planning of new communities. Urban agriculture can take many forms, most commonly as rooftop and community gardens, truck farms and balcony planters. The integration of urban agriculture into cities can go beyond these approaches, developing the City plan around sustainable food production. The preservation of agricultural heritage is as vital as the ongoing productivity of the lands. Modern approaches to urban agriculture seek to increase the productivity of the land by intensifying both development and agricultural production, with multiple forms of agriculture incorporated throughout different densities. Food production, farmers markets, festivals, fairs and harvests can become events which bring the community together for shared activities.

Figure 23: Urban Agriculture and Recreation Precedents



Source: Duany Plater-Zyberk, "Theory and Practice of Agrarian Urbanism", 2011.

Figure 24: Agrarian Urbanism Example Block Layouts

Figure 25: Complete Street Precedents

3.3.1.9 COMPLETE STREETS

A 'complete streets' approach to developing movement corridors de-emphasizes the car and is designed for all ages, abilities, and modes of travel. Safe and comfortable access for pedestrians, bicycles, transit users and the mobility-challenged is integral to the design and planning of the street and transportation network. This is an essential element in planning modern cities and urban centres. A successful complete streets approach integrates people into every stage of development, encouraging a sense of ownership and buy-in. Developing transport networks from this perspective is essential to a healthy and active community, and is an important aspect of transit-oriented development as it reduces the need for car ownership and encourages alternative modes of transport. Complete streets also are vital to healthy and active lifestyles, sustainability and age-friendly development. Hamilton is in the process of developing a Complete Streets policy termed 'Complete-Livable-Better Streets' as part of its Transportation Master Plan review and update.

3.3.1.10 NODES AND CORRIDORS

The principle of nodes and corridors within urban form and design ties closely with transit-oriented development and other best practices already noted in that it looks at development as a series of pedestrian-oriented higher-density clusters of activity, where transit and transportation modes intersect (nodes) and corridors, which connect the various nodes and are predominantly street-oriented (including transit) with a mix of commercial, retail and residential uses. In Elfrida, future development can be focused in an organized way that is aligned with transit infrastructure and the City's overall approach to growth management and which allows concentrated development along the length of the corridor to create dense and walkable environments.

Figure 26: Pedestrian-Oriented Design Precedents

3.3.2 PARKLAND POLICIES

Section B.3.5.3 in both the RHOP and UHOP outlines a hierarchy of parkland policies, including contemplated uses for lands designated for park uses (community and recreational facilities and ancillary uses), as well as stipulating that some open space areas are intended to reflect and protect natural heritage features, where only limited recreational activities may be permitted. Section B.3.5.3.2 of the UHOP notes that these uses may only be permitted where they don't *"interfere with or have negative impacts on the open space nature of the land".* The size and design criteria should inform the development of conceptual land use plans and a parkland strategy for Elfrida.

The City also identifies a hierarchy of parks and open spaces, shown in **Table 6**, which on average dedicates 0.7 hectares of land per 1000 residents. This supply target will serve as an important guidepost for this study.

Preference is given to locating Neighbourhood or Community Parks adjacent to school sites (Section B.3.5.3.15 of the RHOP and Section B.3.5.3.17 of the UHOP).

Along with descriptions of permitted uses in Parklands (Section B.3.5.3.1), Section B.3.5.3.2 expands this so that the possibility of activating these spaces and places through a mix of uses is possible, which is important to making them active and supportive of active lifestyles. These include allowing appropriate commercial and retail uses where they don't negatively impact the open space, such as food concessions (typically operated by user groups and may require a user group agreement) and recreational equipment rentals. These will be important to highlight in the urban design guidelines prepared for Elfrida.

Table 6: Parks and Open Space Hierarchy

	Type	Facilities	Notes
Parks	Neighbourhood Park	Municipal parkland; passive areas, sports facilities, informal and formal play areas and may include natural areas	Meant to serve ~5000 people in the general vicinity Minimum size ~2ha, service radius within 800m
	Community Parks	Sports fields, recreational and community centres	Serve more than one urban neighbourhood and the rural area, but not the City as a whole, ~20,000 people should have good transportation access and adequate parking Minimum size ~7ha, service radius within 2km
	City-wide Parks	Major recreation, education or leisure activities and may have natural or unique features	Ranges in size and type - municipally, regionally, provincially or nationally Significant destinations that meet the needs of residents
	Parkettes	Small open spaces with limited to no recreational facilities	
Open Space	General Open Space	Golf courses, community gardens, pedestrian and bicycle trails, walkways, picnic areas, beaches, and remnant parcels of open space lands	These areas do not function as parks but are used for both active and passive recreational activities.

Source: City of Hamilton, RHOP and UHOP Section B.3.5.3

3.3.3 COMMUNITY FACILITY NEEDS

In the City of Hamilton's *Outdoor Recreation Facilities & Sports Field Provision Plan, Phase I & II Reports* (Outdoor Study, completed in 2011), and the *Use, Renovation and Replacement Study of Hamilton Recreation and Public-Use Facilities* (Indoor Study, completed in 2008), several recreation facility needs were identified. These studies made recommendations for facilities in the existing Upper Stoney Creek and Glanbrook communities, both of which are located partially within the Elfrida Growth Study area.

3.3.3.1 UPPER STONEY CREEK RECOMMENDATIONS

3.3.3.1.1 OUTDOOR

- Implement current planned improvements at Heritage Green Sports Park (including one artificial turf field and one Class A field in 2010), Maplewood Park, and Summit Park. This could result in approximately six additional fields in the short-term (unlit equivalents).
- Seek opportunities to provide additional fields through new Community Park development and redevelopment in Upper Stoney Creek.
- New tennis court development will be required in the short-term and long-term.
- Between 2021 and 2031, install 3 spray pads in Community Parks in Upper Stoney Creek.
- Develop a community-wide skate park in Upper Stoney Creek (longer-term) at a location to be determined. (10,000 to 12,000 square feet).
- Construct a neighbourhood-level skate park in the Upper Stoney Creek area (2,000 square feet).

3.3.3.1.2 INDOOR

- Seek opportunities to establish dedicated seniors' space, youth space, program space, and expanded library space at Valley Park Community Centre (the City is currently pursuing this).
- Secure land for the provision of a large multi-use community centre site.
- Establish a community centre potentially consisting of two indoor pools, two ice pads, gymnasium, dedicated seniors space (large), dedicated youth

space and program space with private arenas and proximity to the Mohawk 4-pad facility. Particular attention should be given to a proper assessment of indoor ice needs in this area.
- Consider partnership with library.
- Consider the development of an outdoor pool, but only if existing and planned indoor pool facilities are deemed to be insufficient to meet such needs.
- Valley Park indoor pool was built in 1986 and will be approaching the normal functional lifespan of an indoor pool by 2026. Major refurbishment of this facility may be required.

3.3.3.2 GLANBROOK RECOMMENDATIONS

3.3.3.2.1 OUTDOOR

- Monitor local soccer demand to determine need for longer-term soccer field expansions at Glanbrook Sports Complex, including the possibility of an artificial turf soccer field.
- One basketball / multi-use court should be developed in Binbrook. Additional multi-use court development may be required between 2016 and 2031.
- New tennis court development will be required in the short-term.

3.3.3.2.2 INDOOR

- The Glanbrook Arena and Hall was built in 1975 and will approach the normal functional lifespan of an arena by 2025. Major refurbishment of this facility may be required around this time. Around this same time, a community centre consisting of an indoor pool, gymnasium, dedicated seniors space, and program space may be required. Consideration should be given to adding the community centre to a refurbished Glanbrook Arena or removing the Arena from service and building a community centre (with one ice pad) at an alternative location in the area. Partnerships with the public library should also be explored at this time. (Capital improvements were completed in 2014; no action taken to add a purposed multi-purpose community centre).

The recommendations from the Outdoor and Indoor Studies should be considered in conjunction with the potential new facility needs due to population growth within the study area. There is an expected need for new recreation facilities, both indoor and outdoor. Provision rates are determined by the City using specific population and age cohort data. As such, amenity need will be determined at a later date by the City of Hamilton Recreation Planning Department.

3.3.4 RECREATIONAL TRAILS MASTER PLAN

The Recreational Trails Master Plan looks at the existing trail network in both rural and urban Hamilton (organized by ward), reviews the status of 2007 trail initiatives, outlines new (2015) trail initiatives, and provides detailed design guidance for new trails. An implementation plan and summary of recommendations are presented at the end of the document.

Goals of the Trails Master Plan that will influence design in Elfrida include the following:

- Integrate components of the existing recreational trail system, including those planned in the 2007 report;
- Propose new (2015) trail initiatives and incorporate them with 2007 trail initiatives. This will help to alleviate gaps in the overall trails system;
- Integrate new trail accesses, routes, and crossings with existing conditions and planned City infrastructure projects (e.g. Highway 403, Lincoln Alexander Parkway, Red Hill Valley Parkway, waterfront, Niagara Escarpment, GO transit stations);
- Complement the City's transportation system to support multi-modal mobility
- Encourage inter-regional trail connections;
- Strengthen partnerships with other trail organizations and groups;
- Continue to build upon physical, economic, sustainable, and environmental design standards;
- Further develop maintenance and management standards;
- Identify new trail amenities to provide a better user experience;
- Priority recommendations for implementation and development; and
- Integrate off-road trails with the planned on-road cycling networks to better address broader community land use and transportation goals and objectives.

Objectives related to trail design will be considered when developing an active transportation system for Elfrida.

3.3.4.1 EXISTING TRAILS WITHIN THE STUDY AREA

The existing 'Greenbelt Route' trail runs along Highland Road East and First Road East (north of Highland Road East) through the study area. This is a new (2015) on- and off-road bike route connecting Northumberland to Niagara. The section of the Greenbelt Route in the study area is on-road.

3.3.4.2 PROPOSED TRAILS WITHIN THE STUDY AREA

Proposed trail initiatives within the study area include a multi-use recreational trail along the east-west Hydro Corridor that partially bounds the site to the north. The proposed trail would turn south at Highway 56 and continue to follow Highway 56 south beyond the Elfrida Growth Study area.

Additionally, an on-road bicycle route is proposed from the north along Fletcher Road and terminating at Golf Club Road.

3.4 KEY DIRECTIONS

The UHOP and RHOP will guide the planning and design in Elfrida through the consideration of relevant policies into preparing land use explorations, concepts, urban design guidelines, and master plans required for this study. The UHOP notes the requirements for future development, including urban design guidelines and requirements, parkland and community facility requirements and policies, and design elements to ensure new development respects adjacent land uses. Implementation of these policies will be provided for in the urban design guidelines, directing the design of safe, accessible, connected and vibrant communities which respect adjacent uses, and the existing natural and cultural heritage of the lands within the study area.

Key directions for developing a future urban vision for Elfrida are:

1. Design for a healthy community which supports the quality of human well-being and active lifestyles, nourished and nurtured by an interrelationship between the built environment and nature that facilitates equal opportunities for social, psychological, physical, and spiritual and cultural development for all individuals and the community alike.
2. Design for a diverse community which supports a wide array of lifestyles and activities, by including a range of land uses and building types. Preserved nature, sustainable agriculture and active spaces support a diversity of housing, vibrant retail, integrated employment and civic facilities.
3. Design for a contextual community which transitions meaningfully into its surroundings, creating new connections to existing amenities, respecting existing built-up areas and maintaining effective buffering and relationships with natural areas.
4. Design for a coherent community which organizes itself around well-defined public spaces and cultural amenities, using architecture, transportation networks and the landscape to frame identifiable urban places that celebrate local history and culture, natural and built heritage. Building phases function individually, and contribute to the overall community identity.

4.0 TRANSPORTATION

The following section assesses the existing transportation conditions related to the road network, pedestrian activity and amenities, cycling facilities, transit services and vehicle traffic conditions. This information is followed by a review of the existing transportation policy context and how existing policies will shape the future transportation network for Elfrida. The transportation planning work for Elfrida will align with the overall Secondary Plan, associated studies and existing policies.

The transportation planning work is being conducted as a Schedule B Environmental Assessment (EA) for master plans and will address Phase 1 (problem or opportunity statement) and Phase 2 (alternatives assessment) of the EA process.

While the transportation planning work will focus on Elfrida, it will be important to integrate Elfrida into the rest of Hamilton and consider and plan for transportation impacts outside of the study area.

This chapter references the 2007 City of Hamilton Transportation Master Plan (TMP). However, the City is currently in the process of updating this document along with the Cycling Master Plan, both of which are expected to be updated before the Elfrida Growth Study concludes. The Elfrida TMP shall be aligned to the new policy direction which results from these updates.

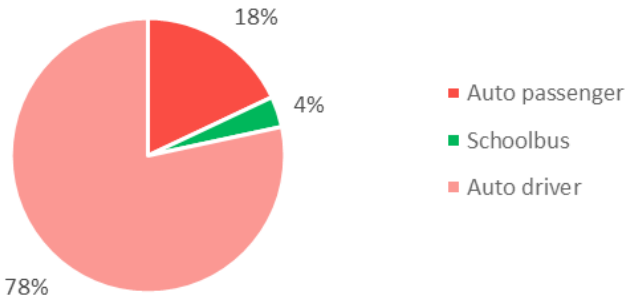
4.1 EXISTING TRANSPORTATION MODE SPLIT AND POPULAR DESTINATIONS

The 2011 Transportation Tomorrow Survey (TTS 2011) was reviewed to obtain the transportation mode split and the popular trip destinations for the study area during the p.m. peak period (3:00 p.m. to 6:00 p.m.). The mode splits for the study area are shown in **Figure 27**.

The TTS 2011 indicates that the dominant mode of transportation in the study area is the automobile (96%), followed by school bus (4%). A negligible number of trips destined to the study area in the p.m. peak period are taken by public transit, cycling or walking.

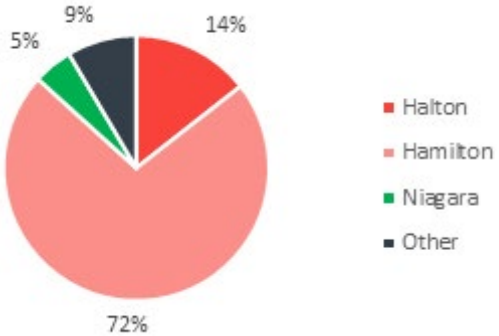
The TTS 2011 also indicates that the majority of trips destined for the Elfrida Growth Study area during the p.m. peak period were from within Hamilton (72%). The next most popular origin of trips destined for Elfrida is Halton Region (14%), followed by Niagara Region (5%). The remainder of trips are distributed among other areas. The popular destinations are shown in **Figure 28**.

Figure 27: Primary Travel Mode of Elfrida Destined Trips (PM)



Source: TTS 2011

Figure 28: Primary Travel Mode of Elfrida Destined Trips (PM)



Source: TTS 2011

Table 7 shows that the most popular Hamilton destinations are approximately 25 minutes or less away by auto and one hour or less away by transit from the study area. These travel times are based on the Google Maps trip estimator software, which accounts for current transportation infrastructure. While the focus of this project is the study area itself, a goal of the transportation component will be to integrate Elfrida with other key destinations in the City and plan for multi-modal connections to these destinations.

4.2 ROAD NETWORK

The existing conditions of the arterial and collector roads in the study area are profiled in this section.

4.2.1 ARTERIAL ROADS

- **Mud Street East** is a two-lane east-west arterial with a posted speed of 70 km/h.
- **Upper Centennial Parkway/Regional Road 56** is a four-lane north-south arterial with a posted speed of 80 km/h. South of Rymal Road, it is referred to as Regional Road 56 and reduces to a two-lane cross-section. North of Mud Street, it transitions to Centennial Parkway, providing an eventual connection to the Queen Elizabeth Way.
- **Regional Road 20** is a four-lane east-west arterial with a posted speed of 80 km/h. East of First Road, it reduces to a two-lane cross-section. West of Upper Centennial Parkway, it is known as Rymal Road, and provides connection to Highway 6 and Highway 403.

4.2.2 COLLECTOR ROADS

- **First Road East** is a two-lane north-south collector road with a posted speed of 60 km/h.
- **Second Road East/Hendershot Road** is a two-lane north-south collector road with a posted speed of 60 km/h. South of Regional Road 20, it is referred to as Hendershot Road.
- **Highland Road East** is a two-lane east-west collector with a posted speed of 60 km/h.
- **Golf Club Road** is a two-lane east-west collector with a posted speed of 60 km/h.
- **Trinity Church Road** is a two-lane north-south collector with a posted speed of 60 km/h.
- **Fletcher Road** is a two-lane north-south collector with a posted speed of 60 km/h.

The road network is shown in **Figure 29**.

4.2.3 PROPOSED RIGHT OF WAY EXPANSIONS

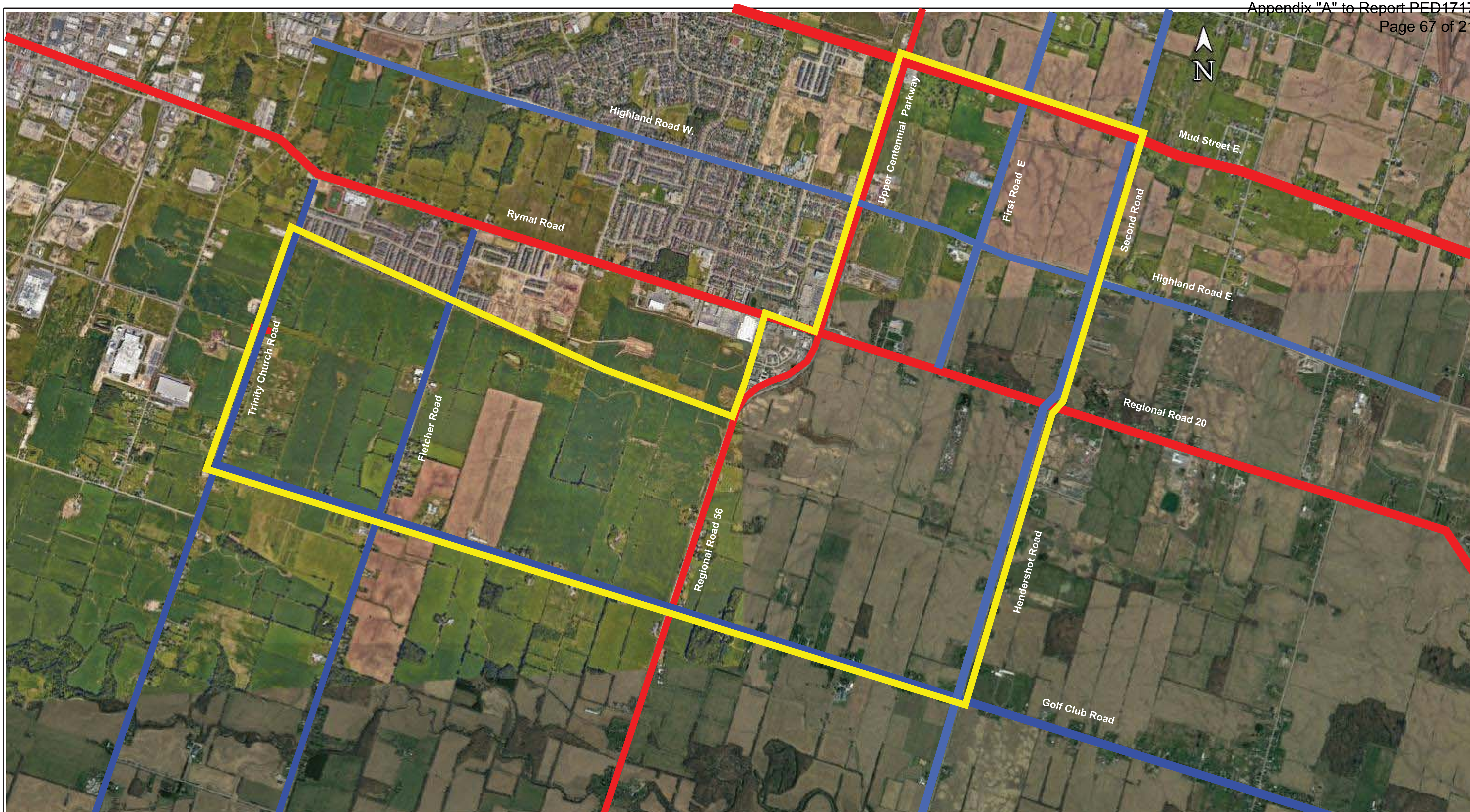
Both the Rural Hamilton Official Plan (RHOP)and Urban Official Plan (UHOP) identify right-of-way (ROW) expansions to accommodate future needs, including transit, utilities, the public realm, additional vehicle capacity or other needs. Section 4.5.2 of the RHOP and the UHOP prescribe maximum road widths for all local, collector and arterial roadways in the rural and urban area respectively. These widths are listed below:

- Parkways (Urban): 60.960 Metres;
- Arterial Roads (Rural): 36.576 metres, and in certain circumstance, 45.720 metres;

Table 7: Popular Destinations Travel Time From Elfrida

Destination	Auto	Transit
Hamilton GO Centre	20 minutes	55 minutes
McMaster University	25 minutes	1 hour 15 minutes
Downtown Hamilton	25 minutes	50 minutes
Eastgate Square	10 minutes	15 minutes
Van Wagner's Beach	15 minutes	45 minutes
Limeridge Mall	15 minutes	35 minutes
Hamilton International Airport	20 minutes	50 minutes
Confederation GO Station	14 minutes	35 minutes

Source: Google Maps Trip Estimator (2017)



Legend

🟥 Arterial Road
🟦 Collector Road
🟨 Study Area

0 1 2 4 Kilometers

Client: City of Hamilton

Hamilton

Title: Elfrida Study Area

Figure 29: Road Network

Prepared by: WSP, The Planning Partnership, metro economics, ASI, Cushman & Wakefield

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- Major Arterial (Urban): 45.720 metres;
- Minor Arterial (Urban): 36.576 metres;
- Collector Roads (Rural): 36 metres;
- Collector Roads (Urban): 30.480 metres (Employment Area), 26.213 metres (other areas);
- Local Roads (Rural): 36 Metres; and
- Local Roads (Urban): between 15.24 metres- 20.117 metres.

Schedule C-1 of the RHOP and Schedule C-2 of the UHOP show the proposed future ROW expansions. Of the ROW listed on these schedules, the proposed widenings which affect the study area are listed in **Table 8**.

4.2.4 PROPOSED ROAD IMPROVEMENTS

The Development Charge Background Study (completed in October 2014) lists the following roadway improvements for the Elfrida Growth Area. All of these improvements are planned for implementation within the 2022-2031 timeframe. Planned road improvements include:

- Trinity Church Road (Hydro corridor to Golf Club Road), to be urbanized;
- Second Road East (Regional Road 20 to Mud Street), widen to three lanes and rural upgrade;
- Mud Street (Upper Centennial to Second Road East), to be urbanized;
- Highland Road (Upper Centennial Parkway/Highway 56 to Second Road East), widen to three lanes and urbanize;
- Hendershot Road (Regional Road 20 to Golf Club Road), widen to three lanes and rural upgrade;
- First Road East (Regional Road 20 to Mud Street): Widen to three lanes and urbanize;
- Golf Club Road (Trinity Church Road to Hendershot Road), rural upgrade;
- Upper Centennial Parkway (Green Mountain Road to north of Regional Road 20), widen to five lanes and urbanize;
- Fletcher Rd (500m south of Rymal Road to Golf Club Road), widen to three lanes and urbanize; and
- Highway 56 (Rymal Road to south limits of ROPA 9), widen to five lanes and urbanize.

4.3 PEDESTRIAN AND CYCLIST CONDITIONS

Currently there are limited pedestrian facilities in Elfrida. With roads built to a rural standard with mostly unpaved shoulders, there are no sidewalks. Pedestrians have to walk on the unpaved shoulder. **Figure 30** shows a typical road section (late winter) in the Elfrida Growth Study area.

Cyclists in the study area boundary share the road with vehicles as there are no dedicated bike routes in place. However, the City's Active Transportation Network map indicates First Road East, Highland Road East, and Trinity Church Road to be cautionary unsigned bike routes within the limits of the Study Area. These are shown in **Figure 31**.

As per the Recreational Trails Master Plan, future on-street bike routes are planned for Fletcher Road within the study area boundary. There is also a planned multi-use trail that will extend south of Regional Road 20, between Trinity Church Road and Upper Centennial Parkway. The Cycling Master Plan also shows proposed paved shoulders along Fletcher Road and Highland Road as well as a proposed bike lane running just south of Rymal Road East. The Cycling Master Plan is currently being reviewed and updated as part of the TMP review and update, and updates made to the Cycling Master Plan will be incorporated into the Elfrida Transportation Master Plan.

Table 8: Right-Of-Way Expansions (RHOP)

Road Name	Existing ROW (APPROX.)	Proposed ROW
Regional Road 56: (Rymal Road - Cemetery Road)	33 metres	36.6 metres
Golf Club Road West & East: (Trinity Church Road - Westbrook Road)	20 metres	26.2 metres
Mud Street (305m east of Upper Centennial- East City Limits)	20 metres	36.6 metres

Source: City of Hamilton, RHOP, Schedule C-1 and UHOP, Schedule C-2

4.4 TRANSIT CONDITIONS

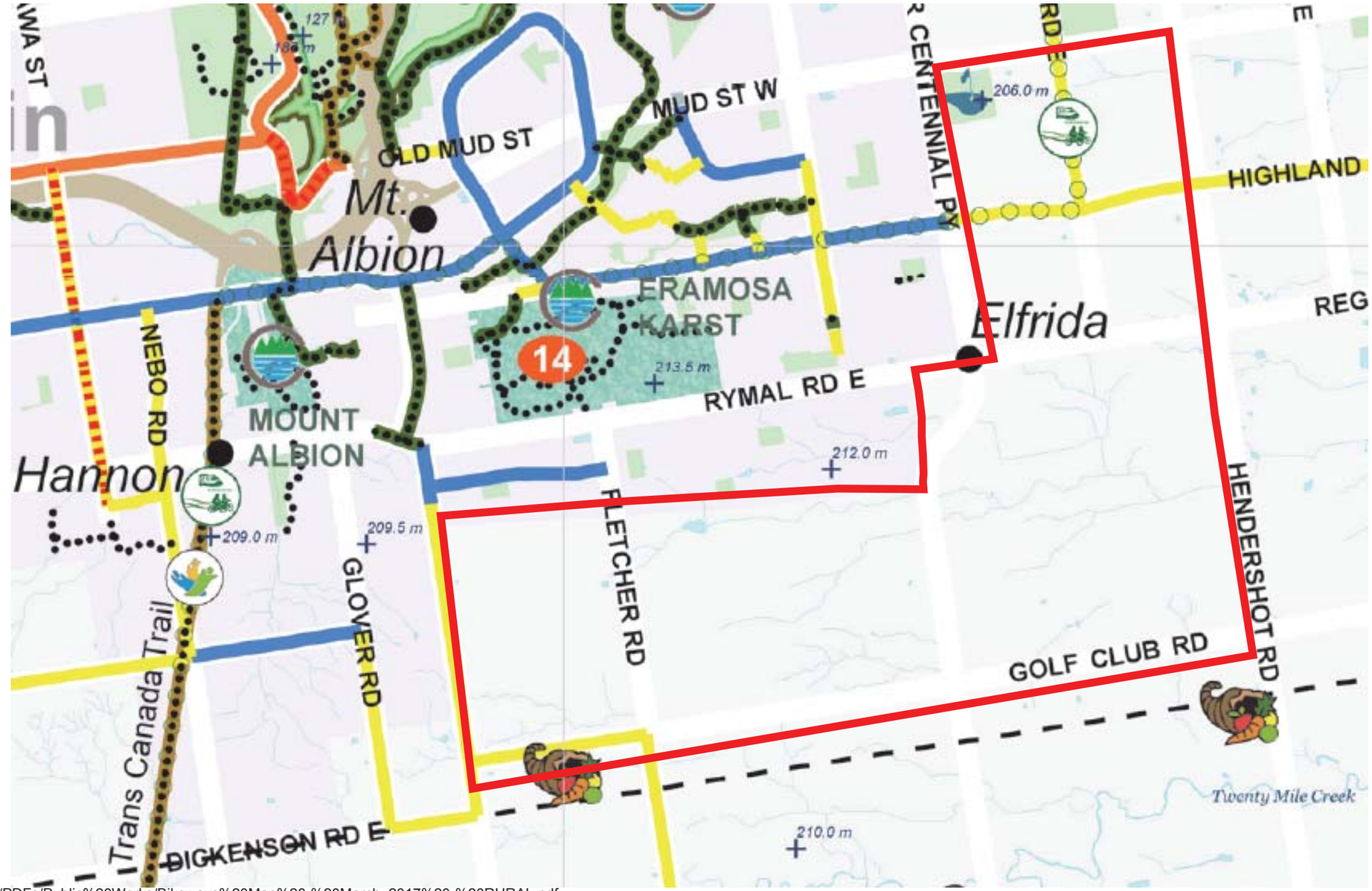
The Hamilton Street Railway (HSR) presently does not operate transit routes through the Elfrida Growth Study area. The route nearest to the site is Route 44 Rymal, which travels along Upper Centennial Parkway, adjacent to the northern portion of the study area. This bus route travels between the Ancaster Business Park and the Eastgate Square Mall, which acts as a central transit hub connecting Route 44 to multiple other transit routes. Route 44 Rymal runs every 30 minutes from 5:00 a.m. - 12:00 a.m. on weekdays and until 1:00 a.m. on weekends.

HSR transit service near the study area is shown on the map in **Figure 32**.

Transit service continues to evolve in Hamilton. The City of Hamilton's 2007 Transportation Master Plan (TMP) provides long-term direction to construct a network of rapid transit corridors to connect the southern portion of the city east-to-west, with further connections to the airport, the harbour and the downtown, along with other popular destinations. This network is referred to as the 'B.L.A.S.T.' network in the Rapid Ready report which outlines the city's vision of a connected rapid transit system. This is further supported in the 10-Year Local Transit Strategy. Each letter of the B.L.A.S.T. network represents a rapid transit corridor. The 'B' line of the network is the proposed Hamilton Light Rail Transit (LRT) route in downtown and the 'S' line is a Bus Rapid Transit route that connects the 'B' line to Ancaster via Elfrida area. The route would follow Upper Centennial Parkway over the Escarpment to Eastgate Mall and ultimately to the proposed Confederation GO Station, which is expected to be located near Centennial Parkway between Arrowsmith Road and Goderich Road.

Due to the 'S' line connection on Rymal Road and Upper Centennial Parkway, Elfrida is distinguished in the TMP as transit-orientated development (TOD) supportive and

Figure 30: First Road East - Looking North



full map available at:
http://map.hamilton.ca/Static/PDFs/Public%20Works/Bikeways%20Map%20-%20March_2017%20-%20RURAL.pdf

Legend

- Study Area
- Cautionary Unsigned Bicycle Routes
- Designated Bicycle Lanes
- High Volume and/or Narrow Lane
- GreenBelt Trail
- Paved Multi-use Trail
- Unpaved Multi-use Trail
- Walking or Hiking Trail
- Signed On-Street Bike Lane
- Farm Gate Sale and Markets

0 1 2 4 Kilometers

Client: City of Hamilton

Title: **Elfrida Study Area Context**
Figure 31: Active Transportation Network

Prepared by: WSP, Metro Economics, ASI, The Planning Partnership, Cushman & Wakefield

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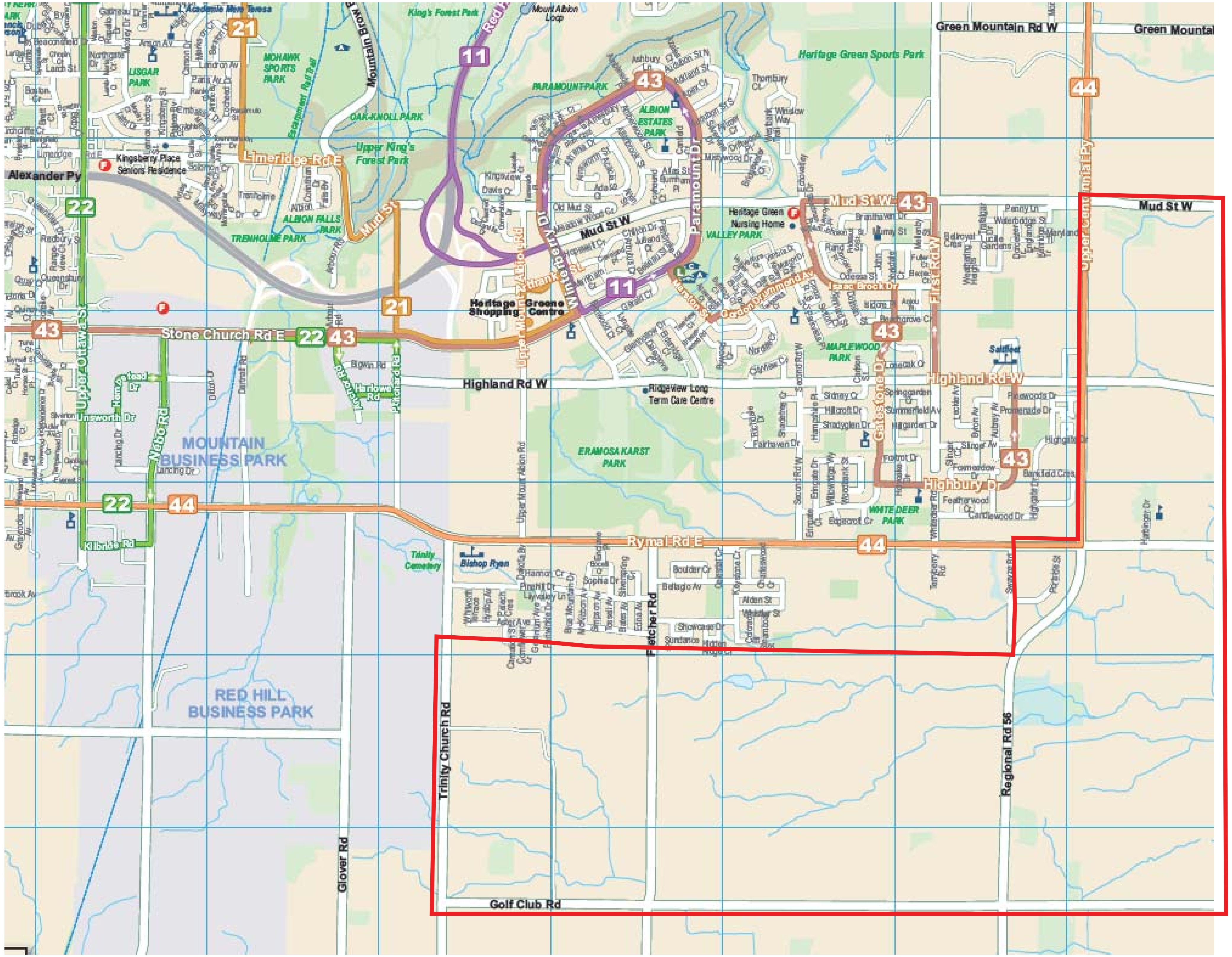

Legend

Study Area

Client:

City of Hamilton

Title:

Elfrida Study Area Context

Figure 32: Existing Transit Services (Bus Routes)

Prepared by: WSP, The Planning Partnership, metro economics, ASI, Cushman & Wakefield

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within the City of Hamilton Transit Oriented Development Guidelines (2010) is designated as a greenfield-node. The Elfrida Growth Study area is also noted as a proposed site of a future park-and-ride facility.

Currently, the 'B' line is the only funded element of the B.L.A.S.T. network and is expected to be constructed in the 2019 to 2024 timeframe, while the 'S' line is a 25 year-plus plan. The planned B.L.A.S.T. network is shown in **Figure 33**.

Overall, encouraging rapid transit is a key focus of Hamilton's municipal policy and is prioritized within the Rapid Ready Report and the 10-year Local Transit Strategy (reviewed under Section 4.6.3.11 of this report). It will be important to implement these plans from the outset of the development of the Elfrida Growth Study area in order to have transit services in place that can be utilized by new residents and businesses as they arrive.

4.5 VEHICLE TRAFFIC CONDITIONS

4.5.1 STUDY INTERSECTIONS

A site visit identified 13 main intersections in the Elfrida Growth Study area, of which five are signalized. Due to the mostly undeveloped nature of Elfrida, all of the intersections would be anticipated to have adequate levels of service throughout the day, including peak travel periods. A more detailed traffic assessment will be conducted of future conditions as part of the Phase 2 alternatives assessment of the EA process. This assessment will account for planned improvements in the study area and will identify any additional transportation measures needed to accommodate population and employment growth. The main intersections include:

- Mud Street East and Upper Centennial Parkway (Signalized);
- Mud Street East and First Road East (Signalized);
- Mud Street East and Second Road Hendershot Road (Unsignalized);
- Highland Road East and Upper Centennial Parkway (Signalized);
- Highland Road East and First Road East (Unsignalized);
- Highland Road and Hendershot Road (Unsignalized);
- Regional Road 20 and Upper Centennial Parkway (Signalized);
- Regional Road 20 and First Road East (Unsignalized);
- Regional Road 20 and Hendershot Road (Unsignalized);
- Golf Club Road and Trinity Church Road (Unsignalized);
- Golf Club Road and Fletcher Road (Unsignalized);
- Golf Club Road and Regional Road 56 (Signalized); and
- Golf Club Road and Hendershot Road (Unsignalized).

The study intersections are shown in **Figure 34**.

4.5.2 LANE CONFIGURATIONS

The lane configurations for the 13 main study intersections are shown in **Figure 35**.

4.6 EXISTING TRANSPORTATION POLICY REVIEW

There are a number of interrelated Federal, Provincial and City governmental policies influencing transportation that need to be considered when planning for a multi-modal transportation network for Elfrida. The existing policies and directives provide a foundation on which to plan for a more balanced, multi-modal transportation system in the study area. With the help of supportive visions for transportation, a more sustainable distribution of modes can be achieved that emphasizes active transportation and transit while continuing to provide facilities for the efficient car travel for residents, particularly for commuting within the Hamilton region.

4.6.1 FEDERAL DIRECTION

The Strategies for Sustainable Transportation Planning: A Review of Practices and Options (2005) identifies guidelines for consideration when incorporating sustainable transportation into municipal policies. The report includes principles that support the promotion of active transportation as a mode of sustainable transportation at the federal level, and the promotion of active transportation as a viable form of transportation.

Potential strategies identified in the Transport Canada guidelines include:

- Land Use Planning Integration;
- Environment and Health; and
- Modal Sustainability.

The strategies identified in Transport Canada's report demonstrate the federal government's commitment to developing national standards and practices which can be used to help improve conditions for walking and cycling.

4.6.2 PROVINCIAL DIRECTION

Provincial policy documents that provide direction for transportation planning in Elfrida include the following.

4.6.2.1 ACCESSIBILITY FOR ONTARIANS WITH DISABILITIES ACT (AODA) (2005)

- The transportation and built environment standards of the AODA provide the accessibility requirements for all infrastructure within the province. All new transportation initiatives developed in Elfrida should be compliant with AODA and the Integrated Accessibility Standard Regulation (IASR) including transit stop design, public realm design, and transit considerations such as boarding announcements and courtesy seating. AODA applies to all public and private organizations, and design and development within Elfrida will need to conform to its barrier-free design expectations.

4.6.2.2 THE BIG MOVE, METROLINX (2008)

- Regional transportation plan for the GTHA that provides direction towards sustainable, multi-modal and linked transportation options throughout the region. Downtown Hamilton is designated as an urban growth centre. Three higher -order transit lines are identified in the next 25 years, although these three do not extend to Elfrida. Other transit measures could be put in place to provide service to Elfrida. The Big Move Review and Update is currently underway.

4.6.2.3 ONTARIO CYCLING STRATEGY #CYCLEON, MINISTRY OF TRANSPORTATION (2014)

- Outlines provincial direction for cycling routes and infrastructure within Ontario. All new cycling facilities developed within Elfrida should consider the guiding policies of this plan to create safe and connected cycling infrastructure that provides service to occasional users and daily commuters.

4.6.2.4 ONTARIO CLIMATE CHANGE STRATEGY #ONCLIMATE, MINISTRY OF ENVIRONMENT AND CLIMATE CHANGE (2016)

- Provides sustainable development practices and sets emission reduction goals. This study should focus on sustainable initiatives in alignment with this plan.

4.6.2.5 ONTARIO TRAILS STRATEGY, 2003

- Outlines future plans for connectivity and experiences on the Ontario Trail Network. New trails developed within the study area should be developed in compliance with the goals and directions of this plan.

4.6.2.6 TRANSIT SUPPORTIVE GUIDELINES, MINISTRY OF TRANSPORTATION (2012)

- Guides urban planning and land use decisions to support transit initiatives through compact and dense built form. The guidelines also support active transportation connections between transit stops and stations. These guidelines should be implemented in built form decisions as well as used to guide linkages between transit stations and modes of transportation.

4.6.3 CITY OF HAMILTON DIRECTION

The City has completed considerable transportation planning and policy work on all modes of transportation. Existing plans and policies that provide direction to the Elfrida TMP have been listed in alphabetical order and include:

Legend

B 15 year priority plan; beyond 25 years

L beyond 25 years

A within 15 years

S beyond 25 years

T within 25 years

Site Location

0 1 2 4 Kilometers

Client: City of Hamilton

Title: **Elfrida Study Area Context**
Figure 33: B.L.A.S.T. Rapid Transit Network

Prepared by: WSP, metro economics, ASI, The Planning Partnership, CUSHMAN & WAKEFIELD

17M-00642-00 | Date: 27/06/2017 | Review: JS

Subject Intersections

1. Mud Street East & Upper Centennial Parkway
2. Mud Street East & First Road East
3. Mud Street East & Second Road Hendershot Road
4. Highland Road East & Upper Centennial Parkway
5. Highland Road East & First Road East
6. Highland Road & Hendershot Road
7. Regional Road 20 & Upper Centennial Parkway
8. Regional Road 20 & First Road East
9. Regional Road 20 & Hendershot Road
10. Golf Club Road and Trinity Church Road
11. Golf Club Road and Fletcher Road
12. Golf Club Road and Regional Road 56
13. Gold Club Road and Hendershot Road

LEGEND

- Signalized
- Unsignalized
- Study Area

Legend

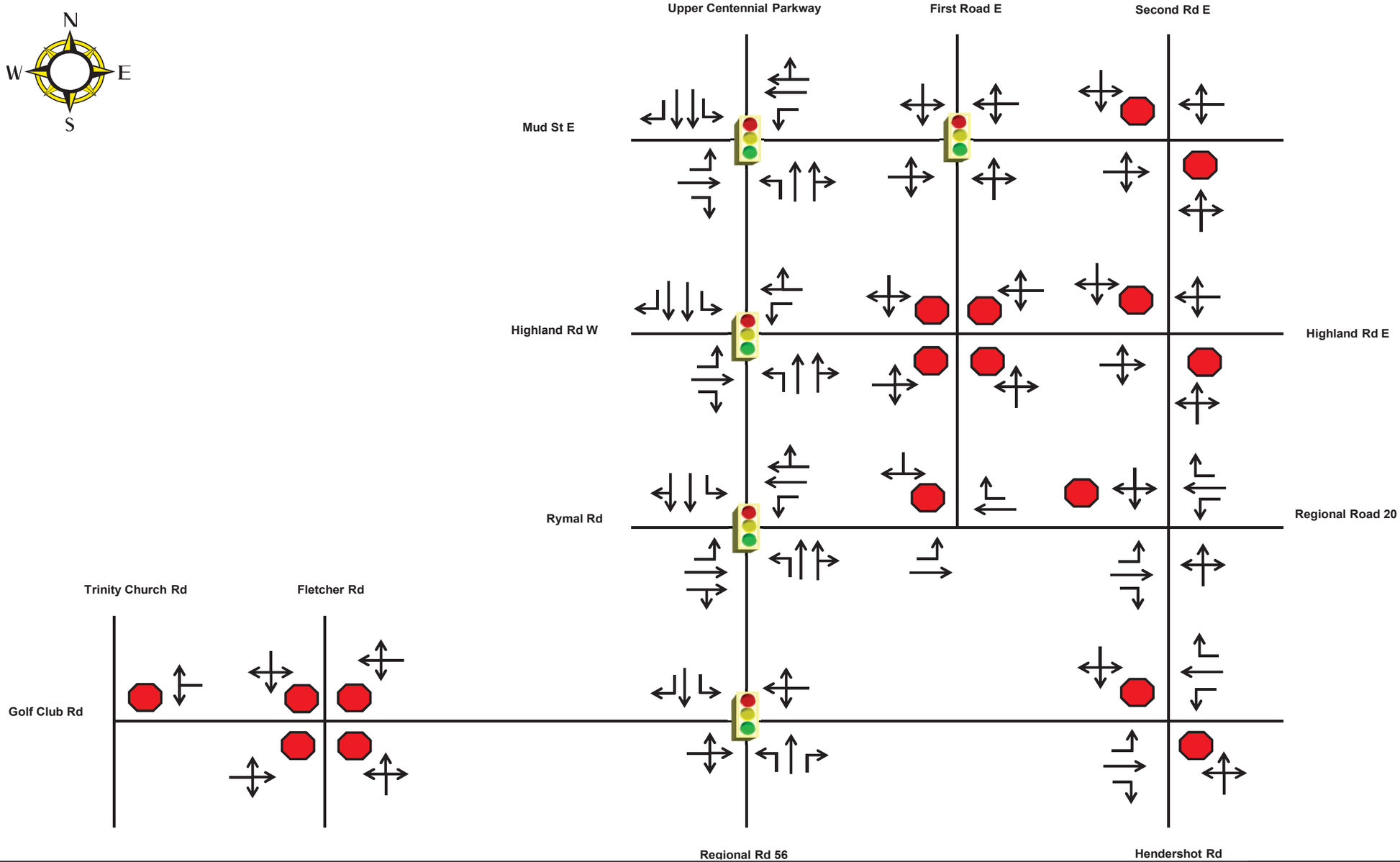
0 1 2 4 Kilometers

Client: City of Hamilton

Title: **Elfrida Study Area**
Figure 34: Study Intersections

Prepared by: WSP, The Planning Partnership, Metro Economics, ASI, Cushman & Wakefield

17M-00642-00 | Date: 27/06/2017 | Review: JS



Legend

- Lane Configuration
- Stop Sign
- Traffic Signal

0 1 2 4 Kilometers

Client: City of Hamilton

Title: **Elfrida Study Area**
Figure 35: Existing Lane Configurations

Prepared by: WSP, The Planning Partnership, metro economics, ASI, CUSHMAN & WAKEFIELD

17M-00642-00 | Date: 27/06/2017 | Review: JS

4.6.3.1 ACTIVE AND SUSTAINABLE SCHOOL TRANSPORTATION CHARTER (2015)

- Charter signed by City of Hamilton, Hamilton-Wentworth Catholic District School Board, and Hamilton-Wentworth District School Board to facilitate a measureable shift in travel behavior towards active and sustainable transportation and implement walkable school transportation routes. The vision of this plan is to ensure that all Hamilton Schools exist in a safe, healthy and sustainable community where people of all ages choose to and are able to use active and sustainable modes of transportation. The charter enlists five key principles:
  - Street design for comfort, convenience and safety for all users;
  - Supportive land use and site planning;
  - Personal and community safety;
  - Partnership, collaboration and shared responsibility; and
  - A culture of active and sustainable transportation
- To implement these principles, a range of actions are proposed to be included in future development, including implementing transportation demand management strategies, school travel plans, wayfinding, adequate lighting, and street greening.

4.6.3.2 CORRIDOR MANAGEMENT GUIDELINES (2012)

- Promote the intensification and infill of existing corridors within Hamilton to support streetscapes that are attractive, safe and accessible for all modes. The guidelines promote minimizing the negative impacts associated within development such as shading, building scale and overview of buildings on adjacent properties, and the public realm. Further, a diversity of built form, neighbourhood character, and development is encouraged. The guidelines encourage implementing maximum building heights, landscaping, pedestrian focus areas, character areas, and additional interventions to land use and the public realm to achieve the goals.

4.6.3.3 ECONOMIC DEVELOPMENT ACTION PLAN (2016)

- Summarizes the vision for economic development opportunities within Hamilton and identifies areas of focus to help implement the vision. One of these areas of interest is to facilitate safe, effective and efficient movement of people and goods markets by investing in transportation infrastructure. The major opportunities listed focus on implementing Light Rail Transit, increase transit service to employment areas and business parks, plan for future goods/people movement strategy through updating the City's TMP, and to expand regional GO service.

4.6.3.4 GOODS MOVEMENT STUDY (2005)

- Released as part of the City's GRIDS initiative (Growth Related Integrated Development Strategy), the objective of the study was to examine the City's technical potential to become an efficient, integrated and sustainable regional intermodal transportation centre within the Greater Golden Horseshoe and the Greater Toronto Area-Windsor-Sarnia trade corridor. The plan includes a focus on establishing on-going private-public collaboration, promoting economic development initiatives, carrying out transportation improvements and developing human resource skills. The overall goal for goods movement throughout Hamilton was to create an integrated goods movement strategy which connects and promotes the multiple modes of goods movement infrastructure existing and being developed within Hamilton.

4.6.3.5 PEDESTRIAN MOBILITY PLAN (2012)

- Ties together land use, transportation and public realm considerations to foster a culture of walking within Hamilton. This plan was created under the commitment to the International Charter for Walking. Key policy directives promote environmental sustainability and increased public health through walkable cities. The vision of this plan is to address how to make walkability an intuitive trait of Hamilton's transportation structure through addressing the accessibility, safety, and desirability of Hamilton's pedestrian network. The plan promotes achieving the pedestrian network vision through implementing public art initiatives, addressing traffic concerns with mid-block crossings and increased sidewalk networks and promoting walkability through land use planning and municipal policy.
- The Pedestrian Mobility Plan is implemented using a process termed 'routine accommodation'. When streets are reconstructed for infrastructure repair, replacement, or upgrades, and civic streetscape improvements, pedestrian improvements will be implemented as part of the overall project.

4.6.3.6 PLAN FOR AN AGE-FRIENDLY CITY (2014)

- Envisions Hamilton as a completely accessible community for all ages including older adults. As part of this plan, mobility was noted as a key issue. As a result, one of the goals of the plan was to implement a plan for getting around Greater Hamilton which addressed the needs of all demographics. The objectives of this plan includes ensuring older adults concerns and ideas are reflected within the TMP, investigate the feasibility of a shared ride model that provides the appropriate amount of door-to-door convenience, building on existing services and identifying opportunities to expand usage of community bus shuttles or volunteer drivers, improve the ease of using public transit and improving the existing Disabled and Aged Regional Transportation System (DARTS). The plan also looked at active transportation connections and how these could be improved to reflect the needs of older adults. The objectives included implementing the goals of the Pedestrian Mobility Plan and Cycling Master Plan, developing workshops which gear cycling to older adults, educating the public on the accessibility of trails, and developing a way-finding process for the City of Hamilton.

4.6.3.7 RAPID READY: EXPANDING MOBILITY CHOICES IN HAMILTON (2013)

- Evaluates the progress of the City of Hamilton in collaboration with Metrolinx in preparing the City for rapid transit initiatives. The report provides a summary of the current status of light rail in Hamilton including a synopsis of the 2012 work plan activities. It also outlines key elements of integrated mobility for Hamilton, including: improving transit, supportive community planning and multi-modal integration. These key elements are proposed to guide Hamilton's future mobility choices. The plan also reviewed the 2007 TMP, which proposed creating a municipal Complete Streets Guideline. Overall, the seven key actions recommended are: building a rapid ready transit network with increased bus services, creating an accessible transportation system, making transit faster and more reliable, creating a refined customer experience, providing safe and convenient walking and cycling environments, integrating corridor and community planning and developing seamless multi-modal connections.

4.6.3.8 RECREATIONAL TRAILS MASTER PLAN (2016)

- Introduces the City's updated visioning for recreational trails and active transportation in both Hamilton's urban and rural wards. Building upon guidance from the 2007 plan, the new plan provides a broader range of opportunities that focus on increasing accessibility, usage, safety and scope of the existing and proposed trail network. The plan creates goals that foster a connection regionally and trails that provide service for workplace commuting, recreational use and destination connection. Wayfinding is encouraged to be an integral part of trail development. This policy is also recognized as a contributing document to Hamilton's overall active transportation vision.
- Although no proposed trail routes currently run through the study area, the plan does delineate a multi-use recreational trail along the border of the study area along Highway 56 connecting to the Binbrook urban area as well as along the existing hydro corridor south of Rymal Road East. Future trails established as part of urban development are anticipated and would consider the design goals proposed in this plan.

4.6.3.9 SHIFTING GEARS: THE CYCLING MASTER PLAN (2007)

- Outlines the cycling network initiatives in the City. This plan focuses on on-road provisions as opposed to off-road provisions, which are identified in more detail within the Hamilton Recreational Trails Master Plan. The plan identifies a cycling network for utilitarian, commuter and recreational use that connects key residential and employment areas as well as transit nodes. Currently, the plan is being updated as part of the City-wide TMP review. Any approved changes and/or updates to the Cycling Master Plan will be incorporated into the Elfrida TMP.

4.6.3.10 TAKING ACTION ON CLIMATE CHANGE ACTION IN HAMILTON – A COMMUNITY PLAN (2015)

- Outlines the goals for reducing the City's emissions and impact to the environment. Transportation is noted as a major contributor to the City's emissions

(33%). This plan identifies the goal of a more efficient transportation network that reduces the use of single occupancy vehicles and balances the needs of all users for walking, cycling, transit, carpooling and movement of goods. To achieve this, the City envisions a change in behavior in social norms to support sustainable modes of transportation, building complete and integrated streets and networks, engaging community members in decision making related to their mobility network, supporting investments in higher order public transit and supportive land uses, and moving goods efficiently by using low carbon alternatives that are less prone to impacts from climate change.

4.6.3.11 TEN YEAR LOCAL TRANSIT STRATEGY (2015)

- Builds upon the guidance provided in the 2013 Rapid Ready Report. The Transit Strategy is a two-year interim monitoring report on how the goals of the Rapid Ready Report were being achieved. The report then provides a five-step process on how to continue to plan for transit in the ten-year horizon for Hamilton. These chronological goals include: continue to refine the customer experience, address the current system deficiencies, revise and apply service standards, continue to add capacity until ridership exceeds capacity and introduce rapid transit corridors. This report also introduced the finalized proposal of the B.L.A.S.T. network, which includes the 'S' line of BRT connecting to the study area.

4.6.3.12 TRANSIT ORIENTED DEVELOPMENT (TOD) GUIDELINES FOR HAMILTON (2010)

- Set forth principles for integrated land use and transportation system designs which promote strong transit corridors. Relevant principles include:
  - Promote place making;
  - Ensure a mix of appropriate land uses;
  - Require density and compact urban form;
  - Focus on urban design;
  - Create pedestrian environments;
  - Address parking management;
  - Respect market considerations;
  - Take a comprehensive approach to planning;
  - Plan for transit and promote connections (for all modes); and,
  - Promote partnerships and innovative implementation.
- Elfrida is denoted as a Greenfield Node for consideration of TOD guidelines. Greenfield Nodes are undeveloped areas to be built around transit and have the intention of developing the same characteristics of an urban node over time. Specific goals for greenfield neighbourhoods (which surround Greenfield Nodes) would be a mixture of low to high density uses ranging from a minimum of 60 units per hectare and upwards. Overall, greenfield areas should be developed to accommodate transit from the beginning of occupancy by residents or businesses. Specific design guidelines for greenfield neighbourhoods which are relevant to this study include:
  - Plan for clustering of uses;
  - Create a focal point of new communities near the centre, with good transit access;
  - Plan for walkways and pedestrian paths early;
  - Promote small parking lots and shared lots in the rear or side of buildings;
  - Promote on-street parking; and
  - Ensure good pedestrian connections between buildings and bus stops.

4.6.3.13 TRANSPORTATION MASTER PLAN UPDATE (2017)

- Currently, the City is undergoing a review and update of the 2007 TMP. The changes and updates will be reflected in the Elfrida TMP. The main goal of this TMP update is to address the population, employment and travel behavior changes in Hamilton now and to the year 2031 and beyond. To facilitate a new vision the City released a series of background reports for policy goals of the update which included the integration of health into the transportation planning process, the connection of upper and lower Hamilton, embracing emerging technology, complete livable better streets, two-way street conversions, effective and efficient road network, improved transit service and network, accessible and age-friendly non-auto network, efficient goods movement and a sustainable economy and a balanced transportation system.

4.6.3.14 TRANSPORTATION MASTER PLAN (2007)

- Provides direction for the transit, active transportation, vehicular road and goods movement network within Hamilton. The goal of the TMP is to create a complete transportation network which provides integrated transportation options and is safe and efficient for all current and future users. Specific policy direction includes:
  - Implementing rapid transit in the City of Hamilton through a Rapid Transit network;
  - Maximizing the efficiency of existing road networks and focusing on road improvements to good movements corridors and enhancing employment lands access;
  - Facilitating safe and efficient travel of cyclists and pedestrians;
  - Promoting recreational cycling and active transportation through off-street facilities;
  - Encouraging escarpment crossings and linkages; and,
  - Improving access to Port and Airport facilities.
- Within the TMP, Elfrida is denoted as a Transit Service Expansion Area.

4.6.3.15 TRUCK ROUTE MASTER PLAN (2010)

- Evaluated current truck routes and attempted to relieve issues of pedestrian and truck conflict and ensure efficient transport of goods movement throughout the city. The final network of truck routes proposed was a result of stakeholder consultation, public consultation and a review of current deficiencies in the existing network. In addition to the master plan study, additional policies and amendments to the existing route by-laws were proposed.
- Within the study area, Upper Centennial Parkway/ Highway 56 and Regional Road 20 are denoted as full-time truck routes per the 2010 Highways Designated for Use by Heavy Traffic map.

4.6.3.16 TRANSPORTATION DEMAND MANAGEMENT (TDM) GUIDELINES (2015)

- Emphasize on using policies, programs, improvements and services to influence travel behaviour and promote sustainable travel options. The key objectives are to shift the travel mode from the single occupancy vehicle, reduce the number of trips people need to make, and improve travel efficiency. Key strategies listed in the guideline include:
  - Providing accommodation to increase access and convenience for pedestrians and cyclists;
  - Supporting transit users;
  - Developing Parking management strategies;
  - Promoting carpooling;
  - Supporting services such as carsharing and bikesharing;
  - Wayfinding and trip planning strategies; and
  - TDM education and promotion.
- The TDM guidelines also provides specific direction for a variety of key land uses such as residential, commercial, industrial, mixed-use, and institutional uses.

4.7 KEY DIRECTIONS

This existing transportation conditions study documents the pedestrian, cycling, transit and road infrastructure in the Elfrida Growth Study area.

There are opportunities to expand the existing transit network to service the Study Area in addition to providing connection to planned rapid transit initiatives by the City, such as the B.L.A.S.T. network. Encouraging rapid transit is a key focus of Hamilton's municipal policy and is prioritized within the Rapid Ready Report and the 10-year Local Transit Strategy.

Currently, limited pedestrian infrastructure exists within the study area. Ensuring safe and connected pedestrian transport is a key focus for municipal and provincial policy direction. This objective is reflected within the multiple municipal policies in place such as the Pedestrian Mobility

Plan and the Recreational Trails Master Plan. Proposed improvements to the Elfrida Growth Study area include on-street cycling routes and multi-use trails.

Although Hamilton is currently within the process of updating its TMP, there are several municipal policies in place that can guide the planning and design in Elfrida to meet multi-modal transportation objectives. Both the Province and the City of Hamilton have transit supportive policies and have identified active transportation as a key objective.

Transportation planning for Elfrida will leverage the planning and policy work already completed by the City to plan for a balanced approach to transportation, focusing on the most vulnerable road users (pedestrians) and making appropriate provisions for cyclists and transit, while maintaining an adequate network for automobiles and goods movement, including farm equipment. The transportation network for Elfrida will be integrated into the rest of the City and will provide viable multi-modal travel options to facilitate movement of people and goods.

The following key directions will be implemented through this process:

5. Create a transportation network which promotes health and safety by integrating health into the transportation network, promoting active transportation, and age-friendly non-auto networks.
6. Foster a connected and accessible on-road and off-road pedestrian path network which promotes a culture of walking.
7. Build an extensive on-road and off-road cycling network which can connect cyclists for utilitarian, commuting and recreational uses.
8. Create an expanded transit network that can support ridership demand until the implementation of rapid transit through the proposed LRT / BRT routes (25-year horizon).
9. Design a complete street network that incorporates elements of ‘Complete-Livable-Better Streets’. These would be supportive of all modes of travel as well as supporting vehicle and goods movement (including agricultural equipment).

5.0 CULTURAL HERITAGE

Detailed analysis related to cultural heritage is attached as Appendix A to this report. The results of the desktop data collection, which included a review of nineteenth and twentieth century mapping, reveal a study area with Indigenous history dating back thousands of years and an agricultural land use history with its origins in early nineteenth century survey and settlement. Over the past centuries, the study area has been minimally altered and a small number of mid- to late-twentieth century residential structures have been introduced. A number of nineteenth century agricultural complexes and structures have been maintained, and generally the overall landscape of the area has retained a rural, agricultural character and setting.

5.1 ARCHAEOLOGICAL RESOURCES

From the preliminary desktop review, a long history of Indigenous occupation and Euro-Canadian settlement is apparent. There are over 200 registered archaeological sites within a one-kilometer radius of the study area (see **Figure 36** below). Potential modelling shall be completed later in the study in order to illustrate where areas of Stage 2 Archaeological Assessment will be required.

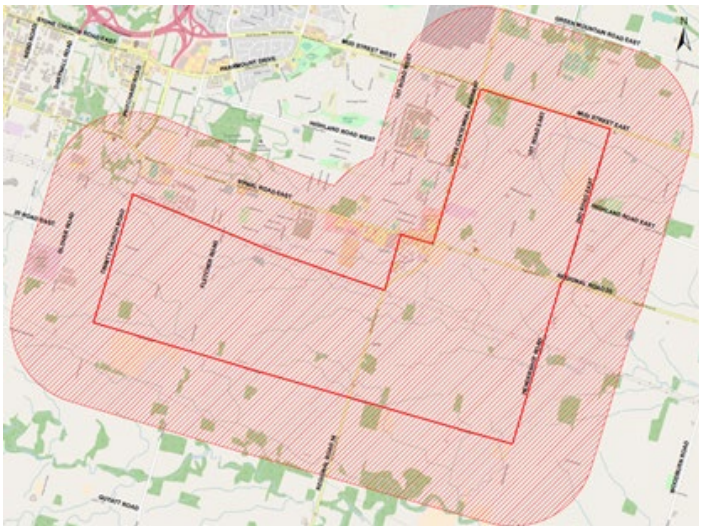


Figure 36: One Kilometer Archaeological Study Radius

5.2 CULTURAL HERITAGE RESOURCES

Based on the results of background research and the field review, 32 Inactive and Active cultural heritage resources are within and adjacent to the Elfrida Study Area, including 18 residential properties (Built Heritage Resources [BHRs] 1, 2, 4-7, 9, 11-14, 16-22), eight farmscapes (Cultural Heritage Resources [CHLs] 1, 3, 4-9), two outbuildings (BHRs 3 and 15), two cemeteries (CHLs 2 and 10), one place of worship (BHR 10), and one former place of worship (BHR 23). A total of 29 individual properties were on Hamilton's Inventory, including 21 on the Inventory of Buildings of Architectural and/or Historical Interest, six on the Canadian Inventory of Historic Buildings, one on the Inventory of Cemeteries and Burial Grounds, and one on the Inventory of Places of Worship. Two properties were identified in the field review and one property is listed on City's Register of Properties of Cultural Heritage Value or Interest under Section 27 of the *Ontario Heritage Act* (OHA). The study area does not contain any properties designated under Part IV of the OHA, properties listed as cultural heritage landscapes, properties subject to Heritage Conservation Easement Agreement, or properties subject to a Notice of Intention to Designate under Section 29, of the OHA.

The City of Hamilton's plan for growth is likely to impact the character and setting of the rural landscape and has the potential to directly impact cultural heritage resources. This may involve the removal or demolition of some cultural heritage resources which may alter the present rural character associated with the nineteenth century transportation routes. It may also disrupt or indirectly impact cultural heritage resources in the lands adjacent to the growth plan area through the introduction of physical, visual, audible, or atmospheric elements to the existing environment that are not in keeping with the rural character and/or setting. Efforts will be made to conserve and retain built heritage resources within new development. If no other alternatives have been found, built heritage resources may be partially or fully demolished with appropriate impact assessments as well as documentation and salvage processes in place.

The identified cultural heritage resources should be candidates for conservation and integration into future

land uses. Incorporating cultural heritage components into new development assists in making the area visually diverse and distinctive. Appropriate mitigation measures and/or alternative development approaches should be incorporated to reduce the potential for adverse impacts to the cultural heritage resources in the area. Four key objectives with regard to the cultural heritage planning and conservation of built heritage and cultural heritage landscapes found within the Elfrida Growth Study area have been identified:

- Integrate significant built heritage resources into new development proposals;
- Designate significant built heritage resources and significant cultural heritage landscapes under Section 29 of the *Ontario Heritage Act*;
- Incorporate where possible, principal cultural heritage elements into the evolving future landscape where opportunities for conservation may exist;
- Protect and maintain as much as possible the rural character of the area, including tree lines, fencing etc., associated with the portions of roadscapes and agricultural lands.

Based on the results of the assessment, the following recommendations have been developed:

A total of 32 cultural heritage resources are within or adjacent to the Elfrida Growth Study area including 20 Active cultural heritage resources (BHRs 1-13 and 23, and CHLs 1-7) and 12 Inactive cultural heritage resources (BHRs 14-22 and CHLs 8-10). If the Active identified cultural heritage resources are expected to be directly or indirectly impacted through alteration to the setting in the proposed growth plan, a property specific Heritage Impact Assessment (HIA) is required, which should include an evaluation of the resource based on the criteria set out in Ontario Regulation 9/06. Inactive properties do not require further work. A Cultural Heritage Documentation Report (CHDR) may be a mitigation action of the HIA.

Any future secondary plan should incorporate policies that ensure the long-term viability and presence of the identified built heritage resources and cultural heritage landscapes. Should a secondary plan be developed, the HIA may require updating to consider the potential impacts of future plans on the identified built heritage resources and cultural heritage landscapes. Additional mitigation measures may be identified.

Should future work require an expansion of the study area, then a qualified heritage consultant should be engaged in order to confirm the impacts of the proposed work on potential heritage resources.

5.3 KEY DIRECTIONS

The following key directions will be implemented through this process:

10. Integrate significant built heritage resources into new development proposals.
11. Designate significant built heritage resources and significant cultural heritage landscapes under Section 29 of the *Ontario Heritage Act*.
12. Incorporate where possible, principal cultural heritage elements into the evolving future landscape where opportunities for conservation may exist.
13. Protect and maintain as much as possible the rural character of the area, including tree lines and fencing, associated with the portions of roadscapes and agricultural lands.

6.0 NATURAL HERITAGE

Existing conditions information has been drawn from the Draft Phase 1 Elfrida Subwatershed Study (prepared by Aquafor Beech Limited) and will be used to inform the secondary plan. All information is based on properties assessed through the Subwatershed Study (i.e. where Permission to Enter was available). A high-level summary of key existing conditions results is presented below to provide some context and background information.

6.1 STUDY AREA OVERVIEW

The study area includes headwater areas for five subwatersheds, listed in descending order of total area represented by each subwatershed: Sinkhole Creek, Twenty Mile Creek, Stoney Creek, Hannon Creek, and Upper Davis Creek. Watercourses present within the Elfrida Growth Study area are generally ephemeral, headwater features. There are limited existing connections and naturalized stream corridors in the Study Area, resulting in relatively isolated and disconnected natural heritage features. These features and a number of other important features form the basis for a natural heritage system (NHS) in Elfrida.

6.1.1 DESIGNATED NATURAL AREAS, SPECIES AT RISK (SAR) AND SPECIAL FEATURES

There are three Provincially significant designated natural areas within or adjacent to the Study Area: Twenty Mile Creek Meander Belt (Regional Life Science Area of Natural and Scientific Interest [ANSI]) adjacent to the Study Area, and within it Eramosa Karst (Provincial Earth Science ANSI) and Lower Twenty Mile Creek Wetland Complex (Evaluated, Provincially Significant). Although not provincially significant, Sinkhole Wetland Complex (evaluated, other) is an additional significant natural heritage feature within the study area.

In addition to Provincially significant features, the RHOP also designates natural heritage features considered significant within the City of Hamilton. These areas are identified as Core Areas and include significant habitat of Species at Risk (SAR), fish habitat, wetlands, significant woodlands, significant wildlife habitat, permanent and intermittent streams, seepage areas and springs, Earth Science ANSIs and Linkages, which provide important connectivity between natural areas to support the natural heritage system within the City of Hamilton. Core Areas and Linkages are being assessed through the Elfrida Subwatershed Study and may identify additional features beyond those mapped on Official Plan schedules. The Subwatershed Study is in draft at the time of preparation of this background report; preliminary results from the Study are discussed in this section.

It is important to note that Significant Habitat for Endangered and Threatened Species and Significant Wildlife Habitat, identified as Core Areas in the text of the RHOP, are not mapped on RHOP schedules. Identification and delineation of these features is completed through more detailed studies such as subwatershed studies and Environmental Impact Studies, as appropriate.

A total of nine Species at Risk (SAR) occur or could potentially occur within the Study Area. These species, their designations and potential for presence within the Elfrida Growth Study area is presented in **Table 9**.

The F*ederal Species at Risk Act* and the *Provincial Endangered Species Act* (ESA) provide protection to Species at Risk (SAR) and their habitats. For the potential secondary plan process, the ESA is the legislation that applies for the protection of SAR. Any development or other activities are to be in compliance with the ESA with respect to protection of SAR. The *Species at Risk Act* generally applies on federal lands (including watercourses) or where federal funds are used for project funding.

Species listed as Threatened or Endangered are protected under the ESA and receive protection for individuals of the species and habitats critical for their life-cycles. Some species protected under the ESA have specific habitat regulations that provide direction for the identification of protected habitat and supporting areas; where habitat regulations are not available, the Ministry of Natural Resources and Forestry (MNRF) shall provide direction.

Table 9: Species at Risk Screening Table[1]

Species	Designation		Presence in Study Area
	SARA[2]	ESA[3]	
Eastern Wood-pewee (Contopus virens)	No Status	Special Concern	Confirmed present
Monarch (Danaus plexippus)	Special Concern	Special Concern	Confirmed present
Butternut (Juglans cinerea)	Endangered	Endangered	None observed Suitable habitat is present
Eastern Flowering Dogwood (Cornus florida)	Endangered	Endangered	None observed Suitable habitat is present
Eastern Small-footed Myotis (Myotis leibii)	No Status	Endangered	None observed Suitable habitat is present
Little Brown Myotis (Myotis lucifugus)	Endangered	Endangered	None observed Suitable habitat is present
Northern Myotis (Myotis septentrionalis)	Endangered	Endangered	None observed Suitable habitat is present
Woodland Vole (Microtus pinetorum)	Special Concern	Special Concern	None observed Suitable habitat is present
Eastern Milksnake (Lampropeltis triangulum)	Special Concern	Not at Risk	None observed Suitable habitat is present

Source: [1]Elfrida Subwatershed Study Draft Phase 1 Report (Aquafor Beech Limited 2017); [2]Canadian Species at Risk Act (SARA); and [3]Ontario's Endangered Species Act (ESA)

Species listed as Special Concern receive individual protection under the ESA, but do not receive habitat protection.

6.1.1.1 SIGNIFICANT WILDLIFE HABITAT – ECOREGION 7E

Aquafor Beech Limited used the MNRF's Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E (January 2015) as a guiding document in determining the presence of significant wildlife habitat within the Study Area. Two confirmed Significant Wildlife Habitat (SWH) areas and 11 candidate SWH areas were observed within the Study Area. There were an additional seven candidate SWH areas outside but immediately adjacent to the study area (Figure 3.65 from the Draft Subwatershed Study). The Draft Subwatershed Study should be used as the primary reference as updates may occur to that document that will not be reflected in this background document.

6.1.1.2 SPECIAL FEATURES

Hamilton is known to have karst features present in association with the Eramosa Member of the Lockport Formation in areas of the Davis Creek and Hannon Creek subwatershed areas; specifically it is most evident in areas where the Eramosa Escarpment is exposed at, or near the surface. These known areas of karst have been well documented and are located to the north of the study area. Karst occurs where subterranean movement of water dissolves bedrock such as limestone over time creating sinkholes, disappearing streams, closed depressions, subterranean streams and caves.

Potential presence of karst was considered as part of the Draft Subwatershed Study. One karst feature was identified: a sinkhole at the northwest boundary of the study area near Trinity Church Road and the hydro corridor that outlets through a spring northwest of the study area. Features and functions that support

this hydrologic / hydrogeologic feature will need to be considered through land use and development processes.

6.1.2 TERRESTRIAL ECOLOGY

A detailed assessment of the terrestrial ecology (flora and fauna) within the Elfrida Growth Study area was undertaken as part of the in-process Subwatershed Study. Natural heritage areas are identified for detailed assessment as part of the Subwatershed Study. Key results of the assessments undertaken through the Subwatershed Study are discussed briefly below. The Subwatershed Study should be the primary reference as updates to that document may occur that will not be reflected in this report.

6.1.2.1 FLORA

A total of 18 vegetation community types, representing 24 individual units / polygons, were recorded within the Study Area. Of these, one vegetation community is considered rare at a global and provincial level: Bur Oak Mineral Deciduous Swamp. The remaining 17 community types are considered common and secure on both a global and provincial level.

Botanical inventories of the vegetation communities identified a total of 217 species of vascular plants within the Study Area. Of these, 166 (76.5%) are native to Ontario and 51 (23.5%) are introduced species. This indicates relatively good floristic quality within the natural heritage features surveyed.

No species of global, national or provincial significance were identified during field studies for the subwatershed. No species protected under the ESA were observed. Four species considered rare in Hamilton according to the Hamilton Natural Areas Inventory (NAI) were recorded during field investigations, including: Low Serviceberry (Amelanchier spicata), Fireberry Hawthorn (Crataegus chrysocarpa), Smooth Solomon's Seal (Polygonatum biflorum), Schuett's Oak (Quercus bicolor x macrocarpa). One locally uncommon plant species, Spearscale (Atriplex patula) was also identified.

6.1.2.2 WETLANDS

Two wetlands with existing evaluations for provincial significance and multiple unevaluated wetlands are present within the study area. The previously evaluated wetlands include Lower Twenty Mile Creek Provincially Significant Wetland (PSW) Complex and Sinkhole Creek Wetland Complex (evaluated [non-PSW], other). All unevaluated wetlands greater than 0.5 hectares in size were evaluated according to the Ontario Wetland Evaluation System during the Subwatershed Study. None were evaluated as PSW; however, all are considered Locally Significant under the RHOP.

6.1.2.3 WILDLIFE

6.1.2.3.1 BREEDING BIRDS

A total of 33 bird species were recorded during breeding bird field surveys; of these, 32 exhibited signs of breeding. The most abundant species observed during surveys included Tree Swallow (Iridoprocne bicolor), Common Grackle (Quiscalus quiscula) and Red-winged Blackbird (Agelaius phoeniceus). Eastern Wood-Peewee (Contopus virens), a Species at Risk (SAR) designated as Threatened under the Species at Risk Act and Special Concern under the ESA, was recorded with 'probable' breeding status in the Study Area. Only one species is considered to be uncommon in the Hamilton Area: Vesper Sparrow (Pooecetes gramineus).

6.1.2.3.2 REPTILES AND AMPHIBIANS

Eastern Gartnersnake (Thamnophis sirtalis) was the only snake species observed within the Study Area and is considered common and widespread in Ontario. Six species of anuran were identified through targeted surveys; all species recorded are common or abundant in Hamilton. No salamanders were observed during salamander surveys.

6.1.3 AQUATIC ECOLOGY

Detailed figures showing watercourses and subwatershed boundaries, results of the Headwater Drainage Feature (HDF) assessment, sampling locations and recommendations can be found in the Draft Subwatershed Study document. The Subwatershed Study should be used as the primary reference as updates may occur to that document that will not be reflected in this background document.

6.1.3.1 AQUATIC HABITAT AND THERMAL REGIMES

A brief description of aquatic habitats present within the study area for each subwatershed is provided below; aquatic habitats were assessed during the subwatershed study to document aquatic habitat conditions, fish community present and benthic invertebrates. As the study area is predominantly a headwater area for five subwatersheds, Headwater Drainage Features (HDFs) were assessed according to management recommendations per Credit Valley Conservation (CVC) and Toronto and Region Conservation Authority (TRCA) 2014 guidelines. The assessment framework for HDFs developed by CVC and TRCA is being applied throughout southern Ontario as a means to assess HDFs which have often gone without formal recognition or assessment of their ecological function / impact. Generally, minimal barriers to fish movement were observed within the Elfrida Growth Study area. Barriers noted in Hannon Creek are unlikely to limit fish movement and migration as they were all within ephemeral HDFs.

Sinkhole Creek subwatershed represents the largest land area within Elfrida. Numerous ephemeral headwater drainage features are present in its upper reaches; many of these areas are plowed over during the agricultural planting season. Downstream, as Sinkhole Creek accumulates inputs from headwater drainage features, the channel gains definition. The channel was dry during the field assessment in 2016. However, this may be the result of drought conditions in the year of survey. The presence of mussel shells suggests that Sinkhole Creek likely maintains permanent flow during an average year and is capable of supporting aquatic species and providing suitable habitat for fish. Water quality measurements suggests a coolwater thermal regime. Four online ponds were noted during field investigations within the Sinkhole Creek subwatershed.

Aquatic habitat quality is low for Twenty Mile Creek within the study area, which contains warm to coolwater habitat and permanent flow within the main channel. Aquatic habitat for Twenty Mile Creek within the study area is characterized by two large headwater drainage features (drainage branches), and several other small headwater drainage features that include both ephemeral and intermittent flow. There is little diversity in available instream habitat and limited cover provided by riparian vegetation.

Stoney Creek contains the highest quality coolwater aquatic habitat within the study area. Per the Draft Elfrida Subwatershed Study, upper reaches of Stoney Creek had flow at the time of investigation, while areas downstream were dry at the time of field investigation; this may be due to conditions at the time of each survey and online ponds at the former golf course. Five online ponds were noted within this subwatershed. Although Stoney Creek was intermittent downstream of the ponds, this could be an anomaly due to the dry conditions in 2016.

Three ephemeral tributaries to Hannon Creek have limited function as aquatic habitat within the Study Area. No fish or mussel surveys were completed within Hannon Creek as part of the Subwatershed Study. As these tributaries were dry during assessment, a thermal regime was not identified. It is likely to be a warmwater regime as these headwater tributaries collect surface water only.

Only a very small portion of the catchment area for the Upper Davis Creek subwatershed is captured within the study area. There are no watercourses (ephemeral, headwater or permanent) associated with the Upper Davis Creek subwatershed within Elfrida.

6.1.3.2 HEADWATER DRAINAGE FEATURES (HDF)

Headwater Drainage Features (HDFs) provide a multitude of functions within a subwatershed and form the majority of the drainage system within the study area. Headwater systems are considered important sources of food, sediment, water, nutrients and organic matter for downstream reaches. Given their small size and ephemeral nature, function of these features is often underestimated, resulting in HDFs being particularly vulnerable to impacts resulting from changes in land use such as removal / loss from the landscape (site grading), channel lowering and enclosure.

As discussed above, the study area is comprised of headwaters for several watercourses; as such, HDFs form a major component of the features and functions present in the local landscape and have important roles in the health of downstream systems. They exist within the current agricultural landscape as ‘swales’ or ‘draws’ and may

be cropped and ploughed actively through the growing season, or may be too wet to successfully support crop growth depending on the location and frequency of water within the channel.

Within the study area, HDFs have been evaluated and classified in accordance with the Evaluation, Classification and Management of Headwater Drainage Features Guidelines (developed by the CVC and TRCA in 2014) and detailed results are discussed in the Draft Elfrida Subwatershed Study. Based on this evaluation, HDFs have been classified for Protection, Conservation, Mitigation or No Management Required within the study area. Protection HDF features are to be maintained and / or enhanced in-situ; Conservation classified HDF features are to be maintained, relocated and / or enhanced to protect their form and function on the landscape. Both Protection and Conservation HDF features have been incorporated into the NHS recommended by the Subwatershed Study. Mitigation classified HDFs function(s) are to be replicated or enhanced and contribution to downstream systems must be maintained (e.g. through enhanced lot-level controls); they are not identified as core components of the recommended NHS. Opportunities to maintain these features should be considered through future planning stages, as appropriate. HDF features classified as No Management Required do not support significant function or contribution to downstream reaches and do not have any recommendations with respect to protection.

6.1.3.3 FISHERIES

A total of six species representing five genera were recorded in Stoney Creek, Twenty Mile Creek and Sinkhole Creek. Fish community sampling was not conducted in Hannon Creek or Upper Davis Creek. The six species captured during sampling were evenly split between warmwater and coolwater species, while tolerance levels were also split between tolerant and intermediately tolerant species. All species are common and widespread in Ontario.

6.1.3.4 BENTHIC INVERTEBRATES

Benthic invertebrates were sampled in Twenty Mile Creek and Stoney Creek. Hannon Creek and Sinkhole Creek were dry during the assessment window and could not be sampled. Benthic invertebrate sites in Twenty Mile Creek and Stoney Creek indicate generally poor water quality.

6.2 ELFRIDA NATURAL HERITAGE SYSTEM

A NHS within the rural Hamilton area is mapped in the RHOP and includes Core Areas and Linkages, as discussed in Section **2.2.3.3** of this report. The Draft Subwatershed Study examined natural heritage features within the study area to confirm current knowledge, and to update and add Core Areas and Linkages as appropriate using available secondary source information and supplemented with detailed field assessments undertaken through the Subwatershed Study. Outside of the Elfrida Growth Study area, natural heritage features were classified based on available secondary source data (e.g. NHIC, LIO), air photo interpretation and mapping provided by the City.

The recommended NHS from the Draft Subwatershed Study builds upon the RHOP NHS by confirming or adding to the following three feature designations:

- Core Areas and Linkages as defined in the RHOP;
- Vegetation Protection Zones (VPZ) consistent with the minimum requirements of the RHOP; and
- Opportunities to enhance the attributes of Core Areas and Linkages.

The Draft Subwatershed Study provides preliminary direction with respect to VPZs for the protection of significant natural heritage features and functions from activities that may occur before, during and after construction. Per the Subwatershed Study, the NHS and their respective minimum VPZs are as follows:

- Significant Wildlife Habitat;
- Wetlands (including a 30 metre VPZ);
- A 60 metre VPZ has been recommended for one wetland north of Rymal Road due to hydrologic considerations;
- Significant Woodlands (including a 30 metre VPZ);
- Woodland Linkages (including a 15 metre VPZ);
- Fish Habitat / Watercourses (including a 30 metre VPZ);
- HDFs (including a 30 metre VPZ for Protection, Conservation or Mitigation designation);
- Linkages; and
- Restoration Areas.

Larger VPZs may be considered in areas identified as being of high sensitivity to impact or disturbance from development activities and changes to adjacent land uses. The recommended NHS from the Subwatershed Study, which includes Core Areas, Linkages, applicable VPZs and areas recommended for restoration and enhancement, as well as identified Constraints and Opportunities to Development from the Draft Subwatershed Study can be seen in **Figure 9** of this report. The Subwatershed Study should be used as the primary reference as updates may occur to that document that will not be reflected in this background document and phase of the overall Elfrida Growth Study.

It is important to note that the recommendations with respect to VPZs in the Subwatershed Study are based on the RHOP. Policies with respect to VPZs differ between the RHOP and UHOP. It is recognized that some or all of the lands within the study area will become part of Hamilton's Urban Area in future. As such, consideration will be given to the application of Elfrida-specific natural heritage policies in any future secondary plan, given the unique headwater-oriented landscape of Elfrida.

6.3 KEY DIRECTIONS AND PRELIMINARY RECOMMENDATIONS FOR FURTHER STUDY

Lands not accessed during this study will need to be evaluated as part of future studies. The constraints illustrated on lands not accessed as part of the Draft Subwatershed Study represent an assessment of the best available information at the time. Additionally, at each subsequent planning stage the status and presence of SAR should be revisited to ensure compliance with *Planning Act* requirements and the ESA. Surveys recommended to be completed include:

- Surveys for Butternut and Eastern Flowering Dogwood in Natural Heritage Areas identified in the Subwatershed Study, as well as in hedgerows and on residential properties.
- Anuran calling surveys repeated in future studies as 2016 results may have been impacted by unique climate conditions. Continuous temperature monitoring between July 1 and August 31 for improved accuracy classifying the thermal regime of watercourses.
- Surveys for Milksnake undertaken at all subsequent planning stages to ensure that if this reclusive species is present within the Study Area it is given due consideration. Further investigation of potential snake hibernacula is also recommended.
- Surveys for bats undertaken in all treed habitats within the Study Area following the Guelph District MNRF Office's *2016 Bat and Bat Habitat Surveys of Treed Habitats.*

Key directions to be incorporated into this study include:

14. Identify and explore land use design options that enhance or are compatible with the NHS proposed in the Draft Subwatershed Study.
15. Identify and integrate compatible recreation opportunities that connect the community to the NHS.
16. Consider enhancement opportunities and opportunities to integrate non-core features into the design (e.g. hedgerows).

7.0 AGRICULTURE

There are several agricultural-related considerations that will require management and coordination for any proposed development of the Elfrida Growth Study area. Some of the main considerations include:

- Prime Lands – Most of the lands within the Study Area can be considered prime agricultural land. In public consultation, participating farmers report that lands south of the Hydro Corridor account for the best current farmland within the study area. The urban development of these parcels will impact crop and livestock production within the region and the surrounding regional areas.
- Compatibility – Planning future land uses utilizing a phased method of development may increase compatibility issues, particularly with respect to nuisance, water and agricultural chemical use. This may include complaints from the future users where residential developments and/or open space/parks are planned in the vicinity of agricultural operations subject to pesticide use, livestock agriculture and specialty crop and more industrial operations such as mushroom farms.

- Nuisance Issues – Residential home buyers may not be aware of rural farming practices, right-to-farm legislation and lifestyles that accept nuisance issues such as odours, vibration, light, smoke, noise, dust and flies as part of farming. This can lead to conflict between incompatible land uses issues.
- Parcel Fragmentation – Development should consider avoiding fragmenting parcels which could obstruct access to fields and cause heavy- and slow-moving farm equipment to travel using urban streets.
- Goods Movement – vehicles shipping goods to market, may impact traffic with slower moving vehicles. The new Growth Plan additionally requires municipalities to consider agricultural goods movement as part of transportation studies.
- Minimum Separation Distance (MDS) – consideration of the planning of residential areas may be influenced by livestock farms and field activities, such as manure spreading, both within the study area and those in the vicinity. MDS I (between proposed new development and any existing livestock barns, manure storages and/or anaerobic digesters) and MDS II (between proposed new, expanding or remodeled livestock barns, manure storages and/or anaerobic digesters and existing or approved development) can be used to site farms near residential developments and vice versa (as indicated below), but there is no available tool to assess the impact of field activities causing nuisance factors, such as those listed above.

It is critical that the City and its residents understand that farms and farmers are protected under the *Farming and Food Production Protection Act* (FFPPA), based on two main themes:

- Farmers are protected from nuisance complaints made by neighbours, provided they are following normal farm practices.
- No municipal by-law applies to restrict a normal farm practice carried on as part of an agricultural operation.
- With reference to field practices, such as manure spreading and pesticide/herbicide application, farmers are protected under the FFPPA.

Addressing these types of considerations during the planning and development phases will encourage and advance responsible and positive relations with the residents of the neighbourhood.

Additionally, urban farms, community gardens, and urban farmers markets could be implemented in Elfrida in accordance with UHOP sections C.3.2.4 and C.3.2.5, allowing for continued agriculture in urban-compatible forms.

7.1 LEAR STUDY 2003

An existing agricultural land classification map can be seen in **Figure 37**. In June 2003, the City of Hamilton initiated a LEAR study to identify prime agricultural areas in contiguous designations within the City and to differentiate these from rural (non-prime) lands. The LE factor (land evaluation) is based on the soil capability classification, and the AR factors (area review) considers conflicting land use, size of parcels or surrounding land use that affect long-term agricultural productivity. A numeric LEAR score was developed for each property in the study area. LEAR scores ranged from 20 to 190.

The study team used the LEAR 120 threshold map as a base to delineate prime agricultural areas in the study area and develop maps illustrating the City of Hamilton's prime agricultural areas. These maps show that the Elfrida Growth Study area is almost extensively prime agricultural land (LEAR scores of 120 or higher) and surrounded by prime agricultural areas to the south and east. Properties with LEAR scores below 120 (non-prime) are limited to a few between Mud Street East and Highland Street in the northern edge of the plan area.

7.2 KEY DIRECTIONS

17. Agricultural lands where the use would likely remain agricultural will be identified, evaluated, and considered throughout the planning and design process.
18. Any adverse impacts on agricultural operations and on the agri-food network from expanding settlement areas will be avoided or, if avoidance is not possible, minimized and mitigated as determined through an agricultural impact assessment.
19. Integrating and mitigation of public feedback (questions/concerns) of future effects during transition from agricultural setting to a more urban setting with inclusion of urban agriculture.

Legend

Study Area

Soil Classification

- Class 1
- Class 2
- Class 3
- Class 4
- Class 5
- Class 6
- Class 7
- Organic Soil
- Unclassified

0 0.5 1 2 Kilometers

Client: City of Hamilton

Title: **Elfrida Study Area Context**
Figure 37: Agricultural Land Classifications

Prepared by: WSP, Watson Economics, ASI, The Planning Partnership, CUSHMAN & WAKEFIELD

17M-00642-00 | Date: 6/30/2017 | Review: JS

8.0 WATER AND WASTEWATER MANAGEMENT

As a component of the Elfrida Growth Area Studies, a Water and Wastewater Servicing Master Plan will be undertaken to identify the required improvements and expansion to the City of Hamilton's water distribution and wastewater collection systems to support the proposed growth in the study area. The Servicing Master Plan will be a long-term plan for the water and wastewater infrastructure required to service the future development to 2041.

The Servicing Master Plan is being prepared in accordance with the requirements of the Municipal Class Environmental Assessment document prepared by the Municipal Engineers Association (MEA) (October 2000, as amended in 2007, 2011 and 2015). This Servicing Master Plan is being undertaken following Approach 2 as to satisfy Phase 1 and Phase 2 of the Municipal Class Environmental Assessment (Class EA) process. The five phases outlining the procedures to be followed to satisfy the Class EA requirements for municipal infrastructure projects are listed below.

- Phase 1: Problem Definition
- Phase 2: Identification and Evaluation of Alternative Solutions to Determine a Preferred Solution
- Phase 3: Examination of Alternative Methods of Implementation of the Preferred Solution
- Phase 4: Documentation of the Planning, Design and Consultation Process
- Phase 5: Implementation and Monitoring

Projects subject to the Class EA process are classified into four possible Schedules depending on the degree of expected impacts. The Study will assign a project Schedule to each water and wastewater infrastructure project required to service growth in Elfrida. Any water and wastewater projects identified as Schedule C projects will require a separate Class EA study to satisfy Phases 3 and 4 of the Municipal Class EA process.

8.1 EXISTING WATER DISTRIBUTION SYSTEM

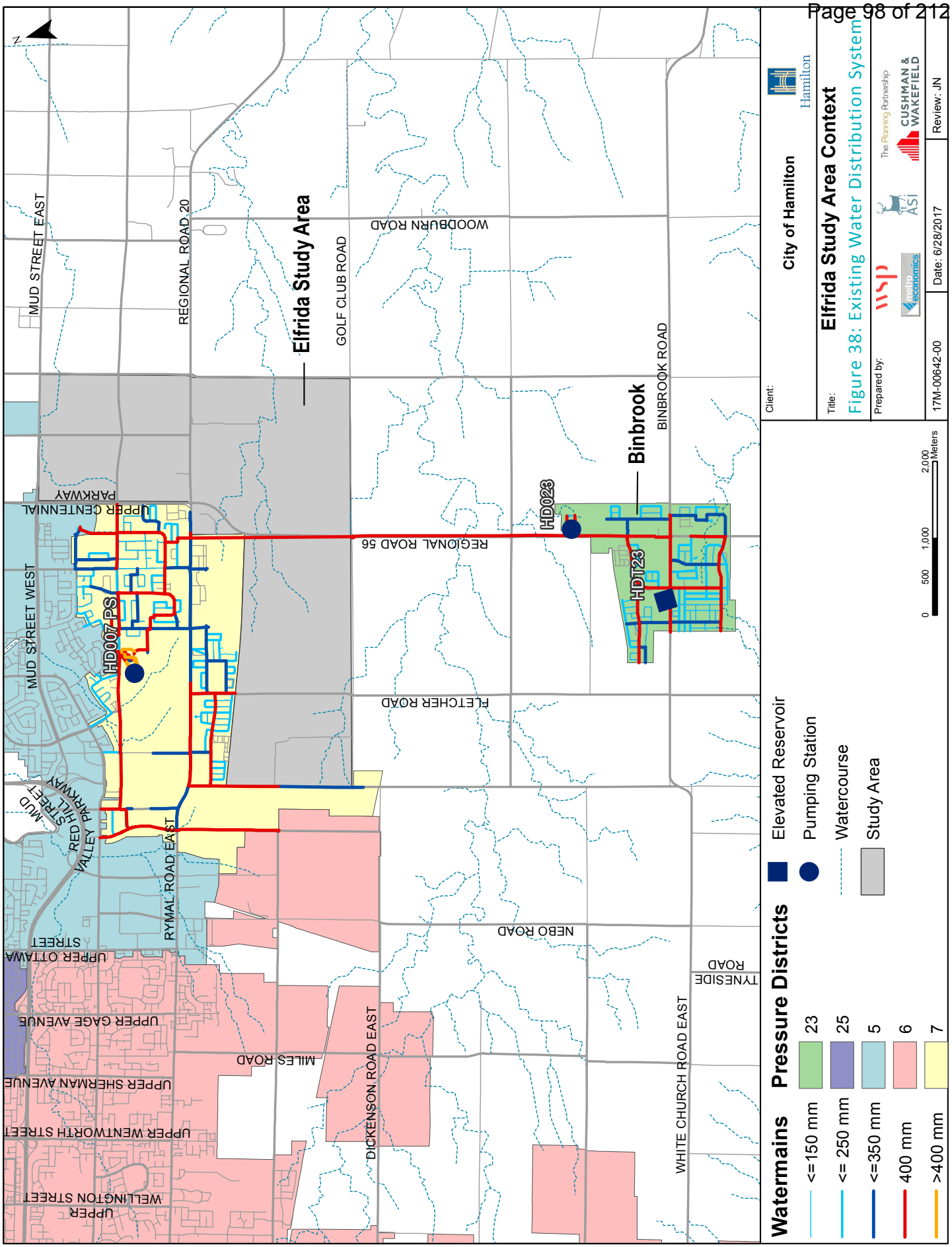
There is no water infrastructure currently servicing the Elfrida Growth Study area. A 400mm watermain runs north-south along Regional Road 56 to service the community of Binbrook (Pressure District 23). Binbrook is located south of the study area and includes the HDT23 Elevated Storage Tank, HD023 Pumping Station and watermains ranging from less than 150mm to 400mm in diameter.

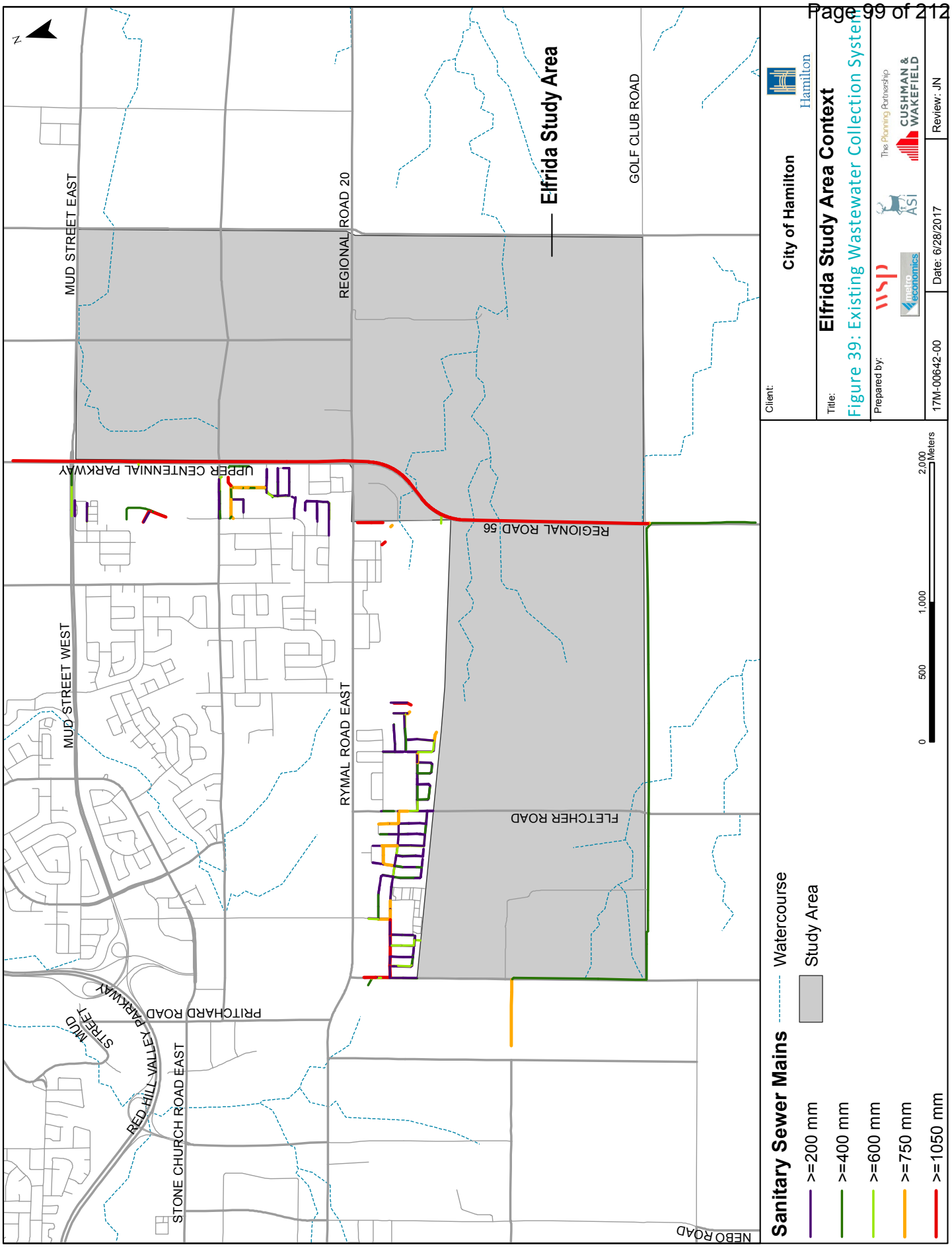
Northwest of the Elfrida Growth Study area is Pressure District 7. Along Trinity Church Road, there is a 400mm watermain from Rymal Road which reduces to 300mm approximately 1km south and extends to Golf Club Road. North of Rymal Road, Pressure District 7 encompasses watermains ranging in diameter from less than 150mm to 400mm.

Pressure District 7 is currently serviced through the HD007 Highland Pumping Station, which pumps water from Pressure District 5. The HD007 pumping station is located at 293 Highland Road in Stoney Creek and feeds from the HDR07 Highland Reservoir. The facility includes a single-storey pump house, a reservoir access house and a two cell reservoir (HDR07). There are four pumps at the station, each with a rated capacity of 250 L/s, discharging to a common 600 mm diameter discharge header which splits into two 600 mm diameter discharge headers to supply the distribution system. The existing water distribution system is shown in **Figure 38**.

8.2 EXISTING WASTEWATER COLLECTION SYSTEM

There is no wastewater infrastructure currently servicing the Elfrida Growth Study area. The Upper Centennial Parkway Sanitary Trunk Sewer is currently under construction and will be extended through the Elfrida Growth Study area from Green Mountain Road to Golf Club Road. The trunk sewer is 1,800 mm in diameter and was designed to connect to proposed and existing sanitary infrastructure. The existing wastewater collection system is shown in **Figure 39**.


Elfrida Study Area
Binbrook
HD007-PS
HD023
HDT23
MUD STREET EAST
REGIONAL ROAD 20
GOLF CLUB ROAD
WOODBURN ROAD
BINBROOK ROAD
REGIONAL ROAD 56
FLETCHER ROAD
NEBO ROAD
TYNESIDE ROAD
WHITE CHURCH ROAD EAST
DICKENSON ROAD EAST
MILES ROAD
RYMAL ROAD EAST
MUD STREET WEST
UPPER CENTENNIAL PARKWAY
RED HILL VALLEY PKWY
MUD STREET
UPPER OTTAWA STREET
UPPER GAGE AVENUE
UPPER SHERMAN AVENUE
UPPER WENTWORTH STREET
UPPER WELLINGTON STREET
Watermains
Pressure Districts
<=150 mm
<= 250 mm
<=350 mm
400 mm
>400 mm
23
25
5
6
7
Elevated Reservoir
Pumping Station
Watercourse
Study Area
0
500
1,000
2,000
Meters
Client:
City of Hamilton
Title:
Elfrida Study Area Context
Figure 38: Existing Water Distribution System
Prepared by:
WSP
Watson economics
ASI
The Planning Partnership
CUSHMAN & WAKEFIELD
17M-00642-00
Date: 6/28/2017
Review: JN


Elfrida Study Area
GOLF CLUB ROAD
REGIONAL ROAD 20
MUD STREET EAST
UPPER CENTENNIAL PARKWAY
REGIONAL ROAD 56
MUD STREET WEST
RYMAL ROAD EAST
FLETCHER ROAD
PRITCHARD ROAD
MUD STREET
RED HILL VALLEY PARKWAY
STONE CHURCH ROAD EAST
NEBO ROAD
Sanitary Sewer Mains
Watercourse
Study Area
>=200 mm
>=400 mm
>=600 mm
>=750 mm
>=1050 mm
0
500
1,000
2,000
Meters
Client:
City of Hamilton
Hamilton
Title:
Elfrida Study Area Context
Figure 39: Existing Wastewater Collection System
Prepared by:
WSP
The Planning Partnership
ASI
urban economics
CUSHMAN & WAKEFIELD
17M-00642-00
Date: 6/28/2017
Review: JN

8.3 OPTIONS FOR SERVICING

8.3.1 WATER

The City's WaterCAD model will be used to conduct a hydraulic analysis for Elfrida after the model has been updated and calibrated. The model was developed in 2009 and will be updated with all water infrastructure that has since been constructed.

The City has initiated a Class Environmental Assessment for a Pressure District 7 elevated tank and booster pumping station (HD07A). Together with the new elevated tank and water pumping station, upgrades to the HD007 Highland Pumping Station and an expansion of the HDR07 Highland Reservoir will be considered for servicing the Elfrida Growth Study area. The opportunity to service Elfrida within a single pressure district, Pressure District 7, will be considered.

Water servicing alternatives for Elfrida will be developed for the preferred land use scenario, and will ensure that all future infrastructure requirements and associated preliminary costs are fully integrated in the development of the Study. The water servicing alternatives will be developed based on an analysis of demand conditions including Minimum Hour, Peak Hour and Maximum Day plus Fire Flow to capture the pressures during the periods of low demand, high demand and an emergency situation. Watermains will be sized to meet the demand and pressure requirements associated with the preferred land use scenario.

8.3.2 WASTEWATER

WSP will build a complete model of the study area for each development scenario, corresponding to the service areas and populations considered for the wastewater areas. Wastewater flows will be conveyed within the subject area and 'exported' to existing trunk sewers from the Elfrida boundary to the Woodward Wastewater Treatment Plant. It will be confirmed if wastewater flows associated with development in Elfrida can be conveyed by gravity within the study area to the Upper Centennial Parkway Sanitary Trunk Sewer, and that a pumping station will not be required. If wastewater flows are to be conveyed by gravity, the functional grade at the critical nodes associated with the proposed wastewater servicing alternative will be provided.

To ensure the flows generated within Elfrida and exported to the existing trunk sewer system will not result in additional surcharge or other issues, the existing wastewater infrastructure surrounding the development area will be further analyzed using the City's MIKE URBAN model. The capacity of the Upper Centennial Parkway Sanitary Trunk Sewer to convey flows from the study area, via the existing system, to the Woodward Wastewater Treatment Plant will be confirmed. The City has not undertaken flow monitoring related to Elfrida. However, flow monitoring downstream of the Centennial Parkway Sanitary Trunk Sewer at King Street is currently being undertaken and is expected to be available for review by the end of summer 2017.

8.4 RELEVANT PLANNING STUDIES AND POLICY DOCUMENTS

As part of the background review, all relevant planning studies and policy documents were obtained and examined to ensure compliance throughout the development of the Servicing Master Plan. The following sub-sections summarize the policy and planning documents that were reviewed.

8.4.1 GROWTH RELATED INTEGRATED DEVELOPMENT STRATEGY (2006)

As noted in Section 2.2.2, the City of Hamilton initiated GRIDS in 2003 to identify a broad land use structure, including the associated infrastructure, economic development and financial implications, to serve the City over the next 30 years. The City's three infrastructure Master Plans were undertaken as part of the GRIDS process (transportation, water and wastewater, and stormwater). The need for water and wastewater infrastructure is identified by GRIDS to service the growth in Elfrida. The preferred growth option provided potential opportunities for locating the water and wastewater infrastructure in common corridors.

8.4.2 CITY OF HAMILTON WATER AND WASTEWATER MASTER PLAN (2006)

The Water and Wastewater Master Plan provides the City of Hamilton with a water and wastewater servicing strategy that supports the preferred growth option identified by GRIDS. To determine the water demand criteria and wastewater design criteria to be used for the Servicing Master Plan, the criteria used in the City's Water and Wastewater Master Plan was reviewed. Residential and employment water demand rates were established as shown in **Table 10** below.

Residential and employment dry-weather flow criteria, average wastewater treatment plant flows, and peak wet-weather flows were established as shown in **Table 11** below.

The Water and Wastewater Master Plan identifies the preferred water and wastewater alternatives for servicing the Southeast Mountain urban boundary expansion, which contains the Elfrida Growth Study area. The Master Plan models the water and wastewater system needs, evaluates several servicing alternatives against environmental and technical criteria, and details the timing and estimated cost of the implementation or construction of the preferred water and wastewater alternatives. In addition, the Rymal Road Planning Area is included within this area at the north boundary of the study area just south of Rymal Road. The servicing study for the Rymal Road Planning Area previously identified the need for additional trunk sewer capacity and indicated that extensive upgrades to the Red Hill Creek Sanitary Interceptor would be required.

8.4.2.1 SOUTHEAST MOUNTAIN PREFERRED WATER SERVICING ALTERNATIVE

The growth areas within the Southeast Mountain urban boundary expansion are located primarily within Pressure District 7. Pressure District 7 is currently serviced through the HD007 pumping station, which pumps water from Pressure District 5. The HD007 pumping station does not have sufficient capacity to meet the projected growth and and there is limited site capacity available to expand the station. To meet the demand associated with the projected growth, an expansion to the HD007 pumping station could be undertaken in combination with other works within the City's water distribution system.

Table 10: City of Hamilton Water and Wastewater Master Plan Water Demand Criteria

Criteria	Value
Average Day Residential Consumption	300 litres per capita per day (Lpcd)
Average Day Employment Consumption	260 L/employee/day
Maximum Day Factor	1.9
Peak Hour Factor	3.0

Source: Criteria used for the City of Hamilton Water and Wastewater Master Plan (KMK Consultants Limited, 2006)

Table 11: City Of Hamilton Water And Wastewater Master Plan Wastewater Design Criteria

Criteria	Value
Average Day Dry-Weather Flow - Residential	300 Lpcd
Average Day Dry-Weather Flow - Employment including industrial, commercial, and institutional (ICI)	260 L/employee/day
Average plant flow rate (combined system area)	769 Lpcd
Average plant flow rate (separated system area)	653 Lpcd
Extraneous flow rate (for future development)	0.2 L/ha/s

Source: Criteria used for the City of Hamilton Water and Wastewater Master Plan (KMK Consultants Limited, 2006)

The preferred alternative is based on servicing the Southeast Mountain with an expansion to the HD007 pumping station, and the addition of Pressure District 7 pumps at the existing HD06B pumping station; making this facility a dual-zone booster supplying both Pressure District 6 and Pressure District 7 via separate feedermains. The preferred alternative also includes a new elevated tank (e.g. water tower) to provide storage, security and operational flexibility. The costs for the preferred water servicing alternative are detailed in **Table 12** below.

8.4.2.2 SOUTHEAST MOUNTAIN PREFERRED WASTEWATER SERVICING ALTERNATIVE

The topography of the Southeast Mountain urban boundary expansion generally slopes to the south towards Binbrook. The area bounded by Mud Road, Upper Centennial Parkway, Highland Road and Second Road is the only area where there is an opportunity to drain by gravity to the existing wastewater collection system. The preferred alternative is based on the entire Southeast Mountain area draining to a new trunk sewer along Centennial Parkway. The depth of the sewer would eliminate the need for a pumping station.

The Master Plan identifies the new trunk sewer as 1,200 mm in diameter with a total length of approximately 8,000 m, and discharging into the existing Battlefield trunk sewer. The Battlefield trunk sewer would need to be twinned over a distance of approximately 2,000 m. The costs for the preferred wastewater servicing alternative are detailed in **Table 13** below.

Table 12: City of Hamilton Water and Wastewater Master Plan Preferred Water Servicing Solutions

Year	Project	Total Estimated Cost*
2009	HD007 Highland Pumping Station Upgrades	$6.9M
	HD007 Highland Reservoir Expansion	$8.2M
2016	HD06B Tunbridge Pumping Station Upgrades (HD07A)	$3.5M
	Pressure District 7 Elevated Tank	$5.3M

Source: Southeast Mountain Preferred Water Servicing (City of Hamilton Water and Wastewater Master Plan, 2006)
**Identified projects for the Southeast Mountain Preferred Water Servicing*

Table 13: City of Hamilton Water and Wastewater Master Plan Preferred Wastewater Servicing Solutions

Year	Project	Total Estimated Cost*
2010	New Centennial Trunk Sewer	$24.5M
2010	New Centennial Trunk Sewer	$10.0M
2014	Battlefield Trunk Sewer Twinning	$2.2M
2014	Battlefield Trunk Sewer Twinning	$1.8M

Source: Southeast Mountain Preferred Water Servicing (City of Hamilton Water and Wastewater Master Plan, 2006)
**Identified projects for the Southeast Mountain Preferred Wastewater Servicing*

8.4.3 HAMILTON SOUTHEAST MOUNTAIN WATER SERVICING STRATEGY (STANTEC, 2013)

The Hamilton Southeast Mountain Water Servicing Strategy (October 2013) was undertaken to confirm and update the water servicing strategy for Pressure Districts 7 and 23 to support proposed growth to the year 2031. Additionally, the timing and implementation requirements, as well as cost estimates for the recommended works were outlined in the report.

The design criteria shown below in **Figure 40** were determined using different sources including the MOE Design Guidelines for Drinking Water Systems (2008), Fire Underwriters Survey (1999), SCADA, previous planning documents such as the 2006 Water and Wastewater Master Plan and through consultation with City staff.

The storage and pumping requirements for PD7 and PD23 were assessed, the pressing infrastructure needs were evaluated, and the infrastructure projects and recommendations were summarized. The project summary table is provided in **Table 14**.

Figure 40: Design Criteria

Base Demands				*Source*
Residential Demand	360	Lpcd		*Start up meeting - City*
Industrial	35000	L/ha/d	28,000 vs 35,000 or other	*MOE*
Institutional	28000	L/ha/d	28,000 or other	*Building Code/MOE*
Commercial	28000	L/ha/d	28,000 or other	*City email/WMP*
Institutional - opt	80	L/student		*Building Code/MOE*
Employee - opt	260	L/person/day		*Building Code/MOE*
City MXDY & PKHR Multipliers				
Res MXDY Multiplier	1.9	x AVDY		*City/WMP*
Res PKHR Multiplier	1.58	x MXDY	*(3 x AVDY)*	*City/WMP*
ICI MXDY Multiplier	1.9	x AVDY		*City/WMP*
ICI PKHR Multiplier	1.58	x MXDY	*(3 x AVDY)*	*City/WMP*
Fire Flow				
PD7 Fire Flow	250	L/s	*(MOE, 250, 183.3 or 150 L/s)*	*MOE/W&WWMP/FUS*
PD7 Fire Flow Duration	3.25	hours	*if MOE see formula*	*MOE/W&WWMP/FUS*
PD23 Fire Flow	150	L/s	*(MOE, 250, 183.3 or 150 L/s)*	*MOE/W&WWMP/FUS*
PD23 Fire Flow Duration	2	hours	*if MOE see formula*	*MOE/W&WWMP/FUS*

Base 2011 Demands

CHOOSE:	SCADA	2011MXDY	2011PKHR	*(Choose: SCADA or Model)*
	PD7	9.77	23.04	
	PD23	1.79	3.77	
	PD7&23	11.56	26.80	

Beyond Staging Growth Future Demands

CHOOSE: City Design *(Choose: 2006WMP, City or MOE Design)*

Year	PD7		PD23		PD7+PD23	
	MXDY	PKHR	MXDY	PKHR	MXDY	PKHR
2031	79.1	124.9	11.4	18.0	90.5	142.8

Hamilton Southeast Mountain Water Servicing Strategy, Stantec October 2013)

8.4.4 CLASS EA FOR PRESSURE DISTRICT 7 ELEVATED TANK AND PUMPING STATION (ON-GOING)

The City has initiated a Class Environmental Assessment (Class EA) for a Pressure District 7 elevated tank and booster pumping station (HD07A) in accordance with the recommendations of the Hamilton Southeast Mountain Water Servicing Strategy (Stantec, October 2013). The Class EA is being undertaken as a Schedule B project whereby all components of Phase 1 and Phase 2 of the Municipal Class Environmental Assessment process will be satisfied. The Class EA will determine the following:

- A preferred location for the elevated tank (ET), which the City could proceed immediately to acquire the land and subsequently construct.
- A preferred location for the second PD7 (HD07A) booster pumping station (PS), which the City could proceed to acquire land in the near future and construct in order to commission by 2025.
- Provision of conceptual designs for the ET and the booster PS, which would be sufficient to either engage a consultant to complete the detailed design or to engage a design/build contractor to construct the works.

8.4.5 UPPER CENTENNIAL PARKWAY SANITARY TRUNK SEWER

8.4.5.1 UPPER CENTENNIAL PARKWAY SIZING MEMORANDUM (2014)

The City's Water and Wastewater Master Plan (2006) identified a 1,200 mm diameter trunk sewer to service the upstream areas of Binbrook, Airport Employment Growth District and the Elfrida Growth Study area. The Upper Centennial Sizing memorandum was undertaken to confirm the design flows and sizing for the Upper Centennial Parkway (UCP) Trunk Sewer as well as the sizing of the future connecting sewers.

A review of the peak wet weather flows within the sewer catchment area determined a range of approximately 2,200 litres per second (L/s) to 2,650 L/s based on GRIDS population and employment projections, and 0.4 L/s/ha peak extraneous flow rate for the drainage area. The memorandum recommends a 1,500 mm diameter trunk sewer at a minimum of 0.25% slope, which will provide full flow capacity of approximately 3,500 L/s. Additionally, the memorandum proposes future connection diameters along the length of the UCP trunk sewer. The memorandum recommends that the final sizing of the connection sewers take place during a secondary plan process.

8.4.5.2 UPPER CENTENNIAL PARKWAY PRE-DESIGN REPORT (2014)

The City's design and construction of the Centennial Parkway Sanitary Trunk Sewer (CPSTS) was split into two phases. Phase 1 extends from Green Mountain Road to King Street East. Phase 2 extends through the study area from the Phase 1 termination at Green Mountain Road, southward on Centennial Parkway and then Regional Road 56 to Golf Club Road. The report focuses on the design of Phase 2.

The CPSTS was designed to maintain a gravity flow and connect to proposed and existing sanitary infrastructure. The build-out design flow of 3,500 L/s assumes the entire drainage area is developed and occupied. A 1,500 mm diameter sewer, as identified in the 2014 memorandum above, can carry the build-out design flow. However, a flatter slope can be used with a 1,800 mm diameter sewer to carry the same flows. The pre-design report considers the design for both the 1,500 mm diameter sewer and 1,800 mm diameter sewer. Both designs were made available for tender and the 1,800 mm diameter sewer was selected for construction.

The 1,800 mm diameter sewer will have a slope of 0.10% and will discharge into the existing 1,950 mm diameter sewer of Phase 1 at Green Mountain Road. Ultimately, the sewer will discharge to the 1,500 mm diameter sewer immediately upstream of King Street East. The flow velocity for the build-out scenario is 1.38 m/s for the 1,800 mm diameter sewer, which is within the range specified in the City of Hamilton guidelines and Ministry of the Environment and Climate Change (MOECC) design standards.

Table 14: Project Summary Table

Project No.	Project	Description	Existing Firm Capacity	Quantity / Additional Capacity	Size/ Total Firm Capacity	Target Year for Commission	Year Deficit Occurs	Estimated Cost ($M)	Trigger	Comments
W-10	HD007 Highland PS Upgrades	Pumping Station expansion including additional pumping capacity and new standby power	12.1 ML/d	32.1 ML/d	44.3 ML/d	2015	2012	$5.2	Growth in ROPA9 and SE Mountain	HD007 will remain in deficit until the recommended upgrades are commissioned. City preferred option is to upgrade station to address firm capacity needs up to 2020, and with construction of elevated tank, defer proceeding with additional pumping station to service PD7 until 2027. The additional firm capacity needed is 32.1 ML/d, and can be achieved by changing three of the pumps to 34.2 ML/d pumps, with the existing 10.1 ML/d pump remaining as is.
W-11	HDR07 Highland Reservoir Expansion	HDR07 Reservoir expansion	11.37 ML	11.37 ML	22.74 ML	2024	2026	$6.9	Growth in ROPA9 and SE Mountain	City preferred option is to proceed with additional elevated tank (W-23), then HDR07 (W-11) to address total storage needs for PD7.
W-13	Centennial Pkwy Trunk Feedermain	New watermain aligned through new developments from HD05A up escarpment to the corner of Centennial Parkway Mud St. W	N/A	3000 m	1200 mm	2016	N/A	$11.6	Growth in Hamilton Mountain, Ancaster, Airport Lands, Binbrook, security of supply	Current submitted Draft Plans do not cover alignment for proposed watermain. Recommend to defer construction until development is approved along alignment, but cannot defer past 2016, as this watermain feeds W-24.
W-20	HD019 Binbrook/ Hwy 56 PS Upgrades	Additional pumping capacity	6.5 ML/d	5 ML/d	11.5 ML/d	2019	2021	$1.3	Growth in Binbrook	Addresses firm capacity, needs up to 2031.
W-20	PD23 Storage	Expand storage feeding HD019	3.4 ML *	1.7 ML	5.1 ML	2020	2022	$2.2	Growth in Binbrook	Existing storage is an elevated tank. Additional storage is required for PD23 to meet capacity requirement to 2031.
W-21	New PD7 PS HD07A	New pumping station located near the corner of Centennial Parkway and Rymal Road E.	N/A	15.6 ML/d	15.6 ML/d	2027	2029	$4.0	Growth in ROPA9 and SE Mountain	Addresses firm capacity needs up to 2031, provided elevated storage (W-23) is completed by 2021.
W-22	HD07A Feedermain	New watermain on Centennial Parkway from Mud St. W to HD07A	N/A	2000 m	600 mm	2027	2029	$3.4	Growth in ROPA9 and SE Mountain	The location of this watermain has changed from the 2006 WWMP due to the change in location of HD07A (W-21).
W-23	Pressure District 7 Elevated Tank	New Elevated Tank, south of Highland Rd and west of First Rd. E	N/A	7 ML	7 ML	2016 (could defer to 2021)	2023	$8.2	Growth in ROPA9 and SE Mountain	City preferred option is to proceed with additional elevated tank (W-23) as soon as possible to contribute to operational flexibility, then expand at HDR07 (W-11) to address total storage needs for PD7. Note that demand requirements do not trigger need for elevated tank until 2021.

Table 14: Project Summary Table

Project No.	Project	Description	Existing Firm Capacity	Quantity / Additional Capacity	Size/ Total Firm Capacity	Target Year for Commission	Year Deficit Occurs	Estimated Cost ($M)	Trigger	Comments
W-24	Stone Church Trunk Feedermain	New watermain from corner of Centennial / Mud St W, to Paramount/ Stone Church Rd. terminates at HD06B	N/A	6500 m	1050 mm	2016	N/A	$21.3	Growth in Ancaster, Airport Lands, Binbrook, security of supply	This watermain is for security of supply, and demands in PD7 do not effect size or timing. Therefore recommendation was not changed from the 2009 HMM Report.
W-28	HD05A Greenhill PS Upgrades	Additional pumping capacity and new standby power	98 ML/d	59 ML/d	157 ML/d	2020	2022	$15.3	Growth in SE Mountain, Ancaster, Airport Lands, Binbrook, security of supply	Since 2022 demands are very similar to WWMP, the timing of upgrades did not change.
W-30	Binbrook Trunk Feedermain	New watermain from PD7 to HD019 along Fletcher Road and Cemetery Road	N/A	6800 m	400 mm	2021	N/A	$7.2	Growth in Binbrook, security of supply	Timing of upgrade is dependent on reliability of supply. City should utilize development along alignment to construct as it occurs.

Source: Hamilton Southeast Mountain Water Servicing Strategy (Stantec, October 2013)

The Phase 1 CPSTS is a 1,950 mm diameter sewer that flows partially during the peak design flow for the build-out scenario, at a capacity of 14% and a peak design flow of 1,729 L/s. Although the Phase 2 design flow is 3,500 L/s and will carry through to the Phase 1 sewer, the capacity of the Phase 1 sewer would only be increased to 40%. The pre-design report determined that the Phase 1 sewer has more than sufficient capacity to accept the flows from the Phase 2 sewer.

The City's Master Plan identified the need to twin the Battlefield sanitary trunk sewer downstream of the CPSTS to convey flow from the CPSTS to the eastern Sanitary Interceptor. This trunk sewer would be sized for the build-out peak design flow of the CPSTS. The City has constructed a 600mm diameter sanitary sewer (with a slope of 60%) along King Street East to connect to the existing Battlefield sanitary trunk sewer. This sewer was constructed as an interim measure and carries flows up to 496 L/s, which is less than the spare capacity of the existing Battlefield sanitary trunk sewer (515 L/s). Before the peak flow in the CPSTS exceeds 496 L/s, it will be necessary to twin the Battlefield sanitary trunk sewer.

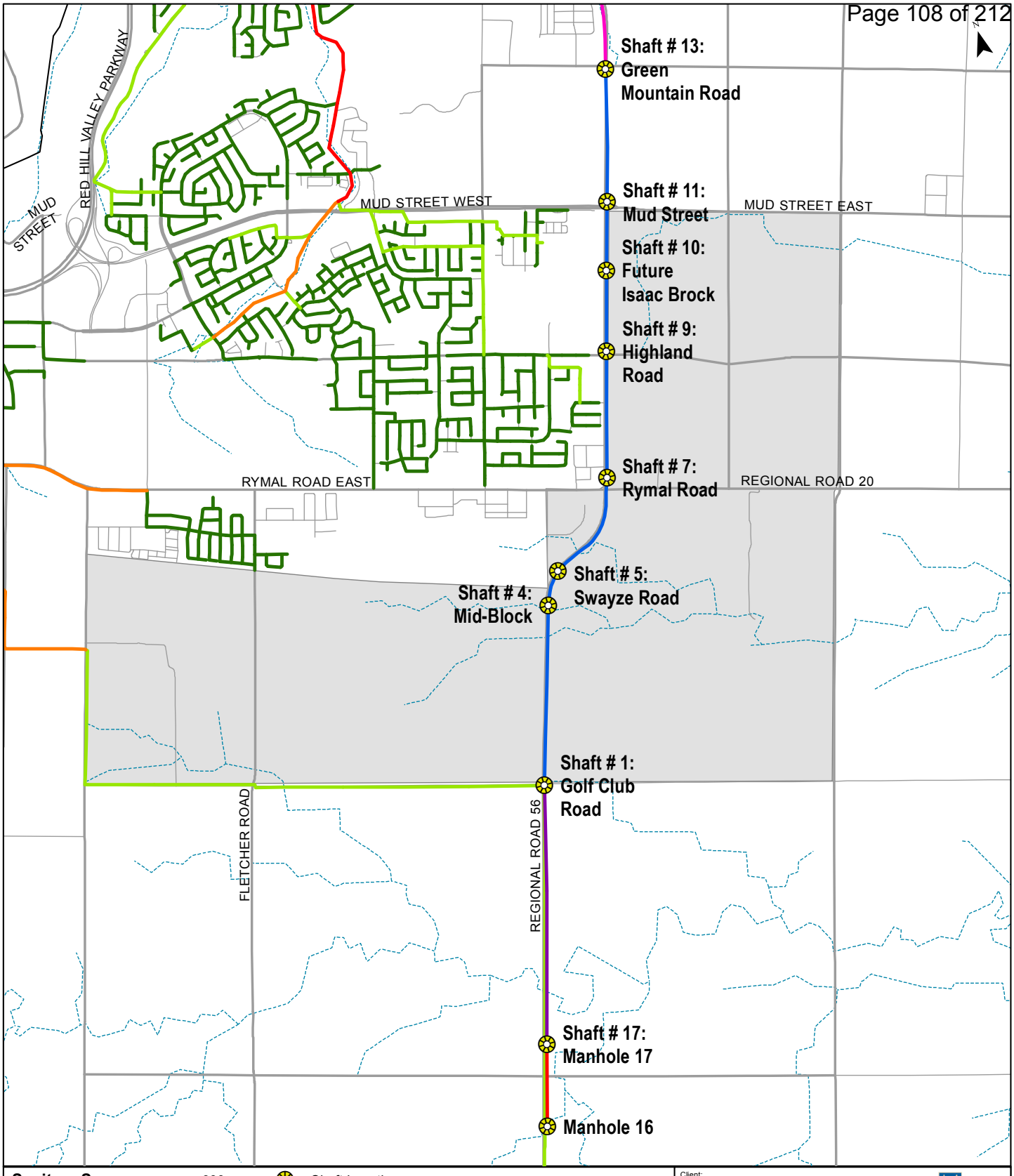
The pre-design report summarizes the geotechnical, hydrogeological, and environmental investigations that were undertaken for the design of the CPSTS. The report includes the sewer alignment and profile, locations of maintenance holes, configuration of drop shafts and other details concerning construction methods, utility relocations and easements. The drop shafts are provided where the trunk sewer will be connected to the proposed future sewers.

It should be noted that following the completion of the pre-design report, the City proceeded with the development of an extension to the Upper Centennial Parkway Sanitary Trunk Sewer. The trunk sewer was extended approximately 1.71 km south from Gold Club Road along Regional Road 56. Between Gold Club Road and Manhole 17, the trunk sewer extension will be 1,200 mm in diameter with a slope of 0.14%. The trunk sewer extension will be 900 mm in diameter with a slope of 0.14% from Manhole 17 to Manhole 16, where it will connect to an existing 900 mm diameter sanitary sewer. **Table 15** and **Figure 41** show the locations of future sewers connecting to the Upper Centennial Parkway Sanitary Trunk Sewer as well as the sewer extension.

Table 15: Upper Centennial Parkway Sanitary Trunk Sewer Connection Locations

Location	Shaft	Size (mm)	Top of Ground (m)	Invert (m)	Flow (l/s)	Direction
Manhole 16	N/A	900	207.7	N/A	N/A	South
Manhole 17	17	N/A	205.8	N/A	N/A	N/A
Golf Club Road	1	600	208.3	195.02	168	East
Golf Club Road	1	1200	208.3	195.41	1554	West
Mid-Block	4	750	209.7	195.1	380	East
Swayze Road	5	600	209.7	201.5	By Others	West
Rymal Road	7	675	211.6	199.4	229	East
Rymal Road	7	525	211.6	205.2	123	West
Highland Road	9	525	210.7	203.3	114	East
Future Isaac Brock	10	600	206.5-	201	82	West
Mud Street	11	750	206.7	195	363	East
Mud Street	11	300	206.7	202	39	West
Green Mountain Road	13	600	204.3	194.6	228	East

Source: Upper Centennial Parkway Pre-Design Report (2014)


Shaft # 13:
Green
Mountain Road
Shaft # 11:
Mud Street
Shaft # 10:
Future
Isaac Brock
Shaft # 9:
Highland
Road
Shaft # 7:
Rymal Road
Shaft # 5:
Swayze Road
Shaft # 4:
Mid-Block
Shaft # 1:
Golf Club
Road
Shaft # 17:
Manhole 17
Manhole 16
MUD STREET WEST
MUD STREET EAST
MUD STREET
RED HILL VALLEY PARKWAY
RYMAL ROAD EAST
REGIONAL ROAD 20
FLETCHER ROAD
REGIONAL ROAD 56
Sanitary Sewer
All other values
<=400 mm
<= 600 mm
<=850
900 mm
1200 mm
1800 mm
1950 mm
Shaft Location
Watercourse
Study Area
0 0.275 0.55 1.1
Kilometers
Client:
City of Hamilton
Title:
Elfrida Study Area Context
Figure 41: Upper Centennial Sanitary Trunk Sewer
Prepared by:
17M-00642-00
Date: 8/10/2017
Review: JN

8.4.6 COMPREHENSIVE DEVELOPMENT GUIDELINES AND FINANCIAL POLICIES MANUAL (2016)

The City's Comprehensive Development Guidelines and Financial Policies Manual (2016) outlines the design guidelines for watermains (Section D) and sanitary sewers (Section E). The guidelines for watermains and sanitary sewers include, but are not limited to: location, size and layout, depth of cover, demand and design criteria, watermain and sewer appurtenances, pipe material specifications, construction specifications and the commissioning/ acceptance and assumption process.

8.4.6.1 WATERMAINS (SECTION D)

Section D of the City's Guidelines states that, *"The domestic demand design flows shall conform to the latest edition of the [MOECC] 'Guidelines for the Design of Water Storage Facilities, Water Distribution Systems, Sanitary Sewer Systems and Storm Sewers'. Fire flows shall be determined in accordance with the Fire Underwriters Survey (1999)".* In addition, the guidelines explain that the distribution system shall be sized to meet peak demands at a maximum operating pressure of 700 KPa. Under simultaneous maximum day and fire flow demands, the pressure shall not drop below 140 KPa.

8.4.6.2 SANITARY SEWERS (SECTION E)

Section E of the City's Guidelines includes the following formula for the calculation of the design flow for sanitary sewers:

Design Flow = Average Dry weather flow x Peak Factor + Infiltration Allowance

The guidelines specify that sanitary sewers shall be designed for 360 litres per day per capita and the densities shown in **Table 16** for the various types of development that are to be used to determine the average dry weather flow.

The Babbitt Formula is included in the City's guidelines for determining the peak factor. Allowances for infiltration into the sewer system are specified as follows:

- For areas where the weeping tiles of the dwelling are designed to be drained by gravity, or where a separate foundation drain collector sewer is proposed, the infiltration factor shall be 0.4 litres per second per hectare; and,
- For areas where there are no storm sewers, or shallow storm sewers which require the weeping tiles of the dwelling to be drained by sump pump, the infiltration factor shall be 0.6 litres per second per hectare.

The City's guidelines include Manning's formula for determining the design capacities of the sanitary sewers and specify the maximum design capacities for the sanitary sewers based on pipe size. Sanitary sewers up to and including 450 mm diameter shall be designed to flow at a maximum of 75% full design capacity of the pipe. Trunk sanitary sewers (525 mm diameter and above) shall be designed to flow at a maximum of 60% full design capacity of the pipe. In addition, the design guidelines specify a minimum design velocity of 0.75 m/sec flowing full and a maximum velocity of 2.75 m/sec.

Table 16: Population Density by Development Type

Development	Density
Single detached	60 persons/hectare (ppha)
Semi-detached	75 ppha
Townhouses and Maisonettes (30 upha)	110 ppha
Medium density apartments (60 upha)	250 ppha
High density apartments (100 upha)	Varies (subject to detailed plans)
Parks	12 to 25 ppha
Schools and Institutional Uses	75 to 125 ppha
Commercial	125 to 750 ppha
Industrial and Central Business Districts	125 to 750 ppha

Source: City of Hamilton, Comprehensive Development Guidelines and Financial Policies Manual (2016)

8.4.7 MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT

Class Environmental Assessments (EAs) were approved by the MOECC in 1987 for municipal projects, including water and wastewater projects, having predictable and preventable impacts. The Municipal Class EA document was revised and updated in 1993, 2000, 2007, 2011 and again in 2015. The Class EA approach streamlines the planning and approvals process for municipal projects which have the following characteristics:

- Recurring;
- Similar in nature;
- Usually limited in scale;
- Predictable range of environmental impacts; and,
- Environmental impacts are responsive to mitigation.

The Class EA process flowchart is provided in **Figure 42**.

Projects subject to the Class EA process are classified into four possible 'Schedules' depending on the degree of expected impacts. The Municipal Class EA document provides listings of which projects are categorized under each schedule. The following provides some general characteristics of the projects categorized under each schedule.

8.4.7.1 SCHEDULE A

These projects generally include normal or emergency operational and maintenance activities. The environmental effects of these activities are usually minimal and, therefore, these projects are pre-approved.

Typical projects that follow a Schedule A process will be the construction of watermains and sewers within existing road allowances where no watercourse crossings are required. In addition, the construction of stormwater management facilities which are required as a condition of approval on a consent, site plan, plan of subdivision or condominimum which will come into effect under the *Planning Act* prior to construction will follow a Schedule A process.

8.4.7.2 SCHEDULE A+

In 2007, the Municipal Class EA introduced the Schedule A+ classification. These projects are pre-approved; however, the public is to be advised prior to project implementation. The manner in which the public is advised is to be determined by the proponent.

Typical Schedule A+ projects include retiring a water or wastewater facility that would have been planned under a Schedule A or A+ of the Municipal Class EA for its establishment.

8.4.7.3 SCHEDULE B

These projects generally include improvements and minor expansions to existing facilities. There is the potential for some adverse environmental impacts as a result of implementing these projects and, therefore, the proponent is required to proceed through a screening process including consultation with those who may be affected.

Typical projects that follow a Schedule B process will include: projects requiring watercourse crossings, watermains and sewers outside of existing road allowances, pumping stations and reservoirs.

These projects require completion of Phases 1 and 2 of the MEA Class EA process.

Figure 42: Municipal Class EA Process

8.4.7.4 SCHEDULE C

These projects generally include the construction of new facilities and major expansions to existing facilities.

Typical projects that follow the Schedule C process include the expansion of existing or construction of new Water and Sewage Treatment Facilities.

These projects require completion of Phases 1 through 4 of the MEA Class EA process.

8.5 KEY DIRECTIONS

The Water and Wastewater Servicing Master Plan will identify the required improvements and expansion to the City of Hamilton's water distribution and wastewater collection systems to support the proposed growth in the Elfrida Growth Study area. Based on the background review, key considerations related to the future water and wastewater servicing options for the Elfrida Growth Study area are summarized below.

ELFRIDA WATER DISTRIBUTION SYSTEM

The City has initiated a Class Environmental Assessment for the Pressure District 7 elevated tank and booster pumping station (HD07A). Together with the new elevated tank and water pumping station, the upgrades to the HD007 Highland Pumping Station and expansion of the HDR07 Highland Reservoir will be incorporated into the water servicing strategy for the Elfrida Growth Study area, in accordance with the Hamilton Southeast Mountain Water Servicing Strategy (Stantec, October, 2013). The opportunity to service the Elfrida Growth Study area within a single pressure district, Pressure District 7, will be considered.

ELFRIDA WASTEWATER COLLECTION SYSTEM

The City's wastewater model will be used to confirm the capacity of the Centennial Parkway Sanitary Trunk Sewer and downstream sanitary sewers to handle peak flows from the Elfrida Growth Study area in consideration with updated inflow/infiltration per the City's Comprehensive Development Guidelines, as well as the recommendation to twin the Battlefield sanitary trunk sewer as identified in the City's Master Plan.

As indicated in the City's 2006 Master Plan, the entire Elfrida Growth Study area will drain by gravity to the Centennial Parkway Sanitary Trunk Sewer. The design of the new Centennial Parkway Sanitary Trunk Sewer and the City's wastewater model will be used to confirm that all flows from Elfrida will drain by gravity and will not require a pumping station.

The locations and pipe diameter sizes provided in the design of the Centennial Parkway Sanitary Trunk Sewer for the future connecting sewers will be accommodated where possible during the planning of the future sewers to service the Elfrida Growth Study area.

KEY DIRECTIONS

Key directions for Water and Wastewater Servicing which will be implemented through this process are:

20. Consider ease of connecting any future water and wastewater infrastructure to the City's existing water and wastewater infrastructure.
21. Maintain or enhance drinking water quality.
22. Provide efficient wastewater collection with a focus on the protection of property and the environment.

9.0 STORMWATER MANAGEMENT

The study area includes five subwatersheds encompassing the following five creeks:

- Upper Davis Creek;
- Hannon Creek;
- Twenty Mile Creek;
- Sinkhole Creek; and
- Stoney Creek.

Three of these creeks (Upper Davis Creek, Hannon Creek, and Twenty Mile Creek) originate within the study area, while the other two (Sinkhole Creek and Stoney Creek) originate from the urbanized area to the west.

9.1 HYDROLOGY

According to the Draft Subwatershed Study, a hydrologic model was developed which included 75 subcatchments within the study area and two external areas draining to Sinkhole Creek and Stoney Creek. The Subwatershed Study utilized the model for event-based modeling (2-year to 100-year) only. The Hydrologic Model Setup information (Appendix C of the Draft Subwatershed Study) included hydrologic parameters for the three major creeks covering the Study Area (Stoney Creek, Sinkhole Creek, and Twenty Mile Creek), in addition to the hyetographs of the 2-year to the 100-year events. This model will be reviewed as part of evaluating the land use explorations.

The Draft Subwatershed Study included a monitoring program that ran between May and September 2016. As part of the program, three stream gauges were installed on Stoney Creek, Sinkhole Creek, and Twenty Mile Creek. The results of the monitoring program were concluded by the Draft Subwatershed Study, indicating that difficulties related to flow measurements and defining rating curves had prevented the generation of runoff hydrographs. Consequently, monitoring data were not utilized in the hydrologic modeling of the Study Area.

Following the completion of the impact assessment under future development, we will review the hydrology and the proposed stormwater management strategy and update the findings and conclusions in a way that is appropriate to the scale and requirements of this study..

9.1.1 FLOOD FLOW ESTIMATES

The Regulatory Flood event for the Elfrida Growth Study area is based on the 100-year storm event. The model developed using PCSWMM as part of the Draft Subwatershed Study utilized the 12-hour AES design storm, based on long-term data from the Mount Hope rainfall gauge station. The Draft Subwatershed Study provided summary tables showing estimated flood flows for storm events ranging from the 2-year to the 100-year event. It was concluded that the flow estimates were reasonable and reflect anticipated flow rates and hydraulics for the floodplain mapping of the study area.

9.1.1.1 HYDRAULICS AND FLOODPLAIN MAPPING

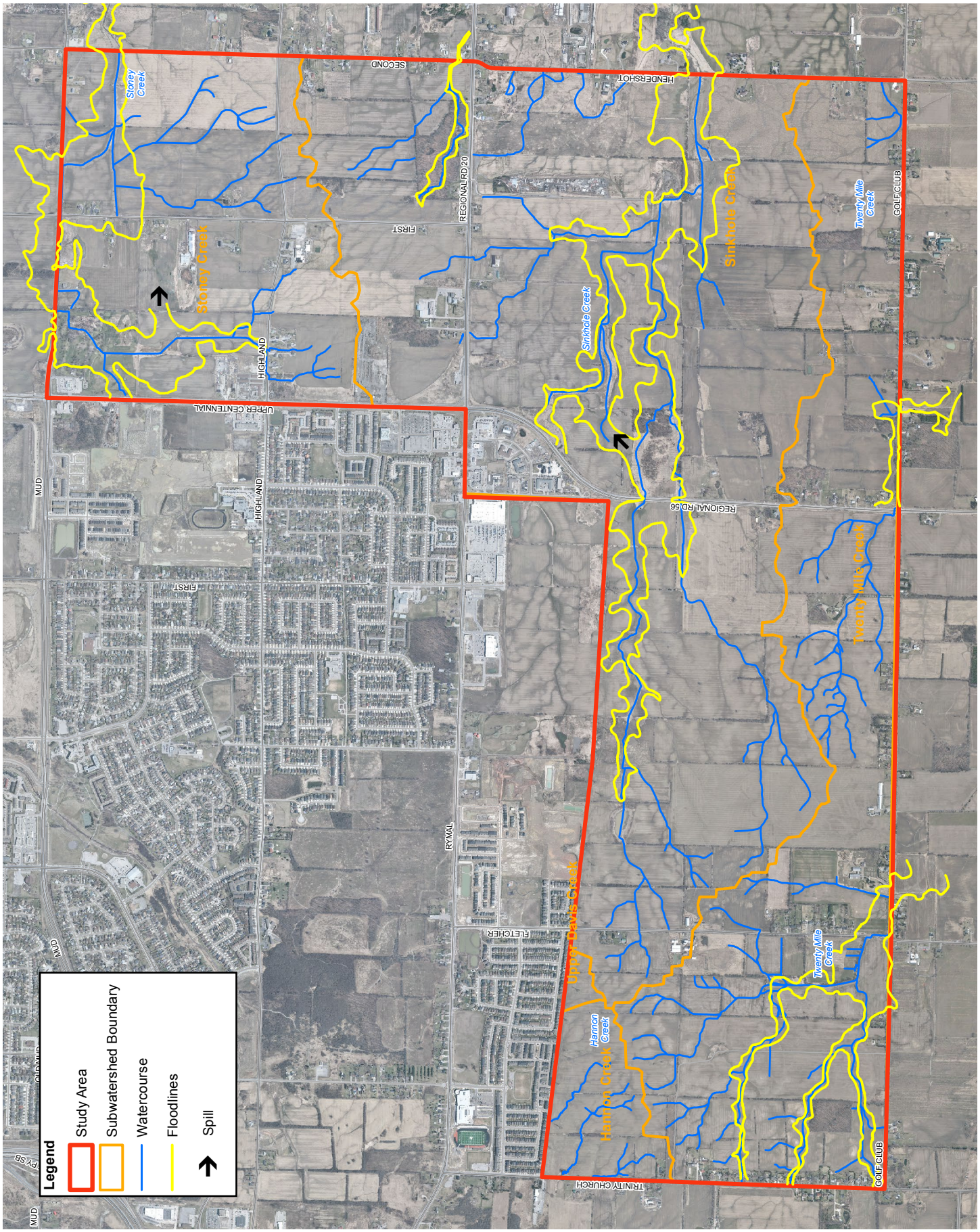
According to the Draft Subwatershed Study, previous flood studies have primarily covered Sinkhole Creek, which encompasses a significant span of the study area, consequently having up to four stream orders (The Niagara Peninsula Conservation Authority's Sinkhole Creek Floodplain Mapping report, 2006). The 2007 Twenty Mile Creek Floodplain Mapping Study and the 1976 Battlefield and Stoney Creeks Floodplain Mapping Study did not cover the study area.

The Draft Subwatershed Study developed floodplain hazard lines for the three major creeks in the Study Area: Stoney Creek, Sinkhole Creek, and Twenty Mile Creek. The generated floodplains are relatively wide due to flat topography and lack of valley formations.

Spilling of floodwaters was predicted within two areas: one between two Sinkhole Creek tributaries and the other at Stoney Creek (refer to **Figure 43**). The Draft Subwatershed Study recommends that future development consider grading works to eliminate potential spills.

9.2 FLUVIAL GEOMORPHOLOGY

According to the Draft Elfrida Subwatershed Study, there were no locations within the study area that show signs of excessive erosion.



Source: City of Hamilton, Elfrida Draft Subwatershed Study Municipal Class EA Process

Figure 43: Floodplain Hazard Lines and Spill Zones

9.3 WATER QUALITY

According to the Draft Elfrida Subwatershed Study, there had been no water quality monitoring locations within the study area before the inception of the Subwatershed Study. Downstream of the study area, there are water quality monitoring data collected by NPCA and HCA on Twenty Mile Creek. The results compiled from downstream of the study area show that concentrations of chloride, copper, E.coli, lead, nitrate, phosphorus, TSS, and zinc frequently exceed provincial guidelines.

Grab samples collected along Stoney Creek, Sinkhole Creek, and Twenty Mile Creek, as part of the Subwatershed Study reveal that phosphorus and chloride concentrations exceed the provincial water quality guidelines. In addition, elevated levels of E.coli, TSS, and some metals were observed as part of the monitoring program initiated by the Subwatershed Study.

9.4 KEY DIRECTIONS

23. Proposing conventional stormwater management facilities (wet ponds and dry ponds) in addition to innovative Low Impact Development measures would significantly contribute toward achieving environmental objectives in addition to municipal objectives, and which would collectively provide sustainable drainage infrastructure within Elfrida.
24. Minimizing the percentage of impervious surfaces as well as adopting Green Infrastructure techniques and Low Impact Development (LID) standards would reduce rates of surface water flow and run-off, improve water quality, and mitigate stream erosion downstream of future development.

Subsequent to the recommendation of a stormwater management strategy, we will review the recommendations and propose approaches to integrate the stormwater management strategies within the future urban fabric of the study area. This will include reviewing the PCSWMM model, refining the model to reflect the future drainage and land use templates, and updating the conclusions as appropriate to the scale and requirements of the study.

10.0 RETAIL-COMMERCIAL ANALYSIS

An analysis was conducted of the existing retail-commercial environment as well as an assessment of the required amount of retail-commercial lands (including location and type/scale of development) to support development of these lands. The detailed analysis provided by Cushman and Wakefield is attached as Appendix B to this report.

From this review, it is apparent that the existing commercial uses to the west of Upper Centennial Parkway along Rymal Road East have the capacity to serve a greater population than what is existing. The primary trade area for these retail-commercial uses extends into the study area. The west side of the intersection of Rymal Road and Upper Centennial Parkway/Highway 56 is identified as a Community Node on the Urban Structure Plan in the UHOP. The east side of the intersection is within the study area, and would round out this node.

10.1 KEY DIRECTIONS

General observations and conclusions of the study noted that the Primary Trade Area (37.6 sf per capita) has nearly 2.3 times the amount of shopping centre-type space compared to the City of Hamilton average (16.5 sf per capita). From this analysis, the following key directions will apply to future stages of this study:

25. There is room for considerable population growth within the Primary Trade Area (which encompasses the study area, and beyond)—in the range of 35,100 persons—without a requirement for additional provision of retail-commercial lands.
26. The Primary Trade Area/Study Area does not have to match the City's average shopping centre space per capita; it can exceed it, but shouldn't be drastically higher.

11.0 CONCLUSIONS AND NEXT STEPS

11.1 KEY DIRECTIONS

The analysis completed in this report has produced 27 key directions which will need to be considered in all future stages as this process moves forward. This includes the future master planning and design work to be undertaken for the Elfrida Growth Study area. The key directions are:

PLANNING AND URBAN DESIGN

1. Design for a healthy community which supports the quality of human well-being and active lifestyles, nourished and nurtured by an interrelationship between the built environment and nature that facilitates equal opportunities for social, psychological, physical, and spiritual and cultural development for all individuals and the community alike.
2. Design for a diverse community which supports a wide array of lifestyles and activities, by including a range of land uses and building types. Preserved nature, sustainable agriculture and active spaces support a diversity of housing, vibrant retail, integrated employment and civic facilities.
3. Design for a contextual community which transitions meaningfully into its surroundings, creating new connections to existing amenities, respecting existing built-up areas and maintaining effective buffering and relationships with natural areas.
4. Design for a coherent community which organizes itself around well-defined public spaces and cultural amenities, using architecture, transportation networks and the landscape to frame identifiable urban places that celebrate local history and culture, natural and built heritage. Building phases function individually, and contribute to the overall community identity.

TRANSPORTATION

5. Create a transportation network which promotes health and safety by integrating health into the transportation network, promoting active transportation, and age-friendly non-auto networks.
6. Foster a connected and accessible on-road and off-road pedestrian path network which promotes a culture of walking.
7. Build an extensive on-road and off-road cycling network which can connect cyclists for utilitarian, commuting and recreational uses.
8. Create an expanded transit network that can support ridership demand until the implementation of rapid transit through the proposed LRT / BRT routes (25-year horizon).
9. Design a complete street network that incorporates elements of 'Complete-Livable-Better Streets'. These would be supportive of all modes of travel as well as supporting vehicle and goods movement (including agricultural equipment).

CULTURAL HERITAGE

10. Integrate significant built heritage resources into new development proposals.
11. Designate significant built heritage resources and significant cultural heritage landscapes under Section 29 of the *Ontario Heritage Act*.
12. Incorporate where possible, principal cultural heritage elements into the evolving future landscape where opportunities for conservation may exist.
13. Protect and maintain as much as possible the rural character of the area, including tree lines, fencing etc., associated with the portions of roadscapes and agricultural lands.

NATURAL HERITAGE

14. Identify and explore land use design options that enhance or are compatible with the Natural Heritage System.
15. Identify and integrate compatible recreation opportunities that connect the community to the Natural Heritage System.
16. Consider enhancement opportunities and opportunities to integrate non-core features into the design (e.g. hedgerows).

AGRICULTURE

17. Agricultural lands where the use would likely remain agricultural will be identified, evaluated, and considered throughout the planning and design process.
18. Any adverse impacts on agricultural operations and on the agri-food network from expanding settlement areas will be avoided or, if avoidance is not possible, minimized and mitigated as determined through an agricultural impact assessment.
19. Integrating and mitigation of public feedback (questions/concerns) of future effects during transition from agricultural setting to a more urban setting with inclusion of urban agriculture.

WATER AND WASTEWATER

20. Consider ease of connecting any future water and wastewater infrastructure to the City's existing water and wastewater infrastructure.
21. Maintain or enhance drinking water quality.
22. Provide efficient wastewater collection with a focus on the protection of property and the environment.

STORMWATER

23. Proposing conventional stormwater management facilities (wet ponds and dry ponds) in addition to innovative Low Impact Development measures would significantly contribute toward achieving environmental objectives in addition to municipal objectives, and which would collectively provide sustainable drainage infrastructure within Elfrida.
24. Minimizing the percentage of impervious surfaces as well as adopting Green Infrastructure techniques and Low Impact Development (LID) standards would reduce rates of surface water flow and run-off, improve water quality, and mitigate stream erosion downstream of future development.

RETAIL-COMMERCIAL

25. There is room for considerable population growth within the Primary Trade Area (which encompasses the study area, and beyond)—in the range of 35,100 persons—without a requirement for additional provision of retail-commercial lands.
26. The Primary Trade Area/Study Area does not have to match the City's average shopping centre space per capita; it can exceed it, but shouldn't be drastically higher.

THEMES

Some general themes that emerged through this process are:

- Due to anticipated growth, an expansion of the urban boundary of Hamilton will likely be required; the Residential Land Needs Technical Working Paper prepared by Deloitte in November 2016 identified that 533 gross hectares of land (excludes lands that are to be within the NHS) would be needed to accommodate planned growth to 2031.
- Elfrida was selected as the preferred location through the City-initiated GRIDS study and initial adoption of the UHOP and RHOP. GRIDS II, the MCR and Land Budget Analysis are answering questions with respect to land needs to accommodate growth to 2041 across Hamilton.
- Transportation networks require further study, and a City-wide Transportation Master Plan update is currently underway. Building on the extensive work done by the City, transportation for Elfrida will focus on active and alternative transportation networks and complete streets.
- Elfrida will look, feel, and function differently from almost any other new community in Ontario. Health, diversity, and sustainability will be important to the urban design of the area, as well as ensuring that design is context-sensitive and creates a unifying community identity.
- While the Primary Trade Area around Elfrida is highly supplied with retail and commercial uses for the current population, full build-out would require more retail/commercial spaces. Small-scale local and mixed-use retail development may still occur as part of the overall commercial supply.
- Further study is required to determine the extent of archaeological and cultural heritage resources in and adjacent to the study area.
- Significant natural heritage resources exist and require protection; significant work has already been conducted through the Subwatershed Study (running concurrent to this study) and will continue to be undertaken as this study progresses;
- Preserving agricultural lands and mitigating any adverse impacts will be important to consider as the phasing of potential development is reviewed;
- The City-wide Water/Wastewater Servicing Master Plan identified preferred servicing options, and a major construction project is currently underway on Upper Centennial Parkway to extend wastewater services in this area; and
- Sustainable design is key to this development, including consideration for low impact development technologies to accommodate stormwater management in a way that is integrated with the natural heritage and watershed features.

11.2 NEXT STEPS

The key directions developed in this report were presented at the initial public consultations for this study, held in June 2017. This public consultation included presentations on the findings thus far, engagement in developing a vision, goals and objectives for this study, and 6 preliminary explorations for land use scenarios in the Elfrida Growth Study area. These 6 preliminary land use designs produced in the June 2017 consultation exercise are being refined into three explorations which will be developed and sent to the study team, City staff, Council and the public for broader evaluation and feedback. These three explorations, along with the refined vision, goals and objectives of this study will feed into the second round of this iterative process of engagement, review and refinement through continued public engagement events for the development of a preferred land use scenario for the study area. The timeline illustrated in **Figure 44** below outlines the implementation plan for this process.

The key directions and findings of this report will be carried forward into the final phases of design, ensuring a holistic, integrated approach to defining and creating the preferred land use scenario. The elements and analysis discussed in this report will also filter into accompanying studies and guidelines such as the Transportation and Servicing Master Plans, Urban Design Guidelines, and Financial Investment Strategy.

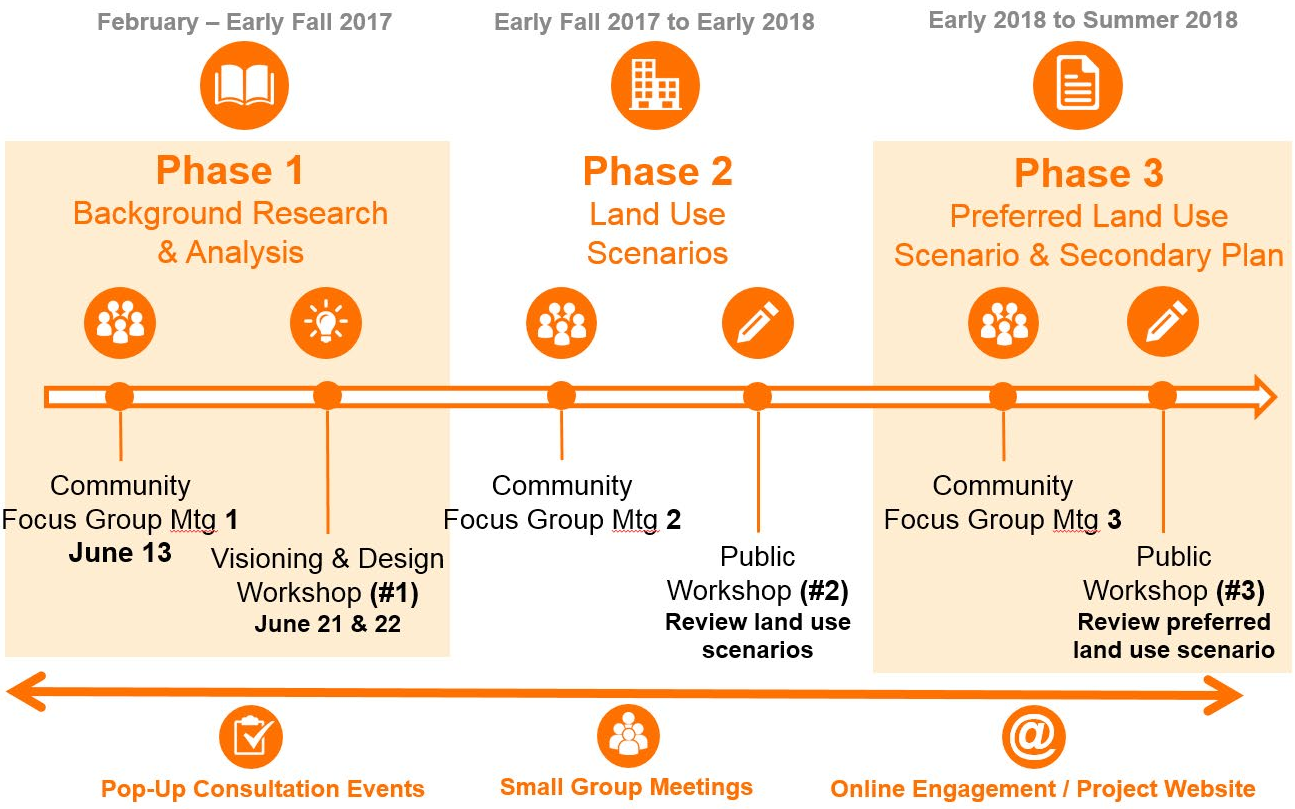


Figure 44: Elfrida Growth Study Timeline

A BUILT HERITAGE RESOURCES AND CULTURAL HERITAGE LANDSCAPES

CULTURAL HERITAGE REOURCE ASSESEMENT
EXISTING CONDITIONS REPORT
ELFRIDA STUDY AREA

GEOGRAPHIC TOWNSHIPS OF SALTFLEET AND BINBROOK, WENTWORTH COUNTY
CITY OF HAMILTON, ONTARIO

Prepared for:

MMM Group Limited
100 Commerce Valley Drive West
Thornhill, Ontario
L3T OA1

ASI File: 16TS-230

August 2017

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CULTURAL HERITAGE REOURCE ASSESEMENT
EXISTING CONDITIONS REPORT
ELFRIDA STUDY AREA

GEOGRAPHIC TOWNSHIPS OF SALTFLEET AND BINBROOK, WENTWORTH COUNTY
CITY OF HAMILTON, ONTARIO

In 2016, the City of Hamilton retained MMM Group Limited to prepare a number of studies for the Elfrida Study Area. The study area has been identified as a potential area for urban growth in the City of Hamilton. ASI was contracted by the latter firm to complete a Cultural Heritage Resource Assessment (CHRA) of the proposed growth area. The Elfrida Study Area consists of various properties and roadways within an area generally defined as being bounded by Mud Street East to the north, Golf Club Road to the south, Trinity Church Road to the west, and following the existing urban boundary on the northwest (Figure 1). The size of the study area is approximately 1,237 hectares. In general, the Elfrida study is being undertaken to provide detailed policy and land use direction, and to help understand opportunities and constraints to developing this greenfield area.

The results of the desktop data collection, which included a review of nineteenth and twentieth century mapping, revealed a study area with Indigenous history dating back thousands of years and an agricultural land use history with its origins in early nineteenth century survey and settlement. Over the past centuries, the study area has been minimally altered and a small number of mid- to late-twentieth century residential structures have been introduced. A number of nineteenth century agricultural complexes and structures have been maintained, and generally the overall landscape of the area has retained a rural, agricultural character and setting.

Based on the results of background research, data collection, and the field review, a total of 32 cultural heritage resources were documented. Of those, 20 Active cultural heritage resources are within or adjacent to the Elfrida Study Area, including 10 residential properties (BHRs 1, 2, 4-7, 9, 11-13), six farmscapes (CHLs 1,3, 4-7), one outbuilding (BHR 3), one place of worship (BHR 10), one former place of worship (BHR 23) and one cemetery (CHL 2). A total of 12 Inactive cultural heritage resources were investigated, including eight residential properties (BHRs 14, 16-22), two farmscapes (CHLs 8 and 9), one outbuilding (BHR 15) and one cemetery (CHL 10).

The City of Hamilton's plan for growth is likely to impact the character and setting of the rural landscape and has the potential to directly impact cultural heritage resources. This may involve the removal or demolition of some cultural heritage resources which may alter the present rural character associated with the nineteenth century transportation routes. It may also disrupt or indirectly impact cultural heritage resources in the lands adjacent to the growth plan area through the introduction of physical, visual, audible, or atmospheric elements to the existing environment that are not in keeping with the rural character and/or setting. Efforts will be made to conserve and retain built heritage resources within new development. If no other alternatives have been found, built heritage resources may be partially or fully demolished with appropriate impact assessments as well as documentation and salvage processes in place.

The identified cultural heritage resources should be candidates for conservation and integration into future land uses. Incorporating cultural heritage components into new development assists in making the area visually diverse and distinctive. Appropriate mitigation measures and/or alternative development approaches should be incorporated to reduce the potential for adverse impacts to the cultural heritage resources in the area. Four key objectives with regard to the cultural

heritage planning and conservation of built heritage and cultural heritage landscapes found within the Elfrida Study Area have been identified:

1. Integrate significant built heritage resources into new development proposals;
2. Designate significant built heritage resources and significant cultural heritage landscapes under Section 29 of the *Ontario Heritage Act*;
3. Incorporate where possible, principal cultural heritage elements into the evolving future landscape where opportunities for conservation may exist;
4. Protect and maintain as much as possible the rural character of the area, including tree lines, fencing etc., associated with the portions of roadscapes and agricultural lands.

Based on the results of the assessment, the following recommendations have been developed:

1. A total of 32 cultural heritage resources are within or adjacent to the Elfrida Study Area including 20 Active cultural heritage resources (BHRs 1-13 and 23, and CHLs 1-7) and 12 Inactive cultural heritage resources (BHRs 14-22 and CHLs 8-10). **If the Active identified cultural heritage resources are expected to be directly or indirectly impacted through alteration to the setting in the proposed growth plan, a property specific Heritage Impact Assessment (HIA) is required, which should include an evaluation of the resource based on the criteria set out in Ontario Regulation 9/06.** Inactive properties do not require further work. A Cultural Heritage Documentation Report (CHDR) may be a mitigation action of the HIA.

2. The Elfrida Secondary Plan should incorporate policies that ensure the long-term viability and presence of the identified built heritage resources and cultural heritage landscapes. Upon the completion of the Elfrida Secondary Plan, this report may require updating to consider the potential impacts of future plans on the identified built heritage resources and cultural heritage landscapes. Additional mitigation measures may be identified.

3. Should future work require an expansion of the study area, then a qualified heritage consultant should be engaged in order to confirm the impacts of the proposed work on potential heritage resources.

ARCHAEOLOGICAL SERVICES INC.
CULTURAL HERITAGE DIVISION

PROJECT PERSONNEL

Senior Project Manager:	Annie Veilleux, MA, CAHP *Cultural Heritage Specialist* *Manager, Cultural Heritage Division*
Cultural Heritage Specialist:	Joel Konrad, PhD *Cultural Heritage Specialist*
Project Coordinator:	Jennifer Ley, Hon. BA *Staff Archaeologist* *Assistant Manager, Planning Division*
Project Administrator:	Carol Bella, Hon. BA *Research Archaeologist and Administrative Assistant*
Report Preparation:	Tara Jenkins, MA, CAHP *Cultural Heritage Specialist*
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1.0 INTRODUCTION

In 2016, the City of Hamilton retained MMM Group Limited to study the area of Elfrida for a possible location of future urban growth. ASI was contracted by the latter firm to complete a Cultural Heritage Resource Assessment (CHRA) of the proposed growth area. The Elfrida Study Area consists of various properties and roadways within an area generally defined as being bounded by Mud Street East to the north, Golf Club Road to the south, Trinity Church Road to the west, and following the existing urban boundary on the northwest (Figure 1). The size of the study area is approximately 1,237 hectares. In general, the Elfrida study is being undertaken to provide detailed policy and land use direction, and to help understand opportunities and constraints to developing this greenfield area.

The purpose of this CHRA is to provide a planning framework for the area that can be used by the City of Hamilton in consideration of future development applications and planning studies. The purpose of this report is to describe the existing conditions of the study area, present a built heritage and cultural landscape inventory of cultural heritage resources, and propose appropriate mitigation measures and recommendations for minimizing and avoiding negative impacts on identified cultural heritage resources. This existing conditions report presents the outcome of the review of archival, historical, and known resources. In addition to built heritage resources and cultural heritage landscapes, a property's cultural heritage value and attributes can also be associated with archaeological resources. This report examines only the potential cultural heritage value associated with above ground resources. ASI was also contracted to conduct the archaeological resource assessment and it will be presented in a separate report. The research for this report was conducted under the direction of senior project manager, Joel Konrad, ASI.

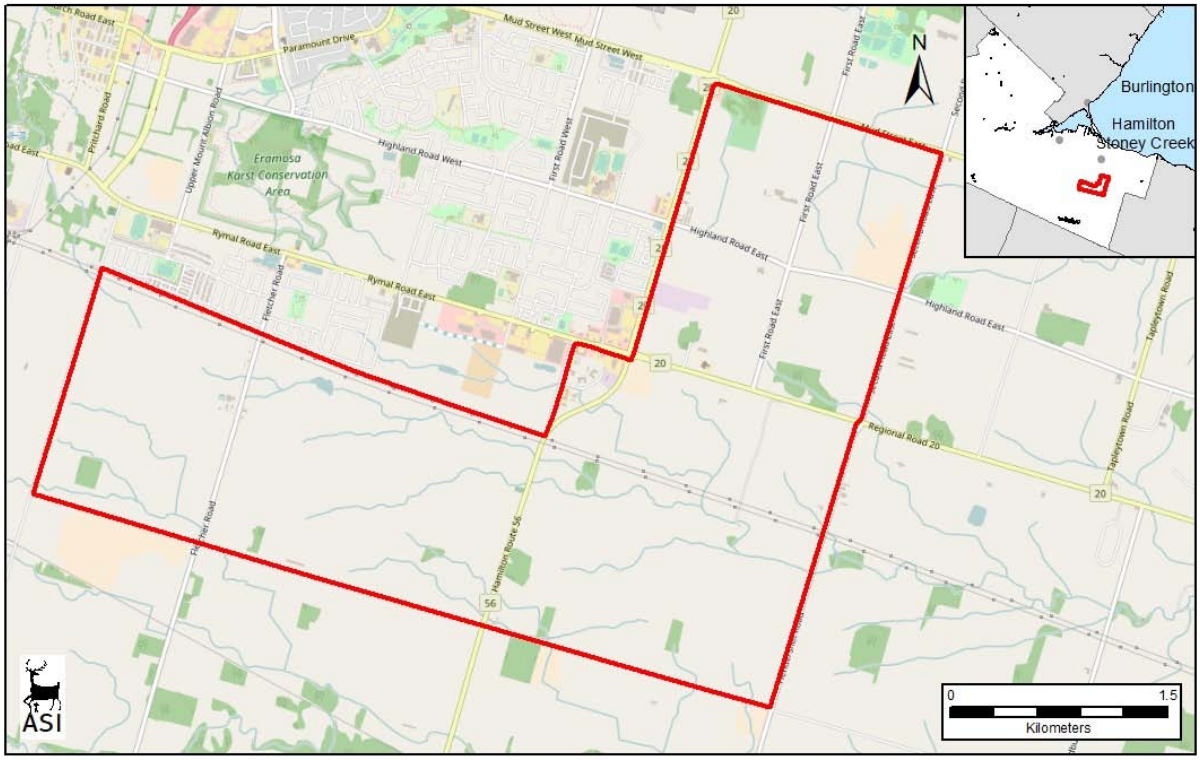


Figure 1: Location of the study area

Base Map:©OpenStreetMap contributors, and the GIS User Community

2.0 BUILT HERITAGE RESOURCE AND CULTURAL HERITAGE LANDSCAPE ASSESSMENT CONTEXT

2.1 Legislation and Policy Context

For the purposes of this assessment, the term cultural heritage resources was used to describe both cultural heritage landscapes and built heritage resources. A cultural heritage landscape is perceived as a collection of individual built heritage resources and other related features that together form farm complexes, roadscapes, and nucleated settlements. Built heritage resources are typically individual buildings or structures that may be associated with a variety of human activities, such as historical settlement and patterns of architectural development.

The analysis throughout the study process addresses cultural heritage resources under various pieces of legislation and their supporting guidelines. Under the *Environmental Assessment Act* (1990) environment is defined in Subsection 1(c) to include:

- cultural conditions that influence the life of man or a community, and;
- any building, structure, machine, or other device or thing made by man.

The Ministry of Tourism, Culture and Sport is charged under Section 2 of the *Ontario Heritage Act* with the responsibility to determine policies, priorities and programs for the conservation, protection and preservation of the heritage of Ontario and has published two guidelines to assist in assessing cultural heritage resources as part of an environmental assessment: *Guideline for Preparing the Cultural Heritage Resource Component of Environmental Assessments* (MCC 1992), and *Guidelines on the Man-Made Heritage Component of Environmental Assessments* (1981).

The *Guidelines on the Man-Made Heritage Component of Environmental Assessments* (Section 1.0) states the following:

> When speaking of man-made heritage we are concerned with the works of man and the effects of his activities in the environment rather than with movable human artifacts or those environments that are natural and completely undisturbed by man.

In addition, environment may be interpreted to include the combination and interrelationships of human artifacts with all other aspects of the physical environment, as well as with the social, economic and cultural conditions that influence the life of the people and communities in Ontario. The *Guidelines on the Man-Made Heritage Component of Environmental Assessments* distinguish between two basic ways of visually experiencing this heritage in the environment, namely as cultural heritage landscapes and as cultural features.

Within this document, cultural heritage landscapes are defined as the following (Section 1.0):

> The use and physical appearance of the land as we see it now is a result of man's activities over time in modifying pristine landscapes for his own purposes. A cultural landscape is perceived as a collection of individual man-made features into a whole. Urban cultural landscapes are sometimes given special names such as townscapes or streetscapes that describe various scales of perception from the general scene to the particular view. Cultural landscapes in the countryside are viewed in or adjacent to natural undisturbed landscapes, or waterscapes, and include such land uses as agriculture, mining, forestry, recreation, and transportation. Like urban cultural landscapes, they too

> may be perceived at various scales: as a large area of homogeneous character; or as an intermediate sized area of homogeneous character or a collection of settings such as a group of farms; or as a discrete example of specific landscape character such as a single farm, or an individual village or hamlet.

A cultural feature is defined as the following (Section 1.0):

> …an individual part of a cultural landscape that may be focused upon as part of a broader scene, or viewed independently. The term refers to any man-made or modified object in or on the land or underwater, such as buildings of various types, street furniture, engineering works, plantings and landscaping, archaeological sites, or a collection of such objects seen as a group because of close physical or social relationships.

The Minister of Tourism, Culture, and Sport has also published *Standards and Guidelines for Conservation of Provincial Heritage Properties* (April 2010; Standards and Guidelines hereafter). These Standards and Guidelines apply to properties the Government of Ontario owns or controls that have cultural heritage value or interest. They are mandatory for ministries and prescribed public bodies and have the authority of a Management Board or Cabinet directive. Prescribed public bodies include:

- Agricultural Research Institute of Ontario
- Hydro One Inc.
- Liquor Control Board of Ontario
- McMichael Canadian Art Collection
- Metrolinx
- The Niagara Parks Commission.
- Ontario Heritage Trust
- Ontario Infrastructure Projects Corporation
- Ontario Lottery and Gaming Corporation
- Ontario Power Generation Inc.
- Ontario Realty Corporation
- Royal Botanical Gardens
- Toronto Area Transit Operating Authority
- St. Lawrence Parks Commission

The Standards and Guidelines provide a series of definitions considered during the course of the assessment:

A provincial heritage property is defined as the following (14):

> Provincial heritage property means real property, including buildings and structures on the property, that has cultural heritage value or interest and that is owned by the Crown in right of Ontario or by a prescribed public body; or that is occupied by a ministry or a prescribed public body if the terms of the occupancy agreement are such that the ministry or public body is entitled to make the alterations to the property that may be required under these heritage standards and guidelines.

A provincial heritage property of provincial significance is defined as the following (14):

> Provincial heritage property that has been evaluated using the criteria found in *Ontario Heritage Act* O.Reg. 10/06 and has been found to have cultural heritage value or interest of provincial significance.

A built heritage resource is defined as the following (13):

> …one or more significant buildings (including fixtures or equipment located in or forming part of a building), structures, earthworks, monuments, installations, or remains associated with architectural, cultural, social, political, economic, or military history and identified as being important to a community. For the purposes of these Standards and Guidelines, "structures" does not include roadways in the provincial highway network and in-use electrical or telecommunications transmission towers.

A cultural heritage landscape is defined as the following (13):

> … a defined geographical area that human activity has modified and that has cultural heritage value. Such an area involves one or more groupings of individual heritage features, such as structures, spaces, archaeological sites, and natural elements, which together form a significant type of heritage form distinct from that of its constituent elements or parts. Heritage conservation districts designated under the *Ontario Heritage Act*, villages, parks, gardens, battlefields, mainstreets and neighbourhoods, cemeteries, trails, and industrial complexes of cultural heritage value are some examples.

The *Ontario Heritage Act* makes provisions for the protection and conservation of heritage resources in the Province of Ontario. Our heritage background review is part of a broader environmental study which is intended to identify areas of environmental interest as specified in the *Provincial Policy Statement*. The *Planning Act* (1990) and related *Provincial Policy Statement* (*PPS*), which was updated in 2014, make a number of provisions relating to heritage conservation. One of the general purposes of the *Planning Act* is to integrate matters of provincial interest in provincial and municipal planning decisions. In order to inform all those involved in planning activities of the scope of these matters of provincial interest, Section 2 of the *Planning Act* provides an extensive listing. These matters of provincial interest shall be regarded when certain authorities, including the council of a municipality, carry out their responsibilities under the *Act*. One of these provincial interests is directly concerned with:

> 2.(d) the conservation of features of significant architectural, cultural, historical, archaeological or scientific interest

Part 4.7 of the *PPS* states that:

> The official plan is the most important vehicle for implementation of this Provincial Policy Statement. Comprehensive, integrated and long-term planning is best achieved through official plans.
>
> Official plans shall identify provincial interests and set out appropriate land use designations and policies. To determine the significance of some natural heritage features and other resources, evaluation may be required.
>
> Official plans should also coordinate cross-boundary matters to complement the actions of other planning authorities and promote mutually beneficial solutions. Official plans

> shall provide clear, reasonable and attainable policies to protect provincial interests and direct development to suitable areas.
>
> In order to protect provincial interests, planning authorities shall keep their official plans up-to-date with this Provincial Policy Statement. The policies of this Provincial Policy Statement continue to apply after adoption and approval of an official plan.

Those policies of particular relevance for the conservation of heritage features are contained in Section 2- Wise Use and Management of Resources, wherein Subsection 2.6 - Cultural Heritage and Archaeological Resources, makes the following provisions:

> 2.6.1 Significant built heritage resources and significant cultural heritage landscapes shall be conserved.

A number of definitions that have specific meanings for use in a policy context accompany the policy statement. These definitions include built heritage resources and cultural heritage landscapes.

A *built heritage resource* is defined as: "a building, structure, monument, installation or any manufactured remnant that contributes to a property's cultural heritage value or interest as identified by a community, including an Aboriginal community" (PPS 2014).

A *cultural heritage landscape* is defined as "a defined geographical area that may have been modified by human activity and is identified as having cultural heritage value or interest by a community, including an Aboriginal community. The area may involve features such as structures, spaces, archaeological sites or natural elements that are valued together for their interrelationship, meaning or association" (PPS 2014). Examples may include, but are not limited to farmscapes, historic settlements, parks, gardens, battlefields, mainstreets and neighbourhoods, cemeteries, trailways, and industrial complexes of cultural heritage value.

In addition, significance is also more generally defined. It is assigned a specific meaning according to the subject matter or policy context, such as wetlands or ecologically important areas. With regard to cultural heritage and archaeology resources, resources of significance are those that are valued for the important contribution they make to our understanding of the history of a place, an event, or a people (*PPS* 2014).

Criteria for determining significance for the resources are recommended by the Province, but municipal approaches that achieve or exceed the same objective may also be used. While some significant resources may already be identified and inventoried by official sources, the significance of others can only be determined after evaluation (*PPS* 2014).

Accordingly, the foregoing guidelines and relevant policy statement were used to guide the scope and methodology of the cultural heritage assessment.

2.2 Greater Golden Horseshoe Heritage Policies

The Provincial *Growth Plan for the Greater Golden Horseshoe* (GGH), 2016, recognizes the importance of cultural heritage resources. Urban sprawl can degrade the region's cultural heritage resources. The GGH contains important cultural heritage resources that contribute to a sense of identity, support vibrant tourism industry, and attract investment based on cultural amenities. Accommodating growth can put

pressure on these resources through site alteration and development. In general, the Growth Plan strives to conserve and promote cultural heritage resources to support the social, economic, and cultural well-being of all communities, including First Nations and Métis communities. Section 4.2.7 of the Growth Plan states that:

> 1. *Cultural heritage resources* will be conserved in accordance with the policies in the PPS, to foster a sense of place and benefit communities, particularly in *strategic growth areas*.
> 2. Municipalities will work with stakeholders, as well as First Nations and Métis communities, to develop and implement official plan policies and strategies for the identification, wise use and management of *cultural heritage resources*.3. Municipalities are encouraged to prepare and consider archaeological management plans and municipal cultural plans in their decision-making.

2.3 City of Hamilton Official Plan Polices Regarding Cultural Heritage

Within the City of Hamilton's planning framework, the Elfrida study will offer a comprehensive document for addressing planning concerns and evaluating new *Planning Act* applications. At the time of this report, the study area falls within the *Rural Hamilton Official Plan* (RHOP) (effective March 7, 2012). The RHOP recognizes the importance of cultural heritage resources. The purpose of the current cultural heritage resource study is to ensure that potential and existing properties of cultural heritage value or interest, including cultural heritage landscapes, are appropriately identified, understood, and conserved as part of a more robust planning framework for the area. Further, it is intended to improve the quality and scope of information documented in the City's Heritage Register for the area, outline recommendations for further study, evaluation and conservation, and support the ongoing refinement of the City's policy direction as part of the Provincial *Growth Plan for the Greater Golden Horseshoe*.

The City of Hamilton's RHOP, Section 3.4 (Cultural Heritage) confirms that the City will "identify and conserve the City's cultural heritage resources through the adoption and implementation of policies and programs, including partnerships among various public and private agencies and organizations" (3.4.1.1). Heritage conservation is undertaken in an effort to "Encourage a city-wide culture of conservation by promoting cultural heritage initiatives as part of a comprehensive environmental, economic, and social strategy, where cultural heritage resources contribute to achieving sustainable, healthy, and prosperous communities" (3.4.1.2).

The RHOP provides policies specific to the protection of built heritage resources (3.4.5), including designated heritage properties (3.4.2.2) and non-designated heritage properties (3.4.2.7), cultural heritage landscapes (3.4.6), including the policies for heritage conservation districts, and archaeological resources (3.4.4). The City shall "protect and conserve the tangible cultural heritage resources of the City, including archaeological resources, built heritage resources, and cultural heritage landscapes" (3.4.2.1(a)), and "identify cultural heritage resources through a continuing process of inventory, survey, and evaluation, as a basis for the wise management of these resources" (3.4.2.1(b)). The policies also provide that the "City may, by By-law, designate individual and groups of properties of cultural heritage value under Parts IV and V, respectively, of the Ontario Heritage Act, including buildings, properties, cultural heritage landscapes, heritage conservation districts, and heritage roads or road allowances" (3.4.2.3).

As per Section 3.4.1.3, the RHOP has a policy goal to "ensure that all new development, site alterations, building alterations, and additions are contextually appropriate and maintain the integrity of all on-site or adjacent cultural heritage resources."

2.4 Data Collection

In the course of the cultural heritage assessment, all potentially affected cultural heritage resources are subject to inventory. Short form names are usually applied to each resource type, (e.g. barn, residence). Generally, when conducting a preliminary identification of cultural heritage resources in a desktop data collection study, two stages of research and data collection are undertaken to appropriately establish the potential for and existence of cultural heritage resources in a particular geographic area. The built heritage resource and cultural heritage landscapes background review considers cultural heritage resources in the context of the Elfrida Study Area.

Background historical research, which includes consultation of primary and secondary source research and historic mapping, is undertaken to identify early settlement patterns and broad agents or themes of change in a study area. This stage in the data collection process enables the researcher to determine the presence of sensitive heritage areas that correspond to nineteenth and twentieth-century settlement and development patterns. To augment data collected during this stage of the research process, federal, provincial, and municipal databases and/or agencies are consulted to obtain information about specific properties that have been previously identified and/or designated as retaining cultural heritage value. Typically, resources identified during these stages of the research process are reflective of particular architectural styles, associated with an important person, place, or event, and contribute to the contextual facets of a particular place, neighbourhood, or intersection.

A field review is then undertaken to confirm the location and condition of previously identified cultural heritage resources. The field review is also utilised to identify cultural heritage resources that have not been previously identified on federal, provincial, or municipal databases.

Several investigative criteria are utilised during the field review to appropriately identify new cultural heritage resources. These investigative criteria are derived from provincial guidelines, definitions, and past experience. During the course of the environmental assessment, a built structure or landscape is identified as a cultural heritage resource if it is considered to be 40 years or older, and if the resource satisfies at least one of the following criteria:

Design/Physical Value:

- It is a rare, unique, representative or early example of a style, type, expression, material or construction method.
- It displays a high degree of craftsmanship or artistic merit.
- It demonstrates a high degree of technical or scientific achievement.
- The site and/or structure retains original stylistic features and has not been irreversibly altered so as to destroy its integrity.
- It demonstrates a high degree of excellence or creative, technical or scientific achievement at a provincial level in a given period.

Historical/Associative Value:

- It has a direct association with a theme, event, belief, person, activity, organization, or institution that is significant to: the City of Hamilton; the Province of Ontario; or Canada.
- It yields, or has the potential to yield, information that contributes to an understanding of the history of the: the City of Hamilton; the Province of Ontario; or Canada.
- It demonstrates or reflects the work or ideas of an architect, artist builder, designer, or theorist who is significant to: the City of Hamilton; the Province of Ontario; or Canada.
- It represents or demonstrates a theme or pattern in Ontario’s history.

- It demonstrates an uncommon, rare or unique aspect of Ontario's cultural heritage.
- It has a strong or special association with the entire province or with a community that is found in more than one part of the province. The association exists for historical, social, or cultural reasons or because of traditional use.
- It has a strong or special association with the life or work of a person, group or organization of importance to the province or with an event of importance to the province.

Contextual Value:

- It is important in defining, maintaining, or supporting the character of an area.
- It is physically, functionally, visually, or historically linked to its surroundings.
- It is a landmark.
- It illustrates a significant phase in the development of the community or a major change or turning point in the community's history.
- The landscape contains a structure other than a building (fencing, culvert, public art, statue, etc.) that is associated with the history or daily life of that area or region.
- There is evidence of previous historic and/or existing agricultural practices (e.g. terracing, deforestation, complex water canalization, apple orchards, vineyards, etc.)
- It is of aesthetic, visual or contextual important to the province.

If a resource meets one of these criteria it will be identified as a cultural heritage resource and is subject to further research where appropriate and when feasible. Typically, detailed archival research, permission to enter lands containing heritage resources, and consultation is required to determine the specific heritage significance of the identified cultural heritage resource.

When identifying cultural heritage landscapes, the following categories are typically utilized for the purposes of the classification during the field review:

Farm complexes:	comprise two or more buildings, one of which must be a farmhouse or barn, and may include a tree-lined drive, tree windbreaks, fences, domestic gardens and small orchards.
Roadscapes:	generally two-lanes in width with absence of shoulders or narrow shoulders only, ditches, tree lines, bridges, culverts and other associated features.
Waterscapes:	waterway features that contribute to the overall character of the cultural heritage landscape, usually in relation to their influence on historic development and settlement patterns.
Railscapes:	active or inactive railway lines or railway rights of way and associated features.
Historical settlements:	groupings of two or more structures with a commonly applied name.
Streetscapes:	generally consists of a paved road found in a more urban setting, and may include a series of houses that would have been built in the same time period.

Historical agricultural landscapes: generally comprises a historically rooted settlement and farming pattern that reflects a recognizable arrangement of fields within a lot and may have associated agricultural outbuildings, structures, and vegetative elements such as tree rows.

Cemeteries: land used for the burial of human remains.

Results of the desktop data collection and field review are contained in Sections 3.0 and 4.0. Once fieldwork has been undertaken further sections will provide recommendations with respect to potential impacts of the undertaking on identified cultural heritage resources.

3.0 HISTORICAL BACKGROUND

3.1 Introduction

This section provides a brief summary of historical research and a description of identified above ground cultural heritage resources that may be affected by the proposed undertaking. Available secondary source material was reviewed to produce a contextual overview of the study area, including a general description of Indigenous land use and Euro-Canadian settlement.

3.2 Indigenous Land Use and Settlement in the Hamilton Area

As part of the Stage 1 archaeological component (ASI 2017) for this project, an inquiry into the Ontario Archaeological Sites Database (OASD) (April 2017) indicated that a total of 227 pre-contact archaeological sites, some of which assigned to specific periods from Early Archaic to Iroquoian, are registered within a one kilometre radius of the study area. Two of these sites are situated within the limits of the study area. Despite multiple archaeological investigations conducted in close proximity to the study area, our knowledge of Indigenous occupation of the general area is incomplete. Nevertheless, using province-wide (MCCR 1997) and region-specific data, a generalized cultural chronology for Indigenous settlement in the area provides the pre- and early post-contact context for the study area (Table 1).

Table 1: Cultural Chronology for Indigenous Settlement in the Hamilton Area

Period			Time Range (circa)	Diagnostic Features	Complexes
Paleoindian	Early		9000-8400 B.C.	fluted projectile points	Gainy, Barnes, Crowfield
	Late		8400-8000 B.C.	Non-fluted and lanceolate points	Holcombe, Hi-Lo, Lanceolate
Archaic	Early		8000-6000 B.C.	Serrated, notched, bifurcate base points	Nettling
	Middle		6000-2500 B.C.	Stemmed, side & corner notched points	Brewerton, Otter Creek, Stanley/Neville
	Late		2000-1800 B.C.	Narrow points	Lamoka
			1800-1500 B.C	Broad points	Genesee, Adder Orchard, Perkiomen
			1500-1100 B.C.	Small points	Crawford Knoll
	Terminal		1100-950 B.C.	First true cemeteries	Hind
Woodland	Early		950-400 B.C.	Expanding stemmed points, Vinette pottery	Meadowood
	Middle		400 B.C.- A.D. 500	Denate, pseudo-scallop pottery	Saugeen
	Transitional		A.D. 500-900	First corn, cord-wrapped stick pottery	Princess Point

Table 1: Cultural Chronology for Indigenous Settlement in the Hamilton Area					
Period			Time Range (circa)	Diagnostic Features	Complexes
	Late	Early Iroquoian	A.D. 900-1300	First villages, corn horticulture, longhouses	Glen Meyer, Pickering
		Middle Iroquoian	A.D. 1300-1400	Large villages and houses	Uren, Middleport
		Late Iroquoian	A.D. 1400-1650	Tribal emergence, territoriality	Neutral Iroquois
Contact		Aboriginal	A.D. 1700-1875	Treaties, mixture of Native & European items	Six Nations/Mississaugas
		Euro-Canadian	A.D. 1796 - present	English goods, homesteads	European settlement, pioneer life

3.3 Historical Euro-Canadian Land Use: Township Survey and Settlement

Historically, the Elfrida Study Area is located in Lots 5-7, Block 5, Concession 1, Lots 1-5, Block 4, Concession 1, Lots 1-5, Block 3, Concession 1, in the Township of Binbrook, and Lots 21-24, Concession 8, and Lots 21-24, Concession 7, in the Township of Saltfleet.

3.3.1 Townships of Saltfleet and Binbrook

Saltfleet Township was part of lands acquired in 1784 under terms of the "Between the Lakes Purchase" signed by Sir Frederick Haldimand. Survey of the township was completed in 1791, and the first settlers were disbanded soldiers, mainly Butler's Rangers. Other Loyalists settlers soon followed after the American Revolutionary War (Armstrong 1985:147, Rayburn 1997:305). Saltfleet was the earliest settled township in the study area with the first arrivals coming between 1786 and 1790. By 1815, Saltfleet listed 102 heads of household, 33 log houses, 20 one storey frame houses, and a two storey frame house. No brick or stone structures were evident. A grain warehouse had been set up in the village of Stoney Creek, but declined during the 1850s as the City of Hamilton came to preeminence. Saltfleet grew rapidly with Loyalist and European immigrants largely due to the fact that two major transportation corridors ran through its borders. These early roads skirted the Hamilton Mountain, followed the lakeshore and terminated at Burlington Heights. They did facilitate access to the township and gave rise to lucrative stage coaching inns. By 1846, Saltfleet, as described in *Smith's Canadian Gazetteer*, had "a large proportion of excellent land and many old-settled and well-cultivated farms."

It was during the latter half of the 1850s that Saltfleet developed in a substantially different manner from its neighbouring townships. By 1863, the orchard and vineyards of Saltfleet Township formed an integral part of the Niagara Peninsula fruit belt. In 1875, the *Illustrated Historical Atlas of the County of Wentworth* (pp.15) noted that:

> Of late years the farming community have turned their attention to fruit growing instead of grain and stock raising as formerly. The land of that part under the mountain is especially adapted to fruit, and large vineyards and orchards have been planted out on nearly every farm, until the district has made heavy annual exports and acquired more than a local name as a fruit growing region.

In 1875, Saltfleet's 100 acre lotting pattern was still intact with each lot farmed for the most part by a single individual or family.

The land within Binbrook Township was acquired by the British from the Mississaugas in 1784. The first township survey was undertaken in 1789, and the first legal settlers occupied their land holdings the same year. Early survey divided the township into four concessions, each containing five blocks of 1,000 acres

each. The township is said to have been named after a town in Lincolnshire, England. Binbrook was initially settled by disbanded soldiers, mainly Butler's Rangers, and other Loyalists following the end of the American Revolutionary War. In 1805, Boulton noted that this township contained good land but "the settlement of it proceeds rather slowly…from the want of settlers." In 1820 there were less than 20 families living in the township. By the 1840s, the township was described as "well settled". In 1841, there was a movement towards self-government with the establishment of municipal councils. By 1850, the two principle settlements in Binbrook Township had been established; Hall's Corners (Binbrook), near the centre of the township, and Woodburn, in the southeast corner. Much of the township was covered in pine forest and this supplied the area with enough lumber to keep six sawmills operating in the township. By this time the 389 inhabitants of the township had cleared enough land to produce ten thousand bushels of wheat and eight thousand bushels of oats. In 1851, a municipality was formed between Wentworth, Halton and Brant counties. A year later, Brant County separated and by 1853, Halton too had separated from the municipality. In 1854, Wentworth municipality composed of: Ancaster, Barton, Beverly, Binbrook, Flamboro East, Flamboro West, Glandford, Waterdown and Dundas townships.

Farm lands below the Hamilton Mountain were characterized by smaller holdings with expansive areas of orchards. Above, on the Mountain, farm holdings in Glanford and Binbrook Townships were larger and more typically reflected wheat and mixed farming practices. The agricultural landscape is interspersed with farmhouses, barns and silos. The Illustrated Historical Atlas of the County of Wentworth also depicts supporting rural institutions such as churches, cemeteries and schoolhouses. The study area is on the Hamilton Mountain.

By the 1920s, the Hamilton Mountain came under scrutiny as a potential urban growth area and by the 1950s had lost some of its rural character. In 1973, a Bill was passed to change Wentworth County into the Regional Municipality of Hamilton-Wentworth. In 1974, Saltfleet Township amalgamated with the village of Stoney Creek to form the Town of Stoney Creek and Binbrook Township amalgamated with the Township of Glanford to form the municipal Township of Glanbrook. In 2001, the Regional Municipality and six municipalities, including the City of Hamilton, Town of Stoney Creek, Township of Glanbrook, Town of Anacaster, Town of Flamborough, and the Town of Dundas, were amalgamated to form the new City of Hamilton. (Boulton 1805:74; Smith 1846:15; BHS 1979; Armstrong 1985:141; Rayburn 1997:32; Mika and Mika 1977:197)

3.3.2 Elfrida

The settlement area of the Village of Elfrida is located at the junction of Highways 53 (now Rymal Road East) and Highway 56. In the early nineteenth century, Elfrida grew as a rural village that boasted several businesses; two hotels, a blacksmith operated by Philip Hendershot, a church, and a general store run by Arthur Spera (BHS 1979:170). The Fletchers, Stewarts, Swayzes, Clines, Hendershots and the Quances were among the earliest settlers. The settlers farmed land around the Village of Elfrida (BHS 1979:171). The Quance family bought land and operated a small mill, which later expanded to a grist mill. The village had two cemeteries: the Swayze cemetery on Highway 56 and the Cline cemetery on Highway 20, just north of the intersection of Highway 53 and Highway 20. Originally Elfrida was called Clinesville in honour of the Cline family who immigrated from Pennsylvania in the late 1700s (BHS 1979:171). The Swayze family were the second settlers to come and soon after the village's name was changed to Swayze's Corners. In 1848, Hamilton George Swayze ran a general store and a post office. Eventually the junction was named Elfrida and the origin of that name is unknown (BHS 1979:171).

3.3.3 Physiographic Region

The Haldimand Clay Plain physiographic region (Chapman and Putnam 1984:156-159) is among the largest of the 53 defined physiographic regions in southern Ontario, comprising approximately 3,500 square km (MacDonald 1980:3). Generally, this region is flat and poorly drained, although it includes several distinctive landforms including dunes, cobble, clay, and sand beaches, limestone pavements, and back-shore wetland basins. Within this part of the Niagara peninsula, a number of environmental sub-regions have been described, including the Niagara Slough Clay Plain, the Fort Erie Clay Plain, the Calcareous Rock Plain (Onondaga Escarpment), the Buried Moraines, the Lake Erie Coast, and the Niagara River Valley (MacDonald 1980). The distribution and nature of these sub-regions, and the specific environmental features they contain, have influenced land use in the region throughout history and pre-history.

3.4 Review of Nineteenth and Twentieth Century Mapping

A series of nineteenth and twentieth century maps were reviewed to provide a visual summary of many of the trends in community development described in the previous section. The review also determines the potential for the presence of historical features within the study area.

One of the earliest maps showing detail within the general study area is Page & Smith's *Illustrated Historical Atlas of the County of Wentworth* (1875; Figure 2). The illustrated atlas series of maps are useful in that they defined the boundaries of land ownership parcels and provided names of landowners (but not settlers *per se*). In the case of this particular map, the locations of notable buildings and farmstead clearings are provided, and the settlement area of Elfrida is identified. The map also shows the study area intersects nine concession roads, those being what are now referred to as Golf Club Road, Highway 20, Highway 56, Hendershot Road, Fletcher Road, Trinity Church Road, Second Road East, Highland Road East and Mud Street East. The majority of buildings depicted on the 1875 map are farmhouses. The map also illustrates the location of a church in Lot 1, Block 4, Concession 1, a mill in Lot 5, Block 3, Concession 1, and a blacksmith in Lot 7, Block 5, Concession 1.

It should be noted that not all features of interest were mapped systematically in the Ontario series of historical atlases, given that they were financed by subscription, and subscribers were given preference with regard to the level of detail provided on the maps. Moreover, not every feature of interest would have been within the scope of the atlases. The following property owners/occupants and associated historical features are illustrated within or adjacent to the study area:

Table 2: Nineteenth-century Property owner(s) and Historical Features(s) within the Study Area

1875				
Con #	**Lot #**	**Block**	**Property Owner(s)**	**Historical Feature(s)**
Binbrook Township				
1	5	5	W.R. Freeman	Farmhouse
1	5	5	George Magill	None
1	6	5	A. Freeman	None
1	6	5	Robert Quance	None
1	7	5	E. Stewart	House

1875				
Con #	**Lot #**	**Block**	**Property Owner(s)**	**Historical Feature(s)**
1	7	5	James Pottruff	Farmhouse (2), Blacksmith
1	5	4	William Woodhouse	Farmhouse
1	5	4	J.B. Stewart	None
1	4	4	James Grassie	Farmhouse
1	4	4	Arthur Stewart	None
1	4	4	Mrs. Pottruff	None
1	3	4	Heirs of William Stewart	Farmhouse, Orchard
1	3	4	David Fletcher	None
1	2	4	Mrs. E. Hildreth	None
1	2	4	Richard Swayze	Farmhouse, Orchard (2), Schoolhouse
1	1	4	Richard Swayze	None
1	1	4	R. Swayze	Farmhouse
1	1	4	A. Swayze	Farmhouse
1	5	3	Richard Quance	Farmhouse, Orchard, Mill
1	5	3	Ira Stewart	Farmhouse
1	4	3	Richard Quance	None
1	4	3	J. Swayze	None
1	4	3	John Quance	Farmhouse, Orchard
1	3	3	John Quance	None
1	3	3	Joel Swayze	Farmhouse, Orchard
1	2	3	Henry Cline	Farmhouse, Orchard
1	2	3	A. Swayze	Farmhouse
1	1	3	T. Kennedy	Farmhouse
1	1	3	P. Hendershot	None
1	1	3	George Synder	Farmhouse
1	1	3	I. Synder	Farmhouse, Orchard
Saltfleet Township				
8	24		John Cline	Farmhouse
8	23		Mrs. Kiddia Marshall	Farmhouse
8	23		Charles Marshall	None
8	22		Francis Trusdal	Farmhouse, Orchard
8	22		Estate of John Menary	None
8	21		Estate of John Menary	None
7	24		Robert Trusdal	Farmhouse (2), Orchard
7	23		Francis Trusdal	Farmhouse, Orchard
7	22		Charles Marshall	Farmhouse, Orchard
7	21		John Burkholder	Farmhouse (2), Orchard

A topographic map of the study area, dating to 1907, illustrates that there had been settlement along the above noted transportation routes (Figure 3). Watercourses are present running through the study area in

an east-westerly direction. The most notable feature is the “Old Mill” situated alongside a watercourse. In addition, the 1907 map shows the majority of the farmhouses were of frame construction in the study area, with only six brick buildings consisting of four houses, a mill, and a church. The map also labels a cemetery across from the Old Mill along Highway 56 and a brick schoolhouse on the north side of Golf Club Road.

The topographic maps, dating from 1932 and 1938, indicate the study area was sparsely populated at the time (Figures 4 and 5). Generally, these maps demonstrate a period of minimal growth with the continuation of agriculture in the study area. A hydro electric line is depicted as running along Golf Club Road. By 1976 the topographic map shows a significant settlement along the historical transportation routes as new residences were built (Figure 6). The map also labels a “Cemetery” along Highway 56 on the west side of the road. The schoolhouse along Golf Club Road is no longer depicted. Generally, historical mapping does not show that there was significant expansion within the community of Elfrida throughout the nineteenth and twentieth century’s. The main settlement remained just east of the study area. The topographic map of 1986 illustrates much of the same configuration as the 1976 map with the addition of some industrial development in the north end of the study area (Figure 7).

In summary, a review of historical mapping reveals that the study area was, throughout the nineteenth and twentieth century’s, a rural, agricultural landscape.

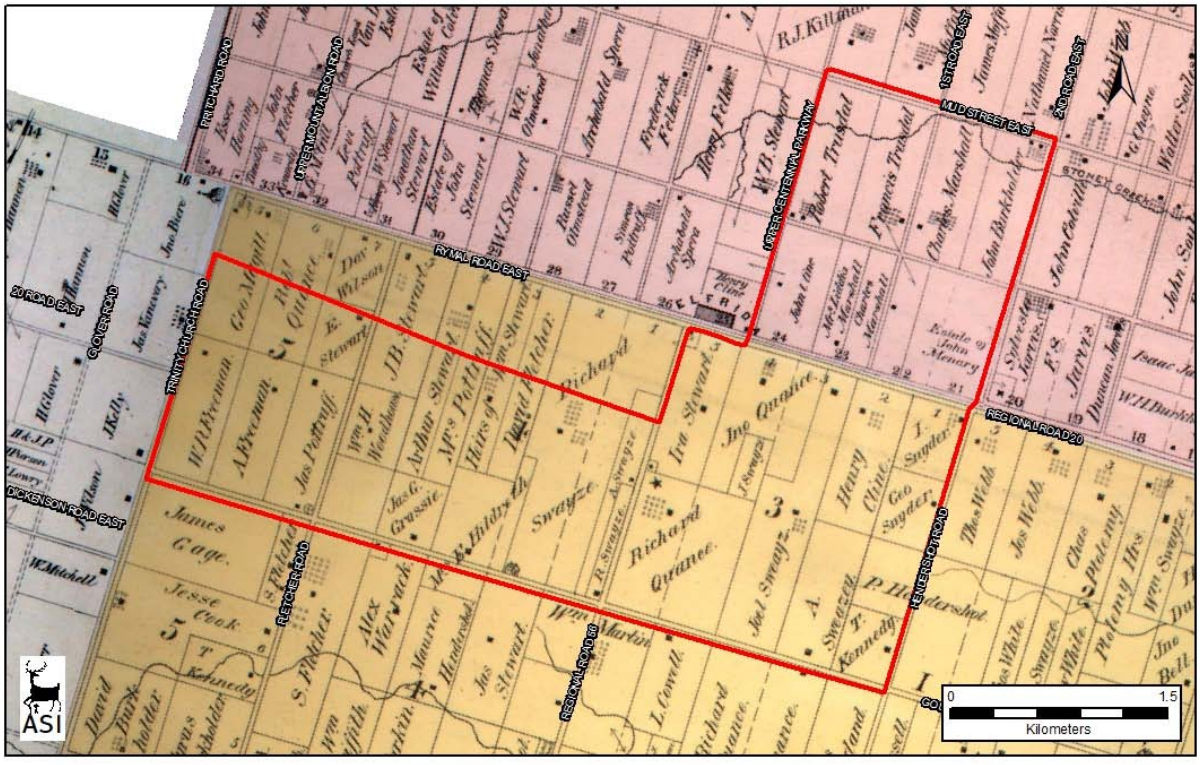


Figure 2: The study area overlaid on the 1875 *Map of the County of Wentworth*
Source: Page & Smith 1875

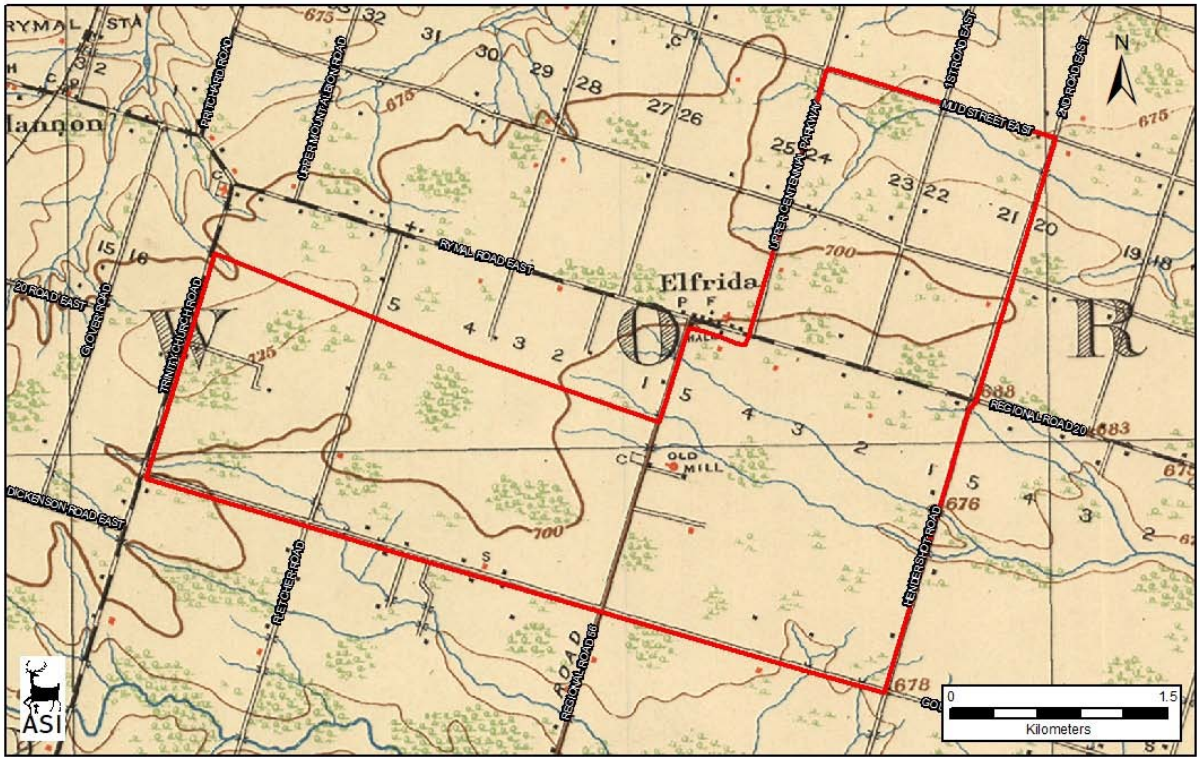


Figure 3: The study area overlaid on the 1907 topographic map of the area
Source: Department of Militia and Defence 1907

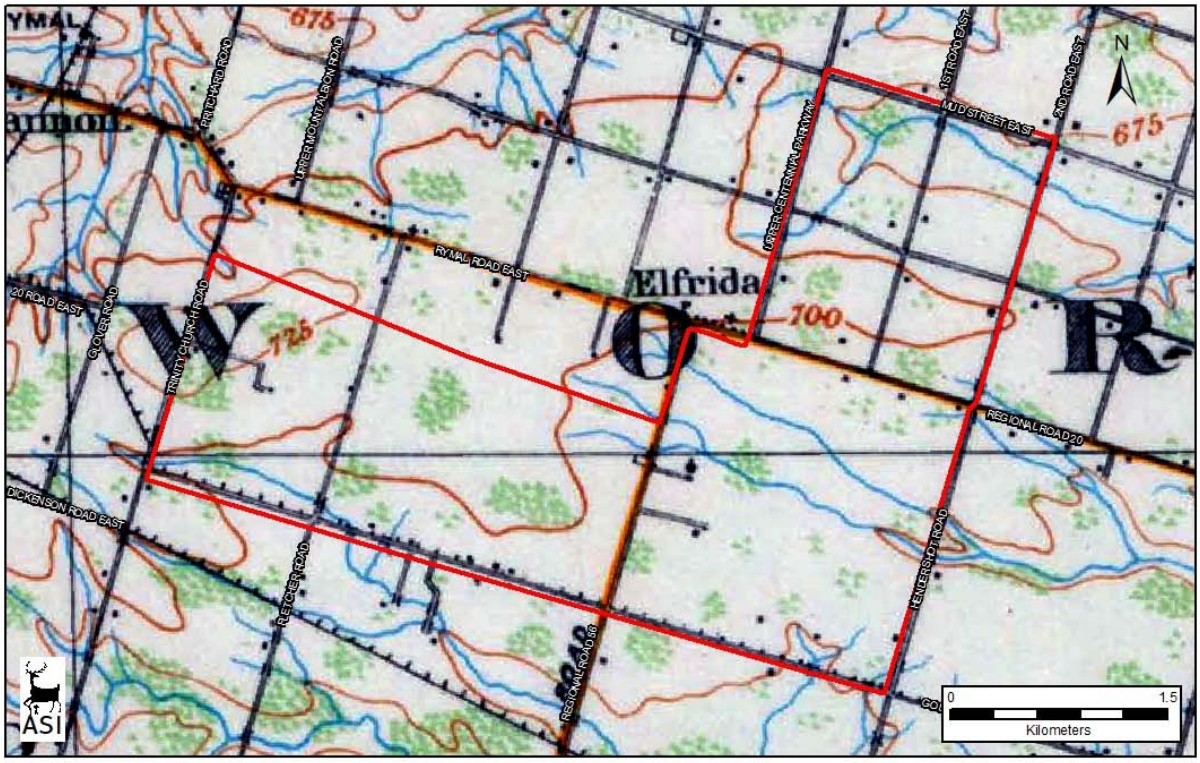


Figure 4: The study area overlaid on the 1932 NTS map
Source: Department of National Defence 1932

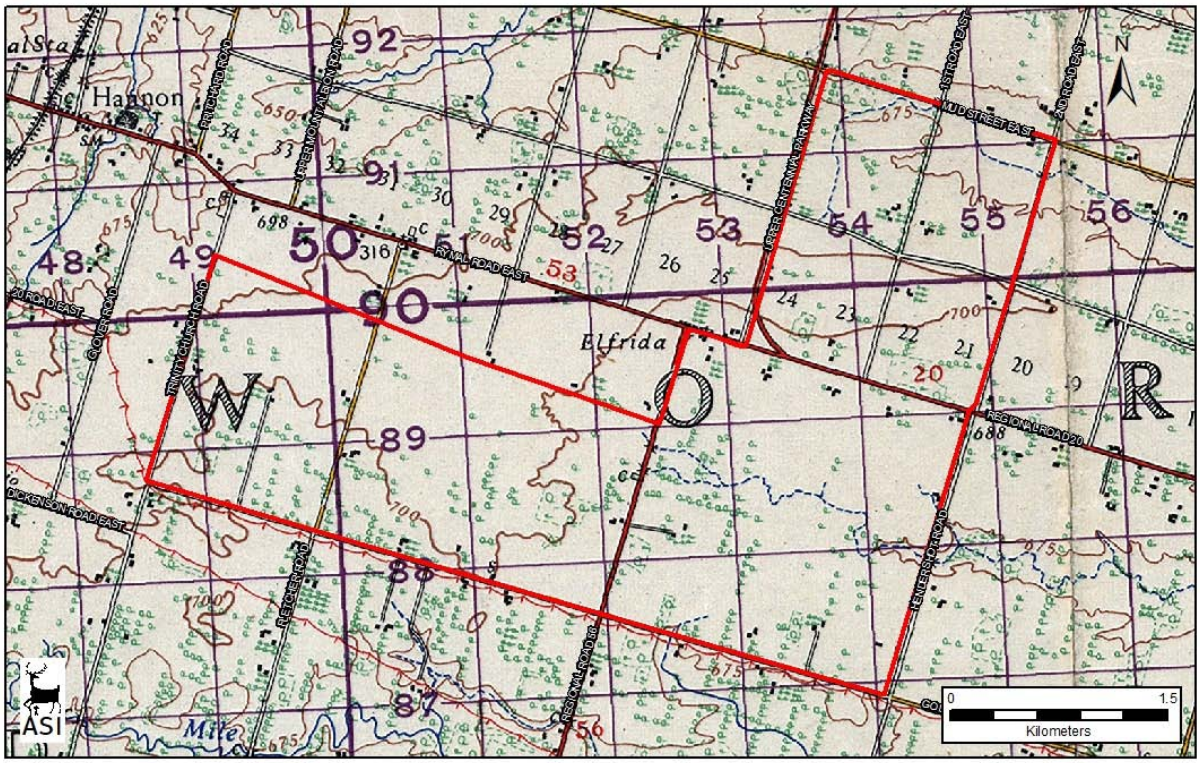


Figure 5: The study area overlaid on the 1938 topographic map of the area
Source: Department of National Defence 1938

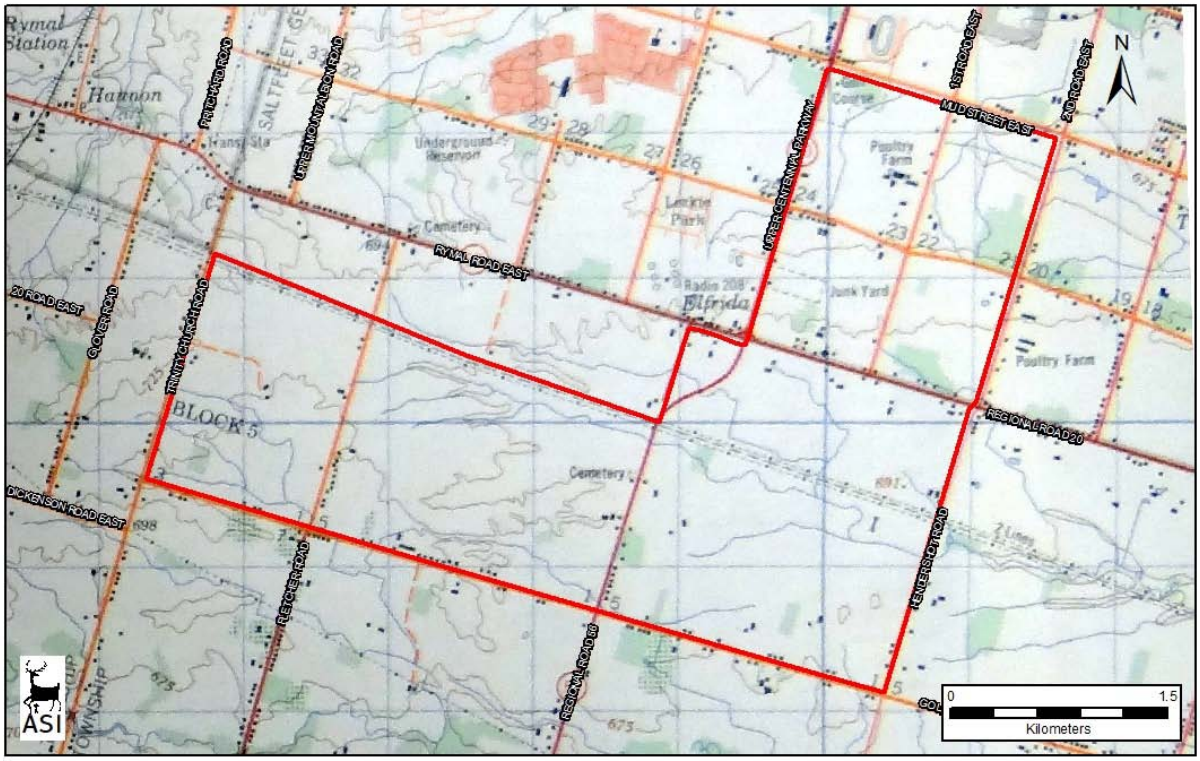


Figure 6: The study area overlaid on the 1976 topographic map of the area
Source: Department of Energy, Mines and Resources 1976

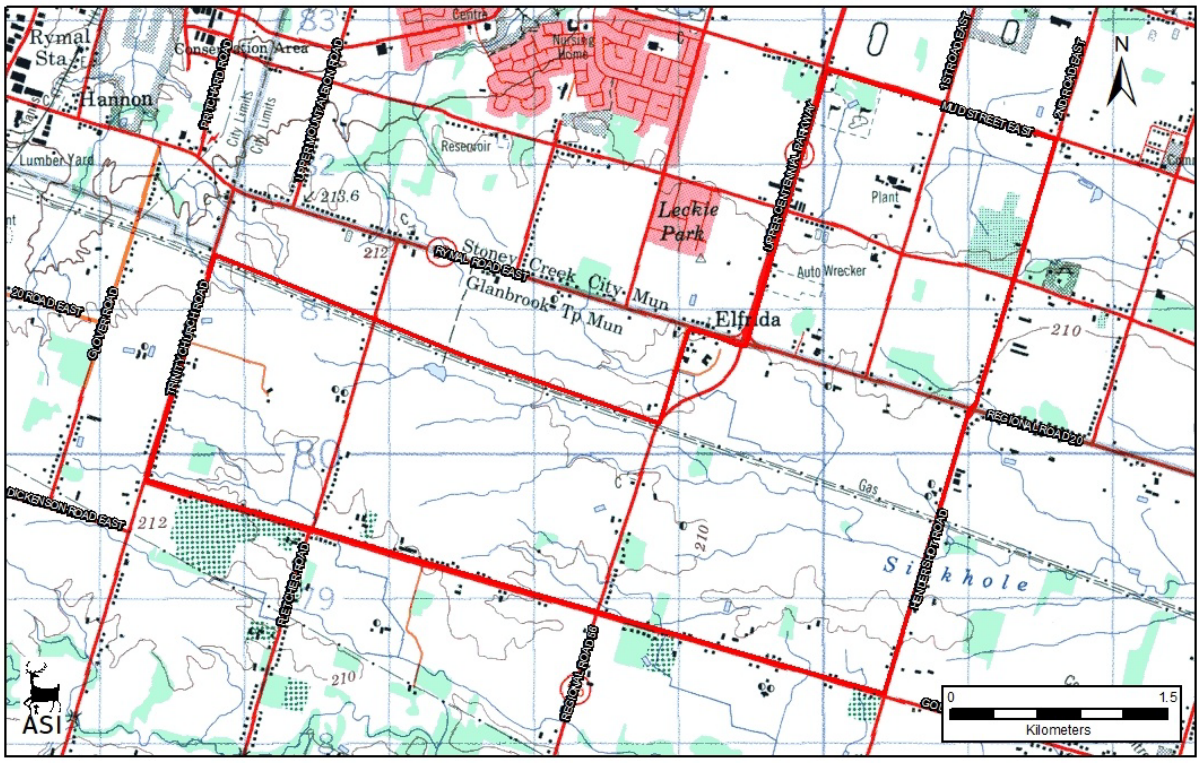


Figure 7: The study area overlaid on the 1986 NTS map
Source: Department of Energy, Mines and Resources 1986

4.0 EXISTING CONDITIONS

In order to undertake a preliminary identification of existing cultural heritage resources within the study area, the following were consulted:

- All individually designated properties (buildings or structures designated under Part IV of the OHA) in the *List of Designated Properties and Heritage Conservation Easements under the Ontario Heritage Act*; available at https://www.hamilton.ca/city-planning/heritage-properties/heritage-resources (reviewed 24 July 2017);
- All properties in the *Inventory of Buildings of Architectural and/or Historical Interest*; available at https://www.hamilton.ca/city-planning/heritage-properties/heritage-resources (reviewed 24 July 2017);
- All properties in the *Canadian Inventory of Historic Buildings*; available at https://www.hamilton.ca/city-planning/heritage-properties/heritage-resources (reviewed 24 July 2017); and
- All cemeteries/burial grounds in the *Inventory of Cemeteries and Burial Grounds*; available at https://www.hamilton.ca/city-planning/heritage-properties/heritage-resources (reviewed 24 July 2017).

Other resources consulted for the preliminary identification of cultural heritage resources within the study area included:

- City of Hamilton's *Inventory of Places of Worship: Ancaster, Beverly, Binbrook, Dundas, East Flamborough, Glanford, Saltfeet, and West Flamborough*, available at http://www2.hamilton.ca/NR/rdonlyres/868A64A8-EF8B-4557-BAA4-7AF126ECE321/0/HPHamiltonsHeritageVolume7A.pdf (reviewed 24 July 2017);
- Parks Canada's *Canada's Historic Places* website, a searchable online register of historic places recognized for their heritage value at the local, provincial, territorial, and national levels, available at http://www.historicplaces.ca/en/pages/about-apropos.aspx (reviewed 24 July 2017);
- Park's Canada's *Directory of Federal Heritage Designation*, a searchable on-line database of National Historic Sites, National Historic Events, National Historic People, Heritage Railway Stations, Federal Heritage Buildings, and Heritage Lighthouses, available at http://www.pc.gc.ca/apps/dfhd/default_eng.aspx (reviewed 24 July 2017);
- Ontario Heritage Trust's *Ontario Heritage Plaque Guide*, a searchable online database of Provincial heritage plaques, available at http://www.heritagetrust.on.ca/Resources-and-Learning/Online-Plaque-Guide.aspx (reviewed 24 July 2017); and
- *Ontario's Historical Plaques*, available at http://www.ontarioplaques.com/ (reviewed 24 July 2017).

In addition, the City of Hamilton Planning Department's cultural heritage staff was contacted by email to gather any relevant information regarding cultural heritage resources and concerns within the study area (email communication, Jeremy Parsons, Planner II, Cultural Heritage, Planning & Economic Development Department, 13 June 2017). The City of Hamilton's *Register of Properties of Cultural Heritage Value or Interest* is an ongoing list of properties of potential cultural heritage value or interest, and is a record of non-designated properties protected under Section 27 of the *Ontario Heritage Act*.

The Municipal Cultural Heritage Staff returned a list of 18 inventoried cultural heritage resources, including two cemeteries within or adjacent to the study area (email communication, Jeremy Parsons, Planner II, Cultural Heritage, Planning & Economic Development Department, 13 June 2017). Hamilton's Inventory is an ongoing list of properties of potential cultural heritage value or interest. In addition there is one property listed on the City's *Register of Properties of Cultural Heritage Value or Interest* (email communication, Jeremy Parsons, Planner II, Cultural Heritage, Planning & Economic Development Department, 03 August 2017). The review of available online federal, provincial and municipal heritage inventories revealed an additional 11 inventoried cultural heritage resources. Therefore a total of 30 cultural heritage resources were identified within and/or adjacent to the Elfrida Study Area in this desktop collection.

It should be noted that a number of historical structures and features are depicted on late-nineteenth and early-twentieth century mapping for the study area. Accordingly, it is anticipated that additional cultural heritage resources will be identified during field review.

A field review was undertaken by Joel Konrad, Cultural Heritage Specialist, ASI, on July 7, 2017 to document the existing conditions of the study area. His field review was preceded by a review of available, current and historic, aerial photographs and maps (including online sources such as Bing and Google maps). These large-scale maps are reviewed for any potential cultural heritage resources which may be extant in the study area. Identified cultural heritage resources are discussed in Tables 3 and 4 and Tables 5 and 6 and mapped on Figure 8 of this report.

4.1 Elfrida Study Area - Existing Conditions

The Elfrida Study Area is situated in the northern part of Binbrook Township and the southern part of Saltfleet Township. The study area is an irregularly shaped boundary which consists of various properties and roadways within an area generally defined as being bounded by Mud Street East to the north, Golf Club Road to the south, Trinity Church Road to the west, and Hendershot Road/Second Road East which is the existing urban boundary on the northwest.

The study area is approximately 1,237 hectares and was assessed using the existing right-of-ways along Mud Street East, Highland Road East and West, Rymal Road East/Regional Road 20, First Road East, Regional Road 56 (also referred to as Highway 56)/Upper Centennial Parkway, Golf Club Road, Fletcher Road, Hendershot Road/Second Road East and Trinity Church Road. While many of the existing agricultural buildings appear to date from the late nineteenth to early twentieth century, the residential properties appear to have been severed more recently and many retain modern buildings. These roads are all primarily rural roadscapes composed of two paved lanes of divided vehicular traffic bordered by narrow gravel shoulders and drainage ditches (Plates 1, 3-6). The roadways are lined with hydro poles, vegetation, and with adjacent farmscapes, rural residential lots, and active agricultural lands. The northwest portion of the study area abuts the urban sprawl of the City of Hamilton. A small portion of the study area along Rymal Road East and Highland Road West consists of a modern suburban neighbourhood. As such, the roadways are paved and lined with curbs, sidewalks, and landscaping associated with the adjacent development (i.e. Plate 4). This development has occurred at the historic crossroads of Elfrida at Rymal Road East and Regional Road 56. Elfrida has undergone recent development, with the exception of east of Highway 56 which remains rural in character, however there is no visible sign of the former community.

The Elfrida Study Area is historically predominantly rural agricultural, and this agricultural use is reflected in today's existing conditions. The study area is characterized by predominantly agricultural farm complexes with some smaller residential lots.

Plate 1: Looking south along Trinity Church Road

Plate 2: Looking west along Golf Club Road from Trinity Church Road

Plate 3: Looking north along Upper Centennial Road/Highway 56

Plate 4: Looking east along Highland Road West into the study area

Plate 5: Looking south from Mud Street, just west of Second Road East

Plate 6: Looking west along Mud Street, just west of Second Road East

4.1.1 Elfrida Study Area – Identified Cultural Heritage Resources

Based on the results of background research and the field review, a total of 32 cultural heritage resources were documented. The City of Hamilton identifies both Active and Inactive resources, with the former consisting of known, extant resources and the latter consisting of known, demolished, or relict resources. Of the 32 cultural heritage resources, 20 Active cultural heritage resources are within or adjacent to the Elfrida Study Area, including 10 residential properties (BHRs 1, 2, 4-7, 9, 11-13), six farmscapes (CHLs 1,3, 4-7), one outbuilding (BHR 3), one place of worship (BHR 10), one former place of worship (BHR 23), and one cemetery (CHL 2). A total of 12 Inactive cultural heritage resources were also investigated, including eight residential properties (BHRs 14, 16-22), two farmscapes (CHLs 8 and 9), one outbuilding (BHR 15), and one cemetery (CHL 10). Tables 3 (Active) and 4 (Inactive) provide a summary of built heritage resources and cultural heritage landscapes. Tables 5 (Active) and 6 (Inactive), Appendix A, provide a detailed description of these identified resources.

Table 3: Summary of ACTIVE cultural heritage resources (CHRs) within and/or adjacent to the study area

Resource	Type	Address/Location	Recognition	Description/Comments
Within the Study Area:				
BHR 1	Residence	570 Hendershot Road Lot 1, Con. 1, Block 3, Binbrook Twp.	Inventory of Buildings of Architectural and/or Historical Interest- Identified by Municipal Cultural Heritage Staff	frame construction, likely built between ca. 1875-1907
BHR 2	Residence	468 Highway 56 Lot 1, Con. 1, Block 4, Binbrook Twp.	Inventory of Buildings of Architectural and/or Historical Interest- Identified by Municipal Cultural Heritage Staff	brick construction, likely built between ca. 1907-1938
CHL 1	Farmscape	469 Highway 56 Lot 5, Con. 1, Block 3, Binbrook Twp.	Inventory of Buildings of Architectural and/or Historical Interest- Identified by Municipal Cultural Heritage Staff	brick construction, likely built prior to ca. 1875
BHR 3	Outbuilding	54 Upper Centennial Parkway, Lot 24, Con. 8, Saltfleet Twp.	Canadian Inventory of Historic Buildings	Storage, likely built in the nineteenth century
CHL 2	Cemetery	404 Regional Road 56, Lot 1, Con.1, Block 1, Binbrook Twp.	Inventory of Cemeteries and Burial Grounds- Identified by Municipal Cultural Heritage Staff	- Swayze Family cemetery, fenced with signage. The cemetery opened in 1817. Municipality has maintained since 1973, and states still open for burials (Hamilton's *Inventory of Cemeteries and Burial Grounds*). - Municipal Cultural Heritage Staff inventory this cemetery as Inactive.
Adjacent to the Study Area:				

Table 3: Summary of ACTIVE cultural heritage resources (CHRs) within and/or adjacent to the study area

Resource	Type	Address/Location	Recognition	Description/Comments
BHR 4	Residence	1125 Fletcher Road, Lot 5, Con.2, Block 4, Binbrook Twp.	Inventory of Buildings of Architectural and/or Historical Interest- Identified by Municipal Cultural Heritage Staff	frame construction, likely built prior to ca. 1907
CHL 3	Farmscape	2275 Golf Club Road, Lot 2, Con.2, Block 3, Binbrook Twp.	Inventory of Buildings of Architectural and/or Historical Interest- Identified by Municipal Cultural Heritage Staff	brick construction, likely built in the early twentieth century
BHR 5	Residence	2291 Golf Club Road, Lot 3, Con. 2, Block 4, Binbrook Twp.	Inventory of Buildings of Architectural and/or Historical Interest	brick construction, likely built between ca. 1875-1907
CHL 4	Farmscape	3481 Golf Club Road, Lot 4, Con.2, Block 4, Binbrook Twp.	Inventory of Buildings of Architectural and/or Historical Interest- Identified by Municipal Cultural Heritage Staff	house is frame construction, likely built prior to ca. 1875
BHR 6	Residence	1145 Highway 56, Lot 5, Con.2, Block 3, Binbrook Twp.	Inventory of Buildings of Architectural and/or Historical Interest- Identified by Municipal Cultural Heritage Staff	brick construction, likely built prior to ca. 1875
CHL 5	Farmscape	1230 Highway 56, Lot 1, Con. 2, Block 4, Binbrook Twp.	Inventory of Buildings of Architectural and/or Historical Interest- Identified by Municipal Cultural Heritage Staff	house is brick construction, likely built prior to ca. 1875

Table 3: Summary of ACTIVE cultural heritage resources (CHRs) within and/or adjacent to the study area

Resource	Type	Address/Location	Recognition	Description/Comments
BHR 7	Residence	338 Trinity Church Road, Lot 16, Con. 1, Glanford Twp.	Inventory of Buildings of Architectural and/or Historical Interest	frame construction, likely built prior to 1875
BHR 9	Residence	420 Trinity Church Road, Lot 16, Con.2, Glandford Twp.	Inventory of Buildings of Architectural and/or Historical Interest	frame construction, likely built between ca. 1875-1907
BHR 10	Place of Worship	218 Mud Street East, Lot 20, Con. 7, Saltfleet Twp.	Inventory of Places of Worship-Identified by Municipal Cultural Heritage Staff	Modern building
BHR 11	Residence	142 First Road East, Lot 22, Con. 7, Saltfleet Twp.	Inventory of Buildings of Architectural and/or Historical Interest-Identified by Municipal Cultural Heritage Staff	frame construction, likely built prior to ca. 1875
BHR 12	Residence	190 Regional Road 20, Lot 1, Con. 1, Block 3, Binbrook Twp.	Inventory of Buildings of Architectural and/or Historical Interest-Identified by Municipal Cultural Heritage Staff	frame construction, likely built prior to ca. 1875
BHR 13	Residence	3219 Golf Club Road, Lot 2, Con. 2, Block 4, Binbrook Twp.	Inventory of Buildings of Architectural and/or Historical Interest-Identified by Municipal Cultural Heritage Staff	frame construction, likely built between ca. 1875-1907
CHL 6	Farmscape	1014 Fletcher Road, Lots 5-7, Con. 2, Block 5, Binbrook Twp.	Identified during field review	house is brick construction, built early twentieth century, prior to 1938
CHL 7	Farmscape	406 Fletcher Road, Lot 7, Con. 1, Block 5, Binbrook Twp.	Identified during field review	house is frame construction, likely built between ca. 1875-1907

Table 3: Summary of ACTIVE cultural heritage resources (CHRs) within and/or adjacent to the study area

Resource	Type	Address/Location	Recognition	Description/Comments
BHR 23	Former Place of Worship	2251 Rymal Road East, Lot 25, Con. 8, Saltfleet Twp.	Listed on the Register of Properties of Cultural Heritage Value or Interest and the Inventory of Places of Worship- Identified by Municipal Cultural Heritage Staff	Constructed as a church in 1858, rebuilt 1881, now the "Vicar's Vice" restaurant

Table 4: Summary of INACTIVE cultural heritage resources (CHRs) within and/or adjacent to the study area

Resource	Type	Address/Location	Recognition	Description/Comments
Within the Study Area:				
BHR 14	Residence	511 Fletcher Road, Lot 5, Con. 1, Block 4, Binbrook Twp.	Inventory of Buildings of Architectural and/or Historical Interest- Identified by Municipal Cultural Heritage Staff	Inactive. House demolished in 2015, brick construction, likely built between ca. 1875-1907.
CHL 8	Farmscape	2328 Golf Club Road Lot 3, Con. 1, Block 3, Binbrook Twp.	Inventory of Buildings of Architectural and/or Historical Interest- Identified by Municipal Cultural Heritage Staff	Inactive. House demolished in 2002, house was frame construction, likely built between ca. 1875-1907 - barn present
BHR 15	Outbuilding	351 Trinity Church Road, Lot 6, Con. 1, Block 5, Binbrook Twp.	Canadian Inventory of Historic Buildings	Inactive. Ruins. Documented as a Storage, ca. 1873, in the CIHB
BHR 16	Residence	180 Second Road East, Lot 20, Con. 7, Saltfleet Twp.	Canadian Inventory of Historic Buildings and Inventory of Buildings of Architectural and/or Historical Interest- Identified by Municipal Cultural Heritage Staff	Inactive. Demolished, date unknown. Documented as a single dwelling, ca. 1880, in the CIHB
BHR 17	Residence	62 Upper Centennial Parkway, Lot 24, Con. 8, Saltfleet Twp.	Canadian Inventory of Historic Buildings	Inactive. Demolished, date unknown. Documented as a multiple dwelling, ca. 1880, in the CIHB

Table 4: Summary of INACTIVE cultural heritage resources (CHRs) within and/or adjacent to the study area

Resource	Type	Address/Location	Recognition	Description/Comments
BHR 18	Residence	130 Upper Centennial Parkway, Lot 24, Con.7, Saltfleet Twp.	Canadian Inventory of Historic Buildings	Inactive. Demolished, date unknown. Documented as a single dwelling, ca. 1860, in the CIHB
Adjacent to the Study Area:				
BHR 19	Residence	413 Hendershot Road, Lot 5, Con. 1, Block 2, Binbrook Twp.	Inventory of Buildings of Architectural and/or Historical Interest- Identified by Municipal Cultural Heritage Staff	Inactive, Residence demolished, date unknown. Former residence, likely built between ca. 1875-1907.
BHR 20	Residence	20 Highland Road West, Lot 25, Con. 7,Saltfleet Twp.	Canadian Inventory of Historic Buildings	Inactive, Residence demolished, date unknown, likely built prior to ca. 1875
BHR 21	Residence	299 Second Road East	Canadian Inventory of Historic Buildings	Inactive. Demolished, date unknown. Documented as a single dwelling, ca. 1819, in the CIHB.
CHL 9	Farmscape	760 Trinity Church Road, Lot 16, Con. 2, Glanford Twp.	Inventory of Buildings of Architectural and/or Historical Interest	Inactive. Abandoned. The property is not visible from the public right-of-way. Visible in air photos.
CHL 10	Cemetery	Lot 21, Con.6, Saltfleet Twp.	Identified by Municipal Cultural Heritage Staff (Inventoried)	Inactive, Abandoned. Norris Family Plot. Possible unmarked burials.
BHR 22	Residence	217 Mud Street East, Lot 21, Con. 6, Saltfleet Twp.	Inventory of Buildings of Architectural and/or Historical Interest	Inactive, Demolished, date unknown. Documented as a single dwelling, ca. 1819, in the CIHB. Related to BHR 21.

5.0 CONCLUSIONS

The results of background historical research and a review of secondary source materials, including historic mapping, revealed a study area with Indigenous history dating back thousands of years, and rural land use history dating back to the nineteenth century. The topographic maps show a number of mid- to late-twentieth century residential structures that were introduced along the historical transportation routes, although generally the core of the landscape has been minimally altered from its rural land use. A fair number of nineteenth and early twentieth century rural residences and farm complexes dot the landscape maintaining the rural nature of the area. In addition, the majority of the roads have also retained a rural nature characterized by two lane paved roads with narrow gravel shoulders and grassy ditches, with some tree lined and some fence lined. There has been some change in the twentieth century and onward in the form of new and scattered development of single rural residences and the conversion of several former farmhouses to rural residences.

Based on the results of background research and the field review, 32 Inactive and Active cultural heritage resources are within and adjacent to the Elfrida Study Area, including 18 residential properties (BHRs 1, 2, 4-7, 9, 11-14, 16-22), eight farmscapes (CHLs 1, 3, 4-9), two outbuildings (BHRs 3 and 15), two cemeteries (CHLs 2 and 10), one place of worship (BHR 10), and one former place of worship (BHR 23). A total of 29 individual properties were on Hamilton's Inventory, including 21 on the *Inventory of Buildings of Architectural and/or Historical Interest*, six on the *Canadian Inventory of Historic Buildings*, one on the *Inventory of Cemeteries and Burial Grounds*, and one on the *Inventory of Places of Worship*. Two properties were identified in the field review and one property is listed on City's *Register of Properties of Cultural Heritage Value or Interest* under Section 27 of the *Ontario Heritage Act* (*OHA*). The study area does not contain any properties designated under Part IV of the *OHA*, properties listed as cultural heritage landscapes, properties subject to *Heritage Conservation Easement Agreement*, or properties subject to a Notice of Intention to Designate under Section 29, of the *OHA*.

5.1 Key Findings

The City of Hamilton has determined that future growth will require an expansion of the current Urban Boundary, and has targeted the Elfrida area as the preferred location to accommodate this new growth. The City's plan for growth is likely to impact the character and setting of the rural landscape and has the potential to directly impact cultural heritage resources. This may involve the removal or demolition of some cultural heritage resources which may alter the present rural character associated with the nineteenth century transportation routes. It may also disrupt, or indirectly impact cultural heritage resources in the lands adjacent to the growth plan area through the introduction of physical, visual, audible or atmospheric elements to the existing environment that are not in keeping with the rural character and/or setting.

Based on the results of background data collection and the field survey, 32 cultural heritage resources are located within or adjacent to the Elfrida Study Area. As such, urban development in the Elfrida Study Area should be planned to avoid impacts to any cultural heritage resources. In summary,

- A total of 32 cultural heritage resources were identified within and/or adjacent to the study area;
- A total of 20 Active cultural heritage resources are within or adjacent to the Elfrida Study Area, including 10 residential properties (BHRs 1, 2, 4-7, 9, 11-13), six farmscapes (CHLs 1,3, 4-7), one outbuilding (BHR 3), one place of worship (BHR 10), one former place of worship (BHR 23), and one cemetery (CHL 2).
- A total of 12 Inactive cultural heritage resources were investigated, including eight residential properties (BHRs 14, 16-22), two farmscapes (CHLs 8 and 9), one outbuilding (BHR 15), and one cemetery (CHL 10).
- Identified cultural heritage resources are historically, architecturally, and contextually associated with land use patterns in the rural area within the City of Hamilton, and more specifically are representative of the nineteenth century and early twentieth century rural land use.

A preliminary impact assessment of growth of the 32 cultural heritage resources based on the boundaries of the study area resulted in the following:

- Direct impacts may be anticipated for the Active cultural heritage resources, BHRs 1- 3, and CHLs 1 and 2 which are within the boundary of the study area. Direct impacts may include, but are not limited to, direct physical impact to the cultural heritage resources (i.e. demolition).

- Indirect impacts were found with Active cultural heritage resources BHRs 4-7, 9-13 and 23, and CHLs 3-7 which are adjacent to the boundary of the study area. Indirect impacts may include, but are not limited to, introduction of physical, visual, audible or atmospheric elements that are not keeping with the rural character of the area.

- There are no anticipated direct and indirect impacts to Inactive BHRs and CHLs, however some of the former cultural heritage resources may be of archaeological interest, especially CHL 10, the Norris family cemetery.

6.0 RECOMMENDATIONS

The City of Hamilton's proposed growth plan should not adversely affect cultural heritage resources, and intervention should be managed in such as way that its impact is sympathetic with the value of the resources. When the nature of the undertaking is such that adverse impacts are unavoidable, it may be necessary to implement management or mitigation strategies that alleviate the deleterious effects on cultural heritage resources. Mitigation is the process of causing lessening or negating anticipated adverse impacts to cultural heritage resources.

Background research, data collection, and the field review conducted for the Elfrida Study Area determined that 32 cultural heritage resources are located within or adjacent to the study area. These cultural heritage resources combine to create a study area with a rural land use history dating back to the late nineteenth to early twentieth century. The cultural heritage resources identified within or adjacent to the Elfrida Study Area are of varying degrees of heritage value. Further assessment of significant resources will address appropriate conservation measures. Resources may require a Heritage Impact Assessment as part of the development process, particularly for those resources identified as Active. The Heritage Impact Assessment should include an evaluation of each resource based on the criteria set out in Ontario Regulation 9/06 in order to provide a more detailed assessment of the resource and to develop appropriate conservation strategies. If cultural heritage resources cannot be retained, a Cultural Heritage Documentation Report (CHDR) may be a mitigation action of the Heritage Impact Assessment report. In the event of a demolition process, salvage of architectural elements should be considered.

The identified cultural heritage resources should be candidates for conservation and integration into future land uses. Incorporating cultural heritage components into new development assists in making the area visually diverse and distinctive. Appropriate mitigation measures and/or alternative development approaches should be incorporated to reduce the potential for adverse impacts to the cultural heritage resources in the area. Four key objectives with regard to the cultural heritage planning and conservation of built heritage and cultural heritage landscapes found within the Elfrida Study Area have been identified:

1. Integrate significant built heritage resources into new development proposals;
2. Designate significant built heritage resources and significant cultural heritage landscapes under Section 29 of the *Ontario Heritage Act*;
3. Incorporate where possible, principal cultural heritage elements into the evolving future landscape where opportunities for conservation may exist;

4. Protect and maintain as much as possible the rural character of the area, including tree lines, fencing etc., associated with the portions of roadscapes and agricultural lands.

Since the study area may be intended for urban development, it is recognized that maintaining the entirety of the rural character and setting is unlikely. Therefore, in planning, consideration should be made to conserve some agricultural remnants. Built heritage resources, such as farmhouses and rural residences, are most easily incorporated into planning initiatives and should be retained and integrated into new development. Although these resources should be conserved as standalone residences, adaptive reuse may also provide beneficial opportunity to retain this type of heritage resource. Relocation of the buildings on-site and off-site is an alternative conservation option, however leaving the resource *in situ* is the preferred option. In addition, consideration should be given to retaining some of the existing rural characteristics of the roadscapes, particularly nearby cultural heritage resources, such as along Golf Club Road.

Barns and agricultural outbuildings are a greater adaptive reuse challenge than houses. They should be retained where there is an opportunity for reuse within modern development. Where barns have been displaced, surviving barn remnants such as stone foundation walls, could be incorporated into new uses, such as in parks. Silos are also significant features and are excellent visual markers in the agricultural landscape. Conserving a silo can serve as an eye-catching monument of the former rural landscape in a modern landscape.

If new development is planned in the study area, it is also recommended that farming family surnames including, but not limited to, Quance, Snyder, Swayze, Stewart, Pottruff, Freeman, and Norris be celebrated in the naming of streets, parks, community facilities and other public places. Built heritage resources that are retained in the study area should be commemorated with historical/architectural markers.

Based on the results of the assessment, the following recommendations have been developed:

1. A total of 32 cultural heritage resources are within or adjacent to the Elfrida Study Area including 20 Active cultural heritage resources (BHRs 1-13, and 23, and CHLs 1-7) and 12 Inactive cultural heritage resources (BHRs 14-22 and CHLs 8-10). **If the Active identified cultural heritage resources are expected to be directly or indirectly impacted through alteration to the setting in the proposed growth plan, a property specific Heritage Impact Assessment (HIA) is required, which should include an evaluation of the resource based on the criteria set out in Ontario Regulation 9/06.** Inactive properties do not require further work. A Cultural Heritage Documentation Report (CHDR) may be a mitigation action of the HIA.

2. The Elfrida Secondary Plan should incorporate policies that ensure the long-term viability and presence of the identified built heritage resources and cultural heritage landscapes. Upon the completion of the Elfrida Secondary Plan, this report may require updating to consider the potential impacts of future plans on the identified built heritage resources and cultural heritage landscapes. Additional mitigation measures may be identified.

3. Should future work require an expansion of the study area, then a qualified heritage consultant should be engaged in order to confirm the impacts of the proposed work on potential heritage resources.

7.0 CULTURAL HERITAGE RESOURCE INVENTORY

Table 5: Detailed description of ACTIVE built heritage resources (BHR) and cultural heritage landscapes (CHL) within or adjacent to the study area					
Feature ID	**Resource Type**	**Address/Location**	**Recognition**	**Description/Comments**	**Photograph(s)**
Within the Study Area:					
BHR 1	Residence	570 Hendershot Road Lot 1, Con. 1, Block 3, Binbrook Twp.	Inventory of Buildings of Architectural and/or Historical Interest- Identified by Municipal Cultural Heritage Staff	Historic: - The property supports the agricultural character of the area. - This property is identified as belonging to T. Kennedy in 1875, which had a house roughly in the location of BHR 1 (Figure 2). A frame house is illustrated in 1907 (Figure 3). Design: - A late nineteenth century vernacular farmhouse, with an L-shape plan, clad in modern material, with modern windows, and a hipped roof. The house has a rear addition. - There are modern outbuildings on the property. Context: - The rural residential property contributes to the rural nature of this portion of Hendershot Road. - This residence sits close to the road, surrounded by agricultural fields. There is a residential lot to the south.	 View of BHR 1 from Hendershot Road, looking west.

Table 5: Detailed description of ACTIVE built heritage resources (BHR) and cultural heritage landscapes (CHL) within or adjacent to the study area					
Feature ID	**Resource Type**	**Address/Location**	**Recognition**	**Description/Comments**	**Photograph(s)**
BHR 2	Residence	468 Highway 56 Lot 1, Con. 1, Block 4, Binbrook Twp.	Inventory of Buildings of Architectural and/or Historical Interest- Identified by Municipal Cultural Heritage Staff	Historic: - The property supports the agricultural character of the area. This property is identified as belonging to A. Swayze in 1875 (Figure 2). A building is first noted in 1938 at the location of the existing residence (Figure 5). Design: - A twentieth century brick Four Square style house with a hipped roof, front shed dormer, brick chimney, sitting on a concrete foundation. - No outbuildings are present. Context: - The rural residential property contributes to the rural nature of this portion of Highway 56. - The residence sits close to the road and is surrounded by open fields and a modern residential property to the south.	 View of BHR 2 from Highway 56, looking west.

Table 5: Detailed description of ACTIVE built heritage resources (BHR) and cultural heritage landscapes (CHL) within or adjacent to the study area					
Feature ID	**Resource Type**	**Address/Location**	**Recognition**	**Description/Comments**	**Photograph(s)**
CHL 1	Farmscape	469 Highway 56 Lot 5, Con. 1, Block 3, Binbrook Twp.	Inventory of Buildings of Architectural and/or Historical Interest- Identified by Municipal Cultural Heritage Staff	During the roadside assessment, the farm complex could not be viewed from the road since it is set far back from the road. Recent satellite imagery shows extant buildings and ruins. Historic: - The property expresses the agricultural settlement patterns of the area. - This property is identified as belonging to Richard Quance in 1875, which had a house and orchard in roughly the same location as existing farm complex (Figure 2). A sawmill was historically part of the same lot, now subdivided (Figure 2). Design: - Design details could not be obtained since the buildings are too far back from Highway 56. - In 1907, the house is shown as constructed by brick (Figure 3). Context: - The agricultural property contributes to the rural nature of this portion of Highway 56. - The property is set far back from the road and is surrounded by agricultural fields.	 View of driveway from Highway 56, looking east.  Aerial photograph of CHR 5.

Table 5: Detailed description of ACTIVE built heritage resources (BHR) and cultural heritage landscapes (CHL) within or adjacent to the study area					
Feature ID	**Resource Type**	**Address/Location**	**Recognition**	**Description/Comments**	**Photograph(s)**
BHR 3	Outbuilding	54 Upper Centennial Parkway, Lot 24, Con. 8, Saltfleet Twp.	Canadian Inventory of Historic Buildings	During the roadside assessment, Upper Centennial Parkway was under construction and BHR 3 could not be viewed from the roadside. Recent satellite imagery shows extant storage buildings, one of which may be the storage (ca. 1873) building documented on the CIHB. Historic: - The area is associated with the former historical community of Elfrida. - A house is illustrated in the vicinity of the property in 1875 (Figure 2). No structures are shown within the property in 1907, except for a red brick house to the north of BHR 3 (in BHR 17). Design: - Design details could not be obtained since Upper Centennial Parkway was not accessible. Context: - The buildings sit close to Upper Centennial Parkway near Regional Road 20, in the former community of Elfrida.	 Aerial photograph of BHR 3.

Table 5: Detailed description of ACTIVE built heritage resources (BHR) and cultural heritage landscapes (CHL) within or adjacent to the study area					
Feature ID	**Resource Type**	**Address/Location**	**Recognition**	**Description/Comments**	**Photograph(s)**
CHL 2	Cemetery	404 Regional Road 56, Lot 1, Con.1, Block 1, Binbrook Twp.	Inventory of Cemeteries and Burial Grounds- Identified by Municipal Cultural Heritage Staff	Historic: - The Swayze Family cemetery opened in 1817- John "Sweazy" was the first interment. The Swayze family settled the property by 1811. The cemetery location is first noted on a map in 1907 (Figure 3). - Documented as active by the online Inventory of Cemeteries and Burials Grounds, but noted as inactive by Municipal staff at the time of this report. Design: - Documented 50 monuments (Inventory of Cemeteries and Burial Grounds) within a wire fenced boundary. Monument stone at entrance - "Swayze Cemetery" Context: - Monuments are set back from Highway 56, and the cemetery remains bounded within in a rural context.	 Aerial photograph of the Swayze Family cemetery.  View of the cemetery entrance from Regional Road 56, looking northeast.
Adjacent to the Study Area:					

Table 5: Detailed description of ACTIVE built heritage resources (BHR) and cultural heritage landscapes (CHL) within or adjacent to the study area					
Feature ID	**Resource Type**	**Address/Location**	**Recognition**	**Description/Comments**	**Photograph(s)**
BHR 4	Residence	1125 Fletcher Road, Lot 5, Con.2, Block 4, Binbrook Twp.	Inventory of Buildings of Architectural and/or Historical Interest- Identified by Municipal Cultural Heritage Staff	Historic: - The property expresses the agricultural settlement patterns of the area. - This property is identified as belonging to S. Fletcher in 1875 which had a house illustrated set back from Fletcher Road (Figure 2). In 1907, a frame house is shown closer to Fletcher Road, in the same location as the existing house. Design: - Example of a Gothic Revival farmhouse. One and a half storey frame house with gabled roof, including one steep pitched gable on the façade with a rectangular window. An addition extends from the rear. - Small brick outbuilding with gable roof. Context: - The rural residential property contributes to the rural nature of this portion of Fletcher Road. - The property sits close to Fletcher Road and is surrounded by open fields.	 View of the house from Fletcher Road, looking east.

Table 5: Detailed description of ACTIVE built heritage resources (BHR) and cultural heritage landscapes (CHL) within or adjacent to the study area					
Feature ID	**Resource Type**	**Address/Location**	**Recognition**	**Description/Comments**	**Photograph(s)**
CHL 3	Farmscape	2275 Golf Club Road, Lot 2, Con.2, Block 3, Binbrook Twp.	Inventory of Buildings of Architectural and/or Historical Interest- Identified by Municipal Cultural Heritage Staff	Historic: - The property expresses the agricultural settlement patterns of the area. - This property is identified as belonging to Richard Quance in 1875. There is a farmhouse illustrated set close to the road (Figure 2). However the farmhouse is set back from the road and is first illustrated on a map in 1938 (Figure 5). Design: - An early twentieth century one and a half storey brick vernacular house with a T-shaped plan and several rear additions. - Outbuildings appear to be modern. Context: - The agricultural property contributes to the rural nature of this portion of Golf Club Road. - The farm complex is set back from the road and surrounded by some mature trees, open fields, and small rural residential properties.	 View of the farm complex from Golf Club Road, looking south.

Table 5: Detailed description of ACTIVE built heritage resources (BHR) and cultural heritage landscapes (CHL) within or adjacent to the study area					
Feature ID	**Resource Type**	**Address/Location**	**Recognition**	**Description/Comments**	**Photograph(s)**
BHR 5	Residence	2291 Golf Club Road, Lot 3, Con. 2, Block 3, Binbrook Twp.	Inventory of Buildings of Architectural and/or Historical Interest	At the time of the road side assessment, the house was heavily screened by vegetation. Historic: - The property supports the agricultural character of the area. - This property is identified as belonging to Richard Quance in 1875. There is no farmhouse illustrated in this lot in 1875 (Figure 2). BHR 5 is first depicted at this location as a brick home in 1907 (Figure 3). Design: - An early twentieth century two storey brick Four Square style farmhouse with a hipped roof. Rusticated concrete block foundations. - A modern shed is present. Context: - The rural residence contributes to the rural nature of this portion of Golf Club Road. - The historical lot was subdivided and modern rural residences have been built adjacent to BHR 5. - The residence sits close to the road and is surrounded by mature trees and open fields.	 View of the house from Golf Club Road, looking south.

Table 5: Detailed description of ACTIVE built heritage resources (BHR) and cultural heritage landscapes (CHL) within or adjacent to the study area					
Feature ID	**Resource Type**	**Address/Location**	**Recognition**	**Description/Comments**	**Photograph(s)**
CHL 4	Farmscape	3481 Golf Club Road, Lot 4, Con.2, Block 4, Binbrook Twp.	Inventory of Buildings of Architectural and/or Historical Interest- Identified by Municipal Cultural Heritage Staff	During the roadside assessment the farm could not be viewed from Golf Club Road. It is set well back from the road. A review of satellite imagery suggests the farm complex is still extant. Historic: - The property supports the agricultural character of the area. - This property is identified as belonging to Alex Warrack in 1875. That year, a house is illustrated on the lot set far back from the road, in the vicinity of CHL 4 (Figure 2). In 1907 the house is shown as frame construction (Figure 3). Design: - The residence could not be viewed from Golf Club Road. A gambrel roof barn can be viewed from the roadside, possibly twentieth century. Context: - The agricultural property contributes to the rural nature of this portion of Golf Club Road. - The farm complex is set back from the road and surrounded by some mature trees and agricultural fields.	 Aerial photograph of CHL 4  Laneway to CHL 4 off of Golf Club Road, looking south

Table 5: Detailed description of ACTIVE built heritage resources (BHR) and cultural heritage landscapes (CHL) within or adjacent to the study area					
Feature ID	**Resource Type**	**Address/Location**	**Recognition**	**Description/Comments**	**Photograph(s)**
BHR 6	Residence	1145 Highway 56, Lot 5, Con.2, Block 3, Binbrook Twp.	Inventory of Buildings of Architectural and/or Historical Interest- Identified by Municipal Cultural Heritage Staff	Historic: - The property supports the agricultural character of the area. - This property is identified as belonging to William Martin in 1875. There is a farmhouse and orchard illustrated set close to Highway 56, in the vicinity of BHR 6 (Figure 2). BHR 6 is depicted as a brick home in 1907 (Figure 3). Design: - Late nineteenth century Gothic Revival style house, two storey red brick with an L-shaped plan and cross-gabled roof. Decorative bargeboard on gables. Second storey windows may be original. - Modern barn and outbuildings are present. Context: - The residence contributes to the rural nature of this portion of Highway 56. - The house sits close to the road and is surrounded by some mature trees and agricultural fields.	 View of the house from Highway 56, looking east.

Table 5: Detailed description of ACTIVE built heritage resources (BHR) and cultural heritage landscapes (CHL) within or adjacent to the study area					
Feature ID	**Resource Type**	**Address/Location**	**Recognition**	**Description/Comments**	**Photograph(s)**
CHL 5	Farmscape	1230 Highway 56, Lot 1, Con. 2, Block 4, Binbrook Twp.	Inventory of Buildings of Architectural and/or Historical Interest- Identified by Municipal Cultural Heritage Staff	Historic: - The property supports the agricultural character of the area. - This property is identified as belonging to William Martin in 1875. There is a farmhouse illustrated set close to Highway 56, in the vicinity of CHL 5 (Figure 2). The farmhouse is depicted as constructed of brick in 1907 (Figure 3). Design: - A late nineteenth century Gothic Revival style house, two storey red brick with an L-shaped plan and a cross-gabled roof. A modern addition on the front. - Gable roof frame barn with possibly a field stone foundation. The barn is obscured by trees. Context: - The agricultural property contributes to the rural nature of this portion of Highway 56. - The house sits close to the road and is surrounded by mature trees. The farm complex is surrounded by agricultural fields.	 View of the house from Highway 56, looking west  Aerial view of CHL 5

Table 5: Detailed description of ACTIVE built heritage resources (BHR) and cultural heritage landscapes (CHL) within or adjacent to the study area					
Feature ID	**Resource Type**	**Address/Location**	**Recognition**	**Description/Comments**	**Photograph(s)**
BHR 7	Residence	338 Trinity Church Road, Lot 16, Con. 1, Glanford Twp.	Inventory of Buildings of Architectural and/or Historical Interest	Historic: - The property supports the agricultural character of the area. - This property is identified as belonging to Jason Vanevery in 1875. There is a farmhouse and orchard illustrated set close to Trinity Church Road, in the vicinity of BHR 7 (Figure 2). The farmhouse is depicted as a frame house in 1907 (Figure 3). Design: - A late nineteenth century Gothic Revival style house, one and a half storey frame with modern siding, lancet arch within the front gable, brick chimney, and a small addition to the north. Context: - The rural residence contributes to the rural nature of this portion of Trinity Church Road. - The house sits close to the road and is surrounded by mature trees, a residential lot to the north with commercial land use, and agricultural fields.	 View of the house from Trinity Church Road, looking west.

Table 5: Detailed description of ACTIVE built heritage resources (BHR) and cultural heritage landscapes (CHL) within or adjacent to the study area					
Feature ID	**Resource Type**	**Address/Location**	**Recognition**	**Description/Comments**	**Photograph(s)**
BHR 9	Residence	420 Trinity Church Road, Lot 16, Con. 2, Glanford Twp.	Inventory of Buildings of Architectural and/or Historical Interest	During the roadside assessment the house could not be viewed from Trinity Church Road since it is set well back from the road. A review of satellite imagery suggests the house is still extant. Historic: - The property supports the agricultural character of the area. - This property is identified as belonging to J. Kelly in 1875. There is a farmhouse and orchard illustrated set close to Trinity Church Road, south of BHR 9 (Figure 2). In 1907, a house is depicted as a frame house in the location of BHR 9, set well back from Trinity Church Road (Figure 3). Design: - The residence could not be viewed from Trinity Church Road. Context: - The rural residence contributes to the rural nature of this portion of Trinity Church Road. - The house, if extant, sits well back from the road and is surrounded by agricultural fields.	 Aerial photograph of BHR 9.  View of tree lined driveway from Trinity Church Road, looking west.

Table 5: Detailed description of ACTIVE built heritage resources (BHR) and cultural heritage landscapes (CHL) within or adjacent to the study area					
Feature ID	**Resource Type**	**Address/Location**	**Recognition**	**Description/Comments**	**Photograph(s)**
BHR 10	Place of Worship	218 Mud Street East, Lot 20, Con. 7, Saltfleet Twp.	Inventory of Places of Worship- Identified by Municipal Cultural Heritage Staff	Historic: N/A Design: - A modern single storey brick church, with a columned entry. Kingdom Hall of Jehovah's Witnesses, Tapleytown Context: - The church sits at the crossroads of Mud Street East and Second Road East. - The property is surrounded by agricultural fields.	 View from Second Road East, looking east

Table 5: Detailed description of ACTIVE built heritage resources (BHR) and cultural heritage landscapes (CHL) within or adjacent to the study area					
Feature ID	**Resource Type**	**Address/Location**	**Recognition**	**Description/Comments**	**Photograph(s)**
BHR 11	Residence	142 First Road East, Lot 22, Con. 7, Saltfleet Twp.	Inventory of Buildings of Architectural and/or Historical Interest- Identified by Municipal Cultural Heritage Staff	At the time of the roadside assessment, the residence was obscured by trees. Historic: - The property supports the agricultural character of the area. - This property is identified as belonging to Charles Marshall in 1875. A house and orchard are located in the vicinity of BHR 11 in 1875 (Figure 2). The house is shown as being a frame building in 1907 (Figure 3). Design: - The residence is obscured by trees. A two storey frame house with a veranda and turret on the northwest. Context: - The rural residence contributes to the rural nature of this portion of First Road East. - The house sits well back from the road and is surrounded by agricultural fields.	 View of the house from First Road East, looking east

Table 5: Detailed description of ACTIVE built heritage resources (BHR) and cultural heritage landscapes (CHL) within or adjacent to the study area					
Feature ID	**Resource Type**	**Address/Location**	**Recognition**	**Description/Comments**	**Photograph(s)**
BHR 12	Residence	190 Regional Road 20, Lot 1, Con. 1, Block 3, Binbrook Twp.	Inventory of Buildings of Architectural and/or Historical Interest- Identified by Municipal Cultural Heritage Staff	Historic: - The property supports the agricultural character of the area. - This property is identified as belonging to I. Synder in 1875. A house and orchard are located in the vicinity of BHR 12 in 1875 (Figure 2). The house is shown as being a frame building in 1907 (Figure 3). Design: - A late nineteenth century two storey vernacular frame house with a steep gabled roof. There is a one storey west addition. It has a bay window, modern siding, and a stone foundation with concrete parging. - The barn, located to the southwest, was likely associated with this house but is now part of the parcel directly to the west. Context: - The rural residence contributes to the rural nature of this portion of Regional Road 20. - The house sits close to the road and is surrounded by some fields and some twentieth century residences.	 View of the house from Regional Road 20, looking south.  View of the house from Hendershot Road, looking west.

Table 5: Detailed description of ACTIVE built heritage resources (BHR) and cultural heritage landscapes (CHL) within or adjacent to the study area					
Feature ID	**Resource Type**	**Address/Location**	**Recognition**	**Description/Comments**	**Photograph(s)**
BHR 13	Residence	3219 Golf Club Road, Lot 2, Con. 2, Block 4, Binbrook Twp.	Inventory of Buildings of Architectural and/or Historical Interest- Identified by Municipal Cultural Heritage Staff	Historic: - The property supports the agricultural character of the area. - This property is identified as belonging to Jason Stewart in 1875. A house is illustrated on the property by 1875, however set far back from the Golf Club Road (Figure 2). By 1907, a frame house is shown situated along Golf Club Road, in the vicinity of BHR 13 (Figure 3). Design: - A late nineteenth century Gothic Revival Style building, one and a half storey dichromatic brick house (red and yellow brick), modern windows, gabled roof with two dormers, a five bay front elevation and a centre door accented by a rectangular transom and sidelights. Decorative yellow brick quoining and yellow brick around the windows and door. Additions on the rear. Context: - The rural residence contributes to the rural nature of this portion of Golf Club Road. - The house sits close to the road and is surrounded by agricultural fields and a rural residential property directly to the east. - Ruins of the 1875 farm complex is south of BHR 13 on the in same property.	 View of the house from Golf Club Road, looking south

Table 5: Detailed description of ACTIVE built heritage resources (BHR) and cultural heritage landscapes (CHL) within or adjacent to the study area					
Feature ID	**Resource Type**	**Address/Location**	**Recognition**	**Description/Comments**	**Photograph(s)**
CHL 6	Farmscape	1014 Fletcher Road, Lots 5-7, Con. 2, Block 5, Binbrook Twp.	Identified during field review	Historic: - The property supports the agricultural character of the area. - This property is identified as belonging to James Gage in 1875. A house is illustrated on the property by 1875, however south of CHL 6 (Figure 2). A house is first noted in this location by 1938 (Figure 5). Design: - A twentieth century two storey vernacular brick farmhouse with a hipped roof is partially screened by trees. - Various barns and outbuildings. One gambrel roof barn with vertical side board. Context: - The agricultural property contributes to the rural nature of this portion of Fletcher Road. - The house sits close to the road and is surrounded by agricultural fields and rural residential properties directly to the north and south.	 View of the farm complex from Fletcher Road, looking

Table 5: Detailed description of ACTIVE built heritage resources (BHR) and cultural heritage landscapes (CHL) within or adjacent to the study area					
Feature ID	**Resource Type**	**Address/Location**	**Recognition**	**Description/Comments**	**Photograph(s)**
CHL 7	Farmscape	406 Fletcher Road, Lot 7, Con. 1, Block 5, Binbrook Twp.	Identified during field review	Historic: - The property supports the agricultural character of the area. - This property overlaps lots belonging to E. Stewart and Jason Pontruff in 1875. A house is illustrated on Pontruff's lot, however south of CHL 7 (Figure 2). A house is first noted in this location by 1907 (Figure 3). Design: - Partially obscured by trees, a late nineteenth to early twentieth century Gothic Revival Cottage style frame residence with one and a half storey's with a gable roof, some early windows and a new large window seen on front façade, with possible wood siding, arched window within front gable, and rear additions. - A gambrel roof barn with metal siding and a stone foundation, other agricultural outbuildings and concrete and metal silos. Context: - The agricultural property contributes to the rural nature of this portion of Fletcher Road. - The house sits close to the road and is surrounded by agricultural fields and a rural residential property directly across the road.	 View of the house from Fletcher Road, looking west.  View of the farm complex from Fletcher Road, looking west.

Table 5: Detailed description of ACTIVE built heritage resources (BHR) and cultural heritage landscapes (CHL) within or adjacent to the study area					
Feature ID	**Resource Type**	**Address/Location**	**Recognition**	**Description/Comments**	**Photograph(s)**
BHR 23	Former Place of Worship	2251 Rymal Road East, Lot 25, Con. 8, Saltfleet Twp.	Listed on the Register of Properties of Cultural Heritage Value or Interest and the Inventory of Places of Worship- Identified by Municipal Cultural Heritage Staff * On the City of Hamilton designation work plan for 2018. Request for Designation filed in 2013	Historic: - Property purchased in 1856 by Philip and Catherine Hendershot in order to establish a church in the hamlet of Elfrida. Constructed in 1858 as a Canadian Methodist Church. The church was rebuilt in 1881. Design: - A late nineteenth century one storey red brick church designed in the Late Gothic Revival architectural style. - Architectural features include a symmetrical composition, steep roof with decorative wood brackets and brick dentils, two tall brick chimneys, stone hood-moulds above the point lancet windows, ornamental quatrefoil tracery above the windows, and a large rose window above the main entrance. - Renovated and rezoned in the mid-1990s for adaptive reuse as a restaurant. Context: - The property no longer retains its connection to the historic streetscape of Elfrida since it is surrounded by modern development. However it is a built remnant and the last remaining non-residential building in the former hamlet of Elfrida.	 View of 2251 Rymal Road East, looking northwest.

Table 6: Detailed description of INACTIVE built heritage resources (BHR) and cultural heritage landscapes (CHL) within or adjacent to the study area					
Feature ID	**Resource Type**	**Address/Location**	**Recognition**	**Description/Comments**	**Photograph(s)**
BHR 14	Residence	511 Fletcher Road, Lot 5, Con. 1, Block 4, Binbrook Twp.	Inventory of Buildings of Architectural and/or Historical Interest- Identified by Municipal Cultural Heritage Staff	The house was demolished in 2015. Verified during field review. Historic: - A brick house is first noted on the property in 1907 (Figure 3), now demolished. Design: - A modern house has been built on the property. Context: - The property is now part of a series of rural residential houses along Fletcher Road, surrounded by agricultural fields.	 View of the modern house at 511 Fletcher Road, looking east.  Google image of former house at 511 Fletcher Road.

Table 6: Detailed description of INACTIVE built heritage resources (BHR) and cultural heritage landscapes (CHL) within or adjacent to the study area					
Feature ID	**Resource Type**	**Address/Location**	**Recognition**	**Description/Comments**	**Photograph(s)**
CHL 8	Farmscape	2328 Golf Club Road, Lot 3, Con. 1, Block 3, Binbrook Twp.	Inventory of Buildings of Architectural and/or Historical Interest- Identified by Municipal Cultural Heritage Staff	House demolished in 2002. Verified in the field review. Historic: - The frame house shown at this location by 1907 (Figure 3) is now demolished. Design: - A late nineteenth or early twentieth century barn is located on the property, adjacent to the modern house. The barn has a large gambrel roof with vertical board siding, and one ventilator visible from road. Context: - The agricultural property contributes to the rural nature of this portion of Golf Club Road. - The property is set back from the road and is surrounded by agricultural fields.	 View of barn from Golf Club Road, looking north.

Table 6: Detailed description of INACTIVE built heritage resources (BHR) and cultural heritage landscapes (CHL) within or adjacent to the study area					
Feature ID	**Resource Type**	**Address/Location**	**Recognition**	**Description/Comments**	**Photograph(s)**
BHR 15	Outbuilding	351 Trinity Church Road, Lot 6, Con. 1, Block 5, Binbrook Twp.	Canadian Inventory of Historic Buildings	Ruins. Documented as a storage building, ca. 1873, on the CIHB. It appears the storage is in ruins based on the roadside assessment and satellite imagery. Historic: - A house was present on the lot by 1875 (Figure 2). A long laneway off of Trinity Church Road is illustrated as leading to a frame house in 1907 (Figure 3). Design: - The ruins could not be viewed from Trinity Church Road or Golf Club Road. Context: - The former farm complex appears in aerial as ruins, set well back from Golf Club Road. The original entry from Trinity Church Road is now grassed, now accessible from Golf Club Road. - The property is under cultivation.	 Aerial Photograph of the former farm complex at 351 Trinity Church Road.

Table 6: Detailed description of INACTIVE built heritage resources (BHR) and cultural heritage landscapes (CHL) within or adjacent to the study area					
Feature ID	**Resource Type**	**Address/Location**	**Recognition**	**Description/Comments**	**Photograph(s)**
BHR 16	Residence	180 Second Road East, Lot 20, Con. 7, Saltfleet Twp.	Canadian Inventory of Historic Buildings and Inventory of Buildings of Architectural and/or Historical Interest- Identified by Municipal Cultural Heritage Staff	Demolished, date unknown. Verified during the field review. Historic: - No structure is shown in the vicinity of 180 Second Road East on nineteenth century or early twentieth century mapping. Design: N/A - Documented as a single dwelling, ca. 1880, now a modern house. Context: - The property is now part of a series of rural residential houses along Fletcher Road, surrounded by agricultural fields.	 Modern house at 180 Second Road East

Table 6: Detailed description of INACTIVE built heritage resources (BHR) and cultural heritage landscapes (CHL) within or adjacent to the study area					
Feature ID	**Resource Type**	**Address/Location**	**Recognition**	**Description/Comments**	**Photograph(s)**
BHR 17	Residence	62 Upper Centennial Parkway, Lot 24, Con. 8, Saltfleet Twp.	Canadian Inventory of Historic Buildings	Demolished, date unknown. During the field review, Upper Centennial Parkway was under construction and was not accessible. Aerial photography indicates that the former building has been demolished. No other buildings are visible on the aerial. Historic: - A house, illustrated on the property by 1875 (Figure 2), is now demolished. In 1907, the house is depicted as a brick structure (Figure 3). Design: - Documented as a multiple dwelling, ca. 1880 is no longer extant on the property. Context: - The property is under cultivation.	 Aerial photograph of 62 Upper Centennial Parkway.

Table 6: Detailed description of INACTIVE built heritage resources (BHR) and cultural heritage landscapes (CHL) within or adjacent to the study area					
Feature ID	**Resource Type**	**Address/Location**	**Recognition**	**Description/Comments**	**Photograph(s)**
BHR 18	Residence	130 Upper Centennial Parkway, Lot 24, Con. 7, Saltfleet Twp.	Canadian Inventory of Historic Buildings	Demolished, date unknown. Verified in the field review. A modern storage facility has been built. Historic: - The property is near the historical community of Elfrida. A house is first noted on the property in 1875 in the vicinity of the modern storage facility (Figure 2). In 1907, the house is shown as a frame house (Figure 3). Design: - Documented as a single dwelling, ca. 1860 (CIHB), the house is no longer extant. - If the original house was incorporated into the storage facility design, it has been extensively altered. Context: - The property no longer retains its connection to a rural agricultural landscape.	 View of 130 Upper Centennial Parkway, looking north.
Within 50m of Study area:					

Table 6: Detailed description of INACTIVE built heritage resources (BHR) and cultural heritage landscapes (CHL) within or adjacent to the study area					
Feature ID	**Resource Type**	**Address/Location**	**Recognition**	**Description/Comments**	**Photograph(s)**
BHR 19	Residence	413 Hendershot Road, Lot 5, Con. 1, Block 2, Binbrook Twp.	Inventory of Buildings of Architectural and/or Historical Interest- Identified by Municipal Cultural Heritage Staff	Demolished, date unknown. Verified in the field review. Historic: - The property was owned by P. Hendershot in 1875. A frame house is first noted on the property in 1907 (Figure 3), now demolished. Design: - A modern house and outbuildings are present. Context: - The agricultural property contributes to the rural nature of this portion of Hendershot Road. - The modern house is set back from the road and is surrounded by agricultural fields.	 View of 413 Hendershot Road, looking east

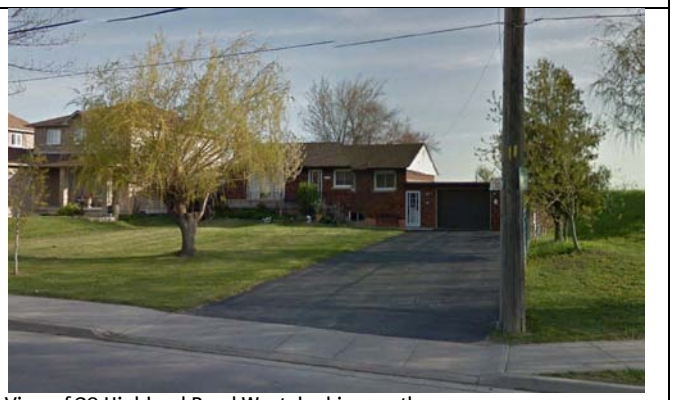
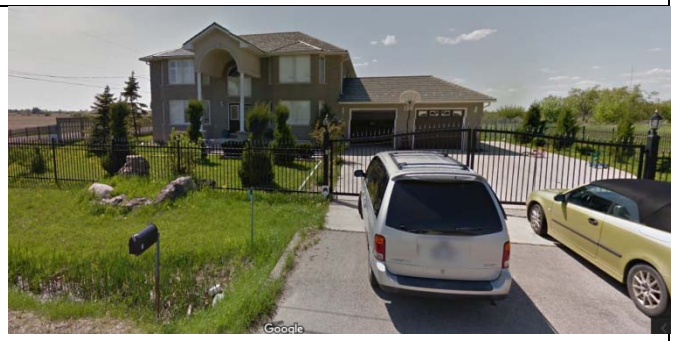
Table 6: Detailed description of INACTIVE built heritage resources (BHR) and cultural heritage landscapes (CHL) within or adjacent to the study area					
Feature ID	**Resource Type**	**Address/Location**	**Recognition**	**Description/Comments**	**Photograph(s)**
BHR 20	Residence	20 Highland Road West, Lot 25, Con. 7, Saltfleet Twp.	Canadian Inventory of Historic Buildings	Residence demolished, date unknown. Verified in the field review. Historic: - The former residence and orchard owned by W.B. Stewart, is present by 1875, close to the community of Elfrida (Figure 2), and was illustrated as a frame house in 1907 (Figure 3). Design: - A modern house has been built. Context: - The property no longer retains its connection to a rural agricultural landscape. *Note: CIHB did not record West or East Highland Road. We deduced West based on the presence of a nineteenth century structure illustrated at 20 Highland Road West.	 View of 20 Highland Road West, looking north.

Table 6: Detailed description of INACTIVE built heritage resources (BHR) and cultural heritage landscapes (CHL) within or adjacent to the study area					
Feature ID	**Resource Type**	**Address/Location**	**Recognition**	**Description/Comments**	**Photograph(s)**
BHR 21	Residence	299 Second Road East, Lot 21, Con.6, Saltfleet Twp.	Canadian Inventory of Historic Buildings	Demolished, date unknown. Verified in the field review. Historic: - The former residence and orchard owned by Nathaniel Norris is present by 1875 at the location of BHR 21 (Figure 2), and was illustrated as a frame house in 1907 (Figure 3). - The property related to CHL 10, the Norris family cemetery, and BHR 22 (see below). Design: - Documented as a single dwelling, ca. 1819 (CIHB), it is now demolished and a modern house has been built. Context: - The agricultural property has been subdivided into rural residential properties which contribute to the rural nature of this portion of Second Road East.	 View of 299 Second Road East, looking west

Table 6: Detailed description of INACTIVE built heritage resources (BHR) and cultural heritage landscapes (CHL) within or adjacent to the study area					
Feature ID	**Resource Type**	**Address/Location**	**Recognition**	**Description/Comments**	**Photograph(s)**
CHL 9	Farmscape	760 Trinity Church Road, Lot 16, Con. 2, Glanford Twp.	Inventory of Buildings of Architectural and/or Historical Interest	Abandoned. The property is not visible from the public right-of-way. It appears the house and barn may be extant based on satellite imagery. Historic: - The property expresses the agricultural settlement patterns of the area. - The former residence owned by J. Wilson is present by 1875 (Figure 2), and was illustrated as a frame house in 1907 (Figure 3). Design: - Design details could not be obtained since the buildings are too far back from Trinity Church Road. - Red gable style roofs are visible in the aerial which suggest that a house and barn are extant. Context: - The agricultural property contributes to the rural nature of this portion of Trinity Church Road. - The farm complex is set back from the road and is screened by mature trees and is surrounded by agricultural fields.	 View of overgrown laneway from Trinity Church Road, looking west  Aerial photograph of 760 Trinity Church Road- View of extant buildings

Table 6: Detailed description of INACTIVE built heritage resources (BHR) and cultural heritage landscapes (CHL) within or adjacent to the study area					
Feature ID	**Resource Type**	**Address/Location**	**Recognition**	**Description/Comments**	**Photograph(s)**
CHL 10	Cemetery	Lot 21, Concession 6, Saltfleet Twp.	Identified by Municipal Cultural Heritage Staff (Inventoried)	Abandoned Cemetery. The Norris Family Plot. Historic: - The lot was owned by Nathaniel Norris in 1875, which had a house and orchard (Figure 2). A frame house is illustrated in 1907 in the vicinity of BHR 21 (Figure 3). - The lot is related to BHR 21, the former Norris house, and BHR 22 (see below). Design: - Possible unmarked burials. Context: - The CHL is currently under cultivation and may include the rural residential parcels.	 Aerial photograph of the lot

Table 6: Detailed description of INACTIVE built heritage resources (BHR) and cultural heritage landscapes (CHL) within or adjacent to the study area					
Feature ID	**Resource Type**	**Address/Location**	**Recognition**	**Description/Comments**	**Photograph(s)**
BHR 22	Residence	217 Mud Street East, Lot 21, Con. 6, Saltfleet Twp. (now 283 Second Road East)	Inventory of Buildings of Architectural and/or Historical Interest	Demolished, date unknown. Verified in the field review. Historic: - The former residence and orchard owned by Nathaniel Norris is present by 1875, north of BHR 22 (Figure 2), and was illustrated as a frame house in 1907 (Figure 3). - The property is related to CHL 10, the Norris family cemetery, and BHR 21, the Norris family home. Design: - Documented as a single dwelling, ca. 1819 (CIHB), it is now demolished and a modern house has been built. Context: - The agricultural property has been subdivided into rural residential properties which contribute to the rural nature of the area. *Note: BHR 22 may be referring the same former residence as BHR 21 since both documents a single dwelling ca. 1819. BHR 21 may have been 217 Mud Street at some point.	

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ASI

9.0 CULTURAL HERITAGE RESOURCE LOCATION MAPPING

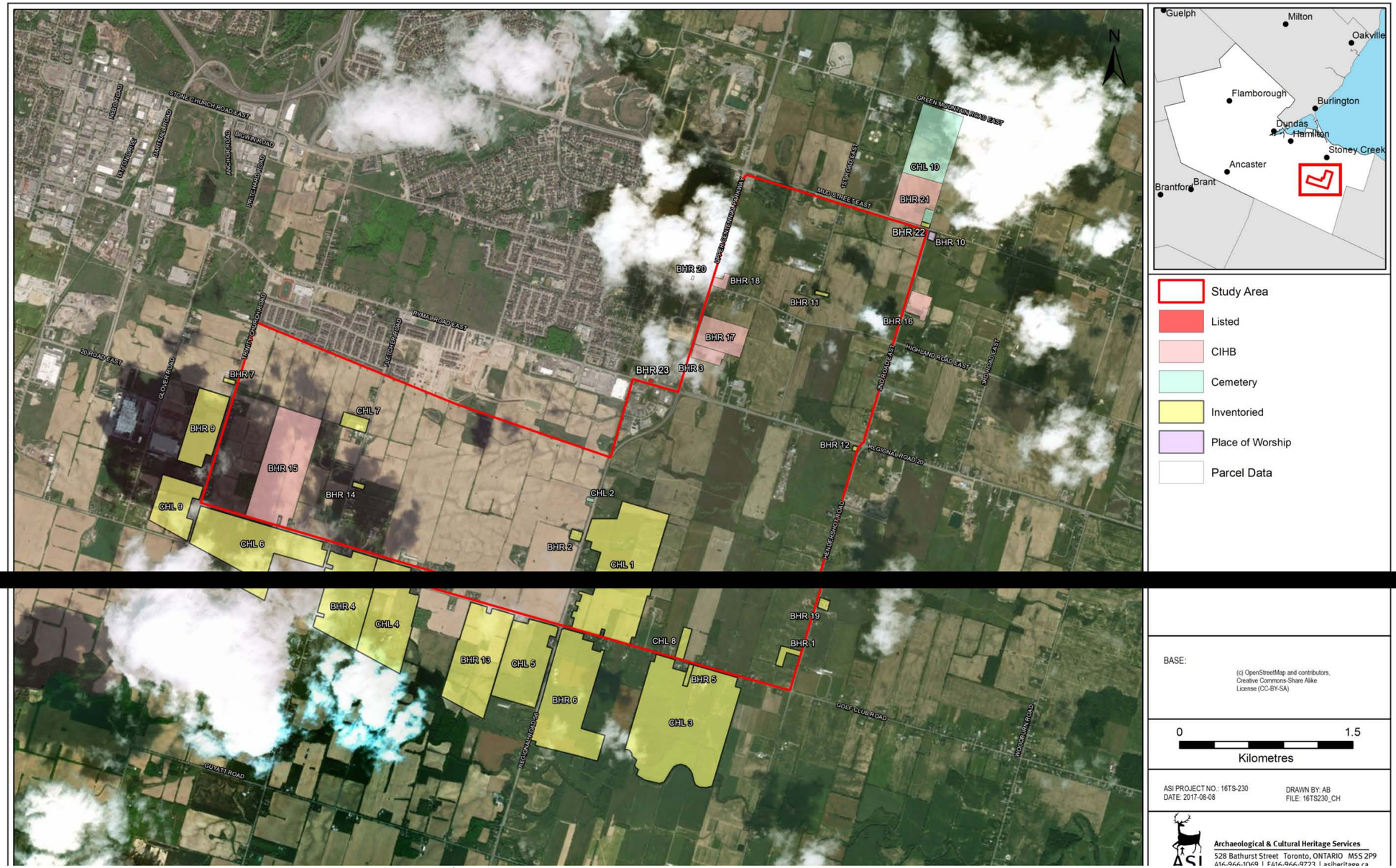

Figure 8: Location of Cultural Heritage Resources within and/or Adjacent to the Study Area

B ELFRIDA COMMERCIAL LANDS REVIEW

CUSHMAN & WAKEFIELD

ELFRIDA COMMERCIAL LANDS REVIEW

PREPARED FOR:

CITY OF HAMILTON

May 19, 2017

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Regarding: Elfrida Commercial Lands Review

Cushman & Wakefield is pleased to present this Elfrida Commercial Lands Review. This report is one of several studies that inform the development of the Elfrida Study Area. Cushman & Wakefield is a sub-consultant to the project team led by MMM Group (a WSP Company), in collaboration with The Planning Partnership, and Archaeological Services.

This Commercial Lands Review profiles the existing retail-commercial environment, defines a Primary Trade Area, and presents a land demand analysis that is guided by the benchmark shopping centre space per capita for the City of Hamilton. At 37.6 sf of shopping centre-type space per capita, the Primary Trade Area has nearly 2.3 times the amount of shopping centre-type space per capita compared to the City of Hamilton average (16.5 sf per capita). This indicates that there is room for considerable population growth within the Primary Trade Area (which encompasses the Elfrida Study Area, and beyond) – in the range of 35,100 persons – without a requirement for additional provision of retail-commercial lands.

Respectfully submitted,

Cushman & Wakefield Ltd.

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TABLE OF CONTENTS

INTRODUCTION

Project Overview

Cushman & Wakefield was retained to provide an analysis of the retail-commercial environment in and around the Elfrida Study Area, as well as to assess the required amount of retail-commercial lands – and the location and type/scale of development – that would be needed to support the future population. This study is intended to inform ongoing planning and development, and supporting policies.

Area Planning Overview

Existing commercial uses to the west of Upper Centennial Parkway along Rymal Road East have the capacity to serve a greater population, as it develops in the future. The primary trade area for these retail-commercial uses extends into the Elfrida Study Area. The west side of the intersection of Rymal Road and Upper Centennial Parkway/Hwy 56 is identified as a Community Node on the Urban Structure Plan in the Urban Hamilton Official Plan. The east side of the intersection is within Elfrida, and would round out this node. This area will play an important role in the overall design and function of the future urban lands, and will be an important consideration for the overall recommended distribution of retail-commercial space in the Study Area.

EXISTING RETAIL-COMMERCIAL ENVIRONMENT

Site Tour

A site tour was completed on March 20, 2017. City staff toured the Study Area along with various project team members. This visit allowed us to review the land uses along the major roads, the interface of uses, as well as vacant sites.

The tour commenced at the "Fortinos plaza" (at Rymal Corners shopping centre), at 2257-2273 Rymal Road E. and 21 Upper Centennial Parkway. This is of importance, as the Existing Inventory of Retail-Commercial Land Uses (described below) is organized in this same sequence.

Existing Inventory of Retail-Commercial Land Uses

The following exhibit illustrates the existing retail-commercial uses located within and in proximity to the Study Area – as well as some commercial-industrial operations that were identified on the site tour. We have identified the property address and name, tenant names[1], and provided a retail-commercial categorization of existing tenancies. Using Propertyline – a property search tool developed by MPAC (Municipal Property Assessment Corporation) – we have determined the year built and floor area data for the retail-commercial properties (we have excluded the industrial/commercial uses from this portion of the analysis), and have verified the floor area using secondary data sources, as needed.

The total retail-commercial floor area totals approximately 710,000 sf, plus nearly 100,000 sf of professional/medical office space. Of this overall retail-commercial supply, nearly 575,000 sf (80%) is located in shopping centre-type properties.

EXISTING RETAIL-COMMERCIAL INVENTORY

Index #	Property Address/Tenant Name	Category	Year Built	Size (sf)
1	**35 Upper Centennial Parkway**		**2015**	**98,560**
	Various health care service providers	Ambulatory Health Care		
	Drug store	Health/Personal Care		
	Vacant units	Vacant		

[1] Note: The term "tenant" is used for simplicity. We are referring to tenants (leasing the space) as well as owner-occupiers, as may be the case.

2	**130 Upper Centennial Parkway**		**1984**	**34,670**
	U-Haul Moving & Storage	Other Services		
3	**135 Upper Centennial Parkway**		**2005/2013**	**41,680**
	5 Star Fitness & Nutrition Centres	Health/Personal Care		
	Beattie Pet Hospital	Other Services		
	Boston Pizza (pad)	Food Services		
	Dentistry Laser	Ambulatory Health Care		
	Full Circle Supplements & Health Care	Health/Personal Care		
	Hasty Market	Food/Beverages		
	Highland Dental Centre (pad)	Ambulatory Health Care		
	Pearl Nail Salon	Other Services		
	Turtle Jack's (pad)	Food Services		
	VG Meats	Food/Beverages		
4	**146 Upper Centennial Parkway**		**1977**	**8,020**
	Cooper Equipment Rentals	Other Services		
5	**151 Upper Centennial Parkway**		**1959/1996**	**2,110**
	M&M Fine Solid Wood Furniture	Furniture/Home Furnishings		
6	**154 Upper Centennial Parkway**		**1976**	**6,580**
	Skyway Lawn Equipment	Other Services		
7	**225 Upper Centennial Parkway**		**1962/2005**	**5,230**
	JD's Grooming	Other Services		
	Queenston Tire & Rim	Other Retail		
8	**244 Upper Centennial Parkway**		N/A	**6,000**
	Tim Hortons	Food Services		
	Wendy's	Food Services		
9	**249 Upper Centennial Parkway**		**2002**	**6,260**
	Esso	Other Retail		
10	**Northwest corner of Upper Centennial Parkway and Mud St. E.**		N/A	N/A (land)
	For lease (vacant site) by Northwest Atlantic	Vacant Land		
11	**167 First Road E.**		N/A	N/A
	Bill's Mushroom Farm	Other		

12	**92 Highland Road E.**		N/A	N/A
	Dorr Foods	Other		
13	**151 Hendershot Road**		N/A	N/A
	Gill Bibby Wooden Boat Builder	Other		
14	**179 Hendershot Road**		N/A	N/A
	Barry Metal Products	Other		
15	**185 Hendershot Road**		N/A	N/A
	Hendershot Storage	Other		
16	**3248 Golf Club Road**		N/A	N/A
	Western Ontario Whirlpools	Miscellaneous		
17	**Southeast corner of Trinity Church Road and Rymal Rd. E.**		N/A	N/A (land)
	Summit Centre – for lease (vacant site) by Multi-Area Developments	Vacant Land		
18	**1869 Rymal Road**		N/A	N/A
	The Co-Operators	Finance/Insurance		
19	**Fletcher Square - 1962-1976 Rymal Road E.**		**2015**	**26,970**
	Avondale Food Stores	Food/Beverages		
	Black Cat Coffee	Food Services		
	Carlo's Pizza & Grill	Food Services		
	Clarity Optometry	Ambulatory Health Care		
	Covers Blinds Shuttery Drapery	Furniture/Home Furnishings		
	Fletcher Dental Centre	Ambulatory Health Care		
	Fletcher Medical Centre	Ambulatory Health Care		
	Halal Mart	Food/Beverages		
	Passion Nails & Salon	Health/Personal Care		
	Tiny Hoppers Early Learning Centres (pad)	Other Services		
	Wonderfloat Wellness Centre	Health/Personal Care		
20	**2070 Rymal Road E.**		**1980**	**22,200**
	Farmer Al's Market	Food/Beverages		
	Layalina Lebanese Restaurant	Food Services		

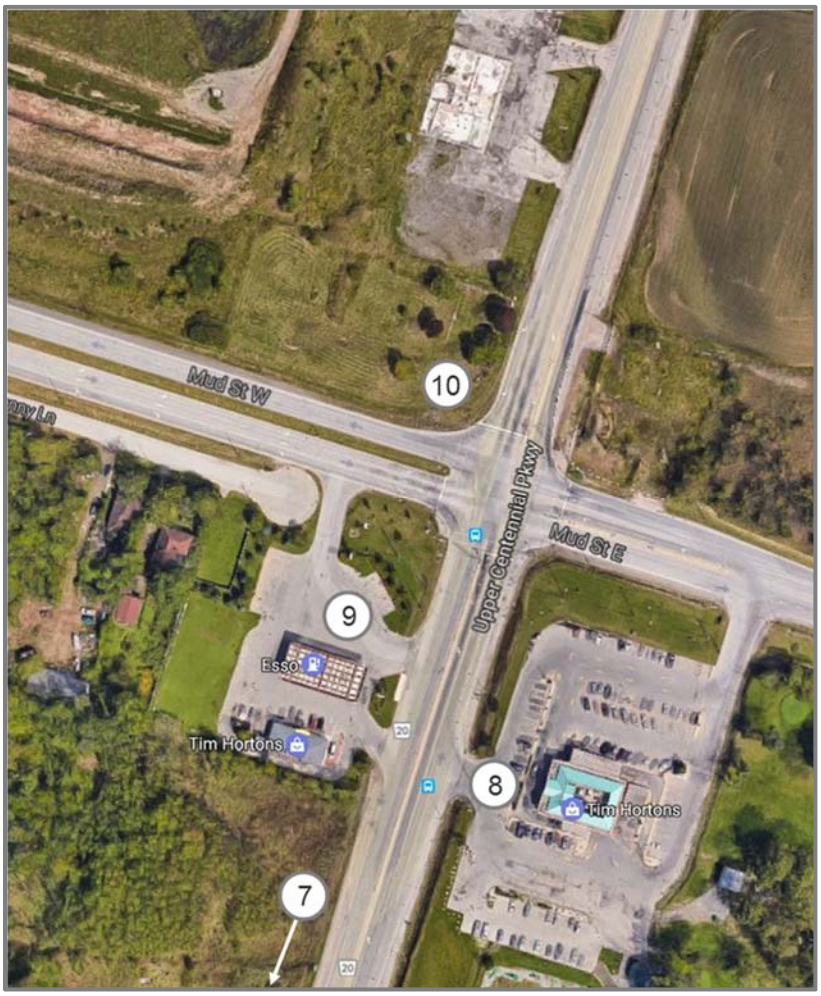
21	**South side of Rymal Road E., at entrance to RioCan's Hamilton Walmart Centre**		N/A	N/A (land)
	Fletcher's Square – for lease (vacant site) by Multi-Area Developments	Vacant Land		
22	**Hamilton Walmart Centre - 2100-2190 Rymal Road E.**		**2007/2009/2010**	**314,000**
	Allstate	Finance/Insurance		
	Ardene	Clothing/Accessories/Shoes		
	BMO (pad)	Finance/Insurance		
	Bouclair Home	Furniture/Home Furnishings		
	Canadian Tire	General Merchandise		
	Carter's Babies & Kids	Clothing/Accessories/Shoes		
	CIBC (pad)	Finance/Insurance		
	Cleo	Clothing/Accessories/Shoes		
	Dairy Queen/Orange Julius	Food Services		
	Dollar Tree	General Merchandise		
	EB Games	Miscellaneous		
	First Choice Hair Cutters	Health/Personal Care		
	Iris Optometrists & Opticians	Ambulatory Health Care		
	La Vie en Rose	Clothing/Accessories/Shoes		
	Meridian	Finance/Insurance		
	OshKosh B'gosh	Clothing/Accessories/Shoes		
	Payless Shoesource	Clothing/Accessories/Shoes		
	Penningtons	Clothing/Accessories/Shoes		
	RBC (pad)	Finance/Insurance		
	Reitmans	Clothing/Accessories/Shoes		
	Ricki's	Clothing/Accessories/Shoes		
	Rymal Dental Centre	Ambulatory Health Care		
	Sleep Country	Furniture/Home Furnishings		
	Staples	Miscellaneous		
	Subway	Food Services		
	Vacant Unit	Vacant		
	Walmart Supercentre w/ Garden Centre & McDonald's	General Merchandise		
	Winners	Clothing/Accessories/Shoes		
23	**Gateway Plaza - 2200 Rymal Road E.**		**1990**	**22,960**
	Aquanica Pools & Spas	Miscellaneous		
	Atami Sushi	Food Services		
	Avondale Food Stores	Food/Beverages		
	Beauty Destination	Health/Personal Care		

	Esso	Other Retail		
	Gino's Pizza	Food Services		
	Lococo Wellness Centre	Health/Personal Care		
	Stoney Mountain Dental Care	Ambulatory Health Care		
	Stoney Ridge Animal Hospital	Other Services		
	Stylisi Hair Design	Health/Personal Care		
	Tim Hortons	Food Services		
	Urban Sunset Wine Company	Miscellaneous		
24	**2227 Rymal Road E.**		**1952/2008**	**4,590**
	Brian Tire	Other Retail		
25	**2237-2241 Rymal Road E.**		**1969/1978**	**4,970**
	Gabby's Express Convenience	Food/Beverages		
	Global	Other Retail		
	Gold City Chinese & Szechuan Food	Food Services		
	Magic Needle Alterations & Repairs	Other Services		
	Sana Grill	Food Services		
26	**2247 Rymal Road E.**		**2009**	**34,730**
	Ability Health Physiotherapy	Ambulatory Health Care		
	Athena Nails & Spa	Health/Personal Care		
	Cornerstone Montessori Academy & Child Care	Other Services		
	Crock a Doodle	Miscellaneous		
	Dr. Nadia Filice Dentistry	Ambulatory Health Care		
	Dutta Financial (2nd storey)	Finance/Insurance		
	First Ontario Credit Union (pad)	Finance/Insurance		
	Hamilton Academy of Music (2nd storey)	Other Services		
	OneMax Real Estate (2nd storey)	Other Services		
	Royal LePage Macro Realty Brokerage (2nd storey)	Other Services		
	Scholard Education Centre	Other Services		
	Symposium Cafe	Food Services		
	Vacant Unit	Vacant		
	Xklusiv Dance Productions (2nd storey)	Other Services		
27	**2250 Rymal Road E.**		**2007/2010**	**7,220**
	A&W	Food Services		
	Scotiabank	Finance/Insurance		

28	**2251 Rymal Road E.**		**1881**	**1,810**
	The Vicar's Vice	Food Services		
29	**Rymal Corners - 2257-2273 Rymal Road E. and 21 Upper Centennial Parkway**		**2000/2007/2009**	**134,240**
	TD Canada Trust (pad)	Finance/Insurance		
	Beer Store (pad)	Food/Beverages		
	Little Caesars	Food Services		
	Dollarama	Miscellaneous		
	Mountain Creek Dental Centre	Ambulatory Health Care		
	Global Pet Foods	Miscellaneous		
	LCBO	Food/Beverages		
	McDonald's (pad)	Food Services		
	Fortinos	Food/Beverages		
	Crichigno Orthodontics	Ambulatory Health Care		
	Vacant Unit	Vacant		
30	**2260 Rymal Road E.**		**2005/2015**	**26,200**
	Queenston Chevrolet Buick GMC	Other Retail		
31	**Swayze Road and Portside Street**		N/A	N/A
	Various commercial-industrial businesses	Other		

The following mapping identifies the existing retail-commercial uses, referring to the Index Number indicated on the Existing Retail-Commercial Inventory exhibit presented above.


6
Skyway Lawn Equipment
5
M & M Fine Solid Wood Furniture
Upper
Upper Centennial Pkwy
Turtle Jacks
4
Cooper Equipment Rentals
Full Circle Health Care and Supplements
Beattie Pet Hospital
Highland Plaza
3
VG Meats Stoney Creek
Boston Pizza
2
U-Haul Moving & Storage of Stoney Creek
Highland Rd W
Highland Rd W
Mary Brown Famous Chicken & Caters
Vitoria Garden Centre
Highland Rd E


Mud St W
10
Upper Centennial Pkwy
Mud St E
9
Esso
Tim Hortons
8
Tim Hortons
7


Trinity United Church
Trinity Church Rd
17
Rymal Rd E
Bishop Ryan Catholic Secondary School
Dakota Blvd
18
Rymal Rd E


Rymal Road Community Church
Rymal Rd E
1962 Rymal Road East
Fletcher Medical Centre
19
Cat Coffee Service
Rymal Rd E
Summit Park
Rymal Rd E
Rymal Rd E
Rymal Rd E
Fletcher Rd
Boulder Dr
Bellagio Ave
Celestial Crescent
Charlesewood Cres
Farmer Al's
20
Layalina
Chaston Water Ha


21
Rymal Rd E
Rymal Rd E
CIBC Branch & ATM
Rymal Rd E
Staples Hannon
Winners
BMO Bank of Montreal
Rymal Rd E
Rymal Rd E
Allstate Insurance Company Of Canada
EB Games
Canadian Tire
Rymal Rd E
22
Reitmans
Ricki's
Walmart Supercentre
Dollar Tree
Western Union
Swayze Rd
Whitedeer Rd
Tanyberry Rd
Candlewood Dr

Overall Impressions

- There appears to be a significant amount of established retail-commercial space relative to the current population of the local area. This has no doubt been completed in anticipation of future residential development in the Elfrida area, in order to achieve a "first mover" advantage (being the first – or among the first – retailer within a product category to occupy a new trade area).
- There are a wide range of retail-commercial formats evident in proximity to the Study Area – from single-tenant freestanding buildings, to unanchored retail strip plazas, to neighbourhood shopping centres, as well as a power centre.
- Over 80% of the retail-commercial floor space was built in the past ten years (2008-onward). The professional/medical office building was built in 2015.
- The following exhibit identifies the distribution of retail-commercial businesses located within or in proximity to the Study Area.

DISTRIBUTION OF RETAIL-COMMERCIAL BUSINESSES

Retail-Commercial Category	Count of Locations	% Share of Total Locations	Sample Businesses
Food Services	19	17%	Boston Pizza, Subway
Other Services	15	14%	Beattie Pet Hospital, OneMax Real Estate
Ambulatory Health Care	13	12%	Highland Dental Centre, Clarity Optometry
Clothing/Accessories/Shoes	10	9%	Ardene, Payless Shoesource
Health/Personal Care	10	9%	Full Circle Supplements & Health Care, Stylisi Hair Design
Food/Beverages	10	9%	Hasty Market, LCBO
Finance/Insurance	9	8%	Allstate, First Ontario Credit Union
Miscellaneous	6	5%	EB Games, Urban Sunset Wine Company
Furniture/Home Furnishings	4	4%	Bouclair Home, Sleep Country
General Merchandise	3	3%	Canadian Tire, Walmart Supercentre
Vacant	4	4%	Space for lease
Other	7	6%	Brian Tire, Esso
TOTAL	**110**	**100%**	

LAND DEMAND ANALYSIS

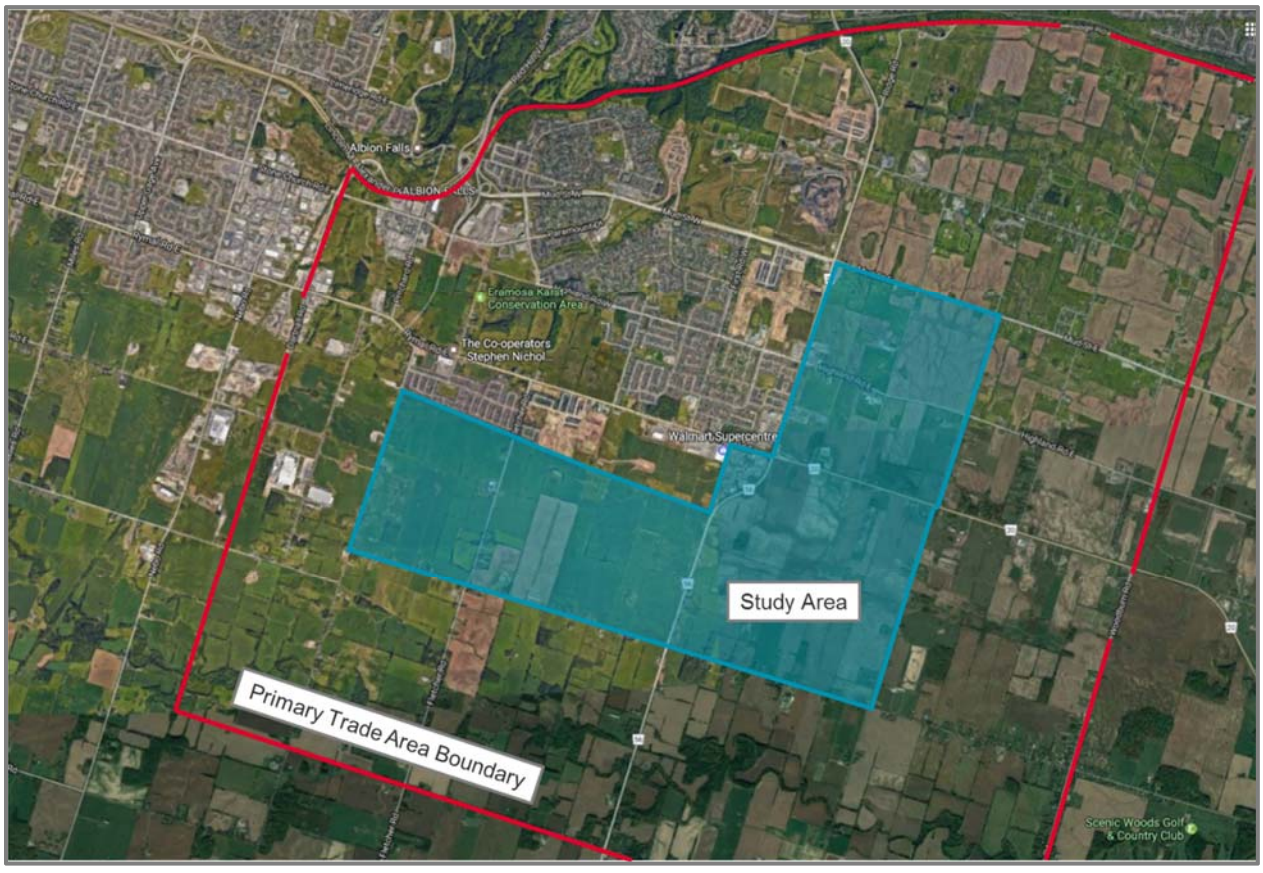
Primary Trade Area

Primary Trade Area Boundaries

The boundaries of the Primary Trade Area for retail-commercial establishments (existing and future) in proximity to and within the Study Area are as follows:

- North: Capturing the subdivision of homes on the north side of Mud Road, east of Red Hill Valley Expressway, with the boundary running along the river valley to the north, and then along Ridge Road.
- East: East to Woodburn Road – although since this area is rural, a suitable boundary definition is vague. Residents in this rural area, once they have decided to make a shopping trip, may opt to shop elsewhere in the City. However, it is likely that their principal shopping destination is within the Primary Trade Area. Adjusting this eastern boundary makes little difference in the outcome of the demand modeling, given the very low population density of the rural area.
- South: Like the eastern boundary, the southern boundary is a challenge to define discretely. However, we have selected Guyatt Road, for the purposes of this analysis. Again, adjusting this boundary makes little difference in the outcome of the demand modeling, given the very low population density of the rural area.
- West: This boundary lies along Dartnall Road. Uses further west include a supermarket and a variety of restaurants and other retail-commercial uses serving the adjacent residential neighbourhoods.

The following map identifies the boundaries of the Primary Trade Area.



Trade Area Profile

The following exhibit presents a summary of select demographics for the Primary Trade Area, compared to the City of Hamilton. Some notable observations include:

- The number of persons per household in the Primary Trade Area is greater than the City of Hamilton average. This is due to the scarcity of apartment dwellings in the local area.
- Single-detached dwellings are the predominant share of dwelling in both geographies, but the proportion is much higher in the Primary Trade Area. Row houses are more prevalent in the Primary Trade Area, while Apartments are a much smaller component of the housing stock.
- 80% of Primary Trade Area households are owner-occupied, compared to 69% City-wide. Again, the scarcity of apartments in the local area is a key factor.
- The average household income of just over $113,000 in the Primary Trade Area is 9% higher than the average for the City of Hamilton as a whole.

SOCIO-ECONOMIC PROFILE

	Primary Trade Area	City of Hamilton
Population and Households		
Population (2017 estimate)	27,500	571,400
Number of Households (2017 estimate)	8,900	226,100
Persons per Household	3.08	2.53
Dwelling Type		
Single-Detached	73%	58%
Semi-Detached	3%	3%
Row House	20%	11%
Apartment	4%	28%
Dwelling Tenure		
Owned	80%	69%
Rented	20%	31%
Income		
Average Household Income	$113,200	$103,800
Median Household Income	$93,900	$105,800

Source: MagnifyMaps

Retail Space per Capita

Primary Trade Area

The total existing retail-commercial floor area within or in proximity to the Study Area totals roughly 710,000 sf. Of this supply, nearly 575,000 sf (80%) is located in shopping centre-type properties. These shopping centre-type properties include strip plazas, power centres, and neighbourhood shopping centres. Other retail-commercial properties include stand-alone uses (including many restaurants), and small multi-tenant buildings.

It is necessary to include other retail-commercial properties located within the Primary Trade Area that have not already been inventoried (those not within or in close proximity to the Study Area). These properties are as follows:

- Heritage Greene Shopping Centre – This power centre-format development is located at 1775 - 1807 Stone Church Road East. Built in 2008, it totals 400,000 sf, and is anchored by Home Depot, Best Buy, and Michaels.
- Heritage Hill Shopping Centre – Anchored by Shoppers Drug Mart, this neighbourhood shopping centre totals 58,930 sf.
- The addition of these two properties adjusts the overall Primary Trade Area shopping centre-type floor space total to 1,033,500 sf.

The Primary Trade Area has a current population of approximately 27,500. This equates to 37.6 sf of shopping centre-type retail-commercial space per capita.

City of Hamilton Benchmark

The City of Hamilton has a current shopping centre inventory of just over 8.8 million sf in 58 properties identified in the Canadian Directory of Shopping Centres (and adjusted based upon Cushman & Wakefield's market reconnaissance). With a population of 536,917 (2016 Census of Canada), this translates to roughly 16.5 sf of shopping centre space per capita.

Conclusion

At 37.6 sf of shopping centre-type space per capita, the Primary Trade Area has nearly 2.3 times the amount of shopping centre-type space per capita compared to the City of Hamilton average (16.5 sf per capita).

Major Retailer Target Market Size Variance

Analysis of Three Major Retailers

From the site tour, it is clear that the retail development that has occurred adjacent to the Study Area is intended to serve future households that will be developed to the south of Rymal Road East, as well as to the east of Centennial Parkway. This is illustrated in the following examination of the population within a 1, 3, and 5 kilometre radius of three existing major retailers – Fortinos, Canadian Tire, and Walmart – compared to these retailers' other locations in Hamilton and area[2].

FORTINOS – COMPARISON OF POPULATION BY LOCATION

Site Name	Property Address	Location	Population 1 km Radius	Population 3 km Radius	Population 5 km Radius
Upper Centennial Pkwy.	21 Upper Centennial Pkwy. S.	Stoney Creek	4,240	21,380	42,750
Eastgate	75 Centennial Pkwy. N.	Hamilton	15,220	67,030	132,180
Fiesta Mall	102 Hwy. #8	Stoney Creek	12,950	55,020	103,170
Mall Rd	65 Mall Rd.	Hamilton	11,200	106,000	261,980
Upper James St	1550 Upper James St.	Hamilton	5,290	63,380	151,850
Dundurn St	50 Dundurn St.	Hamilton	12,920	77,580	190,600
Main St	1579 Main St. W.	Hamilton	4,030	48,830	142,560
Average (excl. 21 Upper Centennial Pkwy. S.)			10,270	69,640	163,720

[2] While there is some minor variance in the population by radius for the three retailers closest to the Study Area, we have elected to use an average (constant) value for the purposes of this analysis.

- Excluding the store nearest the Study Area, the average population within **1 kilometre** of the Hamilton-area Fortinos stores is 10,270. The Fortinos located at 21 Upper Centennial Pkwy. S. has a population of 4,240 within a 1-kilometre radius (or 41% the average at other Hamilton-area store locations).
- Excluding the store nearest the Study Area, the average population within **3 kilometres** of the Hamilton-area Fortinos stores is 69,640. The Fortinos located at 21 Upper Centennial Pkwy. S. has a population of 21,380 within a 3-kilometre radius (or 31% the average at other Hamilton-area store locations).
- Excluding the store nearest the Study Area, the average population within **5 kilometres** of the Hamilton-area Fortinos stores is 163,720. The Fortinos located at 21 Upper Centennial Pkwy. S. has a population of 42,750 within a 5-kilometre radius (or just 26% the average at other Hamilton-area store locations).

CANADIAN TIRE – COMPARISON OF POPULATION BY LOCATION

Site Name	Property Address	Location	Population 1 km Radius	Population 3 km Radius	Population 5 km Radius
Hamilton Mt. East	2160 Rymal Rd. E.	Hamilton	4,240	21,380	42,750
Hamilton Mt. West	777 Upper James St.	Hamilton	10,600	110,720	272,750
Hamilton Centre	1283 Barton St. E.	Hamilton	8,220	69,310	177,900
Stoney Creek	686 Queenston Rd.	Hamilton	9,720	71,830	146,510
Hamilton Main	304 Main St. E.	Hamilton	26,660	123,480	225,350
Average (excl. 2160 Rymal Rd. E.)			13,800	93,840	205,630

- Excluding the store nearest the Study Area, the average population within **1 kilometre** of the Hamilton-area Canadian Tire stores is 13,800. The Canadian Tire located at 2160 Rymal Rd. E. has a population of 4,240 within a 1-kilometre radius (or 31% the average at other Hamilton-area store locations).
- Excluding the store nearest the Study Area, the average population within **3 kilometre** of the Hamilton-area Canadian Tire stores is 93,840. The Canadian Tire located at 2160 Rymal Rd. E. has a population of 21,380 within a 3-kilometre radius (or 23% the average at other Hamilton-area store locations).
- Excluding the store nearest the Study Area, the average population within **5 kilometres** of the Hamilton-area Canadian Tire stores is 205,630. The Canadian Tire located at 2160 Rymal Rd. E. has a population of 42,750 within a 5-kilometre radius (or just 21% the average at other Hamilton-area store locations).

WALMART – COMPARISON OF POPULATION BY LOCATION					
Site Name	**Property Address**	**Location**	**Population 1 km Radius**	**Population 3 km Radius**	**Population 5 km Radius**
Walmart Hamilton Mountain Supercentre	2190 Rymal Rd. E.	Hamilton	4,240	21,380	42,750
Upper James Supercentre	675 Upper James St.	Hamilton	9,300	117,000	270,680
County Fair (Hamilton) Store	499 Mohawk Rd. E.	Hamilton	13,250	109,450	261,800
Hamilton Centre Supercentre	1115 Barton St. E.	Hamilton	11,480	76,790	184,110
Stoney Creek Supercentre	510 Centennial Pkwy. N.	Stoney Creek	3,380	45,880	110,270
Average (excl. 2190 Rymal Rd. E.)			9,350	87,280	206,720

- Excluding the store nearest the Study Area, the average population within **1 kilometre** of the Hamilton-area Walmart stores is 9,350. The Walmart located at 2190 Rymal Rd. E. has a population of 4,240 within a 1-kilometre radius (or 45% the average at other Hamilton-area store locations).
- Excluding the store nearest the Study Area, the average population within **3 kilometres** of the Hamilton-area Walmart stores is 87,280. The Walmart located at 2190 Rymal Rd. E. has a population of 4,240 within a 3-kilometre radius (or 24% the average at other Hamilton-area store locations).
- Excluding the store nearest the Study Area, the average population within **5 kilometres** of the Hamilton-area Walmart stores is 206,720. The Walmart located at 2190 Rymal Rd. E. has a population of 4,240 within a 5-kilometre radius (or just 21% the average at other Hamilton-area store locations).

Conclusions

From the analysis presented above, it is clear that these three major retailers have opened locations in anticipation of significant future population growth in the nearby area. The population in proximity to these stores (within 1 kilometre) is roughly 30%-45% that of more established neighbourhood areas within and nearby the City of Hamilton. As the distance from the store increases, the proportion of the population compared to the established neighbourhoods decreases further. In conclusion, the population within 3 to 5 kilometres of these three major retailers could increase by three or four times in order to be comparable to the average for other Hamilton-area locations.

- With a current estimated population of around 21,380 within **3 kilometres** of these stores, a future population of around 80,000 persons appears supportable – or growth of 58,620 persons.
- With a current estimated population of around 42,750 within **5 kilometres** of these stores, a future population of around 171,000 persons appears supportable – or growth of 128,250 persons.
- While this radius analysis does not conform to the geography of the Study Area (which is L-shaped), the guiding conclusions do inform the additional analysis to be undertaken.

Land Demand Conclusions

The results of analysis of the three major retailers (Fortinos, Canadian Tire, and Walmart) confirms the analysis of shopping centre-type space per capita, which indicates that the Primary Trade Area currently has a much higher proportion of retail-commercial space than would be anticipated, based upon the current population base. Using the City of Hamilton's shopping centre space per capita as a guideline, the Primary Trade Area's shopping centre-type space inventory of 1,033,000 sf would correspond with a population of approximately 62,600 persons. This indicates that there is room for considerable population growth within the Primary Trade Area (which encompasses the Elfrida Study Area, and beyond) – in the range of 35,100 persons – without a requirement for additional provision of retail-commercial lands.