



Haldimand County Official Plan Update:

Phase 1

Revised Report

Growth Strategy

**Matt Reniers and Associates
June 2021**

Executive Summary

The initial Growth Strategy Report was presented to Haldimand County in Committee on February 9th, 2021 in conjunction with an implementing Official Plan Amendment (OPA). The OPA was approved in principal and subsequently forwarded to the Ministry of Municipal Affairs and Housing (MMAH) for circulation to other provincial ministries for comment. Various ministries, including the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), the Ministry of Transportation (MTO) and MMAH have submitted comments and concerns. At the public meeting on February 9th and afterwards, submissions were received from or on the behalf of property owners which have given cause to review specific aspects of the Growth Strategy and the draft OPA. With the passage of time, it is also possible to update the report with up-to-date information, particularly more complete 2020 residential building permit information and with the information contained in Report PDD-36-2020 Servicing Allocation – 2020 Year End and Recommendations. The review of the comments and requests have led to the preparation of this Revised Growth Strategy report.

Haldimand County formally began a municipal comprehensive review of its Official Plan (approved by Council in 2006) on January 14, 2020 to update the Plan to reflect changes to Provincial policies, and to satisfy emerging local demands and trends. The Official Plan Update work program has been divided into two phases. Phase 1 involves the preparation of a growth strategy for the County's six urban areas with a focus on residential and employment land needs. This work is also to include a long-term water servicing strategy for the communities along the Highway 6 Corridor, that would involve extending the water supply service from the Nanticoke Water Treatment Plant to the communities of Caledonia and Cayuga and possibly serving other nearby communities. Phase 1 is intended to bring the County's Official Plan into conformity with the growth policies of the Provincial Policy Statement 2020 (PPS 2020) and the Growth Plan for the Greater Golden Horseshoe including the recently approved Amendment No. 1 (Growth Plan 2020).

The growth strategy, which is the subject of this report, includes a detailed land needs assessment for residential, community employment, and employment area lands based

on recently completed population, household and employment forecasts, intensification and density targets.

In August 2020, the Province approved Amendment No. 1 to the Growth Plan. The amendment extended the planning horizon from 2041 to 2051 and the population and employment forecasts have been significantly increased. With Amendment No. 1, the Growth Plan targets are to be the minimum that municipalities are to plan for. With justification, and Ministry approval, municipalities may set higher population and employment targets than those set out in the Growth Plan. For Haldimand County, the Growth Plan forecasts a total population of 75,000 and a total employment of 29,000 jobs in 2051.

A component of the municipal comprehensive review to determine the land area needed to accommodate the growth forecasted to the Growth Plan 2020 horizon of 2051, is the preparation of a land needs assessment. An overriding principle in the Province's Land Needs Assessment Methodology document is to ensure that municipalities, in their official plans, make sufficient land available for all housing market segments and all employment types and plan for the infrastructure required to meet the forecasted population and employment set out in the Growth Plan, 2020. The objective is to avoid shortages in land supply that can drive up the cost of land for housing and employment uses.

Watson and Associates Economists, in 2020, prepared revised population, household and employment forecasts for Haldimand County taking into consideration the forecasts prepared for the Growth Plan, 2020. Based on the revised forecasts prepared by Watson and Associates, the County is expected to grow to a population of 77,000 residents by 2051. Growth is to be concentrated in the six urban areas; Caledonia is expected to receive 67% of the population growth. A total of 12,730 new households are expected in the County by 2051 to accommodate the forecasted growth. Over 90 per cent of the new households are expected to reside in the 6 urban areas, with over 60% residing in Caledonia. An increase in density of new housing units is expected due to

aging of the population and to increasing costs for low-density housing which is pushing some households into more affordable higher density housing.

The Province requires that municipalities, such as Haldimand County, are to maintain or improve upon the intensification target contained in their official plans. The intensification target in the Haldimand Official Plan is currently set at 32% of all new housing units. This target was based on about 68 new housing units being constructed within the delineated built-up areas of the County's six urban communities. Municipalities, may however, with justification, request approval for a lower intensification target. The land needs analysis in this report is based on an intensification target of 20 per cent of all new housing units. While this is a reduction from the current target in terms of percentage, the proposed 20 per cent target is more realistic for the County based on demands and trends and due to the higher level of anticipated housing production should result in the construction of 74 new units each year within the delineated built-up areas. The proposed intensification target will require an increase in the volume of new housing units constructed in the County's built boundaries compared to what has occurred in recent years.

This report documents the growth needs for Haldimand County to 2051 and the potential supply of land in the County's six urban areas that can be made available to accommodate expected future growth. The report demonstrates that there is a significant imbalance between the potential supply of development land and the demand for such land across the 6 urban areas.

The current distribution of potential development lands will not meet the future growth needs of the County. Urban communities with modest growth needs have a considerable surplus of potential development land. These surpluses can be re-allocated to communities expected to receive a much larger share of future growth. Some growth needs can also be met through the redesignation of lands within urban boundaries to more appropriate uses.

Overall, the net change to the urban boundaries for residential and community employment purposes is minimal. While 310 hectares (766 acres) of land are to be

added to the urban boundaries, this amount is almost balanced by the 286 hectares (707 acres) that are to be removed. The redistribution of residential and community employment lands aligns the Official Plan land use designations with the 2051 urban growth needs of the County. These figures do not take into account lands that are constrained from development, such as the result of land claim protests.

A total of 177 gross hectares (437 acres) of land are to be added to the Employment Areas and 246 hectares (608 acres) removed for a net reduction of 69 hectares (171 acres). Much of the reduction is the result of removing lands from the Employment Area designation that are constrained by hazards such as flooding, undermining, or are otherwise difficult to develop for employment type uses and are better suited for other land uses that meet community needs. The lands removed will be difficult to develop for new industries. The net impact to the urban boundaries is to add 39 gross hectares (96 acres), of employment area lands, most of which will be to the north of the present Caledonia urban boundary. These lands can be serviced and are well located with respect to regional employment supply and transportation network.

To meet the requirements of Section 2.2.8 of the Growth Plan regarding the expansion of settlement area boundaries, an Agricultural Impact Assessment Report has been prepared separately. The conclusions of the Agricultural Impact Assessment Report which are embedded into the appropriate sections of this report, support the recommended urban area boundary changes identified in this report.

The following is a summary of the land needs results and proposed boundary changes for each of the urban areas.

Caledonia

1. Residential/Community Employment

Lands needs: 161 hectares (398 acres)

Net boundary Change: Add 259 hectares (640 acres)

The proposed boundary changes should leave Caledonia with a surplus of lands in 2051. The additional lands represent a logical extension of the Caledonia urban area

and will facilitate the development of comprehensive servicing strategies that have to take a longer period of growth into account and preparation of secondary plans for logical growth areas. Also, the development of about 94 hectares within the Caledonia urban boundary is currently in serious jeopardy due to land claim protests. Development in Caledonia is crucial in meeting the 2051 provincial Growth Plan population target for Haldimand County as it is where the required infrastructure is either in place or planned.

Net Boundary Change: Add 101 hectares (250 acres)

The net boundary change for Employment Area lands includes the removal of 38 hectares (94 acres) on the south side of Greens Road and west of the Highway 6 Bypass. These lands were not included in the inventory of vacant and available Employment Area lands as they are subject to several constraints for development. With the removal of the Employment Lands designation on the former Georgia Pacific lands and the former Domtar lands, which are also constrained for employment development and not included in the vacant land inventory, a further 78 hectares (193 acres) will be removed from that designation. Overall, the net real gain in Caledonia is for an additional 25 hectares (62 acres) of Employment Area lands. With all the adjustments, the County will have a much-improved potential employment land supply will be better suited to meet 2051 growth needs. Note that the land required to accommodate the proposed extension of Highway 6 north of Caledonia and the planned interchange at Greens Road are not included in these estimates.

Cayuga

1. Residential/Community Employment
Land Needs: 7 hectares (17 acres)
Net Boundary Change: 0 hectares (0 acres)
2. Employment Area
Land Needs: 11 hectares (27 acres)
Net Boundary Change: 0 hectares (0 acres)

No boundary changes are proposed. Given wastewater treatment servicing constraints and no additional servicing capacity currently being planned, expansion can not take place at this time.

Dunnville

1. Residential/Community Employment
Land Needs: 34 hectares (84 acres)
Net Boundary Change: Add 25 hectares (62 acres)

2. Employment Area
Land Needs: 2 hectares (5 acres)
Net Boundary Change: 0 hectares (0 acres)

The proposed boundary change for residential/community employment purposes will still leave Dunnville with a shortage of land required to meet 2051 land needs. Development is constrained by the extensive flood plain of the Grand River. Engineering investigations of the flood plain, north of Ramsey Drive and the consideration of introducing the two-zone floodway and flood fringe concept to the area may free up additional lands inside the urban boundary for future development, subject to floodproofing conditions. This investigation should occur before any further extensions of the urban boundary are considered. It is recommended that the lands subject to flooding concerns be placed in a Future Development designation and a site specific policy area pending the outcome of the engineering investigations.

The Employment Area deficit is minor but requires the continued monitoring of the up-take of employment lands.

Hagersville

1. Residential/Community Employment
Land Needs: surplus of 37 hectares (91 acres)
Net Boundary Change: 12 hectares (30 acres)

2. Employment Area

Land Needs: 14 hectares (35 acres)

Net Boundary Change: 0 hectares (0 acres)

The net boundary change for residential/community purposes is the addition of lands around the abandoned quarry near Sandusk Road and will compensate to some extent for the potential development that is constrained by the blasting operations at the Lafarge Quarry.

The Employment Area land needs can be met by redesignating lands within the current urban boundary from “Agriculture” to “Urban Business Park”. The redesignation of 43 hectares (106 acres) is proposed for this purpose which is sufficient to meet long term needs.

Jarvis

1. Residential/Community Employment

Land Needs: surplus of 90 hectares (222 acres)

Net Boundary Change: remove 74 hectares (183 acres)

2. Employment Area

Land Needs 1: surplus of 61 hectares (151 acres)

Net Boundary Change: remove 48 hectares (119 acres)

The removal of Residential/Community Employment and Employment Area lands from the Jarvis urban area will still leave a surplus of lands beyond the requirements of growth needs to 2051.

Townsend

1. Residential/Community Employment

Land Needs: surplus of 218 hectares (222 acres)

Net Boundary Change: remove 198 hectares (489 acres)

The removal of Residential/Community Employment from the Townsend urban area will still leave a surplus of lands beyond the requirements of growth needs to 2051. Not

included in the net boundary change total are lands along the east side of Nanticoke Creek that are subject to flooding concerns and cannot be developed. These lands are also being proposed for removal from the Townsend urban area.

Overall, the report presents recommendations on changes to urban boundaries, land use designations, employment areas, and land use policies. The recommendations also respond to comments and concerns raised by provincial ministries and requests received for urban boundary expansions.

The Nanticoke Water Treatment Plant (WTP) was originally designed to be part of a regional water supply system serving urban communities in Haldimand County, Norfolk County, the Mississaugas of the Credit First Nation, the Six Nations of the Grand River Territory and potentially other communities further north along the Grand River. The existing water supply agreement with the City of Hamilton to supply Caledonia and Cayuga with potable water is not sufficient to meet the growth needs of these two communities to 2051. Revising the City of Hamilton agreement to increase the supply of water to meet the County's growth needs is an option that can be pursued if necessary. Expanding the Nanticoke WTP and transmission service to Caledonia and Cayuga provides the opportunity to share the capital costs of upgrading the plant capacity and expanding the water transmission lines with other communities that will also benefit. The Official Plan should be amended to support the development of such a system.

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1. Introduction

1.1 Need for Revised Report

The initial Growth Strategy Report was presented to Haldimand County in Committee on February 9th, 2021 in conjunction with an implementing Official Plan Amendment (OPA). The OPA was approved in principal and subsequently forwarded to the Ministry of Municipal Affairs and Housing (MMAH) for circulation to other provincial ministries under the One-Window consultation process. Various ministries, including the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), the Ministry of Transportation (MTO) and MMAH have submitted comments and concerns. At the public meeting on February 9th and afterwards, submissions were received from or on the behalf of property owners which have given cause to review specific aspects of the Growth Strategy and the draft OPA. With the passage of time, it is also possible to update the report with up-to-date information, particularly more complete 2020 residential building permit information and with the information contained in Report PDD-36-2020 Servicing Allocation – 2020 Year End and Recommendations.

A description and review of the comments received and the up-dated information are embedded into the body of this report. As a result, this report replaces Haldimand County: Growth Strategy Report, dated December 2020 and prepared by Matt Reniers and Associates.

1.2 Background

The Official Plan for Haldimand County, which was approved in 2009, is in need of an update. The provincial *Planning Act, R.S.O. 1990, c.P.13*, requires periodic review of municipal official plans. Also, the Official Plan should be kept up to date with current development issues in the County and help manage the growth pressures that the County is now facing due to its proximity to the Greater Golden Horseshoe, the largest and fastest growing urban conglomeration in Canada.

The Official Plan Update work program has been divided into two phases. Phase 1 involves the preparation of a growth strategy for the County's six urban areas with a focus on residential and employment land needs. This strategy is also to include a long-term water servicing strategy for the communities along the Highway 6 Corridor, extending the water supply service from the Nanticoke Water Treatment Plant to the communities of Caledonia and Cayuga. Phase 1 is intended to bring the County's Official Plan into conformity with the current versions of the Provincial Policy Statement 2020 (PPS 2020) and the Growth Plan for the Greater Golden Horseshoe including the recently approved Amendment No. 1 (Growth Plan 2020). This report will address the requirements of Phase 1 of the Official Plan Update work program.

Phase 2 of the work program will consider all other aspects of the Official Plan not dealt with in Phase 1 and will include a review of policies and mapping related to the following topics:

- The agricultural system;
- The natural heritage system;
- Source water protection;
- Vegetation management and protection policies;
- Affordable housing;
- Review of planning applications;
- Parkland planning issues;
- Cultural heritage and archaeological resources;
- Review of land use policies related to rural areas;
- Update Lake Erie hazard mapping and risk areas;
- Waste management policies; and
- Technical and general housekeeping matters.

The growth strategy, which is the subject of this report, includes a detailed land needs assessment for residential, community employment, and employment lands based on

recently completed population, household and employment forecasts, intensification and density targets, that are to be implemented through amendments to the Official Plan. Based on the lands needs assessment, recommendations will be made on urban area boundary expansions and contractions for residential and employment lands based on market demand and servicing considerations. The intent will be to meet the 2051 growth needs for Haldimand County and to adjust urban area boundaries to best correspond to market demand and the ability to service that growth through existing and planned expansions to municipal infrastructure.

This report addresses these topics and builds on work previously completed, particularly the Population, Housing and Employment Forecast Update and Land Needs Assessment, completed in 2019 by Watson & Associates Economists Ltd. (Watson 2019), and the follow-up staff report PDD-36-2019 Population Housing and Employment Forecast Update and Land Needs Assessment which presented a preliminary growth strategy including recommendations regarding the expansion and contraction of residential and employment lands in various urban areas which was approved in principle by County Council in September 2019. The Growth Plan for the Greater Golden Horseshoe approved in 2019 was amended in August 2020 through Amendment No. 1. This amendment revised the Growth Plan's population and employment forecasts and extended the planning horizon from 2041 to 2051. As a result of this amendment revised population, household and employment forecasts for the County and the six urban areas were revised by Watson & Associates in the report, "Haldimand County Revised Growth Analysis to 2051". This report will be referred to as Watson 2020. The report also builds on the master servicing plans that have been prepared for the County's urban areas. These master servicing plans analyse existing and future requirements for water, wastewater, storm water management and transportation infrastructure. In addition, engineering analysis was carried out for potential expansion areas to the Caledonia urban boundary by J.L. Richards and C3 Water which also informed this report. Agricultural impact analysis was also carried out for potential expansion lands.

Another aspect of Phase 1 is to update and formalize a long-term strategy to supply the communities of Caledonia and Cayuga, with potable water from the Nanticoke Water Treatment Plant. These communities are currently supplied with water through a transmission line from Hamilton. Specifically, the strategy is to include:

- Identification of key triggers and potential phases to the extension of water service from Nanticoke to Caledonia and Cayuga;
- Verification that previously identified potential customers such as Norfolk County and Six Nations that could be serviced outside of Haldimand County are still interested in water servicing and confirmation of forecasted water demands;
- Updated costing for the implementation of the strategy; and,
- Development of policies relating to the strategy for incorporation into the Official Plan, such as but not limited to: the protection of the corridor, principles around implementation of the strategy, and linking the strategy to future growth.

The Nanticoke Water Supply is addressed in Section 7 of this report.

This report addresses requests that were received from private property owners to have their lands included within urban boundaries so that they could be developed, primarily for residential and population-related commercial purposes. These requests were submitted in anticipation of and following the launch of the Official Plan Update program in January 2020. Additional public comments and requests on the growth strategy and the draft Official Plan Amendment (OPA) were received at and following the public meeting held on February 9th, 2021.

County Council approved the draft OPA in principle and subsequently forwarded it to MMAH which then circulated the document to other provincial agencies for review and comment. This review led to a number of concerns that needed to be addressed. OMAFRA was concerned that the agricultural impact analysis included within the

original Growth Strategy Report was insufficient to satisfy provincial policy requirements for the expansion of urban area boundaries. This concern has led to the preparation of a separate Agricultural Impact Analysis (AIA) report. The conclusions of the AIA report will be presented in following sections of this report.

MTO has expressed concerns for the corridor protection of Highway 6. This concern was in relation to both the potential of upgrading and extending the watermain from the Nanticoke Water Treatment Plant along Highway 6 to serve Caledonia and nearby Indigenous communities. Another significant MTO concern was the protection of the corridor of the new Highway 6 alignment through the proposed additional Urban Business Park lands to the north of Caledonia and the proposed interchange at Greens Road. MTO is concerned that access to the proposed Urban Business Park lands meet its technical requirements and allow for the efficient and safe flow of traffic.

The original Growth Strategy Report recommended that the Caledonia Soccer Park and the Dunnville Soccer Park lands be included within the urban boundary of each community. MMAH has expressed concern that the land needs assessment contained within the Growth Strategy Report did not provide sufficient justification for including these existing and long-standing sports facilities within the urban boundaries of their respective communities.

2. Growth Policies in Current Official Plan

The Haldimand County Official Plan was approved by County Council on June 26, 2006 and by the provincial Ministry of Municipal Affairs on June 8, 2009. In December 2009, Haldimand County Council approved an amendment to the Official Plan (HCOP-21) to bring the Plan into conformity with the policies of the Growth Plan for the Greater Golden Horseshoe. This amendment followed the completion of the Strategy Report for the Housing and Places to Grow Implementation Study prepared by a study team led by Sorensen Gravely Lowes Planning Associated Inc. This study included the completion of a municipal comprehensive review of residential and employment land needs, greenfield development densities and residential intensification potential in the urban areas of the County.

The Official Plan was based, in part, on population and employment growth forecasts for Haldimand County provided in the Places to Grow Growth Plan for the Greater Golden Horseshoe, approved by the Province in 2006. These forecasts relied on population and employment statistics from the 2001 Census of Canada. According to the Growth Plan, Haldimand County was expected to grow from a population of 46,000 in 2001 to 56,000 in 2031, an increase of 10,000 residents over the 30-year forecast period – representing an average annual rate of growth of 0.66% or just over 300 additional persons per year. Over the same period, total employment was forecasted to increase by 4,200 jobs to a total of 20,000 jobs by 2031.

Table 1, which is based on the forecast table found in Section 4. A “Growth Forecast for Haldimand County” in the Official Plan, provides the distribution of residential growth amongst the urban and rural areas of the County. About three-quarters (76%) of the population growth to 2031 was expected to occur in the urban areas with the balance (24%) going to the hamlets and other rural areas of the County. By 2031, about 58% of the County’s actual population was expected to live in the six urban areas rural areas, an increase from 54% in 2001. Over this 30-year period, 4,682 new households were

expected to accommodate this growth in population, requiring the construction of over 150 new residential units each year.

Table 1 Current Official Plan Forecasted Household and Population Growth: 2001 to 2031				
Area	Share of Growth (2001-2031)	Household Growth Units (2001-2031)	Population (2031)¹	% of County Population (2031)
Caledonia	40%	1,890	15,460	27.6
Cayuga	6%	290	2,440	4.4
Dunnville	11%	521	6,900	12.3
Hagersville	14%	650	4,230	7.6
Jarvis/Townsend	5%	231	3,000	5.4
Rural	24%	1,100	23,970	42.8
Total	100%	4,682	56,000	100.0
Source: Haldimand County Official Plan				

To facilitate and direct this growth, the Official Plan contains policies that are consistent with or conform to the versions of the Provincial Policy Statement (2005) and the Places to Grow Growth Plan (2006) in effect at the time of the of its approval in (2009). Key growth-related policies in the Official Plan are:

- Designate the built-up areas and greenfield areas for each of the six urban areas on Schedules B. 1 through B. 6; (Policy 4. A .3.)
- Accommodate a minimum of 10-year of residential growth through intensification, redevelopment and through lands designated and available for residential development; (Policy 4. A. 4)

¹ The table in the Official Plan states "Population (2026)" while the text refers to 2031. The correct year is 2031.

- Maintain at least a 3-year supply of residential units available on suitably zoned and serviced sites to facilitate residential intensification and redevelopment and on lands that are draft approved or within registered plans of subdivision; (Policy 4. A. 4)
- Target 32% of new dwelling units to annually to be provided through intensification after 2015 (Policy 4.B.5.) and encourage and facilitate intensification throughout the built-up area of the urban areas subject to other policy consideration; (Policy 4.B.8.a)
- Delineate the downtowns of the six urban areas as mixed-use intensification areas and direct and encourage intensification in these areas; (Policy 4.B.8.b)
- Direct and encourage higher density intensification, delineation of two intensification corridors, one along Argyle Street in Caledonia and the other along Main Street in Dunnville; (Policy 4.B.8.c)
- Require that residential intensification respects and reinforces the stability and physical character of existing stable residential neighbourhoods; (Policy 4.A.8.d)
- Permit and encourage the creation of secondary suites within the built-up areas of the urban areas; (Policy 4.B.8.e)
- Consider placing intensification and infill development within the built-up area under site plan control to ensure the built form and physical look of the built form and landscaping is compatible with the neighbourhood; (Policy 4.B.8.f)
- Consider offering development incentives to encourage intensification (reduced parkland dedication, parking standards, development charges; and as-of-right zoning); (Policy 4.B.8.g)
- Plan for and encourage a range and mix of housing types in the built-up areas with higher density housing and employment directed to the intensification areas and corridors Policy; (4.A.8.h)
- Target for an average density of 29 persons and jobs per hectare over the entire designated greenfield areas, comprised of 46 persons and jobs per

hectare for new residential development applications and 15 jobs per hectare for new employment applications in greenfield areas; (Policy 4.B.6.)

- Consider urban boundary area expansions only during a comprehensive review/municipal comprehensive review of the Official Plan subject to a number of matters that are to be addressed in such reviews; (Policy 4.A.2. and 4.A.3.)
- Consider re-allocating existing designated greenfield area from one existing urban area to another urban area as long as the current supply of designated greenfield area across the County does not increase as part of a comprehensive review/municipal comprehensive review; (Policy 4.A.4.)
- Ensure, through monitoring residual water and sewage treatment reserves, that water and sanitary sewage facilities are provided in a timely manner to accommodate residential, commercial, institutional and industrial development; (Policy 5.B.1) 3.) and
- Encourage applicants for residential development to provide a minimum of 25% of new housing units as affordable housing. (Policy 7.B.17).

In addition to these specific policies, there are others such as community improvement policies and other policies that encourage infilling and residential intensification.

3. Provincial Policies

Since the approval of the Official Plan, there have been considerable changes to the Growth Plan for the Greater Golden Horseshoe and to the Provincial Policy Statement. According to the *Planning Act*, R.S.O. 1990, c.P,13 the five-year review of the Official Plan is required to ensure that it:

- a) conforms with provincial plans or does not conflict with them;
- b) has regard to matters of provincial interest as laid out in the *Act*; and
- c) is consistent with policy statements issued under the *Act*.

This report will focus on the growth-related policies outlined in the current versions of the Places to Grow Growth Plan (2020) and the Provincial Policy Statement (2020) with a focus on the six urban areas of the County.

3.1 A Place to Grow: Growth Plan for the Greater Golden Horseshoe

In May 2019, the Province approved a new version of the policy document “A Place to Grow: Growth Plan for the Greater Golden Horseshoe”. The Growth Plan is the framework for implementing the Province’s vision for building stronger, prosperous communities by controlling and directing growth in the Greater Golden Horseshoe (GGH). The Growth Plan establishes the long-term framework for where and how the Greater Golden Horseshoe will grow, while recognizing the realities that face cities and smaller communities and acknowledging what governments can and cannot influence. The purpose of the Growth Plan is to address challenges related to the magnitude and pace of forecasted growth and changes expected in this Region, and to ensure the protection of finite resources. The Growth Plan establishes a land use planning framework for this Region that supports the achievement of complete communities, a thriving economy, and social equity. The Growth Plan speaks to issues relating to economic prosperity, which includes transportation, infrastructure planning, land use planning, urban form, housing, natural heritage, and resource protection. The municipal comprehensive review must conform to the Growth Plan policies. While the focus of the Growth Plan is broad, this report will concentrate on those policies that impact growth in

Haldimand County. It is important to recognize that one of the guiding principles of the Growth Plan is to:

Provide for different approaches to manage growth that recognize the diversity of communities in the GGH.

The Growth Plan is a provincial policy document that the Haldimand County Official Plan must be in conformity with or is not in conflict with it.

In August 2020, the Province approved Amendment No. 1 to the Growth Plan. This amendment was required to align the policies of the Growth Plan with recent changes to the Provincial Policy Statement that came into effect in May 2020 (PPS 2020).

Amendment No. 1 has a major impact on the review of the Haldimand County Official Plan growth policies. The amendment extended the planning horizon from 2041 to 2051 and the population and employment forecasts have been significantly increased. In previous iterations of the Growth Plan, municipalities were required to plan and allocate land to meet their population and employment targets. The allocation of land for development was not to exceed what was required to meet the Provincially set targets. With Amendment No. 1, the Growth Plan targets are to be the minimum that municipalities are to plan for. With justification, and Ministry approval, municipalities may set higher population and employment targets than those set out in the Growth Plan. For ease of reference, the current version of the Growth Plan, including Amendment No. 1, will be referred to as the Growth Plan 2020.

Table 2 provides a comparison between the population and employment forecasts for Haldimand County in the original Growth Plan, approved in 2006 (Growth Plan, 2006), and the forecasts contained in the Growth Plan, 2020. The Growth Plan 2006 population and employment forecasts to 2031 for Haldimand County were modest. The County was expected to grow by 10,000 residents, from a population of 46,000 in 2001 to 56,000 in 2031, representing an average annual growth of 330 new residents. Note that the population forecast in the County's Official Plan (2009) is in conformity with the Growth Plan, 2006 forecast. The employment growth forecast was also modest with

total employment in the County growing from 17,000 in 2001 to 20,000 jobs in 2031, a growth of 3,000 jobs over the thirty-year period, representing a yearly average of 100 new jobs.

Table 2 Previous and Current Growth Plan Population and Employment Forecasts for Haldimand County			
	Year	Population	Employment
Growth Plan, 2006	2001	46,000	17,000
	2031	56,000	20,000
	Change 2001-31	10,000	3,000
	Average Annual Change 2001-2031	333	100
Growth Plan, 2020	2021	52,000	18,000
	2051	75,000	29,000
	Change 2021-51	23,000	11,000
	Average Annual Change 2021-2051	767	367
Source: Growth Plans for the Greater Golden Horseshoe, Province of Ontario			

The Growth Plan 2020 forecasts a much higher rate of population and employment growth for the County between 2021 and 2051 compared to the original Growth Plan forecasts from 2001 to 2031 that are the basis of the Official Plan growth policies. The difference in the employment forecast is even greater. While the original Growth Plan forecasted an annual increase of 100 new jobs between 2001 and 2031, the Growth Plan 2020 forecasts employment growth to be 367 new jobs annually.

The policies in the Growth Plan, 2020 are to be read as a whole – a specific policy must read within the context of the entire Plan. However, in this report, the policies that have a direct bearing on the calculation of land needs for residential development in

Haldimand County will be the focus of attention. Other policies in the Growth Plan, 2020 will be given consideration in the review of the balance of the Official Plan in Phase 2 of the work program. The Growth Plan, 2020 policies, most relevant to the development of the County's growth strategy are:

Growth Management

- emphasis on optimizing the use of the existing urban land supply represents an *intensification* first approach to development and city-building, one which focuses on making better use of our existing *infrastructure* and *public service facilities*², and less on continuously expanding the urban area. (Growth Plan page 12)
- forecasted growth to the horizon of this Plan will be allocated based on the following:
 - a) the vast majority of growth will be directed to *settlement areas* that:
 - i. have a *delineated built boundary*;
 - ii. have existing or planned *municipal water and wastewater systems*; and
 - iii. can support the achievement of *complete communities*;
 - b) growth will be limited in *settlement areas* that:
 - i. are *rural settlements*;
 - ii. are not serviced by existing or planned *municipal water and wastewater systems*; or
 - iii. are in the *Greenbelt Area*;
 - c) within *settlement areas*, growth will be focused in:
 - i. *delineated built-up areas*;
 - ii. *strategic growth areas*;
 - iii. locations with existing or planned transit, with a priority on *higher order transit* where it exists or is planned; and
 - iv. areas with existing or planned *public service facilities*;
 - d) development will be directed to *settlement areas*, except where the policies of this Plan permit otherwise. (Growth Plan Policy 2.2.1.2)

² Note words or phrases in italicized text have specific definitions in the Growth Plan, 2020.

Residential Intensification

- Through the next *municipal comprehensive review*, certain municipalities (including Haldimand) shall establish the minimum percentage of all residential development occurring annually that will be within the *delineated built-up area*, based on maintaining or improving upon the minimum intensification target contained in the applicable upper- or single-tier official plan. (Growth Plan Policy 2.2.2.1.b)
- Municipalities are to develop strategies to achieve the intensification targets that are set. (Growth Plan Policy 2.2.2.3)
- Councils of upper- and single-tier municipalities may request an alternative to the target established in policy 2.2.2.1 where it is demonstrated that this target cannot be achieved and that the alternative target will be appropriate given the size, location and capacity of the *delineated built-up area*. (Growth Plan Policy 2.2.2.4)

Designated Greenfield Areas

- Plan to achieve within the horizon of this Plan a minimum density target that is not less than 40 residents and jobs combined per hectare. (Growth Plan Policy 2.2.7.2.b)

Employment Lands

- The Growth Plan, 2020 emphasizes on the long-term protection of employment lands for industrial, manufacturing and related land uses
- Municipalities should designate and preserve lands within *settlement areas* located adjacent to or near *major goods movement facilities and corridors*, including major highway interchanges, as areas for manufacturing, warehousing and logistics, and appropriate associated uses and ancillary facilities. (Growth Plan Policy 2.2.5.5)
- The employment areas are to be protected from the intrusion of other sensitive land uses that may impede manufacturing operations and further industrial development by: prohibiting residential uses and prohibiting or limiting other *sensitive land uses* that are not ancillary to the primary

employment use; prohibiting *major retail* uses or establishing a size or scale threshold for any *major retail* uses that are permitted and prohibiting any *major retail* uses that would exceed that threshold; and, providing an appropriate interface between *employment areas* and adjacent non-employment areas to maintain land use compatibility. (Growth Plan Policy 2.5.7)

- The development of *sensitive land uses*, *major retail* uses or *major office* uses will, in accordance with provincial guidelines, avoid, or where avoidance is not possible, minimize and mitigate adverse impacts on industrial, manufacturing or other uses that are particularly vulnerable to encroachment. (Growth Plan Policy 2.5.8)
- The conversion of lands within *employment areas* to non-employment uses may be permitted only through a *municipal comprehensive review* where it is demonstrated that:
 - a) there is a need for the conversion;
 - b) the lands are not required over the horizon of this Plan for the employment purposes for which they are designated;
 - c) the municipality will maintain sufficient employment lands to accommodate forecasted employment growth to the horizon of this Plan;
 - d) the proposed uses would not adversely affect the overall viability of the *employment area* or the achievement of the minimum intensification and density targets in this Plan, as well as the other policies of this Plan; and
 - e) there are existing or planned *infrastructure* and *public service facilities* to accommodate the proposed uses. (Growth Plan Policy 2.5.9)
- The Minister may identify *provincially significant employment zones (PSEZ)* for the purpose of long-term planning for job creation and economic development and to provide specific planning direction for those areas to be implemented through appropriate official plan policies and designations and economic development strategies. The Nanticoke employment area is designated as a PSEZ by the Province. As the Nanticoke PSEZ is in the rural

area of the County, it will not be dealt with in this report. (Growth Plan Policy 2.2.5.12)

Boundary Adjustments

- *Settlement area* boundaries will be delineated in official plans and a *settlement area* boundary expansion may only occur through a *municipal comprehensive review* that demonstrates that sufficient opportunities are not available to accommodate forecasted growth through intensification and designated greenfield areas. (Growth Plan Policy 2.2.8.1. and 2.)
- Where the need to expand a settlement area boundary has been justified the appropriate location for the proposed expansion will be based on the consideration of the policies of the growth Plan, including the following that are pertinent to Haldimand County:
 - a) there is sufficient capacity in existing or planned *infrastructure* and *public service facilities*;
 - b) the *infrastructure* and *public service facilities* needed would be financially viable over the full life cycle of these assets;
 - c) the proposed expansion would be informed by applicable water and wastewater master plans or equivalent and *stormwater master plans* or equivalent, as appropriate;
 - d) the proposed expansion, including the associated water, wastewater and stormwater servicing, would be planned and demonstrated to avoid, or if avoidance is not possible, minimize and mitigate any potential negative impacts on watershed conditions and the *water resource system*, including the *quality and quantity of water*;
 - e) *key hydrologic areas* and the *Natural Heritage System for the Growth Plan* should be avoided where possible;
 - f) *prime agricultural areas* should be avoided where possible. To support the *Agricultural System*, alternative locations across the upper- or single-tier municipality will be evaluated, prioritized and determined based on avoiding, minimizing and mitigating the impact on the *Agricultural System* and in accordance with the following:
 - i. expansion into *specialty crop areas* is prohibited;
 - ii. reasonable alternatives that avoid *prime agricultural areas* are

- evaluated; and
 - iii. where *prime agricultural areas* cannot be avoided, lower priority agricultural lands are used;
 - g) the *settlement area* to be expanded is in compliance with the *minimum distance separation formulae*;
 - h) any adverse impacts on the agri-food *network*, including agricultural operations, from expanding *settlement areas* would be avoided, or if avoidance is not possible, minimized and mitigated as determined through an *agricultural impact assessment*;
 - i) the policies of Sections 2 (Wise Use and Management of Resources) and 3 (Protecting Public Health and Safety) of the PPS are applied.
- Municipalities may adjust *settlement area* boundaries outside of a *municipal comprehensive review*, provided: there would be no net increase in land within *settlement areas*. (Growth Plan Policy 2.2.8.4.)
 - *Settlement area* boundary expansion may occur in advance of a *municipal comprehensive review* provided that the amount of land to be added to the *settlement area* will be no larger than 40 hectares (99 acres). (Growth Plan Policy 2.2.8.5.)
 - Outside of a *municipal comprehensive review*, the forecasts in Schedule 3 and Schedule 7 cannot be applied on a site specific scale as the basis for approving or refusing proposals for *development* that would otherwise conform with all the policies of this Plan. (Growth Plan Policy 5.2.4.6.)
 - For the purposes of implementing the minimum intensification and density targets in this Plan, municipalities will, through a municipal comprehensive review, delineate the following in their official plans, where applicable:
 - a) delineated built-up areas;
 - b) urban growth centres;
 - c) major transit station areas;
 - d) other strategic growth areas for which a minimum density target will be established; and
 - e) excess lands. (Growth Plan Policy 5.2.5.3.)

- Excess lands are vacant, unbuilt but developable lands within settlement areas but outside of delineated built-up areas that have been designated in an official plan for development but are in excess of what is needed to accommodate forecasted growth to the horizon of this Plan. (Growth Plan Definition)

The Growth Plan 2020 policies on residential intensification, density of greenfield development, identification of employment lands and settlement boundary expansions have implications for the current Haldimand County Official Plan. Each of the six urban areas have settlement area boundaries and a delineated built boundary as required by the Growth Plan. The delineated built boundaries were set by the Province and cannot be changed by the County. The intensification target of 32% of all new residential development, currently in effect in the County's Official Plan, will stay in place until the completion of the municipal comprehensive review. While the Growth Plan, 2020 encourages municipalities to maintain or improve their intensification targets, it does open the door to setting a lower target where it is demonstrated that the established target cannot be met. Intensification targets appropriate to Haldimand County will be discussed further in Section 4 of this report.

The greenfield density target for residential development no longer must compensate for lower employment density, as measured in jobs/hectare in the employment areas, located outside the built boundary. This is an improvement over previous versions of the Growth Plan as municipalities have little control over employment density in industrial developments. Employment levels within industrial areas, as measured in jobs/hectare are generally declining due to automation, improved operating efficiencies and the growth of logistics and warehousing industries. As stated previously in this report, the current Official Plan has a target density of 46 residents and jobs per hectare in the designated greenfield areas of the County. This target was arrived at so that the expected density of 15 jobs/hectare in the employment area portion of greenfield development would be compensated for by a higher density of residential development

of 46 persons and jobs per hectare in the residential area portion of greenfield development to ensure that the overall density of development would meet the requirement of 29 persons/jobs per hectare in the entire greenfield area. The appropriate density of residential development will be discussed further in a later section of this report on the calculation of greenfield land needs.

The Official Plan, on Schedules “I. 1” to “I. 5”, designate employment areas for all the urban areas except Townsend. Conversion of employment areas to a non-employment land use designation will only be permitted through a municipal comprehensive review and the satisfaction of policies indicating that the employment lands are not required, the County’s employment forecasts can be met, no conflicts will be created, the viability of the remaining employment area will not be adversely affected and will not affect the master servicing plans of the County.

Another change that could affect planning in Haldimand County is that settlement boundaries can be expanded by up to 40 hectares (99 acres) in advance of a municipal comprehensive review. There are no limits on the number of such expansions; however, any such expansions must be fully accounted for in the next municipal comprehensive review. While there are conditions as to how this new policy can be applied, it provides some flexibility within the Growth Plan that wasn’t previously available in 2006 to respond to changing conditions such as a higher than expected rate of growth. This policy applies only to settlement areas, the lands must be planned to meet the minimum density targets of the Growth Plan 2020, be serviced by municipal water and wastewater systems with sufficient capacity, and the location of the lands meet the requirements of the Growth Plan 2020.

Further, Section 5.2.4.6 of the Growth Plan (2020) directs that the forecasts in the Growth Plan are to be used in the preparation of municipal comprehensive reviews; however, they are not to be used on a site specific basis for the approval or refusal of development applications. It should be noted that a portion of the Avalon Community

lands, designated “Residential in the Official Plan and being developed by Empire Communities on the west side of McClung Road in Caledonia and have draft plan of subdivision approval have been placed with a Holding (H) zone in the Haldimand County Comprehensive Zoning Bylaw HC 1-2020 with the condition that prohibits residential construction on the lands, which is not to be removed until it is verified that the lands are within the County’s 20-year residential supply and population forecasts. This policy, which was put in place to ensure compliance with the Growth Plan, is no longer required. Removal of such restraints will provide residential developers greater flexibility in responding to local housing market conditions.

The Growth Plan 2020 discourages municipalities from having excess lands designated in their official plans. Excess lands are lands within the settlement area boundaries that are developable but are not needed to meet the residential and employment forecasts to the planning horizon set out in the Growth Plan 2020, which is 2051. Review of official plans in other municipalities throughout the Greater Golden Horseshoe has revealed that some municipalities have excess lands within their settlement area boundaries. Where excess lands have been identified, they are to be placed in a non-development designation and can only be developed upon meeting specific conditions such as the completion of planning justifications, secondary plans and servicing studies. Any change in land use designation would require an amendment to the official plan. The advantage of having excess lands within the settlement area boundaries is to enable municipalities to better control development and changes in land use on the lands that could ultimately constrain development when the lands are needed to meet growth requirements. It also enables municipalities to plan for future infrastructure requirements.

To meet the requirements of Section 2.2.8 of the Growth Plan regarding the expansion of settlement area boundaries, an Agricultural Impact Assessment Report has been prepared separately. The conclusions of the Agricultural Impact Assessment Report will be embedded into the appropriate sections of this report.

3.2 Land Needs Assessment

A component of carrying out the municipal comprehensive review to determine the land area needed to accommodate the growth forecasted to the Plan horizon to 2051 is the preparation of a land needs assessment. The Province has prepared a document “Land Needs Assessment Methodology for the Greater Golden Horseshoe (2020)” that municipalities must follow in determining future land requirements for employment purposes. The following statement is taken directly from this document:

This document provides municipalities and other land use planning decision-makers with the requirements that must be completed as part of the municipal comprehensive review to determine the total quantity of land needed to accommodate forecasted growth to the Plan horizon, including the need for any settlement area boundary expansions, employment land conversions and the quantity of any excess lands.

Key principles in the Land Needs Assessment Methodology (LNAM) document are to ensure that municipalities, in their official plans, make sufficient land available for all housing market segments and all employment types and plan for the infrastructure required to meet the forecasted population and employment set out in the Growth Plan, 2020. The objective is to avoid shortages in land supply that can drive up the cost of land for housing and employment uses.

In the case of Haldimand County which is a single-tier municipality, the determination of land required for community area purposes, housing, population-related jobs and major office jobs involves the completion of five components:

1. Population forecasts by age groups;
2. Calculation of housing needs by dwelling types and the consideration of such factors as demolitions and vacancies;
3. Determination of housing supply potential by policy areas which involves the assessment of housing potential, which in Haldimand, requires the determination of the potential supply in each of the six urban areas within the

delineated built-up areas and designated greenfield areas and the potential supply in the rural area:

4. Determination of the number of jobs that should be allocated to the community areas; and
5. Determination of the settlement area boundary expansions land that will be required to accommodate the forecasted population growth. The methodology does allow for some minor adjustments to ensure the logical expansion of settlement area boundaries.

The components involved in the employment area land needs assessment include the following:

1. Preparation of employment forecasts and the allocation of these forecasts into major categories, such as employment lands jobs, population-related employment, and rural-based jobs;
2. Employment allocation amongst the urban areas of the County as well as the distribution amongst the delineated built-up areas and the designated greenfield areas;
3. Examine the potential within existing employment areas for additional employment growth through intensification on existing employment sites and development on vacant lands; and
4. Determination of additional employment area land requirements. This component requires the consideration of such factors as servicing, access to highways and other goods moving facilities, the ability to provide an appropriate range and size of sites to provide market choice, and proximity to sensitive uses.

This report will address the requirements set out in the Land Needs Assessment Methodology document.

3.3 Provincial Policy Statement 2020

A revised Provincial Policy Statement, 2020 (PPS 2020) came into effect on May 1, 2020 replacing the previous Policy Statement approved in 2014. The PPS 2020 provides policy direction on matters of provincial interest related to land use planning and development. It sets the policy foundation for regulating development and the use of land in Ontario. The Municipal Comprehensive Review must be consistent with the PPS policies. While the PPS 2020 must also be read as a whole, the focus of this report is on the preparation of a growth strategy for the County and only those policies that are pertinent to that objective will be discussed. Aspects of the PPS 2020 not dealt with in this report will be considered in Phase 2 of the work program. The following policies have a direct bearing on the growth strategy. Note that direct quotes from the PPS 2020 are italicized.

Healthy, Liveable and Safe Communities

- *Healthy, liveable and safe communities are sustained by accommodating an appropriate affordable and market-based range and mix of residential types (including single detached, additional residential units, multi-unit housing, affordable housing and housing for older persons), employment (including industrial and commercial), institutional (including places of worship, cemeteries and long-term care homes), recreation, park and open space, and other uses to meet long-term needs. (PPS Policy 1.1.1 b)*
- *Healthy, liveable and safe communities are sustained by promoting the integration of land use planning, growth management, transit-supportive development, intensification and infrastructure planning to achieve cost-effective development patterns, optimization of transit investments, and standards to minimize land consumption and servicing costs. (PPS Policy 1.1.1 e)*

Growth and Development

- *Sufficient land shall be made available to accommodate an appropriate range and mix of land uses to meet projected needs for a time horizon of up to 25*

years, informed by provincial guidelines. However, where an alternate time period has been established for specific areas of the Province as a result of a provincial planning exercise or a provincial plan, that time frame may be used for municipalities within the area.

Within settlement areas, sufficient land shall be made available through intensification and redevelopment and, if necessary, designated growth areas.

Nothing in policy 1.1.2 limits the planning for infrastructure and public service facilities beyond a 25-year time horizon. (PPS Policy 1.1.2)

- *Settlement areas shall be the focus of growth and development. (PPS Policy 1.1.2)*
- *Planning authorities shall establish and implement minimum targets for intensification and redevelopment with built-up areas, based on local conditions. However, where provincial targets are established through provincial plans, the provincial target shall represent the minimum target for affected areas. (PPS Policy 1.1.3.5)*
- *Planning authorities should establish and implement phasing policies to ensure:*
 - a) *that specified targets for intensification and redevelopment are achieved prior to, or concurrent with, new development within designated growth areas; and*
 - b) *the orderly progression of development within designated growth areas and the timely provision of the infrastructure and public service facilities required to meet current and projected needs. (PPS Policy 1.1.3.7)*

Settlement Area Expansion

- *A planning authority may identify a settlement area or allow the expansion of a settlement area boundary only at the time of a comprehensive review and only where it has been demonstrated that:*
 - a) *Sufficient opportunities to accommodate growth and to satisfy market demand are not available through intensification, redevelopment and*

- designated growth areas to accommodate the projected needs over the identified planning horizon;*
- b) the infrastructure and public service facilities which are planned or available are suitable for the development over the long-term, are financially viable over their life cycle, and protect public health and safety and the natural environment;*
 - c) in prime agricultural areas:*
 - 1. the lands do not comprise specialty crop areas;*
 - 2. alternative locations have been evaluated, and*
 - i. there are no reasonable alternatives which avoid prime agricultural areas; and*
 - ii. there are no reasonable alternatives on lower priority agricultural lands in prime agricultural areas;*
 - d) the new or expanding settlement area is in compliance with the minimum distance separation formulae; and*
 - e) impacts from new or expanding settlement areas on agricultural operations which are adjacent or close to the settlement area are mitigated to the extent feasible. (PPS Policy 1.1.3.8)*
- *At the time of the official plan review or update, planning authorities should assess employment areas identified in local official plans to ensure that this designation is appropriate to the planned function on the employment area. (PPS Policy 1.3.2.2,)*

Employment Areas

- *Planning authorities shall protect employment areas in proximity to major goods movement facilities and corridors for employment uses that require those locations. (PPS Policy 1.3.2.6)*
- *Planning authorities may plan beyond 25 years for the long-term protection of employment areas provided lands are not designated beyond the planning horizon identified in policy 1.1.2. (PPS Policy 1.3.2.7)*

Residential Land Supply

- *To provide for an appropriate range and mix of housing types and densities required to meet projected requirements of current and future residents of the regional market area, planning authorities shall:*
 - a) *maintain at all times the ability to accommodate residential growth for a minimum of 15 years through residential intensification and redevelopment and, if necessary, lands which are designated and available for residential development; and*
 - b) *maintain at all times where new development is to occur, land with servicing capacity sufficient to provide at least a three-year supply of residential units available through lands suitably zoned to facilitate residential intensification and redevelopment, and land in draft approved and registered plans.*

Upper-tier and single-tier municipalities may choose to maintain land with servicing capacity sufficient to provide at least a five-year supply of residential units available residential intensification through lands suitably zoned to facilitate and redevelopment, and land in draft approved and registered plans. (PPS Policy 1.4.1)

These policies state that the County should plan for a period of up to 25 years unless a provincial plan, such as the Growth Plan 2020, has an alternative time period. The planning horizon under the Growth Plan is to 2051. It is noted that the planning horizon set in the PPS 2020 does not pertain to infrastructure and public service facilities nor to the planning for employment lands. A longer planning horizon may be applied to these facilities. However, the planning of infrastructure and major public service facilities must be done in concert with long range plans for the development of the community. The approach taken in this report is to plan for the next 30 years, that is to 2051 to achieve conformity with the Growth Plan 2020.

The PPS 2020 requires that municipalities maintain, at all times, the availability of land that can accommodate at least 15-years of residential growth through greenfield development, redevelopment and intensification. Previously, the requirement was to accommodate at least 10 years of growth at all times. The implication of the change is that, at the completion of each review of the Official Plan, sufficient lands should be designated to accommodate at least 20 years of residential development, assuming that the Plan is reviewed every five years to ensure that at all times the minimum requirement of 15 years supply is met.

The PPS 2020 also requires that municipalities must maintain, at all times, the servicing capacity to accommodate a 3-year supply of land for residential development through intensification, redevelopment, draft approved and registered plans of subdivision. This is to meet short-term residential development requirements. The PPS 2020 now allows municipalities to set a higher standard of maintaining the servicing capacity for at least 5-years supply of land for residential intensification and redevelopment.

It is noted that while it is possible to estimate potential residential intensification and redevelopment opportunities, it is difficult to predict when these opportunities will be realized. Some of the hurdles to overcome for intensification or redevelopment projects and achieving intensification targets are:

- Intensification or redevelopment may require the consolidation of several properties.
- The sites may be occupied by established uses that may need to relocate or cease operation.
- Realization of the potential is dependent upon the objectives of the property owner and the owner's ability to plan, finance and construct the redevelopment project.
- Is dependent on the perceived market potential of the new units.
- Intensification and redevelopment projects are often carried out by small-scale developers/builders who, while skilled at bringing projects to

completion, cannot achieve the volume of production that larger-scaled greenfield developers can reach. This makes it difficult for them to compete on a price basis with greenfield developers.

- May be subject to planning approvals and fees which may be costly and are subject to risk.
- It may be costly to expand servicing capacity in existing developed areas to accommodate additional demand resulting from intensification.

Due to these hurdles, potential residential intensification or redevelopment sites should not be included in the residential land supply calculations with respect to these PPS 2020 residential land supply targets unless there has been a specific proposal submitted or approved for the property. The danger of including all potential residential intensification and redevelopment sites is to over-estimate the realistic supply and thereby not having a sufficient supply of land available to meet demand.

Haldimand County addresses the servicing for potential intensification and redevelopment by reserving, where feasible, 5% of the remaining water supply and sanitary sewage treatment plant capacity in each of the six urban areas for infill projects. Where this minimum cannot be met in a specific urban area it is expected that other urban areas can balance the County's infill requirements. Infill projects are assessed on a case-by-case basis. The County assigns the available water and wastewater treatment plant capacity for new developments that request an allocation. A development cannot proceed to the building stage without receiving such an allocation and an approved allocation can be removed if the development does not proceed within proscribed time frames.

In the allocation of water and wastewater plant servicing allocations, preference is given to projects that meet the following ten criteria:

1. are infill and intensification developments within the built boundaries of the urban areas;

2. are higher density residential developments that provide a more efficient use of land or are affordable housing developments that provide housing options for lower income households;
3. are developments that can more easily be serviced with water and sanitary sewers without requiring extension of such services and require minimal grading or engineering to deal with stormwater management;
4. are development proposals for which the developer has entered into a front-ending agreement for the extension of services and/or the oversizing of services that facilitate future growth;
5. are developments that will have a positive or neutral financial impact on the County in terms of infrastructure requirements, capital planning and property assessment;
6. are developments that assist in completing planned external roads identified in Master Servicing Plans or lead to the completion of existing arterial roads are considered advantageous to the County;
7. are developments that do not require engineering infrastructure to be assumed by the County and do not further burden the municipality with future operation, maintenance and replacement costs;
8. are developments for which detailed engineering design has met the County's standards and environmental controls;
9. are developments that will create permanent industrial or commercial employment and contribute to the County's assessment base; and
10. an assessment of the performance of the developer in working towards using their servicing allocation within the prescribed timeframe. Servicing allocations are awarded on a "use it or lose it" basis.

These criteria are not ranked in order of priority. Development proposals are evaluated in how they meet each of the criteria and are ranked according to the number of criteria that they meet.

The servicing allocation policies of the County are in conformity with the policies of the Growth Plan 2020 and are consistent with the policies of PPS 2020. The criteria for allocation of servicing capacity favours infill and intensification or redevelopment within existing built-up areas, encourages the efficient use of municipal infrastructure, minimizes the need to extend municipal services, minimizes the financial burden on the County and encourages higher density housing, affordable housing, and developments that provide employment.

The servicing allocation policy closely monitors servicing capacity with land development. Information is provided annually to Council annually through a monitoring report on current water and wastewater demand and remaining servicing capacity as well as the status of developments that have been awarded allocations and recommendations on the extensions of existing allocations and the awarding of new allocations. These annual monitoring reports also provide Council with information on issues relating to servicing capacity and the need to upgrade plant operations and to provide additional capacity.

The Official Plan addresses monitoring in Section 5.B.1) 3. on servicing in urban areas. The policy states as follows:

When monitoring residual water and sewage treatment reserves, the County shall have regard to the servicing requirements of residential development, new and/or expanded commercial, institutional and industrial uses as well as capacity for septage and will endeavour to maintain adequate reserves to meet these requirements and undertake expansions to facilities in a timely manner.

The policies and practices of the County go beyond what is described in Section 5.B.1) 3. Expanding this policy in the Official Plan will provide support to what the County is currently doing in monitoring the impact of development on servicing capacities. While the current monitoring system includes information on residential developments that have received servicing allocations it does not provide an analysis as to the extent to which they meet the short-term and long-term land supply requirements set out in PPS 2020. The current Haldimand Official Plan does not have any policies to assess on a

regular basis on how it is meeting the 3-year short-term residential land supply or the 15-year long-term residential land supply requirements. This monitoring information can be provided to Council in conjunction with the annual servicing monitoring report or in a separate annual report and include information for each urban area. The Official Plan should be amended to indicate that the residential land supply will be monitored to ensure that the County maintains an adequate short-term and long-term supply of residential land to meet future requirements and to monitor the achievement of residential intensification targets are being met.

In the following sections of the report, the policies of the Growth Plan 2020 and the PPS 2020 will be further considered in the discussion of population, housing and employment forecasts, land requirements, urban area boundaries, and employment areas.

4. Population, Housing, Forecasts and Land Needs Assessment

4.1 Population and Household Forecasts

In developing a growth strategy for a municipality, the starting point is growth forecasts of future population, household and employment growth to the planning horizon, which in this study is 2051. The development of the Haldimand County growth strategy will rely on two forecasts reports, both carried out by Watson & Associates Economists. The first report, “Population, Housing and Employment Forecast Update and Land Needs Assessment” (Watson 2019), completed in 2019, was based on the Growth Plan 2019 forecasts for Haldimand County. A follow-up report, “Haldimand County Revised Growth Analysis to 2051” (Watson 2020) completed in 2020, was prepared to address the revised forecasts contained in Amendment No. 1 to the Growth Plan (Growth Plan 2020). While the forecasts provided in Watson 2020 are the basis of the land needs analysis in this report, the earlier Watson Report provides a more detailed analysis on key growth factors that are of considerable assistance and which can be relied upon.

Table 3 provides the population forecast prepared in the Watson Report. Recent historical population growth in Haldimand County has been modest with a total population increase of 1,400 residents over the 15-year period from 2001 to 2016. This period was marked by a major recession, Indigenous land claim protests and servicing constraints all of which had a negative impact on development activity. However, a surge in population growth is expected between 2016 and 2021 when the County’s population is expected to grow by 3,300 new residents. There has been a considerable increase in the construction of new residential units, particularly in Caledonia, since 2016. Over the 30-year forecast period, from 2021 to 2051, the County’s population is forecast to increase by 26,600 residents, representing an average annual rate of increase of 1.4% and an average increase of almost 900 new residents each year.

Table 3 Haldimand County Population Forecast to 2051			
Year	Population¹	Incremental change	Average annual rate of change (%)
2001	45,400		
2006	47,200	1,800	0.8
2011	46,000	-1,200	-0.5
2016	47,400	1,400	0.69
2021	50,400	3,300	1.2
2001-2021		5,000	0.5
2026	56,000	5,600	2.1
2031	60,000	4,000	1.4
2036	64,000	4,000	1.3
2041	68,000	4,000	1.2
2046	72,500	4,500	1.3
2051	77,000	4,500	1.2
2021-2051		26,600	1.4
1. Population includes the census undercount 2. Source: Watson & Associates 2020, Haldimand County Revised Growth Analysis to 2051, 2020			

Watson 2020 used the age-cohort survival methodology to prepare its forecast. This approach looks at births, deaths and net migration into the County. The increase in the population growth rate over the 30-year period is expected to be due primarily to increases in net migration of new residents into the County as natural population increase (births minus deaths) is expected to be negative over this period. Most of this migration is from within the Province and especially from the western portion of the GGH.

Haldimand County is located at the southern edge of the outer ring of the Greater Golden Horseshoe (GGH) Growth Plan Area. The GGH is expected to grow from a

population of 10.25 million in 2021 to 14,875 million in 2051; a growth of 4.625 million over the 30-year period. Over the same period, employment is expected to grow by 2.2 million jobs for a total of over 7 million jobs by 2051³. According to Watson 2020, Haldimand County is well-positioned to capture an increasing share of the forecasted GGH population and employment growth. The following extract taken from Watson 2020 describes the forces driving population and employment growth in Haldimand over the next 30 years.

The magnitude and distribution of growth throughout the GGH is of key significance to Haldimand County. More specifically, as the remaining greenfield areas of the more mature areas of the west G.T.H.A gradually build out, increasing outward growth pressure will be placed on the outlying municipalities of the GGH “Outer Ring,” and beyond. For Haldimand County, this outward growth pressure is anticipated to be most heavily felt in the County’s larger urban centres, most notably Caledonia, and to a lesser extent, Hagersville. It is anticipated that the majority of all new residents migrating to Haldimand County will be within the 25-54 age group; however, a growing proportion of new migrants is also expected in the 55-74 age group, given the County’s attractiveness as a retirement destination. In turn, population growth across these broad demographic groups will also continue to drive growth in population-related employment sectors including retail, personal services, business services and health and social services.

Over the next 30 years, the County’s local employment base is also forecast to increase, generating new live/work opportunities within Haldimand. The County is also located immediately west of Niagara Region, and is within an hour’s drive to the United States (U.S.) border at Fort Erie, Ontario/Buffalo, New York, which further adds to the County’s attractiveness as a destination for both residents and businesses.

Although the long-term impacts of the COVID-19 pandemic are difficult to discern at this time, greater opportunities for remote work, more affordable house prices and the perceived qualities of small town living, may encourage migration to smaller communities such as those found in Haldimand. It is expected that Caledonia, and to a lesser extent Hagersville, will be the primary beneficiaries of this migration. Based on these growth drivers, the Watson 2020, population forecast of 77,000 is slightly higher than the Growth Plan 2020 forecast of 75,000 total residents in 2051.

³ From the Technical Report: “Greater Golden Horseshoe: Growth Forecasts to 2051”, prepared by Hemson Consulting Ltd. for the Ministry of Municipal Affairs and Housing, 2020.

According to the Watson 2020 report, future population growth in the County, will be concentrated in the urban areas. **Table 4** breaks down the population and forecasts for the County's urban and rural areas. All the forecasted population growth of 30,200 new residents between 2016⁴ and 2051 is expected to occur in the County's six urban areas. Of the future population growth, Caledonia is expected to attract 67% of the new residents, growing from a population of 10,900 in 2016 to a population of 31,000 in 2051. Hagersville is expected to receive about 17% of the new residents and to grow to a community of 8,200 in 2051, to match the 2051 population of Dunnville. Cayuga and Dunnville are expected to experience moderate growth. Jarvis is expected to grow by 800 new residents over this period and Townsend is expected to continue to grow slowly, growing by 300 residents by 2051. The rural population is expected to be stable at 21,800. In the rural areas, provincial planning policies restrict new lot creation in the agricultural areas and limit development in hamlets.

Table 4 Haldimand County Growth in Population by Urban Area: 2016 - 2051				
Community Areas	2016	2051	Change 2016-2051	% of Total Growth 2016-2051
Caledonia	10,900	31,000	20,100	67
Cayuga	1,900	3,700	1,800	6
Dunnville	6,100	8,200	2,100	7
Hagersville	3,100	8,200	5,100	17
Jarvis	2,000	2,800	800	3
Townsend	1,000	1,300	300	1
Rural	21,800	21,800	-	-
Total	46,800	77,000	30,200	100
Sources: Population, Housing and Employment Forecast Update and Land Needs Assessment: Haldimand County, Draft Report, 2019 and Haldimand County Revised Growth Analysis to 2051, Watson & Associates Economists Ltd, 2020 Note: Numbers may not add up precisely due to rounding				

⁴ Note that the Watson 2020 did not provide an existing population breakdown for the six urban areas so this report had to rely on the population information provided in Watson 2019.

Table 5 provides the household forecasts for each of the urban areas and for the rural area of Haldimand. A total of 12,730 new households are expected in the County by 2051. Over 90 per cent of the new households are expected to reside in the 6 urban areas, with over 60% residing in Caledonia. Note that the rural areas of the County to 2051 are expected to receive 7% of the household growth (890 new households), even though the rural population is expected to be stable, indicating that there will be a decline in the average size of households in the rural areas. The expected concentration of future population and household growth in the County's urban areas is in conformity with the policies of the Growth Plan 2020 and the PPS 2020. To keep pace with household growth over the 35-year period from 2016 to 2051 requires the annual production of 364 new housing units throughout the County.

Table 5 Haldimand County Growth in Households: 2016 - 2051				
Community Areas	2016	2051	Change 2016-2051	% of Total Growth 2016-2051
Caledonia	3,740	11,540	7,800	61
Cayuga	710	1,410	700	5
Dunnville	2,600	3,540	940	7
Hagersville	1,150	3,110	1,960	15
Jarvis	890	1,220	330	3
Townsend	470	590	110	1
Rural	7,960	8,830	890	7
Total	17,510	30,240	12,730	100
Sources: Population, Housing and Employment Forecast Update and Land Needs Assessment: Haldimand County, Draft Report, 2019 and Haldimand County Revised Growth Analysis to 2051, Watson & Associates Economists Ltd, 2020 Note: Numbers may not add up precisely due to rounding				

The distribution of housing units in 2016 and the forecasted 2051 distribution by housing density type is provided in **Table 6**. Low-density housing units, comprised of single detached and semi-detached dwellings, will remain the dominant housing form but its share of total dwelling units will decline from 88% of all dwellings in 2016 to 76% in 2051. As its share of new units is only 59%. The percentage of dwelling units that are medium-density units, that is townhouse dwellings and apartments in small buildings, will increase from 6% in 2016 to 14% in 2051 and will comprise 24% of all new housing units. The proportion of high-density units, consisting of apartments, will increase from 6% of all units in 2016 to 11% of all units in 2051 and comprise 17% of all new units. The increase in density of new housing units is expected due to the aging of the population and due to increasing cost of low-density housing which is pushing some households into more affordable higher density housing.

Table 6 Growth in Housing Units by Density Type: 2016 - 2051					
Year		Low-Density	Medium-Density	High-Density	Total
2016	# of Units	15,430	1,000	1,090	17,520
	% of Total	88	6	6	100
2051	# of Units	22,990	4,030	3,220	30,240
	% of Total	76	14	11	100
Growth 2016-2051	# of Units	7,560	3,030	2,130	12,730
	% of Total	59	24	17	100
Sources: Population, Housing and Employment Forecast Update and Land Needs Assessment: Haldimand County, Draft Report, 2019 and Haldimand County Revised Growth Analysis to 2051, Watson & Associates Economists Ltd, 2020. Note: Figures may not add up precisely due to rounding					

Table 7 provides historical information, obtained from the Canada Mortgage and Housing Corporation, on housing starts⁵ in Haldimand County, from 2001 through to 2020. About 87% of the units started in the County during this period were low-density units while medium and high-density units comprised 9% and 4% of the units started, respectively. The average number of new housing units started each year over the 20-year period was 183. Table 7 also provides the average number of housing starts over the past 5 years, 2016-2020. Note that the annual average total number of new housing units for which building permits were issued for new housing units increased to 267, an increase of 46% above the 20-year average. This 5-year period includes a spike in the total volume of new housing starts in 2017 and 2018, when a total of 819 new units were started. Home builders for the Greater Toronto and Hamilton Region have entered the Haldimand housing market and are now active in the Caledonia and Hagersville urban areas. These home builders work at a large scale, promote their product to a wide region and can bring a large number of new housing units onto the market quickly.

This spike was due to the new house construction in the Avalon Community in Caledonia. Regional homebuilders that market their product over a wide area and can preservice a large area, can bring a large supply of new homes onto the market quickly. Regional homebuilders are now active in Caledonia and to a lesser extent in Hagersville.

The Watson Report forecast is for a sustained increase in the construction of new housing units to 2051 which will be well above the average level of production over the past 20 years. Whereas low-density housing forms dominated the new home market over the past, in the future, medium and high-density housing units will comprise a larger share of new home construction than in the past.

⁵ Housing starts differ from the issuance of building permits and refer to the actual start of construction of a new dwelling unit.

Table 7

Haldimand County, Historical Housing Starts by Dwelling Type, 2001-2020

Year	Single and Semi-Detached	Row	Apartments	Total
2001	288	-	12	300
2002	296	-	-	296
2003	178	-	2	180
2004	171	-	-	171
2005	118	-	3	121
2006	216	44	44	304
2007	103	4	4	111
2008	108	32	-	140
2009	91	22	-	113
2010	81	9	-	90
2011	77	11	3	91
2012	82	25	3	110
2013	64	3	-	67
2014	88	15	-	103
2015	75	18	24	117
2016	141	18	30	189
2017	439	64	12	515
2018	272	32	-	304
2019	145	-	14	159
2020	124	45		169
Total	3,157	342	151	3,650
% Of Total Units	86.5	9.4	4.1	100.0
Average Annual # of Units 2001-2021	158	17	8	183
Average Annual # of Units 2016-2020	224	32	11	267

Source: Canada Mortgage and Housing Corporation

Note: Numbers may not add up precisely due to rounding

Achievement of the growth forecasts present several challenges. One challenge is how to provide a sufficient supply of serviced land and at the right locations to accommodate and sustain the expected increase in new households. Another challenge is how to diversify the new housing supply so that there are more medium and high-density units to provide more choice and affordable options in the local market. A third challenge is how to encourage and facilitate the creation of new housing units created through infilling, intensification or redevelopment within the built-up areas of the County's urban areas. A fourth challenge is how to encourage and facilitate the development of community services and the employment associated with such services in greenfield areas and areas that are intensifying and to create employment opportunities near where people live.

Table 8 presents statistics on the distribution of the housing stock in each of the six urban areas by density type in 2016. Overall, low-density housing comprised about 79% of the 2016 total housing stock in the County's six urban areas. Caledonia, where 86% of the households lived in low-density units, and Townsend, where 87% lived in low-density units, were well above the average for the six urban areas in 2016. Jarvis was slightly above the average with about 80% of the housing units being low-density while other urban areas, Cayuga, Dunnville, and Hagersville were well below the average with the proportion of low-density units being between 70 and 75%. Conversely, in Cayuga, Dunnville and Hagersville close to 30% of all households lived in either medium or high-density housing. In Caledonia, the proportion of households living in medium or high-density housing was 13.6% while the proportion in Townsend was 12.7%.

Table 8 Housing by Density Type and Urban Area, 2016					
Urban Area		Low-Density	Medium-Density	High-Density	Total for Urban Area
Caledonia	# of Units	3,230	230	280	3,740
	% of Total	86.4	6.1	7.5	100.0
Cayuga	# of Units	520	90	100	710
	% of Total	73.2	12.7	14.1	100.0
Dunnville	# of Units	1,830	320	450	2,600
	% of Total	70.4	12.3	17.3	100.0
Hagersville	# of Units	820	220	110	1,150
	% of Total	71.3	19.1	9.6	100
Jarvis	# of Units	710	80	100	890
	% of Total	79.8	9.0	11.2	100.0
Townsend	# of Units	410	10	50	470
	% of Total	87.2	2.1	10.6	100.0
Urban Areas Total	# of Units	7,520	950	1,090	9,560
	% of Total	78.7	9.9	11.4	100.0
Rural Area	# of Units	7,910	50		7,960
	% of Total	100			100
County Total	# of Units	15,430	1,000	1,090	17,520
	% of Total	88	6	6	100
Source: Watson & Associates, Population, Housing and Employment Forecast Update and Land Needs Assessment, Haldimand County, 2019 Note: Numbers may not add up precisely due to rounding.					

The Watson 2020 forecast of household growth does not provide an estimate of housing by density type for each of the six urban areas. It does, however, provide a breakdown of housing type by density for the entire County for the 2016-2051 period and provides a breakdown for the rural and urban areas. In the rural areas of the

County, all new housing units are expected to be low-density units. Therefore, the medium and high-density units can all be attributed to the urban areas. In the urban areas, the proportion of new units to be low-density is expected to be about 56%, medium-density and high-density to be 26% and 18%, respectively, of all new units. All new units in the rural areas are expected to be low-density units. The distribution of new housing units over the forecast period amongst the density types is shown in **Table 9**. It is assumed that the distribution of new units by density type will be fairly consistent amongst the six urban areas.

Table 9 Forecast of New Housing Units by Density Type and Urban Area: 2016-2051				
Urban Area	Low-Density Units	Medium-Density Units	High-Density Units	Total Units
Caledonia	4,370	2,030	1,400	7,800
Cayuga	390	180	130	700
Dunnville	530	240	170	940
Hagersville	1,100	510	350	1,960
Jarvis	180	90	60	330
Townsend	70	30	20	120
Urban Areas Total	6,640	3,080	2,130	11,850
% of Total	56	26	18	
Rural Area	870			870
% of Total	100			100
County Total	7,510	3,080	2,130	12,720
% of Total	59	24	17	100
Source: Matt Reniers and Associates based on information obtained from Haldimand County Revised Growth Analysis to 2051, Watson & Associates Economists Ltd, 2020 Note: Numbers may not add up precisely due to rounding				

Table 10 shows the forecasted distribution of the total housing units by density type for each of the six urban areas. Low-density housing forms will continue to be the dominate form of housing although its share of the total urban housing stock is expected to decline to about 76% of all units by 2051. Medium-density housing is expected to increase its share of the total urban housing stock to about 13% by 2051 and high-density housing forms will increase to about 11% of the total County housing stock in 2051. The distribution amongst the housing density types will vary somewhat between the six urban communities. In the larger communities, the proportion of low-density units will generally be in the neighbourhood of 65% of all housing units, while in the smaller communities of Jarvis and Townsend the proportion will be over 70%. Except for Dunnville and Townsend, the urban communities will have a greater number of medium-density units than high-density housing units.

The Haldimand County Official Plan demarcates the built boundary for each of the urban areas on Schedules “B.1” to “B.6” and set the intensification target of 32% of all new residential units. This target was to come into effect after 2015. This lower target was decided upon following the analysis of intensification potential in the report “Housing & Places to Grow Implementation Study” led by Sorensen Graves Lowes Planning Associates, Inc. (SGL Study) completed in 2009. This study identified potential intensification opportunities on vacant lots in each urban area, in the upper floors of commercial buildings and on other potential intensification sites. The SGL Study recognized that encouraging intensification in communities such as Haldimand County is a challenge:

in less intensely developed communities such as Haldimand, facilitating residential intensification can be challenging. From a market viewpoint, the amenities and services are simply not broad enough in existing urban areas to attract any significant demand.

Municipalities, such as Haldimand County, are to maintain or improve upon the intensification target contained in their official plans. Municipalities, may however, with justification, request approval for a lower intensification target.

Table 10 Forecast of Housing by Density Type and Urban Area: 2051					
Urban Area	Period	Low-Density Units	Medium-Density Units	High-Density Units	Total Units
Caledonia	# of Units	7,600	2,260	1,680	11,540
	% of Total	66	20	15	100
Cayuga	# of Units	910	270	230	1,410
	% of Total	65	19	16	100
Dunnville	# of Units	2,360	560	620	3,540
	% of Total	67	16	18	100
Hagersville	# of Units	1,920	730	460	3,110
	% of Total	62	23	15	100.0
Jarvis	# of Units	890	170	160	1,220
	% of Total	73	14	13	100
Townsend	# of Units	480	40	70	590
	% of Total	81	7	12	100
Rural Area	# of Units	8,830			8,830
	% of Total	100			100
County Total	# of Units	22,990	4,030	3,220	30,240
	% of Total	76.0	13	11	100
Source: Matt Reniers and Associates Note: Numbers may not add up precisely due to rounding					

The Haldimand County Official Plan demarcates the built boundary for each of the urban areas on Schedules “B.1” to “B.6” and set the intensification target of 32% of all new residential units. This target was to come into effect after 2015. This lower target was decided upon following the analysis of intensification potential in the report “Housing & Places to Grow Implementation Study” led by Sorensen Graves Lowes Planning Associates, Inc. (SGL Study) completed in 2009. This study identified potential intensification opportunities on vacant lots in each urban area, in the upper floors of

commercial buildings and on other potential intensification sites. The SGL Study recognized that encouraging intensification in communities such as Haldimand County is a challenge:

in less intensely developed communities such as Haldimand, facilitating residential intensification can be challenging. From a market viewpoint, the amenities and services are simply not broad enough in existing urban areas to attract any significant demand.

Municipalities, such as Haldimand County, are to maintain or improve upon the intensification target contained in their official plans. Municipalities, may however, with justification, request approval for a lower intensification target.

The Watson Report 2019 examined recent intensification activity over the period between 2007 and 2016. It was estimated that over this 10 -year period about 680 new residential units were constructed within the built boundaries of the six urban areas. Intensification amounted to 60% of the total new residential construction, representing an average of 68 units per year. As indicated on **Table 7**; this was a period of relatively slow growth in the County and before the start of large-scale residential subdivision developments such as the Avalon Community in Caledonia. The Watson Report 2019 pointed out that most of the development within the Built Boundary was on greenfield sites that had been captured by the built boundary. Only 50 of the 680 units (7%) were in the form of infill development or the intensification through the creation of additional units on existing built sites.

A further detailed review of residential development activity within the built boundary and designated greenfield areas of the six urban communities was completed for this report, the results of which are presented in **Table 11**. New residential construction and units lost through demolitions were tracked over this period by examining the building permit summaries provided by Haldimand County. The unit count provided in **Table 11** are net of demolitions. Over the 5-year period between 2016 and 2020, intensification resulted in the creation of 276 net new residential units, representing an average of 55 new units in each year. Overall, the proportion of new residential units built within the

built boundaries comprised 22% of the total new units created in the urban areas over this five-year period. However, as a proportion of the County total, the proportion of new units that can be considered as intensification drops to 18%.

The proportion of the new units that can be considered as intensification varied considerably amongst the urban communities. Caledonia, in which the majority all new units were constructed, the proportion constructed within the built boundary was 12% even though it had the highest number of net new housing units created through intensification. In Jarvis and Hagersville, residential intensification within the built boundary represented less than 20% of the new units created in the 5-year period in each of the communities. In Cayuga, Dunnville and Townsend, the proportion of new units created within the built boundary was well above the intensification target of 32% of new housing units. This reflects the opportunities for infill development in those communities and the lack of residential subdivision activity.

Note that in the 5-year period, 2016-2020, building permits were issued for a County-wide total of 1,675 new residential units. During this period, demolition permits were issued for 112 residential units, of which 71 were located in the rural areas of the County. Within the urban areas, only 2 of the 41 units lost through demolitions were located within the designated greenfield area. Demolition of housing units in the greenfield areas is not a significant factor. In the built-up areas, demolitions were primarily of low-density housing units and often made way for replacement dwellings or intensification projects.

Table 11					
Permits for Net New Residential Units by Density Type and Urban Area, 2016-2020					
Urban Area	Planning Area	Low-Density Units	Medium-Density Units	High-Density Units	Total Units
Caledonia	BUA	1	0	100	101
	DGA	609	162	0	771
Cayuga	BUA	5	2	0	7
	DGA	4	0	0	4
Dunnville	BUA	64	2	20	86
	DGA	3	0	0	3
Hagersville	BUA	10	22	0	32
	DGA	134	0	0	134
Jarvis	BUA	13	0	0	13
	DGA	77	0	0	77
Townsend	BUA	0	0	37	37
	DGA	0	0	0	0
Urban Areas Total	BUA	93	26	157	276
	DGA	827	162	0	989
	Total	920	188	157	1265
	BUA as % of Urban Total	7	2	12	22
Rural Area	Total	298			298
County Total	Total Units	1,218	188	157	1563
	Distribution by Density Type %	78	12	10	100
	BUA as % of County Total	6	2	10	18
Source: Matt Reniers and Associates based on information obtained from Haldimand County Building Division					
Note: Numbers may not add up precisely due to rounding					

In Caledonia, the 2016-2020 period was when the first phases of the Avalon residential community came on-stream resulting in large-scale residential construction in the designated greenfield area. In Dunnville, the high proportion of intensification units was partly due to the lack of development opportunities within the designated greenfield areas. In Cayuga and Hagersville, there was also relatively little greenfield subdivision activity. In Townsend, no greenfield development occurred and the units created through intensification can be attributed to the expansion of a retirement housing facility. With the growing presence of large-scale regional housing developers and builders in Caledonia and to a lesser extent in Hagersville, it will be difficult to increase the level of residential intensification beyond current levels. Smaller infill developers can not match the scale of housing construction of the regional homebuilders.

It should be noted that in the detailed analysis of intensification potential in Caledonia, conducted for the SGL Study in 2009, it was concluded that there is very limited potential for this form of residential development in that community. Based on the past experience in intensification development in Haldimand and the consideration of the evolving nature of the new home market, particularly in Caledonia and Hagersville where a large supply of new homes can be brought onto the market quickly on greenfield sites, a reasonable intensification target for Haldimand County is 20% of new residential units. The achievement of this target should be monitored on an annual basis and should be reconsidered at the next update of the Official Plan.

Taking into account the building permits issued in the 5-year period 2016-2020, the total number of new housing units required by planning area and by density type is presented in **Table 12**. The forecast in **Table 12** is based on achieving the target that 20% of all net new housing units in the County will be located within the built-up areas of the six urban communities. As there will be no intensification units in the County's rural areas, this will require that 21% of all net new housing units are to be within the built-up areas of the urban communities. The number of intensification units required over the 30-year period of 2021-2050 amounts to 2,231 which equates to annual average of 74 new units a year. This is an increase over the level intensification

experienced in the urban areas over the past 5 years and is also an increase over the 68 units a year that was the basis of the current 32% intensification target.

Table 12

Net New Housing Units Required by Planning Area and Density Type, 2021-2050

Urban Area	Planning Area	Low-Density Units	Medium-Density Units	High-Density Units	Total Units
Caledonia	BUA	244	183	1,034	1,460
	DGA	3,641	1,613	213	5,468
	Total	3,885	1,795	1,247	6,928
Cayuga	BUA	24	18	103	145
	DGA	362	160	21	544
	Total	386	179	124	689
Dunnville	BUA	30	22	127	179
	DGA	447	198	26	672
	Total	477	221	153	851
Hagersville	BUA	63	47	268	378
	DGA	943	418	55	1,416
	Total	1,006	465	323	1,794
Jarvis	BUA	8	6	36	51
	DGA	126	56	7	189
	Total	135	62	43	240
Townsend	BUA	3	2	12	17
	DGA	44	19	3	66
	Total	47	2	15	83
Urban Areas Total	BUA	373	279	1,580	2,231
	DGA	5,564	2,464	326	8,354
	Total	5,937	2,743	1,906	10,585
Rural Area	Total	572	-	-	572
County Total	Total Units	6,509	2,743	1,906	11,157
Source: Matt Reniers and Associates based on information obtained from Haldimand County Building Division					
Note: Numbers may not add up precisely due to rounding					

4.2 Urban Area Potential Housing Supply

4.2.1 Built Boundary

The potential housing supply in each of the urban areas is divided into two areas – the potential within the built boundary and the potential within the designated greenfield areas. The built boundary, established by the Province, delineates the area of each urban community that was developed when the boundary was established in 2006.

The supply of potential housing units in the built area, including potential in registered plans of subdivision, draft approved plans and applications being reviewed and including preliminary proposals, was examined for each urban area. The summary of this work is presented in **Table 13**.

Table 13 Potential Housing Supply in Planning Applications by Urban Area and Density Type in the Built Boundary, December 2019				
Urban Area	Low-Density Units	Medium-Density Units	High-Density Units	Total Units
Caledonia	235	135	37	412
Cayuga	0	0	12	12
Dunnville	14	8	66	88
Hagersville	75	0	77	152
Jarvis	0	0	0	0
Townsend	0	30	90	120
Totals	329	173	282	784
Source: Matt Reniers and Associates based on data provided by the Haldimand County Planning Division				

A total of 784 potential housing units have been identified to be in various stages of the planning approval process within the built boundaries of the six urban areas. Over one-half of the potential units identified are in Caledonia. This inventory includes the

potential redevelopment of a portion of the former Georgia Pacific lands that lies within the built boundary and for which a formal planning application has been received. The potential supply also includes an application for a 77- unit apartment building in Hagersville that was received in 2020. The communities of Cayuga and Jarvis have a limited supply. Over one-half of the potential units are for medium-density and high-density housing units. This identified supply is considerably less than the 2,230 new intensification residential units that will be required to 2050. It will be challenging to meet the 20% intensification target, indicating that policies, regulations and incentives will continue to be required to encourage developers to bring forward residential intensification projects that will maintain the character of existing stable neighbourhoods.

The Haldimand County Official Plan is supportive of residential intensification as it identifies intensification areas in each of the urban areas and several intensification corridors. The Downtown Revitalization Programs in designated community improvement areas provide incentives for the creation of new units through intensification projects. The policies in support of infilling and redevelopment will be reviewed further in the Housing Master Plan Study that will be a component of Phase 2 of the Official Plan Update work program.

It is anticipated that development in the designated greenfield areas will continue to be focused on low-density housing forms although medium-density housing will also be important. The designated greenfield areas are not expected to be an important area for high-density housing development. Developers should be encouraged to provide a wide range of housing of housing options including apartments and where appropriate mixed commercial residential projects. The County's rural areas will not contribute towards the intensification target.

4.2.2 Designated Greenfield Areas

Designated greenfield areas (DGA's) are those lands within the urban areas designated for residential development in the Official Plan and located outside of the delineated

built boundary. Vacant lands not otherwise designated for development, such as agricultural lands within the urban boundary, can also be considered as part of the DGA. Lands designated as Employment Areas in the Official Plan are no longer included in the DGA's, however, isolated industrial sites may be included. The DGA's also include community employment areas that provide services to the residential population. Included as community employment are commercial, retail and personal service establishments, educational, health, recreational and governmental facilities. Within the DGA it is important to provide a mix of uses so that services can be provided close to where people live.

The community employment lands are included in the analysis of residential land supply. They are subject to the same density requirement of 40 residents and or jobs per hectare of development. Also, in the Community Commercial and Residential designations on the land use Schedules "B.1" to "B.6" for the urban areas, mixed commercial and residential developments are permitted. This is normally in the form of commercial space on the ground floor and with residential units on the upper floors.

The potential vacant residential and community employment lands in each of the urban areas was determined by examining vacant properties with a residential or commercial land use designation in the greenfield areas using the County's Geographic Information Systems (GIS). The vacant status of the properties was cross-checked with air photo imagery available on Google Maps, verified with County Planning Staff and field checked where necessary. Area calculations are based on assessment information, where available on the GIS database, or are based on calculations made using the measurement tools available on the County's GIS. Only the portions of the properties within the delineated urban boundaries were considered. Properties on which development was under construction were not considered as vacant. Portions of properties constrained by riverine hazard lands, significant wetlands or other constraints were not considered. It is recognized that under certain conditions, such as floodproofing, the availability of more detailed engineered mapping or investigations,

and the approval of the conservation authority, development may occur on riverine hazard lands, but it is impossible to determine what the potential development opportunity may be in advance. Determining the potential development lands in the DGA in this manner is consistent with the Growth Plan 2020. **Table 14** provides the inventory of vacant residential and community employment lands identified in each of the urban areas of the County.

Table 14 Net Vacant Lands in the Designated Growth Areas, December 2020						
Urban Area	Net Residential (hectares)	% of Total	Community Employment (hectares)	% of Total	Net Total of Community Lands	% of Total
Caledonia	236	36	22	46	258	36
Cayuga	32	5	2	4	34	5
Dunnville	18	3		0	18	3
Hagersville	123	19	10	21	133	19
Jarvis	109	16	1	2	110	15
Townsend	146	22	13	27	159	22
Total Land Area	664	100	48	100	712	100
Source: Matt Reniers and Associates with assistance from the Haldimand County Planning Division Note that numbers may not add up precisely due to rounding						

A review of **Table 14** indicates that the supply of vacant land with residential and community employment development potential is not distributed evenly amongst the six urban areas and is not in balance with the population and household growth forecasts for the County. Jarvis and Townsend combined have 4% of the total population growth and 4% of the total household growth to 2051 but have greater land supply than Caledonia which is expected to have 67% of the population growth and 61% of the total household growth to 2051. Caledonia's share of the total vacant land supply in the designated greenfield areas is only 36% while Jarvis and Townsend combined have 38% of the supply. Dunnville, which is expected to have about 7% of the County's

population and household growth to 2051, has only 3% of the vacant land supply in the DGA. The land supply in Cayuga and Hagersville is roughly in balance with their future residential growth needs to 2051. A more detailed analysis of the land needs for each of the urban areas will be provided in Section 6 of this report.

It should be pointed out that a significant portion of the residential development potential in Caledonia has been impacted by land claim protests. In 2020, a blockade has stopped construction at of Phase 1 of the McKenzie Meadows subdivision on the west side of McKenzie Road within the southern boundary of Caledonia. This development, which contains 218 potential single detached and townhouse units, has been stalled even though all necessary approvals had been obtained and internal services (water, sanitary, and utilities) installed. Police presence at the site and court injunctions have not been able to end the blockade. The blockade is similar to the Douglas Creek Estates protests that began in 2006 and which has prevented the development of the 40 hectare subdivision. The Douglas Creek Estates property has been purchased by the Province and is being held in trust until an agreement or future beneficial use can be reached.

The current land claim protests are impacting both Phase 1 and Phase 2 of the McKenzie Meadows subdivisions, involving 43 hectares of potential development land. Also impacted may be the Beattie Estates subdivision of 51 hectares on the east side of McKenzie Road across from the McKenzie Estates lands. This amounts to a total of 94 hectares of land for which the potential development is in jeopardy.

The unit potential on the identified vacant lands is based on yielding an average density of 40 persons and jobs per gross hectare of development which is the minimum density requirement under the Growth Plan. According to the Watson Report 2020, development within the DGA over the period 2022 to 2051 is expected to be proportioned amongst the density unit types as follows:

- Low-density: 68%;

- Medium-density: 29%; and
- High-density: 3%.

On a per hectare basis and allowing for rounding to the nearest whole number, this distribution equates to 15 residential units per gross hectare of development. These units can be distributed amongst the three density types as follows:

- Low-density: 10 units
- Medium-density: 4 units; and
- High-density: 1 unit.

An estimate of the potential population can be calculated by applying the average number of persons by density type provided in Watson Report 2019 and based on the 2016 Census data. The average number of persons per unit by density type is:

- Low-density: 2.90 persons;
- Medium-density: 2.68 persons; and
- High-density: 1.81 persons.

Multiplying the number of units by density type per hectare of development by the average number of persons per unit, yields an average density of 41.59 persons per hectare. This density does not include the potential jobs in the residential units for persons working from their homes. It should be pointed that this density is essentially a gross density as it includes lands required for roads, infrastructure, storm water management, school and park sites associated with the residential development. This is a safe density to apply to vacant residential lands to estimate the potential units that can be developed in a manner that is in conformity to the requirements of the Growth Plan 2020.

Table 14 also provides an inventory of the vacant community employment lands in each of the urban areas. Community employment lands comprise only about 7% of the DGA vacant land supply, with Caledonia having the largest supply, followed by Townsend and Hagersville. Cayuga, Dunnville and Jarvis have little or no vacant community

employment lands. Community employment land needs for each urban area will be dealt with in Section 6: Urban Area Analysis.

As indicated in **Table 15**, the potential housing supply in the County's urban areas can accommodate about 28,000 new residents. Considering that 20% of growth will be targeted to the built-up portions of the urban communities, the supply is adequate to accommodate forecasted population growth to 2051. However, **Table 15** demonstrates the imbalance between the supply of land and where growth is expected to take place. Caledonia, where 67% of the urban growth is expected to occur, can accommodate about 36% of the potential population growth on vacant DGA lands. Jarvis and Townsend, combined are expected to receive about 4% of the County's population growth, have sufficient land supply to house 38% of the population growth that can be accommodated on the DGA land supply.

Table 15 Comparison of Potential Population Growth in DGA's to Urban Area Growth Forecasts to 2051					
Urban Area	Net Vacant DGA Residential Lands (ha.)	Potential Population on vacant DGA Lands ¹	% of Total	Forecast of Urban Population Growth 2016-2051 ²	% of Total
Caledonia	236	9,820	36	20,100	67
Cayuga	32	1,330	5	1,800	6
Dunnville	18	750	3	2,100	7
Hagersville	123	5,120	19	5,100	16
Jarvis	109	4,530	16	800	3
Townsend	146	6,070	22	300	1
Total	664	27,620	100	30,200	100
Source: 1. Matt Reniers and Associates 2. Watson and Associates, 2020					

Table 16 provides an estimate on the total potential housing supply in planning applications at various stages of the approval process for the urban areas of the County. The supply is based on information obtained from the Haldimand County Planning Division on the housing potential available on registered plans of subdivision, draft approved plans and planning applications under review. Planning applications under review include preliminary proposals that have been submitted to the Planning Division but have not yet reached the formal application stage. The portion of low-density housing units is consistent with the forecasted percentage of low-density units presented in **Table 13**. The portion of medium-density units is lower than that forecasted for DGA, while the proportion comprised of high-density units is higher than forecasted. This distribution is in response to market demand and indicates that the greenfield areas can play an important role in meeting the diverse housing needs of the County.

Table 16 Potential Residential Units by Density Type in Planning Applications, Designated Growth Areas, December 2019				
Greenfield Area	Low-Density Units	Medium-Density Units	High-Density Units	Total Units
Registered Not Built	358	144	200	702
Draft Plan Approved	2,740	456	260	3,456
Application Under Review	854	434	345	1633
Total Greenfield	3,952	1,034	805	5,791
Unit Mix (%)	68%	18%	14%	100%
Source: Matt Reniers and Associates with data provided by the Haldimand County Planning Division Note that numbers may not add up precisely due to rounding				

5. Employment Forecast and Employment Area Land Needs

5.1 Employment Forecast by Urban Area

The Watson 2020 Report presents revised employment forecasts, to 2051, for the County, for each urban area and for the rural area. The urban areas forecast is further broken down into employment areas and community areas.

Employment in community areas is generally related to population and includes commercial and institutional and most office employment. This category refers to jobs in shops and services in the downtowns, neighbourhood commercial businesses, the commercial areas along major roads as well as in recreational facilities and in institutional uses such as government and health services. Also considered in the forecasts are those who work at home or who have no fixed place of employment.

Employment areas refers to industrial and logistic warehouse type jobs located in prime employment areas as well as office and commercial jobs related to servicing industrial activities in the prime employment areas. There may be other industries on individual sites scattered throughout the urban areas, but these are not considered as employment areas according to the definition provided by the Growth Plan, 2020. Of particular interest in this report, is the determination of employment area land needs as required by the Growth Plan. Schedules “I.1” to “I.5” of the Official Plan designate the employment areas in the communities of Caledonia, Cayuga, Dunnville, Hagersville, and Jarvis. There is no employment area designated in Townsend.

As demonstrated in **Table 17**, the County’s total employment is expected to grow to 29,000 jobs by 2051, an increase of 11,000 jobs from the 2016 total of 18,030 jobs. This represents an average of 313 new jobs each year between 2016 and 2051. About 78% of the job growth is expected to occur in the urban areas of the County and the majority of this growth (60%) is expected to be within the community areas. The rural areas, which include primarily employment in such industries as agriculture and aggregate

resource extraction as well as commercial and industrial operations located outside of the six urban areas and the Nanticoke PSEZ employment area, are expected to attract about 22% of future job growth.

Table 17					
Haldimand County Employment Forecast to 2051 by Policy Area					
Period	Rural Area	Urban Areas			County-Wide Total Employment
		Employment Areas	Community Areas	Urban Area Total	
2016	5,790	3,020	9,220	12,240	18,030
2051	8,200	6,400	14,400	20,800	29,000
2016-2051	2,410	3,380	5,180	8,560	10,970
Annual Average of New Jobs	69	97	148	245	294313
% Share of Growth	22%	31%	47%	78%	100%
Source: Watson & Associates Economists Ltd., 2020. Note: No fixed place of work is included in the Rural Area, Employment Areas and Community Areas. Numbers may not add up precisely due to rounding					

The distribution of employment area jobs in 2016 and the forecast for 2051 for each of the urban areas is presented in **Table 18**. In 2016, Dunnville had the highest number of jobs, with 1,170 jobs, in a designated employment area amongst all the urban communities. Caledonia had the second highest. Employment area job growth is expected to be much stronger in Caledonia which will attract about 65% of the total employment area job growth to 2051. Over the same period, employment area job growth in Dunnville is expected to be about 510 jobs or 15% of the total for the six urban areas. Jarvis is expected to attract about 3% of the employment area job growth to 2051. No employment area job growth has been allocated to Townsend.

Table 18 Forecast of Job Growth in Employment Areas by Urban Area: 2016-2051				
Urban Area	Jobs in Employment Area: 2016	Jobs in Employment Area: 2051	Growth in Number of Jobs 2016-2051	% of Total Employment Area Job Growth: 2016-2051
Caledonia	1,090	3,280	2,190	65
Cayuga	320	610	290	9
Dunnville	1,170	1,680	510	15
Hagersville	290	580	290	9
Jarvis	150	250	100	3
Townsend	0	0	0	0
Total	3,020	6,400	3,380	100
Source: Watson and Associates 2020 Numbers may not add up precisely due to rounding				

5.2 Employment Land Supply

The calculation of employment area land needs begins with identifying the inventory of vacant employment area lands in each of the County's urban areas. The inventory was prepared by examining the vacant lands within the designated employment areas delineated on Schedules "I. 1" to "I. 5" of the Official Plan. The methodology used was similar to that used in preparing the inventory for vacant residential and community employment lands described previously in this report. The objective was to identify those lands that are shovel-ready or can be reasonably be made shovel-ready.

The vacant land inventory for employment areas was determined by:

1. Identifying potential community employment lands in the areas designated as Residential or Community Commercial on Schedules "B. 1" to "B. 6";
2. Examining the vacant land inventory provided by the Official Plan Review GIS;
3. Cross-checking vacant sites with satellite imagery available on Google Maps;

4. Calculating land areas based on assessment information, where available. Where assessment information was not available, or where only a portion of the property was to be included in the inventory, the calculation was made using the measurement tools available on the County's GIS;
5. Only the portions of the properties within the delineated urban boundaries were considered;
6. Portions of properties constrained by riverine hazard lands and significant wetlands were not considered. It is recognized that under certain conditions, such as floodproofing, the availability of more detailed engineered mapping or investigations, and the approval of the conservation authority, development may occur on riverine hazard lands, but it is impossible to determine this in advance and for inventory purposes it is best to exclude such lands;
7. Landlocked properties within Employment Areas were not considered; and
8. Where Employment Area designations followed abandoned railway lines or remnant fragments of areas, they were not considered.

The results of this analysis, for each of the urban areas, is presented in **Table 19**. The total inventory of vacant employment area lands identified was 209 hectares (516 acres). Of this amount 48 hectares (119 acres) are community employment lands and have been included in the discussion on residential land supply. The other employment lands category refers to isolated vacant sites that are not included with the designation of Employment Areas on Schedules "I. 1" to "I. 5" of the Official Plan. These lands are not subject to the protective employment land policies of the Growth Plan 2020. The emphasis in this section of the report will be on lands in the employment area category.

The vacant employment area lands are not well distributed with respect to the higher growth areas of the County. Jarvis, with 67 hectares (166 acres) of employment area lands has the largest supply, followed by Caledonia and then Dunnville. Cayuga and Hagersville have a limited supply and no employment area lands have been designated in Townsend.

Table 19 Vacant Employment Area Lands in Urban Areas, 2020					
Urban Area	Community Employment Lands (ha)	Designated Employment Areas (ha.)	Other Employment Lands (ha.)	Totals	% of Total
Caledonia	22	46		68	33
Cayuga	2	7	4	13	6
Dunnville		30		30	14
Hagersville	10	4		14	7
Jarvis	1	67	3	71	34
Townsend	13	0		13	6
Totals	48	154	7	209	100
Source: Matt Reniers and Associates based on information provided by the Haldimand County Planning Division Note that numbers may not add up precisely due to rounding					

The vacant employment area lands are not well distributed with respect to the higher growth areas of the County. Jarvis, with 67 hectares (166 acres) of employment area lands, has the largest supply, followed by Caledonia and then Dunnville. Cayuga and Hagersville have a limited supply and no employment area lands have been designated in Townsend.

It should be noted that considerably more lands are designated as employment areas in Caledonia, however, about 123 hectares (311 acres) were excluded through the methodology described above. Generally, these lands are constrained by lack of access, riverine hazard lands, undermining and are not serviced. Also, not included in the Caledonia total are the Georgia Pacific lands which are constrained by undermining and for which an alternative development application for residential and recreational/open space uses has been submitted to the County (in the form of planning applications). In Dunnville, a large portion of the Frank A. Marshall industrial area, about 44 hectares (109 acres), is constrained by the Riverine Hazard Land designation and was excluded from the inventory. Some of these lands may be developable subject to

more detailed engineering analysis and floodproofing but it is hard to estimate the development potential in advance. The Riverine Hazard Land designations act as a constraint on the development of these lands.

A further problem with the vacant employment land supply is that much of it is not serviced. The supply in Caledonia, Cayuga and Jarvis is not currently supplied with municipal water and wastewater services. A key component of the County's economic development strategy is to be investment ready. This generally means having industrial lots that are properly zoned and serviced and available for development and at locations that are attractive to new or expanding businesses. The limited supply of such land in Haldimand County is a major constraint on economic development.⁶

The Watson Report 2019 carried out a detailed analysis of the employment densities on employment area lands in Haldimand and estimated that future job growth on employment lands will be 15 jobs per gross hectare and that 5% of job growth will occur as intensification on existing occupied lands. Applying this employment density and the intensification factor to expected job growth to 2051 on employment area lands, results in a land requirement of 213 hectares (526 acres) (see **Table 20**). About 140 hectares (346 acres), or 65% of this land need will be required in Caledonia. Dunnville will need to have 32 hectares (79 acres) of employment lands developed by 2051.

Table 21 compares employment area land needs with land supply for each of the urban areas. Overall, there is deficit of 59 hectares (146 acres). Jarvis has a surplus of 61 hectares (151 acres) while Caledonia, Cayuga, Dunnville and Hagersville all have a deficit. The deficit in Caledonia at 93 hectares (230 acres) is significant. The following section of the report will discuss how these land supply issues can be dealt with.

⁶ See the report "Haldimand County Economic Development Strategy" 2017 prepared by McSweeney & Associates available on the County's website: www.haldimandcounty.ca.

Table 20

Forecast Employment Area Lands of Job Growth by Urban Area: 2016-2051

Urban Area	Change in the # of Jobs in Employment Area 2016-2051	Job Growth Through Intensification in Employment Area	Jobs Growth on Vacant Lands Employment Area 2016-2051	Land Area to Accommodate Employment Area Job Growth 2016-2051
Caledonia	2,190	110	2,080	139
Cayuga	290	15	275	18
Dunnville	510	25	485	32
Hagersville	290	15	275	18
Jarvis	100	5	95	6
Townsend	0	0	0	0
Totals	3,380	170	3,210	213

Source: Matt Reniers and Associates

Note that numbers may not add up precisely due to rounding

Table 21

Comparison of Employment Land to Employment Land Supply by Urban Area: 2016-2051

Urban Area	Land Area Needed for Employment Area Job Growth 2016-2051	Employment Land Supply	Employment Land Surplus/Deficit
	A	B	C=B-A
Caledonia	139	46	-93
Cayuga	18	7	-11
Dunnville	32	30	-2
Hagersville	18	4	-14
Jarvis	6	67	61
Townsend	0	0	0
Totals	213	154	-59

Source: Matt Reniers and Associates

Note that numbers may not add up precisely due to rounding

6. Urban Area Analysis

6.1 Preliminary Growth Strategy

County Council at its meeting on September 3rd, 2019, approved in principle a preliminary growth strategy focused on the six urban areas. The strategy was based in part on the report “Population, Housing, and Employment Forecast Update and Land Needs Assessment” prepared by Watson & Associates Economists Ltd (Watson 2019). The preliminary growth strategy was outlined in Staff Report PDD-36-2019.

Previous sections of this report have shown that there is an imbalance between the supply of land designated for residential and employment development and the demand for such land. Nor does the supply of land relate to existing servicing capacities in the urban areas or to new or planned improvements to infrastructure capacity. Also, some lands designated for development are constrained by environmental features or undermining and may be difficult and/or costly to bring forward to a shovel-ready state.

The growth strategy adopted by Council is based on the analysis of the current situation on land supply and the pursuit of the following principals:

- Rationalize land supply relative to market demand;
- Align servicing capabilities and capacities to land demand and supply;
- Re-examine existing designations to respond to changing markets, to build stronger community and to ensure appropriate balance of land uses;
- Create opportunities for economic development and managed growth;
- Create conditions for contiguous assemblages of lands for (future) comprehensive development;
- Avoid areas that are not feasible and/or cost-effective to develop; and
- Avoid areas that would lead to major capital works to bring lands ‘on line’.

The primary objective of Council’s strategy is to “right-size” the six urban areas by accomplishing the following:

- eliminating some of the oversupply – urban boundary compression
- increasing land supply in areas where demand is high and growing – urban boundary expansion
- adjusting designations to better build community, integrate land uses and proactively respond to changing land needs
- eliminating harder to develop areas such as:
 - lands surrounded by / with constraints throughout (floodplain, undermined, etc.)
 - small, isolated pockets of land
 - lands with limited connectivity (to existing road network, servicing infrastructure, etc.).

The following is a summary of the main points of the preliminary Growth Strategy for each of the six urban areas. Maps showing the areas impacted by the Growth Strategy are provided in the following sections for each urban area.

Caledonia (see Map 1)

1. Urban Boundary Changes:

i. Residential/Community Lands:

- Expand: 188 hectares (464 acres)
East side of McClung Road and north of Greens Road and east of Chippewa Trail;
- Add 4 ha on the east side of McClung Road at Soccer Park
- Remove: 5 hectares (12 acres)
North side of Stirling Street, west of CNR line;
Net Change: Add 188 hectares (465 acres).

ii. Employment Areas:

- Expand: 43 hectares (106 acres)
North side of Greens Road and West of Highway 6;
- Remove: 38 hectares (94 acres)

South side of Greens Road and west of Highway 6 Bypass;

Net Change: Add 5 hectares (12 acres).

iii. Future Development:

- Net Change: Add 53.5 hectares (132 acres)

North side of Greens Road and east of Highway 6; and

iv. Non-Development Area:

- Net Change: Add 39 hectares (96 acres)

East side of McClung Road (McClung Soccer Park).

v. Other Changes

- Reconsideration of land use designations within Urban Boundary:

Gateway/Georgia Pacific Lands 132 hectares (326 acres)

East of Argyle Street North and south of Greens Road.

Empire Communities has submitted a proposal for the development of a large portion of these lands that includes residential, commercial and recreational uses.

Cayuga

No proposed changes to Urban Boundary.

Dunnville (see Map 5)

1. Urban Boundary Changes:

- Add 1.75 hectares (4.3 acres) and designate as “Residential”

North of Cross Street West and east of Robinson Road (lands surplus to the municipal Woodlawn Cemetery).

2. Employment Areas

- Remove 20 hectares (49 acres) from employment lands

Remove from the Frank Marshall Business Park and change to “Residential”.

- Remove 19 hectares (47 acres) from employment lands
Remove from “Urban Industrial” and change to “Business Park”.

Hagersville (see Map 7)

1. Employment Areas

Remove 43 hectares (107 acres) from Agriculture designation
East Side of Highway 6 at northern boundary of Urban Area
Change designation to Employment lands

2. Residential

Remove 61 hectares (150 acres) from Agriculture designation
North side of King Street East at eastern boundary of Urban Area
Change designation to residential

Jarvis (see Map 9)

1. Urban boundary changes:

- Remove 52 hectares (128 acres) from employment lands and from urban area.
North east edge of urban area, south of Concession Road 8 Walpole.
- Remove 67 hectares (165 acres) from residential designation and from urban area
South end of the urban area, east of Highway # 6 and east of John Street.

Townsend (Map 11)

1. Urban boundary changes

- Remove 208 hectares (514 acres) from the urban boundary.

6.2 Boundary Change Requests Received

In addition to the preliminary Growth Strategy approved in principle by County Council, requests have been received from property owners for changes to the urban boundaries of Caledonia and Hagersville. These requests are as follows:

Caledonia (see Map 2)

1. Empire Communities

- 134 McClung Road and 454 Haldimand Road 66 – 56 hectares (138 acres).
Portion of the property is located outside of the proposed urban area boundary expansion in the County's preliminary growth strategy. This land is proposed for residential development.
- 66 McClung Road – 4.5 hectares (10 acres)
This site is located within the proposed expansion of the urban area boundary to accommodate the Caledonia Soccer Park. This property is separate from the McClung Soccer Park and has been used as a sales office for Empire Communities' Avalon development. This land is proposed for commercial development.

Items 2, 3 and 4 below represent lands that were not proposed as urban area expansion in the preliminary growth strategy.

2. Stovel and Associates

- Add four properties, with a combined area of about 101 hectares (249 acres), west of Highway 6(Argyle Street North) to the Caledonia urban area.

3. Coscorp Inc.

- 4300 River Road, located on the north side of River Road, southeast of the Caledonia urban area, approximately 43 hectares in area; and
- 1475 McKenzie Road, on the west side of McKenzie Road, immediately south of the Caledonia urban area, approximately 40 hectares in area.

4. Other

- 316 McClung Road – 40 hectares (99 acres)
East side of McClung Road and north of County Road 66

Hagersville (see Map 8)

1. Empire Communities

Remove 7.91 hectares (19.54 acres) of the Smith Farm lands from the urban area that are within the Lafarge quarry 300 metre (984 feet) buffer and Add 7.77 hectares (19.20 acres) to the urban boundary north side of King Street East, immediately east of the proposed Smith Farm lands development.

- Add lands bounded by Sandusk Road, Concession Road 12, King Street East and a former railway corridor to the urban area. The property is 35 hectares (86 acres) in area but a large portion is occupied by a former quarry pond. The developable portion is 10-12 hectares (24 to 30 acres).

2. Format Group Inc.

- Expand the Hagersville westward towards Sandusk Road and north of the rail line by adding two parcels with a combined area of about 38 hectares for residential development. The larger of the two parcels has subsequently been purchased by Empire Communities and is now included in item 1 above. The remaining parcel is about 2 hectares (5 acres) in area and is located to the west of the Hagersville urban boundary, south of Concession 12 Walpole and north of the active rail corridor.

3. DG Group (Hagersville Holdings Ltd.)

- Add 88 hectares (218 acres) to the south of current urban area boundary to the east of the Hydro Corridor for residential purposes.
- The DG Group originally also requested to add 23 hectares (58 acres) at southwest corner of King Street East and Cheapside Road, east of the Hydro

Corridor to the urban boundary for employment purposes but have withdrawn that request.

4. Calibrex Development Group

- Calibrex has requested including the property on the east side of Sandusk Road, north of the abandoned rail corridor, south of Concession 13 Walpole and west of the quarry pond into the Hagersville urban boundary to allow for the residential development of the lands. This request would add about 15 hectares (37 acres) to the Hagersville urban area.

All of these requests will be discussed in greater detail in the following Community Analysis section. Note that no additional boundary expansion requests were received for the urban areas of Cayuga, Dunnville, Jarvis and Townsend.

6.3 Community Analysis

In this section, the sites identified in the preliminary Growth Strategy, approved in principle by County Council, and the requests received to expand the urban area boundaries of Caledonia and Hagersville will be reviewed in more detail. Each of the six urban areas will be dealt with separately. The review will be in conjunction with the requirements set out in the provincial Growth Plan 2020 for a municipal comprehensive review including a land need analysis. This review will look at the residential and employment land needs for each of the urban areas, servicing, impact on agricultural lands and natural resources, constraints to development and other relevant planning considerations.

The servicing discussion in the following subsections is at a high level and does not consider services that are generally internal to a development plan. The discussion will lean on the Master Servicing Plans completed for the urban areas and the annual reports on servicing capacity allocations that are presented to County Council. A functional engineering analysis was also carried out for potential expansion lands to the

Caledonia urban boundary. The focus is on the capacities of the water and wastewater treatment systems. While storm water management is an important consideration in development servicing, the solutions are usually found on a site or area basis, paid for by the developer and system capacity is not normally an issue. With respect to roads, only major issues that have a potential impact on development are discussed.

6.3.1 Caledonia

6.3.1.1 Residential Land Needs

The population and household forecasts for the Caledonia urban area are presented in **Table 22**. Caledonia is expected to grow from a community of 10,900 residents in 2016 to a community of 31,000 by 2051. This represents a growth of 20,100 new residents over the 35-year period, an average of 575 new residents each year. The number of households is expected to increase by 7,800 over the 35-year period, from 3,740 households in 2016 to 11,540 households in 2051. This represents an average growth of 220 new households each year.

Table 22				
Caledonia Population and Households Forecast, 2016-2051				
Years	Population ¹	Average Annual Change in Population (%)	Households ²	Average Change in Number of Households
2016	10,900		3,740	
2051	31,000		11,540	
Growth 2016-2051	20,100	575	7,800	220
Population includes the census undercount				
1. Watson & Associates, Population, Housing and Employment Forecast Update and Land Needs Assessment, Haldimand County, 2019				
2. Matt Reniers and Associates				
Note: Numbers may not add up precisely due to rounding				

The forecast for Caledonia of the total number of housing units by density type is presented in **Table 23**. In 2016, about 86% of Caledonia's dwelling units were low-density units comprised of single detached and semi-detached houses. Medium-density housing units, comprised primarily of townhouse units and units in small apartment buildings such as duplexes and triplexes, comprised 6% of all dwelling units and high-density apartment units comprised about 8% of the total housing stock. The percentage of low-density units is expected to decrease over the forecast period, declining to about 66% of all housing units in 2051. Over the same period, the proportion of housing units comprised of medium-density units will increase to 19% of all units and high-density units will increase to about 14% of the total dwelling units in Caledonia.

Table 23 Caledonia Forecast of Housing Units by Density Type: 2016 and 2051					
Year		Low-Density	Medium-Density	High-Density	Total
2016 ¹	# of Units	3,230	230	280	3,740
	% of Total	86	6	8	100.0
2051 ²	# of Units	7,660	2,230	1,650	11,540
	% of Total	66	19	14	100.0
Change 2016-2051	# of Units	4,430	2,000	1,370	7,800
Sources: 1. Watson & Associates, Population, Housing and Employment Forecast Update and Land Needs Assessment, Haldimand County, 2019 2. Matt Reniers and Associates Note: Numbers may not add up precisely due to rounding					

Table 24 shows the distribution of the expected new housing units to be constructed during the period 2021 to 2051 within the built boundary and in the designated greenfield areas (DGA) of Caledonia, according to the 20% intensification target. The target is for the lands within the built boundary to accommodate 1,460 new housing units by 2051. This amounts to an average of about 49 new housing units each year in

Caledonia, most of which should be high-density units. The DGA of Caledonia is expected to accommodate a total of 5,468 new housing units between 2021 and 2051, an average of about 182 new units each year.

Table 24 Caledonia Housing Needs by Planning Area, 20 % Intensification Target: 2021-2051				
Planning Area	Housing Density Type			Total Housing Units
	Low-Density	Medium-Density	High-Density	
Built Boundary	244	183	1,034	1,460
Designated Greenfield Area	3,641	1,613	213	5,468
Total	3,885	1,795	1,247	6,928
Source: Matt Reniers and Associates based on forecasts provided in Watson & Associates Economists Ltd., 2020 Note that numbers may not add up precisely due to rounding				

The land need, to 2051, for the DGA of Caledonia, was determined by calculating the land required for the two major components: the residential area and the community employment area. These calculations involved the following steps:

1. Dividing the total new residential units expected in the DGA from **Table 24** by the average density of 15 units per gross hectares to arrive at the residential land area need;
2. The community employment land need was calculated by dividing the employment growth to 2051 in Caledonia's DGA, as provided in Watson Report 2020, by the minimum density factor of 40 jobs/hectare required by the Growth Plan 2020;

3. The supply of vacant land within the DGA was calculated by adding the vacant residential land supply and the vacant community employment lands (see **Table 14**); and
4. The residential and community employment land needs calculated in steps 1 and 2 were then divided by the total vacant land supply from step 3 to arrive at the overall DGA land need.

This methodology was consistently applied to all the other urban communities.

The calculations are shown in **Table 25**. It is anticipated that, by 2051, Caledonia will require 161 hectares (398 acres) of additional land to accommodate anticipated residential and community employment in its designated growth areas. Meeting this need will require the expansion of Caledonia's urban boundary.

Table 25			
Caledonia Designated Growth Area Land Need to 2051			
Residential	Household Growth in DGA to 2051	A	5,468
	Density Factor (units per gross hectare)	B	15
	Land Need	$C=A/B$	365
Community Employment	Employment Growth to 2051	D	2,160
	Density Factor (jobs per gross hectare)	E	40
	Land Need	$F=D/E$	54
DGA Total	Land Need	$G=C+F$	419
	Vacant Land Supply (hectares)	H	258
	Land Need	$J=G-H$	161
Source: Matt Reniers and Associates based on forecasts provided in Watson & Associates Economists Ltd., 2020 Note that numbers may not add up precisely due to rounding			

6.3.1.2 Employment Area Land Needs

In 2020, the supply of designated and vacant Employment Area lands in Caledonia, amounted to 113 hectares (279 acres). This supply does not include about 40 hectares (99 acres) of employment lands on the area of the former Georgia Pacific property, portions of which are constrained by riverine hazard lands and undermining. The employment land designation on the Georgia Pacific property is irregular in shape, includes some isolated pockets and follows along abandoned railway lines, some of which has been converted into public trails. The combination of these factors make the lands undesirable for employment development. The lands are well-suited for residential and recreational development that will connect the Avalon Community to the east to Caledonia's downtown core and the commercial corridor along Argyle Street North. An application for residential and community open space uses has been submitted for the Georgia Pacific lands.

The inventory of 113 hectares (279 acres) does include other lands that will also be difficult to develop for employment purposes. An area to the west of the Domtar quarry and along Highway 6 will be difficult to access for development. An area to the west of the Highway 6 Bypass and south of Greens Road is also problematic for employment development. A portion of this property, which has an area of 48 hectares (119 acres), has been undermined, a Riverine Hazard Land designation traverses the property and there are several small wetlands. About 4 hectares (10 acres) of this property, along the southside of Greens Road and west of Henning Park, appears not to be impacted by these constraints. When these areas are excluded from consideration, the effective employment land supply in Caledonia is reduced to about 46 hectares (114 acres). This amount is the supply that should be considered in the employment area land needs analysis.

According to the Watson Report 2020, employment growth to 2051, on employment area lands in Caledonia, is expected to increase by 2,190 jobs from the 2016 employment level. The Watson Report 2019 calculated employment area land needs

based on a density of 15 jobs/hectares and that density will be used in this report. It also assumed that there will be some intensification on existing employment sites and estimated this amount to be about 5% of employment growth. The calculation of 2051 employment area land needs is shown on **Table 26**. The Caledonia urban boundary needs to expand by at least 93 hectares (230 acres) to accommodate expected job growth on employment areas lands to 2051. Additional lands appropriate for industrial development and capable of being serviced with municipal water and wastewater services need to be brought on-stream to meet future employment needs.

Table 26		
Caledonia Employment Area Land Need to 2051		
Employment Area Job Growth to 2051	A	2,190
Employment Growth in Existing Employment Areas (5%)	B	110
Net Employment Growth on Vacant Lands	$C=A-B$	2,080
Employment Density - Jobs/Hectare	D	15
Employment Area Land Requirement	$E=C/D$	139
Vacant Employment Area Supply (hectares)	F	46
Land Need (hectares)	$G=E/F$	93
Source: Matt Reniers and Associates based on forecasts provided in Watson & Associates Economists Ltd., 2020. Note that numbers may not add up precisely due to rounding		

The analysis indicates that Caledonia has an effective shortage in the supply of employment lands, in the range of 93 hectares (230 acres), to meet its needs to 2051. This will necessitate the expansion of the Caledonia urban area boundaries. The total

urban boundary expansion required for Caledonia to accommodate both the DGA land needs and the employment area land needs is 254 hectares (628 acres).

6.3.1.3 Servicing for Growth

Haldimand County, at the time of preparing this report, is in the process of completing a Master Servicing Plan Update (MSP) for Caledonia, in compliance with the requirements for the Class Environmental Assessment process under the provincial *Environmental Assessment Act*.

The (MSP) update examined the provision of water, wastewater management, storm water management and transportation services for the built-up and growth areas within the existing urban boundary of Caledonia. The master servicing plan update is intended to satisfy Phase 1 and Phase 2 of the Municipal Class EA process. Phase 1 involves identifying and describing the problem or opportunity. In Phase 2 alternative solutions are evaluated and a preferred solution identified. The MSP evaluated alternative solutions and selected servicing strategies and their costs to meet the infrastructure needs of existing developed areas and growth areas in Caledonia.

The MSP process resulted in the preparation of four reports:

1. Water Servicing Review and Updates, prepared by C3 Water Inc.;
2. Wastewater Servicing Review and Updates, prepared by J.L. Richards & Associates;
3. Draft Final Storm Drainage Report, by Wood Environmental & Infrastructure Solutions; and
4. Transportation, prepared by CIMA+ with review and updates by J.L. Richards & Associates.

It should be noted that all the MSP reports relied on population and employment forecasts prepared by Watson and Associates in their report: Population, Housing and Employment Forecast Update and Land Needs Assessment, completed in 2019. The

forecasts in this report went out to 2046 and were prepared in conformity of the growth projections set out for Haldimand County in the Growth Plan 2019. As discussed elsewhere in this report, the Growth Plan 2019 projections have been superseded by Amendment No. 1 to the Growth Plan which has forecasted a higher rate of growth for Haldimand County and extended the forecast horizon to 2051. Continued monitoring of growth and development within Caledonia will be required to ensure that the servicing infrastructure improvements recommended in the MSP will be in place in a timely fashion to meeting future growth needs.

The focus in this section will be to provide a summary of the MSP recommendations as they impact on the provision of infrastructure services for the growth areas in Caledonia.

Water Services

Potable water is provided to Caledonia by the City of Hamilton in accordance with an agreement. This supply also serves Cayuga and portions of the hamlet of York. The Hamilton water supply agreement has a limit of 13.8 ML/day. Reaching 85% of this supply limit is seen as the trigger at which plans to expand the service supply and associated infrastructure should begin to ensure on-going maintenance of adequate supply to meet future growth needs. According to the C3 Water report, this 85% trigger can be reached as early as 2028 and the system may not have sufficient capacity to supply water by 2030. However, when projecting water demands based on actual usage, these dates shift to 2034 and 2044, respectively. The water service alternatives evaluated in the report dealt primarily with ensuring adequate water pressure throughout all areas of Caledonia and ensuring sufficient storage and distribution. The following service improvements are recommended regardless of the alternative solution selected:

- construct a new 350 mm watermain along McClung Rd from Haldimand Rd 66 to Caithness St East, approximately 2 km, twinning the existing 350 mm transmission main;
- a new river crossing to provide better connectivity from the McClung Rd valve chamber to the south area of Caledonia. The new river crossing is recommended to consist of a 800 m stretch of 300 mm watermain from

McClung Rd/Caithness St East to River Rd, including approximately 250 m of tunneling across the Grand River. The purpose of this watermain is to improve system redundancy, reduce headloss in the water system to fill the standpipe/proposed elevated tank in the south part of Caledonia and to maintain reasonable pressures throughout the system;

- construct approximately 3 km of additional 300 mm watermain connections to loop the new river crossing to River Rd, McKenzie Rd and Argyle Street South by improving connectivity to the standpipe/proposed elevated tank;
- construct approximately 2 km of new 350 mm watermain along Greens Rd from Argyle Street North to provide servicing to the north west employment area.

The selected alternative includes replacing the existing standpipe with a new 5,000 m³ South elevated tank (ET) and upgrading the existing Caledonia Water Treatment Plant (WTP) in-ground reservoir, located on Argyle Street North, north of the Caledonia urban boundary, by 5,000 m³ to meet the water storage requirement for the system. Basic upgrades to the booster pumping station will be required. The system would operate as a single pressure zone and the existing Greens Rd and McClung Rd valve chambers would remain fully open. A single pressure zone would allow for ease of operations and ease of transition to a new south water supply from Nanticoke or other potential water sources in the future. Note that the extension of the Nanticoke water supply system will be discussed in Section 7 of this report. The Caledonia water system is currently operating with less water storage than recommended by provincial guidelines. Planning and design of the new South elevated tank and an increase in reservoir capacity should begin when funding and approvals are available. Construction of the new South ET is deemed as a higher priority for new storage relative to the in-ground storage for the improvement of pressures in areas south of the river and an increase in fire flows.

Wastewater Services

The Caledonia wastewater system includes one wastewater treatment plant (WWTP) located to the south of the Grand River, seven (7) sewage pumping stations as well as the wastewater collection system. The WWTP has a rated capacity of 7,200 m³/day. The average daily flow to the WWTP over the past four years (2016-2019) was 3,306

m³/day. The average day wastewater flow in 2046 is estimated to be 9,700 m³/day. The plant is expected to reach its rated capacity around 2028 and 85% trigger of rated capacity around 2026.

J.L. Richards, in their report, evaluated several alternatives to expand future wastewater treatment capacity. These alternatives included increasing the capacity of the existing plant, building a new plant on the north side of the Grand River and a hybrid alternative in which the existing plant will handle wastewater flows from the southside of the Grand River and a new plant will treat flows from the north side.

The recommended alternative to expand wastewater treatment capacity is to construct a new WWTP in north Caledonia to treat flows from north of the Grand River, while maintaining the existing WWTP to treat flows from south of the river. The new WWTP design capacity would be 6,100 m³/day to treat flows to 2046, using conventional technology. The north plant could be expanded in the future to service all of Caledonia when the south plant reaches the end of its useful life, which is expected to be about 2043. Consideration can be given to re-rating the existing Caledonia WWTP for a lower treatment capacity when negotiating effluent quality requirements for the existing and new WWTP with the provincial Ministry of Environment, Conservation and Parks (MECP). Re-rating the existing WWTP could allow the loading capacity of the receiving water body to be re-allocated to the new WWTP.

The Development Charges Background Study for the County includes an expenditure of \$45 million for wastewater treatment upgrades which will expand existing treatment capacity by 7,000 m³/day, sufficient to accommodate the growth needs for an additional 20,000 new residents. The new plant will have capability for further expansions if needed. This new WWTP, in combination with the existing WWTP south of the Grand River, will allow for all existing and proposed expansion lands to be accommodated.

Other works associated with this alternative include:

- Extending the existing forcemain from Nairne Sewage Pumping Station (SPS) to the new WWTP location.
- Upgrading Nairne SPS for increased capacity.
- Constructing a new forcemain from the existing McClung SPS to the new WWTP location.
- Completing a Schedule C Class Environmental Assessment.

The industrial, community and residential lands in north Caledonia will be serviced through the following new infrastructure:

- North industrial developments and the Caledonia Gateway lands will be serviced by new collector sewers to the new Gateway SPS and a forcemain to the gravity sewer system on Argyle Street North.
- North vacant lands will predominantly be serviced by the new Gateway SPS, a small amount of flow east of the railway line (8 ha) will be directed to the existing McClung SPS.
- The Avalon residential development will be serviced by upgrading the existing McClung SPS and a new Avalon SPS.

Development lands on the southside of the Grand River will be serviced by the following:

- Future community area along Argyle Street South and the western portion of the residential area in the south vacant lands will be conveyed to the sanitary sewer trunk on Argyle Street South;
- A small portion of residential area in the South Vacant Lands west of Celtic Drive will be conveyed to the Caledonia Drive trunk sewer;
- The future McKenzie Meadows residential development will be conveyed to the Caledonia Drive trunk sewer; and
- The future Beattie Estates residential development and a portion of the south vacant lands residential area (west of McKenzie Road) will be serviced by a new SPS on McKenzie Road which will have a forcemain connection via McKenzie Road to Haddington Street.

Storm Drainage

Based on the assessment of the impact of future development on the hydrological and hydraulic conditions in the subwatersheds, namely the Douglas Drain, South Grand,

Seneca Creek, Lindsay Creek and North Grand, Wood Environmental & Infrastructure Solutions identified the potential need for 22 storm water management facilities. In addition, ten culvert upgrades, ten trunk storm sewer upgrades and two (2) storm water outfall retrofits were also recommended for areas of existing development and growth. Storm drainage facilities associated with development in greenfield areas will be subject to more detailed engineering analysis and design and their installation costs are normally assumed by the developer.

Transportation

CIMA+ analysed the road network's constraints and opportunities under existing and future conditions. Under existing conditions, the analysis found that the operational performance at all intersections studied was acceptable during the weekday morning and afternoon peak hours. Peak traffic volumes are relatively low, and intersections studied have spare capacity and can accommodate additional demand. No measures to improve performance were recommended for current conditions.

CIMA+ then analysed traffic operations based on anticipated development expected to be completed by the horizon year of 2035. Based on the "Do Nothing" alternative, the following intersections were projected to have a level of service that exceeds intersection capacity or have unacceptable volume to capacity ratios:

- Argyle Street at Caithness Street;
- Argyle Street at Celtic Drive/Braemer Avenue;
- Argyle Street at Orkney Street;
- Argyle Street at Sutherland Street;
- Argyle Street at Wigton Road;
- Argyle Street at Highway 6/Haldimand Road 66;
- Caithness Street at McClung Road; and
- McKenzie Road/Wigton Street at Haddington Street.

All but two of the intersections requiring improvement are along the Argyle Street corridor, north and south of the Grand River.

In their analysis of 2035 forecasted traffic, which is expected to be between 3,000 to 3,500 additional vehicle trips per hour, CIMA+ came to the following conclusions:

- Without significant network/intersection improvements by 2035, study area intersections are expected to operate near or over capacity with significant delays;
- Implementing minor intersection improvements, such as signalization and/or adding auxiliary turn lanes will still leave intersections at Argyle/Caithness, Argyle/Orkney, Argyle/Highway 6/Haldimand Road 66 operating at unacceptable levels;
- Assuming that projected traffic generated in south Caledonia, in the vicinity of McKenzie Road, can be diverted to Highway 6 via a new boundary road, as opposed to Argyle Street, study area intersections are expected to operate acceptably however, proposed improvements will still be required at all intersections in the network;
- The intersection of Argyle Street & Highway 6/Haldimand Road 66 is projected to operate with high volume/capacity ratios and long delays following redistribution of traffic along the Boundary Road and Highway 6 Bypass. Additional improvements are recommended to facilitate the high number of left-turning vehicles expected from the redirected vehicles utilizing the Highway 6 Bypass. The County will need to coordinate with the Ministry of Transportation Ontario (MTO) on any future improvements planned for the intersection;
- The shared eastbound left-turn/through movement at the intersection of Caithness Street & McClung Road will operate with significant delays during both peak hours. A left-turn lane warrant was met based on future 2035 volumes and is recommended due to the high number of left-turning vehicles onto McClung Road;

- The proposed boundary road aids the operations of the local neighbourhood roads north of the Beattie Estates site and provides a commuter route for traffic traveling to and from the southern residential area of the town. The alternative boundary road located at 6th Line will also provide similar benefits without the need for additional improvements at the intersection of Argyle Street & Highway 6 Bypass/Highway 6, although the signalization of the minor street stop controlled intersection of Argyle Street & 6th Line/Boundary Road should be reviewed at a further time.

Overall, the MSP reports indicate that the development lands within the Caledonia urban boundary can be provided with municipal services. The reports identified the extension to existing services, upgrades to existing infrastructure and new infrastructure that will be required and their tentative timetable for installation. The reports also identified the estimated costs for the infrastructure improvements required to accommodate expected growth and the proportion that will be the responsibilities of the County and developers to pay. The various improvements identified in the reports will each require more detailed engineering study and costs estimates and their final design and installation may vary somewhat from what has been recommended in the MSP reports. Vigilant on-going monitoring of growth and service utilizations will also be required.

This section will first review the proposed urban area boundary and employment land changes presented in Council's preliminary Growth Strategy and then consider additional requests for boundary changes received from property owners. A functional engineering analysis of these expansion lands as well as some adjacent lands was carried out by J.L. Richards (JLR 2020) and Associates and C3 Water who also carried out engineering investigations for the Caledonia Master Servicing Plan Update. Before proceeding in the discussion on boundary changes and proposed land use designation adjustments, it is important to note that the discussion will focus on two maps:

- Map 1** This map presents the preliminary Growth Strategy approved in principle by Haldimand County Council.
- Map 2** Shows the areas included in Map 1 and additional lands to be considered for boundary expansion and the properties associated with boundary expansion requests that have been received.

The following discussion on boundary and land use designations is organized on a geographical basis. As a result, there is some movement back and forth between **Map 1** and **Map 2**.

Preliminary Growth Strategy and Related Lands

Area 1: The proposal is to remove from the Caledonia urban area boundary, from the Employment Area designation and from Urban Business Park land use designation, most of the lands on the south side of Greens Road and west of the Highway 6 Bypass shown as Area 1 on **Map 1**. Much of the lands, which have a total area of 38 hectares (94 acres), are constrained by riverine hazard lands, several small wetlands and undermining and will be difficult to develop for industrial purposes. The lands are not served by municipal water and wastewater services. Not included in Area 1 are about 4 hectares (10 acres), fronting on the south side of Greens Road and immediately to the west of Henning Park, that is to be left within the Caledonia urban area and in the Employment Area and Urban Business Park designations. This area can be serviced when municipal services are extended along Greens Road. Note that the 38 hectares (94 acres) have not been included in Caledonia's employment area land supply. The lands to removed from the urban area should be re-designated to Agriculture.

Map 1



Recommendation # 1: Remove 38 hectares (94 acres), identified as Area 1 on **Map 1**, from the Caledonia Urban Area, from the Urban Business Park designation on Schedule “B.1” and re-designate as Agricultural, and from Employment Area designation on Schedule “I.1” of the Official Plan.

Area 2: The proposal is to expand the Caledonia urban area boundary on the north side of Greens Road and west of existing Highway #6 and designate as Employment Lands- 37 hectares (91 acres). This area is net of the lands that will be required for the proposed interchange and Highway 6 extension north of Greens Road. The lands are shown as Area 2 on **Map 1**. This area represents a logical extension of the employment lands and Urban Business Park designations on the opposite south side of Greens Road. The area also complements the designations on the north side of Greens Road and west of the proposed Highway 6 Corridor extension. Note that the Highway 6 extension will take up about 6 hectares (15 acres) of the proposed expansion land. The area has excellent direct highway access. There is an automobile commercial operation and cabinet maker located along the west side of Highway #6 in this proposed designation. Most of the vacant lands in this area are currently farmed. The soils are a mix of Class 2 and Class 3 soil capability for agriculture with some Class 4 soils near the intersection of Highway 6 and Greens Road. This soil mix is comparable to many areas around the urban boundary of Caledonia. Industrial development on these lands should not impede existing agricultural operations in the area. The Caledonia MSP recommends the extension of municipal water and wastewater services along Greens Road which can service these lands. Wastewater from the area will flow to the new Gateway SPS and from there to the Caledonia WWTP.

In the provincial review of the draft Official Plan Amendment, the Ministry of Transportation (MTO) has expressed concern about road access to Area 2. For the extension of the Highway 6 Bypass north of Caledonia, an interchange is planned at its intersection with Greens Road. According to the MTO Highway Access Management Requirements there is insufficient space along the north side of Greens Road, between

the proposed interchange and the current Highway 6 alignment. This issue will be dealt with more fully in conjunction with the discussion on Area 8 on **Map 2**.

Recommendation # 2: Add 37 gross hectares (91 acres), as shown as Area 2 on **Map 1** to the Caledonia Urban Area and designate as Urban Business Park on Schedule “B.1” and as Employment Area on Schedule “I.1” of the Official Plan.

Consideration should be given to extending the Employment Area on the north side of Greens Road further northward towards Hamilton as outlined as Area 8 on **Map 2**. The Caledonia employment area land needs has identified the need for an additional 93 gross hectares (230 acres) of employment area lands to meet Caledonia’s growth needs to 2051. The additional lands contain 78 gross hectares (193 acres), excluding the lands required for the future extension of Highway 6 northward towards Hamilton which bisects the lands. These lands, along with the 37 hectares (91) acres to be added through Recommendation # 2, will meet Caledonia’s future employment needs to 2051.

The additional lands to the north of Caledonia are well-suited for industrial development due to their proximity to Hamilton Airport and to highway 403 and the 400 series highway system. The area is easily accessible to a large and diverse regional labour pool. The additional lands will allow for the planning of an industrial area on a larger scale and may be attractive to a larger scale industrial employer. Planning for a larger scale industrial development will help achieve a better balance between future residential and employment growth. Planning on a larger scale, may also make the cost of servicing the lands more economical on a per acre basis.

From the circulation of the draft Official Plan Amendment to the Ministry of Transportation (MTO), the County has been advised that access to the proposed employment areas north of Greens Road will need to meet the technical requirements of MTO. Permanent access from Greens Road will not meet the technical requirements.

Access from the proposed extension of Highway 6 north of Greens Road will not be an option. Access to the western portion of the proposed industrial area from Mines Road, which is a County Road, is not subject to the MTO requirements. Along the existing Highway 6 north of Greens Road, which may eventually be transferred to the County after the completion of the Highway 6 extension, MTO is concerned that any access road be of sufficient distance from the Greens Road intersection to allow for the safe and efficient flow of traffic. A distance of 1,600 metres is preferred between major roads for safe access but a shorter distance may be permitted subject to completion of a supporting traffic impact study satisfactory to MTO. To create more opportunities to create safe access to the eastern portion of the proposed employment area, additional lands, which are part of the Stovel request, are recommended to be added to the proposed employment area. The estimated distance from the Greens Road intersection to the northern limit of the proposed employment area will then be 1,218 metres (3,996 feet) and add 24 hectares (59 acres) to the employment area. With the additional frontage along the existing Highway 6, there should be more opportunities to address the access issue and to find a solution satisfactory to MTO in the secondary planning exercise required for the development of these lands.

Recommendation # 3 Add 102 gross hectares (252 acres), as shown as Area 8 on **Map 2** to the Caledonia Urban Area and designate as Urban Business Park on Schedule “B.1” and as Employment Area on Schedule “I.1” of the Official Plan.

Area 3: This area, of 53.5 hectares (132 acres), shown as Area 3 on **Map 1**, on the north side of Greens Road and east of Argyle Street North (Highway # 6), is shown as a future development area in the preliminary Growth Strategy. The eastern portion of this area, about 12 hectares (30 acres) are Riverine Hazard Lands and may not be developable. Considering these lands, the developable portion may be reduced to about 41 hectares (101 acres).

Map 2



Much of the frontage along the east of Argyle Street North in this area is occupied by several commercial and service businesses. Gateway Church occupies the corner property at the intersection of Argyle Street North and Greens Road. The Gateway Church is planning to expand its operations and the footprint of the expanded church and pavement area will increase to about twice its current size. Future land use for this area has yet to be determined but will likely be a mix of community employment type uses in support of developments on the south side of Haldimand Road 66 and nearby industrial operations and residential development to extend the recently approved residential and commercial south of Haldimand Road 66 further northward. Soils in this area are predominantly Class 2 capability for agriculture with some Class 3 soils. A dairy farm was formerly located to the north of this area, with barns about 270 metres (886 feet) from the closest property line. Access to development on these lands will likely be from Haldimand Road 66 and will have minimal impact on agricultural operations. The eastern portion of the area along the Chippewa Trail is constrained by riverine hazard lands.

Recommendation # 4 Add 53.5 hectares (132 acres), shown as Area 3 on **Map 1**, to the Caledonia Urban Area and designate as Future Development on Schedule “B.1” of the Official Plan.

Area 4: This area is located on the east side of McClung Road and north of Greens Road, east of Chippewa Trail, as shown as Area 4 on **Map 1**. In the preliminary Growth Strategy, this area is primarily intended for future residential development. Empire Communities owns two properties within the area: 134 McClung Road and 166 McClung Road. In a submission to the County, Empire has requested two additions to this area. The first is that the entire property at 134 McClung Road be included within the Caledonia urban boundary. This addition has an area of about 36 hectares (89 acres) and should be considered along with the other lands. The second is a property at

454 Haldimand Road 66 of about 20 hectares (49 acres). The additional lands are shown as Area 9 on **Map 2**. The total land area is 208 hectares (514 acres). A portion of this area, about 9 hectares (22 acres), adjacent to the Chippewa Trail are Riverine Hazard Lands and may not be developable. This reduces the developable portion to about 199 hectares (492 acres).

With the inclusion of these lands, the boundary expansion covers an area of about 208 gross hectares (514 acres). At a density of 40 persons per gross hectare of development, these lands can accommodate a population of 8,000.

The residential development of this area represents a logical extension of the Avalon Community in the northeast area of Caledonia. The area has excellent road access with extensive frontage along McClung Road and Haldimand Road #66), which are designated as arterial roads, designed to carry high volumes of traffic. Further residential development in this area will support the development of commercial and community services to serve the needs of the developing Avalon Community on the west side of McClung Road and the Gateway Development on the south side of Greens Road. Development of the lands will require the preparation of a secondary plan to take account any environmental features, cultural heritage and archaeological resources, the appropriate mix of residential uses and community facilities, servicing and municipal infrastructure, as well as the integration of the development with the adjacent Avalon Community currently under development.

The lands in the proposed area of extending the Caledonia urban boundary are currently farmed for a variety of cash crops. A cattle farm is located on the north side of County Rd 54, east of the Caledonia urban boundary. The barns on this farm are approximately one kilometre (0.6 miles) away and the minimum separation distance calculation carried out for this farm indicates that the proposed development of these lands will not be impacted by this livestock operation or vice versa. There is residential

development within the Caledonia urban boundary on the east side of McClung Road, at its intersection with County Rd #54, which is closer to this livestock farm.

Recommendation # 5: Add 208 hectares (514 acres) of land, as shown as Areas 4 and 9 on **Map 2** to the Caledonia Urban Boundary and designate as “Residential” on Schedule “B.1” of the Official Plan.

Area 5 The Council preliminary Growth Strategy adds an area on the east side of McClung Road (Area 5 on **Map 1**) to be placed in a non-development land use designation. The subject area is comprised of two properties; the Caledonia Soccer Complex with 38.5 hectares (95 acres) and accessed from the former Georgia Pacific mine entrance and an area of 4.5 hectares (11 acres) along McClung Road owned by Empire Communities. Empire Communities has requested that this property be included within the Caledonia urban boundary for potential commercial and residential purposes. The Empire Communities property is shown as Area 16 on **Map 2**.

The Caledonia Soccer Complex is operated by the Haldimand Youth Soccer Club. The soccer facility contains 15 fields of various sizes, a parking area and a fieldhouse with washrooms. The property was deeded to the County on the condition that it be used for community recreation purposes. The County, in the preliminary growth strategy, has proposed that the fields be placed in a non-development category. Another option to consider is the creation of a new Major Open Space land use designation in the Official Plan and to apply it to this site. This designation would support the continued operation of the Caledonia Soccer Complex and provide some flexibility to the development of further facilities on the site that are ancillary to and supportive to the operation of the soccer fields. In the Town of Haldimand Zoning Bylaw 1-H 86, the Caledonia Soccer Complex is mostly zoned “Open Space”, with a Hazard Land” zone bisecting the property. The Open Space zone does not permit agricultural type uses. The zoning on the lands means that the lands are not developable except for recreational purposes. While the Strategy calls for the lands to be added to the Caledonia urban boundary, these lands will not increase development opportunity in Caledonia.

The Ontario Growth Secretariat of the Ministry of Municipal Affairs and Housing, in its review of the draft Official Plan Amendment and supporting background material have commented that the land needs analysis carried out to justify urban boundary expansions did not provide justification to expand such boundaries for open space purposes. The arguments that this expansion is to recognize an existing and long-standing recreational facility and that the lands were donated for that specific purpose were not persuasive.

Correspondence received Haldimand Youth Soccer on February 5, 2021 and included in the Council package for the February 9th, 2021 public meeting, indicated that the Soccer Club did not support moving the soccer fields into the Caledonia urban boundary so as to protect the recreational facility for future generations. However, the letter did indicate support for redesignating the lands as “Open Space” for recreational purposes.

As a result of these comments, it is recommended that the Caledonia urban boundary not be expanded to include the Caledonia Soccer Park and that the Official Plan designation of the lands be changed to a new Major Open Space land use designation.

Empire Communities has requested that the 4.5 hectare (11 acres) parcel at 66 McClung Road, which has formerly served as the site for their Avalon sales office, be developed for commercial purposes to serve the Avalon residential community. These lands are shown as Area 16 on **Map 2**. The property is zoned “Agricultural” in the Town of Haldimand Zoning Bylaw. The adjacent property, the Caledonia Soccer Complex, is zoned “Open Space” and the property immediately to the south is zoned to permit residential development. The property is well-positioned within the Avalon Community and to the long-term proposed residential developments further to the north, along the east side of McClung Road. Empire Communities is proposing to develop the lands for mixed-residential/commercial purposes. This is a reasonable use for the property as the

commercial uses can serve the adjacent residential developments and apartment units above the commercial space are needed in the community.

Recommendation # 6: That the lands identified as Area 5 be designated as Major Open Space on Schedule “B.1” of the Official Plan.

Recommendation # 7: Add the property at 66 McClung Road, shown as Area 16 on **Map 2** with an area of 4.5 hectares (11 acres) to Caledonia Urban Area and designate as Residential on Schedule “B.1”.

Area 6 The preliminary Growth Strategy proposed the removal of lands on the north side of Stirling Street (7th Line) and west of the CNR line from the Caledonia Urban Area (see Area 6 on **Map 1**). The property has an area of 4.67 hectares (12 acres). Stirling Street does not cross over the CNR Line. As a result, the subject lands cannot be accessed directly from within the urban area and are not serviced. The lands are currently designated as “Agricultural” in the Official Plan and zoned “Agricultural” in the Town of Haldimand Zoning Bylaw. It is appropriate to remove these lands from the Caledonia urban boundary.

Included in Council's agenda package for its February 9th, 2020 meeting was correspondence from the owner of these lands requesting that these lands remain within the Caledonia urban boundary so that the lands may be developed should services eventually be extended westward of the railway corridor. This request has been reviewed with the conclusion that the recommendation should stand. Extending services to the area for development west of the railway corridor would require the construction of an access road as Stirling Street does not cross the corridor and would be expensive in relation to the amount of development that could be yielded from the lands considering the buffer requirements along the railway corridor.

In reviewing this matter, it has been concluded that the lands immediately to the south of Area 6 on **Map 1**, should also be removed from the Caledonia urban boundary.

These lands, which are 0,95 hectares (2.35 acres), are shown as Area 17 on **Map 2** and are municipally known as 225 Stirling Street. The lands are within the Agriculture designation subject to Site Specific Policy Area Hal 37 in the Official Plan. Hal 37 states that on the lands:

single detached residential development shall not require municipal water or sanitary sewer services and the development of the lands may proceed on private, individual water and sanitary sewer system in accordance with the requirements of the County Building and By-law Enforcement Division.

These lands, which have been developed in accordance with the above SPA for a single detached dwelling, are subject to the same servicing constraints as Area 6 and it is appropriate to remove the lands from the Caledonia urban boundary. The railway corridor would then be a very specific demarcation of the Caledonia urban area.

Recommendation # 8: Remove 4.67 hectares (12 acres), identified as Area 6 on **Map 1** from the Caledonia Urban Area in the Official Plan and leave in the Agricultural designation on Schedule “B.1” of the Official Plan.

Remove 0.95 hectares (2.35 acres), identified as Area 17 on **Map 2**, and municipally known as 225 Stirling Street, from the Caledonia Urban Area in the Official Plan and leave in the Agricultural and Hal.37 site specific policy area designations on Schedule “B.1” of the Official Plan.

Area 7 The preliminary Growth Strategy refers to the former Georgia Pacific and Gateway lands on the east side of Argyle Street North and north of the former railway line, is within Area 7 on **Map 1**, as an area of reconsideration. Much of this area, other than the portions that are designated as “Riverine Hazard Lands” or “Other Hazard

Lands” due to undermining, are designated as “Urban Business Park” of which a large part, mostly on the former Georgia Pacific portion of the area, is also designated as “Core / Prime Employment Area” on Schedule “I.1”. The preliminary Growth Strategy identifies these lands as an “area for reconsideration” for residential, commercial, open space/recreational and business park uses. These lands are well-positioned within the Caledonia community as a gateway and service type corridor and development applications and proposals have been submitted to develop the lands for uses proposed in the preliminary Growth Strategy. The northern portion of Area 7 was recently approved by County Council, at its meeting in September 2020, for a mix of residential and commercial development and will not be considered further in this report.

The former Georgia Pacific industrial facilities have been demolished and the area remains constrained by undermining and the riverine hazard areas. These constraints do not make the lands suitable for future industrial development and it is important to provide flexibility in the Official Plan to permit consideration of land uses appropriate to the needs of the community. The lands are currently designated for a mix of Urban Business Park, Other Hazard Lands and Riverine Hazard Lands on Schedule “B.1” and a portion is designated as an Employment Area on Schedule “I.1” of the Official Plan.

Planning applications for the redevelopment of these lands have been received and are being reviewed through the development approval process established by the County. A request has also been received to have the Official Plan amended to facilitate the redevelopment of the lands. Given the location of these lands along the east side of Argyle Street North and that a significant portion is included within the Built Boundary, the appropriate development of these lands is desirable for the Caledonia community. Redevelopment of the lands represent the opportunity to redevelop what is essentially a brownfield property. The property is subject to constraints relating to undermining, riverine hazard areas and natural heritage features that need to be considered in the redevelopment of the property. Due to the environmental constraints and abandonment of the railway that formerly passed through these lands, the Employment Area

designation on Schedule “I.1” should be removed from the lands on the east side of Argyle Street North.

With the Gateway development, with its mix of proposed residential and commercial uses, having received County Council approval, residential development on the portions of the Georgia Pacific lands not constrained by hazard lands and natural environmental features, is appropriate. A north-south road linkage between the properties is planned in the Gateway development and this is proposed to be extended through the former Georgia Pacific lands. The property can be placed in a site specific policy area with the principle that the lands be developed for a mix of residential, open space and hazard lands and natural environmental areas with development being subject to subdivision and zoning bylaw approval by Council, following the completion of plan review and public consultation on the proposed development.

Recommendation # 9: That the request to redesignate the former Georgia Pacific lands within Area 7 on **Map 1** from Urban Business Park, other Hazard Lands and Riverine Hazard Lands and to a site specific policy area on Schedule “B.1” of the Official Plan to facilitate the residential development of the lands having regard to the hazard lands, gypsum deposits and natural environmental features on the lands be approved.

and

That the Employment Area designation on Schedule “I.1” of the Official Plan be removed from the lands to the east of Argyle Street North and south of County Road 66.

Engineering Services Review – Expansion Lands

A servicing review of the lands identified for expansion, was carried out by the engineering consultants at J.L. Richards and C3 Water. The former Georgia Pacific Lands was also included in this review. These consultants are familiar with engineering services in Caledonia having worked on the Caledonia Master Servicing Plan Update. The purpose of the review was to examine the impacts of future development on water, wastewater, storm water infrastructure and transportation services. The review was intended to be high level and the development of any of the areas included in the review will require more detailed engineering investigations and servicing plans. The lands included in the engineering services review are shown on **Map 3**.

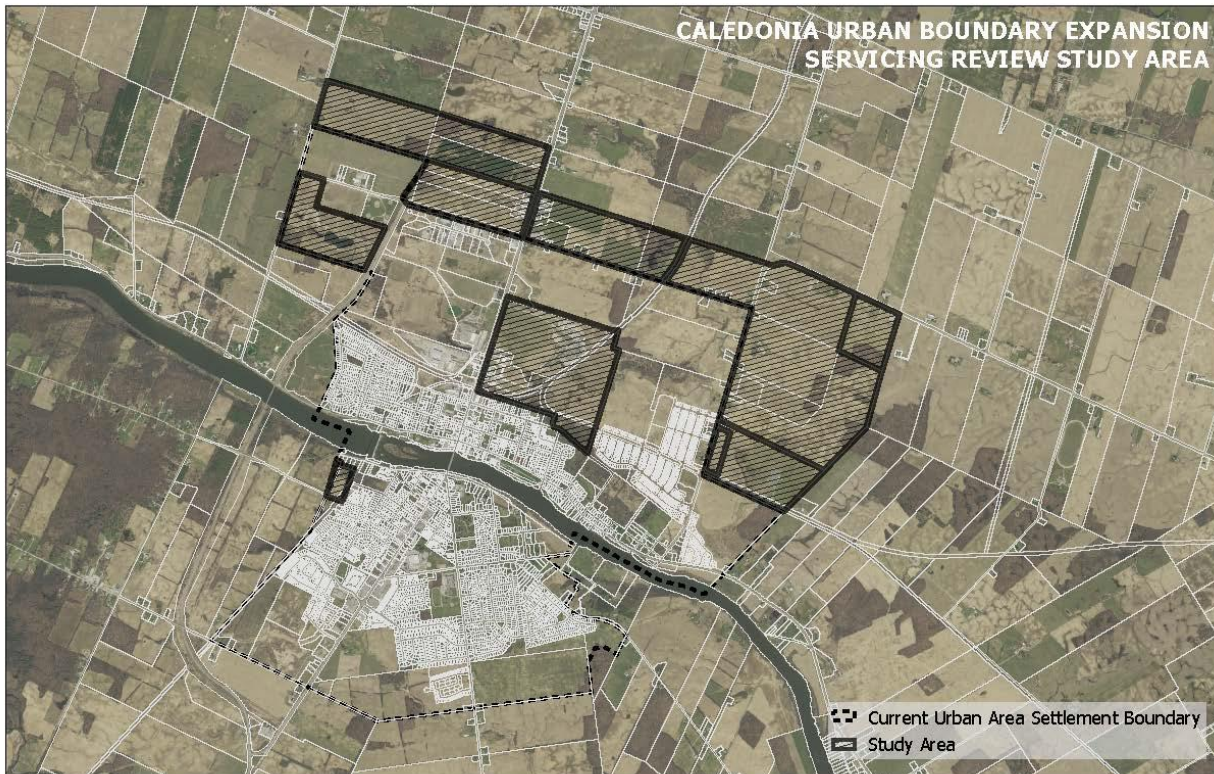
According to the engineering analysis, the urban expansion lands have a total area of about 431 hectares (998 acres). Of this total, 25 hectares (62 acres) are identified as either hazard lands or are unserviceable and 38.5 hectares (95 acres) are slated for non-development (existing sports fields). The land area also does not include the former Georgia Pacific property, while included in the engineering study, are within the urban boundary. This leaves a balance of 367 hectares (907 acres) for potential development. Some of this land will be needed for internal roads, the extension of the Highway 6 Corridor north of Greens Road and other infrastructure such as stormwater.

The results of this engineering analysis review can be summarized as follows:

Water Servicing

- The total maximum daily demand (MDD) for Caledonia, including the expansion lands will be 22.1 ML/d which is above the maximum daily water supply of 13.8 ML/d in the water supply agreement with the City of Hamilton. Options to increasing the supply are to renegotiate the agreement with Hamilton or to expand the Nanticoke WTP and distribution system to service Caledonia. This matter will be discussed in greater detail in Section 7 of this report;

management facilities to service the development lands.



Map 3

- 5,200 m³ of storage will be required over and above the additional storage of 5,000 m³ identified in the Caledonia MSP;
- To maintain adequate pressures in the water distribution system and to maintain required water levels in the elevated tank, the urban expansion demands the addition of a twinned watermain along McClung Road. Note that this was recommended in the Caledonia MSP but the addition of expansion lands will require this improvement to be constructed earlier than originally planned.

Wastewater

- Construct a new wastewater treatment plant north of the Grand River to handle flows from north of the river. When the existing WWTP is decommissioned, this new WWTP will handle all wastewater flows in

Caledonia. The north WWTP was recommended in the Caledonia MSP but the timing and ultimate capacity of the plant will be impacted by the development and growth rates on the expansion lands;

- The north industrial lands will require the construction of new pumping station and forcemain;
- Increase the size of the collector sewers for the north industrial lands from 250 mm to 450 mm;
- Upgrade the north sewage pumping station (SPS); The preferred route for the forcemain from the North SPS is southward along Argyle Street North and discharging into the gravity sewer system at Grand Trunk Lane, this is to be confirmed by a Schedule B, Class EA;
- Upgrade the existing McClung SPS and build additional pumping station capacity in the McClung area;
- Upgrade the Nairne SPS and increase the diameter of the forcemain from the Nairne SPS to the new wastewater treatment plant (WWTP);
- The pumping station already planned for the Avalon residential development; will need to be upgraded to handle flows from the proposed development within the additional lands;
- Upgrade the McClung pumping station to handle additional flow and upgrade the diameter of the forcemain from the McClung SPS to the WWTP;
- The new north WWTP will be constructed to an ultimate capacity of 15,600 m³/day to handle flows from existing development, 25-year growth and the urban expansion lands. This is an increase in the capacity of 9,700 m³/day required to service the lands within the current urban boundary.
- Upgrades to trunk sanitary sewers will be required.

Stormwater

- The urban expansion has no impact stormwater projects and costs identified in the MSP;

- Seven (7) regional stormwater management facilities may be required to service the expansion lands;
- The estimated cost of the stormwater facilities is approximately \$9.8 million.

Transportation

The build out of the urban expansion lands will require the following additional improvements to the transportation in Caledonia:

- Argyle Street at Caithness Street – turning lane and receiving lane improvements;
- Argyle Street at Sutherland Street – upgrade intersection to full signalization;
- Argyle Street at Wigton Street – upgrade intersection to full signalization and provide permissive south bound left turn signal and phasing;
- Caithness Street and McClung Road – double east bound left turn lanes with protected phasing;
- Highway 6 By-Pass and Greens Road – double west bound left turn lanes with protected phasing, improve right turn lanes movements;
- Argyle Street/Highway 6/Greens Road – upgrade northbound right turn movements, eastbound and westbound lanes and westbound left turn lane;
- McClung Road and County Road 66 – south intersection, upgrade intersection to full signalization or roundabout, improve lanes for north bound, east bound and southbound turns;
- McClung Road and County Road 66 – north intersection – upgrade to full signalization of roundabout and improvements for westbound traffic;
- Caithness Road and Mines Road – upgrade intersection to full signalization;
- Greens Road – widen to 4 lanes between Argyle Street and Highway 6 Bypass; and County Road 66 – widen to 4 lanes between Highway 6/Argyle Street and McClung Road.

With the installation of the identified infrastructure improvements, the potential expansion lands can be provided with municipal services. A large proportion of the

costs to provide the infrastructure improvements will be borne by the land developers, either directly or through development charges. More detailed engineering analysis, some of which will require environmental assessments in accordance with the procedures of the *Environmental Assessment Act*, will be required in extending services to the lands. The engineering analysis has demonstrated that there are no significant hurdles or firm impediments to servicing of the proposed expansion lands. There is a clear demonstration of feasibility to extend, connect and construct the necessary infrastructure to bring these lands 'on line' in future in concert with other major infrastructure projects (e.g. new wastewater treatment plant on north side of Grand River).

Other Employment Areas

Lands on the west side of Argyle Street North, around the former Domtar quarry and along the Highway 6 Bypass and north of Orkney Street West, are identified as an "Employment Area" on Schedule "I-1" and with the "Urban Business Park" land use designation on Schedule "B-1". The Riverine Hazard Lands designation bisects this area. The former Domtar site is designated as "Other Hazard Lands" (characterized as undermined area) which limits uses and does not permit buildings. The area is shown as Area 10 on **Map 2**. The area has a mix of zones in the Comprehensive Zoning Bylaw which include Agriculture (A), Hazard Land (HL) and "General Industrial" (MG).

The southern portion of this area, south of the rail line is subject to a Site Specific Policy Area (Hal. 10). This policy states that:

It is the intent of the County that these lands be developed in a manner that is compatible with the existing development in the area and may include residential, institutional, light industrial and or open space uses. The development of these lands shall not be permitted until such a time as a detailed review of the property is completed and accepted by the County.

The detailed review of the property has not been carried out. The range of uses to be considered (residential, institutional, light industrial and or open space) is not consistent with the Growth Plan 2020 policies for Employment Areas.

The Employment Area and Urban Business Park designations appear to be the residual left over from the lands included in the former Domtar property site. These lands have limited or no road access, are mostly not serviced, should be developed through a comprehensive plan in conjunction with the adjacent lands that were formerly mined. Without such a plan, it is unlikely that these lands will be developed for employment purposes or for any other land use, except perhaps those uses that do not require buildings or structures. Due to these constraints and the need for more comprehensive planning for this area, it should not be considered as part of the Employment Area inventory.

Recommendation # 10: Remove 38 hectares (94 acres), shown as Area 10 on **Map 2** from the Employment Area designation from Schedule “I. 1” of the Official Plan and leave in the Urban Business Park designation on Schedule “B. 1” of the Official Plan.

Caledonia Henning Park

Caledonia Henning Park located at 161 Greens Road, at the intersection of the Highway 6 Bypass and Greens Road is adjacent to these lands. The location is shown as Area 11 on **Map 2** and is about 6 hectares (15 acres) in area. Henning Park is a major sports field with six ball diamonds and operated by Caledonia Minor Baseball Association. This property is not available for development for employment purposes. It was recommended in the original growth strategy report that it would be appropriate for a facility of this scale and significance to the community to be designated as Major Open Space which would be a new designation for the Official Plan. The proposed interchange and access ramp for Highway 6 at Greens Road will impact Henning Park. The extent of the impact cannot be assessed until better plans for the proposed interchange are received and can be discussed with the organization operating Henning Park. Until this matter can be assessed more fully, this recommendation should be held in abeyance.

Agricultural Impact Analysis

An Agricultural Impact Analysis (AIA) report has been prepared for the proposed expansion lands in compliance with the draft guidelines available from the Ontario Ministry of Agriculture, Food and Rural Affairs. This analysis examined the proposed expansion lands as a Primary Study Area, lands within 1,500 metres (4,921 feet) of the Primary Study Area and alternative potential development areas in the vicinity of Caledonia and around the County's other five urban areas. The basic conclusion from this analysis is that the alternative potential development lands are not better suited for urban expansion as they are subject to a variety of constraints or would not have a lesser impact on the agricultural system including the agri-food network than the lands evaluated as the Primary Study Area.

A concern identified in the AIA report was along the interface between existing farms and the urban expansion areas. While no Minimum Distance Separation (MDS) issues exist/are created by the expansion proposals, development of the expansion areas will require the preparation of secondary plans which will consider a full range of servicing and planning matters. As part of the secondary plan process, potential impacts of development on neighbouring farms will need to be identified and appropriate mitigation and/or avoidance measures put in place to minimize the impact of development on farms.

Other Urban Boundary Requests

Stovel and Associates Request

A request has been received from Stovel and Associates to include the following properties in the Caledonia urban area:

- 675 Highway 6;
- 679 Highway 6;
- 703 Highway 6; and

- 336 Mines Road.

These properties are owned by Green Horizons Holding Inc., Farmers Fertilizer Inc. and Shantz Station Road Inc. The total land area of these properties is about 101 hectares (249 acres). These lands are outlined as Area 12 on **Map 2**. A portion of the lands, overlap with the area discussed above that is recommended as an expansion to the Caledonia employment area (Area 8 on **Map 2**). This is approximately 20 ha (49 acres). The other lands (approximately 81 hectares / 200 acres) are beyond that recommended by staff at this time for inclusion in an expanded urban boundary.

According to Stovel and Associates, agricultural use of the properties is severely constrained by the poor characteristics of the soils and intensive agricultural operations are restricted by non-farm residential uses in the area. According to the soil capability mapping provided on the County's GIS, the soils on the lands are a mix of Class 2 and Class 3 capability for agriculture. Stovel and Associates and supporting documentation provided in support of the request did not specify the desired land use designation if the lands were to be included within the urban boundary of Caledonia. As the analysis in this report has demonstrated, the lands are not required for residential or community employment purposes. Except for the portion that has been included in the proposed expansion for employment area discussed in this report, the lands are not required for employment land purposes. An engineering analysis to examine the serviceability of all the lands has not been completed.

Recommendation # 12: Other than the area outlined as being within Area 8 on **Map 2**, the request submitted by Stovel and Associates not be approved.

Coscorp Inc. Request

Coscorp Inc. has requested the consideration of two properties that it owns for inclusion in the Caledonia urban area boundary through the Official Plan Update program. These

two properties, which are shown graphically as Areas 13 and 14 on **Map 2**, will be discussed separately.

Area 13

Area 13 is about 43 hectares (106 acres) in area and is located on the north side of River Road, southeast of the Caledonia urban boundary. The municipal address for the property is 4300 River Road. While the urban boundary, on the southside of River Road, terminates across the street from the most western point of Area 13, there is, on the north side of River Road, a distance of about 600 metres (1,970 feet) from the urban boundary. There are several residential properties on the north side of River Road in this gap and estate lot type developments on Elgin Street. The property should not be considered as a contiguous expansion of the urban area boundary, due to this gap.

The property is located within the area designated as a Study Area for a Class EA associated with the potential bridge crossing over the Grand River, connecting the north side of Caledonia along McClung Road with a new arterial road on the south side.

Soils on the property are predominantly Class 3 soil capability for agriculture, with pockets of Class 2 and Class 4 soils. Towards the Grand River, there is an area Class 5 soils. The property, except along the Grand River, is currently farmed.

Area 14

Area 14 is located immediately south of the Caledonia urban boundary and on the west side of McKenzie Road. The property, which has an area of about 40 hectares (99 acres), is municipally addressed as 1475 McKenzie Road. The property is currently being farmed. The soils are predominantly Class 3 capability for agriculture with patches of Class 2 and Class 4 soils.

The property is also located within the area designated as a Study Area for a Class EA, as shown on Schedule “F.4” of the Official Plan associated with the potential bridge

crossing over the Grand River, connecting the north side of Caledonia along McClung Road with the south side.

At present there are two effective bridge crossings over the Grand River serving Caledonia – the Argyle Street bridge at the downtown core and the Highway 6 Bypass to the west of the Caledonia urban area. The Argyle Street bridge crossing and the nearby intersection of Argyle Street with Caithness Street at the heart of the Downtown Core are at capacity and there is limited opportunity to increase capacity. The County is planning to construct new collector and arterial roads, within the present urban boundary in south Caledonia to encourage traffic to use the Highway 6 Bypass. The environmental assessment for this project is underway. Development in the Beattie Estates residential subdivision within the southern boundary of Caledonia and fronting on the east side of McKenzie Road is being phased with a significant portion of the proposed housing units being held back from construction until the completion of these roads. Combined, the two parcels owned by Coscorp Inc. could accommodate about 3,000 new residents. While traffic from these areas may be encouraged to use the Highway 6 Bypass, additional residential development beyond the current urban boundary will undoubtedly put additional pressure on the Argyle Street bridge crossing. The development of the River Road property (Area 13) would preclude the option of connecting the proposed south Caledonia arterial with a bridge crossing to McClung Road. The wastewater pumping station planned for the Beattie Estates subdivision is not being oversized to accommodate other potential developments such as the Coscorp lands. Furthermore, as demonstrated in this report on residential land needs and land supply, these two parcels are not required for development to meet residential growth needs to 2051.

Recommendation # 13: That the request to include the two Coscorp Inc properties, identified as Areas 13 and 14 on **Map 2**, within the Caledonia urban boundary not be approved.

Urban in Mind Planning Consultants Request-316 McClung Road

A request has been submitted by Urban in Mind Planning Consultants to add the property at 316 McClung Road within the Caledonia urban boundary. The property, which is 40 hectares (99 acres) in area, is located at the northeast corner of the intersection of McClung Road and County Road 66. The property is indicated as Area 15 on **Map 2**. The lands are designated as “Agricultural” in the Official Plan and zoned “Agricultural” in the Haldimand Zoning Bylaw. The lands are currently farmed. The soils are predominantly Class 2 soil capability for agriculture, with an area of Class 3 capability soils near its northern property line and several small pockets of Class 4 soils.

The report prepared by Urban in Mind, on behalf of the property owners, did not request a specific land use designation should the lands be included in the urban boundary. Nor does the report provide adequate justification for such an addition. Essentially, the report argues that with the population growth projected for Caledonia in the Watson Report, the potential new 400 series highway to be located north of Caledonia near the Hamilton-Haldimand municipal borders and the proximity of the property to the City of Hamilton, that including 316 McClung Road is a logical extension of the current urban boundary. No needs justification was provided in the Urban in Mind report. Nor did the report provide any timetable for potential new 400 series highway skirting the northern boundary of Haldimand County.

Extending the Caledonia urban boundary to include 316 McClung Road is premature at this time. It would extend development further north along McClung Road, past its northeastern intersection with County Road #66. Further expansion northward should be through a contiguous extension of the entire northern boundary as proposed in the preliminary Growth Strategy. The lands are not required to meet the Caledonia growth needs to 2051 and an engineering analysis to assess the serviceability of the lands has not been carried out.

Recommendation # 14: That the request to add the property at 316 McClung Road, shown as Area 15 on **Map 2**, to the Caledonia urban boundary not be approved.

6.3.2 Cayuga

6.3.2.1 Residential Land Needs

The population and household forecasts for the Cayuga urban area are presented in **Table 27**. Cayuga is expected to almost double in size between 2016 and 2051, growing from a population of 1,900 in 2016 to 3,700 residents in 2051, an increase of 1,800. The number of households is expected to increase by 700 over this period, from 710 households in 2016 to 1,410 households in 2051. This growth represents an average of about 50 new residents and 20 new households annually over the 35-year period.

Table 27				
Cayuga Population and Households Forecast, 2016-2051				
Years	Population ¹	Average Annual Change in Population (%)	Households ²	Average Change in Number of Households
2016	1,900		710	
2051	3,700		1,410	
Growth 2016-2051	1,800	50	700	20
Population includes the census undercount				
1. Watson & Associates, Population, Housing and Employment Forecast Update and Land Needs Assessment, Haldimand County, 2019				
2. Matt Reniers and Associates				
Note Numbers may not add up precisely due to rounding				

The forecast of the total number of housing units by density type for Cayuga is presented in **Table 28**. In 2016, about 73% of dwelling units were low-density units comprised of single detached and semi-detached houses. Medium-density housing units comprised about 13% of all dwelling units and high-density apartment units

comprised 14% of the total dwelling units. The density of housing units is expected to increase over the forecast period to 2051. The proportion of low-density units is expected to decrease to about 65%, the portion comprised of medium-density units will increase to 19% and the number of high-density units is expected to increase to 13% of all housing in 2051.

Table 28

Cayuga Forecast of Housing Units by Density Type: 2016 and 2051

Year		Low-Density	Medium-Density	High-Density	Total
2016	# of Units	520	90	100	710
	% of Total	73	13	14	100
2051	# of Units	910	270	230	1,410
	% of Total	65	19	16	100
Change 2016-2051	# of Units	390	180	130	700

Sources:

1. Watson & Associates, Population, Housing and Employment Forecast Update and Land Needs Assessment, Haldimand County, 2019
2. Matt Reniers and Associates

Note Numbers may not add up precisely due to rounding

Table 29 shows the distribution of the expected new housing units for the 30-year period of 2021 to 2051, within the built boundary and designated greenfield areas of Cayuga, according to the proposed 20% intensification target. The target is for the existing built-up area to accommodate 145 new housing units by 2051, the majority of which are high-density units. The designated greenfield areas of Cayuga are expected to accommodate 544 new housing units by 2051.

Table 29 Cayuga Housing Needs by Planning Area, 20 % Intensification Target: 2021-2051				
Planning Area	Housing Density Type			Total Housing Units
	Low-Density	Medium-Density	High-Density	
Built Boundary	24	18	103	145
Designated Greenfield Area	362	160	21	544
Total	386	179	124	689
Source: Matt Reniers and Associates based on forecasts provided in Watson & Associates Economists Ltd., 2020. Note that numbers may not add up precisely due to rounding				

The residential land needs for Cayuga from 2021 to 2051, provided in **Table 30**, were calculated by using the same methodology that was applied to estimating Caledonia's future land needs. The vacant land supply in Cayuga includes 32 hectares (79 acres) of residential land. This excludes potential residential lands that are constrained by Riverine Hazard Lands that may be subject to flooding. Subject to more detailed analysis of the flooding risk and mapping, flood proofing and the approval of the Grand River Conservation Authority, portions of the lands designated as Riverine Hazard Lands may be developable. About 2 hectares (5 acres) of community employment lands have also been identified within the designated growth area of Cayuga. The land needs analysis has indicated that 10 hectares (25 acres) of additional land are needed for residential and community employment purposes in Cayuga.

Table 30 Cayuga Designated Growth Area Land Need to 2051			
Residential	Household Growth in DGA to 2051	A	544
	Density Factor (units per gross hectare)	B	15
	Land Need	$C=A/B$	36
Community Employment	Employment Growth to 2051	D	310
	Density Factor (jobs per gross hectare)	E	40
	Land Need	$F=D/E$	8
DGA Total	Land Need	$G=C+F$	44
	Vacant Land Supply (hectares)	H	34
	Land Need	$J=G-H$	10
Source: Matt Reniers and Associates based on forecasts provided in Watson & Associates Economists Ltd., 2020 Note that numbers may not add up precisely due to rounding			

6.3.2.2 Employment Area Land Needs

Cayuga currently has a supply of 17 hectares (42 acres) of land designated as Urban Business Park located at the northern boundary of the urban area. Of these lands, approximately 5 hectares (12 acres) are constrained by the Riverine Hazard Land designation which requires that development, if it can be approved, must be floodproofed to the satisfaction of the Grand River Conservation Authority. Only the Urban Business Park lands between Munsee Street North and the Riverine Hazard Lands are designated as an Employment Area on Schedule “I.2” of the Official Plan.

The Employment Area is indicated on **Map 4**. There is about 7 hectares (17 acres) of vacant employment lands in this area. There is about 4 hectares (10 acres) of unconstrained Urban Business Park lands located to the east of the hazard lands. The

development of these lands will require the extension of municipal water and wastewater services.

On Munsee Street North, a residential designation protrudes into the Employment Area designation. One of the principles of the Employment Area designation is to protect manufacturing operations from sensitive land uses. The Employment Area is not shovel-ready, there are surrounding residential which are considered as sensitive uses, and there are farm buildings and a farm residence within the designated area.

Cayuga's employment area land needs to 2051 are provided in **Table 31**. Based on the forecasted population growth, Cayuga is expected to have a demand for 290 new jobs on employment lands by 2051. This job growth is expected to require 18 hectares (44 acres) of employment land by 2051. This demand will lead to a shortage of 11 hectares (27 acres) in the supply of employment lands by 2051.

Table 31		
Cayuga Employment Area Land Need to 2051		
Employment Area Job Growth to 2051	A	290
Employment Growth in Existing Employment Areas (5%)	B	15
Net Employment Growth on Vacant Lands	$C=A-B$	275
Employment Density - Jobs/Hectare	D	15
Employment Area Land Requirement	$E=C/D$	8
Vacant Employment Area Supply (hectares)	F	7
Land Need (hectares)	$G=E/F$	11
Source: Matt Reniers and Associates based on forecasts provided in Watson & Associates Economists Ltd., 2020 Note that numbers may not add up precisely due to rounding		

6.3.2.3 Servicing for Growth

Table 32 provides information on water supply and wastewater treatment capacities and current usage levels for Cayuga. The water supply in Cayuga is part of the system supplied by Hamilton and which also serves Caledonia and portions of York. The maximum day demand of the Caledonia/Cayuga system is currently at 50% of the maximum permitted under the Hamilton/Caledonia Water Servicing Agreement. The capacity of the Hamilton water supply system has previously been presented in the discussion on the Caledonia MSP.

Table 32 Cayuga Water Supply and Wastewater Treatment Capacities, 2020		
System Capacity	Water Supply Treatment Plant (m³/day)	Wastewater Treatment (m³/day)
Rated (C of A) Capacity	n/a	1,200
Estimated Capacity	13,800	1,200
2016-2020 Average Production	5,009	800
Remaining Capacity (Estimated Capacity minus Average Production)	8,791	400
Infill Development Reserve Allocation (5% of Remaining Capacity)	440	20
Total Recommended Capacity (Includes Allocated and Requested Capacity)	1,450.1	233.5
Total Capacity Remaining After Infill Reserve and Recommended Allocation	6,900.9	146.5
Source: Staff Report PDD-36-2020		

The Cayuga WWTP, located just outside of the southern boundary of the urban area, is currently operating at 67% of the facility's rated capacity as stated in its Certificate of

Approval. Of the remaining capacity of 400 m³/day, 20 m³/day has been allocated to potential infill development and a further 242.3 m³/day has been allocated for other developments in Cayuga. The allocated capacity includes residential developments, that when completed, will yield 187 single-detached, 8 semi-detached, 60 townhouse and six apartment units, a total of 261 units. Several commercial developments, a warehouse and the new County administration building have also been allocated capacity.

The unallocated wastewater treatment capacity at the end of 2019 was 146.5 m³/day or 12% of the estimated capacity. Therefore, 88 % of the wastewater treatment capacity is in use or has been allocated for future development. This is insufficient to accommodate the estimated residential and employment growth over the next 30 years. Additional capacity through enhancements to treatment processes or plant expansion will be required to meet future growth needs. Also, inflow and infiltration abatement efforts are anticipated to result in reclaiming a modest amount of treatment capacity.

The preliminary Growth Strategy approved by Council in 2019 did not recommend urban boundary changes and employment areas changes for Cayuga. The future additional land requirements identified for Cayuga are for 4 hectares (10 acres) of community employment lands and 11 hectares (27 acres) of employment area lands. However, as the above servicing analysis has indicated, the existing wastewater treatment capacity is insufficient to meet all of Cayuga's growth needs to 2051. Given the above findings, the following adjustments can be considered for Cayuga: These adjustments are shown on **Map 4**.

1. Remove the Employment Area designation at the north end of Cayuga, shown as Area 1 on **Map 4**, but leave the lands in an Urban Business Park Designation. The vacant lands in this designation are bisected by riverine hazard lands that can constrain development. The lands are also impacted by a residential land use designation which

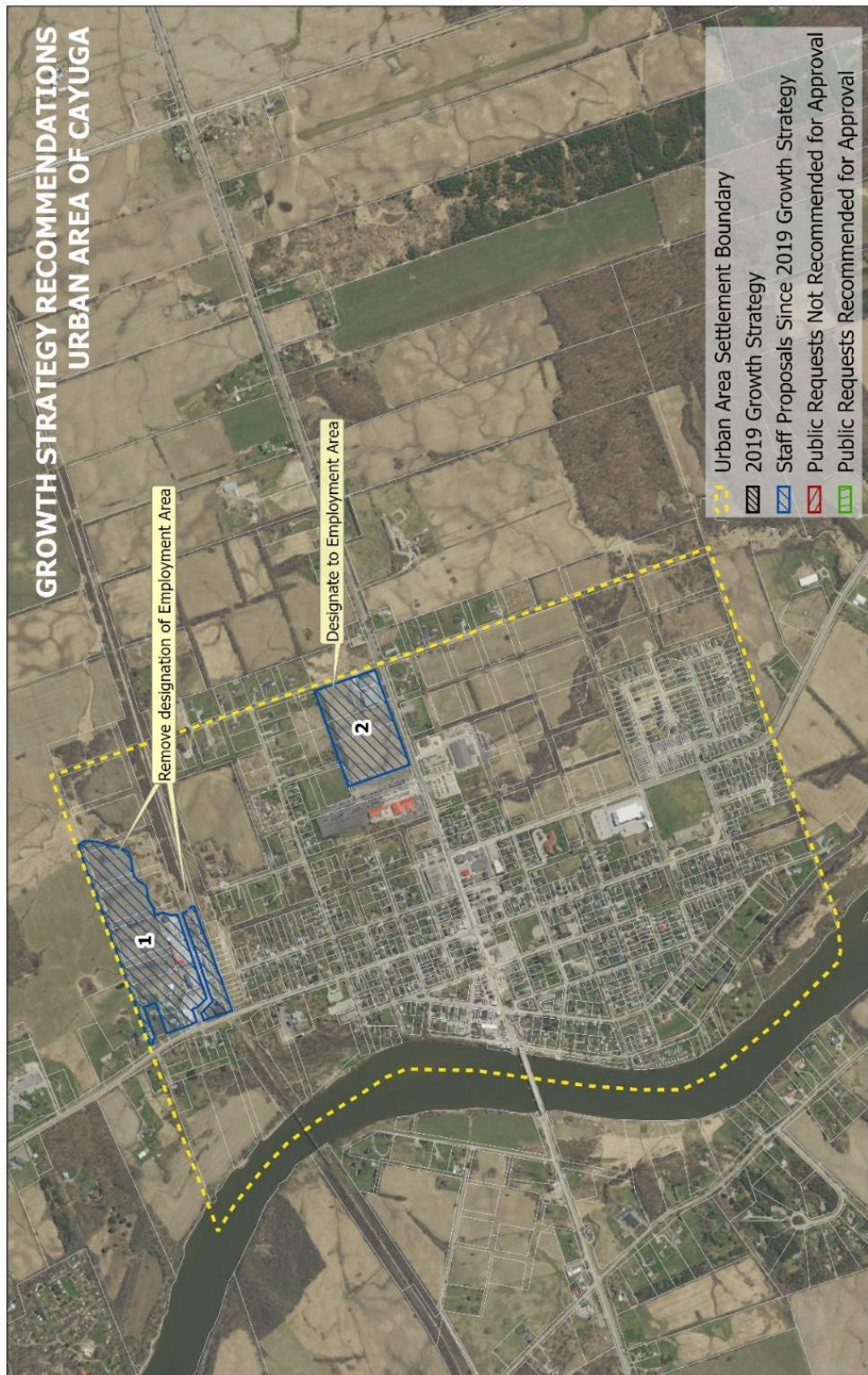
is considered a sensitive use. Furthermore, the lands are not shovel-ready for development. Although the Employment Area designation has been in place for some time, there has been little uptake of these lands for employment purposes. Removing the Employment Area designation can allow for more flexibility in considering development proposals in this area. The frontage along Munsee Street North could be developed for community employment type uses that serve the Cayuga community. Portions of the area may be suitable for residential development. The Housing and Places to Grow Implementation Study, completed in 2009 by Sorenson, Gravely and Lowes Planning Associates, came to the following conclusion in their analysis of these lands for employment development:

The property does not have direct access to the street network. Indian Street East would need to be extended to reach the subject property. This property may be attractive to an agri-business that would benefit from proximity to agricultural operations, however many industries would likely not be attracted to this site due to the access and servicing constraints, and close proximity to the residential area. Similarly, professional services and other small industries may not be attracted to this area because of its isolation from urban services, and commercial amenities.

These comments are still relevant today.

Recommendation # 15: Remove 7 hectares (17 acres) of land, shown as Area 1 on **Map 4**, from the Employment Area designation Schedule “I. 2” and leave in the Urban Business Park designation on Schedule “B. 2” of the Official Plan.

Map 4



2. An area along the north side of Talbot Street East is designated as Urban Business Park in the Official Plan and is subject to the policies of Site Specific Policy Area HCOP-44. There is about 3.5 hectares (9 acres) of vacant land in this area, not including about 1.5 hectares (4 acres) set aside for a storm water management pond. This area is shown as Area 2 on **Map 4**. Several small industrial operations are currently located in this area near the intersection of Talbot Street East and Monture Street North. The industrial uses permitted in this area must be wholly enclosed with no outside storage. The HCOP-44 site specific policies permit a range of employment type uses including offices, institutional, retail, service, health and fitness/recreational uses, warehousing and limited industrial uses. Other than the outdoor display of goods for sale, such as automobiles, all the permitted uses are to be carried out within wholly enclosed buildings. It is appropriate to designate this area as an Employment Area on Schedule “I. 2” to protect the opportunity for job growth and the provision of services that this area can provide for Cayuga and to the County.

Recommendation 16 Designate the area on north side of Talbot Street East, shown as Area 2 on **Map 4** as Employment Area on Schedule “I. 2” of the Official Plan.

These adjustments do not meet all of Cayuga’s future land needs. It was noted that the utilization of the servicing capacity of the Cayuga WWTP is approaching the trigger point at which consideration should be given to expanding the capacity of the plant. While some lands are being removed from the Employment area designation on Schedule “I.1” of the Official Plan, the lands are still recommended to be left in the Urban Business Park land use designation. The additional flexibility that this adjustment provides may assist in meeting some of Caledonia’s future employment needs. Intensification of development within the built boundary of Cayuga along the main commercial streets and on under-utilized properties can also assist in meeting future needs. Further expansion of the Cayuga urban boundary requires more detailed analysis of potential growth areas and infrastructure requirements.

6.3.3 Dunnville

6.3.3.1 Residential Land Needs

The population and household forecasts for the Dunnville urban area are presented in **Table 33**. Dunnville is expected to grow by 2,100 new residents between 2016 and 2051 representing an average annual growth of 60 persons. The number of households is expected to increase by 940 by 2051, representing about 25 new households each year.

Table 33 Dunnville Population and Households Forecast: 2016-2051				
Years	Population ¹	Average Annual Change in Population (%)	Households ²	Average Change in Number of Households
2016	6,100		2,600	
2051	8,200		3,540	
Growth 2016-2051	2,100	60	940	25
Population includes the census undercount 1. Watson & Associates, Population, Housing and Employment Forecast Update and Land Needs Assessment, Haldimand County, 2019 2. Matt Reniers and Associates Note Numbers may not add up precisely due to rounding				

The 2051 forecast for Dunnville of the total number of housing units by density type is presented in **Table 34**. In 2016, about 70% of dwelling units were low-density units. Medium-density housing units comprised 12% and high-density apartment units comprised another 17% of the total dwelling units. The density of housing units is expected to remain relatively stable over the forecast period to 2051. The percentage of low-density units is expected to decrease slightly to 67%, the portion comprised of medium-density units will increase slightly to about 16% of all housing units and the portion of units that are high-density will increase marginally to about 18% of the total dwelling units by 2051.

Table 34					
Dunnville Forecast of Housing Units by Density Type: 2016 and 2051					
Year		Low-Density	Medium-Density	High-Density	Total
2016	# of Units	1,830	320	450	2,600
	% of Total	70	12	17	100
2051	# of Units	2,360	560	620	3,540
	% of Total	67	16	18	100
Change 2016-2051	# of Units	530	240	170	940
Sources:					
1. Watson & Associates, Population, Housing and Employment Forecast Update and Land Needs Assessment, Haldimand County, 2019					
2. Matt Reniers and Associates					

Table 35 shows the distribution of the expected new housing units for the 30-year period from 2021 to 2051 between the built boundary and designated greenfield areas of Dunnville, according to the 20% intensification target. The target is for the existing built-up area of Dunnville to accommodate 179 new housing units, the majority of which will be high-density units by 2051. The greenfield areas of Dunnville are expected to accommodate 672 new housing units, primarily low-density units, by 2051.

Table 35				
Dunnville Housing Needs by Planning Area, 20 % Intensification Target: 2021 - 2051				
Planning Area	Housing Density Type			Total Housing Units
	Low-Density	Medium-Density	High-Density	
Built Boundary	30	22	127	179
Designated Greenfield Area	447	198	26	672
Total	477	221	153	851
Source: Matt Reniers and Associates based on forecasts provided in Watson & Associates Economists Ltd., 2020				
Note that numbers may not add up precisely due to rounding				

The residential land needs for Dunnville from 2021 to 2051 was calculated by using the same methodology that was applied to estimating Caledonia's future land needs (see **Table 36**). The vacant land supply in the designated growth area of Dunnville is about 18 hectares (44 acres), all of which is residential land. There is a parcel of vacant land of about 5.7 hectares (14 acres), designated as a site specific policy area (Dun. 43) to permit retail development, but this site is almost entirely also within the Riverine Hazard Land designation and is constrained due to concerns about potential flooding. The analysis indicates that about 34 hectares (84 acres) of land are needed to meet Dunnville's residential and community employment growth requirements to 2051.

Table 36			
Dunnville Designated Growth Area Land Need to 2051			
Residential	Household Growth in DGA to 2051	A	672
	Density Factor (units per gross ha.)	B	15
	Land Need (ha.)	$C=A/B$	45
Community Employment	Employment Growth to 2051	D	300
	Density Factor (jobs per gross ha.)	E	40
	Land Need (ha.)	$F=D/E$	8
DGA Total	Land Need (ha.)	$G=C+F$	53
	Vacant Land Supply (ha.)	H	18
	Land Need (ha)	$J=G-H$	35
Source Matt Reniers and Associates based on forecasts provided in Watson & Associates Economists Ltd., 2020. Note that numbers may not add up precisely due to rounding			

6.3.3.2 Employment Area Land Needs

Currently, Dunnville has a total supply of 75 hectares (185 acres) of vacant land within its designated employment area which are in the eastern area of the community. The area is known as the Frank A. Marshall Business Park. Of this supply, about 45 hectares (111 acres) are within the designated Riverine Hazards Lands and development on the lands must meet the flood proofing requirements of the Grand River Conservation Authority. The unconstrained vacant land supply in Dunnville's employment lands is 30 hectares (74 acres).

As indicated in the analysis presented in **Table 37**, employment lands in Dunnville will be required to accommodate 510 new jobs by 2051. At an average employment density of 15 jobs/hectare for new development, this job growth will require 32 hectares (70 acres) of employment land by 2051. When compared to the unconstrained supply, this leaves a need for two additional hectares (5 acres) of employment area land.

Table 37		
Dunnville Employment Area Land Need to 2051		
Employment Area Job Growth to 2051	A	510
Employment Growth in Existing Employment Areas (5%)	B	25
Net Employment Growth on Vacant Lands	$C=A-B$	485
Employment Density - Jobs/Hectare	D	15
Employment Area Land Requirement	$E=C/D$	32
Vacant Employment Area Supply (hectares)	F	30
Land Need (hectares)	$G=E/F$	2
Source: Matt Reniers and Associates based on forecasts provided in Watson & Associates Economists Ltd., 2020 Note that numbers may not add up precisely due to rounding		

6.3.3.3 Servicing for Growth

Information on water treatment and wastewater treatment capacities is provided in **Table 38**. Dunnville is supplied with potable water from Lake Erie by the Dunnville Water Treatment Plant through an intake located near Port Maitland. The maximum daily demand is about 57% of the plant's estimated winter capacity. Considering the allocations that have been set aside for infill developments and proposed residential and commercial developments, the remaining unallocated capacity is about 39%. The residential developments that have been allocated water capacity, include 101 single detached units, 56 semi-detached, 188 townhouse and 84 apartment units. These units comprise 45% of Dunnville's estimated housing requirements to 2051. Dunnville has sufficient water treatment capacity to handle future growth.

Table 38 Dunnville Water Supply and Wastewater Treatment Capacities, 2020		
System Capacity	Water Supply Treatment Plant (m³/day)	Wastewater Treatment (m³/day)
Rated (C of A) Capacity	14,500	7,728
Estimated Capacity	14,500 (Summer) 10,000 (Winter)	7,728
2016-2020 Average Production	5,798	4,318
Remaining Capacity (Estimated Capacity minus Average Production)	4,476	3,410
Infill Development Reserve Allocation (5% of Remaining Capacity)	223	171
Total Recommended Capacity (Includes Allocated and Requested Capacity)	295.8	793.3
Total Capacity Remaining After Infill Reserve and Recommended Allocation	3,957.2	2445.7
Source: Staff Report PDD-36-2020		

Average wastewater treatment demand is about 56% of Dunnville's Wastewater Treatment Plant capacity. After taking into consideration allocations for infill developments and proposed developments within the community, the remaining unallocated capacity is 2,445.7

6.3.3.4 Boundary and Designations Adjustments

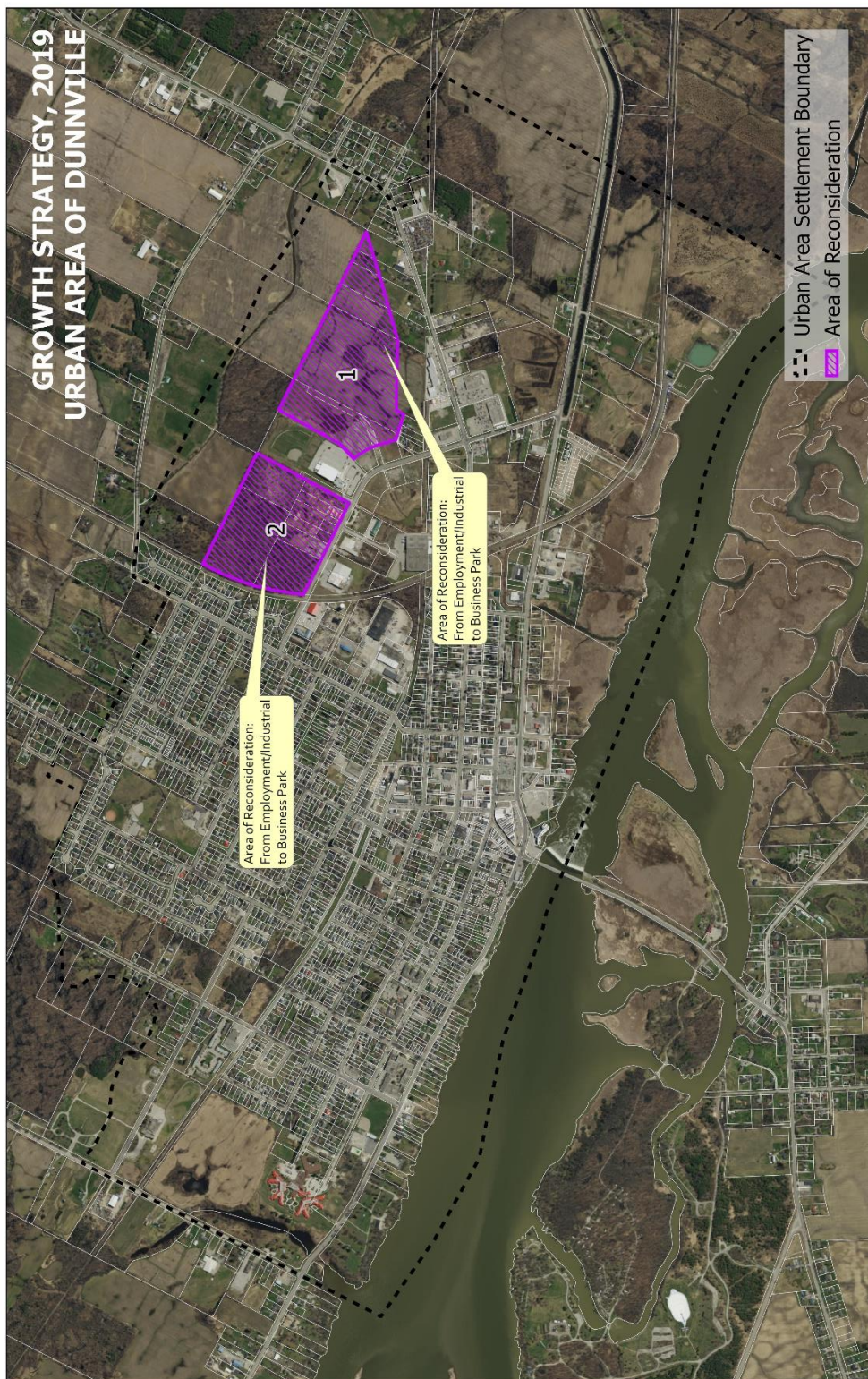
The preliminary Growth Strategy approved by County Council in September 2019 included two changes that impact designated employment lands in Dunnville. These areas are shown on **Map 5**.

A further consideration is that significant portions of the Frank Marshall Business Park lie within areas designated as riverine hazard lands which requires floodproofing to the satisfaction of the Grand River Conservation Authority before development can take place. This makes the lands less desirable for employment type development. The above analysis in **Table 36** has also estimated that there will be a shortage of greenfield residential lands in Dunnville of 34 hectares (84 acres) by 2051.

Employment Urban Industrial to Residential

The preliminary Growth Strategy suggests that the eastern portion of the Frank Marshall Business Park be re-designated from Employment/Urban Industrial to Residential (see Area 1 on **Map 5**). This is an area of about 20 hectares (49 acres), almost all of which is subject to the Riverine Hazard Land policies of the Official Plan and would not have been included in the supply of vacant employment area land inventory. This area may be appropriate for residential development as it has convenient access to the community commercial areas that have recently developed along Broad Street East and to community recreation facilities and to employment opportunities.

Map 5



A major problem to the development of this area is the extent of the Riverine Hazard Lands. The Riverine Hazard lands are mapped as an overlay over the Urban Industrial and Business Park designations for the area on Schedule “B.3” of the Official Plan. The Riverine Hazard Land designation in this area should be considered as part of the floodway of the Grand River. It should be noted that the Riverine Hazard Land designation on Schedule “B.3” is much more extensive than that shown on Schedule “I.3” for Employment Areas in Dunnville. The Schedule “B.3” mapping of the Riverine Hazard Lands closely corresponds to the Grand River Conservation Authority (GRCA) mapping of the floodplain lands in Dunnville.

The area would benefit from more detailed engineering investigation of the extent of the floodplain and the opportunity of applying the two-zone floodway flood fringe management approach as is applied elsewhere in the County. Under this concept, development within the flood fringe may occur subject to appropriate floodproofing measures and the approval of the Conservation Authority. Such an investigation should also examine the expansion capabilities of existing storm water management facilities in the area and the need for any additional facilities. The area is a potential candidate for the application of the two-zone concept due to the low levels and velocities of estimated flood waters. When the extent of the floodplain and potential flood fringe areas are identified, the feasibility of residential development or other uses on the lands can be investigated. As there is a demonstrated need for more residential and community employment lands to meet Dunnville’s growth needs, priority in these investigations should be given to determining the feasibility of such development.

Development of individual properties in the areas subject to the Riverine Hazard lands designation is not likely to occur until the broader flood plain in the area is studied. The studies are costly and risky for individual property owners to undertake on their own. Until the floodplain in this area is investigated by qualified engineers, the lands should be placed into a Site Specific Policy Area to reserve the lands for future development pending the outcome of the floodplain investigations. This designation should apply to

all undeveloped floodplain lands east of Tamarac Street and north of Broad Street (Highway 3) and south of Logan Street. This area extends beyond the current urban boundary of Dunnville. Dunnville has a shortage in potential residential development lands and the lands south of Logan Street are a logical extension to the Dunnville urban area and the technical studies should include these lands. This extension is shown on **Map 6**.

It should be noted that the County has initiated the Frank Marshall Business Park Floodplain Analysis and Scoped Master Servicing Plan Study. The Floodplain Analysis component of this study will determine if and where a two-zone concept for the floodplain can be applied with the objective of permitting development, with conditions, within the flood fringe. The Scoped Master Servicing Plan will provide recommendations on water, sanitary, stormwater, and road infrastructure to develop the area into a mixed-use neighbourhood. Additional land use recommendations may result from this study.

Employment Urban Industrial to Urban Business Park

The removal of the lands from the Employment Area designation on Schedule “I. 3” and to the redesignation from Urban Industrial to Urban Business Park designation will provide more flexibility to the future use of these lands located on the north side of Ramsey Drive at the western boundary of the existing Employment Area designation (see Area 2 on **Map 5**). The subject lands are approximately 16 hectares (40 acres) in area. The removal of the area from the Employment Area designation on Schedule “I.3”, means that a change in designation of the lands, particularly what are not considered as employment uses in the Growth Plan 2020 would not require a municipal comprehensive review, providing Council with greater flexibility in considering proposals for the development of the lands. A portion of these lands could be re-designated to community employment type land uses to meet the expected shortfall in community employment lands in Dunnville by 2051. It should also be noted that the current land use designation of “Urban Industrial” is restrictive in the range of permitted industrial uses. Also, the residential neighbourhood on the east side of Tamarac Street is located



Map 6

close to this area of reconsideration. The Frank A. Marshall Business Park has been slow to develop and adding more flexibility to future land uses while still encouraging employment generating activities may facilitate the further development of the remaining vacant lands.

With the redesignation of the Employment Area lands as suggested by Council's preliminary Growth Strategy, there is no need to leave the remnant portions not included in the strategy and located on the north side of Ramsey Drive within that designation as well (see Areas 3, 5 and 7, **Map 6**). These lands are currently designated as Urban Business Park and much of the area is subject to the riverine hazard lands designation. A portion of the area is now occupied by the Dunnville Soccer Park.

The Dunnville Memorial Arena site should also be removed from the Employment Area designation. The soccer park and arena properties back on to each other and Schedule "B.3" shows the two sites being linked by trails. The removal of the arena property will not impact on the supply of available Employment Area land supply. It would be appropriate to re-designate the Dunnville Memorial Arena property and Dunnville Soccer Park as Major Open Space due to their significance to the community. The Ontario Growth Secretariat of the MMAH as expressed a similar concern with the inclusion of the Dunnville Soccer Club in Dunnville urban areas as it did with the inclusion of the Caledonia Soccer Club into the Caledonia urban area. As a result, it is no longer recommended that the Dunnville Soccer Club property be included in the Dunnville urban area. It will, however, be recommended to receive a Major Open Space designation which is a new designation proposed in the County's Official Plan.

Agricultural Impact Analysis

Due to the environmental nature of much of the lands on the north and east of the current Dunnville urban boundary, the extension of the urban boundary to Logan Road should have minimal impact. Logan Road would make a clear and definitive boundary for the Dunnville

urban area which would eliminate the situation in which the boundary cuts through the middle of properties. Logan Road would make a logical boundary. Extending the urban boundary to Logan Road will not impact the agri-food network. However, there is an equestrian centre located at 74 Logan Road and the calculated minimum separation distance from this facility extends into the south side of Logan Road into the area proposed for boundary expansion. Mitigation or avoidance measures will need to be identified and implemented to ensure that there will be negative impact on the equestrian centre.

Recommendation #17 Remove the Employment Area designation on Schedule “I.3” of the Official Plan on all lands north of Ramsey Drive as shown as Areas, 1, 2, 3, 5 and 7 on **Map 6**.

Recommendation # 18 Redesignate 20 hectares (49 acres), shown as Area 1 on **Map 6** from the Urban Industrial designation on Schedule “B.3” of the Official Plan to a Site Specific Policy Area for Future Development.

Recommendation # 19 Expand the Dunnville Urban Boundary to Logan Road, shown as Areas 4, 6 on **Map 6** and designate Areas 1, 3, 4, and 6 as a Site Specific Policy Area for Future Development on Schedule “B.3”.

Recommendation # 20 Redesignate the Dunnville Memorial Arena and the Dunnville Soccer Park properties, shown as Area 7 on **Map 6** as Major Open Space, Schedule “B.3” of the Official Plan.

Recommendation # 21 Re-designate to Urban Business Park, the 16 hectares (40 acres) of land shown as Area 2 on **Map 6**, on Schedule “B.3” of the Official Plan.

Urban Area Boundary Expansion

Staff report PDD-36-2019 on the Growth Strategy referred to the consideration of a minor boundary adjustment to the Dunnville urban area boundary in the vicinity of Cross Street West. This reference pertains to the unutilized portion of the Municipal Woodlawn Cemetery at 739 Cross Street West. The cemetery has a total area of 12.6 hectares (31 acres) of which 5.35 hectares (13 acres) lie within the urban boundary and are surplus to its needs. An additional area of 1.75 hectares (4 acres) are unutilized by the cemetery and can be developed in conjunction with the lands inside the urban boundary. The property is shown as Area 8 on **Map 6**.

According to a functional servicing report prepared for the property, Phase 1, which is within the urban boundary, can accommodate residential development for 294 persons at 55 persons/hectare (109 units) and Phase 2, outside of the current urban boundary, can accommodate an additional 96 persons at the same density of development (36 units). The additional units in Phase 2 will allow for a more efficient use of infrastructure required to service the development. The lands are not constrained for development and the inclusion of Phase 2 represents a minor adjustment to the current urban boundary. Further expansion beyond Phase 2 is constrained by the cemetery to the west and wetlands and Riverine Hazard Lands to the north. The lands considered for development are not being farmed and its development will not impact on existing agricultural operations in the area. The development of the surplus cemetery lands will contribute to addressing the shortage of unconstrained residential development land in Dunnville.

Recommendation # 22 Expand the Dunnville urban boundary by 1.75 hectares (4 acres), shown as Area 8 on **Map 6** to permit residential development on the surplus lands at the Woodlawn Cemetery and designate the lands as Residential on Schedule “B.3” of the Official Plan.

Dunnville Secondary Plan Area – Site Specific Policy Area 9.1.2

The Secondary Plan policies for this area of Dunnville encourage the redevelopment and revitalization of commercial properties and former industrial sites along Main Street to the east of the historic core commercial area. The western portion of SSPA 9.1.2 is designated as “Community Commercial” and the eastern portion as “Residential” in the Official Plan. In the area designated as “Community Commercial” apartments are permitted in the upper floors of mixed-use commercial buildings that can be up to four storeys in height. There has been interest expressed in the residential development of properties in this area but the requirement of providing ground floor commercial space has been an impediment due to limited demand for such space in the area. Although these policies have been in place for some time, there has been little redevelopment in this area.

A more flexible policy approach is warranted, particularly on the lands designated “Community Commercial” on the south side of Main Street East, east of Maple Street. This area is shown as Area 9 on **Map 6**.

In this area, both mixed commercial and residential buildings as per the current policy should be permitted and stand-alone residential buildings that are of medium or high-density should also be permitted. This is an area of transition from the historic commercial core and the residential development of under-utilized or redeveloped properties will support the existing commercial establishments. Adding more commercial space may encourage the diffusion of commercial businesses in the downtown core and impact its attractiveness as a commercial destination.

Within the areas designated as “Residential” in SSPA 9.1.2, further redevelopment for residential use should be for medium or high-density residential buildings within the height restrictions that are currently in place. Such redevelopment may be associated with neighbourhood type commercial uses. This policy is appropriate for the area with the exception that the policy should clearly state that new single detached or semi-detached housing should not be permitted within the area or within the portion of the

SSPA 9.1.2 designated as “Community Commercial”. It should be noted that any development in this area is subject to meeting the Special Policy Area floodplain policies and subject to the approval of the Conservation Authority.

Recommendation # 23 Amend the policies in the area depicted as Area 9 on **Map 6** of the Dunnville Secondary Plan, Site Specific Policy Area 9.1.2 to facilitate medium and high-density residential development.

6.3.4 Hagersville

6.3.4.1 Residential Land Needs

The population and household forecasts for the Hagersville urban area are presented in **Table 39**. The population of Hagersville is expected to grow by 5,100 by 2051, representing an average annual growth of 145 residents. The number of households is expected to increase by 1,960 by 2051, a growth of 55 new households each year over the 35-year period.

Table 39				
Hagersville Population and Households Forecast: 2016-2051				
Years	Population ¹	Average Annual Change in Population (%)	Households ²	Average Change in Number of Households
2016	3,100		1,150	
2051	8,200		3,110	
Growth 2016-2051	5,100	145	1,960	55
Population includes the census undercount				
1. Watson & Associates, Population, Housing and Employment Forecast Update and Land Needs Assessment, Haldimand County, 2019				
2. Matt Reniers and Associates				
Note that numbers may not add up precisely due to rounding				

The forecast of the total number of housing units by density type for Hagersville is presented in **Table 40**. In 2016, about 71% of dwelling units were low-density units,

19% were medium-density units, and 10% were high-density units. The density of housing units is expected to increase significantly over the forecast period to 2051. The percentage of low-density units is expected to decline to about 62% of all housing units, the number of medium-density units to increase to about 23% and the number of high-density units to increase to 15% of the total dwelling units by 2051.

Table 40 Hagersville Forecast of Housing Units by Density Type: 2016 and 2051					
Year		Low-Density	Medium-Density	High-Density	Total
2016	# of Units	820	220	110	1,150
	% of Total	71	19	10	100
2051	# of Units	1,920	730	460	3,110
	% of Total	62	23	15	100
Change 2016-2051	# of Units	1,100	510	350	1,960
Sources: 1. Watson & Associates, Population, Housing and Employment Forecast Update and Land Needs Assessment, Haldimand County, 2019 2. Matt Reniers and Associates Note that numbers may not add up precisely due to rounding.					

Table 41 shows the distribution, between the built boundary and designated greenfield areas of Hagersville, of the new housing units required to meet the 20% intensification target during the period 2021 to 2051. The target is for the existing built-up area to accommodate 378 new housing units and the designated growth areas to accommodate 1,416 new dwelling units over this 30-year period.

Table 41 Hagersville Forecast of New Housing Units by Density Type, by Built Boundary and Designated Growth Areas: 2021-2051				
Policy Area	Low-Density Units	Medium-Density Units	High-Density Units	Total Units
Built Boundary	63	47	268	378
Designated Growth Area	943	418	55	1,416
Total	1,006	465	323	1,794
Source: Matt Reniers and Associates based on forecasts provided in Watson & Associates Economists Ltd., 2020 Note that numbers may not add up precisely due to rounding				

The residential land needs for Hagersville, from 2021 to 2051, was calculated by using the same methodology that was applied to estimating future land needs for the other urban communities. The analysis is presented in **Table 42**. The vacant land supply in the designated growth area of Hagersville is about 133 hectares (329 acres), most of which are designated as Residential or are suitable for redesignation to Residential use in the Official Plan. The analysis indicates that there will be a surplus of 22 hectares (54 acres) of residential and community employment lands to meet the growth needs in Hagersville designated greenfield areas to 2051. Note that this analysis does not take into account the impact of the blasting operations at the Lafarge Quarry on potential residential land supply. This issue will be discussed further later in this report.

Table 42 Hagersville Designated Growth Area Land Needs: 2021-2051			
Residential	Household Growth in DGA to 2051	A	1416
	Density Factor (units per gross ha.)	B	15
	Land Need (ha.)	$C=A/B$	94
Community Employment	Employment Growth to 2051	D	670
	Density Factor (jobs per gross ha.)	E	40
	Land Need (ha.)	$F=D/E$	17
DGA Total	Land Need (ha.)	$G=C+F$	111
	Vacant Land Supply (ha.)	H	133
	Land Need (ha.)	$J=G-H$	-22
Source: Matt Reniers and Associates based on forecasts provided in Watson & Associates Economists Ltd., 2020 Note that numbers may not add up precisely due to rounding			

6.3.4.2 Employment Area Land Needs

Hagersville, in 2020, has a supply of only 4 hectares (10 acres), comprised of three (3) relatively small parcels of vacant land within its two (2) Employment Areas designated on Schedule “I.4”. Based on the analysis presented in **Table 43**, employment areas in Hagersville will be required to accommodate 290 new jobs by 2051. This job growth is expected to require 14 hectares (35 acres) of land.

Table 43 Hagersville Employment Area Land Needs to 2051		
Employment Area Job Growth to 2051	A	290
Employment Growth in Existing Employment Areas (5%)	B	15
Net Employment Growth on Vacant Lands	$C=A-B$	275
Employment Density - Jobs/Hectare	D	15
Employment Area Land Requirement	$E=C/D$	18
Vacant Employment Area Supply (hectares)	F	4
Land Need (hectares)	$G=E/F$	14
Source: Matt Reniers and Associates based on forecasts provided in Watson & Associates Economists Ltd., 2020 Note that numbers may not add up precisely due to rounding		

6.3.4.3 Servicing for Growth

The basis for the discussion of servicing issues is the Hagersville Master Servicing Plan (HMSP) completed in 2008 by Stantec Consulting. Staff Report PED-09-2019 and its attachments on servicing allocations was also reviewed. The discussion will focus on water supply, wastewater treatment, storm water management, and transportation capacities and other issues that may impact on residential and employment growth over the forecast period to 2046.

Water Supply and Wastewater Treatment

Hagersville is supplied with potable water from the Nanticoke Water Treatment Plant (NWTP) through a 750 mm transmission line to an elevated storage tank located to the north of Townsend. From the elevated tank, water then flows through a 500 mm transmission line along Nanticoke Creek Parkway to Main Street North (Highway 6) in Jarvis. From there, the line splits into two 400 mm transmission lines, one following

north along Highway 6 to the Hagersville Booster Pumping Station and the other flowing southward along Main Street North into Jarvis. The 400 mm transmission line to Hagersville flows to the Hagersville Booster Pumping Station located to the north of Jarvis at County Road 55. From there, a 300 mm transmission lines flows northward to the Hagersville Standpipe. Water service is then dispersed through smaller capacity lines to service the Hagersville community and the Mississaugas of the Credit First Nation. According to a recent assessment of this system conducted in 2018 by Wood Environment and Infrastructure Solutions in their report “Nanticoke to Caledonia Water Supply Feasibility: Final”, it has sufficient capacity to meet the water demands of the communities that it presently serves to their build-out which is beyond the planning horizon of this planning project.

Table 44 presents information on water supply and waste treatment system capacities, capacities that have been allocated for infill development and for new developments from the 2019 year-end servicing allocation report. The Nanticoke water supply system is currently operating at about 69% of its rated capacity.

As indicated in **Table 44**, there is adequate water supply and wastewater treatment capacity to service proposed developments in Hagersville. The Hagersville Wastewater Treatment Plant is currently operating at about 61% of it’s rated capacity. Treatment capacity may be increased as the result of on-going inflow and infiltration abatement activities. The allocated wastewater treatment capacity for future development includes plans for 269 single detached dwellings and 36 townhouses for a total of 305 new housing units. This is less than 20% of the forecasted housing growth forecasted to 2051. The unallocated wastewater treatment capacity was 33% of capacity at the end of 2020. As significant growth is forecasted for Hagersville, wastewater treatment capacity may require expansion to keep pace with residential and employment growth. Regular monitoring of growth, water and wastewater demand will be required to ensure that sufficient capacity will be available.

Table 44 Hagersville Water Supply and Wastewater Treatment Capacities, 2020		
System Capacity	Water Supply Treatment Plant (m³/day)	Wastewater Treatment (m³/day)
Rated (C of A) Capacity	13,600	4,200
Estimated Capacity	13,600	4,200
2016-2020 Average Production	9,373	2,463
Remaining Capacity (Estimated Capacity minus Average Production)	4,227	1,737
Infill Development Reserve Allocation (5% of Remaining Capacity)	211	87
Total Recommended Capacity (Includes Allocated and Requested Capacity)	533.2	247.5
Total Capacity Remaining After Infill Reserve and Recommended Allocation	3,482.2	1,402.5
Source: Staff Report PDD-36-2020		

Stormwater Management

The Hagersville Master Servicing Plan reviewed the existing and proposed storm water management plans for the community in detail. The HMSP proposed an integrated system source controls at the lot level, storm water management ponds, the use of existing quarry lakes to control storm water quantity and quality.

Transportation

The transportation component of the HMSP recommended a collector and arterial road system that would handle the growth needs of Hagersville to 2026. However, the volume of traffic forecast for Highway 6/Main Street corridor will require additional through lanes that cannot be accommodated on the connecting link arterial/collector road network. Projected traffic volumes at the intersection of Main Street and King

Street, the main intersection in Hagersville, will exceed its capacity. The diversion of through traffic on Highway 6, through its re-alignment around Hagersville should alleviate this problem. There is no timetable for when this re-alignment will be constructed by the Province.

6.3.4.4 Boundary and Designations Adjustments

The preliminary Growth Strategy approved by County Council in September 2019 included two changes within the current urban boundary of Hagersville. The areas proposed for a designation change are shown on **Map 7**.

As the land needs analysis for Hagersville has demonstrated, additional employment lands are needed. Appropriate lands to be designated as an employment area lie to the east side of Highway 6, north of the Lafarge Canada quarry. These lands, which are shown on **Map 7** as Area 1, lie within the northern boundary of the Hagersville urban area and are currently designated as “Agriculture” in the Official Plan. The potential employment area is comprised of 43 hectares (106 acres), of which approximately 13 hectares ((32 acres) may be constrained from development as they are within 300 metres (980 feet) of the Lafarge Quarry property. The site has direct access to Highway 6 and its location at the northern boundary of Hagersville can minimize truck traffic through the community. The site is well located with respect to the proposed re-routing of Highway 6 to the east of the hydro corridor along the eastern boundary of Hagersville and which is outlined on Schedules “F. 1” and “F. 2” of the Official Plan. The location complements the employment area on the west side of Highway 6 at the northern boundary of Hagersville. Industrial development at this location should not interfere with main residential areas of the community. The lands can meet the future employment area needs for Hagersville over the forecast period to 2051 and do not require an expansion of the Hagersville urban boundary.

Map 7



Recommendations for boundary and designation adjustments for Hagersville are shown on **Map 8**.

Recommendation # 24: Re-designate 43 hectares (106 acres) of land in north Hagersville, shown as Area 1 on **Map 7**, from Agriculture to Urban Business Park on Schedule “B.4” and to Employment Area on Schedule “I.4” of the Official Plan.

The second area for redesignation in the preliminary Growth Strategy is on the northside of King Street East at the eastern boundary of the Hagersville urban boundary and is shown as Area 2 on Map 7. This is an area, along with other adjacent lands, proposed for residential development by Empire Communities. This area, which is 27 hectares (67 acres) in size, should be considered along with the other Empire Communities’ holdings in the area. A portion of Area 2 is within the 300 metre buffer area from the blasting limit of the Lafarge Quarry and cannot be developed for residential purposes unless blasting permanently ceases on the south end of the quarry property. This impacts the potential construction of up to 276 single detached dwellings which will need to be held back from development while Lafarge has a licence to blast as part of its quarry operations. It should also be noted that the construction of 377 single detached are within the 300 metres blasting buffer line in the adjacent Garden Communities development, which is also an Empire Communities project. That represents a yield of 653 residential units that is frozen or encumbered for an indeterminate period of time.

The lands depicted in Area 4 are constrained from development as they lie within the 300 metre (980 feet) buffer area from the blasting limit in the Lafarge Canada quarry. Residential development within the buffer area is sensitive to noise, dust and vibration from the quarry operations. All the lands in question, including portions that lie within the urban area boundary, are currently designated “Agricultural” in the Haldimand County Official Plan.

Map 8



Empire Communities has, requested that the eastern urban boundary of Hagersville, north of King Street East on the former Smith Farm lands, be modified by removing 8 hectares (20 acres) of land in Area 4 in **Map 8** from the urban boundary and by extending the urban boundary eastward along King Street East by an area of 8 hectares (20 acres) as shown by Area 3 on **Map 8**. The developable lands in Area 3 are about 8 hectares (20 acres) which is equivalent to the developable lands in Area 4.

According to the Provincial soil survey, the lands are Class 3 soil capability for agriculture. Expansion of the urban boundary, as requested, will not impact existing livestock operations as there are no such operations within 0.9 miles (1.5 kilometres) from the subject lands. The hydro corridor immediately to the east of Area 4 forms a logical eastern boundary for the Hagersville urban area. The lands will allow for the logical eastward extension of the Gardens Communities development which is fully registered and for which servicing infrastructure is being installed. The concept plans for Area 3 include a storm water management pond that will serve the Gardens Communities and Smith Farm lands developments. Empire Communities is also proposing to front-end the construction of a sewage pumping station in Area 3 on Map 8 that will service its residential developments and which can be sized to accommodate wastewater from proposed subdivisions located to the south of King Street East and within the Hagersville urban boundary.

The boundary adjustment will not result in a change in the total land area within the Hagersville urban area boundary and will facilitate residential development in the southeastern portion of Hagersville. The boundary change is recommended for approval.

Recommendation # 25: Approve Empire Communities request for boundary land exchange in Hagersville by removing Area 4 from the Hagersville urban area and by adding Area 3, all as shown on **Map 8**, within the Hagersville urban boundary.

Recommendation # 26 Redesignate the lands shown as Areas 2 and 3 on Map 8 from Agriculture to Residential on Schedule “B.4” of the

Official Plan and leave Area 4 on **Map 8** in the Agriculture designation.

Format Group Inc. Request

Format Group Inc., in a letter dated July 8, 2020, has requested that the Hagersville urban boundary be expanded westward to Sandusk Road to include two properties. These properties are shown as Areas 5 and 6 on **Map 8**, and are proposed for residential development. Area 5 has subsequently been purchased by Empire Communities. The property is currently designated as Agriculture in the Official Plan and is zoned as Extractive Industrial (MX). There is no longer a licence to remove aggregate material from the property and the lands around the quarry pond are not farmed. The only use on the land is a solar energy farm which occupies about 2 hectares (5 acres) at the southwest corner of the property and which is not included in the request. The property has not been included in the soil capability for agriculture mapping of the area although it is included in the provincial agricultural land base. Former extraction operations with large quarry ponds are located on lands to the north, south and west of the property. Development of the lands should not impact agricultural operations in the wider area.

The developable portion of Area 5 is 10-12 hectares. Empire is proposing to develop this property with a neighbouring property to the east which is within the Hagersville urban boundary and designated as residential in the Official Plan. According to Empire Communities, the combined development of the two properties could yield 1,250-1,450 new residential units of which 350-450 would be in Area 5. It should be noted that this estimate is preliminary and before the preparation of a secondary plan for the area. The active rail corridor which flanks the eastern boundary of this area and the nearby Hagersville sewage treatment facility will have to be considered in the planning for the area and could impact the potential housing yield. The development of Area 5 would compensate, to some extent, the lands held out of development by the blasting operations at the Lafarge Quarry and discussed above.

The remaining Format Group property which is about 2 hectares in area and is shown as Area 6 on **Map 8**. The Format Group did not provide any reports or documentation to support this request. The property is adjacent to a quarry pond and a solar energy farms and the rail corridor flanks the southern boundary. The developable portion, if any, of the property was not provided. As the lands are not needed to meet Hagersville residential land requirements to 2051, this request should not be approved.

Recommendation # 27: That the request submitted by Empire Communities to expand the Hagersville urban boundary, as shown as Area 5 on **Map 8**, be approved.

That the request submitted by Format Group Inc to expand the Hagersville urban boundary, as shown as Area 6 on Map 8, not be approved.

DG Group (Hagersville Holdings LTD) Request

The DG Group originally requested to have two properties added to the Hagersville urban area. The smaller of the two properties is located to the east of the Hydro corridor on the south side of Main Street East near its intersection with Cheapside Road. It was proposed that this property, which is about 23 hectares (58 acres), be added to the Hagersville urban area to for employment uses. The DG Group has subsequently abandoned this request.

The second parcel, which is 88 hectares (218 acres) in area is located to the west of the Hydro corridor and also has frontage on Main Street East. This property is shown as Area 7 on **Map 8**. It is proposed that this area be added to the urban area and designated for residential development. At a gross density of 40 residents and jobs per hectare, this area can accommodate about 3,500 people.

To support their request, the DG Group provided a Preliminary Servicing Strategy report prepared by R. V. Anderson Associates and a Land Needs Assessment for Hagersville report prepared by Altus Group Economic Consulting. The Preliminary Servicing Strategy report was reviewed by the County's Engineering staff with the conclusion that it lacks sufficient detail to assess the servicing impact of the proposed development of the lands.

The Land Needs Assessment report was based on forecasts for Haldimand County contained in the report "Greater Golden Horseshoe: Growth Forecasts to 2051" prepared by Hemson Consulting in 2020 as background supporting information for Amendment No. 1 to the Growth Plan. The forecasts contained in the Hemson report were prepared at a large scale for the entire Growth Plan area. The forecasts in this report are based on the two reports that have been prepared by Watson and Associates Economists specifically for Haldimand County and which Council has accepted and directed to be used for municipal planning purposes. Approving this request at this time can not be justified by the land needs analysis carried out for Hagersville. Expansion of the Hagersville urban area at this scale requires a comprehensive investigation that examines potential development areas, the efficient extension of municipal infrastructure, and impacts on agricultural resources, natural environmental features and cultural heritage resources. As these investigations have not been carried out and the lands are needed to meet 2051 growth needs, the DG Group request should not be approved.

Recommendation # 28 That the request submitted by the DG Group to expand the Hagersville urban area to include lands shown as Area 7 on **Map 8** not be approved.

Calibrex Development Group

Calibrex has requested including the property on the east side of Sandusk Road, north of the abandoned rail corridor, south of Concession 13 Walpole and west of the quarry

pond into the Hagersville urban boundary to allow for the residential development of the lands. This property is shown as Area 8 on Map 8. This request would add about 15 hectares (37 acres) to the Hagersville urban area.

Most of the property is currently farmed. The soils are a mix of Class 4 and Class 5 soil capability for agriculture. Lands to the north and west of this property are in agricultural production. Based on the land needs assessment to 2051 for Hagersville, expanding the Hagersville urban boundary to include these lands cannot be justified at this time.

Recommendation # 29 That the request submitted by the Calibrex Development Group to expand the Hagersville urban area to include lands shown as Area 8 on **Map 8** not be approved.

6.3.5 Jarvis

6.3.5.1 Residential Land Needs

The population and household forecasts for the Jarvis urban area are presented in **Table 45**. Jarvis is expected to grow by 800 persons between 2016 and 2051, representing an average annual growth of about 25 persons. The number of households is expected to increase by 330 by 2051, an average of about ten households each year.

Table 45				
Jarvis Population and Households Forecast: 2016-2051				
Years	Population ¹	Average Annual Change in Population (%)	Households ²	Average Change in Number of Households
2016	2,000		890	
2051	2,800		1,220	
Growth 2016-2051	800	25	330	10
Population includes the census undercount				
1. Watson & Associates, Population, Housing and Employment Forecast Update and Land Needs Assessment, Haldimand County, 2019				
2. Matt Reniers and Associates				
Note that numbers may not add up precisely due to rounding				

The forecast of the total number of housing units by density type is presented in **Table 46**. In 2016, almost 80% of dwelling units were low-density units comprised of single detached and semi-detached houses. Medium-density housing units, consisting primarily of townhouse units and units in small apartment buildings, such as duplexes and triplexes comprised 9.0% of all dwelling units and high-density apartment units comprised a further 11% of the total dwelling units. The density of housing units is expected to increase slightly over the forecast period to 2051. The percentage of low-density units is expected to decline to about 73% of all units and the number of medium-density units to increase to about 14% and the number of high-density units to increase to 12% of dwelling units in 2051.

Table 46					
Jarvis Forecast of Housing Units by Density Type: 2016 and 2051					
Year		Low-Density	Medium-Density	High-Density	Total
2016	# of Units	710	80	100	890
	% of Total	80	9	11	100
2051	# of Units	890	170	160	1,220
	% of Total	73	14	13	100
Change 2016-2051	# of Units	180	90	60	330
Sources:					
1. Watson & Associates, Population, Housing and Employment Forecast Update and Land Needs Assessment, Haldimand County, 2019					
2. Matt Reniers and Associates					
Note that numbers may not add up precisely due to rounding					

Table 47 shows the distribution of the expected new housing units to be constructed between 2021 and 2051 within the built boundary area and designated greenfield areas of Jarvis, according to the 20% intensification target. The target is for the built boundary to accommodate 51 new housing units by 2051, and the greenfield areas of Jarvis are to accommodate 189 new housing units.

Table 47 Jarvis Forecast of New Housing Units by Density Type, by Built Boundary and Designated Growth Areas: 2021-2051				
Policy Area	Low-Density Units	Medium-Density Units	High-Density Units	Total Units
Built Boundary	8	6	36	51
Designated Growth Area	126	56	7	189
Total	135	62	43	240
Source: Matt Reniers and Associates based on forecasts provided in Watson & Associates Economists Ltd., 2020 Note that numbers may not add up precisely due to rounding				

The residential land needs for Jarvis, from 2021 to 2051, was calculated by using the same methodology that was applied to estimating future land needs for the other urban communities. The analysis is presented in **Table 48**. The vacant land supply in the designated growth area of Jarvis, excluding lands that may be constrained by Riverine Hazard Lands, is about 142 hectares (351 acres), Jarvis has a surplus of about 92 hectares (227 acres) of land within its current urban boundary to meet its residential and community employment land needs to 2051.

Table 48 Jarvis Designated Growth Area Land Needs: 2021-2051			
Residential	Household Growth in DGA to 2051	A	189
	Density Factor (units per gross ha.)	B	15
	Land Need (ha.)	$C=A/B$	13
Community Employment	Employment Growth to 2051	D	190
	Density Factor (jobs per gross ha.)	E	40
	Land Need (ha.)	$F=D/E$	5
DGA Total	Land Need (ha.)	$G=C+F$	18
	Vacant Land Supply (ha.)	H	110
	Land Need (ha.)	$J=G-H$	-92
Source: Matt Reniers and Associates based on forecasts provided in Watson & Associates Economists Ltd., 2020 Note that numbers may not add up precisely due to rounding			

6.3.5.2 Employment Area Land Needs

Jarvis, in 2020, has a supply of 67 hectares (166 acres) of vacant lands within the designated employment area located in the northern portion of the community, on both sides of Main Street North. Employment growth in Jarvis is expected to be modest, with about 100 new jobs expected over the forecast period to 2051. As indicated in the analysis presented in **Table 49**, Jarvis has a surplus of 61 hectares (151 acres) of employment land for its growth needs to 2051.

Table 49 Jarvis Employment Area Land Needs to 2051		
Employment Area Job Growth to 2051	A	100
Employment Growth in Existing Employment Areas (5%)	B	5
Net Employment Growth on Vacant Lands	$C=A-B$	95
Employment Density - Jobs/Hectare	D	15
Employment Area Land Requirement	$E=C/D$	6
Vacant Employment Area Supply (hectares)	F	67
Land Need (hectares)	$G=E/F$	-61
Source: Matt Reniers and Associates based on forecasts provided in Watson & Associates Economists Ltd., 2020 Note that numbers may not add up precisely due to rounding		

6.3.5.3 Servicing for Growth

The basis for the discussion of servicing issues is the Jarvis Master Servicing Plan (JMSP) Update completed in 2019 by J. L. Richards and Associates Limited. The discussion will focus on water supply, wastewater treatment, storm water management, and transportation capacities and other issues that may impact on residential and employment growth over the forecast period to 2051. The water supply and wastewater treatment capacities for Jarvis are presented in **Table 50**.

Water Supply

Jarvis is supplied with potable water from the Nanticoke Water Treatment Plant (NWTP) through a 750 mm transmission line to an elevated storage tank located to the north of Townsend. This tank provides storage for both Jarvis and Townsend. From the storage tank, water is transmitted to Jarvis through a 500 mm transmission line along Nanticoke Creek Parkway to Main Street North (Highway 6). There, the transmission line splits into

two 400 mm lines, one following Highway 6 north to the Hagersville Booster Pumping Station and the other following southward along Main Street North into Jarvis. The water service is then dispersed through smaller capacity lines to service the community.

Table 50		
Jarvis Water Supply and Wastewater Treatment Capacities, 2020		
System Capacity	Water Supply Treatment Plant (m³/day)	Wastewater Treatment (m³/day)
Rated (C of A) Capacity	13,600	853
Estimated Capacity	13,600	853
2016-2020 Average Production	9,373	912
Remaining Capacity (Estimated Capacity minus Average Production)	4,227	0
Infill Development Reserve Allocation (5% of Remaining Capacity)	211	0
Total Recommended Capacity (Includes Allocated and Requested Capacity)	533.2	187.1
Total Capacity Remaining After Infill Reserve and Recommended Allocation	34,852.8	0
Source: Staff Report PDD-36-2020		

The water transmission line from the NWTP is part of a regional water supply system that also serves the communities of Townsend, Hagersville and the Mississaugas of the Credit First Nation as well as the Lake Erie Industrial Park. According to a recent assessment of this system conducted in 2018 by Wood Environment and Infrastructure Solutions in their report “Nanticoke to Caledonia Water Supply Feasibility: Final”, it has sufficient capacity to meet the water demands of the communities that it presently serves to their build-out which is beyond the planning horizon of this planning project.

According to the JMSP, the water distribution system in Jarvis can be extended to serve growth areas in the community. Some alternative options are being considered to improve system looping and redundancy which are important for maintaining water quality and system security. These alternatives include a new feedermain from Townsend that enters Jarvis along Talbot Street West or another feedermain from Talbot Street East from a new regional water transmission line being considered along County Road 55 from the NWTP.

Wastewater

Wastewater is treated at Jarvis Sewage Treatment Lagoons located at the southern boundary of the urban area. The treatment lagoons, with four cells, is nearing its capacity and an environmental assessment has been completed to consider alternative solutions. According to the Municipal Class EA for Additional Wastewater Treatment Capacity for Jarvis prepared by J.L. Richards, the wastewater treatment system is rated for an Average Day Flow (ADF) of 853 m³/day. In 2020, the ADF was estimated to 912 m³/day and the estimated 2038 flow, based on expected growth in the community, is expected to be 1,272 m³/day.

The preferred alternative solution involves making no changes to the rated capacity at the Jarvis lagoon facility and pumping excess wastewater to the Townsend lagoons. The Townsend lagoons, with four cells, has the capacity to handle the additional flows from Jarvis. Pumping excess sewage from Jarvis to Townsend requires the construction of a 3.4 kilometre (2.1 miles) long forcemain from the Jarvis lagoon to the Townsend Sewage Pumping Station and replacing the three (3) existing pumps at the Jarvis Sewage Pumping Station. The construction of the forcemain, scheduled to start in the spring of 2020 and to be completed in 2021. The Townsend lagoons have an unallocated capacity of about 1,700 m³/day and this capacity can be shared with Jarvis when the forcemain is operational. This capacity is sufficient to meet the growth needs for both communities to 2051.

Stormwater Management

The JMSP has modelled the storm water system for future development areas. These areas can be accommodated largely through the expansion of the existing network of storm sewers. New storm water management facilities may be required to service the future industrial areas to the east and west of Main Street North.

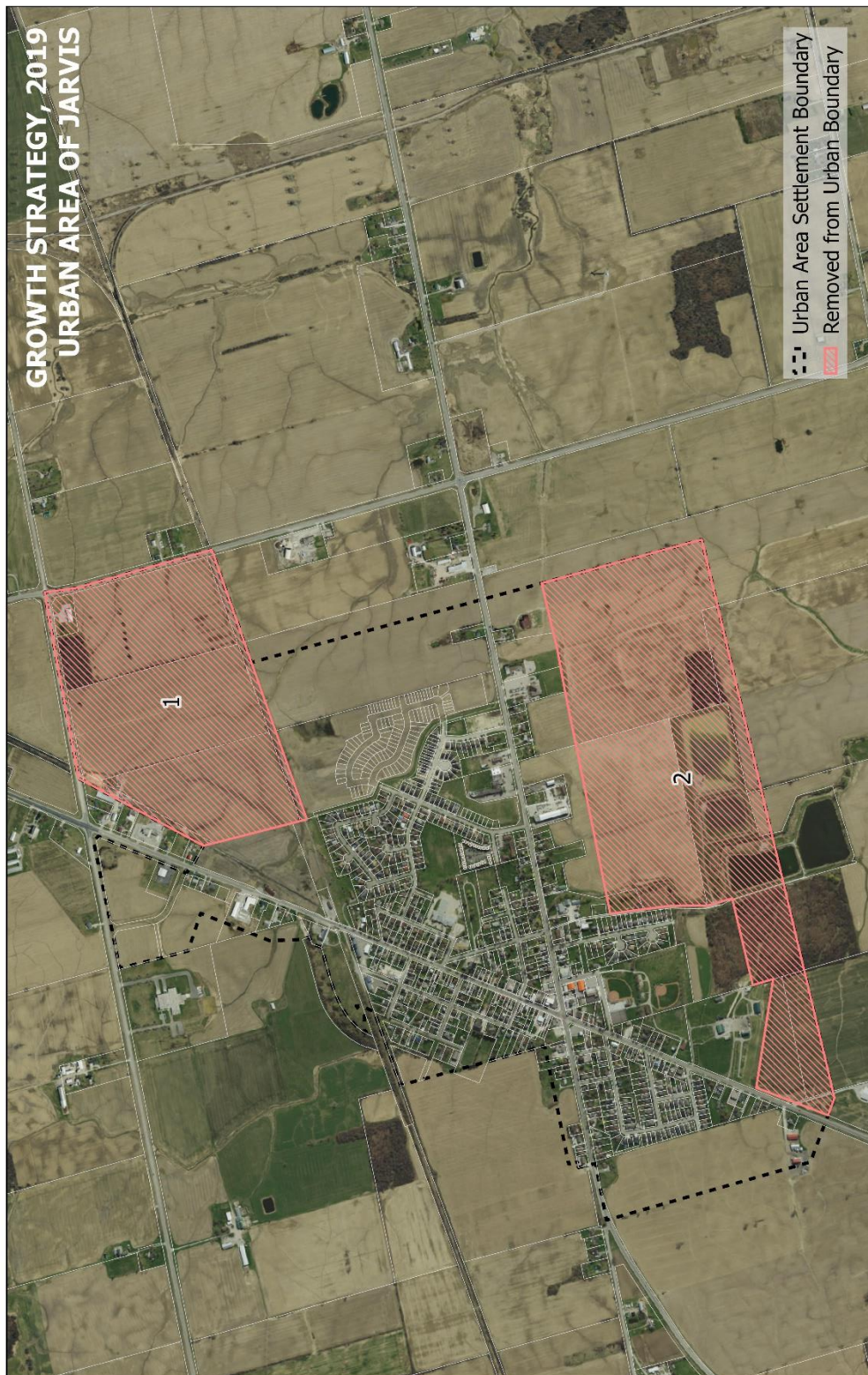
Transportation

The existing and proposed road network in Jarvis was modelled to assess the need for improvements. The major improvement required to 2038 is the re-design of the main intersection of Main Street South and Talbot Street West to construct auxiliary lanes. A new collector, the extension of Craddock Street south from Talbot Street West is proposed but the need is beyond the 20-year planning horizon for the JMSP. The collector is estimated to cost \$2.23 million but would be paid for by development.

6.3.5.4 Boundary Adjustments

The most logical area to remove from the employment area designation is in the northeast corner of Jarvis. These lands are shown as Area 1 on **Map 9** from the 2019 preliminary Growth Strategy. The area, with three vacant properties and the Meller Poultry Equipment site of about 1 hectare, has a combined area of 52 hectares (128 acres). The removal of these lands from the Jarvis urban boundary will still leave Jarvis with a surplus of employment area lands to meet expected employment growth to 2051. The surplus employment lands can be transferred to other urban areas within Haldimand County where the demand and potential for job growth is greater.

Map 9



Council's preliminary Growth Strategy proposes removing 74 hectares (183 acres) of land, primarily designated for residential development, and 52 hectares (128 acres) of employment area lands from the Jarvis urban boundary. These areas are illustrated on **Map 9** as Area 2. The residential lands to be removed from the Jarvis urban boundary are in the southern areas of the community and a large portion of these lands are close to the sewage lagoons. Recent residential development in Jarvis has mostly been in the northeast corner of the community. The removal of these lands from the Jarvis urban area will still leave the community with a surplus of residential lands to meet growth needs to 2051. The surplus residential lands can be transferred to other urban areas within Haldimand County where the demand and potential for growth is greater.

As stated in the discussion on wastewater treatment capacity for Jarvis, there is insufficient capacity to accommodate all lands within the current urban boundary to their full build out. This factor and the lack of demand for the development for all these lands, a contraction of the Jarvis urban boundary is appropriate.

Recommendation # 30: Remove 52 hectares (128 acres), shown as Area 1 on **Map 9**, from the Jarvis Employment Area on Schedule "I.5" and Urban Business Park designations and re-designate as Agriculture on Schedule "B.5" of the Official Plan.

Recommendation # 31 Remove 74 hectares (183 acres) from the Jarvis Urban Area and Residential Designation, shown as Area 2 on **Map 9**, and re-designate as Agriculture on Schedule "B.5" of the Official Plan.

Other Boundary Adjustments

A minor adjustment to the employment area boundary can be made in the northwest corner of Jarvis, to the west of Haldimand County Fire Station No. 3. There the urban area and employment area boundaries carve a wedge into an existing property. The area, which is indicated Area 3 on **Map 10**, abuts the Cargill Meats Canada property

located to the west. The urban boundary of Jarvis in this area does not correspond to the Nanticoke Zoning Bylaw NE1-2000. In the Zoning Bylaw, the subject lands are zoned as Prestige Industrial Zone (MP) although technically the Official Plan land use designation is “Agricultural”. If the urban area and employment area boundaries at this location respected existing property lines, it would create a more logical property for industrial development. This change would add about one hectare (2.5 acres) of industrial land.

A further boundary adjustment should be considered along the east side of Highway 6 at the northern boundary of the Jarvis urban area. This area is shown as Area 4 on **Map 10**. The area includes 6 properties with a total land area of 3.42 hectares (8.46 acres). The depth of the property varies and is about 66 metres (217 feet) at its narrowest point at the south end of the area and about 95 metres (312 feet) deep at its widest point near the intersection of Highway 6 and Nanticoke Creek Parkway. The three northerly properties are used for a mix of residential and service commercial uses. The two southerly properties are residential. The middle property has been designated as Site Specific Policy Area HCOP-46 to permit mini-warehouse, a climate-controlled warehouse and office. A greenhouse formerly occupied this property but has been demolished. The area is bounded to the east, south and west by the Jarvis urban area. Although the area is currently designated as Agriculture in the Official Plan, the lands are not farmed. The lands to the east, as discussed above are being recommended for removal of the urban area boundary and from the Urban Business Park land use designation. Lands to the south and to the west are designated as Urban Business Park. The lands are not currently in agricultural use and due to development that has occurred and approved for the lands, future agricultural use of the lands is unlikely. The redesignation of the lands to Urban Business Park, to mirror the designation across Highway 6 and its inclusion within the Jarvis urban Area as an Employment Area is appropriate.

Map 10



Recommendation #32: The Jarvis Urban Area be expanded by 1 hectare (2.5 acres) and the subject lands, shown as Area 3 on **Map 10** be designated as Urban Business Park on Schedule “B.5” and as an Employment Area on Schedule “I.5” of the Official Plan.

Recommendation # 33: The Jarvis Urban Area be expanded by 3.42 hectares (8 acres) and the subject lands, as shown as Area 4 on **Map 10**, be designated as Urban Business Park on Schedule “B.5” and as an Employment Area on Schedule “I.5” of the Official Plan.

6.3.6 Townsend

6.3.6.1 Residential Land Needs

The population and household forecasts for the Townsend urban area are presented in **Table 51**. Townsend is expected to grow by 300 persons between 2016 and 2051 representing an average annual rate of growth of about nine new residents. The number of households, over the same 35-year period, is expected to increase by 110, an average of three new households each year.

Table 51				
Townsend Population and Households Forecast: 2016-2051				
Years	Population ¹	Average Annual Change in Population (%)	Households ²	Average Change in Number of Households
2016	1,000		480	
2051	1,300		590	
Growth 2016-2051	300	9	110	3
Population includes the census undercount				
1. Watson & Associates, Population, Housing and Employment Forecast Update and Land Needs Assessment, Haldimand County, 2019				
2. Matt Reniers and Associates				
Note that numbers may not add up precisely due to rounding				

The forecast of the total number of housing units by density type is presented in **Table 52**. In 2016, 87% of dwelling units were low-density units, 2% were medium-density housing units, and high-density apartment units comprised the remaining 11% of the total dwelling units. The percentage of low-density units is expected to decline to about 81% of all units the portion of medium-density units to increase to about 7% and the number of high-density units to comprise 12% of dwelling units in 2051.

Table 52					
Townsend Forecast of Housing Units by Density Type: 2016 and 2051					
Year		Low-Density	Medium-Density	High-Density	Total
2016	# of Units	410	10	50	470
	% of Total	87	2	11	100
2051	# of Units	480	40	70	590
	% of Total	81	7	12	100
Change 2016-2051	# of Units	70	30	20	120
Sources:					
1. Watson & Associates, Population, Housing and Employment Forecast Update and Land Needs Assessment, Haldimand County, 2019					
2. Matt Reniers and Associates					
Note that numbers may not add up precisely due to rounding					

The distribution of the expected new housing units to 2051, within the built boundary and greenfield areas of Townsend, according to the 20% intensification target, is displayed in **Table 53**. The intensification target is for the existing built-up area to accommodate 17 new housing units by 2051. The greenfield areas of Townsend are to accommodate 66 new housing units by 2051.

Table 53 Townsend Forecast of New Housing Units by Density Type, by Built Boundary and Designated Growth Areas: 2021-2051				
Policy Area	Low-Density Units	Medium-Density Units	High-Density Units	Total Units
Built Boundary	3	2	12	17
Designated Growth Area	44	19	3	66
Total	46	22	15	83
Source: Matt Reniers and Associates based on forecasts provided in Watson & Associates Economists Ltd., 2020 Note that numbers may not add up precisely due to rounding				

The residential land needs for Townsend, from 2021 to 2051, was calculated by using the same methodology that was applied to estimating future land needs for the other urban communities. The analysis is presented in **Table 54**. The vacant land supply in the designated growth area of Townsend is about 225 gross hectares (556 acres) and the land need to 2051 is about 6 hectares (15 acres). This leaves a surplus of 219 hectares (541 acres) within its current urban boundary to meet its residential and community employment land needs to 2051.

Table 54 Townsend Designated Growth Area Land Needs: 2021-2051			
Residential	Household Growth in DGA to 2051	A	66
	Density Factor (units per gross ha.)	B	15
	Land Need (ha.)	$C=A/B$	4
Community Employment	Employment Growth to 2051	D	60
	Density Factor (jobs per gross ha.)	E	40
	Land Need (ha.)	$F=D/E$	2
DGA Total	Land Need (ha.)	$G=C+F$	6
	Vacant Land Supply (ha.)	H	225
	Land Need (ha.)	$J=G-H$	-219
Source: Matt Reniers and Associates based on forecasts provided in Watson & Associates Economists Ltd., 2020 Note that numbers may not add up precisely due to rounding			

6.3.6.2 Employment Area Land Needs

There are no employment area lands designated within the urban area of Townsend. The employment area forecast prepared by Watson did not identify the need to designate new employment areas in Townsend.

6.3.6.3 Servicing for Growth

Water Supply

Townsend is supplied with potable water from the Nanticoke Water Treatment Plant (NWTP) through a 750 mm transmission line, a distance of 16.7 kilometres (10.4 miles),

to an elevated storage tank located at the northern boundary of Townsend. This tank provides storage for both Jarvis and Townsend. The water service is then dispersed through smaller capacity lines to service the Townsend community.

The water transmission line from the NWTP is part of a regional water supply system that also serves the communities of Townsend, Hagersville and the Mississaugas of the Credit First Nation. According to a recent assessment of this system conducted in 2018 by Wood Environment and Infrastructure Solutions in their report “Nanticoke to Caledonia Water Supply Feasibility: Final”, it has sufficient capacity to meet the water demands of the communities that it presently serves to their build-out which is beyond the planning horizon of this planning project. The Nanticoke water supply system is currently operating at about 67% of its capacity and about 4% of the remaining capacity has been allocated for future development, at this time [see **Table 55**].

Wastewater

Townsend’s wastewater flows by gravity to a main pumping station located near the southern boundary of the urban area. From there, it flows through a forcemain to the Townsend Wastewater Treatment Lagoons to the southwest of the urban area. The lagoon, with its four cells, has sufficient capacity to handle the growth needs of Townsend as well as additional wastewater flows from Jarvis should the preferred alternative from the Municipal Class EA for Additional Wastewater Treatment Capacity for Jarvis Environmental Assessment to divert excess sewage from Jarvis to the Townsend Wastewater Treatment Lagoons be implemented. The Townsend lagoons, with the allowance for infilling and allocated but unbuilt demand, has a remaining capacity of 1700 m³/day, representing about 81% of the lagoon’s rated capacity of 2,095 m³/day. When the forcemain from Jarvis is completed, additional wastewater treatment capacity can be allocated to that community on as needed basis.

Table 55 Townsend Water Supply and Wastewater Treatment Capacities, 2020		
System Capacity	Water Supply Treatment Plant (m³/day)	Wastewater Treatment (m³/day)
Rated (C of A) Capacity	13,600	2,095
Estimated Capacity	13,600	2,095
2016-2020 Average Production	9,373	276
Remaining Capacity (Estimated Capacity minus Average Production)	4,227	1,819
Infill Development Reserve Allocation (5% of Remaining Capacity)	211	91
Total Recommended Capacity (Includes Allocated and Requested Capacity)	533.2	30.0
Total Capacity Remaining After Infill Reserve and Recommended Allocation	3,482.8	1,698
Source: Staff Report PDD-36-2020		

Transportation

It is anticipated that no major transportation improvements will be required to handle the growth needs of Townsend over the planning horizon to 2046. The growth needs can be accommodated through the extension of the local network.

6.3.6.4 Boundary Adjustments

The growth requirements for Townsend are modest and maintaining the lands within the urban area designation distorts Haldimand County's land supply situation with respect to the Growth Plan, 2020 and PPS 2020 policies. The lands to be considered for removal from the urban area are displayed with red hatching and as Area 1 on **Map 11** and involve about 208 gross hectares (514 acres) of land. Most of these lands are owned by the Province of Ontario. It should be noted that a portion of the lands may not

be developable due to environmental constraints. Most of the lands proposed to be removed from the urban area are currently being farmed. The removal of these lands was proposed in the preliminary Growth Strategy adopted by County Council. The removal of these lands from the urban area boundary will leave Townsend with sufficient vacant residential land, of about 16 hectares (40 acres), to meet the community's needs beyond 2051.

At the February 9th public meeting on the draft Official Plan Amendment, the owner of the property at 1846 Townsend Concession Road East (Stone Quarry Road) objected to the removal of this property from the Townsend urban boundary. This property is shown as Area 3 on **Map 12**. The property has now been purchased by Calibrex Development Group which has submitted a preliminary development proposal for a mix of single detached and townhouse dwellings on the property. This property is not being farmed and the soils are a mix of Class 4 and Class 5 capability for agriculture. A portion of the property is undevelopable due to the existing ponds. The lands can be serviced through the extension of services that are available in the vicinity of Stone Quarry Road. The potential development of these lands can be of benefit to the Townsend community and expand the market for the introduction of commercial services for the convenience needs of local residents.

Recommendation 34 Remove 198 hectares (514 acres), shown as Area 1 on **Map 12**, from the Townsend Urban Area and re-designate from Residential to Agriculture on Schedule 'B.6' in the Official Plan.

Other Boundary Adjustments

Lands on the east side of Nanticoke Creek, between Stone Quarry Road and Keith Richardson Parkway are designated as either Floodway or Riverine Hazard Lands on

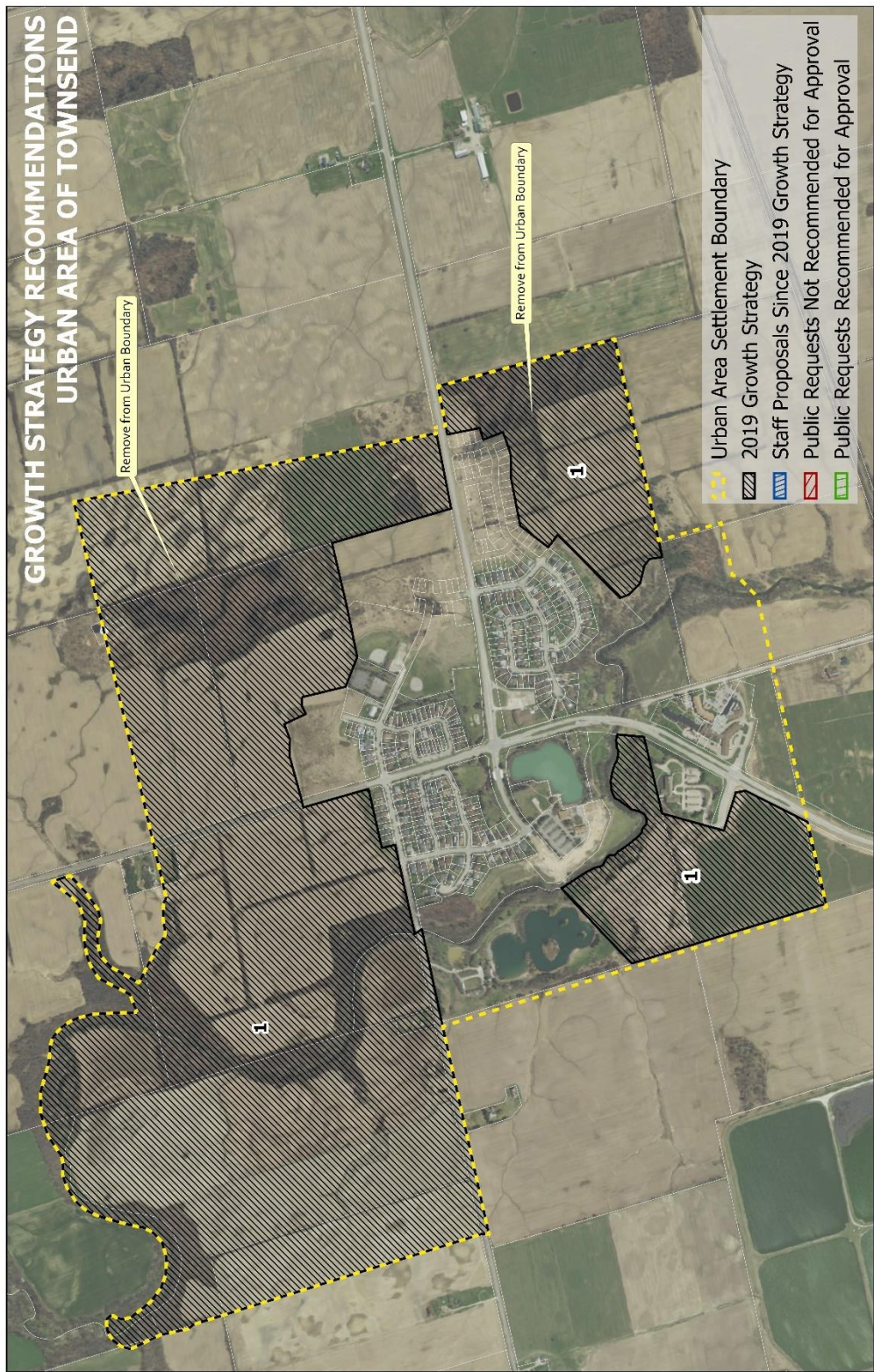
Schedule “B.6” of the Official Plan. The location of these lands is shown as Area 2 on **Map 12** and are beyond the extent of existing development. These lands were not included in preliminary Growth Strategy. The lands have also been purchased by the Calibrex Development Group with the objective of developing a portion of the lands. Most if not all of these lands are designated as either Floodway or Riverine Hazard Lands in the Official Plan. It may be possible to develop along the edges of the Riverine Hazard Lands subject to Calibrex being able to satisfy the requirements of the Long Point Region Conservation Authority. To provide more flexibility for these lands, they should remain within the Townsend urban area and not be removed as was originally recommended.

Recommendation 34 That the lands shown as Area 2 on **Map 12** not be removed from the Townsend Urban Area on Schedule ‘B.6’ of the Official Plan.

Map 11



Map 12



6.4 Land Needs and Boundary Changes Summary

This report has documented the growth needs for Haldimand County to 2051 and the potential supply of land in the County's six urban areas that can be made available to accommodate expected future growth. It is demonstrated in this report that there is a significant imbalance between the potential supply of development land and the demand for such land.

The population, household and employment forecasts prepared for the County in Watson 2020 indicate that the urban areas of the County, as a whole, can expect to receive a considerable amount of growth to 2051. This is largely due to the County's location within the Greater Golden Horseshoe. The 2051 population forecast of 77,000 residents provided in Watson 2020 is only marginally higher than the Growth Plan forecast of 75,000 for the County. Both Watson 2020 and the Growth Plan 2020 forecast total employment of 29,000 for 2051. These are the growth forecasts that the County must accommodate in its Official Plan.

The current distribution of potential development lands will not meet the future growth needs of the County. The growth needs to 2051 are presented in **Table 56**.

Communities with a surplus of land are shown as having a negative (-) need. A redistribution is required to match supply with growth needs. Urban communities with modest growth needs have a considerable surplus of potential development land. These surpluses can be re-allocated to communities expected to receive a much larger share of future growth. Some growth needs can be met through the redesignation of lands within urban boundaries to more appropriate uses. As indicated on **Table 56**, overall, there is a surplus of 68 hectares (168 acres) of community and employment lands, primarily in Jarvis and Townsend.

Table 56			
Summary of Urban Area Land Needs to 2051			
Urban Area	Community Lands (gross ha.)	Employment Lands (gross ha.)	Total (gross ha.)
Caledonia	161	93	254
Cayuga	10	11	21
Dunnville	35	2	37
Hagersville	-22	14	-8
Jarvis	-92	-61	-153
Townsend	-219	0	-219
Total	-127	59	-68
Source: Matt Reniers and Associates			

The Growth Plan 2020 and the PPS 2020 both provide policies to protect lands that are designated for employment, particularly for industrial, warehousing and supportive uses. This report has also shown that some land designated as Employment Areas on Schedules “I.1” to “I.5” of the Official Plan can be difficult to develop due to environmental constraints, undermining, poor access, fragmentation, lack of services and/or proximity of sensitive land uses. These lands should be removed from the Official Plan’s Employment Area designations and not be considered as part of the potential supply.

Table 57 and **Table 58** summarize the recommended changes to the residential and community employment lands and employment areas for each of the six urban areas. It is noted that the land areas indicated in the following two tables are gross. The actual developable portions of the lands may be less than the gross area indicated due to environmental or possible servicing constraints. Portions of the lands will also be required for municipal infrastructure such as roads, services and storm water management.

Table 57 Summary of Residential and Community Employment Area Changes by Urban Area				
Property Description	Residential/Community Employment Areas		Urban Area Boundary Changes	
	Add (ha.)	Remove (ha.)	Add (ha.)	Remove (ha.)
Caledonia				
Northeast corner of Caledonia-east of McClung Road and north of Greens Road	207		207	
Empire Communities lands, 66 McClung Road	4.5		4.5	
North of Greens Road and east of Argyle Street North	53.5		53.5	
Gateway/Georgia Pacific Lands	48			
Stirling Street				6
Cayuga				
No change				
Dunnville				
Eastern portion of Frank Marshall Business Park	20			
739 Cross Street West (Woodlawn Cemetery)	2		2	
Extend Boundary to Logan Road	23		23	
Hagersville				
Empire Communities, King Street East		8		8
Empire Communities, King Street East	35		8	
Empire Communities, Sandusk Road	12		12	
Jarvis				
Southeast area of Jarvis near sewage lagoons		74		74
Townsend				
General reduction around built-up area		198		198
All Urban Areas				
Totals	405	280	310	286

Table 57 summarizes the recommended changes to the residential and community employment areas within each of the six urban areas. While a significant amount of land (405 hectares, 1,001 acres) is recommended for redesignation as residential and community employment lands, a large amount of land (280 hectares, 692 acres) is also being recommended for removal from these designations. This represents a net gain of 125 hectares (309 acres). However, 92 hectares (227 acres) that are recommended to be added to the residential and community employment designations are internal changes within existing urban area boundaries. Overall, the net change to the urban boundaries for residential and community employment purposes is only about 24 hectares (59 acres). While 310 hectares (766 acres) of land are to be added to the urban boundaries, this amount is almost balanced by the 286 hectares (707 acres) hectares that are to be removed. Also, it should be noted that not all the lands to be added to the urban boundary will be developable. The redistribution of residential and community employment lands aligns the Official Plan land use designations with the 2051 urban growth needs of the County. These boundary changes are necessary to achieve population growth in the County consistent with the Growth Plan projections.

The recommended changes to the employment area designations are presented in **Table 58**. A total of 191 gross hectares (472 acres) of land are to be added to the Employment Areas and 246 hectares (608 acres) removed for a net reduction of 55 hectares (136 acres). Much of the reduction is the result of removing lands from the Employment Area designation that are constrained by Riverine Hazard Lands due to potential flooding concerns, undermining or otherwise difficult to develop for employment type uses or suited to other land uses that better meet community needs. The lands removed are not suited for the Employment Area designations as they will be difficult to develop for new industries. The net impact to the urban boundaries is to add 53 gross hectares (131 acres), of employment area lands, most of which will be to the north of the present Caledonia urban boundary. These lands can be serviced and are well located with respect to the regional employment supply and transportation network.

Table 58				
Summary of Employment Area Changes by Urban Area				
Property Description	Employment Area		Urban Area Boundary Changes	
	Add (ha.)	Remove (ha.)	Add (ha.)	Remove (ha.)
Caledonia				
Lands on south side of Greens Road and west of Highway 6 Bypass		38		38
North Side of Greens Road at Argyle Street North (Hwy 6)	37		37	
Additional lands north of Greens Road	102		102	
Lands west of former Domtar and east of Highway 6 Bypass		38		
Georgia Pacific lands, east side of Argyle Street North		40		
Cayuga				
Employment Area at North Boundary of Cayuga, east of County Rd 54		7		
North Side of Talbot Street East	5			
Dunnville				
Eastern area of Frank Marshall Business Park – convert to Residential		20		
Western area of Frank Marshall Business Park-		16		
Additional lands to the north of the above two areas		35		
Hagersville				
East side of Highway 6 at northern boundary of Urban Area	43			
Jarvis				
Northwest corner of Jarvis, west of Fire Station No. 3, boundary adjustment	1		1	
Northwest corner of Jarvis, east side of Highway 6 (Main Street North), boundary adjustment	3		3	
Northeast corner of Jarvis		52		52
Townsend				
No designated employment areas				
All Urban Areas				
Totals	191	246	143	90

The following is a summary of the land needs results and proposed boundary changes for each of the urban areas.

Caledonia

2. Residential/Community Employment

Lands needs: 161 hectares (398 acres)

Net boundary Change: Add 259 hectares (640 acres)

The proposed boundary changes should leave Caledonia with a surplus of lands in 2051. The additional lands represent a logical extension of the Caledonia urban area and will facilitate the development of comprehensive servicing strategies that have to take a longer period of growth into account and preparation of secondary plans for logical growth areas. Also, the development of about 94 hectares (232 acres) within the Caledonia urban boundary is currently in serious jeopardy due to land claim protests. Development in Caledonia is crucial in meeting the 2051 provincial Growth Plan population target for Haldimand County as it is where the required infrastructure is either in place or planned.

2. Employment Areas

Land needs: 93 hectares (230 acres)

Net Boundary Change: Add 101 hectares (250 acres)

The net boundary change for Employment Area lands includes the removal of 38 hectares (94 acres) on the south side of Greens Road and west of the Highway 6 Bypass. These lands were not included in the inventory of vacant and available Employment Area lands as they are subject to several constraints for development. With the removal of the Employment Lands designation on the former Georgia Pacific lands and the former Domtar lands, which are also constrained for employment development and not included vacant land inventory, a further 78 hectares (193 acres) will be removed from that designation. Overall, the net real gain in Caledonia is for an additional 25 hectares (62 acres) of Employment Area lands. With all the adjustments,

the County will have a much improved potential employment land supply in Caledonia that will be better suited to meet 2051 growth needs. Note that the land required to accommodate the proposed extension of Highway 6 north of Caledonia and the planned interchange at Greens Road are not included in these estimates.

Cayuga

2. Residential/Community Employment
Land Needs: 7 hectares (17 acres)
Net Boundary Change: 0 hectares (0 acres)
3. Employment Area
Land Needs: 11 hectares (27 acres)
Net Boundary Change: 0 hectares (0 acres)

No boundary changes are proposed. Given wastewater treatment servicing constraints and no additional servicing capacity currently being planned, expansion can not take place at this time.

Dunnville

2. Residential/Community Employment
Land Needs: 34 hectares (84 acres)
Net Boundary Change: Add 25 hectares (62 acres)
3. Employment Area
Land Needs: 2 hectares (5 acres)
Net Boundary Change: 0 hectares (0 acres)

The proposed boundary change for residential/community employment purposes will still leave Dunnville with a shortage of land required to meet 2051 land needs. Development is constrained by the extensive flood plain of the Grand River. Engineering investigations of the flood plain, north of Ramsey Drive and the consideration of introducing the two-zone floodway and flood fringe concept to the area

may free up additional lands inside the urban boundary for future development, subject to floodproofing conditions. This investigation should occur before any further extensions of the urban boundary are considered. It is recommended that the lands subject to flooding concerns be placed in a Future Development designation and a site specific policy area pending the outcome of the engineering investigations.

The Employment Area deficit is minor but requires the continued monitoring of the up-take of employment lands.

Hagersville

2. Residential/Community Employment
Land Needs: surplus of 37 hectares (91 acres)
Net Boundary Change: 12 hectares (30 acres)
3. Employment Area
Land Needs: 14 hectares (35 acres)
Net Boundary Change: 0 hectares (0 acres)

The net boundary change for residential/community purposes is the addition of lands around the abandoned quarry near Sandusk Road and will compensate to some extent for the potential development that is constrained by the blasting operations at the Lafarge Quarry.

The Employment Area land needs can be met by redesignating lands within the current urban boundary from “Agriculture” to “Urban Business Park”. The redesignation of 43 hectares (106 acres) is proposed for this purpose which is sufficient to meet long term needs.

Jarvis

3. Residential/Community Employment
Land Needs: surplus of 90 hectares (222 acres)
Net Boundary Change: remove 74 hectares (183 acres)

4. Employment Area

Land Needs 1: surplus of 61 hectares (151 acres)

Net Boundary Change: remove 48 hectares (119 acres)

The removal of Residential/Community Employment and Employment Area lands from the Jarvis urban area will still leave a surplus of lands beyond the requirements of growth needs to 2051.

Townsend

2. Residential/Community Employment

Land Needs: surplus of 218 hectares (222 acres)

Net Boundary Change: remove 198 hectares (489 acres)

The removal of Residential/Community Employment from the Townsend urban area will still leave a surplus of lands beyond the requirements of growth needs to 2051. Not included in the net boundary change total are lands along the east side of Nanticoke Creek that are subject to flooding concerns and cannot be developed. These lands are also being proposed for removal from the Townsend urban area.

7.0 Nanticoke Water Supply

7.1 Introduction

An important component in the scope of work for the Official Plan Update work program is to prepare a long-term water servicing strategy for the urban communities along the Highway 6 Corridor including Cayuga. The strategy is to be based upon the review of technical reports and studies associated with extending the existing water service from the Nanticoke Water Treatment Plant (WTP) on Lake Erie along the Highway 6 corridor to Caledonia and then from there to Cayuga. At present this water service terminates at Hagersville.

According to the scope of work, the strategy is to include the following components:

- a) Identification of key triggers and potential phases to the extension of water service from Nanticoke to Caledonia;
- b) Verification that previously identified potential customers that could be serviced outside of Haldimand County are still interested in water servicing and confirmation of forecasted water demands;
- c) Updated costing for the implementation of the strategy; and,
- d) Development of policies relating to the strategy for incorporation into the Official Plan, such as but not limited to: protection of the corridor, principles around implementation of the strategy, and linking the strategy to future growth.

This report relies on engineering studies previously conducted for Haldimand County and other regional water supplies. Specifically, the following studies were reviewed:

1. Nanticoke Grand Valley Area Water Supply Project Feasibility Study completed in 2009 by Genivar (Genivar 2009). This study examined the feasibility of supplying water to the municipalities of Haldimand County, Norfolk County, Brantford, Brant County and the cities of Cambridge, Kitchener and Waterloo in the Region of Waterloo and to the Indigenous communities of the Mississaugas of the Credit First Nation and the Six

Nations of the Grand River Territory, all from the Nanticoke WTP.

2. Highway 6 Corridor Water and Wastewater Servicing Study: Servicing Alternatives and Implementation Plan, completed in December 2015 by WSP (WSP 2015). The purpose of the WSP study was “to identify long term servicing strategies for water and wastewater servicing within the Haldimand County Highway 6 Corridor to the year 2051”. Only the water servicing component of this study was reviewed for this report.
3. Nanticoke to Caledonia Water Supply Feasibility, completed in August 2018 by Wood Environmental & Infrastructure Solutions (Wood 2018). The study was commissioned by Haldimand County to examine the feasibility of extending the Nanticoke water supply system to Caledonia”.
4. Haldimand/Norfolk Regional Water Supply Study, draft report, June 2020, prepared by WT Infrastructure. This study explored the feasibility of creating a regional water supply system, based on the Nanticoke WTP, to serve the communities of Port Dover, Simcoe, Waterford, Delhi and Courtland.
5. Water Servicing Review and Updates, Caledonia Master Plan Update, prepared by C3 Water Inc. in 2020 (C3 Water 2020) This study looked at water supply and demand, storage requirements for Caledonia and Cayuga as well as the water distribution system and water pressure issues within Caledonia.

In addition to these studies, staff from Engineering & Capital Works were consulted throughout the preparation of this report.

7.2 Water Supply Agreement with Hamilton

The Caledonia and Cayuga urban areas and portions of the hamlet of York are supplied with potable drinking water from the City of Hamilton. The latest agreement between Haldimand County and the City of Hamilton to supply water to these communities from Hamilton was signed on July 15th, 2014. The agreement is signed in accordance with Section 20 of the *Municipal Act, 2001 S.O. 2001, c. 25*.

According to the agreement, the City of Hamilton undertakes to supply water to Haldimand County with the following characteristics and quality:

- a) water meeting the Ministry of the Environment's water quality standards;
- b) water meeting all standards of the *Safe Drinking Water Act, 2002, S.O. 2002, c. 32*, as amended from time to time;
- c) water of the same quality as that supplied to consumers in Hamilton; and
- d) a supply of water not greater than 13,800,000 litres (13,800 m³/day) per day in volume at a flow rate not greater than 9,583 litres/minute.

The agreement is in force and effect for an initial term of 20 years beginning on August 1, 2014; and expires on August 1, 2034. The agreement can be extended, upon mutual agreement, for two additional 10-year periods. An extension is to be agreed upon at least two years before the expiry of the agreement. The agreement can be terminated by Haldimand upon providing at least ten (10) years notice. Hamilton, should it decide that there is insufficient capacity to continue to supply the volume and rates of water required by Haldimand, can also terminate the agreement upon giving at least 10 years notice. Upon termination of the agreement, Haldimand shall:

remove or disconnect the Pipelines and the water meter(s), water meter chamber(s) and all appurtenances and restore the lands associated therewith to a reasonable condition, in the opinion of Hamilton, and that Haldimand shall be responsible for all expenses associated with such removal, disconnection and restoration.

Furthermore, Hamilton shall

not be responsible for any loss, expense or damage sustained directly or indirectly by Haldimand by reason of Hamilton exercising its right to terminate this Agreement

The agreement is not a permanent solution to the supply of water to the communities it serves within the County. The current agreement is in effect, unless terminated, to August 1, 2034 and can be extended through mutual agreement for up to another 20 years beyond that date. The agreement is silent about what happens after that date. It is assumed that a new agreement will then have to be entered into subject to conditions and terms set at that time and involving the mutual consent of both parties.

Haldimand County is charged at the Hamilton water rate plus a 10% surcharge for the water it receives from Hamilton. Haldimand is required to guarantee payment for 1.2 million m³ volume of water each year. In the ninth year of the agreement the average day consumption trends and charge rates are to be reviewed and reset with the revised rates to come into effect on January 1st, 2025. In its 2020 operating budget, Haldimand County budgeted \$2,349,600 for the water to be supplied from Hamilton⁷.

While the City of Hamilton must meet provincial standards in the quality of water it provides, it is otherwise in control of the quality of water provided to Haldimand County. There are treatment options over and above provincial standards that can be applied to the treatment of potable water. The City of Hamilton is necessarily focussed on the needs of its own residents and users. For example, the City of Hamilton adds fluoride and orthophosphate in the treatment process at the Woodward WTP that serves Haldimand County. According to the Haldimand County website:

orthophosphate is phosphoric acid that is a food grade, colourless, odourless liquid that changes to orthophosphate when it mixes with water. Orthophosphate is a phosphate-based inhibitor that creates a protective barrier on plumbing services to reduce the release of metals, such as lead and copper into the drinking water.

⁷ Haldimand County, Draft Tax Supported Capital Budget & Forecast: 2020-2029

Neither fluoride or orthophosphate are added to the water supply provided from either the Dunnville WTP or the Nanticoke WTP. Treatment applied to provide potable water also has an impact on wastewater treatment.

The Hamilton water supply transmission in Haldimand County is shown on **Map 13**.

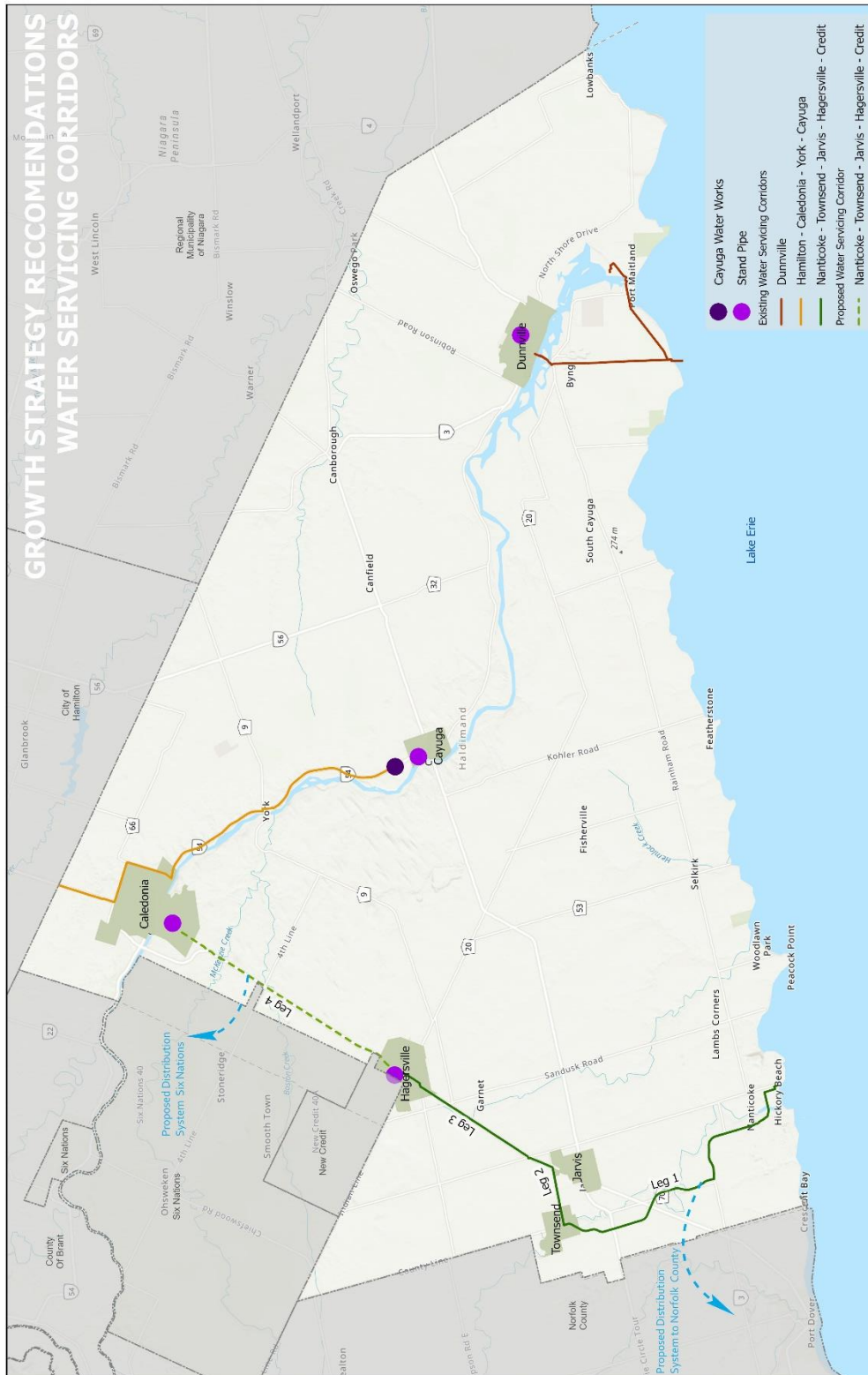
The transmission line enters Haldimand from the north along Argyle Street North (Highway 6) through a 450 mm pipe to the Caledonia Booster Pumping Station and reservoir. From there the 450 mm pipe continues southward to Greens Road (County Road 66). At this point the water transmission line splits into two. A 350 mm pipe watermain continues southward, across the Grand River to the Caledonia Standpipe at Argyle Street South and Haddington Street. The Caledonia community is served from this point.

The second branch continues eastward, in a 350 mm watermain, along Greens Road, then south along McClung Road to County Road 54. From there, it follows along in a 300 mm pipe along County Road 54 through York to the Cayuga Booster Pumping Station and reservoir. From there, the watermain continues in a 300 mm pipe to the Cayuga standpipe located to the rear of the Cayuga Courthouse. From the Cayuga standpipe the water is distributed to the Cayuga community.

7.3 Caledonia and Cayuga Water Demand

The following analysis of existing and future water demand for Caledonia and Cayuga is based on data provided in the C3 Water 2020 study prepared as part of the Caledonia Master Servicing Plan Update. It should be noted that the C3 Water report, based their future demand forecasts based on the growth forecasts contained in the Watson 2019 report which has since been superseded by higher growth forecasts in the Watson 2020 report. The forecasts prepared by C3 Water will be used and the impact of the more aggressive forecasts contained in the Watson 2020 will be provided through commentary.

Map 13



Recent water usage and capacity statistics presented in this report are provided in **Table 59**. **Table 59** provides data from 2015 to 2018 on the average daily demand (ADD) for water and the maximum daily demand (MDD) for each year. ADD provides the typical water demand for normal activities and averages out minor fluctuations that may occur from day to day. MDD takes into account events that temporarily result in a high demand for water. Such events can include a major water pipe burst or a major fire that requires a large volume of water to extinguish. Both ADD and MDD volumes are used in planning for water supply.

Table 59				
Recent Hamilton Water Supply Statistics, 2015 to 2018				
Year	Total Production (m ³ /year)	ADD (m ³ /day)	MDD Factor	MDD (m ³ /day)
2015	1,124,942	3,082	1.55	4,771
2016	1,101,489	3,018	1.58	4,768
2017	1,118,333	3,064	1.56	4,780
2018	1,178,007	3,227	1.48	4,776
Source: C3 Water, Water Servicing Review and Updates, Caledonia Master Plan Update, 2020				

Usage rates for the Hamilton water supply are well within the parameters set by the Agreement. Both the 2018 ADD of 3,227 (m³/day) and the MDD of 4,776 (m³/day) are within the maximum daily volume limit of 13,800 m³/day. The 2018 MDD flow rate equates to 3,317 litres/minute and is below the maximum flow rate of 9,583 litres/minute established in the Agreement with the City of Hamilton.

The C3 Water 2020 report based its forecast of future water demand on the projections contained in Watson 2019 and on engineering water supply design criteria for future development used by Haldimand County. Using these criteria, two MDD water demand projections were prepared:

Projection 1	Based on water demand of 243 L/capita/day which is based on 2018 billing meter records and a peaking factor of 1.58; and
Projection 2	Based on water demand of 325 L/capita/day based on an average density of 3.0 persons per household and a peaking factor of 2.0 litres. This is the design criteria used by Haldimand County and is based on the principle that new infrastructure should be capable of accommodating a variety of situations and fluctuations in demand without system failure.
Trigger Point	The trigger point at which plans to augment supply is set at 85 % of supply capacity. For the Hamilton water supply system serving Caledonia and Cayuga, the trigger point is set at 11,730 m ³ /day.

Table 60 presents the water demand requirements for both Projections 1 and 2 and also the population projections according to both the Watson 2019 and Watson 2020 reports.

Table 60 Future MDD Water Demand and Population Projections for Caledonia and Cayuga to 2051				
Year	Projection 1 (ML/d) ¹	Projection 2 (ML/d) ¹	Watson 2019 ²	Watson 2020 ³
2018	4.78	4.78		
2021	5.56	6.41	15,000	15,800
2026	7.44	10.1	17,300	18,800
2031	10.41	15.01	19,800	21,800
2036	11.31	16.51	22,200	24,800
2041	13.49	19.53	24,900	27,800
2046	15.51	22.26	27,800	31,200
2051 ⁴				34,700
Source: 1. C3 Water, Water Servicing Review and Updates, Caledonia Master Plan Update, 2020 2. Watson and Associates, 2019 3. Watson and Associates, 2020				

- Projection 1 The trigger point is reached around 2037 and water supply capacity is reached around 2042. According to the Watson 2019 population forecasts for Caledonia and Cayuga, these communities should have a combined population of about 22,750 in 2037 and population of 25,500 in 2042. Based on Watson 2020 forecast, the two communities should reach a combined population of 22,750 around 2033 and a combined population of 25,500 around 2038, about four years earlier.
- Projection 2 The trigger point is reached in 2028 and water supply capacity will be reached around 2030. According to the Watson 2019 population forecasts for Caledonia and Cayuga, these communities should have a combined population of about 18,500 in 2028 and population of 19,700 in 2030. Based on Watson 2020 forecast, the two communities should reach a combined population of 18,500 around 2026 and a combined population of 19,700 in 2028, about two years earlier.

Under Projection 1, the trigger point is reached between 2033 and 2037 and supply capacity is reached between 2038 and 2042 depending upon whether the Watson 2020 or the Watson 2019 forecast is used. It is clear that under both projections and forecasts, current Hamilton water supply agreement can not meet the long-term growth needs for Caledonia and Cayuga.

According to Projection 2, the trigger point at which the process to augment water supply should commence can be reached between 2026 and 2028. Supply capacity issues between 2028 and 2030 depending upon the rate of growth that will be experienced. The time difference between the trigger point and when water supply capacity will be reached is only several years later. The planning, the environmental

assessment process, project design, construction can often take eight years or longer for major projects.

The C3 Water 2020 report did not make a specific recommendation as to the future water supply source for Caledonia. However, the recommended improvements to Caledonia's water supply system include a new South Elevated Tank that will facilitate the integration of the water supply coming from the south, that is, the Nanticoke WTP.

7.4 Nanticoke Water Treatment Plant

The Nanticoke Water Treatment Plant (WTP) is located on the west side of County Road 55, south of the hamlet of Nanticoke. The WTP property is about 32 hectares (80 acres) in area and is approximately 75 metres (246 feet) north of the Lake Erie shoreline. There is considerable space available on the property to expand water treatment capabilities to serve additional communities. The Genivar 2009 report examined the feasibility of providing water to all of Haldimand County, Norfolk County, local First Nations communities, Brant County, Brantford and urban communities of Waterloo Region from the Nanticoke WTP site. It was estimated that by 2090, this would require providing in the neighbourhood of 900 ML/day from an expanded plant on the WTP site which was considered feasible.

Between the Nanticoke WTP property and shoreline, there are cottages along both sides of Hickory Beach Lane. Immediately to the north and west of the WTP property, the adjacent properties have no structures and some are currently farmed. The Wilkinson Ready Mix Concrete Plant, at 79 Nanticoke Road (County Road 55), juts into the WTP property. To the east, across Nanticoke Road, is the former Ontario Power Generating Station. The Power Station is no longer active although a solar farm is located to the north of the plant towards Rainham Road.

The Lake Erie water intake pipes for the Nanticoke WTP are located on the Ontario Power Generation (OPG) Station property, located on the east side of County Road 55.

The intake consists of two 6600 mm intake pipes that are owned and operated by OPG. The raw water is conveyed to the Nanticoke WTP. There, an industrial pumping station (IPS) pumps raw untreated water which is delivered by pipes to U.S. Steel and to the Imperial Oil refinery located nearby. A separate low lift pump takes raw water to the Water Treatment Plant for processing. Treated water is then sent to a high lift pump to be conveyed to the 750 mm transmission line. It should be noted that the County is in the process of assuming ownership of the west intake and forebay.

The Nanticoke WTP has a permit to take 1,818,000 m³/day of raw water from Lake Erie. However, an interim limit of 437,000 m³/day has been set by the provincial Ministry of the Environment, Conservation and Parks (MECP). The interim limit is in place until it is demonstrated that a regional water supply strategy requires additional capacity. According to the Nanticoke Drinking Water System 2019 Annual Water Quality Report, the maximum daily flow from Nanticoke Water distribution system in 2019 is a small portion, 19.5% of its interim water permit allotment. This amount includes raw water that is pumped to Stelco and Imperial Oil.

The Nanticoke WTP provides potable water to the urban areas of Townsend, Jarvis and Hagersville and to the neighbouring Mississaugas of the Credit First Nation. The Nanticoke WTP also provides water to the nearby Lake Erie Industrial Park. (LEIP).

The distribution system from the Nanticoke WTP is shown on **Map 13**. The system consists of the following legs⁸:

1. Nanticoke to Townsend – 16.7 kilometres (10.4 miles)– 750 mm pipe, this leg passes through and serves the Lake Erie Industrial Park; It should be noted that in the construction of this leg, the provision of supplying Norfolk County from the Nanticoke WTP was anticipated. Three stubs⁹ were constructed to the Norfolk County line:

⁸ Information from Nanticoke to Caledonia Water Supply Feasibility by Wood Environmental & Infrastructure Solutions, 2018.

⁹ From the WT 2020 report.

- a) A 400 mm pipe 170 metres (558 feet) westward from the main transmission line along Haldimand Road # 3 which connects with St. John's Road East in Norfolk County;
 - b) A 500 mm pipe extending 180 metres (591 feet) westward from the intersection of Keith Richardson Parkway and Town Centre Drive; and
 - c) A 400 mm pipe extending 220 metres (722 feet) westward along Stone Quarry Road from its intersection with Townsend Parkway.
- 2. Townsend to Hagersville Booster Station – 4.5 kilometers (2.8 miles)– 500 mm pipe, this leg supplies Jarvis; and
 - 3. Hagersville Booster Station to Hagersville Standpipe - 7.3 kilometres (4.5 miles) – 300 mm pipe.

The total length of the supply system is 28.5 kilometres (17.7 miles).

Usage and capacity statistics from 2019 for the Nanticoke WTP are presented in in **Table 61**. In 2019, the average daily demand (ADD) on the WTP system was about 52% of its capacity. The maximum daily demand (MDD) on the system was, in 2019, about 72% of its capacity. When approved allocations for are considered, the available capacity is 3,111 m³/day, which is equivalent to 3.1 ML/day. As presented previously in this report, the 2046 MDD water demand for Caledonia and Cayuga is estimated, by C3 Water 2020, to be 22 ML/day. To service the Caledonia and Cayuga communities, the capacity of the Nanticoke WTP needs to be expanded.

Table 61 Nanticoke Water Supply and Demand, 2019			
	Average Daily Demand (m ³ /day)	Maximum Daily Demand (m ³ /day)	Comment
Nanticoke Water Supply	N/A	13,636	Rated Capacity
Industrial	500	700	Historical Data (2016-2019)
Jarvis and Townsend	1,073	2,220	Historical Data (2014-2019)
Hagersville	2,146	3,546	Historical Data (2014-2019)
Mississaugas of the Credit	450	660	Historical Data (2014-2019)
Unaccounted/Unmetered	2,899	2,638	Estimate
Nanticoke Water Demand	7,068	9,764	9 Annual Report Data
Approved Development Allocation		755	Currently Approved Development Allocation
Net Supply Available		3,117	Rated Capacity minus MDD Water Demand and Approved Allocations
Source: WT Infrastructure, Haldimand/Norfolk Regional Water Supply Study, 2020			

7.5 Expanding the Nanticoke Water Supply System to Serve Caledonia and Cayuga

For the Nanticoke WTP to serve Caledonia and Cayuga upgrades to the treatment plant, booster pumps and transmission pipes are required. The upgrades and their costs are outlined in the Wood, 2018 report and include the following:

Water Treatment Plant Upgrades

The Wood, 2018 report estimated that the demand projection for a regional system that includes the communities of Townsend, Jarvis, Hagersville, Caledonia, Cayuga and the adjacent communities of the Mississaugas of the Credit and the Six Nations of the

Grand River Territory would require a water treatment capacity of 35 ML/day. This was based on the build out of the communities and the need to serve a total population of 72,000. This demand projection needs to be updated with current growth projections for these communities.

The Wood 2018 report did not provide cost estimates for upgrades required at the Nanticoke WTP to service a population of 72,000. However, estimates of the total cost of involved in upgrading the Nanticoke WTP to serve the Caledonia and Cayuga communities was provided in the 2015 WSP study. According to this study, the cost of upgrading the Nanticoke WTP to provide 35,000 m³/day (35 ML/day) was \$10 million in 2015. The WSP study also provided cost estimates for the transmission and pumping station upgrades, however, the more recent estimates provided by Wood 2018 will be used in this report.

Transmission Lines:

1. Construct a 600 mm transmission pipe from the Hagersville Standpipe to the Caledonia Standpipe, a distance of 13.5 kilometres (8.4 miles) (\$10.9 million cost);
2. Upgrade the transmission main from the Hagersville Booster Pumping station to the Hagersville Standpipe by 300 mm – 600 mm [this can be either through twinning the existing transmission line or through replacement] – a distance of 7.3 kilometres (4.5 miles) (\$5.9 million cost)
3. Upgrade the 500 mm pipe from the Townsend Elevated tank to the Hagersville Booster Pumping Station, a distance of 4.5 kilometres (2.8 miles) (\$3.6 million).

Not considered in the Wood, 2018 report is the construction of a separate transmission line directly from the Nanticoke WTP, along County Rd 55 to the Hagersville Booster Pumping Station which is located at the intersection of County Road # 55 and Highway 6, a distance of about 13 kilometres (8 miles). The advantage of this new line would be

to create redundancy in the water transmission system and allow for system looping which will assist in maintaining water quality.

The construction of the transmission line will require upgrading existing the line along the Highway 6 right-of-way to Hagersville and the construction of new line from Hagersville to Caledonia. The most direct route for this extension is also along Highway 6. The construction of the upgrade and the extension of the transmission lines along Highway 6 will require approval of the Ministry of Transportation. An environmental assessment under the requirements of the Environmental Assessment Act will be required in the planning of the projects. It is possible that along portions or all along Highway 6 there might not be sufficient room within the right-of way to accommodate the upgrade or extension and the associated construction activities while also allowing for the safe passage of vehicles. Construction of the corridor may require easements from adjacent properties or the selection of alternative routes in whole or for parts of the corridor.

Pumping Stations

1. Upgrade the Hagersville Booster Pumping Station (**\$2 million**);
2. Upgrade the High Lift Pump at the Nanticoke WTP (**\$2 million**); and
3. Construct two intermediate booster pumping stations, one midpoint between the Nanticoke WTP and the Hagersville BPS and the second midpoint between the Hagersville BPS and the Caledonia standpipe. Note that the Wood, 2018 report did not provide a specific estimate for the construction of the two intermediate booster pumping stations. It is estimated that they will cost \$2 million each, based on the estimated cost of the Hagersville Booster Pumping Station. (**\$4 million**).

The total cost of these upgrades is \$28.4 million, in 2018 dollars.

Total Costs

Applying an inflationary factor of 2% annually to the Wood 2018 and the WSP cost estimates, the current cost of extending the Nanticoke WTP system to serve Caledonia

and Cayuga is estimated to be \$40.6 million. It should be noted that these estimates are not based on detailed designs or the examination of alternatives that would be required through an environmental assessment process that is required to be completed before the installation of the capital works can begin.



Map 14: Upgrades to Extend Nanticoke Water Service to Caledonia and Cayugaⁱ¹⁰

¹⁰ Source: Source: WT Infrastructure, Haldimand/Norfolk Regional Water Supply Study, 2020

7.6 Other Municipalities

Nanticoke Grand Valley Area Water Supply Project Feasibility Study completed by Genivar 2009 examined the feasibility of the Nanticoke WTP supplying water to Norfolk County, the Mississaugas of the Credit First Nation, the Six Nations of the Grand River Territory, Brantford, Brant County and the cities of Cambridge, Kitchener and Waterloo in the Region of Waterloo. This was in addition to the Nanticoke WTP supplying water to all six urban areas in Haldimand County. The study concluded that the development of an integrated water system serving the long-term water needs for all of these communities from the Nanticoke WTP was a viable option. However, the development of this integrated water supply system requires the coordinated effort of many municipalities and considerable capital investment from each partner municipality and has not progressed further.

Expanding the Nanticoke WTP supply system to serve communities in Norfolk County has considerable potential. Port Dover currently draws its water supply from Lake Erie at a water treatment plant and intake located at 595 Nelson Street West in Port Dover. In June 2019, Norfolk Council approved a development moratorium in Port Dover for those developments requiring water. The moratorium is to be in place until the water capacity supply issues in Port Dover are addressed. The Port Dover WTP has the capacity to treat 2,454 m³/day while peak demand on the system is 4,579 m³/day.

Other communities in Norfolk County also have potential water supply problems. Waterford is supplied by two wells that are located close to each other. Potentially contamination issues could force the shut down of its water supply. Delhi is also supplied from wells and faces a similar potential contamination issue. Simcoe, which is also served by wells, has water quality issues that effect the operation of the water treatment plant. Also, the capacity of the seven wells that supply water to Simcoe are diminishing in capacity and may not be able to meet the community's long-term growth needs.

7.7 Source Water Protection

The Nanticoke WTP is located within the area covered by the Long Point Region Source Protection Plan which has been approved in accordance with the requirements of the provincial *Clean Water Act, 2006*ⁱⁱ. The purpose of the source water protection plan is to protect municipal drinking water systems by identifying potential risks to municipal drinking water sources and to put policies in place that reduce the risks and protect the quality of drinking water.

The Source Protection Plan outlines the risks associated with the Lake Erie water intakes from the former OPG site as well as the pumping station intake on the Nanticoke WTP property. The specific policies that apply to the Nanticoke WTP Haldimand County are provided in Volume II-Approved of the Long Point Region Source Protection Plan. Policy HC-MC-1.2 requires that the County's Official Plan be amended to do the following:

- a) Identify the vulnerable areas in which drinking water threats prescribed under the *Clean Water Act, 2006* would be significant;
- b) Indicate that within the areas identified, any land use or activity that is, or would be, a significant drinking water threat is required to conform with all applicable Source Protection Plan policies and, as such, may be prohibited, restricted, or otherwise regulated by policies in the Source Protection Plan; and
- c) Incorporate any other amendments required to conform with the threat specific land use policies identified in this Source Protection Plan.

The vulnerable areas associated with the Nanticoke WTP are illustrated on **Map 15**. Intake Protection Zone 1 (IPZ1) is shown in red and relates to the Industrial Pumping Station on the property of the WTP. Intake Protection Zone 2 (IPZ2) is shown in green

and relates to the two intakes each located about 500 metres (1,640 feet) offshore from the Ontario Power Generating property. These two vulnerable areas should be identified in the Official Plan with policies that identify land uses and activities that should be prohibited, restricted or regulated to ensure the on-going protection of the drinking water treatment plant processes.

The prescribed drinking water threats depend on the circumstances of the activity and where the activity is occurring within a vulnerable area. Prescribed drinking water threats for Intake Protection Zone 1 are: commercial fertilizers and pesticides, uncovered road salt storage, handling and storage of fuel, non-aqueous phase liquids and organic chemicals. Prescribed drinking water threats for Intake Protection Zone 2 are commercial fertilizers and pesticides and uncovered road salt storage.

Source water protection policies in the Official Plan are located in Section 2. B.1). This section does not have any specific policies relating to the potential threats identified for the Nanticoke WTP. Therefore, an amendment to the Official Plan is required that addresses the issues identified in the Long Point Conservation Authority's Source Water Protection Plan.

7.8 Corridor Protection

Official Plan corridor protection policies are normally applied to preserve routes for future major transportation routes and have also been used to protect significant environmental features and to preserve proposed routes for major infrastructure such as transmission lines. Corridor protection is warranted for new water transmission lines required to serve Caledonia and Cayuga. The existing water pipeline from the Nanticoke WTP to Townsend and Jarvis is in place and does not require protection. The stub lines that may potentially connect to future water trunk pipes serving Norfolk County communities are also in place.

Extending the Nanticoke WTP water supply to Caledonia requires corridor protection along two routes:

1. From the Nanticoke WTP northward along County Road 55 to the existing pumping station located at the intersection of Highway 6. This is along the original route proposed in the Genivar 2009 study. This route is an option that should be preserved and can be assessed further through the environmental assessment process required to extend the water supply service to Caledonia. County Road 55 provides a more direct route and may also provide advantages to the water supply system in Jarvis by providing system looping as well as redundancy.
2. From the pumping station at County Road 55 along Highway 6, through Hagersville to the Caledonia Standpipe or proposed South Elevated Tank in Caledonia. Along this route additional pumping stations will be required and the existing pipeline to Hagersville will either need to be replaced or twinned.

The purpose of corridor protection is to discourage developments along the proposed route that may potentially increase the cost of construction, make construction more difficult and/or remove the viability of the route for the transmission of water. The

proposed route as well as policies protecting the corridor will need to be added to the Official Plan through an amendment.

7.9 Current Official Plan Policies

Policies on the provision of municipal water are provided in Section 5. Community Building, Subsection B Servicing. The first paragraph of Section 5.B.2 states as follows:

The urban areas of the County are serviced with water by Lake-based supply systems. Caledonia and Cayuga are serviced with Lake Ontario water from the City of Hamilton, while Jarvis, Townsend and Hagersville are serviced with Lake Erie water from a central water system based in Nanticoke. Dunnville is serviced by a separate lake-based water system.

This the only policy relating to the source of water for the urban areas. It is more of a factual statement than a policy and needs to be further expounded. Nor does the policy state that the Nanticoke WTP may serve other municipalities and nearby Indigenous communities. The Official Plan should be amended by adding the following statement in Section 5.B.2:

The Nanticoke WTP is intended to provide potable drinking water on a regional basis. In addition to serving the communities of Jarvis, Townsend, Hagersville and the Mississaugas of the Credit First Nation, the water service may be extended to serve the communities of Caledonia and Cayuga, replacing the service provided by the City of Hamilton, to the Six Nations of the Grand River Territory and to urban communities in Norfolk County. Expansion of the Nanticoke based regional water system will be in accordance with engineering and design studies and the requirements of the Environmental Assessment Act.

7.10 Conclusion

The Nanticoke WTP was originally designed to be part of a regional water supply system serving urban communities in Haldimand County, Norfolk County, the Mississaugas of the Credit First Nation, the Six Nations of the Grand River Territory and potentially other communities further north along the Grand River. The existing water supply agreement with the City of Hamilton to supply Caledonia and Cayuga with potable water is not sufficient to meet the growth needs of these two communities. Revising the City of Hamilton agreement to increase the supply of water to meet growth needs is an option that can be pursued if necessary. Expanding the Nanticoke WTP and transmission service to Caledonia and Cayuga provides the opportunity to share the capital costs of upgrading the plant capacity and expanding the water transmission lines with other communities that will also benefit. The Official Plan should be amended to support the development of such a system.
