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OFFICIAL PLAN

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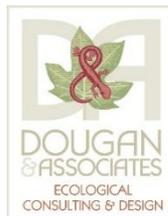
Niagara Watershed Plan

Watershed Planning Equivalency Document

Goals and Objectives Discussion Paper

Niagara Region
October 2020

wood.



north-south
ENVIRONMENTAL

SUSTAINABLE REGION



TABLE OF CONTENTS

1.0	PURPOSE	2
2.0	INTRODUCTION	2
3.0	WATERSHED PLANNING PRINCIPLES	3
4.0	REVIEW OF BACKGROUND DOCUMENTATION	4
5.0	GOALS AND OBJECTIVES	5
5.1	Water Resource System.....	6
5.1.1	Provincial Policies and Plans	7
5.1.2	Existing Regional Official Plan (2014).....	14
5.1.3	Niagara Region Priorities	16
5.1.4	Goals and Objectives	18
5.2	Natural Heritage System	20
5.2.1	Provincial Policies, Plans and Guidance.....	20
5.2.2	Existing Regional Official Plan (2014).....	26
5.2.3	Niagara Region Priorities	27
5.2.4	Goals and Objectives	29
5.3	Land Use Planning and Resiliency	30
5.3.1	Provincial Policies and Plans	30
5.3.2	Existing Regional Official Plan (2014).....	36
5.3.3	Niagara Region Priorities	38
5.3.4	Goals and Objectives	39
5.4	Engagement.....	40
5.4.1	Provincial Policies and Plans	41
5.4.2	Existing Regional Official Plan (2014).....	42
5.4.3	Niagara Region Priorities	42
5.4.4	Goals and Objectives	43
6.0	SUMMARY OF "WORKING" SET OF GOALS AND OBJECTIVES	43
7.0	NEXT STEPS	47
8.0	DISCUSSION QUESTIONS	48

1.0 Purpose

The purpose of this Discussion Paper is to present a working draft of the goals and objectives for the Niagara Watershed Plan (Equivalent) and to seek feedback from the public and other stakeholders. The Watershed Plan (Equivalent) is being prepared to inform the Region's new Official Plan on environmental and water-based constraints and opportunities. The draft Goals and Objectives outlined herein are for the Watershed Plan (Equivalent) explicitly and are intended to be complementary to the overall goals and objectives of the new Official Plan.

2.0 Introduction

Niagara Region is in the process of preparing a new Niagara Official Plan (NOP) which is intended to achieve conformity with provincial plans and provide relevant guidance to local area municipalities. As part of this work, a Natural Environment Work Program (NEWP) is being undertaken, which is focusing on establishing a regional-scale natural heritage system (NHS) and water resource system (WRS), including policies and mapping, which will be implemented through the new NOP.

As part of the NEWP, a Watershed Planning Discussion Paper (October 3, 2019) was prepared to better understand the Provincial requirement that watershed planning must inform land use planning. The Watershed Planning Discussion Paper (WPDP) was largely based on the Draft, Provincial Watershed Planning guidance document "Watershed Planning in Ontario – Guidance for Land-use Planning Authorities" (MOECC, MNRF 2018) highlighting its influence on how best to inform growth and infrastructure planning through the Official Plan process.

The Draft Provincial Watershed Planning guidance document, as well as the Growth Plan and Greenbelt Plan, acknowledge the concept of leveraging equivalent information from existing documents thereby offering the opportunity for re-use for informing growth planning.

The Discussion Paper discussed the possibility of preparing an "equivalency" document at a tertiary level, informed by a review of existing reports available from the Niagara Peninsula Conservation Authority (NPCA), Region of Niagara, local area municipalities (LAM) and other organizations. Notably, based on the terminology in the Provincial Guidance, the "tertiary" level of watersheds refers to those lands draining to Lake Ontario, Lake Erie and the Niagara River for Niagara Region.

The Niagara Watershed Plan Equivalency document (NWP-E) is being prepared as a watershed planning equivalency document in accordance with provincial direction, building on the guidance from the WPDP; notably the WPDP outlined the status of watershed-oriented data across Niagara, specific to mapping, data and reporting. The WPDP also outlined the status of the available data/information and associated gaps. The NWP-E is intended to build on this understanding and further mine the available

information in order to better characterize the areas being planned for growth and to inform the NOP on constraints and opportunities where the information is sufficient. Where there are information gaps, the NWP-E will outline those gaps and provide high-level scope for execution at the subsequent planning stages (local OP). The NWP-E will not fill any gaps, nor conduct any new or confirmatory field work. Furthermore, the NWP-E will not include any analytical modelling of water systems (hydrology, hydraulics, hydrogeology), as this effort is considered more appropriate at the subsequent planning stages, through the Quaternary scale Watershed Plans and ultimately the Subwatershed Studies supporting Secondary Plans.

The Region has retained Wood Environment and Infrastructure Solutions (Wood), in collaboration with North-South Environmental and Dougan & Associates (collectively the Project Team), to develop the Niagara Watershed Plan as an equivalency document to support the new NOP. The key purpose of the NWP-E is to provide tertiary watershed planning direction to inform the new NOP. The Project Team has reviewed applicable provincial policies, plans and guidance documents related to watershed planning, and the NHS and WRS, to inform the development of the goals and objectives of the NWP-E document in the context of the overall NOP process.

3.0 Watershed Planning Principles

Based on guidance from the Provincial Policy Statement, the watershed has been identified as the ecologically meaningful scale for integrated and long-term planning, and also the appropriate scale for identifying natural heritage systems and water resource systems. Further, watershed planning can provide high-level guidance to water (surface and ground) management practices to minimize the impacts of adverse runoff from urban areas (stormwater peaks/volumes and contaminant loads), among other requirements.

Watersheds are defined as an area that is drained by a river and its tributaries, while subwatersheds are defined as an area that is drained by a tributary or some defined portion of a stream. The Growth Plan and Greenbelt Plan share the same definition for watershed planning, which is defined as follows:

Planning that provides a framework for establishing goals, objectives, and direction for the protection of water resources, the management of human activities, land, water, aquatic life, and resources within a watershed and for the assessment of cumulative, cross-jurisdictional, and cross-watershed impacts.

The current Provincial Guidance for Watershed planning (MNRF, 2018 (Draft)) prescribes a number of components of watershed planning as follows: watershed characterization, water budgets, and conservation plans; nutrient loading assessments; consideration of climate change impacts and severe weather events; land and water use management objectives and strategies; scenario modelling to evaluate the impacts of forecasted growth and servicing options, and associated mitigation measures; environmental

monitoring plans; requirements for environmental best management practices, programs, and performance measures; criteria for evaluating the protection of quality and quantity of water; the identification and protection of hydrologic features, areas, and; and targets for the protection and restoration of riparian areas.

Watershed planning can be undertaken at many scales, and considers cross-jurisdictional and cross-watershed impacts. Subwatershed planning which accompanies local municipal planning, has a higher level of analysis and related management details.

Provincial land use plans that are applicable within the Greater Golden Horseshoe area provide direction for municipalities to ensure that watershed planning is undertaken to inform municipal policy and decision-making. Policies in the Growth Plan and Greenbelt Plan require that upper and single tier municipalities, in partnership with conservation authorities, as appropriate, shall ensure that watershed planning is undertaken to support a comprehensive, integrated, and long-term approach to the protection, enhancement or restoration of the quality and quantity of water within a watershed

Furthermore, the Growth Plan requires planning for large-scale greenfield development, including secondary plans, to be informed by subwatershed planning, or equivalent. Settlement Area Boundary Expansions need to demonstrate that any proposed expansion will minimize or mitigate potential impacts on watershed conditions and the water resource system, including the quality and quantity of water.

4.0 Review of Background Documentation

The new NOP is required to be consistent with the Provincial Policy Statement (2020) and conform to provincial plans. For the NWP-E document to inform the new NOP, it is important to identify the key areas of conformity through a review of provincial guidance to inform the Goals and Objectives of the NWP-E document.

The Project Team has reviewed provincial policies and plans to determine legislative requirements regarding Watershed Plans and suitable equivalents to inform land use planning. The Draft Provincial Watershed Planning guidance document “Watershed Planning in Ontario – Guidance for Land-use Planning Authorities” (2018) was specifically reviewed to determine existing provincial guidance regarding the setting of watershed plan goals and objectives.

In order to rationalize the provincial level guidance to the Regional level, as well as identify key areas of conformity and Niagara Region priorities and concerns, the Project Team has reviewed the existing ROP (2014), the NEWP Consultation Summary Report (2019) and the NEWP Watershed Planning Discussion Paper (2019). Furthermore, the Niagara Region Stormwater Management Guidelines: Technical Memorandum #1 was reviewed, and the Regional priorities identified at the Project Kick-off Meeting on May 14, 2020 were incorporated to provide further insights at the Regional level.

The following documents were reviewed to establish the goals and objectives for the NWP-E document, specific to Niagara Region:

- Provincial Policy, Plans and Guidance
 - Provincial Policy Statement (PPS) (2020)
 - A Place to Grow – Growth Plan for the Greater Golden Horseshoe (Growth Plan; 2019)
 - Greenbelt Plan (2017)
 - Niagara Escarpment Plan (2017)
 - Watershed Planning in Ontario – Guidance for land-use planning authorities (Draft February 2018)
- Niagara Region Policy, Reports and Guidance
 - Existing Regional Official Plan (ROP) (2014)
 - Natural Environment Work Program: Watershed Planning Discussion Paper (2019)
 - Natural Environment Work Program: Consultation Summary Report – 1st Point of Engagement (2019)
 - Niagara Stormwater Management Guidelines – Technical Memorandum #1: Background Review, Research Municipalities, Summarize Legislation (July 2020)

5.0 Goals and Objectives

In the context of watershed planning, “Goals” represent the aspirational outcomes established for a watershed, while “Objectives” represent the supporting actions or outcomes necessary to achieve those goals, explicit to watershed planning. The goals and objectives of a watershed plan ultimately set the parameters for some of the land-use planning decisions made under that plan. It is therefore essential that these goals and objectives for the watershed planning process align with all relevant policies and plans, as well as reflect local priorities and existing conditions.

The goals and objectives of the NWP-E document have been categorized into the following key topic areas:

- Water Resource System (WRS)
- Natural Heritage System (NHS)
- Land Use Planning and Resiliency
- Engagement

For each key topic area, relevant provincial guidance, legislative requirements and ROP (2014) policies were identified. Subsequently, Niagara Region specific documents (e.g. NEWP reports) were reviewed to identify Regional and stakeholder priorities, as well as local conditions. The provincial guidance, Regional guidance and stakeholder input were then used to develop preliminary goals and objectives for the key topic areas to be

considered through the NWP-E document and through future actions / recommendations.

As noted above, in the context of the Niagara NWP-E, the “Goals” are the aspirational outcomes established at the tertiary watershed level, encompassing long term and high-level watershed planning goals. The NWP-E “Objectives” represent those actionable items and outcomes that will be either accomplished by the Project Team, as part of this scope of work, or become recommendations for future work by the Region through Quaternary Watershed planning or of the Local Area Municipalities, through subwatershed planning. This Discussion Paper presents a working set of goals and objectives in order to develop a framework for the NWP-E, which will be modified and expanded upon as more information becomes available through future project tasks.

Regional input and stakeholder consultation will also play an important role in refining the NWP-E goals and objectives, in order to ensure they represent local priorities and existing conditions. As the NWP-E goals and objectives are built upon and possibly refined in future project tasks, future actions and recommendations will also be identified in order to provide Niagara Region with the next steps required to implement and achieve the NWP-E goals and objectives, as well as inform the new NOP and local area municipal plans, to ensure land use decisions are informed by watershed planning. Recommendations will include partnership opportunities with the local municipalities, NPCA and the public, in order to further develop the Niagara WP (E), and may include, among others, ground truthing, monitoring programs, modelling, outreach programs, future watershed and subwatershed study recommendations and NWP-E refinements.

It is important to highlight that the current scope and process for the Equivalency Document, being completed by the Project Team, does not include numeric modelling of the water systems nor any new or confirmatory field work, and the NWP-E goals and objectives, as well as future actions / recommendations reflect this accordingly. Furthermore, the Province, through the Growth Plan (2019), acknowledges the concept of an “equivalent” watershed plan to inform official plans, through the use of existing data and information accordingly.

5.1 Water Resource System

The following section identifies relevant policies, plans and guidance related to the Water Resource System, followed by a list of NWP-E goals and objectives.

A Water Resource System per the Provincial Policy Statement (2020) is:

“A system consisting of ground water features and areas and surface water features (including shoreline areas), and hydrologic functions, which provide the water resources necessary to sustain healthy aquatic and terrestrial ecosystems and human water consumption. The water resource system will comprise key hydrologic features and key hydrologic areas.”

5.1.1 Provincial Policies and Plans

5.1.1.1 Water Resource System

Provincial policies, plans and guidance were reviewed to identify key areas of conformity and to determine existing guidance related to the WRS in the context of watershed planning.

Section	Provincial Policy Statement (2020) Policies
1.2 Coordination	
Subsection 1.2.1	A coordinated, integrated and comprehensive approach should be used when dealing with planning matters within municipalities, across lower, single and/or upper-tier municipal boundaries, and with other orders of government, agencies and boards including: e) ecosystem, shoreline, watershed, and Great Lakes related issues
2.2 Water	
Subsection 2.2.1	Planning authorities shall protect, improve, or restore the quality and quantity of water by: <ul style="list-style-type: none"> a. using the watershed as the ecologically meaningful scale for integrated and long-term planning, which can be a foundation for considering cumulative impacts of development b. minimizing potential negative impacts, including cross-jurisdictional and cross-watershed impacts c. evaluating and preparing for the impacts of a changing climate to water resource systems at the watershed level d. identifying water resource systems consisting of ground water features, hydrologic functions, natural heritage features and areas, and surface water features including shoreline areas, which are necessary for the ecological and hydrological integrity of the watershed e. maintaining linkages and related functions among ground water features, hydrologic functions, natural heritage features and areas, and surface water features including shoreline areas g. planning for efficient and sustainable use of water resources, through practices for water conservation and sustaining water quality

Section	A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2019) Policies
2.2.8 Settlement Area Boundary Expansions	

Section	A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2019) Policies
Subsection 3	Where the need for a settlement area boundary expansion has been justified in accordance with policy 2.2.8.2, the feasibility of the proposed expansion will be determined and the most appropriate location for the proposed expansion will be identified based on the comprehensive application of all of the policies in this Plan, including the following: 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
4.2.1 Water Resource Systems	
Subsection 1	Upper- and single-tier municipalities, partnering with lower-tier municipalities and conservation authorities as appropriate, will ensure that watershed planning is undertaken to support a comprehensive, integrated, and long-term approach to the protection, enhancement, or restoration of the quality and quantity of water within a watershed.
Subsection 3	Watershed planning or equivalent will inform: a. the identification of water resource systems b. the protection, enhancement, or restoration of the quality and quantity of water c. decisions on allocation of growth d. planning for water, wastewater, and stormwater infrastructure
Subsection 5	Municipalities will consider the Great Lakes Strategy, the targets and goals of the Great Lakes Protection Act, 2015 and any applicable Great Lakes agreements as part of watershed planning and coastal or waterfront planning initiatives.
4.2.3 Key Hydrologic Features, Key Hydrologic Areas and Key Natural Heritage Features	
Subsection 2	Outside of settlement areas, proposals for large-scale development proceeding by way of plan of subdivision, vacant land plan of condominium or site plan may be permitted within a key hydrologic area where it is demonstrated that the hydrologic functions, including the quality and quantity of water, of these areas will be protected and, where possible, enhanced or restored through: b. meeting other criteria and direction set out in the applicable watershed planning or subwatershed plans
4.2.10 Climate Change	
Subsection 1	Upper- and single-tier municipalities will develop policies in their official plans to identify actions that will reduce greenhouse gas emissions and

Section	A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2019) Policies
	<p>address climate change adaptation goals, aligned with other provincial plans and policies for environmental protection that will include:</p> <ul style="list-style-type: none"> e. recognizing the importance of watershed planning for the protection of the quality and quantity of water and the identification and protection of hydrologic features and areas f. Protecting the Natural Heritage System for the Growth Plan and water resource systems

Section	Greenbelt Plan (2017) Policies
1.2.2 Protected Countryside Goals	
Subsection 6	<p>To enhance our urban and rural areas and overall quality of life by promoting the following matters within the Protected Countryside: Climate Change:</p> <ul style="list-style-type: none"> a. Integrating climate change considerations into planning and managing the Agricultural System, Natural Heritage System and Water Resource System to improve resilience and protect carbon sequestration potential, recognizing that the Natural Heritage System is also a component of green infrastructure b. Integrating climate change considerations into planning and managing growth that includes incorporating techniques to reduce greenhouse gas emissions, and increasing the resilience of settlement areas and infrastructure within the Greenbelt
3.2.3 Water Resource System Policies	
Subsection 2	<p>Watersheds are the most meaningful scale for hydrological planning. Municipalities, partnering with conservation authorities as appropriate, shall ensure that watershed planning is undertaken to support a comprehensive, integrated, and long-term approach to the protection, enhancement or restoration of the quality and quantity of water within a watershed.</p>
Subsection 5	<p>Cross-jurisdictional and cross-watershed impacts need to be considered in the development of watershed plans. The development of watershed plans and watershed management approaches in the Protected Countryside shall be integrated with watershed planning and management in the NEP, the ORMCP and the Growth Plan.</p>
Subsection 6	<p>Municipalities shall consider the Great Lakes Strategy, the targets and goals of the Great Lakes Protection Act, 2015 and any applicable Great Lakes agreements as part of watershed planning and coastal or waterfront planning initiatives.</p>

Section	Greenbelt Plan (2017) Policies
3.2.4 Key Hydrologic Areas	
Subsection 1	<p>For lands within a key hydrologic area in the Protected Countryside, the following policies apply:</p> <p>1. Major development may be permitted where it has been demonstrated that the hydrologic functions, including groundwater and surface water quality and quantity, of these areas shall be protected and, where possible, improved or restored through:</p> <p>b. Meeting other criteria and direction set out in the applicable watershed planning or subwatershed plan</p>

Section	Niagara Escarpment Plan (2017) Policies
Development Objectives	
Section 1.6.8.9	<p>Growth and development in Minor Urban Centres shall be compatible with and provide for:</p> <p>g. compliance with the targets, criteria and recommendations of applicable water, wastewater and stormwater master plans, approved watershed planning and/or subwatershed plan in land use planning.</p>
Section 1.7.5.9	<p>Growth and development in Urban Areas shall be compatible with and provide for:</p> <p>g. compliance with the targets, criteria and recommendations of applicable water, wastewater and stormwater master plans, approved watershed planning and/or subwatershed plan in land use planning.</p>
Section 1.8.5.9	<p>Growth and development in Escarpment Recreation Areas shall be compatible with and provide for:</p> <p>g. compliance with the targets, criteria and recommendations of applicable water, wastewater and stormwater master plans, approved watershed planning and/or subwatershed plans in land use planning.</p>

Topic	Watershed Planning in Ontario – Guidance for Land-use Planning Authorities (Draft 2018)
Watershed Planning	<ul style="list-style-type: none"> • Partnership between upper and single tier municipalities, conservation authorities, as appropriate, to ensure that watershed planning is undertaken to support a comprehensive, integrated, and long-term approach to the protection, enhancement or restoration of the quality and quantity of water within a watershed. • Planning authorities to protect, improve or restore the quality and quantity of water by, among other things, using watershed

Topic	Watershed Planning in Ontario – Guidance for Land-use Planning Authorities (Draft 2018)
	<p>as the ecologically meaningful scale for integrated and long-term planning.</p> <ul style="list-style-type: none"> • Watershed planning should inform the protection of water resource systems and decisions related to planning for growth. • Water, wastewater, and stormwater management planning should be informed by watershed planning. • Assess the sources and means by which nutrients and pollutants get into water for better planning and mitigation practices. • Negative impacts on quality of water to be assessed through environmental studies, such as water impact assessments in accordance with provincial standards.
Water Conservation (Water Quantity)	<ul style="list-style-type: none"> • Promote water conservation through water demand management for the efficient use of water, and through recycling to maximize reuse and recycling of water. • Undertake water budget analysis to assess if water use is sustainable if resources are stressed or likely to become stressed.
Water Quality	<ul style="list-style-type: none"> • Watershed planning to consider phosphorus loading and phosphorus concentration targets to avoid the negative impacts on quality of water as well as degradation of sensitive surface water features, sensitive groundwater features, and their related hydrologic functions. • Reduce nutrient-related impacts from both urban and rural watersheds. • Develop risk management plans for chloride and pathogens in identified vulnerable areas for source protection planning. • Undertake nutrient loading assessments to ensure water quality is satisfactory for aquatic life. • Preserve the quality of surface and ground water to protect aquatic life.

5.1.1.2 Water Resource System & Natural Heritage System Mapping

Provincial policies, plans and guidance were reviewed to identify key areas of conformity and to determine existing guidance related to WRS & NHS Mapping in the context of watershed planning.

Section	Provincial Policy Statement (2020) Policies
2.2 Water	

Section	Provincial Policy Statement (2020) Policies
Subsection 2.2.1	<p>Planning authorities shall protect, improve, or restore the quality and quantity of water by:</p> <p>d. Identifying water resource systems consisting of ground water features, hydrologic functions, natural heritage features and areas, and surface water features including shoreline areas, which are necessary for the ecological and hydrological integrity of the watershed;</p>

Section	A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2019) Policies
4.2.1 Water Resource Systems	
Subsection 2	Water resource systems will be identified to provide for the long-term protection of key hydrologic features, key hydrologic areas, and their functions.
4.2.2 Natural Heritage System	
Subsection 4	Provincial mapping of the Natural Heritage System for the Growth Plan does not apply until it has been implemented in the applicable upper- or single-tier official plan. Until that time, the policies in this Plan that refer to the Natural Heritage System for the Growth Plan will apply outside settlement areas to the natural heritage systems identified in official plans that were approved and in effect as of July 1, 2017.
Subsection 5	Upper- and single-tier municipalities may refine provincial mapping of the Natural Heritage System for the Growth Plan at the time of initial implementation in their official plans. For upper-tier municipalities, the initial implementation of provincial mapping may be done separately for each lower-tier municipality. After the Natural Heritage System for the Growth Plan has been implemented in official plans, further refinements may only occur through a municipal comprehensive review.

Section	Greenbelt Plan (2017) Policies
3.2.3 Water Resource System Policies	
Subsection 3	Water Resource Systems shall be identified, informed by watershed planning and other available information, and the appropriate designations and policies shall be applied in official plans to provide for the long-term protection of key hydrologic features, key hydrologic areas and their functions.
5.3 Municipal Implementation of Protected Countryside Policies	

Section	Greenbelt Plan (2017) Policies
-	<p>Official plans shall contain policies that reflect the requirements of this Plan together with a map(s) showing the boundaries of the Greenbelt Area, the Protected Countryside, the Natural Heritage System and the agricultural land base. Municipalities shall provide a map showing known key natural heritage features and key hydrologic features and any associated minimum vegetation protection zones identified in this Plan. The identification of the Natural Heritage System boundary will form the basis for applying the policies of section 3.2.</p>

Topic	Watershed Planning in Ontario – Guidance for Land-use Planning Authorities (Draft 2018)
WRS	<ul style="list-style-type: none"> ● Identify and map core features, linkages/corridors, natural features, water features, and potential areas for protection/restoration/enhancement.
Natural Hazards	<ul style="list-style-type: none"> ● Municipalities should identify areas subject to natural hazards and develop management plans to limit exposure to public health and safety risks. ● When information does not exist concerning the location of defined hazardous lands, or when existing information is identified as being out of date, municipalities, and other planning authorities are to undertake studies to identify potential risks from natural hazards. ● Floodplain mapping should be undertaken to identify regulatory flood lines and demonstrate hazard areas. ● Floodplain mapping and soil and stability analysis are important for informing where development may and may not occur, as well as for managing its associated impacts on natural watercourses, specifically regarding flooding and erosion — including where and how to focus mitigative measures. ● Municipalities should re-visit flood mapping during the development review and approval process, ensuring that climate change considerations are incorporated, and ensuring that land use planning is integrated with municipal asset management planning.

5.1.2 Existing Regional Official Plan (2014)

5.1.2.1 Water Resource System

The ROP (2014) was reviewed to highlight the existing Regional guidance and requirements related to the WRS in the context of watershed planning.

Section	Existing Regional Official Plan (2014) Policies
Chapter 7: Natural Environment	
<p>7.A.2 Water Resources <i>Policy 7.A.2.1</i></p>	<p>Development and site alteration shall only be permitted if it will not have negative impacts, including cross-jurisdictional and cross-watershed impacts, on:</p> <ol style="list-style-type: none"> a. The quantity and quality of surface and ground water b. The functions of ground water recharge and discharge areas, aquifers and headwaters c. The natural hydrologic characteristics of watercourses such as base flow d. Surface or ground water resources adversely impacting on natural features or ecological functions of the Core Natural Heritage System or its components e. Natural drainage systems, stream forms and shorelines f. Flooding or erosion
<p>7.A.2 Water Resources <i>Policy 7.A.2.3</i></p>	<p>As watershed and ground water studies identify surface and ground water features, hydrologic functions and natural heritage features and areas necessary for the ecological and hydrologic integrity of Niagara’s watersheds, the Region shall consider appropriate amendments to this Plan.</p>
<p>7.A.2 Water Resources <i>Policy 7.C.2.1</i></p>	<p>The Region, in partnership with the Niagara Peninsula Conservation Authority and appropriate local municipalities, shall ensure that Watershed Studies are prepared for major watersheds in consultation with landowners, community groups and other public agencies and shall include:</p> <ol style="list-style-type: none"> a. Inventory, analysis and assessment of ecological features and functions affecting the watershed b. Identification of key issues and objectives c. A water budget and water conservation plan d. Recommendations on actions needed to maintain and enhance ecosystem health and integrity, including policies to be incorporated into municipal planning documents

Section	Existing Regional Official Plan (2014) Policies
	e. Identification of subwatershed boundaries and establishment of guidelines and terms of reference for additional studies if needed
<p>7.C Implementation Measures</p> <p>Policy 7.C.2.4</p>	<p>Watershed and Environmental Planning Studies shall be implemented through amendments to Regional and local official plans, as appropriate, and through secondary plans and zoning by-laws providing guidance and direction for:</p> <p>a. The review of applications for development or site alteration</p> <p>b. Servicing and infrastructure proposals</p> <p>c. The Region's support for environmental stewardship, restoration, and other measures.</p>
Chapter 8: Infrastructure	
<p>Policy 8.B.11</p>	<p>The Region will continue to plan and design municipal water and wastewater systems that return water to the Great Lakes watershed from which the withdrawal originates.</p>

5.1.2.2 Water Resource System & Natural Heritage System Mapping

The ROP (2014) was reviewed to highlight the existing Regional guidance and requirements related to the WRS and NHS mapping in the context of watershed planning.

Section	Existing Regional Official Plan (2014) Policies
Chapter 7: Natural Environment	
<p>7.B The Core Natural Heritage System</p> <p>Policy 7.B.1.6</p>	<p>Key hydrologic features include permanent and intermittent streams, lakes and their littoral zones, seepage areas, springs and wetlands. When key hydrologic features are identified through watershed or other studies the Region will consider an amendment to this Plan to show those features on a Schedule. In the interim, within the Greenbelt Area, if potentially permitted development is proposed in an area within the Unique Agricultural Areas where key hydrologic features have not been identified, the applicant may be required to identify the hydrologic features on the site of the proposed development as well as within 120 meters of the site boundary.</p>
<p>7.B The Core Natural Heritage System</p>	<p>The boundaries of Core Natural Areas, Potential Natural Heritage Corridors and Fish Habitat are shown on Schedule C. They may be defined more precisely through Watershed or Environmental Planning Studies, Environmental Impact Studies, or other studies prepared to the satisfaction of the Region and may be mapped in more detail in local official plans and zoning by-laws. Significant modifications, such as a change in the classification of a Core Natural Area, or a significant change</p>

Section	Existing Regional Official Plan (2014) Policies
Policy 7.B.1.7	in the spatial extent or boundaries of a feature, require an amendment to this Plan unless otherwise provided for in this Plan. Only minor boundary adjustments to Environmental Protection Areas will be permitted without Amendment to this Plan.
7.A.6 Natural Hazards Policy 7.A.6.1	Hazardous lands and sites shall be as identified and mapped by the Niagara Peninsula Conservation Authority. Where an application for development or site alteration is made and such mapping is not available the location and extent of hazardous lands or sites shall be as determined by the Conservation Authority after considering an appropriate study prepared and signed by a qualified engineer and submitted with the application.

5.1.3 Niagara Region Priorities

In order to develop the goals and objectives for the NWP-E document that are specific to Niagara Region, the reports completed for the Region as part of the NEWP, the Consultation Summary Report – 1st Point of Engagement (2019) and the Watershed Planning Discussion Paper (2019), were reviewed to identify key stakeholder priorities. Regional priorities identified during the NWP-E Kick-off Meeting, which took place on May 14, 2020, were also reviewed to identify WRS priorities specific to Niagara Region. It should be noted that any input received to date on the NEWP is still being evaluated by the Project Team. No final decisions on options, mapping, or policy have been made.

5.1.3.1 Water Resource System

The following key issues and priorities, specific to the WRS, were identified:

NEWP Consultation Summary Report – 1st Point of Engagement (2019)

- Produce a clear framework of roles, and responsibilities, and identify a consistent approach to undertake watershed planning.
- Promote protection of vulnerable aquifers through the management of the WRS.

NEWP Watershed Planning Discussion Paper (2019)

- Establish an understanding of conceptual water budgets and water quality/nutrient loading for the WRS on a tertiary level.
- Determine which elements of the NHS, WRS and associated natural and water-based resources should be monitored as part of broad-scale growth plans and develop a Regional monitoring framework.
- Provide clear definitions of tertiary and quaternary watershed and subwatershed.
- Define responsibility for watershed and subwatershed studies and adaptive management.

- Provide direction for new or updates to existing quaternary watershed or subwatershed studies that promote effective land use planning and management of the natural environment; subwatershed planning is necessary for site-specific land use planning decisions.

Regional Priorities from Kick-off Meeting (2019)

The Regional Priorities from the Kick-off Meeting include the following technical aspects:

- Uniqueness of cold-water systems in the Region (e.g. Twelve Mile Creek, etc.);
- The importance of the south Niagara aquifer; and
- Niagara-on-the-Lake and other watercourses in the speciality crop area (concern of the agricultural community related to irrigation systems and agricultural drains).

From the policy aspect, the following should be considered:

- Classification, delineation, and naming of watersheds and subwatersheds.
- Prioritization of future watershed and subwatershed studies.
- Identification of any areas with particularly sensitive karst systems that should be considered.
- Ensuring that the new NOP is appropriately informed by watershed planning.

Niagara Stormwater Management Guidelines – Technical Memorandum #1: Background Review, Research Municipalities, Summarize Legislation (July 2020)

- Preserve the quality of surface water and groundwater through mitigation of development impacts, and other impacts such as phosphorus, chlorides, temperature.
- Replicate the existing hydrologic regime water balance, infiltration, runoff.
- Minimize development impacts to conveyance and flooding and to erosion within watercourses.

5.1.3.2 Water Resource System & Natural Heritage System Mapping

The following key issues and priorities, specific to the WRS and NHS Mapping, were identified:

NEWP Consultation Summary Report – 1st Point of Engagement (2019)

- Promote transparency by making available natural environment mapping through a web-based, accessible, and user-friendly mapping tool.
- Incorporate site-specific study data into Region-managed datasets and make available through a web-based, accessible, and user-friendly mapping tool.
- Use the most up-to-date and accurate datasets to map the natural environment system, incorporating site-specific study data and ground-truth features.

- Differentiate 'natural' and agricultural-related features during the development of natural environment policies and mapping.
- Build flexibility into policy that addresses imperfect mapping to allow refinements to Region mapping.
- Provide interactive, and high accuracy mapping including data acquired during site specific studies to represent the natural environment system.
- Appropriately integrate watercourses into mapping of agricultural systems.
- Integrate corridor along the shoreline of Great Lakes into mapping.
- Link the comprehensive water resource system to the natural environment system in mapping.

NEWP Watershed Planning Discussion Paper (2019)

- Build human-made features, such as stormwater ponds, into water resource system mapping as appropriate.
- Refine watershed boundaries through GIS-based analysis of updated spatial data and documentation of watershed and subwatershed areas delineation.
- Establish consistent watershed delineation and naming within the Region.
- Map the water resources system to support the new Niagara Official Plan.
- Identify quaternary watersheds or subwatersheds that are most likely to be impacted by urban development. Prioritize identified watersheds for watershed planning to inform identification of suitable areas and development of management strategies to manage potential impacts for urban growth.

5.1.4 Goals and Objectives

Based upon applicable provincial policy, plans and guidance documents, and the key priorities identified by Regional staff and through stakeholder consultation, the following NWP-E goal and objectives have been developed for the WRS:

Goal 1: Establish and Maintain Contemporary and Accurate Understanding and Mapping of the Watershed

- a. Identify the WRS
 - Review all available and relevant data sources
 - Delineate Watershed at the Tertiary and Quaternary levels and Subwatershed Boundaries to establish contemporary and accurate understanding of the watershed systems
 - Characterize the existing conditions of the watershed based on existing desktop data specific to natural hazards, natural features and the water resource system components, using the best available information for the area
 - Identify/refine the WRS for Niagara Region, based on initial WRS from the NEWP, including key hydrologic features and key hydrologic areas
 - Consider areas with particularly sensitive karst systems

- Provide appropriate connections with WRS Options identified in the NEWP
- b. Develop WRS Mapping
 - Review all available and relevant data sources
 - Delineate Watershed (tertiary and quaternary) and Subwatershed Boundaries
 - Map WRS elements based on available mapping, including:
 - Key hydrologic features
 - Key hydrologic areas
 - Functional considerations, such as appropriate recognition of human-made features
 - Identify gaps or deficiencies including age, quality / accuracy and/or availability of data
 - Present existing/accessible data and gaps as a mapped index to clearly illustrate this information and its use in prioritizing recommendations for future work
 - Provide recommendations for consideration of WRS GIS/Data portal

Goal 2: Protect Water Quality & Water Quantity

- a. Develop a Water Budget for respective systems, building from a tertiary level of data
 - Review Source Water Protection Plans, preliminary identification and mapping of the WRS, and other available data sources to develop water budget
 - Identify water quality and water quantity concerns
- b. Identify best practices for water conservation and maintaining water quality in order to plan for efficient and sustainable use of water resources
 - Identify considerations for surface water features and areas
 - Identify considerations for groundwater features and areas
 - Provide best practices to enhance stormwater capture / infiltration

Goal 3: Adaptively Manage and Monitor the Watershed

- a. Provide Best Practices for protecting, enhancing and restoring the WRS related to, among others:
 - Shoreline management
 - Flooding and erosion
 - Buffers
 - Water quality and water quantity (refer to Goal 2)
- b. Monitoring and Adaptive Management
 - Collate existing resources (e.g. GIS) of monitoring programs, including location and scale
 - Identify NHS, WRS and associated natural and water-based resources which should be monitored as part of broad-scale growth plans (refer to Goal 5 for additional growth management objectives)

- Develop local and holistic monitoring strategies to establish a monitoring framework for Niagara Region building from existing programs including provincial, NPCA and others
- c. Future Studies / Priorities:
 - Establish guidelines and terms of reference for additional subwatershed studies
 - Provide monitoring guidance for future studies required to support growth (notably subwatershed studies) including natural and water-based systems
 - Provide recommendations for gap-filling and strategic study prioritization

5.2 Natural Heritage System

The following section identifies relevant policies, plans and guidance related to the NHS, followed by a list of NWP-E goals and objectives.

A Natural Heritage System is defined in the Provincial Policy Statement (2020) as:

“Natural heritage system: means a system made up of natural heritage features and areas, and linkages intended to provide connectivity (at the regional or site level) and support natural processes which are necessary to maintain biological and geological diversity, natural functions, viable populations of indigenous species, and ecosystems. These systems can include natural heritage features and areas, federal and provincial parks and conservation reserves, other natural heritage features, lands that have been restored or have the potential to be restored to a natural state, areas that support hydrologic functions, and working landscapes that enable ecological functions to continue. The Province has a recommended approach for identifying natural heritage systems, but municipal approaches that achieve or exceed the same objective may also be used.”

5.2.1 Provincial Policies, Plans and Guidance

Provincial policies, plans and guidance were reviewed to identify key areas of conformity and to determine existing guidance related to the NHS in the context of watershed planning.

Section	Provincial Policy Statement (2020) Policies
1.2 Coordination	
Subsection 1.2.1	A coordinated, integrated and comprehensive approach should be used when dealing with planning matters within municipalities, across lower, single and/or upper-tier municipal boundaries, and with other orders of government, agencies and boards including: e) ecosystem, shoreline, watershed, and Great Lakes related issues
2.1 Natural Heritage	

Section	Provincial Policy Statement (2020) Policies
Subsection 2.1.2	The diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and ground water features.
Subsection 2.1.3	Natural heritage systems shall be identified in Ecoregions 6E & 7E1, recognizing that natural heritage systems will vary in size and form in settlement areas, rural areas, and prime agricultural areas.
2.2 Water	
Subsection 2.2.1	<p>Planning authorities shall protect, improve, or restore the quality and quantity of water by:</p> <ul style="list-style-type: none"> a. using the watershed as the ecologically meaningful scale for integrated and long-term planning, which can be a foundation for considering cumulative impacts of development b. minimizing potential negative impacts, including cross-jurisdictional and cross-watershed impacts c. evaluating and preparing for the impacts of a changing climate to water resource systems at the watershed level d. identifying water resource systems consisting of ground water features, hydrologic functions, natural heritage features and areas, and surface water features including shoreline areas, which are necessary for the ecological and hydrological integrity of the watershed e. maintaining linkages and related functions among ground water features, hydrologic functions, natural heritage features and areas, and surface water features including shoreline areas

Section	A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2019) Policies
2.2.8 Settlement Area Boundary Expansions	
Subsection 3	<p>Where the need for a settlement area boundary expansion has been justified in accordance with policy 2.2.8.2, the feasibility of the proposed expansion will be determined and the most appropriate location for the proposed expansion will be identified based on the comprehensive application of all of the policies in this Plan, including the following:</p> <ul style="list-style-type: none"> 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

Section	A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2019) Policies
	<p>potential negative impacts on watershed conditions and the water resource system, including the quality and quantity of water</p> <p>e. key hydrologic areas and the Natural Heritage System for the Growth Plan should be avoided where possible</p>
3.2.5 Infrastructure Corridors	
Subsection 1	<p>In planning for the development, optimization, or expansion of existing and planned corridors and supporting facilities, the Province, other public agencies and upper- and single-tier municipalities will:</p> <p>d. where applicable, demonstrate through an environmental assessment, that any impacts on key natural heritage features in the Natural Heritage System for the Growth Plan, key hydrologic features and key hydrologic areas have been avoided or, if avoidance is not possible, minimized and to the extent feasible mitigated</p>
4.2.4 Lands Adjacent to Key Hydrologic Features and Key Natural Heritage Features	
Subsection 1	<p>Outside settlement areas, a proposal for new development or site alteration within 120 metres of a key natural heritage feature within the Natural Heritage System for the Growth Plan or a key hydrologic feature will require a natural heritage evaluation or hydrologic evaluation that identifies a vegetation protection zone, which:</p> <p>a. is of sufficient width to protect the key natural heritage feature or key hydrologic feature and its functions from the impacts of the proposed change</p> <p>b. is established to achieve and be maintained as natural self-sustaining vegetation</p> <p>c. for key hydrologic features, fish habitat, and significant woodlands, is no less than 30 metres measured from the outside boundary of the key natural heritage feature or key hydrologic feature</p>
4.2.10 Climate Change	
Subsection 1	<p>Upper- and single-tier municipalities will develop policies in their official plans to identify actions that will reduce greenhouse gas emissions and address climate change adaptation goals, aligned with other provincial plans and policies for environmental protection that will include:</p> <p>e. recognizing the importance of watershed planning for the protection of the quality and quantity of water and the identification and protection of hydrologic features and areas</p> <p>f. Protecting the Natural Heritage System for the Growth Plan and water resource systems</p>

Section	Greenbelt Plan (2017) Policies
1.2.2 Protected Countryside Goals	
Subsection 6	<p>To enhance our urban and rural areas and overall quality of life by promoting the following matters within the Protected Countryside: Climate Change:</p> <ol style="list-style-type: none"> a. Integrating climate change considerations into planning and managing the Agricultural System, Natural Heritage System and Water Resource System to improve resilience and protect carbon sequestration potential, recognizing that the Natural Heritage System is also a component of green infrastructure b. Integrating climate change considerations into planning and managing growth that includes incorporating techniques to reduce greenhouse gas emissions, and increasing the resilience of settlement areas and infrastructure within the Greenbelt
3.2.3 Water Resource System Policies	
Subsection 6	<p>Municipalities shall consider the Great Lakes Strategy, the targets and goals of the Great Lakes Protection Act, 2015 and any applicable Great Lakes agreements as part of watershed planning and coastal or waterfront planning initiatives.</p>
3.2.6 External Connections	
Subsection 1	<p>To support the connections between the Greenbelt’s Natural System and the local, regional and broader scale natural heritage systems of southern Ontario, such as the Lake Ontario shoreline, including its remaining coastal wetlands, the Great Lakes Coast, Lake Simcoe, the Kawartha Highlands, the Carolinian Zone and the Algonquin to Adirondack Corridor, the federal government, municipalities, conservation authorities, other agencies and stakeholders should:</p> <ol style="list-style-type: none"> c. Undertake watershed planning, which integrates supporting ecological systems with those systems contained in this Plan.

Section	Niagara Escarpment Plan (2017) Policies
Development and Growth Objectives	
Section 1.6.8.9	<p>Growth and development in Minor Urban Centres shall be compatible with and provide for:</p> <ol style="list-style-type: none"> a. The protection of natural heritage features and functions; b. The protection of hydrologic features and functions; f. sustainable use of water resources for ecological and servicing needs; and

Niagara Escarpment Plan (2017) Policies	
	g. compliance with the targets, criteria and recommendations of applicable water, wastewater and stormwater master plans, approved watershed planning and/or subwatershed plan in land use planning.
Development Objectives	
Section 1.7.5.9	Growth and development in Urban Areas shall be compatible with and provide for: a. The protection of natural heritage features and functions; b. The protection of hydrologic features and functions; f. sustainable use of water resources for ecological and servicing needs; and g. compliance with the targets, criteria and recommendations of applicable water, wastewater and stormwater master plans, approved watershed planning and/or subwatershed plan in land use planning.
Escarpment Recreation Area	
Section 1.8.1.6	To ensure that recreational development protects and maintains community character, hydrologic and natural heritage features and functions, and the scenic resources of the Escarpment.
Development Objectives	
Section 1.8.5.9	Growth and development in Escarpment Recreation Areas shall be compatible with and provide for: a. The protection of natural heritage features and functions; b. The protection of hydrologic features and functions; f. sustainable use of water resources for ecological and servicing needs; and g. compliance with the targets, criteria and recommendations of applicable water, wastewater and stormwater master plans, approved watershed planning and/or subwatershed plan in land use planning.
Lot Creation	
Section 2.4.5	New lots must: b. protect and enhance existing natural heritage and hydrologic features and functions.
Development Affecting Water Resources	
Section 2.6.7	Where permitted, the construction and expansion of ponds shall be designed and located to avoid Escarpment slopes, key hydrologic features and key natural heritage features, and ponds shall be designed to be offline.
Development Affecting Natural Heritage	

Section	Niagara Escarpment Plan (2017) Policies
<p>Section 2.7.3</p>	<p>The diversity and connectivity between key natural heritage features and key hydrologic features shall be maintained, and where possible, enhanced for the movement of native plants and animals across the landscape.</p>
<p>Development Affecting Natural Heritage</p>	
<p>Section 2.7.6</p>	<p>If in the opinion of the implementing authority, a proposal for development within 120 metres of a key natural heritage feature has the potential to result in a negative impact on the feature and/or its functions, or on the connectivity between key natural heritage features and key hydrologic features, a natural heritage evaluation will be required that:</p> <ol style="list-style-type: none"> a. demonstrates that the development, including any alteration of the natural grade or drainage, will protect the key natural heritage feature or the related functions of that feature; b. identifies planning, design and construction practices that will minimize erosion, sedimentation and the introduction of nutrients or pollutants and protect and, where possible, enhance or restore the health, diversity and size of the key natural heritage feature; c. determines the minimum vegetation protection zone required to protect and where possible enhance the key natural heritage feature and its functions; and d. demonstrates that the connectivity between key natural heritage features and key hydrologic features located within 240 metres of each other will be maintained and where possible enhanced for the movement of native plants and animals across the landscape.
<p>Mineral Aggregate Resources</p>	
<p>Section 2.9.3</p>	<p>In addition to all other relevant policies of this Plan, proposals for mineral aggregate operations including wayside pits and quarries, accessory uses, accessory facilities and haul routes shall:</p> <ol style="list-style-type: none"> e. demonstrate how natural heritage features will be avoided and the connectivity between key natural heritage features and key hydrologic features will be maintained and where possible enhanced during and after the extraction of mineral aggregates;
<p>Section 2.9.11</p>	<p>Rehabilitation shall incorporate the following:</p> <ol style="list-style-type: none"> a. natural heritage and hydrologic features and functions shall be restored or enhanced;

Topic	Watershed Planning in Ontario – Guidance for Land-use Planning Authorities (Draft 2018)
NHS & WRS Linkages	<ul style="list-style-type: none"> • Existing natural heritage system should be identified on a watershed basis. • Natural heritage systems and water resource systems should be considered together on a watershed basis. • Identify and protect features and linkages between natural heritage systems and water resource systems. • At the subwatershed level, information regarding impervious surfaces and natural cover (including wetland cover and woodland cover) should be documented, and targets should be identified in accordance with provincial and national guidelines. • Ensure that watershed delineation and characterization provide for protection of natural heritage features and areas. Also ensure that watershed characterization considers existing and proposed natural heritage systems, and the location of existing and proposed land use changes and development. • Maximizing extent of riparian vegetation can contribute to watershed ecological objectives and provide habitat and ecosystem services.
Natural Hazards	<ul style="list-style-type: none"> • Areas subject to natural hazards should be identified to manage exposure to public health and safety risks and to direct development outside of hazardous lands and sites. • Municipalities should identify areas subject to natural hazards and develop management plans to limit exposure to public health and safety risks. • Integration of watershed planning with natural hazard management to reduce the risks of associated climate change impacts and severe weather events.

5.2.2 Existing Regional Official Plan (2014)

The ROP (2014) was reviewed to identify the existing Regional guidance and requirements related to the NHS in the context of watershed planning.

Section	Existing Regional Official Plan (2014) Policies
Chapter 4: Managing Growth	
4.G Urban Growth	Our Common Objectives: Objective 3 Protect, conserve, enhance and wisely use the valuable natural resources of land, air, energy and water for current and future generations.

Section	Existing Regional Official Plan (2014) Policies
Chapter 5: Rural and Agricultural	
<p>5.C Policies for Rural Areas</p> <p><i>Policy 5.C.6.4</i></p>	<p>Proposals for rural residential development in the Rural Area must meet the following criteria, in addition to the other requirements of this Official Plan, the Niagara Escarpment Plan and the local official plans:</p> <p>f. Development will not have a significant detrimental impact on the larger surrounding ecosystem, such as a reduction in water quality and quantity or interference with natural farm drainage.</p>
Chapter 7: Natural Environment	
<p>7.A.1.1 Natural Vegetation and Wildlife</p> <p><i>Policy 7.A.1.1</i></p>	<p>The Region shall support efforts to achieve the following targets through the development and implementation of watershed and environmental planning studies and through voluntary landowner stewardship and restoration:</p> <ol style="list-style-type: none"> a. 30% of the land area in the Region in forest cover or wetland, with at least 10% of each subwatershed in wetland b. A 30-metre-wide naturally vegetated buffer along 70% of the length of the first to third order streams in Niagara. Agricultural uses may continue within this buffer and are encouraged to employ best management practices to protect water resources and natural heritage
<p>7.A.2 Water Resources</p> <p><i>Policy 7.C.2.1</i></p>	<p>The Region, in partnership with the Niagara Peninsula Conservation Authority and appropriate local municipalities, shall ensure that Watershed Studies are prepared for major watersheds in consultation with landowners, community groups and other public agencies and shall include:</p> <ol style="list-style-type: none"> a. Inventory, analysis and assessment of ecological features and functions affecting the watershed b. Identification of key issues and objectives c. A water budget and water conservation plan d. Recommendations on actions needed to maintain and enhance ecosystem health and integrity, including policies to be incorporated into municipal planning documents e. Identification of subwatershed boundaries and establishment of guidelines and terms of reference for additional studies if needed

5.2.3 Niagara Region Priorities

In order to develop the goals and objectives for the NWP-E document that are specific to Niagara Region, the reports completed for the Region as part of the NEWP, the Consultation Summary Report – 1st Point of Engagement (2019) and the Watershed

Planning Discussion Paper (2019), were reviewed to identify key stakeholder priorities. The following key issues and priorities, specific to the NHS, were identified.

It should be noted that any input received to date on the NEWP is still being evaluated by the Project Team. No final decisions on options, mapping, or policy have been made.

NEWP Consultation Summary Report – 1st Point of Engagement (2019)

- Provide clear direction on implementation of the Growth Plan Natural Heritage System policies.
- Build flexibility into policies for buffers to determine appropriate width and compatible uses.
- Enhance natural areas through Region-managed active management, including invasive species management.
- Develop policies for the natural environment that protect significant features and areas while not impeding normal farming practices.
- Develop guidance documents to assist with interpreting policies, developing appropriate mitigation plans, and supporting management of natural features.
- Protect key features through development of clear policies and appropriate, effective and enforceable by-laws.
- Support brownfield development and repurposing of industrial areas to protect and enhance the natural environment system.
- Develop natural environment policies that are clear and adequate to protect the natural environment for future generations.
- Differentiate between agricultural related water features and 'natural' features in the WRS and NHS.
- Recognize the primacy of the agricultural system in natural environment policies, including exemptions for normal farming practices and from provincial plans.
- Develop a coordinated approach to invasive species.
- Develop clear, science-based buffer definitions, policies and guidelines to support appropriate implementation.
- Develop clear, strong policies that protect and enhance 'core' areas and features for the future.
- Identify natural heritage supporting areas: green infrastructure, increase carbon sequestration, provide opportunities for Low Impact Development (LID) technology, constructed wetlands, enhance urban canopy and biodiversity.
- Find a balance between flexible policy that incorporates site-specific information but also broad natural heritage protections at a system-level.
- Update and align NHS mapping and policies with major changes to Growth Plan.
- Develop clear, defensible policies that are consistent with federal legislation and provincial policies, provide the appropriate level of flexibility, and include definitions for key terms to promote meeting objectives and implementing policies for the natural environment.

- Monitor and work closely with the province and federal governments to help influence future decisions and legislation/planning documents, and build some flexibility into natural environment planning (i.e., policies) to allow for required changes that may be mandated.
- Consider impact of policies related to enhancement and linkage areas on development opportunities.
- Provide clear information about the planning process through flow charts, including agency responsibilities for review/consultation.
- Develop clear policies to inform requirements for buffers and guidelines to ensure consistent interpretation and application of buffer requirements.

NEWP Watershed Planning Discussion Paper (2019)

- Align policies and criteria regarding features inside and outside of urban areas.
- Complete a review of best practices for managing impacts due to urbanization to provide appropriate insights for the new NOP.

5.2.4 Goals and Objectives

Based upon applicable provincial policy, plans and guidance documents, and the key priorities identified by Regional staff and through stakeholder consultation, the following NWP-E goal and objectives has been developed for the NHS:

Goal 4: Protect and Enhance Interactions Between the NHS and WRS

- a. Identify the NHS
 - Incorporate preferred/recommended NHS from NEWP, and the identification of the WRS (refer to Goal 1)
 - Characterize existing conditions across the tertiary watersheds based on desktop accessible information determining areas of high sensitivity and risk
 - Identify gaps or deficiencies including age, quality / accuracy and/or availability of existing data and reports
 - Present data and gaps as a mapped index to clearly illustrate this information and its use in prioritizing recommendations for future work
- b. Identify, preserve and enhance interactions between the WRS and the NHS
 - Identify interactions between the WRS and the NHS to support connectivity
 - Incorporate targets for restoration and protection of the NHS from the NEWP, such as targets for wetland, riparian, forest and grassland cover
 - Identify best practices recommended in the NEWP related to, among others:
 - Management of agricultural related water features and practices
 - Buffers
 - Invasive species

5.3 Land Use Planning and Resiliency

The following section identifies relevant policies, plans and guidance related to Land Use Planning and Resiliency, particularly in relation to Climate Change, Cumulative Impacts and Natural Hazards Management, followed by a list of NWP-E goals and objectives.

5.3.1 Provincial Policies and Plans

Provincial policies, plans and guidance were reviewed to identify key areas of conformity and to determine existing guidance related to Land Use Planning and Resiliency in the context of watershed planning.

Section	Provincial Policy Statement (2020) Policies
1.6 Infrastructure and Public Service Facilities	
Subsection 1.6.1	Infrastructure and public service facilities shall be provided in an efficient manner that prepares for the impacts of a changing climate while accommodating projected needs.
1.6.6 Sewage, Water and Stormwater	
Section 1.6.6.1	Planning for sewage and water services shall: <ul style="list-style-type: none"> b. ensure that these systems are provided in a manner that: <ul style="list-style-type: none"> 1. can be sustained by the water resources upon which such services rely; 2. prepares for the impacts of a changing climate; 3. is feasible and financially viable over their lifecycle; and 4. protects human health and safety, and the natural environment
2.2 Water	
Subsection 2.2.1	Planning authorities shall protect, improve, or restore the quality and quantity of water by: <ul style="list-style-type: none"> c. evaluating and preparing for the impacts of a changing climate to water resource systems at the watershed level;

Section	A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2019) Policies
2.2.8 Settlement Area Boundary Expansions	
Subsection 3	Where the need for a settlement area boundary expansion has been justified in accordance with policy 2.2.8.2, the feasibility of the proposed expansion will be determined and the most appropriate location for the proposed expansion will be identified based on the comprehensive application of all of the policies in this Plan, including the following: <ul style="list-style-type: none"> d. the proposed expansion, including the associated water, wastewater and stormwater servicing, would be planned and demonstrated to

Section	A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2019) Policies
	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
3.2.1 Integrated Planning	
Subsection 2	<p>Planning for new or expanded infrastructure will occur in an integrated manner, including evaluations of long-range scenario-based land use planning, environmental planning, and financial planning, and will be supported by and should involve:</p> <ul style="list-style-type: none"> b. providing sufficient infrastructure capacity in strategic growth areas; d. considering the impacts of a changing climate.
3.2.5 Infrastructure Corridors	
Subsection 1	<p>In planning for the development, optimization, or expansion of existing and planned corridors and supporting facilities, the Province, other public agencies and upper- and single-tier municipalities will:</p> <ul style="list-style-type: none"> d. where applicable, demonstrate through an environmental assessment, that any impacts on key natural heritage features in the Natural Heritage System for the Growth Plan, key hydrologic features and key hydrologic areas have been avoided or, if avoidance is not possible, minimized and to the extent feasible mitigated
3.2.6 Water and Wastewater Systems	
Subsection 2	<p>Municipal water and wastewater systems and private communal water and wastewater systems will be planned, designed, constructed, or expanded in accordance with the following:</p> <ul style="list-style-type: none"> c. a comprehensive water or wastewater master plan or equivalent, informed by watershed planning or equivalent
3.2.7 Stormwater Management	
Subsection 1	<p>Municipalities will develop stormwater master plans or equivalent for serviced settlement areas that:</p> <ul style="list-style-type: none"> a. are informed by watershed planning or equivalent; b. protect the quality and quantity of water by assessing existing stormwater facilities and systems;
Subsection 2	<p>Proposals for large-scale development proceeding by way of a secondary plan, plan of subdivision, vacant land plan of condominium or site plan will be supported by a stormwater management plan or equivalent, that:</p> <ul style="list-style-type: none"> a. is informed by a subwatershed plan or equivalent;
4.2.3 Key Hydrologic Features, Key Hydrologic Areas and Key Natural Heritage Features	

Section	A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2019) Policies
Subsection 2	<p>Outside of settlement areas, proposals for large-scale development proceeding by way of plan of subdivision, vacant land plan of condominium or site plan may be permitted within a key hydrologic area where it is demonstrated that the hydrologic functions, including the quality and quantity of water, of these areas will be protected and, where possible, enhanced or restored through:</p> <ul style="list-style-type: none"> b. meeting other criteria and direction set out in the applicable watershed planning or subwatershed plans
4.2.10 Climate Change	
Subsection 1	<p>Upper- and single-tier municipalities will develop policies in their official plans to identify actions that will reduce greenhouse gas emissions and address climate change adaptation goals, aligned with other provincial plans and policies for environmental protection that will include:</p> <ul style="list-style-type: none"> e. recognizing the importance of watershed planning for the protection of the quality and quantity of water and the identification and protection of hydrologic features and areas f. protecting the Natural Heritage System for the Growth Plan and water resource systems

Section	Greenbelt Plan (2017) Policies
1.2.2 Protected Countryside Goals	
Subsection 6	<p>To enhance our urban and rural areas and overall quality of life by promoting the following matters within the Protected Countryside:</p> <p>Climate Change:</p> <ul style="list-style-type: none"> c. Integrating climate change considerations into planning and managing the Agricultural System, Natural Heritage System and Water Resource System to improve resilience and protect carbon sequestration potential, recognizing that the Natural Heritage System is also a component of green infrastructure d. Integrating climate change considerations into planning and managing growth that includes incorporating techniques to reduce greenhouse gas emissions, and increasing the resilience of settlement areas and infrastructure within the Greenbelt
3.2.3 Water Resource System Policies	

Section	Greenbelt Plan (2017) Policies
Subsection 4	Decisions on allocation of growth and planning for water, wastewater, and stormwater infrastructure shall be informed by applicable watershed planning in accordance with the Growth Plan.
Subsection 5	Cross-jurisdictional and cross-watershed impacts need to be considered in the development of watershed plans. The development of watershed plans and watershed management approaches in the Protected Countryside shall be integrated with watershed planning and management in the NEP, the ORMCP and the Growth Plan.
Subsection 6	Municipalities shall consider the Great Lakes Strategy, the targets and goals of the Great Lakes Protection Act, 2015 and any applicable Great Lakes agreements as part of watershed planning and coastal or waterfront planning initiatives.
3.2.4 Key Hydrologic Areas	
Subsection 1	<p>For lands within a key hydrologic area in the Protected Countryside, the following policies apply:</p> <ol style="list-style-type: none"> 1. Major development may be permitted where it has been demonstrated that the hydrologic functions, including groundwater and surface water quality and quantity, of these areas shall be protected and, where possible, improved or restored through: <ol style="list-style-type: none"> b. Meeting other criteria and direction set out in the applicable watershed planning or subwatershed plan
4.2.3 Stormwater Management and Resilient Infrastructure Policies	
Subsection 4	<p>Applications for development and site alteration in the Protected Countryside shall be accompanied by a stormwater management plan which demonstrates that:</p> <ol style="list-style-type: none"> c. Applicable recommendations, standards or targets within a subwatershed plan or equivalent and water budgets will be complied with;
4.3.1 Renewable Resource Policies	
Subsection 2	Activities related to the use of renewable resources are permitted in the Protected Countryside, subject to the policies of this Plan and all other applicable legislation, regulations, and municipal planning documents, including the PPS. All such activities shall be undertaken in accordance with the applicable recommendations, standards or targets of any relevant watershed plan or water budget and provincial guidance.

Section	Greenbelt Plan (2017) Policies
4.3.2 Non-Renewable Resource Policies	
Subsection 11	Municipalities should ensure that all land use activities related to the post-extraction rehabilitation of mineral aggregate operations are consistent with any relevant approved source protection plan and relevant watershed or subwatershed plan.

Section	Niagara Escarpment Plan (2017) Policies
Development Objectives	
Section 1.6.8.9	Growth and development in Minor Urban Centres shall be compatible with and provide for: g. compliance with the targets, criteria and recommendations of applicable water, wastewater and stormwater master plans, approved watershed planning and/or subwatershed plan in land use planning.
Section 1.7.5.9	Growth and development in Urban Areas shall be compatible with and provide for: g. compliance with the targets, criteria and recommendations of applicable water, wastewater and stormwater master plans, approved watershed planning and/or subwatershed plan in land use planning.
Section 1.8.5.9	Growth and development in Escarpment Recreation Areas shall be compatible with and provide for: g. compliance with the targets, criteria and recommendations of applicable water, wastewater and stormwater master plans, approved watershed planning and/or subwatershed plans in land use planning.

Topic	Watershed Planning in Ontario – Guidance for Land-use Planning Authorities (Draft 2018)
Watershed Planning	<ul style="list-style-type: none"> • Planning authorities to protect, improve or restore the quality and quantity of water by, among other things, using watershed as the ecologically meaningful scale for integrated and long-term planning. • Watershed planning should inform the protection of water resource systems and decisions related to planning for growth.
Climate Change	<ul style="list-style-type: none"> • Planning authorities shall consider the potential impacts of climate change that may increase the risk associated with natural hazards.

Topic	Watershed Planning in Ontario – Guidance for Land-use Planning Authorities (Draft 2018)
	<ul style="list-style-type: none"> • The potential effects of climate change on existing and proposed land uses, infrastructure, and developments should be considered within a watershed/subwatershed boundary and should be considered in watershed planning, management, and infrastructure planning. • Municipalities should assess how current water uses and existing infrastructure could negatively impact the watershed by exaggerating climate change effects. • Climate change mitigation and adaption should be considered vital to protecting and restoring a watershed. • Watershed plans should document the potential effects on climate change on water use and management. • Promote natural features and green infrastructure to provide ecological services which can mitigate impacts of climate change.
Cumulative Impacts	<ul style="list-style-type: none"> • Planning authorities should use watershed as the ecologically meaningful scale for integrated and long-term planning, which can be a foundation for considering cumulative impacts of development and considering cross-jurisdictional and cross-watershed impacts. • Cumulative Effects Assessment (CEA) is fundamental to watershed protection and watershed planning. Watershed planning to be driven by solid and defensible CEA. • Cumulative Effects Assessment (CEA) should be completed to address assessment of cumulative, cross-jurisdictional, and cross-watershed impacts, which could be due to single, multiple, or successive development/site alteration activities. • Cumulative impacts and downstream impacts beyond a single development site or planning application should be considered as part of a comprehensive approach to management of human activities, land, water, aquatic life, and resources within a watershed. • The assessment of cumulative, cross-jurisdictional, and cross-watershed impacts should inform growth and servicing allocations and assist in determining actions to minimize negative impacts on quality and quantity of water and hydrologic functions.
Natural Hazards	<ul style="list-style-type: none"> • Municipalities should identify areas subject to natural hazards and develop management plans to limit exposure to public health and safety risks.

Topic	Watershed Planning in Ontario – Guidance for Land-use Planning Authorities (Draft 2018)
	<ul style="list-style-type: none"> • When information does not exist concerning the location of defined hazardous lands, or when existing information is identified as being out of date, municipalities, and other planning authorities are to undertake studies to identify potential risks from natural hazards. • Floodplain mapping should be undertaken to identify regulatory flood lines and demonstrate hazard areas. • Floodplain mapping and soil and stability analysis are important for informing where development may and may not occur, as well as for managing its associated impacts on natural watercourses, specifically regarding flooding and erosion — including where and how to focus mitigative measures. • Municipalities should re-visit flood mapping during the development review and approval process, ensuring that climate change considerations are incorporated, and ensuring that land use planning is integrated with municipal asset management planning.

5.3.2 Existing Regional Official Plan (2014)

The ROP (2014) was reviewed to highlight the existing Regional guidance and requirements related to Land Use Planning and Resiliency in the context of watershed planning.

Section	Existing Regional Official Plan (2014) Policies
Chapter 4: Managing Growth	
4.G Urban Growth	Our Common Objectives: Objective 3 Protect, conserve, enhance and wisely use the valuable natural resources of land, air, energy and water for current and future generations.
Chapter 6: Resources	
6.C Policies for Mineral Resources Policy 6.C.5	Applications for licenses to open new pits or quarries and applications for changes to or expansions of existing licensed pits or quarries will be considered in relationship to the Niagara Escarpment Plan policies within the Niagara Escarpment Plan area and to the following conditions: c. the impact on the natural environment including surface watercourses and Groundwater

Section	Existing Regional Official Plan (2014) Policies
Chapter 7: Natural Environment	
<p>7.A.2 Water Resources Policy 7.A.2.1</p>	<p>Development and site alteration shall only be permitted if it will not have negative impacts, including cross-jurisdictional and cross-watershed impacts, on:</p> <ul style="list-style-type: none"> a. The quantity and quality of surface and ground water b. The functions of ground water recharge and discharge areas, aquifers and headwaters c. The natural hydrologic characteristics of watercourses such as base flow d. Surface or ground water resources adversely impacting on natural features or ecological functions of the Core Natural Heritage System or its components; e. Natural drainage systems, stream forms and shorelines f. Flooding or erosion
<p>7.A.3 Air Quality and Climate Change</p>	<p>Climate change poses significant economic, environmental and health risks. Many of the activities responsible for greenhouse gas emissions also cause other forms of air pollution. Policies elsewhere in this Plan make a significant contribution to reducing emissions by:</p> <ul style="list-style-type: none"> d. Encouraging waste reduction and diversion, use of landfill gas and water conservation; and e. Promoting green space, tree planting and natural heritage conservation.
<p>7.A.3 Air Quality and Climate Change Objective 7.A.3.C</p>	<p>To adapt to the effects of climate change.</p>
<p>7.A.3 Air Quality and Climate Change Policy 7.A.3.4</p>	<p>Recognizing that some climate change may be unavoidable, the Region shall develop and implement plans to adapt to potential impacts.</p>
<p>7.A.6 Natural Hazards Policy 7.A.6.1</p>	<p>Hazardous lands and sites shall be as identified and mapped by the Niagara Peninsula Conservation Authority. Where an application for development or site alteration is made and such mapping is not available the location and extent of hazardous lands or sites shall be as determined by the Conservation Authority after considering an appropriate study prepared and</p>

Section	Existing Regional Official Plan (2014) Policies
	signed by a qualified engineer and submitted with the application.
<p>7.C Implementation Measures</p> <p><i>Policy 7.C.2.4</i></p>	<p>Watershed and Environmental Planning Studies shall be implemented through amendments to Regional and local official plans, as appropriate, and through secondary plans and zoning by-laws providing guidance and direction for:</p> <ol style="list-style-type: none"> a. The review of applications for development or site alteration; b. Servicing and infrastructure proposals; and c. The Region's support for environmental stewardship, restoration, and other measures.
Chapter 8: Infrastructure	
<p><i>Policy 8.B.11</i></p>	<p>The Region will continue to plan and design municipal water and wastewater systems that return water to the Great Lakes watershed from which the withdrawal originates.</p>

5.3.3 Niagara Region Priorities

In order to develop the goals and objectives for the NWP-E document that are specific to Niagara Region, the reports completed for the Region as part of the NEWP, the Consultation Summary Report – 1st Point of Engagement (2019) and the Watershed Planning Discussion Paper (2019), were reviewed to identify key stakeholder priorities. The following key issues and priorities, specific to Land Use Planning and Resiliency, were identified.

It should be noted that any input received to date on the NEWP is still being evaluated by the Project Team. No final decisions on options, mapping, or policy have been made.

NEWP Consultation Summary Report – 1st Point of Engagement (2019)

- Develop and design natural environment policies and systems to be resilient and address threats, such as climate change and invasive species.
- Develop policies to protect and enhance the natural environment system by recognizing changes in the natural environment resulting from natural and anthropogenic impacts.
- Develop natural environment policies that consider climate change.
- Involve public and stakeholders through meaningful engagement and develop natural environment policies that support the protection of the natural environment for the future.
- Identify natural heritage supporting areas: green infrastructure, increase carbon sequestration, provide opportunities for Low Impact Development (LID) technology, constructed wetlands, enhance urban canopy and biodiversity.

- Monitor and work closely with the province and federal governments to help influence future decisions and legislation/planning documents, and must build some flexibility into natural environment planning (i.e., policies) to allow for required changes that may be mandated.
- Provide clear information about the planning process through flow charts, including agency responsibilities for review/consultation.

NEWP Watershed Planning Discussion Paper (2019)

- Examine different land use and management scenarios in watershed plans to guide urban growth or transportation infrastructure, and to identify mitigation measures or targets.
- Provide guidance on cumulative impacts through the watershed characterisation to identify areas of existing and proposed development that are impacted due to past, current and proposed development.
- Consider the impacts of climate change on infrastructure and growth, including the influence of climate change on stormwater management system planning.

Niagara Stormwater Management Guidelines – Technical Memorandum #1: Background Review, Research Municipalities, Summarize Legislation (July 2020)

- Improve climate change adaptation

5.3.4 Goals and Objectives

Based upon applicable provincial policy, plans and guidance documents, and the key priorities identified by Regional staff and through stakeholder consultation, the following NWP-E goal and objectives have been relative to Land Use Planning and Resiliency:

Goal 5: Ensure Land Use Planning is Informed by Watershed Planning

- a. Review Growth Scenarios to Inform Land Use Planning
 - Review potential growth scenarios, potential settlement expansion areas, known areas experiencing higher levels of development or resource pressure, or are known to have functional concerns related to management of water quality or quantity.
 - Identify high level constraints based on functional sensitivities in areas where the NHS & WRS are at higher risk of impact to inform growth alternatives for Niagara Region and allow for an iterative approach providing feedback through the NWP-E
 - Apply a hierarchical approach to assess prioritized locations where land use changes and growth are anticipated to have low, medium and high impacts on the WRS, to ensure effective input and direction for land use planning for the new NOP.
- b. Provide Best Practices / Recommendations

- Provide balanced consideration of grey/ green infrastructure to inform the new NOP building from acceptable local area municipal approaches
 - Identify and develop recommendations for prioritizing gap filling, and implementation priorities
 - Provide insights into best practices for managing impacts due to urbanization
- c. Provide Best Practices for protecting, enhancing and restoring the WRS related to, among others:
- Shoreline management
 - Flooding and erosion
 - Buffers
 - Water quality and water quantity (including stormwater management) (refer to Goal 2)

Goal 6: Create Resilient Communities to Protect Human Health and Safety, and the Natural Environment

- a. Manage Natural Hazards
- Review NPCA's flood hazard mapping to confirm mapping is current and consistent
 - Incorporate flood hazard mapping into WRS mapping (refer to Goal 1)
- b. Identify climate considerations and potential impacts to the WRS and NHS to improve resilience and inform land use and environmental planning
- Summarize lessons learned from other communities (e.g. City of Ottawa and City of Welland)
 - Provide best practices/recommendations for flood hazard management
 - Provide best practices/recommendations regarding climate change adjusted rainfall patterns
- c. Develop Cumulative Impact Considerations
- Characterize the watershed to identify sensitivities and areas at risk
 - Overlay areas of existing development and proposed growth
 - Define areas anticipated to be under the greatest impact due to past, current and potential future development
 - Identify flood vulnerable areas
 - Provide best practices/recommendations regarding key environmental indicators and developing thresholds for future cumulative impact assessments

5.4 Engagement

The following section identifies relevant policies, plans and guidance related to Engagement, followed by a list of NWP-E goals and objectives.

5.4.1 Provincial Policies and Plans

Provincial policies, plans and guidance were reviewed to identify key areas of conformity and to determine existing guidance related to Engagement in the context of watershed planning.

Section	Provincial Policy Statement (2020) Policies
1.2 Coordination	
Subsection 1.2.1	A coordinated, integrated and comprehensive approach should be used when dealing with planning matters within municipalities, across lower, single and/or upper-tier municipal boundaries, and with other orders of government, agencies and boards including: e) ecosystem, shoreline, watershed, and Great Lakes related issues

Section	Greenbelt Plan (2017) Policies
3.2.3 Water Resource System Policies	
Subsection 2	Watersheds are the most meaningful scale for hydrological planning. Municipalities, partnering with conservation authorities as appropriate, shall ensure that watershed planning is undertaken to support a comprehensive, integrated, and long-term approach to the protection, enhancement or restoration of the quality and quantity of water within a watershed.

Topic	Watershed Planning in Ontario – Guidance for Land-use Planning Authorities (Draft 2018)
Watershed Planning	<ul style="list-style-type: none"> Partnership between upper and single tier municipalities, conservation authorities, as appropriate, to ensure that watershed planning is undertaken to support a comprehensive, integrated, and long-term approach to the protection, enhancement or restoration of the quality and quantity of water within a watershed.
Natural Hazards	<ul style="list-style-type: none"> Coordinated and integrated approach should be adopted by all orders of government (including municipalities, agencies, and boards) on matters related to watershed planning.

5.4.2 Existing Regional Official Plan (2014)

The ROP (2014) was reviewed to highlight the municipal guidance and requirements related to Engagement in the context of watershed planning.

Section	Existing Regional Official Plan (2014) Policies
Chapter 7: Natural Environment	
<p>7.A.2 Water Resources</p> <p>Policy 7.C.2.1</p>	<p>The Region, in partnership with the Niagara Peninsula Conservation Authority and appropriate local municipalities, shall ensure that Watershed Studies are prepared for major watersheds in consultation with landowners, community groups and other public agencies and shall include:</p> <ol style="list-style-type: none"> a. Inventory, analysis and assessment of ecological features and functions affecting the watershed b. Identification of key issues and objectives c. A water budget and water conservation plan d. Recommendations on actions needed to maintain and enhance ecosystem health and integrity, including policies to be incorporated into municipal planning documents e. Identification of subwatershed boundaries and establishment of guidelines and terms of reference for additional studies if needed

5.4.3 Niagara Region Priorities

In order to develop the goals and objectives for the NWP-E document that are specific to Niagara Region, the reports completed for the Region as part of the NEWP, the Consultation Summary Report – 1st Point of Engagement (2019) and the Watershed Planning Discussion Paper (2019), were reviewed to identify key stakeholder priorities. The following key issues and priorities, specific to Engagement, were identified.

It should be noted that any input received to date on the NEWP is still being evaluated by the Project Team. No final decisions on options, mapping, or policy have been made.

NEWP Consultation Summary Report – 1st Point of Engagement (2019)

- Provide well-advertised opportunities for public review and meaningful input into the natural environment mapping and policies.
- Promote transparency by making available natural environment mapping through a web-based, accessible, and user-friendly mapping tool.
- Develop a clear framework of roles and responsibilities and identify a consistent approach to undertake watershed planning.

- Engage public in natural environment planning and provide stewardship opportunities.
- Reinststate an environmental advisory committee with adequate community representation.
- Provide clear information about the planning process through flow charts, including agency responsibilities for review/consultation.

5.4.4 Goals and Objectives

Goal 7: Engage communities to understand and reflect community-identified priorities and local conditions in the Niagara Watershed Plan (E)

- a. NWP-E Objectives:
 - Incorporate public, stakeholder, and Indigenous Groups input and priorities identified in the NEWP Consultation Summary Report(s) into the NWP-E
 - Conduct additional public consultation (e.g. public open houses, surveys, etc.) to gather feedback from the community
 - Engage with Indigenous Groups specifically on the Niagara Watershed Plan Equivalency (NWP-E) project
- b. Future Actions and Recommendations:
 - Partner with NPCA (e.g. watershed planning, monitoring, mapping etc.)
 - Partner with local municipalities (e.g. subwatershed planning, stormwater management etc.)
 - Continue to engage with Indigenous Groups
 - Develop Watershed Planning Steering and Stakeholder Committees comprised of NPCA, LAM, NGO and other interested groups
 - Undertake stewardship, education and outreach opportunities on an ongoing basis, as appropriate, to ensure the NWP-E reflects the community's priorities

6.0 Summary of “Working” Set of Goals and Objectives

The following is a summary of the working set of goals and objectives to establish a framework for the NWP-E, as well as the context for future action. The goals and objectives will be modified and expanded upon as more information becomes available through future project tasks, as well as stakeholder consultation feedback. It is important to acknowledge that the Goals and Objectives will guide the initial development of the NWP-E and also then be used to support the subsequent actions of the Region and its municipal partners in the implementation phases.

Goal 1: Establish and Maintain Contemporary and Accurate Understanding and Mapping of the Watershed

- a. Identify the WRS
 - Review all available and relevant data sources
 - Delineate Watershed at the Tertiary and Quaternary-levels and Subwatershed Boundaries to establish contemporary and accurate understanding of the watershed systems
 - Characterize the existing conditions of the watershed based on existing desktop data specific to natural hazards, natural features and the water resource system components, using the best available information for the area
 - Identify/refine the WRS for Niagara Region, based on initial WRS from the NEWP, including key hydrologic features and key hydrologic areas
 - Consider areas with particularly sensitive karst systems
 - Provide appropriate connections with WRS Options identified in the NEWP
- b. Support the development of WRS Mapping
 - Review all available and relevant data sources
 - Delineate Watershed (tertiary and quaternary) and Subwatershed Boundaries
 - Map WRS elements based on available mapping, including:
 - Key hydrologic features
 - Key hydrologic areas
 - Functional considerations, such as appropriate recognition of human-made features
 - Identify gaps or deficiencies including age, quality / accuracy and/or availability of available data
 - Present existing/accessible data and gaps as a mapped index to clearly illustrate this information and its use in prioritizing recommendations for future work
 - Provide recommendations for consideration of WRS GIS/Data portal

Goal 2: Protect Water Quality & Water Quantity

- a. Develop a Water Budget for respective systems, building from a tertiary level of data
 - Review Source Water Protection Plans, preliminary identification and mapping of the WRS, and other available data sources to develop water budget
 - Identify water quality and water quantity concerns
- b. Identify best practices for water conservation and maintaining water quality in order to plan for efficient and sustainable use of water resources
 - Identify considerations for surface water features and areas
 - Identify considerations for groundwater features and areas

- Provide best practices to enhance stormwater capture / infiltration

Goal 3: Adaptively Manage and Monitor the Watershed

a. Monitoring and Adaptive Management

- Collate existing resources (e.g. GIS) of monitoring programs, including location and scale
- Identify NHS, WRS and associated natural and water-based resources which should be monitored as part of broad-scale growth plans (refer to Goal 5 for additional growth management objectives)
- Develop local and holistic monitoring strategies to establish a monitoring framework for Niagara Region building from existing programs including provincial, NPCA and others

b. Future Studies / Priorities:

- Establish guidelines and terms of reference for additional subwatershed studies
- Provide monitoring guidance for future studies required to support growth (notably subwatershed studies) including natural and water-based systems
- Provide recommendations for gap-filling and strategic study prioritization

Goal 4: Protect and Enhance Interactions Between the NHS and WRS

a. Identify the NHS

- Incorporate preferred/recommended NHS from NEWP, and the identification of the WRS (refer to Goal 1)
- Characterize existing conditions across the tertiary watersheds based on desktop accessible information determining areas of high sensitivity and risk
- Identify gaps or deficiencies including age, quality / accuracy and/or availability of existing data and reports
- Present data and gaps as a mapped index to clearly illustrate this information and its use in prioritizing recommendations for future work

b. Identify, preserve and enhance interactions between the WRS and the NHS

- Identify interactions between the WRS and the NHS to support connectivity
- Incorporate targets for restoration and protection of the NHS from the NEWP, such as targets for wetland, riparian, forest and grassland cover
- Identify best practices recommended in the NEWP related to, among others:
 - Management of agricultural related water features and practices
 - Buffers
 - Invasive species

Goal 5: Ensure Land Use Planning is Informed by Watershed Planning

- a. Review Growth Scenarios to Inform Land Use Planning
 - Review potential growth scenarios, potential settlement expansion areas, known areas experiencing higher levels of development or resource pressure, or are known to have functional concerns related to management of water quality or quantity.
 - Identify high level constraints based on functional sensitivities in areas where the NHS & WRS are at higher risk of impact to inform growth alternatives for Niagara Region and allow for an iterative approach providing feedback through the NWP-E
 - Apply a hierarchical approach to assess prioritized locations where land use changes and growth are anticipated to have low, medium and high impacts on the WRS, to ensure effective input and direction for land use planning for the new NOP.
- b. Provide Best Practices / Recommendations
 - Provide balanced consideration of grey/ green infrastructure to inform the new NOP building from acceptable local area municipal approaches
 - Identify and develop recommendations for prioritizing gap filling, and implementation priorities
 - Provide insights into best practices for managing impacts due to urbanization
- c. Provide Best Practices for protecting, enhancing and restoring the WRS related to, among others:
 - Shoreline management
 - Flooding and erosion
 - Buffers
 - Water quality and water quantity (including stormwater management) (refer to Goal 2)

Goal 6: Create Resilient Communities to Protect Human Health and Safety, and the Natural Environment

- a. Manage Natural Hazards
 - Review NPCA's flood hazard mapping to confirm mapping is current and consistent
 - Incorporate flood hazard mapping into WRS mapping (refer to Goal 1)
- b. Identify climate considerations and potential impacts to the WRS and NHS to improve resilience and inform land use and environmental planning
 - Summarize lessons learned from other communities (e.g. City of Ottawa and City of Welland)
 - Provide best practices/recommendations for flood hazard management

- Provide best practices/recommendations regarding climate change adjusted rainfall patterns
- c. Develop Cumulative Impact Considerations
 - Characterize the watershed to identify sensitivities and areas at risk
 - Overlay areas of existing development and proposed growth
 - Define areas anticipated to be under the greatest impact due to past, current and potential future development
 - Identify flood vulnerable areas
 - Provide best practices/recommendations regarding key environmental indicators and developing thresholds for future cumulative impact assessments

Goal 7: Engage communities to understand and reflect community-identified priorities and local conditions in the Niagara Watershed Plan (E)

- a. NWP-E Objectives:
 - Incorporate public, stakeholder, and Indigenous Groups input and priorities identified in the NEWP Consultation Summary Report(s) into the NWP-E
 - Conduct additional public consultation (e.g. public open houses, surveys, etc.) to gather feedback from the community
 - Engage with Indigenous Groups specifically on the Niagara Watershed Plan Equivalency (NWP-E) project
- b. Future Actions & Recommendations
 - Partner with NPCA (e.g. watershed planning, monitoring, mapping etc.)
 - Partner with local municipalities (e.g. subwatershed planning, stormwater management etc.)
 - Continue to engage with Indigenous Groups
 - Develop Watershed Planning Steering and Stakeholder Committees comprised of NPCA, LAM, NGO and other interested groups
 - Undertake stewardship, education and outreach opportunities on an ongoing basis, as appropriate, to ensure the NWP-E reflects the community's priorities

7.0 Next Steps

The NWP-E Goals and Objectives presented in this Discussion Paper will be further refined based on on-going Regional staff input, stakeholder consultation, and as additional information becomes available through future project tasks.

8.0 Discussion Questions

The Project Team is seeking your feedback on the following discussion questions:

1. What do you like about the goals and objectives that have been presented?
2. Are there any goals and objectives that you would like to see added or changed?
3. Are there any specific issues or opportunities which you would like to see considered as part of the current or future watershed planning efforts?
4. Do you have any information about Niagara's watersheds which you think would be beneficial to this process?
5. Do you have any other feedback to provide regarding the goals and objectives or the Niagara Watershed Plan project?

The project team would appreciate receiving your feedback on the draft goals and objectives presented in this discussion paper no later than **Friday November 27, 2020**.

Please provide your feedback using the survey at the following link, or by e-mail to sean.norman@niagararegion.ca

Link to survey: <https://ca.surveygizmo.com/s3/50085459/Niagara-Watershed-Plan-Feedback-on-Goals-and-Objectives>