

Devil's Punchbowl Conservation Area Master Plan

Final - September 2026

Hamilton Conservation Authority

A Healthy Watershed for Everyone



Prepared by: Hamilton Region Conservation Authority (HCA).

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Hamilton Conservation Authority

A Healthy Watershed for Everyone

Final – September 2026

TABLE OF CONTENTS

1.0 APPROVAL STATEMENT 1

2.0 PREFACE 2

3.0 INTRODUCTION 4
- 3.1 Executive Summary 4
- 3.2 Goals 6
- 3.3 Objectives 7
- 3.4 Site Concept 8
- 3.5 Policy and By-Law Framework 9
- 3.6 Master Plan Zones 11
- 3.7 Development Priorities 18

4.0 BACKGROUND 20
- 4.1 Study Area 20
- 4.2 Property History 21
- 4.3 Planning and Development Controls 24
- 4.4 Buildings 26
- 4.5 Physical Features 28
- 4.6 Cultural Heritage 28
- 4.7 Heritage Designation and Historic Buildings 30
- 4.8 Natural Areas 31

5.0 NATURAL AREAS INVENTORY 32
- 5.1 Physiography and Topography 32
- 5.2 Soil Composition 34
- 5.3 Hydrology and Surface Drainage 35
- 5.4 Biophysical Inventory Methodology 36
- 5.5 Ecological Land Classification 37
- 5.6 Flora/Botanical Inventory 37
- 5.7 Fauna Inventory 37
- 5.8 Breeding Bird Surveys 38
- 5.9 Ecological Land Classification Results 38
- 5.10 Flora/Botanical Inventory Results 38
- 5.11 Fauna Inventory Results 39
- 5.12 Aquatic Inventory 40
- 5.13 Significant Ecological Features 41
- 5.14 Biophysical Inventory – Analysis 42
- 5.15 Natural Areas Recommendations 51

6.0 OVERALL SITE CONCEPT 53
- 6.1 Natural Areas Development 53
- 6.2 Conservation Area Development 53
- 6.3 Day Use Activity Areas 55
- 6.4 Marketing 55

7.0 CONSERVATION AREA MANAGEMENT 56
7.1 Land and Water Management 56
7.2 Vegetation Management 56
7.3 Fish and Wildlife Management 58
7.4 Cultural Heritage Management 58
7.5 Conservation Area Operations 59
7.6 Education 59
7.7 Research 60
7.8 Recreation 60
7.9 Partnerships 61
7.10 Paid Staff 61
8.0 FINANCIAL 62
8.1 Attendance and Revenue Forecasts 62
8.2 Capital Projects 62
8.3 Funding Sources 65
8.4 Business Model 65
9.0 PROGRAMMING 66
9.1 Special Events and Programming 66
9.2 Education and Interpretive Programs 66
10.0 SUMMARY 67
11.0 APPENDIX CONTENTS 68
APPENDIX 1 69
APPENDIX 2 70
APPENDIX 3 96
APPENDIX 4 98
APPENDIX 5 105
APPENDIX 6 118
APPENDIX 7 131

LIST OF FIGURES

Figure 1. Context Map 5
Figure 2. HCA 10-Year Master Plan Study Area 10
Figure 3. Tourism Region 20
Figure 4. City of Hamilton Zoning 27
Figure 5. Soil Composition 33
Figure 6. Subwatersheds 36

LIST OF TABLES

Table 1. Natural Reserve Zone 13
Table 2. Natural Environment Zone 14
Table 3. Cultural Heritage Zone 15
Table 4. Development Zone 16
Table 5. Resource Mangement Zone 17
Table 6. Summary of Ecological Field Studies 37
Table 7. Floristic Summary & Assessment..... 39
Table 8. Fish species Captured in this Area of Stoney Creek 40
Table 9 Federal & Provincial Species at Risk 42
Table 10. Locally Rare & Uncommon Species 43
Table 11. Species of Conservation Concern 46

1.0 APPROVAL STATEMENT

We are pleased to approve the Devil's Punchbowl Conservation Area Master Plan as the official policy document for the Hamilton Region Conservation Authority (HCA).

This plan supports HCA's current Strategic Plan and reflects our Vision of a healthy watershed for everyone and Mission to lead in the conservation of our watershed and connect people to nature.

Moving forward over the next ten years this plan will provide guidance for management of the conservation area in support of these goals.

Lisa Burnside
Chief Administrative Officer
Hamilton Conservation Authority

September 3, 2026
Date

Brad Clark
Chair, Board of Directors
Hamilton Conservation Authority

September 3, 2026
Date

Shawn Carey
Director
NEC

October 16, 2026
Date

Stephen Casselman
Director, Fish and Wildlife Policy Branch
MNR

November 24, 2026
Date

2.0 PREFACE

The Devil's Punchbowl Conservation Area Master Plan is the guiding policy document for the development and management of this conservation area which is owned and administered by the Hamilton Region Conservation Authority (HCA). The recommendations in this Master Plan are intended to help provide direction and guidance for sustainable development and operation of Devil's Punchbowl Conservation Area (DPCA) over the next ten years.

This Master Plan was developed by HCA staff utilizing in-house expertise and resources, with a public consultation process to receive input from stakeholders and the public as follows:

Phase 1 Background

Background review was initiated January 2022 with the HCA executive team review of the work plan, engagement of staff, collection of mapping information, and gathering information through staff and stakeholder meetings. An information report was presented to the HCA Conservation Advisory Board in April 2022, and Phase 1 was completed by October 2022.

Phase 2 Inventory

Inventory includes the collection and assembly of natural areas field surveys and mapping information, ecological reports, trail and vehicle counter data, and visitor surveys. Natural areas reviews began in 2021 by HCA staff. An unexpected change to the project happened in July 2022 when HCA acquired the new land parcel with the Punchbowl Market buildings. Scope and project schedules were adjusted at that time to include this acquisition in the field inventory and public surveys.

A public engagement site was launched on HCA's website in May 2022. A visitor survey for DPCA was conducted online through the HCA website. Flyers were also posted and distributed on site giving visitors QR codes and weblinks to take them to the surveys on their mobile devices. Once the former Market property was acquired, a second survey was created focusing on that part of the conservation area. The main DPCA survey ran from May 18 to September 9, 2022 with 100 surveys submitted. The Market Lands survey ran from July 9 to September 9, 2022, and 32 surveys were submitted. Two public information booths were operated by staff in the conservation area on July 16 and August 6, 2022 to share information on the plan, respond to questions, and sign up people interested in receiving the draft plan for review and comment. Visitors to the public engagement site during this phase were also able to register to receive and comment on the draft Master Plan in Phase 4.

Phase 3 Concepts

Concepts in this plan were completed in-house by HCA staff and refined with the information in the public surveys and input from stakeholders. Staff's professional expertise and experience, plus lessons learned from operating the DPCA for decades helped inform this plan. Four facilitated workshop sessions were held with staff covering: site concept and vision planning; financial sustainability; day use and marketing; and capital project priorities and plans. All information

gathered in this phase was presented internally to HCA staff for review and comment and then compiled in the draft plan circulated in Phase 4.

Phase 4 Summary

Finalizing the draft Master Plan includes reviews of the compiled draft plan by staff, stakeholders, and board advisory members, and circulation to the public who registered in Phase 2. The final draft document integrates comments and feedback received during the external review. After receiving final comments, the plan is to be presented to the HCA Conservation Advisory Board, the HCA Board of Directors as well as the Niagara Escarpment Commission and Ministry of Natural Resources, for endorsement and approval.



3.0 INTRODUCTION

3.1 Executive Summary

Devil's Punchbowl Conservation Area (DPCA) is a 64 ha (158 acre) day-use area located along the Stoney Creek Escarpment in the City of Hamilton. The property was acquired by Hamilton Region Conservation Authority (HCA) in 1969 for its significant location on the Escarpment. In July 2022, HCA acquired an additional 20.3 ha (50 acre) property on Ridge Road with the Punchbowl Market buildings and associated farmlands. This acquisition will provide additional space for visitors to enjoy nature, as well as for the construction of wetlands to help prevent flooding and erosion in lower Stoney Creek. The DPCA lands are shown on Figure 1. Context Map.

DPCA is part of the Niagara Escarpment Park and Open Space System (NEPOSS) and classified as Natural Environment in the Niagara Escarpment Plan (NEP). It is also part of the Niagara Escarpment UNESCO World Biosphere Reserve (NEBR). This classification identifies the Escarpment and the land in its vicinity as a nationally and internationally significant landform (NEPOSS, 2021). This classification and designation serve to protect the outstanding natural heritage features, cultural heritage resources, and scenic resources at DPCA. This Master Plan supports the Biosphere Reserve principles so that the Escarpment will remain substantially as a natural environment for future generations.

The conservation area contains a waterfall that plunges over the Escarpment and offers visitor parking and trail access to lookout areas with spectacular views of Stoney Creek, Hamilton Harbour, and the Punchbowl gorge. From the parking lot visitors may also access the Bruce Trail and Dofasco 2000 Trail which connects to Saltfleet Conservation Area.

In 1980 The Devil's Punchbowl Master Plan was approved by the HCA Board of Directors. Since then, this day-use area has become very popular, and high visitation is now straining the parking capacity and site facilities. This ten-year Master Plan updates and replaces the 1980 plan. This plan consolidates all studies of DPCA since 1980, supplies current mapping and site analysis, and provides guidance for HCA's visitor management, natural area conservation, and operation of the newly expanded conservation area.



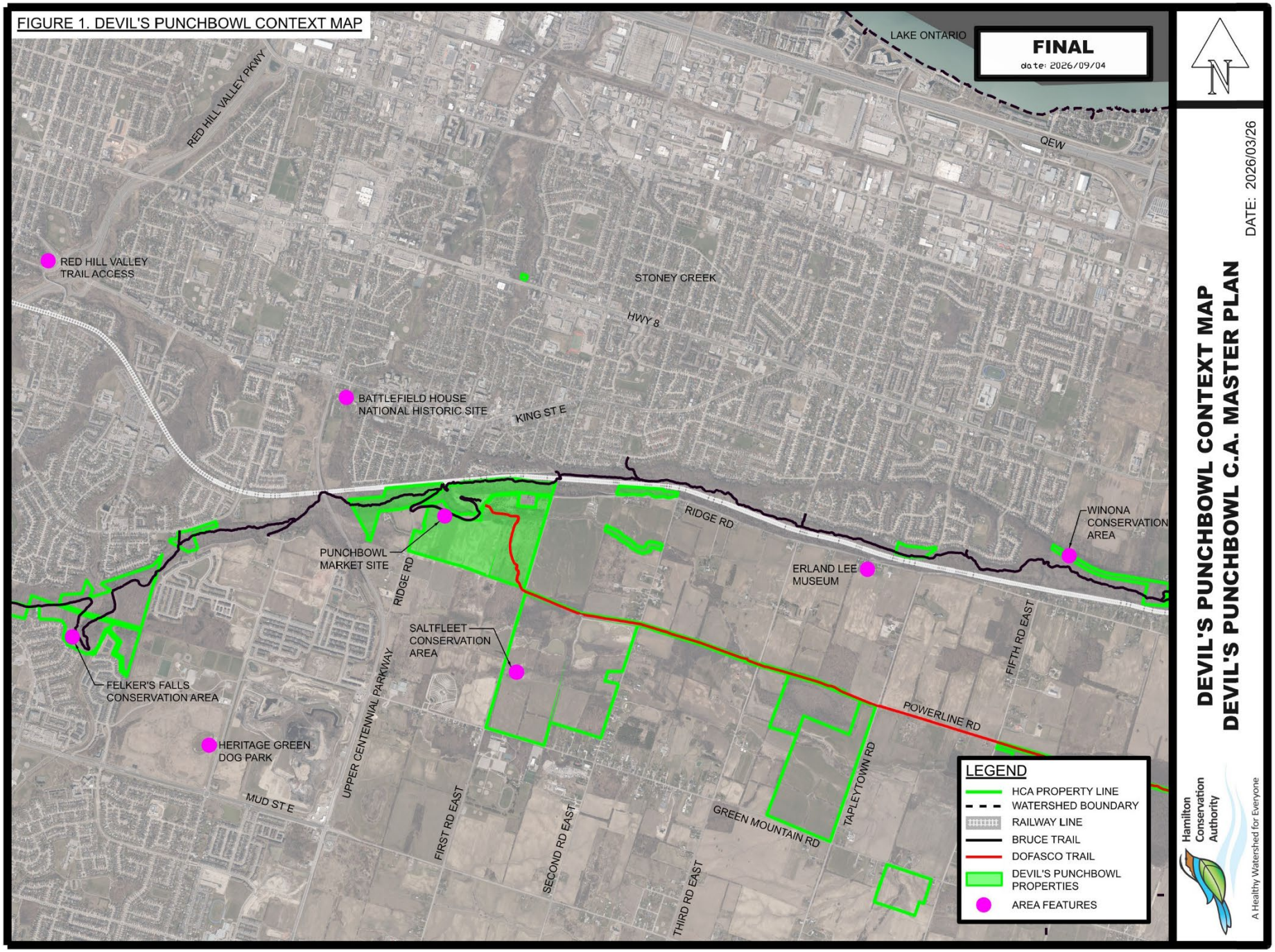


FIGURE 1. DEVIL'S PUNCHBOWL CONTEXT MAP
FINAL
date: 2026/09/04
LAKE ONTARIO
RED HILL VALLEY PKWY
QEW
RED HILL VALLEY TRAIL ACCESS
STONEY CREEK
HWY 8
BATTLEFIELD HOUSE NATIONAL HISTORIC SITE
KING ST E
RIDGE RD
WINONA CONSERVATION AREA
PUNCHBOWL MARKET SITE
RIDGE RD
ERLAND LEE MUSEUM
SALTFLEET CONSERVATION AREA
FIFTH RD EAST
FELKER'S FALLS CONSERVATION AREA
POWERLINE RD
HERITAGE GREEN DOG PARK
UPPER CENTENNIAL PARKWAY
MUD ST E
FIRST RD EAST
SECOND RD EAST
THIRD RD EAST
GREEN MOUNTAIN RD
TAPLEYTOWN RD
LEGEND
HCA PROPERTY LINE
WATERSHED BOUNDARY
RAILWAY LINE
BRUCE TRAIL
DOFASCO TRAIL
DEVIL'S PUNCHBOWL PROPERTIES
AREA FEATURES
DEVIL'S PUNCHBOWL CONTEXT MAP
DEVIL'S PUNCHBOWL C.A. MASTER PLAN
DATE: 2026/03/26
Hamilton Conservation Authority
A Healthy Watershed for Everyone

3.2 Goals

This Master Plan outlines the long-term goals for conservation and land management at DPCA and is intended to be a living document that will be updated completely in ten years' time. If any significant changes to the developmental or operational direction of the conservation area arise during the ten-year timeframe, an amendment can be made to this Plan through the HCA Boards, the NEC and the MNR to incorporate these changes.

These goals set out by HCA in the 1980 Master Plan will be carried forward in this plan:

- To maintain the water management function of the property
- To preserve and enhance all natural features both living and non-living within the conservation area.
- To provide passive recreational opportunities in a manner that will enhance the appreciation of all features within the conservation area, without compromising same.
- To develop a visitor services program which will generate an understanding of the property with particular attention to geological features.
- To establish an appropriate use for the existing buildings located on the property.

Along with these goals, a new goal will be added for the conservation area:

- To enhance the natural and hydrologic function of the land through the creation of wetlands on former agricultural property.

These goals are intended to meet the objectives of the Niagara Escarpment Plan, the NEPOSS and the Niagara Escarpment UNESCO Biosphere Reserve (NEBR) and recognize these designations through sustainable park planning, ecological management, community involvement, environmental monitoring, research and education.

Land Acknowledgement

The HCA joins in stewardship of lands and waters with Indigenous Peoples who have cared for them since time before memory. We acknowledge that the land on which we gather, and the HCA watershed, is part of the Treaty Lands and Territory of the Mississaugas of the Credit First Nation and traditional territory of the Haudenosaunee.

As an organization, we are committed to learning about the shared history and experiences of Indigenous Peoples in Canada and creating relationships based on respect, trust and friendship. In our shared gratitude for every aspect of the natural world, may we create a lasting legacy now and for future generations.

HCA Strategic Plan

Through consultation and analysis of current operations, this plan also supports the following long-term goals as outlined in HCA's current strategic plan:

Vision

- A healthy watershed for everyone.

Mission

- To lead in the conservation of our watershed and connect people to nature.

Strategic Priority Areas

- **Organizational Excellence** - Focused on our organizational resources to ensure efficient and responsive operations are available to meet the needs of the future.
- **Water Resources Management** - Focused on safeguarding the health of the watershed and protecting people and property from natural hazards.
- **Natural Heritage Conservation** - Focused on the management and conservation of natural areas, which include the forests, wetlands, meadows, and watercourses within the watershed.
- **Connecting People to Nature** - Focused on the conservation of HCA lands and connecting communities to natural areas.

HCA Climate Change Strategy

The goal of HCA's Climate Change Strategy is to work towards achieving net zero status across HCA's operations through the reduction of greenhouse gases (GHG's), while also working to increase our overall adaptive capacity to changing climatic conditions

Key Areas of Focus

- Environment and Natural Heritage
- Experience, Education and Awareness
- Partnerships

City of Hamilton Biodiversity Action Plan

The HCA is a dedicated partner of the Hamilton Biodiversity Action Plan. Developing updated Master and Management Plans for HCA owned and managed natural areas directly supports Action 7.6 in the Biodiversity Action Plan. Management Plans help guide the protection of biodiversity in these natural areas and help to inform local decision making.

3.3 Objectives

The goals and objectives in the previous Master Plan have been assessed, and through consultation and analysis of current operations, the HCA supports the following long-term objectives for the Devil's Punchbowl:

- Maintain the existing natural environment of the gorge, along the Escarpment face and brow with management of vegetation, wildlife, and visitors.
- Maintain the hydraulic capacities of the watercourse at the Punchbowl.
- Provide for storm water retention on the conservation area lands.

- Provide for enhanced safe access, parking and visitor amenities with the Punchbowl Market property.
- Provide access to trails including the Bruce Trail to support passive recreation.

3.4 Site Concept

DPCA contains physical features, flora and fauna of significance and these lands were acquired by HCA to preserve these features while providing public opportunities for appropriate passive recreation and environmental education.

This day-use conservation area has become very popular, with high visitation straining the parking capacity and site facilities. In response to visitation here and at other areas in HCA's watershed, in 2019 HCA staff prepared an "HCA Visitor Management and Vehicle Parking Review" with the following recommendations for DPCA approved by HCA's Board of Directors. See Appendix 6 for the full report, the following are highlights from this report:

> "Recommendation #1: HCA staff implement immediate parking enhancement opportunities at…Devil's Punchbowl…to optimize number of parking spaces, traffic flow and signage;

And

> Recommendation #3: HCA staff undertake steps to establish an interim parking lot and trail connection to the Dofasco Trail for the Devil's Punchbowl at the Saltfleet Conservation Area;"

Three key strategies were also presented for DPCA in this report:

- That improvements to the parking lot "could optimize traffic flow, number of parking spaces and visitor experience."
- That there are opportunities "for additional parking to be created within the adjacent lands that comprise part of the Saltfleet Conservation Area…Signage and promotional materials would be needed to inform the public of this option."
- And "In the longer term, as additional lands are acquired, there is potential for a gateway to service the Devil's Punchbowl area."

These further recommendations are identified in the Site Concepts for this plan:

.1 Above the Escarpment:

- Optimize the existing parking lot at the Punchbowl.
- With the addition of the Punchbowl Market property provide enhanced visitor services, HCA staff work areas, and safe trail crossings at Ridge Road.
- Improve the existing trail system and associated signage.
- Provide for new wetland creation south of Ridge Road.
- Accommodate the new market lands in this plan.

.2 Below the Escarpment:

- Improve the existing trail system in partnership with the Bruce Trail Conservancy.
- Market and provide educational information on protecting the sensitive natural areas.
- Manage waterfall visitation in the gorge to protect the natural areas.

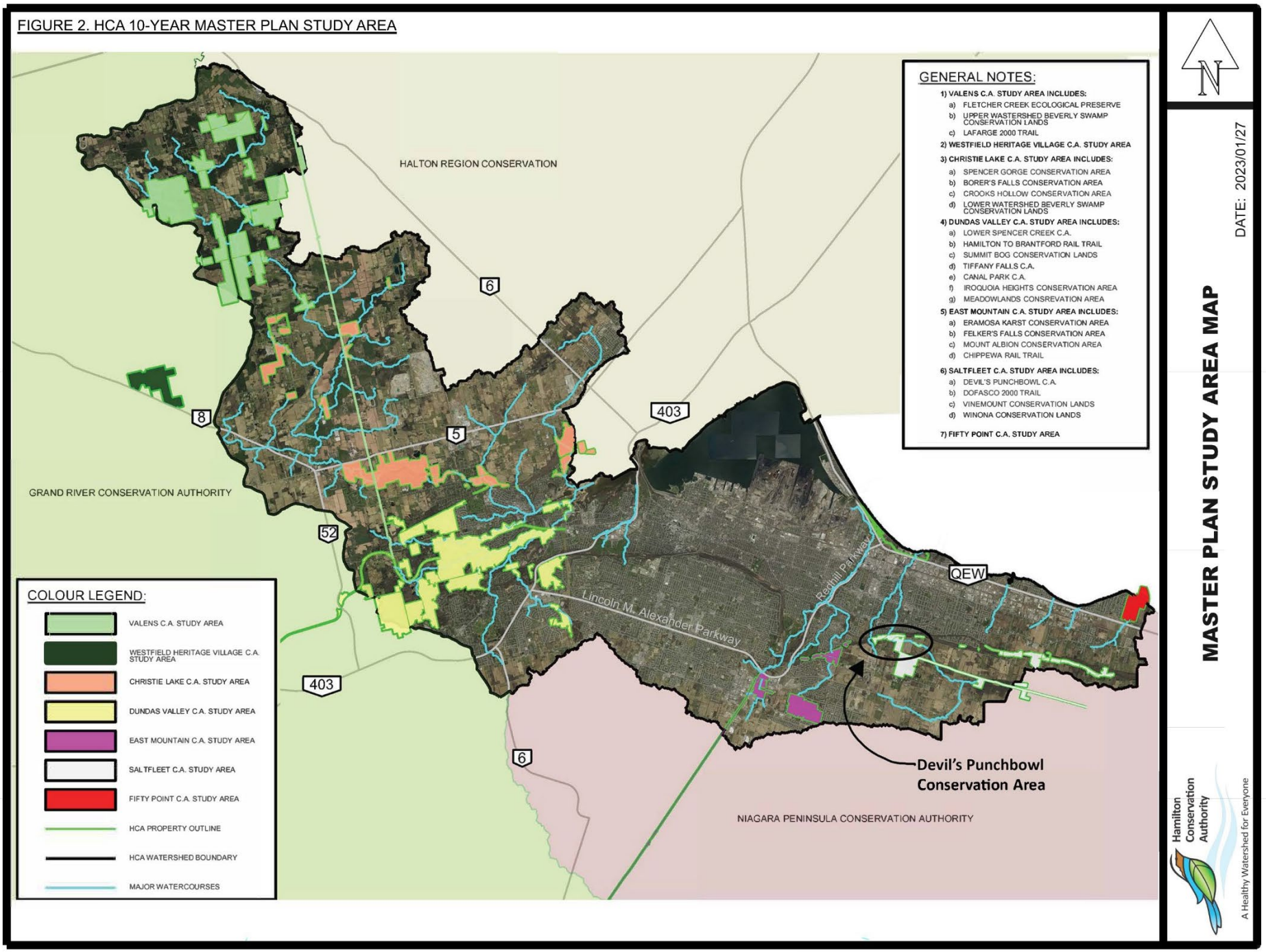
3.5 Policy and By-Law Framework

Conservation areas owned and operated by the HCA are diverse in nature and spread across the HCA watershed. DPCA is near the south-eastern boundary of HCA's watershed. See Figure 2. 10 Year Master Plan Study Area for more information.

HCA has approached this Master Plan with the mindset that all conservation areas in the HCA portfolio requiring Master or Management Plan updates will follow a consistent methodology. A 10 Year Masterplan Update Strategy for properties that HCA owns and manages was approved by HCA's Board of Directors in 2019 and updated in 2022. As per this strategy, guidelines were set out for the completion of HCA Master Plans (including Management Plans and Study Areas). This strategy noted that HCA lands that lie within the boundary of the Niagara Escarpment Plan will need Master Plan endorsement from the Niagara Escarpment Commission (NEC) for HCA to formally ratify them and approval from the Ministry of Natural Resources. Consequently, HCA strategically decided to develop all HCA Master Plans within the guidelines of the Niagara Escarpment Parks and Open Spaces System (NEPOSS), which is a requirement of the NEP for any public agency NEPOSS park Master Plans. The NEPOSS policy framework ensures HCA follows a consistent methodology for all plans, and the plans are developed to an appropriate level of detail with sufficient public consultation for all proposed land improvements and uses.

HCA recognizes that certain public infrastructure such as utility corridors, trails, or transportation links may be required to cross conservation area lands. HCA policy for planning review and regulation of these features adheres to the Conservation Authorities Act, R.SO.1990, C.27. See Section 7.1 for more information.

FIGURE 2. HCA 10-YEAR MASTER PLAN STUDY AREA



The DPCA Master Plan adheres to policies of the Hamilton Conservation Authority, City of Hamilton, and provincial policy. HCA will consult with approval agencies and obtain the required permits when implementing projects flowing from this Master Plan.

3.6 Master Plan Zones

DPCA is located within the jurisdiction of the Niagara Escarpment Commission and Greenbelt Area. The policies of the Niagara Escarpment Plan and guidelines of the Niagara Escarpment Parks and Open Space System Planning Manual (2021) have been observed in the preparation of this Master Plan. The Niagara Escarpment Plan Area is shown on Map 2 in Appendix 1.

This Master Plan follows the current NEPOSS planning manual and identifies five land use zones for DPCA. These zones are intended to help guide future planning, development, and management of the conservation area. The zone boundaries are shown in more detail in Appendix 1 on Map 3. Conservation Area Zones.

Zones are intended to fulfill a variety of functions in the conservation area, including the following as outlined in the current NEPOSS manual:

- Identification and recognition of the features and attributes (values).
- Protection of key natural heritage and cultural heritage resources.
- Confirmation of the appropriate locations for activities (i.e. directing activities with higher impacts to the least sensitive areas and low impact activities to areas that are more sensitive, if appropriate).
- Delineation of areas based on their requirements for management (e.g. management plan objectives).
- Standardization to support management objectives and actions, based on values (e.g. Nature Reserve Zones supports protection of sensitive natural heritage features and landforms and provincially significant Areas of Natural and Scientific Interest).
- Balancing of public use with the preservation of the natural environment.

The five land use zones identified for DPCA are:

- Nature Reserve Zone
- Natural Environment Zone
- Cultural Heritage Zone
- Development Zone
- Resource Management Zone

The following sections briefly describe each zone. The tables in each section provide a zone description, management direction, and permitted uses, including types of development in each zone. All resource, recreational, and facility development uses are subject to Canadian legislation and policies governing public lands and conservation areas, as well as the resource management policies identified in Section 7.

Appendix 5 contains the natural inventory species lists from background research and field work completed for the preparation of the Master Plan. In this Master Plan, “species at risk” means species listed by the Ministry of Environment, Conservation and Parks (MECP) or Government of Canada as threatened, endangered, extirpated or extinct in Ontario including:

- Species designated as endangered, threatened, or special concern by the Species at Risk Act (federal) via the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and listed in Section 5.14.

- Species designated as endangered, threatened, or special concern by the Species Conservation Act (provincial) via the Committee on the Status of Species at Risk in Ontario (COSSARO).



Nature Reserve Zone

Nature reserve zones include significant earth and life science features which require management distinct from that in adjacent zones, as well as a protective buffer with an absolute minimum of development. DPCA's nature reserve zones contain the Punchbowl gorge, waterfalls and water courses, and environmentally sensitive Escarpment.

Table 1. Nature Reserve Zone

Zone	Description	Management Direction	Permitted Uses (subject to management planning)
Nature Reserve	Includes the most sensitive natural heritage features and areas that require careful management to ensure long-term protection. Intended to protect in perpetuity features and values of selected life and earth science areas such as: Devil's Punchbowl Provincially Significant Earth Science Area of Natural and Scientific Interest (ANSI) • Punchbowl gorge • Waterfall and watercourse • Environmentally significant Niagara Escarpment	These areas are predominantly natural and should contain naturally functioning ecosystems. This zone is intended to protect and where possible enhance the natural heritage and hydrological systems within the zone.	Sustainable recreational activities that are supported by a detailed environmental review and that are identified as compatible with the natural heritage features and areas of the park or open space. Examples include: • Bruce Trail • Nature appreciation from designated recreational trails and lookout stations • Temporary scientific research • Conservation practices (e.g. tree maintenance and monitoring, invasive species control, erosion control) • Education and interpretation facilities where justified • Public safety practices e.g. guards, barriers, protective fencing

Natural Environment Zone

Natural environment zones include natural, cultural, and aesthetic landscapes in which minimum development is permitted to support low-intensity recreational activities. DPCA's natural zones are primarily the wooded area below the Escarpment brow.

Table 2. Natural Environment Zone

Zone	Description	Management Direction	Permitted Uses (subject to management planning)
Natural Environment	Includes scenic landscapes in which minimum development is permitted to support recreational activities that have minimal impacts on the Escarpment environment. • Significant woodlands • Devil's Punchbowl Environmentally Significant Area (ESA)	This zone may function as a buffer between Nature Reserve Zones and Development Zones, Cultural Heritage Zones and Access Zones. Management guidance should maintain and enhance the scenic resources and open landscape character of the environment.	Sustainable recreational activities that have minimal impact on the environment may be permitted. Examples include: • Bruce Trail • Nature Appreciation from designated recreational trails and lookout stations • Temporary scientific research • Conservation practices (e.g. tree maintenance and monitoring, invasive species control, erosion control) • Education and interpretation facilities where justified • Infrastructure required for safety or accessibility may be permitted where there is no feasible alternative.

Cultural Heritage Zone

Cultural heritage zones are intended to protect significant built heritage resources, archaeological resources, and cultural heritage resources. DPCA's cultural heritage zone includes the Cross and associated structures and landscaping.

Table 3. Cultural Heritage Zone

Zone	Description	Management Direction	Permitted Uses (subject to management planning)
Cultural Heritage	This zone includes cultural heritage resources that require management to ensure long-term conservation. • Illuminated Cross • Electrical infrastructure for the Cross • Cross planting beds • Cross lookout platform and associated structural elements such as retaining walls. • Archaeological site west of the market building	Management guidance will ensure long-term conservation, enhancement and potentially restoration of cultural heritage resources.	Development will ensure long-term conservation of cultural heritage resources. Examples include: • Structural maintenance • Infrastructure maintenance • Interpretive/educational signage • Compatible landscaping • Compatible site furnishings (benches) • Public safety practices e.g. guards, barriers, protective fencing

Development Zone

Development zones provide visitor access, orientation, and operational facilities in the conservation area.
DPCA's development zones include all park roads and parking areas, day use recreational areas, buildings, and work areas for conservation area operations.

Table 4. Development Zone

Zone	Description	Management Direction	Permitted Uses (subject to management planning)
Development	Development Zones provide the main visitor access to the conservation area, and facilities and services to support nature appreciation, recreational activities and watershed management. This zone may include areas designed to provide facilities and supporting infrastructure for recreational purposes. • Existing gated parking • Market site parking • Punchbowl Market main building • Market workshop building • East Mountain office building	Management guidance should note that recreational uses and development may be accessory or secondary to the protection of natural heritage features and to the conservation of cultural heritage resources, depending on classification. Retail and visitor facilities should be appropriately scaled for the site. Facility development must be undertaken in a way that will minimize the impact on the Escarpment environment.	Examples of permitted uses that provide access, orientation and operational facilities to support nature appreciation and recreational activities include: • Roadways • Parking areas • Recreational trails • Picnic Areas • Temporary events • Public washrooms • Visitor reception • HCA work areas • Small scale commercial or retail operations

Resource Management Zone

Resource management zones provide for sustainable resource management of agricultural lands, previously disturbed sites, forest products, and land that has a long-term resource agreement such as a managed forest.
DPCA's resource management zones include the agricultural lands (fallow fields, orchard, vineyards) south of Ridge Road.

Table 5. Resource Management Zone

Zone	Description	Management Direction	Permitted Uses (subject to management planning)
Resource Management	Provides for sustainable resource management of forests, fisheries, watersheds, wildlife, or flood control. Previously disturbed sites (e.g. old farm fields, abandoned quarries) where active measures are being taken to re-establish natural vegetation. • SC-5 Wetland Study Area • Watershed management and flood control • Transitioning the orchards, vineyards, fallow fields and farm pond into natural heritage and hydrologic features • Section of Dofasco Trail for recreational use	Management guidance should support: Experimenting with alternative resource management practices. Understanding ecosystem structures and functions. Activating effective conservation and stewardship practices.	These areas may be used to demonstrate ecologically sustainable resource management practices. Examples may include: • Recreational trails • Site furnishings, interpretive features and lookout stations • Wetlands • Educational tours • Rehabilitation / naturalization projects • Research • Recreation uses in this zone are subject to HCA policies and management planning.

3.7 Development Priorities

The capital development priorities and cost estimates for DPCA over the next ten years are shown on the maps in Appendix 1 and the tables and drawings in Appendix 2.

All development projects are to be reviewed annually for the life of this Master Plan, and the capital development priority list updated as necessary. Capital projects should not be started until a long-term strategy with timelines and costs for each project are clearly defined and sufficient resources are available to complete them. See Section 8.2 for further information.

The Visitor Management and Vehicle Parking Review analysis noted in Section 3.4 and Appendix 6 identified Devil's Punchbowl as a high use conservation area with visitor and parking issues. The development priorities outlined in this plan are intended to address the recommendations in this report to meet visitation demands over the next ten years.

Significant capital development for DPCA over the next ten years falls within these categories:

.1 Replace Significant Park Features

These significant park features require ongoing repairs for public safety, are nearing or past the end of their life cycle, and are proposed to be replaced or expanded upon:

- Optimize the existing visitor parking lot to improve traffic flow and function.
- Conduct structural reviews and risk assessment of all park features (buildings, lookout platforms, retaining walls etc.) with report recommendations for long-term care and maintenance.
- Repurpose the Punchbowl Market buildings for visitor and operational use.
- Accommodate the Dofasco 2000 Trail connection to Saltfleet Conservation Area with the wetland project.
- Demolish the existing staff office on Ridge Road to accommodate the SC-5 wetland.

.2 Add New Park Features

These capital projects are proposed to serve a greater number of visitors, generate revenue, and enhance the ecological function of these lands:

- Design and construction of a new wetland area, noted as SC-5 on the Punchbowl Market property, to function with the Saltfleet wetland complex.
- With the SC-5 wetland complex, provide passive recreational trails and interpretive features.
- Enhance the market lands south of Ridge Road for visitor and staff use. This will include a new parking lot with autogate system, trailhead amenities, and improvements to the main market building to create a visitor centre with public washrooms and staff offices.
- For visitor management and natural area protection in the Punchbowl gorge, provide waterfall interpretive signage at the Bruce Trail and install boundary signage marking areas off-limits to the public. More information on development in the Punchbowl gorge can be found in Section 8.2.

.3 Enhance Existing Park Features

These capital projects are proposed to enhance existing park features and improve customer service:

- Work with the Bruce Trail Conservancy to improve the trail system and restore degraded natural areas.
- Install perimeter fencing and guards for public safety and to protect natural areas and cultural heritage areas.
- Provide more educational information for visitors online and on site.
- Manage the naturalization of fallow farm fields, remnant vineyards and orchards that are outside the boundaries of the new wetland area in order to improve the ecological function and connectivity of the former agricultural areas.



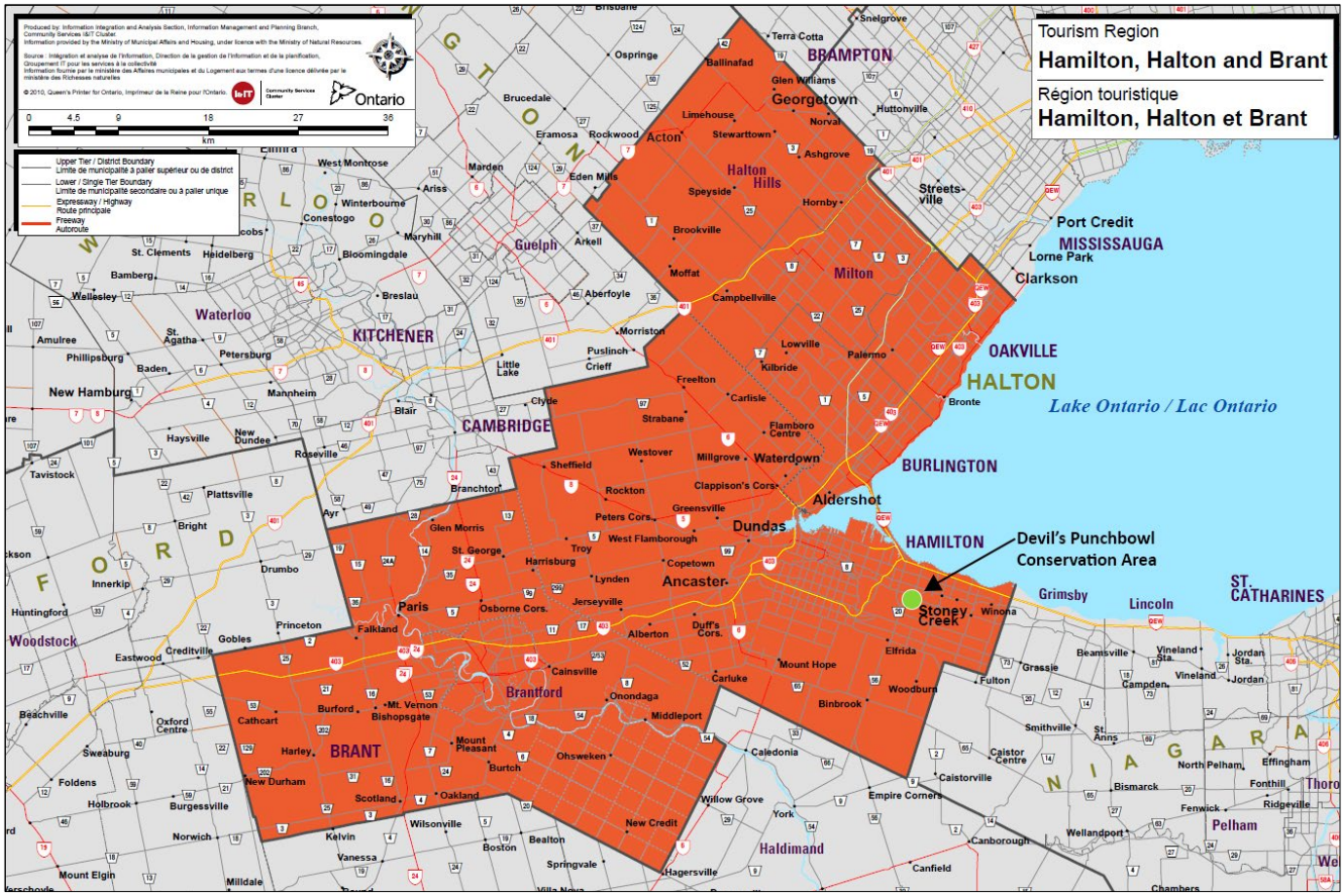
4.0 BACKGROUND

4.1 Study Area

Devil's Punchbowl Conservation Area (DPCA) is located in the south-eastern area of HCA's watershed in Stoney Creek, City of Hamilton. Other HCA lands nearby include the Dofasco 2000 Trail, Saltfleet, Vinemount and Winona Conservation Areas. The DPCA property encompasses 64 ha (158 acres) of land in the former Township of Saltfleet, with a newly acquired 20.3 ha (50 acre) Punchbowl Market property on Ridge Road. Ridge Road bisects the conservation area in an east-west direction. The property on the east and south of Ridge Road is tableland and includes the Dofasco 2000 Trail. The north side of Ridge Road is the main draw for the visitor with Escarpment views, Punchbowl waterfall, and a short trail loop with lookout areas. The Bruce Trail, as well as the Canadian Pacific Railway freight line mark the northern boundary below the Escarpment bordering on the creek.

DPCA is a popular day-use area and tourist attraction within easy driving distance from the Greater Toronto and Hamilton area as well as Niagara Region. Figure 3 shows the tourism market area considered by this Master Plan.

Figure 3. Tourism Region



Source: Ontario Ministry of Tourism, Culture and Sport.

During the preparation of this plan, two visitor surveys for DPCA were distributed online and two public information tables were held in the park during the public commenting period. One public survey ran from May 18 to September 9, 2022, and a second survey from July 8 to September 9, 2022. See Section 6.4 Marketing for the survey analysis, and Appendix 4 for the visitor data.

Development proposed for DPCA will require review by the Hamilton Conservation Authority, the City of Hamilton, and the Niagara Escarpment Commission. Draft copies of this document were circulated to these agencies, and their comments addressed in the finalized Master Plan.

Figure 1 in Section 3.1 shows the study area for this plan. This Master Plan update is part of a ten-year strategy for reviewing HCA lands across the watershed as shown in Figure 2 in Section 3.5. HCA staff are following this strategy to systematically glean valuable scientific data and site information from targeted study areas and using this information in the preparation of master and management plans.

4.2 Property History

.1 Background



HCA initially acquired two small parcels of land in 1969 and in the succeeding years purchased an additional 21.2 ha of lands surrounding the Stoney Creek flood plain above the Escarpment on the south side of Ridge Road to create DPCA. This land contained a vineyard that was left to naturalize following it's acquisition by the HCA. The suitable location and special geologic features of the property provided for passive recreational use such as picnicking, viewing, and hiking. HCA began developing modest facilities on the property to accommodate these uses.

Orchards in production on the properties fell under the management of a local farmer who leased land from HCA. A major fruit tree replacement program was initiated in 1978 at the expense of the lessee. Many of the lands surrounding DPCA above the Escarpment were in agricultural production. As well, a small fruit stand operated on Ridge Road in the immediate vicinity of the conservation area. The only farmland remaining in production today is south of Ridge Road on the newly acquired Market property.

The conservation area officially opened in October 1971. Facilities at that time included pit privy toilets and a parking lot accommodating a maximum of 20 cars. Picnic tables and an interpretive plaque of the geologic history had been placed on site but were subjected to vandalism. The main

lookout area was developed with a stone wall along the Escarpment crest for safety precautions and a split rail fence extending along Ridge Road.

A campground was considered; however, HCA could not justify removing the orchards and vineyards for this use, especially when there was an adequate supply of campsites in the Hamilton vicinity.

.2 Rental Homes

Two homes were located on Lot 23, Concession 4 approximately 300m apart. One was a unique frame home while the other was a newer brick residence. Both homes were used for residential purposes and were leased from HCA on an annual basis in the early years of operation. The frame house was demolished for the parking lot construction, and the brick home has recently been repurposed by HCA for the Hamilton Mountain superintendent's office and base of operations.



.3 The Cross

When HCA acquired the property in 1969, the cross was a feature already in place as installed by the Stoney Creek community. The cross we see on site today originally was a smaller wooden cross installed on the Escarpment brow in 1960. That cross was replaced in 1966 by a larger metal structure, and the lights refurbished in 1968 and 1991.The platform and interpretive signage was installed in 1992. Between 2013 and 2015 the structure and electrical system was refurbished and new LED lighting installed. A memorial plaque was mounted on the cross from the Goemans family, recognizing Tony Goemans support of this refurbishment project.

The cross has an interesting cultural history. In the early 1960's the local community organized with the goal of seeing an illuminated cross on the Escarpment by Christmas of 1966. A "Cross Committee" was formed, through which purchases and financial arrangements were to be directed. Marie Kott, a well-known public figure in Stoney Creek helped initiate the community fundraising for the project, with the Toronto Dominion Bank receiving donations. The committee was successful in their financial outreach and also received the support of local industries and businesses, the councils of the Town of Stoney Creek and Saltfleet Township, service clubs, churches, and Stoney Creek Hydro.

Bill Sinclair, a linesman with Stoney Creek Hydro also helped champion and guide the project with the Cross Committee. With a group of Stoney Creek Hydro linesmen, 182 meters (600 feet) of buried cable were installed from the powerline to supply power to the cross. Stoney Creek Hydro supported the illumination of the cross during certain holiday seasons.

The Cross Committee learned that a hydro tower on Birch Avenue, Hamilton, owned by Ontario Hydro, was available for repurposing. The tower, which was more than 50 feet tall, was obtained, and the Foran Crane Company gave time and materials to erect the tower on site. The tower was anchored to a concrete base prepared by Delta Ready Mix Concrete Co. and formed the structural base for the stainless-steel cross.

As well as Marie Kott mentioned earlier, Stanley Kott and Charles Kott of Wentworth Industries, a local steel fabricating company on Lake Avenue, were responsible for building the cross. They supplied the stainless steel and assembled the labourers for the project. As their company was in the heart of Stoney Creek, they were keen to be involved with the project and were inspired by Marie to donate the steel. A local hardware store donated the lights.

.4 Site Improvements

Since 1980 HCA has initiated modest capital improvements on site for visitor management. A small overflow parking area was added to the parking lot. In 2018 automated parking gates and barriers were installed. The Bruce Trail Conservancy maintains the Bruce Trail running through the property under a partnership agreement with HCA. The City of Hamilton is responsible for capital improvements on the adjacent city lands, including road improvements along Ridge Road, local public access below the Escarpment near the railroad tracks, and infrastructure maintenance of services traversing the site. The post and rail perimeter fencing at the brow was replaced in 2021 with decorative metal picket fencing, consistent with fencing HCA has installed at other Escarpment properties for visitor management. Safety rail fencing along the Escarpment brow and at the lookout platform has been replaced at various times over its lifespan related to emergency rescue operations. Ongoing maintenance and replacement of safety items such as guardrails and barriers is part of the annual operation at DPCA.

.5 Punchbowl Market Land Acquisition

On June 3, 2022, HCA announced the acquisition of an additional 20.3 ha (50 acres) of land south of Ridge Road, including the associated market buildings (see maps in Appendix 1). The land transferred to HCA ownership on July 16, 2022. The Punchbowl Market bakery operation continued to operate under a tenant agreement with HCA until December 23, 2022, at which time it closed. The following year, HCA East Mountain Conservation Area staff began using the workshop building behind the Market for storage and maintaining and securing the property. Reviews of the building's systems including septic, water and hydro are currently underway to gain an understanding of capacity and needed improvements before it can be modified for use by visitors. This land acquisition creates new space for the creation of wetlands, and will provide additional space for visitor access, parking, and enjoyment of the Punchbowl area and the new Saltfleet Conservation Area.



At the time that HCA acquired the Market lands in 2022, only a portion of the property was under active agricultural use. A field at the west end of the property was leased out and farmed in 2023. Most of the orchard area is in decline as a result of not being maintained for several years prior to HCA acquiring the land. HCA is not looking to revive fruit production operations, and the orchards are intended to be naturalized over time through biodiverse natural succession and most areas becoming part of the wetland.

4.3 Planning and Development Controls

See Figure 4. City of Hamilton Zoning Map, and Map 2. NEP Area in Appendix 1 for the location of the planning areas described below.

The properties are under the City of Hamilton's Urban and Rural Official Plans (OP, City of Hamilton 2018) and Stoney Creek Zoning By-law. DPCA is located within City of Hamilton (Stoney Creek) Wards 5, 9 and 10. The lands in Ward 9 are classified as P4 Open Space, and A1 Agricultural. The lands in Ward 10 and Ward 5 are classified as OS-3 Open Space for the Niagara Escarpment Slope.

As the property is within the Niagara Escarpment Commission Area of Development Control, the Niagara Escarpment Plan guides permitted uses and development criteria. The City of Hamilton Planning Department has also been consulted in the preparation of this Master Plan.

In the Greenbelt Plan, Niagara Escarpment Plan (NEP), and City of Hamilton Official Plans several planning designations are identified for the property including:

- Section 3.3 of the Greenbelt Plan applies within the NEP area.
- The entire conservation area is in the Niagara Escarpment Plan Area of Development Control.
- Portions of the conservation area are in the NEP Escarpment Natural Area, Escarpment Protection Area, and Niagara Escarpment Parks and Open Space System (NEPOSS).
- The Niagara Escarpment Slope is part of the City Natural Heritage System – Core Areas and Key Natural Heritage Features – Environmentally Significant Area and Significant Woodlands (Urban OP, Schedule B).
- Provincial Planning Statement (PPS) as well as the NEC have provisions for Significant Woodland, Fish habitat, Significant Wildlife Habitat, habitat for Species at Risk.
- Ontario Species Conservation Act which has implications for endangered and threatened species and their habitat observed on the properties.
- Canada Migratory Birds Convention Act which protects numerous bird species and their breeding season generally extending between late March to August. Timing of construction activities and especially vegetation clearing must take this act into account.
- Ontario Heritage Act governing lands which contain archaeological resources or areas of archaeological potential.
- Canadian Fisheries Act for any work completed in the vicinity of Battlefield Creek.
- Ontario Fish and Wildlife Conservation Act.

- Conservation Authorities Act, R.S.O. 1990.
- Rural Hamilton Official Plan.
- City of Hamilton Rural Private Tree By-Law.
- Ministry of Environment, Conservation and Parks Environmental Protection Act.

Representatives from the Niagara Escarpment Commission and Ministry of Natural Resources were engaged in the scoping component in the preparation of this Master Plan.

With these planning and development controls in the area, there are very few active development applications near the conservation area of concern.

A review of demographic trends reveal over the lifespan of this Master Plan population growth is estimated to add 68 thousand more residents within 15 minutes travel to the conservation area. (2022 City of Hamilton Recreation Master Plan). See Section 8 for more information.

.1 Ridge Road Market Lands

The property south of Ridge Road that was acquired by HCA in 2022 is proposed to be added to the Niagara Escarpment Parks and Open Space System (NEPOSS). These new DPCA lands will provide opportunities for sustainable recreation and play a role in protecting the natural and cultural heritage of the Escarpment, making it a valuable addition to the NEPOSS. To support the addition of this land to the NEPOSS, this master plan aims to guide the management of the property in a manner that is consistent with NEP policies and objectives. The following points guide and support the addition of the new DPCA lands into the NEPOSS, and the transition of the agricultural lands into natural heritage and hydrologic features as proposed in this Plan.

- The development proposed south of Ridge Road is within the NEP Escarpment Protection Area. The area is also recognized as specialty crop area in the Agricultural Land Base for the Greater Golden Horseshoe. As this property is now owned by HCA, the focus of this land will shift from agriculture towards natural heritage protection, to be aligned with Section 2.7 Development Affecting Natural Heritage of the NEP: “The objective is to protect and where possible enhance natural heritage features and functions, in order to maintain the diversity and connectivity of the continuous natural environment.” The proposed wetland development and naturalization of adjacent fallow fields will enhance several of the key natural heritage features listed in Section 2.7.1 of the NEP. As the DPCA lands south of Ridge Road do not have any identified natural heritage features, the naturalization and creation of wetlands on this property will help to enhance and connect with the Escarpment and natural heritage features north of Ridge Road. It will also help to establish natural heritage and hydrological connectivity to Saltfleet Conservation Area to the south.
- The wetland creation is also aligned with NEP Section 2.6 Development Affecting Water Resources: “The objective is to ensure that hydrologic features and functions including the quality, quantity and character of groundwater and surface water, at the local and watershed level, are protected and where possible enhanced.” The purpose of the wetland project is watershed management to reduce flooding downstream. More information about the wetland project can be found in Section 6.2.

- Permitted uses for Escarpment Protection Areas are outlined in the NEP Section 1.4.3. The creation of the wetland complex will mean a change from agriculture and an “on-farm-diversified use” to “watershed management and flood and erosion control carried out by a public body”. Converting the former market buildings for staff and public use would establish Institutional use within this area. This use will support public access to green space and to the Escarpment.
- With the exception of the new wetland, capital development is to remain confined within the Development Zones noted on Map 3. Conservation Area Zones. This area includes the current parking area, former residence, and former Punchbowl Market area (market buildings, road entrances, parking areas, laneways, work yard, and mown areas). The existing recreational trail and pedestrian bridge in the SC-5 wetland study is to be maintained as-is while this area is under review, to maintain visitor access to the Dofasco Trail and Saltfleet Conservation Area.
- Specialty crop areas are designated on Map 3. Conservation Area Zones as “Resource Management”. Management of these areas is to follow the zone definitions and recommendations in this plan. While the property may not continue under agricultural use, HCA aims to protect the ecological integrity of the land.

Devil’s Punchbowl Conservation Area is classified as a Natural Environment Park in the Niagara Escarpment Plan, the definition of such a property being “These lands are characterized by, and serve to protect, a variety of outstanding natural heritage resources and cultural heritage resources, and scenic resources. Activities may range from back-country hiking in the interior of these areas to car-camping and day use activities in more developed or accessible areas.” (NEPOSS, 2021). As stated in the NEPOSS Planning Manual, classifications are subject to confirmation each time a management plan is prepared, reviewed or amended. It is proposed that classification of DPCA as a Natural Environment Park remains the same following the acquisition of the new property on the south side of Ridge Road. The reasoning is that the intent of the conservation area to protect the natural, cultural and scenic resources of the Niagara Escarpment remains the same following the acquisition of the new property. Natural resources will be enhanced with the wetland creation.

4.4 Buildings

See maps in Appendix 1 for building locations and Section 4.7 for information on nearby Cultural Heritage designations.

The two buildings included on the Punchbowl Market property are the main market building and the workshop building. A plastic hoop-house style greenhouse was removed from the site by the previous owner. For more information on HCA’s plans for the remaining buildings, see Section 6.2. A cursory exterior review of the buildings was conducted by HCA staff during the summer of 2022 when the property was acquired, and more detailed reviews are currently in progress. Observations from these reviews have helped to inform the site concepts included in this plan.

The third building located within the DPCA property is the brick residence located at 174 Ridge Road across from the existing conservation area parking lot. This building has previously been rented out to tenants and is currently serving as an office for HCA’s East Mountain staff unit. This building is proposed to be demolished during the construction of the new wetland.

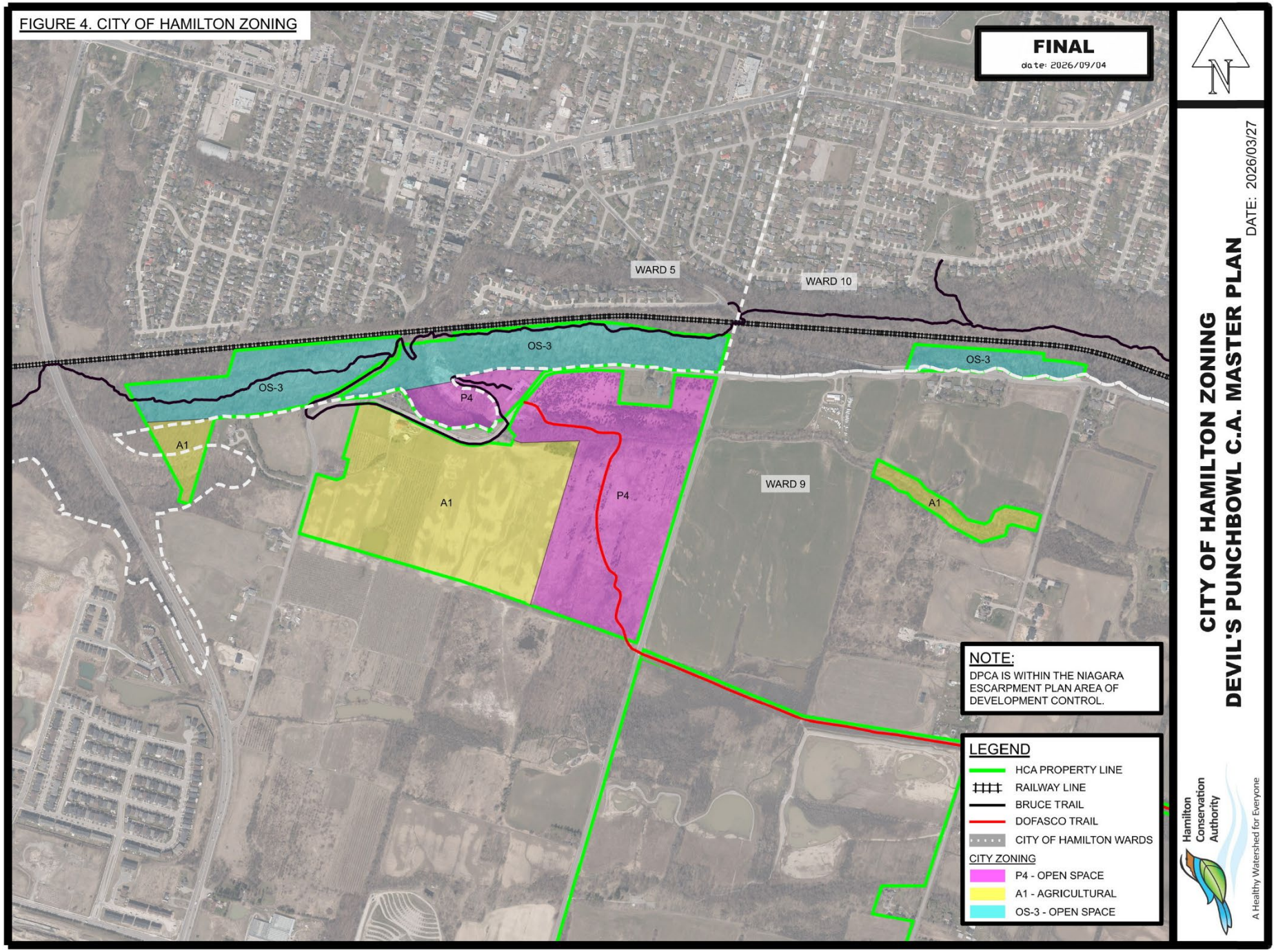


FIGURE 4. CITY OF HAMILTON ZONING
FINAL
date: 2026/09/04
WARD 5
WARD 10
WARD 9
OS-3
OS-3
OS-3
P4
P4
A1
A1
A1
NOTE:
DPCA IS WITHIN THE NIAGARA ESCARPMENT PLAN AREA OF DEVELOPMENT CONTROL.
LEGEND
HCA PROPERTY LINE
RAILWAY LINE
BRUCE TRAIL
DOFASCO TRAIL
CITY OF HAMILTON WARDS
CITY ZONING
P4 - OPEN SPACE
A1 - AGRICULTURAL
OS-3 - OPEN SPACE
CITY OF HAMILTON ZONING
DEVIL'S PUNCHBOWL C.A. MASTER PLAN
DATE: 2026/03/27
Hamilton Conservation Authority
A Healthy Watershed for Everyone

4.5 Physical Features

DPCA contains a beautiful, wooded glen, traversed by a small creek, situated on the Niagara Escarpment. The glen resembles a large bowl with a 40m waterfall descending the edge of the Escarpment. The geologic history dates back at least 450 million years when the materials which formed the Niagara Escarpment were originally deposited in a large inland sea. The area is a fine example of the geologic strata present in this major landmark of Southern Ontario. See Section 5.1 for more information on these physical features.

The combined watercourses of Stoney and Battlefield Creeks represent a major flood plain area. The Stoney Creek drainage area shows that an ancient floodway previously passed the edge of the Escarpment. It is thought that perhaps at one time all run-off flowed down Battlefield Creek. Both creeks have sections with relatively steep slopes and high flow velocities. The waterfall is fed by run-off from upstream farmland, and the Stoney Creek watercourse at this location normally runs dry during the summer months. Soils on top of the Escarpment are moderately fertile and support orchards containing grape, pear, plum and cherry trees as well as crop lands. Immediately below the Escarpment is the highly urbanized area of the Town of Stoney Creek.



4.6 Cultural Heritage

The HCA recognizes that these conservation area lands were inhabited by First Nations peoples including the Mississaugas of the Credit First Nation, the Haudenosaunee, and the Huron-Wendat. The HCA also recognizes that this area has been, and continues to be, home to many Indigenous peoples including the Métis, Inuit and Urban Indigenous communities.

The Mississauga's of the Credit First Nation and Six Nations of the Grand River First Nation were included in the external review and commenting process for this Plan. They will continue to be engaged as this Plan is finalized and on proposed development projects where archaeological

studies are required. First Nations monitors were on site for the archaeological assessments that have been completed on the market property and will continue to be involved for the upcoming Stage 4 assessment.

Stage 1, 2 and 3 archaeological assessments have been completed as part of the SC-5 wetland design on the market property south of Ridge Road. Stage 4 work will begin in spring of 2026 and be completed prior to the construction of the wetland. The Stage 3 assessment identified five areas with archaeological potential and to the extent possible, has guided the siting of development. In this regard, the site located west of the market building will be avoided and protected. While it is the HCA's preference to avoid and protect features, due to the design requirements of the wetland, the four archaeological sites within the wetland area cannot be avoided and a Stage 4 Archaeological Assessment is being undertaken. As a result, to the extent possible, the proposed development demonstrates the conservation of known and potential archaeological resources through avoidance, consistent with applicable cultural heritage and archaeological conservation objectives.

The following historical context has been excerpted from the Devil's Punchbowl Wetland Design Stage 2 Archaeology Assessment completed in March 2025 by Archaeological Research Associates Inc (ARA Inc.).

"After a century of archaeological work in southern Ontario, scholarly understanding of the historical usage of the area has become very well-developed. With occupation beginning in the Palaeo period approximately 11,000 years ago, the greater vicinity of the study area comprises a complex chronology of Indigenous and Euro-Canadian histories." (ARA Inc., 2025).

"The Pre-Contact history of the region is lengthy and rich, and a variety of Indigenous groups inhabited the landscape. Archaeologists generally divide this vibrant history into three main periods: Palaeo, Archaic and Woodland. Each of these periods comprise a range of discrete sub-periods characterized by identifiable trends in material culture and settlement patterns, which are used to interpret past lifeways." (ARA Inc., 2025).

"Although Iroquoian-speaking populations tended to leave a much more obvious mark on the archaeological record and are therefore emphasized in the Late Woodland entries above, it must be understood that Algonquian-speaking populations also represented a significant presence in southern Ontario. Due to the sustainability of their lifeways, archaeological evidence directly associated with the Anishinaabeg remains elusive, particularly when compared to sites associated with the more sedentary agriculturalists. Many artifact scatters in southern Ontario were likely camps, chipping stations or processing areas associated with the more mobile Anishinaabeg, utilized during their travels along the local drainage basins while making use of seasonal resources. This part of southern Ontario represents the ancestral territory if various Indigenous groups, each with their own land use and settlement pattern tendencies." (ARA Inc., 2025).

"During Pre-Contact and Early Contact times, the vicinity of the study area would have comprised a mixture of coniferous trees, deciduous trees and open areas. Indigenous communities actively utilized the land and its resources well into Post-Contact times, and they would have managed the landscape to varying degrees (e.g., establishing clearings for campsites, plant cultivation,

etc.). During the late 18th and early 19th centuries, Euro-Canadian settlers arrived in the area and began to clear the forests for agricultural and settlement purposes." (ARA Inc., 2025).

This Master Plan sets out a cultural heritage zone surrounding the cross, and associated structure and landscaping, with the intent to maintain the heritage value of this feature for the community. The features within this zone, while not designated historic, shall be maintained as necessary for public viewing and safety. Further detailed evaluation of the structure is recommended, and to develop a specific HCA management plan for the continued care and operation of this feature within DPCA. See Section 7.4 Cultural Heritage Management for more information.

4.7 Heritage Designation and Historic Buildings

The Ontario Heritage Act enables municipalities to protect and manage Ontario's cultural heritage resources. Part IV of the Act provides for municipal designation of individual properties as having cultural heritage value. Properties are designated by a municipal by-law, with reasons for designation or a description of heritage attributes which must be retained to conserve the cultural heritage value. Heritage property designation serves to: recognize the importance of a property to the community; identify and protect the property's cultural heritage value; encourage good stewardship ad conservation; and promote knowledge and understanding about the property and the development of the community.

There are no heritage designations for the conservation area buildings or land.

The City of Hamilton Cultural Heritage Resources Inventory notes the following properties near the conservation area of heritage designation, historic value, or heritage interest.

.1 Spera House, 228 Ridge Road

The following information is excerpted from the historic designation for the Spera House:

> "The Spera family has long been associated with the Saltfleet and Stoney Creek area. The land upon which the Spera House now stands may have been the site of the original Adam Green log house where Billy the Scout, hero of the Battle of Stoney Creek, was born…..The 1859 map shows Henry Spera, son of Henry and Barbara, as land owner. William, and perhaps John Spera, built the house that now stands on site, circa 1874. The infant Arthur Harris Spera was brought to the house at that time when he was only three days old. He later planted the orchard, known as Montmorency Farm, because it produced Montmorency cherries. It was at the time the largest cherry farm in the area producing 75 to 100 tons of cherries annually as well as plums, grapes and pears...The two-storey Gothic Revival "Ontario Farmhouse" in the vernacular is cladded with horizontal wood siding. The gable over the main entrance partially encloses a window with a circular head. This shape is unusual."

The following buildings near DPCA are also recognized by the City of Hamilton for heritage designation, historic value, or heritage interest:

- 30 Ridge Road, Billy Green House, circa 1820, designated

- 174 Ridge Road circa 1880
- 136 Ridge Road circa 1890
- 552 Ridge Road, Erland Lee (Museum) Home, circa 1801, designated
- 77 King Street West, Battlefield House, Park and Museum, circa 1796, designated

4.8 Natural Areas

Devil's Punchbowl natural areas include Environmentally Significant and Sensitive Areas (ESA's), Areas of Natural and Scientific Interest (ANSI), Significant Woodlands, Escarpment, Significant Earth Science Features, watercourses and springs, and ecological function. DPCA contains physical features, flora and fauna of significance along with former agricultural lands, meadows, waterfalls and watercourses, and recreational trails above and below the Escarpment. The Escarpment forest is a rich system with a diversity of ground flora and shrubs. A wide variety of bird species use this area for breeding and migration. The talus and cliff communities are provincially rare and occur throughout this conservation area.

All future development from this Master Plan is to follow the Master Plan Zone guidelines outlined in Section 3.6 and the natural areas recommendations noted in Section 5.15.



5.0 NATURAL AREAS INVENTORY

5.1 Physiography and Topography

The Devil's Punchbowl is the product of water erosion, dating from at least 16,000 years ago. It exhibits one of the largest and most complete vertical natural exposures of Silurian stratigraphy along the Escarpment. Vast quantities of water released by melting glaciers formed huge streams that etched the landscape. Stoney Creek, plunging over the Escarpment, has eroded the soft un-resistant rocks near the base of the Escarpment causing undercutting of the gorge.

The bedrock and soils at Devil's Punchbowl are as follows:

.1 Main Plunge Pool Exposure

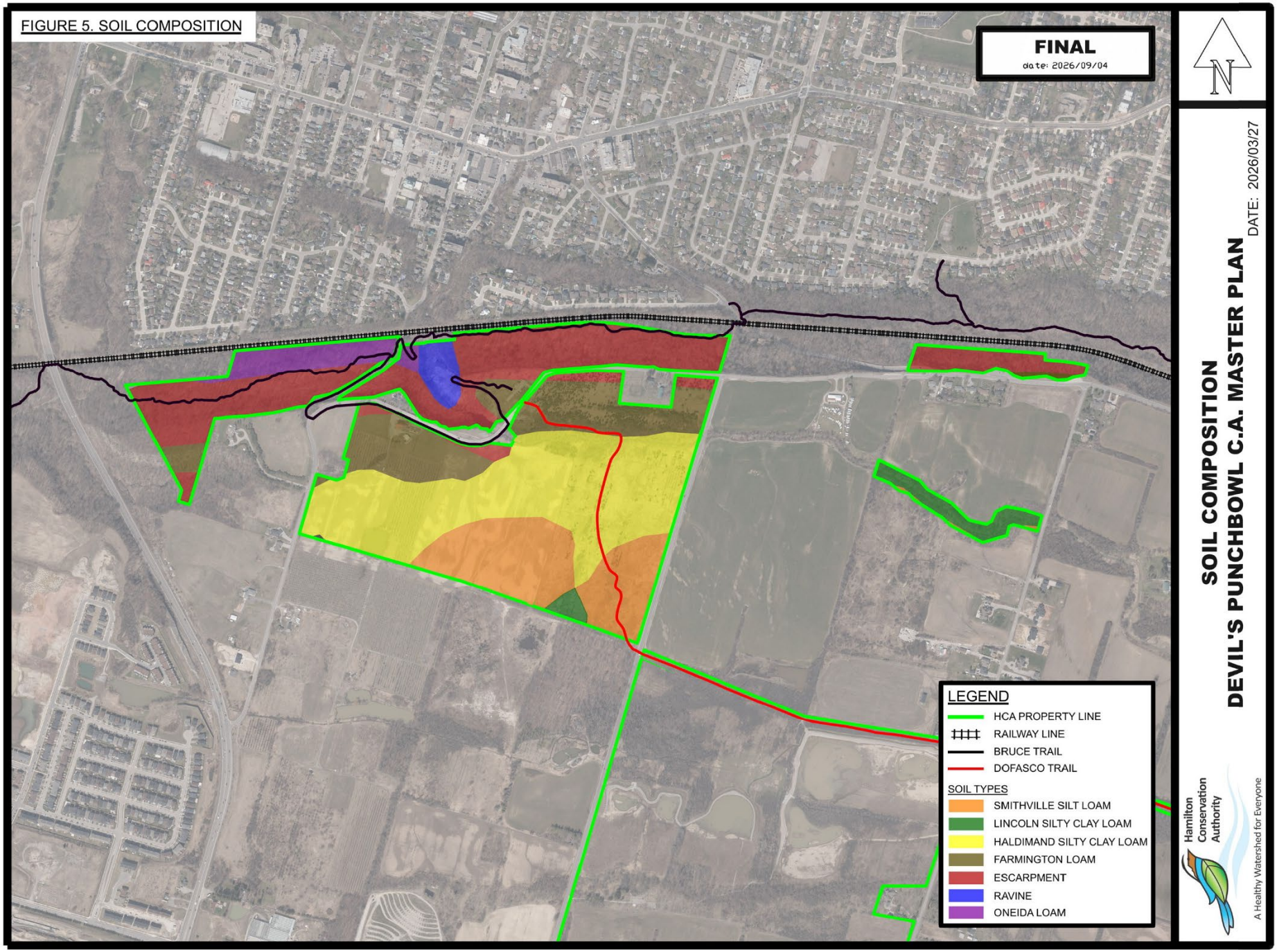
Lockport Formation:	Goat Island Member – Ancaster chert beds; Gasport Member – crinoidal dolomite.
Decew Formation:	Conchoidally weathered dolomites
Rochester Formation:	Dolomitic shale
Irondequoit Formation:	Crinoidal dolomitic limestone
Reynales Formation:	Dolomite with thin shale partings
Thorold Formation:	Greenish sandstone and shale
Grimsby Formation:	Red shale and sandstone
Cabot Head Formation:	Grey shale (most southeasterly exposure)

.2 Lower Cataract Exposure

Manitoulin Formation:	Shaley dolomite (most southeasterly exposure)
Whirlpool Formation:	Cross-bedded sandstone
Queenston Formation:	Red shale



FIGURE 5. SOIL COMPOSITION



5.2 Soil Composition

See Figure 5. Soil Composition for more information.

.1 Haldimand Series

Included are the imperfectly drained, grayish clay soils. The grayish-brown parent materials are relatively impermeable to water and very sticky when wet. The surface soils consist of up to 30cm of brown silt loam overlying the heavier material. These soils are most suited to the production of hay, pasture and spring grains. However, on occasion, the land may be suitable for more productive forms of agriculture such as orchard production.

.2 Smithville Series

Moderately well-drained, grayish clay till soils overlain by lacustrine silt loam characterize the Smithville series. The depth of silt loam over the clay materials ranges from 30cm to 50cm. These soils are the most productive for growing fruit trees. The gently sloping topography and silt loam surface allow excess water to drain away. Drainage may be temporarily impeded in level areas, resulting in periodic damage to certain crops.

.3 Stoney Creek Series

Topsoil consisting of brown to dark silty clay with organics is evident throughout the creek. The thickness of this stratum generally ranges between 15cm to 300cm. A thin stratum of brown till measuring approximately 1.5m in depth underlies the topsoil. Gravel and cobbles are occasionally present in the topsoil.

The very steep slope of the Niagara Escarpment provides sufficient relief for stream erosion to expose all of the above formations. This site contains the most southerly natural exposures of the Manitoulin and Cabot Head formations. The latter is the northern equivalent of the Power Glen sandstones and shales which continue east and south of Stoney Creek.

Most of the geological units exposed at Devil's Punchbowl are typical of those units occurring throughout the Niagara Peninsula.

.4 Escarpment Face Soils

The soils of the Escarpment face are generally non-arable and have been poorly mapped. However, three broad patterns generally occur and are summarized as follows:

- A very stony boulder scree soil with a slight finer matrix on the talus slopes.
- A rolling loamy soil with scattered boulders along the middle and lower slopes.
- A rather shallow, poorly drained fine soil derived from the shales along the bedrock.

.5 Tableland Soils

Soils above the Escarpment have been mapped by the Ontario Department of Agriculture (1965) and consist of the following in addition to the series mentioned previously:

- Farmington Series: The Farmington series includes well-drained, shallow soils with a depth of soil over bedrock that does not exceed 30cm. Most of these soils occur on level or very gently sloping areas where the topography is controlled by the underlying flat bedded dolomite bedrock. These soils usually do not promote extensive agriculture due to numerous stones and bedrock outcroppings as well as summer moisture deficiency.

5.3 Hydrology and Surface Drainage

Drainage patterns in the study area have been heavily altered by the agricultural land use but still flow through the landscape. This study area is divided between two different subwatersheds of the Stoney Creek watershed. The moraine is split into two lobes which affects the drainage pattern. All the watercourses are intermittent or ephemeral and have limited substrate sorting. See Figure 6. Subwatersheds for more information.

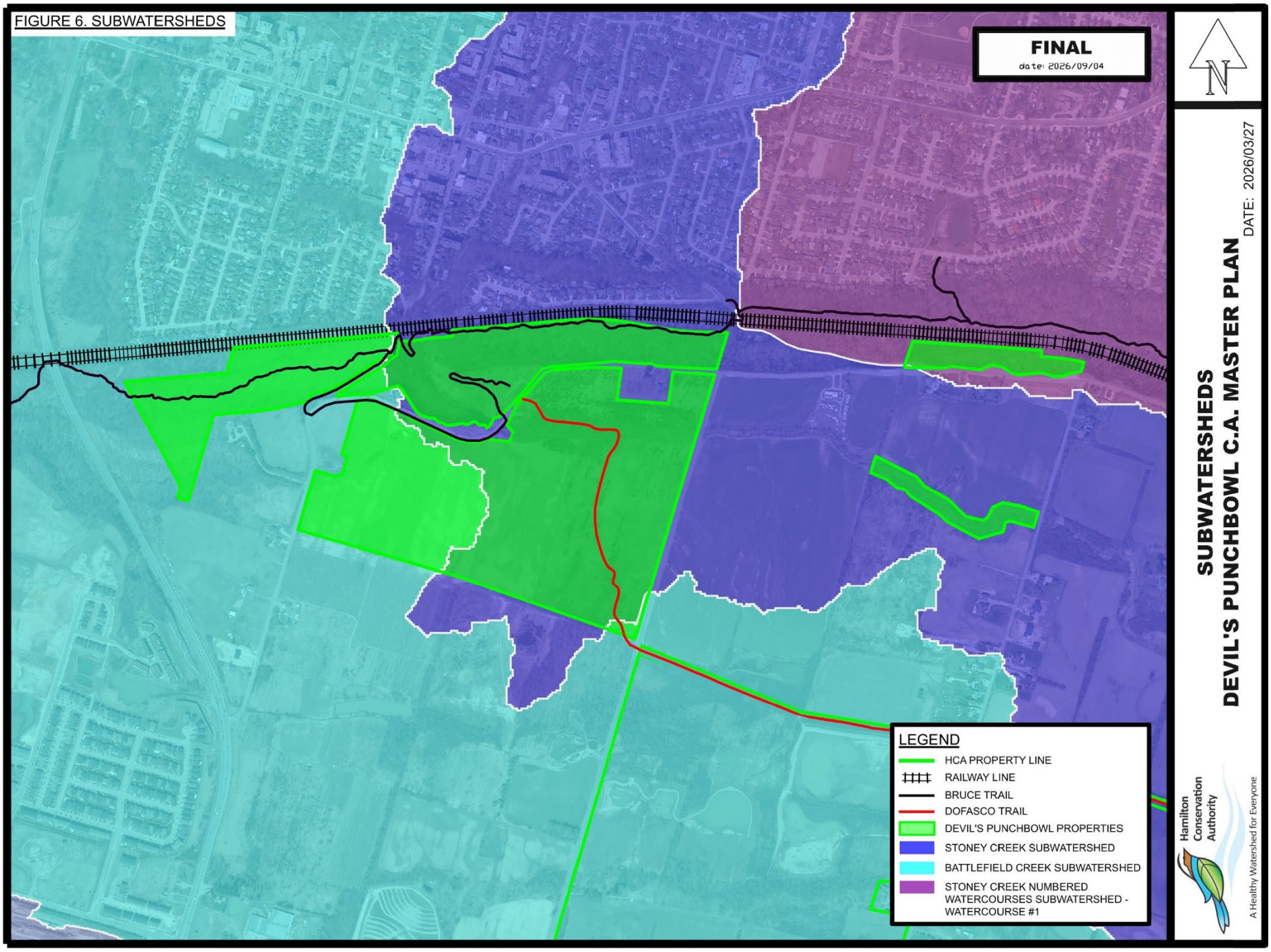
The Battlefield Creek headwaters come from the northwestern edge of the southern moraine lobe and generally flow in a north west direction toward the centennial road cut in the Escarpment. The majority of the flows bypass the Devil's Punchbowl CA to the south but there is a small portion of the western portion of the CA property that drains west towards Battlefield Creek at Centennial Road before the combined Battlefield creek flows over the Niagara Escarpment. Battlefield Creek joins Stoney Creek below the Escarpment about 4.5 km downstream before Stoney Creek flows directly into Lake Ontario after about another 1.5 km.

Hydrology on the site will be altered with the creation of the SC-5 wetland complex. For more information on this wetland creation project, see Section 6.2 on page 55.

.1 Stoney Creek

Stoney Creek has two main source branches. The first begins south of the Battlefield Creek headwaters along the southern side of the southern moraine lobe. It flows east and then turns north entering the gap between the lobes in the area of Green Mountain Rd. From there, it confluences with the flows coming west out of the Provincially significant Vinemount Swamp branch just upstream of Tapleytown Road. From here Stoney Creek flows northwest through the lobe gap picking up a small amount of flow from the northern lobe before entering this conservation area through First Road East. It continues east until falling over the Niagara Escarpment at the Devil's Punchbowl. Stoney Creek below the Escarpment flows north for about 4.5 km before being joined with Battlefield Creek. Stoney Creek flows directly into Lake Ontario after about another 1.5 km.

FIGURE 6. SUBWATERSHEDS



5.4 Biophysical Inventory Methodology

Biophysical inventories competed by HCA staff at Devil's Punchbowl Conservation Area were mainly restricted to Ecological Land Classification and breeding bird surveys in 2021 and 2022. Ecological Land Classification was completed across the property and is shown in Appendix 1 – Map 1. Species lists are included in Appendix 5.

Table 7. Summary of Ecological Field Studies

Survey Type	**Dates**	
	Year	**Day(s)**
Floral Inventory	2020, 2021	Concurrent with ELC surveys
Breeding Bird Surveys	2021, 2022	June 7 2021, June 17 2022
Ecological Land Classification (ELC)	2021, 2022	May 6 and Sept 10 2021, June 17 and August 29 2022.
Incidental Wildlife	Recorded when encountered during all visits – 2021 and 2022	
Aquatic Surveys	Summers 2000, 2006, 2009, 2012, 2018, 2021	

5.5 Ecological Land Classification

The Ecological Land Classification (ELC) system for Ontario was used to describe the vegetation communities at DPCA. Staff conducted multi-season inventories of the property in 2021-2022. Details on the canopy, sub canopy, shrub and ground layers of each vegetation community were recorded. Vegetation community boundaries were determined using air photo analysis and further refined in the field.

5.6 Flora/Botanical Inventory

Botanical inventories were conducted as a part of the Ecological Land Classification surveys of the property. Specific floristic inventories occurred in the fall of 2022 to further identify asters and goldenrod species as they bloom late in the season. An additional survey in the spring of 2021 was conducted for spring ephemerals (early spring flowers). Species in this group die back by mid-summer and therefore are missed when spring surveys are not conducted. Species nomenclature is based on the Natural Heritage Information Centre (NHIC) Plant Species list (updated yearly). Species and community ranks are determined provincially by the Ministry of Natural Resources Natural Heritage Information Centre Database (Sranks) and locally via the Hamilton Natural Areas Inventory (Schwetz 2014).

5.7 Fauna Inventory

No specific surveys were conducted for wildlife on the property. All wildlife encounters were incidental while conducting other aspects of field work. These surveys involved general coverage recording all species observations and signs (e.g. tracks/trails, scat, and burrows, dens, browse

and vocalizations). Background data including older survey material was used to develop a list of butterflies, mammals and dragonflies that have been recorded by naturalists at Devil's Punchbowl Conservation Area over the last 10 years. A summary of the findings is in Appendix 5. Frog call surveys were not conducted on this property due to the lack of suitable habitat.

5.8 Breeding Bird Surveys

Breeding bird surveys were conducted on June 7, 2021 and June 17, 2022. Surveys followed the Ontario Breeding Bird Atlas (Cadman 2010) methodology.

5.9 Ecological Land Classification Results

Field surveys were conducted on May 6 and September 10, 2021, June 17 and August 29, 2022. The subject property was delineated into 10 vegetation communities. Community classifications are on Map 1. Ecological Land Classification in Appendix 1.

5.10 Flora/Botanical Inventory Results

Over the course of multiple survey dates including ELC surveys, staff identified 177 species of plants. Of these, 123 are considered native plant species (69%) while 54 are non-native species (31%) and there were an additional 21 species identified to genus only. The Hamilton NAI (HCA 2014) indicates that there are 1496 species of plants in the Hamilton-Wentworth jurisdiction. Plant species at Devil's Punchbowl Conservation Area represent 12% of that regional flora.



American Kestrel

The Floristic Quality Index (FQI) and the Native Mean Coefficient of Conservatism (CC) have been calculated for the entire property. The CC is a measure of the species specificity of habitat requirements, with a coefficient of 0 indicating a plant tolerant of a wide range of conditions and 10 indicating a plant that has the most specific habitat requirements. FQI is a measure of vegetation quality and is based on both the habitat fidelity of each species and species richness. The FQI for Devil's Punchbowl Conservation Area is 46.83 and the mean CC value is 4.22. These are considered moderate to high for FQI and mean CC. This is likely reflective of the rural nature of this conservation area. See Table 8 for more information.

Table 8. Floristic Summary & Assessment

FLORISTIC SUMMARY & ASSESSMENT		
Species Diversity		
	Total Species:	198
	Total ID to species level	177
	Native Species:	123
	Exotic Species	54
	Species ID'd to sp. only	21
	Percentage native species	69%
	Percentage non-native species	31%
	Total Taxa in Region (NAI 2014)	1496
	% Regional Taxa Recorded	11.8%
Co-efficient of Conservatism and Floral Quality Index		
Co-efficient of Conservatism (CC) (average)		**4.22**
CC 0 to 3	*lowest sensitivity*	40
CC 4 to 6	*moderate sensitivity*	73
CC 7 to 8	*high sensitivity*	13
CC 9 to 10	*highest sensitivity*	0
Floral Quality Index (FQI)		**46.83**

5.11 Fauna Inventory Results

.1 Breeding Birds

Breeding bird surveys were conducted at Devil's Punchbowl Conservation Area in the spring of 2021 and 2022.

These surveys identify 31 species of birds likely breeding within the conservation area. Background data was also collected from the following sources, iNaturalist, Natural Areas Inventory, and eBird. Surveys in 2012 for the NAI identified an additional 48 bird species while eBird and iNaturalist identified an additional 45 species. These were mainly composed of spring and fall migratory species and hawks and owls. These combined data sources have identified 124 species in the area. Of theses 11 are provincial or federal species at risk, 21 are locally rare and 35 are locally uncommon.

.2 Butterflies and Dragonflies

Surveys completed for the Natural Areas Inventory (2012) identified 29 species of Lepidoptera, as well as 10 species of Odonata. An additional two species of Lepidoptera were recorded in the area by incidental observation and iNaturalist observations. The Monarch is provincially at risk while three others are locally uncommon (Compton Tortoiseshell, Silvery Blue and Common Sootywing) and one locally rare butterfly species (White Admiral) were recorded.

.3 Mammals

All incidental wildlife encounters were recorded while conducting other aspects of field work. Mammal sightings were also recorded during historical surveys conducted for the Natural Areas Inventory. These surveys involved general coverage recording all species observations and signs (e.g. tracks/trails, scat, burrows, dens, browse, and vocalizations). Thirteen mammal species have been recorded for this area by staff and during the Natural Areas Inventory. iNaturalist sightings identified one additional mammal species, the muskrat. All mammal species recorded are common to the area.

.4 Herpetofauna

The only species of herpetofauna seen by staff in this area was the Northern Leopard Frog. iNaturalist observations in this area identified three other species; the American Toad, Eastern Gartersnake, and Eastern Red-backed Salamander. No rare species were encountered.

5.12 Aquatic Inventory

.1 Stoney Creek



Brook Stickleback

HCA has a long-term Aquatic monitoring station located in Stoney Creek in the conservation area. Records date back to the 2000's. Stoney Creek in this area is intermittent in nature and the soils are shallow. The portion directly upstream of the waterfall flows directly over bedrock. The harsh conditions in this reach of Stoney Creek are further represented by the fish species captured; see Table 9. Most sampling years the creek is dry, so no fish are present, and when they are captured, only two species have been found. They are tolerant to intermediately tolerant species and indicate a coolwater thermal regime. The portion below the Escarpment is an even more harsh environment. From a safe ingress/egress perspective, HCA ecologists have avoided sampling in this reach. The rail line culvert at the northern end of the property would potentially create a barrier to fish movement up into this reach. Sampling may be required if there is proposed development in the bowl of the conservation area.

Table 9. Fish Species Captured in this Area of Stoney Creek

Common Name	**Scientific Name**
Brook Stickleback	*Culaea inconstans*
Central Mudminnow	*Umbra lima*

.2 Tributary of Battlefield Creek

This tributary was not assessed at the time that other fieldwork was completed for this plan because access was not available. Assessment of this watercourse is planned for summer 2026 prior to the completion of the design of the SC-5 wetland complex. Results will be included in a future update to this plan.

.3 Pond in South-West Corner

This pond was not assessed at the time that other fieldwork was completed for this plan because access was not available. Assessment of this pond is planned for summer 2026 prior to the completion of the design of the SC-5 wetland complex. Results will be included in a future update to this plan.

5.13 Significant Ecological Features

.1 Significant Woodlands

All of the properties within the Devil's Punchbowl Conservation Area are considered by the City of Hamilton to be significant woodland, excluding the Punchbowl Market property. Significant woodlands for the City of Hamilton mean an area which is ecologically important in terms of features (species composition, age of trees and stand history) and function (contributes to the broader landscape because of its location, size or the amount of forest cover in the planning area) (City of Hamilton, 2019).

.2 Environmentally Sensitive Area

The Devil's Punchbowl Escarpment Environmentally Significant Area (ESA) includes the entire conservation area, excluding the Punchbowl Market property and the small parcel of land east of the market property. The ESA was designated because it meets many of the 2003 ESA criteria including:

1. Significant Earth Science Feature
    a. The area encompasses regionally significant landforms
2. Significant Ecological Function
    a. The area contains significant species
    b. The area contains rare biotic communities
    c. The Riparian area serves as a link between natural areas along the Niagara Escarpment
    d. The area is representative of the natural features of the Niagara Peninsula section of the Niagara Escarpment

ESA area protected within the rural official plan for the City of Hamilton. No new development or site alterations are permitted within or adjacent to ESA's unless it can be shown, through an Environmental Impact Statement (EIS), that there will be no negative impacts on the ecological features or functions of the ESA.

.3 Area of Natural and Scientific Interest (ANSI)

The entire conservation area, excluding the Punchbowl Market property, is part of the provincially significant Devil's Punchbowl Earth Science ANSI and Niagara Escarpment Section Life Science ANSI.

5.14 Biophysical Inventory – Analysis

.1 Species at Risk and Locally Rare Species

.1 Significant Flora

Butternut, federally and provincially endangered, was the only plant species considered provincially rare that was found in DPCA. There were only a few still surviving the Butternut canker. Of the plant species recorded on the subject lands through the 2020 and 2021 field surveys, two plant species were found to be locally rare and two to be locally uncommon by the City of Hamilton. Riverbank Wild Rye and Canada Rye are locally rare. Thin-leaved sedge is locally uncommon in the area. All of these species are considered provincially secure (G5/S5 or G4/S4).

.2 Significant Fauna

The following eight species recorded at Devil's Punchbowl Conservation Area, listed in Table 10 are considered species at risk either federally (SARA) or provincially (SCA). These species were recorded within DPCA through different data sources all observed during the breeding season except Olive-sided flycatcher which was noted on migration.

Table 10. Federal and Provincial Species at Risk (END and THR)

Common name	Scientific name	SARA status (Schedule 1)	SCA status	Documented
Barn Swallow	*Hirundo rustica*	THR	THR	NAI
Bobolink	*Dolichonyx oryzivorus*	THR	THR	NAI
Eastern Meadowlark	*Sturnella magna*	THR	THR	NAI
Olive-sided Flycatcher	*Contopus cooperi*	THR	SC	eBird
Wood Thrush	*Hylocichla mustelina*	THR	SC	NAI
Bank swallow	*Riparia riparia*	THR	THR	NAI
Chimney swift	*Chaetura pelagica*	THR	THR	NAI
Monarch	*Danaus plexippus*	END	SC	2022

The Barn Swallow has been reassessed recently (2020) by the federal Committee on the Status of Endangered Wildlife in Canada (COSEWIC) to Special Concern. Its status has not been changed on Schedule 1 of SARA as of the writing of this Master Plan so they will be treated as SAR in this document. Adult Monarchs have been observed throughout the fields and open portions of the forested habitats of this conservation area. This species is considered a species of "Special Concern" on the Species at risk in Ontario (SARO) list. This means that the species lives in the wild in Ontario but may become threatened or endangered due to a combination of threats and biological characteristics. In 2016 COSEWIC recommended that this species be up listed to endangered on Schedule 1 of the federal SAR listing. This has not occurred. Many of

these species at risk noted above are from background documents and their exact location within the conservation area is not known. It is likely that the Chimney Swift, Barn and Bank Swallows were seen flying over this conservation area. The Olive-sided Flycatcher is a migratory species. While the Eastern Meadowlark and Bobolink may have been recorded in the large fields south of Ridge Road. Although not surveyed for it is likely that species at risk bats use this conservation area for parts of their life cycle.



Monarch Butterfly

Threatened and endangered species habitat is protected under the Species Conservation Act (provincially) and the Species at Risk Act (federally). Permits maybe required for development within the habitat for threatened and endangered species.

There were also a large number of locally rare (24) and uncommon (39) species recorded during field surveys and found in the background research (Table 11). These include birds, plants and butterflies and are mostly concentrated within the forested sections of the Niagara Escarpment.

Table 11. Locally Rare and Uncommon Species

Common Name	Scientific name	City of Hamilton Status
Yellow-rumped Warbler	*Setophaga coronata*	rare
Carolina Wren	*Thryothorus ludovicianus*	rare
Ring-necked Pheasant	*Phasianus colchicus*	rare
Yellow-billed Cuckoo	*Coccyzus americanus*	rare
Blackburnian Warbler	*Setophaga fusca*	rare
Black-throated Green Warbler	*Setophaga virens*	rare
Blue-headed Vireo	*Vireo solitarius*	rare
Broad-winged Hawk	*Buteo platypterus*	rare
Common Raven	*Corvus corax*	rare
Golden-crowned Kinglet	*Regulus satrapa*	rare
Long-eared Owl	*Asio otus*	rare
Magnolia Warbler	*Setophaga magnolia*	rare
Osprey	*Pandion haliaetus*	rare
Clay-colored Sparrow	*Spizella pallida*	rare
Hooded Warbler	*Setophaga citrina*	rare
Merlin	*Falco columbarius*	rare
Northern Harrier	*Circus hudsonius*	rare
Red-shouldered Hawk	*Buteo lineatus*	rare
Sharp-shinned Hawk	*Accipiter striatus*	rare
Bald Eagle	*Haliaeetus leucocephalus*	rare

Peregrine Falcon	*Falco peregrinus*	rare
White Admiral	*Limenitis arthemis arthemis*	rare
Red-bellied Woodpecker	*Melanerpes carolinus*	Uncommon
Alder Flycatcher	*Empidonax alnorum*	Uncommon
Turkey Vulture	*Cathartes aura*	Uncommon
Chestnut-sided Warbler	*Setophaga pensylvanica*	Uncommon
Common Name	**Scientific name**	**City of Hamilton Status**
American Kestrel	*Falco sparverius*	Uncommon
Blue-gray Gnatcatcher	*Polioptila caerulea*	Uncommon
Herring Gull	*Larus argentatus*	Uncommon
Orchard Oriole	*Icterus spurius*	Uncommon
American Redstart	*Setophaga ruticilla*	Uncommon
Hairy Woodpecker	*Dryobates villosus*	Uncommon
Least Flycatcher	*Empidonax minimus*	Uncommon
Purple Martin	*Progne subis*	Uncommon
Scarlet Tanager	*Piranga olivacea*	Uncommon
Winter Wren	*Troglodytes hiemalis*	Uncommon
White-throated Sparrow	*Zonotrichia albicollis*	Uncommon
Black-and-white Warbler	*Mniotilta varia*	Uncommon
Black-billed Cuckoo	*Coccyzus erythropthalmus*	Uncommon
Brown Creeper	*Certhia americana*	Uncommon
Eastern Phoebe	*Sayornis phoebe*	Uncommon
Great Blue Heron	*Ardea herodias*	Uncommon
Nashville Warbler	*Oreothlypis ruficapilla*	Uncommon
Red-breasted Nuthatch	*Sitta canadensis*	Uncommon
Wood Duck	*Aix sponsa*	Uncommon
Vesper Sparrow	*Pooecetes gramineus*	Uncommon
Mourning Warbler	*Geothlypis philadelphia*	Uncommon
Ruby-throated Hummingbird	*Archilochus colubris*	Uncommon
Northern Mockingbird	*Mimus polyglottos*	Uncommon
Red-tailed Hawk	*Buteo jamaicensis*	Uncommon
Eastern Bluebird	*Sialia sialis*	Uncommon
Cooper's Hawk	*Accipiter cooperii*	Uncommon
Wood Thrush	*Hylocichla mustelina*	Uncommon
Eastern Meadowlark	*Sturnella magna*	Uncommon
Bank Swallow	*Riparia riparia*	Uncommon
Chimney Swift	*Chaetura pelagica*	Uncommon
Bobolink	*Dolichonyx oryzivorus*	Uncommon
Compton Tortoiseshell	*Nymphalis l-album*	Uncommon
Common Sootywing	*Pholisora catullus*	Uncommon
Silvery Blue	*Glaucopsyche lygdamus*	Uncommon
Thin-leaved Sedge	*Carex cephaloidea*	Rare
Canada Wildrye	*Elymus canadensis*	Rare
Eastern Riverbank Wildrye	*Elymus riparius*	Uncommon

.2 Significant Wildlife Habitat

The Significant Wildlife Habitat Technical manual (Ontario 2000) along with the Ecoregional criteria tables for Ecoregion 7E (OMNR 2015) were used to determine and define significant wildlife habitat (SWH) on the DPCA property. Significant wildlife habitat includes broad categories of habitats for flora and fauna. SWH has been identified under the provincial policy statement for Ontario. No new development is allowed within identified portions of significant wildlife habitat unless there will be no negative impact to the form and function of this habitat type. The broad categories for significant wildlife habitat include seasonal concentration areas of animals, rare vegetation communities or specialized habitat for wildlife, habitats for species of conservation concern and animal movement corridors.

Seasonal concentration areas of animals are areas where wildlife species occur annually in aggregations (groups) at certain times of the year (Ontario 2015). This can include single species concentrations or aggregations of multiple species.

.1 Land Bird Migratory Stopover Areas

These are areas with woodlots or forests within 5km of either Lake Ontario or Lake Erie that migratory birds, especially song birds, use as rest stops before or after crossing the great lakes during migration. Land bird migration should be studied in woodlots 2-5 ha in size where woodlots are rare in this area of shoreline (Ontario 2015). Studies are needed to confirm the use of the habitat by > 200 birds/day and with > 35 species with at least 10 bird species recorded on at least five different survey dates (Ontario 2015). Devil's Punchbowl Conservation Area is within 5km of Lake Ontario. Staff did not undertake migratory land bird studies on these properties. It is assumed due to the position on the landscape, both the proximity to Lake Ontario and being some of the remaining forest stands that this area would function as migratory bird habitat. Migration occurs in the spring from April – May and then again from late July – October.

.2 Bat Hibernation and Maternity Colonies

Although not surveyed, suitable habitat exists in this conservation area for both bat hibernation caves and maternity colonies. There are cliffs and talus within this conservation area that may support bat hibernation. There are also a number of snag trees within the forested communities that may support bat maternity colonies.

.3 Reptile Hibernaculum

This is a difficult type of significant wildlife habitat due to the cryptic nature of snakes. Fire fighters that practice rope rescues along the cliff face at Devil's Punchbowl Conservation Area reportedly regularly encounter snakes. It is assumed from this correspondence that there are hibernacula in the cliff face. The steep terrain prevented staff from confirming these reports.

.3 Rare Vegetation Communities

Rare Vegetation Communities include areas that contain a provincially rare vegetation community, as defined by the NHIC and/or areas that contain a vegetation community that is rare within the planning area.

.1 Cliff and Talus Slopes

Cliff and talus slopes occur throughout this conservation area. Cliffs are any vertical or near vertical rock that is greater then 3m in height. While talus slopes are rock rubble at the base of the cliff. They are rare in the province and support sensitive vegetation communities.

.4 Specialized Habitats of Wildlife

This is a community or diversity-based category as many wildlife require large areas of suitable habitat for successful breeding. The largest and least fragmented habitats within the planning area will support the most significant wildlife populations.

.1 Seeps and Springs

These are areas where groundwater comes to the surface and are often found within forested areas. The criteria include the presence of two or more seeps or springs. There are many springs along the talus slope within Devil's Punchbowl Conservation Area. These areas are often used as water sources for wildlife in the winter when other water sources are frozen.

.5 Habitat for species of Conservation Concern

Habitat for species of conservation concern includes wildlife that are listed provincially as special concern or are rare and declining. Table 12 provides a list of the 5 species located within the Devil's Punchbowl Conservation Area. This list includes migratory species such as the Rusty Blackbird and species seen flying over the conservation area such as Bald Eagle and Peregrine Falcon. Eastern Wood Pewee was noted in several locations within the forested section of the Niagara Escarpment while the Monarch was seen in canopy gaps and small forest openings.

Table 12. Species of Conservation Concern

Common name	Scientific name	SARA status (Schedule 1)	SCA status	Documented
Eastern Wood-Pewee	Contopus virens	SC	SC	2022
Bald Eagle	*Haliaeetus leucocephalus*	NAR	SC	eBird
Rusty Blackbird	*'Euphagus carolinus*	SC	SC	ebird
Peregrine Falcon	*Falco peregrinus*	NAR	SC	eBird
Monarch	*Danaus plexippus*	END	SC	2022

.6 Invasive Species at Devil's Punchbowl Conservation Area

The species detailed below are a threat to the biodiversity and conservation values at Devil's Punchbowl Conservation Area. Trails throughout the conservation area are movement pathways for a number of invasive species. The following section details the invasive species that occur at Devil's Punchbowl Conservation Area. Recommendations for prioritization for each species are detailed here.

.1 Common Buckthorn

Common buckthorn is a small tree or shrub that was introduced to Ontario from Eurasia. It was widely planted in farm hedgerows and fencerows as a wind break. It can survive in a wide

range of conditions making it very good at invading a variety of habitats (Anderson, 2012a). Birds and small mammals feed on the berries of this plant, which has caused it to spread in the conservation area. Moderate numbers of Common buckthorn are growing in the upper punchbowl field as well as the border of Ridge Road between First Road and Second Road East. While the spread of this species is currently limited, an effort will need to be undertaken to prevent future dominance of this species within the area. The focus should begin where buckthorns are sparse to eradicate the population and then on all fruiting female trees in denser locations. These fruiting females can be treated with herbicides and the remaining smaller stems removed through volunteer events and workdays. The larger tree-like shrubs may require the cut-stump method of removal.

.2 Phragmites

This species of common reed from Eurasia is a perennial grass. It is not clear how it was transported to North America. It is an aggressive plant that spreads quickly and out competes other native species in wetland habitats (Nichols, 2020). It forms large monocultures that decrease plant biodiversity and create poor habitat for wildlife. It is a top priority species to be controlled at HCA. There is a patch of phragmites currently growing on the West side of First Road East in the upper punchbowl. An effective control strategy would likely include pesticide application during the dry period for this community (September/ October) (Nichols, 2020).

.3 Spotted Knapweed

Knapweeds were introduced to North America over 100 years ago in contaminated agricultural seed and soil in discarded ballast water. It spreads easily by seed (Sherman and Powell, 2017). This species reduces habitat for other meadow species as it becomes dominant. At present, there are 5 small patches of spotted knapweed in the upper punchbowl.

This species forms a tap root and can be controlled with cultivation to a depth of 18 cm or hand removal. Persistent hand removal (pulling or digging) can control this species if the upper 7.5 cm of the crown portion of the plant are removed before it produces seeds (Sherman and Powell, 2017). A targeted mowing in early August could prevent seed production and keep the Knapweed from spreading further. Removal along the upper punchbowl trail would be a priority to keep the species from spreading to other areas along the Dofasco 2000 Trail. Finally, Knapweed can be shaded out, tree planting in some areas where this plant is starting to dominate could help reduce its presence.

.4 Garlic Mustard

This species was introduced in the 1800’s from Europe as an edible herb for early pioneers in the spring. It is a biennial plant that produces seed in its second year (Anderson, 2012b). It can grow in a variety of conditions making it a very good invader in a variety of habitats. It easily outcompetes other native ground cover and can change the soil environments to favour its growth over others. Garlic Mustard can be found growing in patches within the upper and lower punchbowl. The majority of the garlic mustard growing in the lower punchbowl is on the lower end of the slope between the Bruce Trail and the railway. In the upper punchbowl, it can be found at the northern end of the property. Removal of this species is fairly straight forward with hand picking between April and June, before the plant goes to seed. With a dedicated

effort over 5 years removal of this species can be achieved. This is a high priority because it is easy to remove and there is limited extent of this species in the conservation area.

.5 Cut – leaved Teasel

A perennial plant that occurs in a variety of habitats including meadows, waste areas and roadsides. Teasel has high seed production and can spread and take over areas. In its first year it is a large rosette and by its second year can grow up to 2m high, shading out other meadow species (MDA, n.d.). It can be found in the upper punchbowl field in low numbers. Annual cutting of these plants can occur in the spring to damage the taproot since its full removal can be difficult (MDA, n.d.). Alternatively, the plant responds well to annual herbicide treatment during the main growing season. Eradication can be achieved in 3-5 years when the seed bank is depleted.

.6 European Privet

European privet is a highly invasive ornamental shrub or small tree that is native to Europe, western Asia and northern Africa. It was introduced in the early 1800s, and has since colonized a range of different habitats due to its tolerance for a variety of soil types and environmental conditions (CABI, 2021). Plants may produce 10,000 fruits per tree, which are then spread by wildlife to seed in different areas. European Privet also reproduces vegetatively by its roots, so care must be taken not to spread root fragments during control efforts (CABI, 2021). Small shrubs in newly established populations can be pulled or dug up and properly disposed of. Larger populations require foliar sprays of herbicide mixed with a surfactant between August and December. Larger trees which are difficult to foliar spray can receive a basal spray (Miller, 2003). A small amount of European privet is growing in the lower punchbowl. Prioritize treatment of privet alongside that of Common buckthorn.

.7 Greater Celandine

Greater celandine was introduced to North America from Europe in the 1600s as a medicinal plant (Tree Canada, n.d.). It can grow in dense stands shading out any native diversity, and spreads readily by seed with the help of ants (Invasive Plant Atlas, n.d). There is currently greater celandine growing along much of the trails in the Lower Punchbowl. A toxic sap is released when any part of the plant is crushed that could be irritating to the skin and eyes. Therefore, if manual removal is chosen care should be taken by staff to wear the appropriate personal protective equipment. It is likely plants will readily grow again from root fragments using manual removal, however this method could be used to limit the spread. In order to fully eradicate the species, it is likely the application of a systemic herbicide will be required to attack the roots of the plant (late fall or early spring) (Tree Canada, n.d.).

.8 Honeysuckle sp.

There are four main species of invasive honeysuckle in Ontario which can be difficult to identify due to their tendency towards hybridization, and the lack of identifying characteristics (flowers and fruits) throughout much of the field season (Tassie and Sherman, 2014). These plants have been brought to North America for three centuries from Europe and Asia as an ornamental. Invasive honeysuckles can rapidly reproduce, grow quickly, and outcompete

beneficial vegetation including our native honeysuckles. Their fruits are attractive to birds and mammals, which aid their spread. Within Devil's Punchbowl Conservation Area there is a small population of the invasive honeysuckle, *Lonicera tatarica*, in the upper punchbowl field. There is also a small number of unidentified honeysuckles in the lower punchbowl. While species identification is easiest in the spring during bloom, hand pulling and weed wrenching smaller shrubs should be conducted in the fall as not to disturb the growth of any nearby spring ephemerals. Cutting and girdling larger shrubs should always be paired with the application of herbicide to newly exposed woody material to prevent excessive suckering come next season. For large areas, a foliar spray of chemical herbicide can be applied between August and October. It is likely control multiple years (Tassie and Sherman, 2014). Identification of the unknown honeysuckles should occur first in the spring to ensure only invasive honeysuckles are treated.

.9 Multiflora Rose

Multiflora rose is a large perennial shrub that was introduced to North America in the late 1700s for horticultural purposes and was widely promoted in the 20th century for a variety of uses (Warne, 2018). This plant grows quickly, can self pollinate, produce up to 500,000 seeds a year or more, and forms dense thorny thickets rapidly crowding out native biodiversity. Seeds are widely spread through animal's consumption of the plant's fruits and can be viable in the seed bank for up to 20 years (Warne, 2018). There are a few seedlings located in the lower

punchbowl along the Bruce Trail, as well as a small population of larger shrubs in the upper punchbowl field. Hand pulling is an effective control method for seedlings, however larger shrubs will aggressively re-sprout if cut without removing the roots. Therefore, a weed wrench and/or shovels should be used to fully remove the plant. This is a labour-intensive solution and should prioritize small populations and sensitive areas. Alternatively, glyphosate-based chemical herbicide can be applied in late summer or early fall. A follow up-treatment may be required the following year, with ongoing monitoring to eliminate new seedlings (Warne, 2018).

.10 Periwinkle

Common Periwinkle is a small herbaceous ground cover that was introduced to North America in the 1700s as an ornamental due to its attractive purple flowers (Center for Invasive Species and Ecosystem Health, 2010). However, it has spread throughout forests creating thick mats that prevent tree seedlings and other native plants from growing. Small populations can be hand-pulled, whereas larger patches may require a foliar spray of chemical herbicide. These control measures will likely have to be repeated for multiple years to fully eradicate it. There is a couple small population of periwinkle growing in the lower punchbowl by the rail line.

.11 Oriental Bittersweet

Oriental bittersweet is a fast-growing vine native to East Asia that is popular in floral arrangements. It will wrap around native trees and shrubs until it overcrowds them and outcompetes them for light resources. Additionally, it is displacing native American Bittersweet through its high competitivity (NRCS, n.d.). Oriental Bittersweet can be distinguished from native bittersweet through the positioning of the fruits it produces. However, these fruits are only present in the fall, which makes identification difficult for much of the season. There is

currently a small amount of bittersweet growing in the unofficial trails of the lower DPCA which needs to be identified before continuing with treatment.

If the unknown bittersweet is identified as the invasive variety, there are several options for control. Vines can be cut so the upper portion of the plant dies while the lower portion must be pulled from the ground. Vines can also receive a foliar spray of herbicide in October or November when the native host plants are dormant but oriental bittersweet still has living leaves. Alternatively, vines can be treated with herbicide using the cut stump method or basal bark method year-round (NRCS,n.d.).

.12 Common Burdock

Common burdock is a biennial plant that is native to Europe which presents as a large rosette in its first year, and grows multiple bur-like seed heads in its second year (USDA Forest Service, n.d.). The harmful effects of Common Burdock mainly pertain to agricultural settings, however due to its invasive nature it should be removed from the conservation area to promote native diversity. Common Burdock is growing along several sections of the trail in the lower punchbowl. Manual removal of this species is difficult due to the plant's large taproot that will sprout again if not fully removed. Therefore, the best management practice for common burdock at this site would be the application of chemical herbicide to rosettes before they go to seed in July (Van Vleet, 2013).

.13 Black Locust

Black Locust is a fast-growing species of tree native to the southeastern United States made popular to plant due to its adaptability and durability for woodworking (Warne, 2016). Black locust can readily invade dry areas with poor nutrient availability, giving it competitive advantage over many species. It does best in full sun and can be extremely problematic in early successional communities where it can quickly dominate the ecosystem before other plants have had a chance to establish. The large number of seeds produced by this tree are hearty, staying viable in the seed bank for decades. A well-established seed bank and the immense suckering make the control of this tree so difficult. This species occurs intermittently in the Punchbowl gorge. Chemical herbicide application is the recommended treatment for black locust. Any cutting without systemic herbicide application will result in prolific suckering. Smaller trees can be foliar or basal sprayed in late summer. Larger trees will require the cut stump, hack and squirt, or injection application methods. Any portions of the roots that remain viable after treatment will sucker, therefore treatment and monitoring will have to be completed for several years (Warne, 2016).

.14 Dame's Rocket

This Eurasian biennial wildflower was introduced to North America in the 1600s and has since invaded many moist woodlands and open spaces (Johnson, 2010). The plant spreads through abundant seed production during its three month long blooming period. A small amount of Dame's Rocket can be found growing in the upper punchbowl. Dame's Rocket can be pulled relatively easily from moist soil before the seeds mature in the spring. Alternatively, chemical herbicide can be applied in the late fall to rosettes over the course of a few years until the seed bank is depreciated (Johnson, 2010).

.15 Reed Canary Grass

The Reed Canary Grass that has become invasive in Ontario is thought to be a Eurasian cultivar brought to Ontario as forage for cattle (Anderson 2012c). It displaces native wetland plants and can decrease biodiversity. This plant can grow in a range of habitats and spreads quickly in wetlands. It spreads by both seeds and rhizomes. Several patches of Reed Canary Grass can be found throughout the upper punchbowl. This species can be shaded out through the addition of trees and shrubs to invaded areas. Mulch can also be used to suppress the growth of reed canary grass. Alternatively, a chemical herbicide can be applied in the early growing season (Anderson, 20212c).

5.15 Natural Areas Recommendations

HCA is a supporting partner of the City of Hamilton's Biodiversity Action Plan and a supporter of the Province of Ontario Biodiversity Action Plan. One method that helps us to protect and strengthen biodiversity on our properties is the development of natural areas recommendations in our master and management plans. The natural habitat features at DPCA have been evaluated for restoration opportunities and invasive species removals. Restoration in certain areas can assist with buffering the natural habitats from the impacts of moderate to high levels of visitor use.

Biodiversity conservation targets are a limited number of species or ecological communities that ecologists select to represent the biodiversity of a protected area, and that therefore serve as the focus for conservation investment. Thus, conservation targets are simply those ecosystems, communities, or species upon which we focus planning and management efforts. Because only a handful of targets can be used to plan for biodiversity conservation, selecting the appropriate suite of targets is crucial to successful conservation planning and adaptive management. A coarse filter/fine filter approach looking at both broad-scale ecosystem protection and targeted, species-specific efforts was used when analyzing and describing conservation targets for Devil's Punchbowl Conservation Area. Focusing on the health of the talus and forest communities provides an appropriate umbrella to encompass a number of biodiversity targets at this conservation area. There are few impacts to the Sugar Maple forests, talus and cliffs. A very low level of invasive species was found and a diversity of species were recorded. The table land areas near Ridge Road are impacted by recreational use and past farming practices. This target and issues were used to as an umbrella to provide restoration and enhancement opportunities in the next section.

.1 Restoration/Enhancement Opportunities in the Nature Reserve, Natural and Resource Management Zones

The existing natural habitat features at Devil's Punchbowl Conservation Area have been evaluated for restoration opportunities. Restoration in certain parts of this property can assist with enhancing biodiversity and habitat resiliency for the forest and talus along the Niagara Escarpment. Priorities for natural areas restoration are as follows.

.1 Enhance Biodiversity and Long-Term Forest Resiliency

The talus and forested slopes along the Niagara Escarpment are dominated by Sugar Maple. There is a very low diversity of other tree species within these forested areas. Butternut and White Ash used to form a canopy along with the Sugar Maple. These two species have been lost to invasive forest pests. In order to ensure that these forests remain resilient and stable in the long term it is recommended that a variety of trees be planted. Recommendations would include diseases resistant Butternut, Shagbark and Bitternut Hickory, Basswood and Black Walnut.

.2 Removing Old Vineyard Wires and Posts

The large cultural meadow south of Ridge Road and to the west of First Road has many wires and posts remaining from an old vineyard that existed on the property. These will be removed prior to the creation of the new wetland.

.3 Invasive Species Management

There are low levels of several invasive species located within Devil's Punchbowl Conservation Area. As these populations are low this would be a great opportunity to control these species before large populations establish. Details on the invasive species present on the property and methods to manage them are included in Section 5.14.6.

An overall invasive species prioritization plan should be developed supplementary to this Master Plan.



Carolina Wren

6.0 OVERALL SITE CONCEPT

This Master Plan for DPCA balances the need to conserve the natural environment with the need to accommodate day use visitors. The property will continue to be divided between the protected natural areas of the Escarpment, and active recreational areas on the tableland south of the Escarpment.

This section outlines the key concepts for this Master Plan that have come out of public and stakeholder consultation, staff workshops, meetings, detailed design sessions and inventory results. See Appendix 1 for more information.

6.1 Natural Areas Development

The priority of this plan is to conserve and protect the sensitive and environmentally significant natural areas of the Escarpment. Accordingly, Nature Reserve and Natural Environment zones have been identified in this plan with management guidelines as outlined in Section 3.6. The ecological mapping and species documented within this plan are also provided as a baseline inventory to help guide future land management decisions and project planning. See Section 5.15 for more information on the natural area recommendations.

Development in the natural areas will be strictly limited by HCA and may also be subject to review by the City of Hamilton and the Niagara Escarpment Commission. HCA's development focus in the natural areas will be enhancing biodiversity and long-term forest resiliency; management of the existing trail system in collaboration with the Bruce Trail Conservancy; hazard tree removals; invasive species management; restoration of degraded areas; and closure of unauthorized trails. Site monitoring, annual maintenance and restoration programs, and ongoing visitor education will be necessary to support this goal.

DPCA's largest natural areas are found below the Escarpment in the Punchbowl gorge. More information on development items for the gorge can be found in Section 8.2.

6.2 Conservation Area Development

Within this compact conservation area, the main development priority will be to construct a new wetland complex south of Ridge Road and improve the site watercourses. This will supplement HCA's Saltfleet wetland complex to help reduce flooding and erosion in lower Stoney Creek. Within this compact conservation area, the main development priority will be to construct a new wetland south of Ridge Road and improve the site watercourses as part of the overall Saltfleet Conservation Area Wetland Restoration Program (SCAWRP). The SCAWRP proposes 4 wetlands to be constructed in upper Stoney and Battlefield Creeks to address flooding and erosion in urban Stoney Creek below the Niagara Escarpment, restore and increase natural heritage features associated with the wetlands and provide passive recreation trails.

The Battlefield and Stoney Creek Watersheds drain approximately 3089 ha at the outlet to Lake Ontario. Flooding and erosion conditions along the lower Stoney Creek and Battlefield Creek have been historical concerns and have impacted private property and municipal infrastructure in the City of Hamilton. To address this issue, further detailed study was required to properly assess the

flooding and erosion conditions. The HCA in partnership with the City of Hamilton completed the 2011 'Draft' Conservation Ontario Class Environmental Assessment for the Lower Stoney Creek and Lower Battlefield Creek. This EA recommended remedial measures to address flooding and erosion. The EA was not implemented due to cost and private land requirements. As part of the 2011 EA as well as other historical studies, it was determined that the area above the Niagara Escarpment had the potential to store water to address the flood risk.

Flowing from this work, the HCA had a Flood and Erosion Control Environmental Assessment completed in 2018, which identified four areas above the Niagara Escarpment including the site immediately upstream from the Devil's Punchbowl along the main branch of Stoney Creek as areas that could store water through the creation of wetlands. The acquisition of the land on the Market property south of Ridge Road was pursued by HCA with the goal of creating a wetland as part of the SCAWRP project. The design of the wetland on the former market property is approximately 60% complete. The wetland will be approximately 45 acres in size and have capacity to hold 204,000 cubic meters of water, which is equal to 81.6 Olympic sized swimming pools. Information regarding the SCAWRP can be found at this link - https://conservationhamilton.ca/saltfleet-conservation-area-wetland-restoration-program/.

The wetland will be created on former agricultural lands including fallow fields, orchards and a remnant vineyard. The fields and orchards outside of the SC-5 wetland study area are Resource Management Zones and are to be protected from development. The agricultural areas within the SC-5 wetland study area are to remain protected from development while plans for this area are being developed. Remnant vineyard posts and wires in the wetland study area are to be removed for public safety.

Further, the creation of this wetland supports Hamilton's Biodiversity Action Plan Key Priority 6: "Enhance local aquatic habitats through sustainable stormwater management practices and restoration of degraded watercourses, waterbodies and wetlands."

The secondary development priority will be to support visitation while protecting the natural areas. The Punchbowl Market property south of Ridge Road will be the development focus to provide a visitor hub including a new main entrance, more parking, trailhead amenities, picnic area and trail connections to the Punchbowl, Bruce Trail, Dofasco Trail, and Saltfleet Conservation Area. The existing buildings on the Market property will be repurposed for HCA use. For both existing building locations and proposed uses, see the maps in Appendix 1 and drawings in Appendix 2.

- The existing Market building will provide visitor amenities such as, but not limited to, washrooms, wayfinding, conservation area information, outdoor education opportunities, as well as office facilities for HCA staff.
- The existing storage building will become a staff workshop, and a designated area behind the market building will be fenced off for HCA staff use only.
- The existing parking area on the north side of Ridge Road is to be improved in addition to this development of the Punchbowl Market lands.

6.3 Day Use Activity Areas

DPCA's day use activity areas include the new visitor hub at the existing Punchbowl Market buildings (visitor main entrance, parking, trail-head amenities), recreational trail system and scenic lookout stations. Picnic areas are to be located only near the parking areas. New constructed wetlands will provide opportunity for nature appreciation, passive recreation and education. Wetland lookout points, rest areas, and interpretive information is to be provided with the wetland recreational trails.

The former agricultural lands will be a priority for natural restoration. Cultivated and manicured areas will be reduced, and the naturalized areas that evolve will be managed for invasive species and supplemented with plantings by HCA staff and volunteers. The agricultural lands include fallow fields, orchard, and remnant vineyard. Any remaining fallow fields and orchards outside of the new wetland will be managed for invasive species and to support biodiverse natural succession. Tree planting will be a priority to supplement trees in the conservation area lost to disease and age, as well as provide shade for visitors. Restoration of the former agricultural fields is to be co-ordinated with the implementation of the natural areas recommendations noted in Section 5.15.

6.4 Marketing

There are marketing and communications activities for DPCA provided by HCA including promotion through print, the HCA website, and on various social media platforms.

During public engagement for this plan, two visitor surveys were conducted to gather information on the current conservation area and the newly acquired Punchbowl Market lands. From May 18 to September 9, 2022, 132 surveys were submitted by the public. These surveys will be reviewed by HCA staff when preparing marketing materials for DPCA.

Key marketing items from the surveys and staff workshops to be addressed in the lifespan of this Master Plan include the following:

- This is a popular community landmark that attracts repeat visitors to the lookout, waterfall and Bruce Trail. Continue marketing the value of the HCA membership pass for repeat visits to this site and nearby conservation areas such as Saltfleet and Dofasco Trail.
- The site attracts new tourists and sightseers from outside the community who are unfamiliar with the trail system and the Escarpment. Better wayfinding signage, rest areas, and visitor amenities are appreciated by these visitors, as well as guided and self-guided educational tours.
- The most popular recreational activities are hiking the trails and cycling the Dofasco Trail and area roadways. Safe trails and improved trail connections are desired by these visitors. Signage indicating where activities are permitted (ex. no cycling on the Bruce Trail) should also be incorporated.
- Provide information on the importance of preserving nature and protecting it from damage. Look for opportunities to work with community partners on initiatives to reduce littering, vandalism, and staying on the trails.

7.0 CONSERVATION AREA MANAGEMENT

7.1 Land and Water Management

Land management planning will be accomplished through adherence to the guidelines of the management zones noted in this plan, and through additional resource management plans developed by HCA as necessary. The overall intent will be to ensure protection and conservation of the significant natural areas noted as Nature Reserve (Wetland) and Natural Zones on the Conservation Area Zone Map appended.

The ecological mapping and species data documented within this plan are provided as a baseline inventory to help guide future land management decisions and project planning. Where active management is required for a particular species, it will be accomplished through an HCA approved resource management strategy considering the guidelines outlined in this plan, and in accordance with policies of all governing agencies.

.1 Public Infrastructure – Utilities, Trails and Transportation

Public infrastructure such as utility corridors (watermains, storm and sanitary sewers, natural gas or oil pipelines, hydro and communication corridors), trails (footpaths, boardwalks) and transportation links may cross conservation area lands.

These uses may also have associated rights-of-way, land use agreements, licenses of occupation, permits etc. that are to be considered in the management of the ecological preserve and when implementing items from this management plan.

When new public infrastructure projects are proposed within conservation area owned lands, such uses will be subject, but not limited to, the following criteria:

- The need for the project, area of construction disturbance, and potential site disruption such as soil erosion, flooding, and vegetation loss.
- To maintain or where possible improve or restore key ecological linkages, habitat, and wildlife movement corridors.
- The potential public benefits of the project for research, education, or recreation.

HCA may require detailed environmental assessments, studies, and resource management plans in order to support such land uses.

7.2 Vegetation Management

Where active management is required for a particular plant or animal species, it will be accomplished through an acceptable HCA resource management strategy considering the guidelines outlined in this Master Plan, and in accordance with policies of all governing agencies. Forests will be managed in accordance with the MNR approved HCA Managed Forest Plan 2018 - 2037. Forest plantations and treed areas will also be managed to remove hazard trees and fallen logs in areas of public use such as recreational trails and picnic areas. Forest management is to be carried out with generally accepted sustainable forestry practices.

Invasive species are in the conservation area and HCA places a high priority on invasive species management to maintain biodiversity and conservation values. See Section 5.14.6 for more information on invasive species vegetation management.

Additional non-native plant species will not be deliberately introduced into the conservation area. Introduction of any new plant species by HCA will consider the biodiversity of this site, historical data of species present in the area, research, and additional relevant species inventories and contiguous surroundings within an approved restoration and stewardship strategy. In this plan "non-native" means species not native to Ontario as well as species native to Ontario but not to Hamilton. If established non-native plant species threaten natural heritage values, a program for their eradication will be developed subject to specific guidelines noted in the natural heritage inventory of this plan.

Vegetation may be mowed only:

- Along the conservation area boundary, where mowing would assist in clearer boundary identification.
- In the development zone of this Master Plan to support public usage of the open space, and only to the extent necessary.
- As required along roadways and recreational trails for safety.
- To assist in the control of invasive species, trees and brush may be cut and pruned only.
- To enable resource management or facility development specifically authorized by this Master Plan or an HCA approved resource management or other implementation plan.
- To ensure public safety.
- In service easements i.e., Utility corridors, subject to specific service agreements.

Trees may not be cut for the sole purpose of providing firewood. Trees and brush cut in nature reserve and natural zones outside of the forest plantations will be left to deteriorate naturally as close as possible to where they have been felled, or if that is not feasible, may be used for firewood or wood chips in the conservation area.

Native insects and diseases affecting vegetation will be allowed to progress naturally, except where they threaten significant natural heritage values in nature reserve and natural zones, or significant aesthetic and infrastructure values in development zones. Non-native insects and diseases will be controlled where feasible. Where controls are undertaken, it will be directed as narrowly as possible to the specific insect or disease so as to have minimal effects on the surrounding environment. Biological controls will be used whenever possible.

Chemical fertilizers, herbicides, pesticides and suppressants will not be used for any vegetation management purpose except:

- Insect and disease control under the conditions set out in this section of the Master Plan.
- Eradication of non-native species where it has been demonstrated other methods are not feasible.
- Control of poison ivy in development zones.

7.3 Fish and Wildlife Management

Where applicable on the Conservation Area property, fisheries management will seek to maintain and enhance native, self-sustaining fish populations. Fishing is regulated through the Ontario Fishery Regulations under the Federal Fisheries Act. If necessary, fishing may not be permitted in certain areas of the property due to fisheries or wildlife research, or habitat and natural areas management.

The fish species present are not game species, and their numbers are small so no commercial or recreational fishery/harvest should occur on these CA lands. Further assessment of the aquatic areas is recommended as noted in Section 5.12.

For Terrestrial Flora and Fauna there is no harvest allowed within DPCA to protect the populations with an exception for Research (see Section 7.7).

For wildlife/human conflict HCA has developed the Hamilton Conservation Authority Wildlife Conflict Management Strategy. This strategy outlines the process and methods staff are to follow when dealing with any animal related issues within all conservation areas. This document was produced by the Hamilton Conservation Authority Wildlife Management Committee (WMC). The WMC was a special HCA committee that was established in May 2014 based on HCA staff recommendation and at the direction of the HCA Board of Directors. The purpose of the WMC was to develop best management protocols and practices for the management of wildlife on HCA lands.

Additional non-native animal species will not be deliberately introduced to the conservation area. If already established non-native species threaten the conservation area values, a program for their eradication may be developed if feasible and practical. Missing native species may be reintroduced, and existing populations replenished if feasible and acceptable to HCA.

7.4 Cultural Heritage Management

The Cultural Heritage Zones set out in this plan are shown on Map 3 Conservation Area Zones in Appendix 1. Incompatible resource uses and recreational activities will be restricted or prohibited where necessary to protect cultural heritage resources in this zone. The structures in the zone around the lookout platform and cross will be reviewed for public safety, more detailed studies are to be conducted by HCA as necessary to determine appropriate maintenance, repair or restoration programs for this area.

Capital projects recommended for this zone will require approval by the HCA Board of Directors and may require approval from the City of Hamilton and the Niagara Escarpment Commission.

Archaeological assessments will be completed as needed for development items proposed in this plan. As outlined in Section 4.6, Stage 1, 2 and 3 archaeological assessments have been completed for the wetland complex on the property south of Ridge Road. Archaeological work completed for the wetland has included First Nations monitors on site.

Management strategies for any archaeological sites found in the future may range from allowing the sites to remain without interference, to research, excavation, and rehabilitation. Archaeological and historical artifacts may only be removed, and heritage landscapes altered, in accordance with all applicable legislation. Protection and management will be undertaken in consultation with First Nations and governing agencies.

7.5 Conservation Area Operations

The Punchbowl Market building operation will be reviewed in more detail supplementary to this plan. HCA will review the operation plan for these lands annually and update as required. HCA will provide staff with information and resources as required to operate the conservation area on a day-to-day basis. This will include specific direction for the management and operation of all facilities and activities and address such topics as budgets, staffing, maintenance, enforcement and emergency services.

Self-serve facilities may be developed, and individual volunteers and partner organizations may be involved in programs as approved by the HCA, within the conservation area.

The HCA has the right to suspend operations of any facilities or services due to funding limitations, but in so doing will ensure that heritage values are not impaired and customer service standards are affected as little as possible.

New business practices may be introduced into the conservation area operations in accordance with HCA policy such as:

- Improving operating efficiency and controlling costs.
- Contracting out some operating functions.
- Improving customer service standards.

7.6 Education

Education in the conservation area is intended to develop visitors' awareness and appreciation of Ontario's natural and cultural heritage, fostering a commitment to protect that heritage for all generations. Education opportunities are meant to be educational and recreational, formal and informal, and accessible to all. Information, education, and outdoor recreation are the three main components of education in the conservation area. The level of service provided at DPCA will be determined by its significance and visitation. A priority will be placed on providing natural areas education in support of the goals and objectives outlined in this plan.

HCA encourages further research to provide interpretive and educational information on the natural features and history of this area. HCA provides online information about the significance of these natural areas and their need for protection. As HCA updates and develops new park-related brochures, maps and interpretive materials for this conservation area, the Escarpment's status as a World Biosphere Reserve should be recognized, as well as these public lands being within NEPOSS and including a portion of the Bruce Trail. Developing visitors' awareness and appreciation of Ontario's natural and cultural heritage and fostering a commitment to protect that

heritage for all generations is supported in the goals and objectives of this plan. Where there is an opportunity, HCA may consider partnering with local Indigenous communities when developing educational programming in order to incorporate topics such as Indigenous history, culture and connections to the land.

7.7 Research

DPCA, like all of HCA's properties, provide in essence an opportunity for living laboratories. HCA Ecologists monitor the health of lands using established protocols and can, when needed, develop special research programs to answer resource related questions.

Outside Research by qualified individuals that contributes to the knowledge of natural and cultural history and to environmental and recreational management will be encouraged by HCA staff.

All research projects will require authorization from HCA and authorization is obtained by contacting the staff ecologists who administer the process and issue research authorizations.

7.8 Recreation

The conservation area is open from sunrise to sunset, year-round. Entry to DPCA will be controlled year-round and HCA will enforce the collection of entrance fees from visitors. Day use parking spaces are provided on a first come, first serve basis and visitors may be restricted from entering the conservation area when the parking areas are full.

See Appendix 4 for highlights of key items from the day-use visitor surveys for DPCA and the Punchbowl Market lands.

The following recreational activities will not be permitted in the conservation area:

- All–terrain vehicle use
- Bicycles on the Bruce Trail
- Motor bikes on trails
- Snowmobiling
- Personal unmanned aerial vehicle (UAV / Drone)
- Personal watercraft (fishing boats, canoes, kayaks, SUPS) in the watercourses and wetlands
- Ice skating on frozen waterbodies
- Horseback riding
- Rock climbing or scaling the Escarpment slopes

The following recreational activities are permitted in the conservation area:

- Hiking
- Bicycles on HCA trails including the Dofasco 2000 Trail
- Dog Walking
- Picnicking
- Nature Appreciation
- Geocaching
- Winter Activities: Snowshoeing, Cross Country Skiing



A long-term goal of this Master Plan is to provide visitors with appropriate, high quality, sustainable recreational experiences. Recreational opportunities are to be provided that are appropriate to the conservation area and Master Plan zones outlined in Section 3.6.

7.9 Partnerships

HCA values the community support from area residents and landowners, businesses, service clubs, interested First Nations, volunteers, and volunteer organizations that currently or could contribute in a variety of ways at DPCA. HCA will continue to nurture existing support and will seek out new opportunities for partnerships. Current support provided by the Hamilton Conservation Foundation and the Bruce Trail Conservancy is encouraged and welcomed.

HCA also values community relationships and help from volunteers to manage natural areas and the species that utilize and inhabit them. HCA Stewardship Action Plans, public consultation, and stewardship work are examples of this and are to be encouraged for the life of this Master Plan. Volunteers are governed by volunteer policies set by HCA for recruitment, orientation, training, supervision, health and safety instruction, evaluation and recognition. Volunteer programs shall be considered in all business decisions made by HCA in the operation of this conservation area.

7.10 Paid Staff

A supplemental operation plan is recommended to be developed for DPCA by HCA staff once this Master Plan is adopted.

DPCA, similar to staffing at other conservation areas, includes full time permanent employees and part time casual employees to undertake its operations. In addition, staff from other departments at HCA are involved in varying capacities with the management and operation of DPCA. Staff may also be involved in supervising the activities of outside consultants, partners, or contractors retained by HCA.

8.0 FINANCIAL

8.1 Attendance and Revenue Forecasts

Visitor attendance, visitor surveys and operating revenue and expenses for DPCA are listed in Appendices 3 and 4.

Visitation to DPCA during the COVID-Pandemic increased significantly from 2020 to 2022. Visitation is anticipated to remain strong for the life of this plan, as population growth and development transform the community. Expanded parking and visitor facilities on the Punchbowl Market lands are intended to support this anticipated growth away from the Escarpment brow.

DPCA's financial success is expected to rely heavily on day-use admissions by visitors seeking to see the punchbowl waterfalls and lookouts, with opportunity to increase revenue by offering amenities to those arriving to the site by the Bruce Trail and Dofasco Trail. The Punchbowl Market property also has space for increased revenue generation through special events and programs. Enhancing existing features in the day use area, and providing new amenities such as more parking and washrooms, will also help to attract and retain repeat visitors.

8.2 Capital Projects

The capital development priorities list in Appendix 2 provides preliminary estimates for the development envisioned in the Master Plan. As noted in Section 3.7, the following capital development priorities are proposed for the next ten years at DPCA:

.1 Replace Significant Park Features

These features require ongoing repairs for public safety, are nearing or past the end of their life cycle and are proposed to be replaced or expanded upon.



Improvements are recommended for the existing Punchbowl parking lot on the north side of Ridge Road. Improvements would include formalizing the grass overflow area with gravel and parking curbs, adding an exit laneway and automatic gate alterations in order to enhance traffic flow through the lot.

The existing trails leading from the parking lot to the lookout platform, and the trail along the edge of the Punchbowl, should be improved to be in line with HCA trail standards.

Structural features such as the lookout platforms, Cross and associated supports, retaining walls, guard rails etc. are to be reviewed annually by HCA and maintained for public safety. Within the

first five years of this Master Plan, it is recommended that an engineering review of these items be conducted with report recommendations provided to HCA for care and maintenance.

Adjacent City lands on the tableland, and Ridge Road itself are close to the Escarpment brow and may be subject to erosion. HCA has observed that construction maintenance of City property around the culvert is required. HCA will work with the City to investigate other items that could pose a hazard and provide City access to attend to maintenance projects on their lands.

The former rental house (brick residence) at 174 Ridge Road has been repurposed for HCA's Hamilton Mountain business unit, consistent with HCA's strategy to repurpose existing buildings for operations before considering adding new buildings to a conservation area. This building will need to be demolished to accommodate the new wetland on the site.

The main building on the newly acquired Punchbowl market property was previously operated as a bakery and store. There is also an existing workshop building that is currently being utilized by HCA East Mountain staff. The main market building will be repurposed by HCA as a visitor centre and as staff offices.

Ontario Regulation 826/90 under the Niagara Escarpment Planning and Development Act (NEPDA) applies to DPCA which is designated as an Area of Development Control. NEC Development Permits could be required for certain types of development (see Ontario Regulations 826/90 and 828/90). Development Permit Exemption for the planned changes and improvements to the market building can be granted by the NEC through the approval of this Master Plan. Detailed drawings of the proposed changes to the building are included in Appendix 2.

HCA will adhere to these regulations and the following development principles for the re-purposing of the market buildings.

- Total floor area of the building or structures will not be increased.
- Height of the buildings and structures will not increase by more than 2.5 metres.
- Changes to roof lines will not exceed the height of the highest part of the roof line.
- The existing driveway entrances will be used for access and egress to Ridge Road.
- Interior renovations to the market building will be for public washrooms, visitor reception area and staff space.
- The workshop building and associated work yard will be solely for HCA park operations.
- Utilities review and studies are currently being conducted by HCA for project scoping. (electric, water supply, septic system etc.)

The Dofasco Trail, including the pedestrian bridge over the watercourse on the DPCA lands south of Ridge Road will be rerouted to accommodate the new wetlands proposed in this plan. The long-term goal is to provide recreational trail access for visitors from DPCA to the Dofasco Trail and Saltfleet Conservation Area. This goal will be accommodated in the design for the new wetlands. The area for the new SC-5 wetland is shown on the maps in Appendix 1.

.2 Add New Park Features

These capital projects are proposed to serve the community, generate revenue, and improve customer service:

- The Punchbowl Market lands south of Ridge Road are identified as a priority area for new wetland development in connection with the new Saltfleet wetland complex. More detail on this wetland project can be found in Section 6.2. Similar to the Saltfleet Conservation Area wetlands that were constructed in 2023, the wetlands will have berms to retain water and support trail connections through the site. The detailed design of the new wetland complex is currently in progress.
- The Punchbowl Market lands south of Ridge Road are also targeted as a priority area for new capital development to improve customer service and support revenue. New capital investment to improve traffic flow into the conservation area, more parking, visitor amenities, site security, and pedestrian and cyclist access are targeted for this area. Capital projects are recommended to be phased in with the wetland project, and as HCA undertakes reviews and takes on operation of the former market buildings. See Section 6.2 for more information on the proposed repurposing of the existing market facilities.
- There are a few unauthorized trails in the gorge below the Escarpment brow, with associated degradation of the natural environment. During the preparation of this plan, HCA installed trail counters in the area to assess the number of visitors in the gorge viewing the waterfall. See Appendix 4 for the trail counts. Based on these counts and observed damage to the natural areas, it is recommended that HCA further study this area, consult with the Bruce Trail Conservancy, City of Hamilton, and other agencies who have experienced similar issues at natural attractions. This approach is recommended to develop comprehensive solutions for site improvements and management best practices, further to this plan. At a minimum for visitor management and natural area protection in the punchbowl gorge, it is recommended that waterfall interpretive signage be provided at the Bruce Trail and boundary signage installed to clearly identify natural areas off-limits to the public. As shown on the Site Concept map in Appendix 1, the formalization of an existing unauthorized trail and creation of a waterfall lookout station could also be considered after further review of the area with Bruce Trail representatives. No structures are proposed for the lookout station. A lookout station may consist of any of the following: firm trail surfacing, fencing, barriers, interpretive signage, or directional and safety signage.

.3 Enhance Existing Park Features

Rounding out the capital improvements for this Master Plan is the enhancement of existing park features to improve the natural areas and customer service.

Existing HCA trails, lookout areas, and platforms are to be improved for public safety and to restore adjacent degraded areas. Perimeter fencing and guards will be installed as required to protect natural areas, budgeting for this item is accounted for the life of this plan.

The Resource Management Zone in this plan sets out the former cultivated lands including the farmlands with the market buildings. A large portion of this zone is under study for the SC-5 wetland.

Lastly, more educational information is to be provided to visitors to enhance their experience of the lookouts, recreational trails, new wetlands, and the Escarpment. HCA will build on their experience with interpretive signs, digital story telling applications, website and social media, partnerships, and educational programs to support this initiative.

Capital projects should not be started until a long-term strategy with timelines and costs for each project are clearly stated and sufficient resources are available to complete them. As well, the additional operational costs for each item should be factored into the capital strategy.

8.3 Funding Sources

HCA's operation of DPCA is entirely self-funded. User and membership fees generated by the properties in the East Mountain business unit are anticipated to be the primary funding source for operations. Revenue generated through both gate admissions and other sources in 2025 is outlined in Appendix 3.

Financial statements are audited every year and are available to the public once approved by the HCA Board of Directors.

Permitted special events and programs may provide a source of additional revenue. These potential revenue sources may require outside agency approval and permits to proceed and are to be weighed against the disruption to the daily activities and revenue generation in the conservation area.

Financing for special projects and annual capital development will continue to be provided through grants, sponsorship, corporate donations, and private donations. The Hamilton Conservation Foundation also provides funding for specific projects. There is good potential for increasing donor funding, donor recognition is also a key element that needs to be nurtured and sustained.

8.4 Business Model

HCA receives a levy from the City of Hamilton and also the Township of Puslinch that forms part of the operating budget. The remainder of the budget is funded through user fees, membership fees, grants and donations. These dollars directly contribute to conservation work throughout HCA’s watershed and preserve heritage sites on HCA lands. Financial statements are audited annually and available to the public once approved by HCA’s Board of Directors.

Cost recovery is a prime requirement for all services and programs delivered at DPCA. In the development of programs, the following factors will be considered: anticipated attendance, income sources, market, volunteer resources, HCA staffing requirements, advertising, insurance, administration, operation costs and maintenance expenses.

The new parking area proposed for the Market lands south of Ridge Road will have a large impact on future revenue generation. Supplemental detailed site analysis and operations planning for the Market lands is recommended for DPCA once this Master Plan is adopted.

9.0 PROGRAMMING

9.1 Special Events and Programming



DPCA has been used as a filming location, and filming on site will continue to be supported by HCA with strict procedures so the integrity of the site is not sacrificed.

The Development Zone outlined in this Master Plan offers HCA opportunities to host special events, programming, and services in a location away from the Escarpment environment. Wedding parties have used the market site in the past for outdoor service, photographic opportunities, outdoor reception and more. These uses are to be explored further by HCA for the market site moving forward.

There is potential for school and community groups to reserve use of the market property for day-use camps, educational visits, etc. HCA will investigate this need further in the life of this plan, to determine if additional capital improvements such as group picnic shelters or storage areas are required to support this activity.

Events and day-use rentals will take place only within the Development Zone identified for this area on Map 3 in Appendix 1 as per NEC guidelines.

9.2 Education and Interpretive Programs

Education and interpretive programs are an opportunity to attract new visitors and provide variety for repeat visitors. Opportunities range from self-guided tours with interpretive signs and story-telling mobile applications along the trail system, to hands-on activities, educational demonstrations, live shows, workshops, and more. Some potential themes that could be explored include:

- Water Management
- Wildlife and Bird Watching
- The Niagara Escarpment
- Local History
- Indigenous Perspectives, History and Connections with the Land
- Role of Conservation Authorities
- Climate Change

All programs should relate to HCA's strategic value of providing outdoor learning experiences and increasing knowledge and awareness of the value of our environment and heritage.

10.0 SUMMARY

DPCA is a unique natural area with environmentally sensitive lands. The overall intent of this Master Plan is to ensure protection and conservation of the natural areas while creating a visitor hub on the tablelands with connections to the Dofasco 2000 Trail and Saltfleet Conservation Area.

Continued safe enjoyment of the property will require capital work to be completed. See Appendices 1 and 2 for more information. The following items are recommended to be implemented in order to achieve this goal:

Natural Areas:

The former agricultural lands south of Ridge Road will be the focus of HCA's restoration management activities and new wetland development. The wetland development will be the most significant capital investment in the life of this plan.

HCA's development focus in the natural areas of the gorge will be enhancing biodiversity and long-term forest resiliency, management of the existing trail system, hazard tree removals, invasive species management, tree planting, restoration of degraded areas, and closure of unauthorized trails. Site monitoring, annual maintenance and restoration programs, and ongoing visitor education will be necessary to support this goal.

Conservation Area:

The recent acquisition of the Punchbowl Market lands south of Ridge Road is a significant change for DPCA. This acquisition expands the potential for DPCA to provide a visitor hub for exploration of the Escarpment, Bruce Trail, Dofasco 2000 Trail and Saltfleet Conservation Area. These lands are targeted as a priority area for capital development to enhance the visitor experience and provide additional revenue. New capital investment to improve traffic flow into the conservation area, more parking, visitor amenities, site security, and pedestrian and cyclist access are targeted for this area.

Day Use Activities:

The new land acquisition provides opportunity for improved day use activity areas at the market buildings. This plan outlines new opportunities for recreational activities and educational programs that could occur at this location. This location will also help serve a growing number of visitors and provide operating revenue for the Hamilton Mountain Conservation Areas.



11.0 APPENDIX CONTENTS

APPENDIX 1	Mapping
APPENDIX 2	Capital Development Priorities and Detail Drawings
APPENDIX 3	Operational Revenue and Expenses - 2025
APPENDIX 4	Visitor Data – Trail Counter Summary and Public Survey Results
APPENDIX 5	Natural Inventory – Species Lists
APPENDIX 6	HCA Visitor Management and Vehicle Parking Review
APPENDIX 7	References

APPENDIX 1

Mapping

Map 1	Ecological Land Classification
Map 2	Niagara Escarpment Plan Area
Map 3	Conservation Area Zones
Map 4	Buildings and Structures
Map 5	Site Concept
Map 6	Trails Master Plan

MAP 1. ECOLOGICAL LAND CLASSIFICATION

FINAL
date: 2026/09/04

ECOLOGICAL LAND CLASSIFICATION
DEVIL'S PUNCHBOWL C.A. MASTER PLAN

DATE: 2026/03/27

KING STREET E
NEW MOUNTAIN ROAD
RIDGE ROAD
SECOND ROAD E
FIRST ROAD E
RIDGE ROAD
UPPER CENTENNIAL PARKWAY

TATC1
FODM5-1
CLT1-2
TATC1-4
MEGM3
CLT1-2
MEGM3
MEGM3
TAGM1
TAGM1
TATC1-4
TAOC1-1
TATC1
CRV_1
FODM7-4
CLT1-2
TATC1-4
NS
NS
FODM5-3
CLT1-2
TATC1-4
MEGM3
WODM4-4
WODM4-4
WODM4-4

LEGEND

- HCA PROPERTY LINE
- HCA PROPERTY OUTSIDE STUDY AREA
- RAILROAD TRACKS
- DOFASCO TRAIL
- BRUCE TRAIL
- WATERCOURSE
- WATERBODY
- ELC AREA

ECOLOGICAL LAND CLASSIFICATION

CLT1-2	SUGAR MAPLE IRONWOOD WHITE ASH TREED CARBONATE CLIFF TYPE
CRV_1	LOW DENSITY RESIDENTIAL
FODM5-1	DRY-FRESH SUGAR MAPLE DECIDUOUS FOREST
FODM5-3	DRY FRESH SUGAR MAPLE OAK DECIDUOUS FOREST
FODM7-4	FRESH-MOIST BLACK WALNUT LOWLAND DECIDUOUS FOREST
MEGM3	DRY-FRESH GRAMINOID MEADOW
NS	NOT SURVEYED
TAGM1	CONIFEROUS PLANTATION
TAOC1-1	DRY FRESH CALCEREOUS OPEN TALUS TYPE
TATC1	CALCEREOUS TREED TALUS ECOSITE
TATC1-4	FRESH MOIST SUGAR MAPLE CALCEREOUS TREED TALUS TYPE
WODM4-4	DRY-FRESH WALNUT DECIDUOUS WOODLAND

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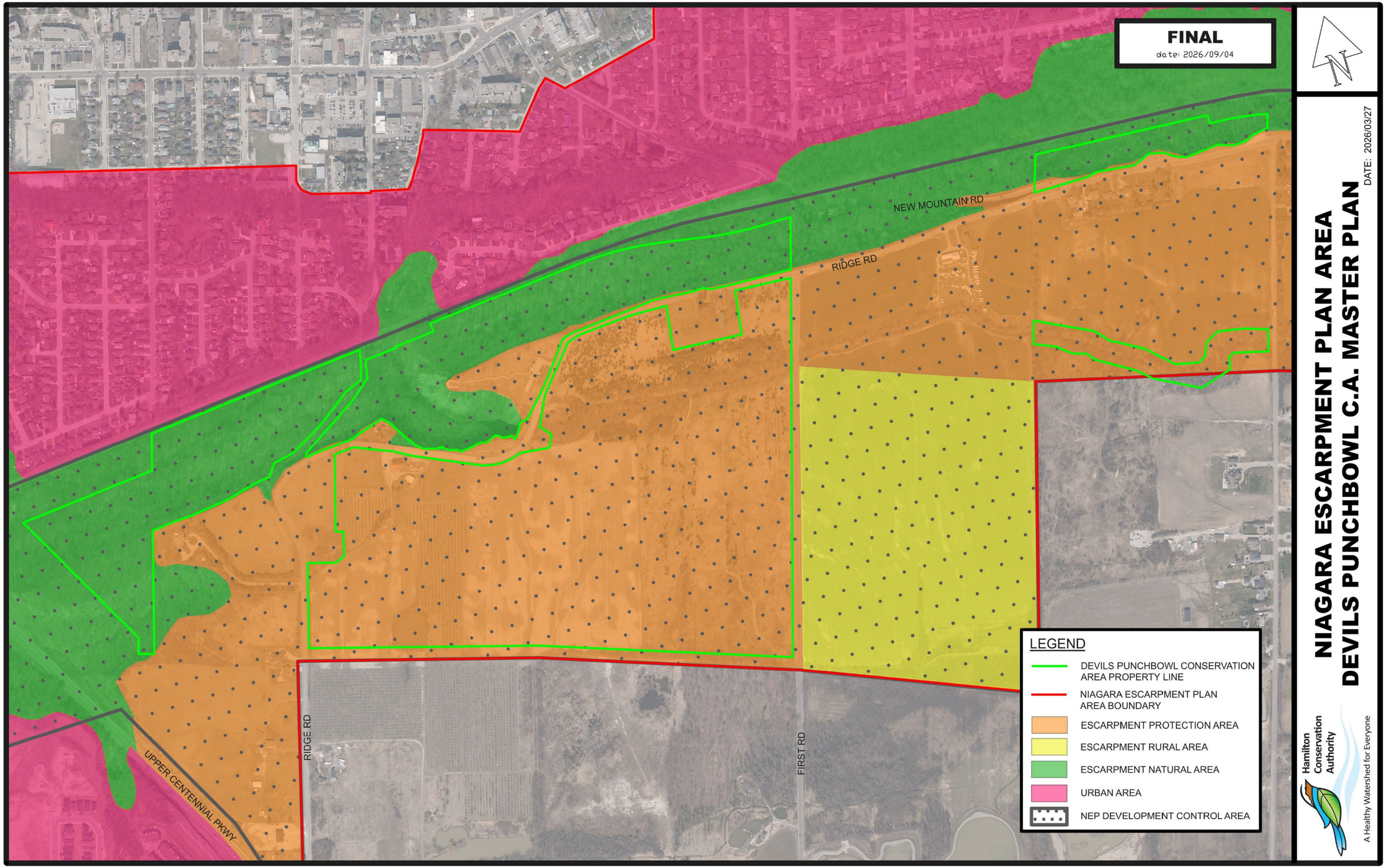
MAP 2. NIAGARA ESCARPMENT PLAN AREA



MAP 3. CONSERVATION AREA ZONES

FINAL
date: 2026/09/04

KING STREET E
NEW MOUNTAIN ROAD
RIDGE ROAD
SECOND ROAD E
FIRST ROAD E
UPPER CENTENNIAL PARKWAY

NE
NR
RM
D
CH

SEE SALTFLEET CONSERVATION AREA 2024 MASTER PLAN FOR MORE INFORMATION

LEGEND

- HCA PROPERTY LINE
- HCA PROPERTY OUTSIDE REVIEW AREA
- WATERCOURSE
- WATERBODY
- PROPOSED SC-5 WETLAND AND BERMS

CONSERVATION AREA ZONES*

- D — DEVELOPMENT
- NE — NATURAL ENVIRONMENT
- NR — NATURE RESERVE
- RM — RESOURCE MANAGEMENT
- CH — CULTURAL HERITAGE

* ZONES FOLLOW CRITERIA SET OUT IN THE NIAGARA ESCARPMENT PLAN AND NIAGARA PARKS AND OPEN SPACE SYSTEM (NEPOSS) PLANNING MANUAL

CONSERVATION AREA ZONES
DEVIL'S PUNCHBOWL C.A. MASTER PLAN

DATE: 2026/04/16

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FINAL
date: 2026/09/04

BUILDINGS AND STRUCTURES MAP
DEVIL'S PUNCHBOWL C.A. MASTER PLAN

DATE: 2026/03/27

RIDGE ROAD

LEGEND

- HCA PROPERTY LINE
- DOFASCO TRAIL
- BRUCE TRAIL
- ① MARKET BUILDING
- ② MARKET WORKSHOP
- ③ LOOKOUT PLATFORM
- ④ CROSS STRUCTURE
- ⑤ STAFF OFFICE - TO BE DEMOLISHED WITH WETLAND CONSTRUCTION

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FINAL
date: 2026/09/04

PLANTED BUFFER ALONG PROPERTY LINE

RIDGE ROAD

SEE DWG 1 IN APPENDIX 2B FOR MORE DETAIL

IMPROVEMENTS TO EXISTING PARKING LOT

EXISTING LOOKOUT AND CROSS STRUCTURE

WETLAND VIEW POINT

NEW LANEWAY

BUILDING TO BE CONVERTED TO VISITOR CENTRE & STAFF OFFICES

PLANTED BUFFER

PICNIC AREA

PROPOSED PARKING LOT (74 SPACES)

HCA STAFF WORKSHOP AND FENCED WORK YARD

SEE DWG 2 IN APPENDIX 2B FOR MORE DETAIL

SC-5 WETLAND AREA

WETLAND VIEW POINT

TRAILS ALONG TOP OF BERM SURROUNDING WETLAND

RAISED LANDSCAPE FEATURE

RAISED LANDSCAPE FEATURE

RIDGE ROAD

FIRST ROAD EAST

SALTFLEET CONSERVATION AREA

LEGEND

EXISTING FEATURES
- HCA PROPERTY LINE
- HCA PROPERTY OUTSIDE OF STUDY AREA
- WATERCOURSE
- WATERBODY
- RAILROAD TRACKS

SITE CONCEPT FEATURES
- SC-5 WETLAND BERMS
- SC-5 WETLAND AREA
- EXISTING PARKING
- PROPOSED PARKING
- PUBLIC ACCESS POINTS
- SERVICE ACCESS POINTS
- PARKING
- PUBLIC WASHROOM
- LOOKOUT POINT
- PROPOSED INTERPRETIVE STATION

TRAILS
- DOFASCO TRAIL
- DOFASCO TRAIL REROUTE
- BRUCE TRAIL
- BRUCE TRAIL REROUTE
- PROPOSED TRAIL
- TRAIL TO BE REMOVED
- TRAIL TO BE IMPROVED

SITE CONCEPT
DEVIL'S PUNCHBOWL C.A. MASTER PLAN

DATE: 2026/04/16

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MAP 6. TRAILS MASTER PLAN

FINAL
date: 2026/09/04

LEGEND

EXISTING FEATURES
- HCA PROPERTY LINE
- HCA PROPERTY OUTSIDE OF STUDY AREA
- WATERCOURSE
- WATERBODY
- RAILROAD TRACKS

TRAIL SYSTEM FEATURES
- SC-5 WETLAND BERMS
- SC-5 WETLAND AREA
- EXISTING PARKING
- PROPOSED PARKING
- PUBLIC ACCESS POINTS (A)
- PARKING (P)
- PUBLIC WASHROOM (W)
- LOOKOUT POINT
- TRAILHEAD - STAGING AREA (TH)
- TRAIL NODE - INTERSECTION
- TRAIL CROSSING BRIDGE OR CULVERT (TC)

TRAILS
- DOFASCO TRAIL
- DOFASCO TRAIL REROUTE
- BRUCE TRAIL
- BRUCE TRAIL REROUTE
- PROPOSED TRAIL
- TRAIL TO BE REMOVED
- TRAIL TO BE IMPROVED

TRAILS MASTER PLAN
DEVIL'S PUNCHBOWL C.A. MASTER PLAN

DATE: 2026/04/16

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RIDGE ROAD
IMPROVE TRAIL TO WATERFALL VIEWPOINT
EXISTING TRAIL TO BE IMPROVED
IMPROVE TRAIL CONNECTION AND ROAD CROSSING
BRUCE TRAIL REROUTE OFF OF THE ROAD
TRAIL CONNECTION TO BERM
EXISTING DOFASCO TRAIL TO BE REROUTED
DOFASCO TRAIL REROUTED AROUND WETLAND
TRAILS ALONG TOP OF BERM SURROUNDING WETLAND
NEW TRAIL TO SALTFLEET C.A. INCLUDED IN WETLAND DESIGN
DOFASCO TRAIL
FIRST ROAD EAST
RIDGE ROAD

APPENDIX 2

Capital Development Priorities and Detail Drawings

2A. Development Priorities

Table 1 Devil's Punchbowl Capital Development Priorities: 2026 – 2036

Table 2 Devil's Punchbowl Proposed Capital Review and Requirements

2B. Site Plans and Building Details

Drawing 1 Existing Parking Lot Site Plan

Drawing 2 Market Building Site Plan

Drawing 3 Existing Floor Plan

Drawing 4 Proposed Floor Plan

Drawing 5 Front Elevations

Drawing 6 Rear Elevations

Drawing 7 Side Elevations

2C. SC-5 Wetland Design Drawings

Drawing 1 SC-5 Wetland Design Package – Sheet 1

Drawing 2 SC-5 Wetland Design Package – Sheet 2

Drawing 3 SC-5 Wetland Design Package – Sheet 3

Drawing 4 SC-5 Wetland Design Package – Sheet 12

Drawing 5 SC-5 Wetland Design Package – Sheet 13

Drawing 6 SC-5 Wetland Design Package – Sheet 14

Drawing 7 SC-5 Wetland Design Package – Sheet 16

Drawing 8 SC-5 Wetland Design Package – Sheet 26

Table 1 – DEVIL'S PUNCHBOWL CAPITAL DEVELOPMENT PRIORITIES: 2026 - 2036

A. Site Concept Improvements		***Budget** (1.82M)
A1	North Ridge Road Parking Lot Improvements	$ 60,000
A2	Bruce Trail Re-Route	$ 20,000
A3#	Ridge Road Trail Crossings	$ 5,000
A4	Lower Gorge Interpretive Area	$ 10,000
A5	Interpretive Signage	$ 25,000
A6	Replace Entrance Sign – North Ridge Rd Lot	$ 15,000
A7	New Entrance Sign – Market Property	$ 35,000
A8+	Market Building Improvements, Partial Demolition and Washroom Addition	$ 1,000,000
A9	Market Site Visitor Parking Lot	$ 230,000
A10	Market Site Gatehouse and Autogates	$ 70,000
A11	Operations Work Yard Fencing	$ 100,000
A12	Office Building Demolition	$ 50,000
A13+	Market Building Services – Septic, Water Cistern	$ 175,000
A14	Market Site Picnic Shelters	$ 25,000

B. Conservation Area Improvements		***Budget** (580K)
B1	Perimeter Fencing	$ 150,000
B2	Perimeter Service Gates	$ 10,000
B3+	General Building Maintenance	$ 25,000
B4	Existing Site Structure Maintenance	$ 100,000
B5	Trail Maintenance	$ 50,000
B6	Site Signage	$ 20,000
B7+	Invasive Species Management	$ 100,000
B8+	Natural Area Restoration	$ 25,000
B9	Site Furnishing	$ 20,000
B10	Vegetative Buffers	$ 80,000

C. Outside Fundraising Dependent Improvements		***Budget** (4.425M)
C1	New SC-5 Wetland South of Ridge Road	$ 4,425,000

* Budget costs are in 2026 dollars, projects and budgets to be reviewed annually.
+ Costs subject to further site and structure investigations and recommendations.
# Costs subject to further consultation with the City of Hamilton.

Table 2 – DEVIL'S PUNCHBOWL PROPOSED CAPITAL REVIEW AND REQUIREMENTS*

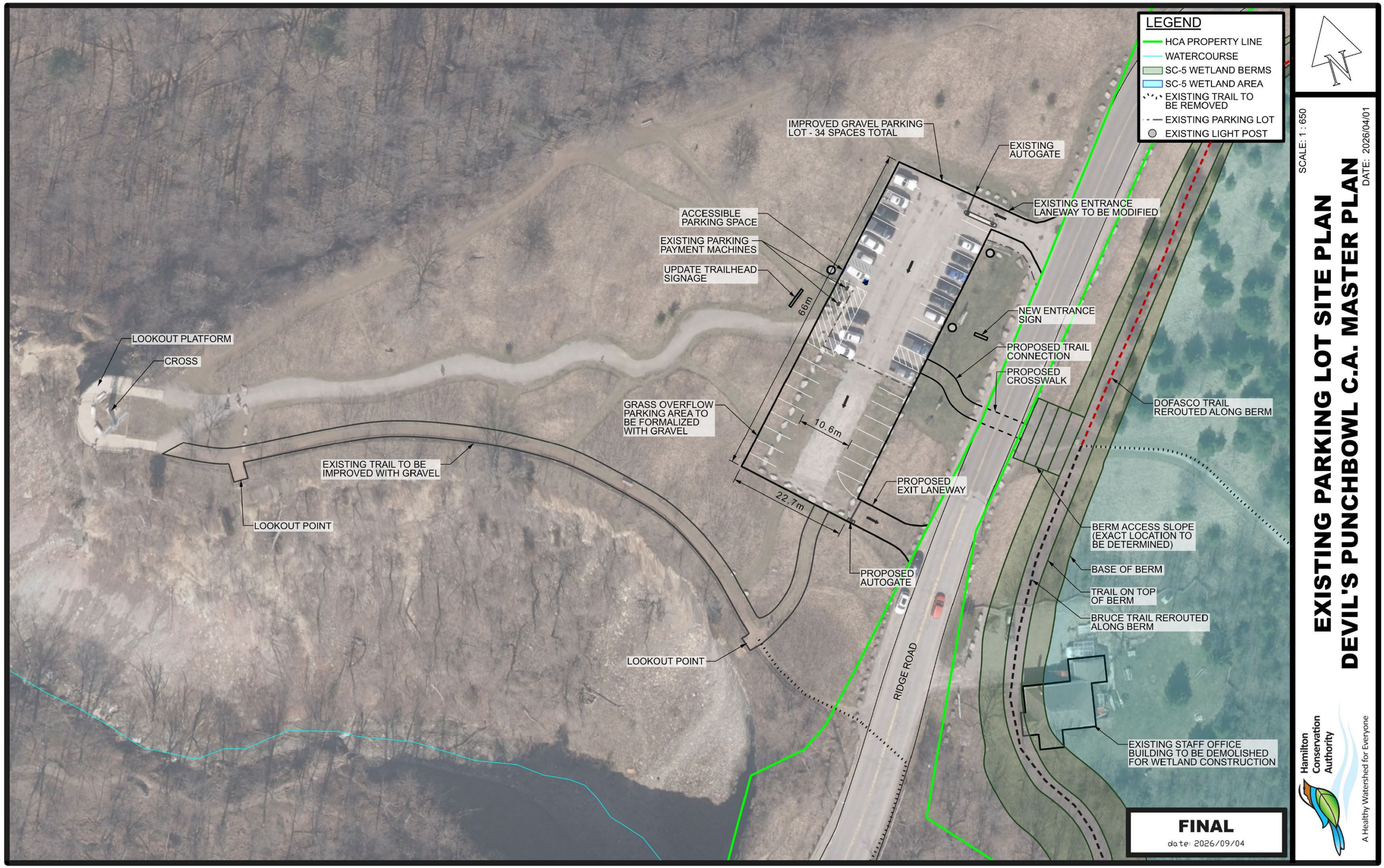
No.	Proposed Development**	NEC Development Permit Exempted***	NEC Development Permit Exemption through approved Master Plan	NEC Development Permit Required	City of Hamilton Review or Approval Required
A. Site Concept Improvements					
A1	North Ridge Road Parking Lot Improvements		**X**		**X**
A2	Bruce Trail Re-Route	**X**			
A3	Ridge Road Trail Crossings	**X**			**X**
A4	Lower Gorge Interpretive Area	**X**			
A5	Interpretive Signage	**X**			
A6	Replace Entrance Signage	**X**			**X**
A7	New Entrance Sign	**X**			**X**
A8	Market Building Improvements, Partial Demolition and Washroom Addition		**X**		**X**
A9	Market Site Visitor Parking Lot		**X**		**X**
A10	Market Site Gatehouse and Autogates	**X**			
A11	Operations Work Yard Fencing		**X**		
A12	Demolition of Building at 174 Ridge Road	**X**			**X**
A13	Market Building Services – Septic, Water Cistern		**X**		**X**
A14	Market Site Picnic Shelters	**X**			
B. Conservation Area Improvements					
B1	Perimeter Fencing	**X**			
B2	Perimeter Service Gates	**X**			
B3	General Building Maintenance	**X**			
B4	Existing Site Structure Maintenance	**X**			
B5	Trail Maintenance	**X**			
B6	Site Signage	**X**			
B7	Invasive Species Management	**X**			
B8	Natural Area Restoration	**X**			
B9	Site Furnishing	**X**			
B10	Vegetative Buffers	**X**			
C. Outside Fundraising Dependent Improvements					
C1	New SC-5 Wetland		**X**		**X**

* DPCA is in the Niagara Escarpment Plan Area of Development Control. The NEC exemptions and City Permit items are proposed by HCA for NEC and City review.

** Projects and Budgets to be reviewed annually by HCA.

*** Exempted from an NEC Development Permit through R.R.O. 1990, Reg. 828: Development within the Development Control Area.

APPENDIX 2B – Site Plans and Building Details


LEGEND
HCA PROPERTY LINE
WATERCOURSE
SC-5 WETLAND BERMS
SC-5 WETLAND AREA
EXISTING TRAIL TO BE REMOVED
EXISTING PARKING LOT
EXISTING LIGHT POST
IMPROVED GRAVEL PARKING LOT - 34 SPACES TOTAL
EXISTING AUTOGATE
EXISTING ENTRANCE LANEWAY TO BE MODIFIED
ACCESSIBLE PARKING SPACE
EXISTING PARKING PAYMENT MACHINES
UPDATE TRAILHEAD SIGNAGE
66m
NEW ENTRANCE SIGN
PROPOSED TRAIL CONNECTION
PROPOSED CROSSWALK
DOFASCO TRAIL REROUTED ALONG BERM
LOOKOUT PLATFORM
CROSS
GRASS OVERFLOW PARKING AREA TO BE FORMALIZED WITH GRAVEL
10.6m
22.7m
EXISTING TRAIL TO BE IMPROVED WITH GRAVEL
PROPOSED EXIT LANEWAY
LOOKOUT POINT
PROPOSED AUTOGATE
BERM ACCESS SLOPE (EXACT LOCATION TO BE DETERMINED)
BASE OF BERM
TRAIL ON TOP OF BERM
BRUCE TRAIL REROUTED ALONG BERM
LOOKOUT POINT
RIDGE ROAD
EXISTING STAFF OFFICE BUILDING TO BE DEMOLISHED FOR WETLAND CONSTRUCTION
FINAL
date: 2026/09/04
SCALE: 1 : 650
DATE: 2026/04/01
EXISTING PARKING LOT SITE PLAN
DEVIL'S PUNCHBOWL C.A. MASTER PLAN
Hamilton Conservation Authority
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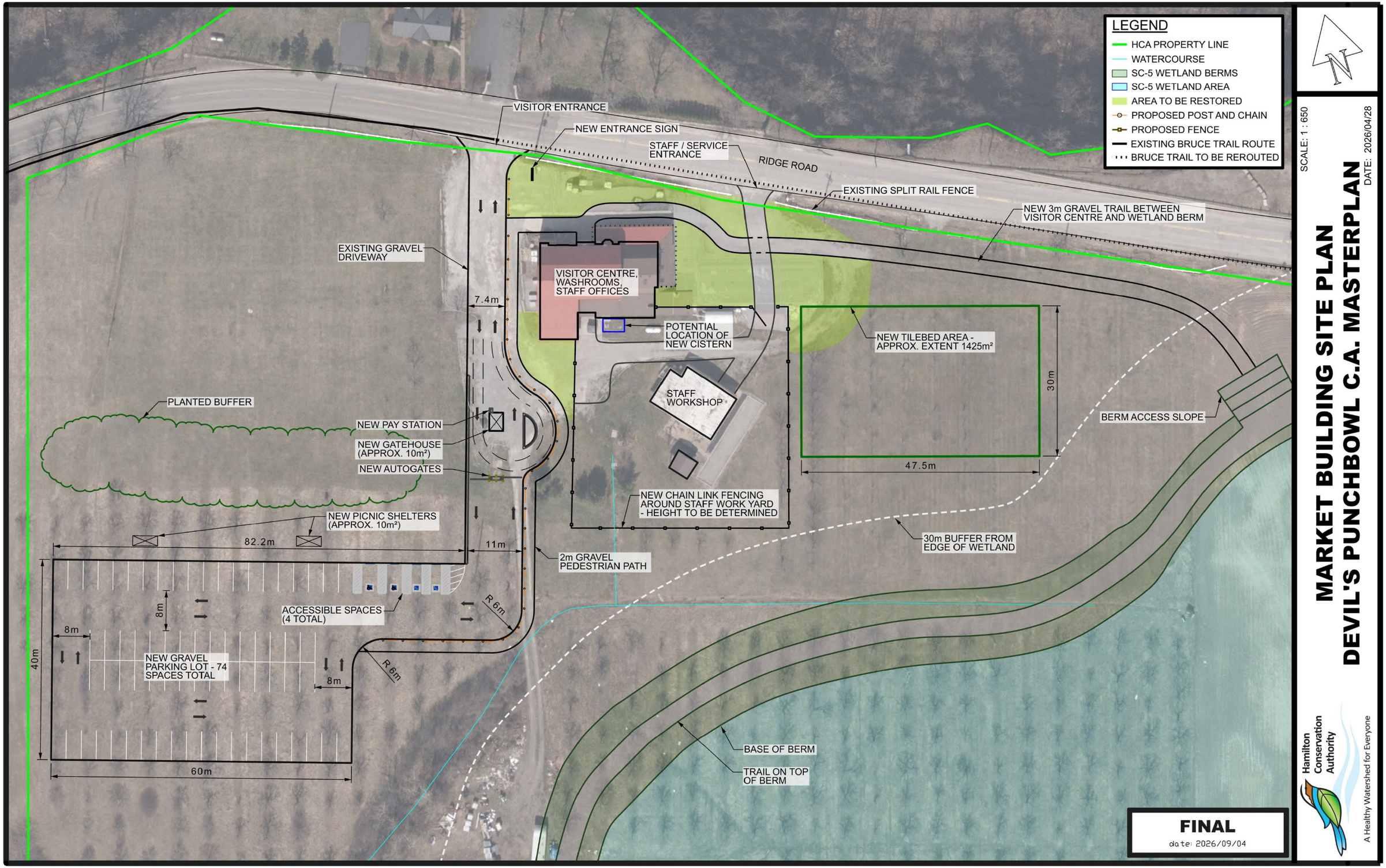
LEGEND
HCA PROPERTY LINE
WATERCOURSE
SC-5 WETLAND BERMS
SC-5 WETLAND AREA
AREA TO BE RESTORED
PROPOSED POST AND CHAIN
PROPOSED FENCE
EXISTING BRUCE TRAIL ROUTE
BRUCE TRAIL TO BE REROUTED
VISITOR ENTRANCE
NEW ENTRANCE SIGN
STAFF / SERVICE ENTRANCE
RIDGE ROAD
EXISTING SPLIT RAIL FENCE
NEW 3m GRAVEL TRAIL BETWEEN VISITOR CENTRE AND WETLAND BERM
EXISTING GRAVEL DRIVEWAY
VISITOR CENTRE, WASHROOMS, STAFF OFFICES
7.4m
POTENTIAL LOCATION OF NEW CISTERN
NEW TILEBED AREA - APPROX. EXTENT 1425m²
30m
STAFF WORKSHOP
BERM ACCESS SLOPE
PLANTED BUFFER
NEW PAY STATION
NEW GATEHOUSE (APPROX. 10m²)
NEW AUTOGATES
47.5m
NEW CHAIN LINK FENCING AROUND STAFF WORK YARD - HEIGHT TO BE DETERMINED
NEW PICNIC SHELTERS (APPROX. 10m²)
82.2m
11m
30m BUFFER FROM EDGE OF WETLAND
2m GRAVEL PEDESTRIAN PATH
8m
ACCESSIBLE SPACES (4 TOTAL)
R 6m
8m
40m
NEW GRAVEL PARKING LOT - 74 SPACES TOTAL
8m
R 6m
60m
BASE OF BERM
TRAIL ON TOP OF BERM
FINAL
date: 2026/09/04
SCALE: 1 : 650
DATE: 2026/04/28
MARKET BUILDING SITE PLAN
DEVIL'S PUNCHBOWL C.A. MASTERPLAN
Hamilton Conservation Authority
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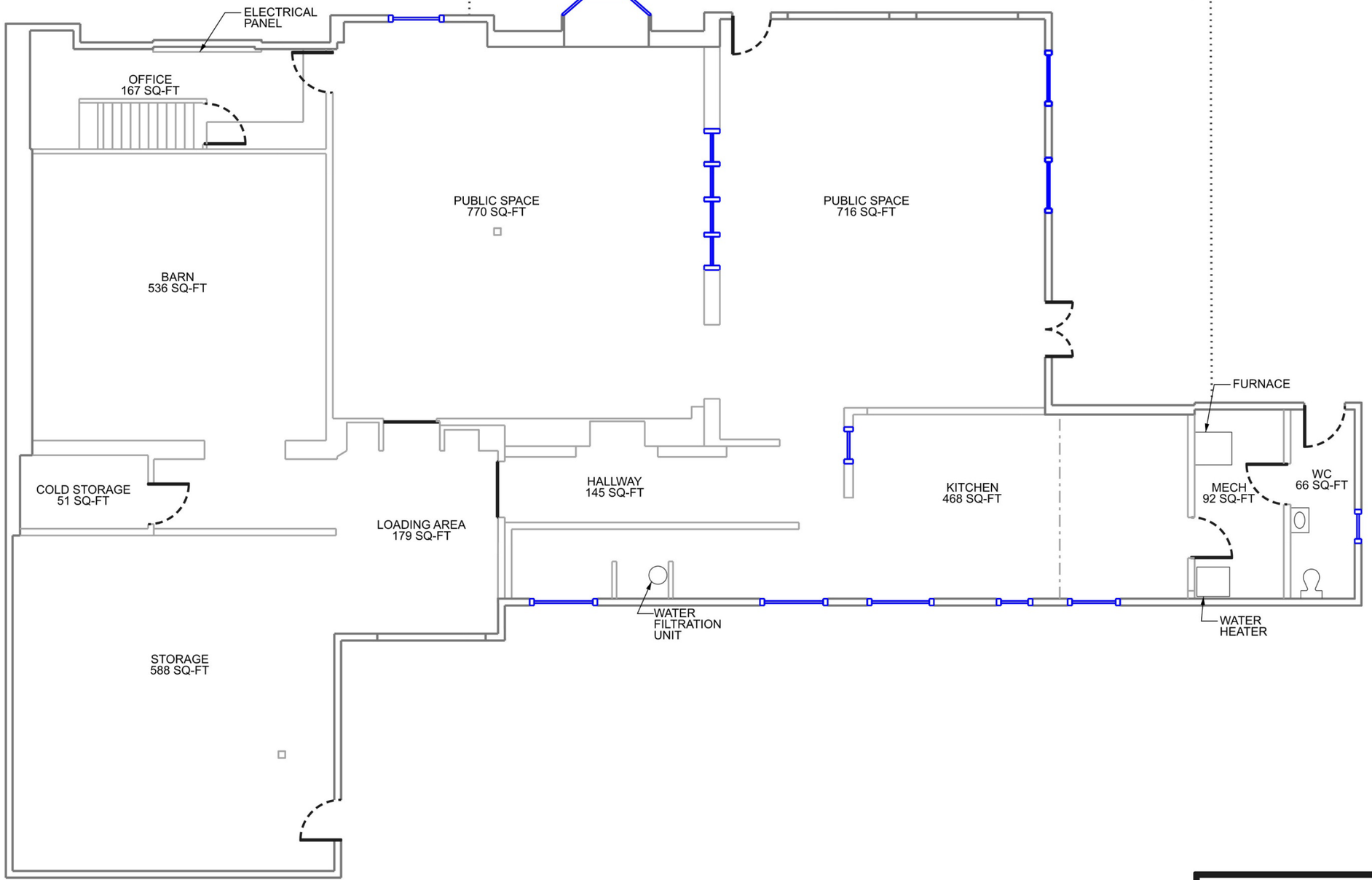
GENERAL NOTES

-TOTAL GROSS BUILDING AREA: 4194 SF

-EXISTING KITCHEN REMOVAL

LEGEND

··· EXISTING ROOF OVERHANG



SCALE: 1/8" = 1'- 0"

DATE: 2026/04/02

MARKET BUILDING - EXISTING FLOOR PLAN
DEVIL'S PUNCHBOWL C.A. MASTERPLAN

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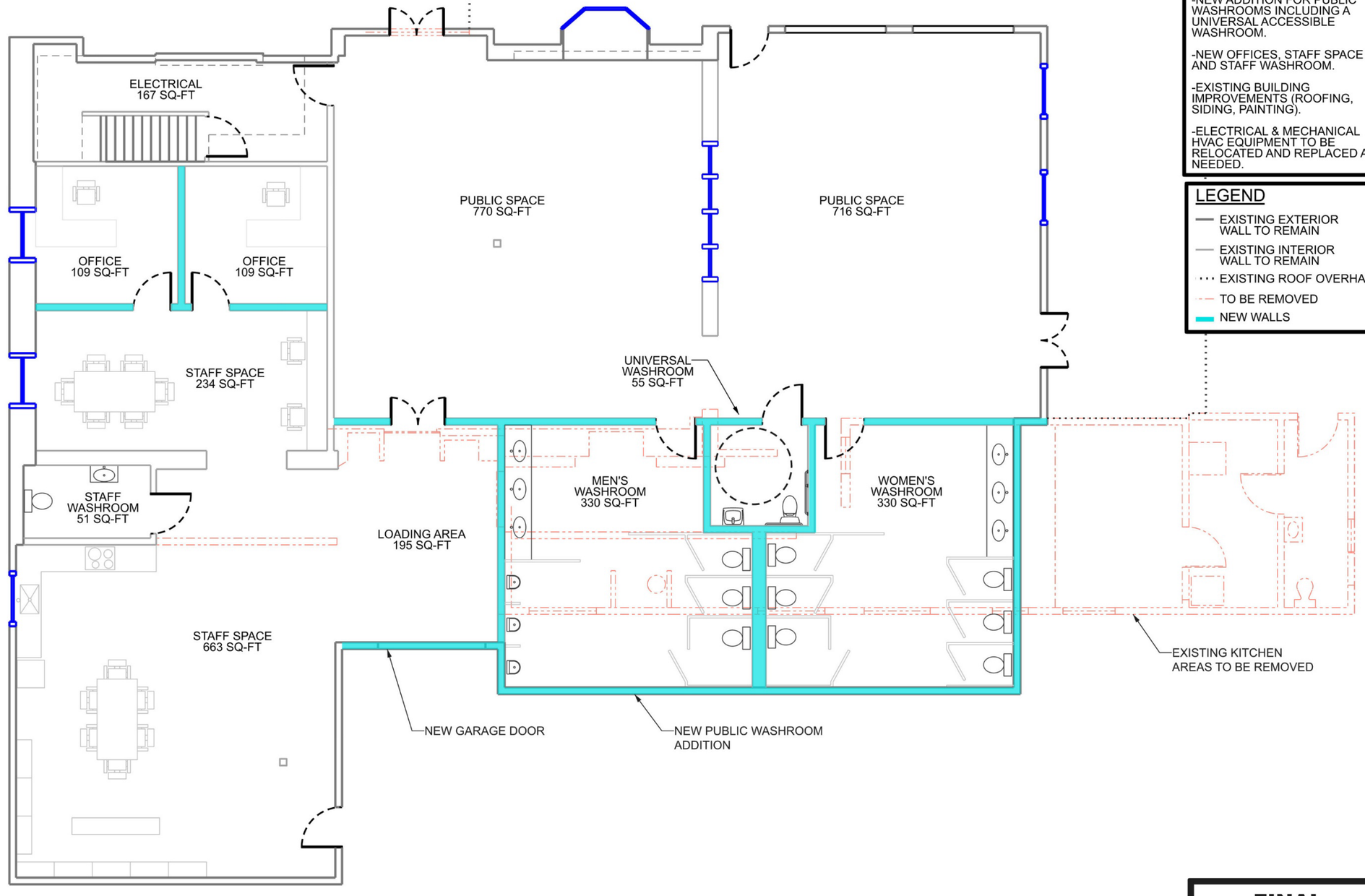
FINAL

date: 2026/09/04



GENERAL NOTES

-TOTAL GROSS BUILDING AREA: 4055 SF.

-OFFICE AREA IMPROVEMENTS.

-INTERIOR SPACE UPGRADES (PAINT, FLOORING LIGHTING).

-NEW ADDITION FOR PUBLIC WASHROOMS INCLUDING A UNIVERSAL ACCESSIBLE WASHROOM.

-NEW OFFICES, STAFF SPACE AND STAFF WASHROOM.

-EXISTING BUILDING IMPROVEMENTS (ROOFING, SIDING, PAINTING).

-ELECTRICAL & MECHANICAL HVAC EQUIPMENT TO BE RELOCATED AND REPLACED AS NEEDED.

LEGEND

- EXISTING EXTERIOR WALL TO REMAIN
- EXISTING INTERIOR WALL TO REMAIN
- EXISTING ROOF OVERHANG
- TO BE REMOVED
- NEW WALLS

SCALE: 1/8" = 1'- 0"

DATE: 2026/04/02

MARKET BUILDING - PROPOSED FLOOR PLAN
DEVIL'S PUNCHBOWL C.A. MASTERPLAN

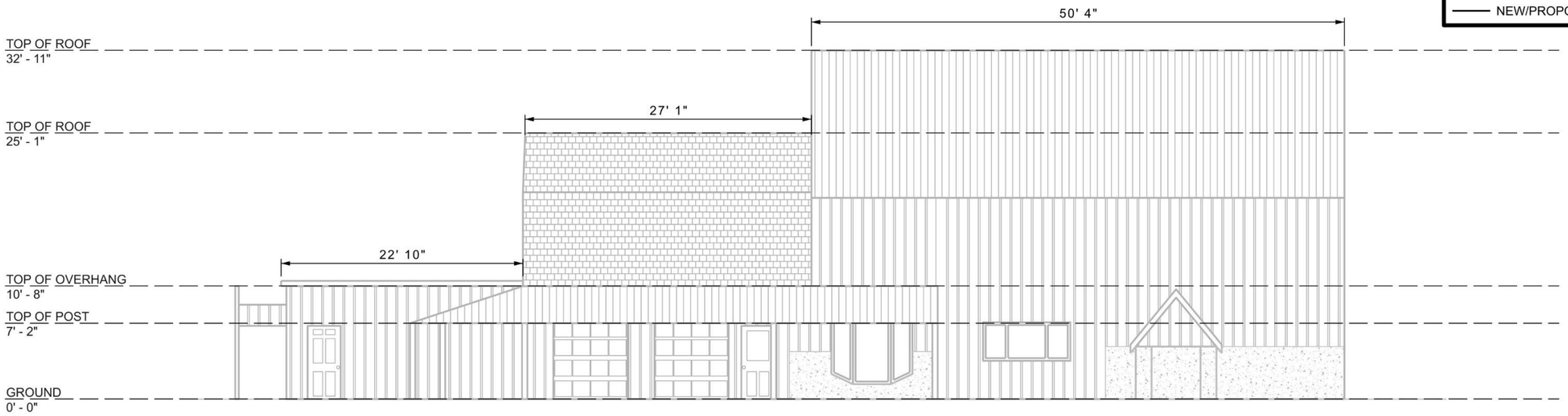
Hamilton Conservation Authority

A Healthy Watershed for Everyone

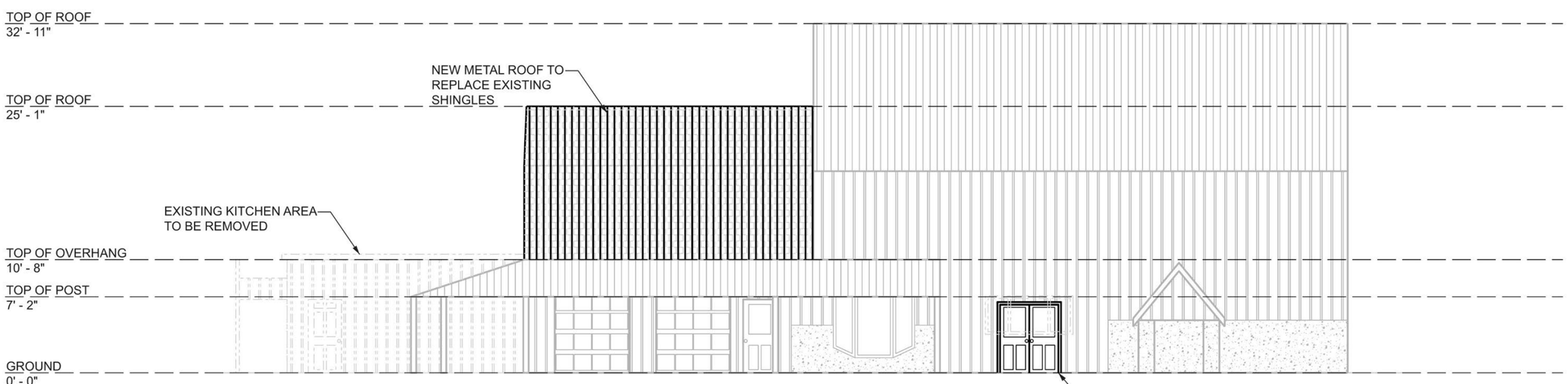
FINAL

date: 2026/09/04

LEGEND
- EXISTING/TO REMAIN
- TO BE REMOVED
- NEW/PROPOSED



FRONT ELEVATION
(EXISTING)



FRONT ELEVATION
(PROPOSED)

FINAL
date: 2026/09/04

MARKET BUILDING - FRONT ELEVATIONS
DEVIL'S PUNCHBOWL C.A. MASTERPLAN

SCALE: 3/32" = 1'- 0"
DATE: 2026/02/25

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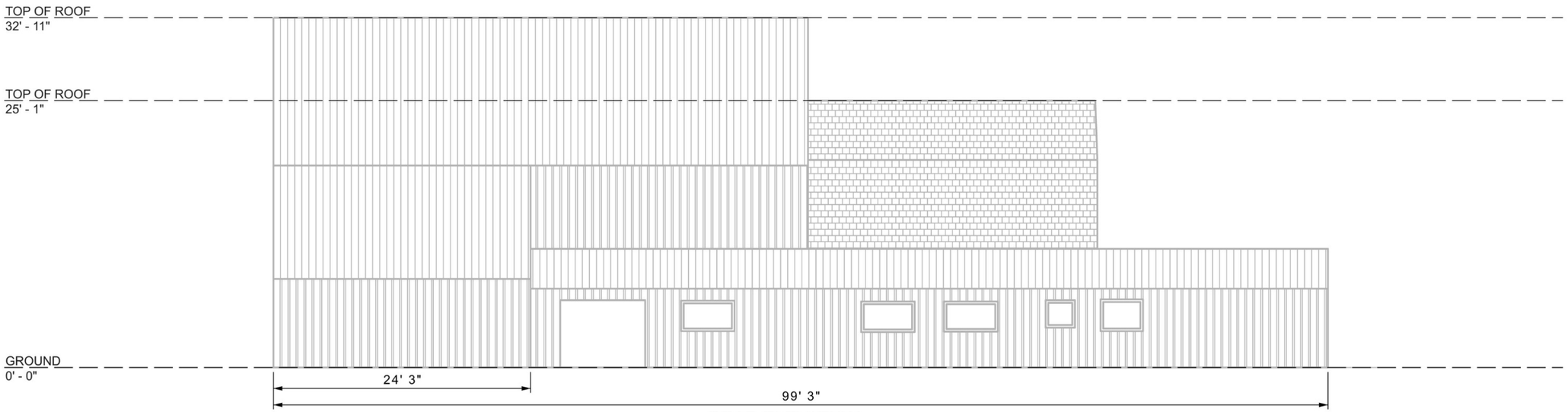
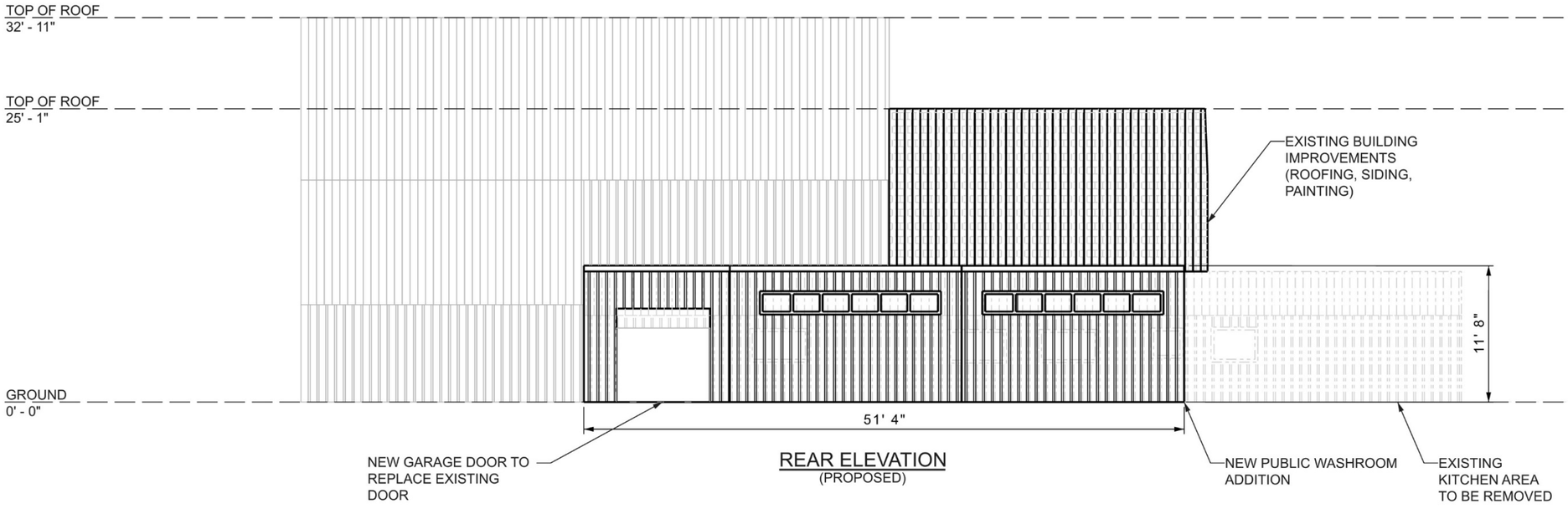
LEGEND
EXISTING/TO REMAIN
TO BE REMOVED
NEW/PROPOSED



REAR ELEVATION
(EXISTING)



REAR ELEVATION
(PROPOSED)

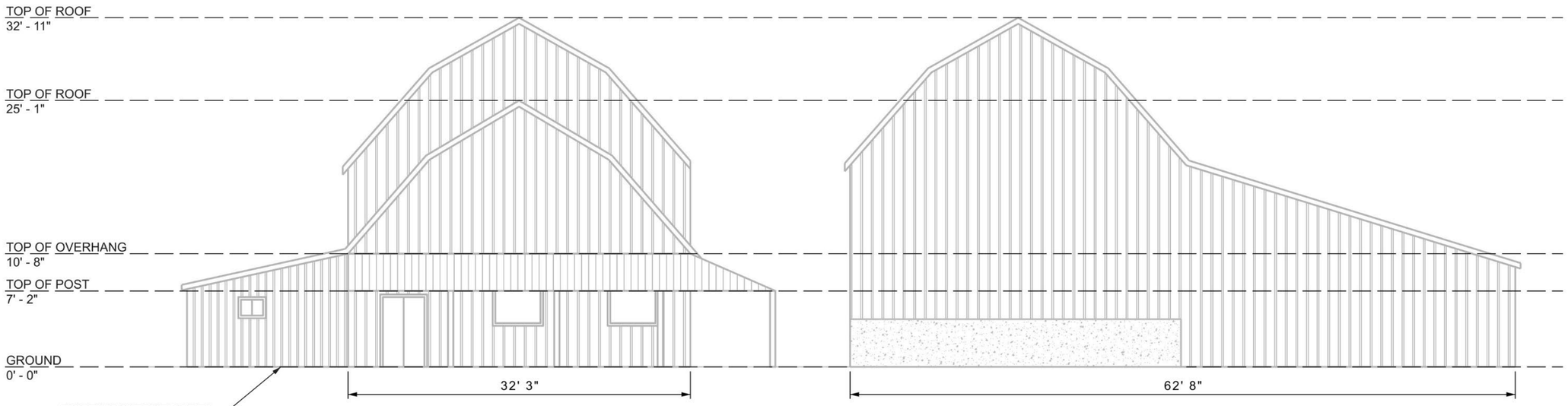
FINAL
date: 2026/09/04

MARKET BUILDING - REAR ELEVATIONS
DEVIL'S PUNCHBOWL C.A. MASTERPLAN

SCALE: 3/32" = 1'- 0"
DATE: 2026/02/25

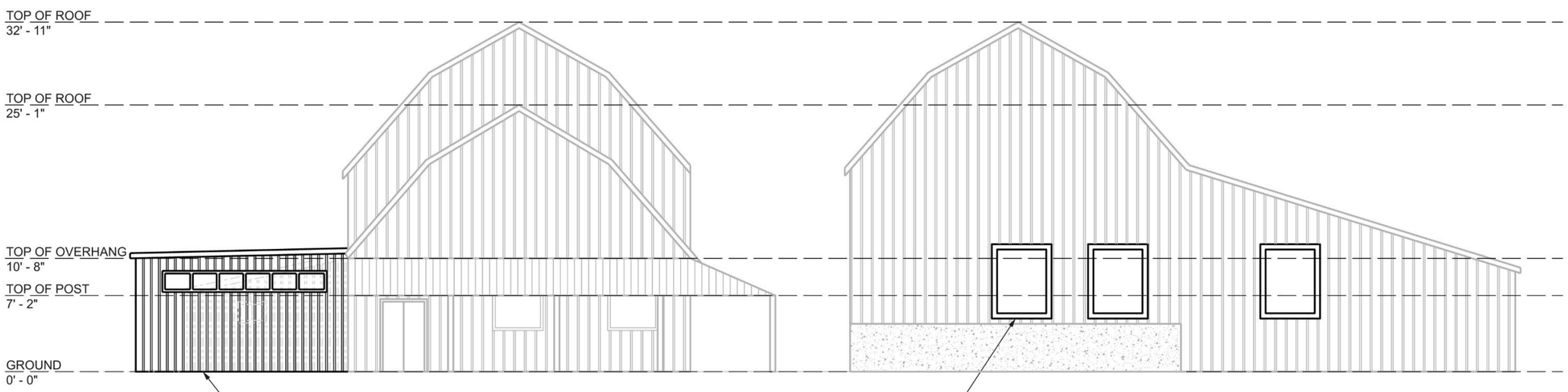
Hamilton Conservation Authority
A Healthy Watershed for Everyone

LEGEND
- EXISTING/TO REMAIN
- TO BE REMOVED
- NEW/PROPOSED



SIDE ELEVATION (EAST)
(EXISTING)

SIDE ELEVATION (WEST)
(EXISTING)



SIDE ELEVATION EAST
(PROPOSED)

SIDE ELEVATION (WEST)
(PROPOSED)

FINAL
date: 2026/09/04

SCALE: 3/32" = 1'- 0"
DATE: 2026/02/25

MARKET BUILDING - SIDE ELEVATIONS
DEVIL'S PUNCHBOWL C.A. MASTERPLAN

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APPENDIX 2C – Wetland Design Drawings

APPENDIX 2C – DRAWING 1





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date: 2026/09/04

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1	20260227	EEG	60% DESIGN SUBMISSION

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SALTFLEET CONSERVATION AREA
SC-5 WETLAND DESIGN

GENERAL PLAN

DESIGN	PROJECT No.
EEG	22051
CHECKED	SHEET No.
EG	1

APPENDIX 2C – DRAWING 2



N

RIDGE ROAD

STOCKPILE AREA

SILTFENCE
(SEE OPSD 219.130 ON SHEET 17)

STAGING AND STOCKPILE AREA SHOULD BE MINIMUM 15 METRES AWAY FROM THE TOP OF BANK. MATERIAL PILES STORED IN THE STOCKPILE AREA SHOULD BE LESS THAN 2 METRES HIGH

ROAD TO BE KEPT FREE OF DIRT AND DEBRIS. CONTRACTOR IS RESPONSIBLE FOR ROAD CLEANING WHEN AND IF REQUIRED

MUD MAT TO BE INSTALLED AT ENTRANCE TO SITE

ACCESS TO SITE FROM RIDGE ROAD

COFFERDAM

PUMP OUTLET

PUMP INLET

COFFERDAM

PUMP LINE

SILTFENCE
(SEE OPSD 219.130 ON SHEET 17)

FIRST ROAD EAST

STAGING AREA

STOCKPILE AREA

SILTFENCE
(SEE OPSD 219.130 ON SHEET 17)

RIDGE ROAD

ROAD TO BE KEPT FREE OF DIRT AND DEBRIS. CONTRACTOR IS RESPONSIBLE FOR ROAD CLEANING WHEN AND IF REQUIRED

MUD MAT TO BE INSTALLED AT ENTRANCE TO SITE

ACCESS TO SITE FROM FIRST ROAD EAST

FINAL
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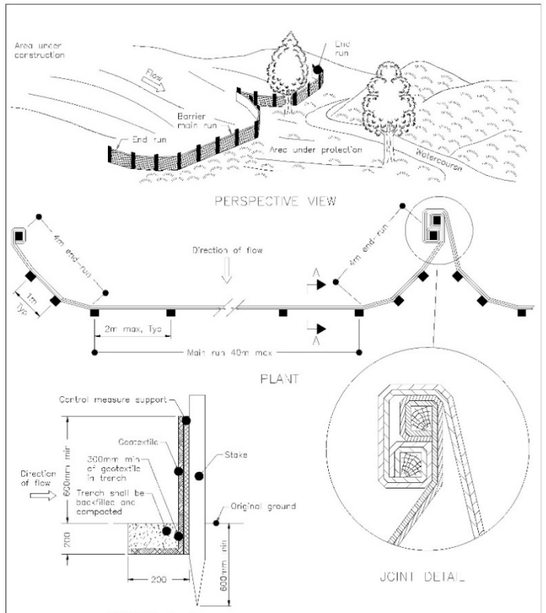
SALTFLEET CONSERVATION AREA
SC-5 WETLAND DESIGN

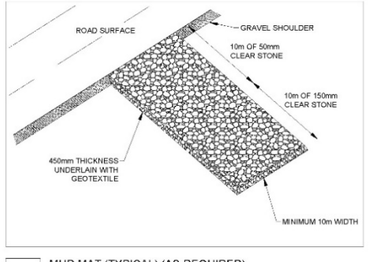
EROSION AND SEDIMENT CONTROL PLAN

DESIGN	PROJECT No.
EEG	22051
CHECKED	SHEET No.
EG	2

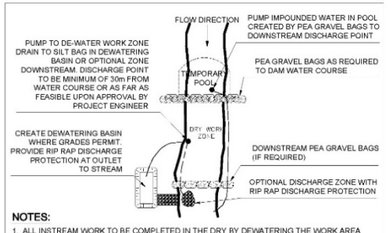


NOTE:
A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2015	Rev 2
HEAVY–DUTY SILT FENCE BARRIER		OPSD 219.130



D7 MUD MAT (TYPICAL) (AS REQUIRED)
N.T.S.



NOTES:

1. ALL INSTREAM WORK TO BE COMPLETED IN THE DRY BY DEWATERING THE WORK AREA AND DIVERTING AND/OR PUMPING FLOWS AROUND COFFERDAMS PLACED AT THE LIMITS OF THE WORK AREA.
2. EXISTING STREAM FLOWS TO BE MAINTAINED DOWNSTREAM OF THE DE-WATERED WORK AREA WITHOUT INTERRUPTION, DURING ALL STAGES OF THE WORK. THERE SHALL BE NO INCREASE IN WATER LEVELS UPSTREAM OF THE DE-WATERED WORK AREA.
3. FISH TO BE REMOVED FROM THE WORK AREA PRIOR TO DE-WATERING AND RELEASED ALIVE IMMEDIATELY DOWNSTREAM. CONTRACTOR TO PROVIDE QUALIFIED AQUATIC BIOLOGIST.
4. FLOW DISSIPATERS AND/OR FILTER BAGS, OR EQUIVALENT, TO BE PLACED AT WATER DISCHARGE POINTS TO PREVENT EROSION AND SEDIMENT RELEASE.
5. SILT OR DEBRIS THAT HAS ACCUMULATED AROUND THE TEMPORARY COFFERDAMS SHOULD BE REMOVED PRIOR TO THEIR WITHDRAWAL.
6. WORK TO BE CONDUCTED DURING LOW FLOW CONDITIONS.
7. ANY "SANDBAGS" USED FOR COFFERDAM CONSTRUCTION TO BE FILLED WITH CLEAN PEA GRAVEL FREE OF FINE PARTICULATES. UPON PROJECT COMPLETION, ALL SAND BAGS TO BE REMOVED FROM THE WATERCOURSE.

D8 DAM AND PUMP (TYPICAL)
N.T.S.

CONSTRUCTION ACCESS:

1. ACCESS TO THE CONSTRUCTION SITE WILL BE OFF RIDGE ROAD.
2. SHRUBS TO BE TRIMMED OR REMOVED FROM ACCESS AS APPROVED BY CONTRACT ADMINISTRATOR AND MUNICIPALITY.
3. SAFETY FENCE TO BE ERECTED AS REQUIRED TO LIMIT PUBLIC ACCESS TO TEMPORARY CONSTRUCTION ACCESS ROAD AND CONSTRUCTION SITE.
4. SITE CONSTRUCTION ACTIVITY WILL INCLUDE THE REPAIR OF THE CREEK ACCESS AND EGRESS AREA AS PER DESIGN.
5. UPON COMPLETION OF THE CONSTRUCTION, THE ACCESS WAY IS TO BE REPAIRED TO EXISTING CONDITIONS OR BETTER.
6. CONTRACTOR TO MEET ON SITE WITH THE CONTRACT ADMINISTRATOR, CONSERVATION AUTHORITY STAFF AND MUNICIPAL STAFF PRIOR TO INITIATION OF CONSTRUCTION.
7. ROAD TO BE KEPT FREE OF DIRT AND DEBRIS, CONTRACTOR IS RESPONSIBLE FOR ROAD CLEANING WHEN AND IF REQUIRED.

CONSTRUCTION SEQUENCING AND STAGING NOTES:

1. CONTRACTOR TO NOTIFY MUNICIPALITY, AGENCIES AND CONTRACT ADMINISTRATOR TWO (2) DAYS PRIOR TO ACTUAL CONSTRUCTION.
2. THE CONTRACTOR SHALL PROVIDE GENERAL ARRANGEMENT DRAWINGS AND A STAGING PLAN WITH THE PROPOSED BYPASS METHODOLOGY AND DEMONSTRATE THAT THE APPROACH CAN ADEQUATELY ADDRESS THE ENVIRONMENTAL AND EXISTING SITE CONDITIONS (VARYING FLOW CONDITIONS, CHANNEL CAPACITIES, WET WEATHER RESPONSE).
3. CONSTRUCTION STAGING MUST HAVE REGARD FOR THE ENVIRONMENTAL ASPECTS OF THE PROPOSED CONSTRUCTION. THIS WILL ENSURE THAT AMPLE TIME IS PROVIDED TO ENSURE THE TIMELY ARRIVAL OF REQUIRED EQUIPMENT AND MATERIALS AND THE APPROPRIATE ALLOCATION OF RESOURCES.
4. INSTALL CONSTRUCTION FENCING AND SILT FENCING AS PER SPECIFICATIONS. FENCE TO BE INSTALLED PRIOR TO CONSTRUCTION AND SHALL BE THE LIMIT OF CONSTRUCTION ACTIVITY.
5. INSTALL MUD MAT AT ENTRANCES TO SITE AS PER DETAIL D7.
6. REMOVE AND DISPOSE OF EXISTING VEGETATION WITHIN THE WORK AREA.
7. PLACE DAM & PUMP CONTROLS IN DESIGNATED AREA.
8. REMOVE AND STOCKPILE TOPSOIL ALONG PROPOSED BERM.
9. SUPPLY AND PLACE ENGINEERED FILL FOR BERM.
10. SUPPLY AND PLACE OUTLET STRUCTURES AND OUTFALL STONE.
11. GRADE AND SHAPE WETLANDS.
12. ALL EXCESS MATERIAL STOCKPILED ON SITE TO BE USED IN BERMS.
13. COMPLETE SEEDING AND PLANTING AS PER APPROVED PLANS AND SPECIFICATIONS.
14. STABILIZE ALL SLOPES AS NOTED ON PLAN.
15. REMOVE DAM & PUMP CONTROLS
16. REMOVE ANY EROSION AND SEDIMENT CONTROLS ONCE ALL VEGETATION HAS BECOME SUFFICIENTLY ESTABLISHED.

EROSION AND SEDIMENT CONTROL STRATEGY

1. PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT A DETAILED SCHEDULE AND WORK PLAN FOR REVIEW AND APPROVAL OF THE CONTRACT ADMINISTRATOR AND EXTERNAL AGENCIES AS REQUIRED, INDICATING HOW HE WILL IMPLEMENT SEDIMENT AND EROSION CONTROLS, AND HOW HE WILL CONTROL/DIVERT CREEK FLOWS AROUND OR THROUGH THE CONSTRUCTION AREA.
2. SEDIMENT AND EROSION CONTROL MEASURES MUST BE IMPLEMENTED PRIOR TO WORK, AND MAINTAINED DURING THE WORK PHASE, TO PREVENT ENTRY OF SEDIMENT INTO THE WATER OR RE-SUSPENDED SEDIMENT.
3. ANY STOCKPILED MATERIALS SHOULD BE STORED AND STABILIZED AWAY FROM THE WATER. EXCESS MATERIAL SHALL BE REMOVED IMMEDIATELY FROM THE CHANNEL AREA AND TEMPORARILY STOCKPILED IN SUITABLE LOCATIONS IDENTIFIED BY THE DESIGN DRAWINGS AND ON-SITE AREAS APPROVED BY THE CONTRACT ADMINISTRATOR.
4. ALL WORK IS TO BE PERFORMED DURING LOW FLOW CONDITIONS AND WORK IS NOT TO BE INITIATED WHEN WEATHER FORECASTS SUGGEST EXTENSIVE RAIN.
5. THE CONSTRUCTION ZONE IS TO BE ISOLATED FROM ADJACENT STREAM FLOWS USING A DAM & PUMP TECHNIQUE AND BY USING ADEQUATE SILT FENCING, STONE OR ANY OTHER METHOD AS APPROVED BY THE CONTRACT ADMINISTRATOR.
6. ALL WORK IS TO BE COMPLETED AS EXPEDITIOUSLY AS POSSIBLE AND ANY WORK THAT HAS BEEN INITIATED MUST BE COMPLETED WITHIN THE WORKING DAY. IF THIS IS NOT POSSIBLE, THEN THE CONTRACTOR MUST ENSURE, TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR, THAT THE WORK SITE IS ADEQUATELY STABILIZED.
7. ONCE EACH GRADING COMPONENT OF THE PROJECT HAS BEEN COMPLETED BY THE CONTRACTOR, THE SITE IS TO BE REVEGETATED AS PER THE PLANS AND STABILIZED.
8. ANY EROSION AND SEDIMENT CONTROLS ARE TO BE REMOVED AT THE COMPLETION OF THE PROJECT AFTER A JOINT INSPECTION BY THE CONTRACTOR AND CONTRACT ADMINISTRATOR.
9. ANY DEVIATIONS FROM THE APPROVED STRATEGY MUST BE APPROVED BY THE CONTRACT ADMINISTRATOR.
10. CONTRACTOR TO AVOID ANY UNNECESSARY DISRUPTION OF THE EXISTING CHANNEL.
11. SEDIMENT LADEN DEWATERING DISCHARGE SHOULD BE PUMPED TO A SETTLING BASIN OR FILTERING SYSTEM WELL AWAY FROM THE WATERCOURSE AND ALLOWED TO SETTLE AND/OR FILTER THROUGH THE RIPARIAN VEGETATION BEFORE RE-ENTERING THE WATERCOURSE DOWNSTREAM OF THE CONSTRUCTION AREA.

FINAL
date: 2026/09/04

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1	20260227	EEG	60% DESIGN SUBMISSION

DATE: February 27, 2026

SCALE: HORIZONTAL - 1:1500

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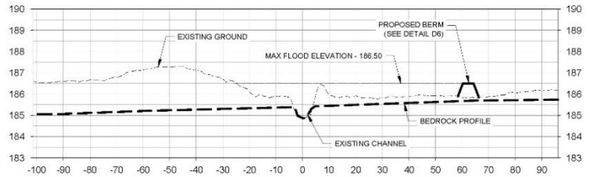
SALTFLEET CONSERVATION AREA
SC-5 WETLAND DESIGN

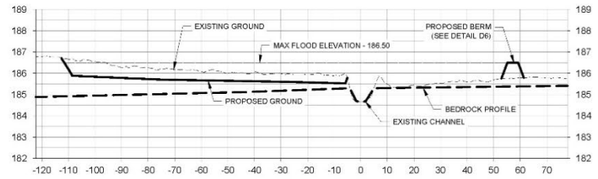
EROSION AND SEDIMENT CONTROL DETAILS

DESIGN	PROJECT No.
EEG	22051
CHECKED	SHEET No.
EG	3

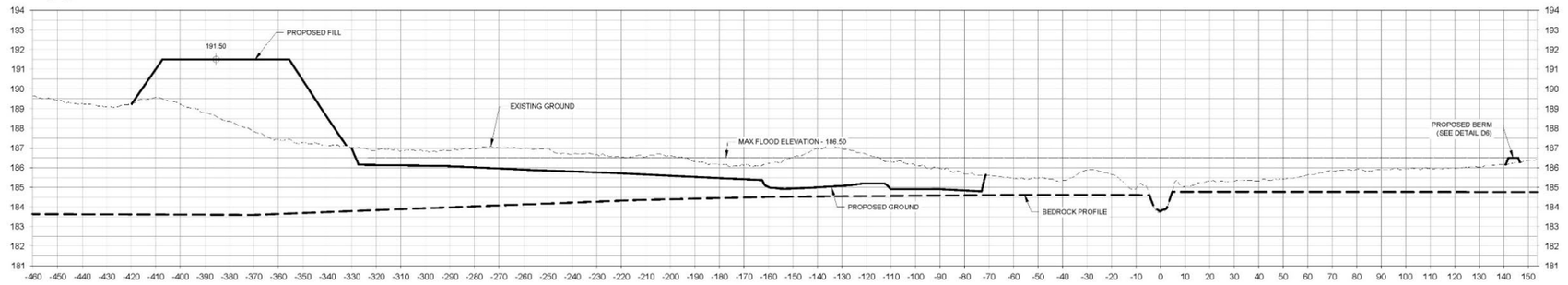
A-A"



B-B"



C-C"



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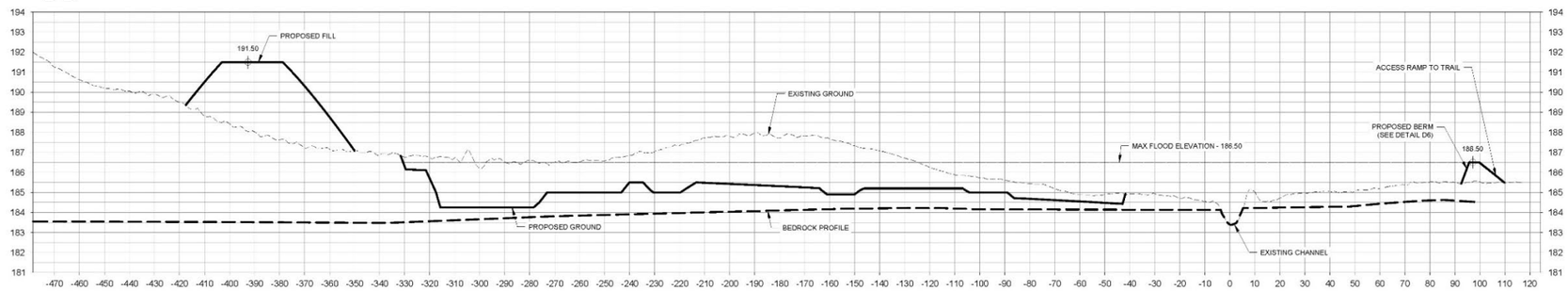

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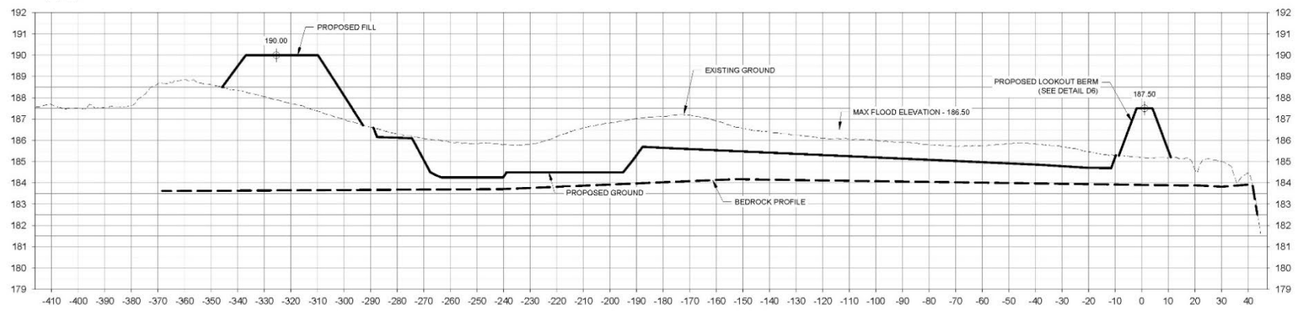

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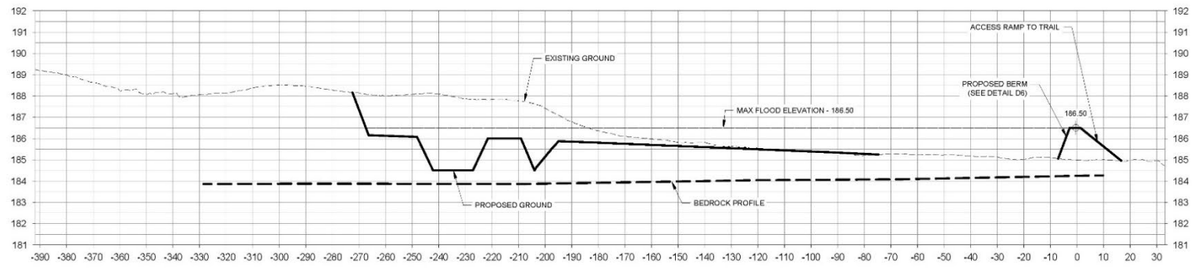

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date: 2026/09/04

No.	DATE	BY	REVISIONS
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VERTICAL - 1:800

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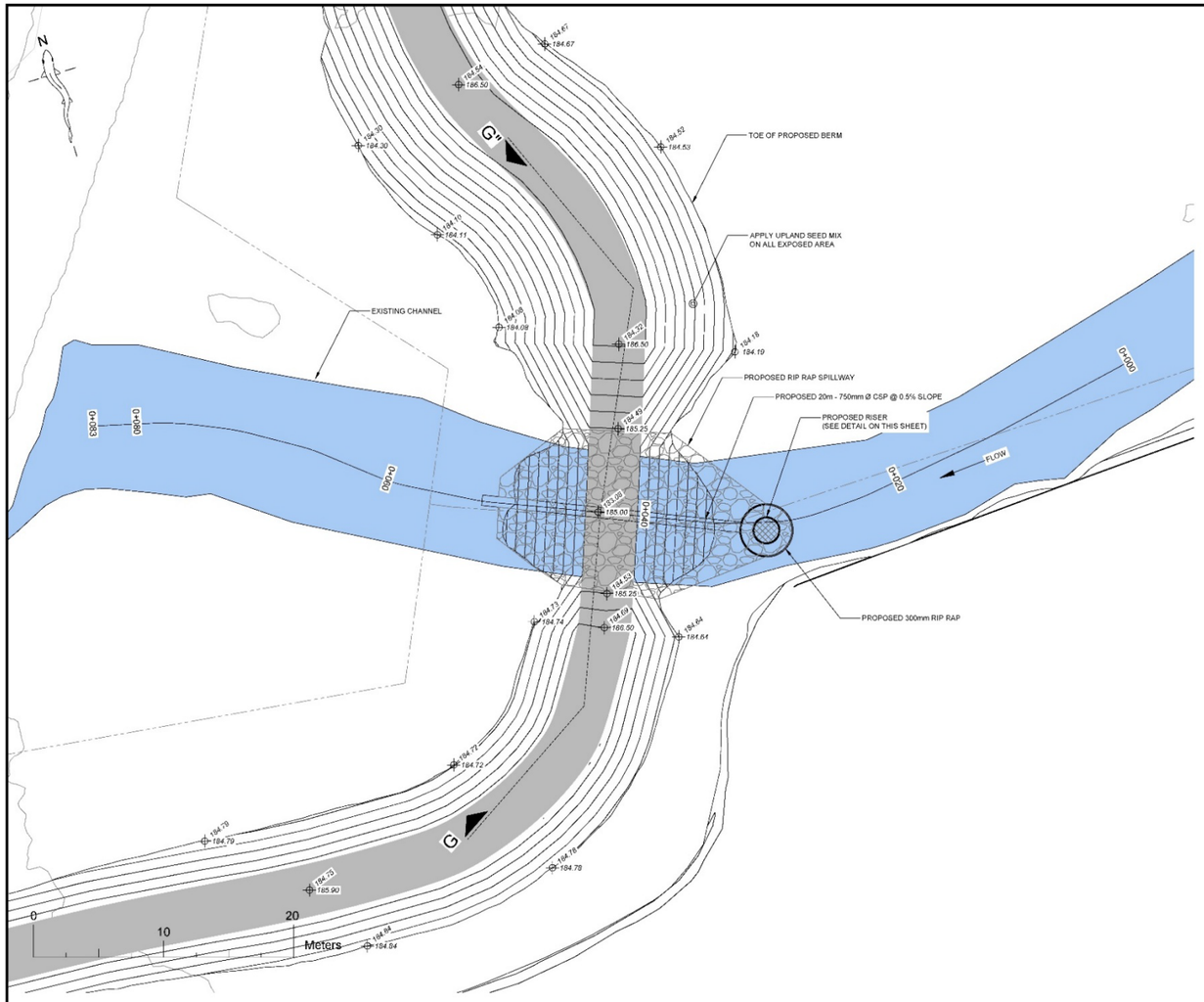
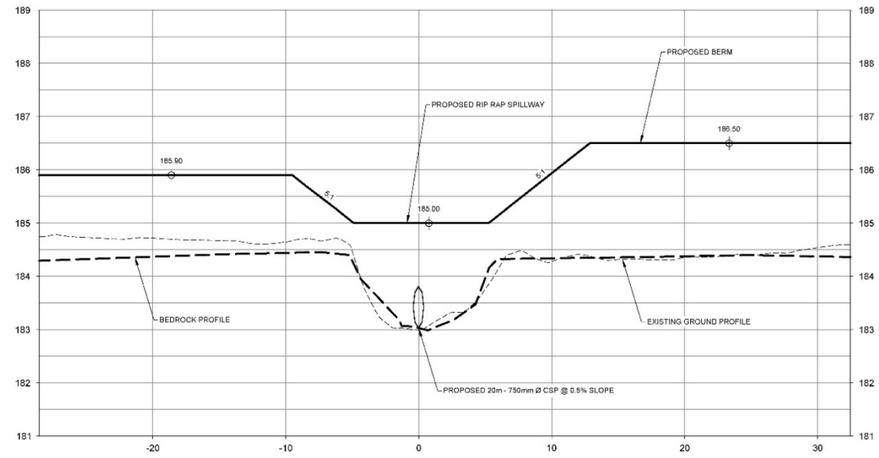
SALTFLEET CONSERVATION AREA
SC-5 WETLAND DESIGN

CROSS SECTIONS

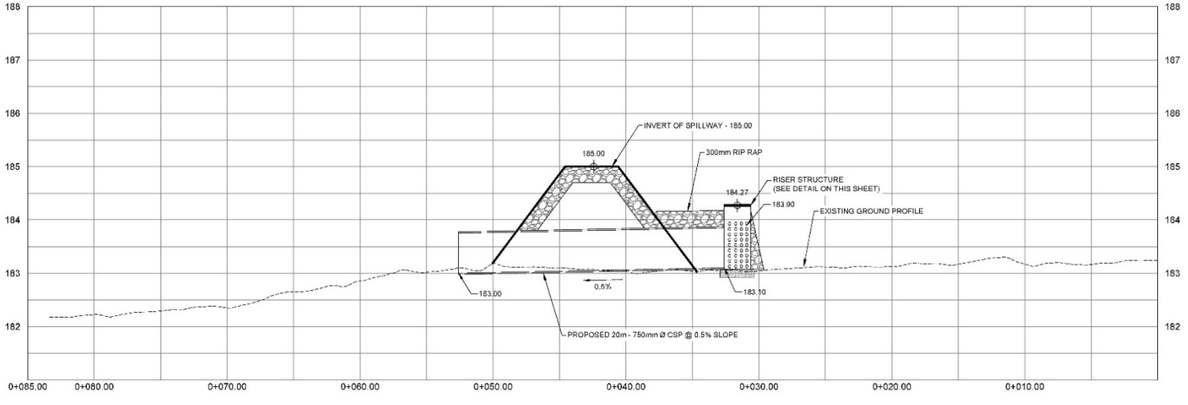
DESIGN	PROJECT No.
EEG	22051
CHECKED	SHEET No.
EG	12

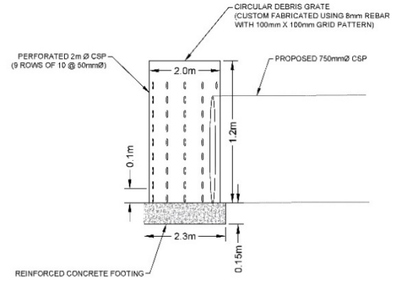


G-G"



OUTLET STRUCUTRE PROFILE





RISER STRUCTURE DETAIL - NTS

FINAL
date: 2026/09/04

No.	DATE	BY	REVISIONS
1	20260227	EEG	60% DESIGN SUBMISSION

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VERTICAL - 1:50

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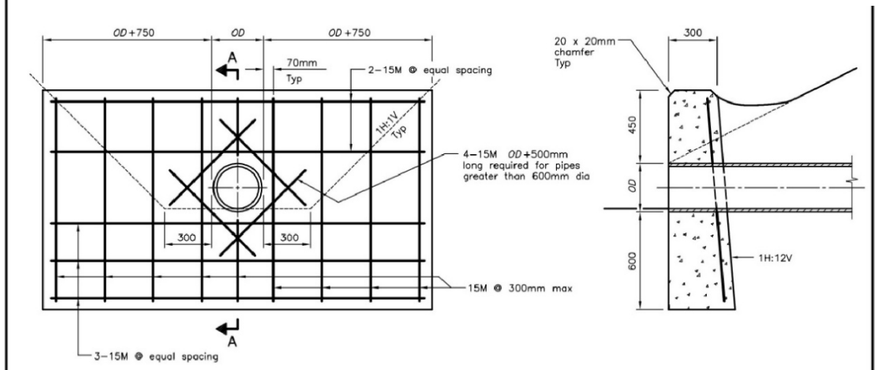
SALTFLEET CONSERVATION AREA
SC-5 WETLAND DESIGN

OUTLET STRUCTURE

DESIGN	PROJECT No.
EEG	22051
CHECKED	SHEET No.
EG	13

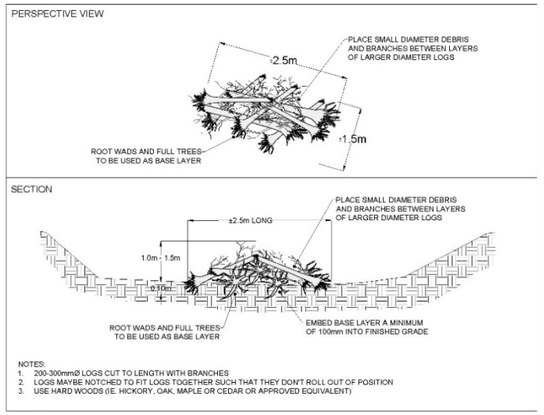


FRONT ELEVATION **SECTION A–A**

LEGEND:
OD – Outside diameter of pipe

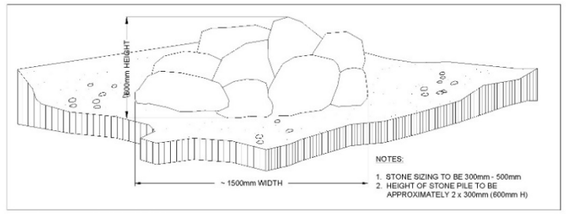
NOTES:
A This OPSD to be read in conjunction with OPSD 3940.150.
B If a steel grate is required, refer to OPSD 804.05.
C Class of concrete: 30MPa.
D Cover to reinforcing bars 70mm ± 20mm.
E All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2017	Rev 2
CONCRETE HEADWALL FOR PIPE LESS THAN 900mm DIAMETER		
	OPSD 804.030	

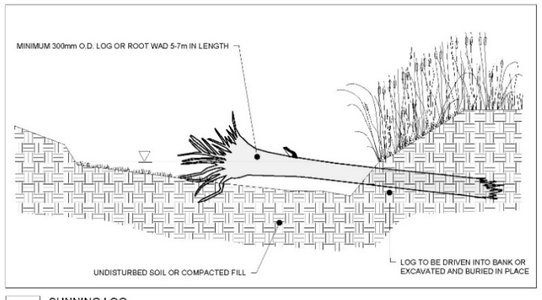


D2 WOODY DEBRIS DETAIL
N.T.S.

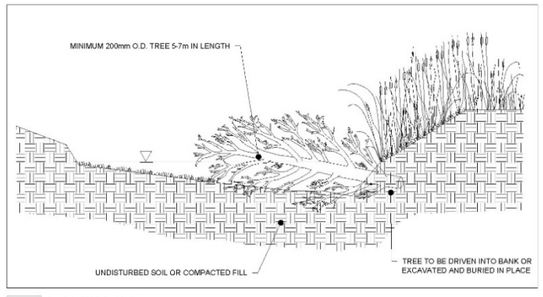
D50 - STONE SIZING GRADATION 500mm RIFFLESTONE (mm)	
800 - 900	10%
700 - 800	10%
600 - 700	15%
500 - 600	15
400 - 500	10%
300 - 400	5%
150 - 300	5%
< 150	5%
Granular "B" TYPE I	25%
SUM	100%
NATIVE BANK MATERIAL TO BE MIXED WITH GRANULAR B TO FILL INTERSTITIAL VOIDS	



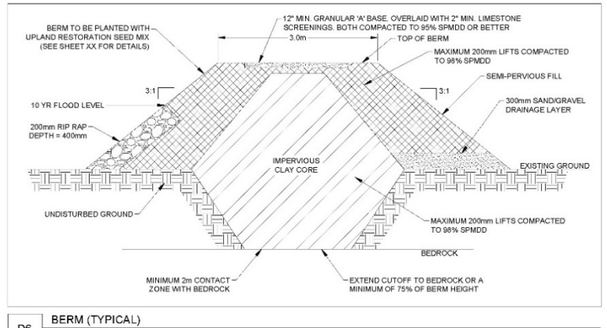
D3 STONE PILE (TYPICAL)
N.T.S.



D4 SUNNING LOG
N.T.S.



D5 TREE HABITAT
N.T.S.



D6 BERM (TYPICAL)
N.T.S.

EROSION AND SEDIMENT CONTROL NOTE:

1. THE EROSION AND SEDIMENT CONTROL STRATEGIES OUTLINED ON THE PLANS ARE NOT STATIC AND MAY NEED TO BE UPGRADED/AMENDED AS SITE CONDITIONS CHANGE TO MINIMIZE SEDIMENT LADEN RUN-OFF FROM LEAVING THE WORK AREAS. IF THE PRESCRIBED MEASURES ON THE PLANS ARE NOT EFFECTIVE IN PREVENTING THE RELEASE OF A DELETERIOUS SUBSTANCE, INCLUDING SEDIMENT, THEN ALTERNATIVE MEASURES MUST BE IMPLEMENTED IMMEDIATELY TO MINIMIZE POTENTIAL ECOLOGICAL IMPACTS.
2. STAGING AND STOCKPILE AREA SHOULD BE MINIMUM 15 METRES AWAY FROM THE TOP OF BANK.
3. MATERIAL STORED IN THE STOCKPILE AREA SHOULD BE LESS THAN 2 METRES HIGH.
4. CONTRACTOR SHALL MONITOR THE WEATHER ON AN ONGOING BASIS. SHOULD AN UNEXPECTED STORM ARISE, CONTRACTOR SHALL REMOVE ALL UNFIXED ITEMS FROM THE REGIONAL STORM FLOOD PLAIN THAT WOULD HAVE THE POTENTIAL TO CAUSE A SPILL OR AN OBSTRUCTION TO FLOW, E.G. FUEL TANKS, PORTA-POTTIES, MACHINERY, EQUIPMENT, CONSTRUCTION MATERIALS, ETC.

FISHERIES TIMING WINDOW:

THERE SHALL BE NO IN-WATER WORK OR ACTIVITY FROM SEPTEMBER 30TH TO JULY 15TH.

NOTE:
ALL TREE REMOVAL TO OCCUR OUTSIDE OF BAT ACTIVE PERIOD (APRIL 1 - SEPTEMBER 30). IF THIS TIMING IS NOT FEASIBLE, A DETAILED ASSESSMENT OF AVAILABLE ROOST TREES IS RECOMMENDED TO BE COMPLETED WITHIN TREED AREAS PROPOSED TO BE IMPACTED.

CHANNEL OPENING NOTES:

1. AFTER STABILIZATION OF THE BANKS IS CONFIRMED, FLOW IS TO BE REINITIATED INTO CHANNEL UNDER SUPERVISION OF THE PROJECT FLUVIAL GEOMORPHOLOGIST.
2. CONTRACTOR SHALL ENSURE THAT CHANNEL REMAINS ISOLATED FROM FLOWS UNTIL THE BANK WORK IS COMPLETE.

AREA STABILIZATION:

EROSION CONTROL BLANKETS ARE TO BE PLACED ON THE BERM AND NATURAL CHANNEL AREA TO CONTROL EROSION AFTER SEEDING. ECB TO BE COIR 400 BLANKET OR APPROVED EQUIVALENT AND INSTALLED AS PER MANUFACTURER'S SPECIFICATIONS.

CONSTRUCTION SUPERVISION:

THE FLUVIAL GEOMORPHOLOGIST SHALL BE ON SITE OR AVAILABLE DURING ALL PHASES OF CONSTRUCTION OF THE CHANNEL AND IN-WATER WORKS.

GENERAL CREEK NOTES

1. BATTLEFIELD CREEK IS CLASSIFIED AS A COLDWATER SYSTEM WITH AQUATIC HABITAT WITHIN THE CONSTRUCTION AREA. AS A RESULT OF THESE CHARACTERISTICS A CONSTRUCTION TIMING WINDOW THAT PROHIBITS IN-WATER CONSTRUCTION ACTIVITIES BETWEEN SEPT 30TH AND JULY 15TH MUST BE RESPECTED.
2. ALL CHANNEL ACTIVITIES MUST BE COMPLETED IN THE DRY USING CONVENTIONAL DAM AND PUMP METHODS (IN-STREAM PLUG AND BYPASS PUMPING), OR A COMBINATION OF DIVERSION PIPING AND DAM AND PUMP METHODS.
3. NEW BANKS TO BE INTEGRATED INTO EXISTING BANK HEIGHT IN BOTH UPSTREAM AND DOWNSTREAM DIRECTIONS AND BE KEYED IN FOR 2-5M.
4. ANY FILL MATERIAL IS TO BE COMPACTED TO 95% SPD AND CONFIRMED WITH COMPACTION TESTING.
5. PROPER EROSION AND SEDIMENT CONTROL MEASURES TO BE USED AT ALL LOCATIONS TO PREVENT SEDIMENT FROM ENTERING WATER COURSE.
6. BANKS TO BE REVEGETATED AS PER THE DESIGN DRAWINGS WITH COIR FABRIC, SEED AND STABILIZED WITH NATIVE VEGETATION AS PER SPECIFICATIONS.
7. CONTRACTOR TO RESTORE ANY DAMAGED AREAS TO THE EXISTING CONDITION OR TO THE SATISFACTION OF THE CLIENT AND CONTRACT ADMINISTRATOR.

FISHERIES MITIGATION NOTES

1. FISH ARE TO BE COLLECTED AND RELOCATED FROM THE CONSTRUCTION AREA PRIOR TO THE BYPASS PUMPING/DIVERSION PIPING AND SUBSEQUENT CHANNEL DEWATERING, AND RELEASED ALIVE IMMEDIATELY DOWNSTREAM. ANY FISH COLLECTION AND RELOCATION SHALL BE COMPLETED BY A QUALIFIED FISHERIES PROFESSIONAL UNDER A SCIENTIFIC COLLECTORS PERMIT, ISSUED BY THE MINISTRY OF NATURAL RESOURCES.
2. THE CONTRACTOR WILL BE RESPONSIBLE FOR ENSURING THE CONTINUOUS OPERATION OF THE BYPASS PUMPING/DIVERSION PIPING, TO ENSURE THAT THE WATER FLOW WILL BE MAINTAINED CONTINUOUSLY DOWNSTREAM OF THE WORK AREA (DURING ALL STAGES OF THE WORK), AND DISCHARGED BACK INTO THE CHANNEL USING A DIFFUSER/DISSIPATER TO ENSURE THAT THE RETURNING WATER DOES NOT SCOUR OR ERODE THE STREAMBED AND BANKS. BYPASS PUMPING/DIVERSION PIPING IS TO BE ADEQUATELY SIZED TO CONTROL A RANGE OF ANTICIPATED CREEK FLOWS. THE ANTICIPATED BASE FLOW RATE WITHIN THE CHANNEL DURING THE CONSTRUCTION TIMING WINDOW IS UNKNOWN AT THIS TIME.

ENVIRONMENTAL NOTES

1. IN ORDER TO PREVENT THE SPREAD OF COMMON REED OR OTHER NON-NATIVE SPECIES, EQUIPMENT SHOULD ARRIVE ON SITE CLEAN AND FREE OF PLANT MATERIALS AND MUD.
2. REFUELLING ACTIVITIES SHOULD BE CONDUCTED IN AN ENVIRONMENTALLY RESPONSIBLE MANNER. THIS INCLUDES KEEPING THE FUELLING OPERATIONS 30 M SETBACK FROM THE WATER'S EDGE, DRAINAGE PATHWAY OR UNLESS OTHERWISE DIRECTED BY THE CONTRACT ADMINISTRATOR. SPILL KITS AND SUFFICIENT AMOUNT OF SORBANT MATERIAL SHOULD BE AVAILABLE ON THE FUEL OR SERVICE VEHICLES.
3. ANY PART OF EQUIPMENT ENTERING THE WATER SHOULD BE FREE OF FLUID LEAKS AND EXTERNALLY CLEANED AND DEGREASED TO PREVENT ANY DELETERIOUS SUBSTANCES FROM ENTERING THE WATER.
4. ANY SPILLS RESULTING FROM REFUELLING OPERATIONS, HYDRAULIC LEAKS, MAINTENANCE ETC. MUST BE REPORTED IMMEDIATELY TO THE CONTRACT ADMINISTRATOR WHO WILL THEN NOTIFY THE SPILLS ACTION CENTRE IF REQUIRED.
5. ALL MATERIALS AND EQUIPMENT USED FOR THE PURPOSE OF SITE PREPARATION AND PROJECT COMPLETION SHOULD BE OPERATED AND STORED IN A MANNER THAT PREVENTS ANY DELETERIOUS SUBSTANCE (E.G. PETROLEUM PRODUCTS, SILT, DEBRIS, ETC) FROM ENTERING THE WATER.
6. THE AREA OF DISTURBANCE WITHIN THE CHANNEL AND ON THE STREAMBANKS MUST BE KEPT TO A MINIMUM. HEAVY EQUIPMENT TRAFFIC WILL BE RESTRICTED TO ESTABLISHED TRAVEL PATHWAYS.
7. STOCKPILE AND STAGING AREAS SHOULD BE WELL REMOVED FROM THE WATERCOURSE AND CONTAINED BY APPROPRIATE SEDIMENT AND EROSION CONTROLS.
8. SEDIMENT AND EROSION CONTROL MEASURES SHOULD BE INSTALLED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. THE INSTALLED MEASURES SHOULD BE ROUTINELY INSPECTED TO ENSURE THAT THEY ARE FUNCTIONING AS INTENDED. DISTURBED SOILS SHOULD BE STABILIZED IMMEDIATELY WITH SUITABLE PLANTINGS/SEED/MAT. MAINTENANCE SHOULD CONTINUE UNTIL SUCH TIME AS THE DISTURBED AREAS ARE SUFFICIENTLY STABILIZED THROUGH VEGETATIVE GROWTH.
9. TRAFFIC MANAGEMENT PLAN OR CROSSING CONSTRAINTS - SPAN STRUCTURE ONLY. SPECIFIC DETAILS TO BE PROVIDED BY CONTRACTOR.
10. WEATHER CONDITIONS SHOULD BE MONITORED TO ADEQUATELY PREPARE THE SITE FOR RAIN EVENTS.
11. AS CONSTRUCTION ACTIVITIES IN AND AROUND WATER IS CHALLENGING, WITH A SIGNIFICANT POTENTIAL FOR ENVIRONMENTAL EFFECT, IT IS RECOMMENDED THAT THE CONTRACTOR ORGANIZE AN IN-WATER CONSTRUCTION TEAM WHICH WILL CONSIST OF AN ENVIRONMENTAL MONITOR, SUPERVISOR, SELECTED MACHINE OPERATORS AND GENERAL LABOURERS. THIS TEAM WILL BE RESPONSIBLE FOR THE CONSTRUCTION ACTIVITIES WITHIN THE CHANNEL INCLUDING THE CONSTRUCTION OF THE CHANNEL AND RE-GRADING OF THE STREAMBANKS AND FLOODPLAINS.

FINAL
date: 2026/09/04

No.	DATE	BY	REVISIONS
1	20260227	EEG	60% DESIGN SUBMISSION

DATE: February 27, 2026
SCALE:

CONSULTANT
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Hamilton Conservation Authority
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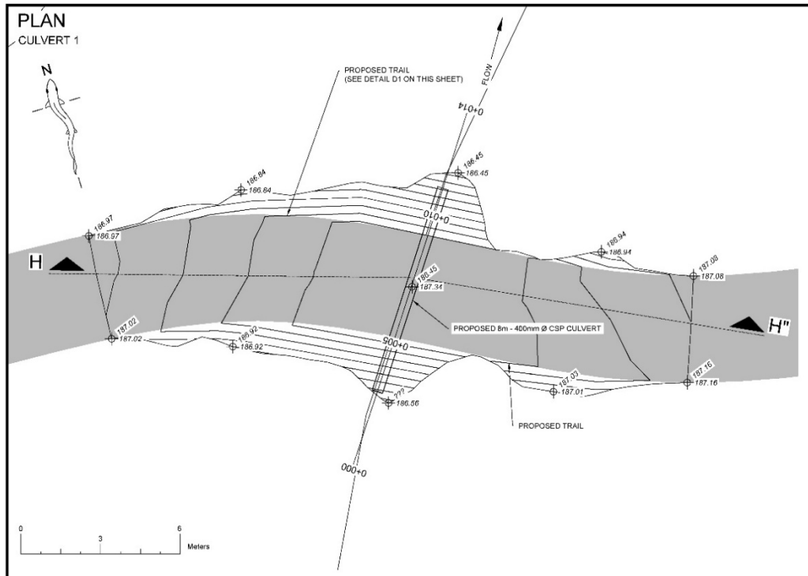
SALTFLEET CONSERVATION AREA
SC-5 WETLAND DESIGN

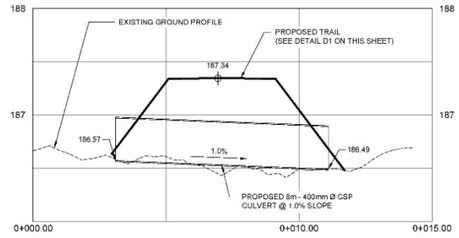
DETAILS

DESIGN	PROJECT No.
EEG	22051
CHECKED	SHEET No.
EG	14

PLAN
CULVERT 1



CULVERT 1 PROFILE



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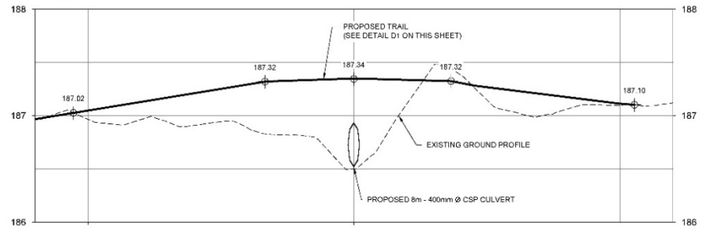



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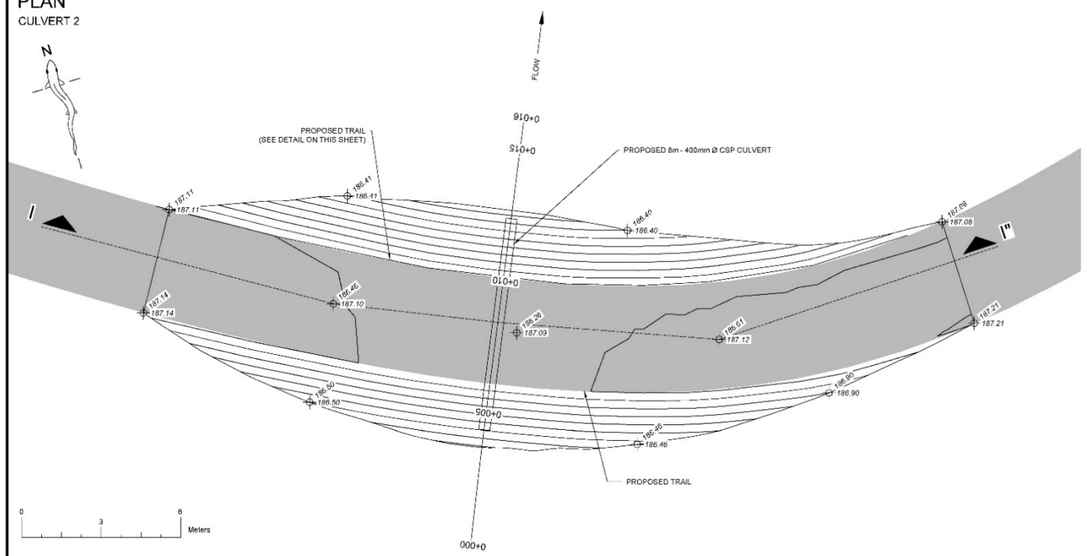
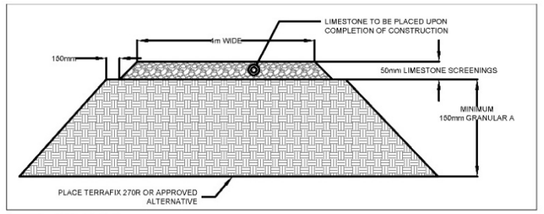
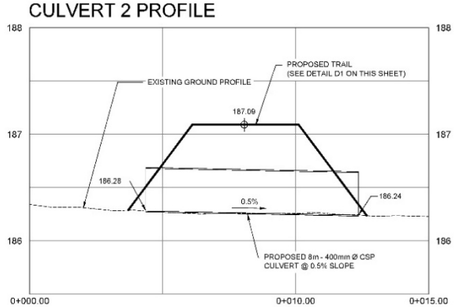
CULVERT 2



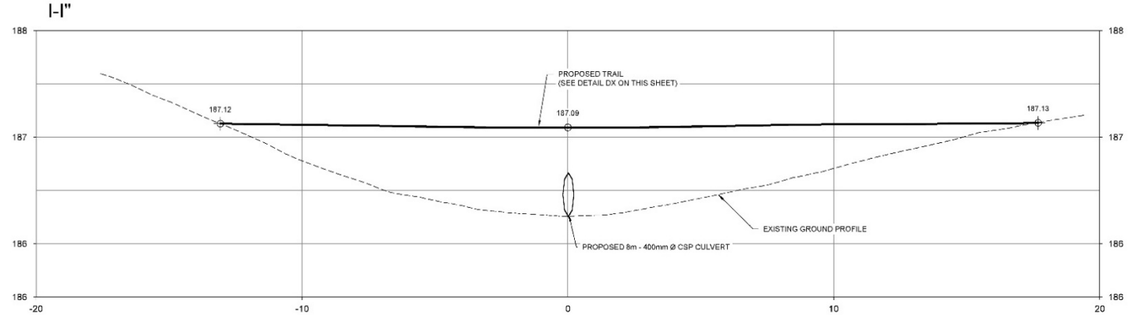


D1 TRAIL DETAIL
N.T.S.

CULVERT 2 PROFILE



I-I"



FINAL
date: 2026/09/04

No.	DATE	BY	REVISIONS
1	20260227	EEG	60% DESIGN SUBMISSION

DATE: February 27, 2026

SCALE:
HORIZONTAL - 1:100
VERTICAL - 1:25

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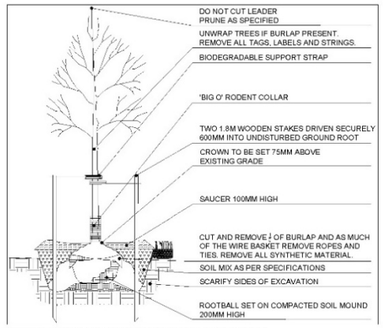
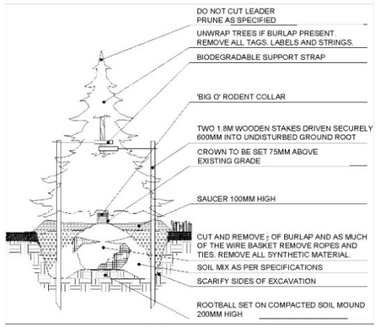
SALTFLEET CONSERVATION AREA
SC-5 WETLAND DESIGN

TRAIL CULVERTS DETAIL

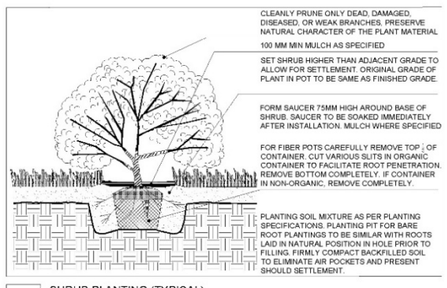
DESIGN	PROJECT No.
EEG	22051
CHECKED	SHEET No.
EG	16



D9 DECIDUOUS TREE PLANTING (TYPICAL)
N.T.S.



D10 CONIFEROUS TREE PLANTING (TYPICAL)
N.T.S.



D11 SHRUB PLANTING (TYPICAL)
N.T.S.

WETLAND RESTORATION SEED MIX

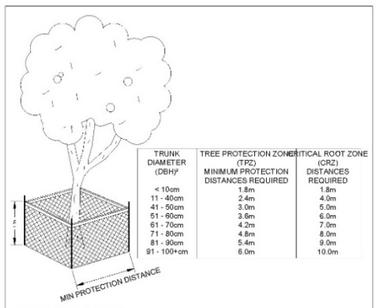
1. SEED MIX BASED ON SEED MIXES SUITABLE FOR OUR WATERSHED (HCA 2019)
2. SEED MIX TO BE APPLIED AT A RATE OF 22 - 25KG/HA
3. CONTRACTOR TO SOW NURSE CROP OF OATS (Avena sativa) AND BUCKWHEAT (Fagopyrum esculentum) OVER ENTIRE AREA AT A RATE OF 35 KG/HA
4. SEED DISPERSAL METHOD TO BE HAND SEEDING AT SPECIFIED RATES

Botanical Name	Common Name	% of mix
Asclepias incarnata ssp. incarnata	Swamp Milkweed	1
Symphyotrichum novae-angliae	New England Aster	1
Symphyotrichum puniceum var. puniceum	Swamp Aster	1
Carex vulpinoidea	Fox Sedge	35
Elymus viginicus var. virginicus	Virginia Wildrye	35
Eutrochium maculatum	Spotted Joe-Pye-Weed	1
Iris versicolor	Harlequin Blue Flag	1
Juncus effusus ssp. solutus	Soft Rush	5
Leersia oryzoides	Rice Cutgrass	1
Mimulus ringens	Square-stemmed Monkeyflower	1
Scirpus atrovirens	Dark-green Bulrush	8
Scirpus cyperinus	Cottongrass Bulrush	1
Verbena hastata	Blue Vervain	9
TOTAL		100

UPLAND RESTORATION SEED MIX

1. SEED MIX BASED ON SEED MIXES SUITABLE FOR OUR WATERSHED (HCA 2019)
2. SEED MIX TO BE APPLIED AT A RATE OF 22 - 25KG/HA
3. CONTRACTOR TO SOW NURSE CROP OF OATS (Avena sativa) AND BUCKWHEAT (Fagopyrum esculentum) OVER ENTIRE AREA AT A RATE OF 35 KG/HA
4. SEED DISPERSAL METHOD TO BE HAND SEEDING AT SPECIFIED RATES

Botanical Name	Common Name	% of mix
Oenothera biennis	Common Evening Primrose	25
Anemonastrum canadense	Canada Anemone	1
Asclepias syriaca	Common Milkweed	2
Symphyptrichum cordifolium	Heart Leaved Aster	1
Symphyptrichum novae-angliae	New England Aster	1
Carex granularis	Granular Sedge	15
Clematis virginiana	Virginia Virgin's-bower	1
Elymus virginicus var. virginicus	Virginia Wildrye	40
Euthamia graminifolia	Grass-leaved Goldenrod	1
Monarda fistulosa	Wild Bergamot	1
Rudbeckia hirta	Black-eyed Susan	10
Solidago canadensis	Canada Goldenrod	2
TOTAL		100



TRUNK DIAMETER (DBH)²	TREE PROTECTION ZONE (TPZ) MINIMUM PROTECTION DISTANCES REQUIRED	CRITICAL ROOT ZONE (CRZ) DISTANCES REQUIRED
< 10cm	1.8m	1.8m
11 - 40cm	2.4m	4.0m
41 - 50cm	3.0m	5.0m
51 - 60cm	3.6m	6.0m
61 - 70cm	4.2m	7.0m
71 - 80cm	4.8m	8.0m
81 - 90cm	5.4m	9.0m
91 - 100+cm	6.0m	10.0m

TREE PROTECTION BARRIER:

1. BARRIER TO BE 1.2m HIGH AND CONSIST OF ORANGE PLASTIC WEB SNOW FENCING ON WOOD FRAME OF 2"X4" S, SUPPORTED ON METAL "T" BARS, 2.0m C/C MAX.
2. WHERE SOME EXCAVATE OR FILL HAS TO BE TEMPORARILY LOCATED NEAR A TREE PROTECTION BARRIER PLYWOOD MUST BE USED TO ENSURE NO MATERIAL ENTERS THE TREE PROTECTION ZONE.
3. LL SUPPORTS AND BRACING SHOULD BE OUTSIDE THE TREE PROTECTION ZONE. ALL SUCH SUPPORTS SHOULD MINIMIZE DAMAGING ROOTS OUTSIDE THE TREE PROTECTION BARRIER.
4. NO CONSTRUCTION ACTIVITY, GRADE CHANGES, SURFACE TREATMENT OR EXCAVATIONS OF ANY KIND IS PERMITTED WITHIN THE TREE PROTECTION ZONE.

D12 TREE PROTECTION BARRIER (TYPICAL)
N.T.S.

TREE AND SHRUB PLANT LIST

Key	Botanical Name	Common Name	Cal. (mm)	Ht. (cm)	Root Condition	QNTY.
	TREES					
qm	Quercus macrocarpa	Bur Oak	60		W.B.	40
qr	Quercus rubra	Red Oak	60		W.B.	50
pd	Populus deltoides	Eastern Cottonwood	60		W.B.	40
as	Acer saccharinum	Silver Maple	60		W.B.	60
ps	Prunus serotina	Black Cherry	40 - 50		W.B.	40
pst	Pinus strobus	White Pine	60		W.B.	85
co	Carya ovata	Shagbark Hickory	60		W.B.	57
ba	Betula alleghaniensis	Yellow Birch	60		W.B.	48
ta	Tilia Americana	American Basswood	60		W.B.	40
pt	Populus tremuloides	Trembling Aspen	40 - 50		W.B.	50
rt	Rhus typhina	Staghorn Sumac	40 - 50		W.B.	30
cm	Crataegus mollis	Downy Hawthorn	40 - 50		W.B.	37
cc	Crataegus crus-galli	Cockspur Hawthorn	40 - 50		W.B.	45
	TOTAL					602
	SHRUBS					
nm	Ilex verticillata	Winterberry		80	3 Gal. Pot	400
cs	Cornus sericea	Red Osier Dogwood		80	3 Gal. Pot	600
pv	Prunus virginia	Chokecherry		60	3 Gal. Pot	500
ro	Rubus odoratus	Flowering Raspberry		80	3 Gal. Pot	1000
seq	Salix exigua	Sandbar Willow		60	3 Gal. Pot	500
sl	Salix lucida	Shining Willow		60	3 Gal. Pot	500
sp	Salix petiolaris	Slender Willow		60	3 Gal. Pot	500
sc	Sambucus canadensis	Elderberry		80	3 Gal. Pot	500
sa	Spirea alba	Meadowsweet		60	3 Gal. Pot	500
vl	Viburnum lentago	Nannyberry		60	3 Gal. Pot	500
co	Cephalanthus occidentalis	Buttonbush		80	3 Gal. Pot	400
cf	Cornus foemina	Grey Dogwood		80	3 Gal. Pot	500
	TOTAL					6400

SITE REVEGETATION:

PROJECT MANAGER TO CONFIRM WITH HCA ALL PLANT REMOVALS AND PLANTS TO BE SALVAGED PRIOR TO CONSTRUCTION. SALVAGED PLANTS TO BE STORED ON SITE AND PROTECTED FROM CONSTRUCTION ACTIVITIES UNTIL PLANTING.

ALL DISTURBED AREAS, INCLUDING ACCESS ROUTES, STAGING AREAS AND WORK ZONES ARE TO BE CLEARED (PLANT MATERIAL TO BE SALVAGED) PRIOR TO CONSTRUCTION AND REVEGETATED WITH SPECIFIED SEED MIX AND SALVAGED PLANT MATERIAL UNLESS DIRECTED OTHERWISE BY DESIGN DETAILS.

VEGETATION BUFFER:

THE LIMIT OF GRADING AND A REDUCED VEGETATION PROTECTION ZONE (LESS THAN 30m FROM DRIPLINE) SHOULD BE DELINEATED WITH HEAVY DUTY SEDIMENT FENCE.

LANDSCAPE NOTES:

1. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH BY-LAWS AND CODES HAVING JURISDICTION OVER SITE LOCATION.
2. COMPLETE ALL WORK TO THE SATISFACTION OF THE PROJECT MANAGER. REPORT ANY CHANGES, DISCREPANCIES OR SUBSTITUTIONS TO THE PROJECT MANAGER FOR REVIEW. OBTAIN APPROVAL FROM THE PROJECT MANAGER BEFORE PROCEEDING.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE EXISTING SERVICE LOCATIONS.
4. EXACT LOCATIONS OF PLANT MATERIAL WILL BE DETERMINED BY PLACEMENT OF SITE SERVICES SUCH AS HYDRO VAULTS, METERS, UTILITIES ROOF RAIN WATER LEADERS, DRIVEWAYS, LIGHT STANDARDS, ETC.
5. ALL PLANT MATERIAL LOCATIONS TO BE STAKED OR MARKED OUT AND APPROVED BY PROJECT MANAGER PRIOR TO INSTALLATION.
6. SUPPLY ALL PLANT MATERIAL IN ACCORDANCE WITH THE CANADIAN STANDARDS FOR NURSERY STOCK (7TH ED.).
7. INSTALL PLANT MATERIAL ACCORDING TO DETAILS SHOWN.
8. DISTURBED SOIL AREAS AROUND TREES AND SHRUBS ARE TO BE COVERED WITH SHREDDED CONIFER BARK MULCH SUCH AS CANADA RED OR GRO BARK, SPM MULCH, OR APPROVED EQUIVALENT. ALTERNATIVE MULCHES MUST BE APPROVED BY THE PROJECT MANAGER.
9. CONTRACTOR TO UTILIZE LAYOUT DIMENSIONS WHERE PROVIDED.
10. PROVIDE PLANTING BED AREA AS NOTED ON THE DRAWING OR TO ACCOMMODATE MATURE SIZE OF PLANT MATERIAL.
11. ALL SUPPORT SYSTEMS MUST BE REMOVED TO THE SATISFACTION OF THE PROJECT MANAGER ONCE THE TREE IS ESTABLISHED.
12. SUPPLY AND PLACE TOPSOIL IN ACCORDANCE WITH OPSS 570 TO A MINIMUM DEPTH OR 100MM UNLESS OTHERWISE SPECIFIED.
13. SUPPLY AND PLACE SEED IN ACCORDANCE WITH OPSS 572 UNLESS OTHERWISE SPECIFIED.
14. CONTRACTOR TO PROVIDE NECESSARY EROSION CONTROL PROTECTION AS REQUIRED TO ENSURE SOIL STABILIZATION AND PROPER SEED GERMINATION.
15. ALL DIMENSIONS IN MM UNLESS OTHERWISE NOTED.
16. IF DISCREPANCIES ARISE BETWEEN PLANT MATERIAL COUNT SHOWN ON DRAWING AND PLANT LIST THE DRAWING SHALL BE CONSIDERED CORRECT.
17. CONTRACTOR TO PROVIDE MINIMUM 1 YEAR WARRANTY PERIOD FOR SEEDING AND ALL PLANT MATERIAL FOR FINAL ACCEPTANCE AND SUBSTANTIAL PERFORMANCE.
18. ANY SITE PLAN OR GRADING AND SERVICING SHOWN IS FOR INFORMATION ONLY. REFER TO APPROVED DRAWINGS.

WETLAND PLANT LIST

KEY	BOTANICAL NAME	COMMON NAME	SIZE	CONT	FLOOD PLAIN QNTY.
	EMERGENT SPECIES				
sl	Sagittaria latifolia	Common Arrowhead	250cm Ht.	#1 cont	875
ap	Alisma subcordatum	Water Plantain	250cm Ht.	#1 cont	870
as	Sparganium eurycarpum	Common Bur reed	250cm Ht.	#1 cont	870
	TOTAL				2615
	SUBMERGENT SPECIES				
eo	Elodea canadensis	Common Waterweed	250cm Ht.	#1 cont	780
cd	Nymphaea alba	White Water Lily	250cm Ht.	#1 cont	780
	TOTAL				1560

NOTE:

COMMON CATTAIL (Typha latifolia) IS EXPECTED TO SEED IN ON ITS OWN.

FINAL
date: 2026/09/04

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1	20260227	EEG	60% DESIGN SUBMISSION

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SALTFLEET CONSERVATION AREA
SC-5 WETLAND DESIGN

PLANTING PLAN DETAILS

DESIGN	PROJECT No.
EEG	22051
CHECKED	SHEET No.
EG	26

APPENDIX 3

Operational Revenue and Expenses - 2025

Devil's Punchbowl Operational Revenue and Expenses - 2025

Operation Revenues	Amount	% of Revenues
Admissions (Autogates)	$ 90,906.05	87.5%
Other	$ 13,009.57	12.5%
Total Revenues	**$ 103,915.62**	**100%**
Operation Expenses	**Amount**	**% of Expenses**
Salaries – Wages and Benefits	$ 91,977.70	80%
Contracts	$ 7,899.60	6.9%
Office	$ 7,128.76	6.2%
Taxes	$ 2,135.72	1.9%
Maintenance	$ 2,073.20	1.8%
Materials and Supplies	$ 2,044.07	1.7%
Equipment	$ 977.87	0.8%
Utilities	$ 852.94	0.7%
Total Expenses	**$ 114,911.86**	**100%**

APPENDIX 4

Visitor Data – Trail Counter Summary and Public Survey Results

Public Surveys – Summary of Key Comments and Resolutions

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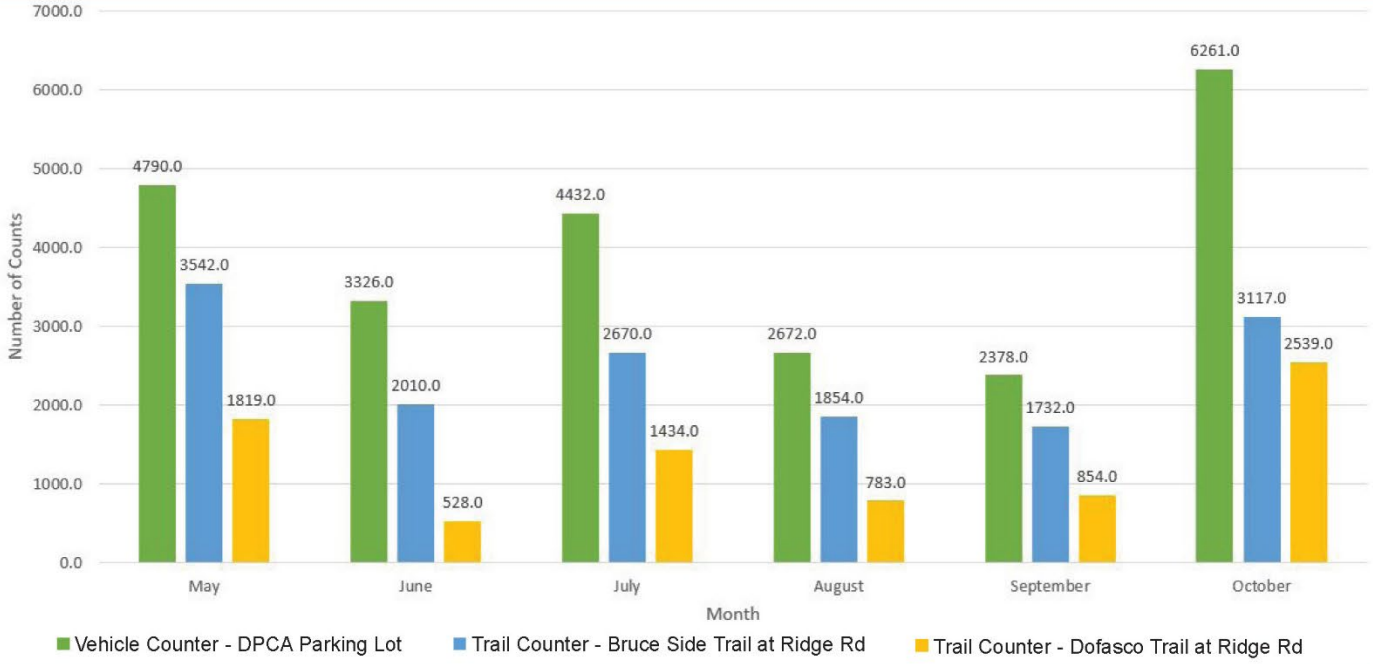
Appendix 4

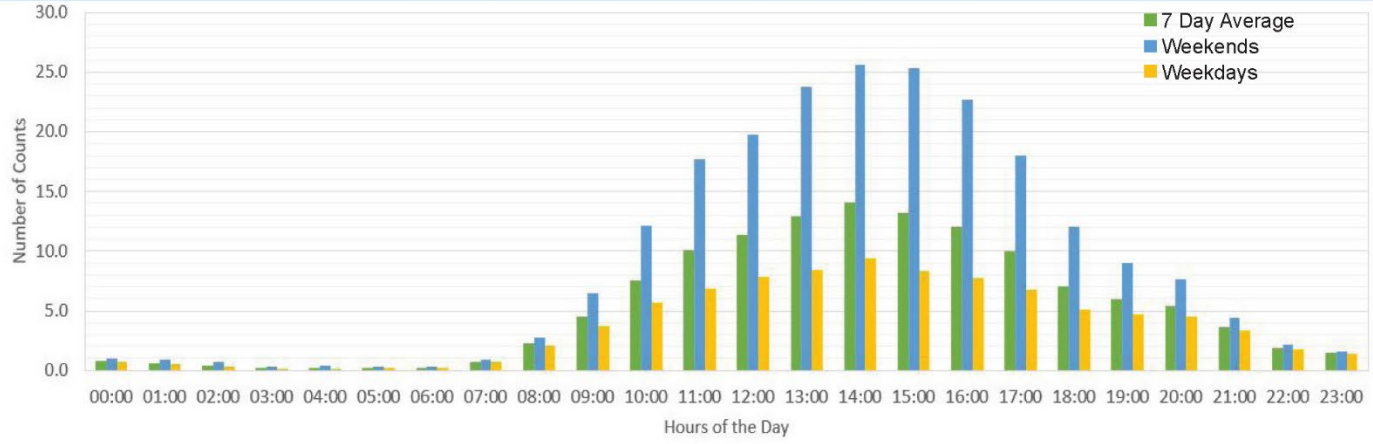
Devil's Punchbowl 2022 Trail and Vehicle Counters

Vehicle and Trail Counter Summary

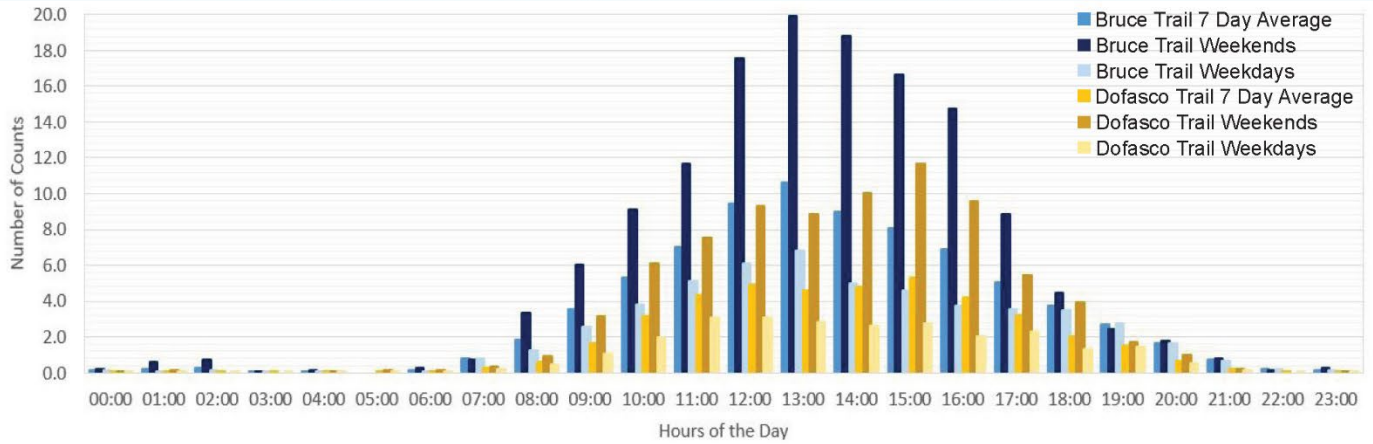
Devil's Punchbowl Vehicle and Trail Counters - Monthly Totals 2022



Parking Lot Vehicle Counter - 24 Hour Counts



Trail Counters (Bruce Side Trail at Ridge Rd and Dofasco Trail at Ridge Rd) - 24 Hour Counts



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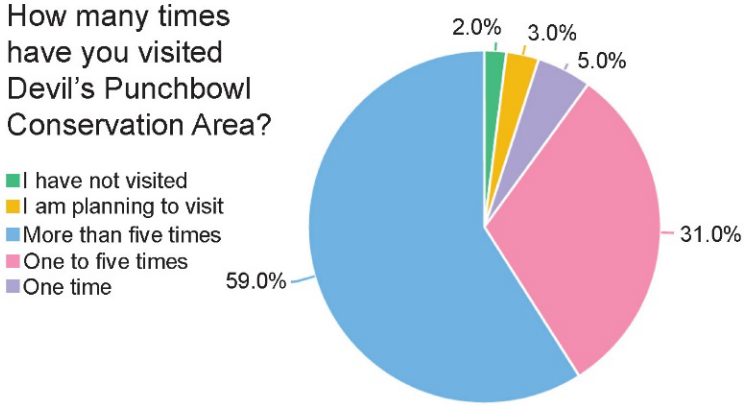
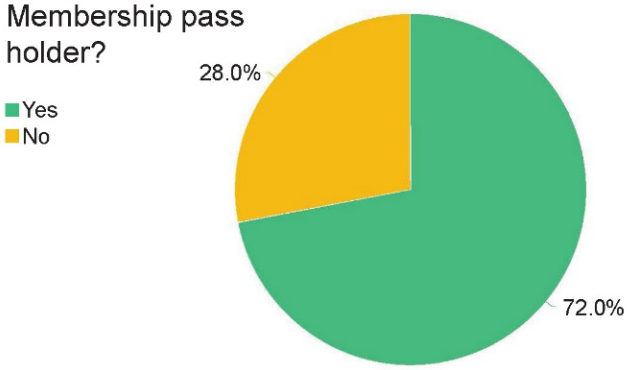
Devil's Punchbowl Survey Results Summary

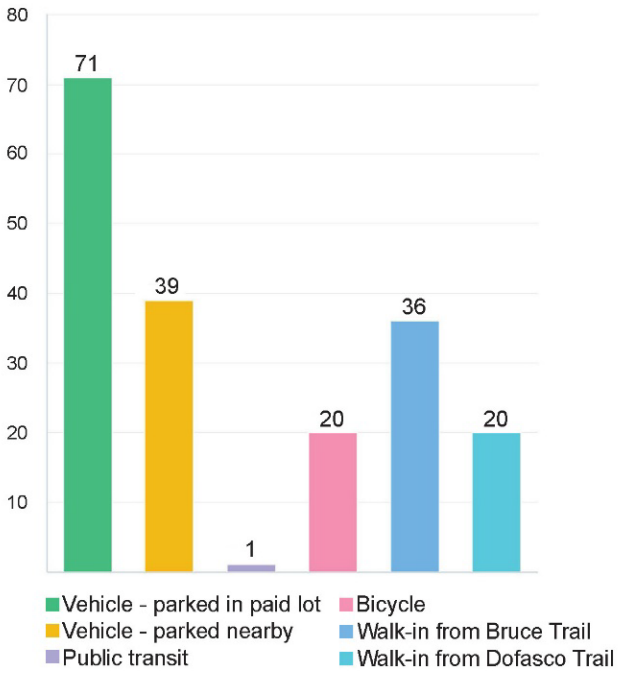
How many times have you visited Devil's Punchbowl Conservation Area?



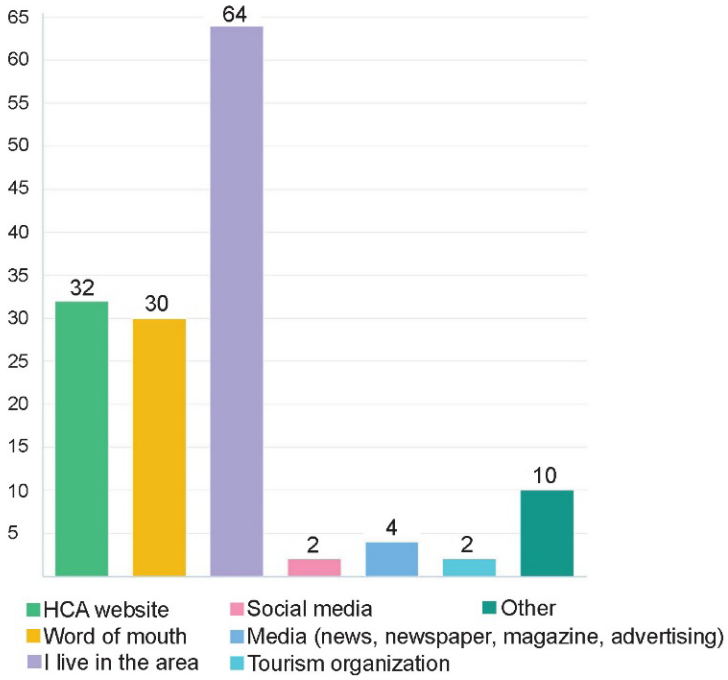
Are you an HCA Membership pass holder?



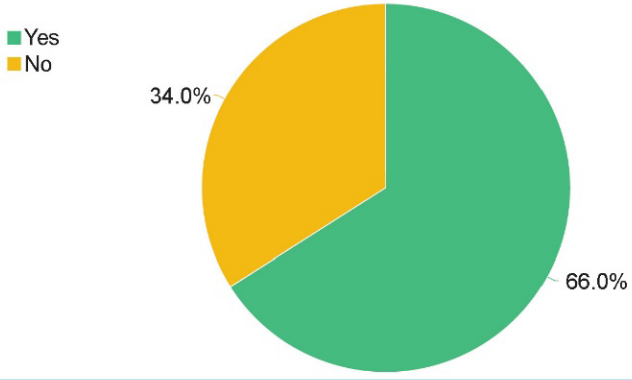
How did you travel to Devil's Punchbowl Conservation Area? (Choose all that apply)



How did you learn about Devil's Punchbowl Conservation Area? (Choose all that apply)



Are you aware that the Dofasco 2000 Trail connects DPCA, Saltfleet and Vinemount Conservation Areas?



What was your favourite thing about your visit?

- The geological features
- The view
- Being in nature
- The accessibility
- The waterfall
- Different each time you see it
- The trails
- Visiting the market

Do you have any comments or suggestions for us?

- Improved directional signage
- More parking
- Connect to other trails
- Better access to market
- Access to washrooms
- More safety signage

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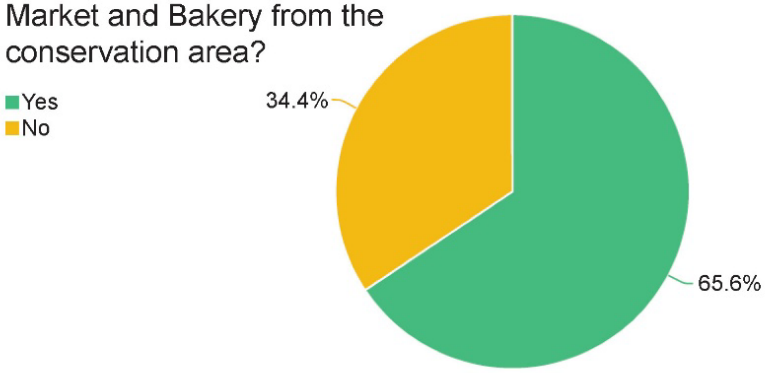
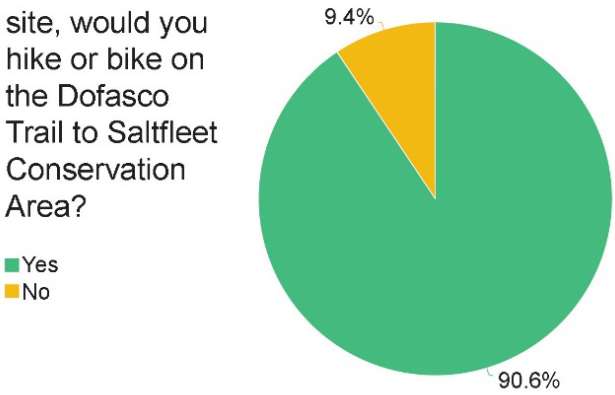
DPCA Market Lands Survey Results Summary

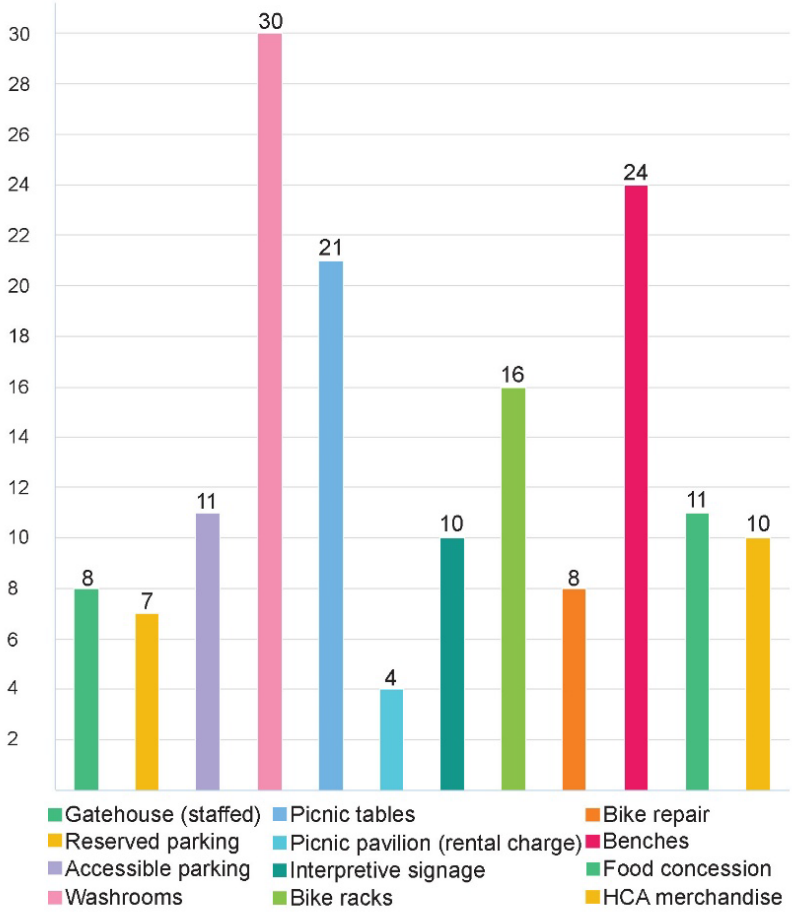
Do you visit the Punchbowl Market and Bakery from the conservation area?



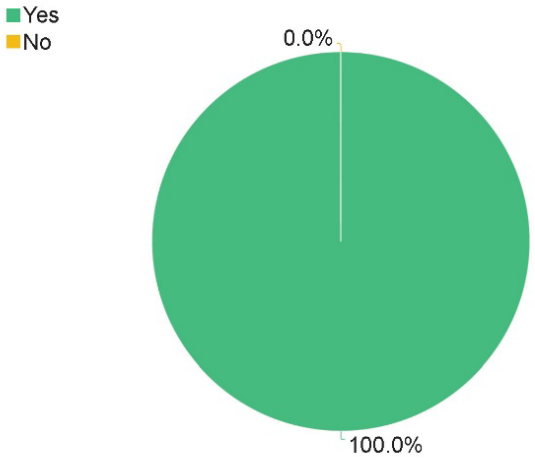
From the market site, would you hike or bike on the Dofasco Trail to Saltfleet Conservation Area?



HCA is considering the market lands to be the "gateway" to Devil's Punchbowl Conservation Area. Along with expanded parking, what services would be important to you? (Choose all that apply, 32 respondants in total)



New wetlands are being planned for part of the market lands. Would you visit the wetlands while at the conservation area?



What is your favourite thing about your visit to the market and bakery?

- Supporting small business
- Delicious baked goods
- Local produce
- Friendly staff
- Nice treat after hiking
- Souvenirs

Do you have any comments or suggestions for us?

- Keep focus on nature and conservation
- Include directional signage
- Improved pedestrian paths along Ridge Road
- Make sure the area is accessible
- Opportunities for guided visits
- Garbage and recycling facilities

Public Surveys – Summary of Key Comments and Resolutions

Summary of participants: The surveys were made public on HCA's website for any person who was interested in the project. There were posters on site at DPCA with a QR code and website link for the surveys, the surveys were promoted on HCA's social media platforms, and links were sent by email to all HCA newsletter subscribers.

Key Comments Received	Solutions Included in the Plan
Question: "Have you ever tried to visit DPCA by vehicle, but could not get into the parking lot?"	
42% of respondents selected "yes".	• Optimizing the existing parking lot at DPCA by formalizing the overflow parking area will almost double the parking capacity. • Adding a new entry/exit laneway to the existing parking lot will help traffic flow and reduce congestion at the entrance. • Adding new parking at the Market property will greatly increase capacity.
Most common themes in response to question: "Do you have any comments or suggestions for us?" (open ended) with regard to Devil's Punchbowl Conservation Area.	
17% of respondents identified a need for more wayfinding and informational signage.	• Proposed addition of new trailhead signage at the existing DPCA parking lot and on the Market property. • Proposed addition of new trail wayfinding signage across properties on either side of Ridge Road. • Proposed addition of new safety and warning signage above and below the Punchbowl gorge. • Proposed addition of new interpretive signs across the properties with information about the conservation area and the ecology of the area.
17% of respondents identified the need for more parking spaces.	• Optimizing the existing parking lot at DPCA by formalizing the overflow parking area will almost double the parking capacity. • Adding new parking at the Market property will greatly increase capacity.
15% of respondents suggested that they are	• Paid parking at this area allows respondents access to other HCA areas for the same day, HCA is taking this into account in their visitor services marketing moving forward.

unwilling to pay for parking at the conservation area.	• Adding more features on the south side of Ridge Road will offer visitors more to see and do when they visit, which could increase the perceived value of purchasing parking.
12% of respondents identified increasing safety precautions at the top of the Escarpment as a top priority.	• Proposed addition of new safety and warning signage above and below the Punchbowl gorge. • Proposed re-routing of the Bruce Trail side trail off of Ridge Road onto the Market property where possible. • Improvements to Ridge Road crossing at existing DPCA parking lot. • Ongoing maintenance and review of structures including the lookout platform, the Cross, fences and guardrails.
12% of respondents suggested that protecting natural areas should be seen as a top priority.	• Sustain DPCA's natural resource value by limiting activities to the zones outlined in this Plan. • Proposed addition of new signage below the Escarpment in the gorge clearly identifying natural areas off-limits to the public. • Proposed addition of new interpretive signage to educate visitors on the natural areas around them and why they are valuable. • Implementation of recommendations from Section 5.15 Natural Areas Recommendations. • Construction of the new wetland complex south of Ridge Road will create new habitat and protect the environment downstream by reducing flooding.
5% of respondents suggested an increase to the number of trails accessible from DPCA.	• Proposed addition of new signage highlighting connections to other natural areas and trails from DPCA. • Addition of new trails on the Market property south of Ridge Road once the wetland project has been completed. • Enhance and promote the connection between DPCA and Saltfleet Conservation Area by the Dofasco Trail.
Top 5 most popular responses to question: HCA is considering the market lands to be the 'gateway' to the Devil's Punchbowl. Along with more expanded parking, what services would be important to you? (Check all that apply).	

94% of respondents identified “washrooms” as important to them.	• The addition of public washrooms is proposed for the existing buildings on the Market property south of Ridge Road.
75% of respondents identified “benches” as important to them.	• Rest areas with benches will be included in the development of new trails on the Market property once the wetland is completed. • Benches will be included near the building on the south side of Ridge Road after it is open to the public.
66% of respondents identified “picnic tables” as important to them.	• Picnic areas will be included near the building on the property south of Ridge Road after it is open to the public.
50% of respondents identified “bike racks” as important to them.	• Bike racks will be included near the building on the south side of Ridge Road after it is open to the public.
34% of respondents identified “accessible parking” as important to them.	• Accessible parking spaces will be included in the new parking lot on the Market property. • Accessible parking will be created at the existing DPCA parking lot as part of optimization.
Question: “From the market site, would you hike or bike on the Dofasco Trail to Saltfleet Conservation Area?”	
91% of respondents selected “yes”.	• The Dofasco Trail will be re-established to connect DPCA and Saltfleet after the completion of the new wetland complex south of Ridge Road. • Addition of new trails on the Market property once the wetland project has been completed will provide connections from the proposed parking lot over to the First Road East crossing. • Proposed addition of new signage highlighting connections to other natural areas and trails from DPCA.

APPENDIX 5

Natural Inventory – Species List

5.1 Plants

5.2 Breeding Birds

5.3 Mammals

5.4 Butterflies and Dragonflies

Plant Species Inventoried

HCA staff	iNat	SPECIES_CODE	SCIENTIFIC_NAME_NHIC	COMMON_NAME_NHIC
x	x	P-ACENEGU	Acer negundo	Manitoba Maple
x		P-ACESANI	Acer nigrum	Black Maple
x	x	P-ACEPLAT	Acer platanoides	Norway Maple
x		P-ACESACC	Acer saccharinum	Silver Maple
x	x	P-ACESASA	Acer saccharum	Sugar Maple
x	x	P-ACTPACH	Actaea pachypoda	White Baneberry
x	x	P-ACTRUBR	Actaea rubra	Red Baneberry
x		P-AESHIPP	Aesculus hippocastanum	Horse Chestnut
x	x	P-EUPRUGO	Ageratina altissima var. altissima	Common White Snakeroot
x		P-AGRGRYP	Agrimonia gryposepala	Hooked Agrimony
x		P-AGR_SP	Agrimonia sp.	Agrimony Species
x		P-AGRGIGA	Agrostis gigantea	Redtop
x		P-ALIPLAN	Alisma triviale	Northern Water-plantain
x	x	P-ALLPETI	Alliaria petiolata	Garlic Mustard
x		P-ALLTRIC	Allium tricoccum	Wild Leek
x		P-AMB_SP	Ambrosia sp.	Ragweed Speices
t	t	P-AQUCANA	Aquilegia canadensis	Red Columbine
x		P-ARANUDI	Aralia nudicaulis	Wild Sarsaparilla
x	x	P-ARCLAPP	Arctium lappa	Great Burdock
x	x	P-ARITRTR	Arisaema triphyllum ssp. triphyllum	Jack-in-the-pulpit
x	x	P-ASACANA	Asarum canadense	Canada Wild-ginger
x	x	P-ASCSYRI	Asclepias syriaca	Common Milkweed
x		P-AST_SP	Aster sp.	Aster Species
t	t	P-BARVULG	Barbarea vulgaris	Bitter Wintercress
x	x	P-BETPAPY	Betula papyrifera	Paper Birch
x		P-BIDFRON	Bidens frondosa	Devil's Beggarticks
x		P-BID_SP	Bidens sp.	Beggar-ticks Species
x		P-BRA_SP	Brassica sp.	Mustard Species
x		P-BROININ	Bromus inermis	Smooth Brome
x	x	P-CARCONC	Cardamine concatenata	Cut-leaved Toothwort
x		P-CARDIPH	Cardamine diphylla	Two-leaved Toothwort
x		P-CARALBU	Carex albursina	White Bear Sedge

Plant Species Inventoried (cont.)

HCA staff	iNat	SPECIES_CODE	SCIENTIFIC_NAME_NHIC	COMMON_NAME_NHIC
x		P-CARCEPD	Carex cephaloidea	Thin-leaved Sedge
x		P-CARPLAN	Carex plantaginea	Plantain-leaved Sedge
t	t	P-CARPLAT	Carex platyphylla	Broad-leaved Sedge
x		P-CARVULP	Carex vulpinoidea	Fox Sedge
x		P-CARCORD	Carya cordiformis	Bitternut Hickory
x	x	P-CAUGIGA	Caulophyllum giganteum	Giant Blue Cohosh
x		P-CAUTHAL	Caulophyllum thalictroides	Blue Cohosh
t	t	P-CERCANA	Cercis canadensis	Eastern Redbud
x	x	P-CHEMAJU	Chelidonium majus	Greater Celandine
x	x	P-CICINTY	Cichorium intybus	Chicory
x		P-CIRLUCA	Circaea canadensis ssp. canadensis	Canada Enchanter's Nightshade
x		P-CIRVULG	Cirsium vulgare	Bull Thistle
x	x	P-CORALTE	Cornus alternifolia	Alternate-leaved Dogwood
x		P-CORFORA	Cornus racemosa	Gray Dogwood
x	x	P-CORRUGO	Cornus rugosa	Round-leaved Dogwood
x		P-CORSTOL	Cornus sericea	Red-osier Dogwood
x		P-CRA_SP	Crataegus sp.	Hawthorn Species
x	x	P-CYSBULB	Cystopteris bulbifera	Bulblet Fern
x		P-DACGLOM	Dactylis glomerata	Orchard Grass
x	x	P-DAUCARO	Daucus carota	Wild Carrot
x		P-DICCANA	Dicentra canadensis	Squirrel-corn
x	x	P-DICCUCU	Dicentra cucullaria	Dutchman's Breeches
x	x	P-DIPFUSY	Dipsacus fullonum	Common Teasel
x	x	P-DRYMARG	Dryopteris marginalis	Marginal Wood Fern
x		P-ELYCANA	Elymus canadensis	Canada Wildrye
x		P-ELYRIPA	Elymus riparius	Eastern Riverbank Wildrye
x		P-ELYVIVI	Elymus virginicus var. virginicus	Virginia Wildrye
x		P-ERIANNU	Erigeron annuus	Annual Fleabane
x		P-ERIPHPH	Erigeron philadelphicus var. philadelphicus	Philadelphia Fleabane
x	x	P-ERYAMAM	Erythronium americanum ssp. americanum	Yellow Trout-lily
x		P-EUOOBOV	Euonymus obovatus	Running Strawberry Bush
x		P-EUPPERF	Eupatorium perfoliatum	Common Boneset

Plant Species Inventoried (cont.)

HCA staff	iNat	SPECIES_CODE	SCIENTIFIC_NAME_NHIC	COMMON_NAME_NHIC
x		P-ASTMACR	Eurybia macrophylla	Large-leaved Aster
x		P-EUTGRAM	Euthamia graminifolia	Grass-leaved Goldenrod
x	x	P-FAGGRAN	Fagus grandifolia	American Beech
t	t	P-FRAVEAM	Fragaria vesca ssp. americana	American Woodland Strawberry
x	x	P-FRAVIRG	Fragaria virginiana	Wild Strawberry
x	x	P-FRAAMER	Fraxinus americana	White Ash
x		P-FRAPENN	Fraxinus pennsylvanica	Green Ash
t	t	P-GALAPAR	Galium aparine	Cleavers
x	x	P-GERROBE	Geranium robertianum	Herb-Robert
x		P-GEUALEP	Geum aleppicum	Yellow Avens
x		P-GEU_SP	Geum sp.	Avens Species
t	t	P-GEUURBA	Geum urbanum	Wood Avens
x		P-GLEHEDE	Glechoma hederacea	Ground Ivy
x	x	P-HAMVIRG	Hamamelis virginiana	American Witch-hazel
t	t	P-HEMFULV	Hemerocallis fulva	Orange Daylily
x	x	P-HESMATR	Hesperis matronalis	Dame's Rocket
x		P-HIE_SP	Hieracium sp.	Hawkweed Species
x	x	P-HYDVIRG	Hydrophyllum virginianum	Virginia Waterleaf
x		P-IMPCAPE	Impatiens capensis	Spotted Jewelweed
x		P-IMP_SP	Impatiens sp.	Jewel-weed Species
x	x	P-JUGCINE	Juglans cinerea	Butternut
x		P-JUGNIGR	Juglans nigra	Black Walnut
x		P-LAC_SP	Lactuca sp.	Lettuce Species
x	x	P-LAPCANA	Laportea canadensis	Wood Nettle
x	x	P-LAPCOMM	Lapsana communis	Common Nipplewort
x		P-LEEORYZ	Leersia oryzoides	Rice Cutgrass
x	x	P-LEOCACA	Leonurus cardiaca ssp. cardiaca	Common Motherwort
x		P-CHRLEUC	Leucanthemum vulgare	Oxeye Daisy
x		P-LIGVULG	Ligustrum vulgare	European Privet
t	t	P-LINVULG	Linaria vulgaris	Butter-and-eggs
x		P-LON_SP	Lonicera sp.	Honeysuckle Species
x		P-LONTATA	Lonicera tatarica	Tartarian Honeysuckle

Plant Species Inventoried (cont.)

HCA staff	iNat	SPECIES_CODE	SCIENTIFIC_NAME_NHIC	COMMON_NAME_NHIC
x	x	P-LOTCORN	Lotus corniculatus	Garden Bird's-foot Trefoil
x		P-LYCUNIF	Lycopus uniflorus	Northern Water-horehound
x		P-LYTSALI	Lythrum salicaria	Purple Loosestrife
x	x	P-MAIRARA	Maianthemum racemosum	Large False Solomon's Seal
x		P-MALPUMI	Malus pumila	Common Apple
x		P-MEDLUPU	Medicago lupulina	Black Medic
x		P-MELALBA	Melilotus albus	White Sweet-clover
x		P-MELOFFI	Melilotus officinalis	Yellow Sweet-clover
x		P-MEN_SP	Mentha sp.	Mint Species
x	x	P-MONFIST	Monarda fistulosa	Wild Bergamot
x		P-MOR_SP	Morus sp.	Mulberry Species
x		P-PREALTI	Nabalus altissimus	Tall Rattlesnakeroot
x		P-GRA_SP	no data1	Grass Species
x		P-MOS_SP	no data2	Moss Species
x	x	P-OSTVIRG	Ostrya virginiana	Eastern Hop-hornbeam
x		P-PARQUIN	Parthenocissus quinquefolia	Virginia Creeper
x		P-PAT_SP	Parthenocissus sp.	Virginia Creeper Species
x		P-PARINSE	Parthenocissus vitacea	Thicket Creeper
x		P-POLHYDR	Persicaria hydropiper	Marshpepper Smartweed
x		P-POLHYDS	Persicaria hydropiperoides	False Waterpepper
x		P-POLPERS	Persicaria maculosa	Spotted Lady's-thumb
x		P-PHAARUN	Phalaris arundinacea	Reed Canary Grass
x		P-PHLPRAT	Phleum pratense	Common Timothy
x		P-PHRAUST	Phragmites australis	Common Reed
x	x	P-PICGLAU	Picea glauca	White Spruce
x		P-PICPUNG	Picea pungens	Blue Spruce
x	x	P-PILPUMI	Pilea pumila	Dwarf Clearweed
x		P-PIL_SP	Pilea sp.	Clearweed Species
x		P-PINRESI	Pinus resinosa	Red Pine
x	x	P-PINSTRO	Pinus strobus	Eastern White Pine
x		P-PLAMAJO	Plantago major	Common Plantain
x		P-PODPELT	Podophyllum peltatum	May-apple

Plant Species Inventoried (cont.)

HCA staff	iNat	SPECIES_CODE	SCIENTIFIC_NAME_NHIC	COMMON_NAME_NHIC
x		P-POPDEDE	Populus deltoides ssp. deltoides	Eastern Cottonwood
x		P-POPTREM	Populus tremuloides	Trembling Aspen
t	t	P-POTRECT	Potentilla recta	Sulphur Cinquefoil
x		P-PRUAMER	Prunus americana	American Plum
x	x	P-PRUAVIU	Prunus avium	Sweet Cherry
x	x	P-PRUSERO	Prunus serotina	Black Cherry
x	x	P-PRUVIVI	Prunus virginiana	Choke Cherry
x	x	P-PYRCOMM	Pyrus communis	Common Pear
t	t	P-QUEALBA	Quercus alba	White Oak
x		P-QUEBICO	Quercus bicolor	Swamp White Oak
x		P-QUEMACR	Quercus macrocarpa	Bur Oak
x		P-QUERUBR	Quercus rubra	Northern Red Oak
x	x	P-RANACRI	Ranunculus acris	Tall Buttercup
x		P-RANRECU	Ranunculus recurvatus	Hooked Buttercup
x	x	P-RHACATH	Rhamnus cathartica	Common Buckthorn
x	x	P-RHUTYPH	Rhus typhina	Staghorn Sumac
x		P-RIBAMER	Ribes americanum	Wild Black Currant
x		P-RIBCYNO	Ribes cynosbati	Prickly Gooseberry
x		P-ROBPSEU	Robinia pseudoacacia	Black Locust
x		P-ROSCARO	Rosa carolina	Carolina Rose
x	x	P-ROSMULT	Rosa multiflora	Multiflora Rose
t	t	P-ROSRUGO	Rosa rugosa	Rugosa Rose
x	x	P-RUBOCCI	Rubus occidentalis	Black Raspberry
x	x	P-RUBODOR	Rubus odoratus	Purple-flowering Raspberry
x		P-RUM_SP	Rumex sp.	Dock Species
x		P-SAL_SP	Salix sp.	Willow Species
x		P-SAMCANA	Sambucus canadensis	Common Elderberry
x	x	P-SAMRAPU	Sambucus racemosa ssp. pubens	Red Elderberry
x		P-SANCANA	Sanguinaria canadensis	Bloodroot
x		P-SCIVALI	Schoenoplectus tabernaemontani	Soft-stemmed Bulrush
t	t	P-SCISIBE	Scilla siberica	Siberian Squill
x		P-SIUSUAV	Sium suave	Hemlock Water-parsnip

Plant Species Inventoried (cont.)

HCA staff	iNat	SPECIES_CODE	SCIENTIFIC_NAME_NHIC	COMMON_NAME_NHIC
x	x	P-SOLDULC	Solanum dulcamara	Bittersweet Nightshade
x		P-SOLALAL	Solidago altissima var. altissima	Eastern Tall Goldenrod
x		P-SOLCAES	Solidago caesia	Blue-stemmed Goldenrod
x		P-SOLCANA	Solidago canadensis	Canada Goldenrod
x	x	P-SOLFLEX	Solidago flexicaulis	Zigzag Goldenrod
x		P-SOL_SP	Solidago sp.	Goldenrod Species
x		P-SON_SP	Sonchus sp.	Sow-thistle Species
x		P-ASTCORD	Symphyotrichum cordifolium	Heart-leaved Aster
t	t	P-ASTERER	Symphyotrichum ericoides var. ericoides	White Heath Aster
x		P-ASTLATE	Symphyotrichum lateriflorum	Calico Aster
x		P-ASTNOVA	Symphyotrichum novae-angliae	New England Aster
x		P-ASTPUPU	Symphyotrichum puniceum var. puniceum	Swamp Aster
x		P-ASTUROP	Symphyotrichum urophyllum	Arrow-leaved Aster
x	x	P-TANVULG	Tanacetum vulgare	Common Tansy
x	x	P-TAROFFI	Taraxacum officinale	Common Dandelion
x		P-THADIOI	Thalictrum dioicum	Early Meadow-rue
x	x	P-TILAMER	Tilia americana	American Basswood
x		P-TORJAPO	Torilis japonica	Erect Hedge-parsley
x		P-RHURADI	Toxicodendron radicans	Poison Ivy
x		P-RHURARY	Toxicodendron radicans var. rydbergii	Western Poison Ivy
t	t	P-TRAPORR	Tragopogon porrifolius	Purple Goat's-beard
t	t	P-TRAPRPR	Tragopogon pratensis	Meadow Goat's-beard
x	x	P-TRIPRAT	Trifolium pratense	Red Clover
x		P-TRIREPE	Trifolium repens	White Clover
x	x	P-TSUCANA	Tsuga canadensis	Eastern Hemlock
x	x	P-TUSFARF	Tussilago farfara	Colt's-foot
x		P-ULMAMER	Ulmus americana	American Elm
x		P-ULMRUBR	Ulmus rubra	Slippery Elm
x		P-URTDIDI	Urtica dioica ssp. dioica	European Stinging Nettle
t	t	P-UVUGRAN	Uvularia grandiflora	Large-flowered Bellwort
x		P-VERURTI	Verbena urticifolia	White Vervain
x		P-VIBACER	Viburnum acerifolium	Maple-leaved Viburnum

Plant Species Inventoried (cont.)

HCA staff	iNat	SPECIES_CODE	SCIENTIFIC_NAME_NHIC	COMMON_NAME_NHIC
t	t	P-VIBLANA	Viburnum lantana	Wayfaring-tree
x		P-VICCRAC	Vicia cracca	Tufted Vetch
x		P-VICTETR	Vicia tetrasperma	Four-seeded Vetch
t	t	P-VIOCANA	Viola canadensis	Canada Violet
x		P-VIOPUBE	Viola pubescens	Yellow Violet
x	x	P-VITRIPA	Vitis riparia	Riverbank Grape

Breeding Bird Species Inventoried

ebird Data	NAI	HCA Staff	HCA Staff	iNat	Species_Code	OFO_Scientific_Name	OFO_Common_Name
x					B-COHA	Accipiter cooperii	Cooper's Hawk
x					B-SSHA	Accipiter striatus	Sharp-shinned Hawk
	x				B-SPSA	Actitis macularius	Spotted Sandpiper
x					B-NSWO	Aegolius acadicus	Northern Saw-whet Owl
x	x (PO)	x	x		B-RWBL	Agelaius phoeniceus	Red-winged Blackbird
x					B-WODU	Aix sponsa	Wood Duck
x					B-MALL	Anas platyrhynchos	Mallard
	x				B-RTHU	Archilochus colubris	Ruby-throated Hummingbird
x					B-GBHE	Ardea herodias	Great Blue Heron
x					B-LEOW	Asio otus	Long-eared Owl
x	x (PO)	x		x	B-CEDW	Bombycilla cedrorum	Cedar Waxwing
x	x (PR)				B-CAGO	Branta canadensis	Canada Goose
x	x (CO)			x	B-RTHA	Buteo jamaicensis	Red-tailed Hawk
x					B-RSHA	Buteo lineatus	Red-shouldered Hawk
x					B-BWHA	Buteo platypterus	Broad-winged Hawk
x	x (CO)	x	x	x	B-NOCA	Cardinalis cardinalis	Northern Cardinal
x	x (PO)		x	x	B-TUVU	Cathartes aura	Turkey Vulture
x					B-BRCR	Certhia americana	Brown Creeper
x	x (PO)				B-CHSW	Chaetura pelagica	Chimney Swift
x	x				B-KILL	Charadrius vociferus	Killdeer
x					B-NOHA	Circus hudsonius	Northern Harrier
x	x (PO)				B-YBCU	Coccyzus americanus	Yellow-billed Cuckoo
x					B-BBCU	Coccyzus erythropthalmus	Black-billed Cuckoo
x	x (CO)		x		B-NOFL	Colaptes auratus	Northern Flicker
x	x (PO)				B-RODO	Columba livia	Rock Pigeon
x					B-OSFL	Contopus cooperi	Olive-sided Flycatcher
x	x (PO)	x	x	x	B-EAWP	Contopus virens	Eastern Wood-Pewee
x					B-BLVU	Coragyps atratus	Black Vulture
x	x (PR)		x	x	B-AMCR	Corvus brachyrhynchos	American Crow
x					B-CORA	Corvus corax	Common Raven
x	x (CO)	x	x	x	B-BLJA	Cyanocitta cristata	Blue Jay
	x (PO)				B-BOBO	Dolichonyx oryzivorus	Bobolink
x	x (PR)	x	x	x (winte	B-DOWO	Dryobates pubescens	Downy Woodpecker
x	x (PO)				B-HAWO	Dryobates villosus	Hairy Woodpecker
x	x (CO)	x	x		B-GRCA	Dumetella carolinensis	Gray Catbird
x	x (PO)	x	x		B-ALFL	Empidonax alnorum	Alder Flycatcher
x	x (PO)				B-LEFL	Empidonax minimus	Least Flycatcher

Breeding Bird Species Inventoried (cont.)

ebird Data	NAI	HCA Staff	HCA Staff	iNat	Species_Code	OFO_Scientific_Name	OFO_Common_Name
x	x	x			B-WIFL	Empidonax traillii	Willow Flycatcher
	x				B-HOLA	Eremophila alpestris	Horned Lark
x					B-RUBL	Euphagus carolinus	Rusty Blackbird
x					B-MERL	Falco columbarius	Merlin
x					B-PEFA	Falco peregrinus	Peregrine Falcon
x	x				B-AMKE	Falco sparverius	American Kestrel
	x				B-MOWA	Geothlypis philadelphia	Mourning Warbler
x	x (PO)	x			B-COYE	Geothlypis trichas	Common Yellowthroat
x	x (PO)				B-HOFI	Haemorhous mexicanus	House Finch
x					B-BAEA	Haliaeetus leucocephalus	Bald Eagle
x	x (PO)				B-BARS	Hirundo rustica	Barn Swallow
	x (PO)				B-WOTH	Hylocichla mustelina	Wood Thrush
x	x (PO)	x	x		B-BAOR	Icterus galbula	Baltimore Oriole
x	x				B-ORCR	Icterus spurius	Orchard Oriole
x					B-DEJU	Junco hyemalis	Dark-eyed Junco
x					B-NSHR	Lanius borealis	Northern Shrike
x	x				B-HERG	Larus argentatus	Herring Gull
x	x				B-RBGU	Larus delawarensis	Ring-billed Gull
x	x	x	x		B-RBWO	Melanerpes carolinus	Red-bellied Woodpecker
x					B-WITU	Meleagris gallopavo	Wild Turkey
	x				B-SWSP	Melospiza georgiana	Swamp Sparrow
x	x (CO)	x	x		B-SOSP	Melospiza melodia	Song Sparrow
	x (CO)				B-NOMO	Mimus polyglottos	Northern Mockingbird
x					B-BAWW	Mniotilta varia	Black-and-white Warbler
x	x (PR)	x			B-BHCO	Molothrus ater	Brown-headed Cowbird
x	x (PO)		x		B-GCFL	Myiarchus crinitus	Great Crested Flycatcher
x					B-TEWA	Oreothlypis peregrina	Tennessee Warbler
x					B-NAWA	Oreothlypis ruficapilla	Nashville Warbler
x					B-OSPR	Pandion haliaetus	Osprey
	x				B-NOWA	Parkesia noveboracensis	Northern Waterthrush
x	x (PO)				B-HOSP	Passer domesticus	House Sparrow
	x (PO)				B-SAVS	Passerculus sandwichensis	Savannah Sparrow
x	x (PO)	x	x	x	B-INBU	Passerina cyanea	Indigo Bunting
x					B-DCCO	Phalacrocorax auritus	Double-crested Cormorant
x	x (PO)				B-RINP	Phasianus colchicus	Ring-necked Pheasant
x	x (PO)				B-RBGR	Pheucticus ludovicianus	Rose-breasted Grosbeak
x	x (PO)				B-SCTA	Piranga olivacea	Scarlet Tanager

Breeding Bird Species Inventoried (cont.)

ebird Data	NAI	HCA Staff	HCA Staff	iNat	Species_Code	OFO_Scientific_Name	OFO_Common_Name
x					B-SNBU	Plectrophenax nivalis	Snow Bunting
x	x (CO)	x	x		B-BCCH	Poecile atricapillus	Black-capped Chickadee
x	x				B-BGGN	Polioptila caerulea	Blue-gray Gnatcatcher
				x	B-VESP	Pooecetes gramineus	Vesper Sparrow
x	x (PO)				B-PUMA	Progne subis	Purple Martin
x	x (CO)				B-COGR	Quiscalus quiscula	Common Grackle
x					B-RCKI	Regulus calendula	Ruby-crowned Kinglet
x					B-GCKI	Regulus satrapa	Golden-crowned Kinglet
x	x				B-BANS	Riparia riparia	Bank Swallow
x					B-EAPH	Sayornis phoebe	Eastern Phoebe
x	x				B-AMWO	Scolopax minor	American Woodcock
x	x (PO)				B-OVEN	Seiurus aurocapilla	Ovenbird
x					B-NOPA	Setophaga americana	Northern Parula
x					B-BTBW	Setophaga caerulescens	Black-throated Blue Warbler
x					B-BBWA	Setophaga castanea	Bay-breasted Warbler
		x			B-HOWA	Setophaga citrina	Hooded Warbler
x	x				B-YRWA	Setophaga coronata	Yellow-rumped Warbler
x					B-BLBW	Setophaga fusca	Blackburnian Warbler
x					B-MAWA	Setophaga magnolia	Magnolia Warbler
x					B-PAWA	Setophaga palmarum	Palm Warbler
x			x		B-CSWA	Setophaga pensylvanica	Chestnut-sided Warbler
x	x (PO)	x	x		B-YWAR	Setophaga petechia	Yellow Warbler
x	x (PO)				B-AMRE	Setophaga ruticilla	American Redstart
x	x				B-BLPW	Setophaga striata	Blackpoll Warbler
x					B-CMWA	Setophaga tigrina	Cape May Warbler
x					B-BTGW	Setophaga virens	Black-throated Green Warbler
x	x				B-EABL	Sialia sialis	Eastern Bluebird
x					B-RBNU	Sitta canadensis	Red-breasted Nuthatch
x	x (PO)	x		x	B-WBNU	Sitta carolinensis	White-breasted Nuthatch
x					B-PISI	Spinus pinus	Pine Siskin
x	x (PR)	x	x	x	B-AMGO	Spinus tristis	American Goldfinch
	x				B-CCSP	Spizella pallida	Clay-colored Sparrow
x	x (PO)				B-CHSP	Spizella passerina	Chipping Sparrow
x	x (PO)	x	x		B-FISP	Spizella pusilla	Field Sparrow
x				x (winte	B-ATSP	Spizelloides arborea	American Tree Sparrow
x	x (CO)				B-NRWS	Stelgidopteryx serripennis	Northern Rough-winged Swallo
x	x (PO)				B-EAME	Sturnella magna	Eastern Meadowlark

Breeding Bird Species Inventoried (cont.)

ebird Data	NAI	HCA Staff	HCA Staff	iNat	Species_Code	OFO_Scientific_Name	OFO_Common_Name
x	x (CO)		x		B-EUST	Sturnus vulgaris	European Starling
x	x	x			B-TRES	Tachycineta bicolor	Tree Swallow
x	x (PO)				B-CARW	Thryothorus ludovicianus	Carolina Wren
x	x (PO)	x	x		B-HOWR	Troglodytes aedon	House Wren
x	x (PO)				B-WIWR	Troglodytes hiemalis	Winter Wren
x	x (PO)	x	x	x	B-AMRO	Turdus migratorius	American Robin
x	x (PR)				B-EAKI	Tyrannus tyrannus	Eastern Kingbird
x	x				B-WAVI	Vireo gilvus	Warbling Vireo
x	x (PO)	x	x		B-REVI	Vireo olivaceus	Red-eyed Vireo
x					B-PHVI	Vireo philadelphicus	Philadelphia Vireo
x					B-BHVI	Vireo solitarius	Blue-headed Vireo
x	x (PO)				B-MODO	Zenaida macroura	Mourning Dove
x	x (VO)				B-WTSP	Zonotrichia albicollis	White-throated Sparrow

Mammal Species Inventoried

NAI	HCA Staff	iNat	Species_Code	Scientific_Name_NHIC	Common_Name_NHIC
x		x	M-NSTS	Blarina brevicauda	Northern Short-tailed Shrew
	x		M-COYO	Canis latrans	Coyote
x			M-VIOP	Didelphis virginiana	Virginia Opossum
x			M-WOOD	Marmota monax	Woodchuck
x			M-MEVO	Microtus pennsylvanicus	Meadow Vole
x			M-MINK	Neovison vison	American Mink
x			M-WTDE	Odocoileus virginianus	White-tailed Deer
		x	M-MUSK	Ondatra zibethicus	Muskrat
x			M-WFMO	Peromyscus leucopus	White-footed Mouse
x		x	M-RACC	Procyon lotor	Northern Raccoon
x	x		M-GRSQ	Sciurus carolinensis	Eastern Gray Squirrel
x			M-EACO	Sylvilagus floridanus	Eastern Cottontail
x	x		M-EACH	Tamias striatus	Eastern Chipmunk
x			M-RESQ	Tamiasciurus hudsonicus	Red Squirrel

Butterflies and Dragonflies Inventoried

NAI	HCA Staff	iNat	Species_Code	NHIC_Scientific_Name	NHIC_Common_Name
x			O-GRDA	Anax junius	Common Green Darner
x			L-LESK	Ancyloxypha numitor	Least Skipper
x			O-EBJE	Calopteryx maculata	Ebony Jewelwing
x			L-SPAZ	Celastrina lucia	Northern Spring Azure
x			L-SUAZ	Celastrina neglecta	Summer Azure
x		x	L-WONY	Cercyonis pegala	Common Wood-Nymph
x			L-CORI	Coenonympha tullia	Common Ringlet
x			L-ORSU	Colias eurytheme	Orange Sulphur
x		x	L-COSU	Colias philodice	Clouded Sulphur
x			L-ETBL	Cupido comyntas	Eastern Tailed Blue
x		x	L-MONA	Danaus plexippus	Monarch
x			O-FABL	Enallagma civile	Familiar Bluet
x		x	L-SSSK	Epargyreus clarus	Silver-spotted Skipper
x			O-EAPO	Erythemis simplicicollis	Eastern Pondhawk
x			L-SIBL	Glaucopsyche lygdamus	Silvery Blue
x			O-EAFO	Ischnura verticalis	Eastern Forktail
x			O-DTWH	Leucorrhinia intacta	Dot-tailed Whiteface
x			O-WISK	Libellula luctuosa	Widow Skimmer
x			O-TSSK	Libellula pulchella	Twelve-spotted Skimmer
x			L-VICE	Limenitis archippus	Viceroy
	x		L-WHAD	Limenitis arthemis arthemis	White Admiral
		x	L-GYMO	Lymantria dispar	Gypsy Moth
x			L-LWSA	Megisto cymela	Little Wood-Satyr
x		x	L-MOCL	Nymphalis antiopa	Mourning Cloak
x			L-COTO	Nymphalis l-album	Compton Tortoiseshell
x			L-TISW	Papilio glaucus	Eastern Tiger Swallowtail
x			L-BLSW	Papilio polyxenes	Black Swallowtail
x			L-COSW	Pholisora catullus	Common Sootywing
x			L-PHYPAS	Phyciodes cocyta	Northern Crescent
x			L-PECR	Phyciodes tharos	Pearl Crescent
x		x	L-CAWH	Pieris rapae	Cabbage White
x		x	O-COWH	Plathemis lydia	Common Whitetail
x			L-PESK	Polites peckius	Peck's Skipper
x			L-COMM	Polygonia comma	Eastern Comma
x			L-QUMA	Polygonia interrogationis	Question Mark
x			L-BAHA	Satyrium calanus	Banded Hairstreak
x			L-GSFR	Speyeria cybele	Great Spangled Fritillary
x			L-EUSK	Thymelicus lineola	European Skipper
x			O-BLSA	Tramea lacerata	Black Saddlebags
x		x	L-READ	Vanessa atalanta	Red Admiral
x			L-AMLA	Vanessa virginiensis	American Lady

APPENDIX 6

HCA Visitor Management and Vehicle Parking Review

Hamilton Conservation Authority

A Healthy Watershed for Everyone

Report

TO:	**Conservation Advisory Board**
FROM:	**Lisa Burnside, Chief Administrative Officer (CAO)**
RECOMMENDED & PREPARED BY:	**Gord Costie, Director, Conservation Area Services** **Matthew Hall, Director, Capital Projects & Strategic Services** **T. Scott Peck, MCIP, RPP, Deputy CAO/Director, Watershed Planning & Engineering**
DATE:	**October 10, 2019**
RE:	**HCA Conservation Area - Visitor Management & Vehicle Parking Review**

THAT the Conservation Advisory Board recommend to the Board of Directors:

THAT Staff be directed to implement the following directions outlined in the report titled "HCA Conservation Area - Visitor Management & Vehicle Parking Review";

Recommendation #1 – HCA staff implement immediate parking enhancement opportunities at Artaban Road, Tiffany Falls, Devil's Punchbowl, Tew Falls and Westfield Heritage Village to optimize number of parking spaces, traffic flow and signage;

Recommendation #2- HCA staff undertake steps to consider expansion of the Artaban road parking lot through a Niagara Escarpment development permit;

Recommendation #3 – HCA staff undertake steps to establish an interim parking lot and trail connection to the Dofasco Trail for the Devil's Punchbowl at the Saltfleet Conservation Area;

Recommendation #4 – HCA staff further examine and explore additional options for safe visitor access to Tiffany Falls;

Recommendation #5 – HCA staff work with various agencies and partners such as City of Hamilton, Tourism Hamilton, Hamilton/Burlington Trails Council etc. to encourage transportation alternatives;

Recommendation #6 – HCA develop a marketing campaign and website enhancements to increase turnover and shorter term stays at areas with limited parking and encourage visitation to less frequented areas and when there is capacity;

Recommendation #7 – HCA staff ensure that the approved 10 year Masterplan Strategy incorporates detailed review of parking at all areas through the Master planning process.

BACKGROUND

In February 2019, a report titled "HCA Conservation Area Vehicle Parking Review" was presented to the Conservation Advisory Board with the following recommendation "**THAT HCA staff be directed to undertake the parking inventory as detailed in the report titled "HCA Conservation Area Vehicle Parking Study", dated February 1, 2019."** This recommendation was endorsed by the Conservation Advisory Board and approved by the Board of Directors at their March 7, 2019 meeting.

As noted in the report, the parking review will assess the supply at individual HCA areas and identify capacity gaps, provide potential recommendations for parking strategies that support these HCA areas while conserving the natural features of the area, and building upon the existing parking system.

A project steering committee comprised of senior HCA staff was struck and has met multiple times in the past months as part of finalizing the parking inventory assessment and obtained input from Conservation Area staff. From this work, the steering committee had identified steps that had already been taken to address visitor and parking issues by way of the following initiatives:

1. Implementing the shuttle service at Christie Lake to service Spencer Gorge Conservation Area on weekends April through October and examining each year how to make this more effective

2. Utilizing shuttles to bring visitors to the Telling Tales Festival event at Westfield Heritage Conservation Area by the third party organizers

3. Having HCA staff on site to meet with visitors to provide trail etiquette and information regarding other conservation areas to visit.
4. Increasing posting of trail signage and brochures highlighting the need to stay on the trail for visitor safety and conservation of the associated natural areas.

5. Working through HCA website and social media directing people to authorized access points and providing visitor education.

6. Working with the City of Hamilton regarding municipal No Parking and No Stopping signage and associated municipal by-law enforcement.

7. Installing automated access gates at conservation areas and installing trail and vehicle counters to provide information regarding the number of visitors accessing areas.

8. Allocating capital budget dollars to maintain internal HCA roads through tar and chip and/or paving.

9. Allocating capital budget dollars to improve various HCA parking areas with site specific measures such as clean up, line painting, creation of overflow parking and/or expansion

10. Re-opening both the Merrick lot and Artaban lot in the Dundas Valley

Following the review of work already undertaken, the committee then determined the next outcomes to be taken to further improve the situation. This report highlights five key visitor management and parking program areas with associated action items to be implemented.

Key Visitor Management and Parking Program Areas

1. Identifying High Use Conservation Areas through Parking review metrics

2. Addressing High Use Conservation Areas with Visitor and Parking Issues

3. Optimizing Mass Transit and Non-motorized Vehicle Access to Conservation Areas

4. Marketing and Communication

5. Master Planning and Operational Improvements

This review was undertaken with an understanding of our role as the area's leading environmental agency and our role as a landowner. The lands owned by the Hamilton Conservation Authority contain physical features, flora and fauna of national, provincial and local significance and these lands were acquired to preserve these features while developing these lands as appropriate for passive recreation and environmental education. In developing the five key program areas with the associated action items, the first priority is ensuring the environmental features of the lands are maintained and that the Hamilton Conservation Authority is leading by example as it relates to the management of our lands while ensuring positive and safe visitor experiences.

STAFF COMMENT

As noted in the background section above, five key visitor management and parking program areas have been identified with associated information and action items.

1. Identification of High Use Conservation Areas through Parking Review Metrics

HCA has approximately parking capacity for 7,322 vehicles in its parking areas, as shown in the table below with the vast majority at Christie Lake, our main event area and shuttle hub location for Spencer Gorge that can handle large numbers of cars.

Our major conservation areas generally have adequate capacity for current visitation, except for certain special events at Westfield Heritage Village.

2018 data from autogate and pay and display machines at our unattended parking areas demonstrate the high volume at three smaller parking facilities which tend to be associated with waterfalls or iconic escarpment areas. It is important to note that these figures do not include HCA annual vehicle pass holders or unpaid vehicles. Parking tickets issued in 2018 by City of Hamilton bylaw for road side waterfall areas also demonstrate pressure these areas experience. Ridge Road has armour stone along the road way to help prevent parking and likely results in the lower number of tickets, and staff also report visitors utilizing parking at the Devil's Punchbowl market and walking along Ridge Road.

Staff note through site visits and maintenance that Tiffany Falls, Devil's Punchbowl and Artaban Road are extremely busy on weekends and holidays throughout the year and vehicle congestion issues are common. Further, staff working in these areas have noticed a high turn-over at these locations as the hikes to the waterfall attractions are very short and staff report that through interaction with visitors that many are unaware of the Bruce Trail connection for Tiffany and Sherman Falls and greater connections to the Dundas Valley.

While Spencer Gorge is handled by the shuttle on weekends and public holidays during the operating season, staff report parking pressures at Tew Falls mid-week during the fall leaf colours in October.

CONSERVATION AREA or PARKING LOT NAME	PARKING SPACES	AUTOGATE PAID VEHICLES	CITY BY-LAW PARKING TICKETS
Fletcher Creek Ecological Preserve	12	no gate or pay machine	
Beverly Swamp	14	no gate or pay machine	
Tiffany Falls	20	10,314	378
Artaban Road	21	4616	775
Devil's Punch Bowl	22	10,433	186
Monarch Trail	22	367	
Chippawa Rail Trail	23	no gate or pay machine	
Iroquoia Heights	25	no gate or pay machine	
Borer's Falls	27	no gate or pay machine	
Felker's Falls	30	no gate or pay machine	
Dundas Valley HCA workshop & area	30	350	
Merrick Orchard	36	1908	
Hermitage	40	4226	
Hamilton to Brantford Rail Trail - West	42	no gate or pay machine	
Eramosa Karst	60	912	
Crooks' Hollow	86	941	
Spencer Gorge	248	23,162	2200
Dundas Valley Main Parking	265	4816	
Westfield Heritage Village	300	Staffed gate	
Valens Lake	354	Staffed gate	
Fifty Point	862	Staffed gate	
Christie Lake	4,783	Staffed gate	
TOTAL	**7,322**		

- **Paid Vehicles only entering through unattended parking areas, does not count HCA annual pass holders or unpaid visits**
- **Spencer Gorge parking lots are closed weekends and public holidays during shuttle operations**

2. Addressing High Use Conservation Areas with Visitor and Parking Issues

As part of the development of the parking inventory and through an understanding of current conservation area operations, Spencer Gorge Conservation Area, Tiffany Falls and Artaban Road in the Dundas Valley Conservation Area as well as the Devil’s Punchbowl Conservation

Area have been identified as high use areas with associated parking issues. Westfield Heritage Village Conservation Area also experiences parking issues during some special events.

Spencer Gorge / Tew Falls

- Visitation and parking issues at the Spencer Gorge are being addressed on weekends and public holidays through the high operating season through the operation of the visitor shuttle and partnership with Park Bus. The Board of Directors have provided direction to staff that this shuttle operation will continue as part of the annual operations for this conservation area.

- In season, during the week, Tew Falls parking area receives significant visitation and handles the bulk of vehicles for Spencer Gorge. Staff have identified that improvements to this lot would optimize traffic flow, number of parking spaces and visitor experience. This work could require an Environmental Impact Study (EIS), NEC review and approval based on final scale and scope of enhancements.

Tiffany Falls

- Tiffany Falls is a highly visited area that is serviced by a small parking lot. It is important that HCA continue to work collaboratively with City bylaw enforcement to control and enforce no parking regulations to address spillover parking along Wilson Street. While there are no options available to physically enlarge the existing parking lot, some measures can be taken on site to optimize the lot to enhance traffic flow and angular parking.
- Additional options will need to be explored for this area, bearing in mind the single trail and viewing platform and overall limited space and capacity of the area. Several options for further detailed consideration and investigation have initially been identified to include:

    1. Continue with operation of the existing parking area with an increased focus on promoting short stays, increased visitor turnover and off-peak visitation. This would also involve signing the area to advise that picnics are not permitted in this location and reviewing photography permits and parking access for Bruce Trail members.

    2. Promote walk-in access through nearby HSR bus stop and Bruce Trail.

    3. Potential for the development of a new larger parking lot for this site on HCA lands adjacent to Tiffany Falls located north of Wilson Street with frontage on Lower Lions Club Road. There is additional work to be completed to determine the feasibility of this proposal. This includes:
        i. Completion of an Environmental Impact Study (EIS) to determine if it is acceptable according to HCA and City of Hamilton requirements to develop a parking lot on the lands as the majority of the area is designated as an Environmentally Significant Area. This work would take approximately 1-year to complete and would require the services of an outside consultant.
        ii. The subject lands are located within the Niagara Escarpment Plan area, within the Protection Area designation and a Development Permit would be required for the development of a parking lot in this area. The above noted EIS would form part of this application.

iii. A review of traffic issues and pedestrian crossing requirements would need to be completed and reviewed with the City of Hamilton. Wilson Street is a major thoroughfare within the City and specifically Ancaster with a 70km/hr speed limit at the Tiffany Falls area

Artaban Road Parking Lot

- This parking lot receives significant visitation, particularly now that Lions Club road has been signed as No Parking. Its popularity is associated with visitation with Sherman Falls which is not owned by HCA but is located adjacent to HCA lands and associated trail system. It is important that HCA continue to work collaboratively with City bylaw enforcement to control and enforce No Parking regulations to address spillover parking on Lions Club Road.

- Staff have identified that improvements to this lot would optimize traffic flow, number of parking spaces and visitor experience and could be promoted further as an offsite parking location for Tiffany Falls for visitors to access by walking the Bruce Trail connection.

- There is the potential to formally expand the parking lot at Artaban Road adjacent to the existing HCA parking lot. There is additional work to be completed to determine the feasibility of this proposal. This includes:
    i. Completion of an Environmental Impact Study (EIS) to determine if it is acceptable according to HCA and City of Hamilton requirements to develop a parking lot on the lands as the majority of the area is designated as an Environmentally Significant Area. This work would take approximately 1-year to complete and would require the services of an outside consultant.
    ii. The subject lands are located within the Niagara Escarpment Plan area, within the Protection Area designation and a Development Permit would be required for the development of a parking lot in this area. The above noted EIS would form part of this application.

Devil's Punchbowl

- Auto gates installed in this parking lot have demonstrated its popularity and high utilization. Staff have identified that improvements to this lot could optimize traffic flow, number of parking spaces and visitor experience

- While the current lot would benefit from improvements, there are opportunities for additional parking to be created within the adjacent lands that comprise part of the Saltfleet Conservation Area to provide additional parking on an interim basis until the design work for the wetland is completed in 2020 and Master Plan which is timed for 2021. Subject to the above, on the east side of First Road East with an existing driveway, a parking area and a trail could be created to connect to the Dofasco Trail. Signage and promotional materials would be needed to inform the public of this option.

- In the longer term, as additional lands are acquired, there is potential for a gateway to service the Devil's Punchbowl area.

Westfield Heritage Village Conservation Area

- Staff have identified that improvements to this lot would optimize traffic flow, number of parking spaces and visitor experience

- Lack of sufficient event parking at certain special events at Westfield have been identified as an issue to address parking and crowd management.

- Staff are bringing forward a separate report entitled “2020 Christmas Ticket Purchase Pilot” for consideration on managing parking and visitation during high volume special events for the area.

3. Optimizing Mass Transit and Non-motorized Vehicle Access to Conservation Areas

- As noted in earlier comments above, efforts have been made to encourage visitors to utilize services such as Park Bus or through public transit as available or regional and local trail and cycling networks. These efforts should be enhanced to promote transit through municipal transit (HSR), enhancing as appropriate trail connections and regional trail and road hiking and cycling networks to reduce parking demand

- Through the parking review, staff have identified three areas with HSR connections

Parking Areas with HRS stop within 500 metres

CONSERVATION AREA	BUS NUMBER	BUS NAME	STOP LOCATION
Dundas Valley	5	DELAWARE	MAIN at EWEN
Felker's Falls	43	STONE CHURCH	PARAMOUNT opposite AUCKLAND And PARAMOUNT at APEX
Tiffany Falls	5	DELAWARE	At 1039 WILSON

- Staff have identified that it would be beneficial to inquire with HSR the possibility of moving the bus stop location on Wilson Street closer to the Tiffany Falls parking lot

- The overall work of promoting transit and local trails will involve a high degree of public education and is also part of the action items noted in Section 4, Marketing and Communications.

4. Marketing and Communication

- For specific high use areas, identify the closest off-site parking areas, linked by trails and create walking tour suggestions for visitors to access the areas from a little further away, and highlighting places and sights along the way, to make the hike more appealing. For example, accessing the Devil’s Punchbowl by getting there along the Dofasco 2000 Trail, seeing the boardwalk section through the Vinemount Swamp and other sights along the escarpment brow.

- Increase and improve on-site messaging. Signage could be created along the lines of "Found it a little busy here today? Try visiting during the week or earlier in the morning for a more secluded experience." This can also be encouraged on Instagram and Facebook.

- Improve website messaging with peak times and suggested times to visit for the best experience and also add parking information to each of the affected area's section of the website.

- A brochure could be created for all of our East Mountain areas (Devil's Punchbowl, Saltfleet, East Mountain Trail Loop, Dofasco Trail, Karst, etc.), both for area information and to communicate the needed messages in these areas.

- Update information on our Trip Advisor and Google pages and as well as Waterfalls Hamilton website through the City of Hamilton.

- Automatic Gates and Pay and Display Machines – a new ticket with multi conservation area access is a new option. There are 10 locations that have this feature for 2019, with additional areas proposed in 2020. This feature can be marketed once all machines are operational. This option allows for a visitor to go to multiple locations for one daily price and the idea is that it will encourage shorter term stays as visitors can attend multiple locations thereby increasing turnover.

5. <u>Master Planning and Operational Improvements</u>

- In addition to the above noted items that have either been implemented or will be implemented within existing programs or through further site specific considerations as appropriate, there are issues that require further consideration which can be identified through the development of master plans/management plans or through conservation area operations. This would include such items as:
    i. Continued implementation of the HCA's auto-gates and pay and display for parking areas.
    ii. Refinement of parking use and parking lot configuration to maximize the area available for parking within existing parking lots.
    iii. Visitor and parking management through such initiatives as a limited number and specific date ticketing system for events and programs.
    iv. Continued work with our municipal partners regarding "No Stopping" and "No Parking" signs and enforcement in these areas. It is important to note that the HCA can only manage issues on HCA lands, issues related to the use of municipal roads and road right of ways is the responsibility of the affected municipality.
    v. Development of master plans and management plans to guide the management of our conservation areas with an eye to anticipate long term visitation trends with associated infrastructure requirements.
    vi. Including information within master plans as guidance regarding the use of conservation areas and trail classification to better understand how visitors can impact the natural features of the lands and also how the number of visitors can impact visitor experience.

vii. Providing direction regarding the need for continued land acquisition to ensure the conservation of our watersheds natural features while providing passive recreation opportunities. The Land Securement Strategy will also provide direction in this regard.

STRATEGIC PLAN LINKAGE

The initiative refers directly to the HCA Strategic Plan 2019 - 2023:

- **Strategic Priority Area – Organizational Excellence**
  - Initiatives - Update our website to increase access to information and services

- **Strategic Priority Area – Conservation Area Experience**
  - Initiatives – Develop visitor and parking management strategies to support conservation areas for sustainable recreation, education and tourism
  - Initiatives - Continue to expand installation of automatic gates across our conservation areas
  - Initiatives - Work with partners such as the City of Hamilton, the Cootes to Escarpment Ecopark System, and the Hamilton Burlington Trails Council, to enhance trail networks for recreational uses

AGENCY COMMENTS

Program implementation will require working with partner agencies such as the City of Hamilton, Tourism Hamilton and the Niagara Escarpment Commission. This work would include no parking and no stopping signage as appropriate, parking enforcement on City roadways, working with City of Hamilton Natural Heritage Planners regarding development within environmentally significant areas, promotion and visitor education with Tourism Hamilton as well as working through development permits for new or expanded parking areas with the Niagara Escarpment Commission.

LEGAL/FINANCIAL IMPLICATIONS

Implementation of this program work will be incorporated into departmental work plans with associated approved operating and capital budget resources being utilized as approved and allocated annually. Some parking lot enhancements can be undertaken in 2019 through the 2019 capital budget as resources and time permits.

CONCLUSIONS

Visitor and parking management will continue to be a main program area for the HCA into the foreseeable future. The recommendations flowing from the five program areas outlined in this report will continue to be the primary focus of our efforts to preserve the natural resources on our conservation area lands while ensuring a positive visitor experience.

THAT Westfield initiate a pilot program for date specific ticket sales for the 2020 Christmas evening program and further,

THAT staff evaluate the effectiveness of the pilot and report back to CAB regarding its ongoing potential.

CARRIED

Resolution Number CA1936 from Conservation Advisory Board Minutes October 10, 2019 - Visitor Management & Vehicle Parking Review

BD12,2710 **MOVED BY: Cynthia Janzen**
SECONDED BY: Dan Bowman

THAT the Conservation Advisory Board recommend to the Board of Directors:

THAT Staff be directed to implement the following directions outlined in the report titled "HCA Conservation Area - Visitor Management & Vehicle Parking Review";

Recommendation #1 – HCA staff implement immediate parking enhancement opportunities at Artaban Road, Tiffany Falls, Devil's Punchbowl, Tew Falls and Westfield Heritage Village to optimize number of parking spaces, traffic flow and signage;

Recommendation #2- HCA staff undertake steps to consider expansion of the Artaban road parking lot through a Niagara Escarpment development permit;

Recommendation #3 – HCA staff undertake steps to establish an interim parking lot and trail connection to the Dofasco Trail for the Devil's Punchbowl at the Saltfleet Conservation Area;

Recommendation #4 – HCA staff further examine and explore additional options for safe visitor access to Tiffany Falls;

Recommendation #5 – HCA staff work with various agencies and partners such as City of Hamilton, Tourism Hamilton, Hamilton/Burlington Trails Council etc. to encourage transportation alternatives;

Recommendation #6 – HCA develop a marketing campaign and website enhancements to increase turnover and shorter term stays at areas with limited parking and encourage visitation to less frequented areas and when there is capacity;

Recommendation #7 – HCA staff ensure that the approved 10-year Masterplan Strategy incorporates detailed review of parking at all areas through the Master planning process.

CARRIED

9.2. Foundation Chairman's Report

Margaret Reid presented the report.

Donations

We received a total of **$89,350** in donations in October. They break down as follows:

- $50,390 for the Dobson-McKee Outdoor Education Endowment Fund
- $25,520 for Outdoor Environmental Education
- $9,650 for the Dundas Valley Trail System
- $2,125 for our new Tribute Tree Fund which will help fund HCA plantings throughout the watershed.
- The remaining $1,665 came in donations for Westfield Heritage Village, Tribute Benches, Land Securement, Stewardship and our Area of Greatest Need Fund.

This brings our total for the current fiscal year (Dec 2018 to Oct 31) to **$572,974**

Events

The Foundation has a fundraiser planned for November 13th

- Adam Shoalts: Modern Day Explorer - Wednesday, November 13, 7:30pm – Westdale Theatre. More information available on the Foundation website and tickets can be purchased online via The Westdale or at the door.

BD12,2711 **MOVED BY: Esther Pauls**
SECONDED BY: Cynthia Janzen

APPENDIX 7

References

References

Archaeological Research Associates Inc. Stage 2 Archaeological Assessment - Devil's Punchbowl Wetland Design (SC-5). Hamilton Conservation Authority. March 10, 2025

Hamilton Conservation Authority Board of Directors. Report 9.1.2 November 7, 2019, Board Recommendations and Approval. HCA Conservation Area – Visitor Management & Vehicle Parking Review. October 10, 2019

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The City of Stoney Creek Planning Department. By-Law No. 4134-94 to designate the property known municipally as 228 Ridge Road being of Architectural and Historical Value or Interest. Enacted and Passed December 13, 1994.

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Hamilton Conservation Authority

A Healthy Watershed for Everyone



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