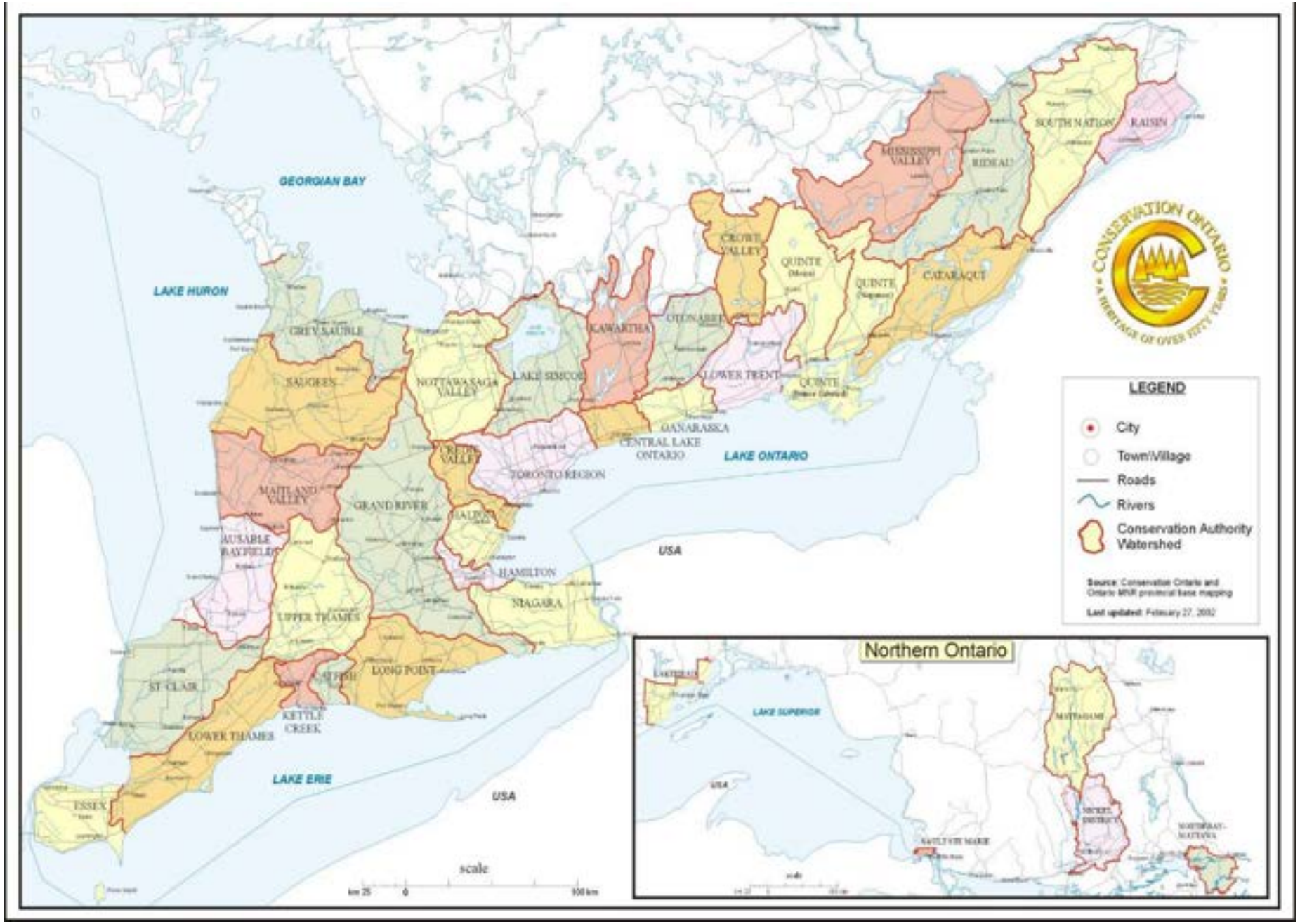
Saltfleet Conservation Area Wetland Restoration Project Program Overview

Nature Based Solutions for Climate Change, November 9, 2022

Hamilton Conservation Authority

A Healthy Watershed for Everyone


GEORGIAN BAY
LAKE HURON
LAKE ONTARIO
LAKE ERIE
USA
USA
GREY SAUBLE
SAUGEEN
NOTTAWASAGA VALLEY
LAKE SIMCOE
KAWARTHA
OTONABEE
CROWE VALLEY
QUINTE
QUINTE
CATARAQUI
MISSISSIPPI VALLEY
RIDEAU
SOUTH NATION
RAISIN
LOWER TRENT
QUINTE
GANARASKA
CENTRAL LAKE ONTARIO
TORONTO REGION
CREDIT VALLEY
HALTON
HAMILTON
NIAGARA
MAITLAND VALLEY
GRAND RIVER
AUSABLE BAYFIELD
UPPER THAMES
ST CLAIR
KETTLE CREEK
LOWER THAMES
ESSEX
LONG POINT
CONSERVATION ONTARIO
A HERITAGE OF OVER FIFTY YEARS
LEGEND
City
Town/Village
Roads
Rivers
Conservation Authority Watershed
Source: Conservation Ontario and Ontario MNR provincial base mapping
Last updated: February 27, 2012
Northern Ontario
LAKE SUPERIOR
USA
scale
km 25
0
100 km

What is a Conservation Authority?

The purpose of this Act is to provide for the organization and delivery of programs and services that further the conservation, restoration, development and management of natural resources in watersheds in Ontario.

Program Areas for Conservation Authorities:



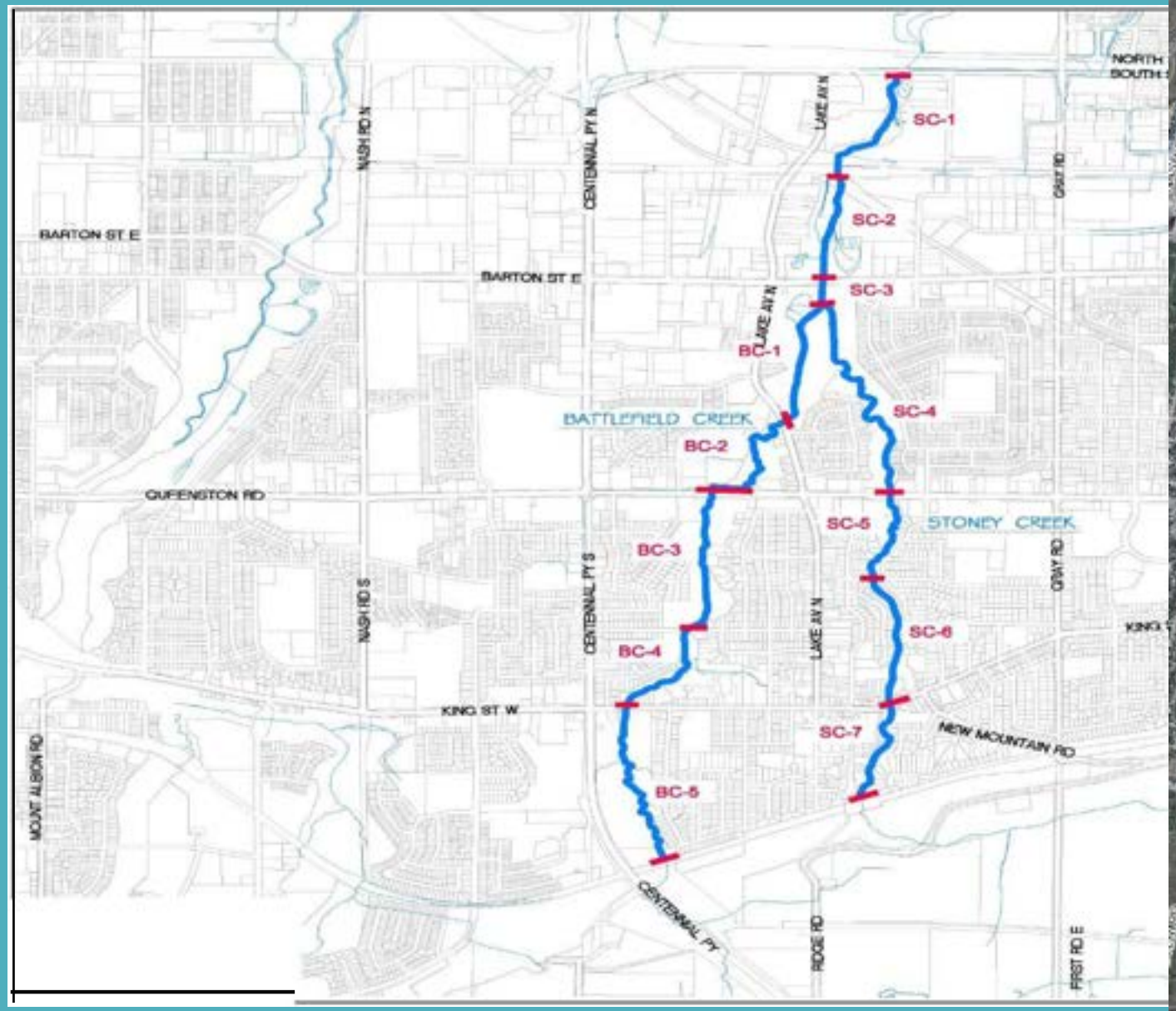

HAMILTON CONSERVATION AUTHORITY
SUBWATERSHEDS
Major Watersheds
Spencer Creek
Borer's Creek
Chedoke Creek
Urban Hamilton
Red Hill Creek
Stoney/Battlefield Creeks
SC Numbered Watercourses
Fletcher
Upper Spencer
Westover
Flamborough
West Spencer
Borer's
Logie's
Middle Spencer
Spring
Sydenham
Lower Spencer
Sulphur
Hamilton Harbour
Chedoke
Urban Hamilton
Ancaster
Greenhill
Lake Ontario
Red Hill Valley
Tiffany
Upper Ottawa
Hannon
Montgomery
Davis
Stoney/Battlefield
Stoney Creek Numbered Watercourses
N
S
0
10 km

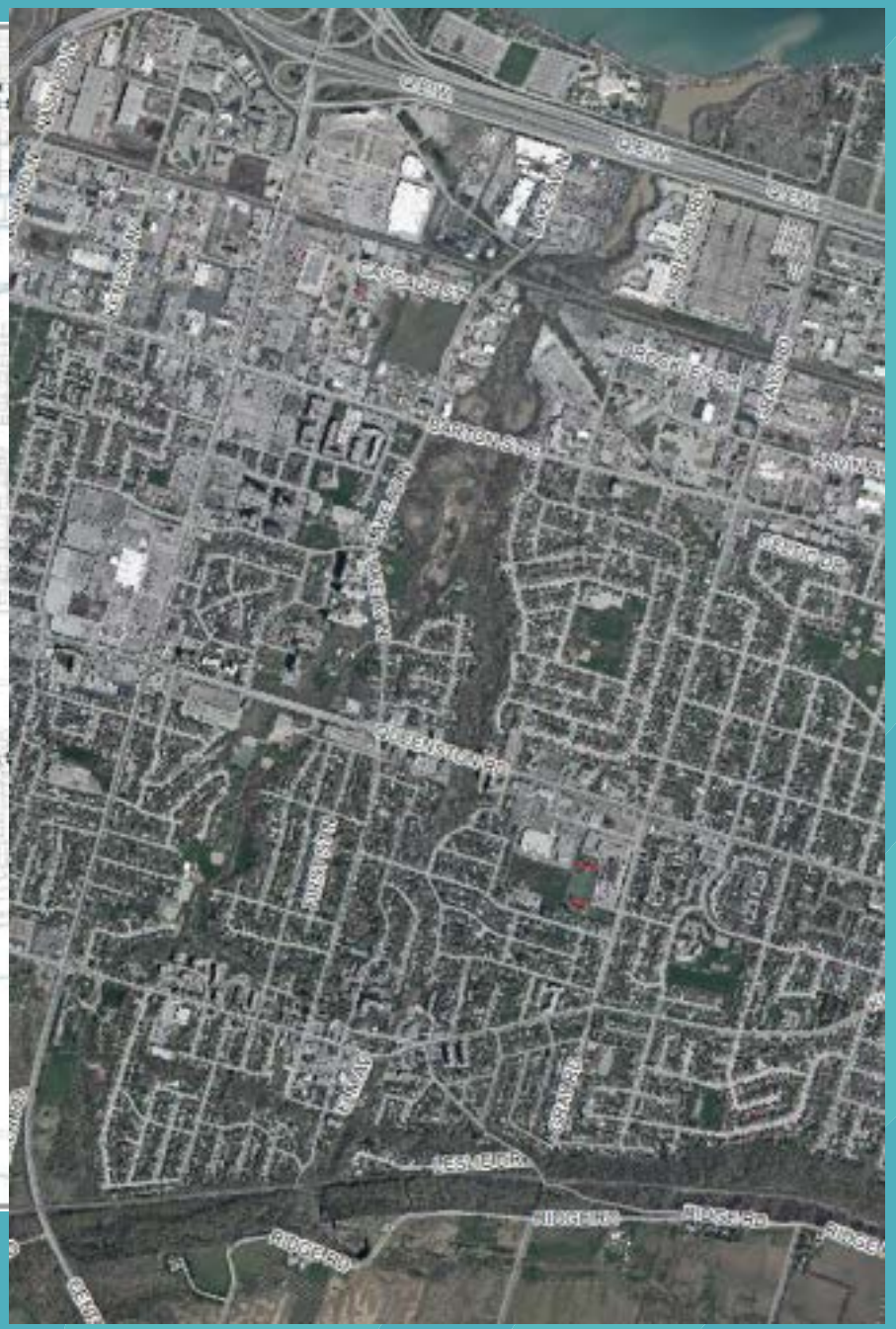
2011 Stoney/Battlefield Creek Environmental Assessment

This study was initiated by Hamilton Conservation Authority as numerous complaints and concerns had been provided to Hamilton Conservation Authority and the City of Hamilton regarding flooding along portions of the watercourses and localized creek erosion.

Preferred Alternatives were identified.

Short-term flood and erosion protection alternatives considered to be implemented in the 0 to 15 year timeframe, medium and long-term management practices (15 to 25 years, 25 years +) where determined.


SC-1
SC-2
SC-3
SC-4
SC-5
SC-6
SC-7
BC-1
BC-2
BC-3
BC-4
BC-5
BATTLEFIELD CREEK
STONEY CREEK
BARTON ST E
QUEENSTON RD
KING ST W
NEW MOUNTAIN RD
NASH RD N
NASH RD S
CENTENNIAL PY N
CENTENNIAL PY S
LAKE AV N
RIDGE RD
GRAY RD
FIRST RD E



2011 Stoney/Battlefield Creek Environmental Assessment

Replacement of existing bank protection along both banks (with regrading if constraints allow).

- Creation of pool features for fisheries benefit.

Preliminary cost estimate of $770,000.

Localized realignment and bank protection to protect property line on east bank.
Regrading of area of slope instability on east bank.
Creation of pool features for fisheries benefit.
Preliminary cost estimate of $450,000

Replacement of existing bank protection along both banks (with regrading if constraints allow).
Creation of pool features for fisheries benefit.
Preliminary cost estimate of $165,000.

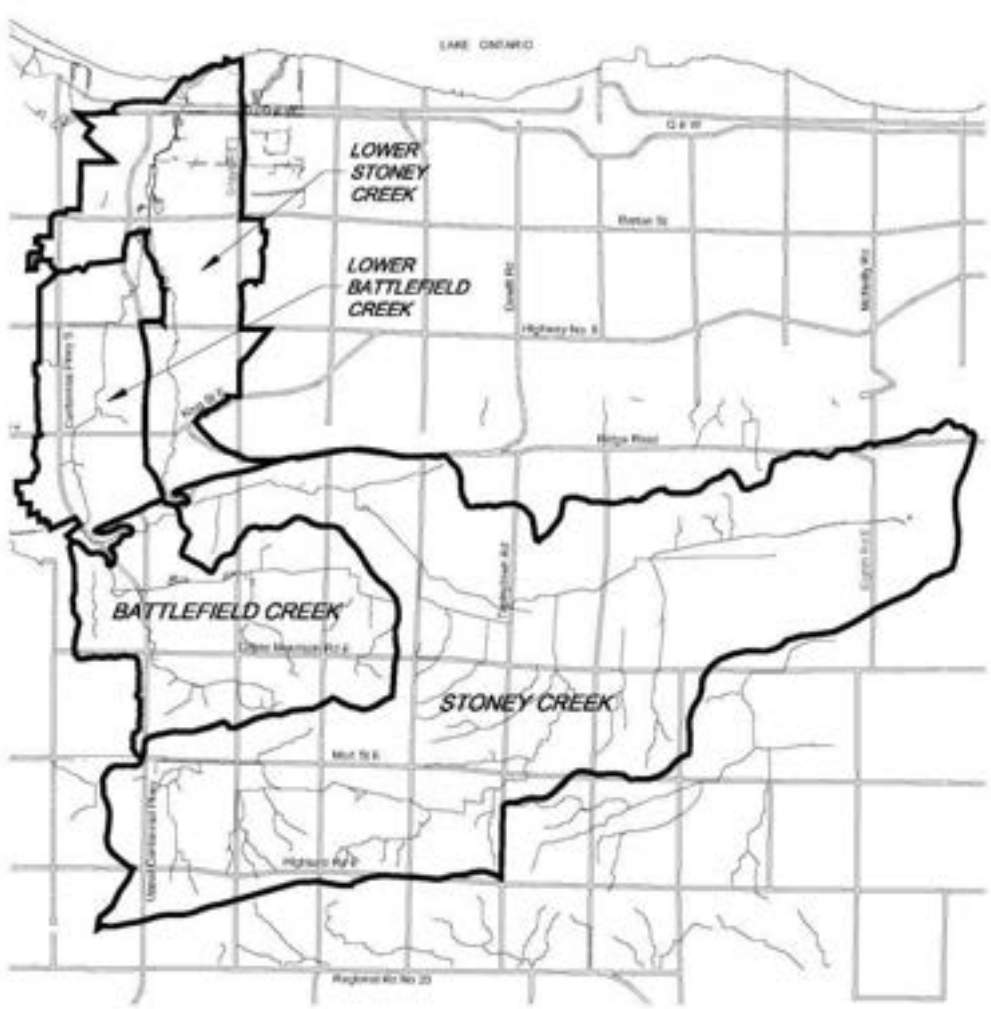
Replacement of existing bank protection along both banks (with regrading if constraints allow).
Creation of pool features for fisheries benefit.
Preliminary cost estimate of $979,000.

2011 Stoney/Battlefield Creek Environmental Assessment

- Ultimately, the 2011 Stoney/Battlefieled Creek Environmental Assessment was not implemented
  - Issues
    - Cost
    - Private Land Issues

A Different Way to Solve a Problem

Saltfleet Conservation Area Wetland Restoration Program



Stoney Creek Watershed Area – 2,070 hectares (5,116 acres)

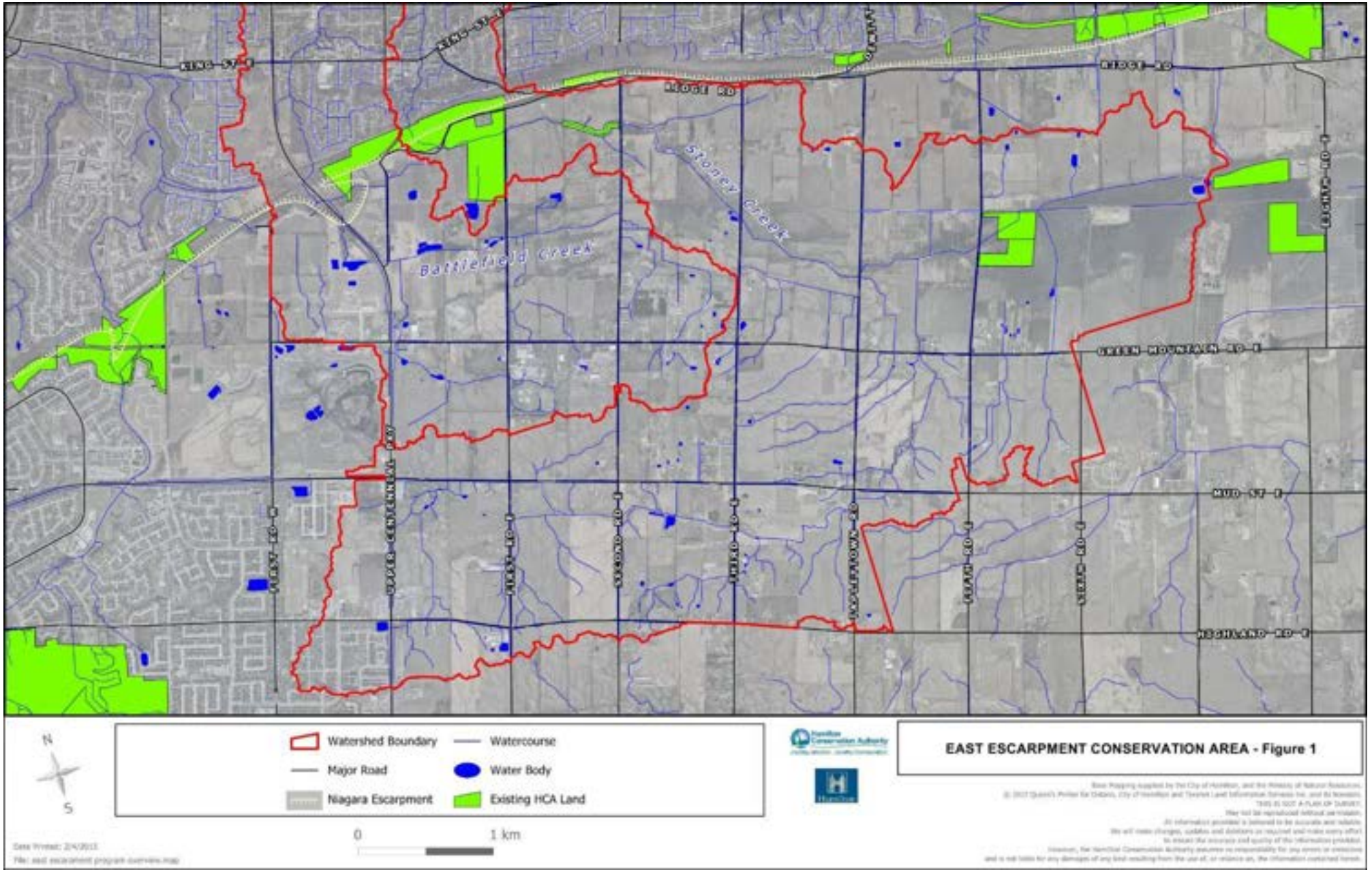
- Of that, 1,619 hectares (4,000 acres) above Niagara Escarpment

Battlefield Creek Watershed Area – 784 hectares (1,936 acres)

- Of that, 500 hectares (1,236 acres) above Escarpment

Total area of both watersheds above Niagara Escarpment is 2,119 hectares (5,236 acres)

The watershed area above the Niagara Escarpment represents 74.24% of total watershed areas


Stoney Creek
Battlefield Creek
MUD ST E
GREEN MOUNTAIN RD E
HIGHLAND RD E
N
S
Watershed Boundary
Watercourse
Major Road
Water Body
Niagara Escarpment
Existing HCA Land
0
1 km
EAST ESCARPMENT CONSERVATION AREA - Figure 1

Saltfleet Conservaiton Area Wetland Restoration Program

Goal

New conservation area in the east end of the City of Hamilton, specifically the Upper Stoney Creek and Upper Battlefield Creek watersheds to provide natural hazard attenuation, natural heritage enhancements and recreation opportunities.

Objectives

Utilize the floodplain areas to retain water to provide flood attenuation.

Mitigate the effects of climate change – natural environment solution

Enhance and enlarge existing wetland areas and create new wetland areas to provide enhanced wetland function to reduce the impacts of high water events and provide water to area watercourses during low flow periods.

Restore natural features and functions of the watercourses in the area.

Restore, enhance and enlarge the natural heritage features associated with the floodplains, wetlands and watercourses of the area.

Provide linkages within and between conservation area lands by utilizing the DoFasco Trail

Enhance and create passive recreational opportunities along the DoFasco Trail.

Existing Floodplain and Erosion Sites

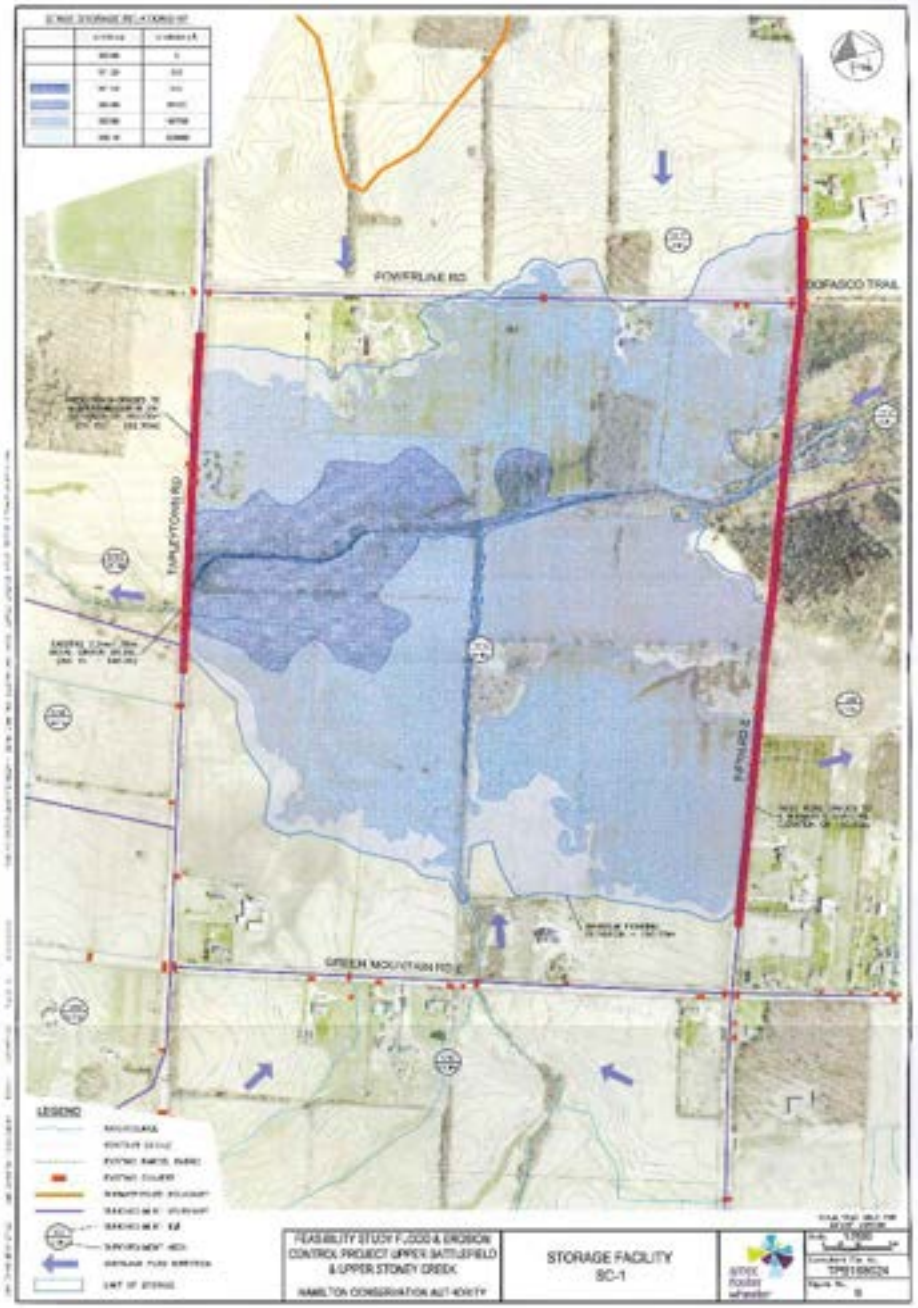
Existing Floodplain and Erosion Sites

Existing Floodplain and Erosion Sites

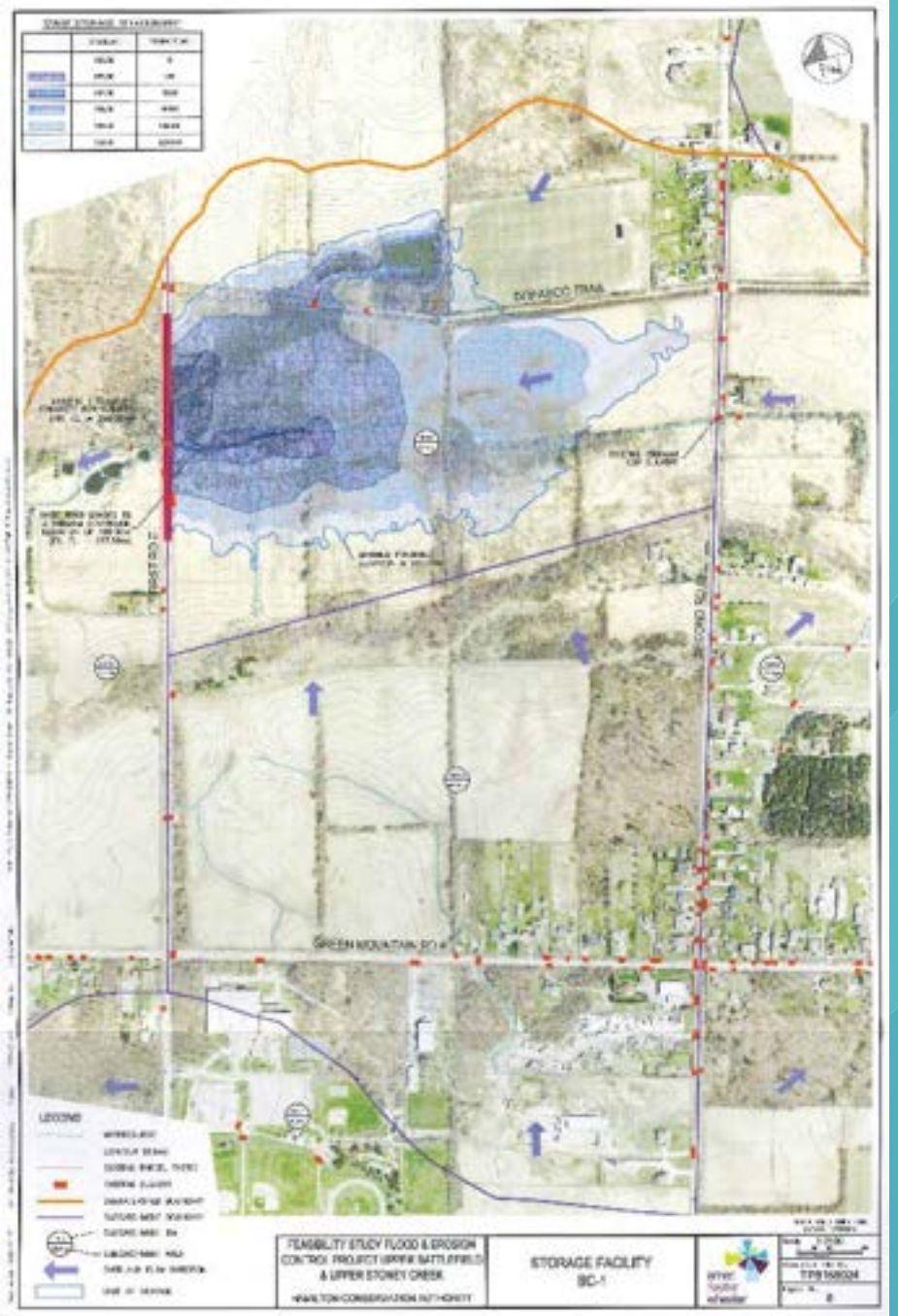
Environmental Assessment Process/Outcomes

Address Downstream Flood and Erosion Issues

Environmental Assessment Process/Outcomes



Environmental Assessment Process/Outcomes



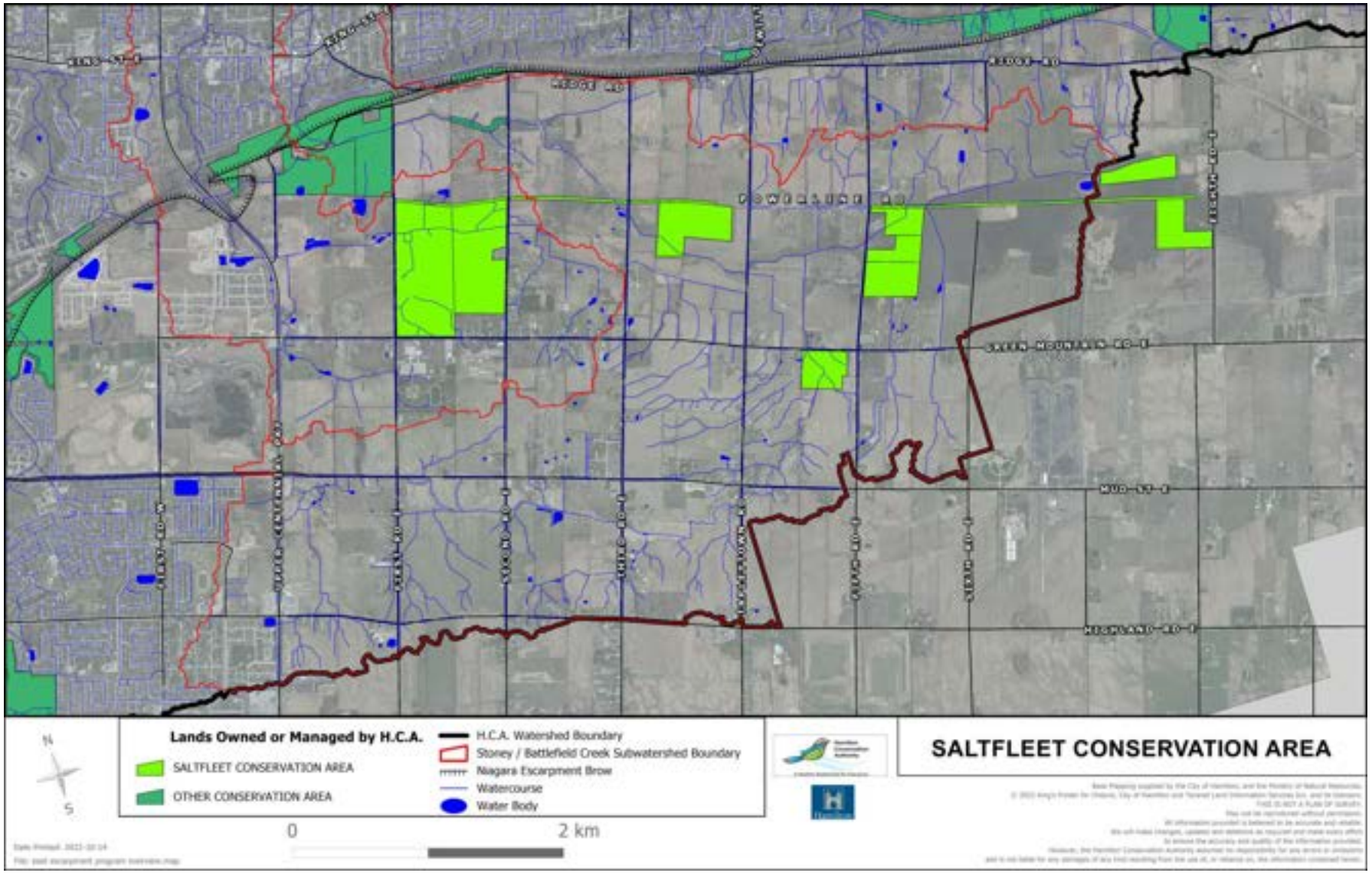
Environmental Assessment Process/Outcomes

Table 4.36. Lower Battlefield Creek and Stoney Creek – Total Properties and Buildings at Risk

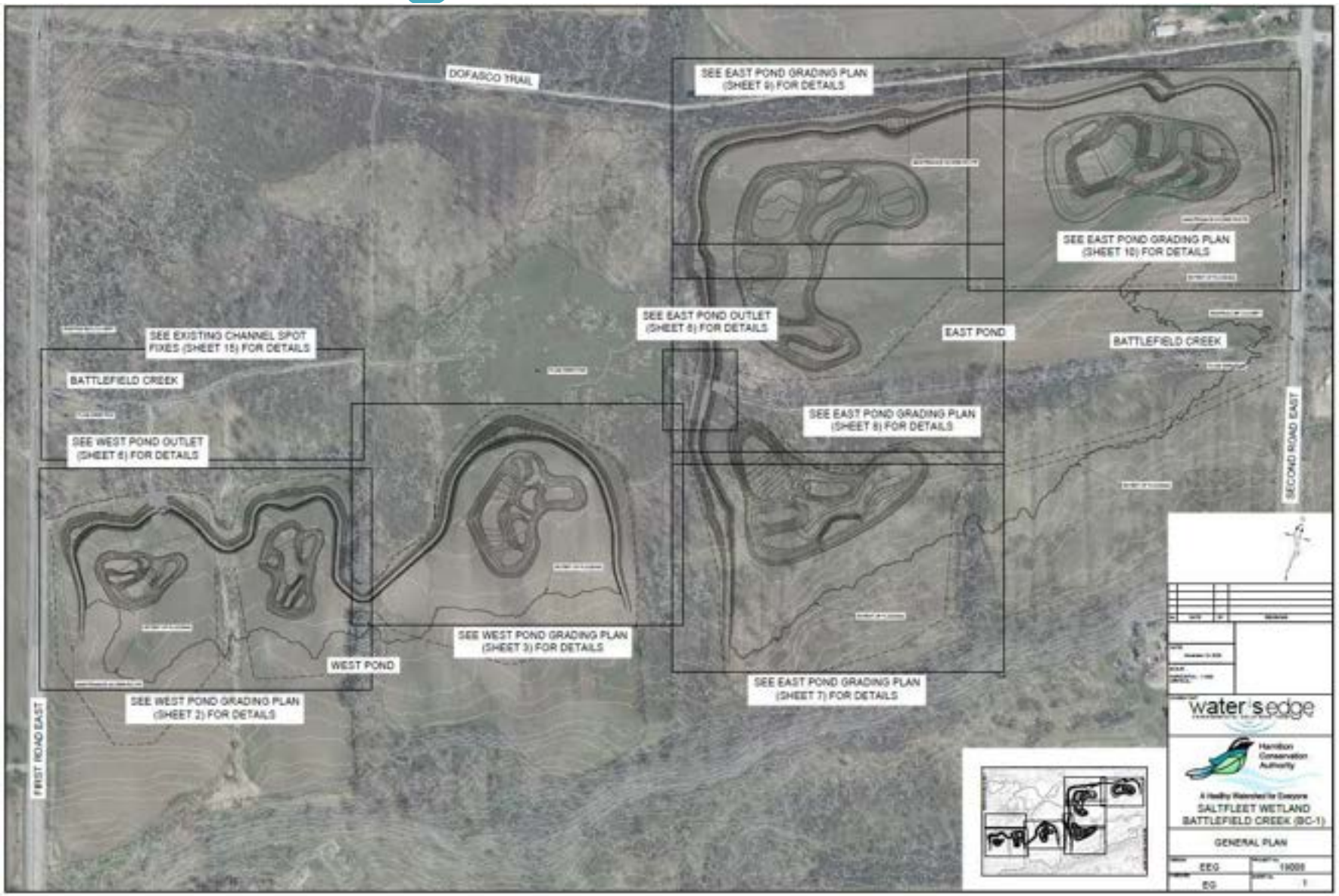
Scenario	Storm Event:	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year	Regional	Comments
Existing Battlefield Creek[3]	Property	1	7	9	10	10	16	52	
	Buildings		1	1	1	1	9	31	
Storage Area BC-1[1]	Property	1	7	8	9	10	14	52	Negligible impact on flooding numbers within Battlefield Creek.
	Buildings		1	1	1	1	8	31	
Existing Stoney Creek[2]	Property		7	24	52	68	86	142	
	Buildings		1	1	6	10	37	85	
Existing Combined Battlefield Creek and Stoney Creek	Property	1	14	33	62	78	102	194	Sum of Existing Battlefield Creek & Existing Stoney Creek.
	Buildings		2	2	7	11	46	116	
Storage Area SC-1[2]	Property				8	21	38	142	Reduces 100 year flooding numbers to less than 25 year flooding numbers within Stoney Creek.
	Buildings				1	1	2	85	
Storage Area SC-2[2]	Property		7	21	38	68	86	142	Reduction in 25 year flooding numbers. All other storm events have negligible or no reduction in flooding numbers.
	Buildings		1	1	2	10	37	85	
Storage Area SC-3[2]	Property		7	21	38	68	76	142	Reduction in 25 year & 100 year flooding numbers. All other storms have negligible or no reduction in flooding numbers.
	Buildings		1	1	2	10	24	85	
Storage Area SC-4[2]	Property		7	21	38	68	78	142	Reduction in 25 year & 100 year flooding numbers. All other storms have negligible or no reduction in flooding numbers.
	Buildings		1	1	2	10	24	85	
Combined Storage Areas Scenario (BC-1,SC-1,SC-4)	Property				7	21	38	142	Reduces 100 year flooding numbers to near 10 year flooding numbers within Stoney Creek.
	Buildings				1	1	2	85	
All Storage Areas	Property				1	14	21	142	Reduces 100 year flooding numbers to less than 10 year flooding numbers within Stoney Creek.
	Buildings					1	1	85	

1. Property/Building numbers listed for Storage Area BC-1 include Properties/Buildings along Battlefield Creek only.
2. Property/Building numbers listed for Storage Areas SC-1 through 4 include Properties/Buildings along Stoney Creek only. Note: Stoney Creek extends to Lake Ontario (past confluence of Stoney Creek & Battlefield Creek).
3. Flood risk identified based on 2011 Class EA Peak Flows (Continuous) and associated rating curves to determine property and buildings at risk.

Land Acquistion

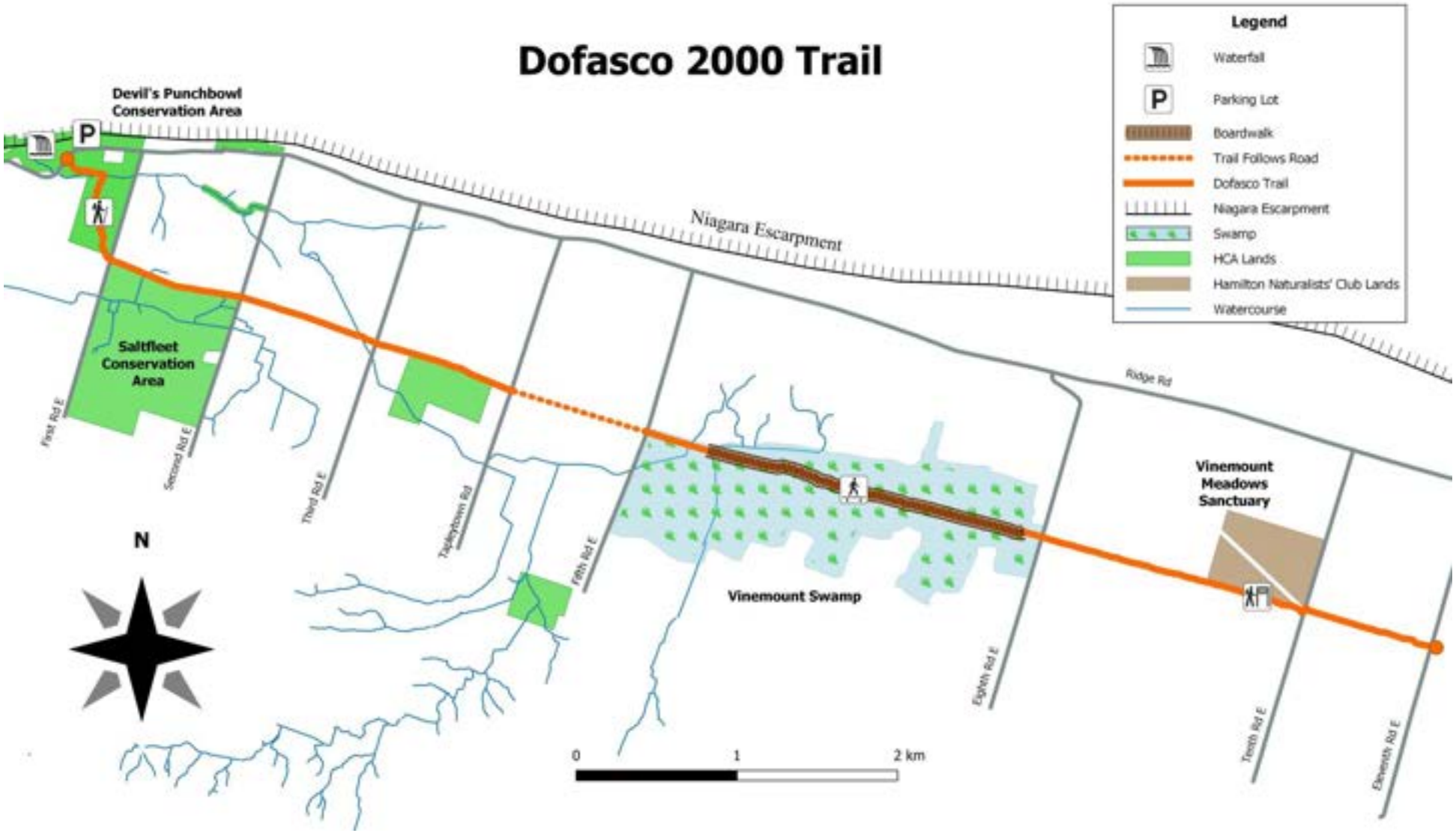


What the Design Looks Like



What the Design Looks Like

Trail Connections



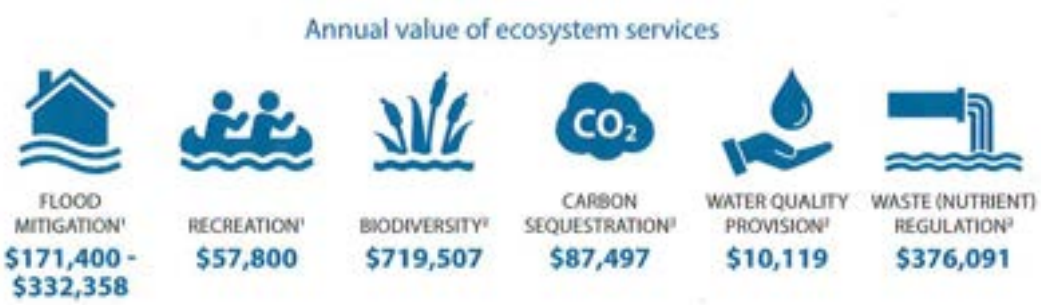
Greenbelt Foundation – Economic Case

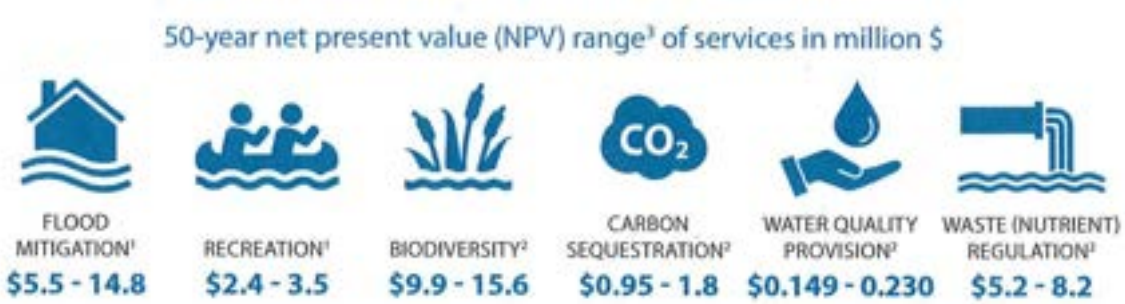
Saltfleet Conservation Area

A critical component of strengthening regional resilience to the impacts of climate change is the strategic investment in natural assets, like wetlands and forests. This natural or “green” infrastructure can help us mitigate some of the largest threats facing our region, including flooding, water quality issues and rising temperatures. By understanding what services our natural assets provide, we can better plan for and manage them – just as we would any other municipal asset.

Even by conservative estimates, this proposed green infrastructure capital investment would pay for itself and would provide additional value beyond grey infrastructure alternatives.

https://www.greenbelt.ca/economic_case





Next Steps

Continued Land Acquisition

Detailed Design for second wetland underway

Detailed Design for third wetland initiated

Contact Information

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