

Lyons Creek East

Evaluation of Administrative Controls



Prepared for:
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Ministry of Environment
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Preamble

Polychlorinated biphenyls (PCBs) were first detected in Lyons Creek in 1990 after a transformer spill occurred at the Hydro One Crowland Substation in Lyons Creek West (west of the Welland Canal By-pass). During the cleanup the presence of older PCB contamination was detected, and this led to an assessment of contaminated sediments in Lyons Creek East (east of the Welland Canal By-pass).

In 1987, Canada and the United States signed the revised Great Lakes Water Quality Agreement (GLWQA), in which Annex 2 described Remedial Action Plans (RAPs) that are required to address environmental degradation in specific areas around the Great Lakes Basin. The GLWQA identified 43 "Areas of Concern" (AOCs) and recommended that RAPs be developed at the local level and include public participation. The Niagara River is a binational AOC where two RAPs are under development separately – one in Ontario and the other in New York State.

In 1999, the Ministry of the Environment, Environment Canada and the Niagara Peninsula Conservation Authority (NPCA) entered into a Memorandum of Understanding under which the NPCA assumed the role of coordinator of the Niagara River RAP. In order to complete the actions required under the Canada-Ontario Agreement (COA), implement the Niagara River RAP, and achieve AOC delisting, the contaminated sediment issues in the AOC needed to be resolved. The RAP Stage 1 document identified three categories (Level 1, 2 and 3) of contaminated sediment in 14 locations in the Niagara River AOC.

In 2004, a Niagara River Contaminated Sediment Technical Advisory Group (TAG) was formed to review and comment on studies being completed at contaminated sediment sites (see Appendix 1 for TAG membership).

Lyons Creek East was identified for further assessment in the Niagara Remedial Action Plan (RAP) because contaminant(s) in sediment exceeded guidelines. The remediation of PCB-contaminated sediment and soil in Lyons Creek West is currently being evaluated, and a risk assessment of the other 11 sites determined that they did not warrant further management.

Studies were undertaken to determine if there was a risk from PCB-contaminated sediment in Lyons Creek East to local fish, wildlife and human health. As a result of the studies and input from the community open houses it was concluded that there is a low level of risk to human and ecological health associated with the contaminated sediment, and that removal was not warranted. Since the sediments of interest are situated within a Provincially Significant Wetland it was determined that removal would actually do more environmental harm than good.

As a result, Monitored Natural Recovery was selected as the best approach to manage the contaminated sediment. This approach allows the ongoing burial of contaminated sediment to continue while a monitoring program is developed to periodically assess the natural recovery of the creek, and administrative controls are established to prevent re-suspension of the contaminated sediment.

The use of administrative controls raises a number of key questions:

- What are the activities that could disturb the sediment?*
- What activities pose the greatest threat?*
- Are the administrative controls currently in place effective at ensuring that contaminated sediment is not disturbed?*
- Are there any activities that are not presently controlled?*
- Which agencies are involved?*
- How can it be ensured that the agencies will work together, using a harmonized approach?*
- Are there other approaches (e.g., communication) that should be used to complement the use of administrative controls?*

The purpose of this report is to investigate these questions and recommend a management framework that harmonizes administrative controls to ensure that human activities do not disturb and re-suspend the contaminated sediment.

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Acronyms

AOC(s)	Areas of Concern(s)
ATV	All Terrain Vehicle
CA(s)	Conservation Authority or Authorities
CAA	Conservation Authorities Act (Provincial)
CEAA	Canadian Environmental Assessment Act (Federal)
CFS	Cubic Feet Per Second
CLC	Community Liaison Committee
CN	Canadian National Railway
COA	Canada-Ontario Agreement
C of A	Certificate of Approval
COSSARO	Committee On the Status of Species At Risk in Ontario
CITY	City of Welland
DA	Drainage Act (Provincial)
DFO	Fisheries and Oceans Canada (Federal Department)
DLUG	District Land Use Guidelines
EAA	Environmental Assessment Act (Provincial)
EBR	Environmental Bill of Rights
EC	Environment Canada
EIS	Environmental Impact Study
EPA	Environmental Protection Act (Provincial)
ERA	Ecological Risk Assessment
ESA	Endangered Species Act (Provincial)
FHMP	Fish Habitat Management Plan
GLWQA	Great Lakes Water Quality Agreement
GTA	Greater Toronto Area
HADD	Harmful Alteration, Disruption or Destruction of fish habitat
HHRA	Human Health Risk Assessment
LDR	Land Disposal Restrictions
LRIA	Lakes and Rivers Improvement Act (Provincial)
MNR	Ontario Ministry of Natural Resources
MOE	Ontario Ministry of the Environment
MOU	Memorandum of Understanding
MTO	Ontario Ministry of Transportation
NR	Niagara Region
NPCA	Niagara Peninsula Conservation Authority
NWPA	Navigable Waters Protection Act
NWPP	Navigable Waters Protection Program
OP	Official Plan
OWRA	Ontario Water Resources Act (Provincial)
PA	Planning Act (Provincial)
PCBs	Polychlorinated biphenyls
PLA	Public Lands Act
PPS	Provincial Policy Statement
PSW	Provincially Significant Wetland
RAP(s)	Remedial Action Plan(s)
SAR	Species at Risk
SARA	Species at Risk Act (Federal)
SARO	Species at Risk in Ontario
SLSMC	St. Lawrence Seaway Management Corporation
TAG	Niagara River Contaminated Sediments Technical Advisory Group
TC	Transport Canada (Federal)

1.0 Purpose and Introduction to Study Area

1.1 Purpose and Scope of Administrative Controls Review

The purpose of this report is to:

- 1) Identify activities that could occur within the Lyons Creek East sub-watershed and assess the risk of sediment re-suspension associated with each activity (Section 2);
- 2) Review the administrative planning and permit approval controls currently in place that regulate development and site alteration (Section 3 and Appendix 2);
- 3) Assess how administrative controls are implemented through the review of activity scenarios (Section 4);
- 4) Provide an administrative protocol to harmonize agency mandates together with a decision making process that coordinates and strengthens the review and control of activities that have the potential to disturb contaminated sediment (Section 5); and
- 5) Develop a community outreach program that communicates the administrative control protocol and provides options for dealing with non regulatory activities (Section 6).

Within the scope of this project, the term “administrative controls” pertains to the policies, standards, procedures and guidelines that are in place to regulate activities that may disturb and re-suspend contaminated sediment. Essentially, they are the planning process approvals and permit control mechanisms that municipal, provincial, and federal levels of government can apply to regulate development and site alteration activities. Within the context of the Lyons Creek East Sediment Strategy, these administrative controls will be used to ensure long-term human and ecological health by preventing the disturbance and re-suspension of contaminated sediment.

The types of Administrative Controls considered in this assessment include environmental reviews under the Canadian *Environmental Assessment Act* and the Ontario *Environmental Assessment Act*; planning review processes under the provincial *Planning Act*; and the permit approval processes under the federal *Fisheries Act*, the *Species at Risk Act*, the provincial *Drainage Act*, *Endangered Species Act*, *Environmental Protection Act*, *Public Lands Act*, and *Ontario Water Resources Act*, as well as Ontario *Regulation 155/06* under the *Conservation Authorities Act*, and municipal approvals under the *Planning Act* and building permits under the *Ontario Building Code Act*.

1.2 Analytical Process

Our analysis was based on a review of the scientific study documents and other background research completed to date that pertains specifically to Lyons Creek East. Our

analysis also included a review of meeting summaries, presentations and newsletters that were prepared by various consultants and the Technical Advisory Group (TAG) and presented to the community stakeholders.

Several meetings were held with the Technical Advisory Group at the Niagara Peninsula Conservation Authority's head office in Welland to share information and discuss the approaches to control human activities that may disturb contaminated sediment. The discussions focused on developing a protocol to improve the use of administrative controls in order to effectively regulate human activities that could result in a negative impact on the environment.

Following the meetings an analysis of the information was completed, and additional information on agency roles and responsibilities was received and discussed with a number of the participants. Appendix 1 provides a list of the Technical Advisory Group members that were involved in the review of this report.

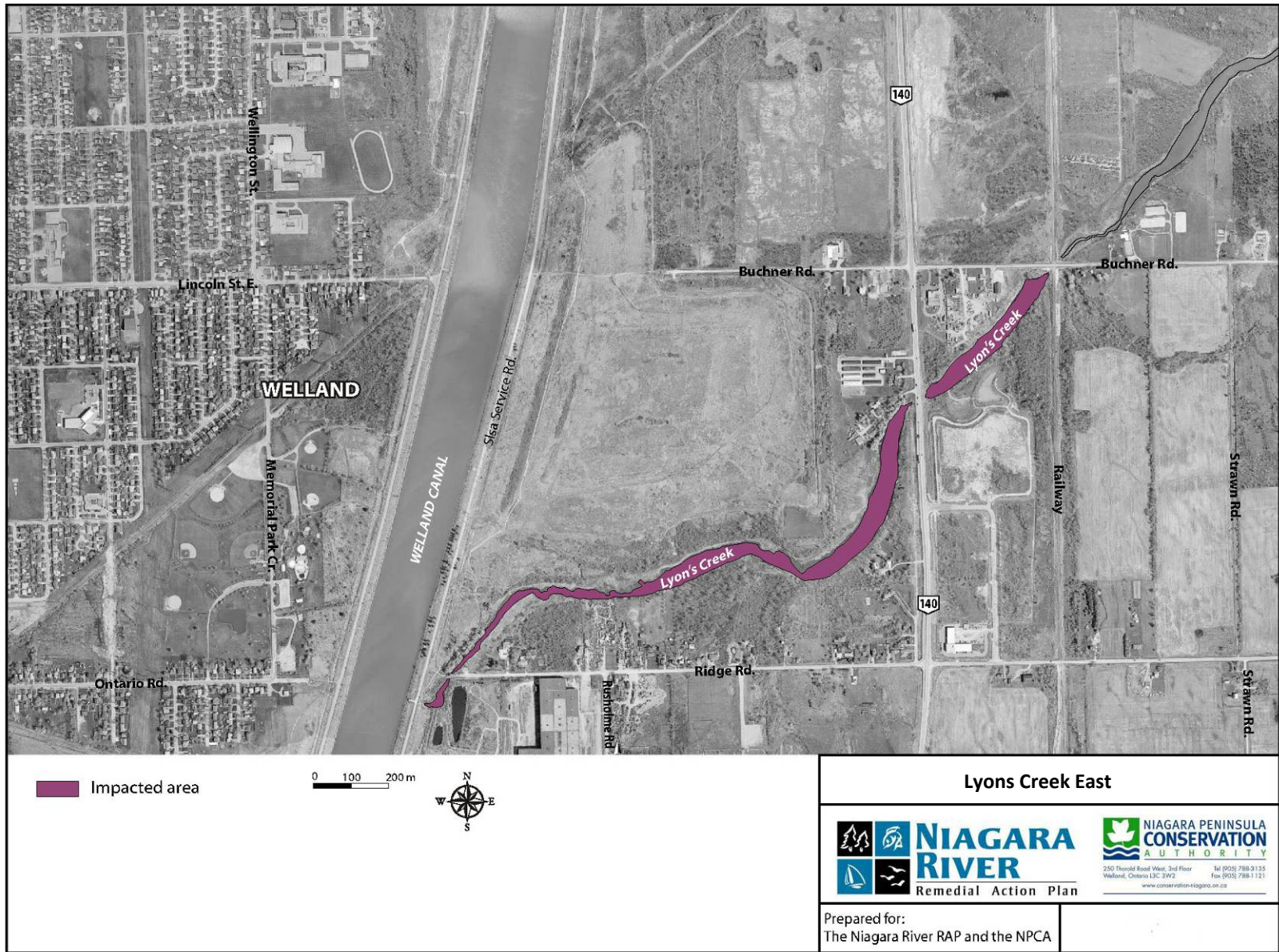
1.3 History of Lyons Creek East

The PCBs present in Lyons Creek East originated from untreated storm sewer discharge that had been directed to the headwaters of Lyons Creek. From the 1940s through to the 1960s, sewers servicing the southern sections of the City of Welland drained into Lyons Creek. Originally, Lyons Creek flowed from southeast Welland and emptied into the Welland River. In 1971, the Welland Canal By-Pass was completed, providing ships with a more direct route between Lake Ontario and Lake Erie. The construction of the Welland Canal By-Pass severed the Lyons Creek watershed, creating two separate watersheds: *Lyons Creek West* which empties into the Welland Canal By-pass and *Lyons Creek East* which receives water that is pumped directly from the Welland Canal By-pass into the creek channel and empties into the Niagara River.

Polychlorinated biphenyls (PCBs) were first detected in Lyons Creek West in 1990 after a transformer spill at the Ontario Hydro (now Hydro One) Crowland substation west of the Welland Canal By-pass. During the clean up, the presence of older PCB contamination in Lyons Creek West sediment was detected and this finding initiated separate studies in both Lyons Creek West and Lyons Creek East. Between 1991 and 1998 the Ministry of the Environment (MOE) conducted sediment sampling studies which delineated the PCB-Impacted Area in Lyons Creek East (Figure 1, Page 3). Figure 2 (page 7) illustrates the locations of the 4 zones that were monitored for the presence of PCB contaminated sediment within the Impacted Area, as summarized in Niagara River AOC Phase IV Report : Sediment Management Options for Lyons Creek East and West, Golder Associates (August, 2008).

The effects on biota and human health due to PCB contamination of the Lyons Creek East sediment was predicted through a risk assessment approach and contaminated sediment management options were evaluated.

Figure 1 – Lyons Creek East – Area Impacted by Contaminated Sediment



From all the studies and assessments prepared since 1991, the following are the key conclusions with respect to Lyons Creek East:

- The area of impacted PCB contaminated sediment is located between the Welland Canal By-pass and the Canadian National Railways (CN) rail line crossing at Buchner Road (see Figure 2, Zones 1, 2, 3 and 4, page 7).
- Within the Impacted Area, the PCB contaminated sediment is confined to the silt and detritus that has accumulated in the 20-50 cm layers, and has not contaminated the deeper clay layer.
- Exposure to PCBs and dioxin-like PCBs in sediment is not expected to result in adverse human health effects. Risk through the consumption of sport fish taken from Lyons Creek East is predicted to be minimal because a survey indicated that consumption of fish taken from the creek is minimal. However, the public is advised to follow the MOEs Guide to Eating Ontario Sport Fish (Source - Detailed Human Health Risk Assessment: Lyons Creek East, Dillon Consulting Limited, November 2007).
- The ecological health risks associated with the contaminated sediment are low. An assessment of the effects of contaminated sediment on three receptors (Great Blue Heron, Belted Kingfisher, and Mink) showed that there was low risk to these three species. (Source – Lyons Creek East Wetland Inventory & Monitoring Study Final Interim Report (March, 2007) C. Portt & Associates, Dougan & Associates Ecological Consulting Services).
- The Impacted Area is located within the boundaries of a Provincially Significant Wetland (PSW) (see Figure 3, page 8). The PSW supports habitat for provincially threatened and rare species and ecological communities, and therefore should be maintained.

In August 2008, Golder and Associates prepared a final study outlining the various management options to remediate the contaminated sediment site and the following options were considered:

- 1) Monitored Natural Recovery;
- 2) Enhanced Natural Recovery;
- 3) Capping; and
- 4) Removal.

Each option was evaluated against 10 criteria and Monitored Natural Recovery was selected as the preferred management strategy (See Golder Associate Phase IV Report for full definition of criteria):

Criteria 1: Does the option address the identified risks to human health or the environment?

Criteria 2: Does the option protect the ecological integrity of the surrounding environment?

Criteria 3: What neighbourhood impacts will the option generate?

Criteria 4: Does the option comply with federal, provincial or municipal legislation and policy?

- Criteria 5: Will the option receive community support?
- Criteria 6: How effectively will the option perform in the long term?
- Criteria 7: Will the option reduce the toxicity and mobility of the contaminants?
- Criteria 8: Is the option technically feasible?
- Criteria 9: How much will the option cost in the short and long term?
- Criteria 10: Will the project funders and regulatory agencies support the option?

In November 2009, the criteria listed above and the recommended sediment management option, Monitored Natural Recovery, were presented at a public Open House. Monitored Natural Recovery is supported by the following agencies and organizations:

- 1) City of Welland;
- 2) Environment Canada;
- 3) Ministry of the Environment;
- 4) Ministry of Natural Resources;
- 5) Niagara Peninsula Conservation Authority;
- 6) Niagara Region; and
- 7) The Welland River Keepers (a local conservation group).

1.3 Scope and Description of Study Area – The Area of Undertaking

The geographic scope of this evaluation includes all lands that drain into the upper portion of Lyons Creek East between the Welland Canal and the Buchner Road / CN Railway Intersection (Figure 2). Within this area there are two areas of concern:

- Impacted Area – Includes all land in the creek bed where the contaminated sediment exists (Zones 1, 2, 3, and 4).
- Area of Undertaking – Includes all land within the sub-watershed that drains into the Impacted Area

This study area was selected because the contaminated sediments in the Impacted Area could potentially be re-suspended by any activity that occurs in the creek and by activities in the sub-watershed that could alter water flow entering into the Impacted Area.

The Impacted Area includes Zones 1, 2, 3 and 4 as identified in Niagara River AOC Phase IV Report: Sediment Management Options for Lyons Creek East and West (Golder Associates, August, 2008). According to this report Zones 1, 2 and 3 have a high incidence of PCB contamination at a known depth and location, whereas Zone 4 was not uniformly sampled. The exact depth and location of all contaminated sediment has not been confirmed; however, based on the sampling undertaken, it was determined that the risk of re-suspending contaminated sediment in Zone 4 was much lower than in Zones 1,2 and 3. A less restrictive approach for Zone 4 was warranted.

Lyons Creek East is located totally within the boundaries of a Provincially Significant Wetland (PSW) and the Niagara Peninsula Conservation Authority's 1:100 year flood line as illustrated on Figure 3 (page 8).

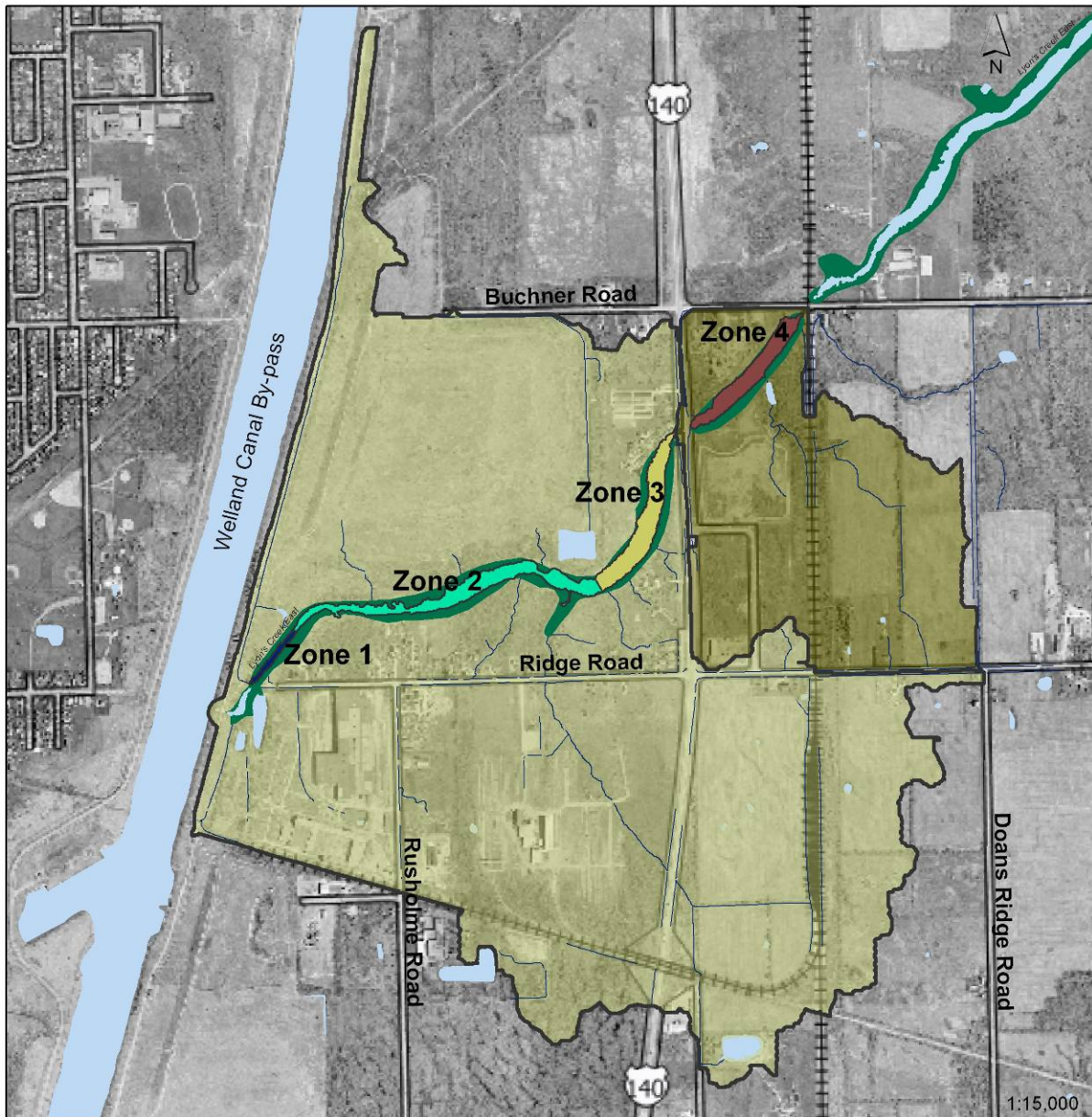
The creek bed is owned by the Provincial Crown, which is administered by the Ministry of Natural Resources. The City of Welland owns two small parcels of land along the southern shoreline of the creek and an industrial subdivision along the east side of Highway 140. Transport Canada own a vacant 150 acre site on the north side of Lyons Creek East that was used to store the spoils from dredging the Welland Canal By-pass in the early 1970s. This site is managed by the St. Lawrence Seaway Management Corporation (SLSMC).

The majority of the surrounding lands are privately owned. The land uses immediately adjacent to the Impacted Area are a mixture of single family residential, vacant lands, agricultural and light industrial uses including scrap yards, mini storage facilities, the Universal Resource Recovery Plant and other manufacturing operations. Two floating docks were observed on September 30, 2009 in Zones 3 and 4 (see Figure 2, page 7) and there was ATV activity along the canal service road and on the SLSMC lands.

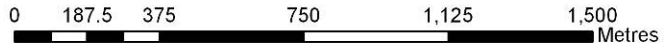
The Area of Undertaking includes all lands that drain into the Impacted Area and is generally bounded on the west by the Welland Canal By-pass, Buchner Road on the north, the CNR rail line to the east, and a spur line along the south as illustrated on Figure 2. There are two major culvert crossings including Highway 140, and the CN Rail line/Buchner Road crossing, and there is a small concrete bridge on the westerly end of Ridge Road that is currently closed to highway vehicle access. An Enbridge Gas line and a municipal water and sewer also cross Lyons Creek East along the east side of the Highway 140 culvert.

Many portions of Lyons Creek East are navigable only by canoe or kayak due to the shallow depth and thick aquatic vegetation. Water-based recreational activities are almost entirely limited to non-motorized boating, fishing and swimming. All lands adjacent to the creek are privately owned (except two City owned parcels and the SLSMC lands) and there are no developed public water access points in the Impacted Area.

Figure 2 – Lyons Creek East – Area of Undertaking



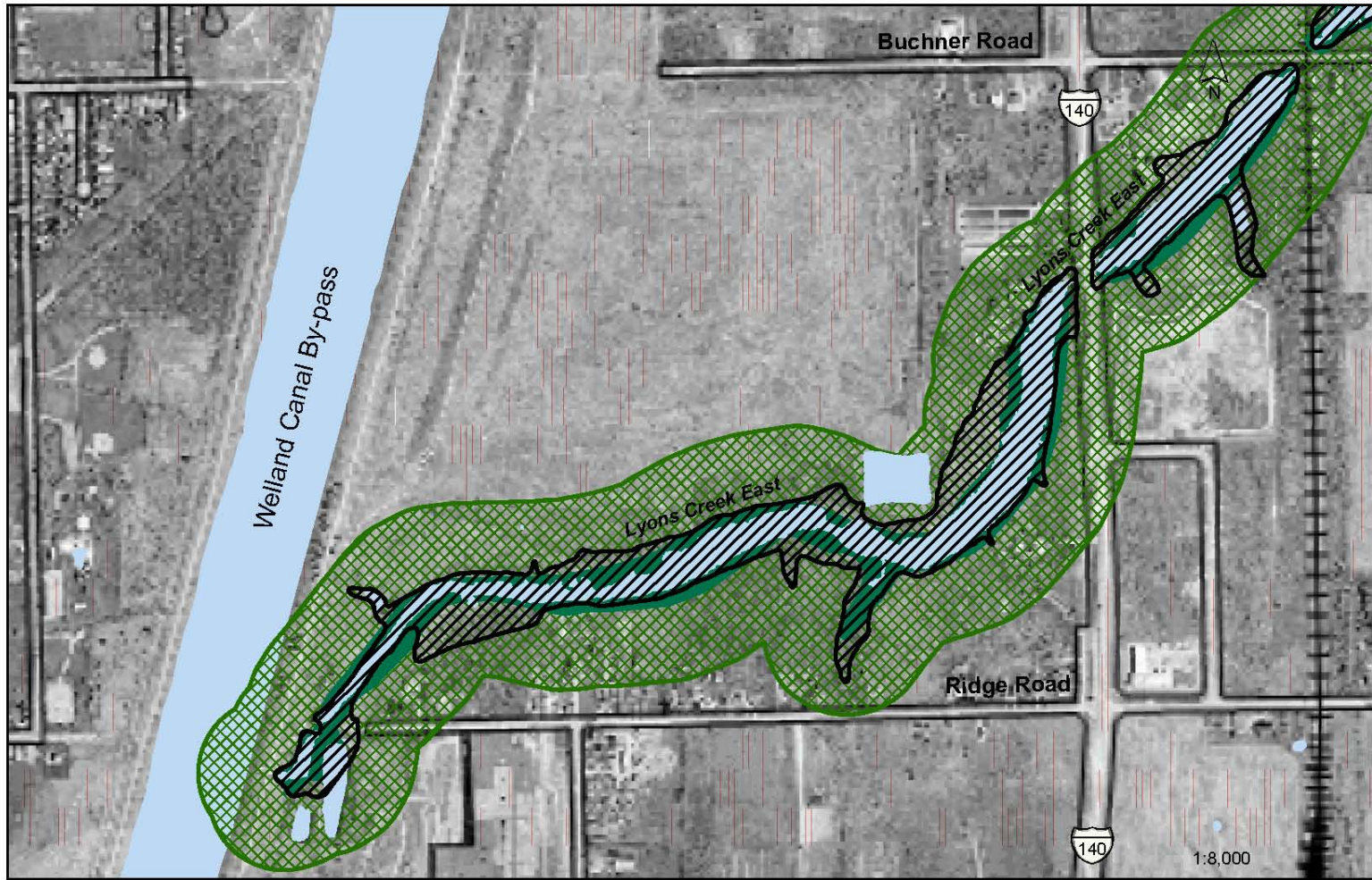
Legend



- +— Railway
- ~ NPCA Hydroline: Streams & Ditches
- ~ Watercourse
- Lyons Creek East PSW Boundary
- Area of Undertaking Zones 1 to 3
- Area of Undertaking Zone 4
- Impacted Areas: Zones with Contaminated Sediments



Figure 3 – Lyons Creek East – Boundaries and Adjacent Lands of PSW, and 100 Year Flood Area



Legend

- | | | |
|---|---|--|
|  Lyons Creek East PSW Boundary |  Railway |  Lyons Creek East 100 Year Flood Area |
|  120 m PSW Adjacent Lands |  Watercourse |  |

2.0 Analysis of Activities and Assessment of Risk

Section 2.0 describes the natural and human-induced activities that could occur within the Area of Undertaking and assesses the risk of sediment re-suspension associated with each activity. This information will be used to assess the effectiveness of the current administrative controls that are used to regulate activities (Section 3 and 4), confirm a protocol to harmonize agency approvals (Section 5), and recommend a complementary Community Outreach Program (Section 6) that ensures all proponents of these activities are aware of the existence of the contaminated sediment.

2.1 Description of Potential Activities

Table 1 provides a complete list of activities that have the potential to occur within the Impacted Area and the Area of Undertaking, as shown on Figure 2, and result in disturbing contaminated sediment. Activities have been categorized into five groups: Public Works and Utilities, Private Sector Development, Recreational Activities, Monitoring and Restoration Activities, and Uncontrollable Activities.

Public Works and Utilities – Public works are activities related to the construction, maintenance and emergency repair of public infrastructure such as roads and road widening, municipal water and sewer, and culverts and ditches. Utility activities include installation and maintenance of infrastructure for natural gas, telephone service, cable television and other services. Some of these activities are subject to federal, provincial and municipal approvals and the Environmental Assessment Process (*CEAA, Ontario EA Act*). Activities in this category are generally for public services.

Table 1 – List of Activities that Could Potentially Disturb Contaminated Sediment

Activities
1. Public Works and Utilities
Public Road Widening
Emergency Utility Repair
Culvert Replacement and Maintenance
Underground Cable and Pipelines
Alteration of Source Water Pump Flow
Water Taking for Fire Fighting
Snow Storage
2. Private Sector Development
Development and Site Alteration
Railroad Widening
Major Shoreline Alteration
Stormwater Outflow
Construct Parkland (public & private)
Water Taking (municipal & industrial)
Water Discharge (commercial & industrial)
Filling Lands Under Water
Retaining Walls
Docks – Crib and Sheet Piling
Docks – Post or Pile (not sheet piling)
Docks – Floating
3. Recreational Activities
Increasing Depth of Boating Channel
ATV – Motorized Vehicles
Propeller Wash
Anchoring
Paddling
Fishing
Swimming
4. Monitoring and Restoration Activities
Habitat Creation Project
Sediment Monitoring and Field Excursions
Aquatic Weed Harvest or Removal
5. Uncontrollable Events
Train Derailment – Highway Accident
Earthquake or Tornado
Storm Event (1;100 year)
Tree Falling and Clearing
Ice Scouring
New Species Introduction
Climate Change

Private Sector Development – Private sector development applies to private land and shoreline development, and involves the construction of new buildings and structures, a change in land use, the creation of a new lot, or any site alteration that would change the topography and natural vegetative characteristics of the land. Most private sector development activities require approvals from Niagara Peninsula Conservation Authority and/or the City of Welland (e.g., zoning by-law), at a minimum. Development or site alteration that occurs in the Area of Undertaking but outside of the Impacted Area will only impact the contaminated sediment through increased stormwater that enters Lyons Creek East.

Recreational Activities – Water related recreational activities include motorized and non-motorized boating, swimming and fishing. Land based activities include motorized recreational vehicles and walking that occurs along the trails located on the adjacent Transport Canada lands.

Monitoring and Restoration Activities – There are some human-induced activities related to monitoring and restoration of the contaminated sediment, the Provincially Significant Wetland, and species at risk habitat that could potentially disrupt contaminated sediment. The impacts of these activities, such as a wetland habitat creation project, or ongoing monitoring or field excursions for educational purposes, are controllable and can be mitigated.

Uncontrollable Events – There are other events that are uncontrollable. Human-induced activities may include a train derailment or highway accident. Naturally occurring events that could potentially disturb sediment include extreme storm events, natural catastrophes (earthquakes and tornadoes), ecological and environmental impacts from climate change, new species introduction, or fish and wildlife movement (e.g., beaver building dams or migration) that could alter the aquatic environment through unusual behavioural and life-cycle habits. These events are uncontrollable and there are no effective means to prevent these events from occurring. However, if such an event were to occur, monitoring should be undertaken to determine whether sediment has been re-suspended and to implement mitigation measures, if necessary and appropriate. As a precautionary measure, monitoring for ecological and/or environmental “triggers” of some of the uncontrollable events over the next monitoring period, such as highway accidents and/or climate change, may help to mitigate impacts in the future.

While completed and ongoing studies indicate the sediment is stable under natural conditions, the impact of global warming and subsequent changes in flow conditions on the stability of these deposits has not been assessed.

2.2 Proponents of the Activities

Table 2 lists the potential proponents of human-induced activities in the Lyons Creek East watershed. There are three categories of proponents that conduct activities that could possibly re-suspend the contaminated sediment: Public Agencies, Utilities and Authorities, and Private Sector.

The Public Agencies include all agencies with policies or administrative controls within the sub-watershed of Lyons Creek East. In one case, the City of Welland has created an industrial subdivision that is now available for development (Enterprise Subdivision). Public Utilities and Authorities include Enbridge Gas, Bell Canada, Ontario Hydro, and the St. Lawrence Seaway Management Corporation which work to provide essential services for residents and industry. The private sector includes recreationalists, land developers, and residential, commercial, industrial, agricultural and vacant land property owners.

Most private sector activities are regulated by provincial, municipal and conservation authority regulations, while most utility and public sector activities are self regulated or subject to federal, provincial and municipal approvals and the Environmental Assessment Process (*CEAA, Ontario EA Act*). Included in the list of public agencies are those that provide funding for projects that could disturb contaminated sediment.

Table 2 – Potential Proponents of Human Induced Activities

Public Agencies	Utilities and Authorities	Private Sector
Environment Canada	St. Lawrence Seaway Management Corporation	Recreationalists Naturalists, ATV, Anglers and Hunters
Transport Canada	Enbridge Gas	Developers
Fisheries and Oceans Canada	Bell Canada	Residential Property Owners
Ministry of the Environment	Hydro One	All Commercial and Industrial Operators <i>including:</i> <i>CNR rail line, Weed Man, Daves' Auto Pit, WD Marr Industries, Timbro/Procur, Falconer's Scrap, Mid Town Forge, Trans Canada Marine, W Abrasives, Universal Resource Recovery Inc, and Niagara Sausage and Meat Products</i>
Ministry of Natural Resources		
Ministry of Transportation		
Niagara Peninsula Conservation Authority		
City of Welland		
Niagara Region		

Note – The list of commercial and industrial users noted from a site inspection Oct 1, 2009

2.3 Assessing the Risk of Activities

In order to assess the risk that certain activities may pose in terms of disturbing or re-suspending contaminated sediment, the types of actions responsible for the disturbance must be considered. Timing, location, duration and scope of work are also key factors to be taken into account.

Identifying Common Actions that Cause Disturbance – There are five general actions (see Figure 4 below) that are common to most development and recreational activities that could potentially disturb sediment including dredging, water flow alteration, scouring, filling and piling. For example, the activity of locating new municipal water or sewage pipelines or an Enbridge gas line through the Impacted Area could result in a combination of all five individual actions (i.e., dredging, altering water flow, scouring, filling and piling). On the other hand the construction of a single residential dock may only involve piling. Activities that occur in the Area of Undertaking but outside of the Impacted Area can only cause re-suspension of contaminated sediment by increased stormwater runoff that flows into the Impacted Area.

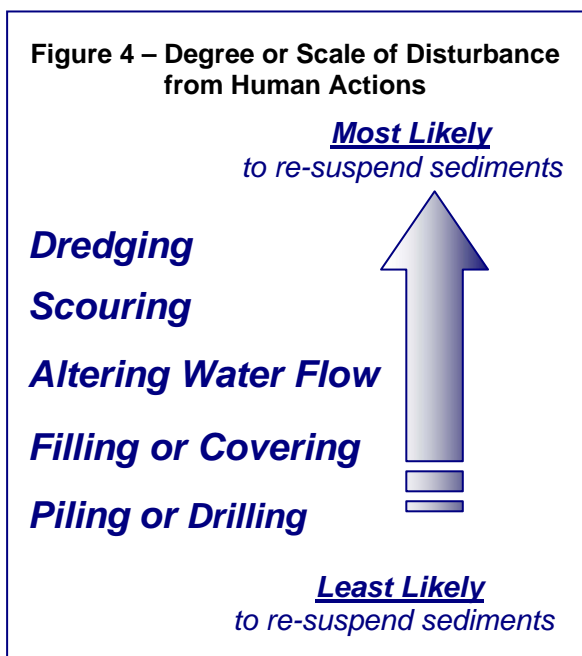
The five actions are defined as follows:

Dredging (excavation) – is the physical alteration of the creek bed by the removal of mud, sand, detritus and sediment from the bottom of the creek. The purpose of such actions may be to clear out an area or deepen a channel for a road or railroad widening, culvert clean out, or a water-crossing (bridge/culvert) replacement. Without implementing proper mitigation measures, dredging would significantly increase the risk of disturbing and re-suspending contaminated sediment.

Scouring (incidental disturbance) – is the moving or scraping of the top layer of the creek bed by an object (e.g., anchor, paddle, propeller, ice) being dragged across the sediment surface. This action only moderately increases the potential to re-suspend contaminated sediment depending on the depth of the scouring activity.

Altering Water flow (erosion) – is the alteration of the natural flow of water in the creek by adding an obstruction, dredging a channel, installing an inlet or outflow for water or effluent, altering the volume of water supplied to the creek from the Welland Canal By-pass Pumping Station, or an increase in stormwater runoff from areas outside of the Impacted Area. These activities could significantly increase the risk of disturbing the top layer of cleaner silt and detritus and expose the contaminated sediment to erosion. The magnitude of impact, however, would depend on the location, extent and duration of the activity.

Filling (covering) – is the physical alteration of the creek bed and shoreline by covering the substrate with soil, sediment, concrete, cribs or any other material. This action may result in a minimal and incidental re-suspension of sediment and would make it more difficult to remove contaminated sediment once completed.



Piling or Directional Drilling (vibration) – Piling is the driving of a beam or post into the creek bed, in order to attach something to the top of the beam, such as a dock, a bridge or a sign. The beam is often referred to as the pile. Directional drilling is a technique applied for the placement of gas or utility lines. These actions only slightly increase the risk of disturbing sediment through the vibration or movement of the pile or drill through the substrate in a localized area.

Risk Assessment Assumptions – Due to the varying duration, location, and scope of work of each of the actions it is very difficult to determine the exact likelihood or magnitude of risk associated with any specific development or recreational activity. However, it is possible to provide a general assessment of whether some actions will result in a high, medium or low risk of disturbing contaminated sediment based on the location of the activity and the type of actions (dredging, water flow alteration, scouring, filling and piling) that are involved.

The relative location of any activity in proximity to the contaminated sediment will increase or decrease the risk of re-suspending the contaminated sediment. For the purposes of this assessment, it is assumed that:

- Activities occurring inside the Impacted Area will have the greatest likelihood of disturbing the contaminated sediment and that the risk will decrease as activities are located further away from the Impacted Area.
- The greatest impact for activities occurring in the Area of Undertaking but outside the Impacted Area is from increased volume and/or velocity of stormwater entering the creek.

For the purposes of this assessment, it makes sense to apply the *Provincial Policy Statement*, the *Regional Policy Plan* and *Ontario Regulation 155/06* and consider the potential prohibitions or restrictions in development and site alteration activity. Therefore, it is assumed that within the Area of Undertaking:

- There is a low risk associated with development or site alteration activities in the Provincially Significant Wetland because these activities are not permitted by the Provincial Policy Statement (PPS), the Regional Policy Plan or the City of Welland Official Plan.
- There is a low risk associated with development within 30 m of the Provincially Significant Wetland because these activities are restricted by *Ontario Regulation 155/06*.
- There is a low risk associated with development or site alteration activities on lands within 120 m of the PSW boundary, or within the boundary of the floodplain, whichever is the greatest, because these activities are restricted by the PPS and the Regional Policy Plan. Development or site alteration within 120 m of the PSW will require an Environmental Impact Study before any projects can proceed.
- There is a low risk with activities that occur on lands outside of the 120 m boundary that drain into Lyons Creek East because these activities can only re-

suspend the contaminated sediments by increasing the volume and/or velocity of storm water entering the Impacted Area. Under the Regional Policy Plan development and site alteration are only permitted if they will not have negative impacts on stormwater runoff and erosion. A stormwater management plan and a sediment and erosion control plan may be required.

Assessing the Risk of Certain Activities – Table 4 (on next page) summarizes the risk assessment for each of the activities with respect to potential for re-suspension of contaminated sediment and the likelihood of occurrence. Each activity was assessed to determine the likelihood of the five actions occurring (i.e., dredging, altering water flow, scouring, filling/covering, or piling/directional drilling) based on a simple weighted rating that was applied to each activity as follows: action likely involved (1.0), action possibly involved (0.5), and action not involved (0.0).

The last column in Table 4 provides the total rating of the activity based on the number and type of actions that could result from any one activity. As a result, development, site alteration or recreational activities that require a combination of independent actions would receive a higher risk factor (i.e., likelihood of impacts would be greater as well as the magnitude of impact) than an activity that would cause only one action to occur. For example, the widening of Highway 140 could result in all five actions occurring and would receive a higher risk rating than an activity such as a recreational boat that may only cause scouring from a motor or the dipping of a paddle.

Therefore, in assessing the risk of potential activities in re-suspending contaminated sediment, the following assumptions are applicable (Table 3):

Table 3 – Risk Assessment Assumptions

Level of Risk	Location	Number and Type of Actions	Activity/Action Risk Assessment (figure)
HIGH RISK	Activities that occur within the Impacted Area	Dredging occurs	Rating 2.5 – 5.0
MODERATE RISK	Activities that occur on lands within 120 m of the PSW	More than one of actions occur excluding dredging	Rating 1.0 – 2.0
LOW RISK	Activities that occur outside of the 120 m adjacent lands of the PSW, but inside the Area of Undertaking	Only one of the following actions occur; scouring, filling, piling	Rating 0.5

Table 4 – Assessing Risk of Activities in the Area of Undertaking

Activities	Potential Actions					Rating
	Dredging	Water Flow	Scouring	Filling	Piling	
1. Public Works and Utilities						
Public Road Widening	●	●	●	●	●	5.0
Emergency Utility Repair	●	●	●	●	●	5.0
Culvert Replacement	●	●	●	●	●	5.0
Underground Cable and Pipelines	○	○	●	●	●	3.0
Alteration of Source Water Pump Flow	○	●	●	○	○	2.0
Culvert Maintenance (Cleaning)	◐	○	◐	○	○	1.0
Water Taking for Fire Fighting	○	○	◐	○	○	0.5
Snow Storage	○	◐	○	○	○	0.5
2. Private Development						
Development and Site Alteration	●	●	●	●	●	5.0
Railroad Widening	●	●	●	●	●	5.0
Major Shoreline Alteration	●	●	○	●	●	4.0
Stormwater Outflow	●	●	◐	●	○	3.5
Parkland Construction (public/ private)	○	○	◐	◐	◐	1.5
Water Taking (municipal & industrial)	◐	●	○	○	○	1.5
Water Discharge (commercial & industrial)	◐	●	○	○	○	1.5
Filling Lands Under Water	○	◐	○	●	○	1.5
Retaining Walls	◐	○	○	◐	◐	1.5
Docks – Crib and sheet piling	○	◐	○	◐	◐	1.5
Docks – Post or pile (not sheet piling)	○	○	○	○	◐	0.5
Docks – Floating	○	○	○	◐	○	0.5
3. Recreational Activities						
Increasing Depth of Boating Channels	●	●	●	○	○	3.0
ATV – Motorized Vehicles	○	○	●	○	○	1.0
Propeller Wash	○	○	●	○	○	1.0
Anchoring	○	○	◐	○	○	0.5
Paddling	○	○	◐	○	○	0.5
Fishing	○	○	◐	○	○	0.5
Swimming	○	○	◐	○	○	0.5
4. Monitoring and Restoration Activities						
Habitat Creation Project	◐	○	◐	◐	○	1.5
Sediment Monitoring and Field Excursions	○	○	◐	○	◐	1.0
Aquatic Weed Harvest or Removal	○	○	◐	○	○	0.5
5. Uncontrollable Activities						
Train Derailment – Highway Accident	●	○	●	○	○	2.0
Earthquake or Tornado	○	◐	◐	○	○	1.0
Storm Event (1:100 year flood)	–	◐	◐	○	○	1.0
Tree Falling and Clearing	○	○	◐	○	○	0.5
Ice Scouring	○	○	◐	○	○	0.5
New Species Introduction	unknown	unknown	unknown	unknown	unknown	unknown
Climate Change	unknown	unknown	unknown	unknown	unknown	unknown

● Likely involved - Maximum Impact. ◐ Possibly involved – Medium Impact. ○ Not involved – No Impact.

2.4 Summary of Risk Assessment

Table 5, Summary of Activities and Risk Disturbance, categorizes the activities into three groups: high risk, moderate risk, and low risk. Activities in the “high risk” category include major public works and private development projects that involve dredging and at least one other action (weighted rating of 2.5 to 5.0). Activities with “moderate risk” are generally minor development projects that do not involve dredging but includes at least three types of actions such as altered water flow, scouring, filling/covering (1.0 to 2.0). “Low risk” activities do not involve dredging and involves one or two actions that are less likely to disturb sediment such as filling or piling (weighted rating of 0.5 or less).

Table 5 – Summary of Activities and Risk of Disturbance

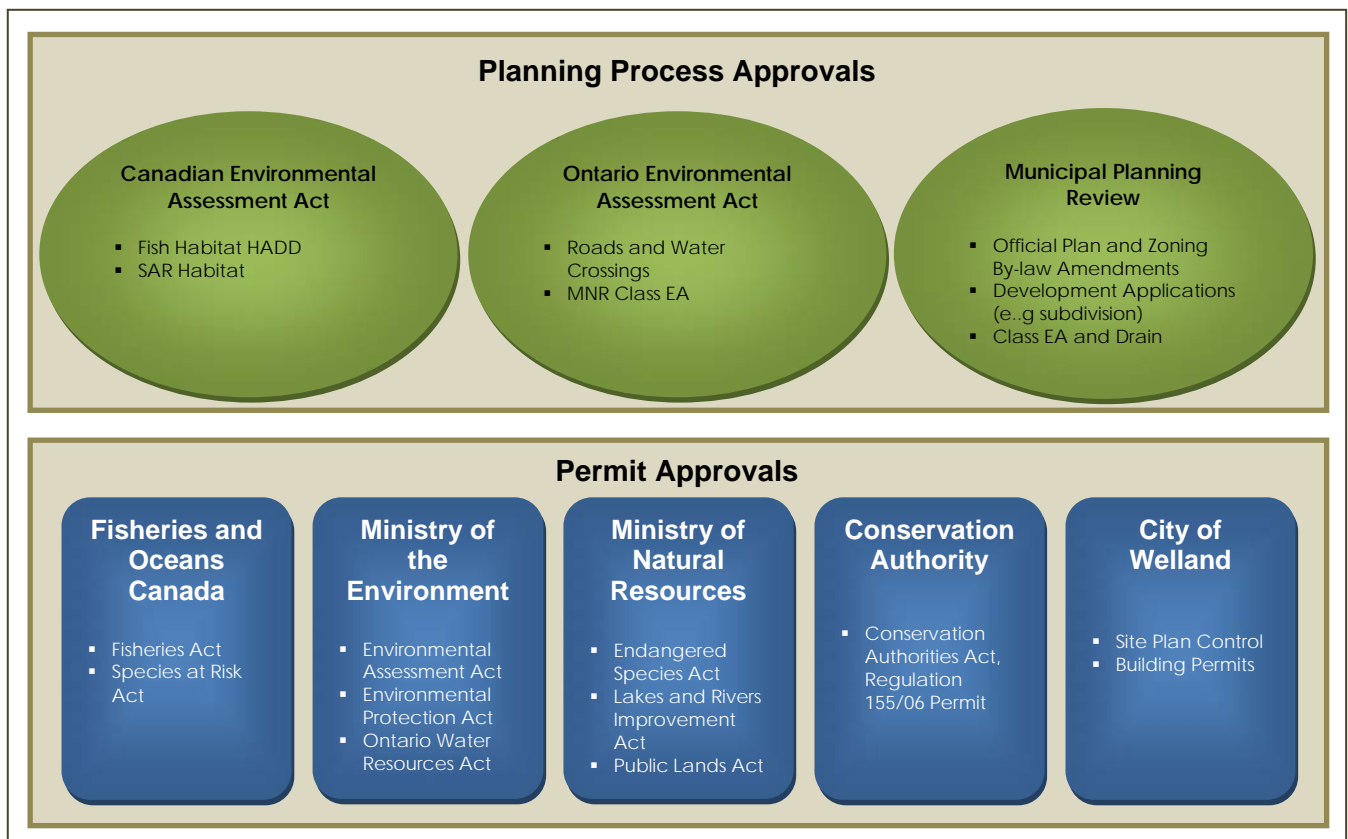
	Low Risk (Rating 0.5)	Moderate Risk (Rating 1.0 – 2.0)	High Risk (Rating 2.5 – 5.0)
Public Works and Utilities	<ul style="list-style-type: none"> • Water Taking for Fire Fighting • Snow Storage 	<ul style="list-style-type: none"> • Alteration of Source Water Pump Flow • Culvert Maintenance 	<ul style="list-style-type: none"> • Public Road Widening • Emergency Utility Repair • Culvert Replacement • Underwater Cable or Pipeline
Private Development	<ul style="list-style-type: none"> • Docks (Post, Pile or Floating) • Propeller Wash 	<ul style="list-style-type: none"> • Construct Parkland • Water Taking • Water Discharge • Filling Lands Under Water • Retaining Walls • Docks (cribs and sheet piling) 	<ul style="list-style-type: none"> • Development and Site Alteration in Impacted Area • Railroad Widening • Major Shoreline Alteration • Stormwater Outflow
Recreational Activities	<ul style="list-style-type: none"> • Anchoring • Paddling • Fishing • Swimming 	<ul style="list-style-type: none"> • ATV – Motorized Vehicles • Propeller Wash 	<ul style="list-style-type: none"> • Increasing Depth of Boating Channel
Monitoring and Restoration	<ul style="list-style-type: none"> • Aquatic Weed Harvest or Removal 	<ul style="list-style-type: none"> • Habitat Creation Project • Sediment Monitoring and Field Excursions 	
Uncontrollable Events	<ul style="list-style-type: none"> • Tree Falling and Clearing • Ice Scouring 	<ul style="list-style-type: none"> • Earthquake or Tornado • Storm Event (1:100 year flood) 	<ul style="list-style-type: none"> • Train Derailment - Highway Accident

3.0 Review of Administrative Controls and Relevant Policies

In Ontario, there are at least 18 pieces of Federal and Provincial legislation and municipal policies and by-laws that could apply to development and site alteration proposals in Lyons Creek East Area of Undertaking. The scope of this review applies to planning approval and permit control mechanisms that regulate development and site alteration activities in the Area of Undertaking pursuant to the authority of a conservation authority, or a municipal, provincial or federal agency.

There are two main types of Administrative Controls: Planning Process Approvals (Environmental Assessment or Municipal), and Permit Approvals (see Figure 5).

Figure 5 – Agencies and Types of Administrative Controls



3.1 Planning Process Approvals

Planning Process Approvals, such as those under the federal and provincial *Environmental Assessment Acts* and the provincial *Planning Act*, often involve a comprehensive planning process that includes a wide range of agencies and stakeholders. These types of approvals require the assessment and mitigation of potential environmental impacts of federal, provincial and municipal government projects through federal and provincial environmental assessment processes, or a municipal

Official Plan or Zoning By-law Amendment, plan of subdivision, or variance for private land development. These processes require a public notification and participation process that notifies other agencies and stakeholders.

The key planning approvals that may apply to activities in the Impacted Area and the Area of Undertaking include:

- Canadian Environmental Assessment (Canadian Environmental Assessment Agency)
- Fish Habitat Referral Process (Fisheries and Oceans Canada)
- Ontario Environmental Assessment (Ministry of the Environment, Ministry of Natural Resources)
- Planning Act Approvals (City of Welland)

3.2 Permit Approvals

Permit Approvals (e.g., work and building permits, site plan agreements) can often have a more limited scope of review (i.e., geographic area and number of agencies involved). While some of these approvals may require public posting in the Environmental Bill of Rights Registry, they usually do not require public notification and participation.

The key permit approvals that may apply to activities in the Impacted Area and the Area of Undertaking include:

- Ontario Regulation 155/06 (Conservation Authority)
- *Public Lands Act* (Ministry of Natural Resources)
- *Fisheries Act* (Fisheries and Oceans Canada)
- *Ontario Water Resources Act* (Ministry of the Environment)
- Building Permits and Site Plans (City of Welland)
- Canal Pump Operation (St Lawrence Seaway Management Corporation)

Appendix 2 provides detailed information on federal, provincial, municipal and other agency (i.e., St. Lawrence Seaway Management Corporation) legislation, planning and permit approval processes and procedures that regulate development and site alteration within the Area of Undertaking. Table 20 (page 44) provides a list of the planning and permit approvals based on scenarios of potential activities that could occur in the Area of Undertaking.

4.0 Review of Activity Scenarios

There are many activities that could occur in the Area of Undertaking that may potentially disturb contaminated sediment. Examining various scenarios (Table 6) will help to identify which agencies are involved, how they work together, and the effectiveness of the administrative controls that are currently in place. Reviewing potential scenarios will also help to determine the associated risk of an activity to re-suspend contaminated sediment based on the actions required for each activity as well as the regulations that may prohibit or restrict such an activity. Where there are gaps in regulations, other communication approaches, such as the Community Outreach Program (see Section 6) should be applied to properly notify appropriate agencies and individuals of the hazards of conducting development, site alteration and recreational activities in the Impacted Area and the Area of Undertaking.

The following thirteen scenarios represent a range of possible situations where development projects, site alterations, emergency services or recreational activities could potentially disturb the contaminated sediment. Some of these scenarios occur within the Impacted Area (see Figure 2, page 7) and others occur in adjacent areas in the Area of Undertaking. The

Scenario 1	Residential Subdivision
Scenario 2	Docks and Shoreline Alteration
Scenario 3	Sale of Transport Canada Lands (Canal Spoils)
Scenario 4	Culvert Maintenance or Replacement
Scenario 5	Widening of Highway 140
Scenario 6	Changes to Stream Base Flow – Canal Pumps
Scenario 7	Recreational Use (boating, fishing, swimming, ATV)
Scenario 8	Water Taking for Irrigation > 50,000 litres/day
Scenario 9	Water Taking for Irrigation < 50,000 litres/day
Scenario 10	Emergency Response - Fire-fighting
Scenario 11	Train Derailment / Highway Accident
Scenario 12	Gas Pipeline Crossing
Scenario 13	Extreme Weather Event

assessment of the scenarios is based on administrative controls that are currently in place and it is expected that as regulations and policies change over time, the results of the scenarios may also change.

The following scenarios;

- Describe a potential activity that could occur;
- Assess the risk of re-suspending contaminated sediments associated with the activity and the policy framework in place that prohibits or restricts the activity;
- Identify the agencies that are involved and the administrative controls that trigger a review; and
- Provide a summary of recommendations to be considered for each activity.

4.1 Scenario 1 – Residential Subdivision

A residential plan of subdivision is submitted to the City of Welland for a parcel of land within the Area of Undertaking, immediately adjacent to the Impacted Area. The residential development will be located outside of the 1:100 year flood line, but within 120 m of the PSW (see Figure 3, page 8). The land immediately adjacent to the creek will be landscaped with pathways and benches, and floating docks will be constructed for people to access the creek with non-motorized boats (e.g., canoes, kayaks). Note – the same process and analysis would apply to an industrial plan of subdivision.



Risk Assessment of Disturbing Sediment – LOW to HIGH

- A residential or industrial subdivision could result in a low to high risk of disturbing contaminated sediment depending on the location of the proposed development. A high risk would result if development occurred in the Impacted Area, a moderate risk if activity occurred within 120 m of the Provincially Significant Wetland (PSW) and a low risk if development is further than 120 m from the PSW;
- Stormwater runoff to the Impacted Area would result in a low risk;
- The proposed recreational activities will pose a low risk of disturbing sediment because the docks are floating and motorized boating is not allowed;
- The site alteration of the shorelands adjacent to the creek will result in a low risk of disturbing contaminated sediment, however, the features and functions of the wetland may be affected;
- Under Ontario Regulation 155/06 the NPCA can refuse a permit for development or site alteration in a PSW or within 30 m of a PSW;
- The Impacted Area and some adjoining areas (see Figure 2, page 7) are identified as a Provincially Significant Wetland (PSW) and, according to the Provincial Policy Statement (PPS) and the Regional Policy Plan, development and site alteration is not permitted in these areas. An EIS is also required for any development or site alteration within 120 m (adjacent lands) of the PSW to demonstrate no negative impact to the wetland or the ecological functions of the adjacent lands.
- The Regional Policy Plan requires that development and site alteration shall only be permitted if it will not have negative impacts, including cross-jurisdictional and cross-watershed impacts, on:
 - The quantity and quality of surface and ground water;
 - The natural hydrologic characteristics of watercourses such as base flow;
 - Surface or ground water resources adversely impacting on natural features or ecological functions of the Core Natural Heritage System or its components;

- Natural drainage systems, stream forms and shorelines; and
- Flooding or erosion.
- A stormwater management plan may be required. Stormwater management facilities shall not be constructed in Core Natural Heritage Areas, Fish Habitat or in key hydrologic features. Core Natural Heritage Areas include significant woodlands; significant wildlife habitat; significant habitat of species of concern; regionally significant Life Science ANSIs; other evaluated wetlands; significant valleylands; savannahs and tallgrass prairies; and alvars; and publicly owned conservation lands.

Assessment of Administrative Controls

The following agencies (Table 7) would be involved in the review of a Residential Plan of Subdivision:

- City of Welland (City) – The City of Welland has the authority to approve or deny a Plan of Subdivision or Condominium, under the auspices of the *Planning Act*. Pursuant to these powers and the Provincial Policy Statement (PPS), the City has the authority and the responsibility to request supporting documentation from the proponent to ensure that there are no impacts on adjacent properties, natural features and areas (PPS Policy 2.1), contaminated sites (PPS Policy 3.2.2) and matters of local interest such as development or site alteration that could re-suspend the contaminated sediment.

Table 7 – Approval Agencies Involved in Residential Subdivision

Niagara Peninsula Conservation Authority	✓
Environment Canada	-
Fisheries and Oceans Canada	✓ if HADD
Ministry of the Environment	-
Ministry of Natural Resources	✓
Ministry of Transportation	-
City of Welland	✓
Niagara Region	-
St. Lawrence Seaway Management Corporation	-

The City is required by the *Planning Act* to provide notice to the general public and agencies about the proposed plan of subdivision. As well, the MOU between the Niagara Region and the lower tier municipalities (e.g., City of Welland) will provide a trigger to ensure that the appropriate agencies are involved and have an opportunity to comment.

When these types of applications occur within the Area of Undertaking, the City could request the proponent to provide the following as a condition of subdivision approval:

- A stormwater management report including detailed information on outfall in relation to the Impacted Areas and mitigation strategies;
- A study to address contaminated sites (i.e., Impacted Area) as per Policy 3.2.2 of the *Provincial Policy Statement*, or a study to address the re-suspension of contaminated sediments, as identified as a local planning matter;
- An Environmental Impact Study (EIS) for proposed development on lands within 120 m of a Provincially Significant Wetland, to assess and confirm the protection of natural heritage features, including species at risk and/or their habitat and fish habitat as per PPS Policy 2.1.

- iv. An Impact Study or Site Evaluation to assess the impacts of the development on Endangered and Threatened Species as per *PPS* Policy 2.1.3 a); and
- v. Parkland dedication of land along Lyons Creek East.

There are currently no policies in the City of Welland Official Plan that specifically address the restriction of activities in the Area of Undertaking or the Impacted Area. The new official plan must include specific policies that restricts development and site alteration as well as address the above five conditions. Currently, the City of Welland does not have a By-law to address Drainage, but could require specific provisions to be included in a Site Plan Control or Subdivision Agreement to be registered on title.

- b. Niagara Peninsula Conservation Authority (NPCA) – In accordance with the Memorandum of Understanding (MOU) between the NPCA, Niagara Region and the Area Municipalities, the NPCA is responsible for plan review and technical clearance for all natural heritage matters and would be involved in pre-consultation including the determination of Environmental Impact Study requirements, as well as reviewing and approving the EIS. The construction of the communal docking facility would require an alteration to waterway permit. The NPCA could also impose mitigation measures such as the type of construction technique (e.g., floating dock, no dredging) and timing requirements. As well, the NPCA would provide advice on whether a HADD (Harmful, Alteration, Disruption or Destruction) to fish habitat would occur, and would notify DFO, if necessary. The NPCA would also flag and exchange information on any other natural heritage features within the proposed development site with the Niagara Region and the City of Welland to determine whether additional permits are required (i.e., ESA permits via the MNR).
- c. Fisheries and Oceans Canada (DFO) – The DFO would be contacted by the NPCA if it is determined that a HADD to fish habitat could occur and DFO would have to decide on whether compensation for lost fish habitat is appropriate. In the case of a floating dock, no HADD is likely to occur.
- d. Ministry of Natural Resources (MNR) – The Provincial Crown owns the land under water (i.e., creek bed) and a *Public Lands Act* work permit would be required by the MNR depending on the type of development proposed in the creek bed. A *Lakes and Rivers Improvement Act (LRIA)* work permit is not required by the MNR, as this is addressed by the requirements of the NPCA. In accordance with the Memorandum of Understanding (MOU) between the NPCA, Niagara Region and the Area Municipalities, the NPCA would be responsible for addressing all natural heritage matters.

A permit issued under the *Endangered Species Act (ESA)* may be required if a species listed as Endangered, Threatened or Extirpated on the Species at Risk in Ontario (SARO) list, or its habitat, is present on site and the species or its habitat will be impacted. These species and their habitats would be flagged during the initial review process by the NPCA. If SAR and/or habitat are present, an Environmental Impact

Study (EIS) would be required to identify mitigation strategies that minimize or avoid impacts to SAR and their habitat. If impact on the species and/or habitat cannot be avoided, the landowner may consider applying for an *ESA* Section 17c permit. Permits may not be required if passive mitigation is applied to avoid species contact through development timing, e.g., no construction during April to October (no permit needed), and if construction occurs outside of constraint areas (i.e., reasonable steps taken to minimize adverse effects on habitat and species).

Summary – Scenario 1 – Residential Subdivision

In this subdivision scenario, the assessment of risk for potential disturbance is primarily the responsibility of the City of Welland through its municipal review process. The City would provide notice to all interested agencies and adjacent property owners through the plan of subdivision process. The Niagara Region and the NPCA would be circulated the application for plan of subdivision and provided an opportunity to comment on the proposed development to identify any associated impacts, as well as any permit requirements.

The Provincial Policy Statement (PPS) provides policy (2.1) that prohibits development and site alteration in the wetland and policy (3.2.2) to require contaminated sites to be remediated. The new City of Welland Official Plan should also include policy that would trigger an Impact Study to demonstrate no impact to the contaminated sediment and this would enable the City to request additional studies to investigate the potential for disturbance of the sediment.

An alteration to waterway permit would be required from the NPCA, and possibly an *Endangered Species Act* (ESA) permit to move SAR species or develop within SAR habitat. A provincial environmental assessment may be required if species at risk and/or their habitat is present, as well as a federal environmental assessment may be required if a HADD occurs.

The Administrative Control Protocol (Section 5, page 45) provides a process to ensure that all agencies are involved and properly notified.

4.2 Scenario 2 – Docks and Shoreline Alteration

A homeowner with lot frontage on the creek in the Impacted Area proposes to construct a small floating dock (2 m x 5 m) in front of their property. The homeowner also intends to construct a gazebo, landscape the lands along the shoreline with lawns and gardens, and create an off-line or dug-out pond.



Risk Assessment of Disturbing Sediment – LOW

- The construction of a small floating dock in the Impacted Area would, by itself, result in a low risk of disturbing contaminated sediment provided it is attached to the shoreline and not the creek bed;
- Docks will provide increased access to the creek for recreational activities such as non-motorized boating (low risk), motorized boating (moderate risk), and swimming (low risk);
- The construction of a gazebo and the landscaping of lands adjacent to the creek will also result in a low impact to the contaminated sediment because the construction activity is not located within the Impacted Area, and the only indirect impact would result from increased stormwater entering the creek in the absence of construction and post construction mitigations;
- Under *Ontario Regulation 155/06* the NPCA can refuse a permit for development or site alteration in a Provincially Significant Wetland (PSW) or within 30 m of a PSW, and can require an EIS for any development or site alteration within 120 m of the PSW to demonstrate no negative impacts to the wetland.

Assessment of Administrative Controls

The following agencies (Table 8) would be involved in the review of this project:

- Niagara Peninsula Conservation Authority (NPCA) – The construction of a dock in the wetland or the proposed development and site alteration on lands within 30 m of the PSW would require approval and a permit under *Ontario Regulation 155/06*. The NPCA would also provide advice with respect to a HADD of fish habitat and contact DFO, if necessary. Off-line ponds would require approval from the NPCA and may be permitted if the pond is outside of the wetland and/or does not alter (straighten, change, divert or interfere in any way with) the existing channel of the creek or change or interfere in any way with a wetland.
- Fisheries and Oceans Canada (DFO) – The DFO would be contacted by the NPCA if it is determined that a HADD to fish habitat could occur. As a result, the DFO would

Table 8 – Approval Agencies Involved in Construction of Docks

Niagara Peninsula Conservation Authority	✓
Environment Canada	-
Fisheries and Oceans Canada	✓ if HADD
Ministry of the Environment	-
Ministry of Natural Resources	✓
Ministry of Transportation	-
City of Welland	✓
Niagara Region	-
St. Lawrence Seaway Management Corporation	-

only be involved if a HADD were to occur and would have to decide on whether compensation for lost fish habitat is appropriate.

- c. Ministry of Natural Resources (MNR) – The Provincial Crown owns the land under water (i.e., creek bed) and a *Public Lands Act* work permit would be required by the MNR if the dock covers more than 15 square metres of the creek bed. A *Lakes and Rivers Improvement Act (LRIA)* work permit is not required by the MNR, as this is addressed by the requirements of the NPCA, however, if MNR determines that the design of the dock diverts or holds back water, a permit pursuant to the *LRIA* would be required. A permit issued under the *Endangered Species Act* may be required if a species listed as Endangered, Threatened or Extirpated on the Species at Risk in Ontario (SARO) list, or its habitat, is present on site and the species or its habitat will be impacted.
- d. City of Welland (City) – Provided that the building and structure complies with the requirements of the Zoning By-law, a building permit would be granted. If a building permit is required, the City would notify the NPCA to ensure their requirements are fulfilled. If the gazebo is less than 10 sq m in size, a building permit is not required.

Summary – Scenario 2 – Docks and Shoreline Alteration

The requirements of the NPCA, MNR and City of Welland for the installation of a dock, pond and gazebo will depend on the size and extent of the proposed structures, and whether impacts to fish and/or species at risk habitat are present. The approval of a dock and the excavation of lands within the 1:100 floodplain and/or within 30 m of the wetland would require an application under *Ontario Regulation 155/06*.

The Administrative Control Protocol (Section 5, page 45) provides a process to ensure that all agencies are involved and properly notified. The Community Outreach Program should include actions to notify property owners about the permit requirements for constructing docks and conducting landscape alterations adjacent or in the Impacted Area.

4.3 Scenario 3 – Sale of Transport Canada Lands (Canal Spoils)

Transport Canada decides to dispose of the 150 acre site containing the spoils from the Welland Canal By-pass. This site includes portions of the creek bed (Impacted Area) as well as the wetlands and a portion of the shore lands (i.e. the lands adjacent to the wetland). Transport Canada would consider transferring this site to an interested government agency. The land could be used for public purposes or transferred to a private interest for a development project.



Risk Assessment of Disturbing Sediment – LOW

- The disposition of the land, by itself, would be a low risk of disturbing the contaminated sediment, and the subsequent development (public or private) would also result in a low risk provided no construction or site alteration is permitted in the Impacted Area and the wetland, and that an Impact Study is completed to demonstrate no impact to the contaminated sediment from increased stormwater runoff;
- Transport Canada has indicated that they would consider transferring the ownership of the creek bed, the lands identified as a PSW and a portion of the adjoining lands to an interested government agency for conservation purposes. Divesting the creek lands and portions of the land adjacent to the wetland would protect and conserve the wetland and ensure no disturbance to the contaminated sediment; and
- The creek bed (Impacted Area) and some adjoining areas (see Figure 3, page 8) are identified as a Provincially Significant Wetland (PSW) and according to the Provincial Policy Statement and the NPCA Policies, Procedures and Guidelines document, development and site alteration is either prohibited or restricted in these areas.

Assessment of Administrative Controls

The following agencies (Table 9) would be involved in the review of this project:

- Environment Canada (CEAA – Canadian Environmental Assessment Agency)* – No Environmental Assessment or notification is required to dispose of Transport Canada surplus property pursuant to the *Canadian Environmental Assessment Act*

(par. 5(1)1(c) because the intent of such a transaction is “to dispose of surplus land”, and not “to enable a project” to be carried out. Transport Canada would sell the

Table 9 – Approval Agencies Involved in Sale of Transport Canada Lands

Niagara Peninsula Conservation Authority	-
Environment Canada	-
Fisheries and Oceans Canada	-
Ontario Ministry of the Environment	-
Ontario Ministry of Natural Resources	-
Ontario Ministry of Transportation	-
City of Welland	-
Niagara Region	-
St. Lawrence Seaway Management Corporation	-

property to the Canada Lands Company and then any development or site alteration would require provincial and municipal approvals.

- b. City of Welland (City) – There is no environmental assessment or notification process for the disposition of surplus lands, however, any development or site alteration is subject to an application pursuant to the *Planning Act*. The City of Welland has the authority to approve or deny an Official Plan Amendment, Zoning Amendment, Consent or Subdivision application. Subject to these powers and the Provincial Policy Statement, the City has the authority and the responsibility to request supporting documentation from the proponent to ensure that there are no negative impacts on adjacent properties and natural features and areas, including the Impacted Area.

The City can also impose provisions (construction, engineering, maintenance, timing and special conditions) on the proposed development through a Site Plan Control (By-Law 9973) or Subdivision Agreement to be registered on title. The 2005 Provincial Policy Statement provides policy that prohibits development and site alteration within a Provincially Significant Wetland (Policy 2.1.3), restricts development and site alteration within the 1:100 year floodplain (Policy 3.1.1) and requires contaminated sites to be remediated prior to any activity on the site (Policy 3.2.2).

- c. Niagara Peninsula Conservation Authority (NPCA) – There is no environmental assessment or notification process for the disposition of surplus lands. However, any development or site alteration is pursuant to the *Planning Act* and in accordance with the Memorandum of Understanding (MOU) between the NPCA, Niagara Region and the Area Municipalities, the NPCA is responsible for all natural heritage matters. Through this process the NPCA would be involved in pre-consultation including the determination of the Environmental Impact Study (EIS) requirements, as well as reviewing and approving the EIS. Further, any site alteration on lands within 30 m of the PSW would require approval and a permit under *Ontario Regulation 155/06*.
- d. Ministry of Natural Resources (MNR) – The Provincial Crown owns the land under water (i.e., creek bed) and a *Public Lands Act* work permit may be required by the MNR for the eventual development of the land, depending on whether *structures are* proposed in the creek.

Summary – Scenario 3 – Sale of Transport Canada Lands (Canal Spoils)

There is no environmental assessment or notification process for the disposition of surplus lands, however, any development or site alteration is subject to an application pursuant to the *Planning Act*. The process described in Scenario 1 would apply at the development approval stage (e.g., plan of subdivision or rezoning).

The Administrative Control Protocol (Section 5, page 45) provides a process to ensure that all agencies are involved and properly notified.

4.4 Scenario 4 – Culvert Maintenance and Replacement

The Ontario Ministry of Transportation and the City of Welland propose maintenance work on the Lyons Creek East culverts that flow under Highway 140 and Buchner Road, respectively. Work to be completed involves removing sediment and debris, and both the workers and the culvert would be in the Impacted Area. During the maintenance inspection, MTO determines that the culvert should be replaced.



Risk Assessment of Disturbing Sediment – LOW to HIGH

- The maintenance and cleanout of culverts would result in a moderate risk of disturbing contaminated sediment depending on the nature of the maintenance activity. If cleanout activities are related to removal of debris, then the risk is low, however, if heavy construction equipment is used or sediment is removed from the Impacted Area then there is a high risk to disturbing contaminated sediment; and
- The replacement and repair of culverts in the Impacted Area would result in a high risk because the removal and replacement process would potentially involve all five actions (dredging, alter water flow, scouring, filling and piling).

Assessment of Administrative Controls

The following agencies (Tables 10 a. and b.) would be involved in the review of this project:

- Ontario Ministry of Transportation (MTO)
– The Ministry of Transportation owns and maintains the Highway 140 culvert. Maintenance can occur in response to an emergency and by schedule. Prior to maintenance, there is no requirement to contact other agencies to address the protection of contaminated sediment or wetland features. The replacement of a culvert would require contact with the MNR.

- City of Welland (City) – The City of Welland owns and maintains the Buchner Road culvert. Maintenance can occur in response to an emergency or through regular scheduling. Prior to maintenance there is no

Table 10 a. – Approval Agencies Involved in Culvert Maintenance

Niagara Peninsula Conservation Authority	-
Environment Canada	-
Fisheries and Oceans Canada	-
Ontario Ministry of the Environment	-
Ontario Ministry of Natural Resources	-
Ontario Ministry of Transportation	-
City of Welland	-
Niagara Region	-
St. Lawrence Seaway Management Corporation	-

Table 10 b. – Approval Agencies Involved in Culvert Replacement

	Provincial Project	City Project
Niagara Peninsula Conservation Authority	-	✓
Environment Canada	-	-
Fisheries and Oceans Canada	✓ if HADD	✓ if HADD
Ontario Ministry of the Environment	-	-
Ontario Ministry of Natural Resources	✓	✓
Ontario Ministry of Transportation	✓	-
City of Welland	-	✓
Niagara Region	-	-
St. Lawrence Seaway Management Corporation	-	-

requirement to contact other agencies to address the protection of contaminated sediment or wetland features. If replacement is required, the City would be required to obtain approvals from MNR and NPCA.

- c. Niagara Peninsula Conservation Authority (NPCA) – In the case of culvert maintenance, the NPCA would not be involved unless culverts were reported, by the municipal staff, as being perched or obstructing fish passage.

In the case of culvert replacement for provincial works on Highway 140, the NPCA does not require a permit under *Ontario Regulation 155/06* provided certain mitigation measures are in place during maintenance or emergency response, such as the type of construction techniques (piling), timing requirements, and silt curtains for dredging.

In the case of a culvert replacement by the City of Welland, the NPCA would be contacted. The NPCA would provide advice on whether a HADD to fish habitat would occur during maintenance, and would notify DFO, if necessary. The NPCA would flag other natural heritage features within the Area of Undertaking and advise the City to contact MNR to determine whether additional permits are required (i.e., ESA permits).

- d. Fisheries and Oceans Canada (DFO) – In the case of culvert maintenance, the DFO would not be involved.

In the case of culvert replacement, either the MNR (for provincial projects) or the NPCA (for City projects) would review the replacement program and provide in-field observations to determine whether a HADD to fish habitat could occur and contact DFO if required. The DFO would only be involved if a HADD were to occur and DFO's authorization would trigger a CEAA process. Perched culverts, blockages and blowouts, and extreme storm events may require de-watering of the area, channel diversion, fish rescue and ponding during maintenance activities which could negatively impact the contaminated sediment, aquatic habitat, and fish.

- e. Ministry of Natural Resources (MNR) – In the case of culvert maintenance, the MNR would not be involved.

In the case of replacement by the province (MTO), MNR would be involved as the acting agent for DFO and determine whether a HADD to fish habitat would occur.

When culverts are replaced by the City of Welland on Crown owned lands, a *Public Lands Act* work permit would be required. However, in the case of a Ministry of Transportation project, no permit would be required.

A permit issued under *the Endangered Species Act* may be required if a species listed as Endangered, Threatened or Extirpated on the Species at Risk in Ontario (SARO) list, or its habitat, is present on site and the species or its habitat will be impacted. The ESA permit would enable field staff to move species at risk individuals encountered in the field.

Summary – Scenario 4 – Culvert Maintenance and Replacement

There is no comprehensive planning process or permit approval required for the maintenance of culverts that would notify involved agencies about the existence of the contaminated sediment or require specific precautionary or mitigation measures. As a result, the Administrative Control Protocol (Section 5, page 45) provides the only process to ensure that all agencies are involved and properly notified.

The community outreach program should include an action to provide notice to the Ontario Ministry of Transportation and the City of Welland Public Works so that maintenance workers are aware of the potential hazard. It is the responsibility of partnering organizations to provide appropriate messaging to their employees. As well, signs should be posted in the area where maintenance activities are likely to occur to ensure people are aware of the contaminated sediment.

As well, the NPCA could be declared the first point of contact for both agencies prior to initiating any maintenance or during emergency response protocols. The purpose of this contact would be to ensure any updated information (e.g., new monitoring studies) would be made available to MTO and the City prior to any work commencing. As well the MTO and the City of Welland could prepare a contingency plan to minimize or avoid risk of habitat alteration or destruction in a PSW or Species at Risk habitat from any proposed activity.

4.5 Scenario 5 – Widening of Highway 140

The Ministry of Transportation (MTO) proposes to widen Highway 140 to support the Niagara/GTA Trade Corridor, which requires the disturbance of sediment on both sides of the road. Work to be completed involves removing the sediment within confined areas and replacing with clean sediment, rip rap, appropriate road-base material and supporting infrastructure (culvert, bridge, etc.).



Risk Assessment of Disturbing Sediment – HIGH

- The expansion of the Highway 140 corridor will result in a high risk to disturbing the contaminated sediment because the creek channel and wetland habitat will have to be altered; and
- There are no administrative controls that would prohibit this activity from occurring.

Assessment of Administrative Controls

The following agencies (Table 11) would be involved in the review of this project:

Table 11 – Approval Agencies Involved in Highway Expansion

Niagara Peninsula Conservation Authority	-
Environment Canada	-
Fisheries and Oceans Canada	✓ if HADD
Ontario Ministry of the Environment	-
Ontario Ministry of Natural Resources	-
Ontario Ministry of Transportation	✓
City of Welland	-
Niagara Region	-
St. Lawrence Seaway Management Corporation	-

- a. Ministry of Transportation (MTO) – The planning and designing of MTO provincial transportation projects follows an approved Provincial Class Environmental Assessment (EA) process based on guidelines described in the Class Environmental Assessment for Provincial Transportation Facilities (1997).

Smaller projects such as highway expansion, with predictable and manageable environmental impacts, undergo a Class EA process (a 1-3 year process). It is an MTO-run process that does not require MOE approval.

Larger-scale projects such as the creation of a new highway corridor, with the potential for greater environmental impacts, undergo an Individual EA process that requires MOE review and Ministerial/Cabinet approval.

Both the individual and Class EA processes require notification of all the approval agencies.

- b. Niagara Peninsula Conservation Authority (NPCA) – The NPCA would be circulated a copy of the proposed plan for Highway 140 expansion and asked to comment. The NPCA could request mitigation measures such as the type of

construction techniques (piling), timing requirements, and silt curtains for dredging during construction.

- c. *Fisheries and Oceans Canada (DFO)* – In an MTO EA process, the MNR would review the Class Environmental Assessment for Provincial Transportation Facilities to determine whether a HADD to fish habitat could occur and contact DFO if necessary. The DFO would only be involved if a HADD were to occur and DFO's authorization would trigger a CEAA process.
- d. *Ministry of Natural Resources (MNR)* – The Provincial Crown owns the land under water (i.e., creek bed) and a work permit, issued by the MNR, would normally be required prior to construction (road expansion, bridge and culvert rehabilitation or replacement, etc.), or any dredging and filling activities. However, in the case of a Ministry of Transportation project (Highway 140) no permit is required.

MNR is also responsible to determine whether a HADD to fish habitat could occur and contact DFO if necessary. The DFO would only be involved if a HADD were to occur and DFO's authorization would trigger a CEAA process.

A permit issued under the *Endangered Species Act* may be required if a species listed as Endangered, Threatened or Extirpated on the Species at Risk in Ontario (SARO) list, or its habitat, is present on site and the species or its habitat will be impacted. The ESA permit would enable field staff to move species at risk individuals encountered in the field.

- e. *Niagara Region (NR)* – Highway 140 connects to Highway 406 via portions of County Road 27, which is owned and maintained by the Niagara Region. The Region would review the plans for expansion if the highway plan involves municipal lands and right-of-ways. Expropriation, lease or easement of these lands, or other forms of compensation and partnership, would need to be approved between provincial and municipal partners.

Summary – Scenario 5 – Widening of Highway 140

A comprehensive MTO-run EA planning review process is in place that would automatically notify all interested agencies and solicit their comments. Permission by the Region for work on municipal land and right-of-ways would also need to be acquired prior to approval. The excavation of shorelands would require an application for a permit under the *Public Lands Act* (MNR) and *Regulation 155/06* (NPCA).

The Administrative Control Protocol (Section 5, page 45) provides a process to ensure that all agencies are involved and properly notified.

4.6 Scenario 6 – Changes to Stream Base Flow (Canal Pumps)

The canal pumps, operated by the St. Lawrence Seaway Management Corporation (SLSMC), malfunction and the water flow to the creek either stops or increases significantly. This activity goes undetected for several days. As a result the SLSMC proposes to update the canal pump and during this operation the pump is replaced and the base flow to the creek is temporarily altered (i.e., increases or decreases). This work will take place inside the pumphouse, which is located outside the Impacted Area.



Risk Assessment of Disturbing Sediment – LOW to MODERATE

- The construction and maintenance activity associated with updating the canal pumps would result in a low risk, because the pump house is located outside of the Impacted Area and no direct disturbance to contaminated sediment will occur;
- The alteration of the water flow to Lyons Creek East may result in a potential moderate impact because an increase or decrease in water flow could potentially alter the top layer of cleaner sediment and/or expose the layer of contaminated sediment; and
- Pump failure would result in a temporary negative base flow to the creek, which may result in short term low risk impact on the function of the Provincially Significant Wetland, fish habitat and/or spawning activity, and SAR species and their habitat.

Assessment of Administrative Controls

The pumping station maintains the base flow in Lyons Creek East and was built as part of the construction of the Welland Canal By-Pass and is operated by the St. Lawrence Seaway Management Corporation with staff located in St. Catharines, Ontario. There is no regulatory control or agreement in place to ensure that the pumps and the base flow are being maintained.

Table 12 – Approval Agencies Involved in Creek Pumps to Maintain Base Flow

Niagara Peninsula Conservation Authority	-
Environment Canada	-
Fisheries and Oceans Canada	✓ if HADD
Ontario Ministry of the Environment	-
Ontario Ministry of Natural Resources	-
Ontario Ministry of Transportation	-
City of Welland	-
Niagara Region	-
St. Lawrence Seaway Management Corporation	✓

The following agencies (Table 12) would be involved in the review of this project:

- St. Lawrence Seaway Management Corporation (SLSMC) – The St. Lawrence Seaway operates and maintains the pumps according to the specifications in an exchange of letters (See Appendix 3).

- b. Niagara Peninsula Conservation Authority (NPCA) – If notified, the NPCA would provide advice on whether a HADD to fish habitat would occur, and would notify DFO, should it be necessary.
- c. Fisheries and Oceans Canada (DFO) – If water levels were altered, negatively impacting fish habitat in Lyons Creek East, regulations under the *Fisheries Act* would be triggered, ultimately involving the DFO. The DFO would have to decide on whether compensation for lost fish habitat is appropriate.
- d. Ministry of Natural Resources (MNR) – The MNR would be involved if species at risk habitat or individuals were negatively impacted by changes to base flow. A permit issued under the *Endangered Species Act* may be required if a species listed as Endangered, Threatened or Extirpated on the Species at Risk in Ontario (SARO) list, or its habitat, is present on site and the *species or its habitat will be impacted*.

Summary – Scenario 6 - Changes to Stream Base Flow – Canal Pumps

There is no comprehensive planning review process or formal agreement that would automatically notify interested agencies. A requirement in the Administrative Control Protocol regarding the maintenance and monitoring of the canal pumps would ensure the involvement and comment of all required agencies.

The federal *Fisheries Act*, *Species at Risk Act* and the *Endangered Species Act* would be triggered if the pumps failed and provided the NPCA or DFO are notified. The St. Lawrence Seaway Management Corporation should become a partner in the Administration Control Protocol to ensure a long-term commitment and the implementation of a contingency plan to ensure that base flow and water levels are maintained and monitored.

4.7 Scenario 7 – Recreational Use (boating, fishing, swimming, ATV)

A small motor boat and a kayak travel through the Impacted Area and the occupants swim from the watercraft in order to salvage lost personal equipment (e.g., oars, fishing pole/reel) or field equipment (e.g., minnow traps, seine nets). Both the boat’s propeller and the kayak paddles scour the creek bed, re-suspending the bottom sediment. An All Terrain Vehicle (ATV) travels along the trails on the Transport Canada lands (canal spoils) and travels through a portion of the Provincially Significant Wetland outside the Impacted Area.



Risk Assessment of Disturbing Sediment – LOW to MODERATE

- Recreational activities, including swimming and non-motorized boating result, in a low risk of disturbing contaminated sediment because the deeper, more contaminated sediment is not disturbed;
- Motorized boating results in a moderate risk due to the potential for increased scouring from the propeller scraping the clean sediment away and exposing the contaminated sediment;
- ATVs travelling along existing trails result in a low risk. However, if ATVs were to travel in the Impacted Area, the risk to disturb sediment would be high; and
- The impacts from most recreational activities such as swimming, kayaking/canoeing, and fishing are relatively benign, localized and may only involve the surface sediment and not the buried contaminated sediment (20-40 cm depth).

Assessment of Administrative Controls

There are no administrative controls that deal with the regulation of recreational activities to prevent the disturbance of contaminated sediment (Table 13).

Summary – Scenario 7 – Recreational Use

There is no regulatory control or permit system to manage the liability associated with recreational activity within the Impacted Area. As well, there are no public access points for launching boats in the Area of Undertaking, and there were only two floating docks observed in the Impacted Area (Zone 3 and 4, see Figure 2, page 7). Recreational activities should be monitored by the Administrative Control partners to ensure contaminated sediment is not being disturbed. The Community Outreach Program should include actions to notify all potential users (e.g., adjacent property owners and other recreationalists) of the risk of re-suspending contaminated sediment through newsletters, press releases and signage.

Table 13 – Approval Agencies Involved in Recreational Activities

Niagara Peninsula Conservation Authority	-
Environment Canada	-
Fisheries and Oceans Canada	-
Ontario Ministry of the Environment	-
Ontario Ministry of Natural Resources	-
Ontario Ministry of Transportation	-
City of Welland	-
Niagara Region	-
St. Lawrence Seaway Management Corporation	-

4.8 Scenario 8 – Water Taking for Irrigation > 50,000 Litres/Day

An abutting property owner proposes to take water from Lyons Creek East in the Impacted Area to irrigate an agricultural project (e.g., nursery, farming). The proposal is to lay pipes on the surface of the creek bed and draw more than 50,000 litres of surface water per day.



Risk Assessment of Disturbing Sediment – MODERATE

- The activity of taking water results in a moderate risk of disturbing contaminated sediment as it could result in high water flows that alter the morphology of the creek in localized areas;
- The activity of installing new infrastructure (pipes, pumps) results in a moderate risk when located in the Impacted Area; and
- The likelihood of the extraction of water greater than 50,000 litres per day is low since the area is serviced by municipal water and sewer infrastructure.

Assessment of Administrative Controls

The following agencies (Table 14) would be involved in an application to take greater than 50,000 litres per day:

Table 14 – Approval Agencies Involved in Water Taking > 50,000 Litres/Day

Niagara Peninsula Conservation Authority	-
Environment Canada	-
Fisheries and Oceans Canada	✓ if HADD
Ontario Ministry of the Environment	✓
Ontario Ministry of Natural Resources	-
Ontario Ministry of Transportation	-
City of Welland	-
Niagara Region	-
St. Lawrence Seaway Management Corporation	-

- Ministry of the Environment (MOE) – To take water greater than 50,000 litres per day, the MOE's *Regulation 387/04* under the *Ontario Water Resources Act* is triggered requiring the proponent to obtain a Permit to Take Water prior to surface water extraction. The MOE takes into consideration water needs in a High Use Watershed such as the Welland Canal, water flows and water levels, as well as the habitat dependent upon water flows and levels prior to issuing a permit.
- Niagara Peninsula Conservation Authority (NPCA) – The NPCA would be circulated a copy of the Permit to Take Water application, if it is registered on the Environmental Bill of Rights Registry. The NPCA could recommend mitigation measures such as timing and location of the extraction and silt curtains to prevent erosion and runoff to the wetland/creek. The NPCA would also flag other natural heritage features within the proposed development site and advise proponents to contact MNR to determine whether additional permits are required (i.e., ESA). However, there is currently no arrangement for the MOE to notify the NPCA of their decision.
- Fisheries and Oceans Canada (DFO) – The NPCA would review the Permit to Take Water application to determine whether a HADD to fish habitat could occur and contact DFO if necessary. The DFO would only be involved if a HADD were to occur and DFO's authorization would trigger a CEEA process.

- d. *Ministry of Natural Resources (MNR)* – A permit issued under the *Endangered Species Act* may be required if a species listed as Endangered, Threatened or Extirpated on the *Species at Risk in Ontario (SARO) list*, or its habitat, is present on site *and the species or its habitat will be impacted*.

Summary – Scenario 8 – Water Taking for Irrigation > 50,000 Litres/Day

The primary source of water for Lyons Creek East is pumped from Welland Canal at an established flow by pumps maintained by the St. Lawrence Seaway Management Corporation.

The only administrative control in place for the taking of water greater than 50,000 litres per day is the MOE Permit to Take Water. Due to the existence of a municipal water service it is unlikely that there will be applications to take water from Lyons Creek East. However, in the event that a proponent requires greater than 50,000 litres of creek water, the MOE's permitting process and the NPCA's *Regulation 155/06* would determine if harm or serious risk of harm to the environment and human health and safety were an issue.

Any application to take water from the creek should also be reviewed by the St. Lawrence Management Corporation because they are responsible for the pumps that maintain the base flow.

The Administrative Control Protocol (Section 5, page 45) provides a process to ensure that all agencies are involved and properly notified.

4.9 Scenario 9 – Water Taking for Irrigation < 50,000 Litres/Day

An abutting property owner proposes to take water from the Impacted Area to irrigate their lawn. The proposal is to draw less than 50,000 litres of surface water from the creek with a small pump and garden hose. No other infrastructure in the creek is required.



Risk Assessment of Disturbing Sediment – LOW

- The activity of taking < 50,000 litres of water per day results in a low risk of disturbing contaminated sediment as it will only require the drawing of surface water and does not require any infrastructure or activity in the deeper layer of contaminated sediment.
- All properties abutting the creek are serviced by municipal water and the extraction of water from the creek to irrigate lawns is not necessary and will likely be limited.
- The cumulative impacts from potential multiple withdrawals may increase the risk of disturbing contaminated sediment.

Assessment of Administrative Controls

There are no administrative controls that regulate the taking of less than 50,000 litres of surface water per day (Table 15).

Table 15 – Approval Agencies Involved in Water Taking < 50,000 Litres/Day

Niagara Peninsula Conservation Authority	-
Environment Canada	-
Fisheries and Oceans Canada	✓ if HADD
Ontario Ministry of the Environment	-
Ontario Ministry of Natural Resources	-
Ontario Ministry of Transportation	-
City of Welland	-
Niagara Region	-
St. Lawrence Seaway Management Corporation	-

Summary – Scenario 9 – Water Taking for Irrigation < 50,000 Litres/Day

The primary source of water for Lyons Creek East is pumped from Welland Canal at an established flow by pumps maintained by the St. Lawrence Seaway Management Corporation.

There are no administrative controls that regulate the taking of less than 50,000 litres of surface water per day. The DFO would only be involved if a HADD to fish habitat were to occur.

The Community Outreach Program should include an action to discourage the pumping of water from the creek and notify all potential users of the health and environmental risk of re-suspending contaminated sediment when drawing water.

4.10 Scenario 10 – Emergency Response – Water-taking during Fire-fighting

The City of Welland Fire Fighters respond to an industrial or transportation emergency and it demands excessive amounts of water. The local municipal water and sewer infrastructure fails to meet the demands of the emergency and the Fire Fighters resort to extracting water from the creek in the Impacted Area.



Risk Assessment of Disturbing Sediment – LOW

- The taking of water from Lyons Creek East in an emergency fire fighting situation would result in a low risk of disturbing contaminated sediment as it may only result in the scouring of the top layer of clean sediment from the taking of surface water from the creek in the Impacted Area; and
- The likelihood of taking water from the creek is low due to the existence of municipal water and fire hydrant services throughout the Area of Undertaking;

Assessment of Administrative Controls

There are no administrative controls that deal with the regulation of drawing water for fire fighting activities. Should a spill or accident occur the following agencies (Table 16) would be involved:

Table 16 – Approval Agencies Involved in Water Taking for Fire Fighting

Niagara Peninsula Conservation Authority	-
Environment Canada	-
Fisheries and Oceans Canada	-
Ontario Ministry of the Environment	-
Ontario Ministry of Natural Resources	-
Ontario Ministry of Transportation	-
City of Welland	-
Niagara Region	-
St. Lawrence Seaway Management Corporation	-

- City of Welland (City) and Niagara Region Police – The City's Fire and Emergency Services and Niagara Region

Police are responsible for 911 emergency responses to fires and traffic accidents, industrial and commercial spills, flooding, and unexpected situations. Fire Fighters and Region Police are first on the scene. City Fire Fighting staff and Region Police need to be made aware of the location of the contaminated sediments and the health risks associated with working in the Impacted Area. Communication with these agencies will help to minimize activities that re-suspend contaminated sediment and these agencies should prepare contingency plans for working in the Impacted Area.

Summary – Scenario 10 - Emergency Response – Water-taking during Fire-fighting

There are no administrative controls that deal with the regulation of the drawing of water for fire fighting or emergency activities in the Impacted Area. The Community Awareness Protocol should include actions to ensure that Fire Fighters and Region Police are aware of the contaminated sediment and that they follow appropriate mitigation measures to lessen the potential to disturb the contaminated sediment. Some of these messages would include taking water from outside of the impacted zone if possible and avoiding contact with the deeper sediments in the creek bed. Messages can be delivered through the use of signage, newsletters, meetings, and letters; and the adoption of mitigation procedures and contingency plans will help to ensure that workers are safe.

4.11 Scenario 11 – Train Derailment / Highway Accident

The CN Police, Niagara Region Police and the City of Welland Fire Fighters respond to a train derailment and highway vehicle accident at the Buchner Road CN Rail crossing. As a result of the accident, one highway vehicle, the locomotive and several box cars fall into the creek. Emergency services personal enter the water to rescue people and equipment, and plans are being considered to remove the vehicles from the creek.



Risk Assessment of Disturbing Sediment – LOW to HIGH

- Accidental derailment into the creek and the subsequent extraction of highway vehicles or train equipment may result in a high risk of disturbing contaminated sediments depending on the location and depth of the vehicles to be extracted and the method of extraction.

Assessment of Administrative Controls

There is no planning review or permit approval process that would regulate the extraction of people or equipment during emergency response scenarios or notify other agencies (see Table 17).

Table 17 – Approval Agencies Involved in a Train Derailment / Highway Accident

Niagara Peninsula Conservation Authority	-
Environment Canada	-
Fisheries and Oceans Canada	-
Ontario Ministry of the Environment	-
Ontario Ministry of Natural Resources	-
Ontario Ministry of Transportation	-
City of Welland	-
Niagara Region	-
St. Lawrence Seaway Management Corporation	-

Summary – Scenario 11 – Train Derailment / Highway Accident

Although there is no planning review or permit approval process that would regulate activities or notify involved agencies during an emergency situation, the Canadian National Railway (CN) has an Emergency Response Plan and both Niagara Region Police and City of Welland Fire Fighters have procedures for dealing with these types of situations.

The Community Outreach Program should include actions to notify all agencies and stakeholders about the presence of the contaminated sediments. It should be the responsibility of individual agencies to consider potential risks to their employees and undertake appropriate health and safety messaging.

The addition of signage at appropriate locations to forewarn people of the potential hazard would also help to remind emergency and maintenance people of the potential hazard.

4.12 Scenario 12 – Gas Pipeline Crossing

Enbridge Gas proposes to remove and replace or install new gas lines that cross the Lyons Creek East Impacted Area along the Highway 140 corridor. Work involves removing and replacing lines and may require dredging or horizontal drilling.



Risk Assessment of Disturbing Sediment – LOW to HIGH

- The maintenance or replacement of gas pipelines or other utilities that require dredging would pose a high risk of disturbing contaminated sediment. Where this activity can be completed by horizontal drilling, a low risk would result.

Assessment of Administrative Controls

The following agencies (Table 18) would be involved in the review of this project:

Table 18 – Approval Agencies Involved in Gas Pipeline Crossing

- a. Ministry of Natural Resources (MNR) – The Provincial Crown owns the land under water (i.e., the creek bed) and therefore a license of occupation, lease or easement may be required for the installation of new gas pipelines. If the creek is determined to be navigable then an easement would be required. A work permit, issued under the *Public Lands Act*, is also required for this type of work.

Niagara Peninsula Conservation Authority	✓
Environment Canada	-
Fisheries and Oceans Canada	✓ if HADD
Ontario Ministry of the Environment	-
Ontario Ministry of Natural Resources	✓
Ontario Ministry of Transportation	-
City of Welland	-
Niagara Region	-
St. Lawrence Seaway Management Corporation	-

New gas pipelines require the application of the *Ontario Environmental Assessment Act* Class EA process. In this scenario, MNR would review the requirements of the *Class EA for MNR Resource Stewardship and Facility Development Projects*. Through this assessment, MNR would screen the project and determine the potential for environmental impacts and identify, whether further assessment, study or approval would be required. The replacement of an existing cable may only require notification of the project with MNR.

A permit issued under the *Endangered Species Act* may be required if a species listed as Endangered, Threatened or Extirpated on the Species at Risk in Ontario (SARO) list, or its habitat, is present on site and the species or its habitat will be impacted.

- b. Niagara Peninsula Conservation Authority (NPCA) – A permit under *Ontario Regulation 155/06* may be allowed for the development of public infrastructure (e.g., roads, pipelines and sewers) provided an Environmental Impact Study (EIS) is completed and a number of criteria are satisfied. If an Environmental Assessment is

required, the NPCA would be circulated a copy of the project description and would provide comments.

- c. *Fisheries and Oceans Canada (DFO)* – If an Environmental Assessment is required, DFO would be notified through that process. If requested by MNR, the DFO would review the proposal to determine the presence of fish habitat and identify whether a HADD is expected.
- d. *City of Welland (City)* – The City of Welland would only be directly involved if the pipeline crossed municipal land and an easement or right-of-way is required. If an environmental assessment were required, the City would be circulated a copy of the project description and would be provided an opportunity to identify any negative impacts to be addressed.
- e. *St. Lawrence Seaway Management Corporation (SLSMC)* – The SLSMC would have to issue a right of way if the pipeline crossed the land owned by Transport Canada.

Summary – Scenario 12 – Gas Pipeline Crossing

In this scenario, the assessment of risk on potential disturbance is primarily the responsibility of the MNR and NPCA. If the pipeline is being replaced on the creek bed, then a license of occupation is required and the MNR could take the lead in notifying other agencies, especially the NPCA and DFO. A new pipeline would be considered under the provincial *Environmental Assessment Act*. Through this process, other agencies would be notified in order to screen the project and to determine if further assessment is required.

The Administrative Control Protocol (Section 5, page 45) provides a process to ensure that all agencies are involved and properly notified.

4.13 Scenario 13 – Extreme Weather Event

As a result of a changing climate, extreme weather events or other natural disasters, such as heavy rains, tornadoes, drought and earthquakes could occur in the Area of Undertaking, negatively impacting the creek bed and contaminated sediment in the Impacted Area.



Risk Assessment of Disturbing Sediment – MODERATE

- Extreme weather events could result in a moderate risk of disturbing sediment through the scouring action of increased and altered water flow from storm runoff; and
- Extreme weather events could also result in a reduced risk due to the further burial of PCB contaminated sediment that would further protect the contaminated sediment.

Assessment of Administrative Controls

There are no administrative controls (Table 19) in place to deal with natural disturbances and disasters.

Summary – Scenario 13

There are no administrative controls in place to deal with natural disturbances and disasters. The Administrative Control Protocol should be used to ensure that monitoring occurs following an extreme weather event to detect any changes in the stability of the contaminated sediment. The Niagara Peninsula Conservation Authority could be responsible for conducting a preliminary inspection of the creek following a storm event and then contact the Ministry of the Environment (MOE) and Environment Canada (EC). The MOE and EC should be responsible for follow-up monitoring regarding the stability of the contaminated sediment.

Table 19 – Approval Agencies Involved in Extreme Weather Event

Niagara Peninsula Conservation Authority	-
Environment Canada	-
Fisheries and Oceans Canada	-
Ontario Ministry of the Environment	-
Ontario Ministry of Natural Resources	-
Ontario Ministry of Transportation	-
City of Welland	-
Niagara Region	-
St. Lawrence Seaway Management Corporation	-

4.14 Scenario Summary of Planning and Permit Approvals

Table 20 provides a summary of the involved agencies and their planning and permit approvals required for the scenarios listed above (see section 3.0 and Appendix 2 for more information on the required approvals).

Table 20 – Scenario Summary of Planning and Permit Approvals

Scenarios	Planning Approvals			Permit Approvals					Other
	FEDERAL CEAA	PROV- INCIAL OEA	MUNICIPAL Planning Approval	NPCA OR 155/0 6	MNR Public Lands ESA	DFO Fisheries Act	MOE OWRA	CITY Site Plan Building Permit	SLSMC Canal Pump Operation
1 Residential Subdivision	-	-	✓	✓	✓	✓if HADD	-	✓	-
2 Docks and Shoreline Alteration	-	-	-	✓	✓	✓if HADD	-	✓	-
3 Disposition of Transport Canada Lands (Canal Spoils)	-	-	-	-	-	-	-	-	-
4 Culvert Maintenance	-	-	-	-	-	-	-	-	-
Culvert Replacement	Provincial	✓	-	-	✓ESA	✓if HADD	-	-	-
	Municipal	-	✓	✓	✓	✓if HADD	-	-	-
5 Widening of Highway 140	-	✓	-	✓	-	✓if HADD	-	-	-
6 Changes to Stream Base Flow – Canal Pumps	-	-	-	-	-	✓if HADD	-	-	✓
7 Recreational Use (boating, fishing, swimming, ATV)	-	-	-	-	-	-	-	-	-
8 Water Taking for Irrigation > 50,000 litres/day	-	-	-	-	-	✓if HADD	✓	-	-
9 Water Taking for Irrigation < 50,000 litres/day	-	-	-	-	-	✓if HADD	-	-	-
10 Emergency Response – Water Taking during Fire-fighting	-	-	-	-	-	-	-	-	-
11 Train Derailment / Highway Accident	-	-	-	-	-	-	-	-	-
12 Gas Pipeline Crossing	-	-	-	✓	✓	✓if HADD	-	-	-
13 Extreme Weather Event	-	-	-	-	-	-	-	-	-

5.0 Lyons Creek East Administrative Control Protocol

Section 5.0 provides a recommended Administrative Control Protocol for the partner agencies to consider. The Protocol identifies a coordinating agency (the NPCA), establishes a common approach to protect the contaminated sediment, and confirms a commitment from all partners. The protocol is a signed agreement between all partners, by senior management staff, that includes the following principles, practices and procedures.

5.1 Protocol Purpose and Introduction

The Lyons Creek East Administrative Control Protocol is a common administrative approach that provides a set of rules and principles to ensure contaminated sediment in the Impacted Area is not disturbed, exposed or re-suspended. The Protocol guides key agencies in the implementation of Monitored Natural Recovery through the Lyons Creek Sediment Strategy, which states:

- Polychlorinated biphenyls (PCBs) contaminated sediment is located in the upper portions of the Lyons Creek East (between the Welland Canal By-pass and Highway 140) and should be left in place, undisturbed, in order to allow natural recovery to take place; and
- Administrative controls and a Community Outreach Program should be put in place to ensure human activities do not disturb the top layer of sediment and expose the deeper, more contaminated material.

As they currently exist, historically contaminated sediment in the Lyons Creek East Sub-watershed (Area of Undertaking) are stable and covered with a cleaner layer of sediment and therefore do not pose a significant human health or ecological risk. However, certain development, site alteration, emergency and recreational activities that involves dredging, filling/covering, piling/directional drilling, or scouring have the potential to disturb, expose or re-suspend the deeper more contaminated sediment.

The intent of this Protocol is to integrate the efforts of all agencies that have the mandate and authority to regulate activities in the Area of Undertaking to ensure that PCB contaminated sediment is not disturbed, exposed or re-suspended. The Protocol represents an inter-agency commitment to collaborate on the long-term protection, monitoring and awareness efforts regarding the contaminated sediment.

Participating Agencies

- Niagara Peninsula Conservation Authority (NPCA)
- Environment Canada (EC)
- Fisheries and Oceans Canada (DFO)
- Ministry of the Environment (MOE)
- Ministry of Natural Resources (MNR)
- City of Welland (CITY)
- Niagara Region (NR)
- St. Lawrence Seaway Management Corporation (SLSMC)

The parties to this Protocol have agreed to work together in a cooperative, coordinated and integrated fashion and are committed to prevent the disturbance, exposure and re-suspension of contaminated sediment within the “Impacted Area” and the “Area of Undertaking”.

5.2 Protocol Objectives

The objectives of the protocol are:

- To create a common administrative approach to ensure contaminated sediment is not disturbed, exposed or re-suspended;
- To harmonize agency mandates and to strengthen and coordinate a common review process for regulating activities that have potential to disturb contaminated sediment;
- To establish principles that will guide decisions; and
- To clearly articulate the roles and responsibilities of each party to this protocol.

5.3 Geographic Scope of the Protocol

The geographic scope of this evaluation includes all lands that drain into the upper portion of Lyons Creek East between the Welland Canal and the Buchner Road / CN Railway Intersection (Figure 6, page 47). Within this area there are two areas of concern:

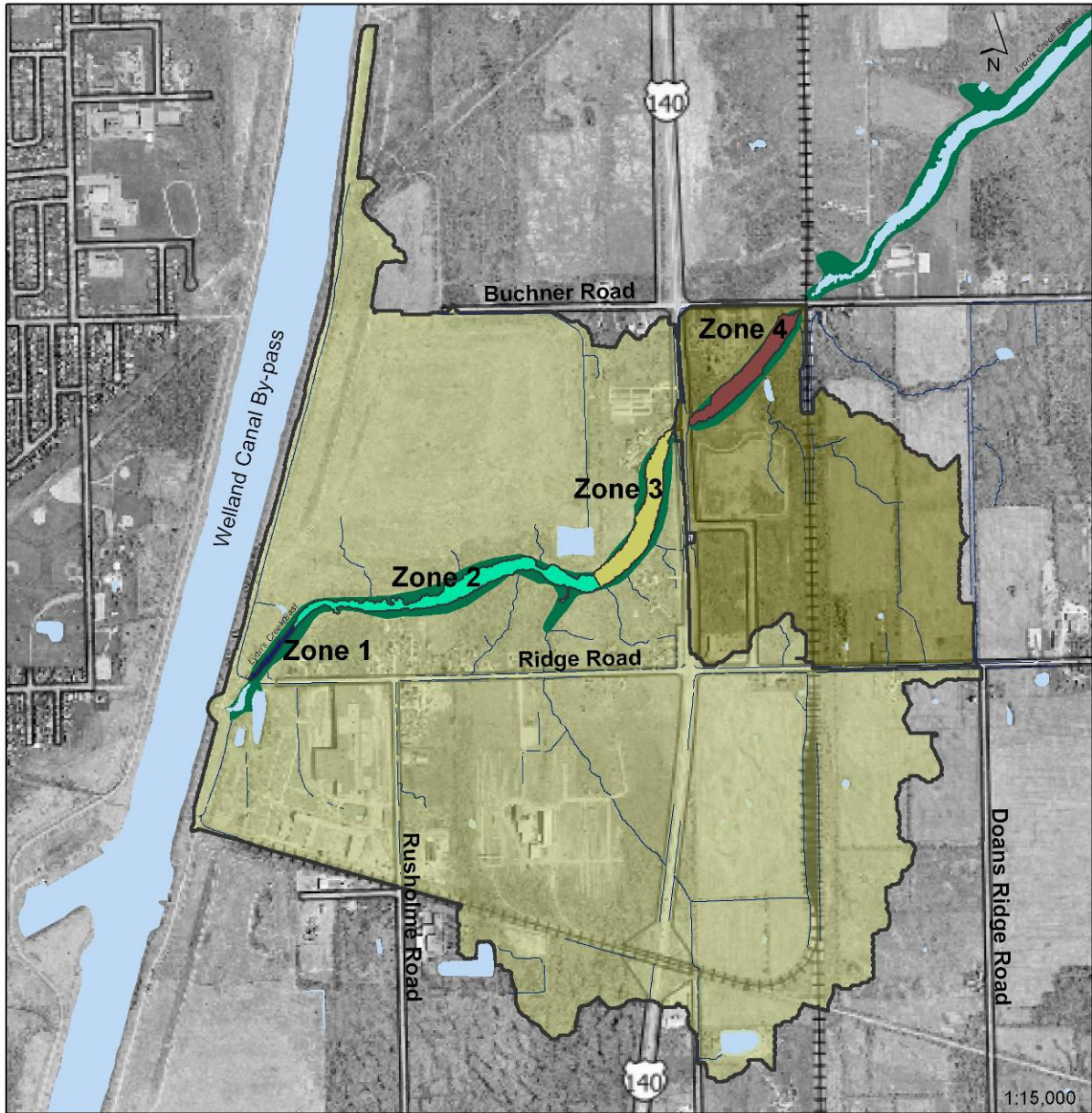
- Impacted Area – Includes all land in the creek bed where the contaminated sediment exists (Zones 1, 2, 3, and 4).
- Area of Undertaking – Includes all land within the sub-watershed that drains into the Impacted Area.

5.4 Protocol Principles








The following principles will guide the decisions of the parties to this protocol for all activities in the Area of Undertaking:

1. **Prevent Disturbance** – Prevent disturbance, exposure or re-suspension of contaminated sediment.
2. **Apply Design Making Process** – All activities must be assessed based upon the application of the Decision Making Process (Figure 7, page 48) and the following design criteria in decreasing order of priority: Relocate, Redesign and Remediate.
3. **Mitigate Impacts of Public Service and Utility Projects** – Public service and utility projects that cannot be relocated or redesigned and may potentially disturb any sediment must have a mitigation plan that indicates how contaminated sediment will be removed, handled and disposed of in a safe and environmentally protective manner.
4. **Monitor and Mitigate Impacts of Emergency and Disaster Situations** – When emergency and disaster situations occur in the Impacted Area, the impacts must be monitored and appropriate actions taken to mitigate further re-suspension of contaminated sediment.
5. **Proponent is Responsible for Costs** – The proponent of any activity is responsible for all costs, including engineering reports and the removal, handling and disposal of contaminated sediment and for worker safety.
6. **Continue the Monitored Natural Recovery Process** – The Lyons Creek East contaminated sediment has been undergoing a natural recovery process since it was deposited over 40 years ago. Monitored Natural Recovery is the preferred management option and ensures the continuation of this natural recovery process.
7. **Monitoring of Contaminated Sediment** – It will take decades to effectively monitor and determine whether Monitored Natural Recovery is working. The protocol and the Decision Making Process must remain flexible to adapt to new information and circumstances.

Figure 6 – Lyons Creek East – Impacted Area and Area of Undertaking



Legend

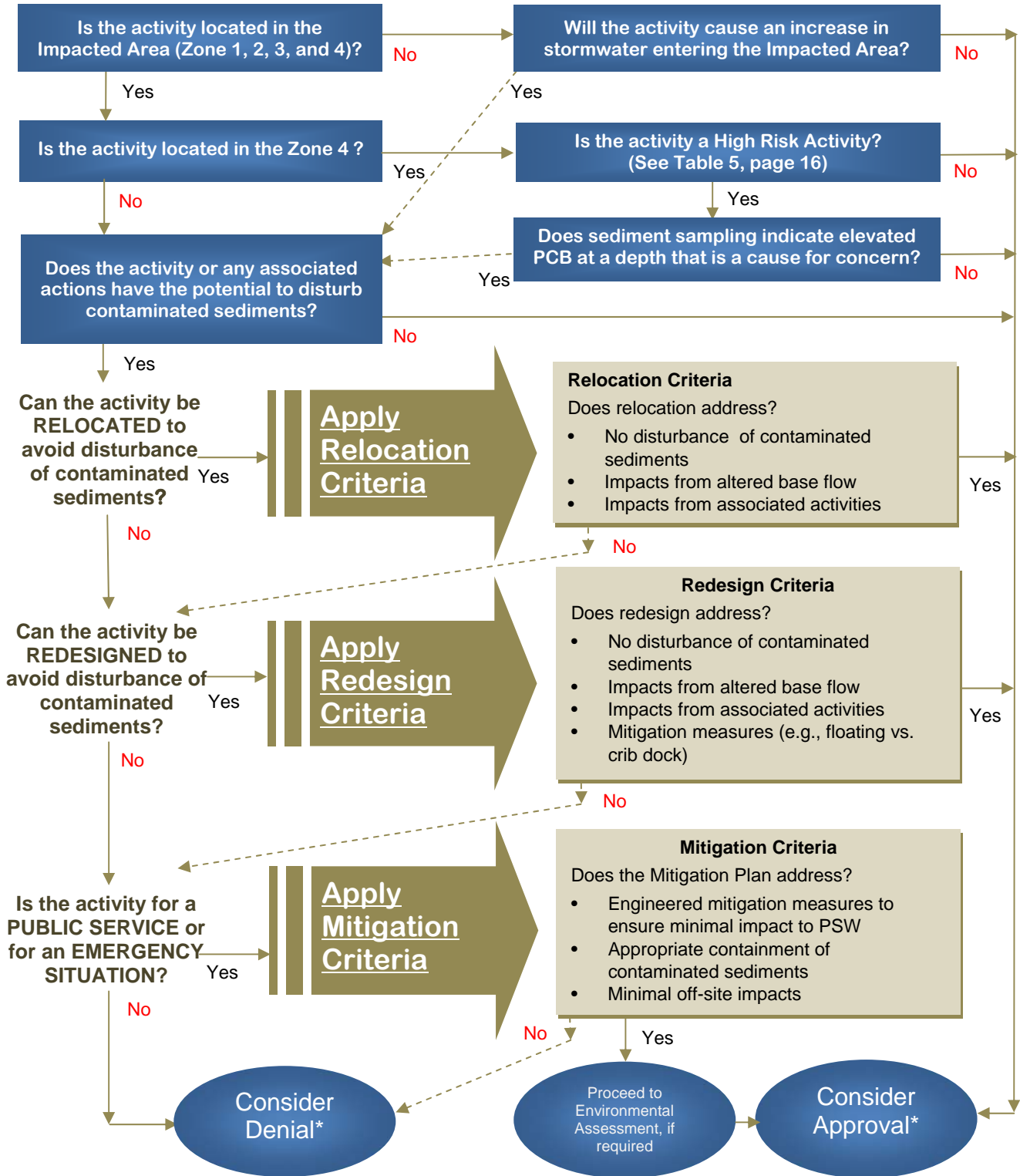
- | | |
|---|---|
|  Railway |  Area of Undertaking Zones 1 to 3 |
|  NPCA Hydroline: Streams & Ditches |  Area of Undertaking Zone 4 |
|  Watercourse |  Impacted Areas:
Zones with Contaminated
Sediments |
|  Lyons Creek East PSW Boundary | |



5.5 Decision Making Process

All partner agencies will apply the following “Decision Making Process” (Figure 7) to review projects and activities located in the Area of Undertaking.

Figure 7 – Decision Making Process for Activities in Area of Undertaking



* Pending consideration of all other legislation

5.6 Roles and Responsibilities

Through the Administrative Control Protocol the parties confirm their commitment to work in a cooperative, coordinated and integrated fashion in order to harmonize the Decision Making Process outlined in Figure 7 (previous page). To this end, the parties agree to:

1. Recognize the Niagara Peninsula Conservation Authority as the agency that is responsible for coordinating the Decision Making Process and confirming the involvement of all agencies;
2. Review applications in accordance with their own jurisdiction and provide comments to the NPCA in a timely fashion;
3. Practice a “No Wrong Point of Contact” approach and provide proponents with a development guidance document to assist them through the process;
4. Notify all appropriate parties to this Protocol when applications are received and when infractions of legislation, regulations and instruments related to this protocol are identified;
5. Promote open communication and facilitate discussion between parties to review applications, exchange new information or to discuss the implementation of the Protocol and the Community Outreach Program; and
6. Implement a community outreach program.

The Protocol should not affect the normal business of any party or result in an unacceptable burden to any party. The intent of the protocol is to harmonize the Decision Making Process and to identify opportunities to discuss and coordinate decisions. Any party that is participating in an Environmental Assessment review process is responsible to notify all other parties.

The parties to this protocol agree to the roles and responsibilities as outlined in Table 21.

Table 21 - Roles and Responsibilities of Protocol Parties

Responsibilities	Supporting Partners							
	NPCA	EC	DFO	S/SMC	MOE	MNR	CITY	NR
Coordinate Process								
• Supports implementation of the Administrative Control Protocol	✓	✓	✓	✓	✓	✓	✓	✓
• Enables implementation of a coordinated Decision Making Process	✓	-	-	-	-	-	-	-
• Initiates meetings with all parties (once a year, if required)	✓	-	-	-	-	-	-	-
• Participates in meetings and discussions as required	✓	✓	✓	✓	✓	✓	✓	✓
Notification/Circulation								
• Refers proponents to appropriate agencies	✓	✓	✓ ¹	✓	✓	✓	✓	✓
• Provides Development Guideline to assist proponents with the approval process	✓	✓	✓ ¹	-	✓	✓	✓	✓
• Notifies NPCA and appropriate parties when applications are received or internal activities planned	✓	✓	✓ ¹	✓	✓	✓	✓	✓
• Responds to requests for information in a timely manner	✓	✓	✓ ¹	✓	✓	✓	✓	✓
Review Application								
• Coordinates the review of the application and requests input from the appropriate agencies	✓	✓	✓ ¹	✓	✓	✓	✓	✓
• Provides input to application, as requested	✓	✓	✓ ¹	✓	✓	✓	✓	✓
• Provides scientific information and technical data with respect to the impact of activities on contaminated sediment	-	✓	-	-	✓	-	-	-
• Reports to the NPCA and other parties on the findings of its review and recommendations before making a decision on approval	✓	✓	✓	✓	✓	✓	✓	✓
• The NPCA coordinates a review by the parties of the partner's findings and recommendations	✓	-	-	-	-	-	-	-
• Provides notice of final decision to partners and to the proponent	✓	✓	✓	✓	✓	✓	✓	✓
Monitoring – Activities								
• Monitors activities within the Impacted Area	✓	✓	✓ ¹	-	✓	✓	✓	✓
• Monitor the effectiveness of the Monitored Natural Recovery Process	✓	-	-	-	✓	-	-	-
• Monitors and reports on effectiveness of administrative controls	-	✓	-	-	-	-	-	-
• Monitors compliance of activity with conditions of approval, if applicable	✓	✓	✓ ¹	✓	✓	✓	✓	✓
• Monitors for illegal activities and informs all parties of any infractions	✓	✓	✓ ¹	-	✓	✓	✓	✓
• Monitors canal pumps and notifies partners of any water flow changes in operation (maintenance and malfunction)	-	-	-	✓	-	-	-	-
Monitoring – Sediment								
• Updates to maps as required	-	✓	-	-	✓	-	-	-
• Monitors sediment and biota (benthos, fish and wildlife) to ensure that environmental conditions are improving	-	✓	-	-	✓	✓	-	-
• Informs all parties of new information as it becomes available	-	✓	-	-	✓	-	-	-
Enforcement								
• Enforces own acts and regulations	✓	✓	✓ ¹	✓	✓	✓	✓	✓
Communication								
• Ensures work safety of all employees working in the Impacted Area	✓	✓	✓ ¹	✓	✓	✓	✓	✓
• Maintains archive of reports	✓	✓	-	-	-	-	-	-
• Implements community outreach program and products to maintain awareness of general public, proponents and agencies	✓	✓	✓	✓	✓	✓	✓	✓

Note 1 – DFO only involved if there is a potential for a HADD

5.7 Protocol Administration

While the protocol provides a formal recognition of agency roles and responsibilities, it must also remain adaptive and flexible to deal with new issues, emergency situations, include new parties, and address the results of long-term monitoring programs.

1. Amendments to Protocol and Changes in Parties – Amendments to the Administrative Control Protocol can be made and new parties can be added at any time provided there is consultation with and consent of the other parties.
2. Dispute Avoidance – The parties to this protocol are committed to working collaboratively to avoid and resolve any dispute concerning the implementation of the Protocol.

5.8 Signing Authorities

By signing this Protocol the parties confirm their commitment to protect the Lyons Creek East ecosystem.

- Department of Environment Canada
- Fisheries and Oceans Canada
- Ontario Ministry of the Environment
- Ontario Ministry of Natural Resources
- Niagara Peninsula Conservation Authority
- Regional Municipality of Niagara
- City of Welland
- St Lawrence Seaway Management Corporation

The signing authorities will be confirmed and inserted into the final protocol document.

6.0 Protocol for a Community Outreach Program

The following section provides a suggested Protocol for a Community Outreach Program. The Protocol describes the purpose and objectives of a community outreach program and identifies the target audience, key messages and approaches to be considered.

While the Administrative Controls Protocol puts in place an approach to deal with applications for development and site alterations, there are a number of potential activities (e.g., recreational, and emergency response) and extreme weather events or occurrences that are not regulated. The Community Outreach Program complements the Administrative Controls Protocol by providing awareness and information to the proponents of both regulated and non-regulated activities. This approach ensures that everyone will be informed and involved in the Monitored Natural Recovery of the contaminated sediment.

6.1 Purpose

The purpose of the Community Outreach Program is to ensure that appropriate agencies, authorities, organizations and community members are informed and aware of the contaminated sediment and the precautionary measures to be taken when any activity occurs in or near the Impacted Area.

The Community Outreach Program can engage a target audience of agencies and community stakeholders in order to build awareness on matters such as the location of the contaminated sediment, the effects of re-suspension, the principles and purpose of the Administrative Control Protocol, who to contact, and best management practices to prohibit disturbances to the sediment.

Community outreach is a program that disseminates key messages linked to the Protocol's principles, goals and milestones. The program can use a variety of tools including newsletters, signage, on-going monitoring, emergency response staff training, as well as periodic updating of information pertaining to new and evolving circumstances to educate the public and special interest/user groups. The program should engage stakeholders and community groups and other agencies implementing monitoring programs and remedial and educational activities to protect the Lyons Creek East watershed.

6.2 Objectives

The objectives of the Community Outreach Program are to:

- ✓ Be as inclusive as possible of all the stakeholders – general public, special interest groups, government agencies, municipal, regional and First Nations governments;
- ✓ Include and address the opinions, concerns and knowledge of the community;
- ✓ Provide information on the area of contaminated sediment and methods to reduce the risk of re-suspension;

- ✓ Provide new information to the community in a timely fashion to ensure the community has been provided with the most up-to-date information, issues and decisions (i.e., monitoring, best management practices);
- ✓ Seek and promote partnerships with agencies and stakeholders to work together to achieve coordinated and cooperative management of the Impacted Area;
- ✓ Provide information to develop and seek consensus on issues and objectives of the Monitored Natural Recovery option; and
- ✓ Develop a shared sense of responsibility and stewardship.

6.3 Implementation

The key players in delivering the Community Outreach Program are those agencies/authorities that have signed the Administrative Controls Protocol, including:

- Niagara Peninsula Conservation Authority
- Environment Canada
- Fisheries and Oceans Canada
- Ministry of the Environment
- Ministry of Natural Resources
- Niagara Region
- City of Welland
- St. Lawrence Seaway Management Corporation

All partners should agree to undertake a joint communication program that will enhance opportunities for open, transparent, effective and pro-active communications with the targeted audience through appropriate, continuous and consistent public information approaches.

All partners should agree on the audience, timing, approach, and content of communication and all public information material shall be prepared jointly and shall equitably reflect the contributions of all partners. The St. Lawrence Seaway Management Corporation, while a participating partner in the Administrative Controls Protocol, will have a minimal role in delivering the communications protocol.

6.4 Target Audience

The target audience includes all agencies, stakeholders, property owners and people that may undertake any activity in or near the Impacted Area. Key educational messages and other forms of public outreach should be focused on the following individuals and groups:

- General Public;
- Property Owners and Business Operators – residential, industrial, commercial and vacant land;
- Emergency Services – Ontario Provincial Police, Niagara Police, Ambulance Services;
- City of Welland – Council, Senior Management and Fire Fighting Services, Planning, Engineering and Public Works;
- Niagara Region – Planning and Engineering;

- Federal Agencies – Environment Canada, Fisheries and Oceans Canada, St. Lawrence Seaway Management Corporation;
- Provincial Agencies – Ministry of the Environment, Ministry of Natural Resources, Ministry of Transportation;
- Recreational Groups – Anglers & hunters, naturalists, and other creek visitors;
- Community Groups – Welland River Keepers, local service clubs; and
- Aboriginal Governments – Metis and First Nation.

6.5 Key Messages

The following key messages should be considered when communicating with the target audience:

Key Message 1 – All property owners and proponents of activities should practice best management practices when conducting activities in or near the contaminated sediment.

- Best Management Practices include:
 - Do not disturb (dredge, scour, fill, alter) the bed of the creek;
 - Relocate all activities outside of the provincially significant wetland (PSW);
 - Contact the NPCA before you dig in the PSW;
 - Follow Ontario's Fish Consumption Guidelines before eating fish from Lyons Creek East; and
 - Contain stormwater runoff on your property – do not increase direct runoff into the creek.

Key Message 2 – No development or site alteration is permitted in the creek and PSW, or within 30 m of the shoreline.

- The best approach to prevent disruption of sediment is through the prohibition of activities within and immediately adjacent to the Impacted Area. The harmonized use of Administrative Controls will limit the risk of disrupting contaminated sediment.
- The 30 m restriction is due to the NPCA's authority to enforce Ontario Regulation 155/06.

Key Message 3 – Contact the NPCA should you plan any development or site alteration in or near the contaminated sediment or want further information about the contaminated sediment in Lyons Creek East.

- The NPCA will provide a one window approach for any development or site alteration in or near the contaminated sediment and ensure the proponent contacts the right agencies.
- The NPCA will be the first point of contact for an inter-agency approval process for any development and site alteration proposal, emergency situations and any questions and concerns from the public, and will direct the public to the appropriate approval agency.

Key Message 4 – A significant amount of work has been completed to identify the location of the contaminated sediment and to determine that it poses a minimal risk to human and ecosystem health.

- Risk assessment studies on contaminated sediment sampling and ecological impacts, conducted by the Ministry of the Environment (MOE) and Environment Canada (EC), determined that untreated stormwater discharge that occurred between the 1940s and 1971 has caused polychlorinated biphenyls (PCBs) contamination in Lyons Creek East sediment (the Impacted Area).
- The construction of the Welland Canal By-pass severed Lyons Creek East from the original source of the PCB contamination and therefore new PCBs have not been deposited since 1972 and the original PCBs are being slowly buried.
- The contaminated sediment is confined to the 20 to 50 cm depth layer of silt and detritus that has accumulated along the creek bed. The deeper layers remain uncontaminated.
- The geographic scope of the Impacted Area and the Area of Undertaking includes the area between the new Welland Ship Canal and the Canadian National (CN) railway crossing at Buchner Road, east of Highway 140 (Figure 2, page 7).

Key Message 5 – The contaminated sediment is located in a Provincially Significant Wetland where development and site alteration is either not permitted or restricted.

- The contaminated sediment is located within the confines of the Lyons Creek East creek bed (owned by the Provincial Crown) which is within the boundaries of a Provincially Significant Wetland (PSW). Current provincial, municipal and conservation authority regulations protect the PSW, fish habitat, and species at risk and their habitat from any major ecological impact associated with development or site alteration proposals.
- The NPCA may prohibit development or prescribe site alteration conditions under *Ontario Regulation 155/06* within the wetland.

Key Message 6 – The contaminated sediment will be managed by the Monitored Natural Recovery Strategy which leaves the sediment in place and establishes a monitoring program to assess the natural recovery of the creek over time.

- The Lyons Creek East contaminated sediment has been undergoing natural recovery since deposition began over 40 years ago. Monitored Natural Recovery Process is the preferred management option and Lyons Creek East will continue to undergo this natural process.
- The Ministry of the Environment, Ministry of Natural Resources, Niagara Peninsula Conservation Authority, Environment Canada, Fisheries and Oceans Canada, St. Lawrence Seaway Management Corporation, Niagara Region, and the City of Welland have partnered to prepare the Lyons Creek East Sediment Management Strategy.

- Through public consultation, sediment management strategies were discussed to mitigate re-suspension of PCB contaminated sediment into the creek's water-column.
- Sediment removal and capping remediation options would result in significant damage to the PSW and would cause greater ecological harm than good.
- The Monitored Natural Recovery option was selected as the best approach because it: 1) results in a low risk to human and ecological health, 2) protects high biological significance of the Lyons Creek East ecosystem; 3) protects the Provincially Significant Wetland; and 4) the alternative options would result in a higher risk of re-suspending contaminated sediment during dredging and capping.
- Contamination levels are expected to decrease over time as clean, new sediment covers and buries older sediment and the PCB degrade, further reducing the concentrations of PCBs in the creek.

Key Message 7 – All agencies have signed a Protocol that harmonizes their planning and permit approvals process and efforts for ongoing research and monitoring.

- The Protocol harmonizes the review of planning and permitting approvals and ensures agency collaboration.
- The Administrative Protocol will also ensure that on-going monitoring needs are met, and that effectiveness monitoring is conducted and reported to the public.

6.6 Communication Approaches

The following communication approaches should be considered when communicating with the target audience:

- **News Releases** – Provide a news release in local newspapers as a public interest story to ensure broad coverage across the City of Welland at the following events: 1) the signing of the Administrative Controls Protocol, and 2) when any new information arises from monitoring.
- **Newsletter** – A newsletter could provide key messages suggested above regarding the Protocol and how it will affect the general public. The newsletter could be mailed out to all agencies, property owners and stakeholders as well as being made available via email and a website. Email should not be relied upon as the primary means to contact everyone and all information should be sent by regular mail.
- **Website** – The NPCA website that contains the Lyons Creek East webpage could continue to be a primary form of outreach and information exchange, and would be used to complement other forms of communication.
- **Fact Sheets** – Fact sheets could be prepared and distributed to provide information to target groups (e.g., fire fighters, property owners) regarding the contaminated sediment. Fact sheets should be written in understandable terminology and include user-friendly graphics to explain scientific, technical, legislative or managerial information, concepts and principles.

Some topics to be considered include:

- Human health risks of contaminated sediment in Lyons Creek East
 - Location and extent of contaminated sediment
 - Rules on development and site alteration in the Area of Undertaking and who to contact
 - Administrative Controls Protocol
- **Signage** – Signs could be posted at a minimum of five locations (Ridge Road Bridge and turnaround, Buchner Rd/Railway crossing, the east and west side of Highway 140, and the Lyons Creek East pumping station). The sign would warn people about the presence of contaminated sediment in the creek, provide a message not to dig or disturb the provincially significant wetland, contact information for the NPCA (e.g., telephone number and web site address) and to consult the MOEs Guide to Eating Ontario Sport before consuming any fish. Consideration should be given to providing signage in English, French and Mandarin.

7.0 Summary

The following is a summary of our key observations and recommendations:

Observations

1. The contaminated sediment is confined to the creek bed which lies within the boundaries of a provincially significant wetland (PSW). New development or site alteration is not permitted according to the Provincial Policy Statement, and is restricted according to NPCA's Policies, Procedures, and Guidelines for the Administration of Ontario Regulation 155/06 and Land Use Planning Policy Document (2007).
2. Most high-risk activities (highway expansion, bridges, new utility lines, water diversions, large private land developments) are subject to a comprehensive Environmental Assessment or Municipal Planning Review process. These processes provide an opportunity to inform others about the presence of contaminated sediment, request a detailed assessment of the potential impacts and identify measures and techniques that mitigate the impacts of development and site alteration.
3. All development and site alteration activities in the impacted area (e.g., filling lands under water, retaining walls and crib docks) require the approval of the Niagara Peninsula Conservation Authority, Ministry of Natural Resources, and in some cases, the City of Welland. This permit approval process provides for an assessment of the risk of disturbance and identifies measures that mitigate the impacts of development. This process also provides an opportunity to ensure all agencies are involved in the review of the application.
4. Recreational, monitoring and educational activities are not subject to administrative controls and there is currently no means to mitigate their impacts; however these activities are associated with a low risk to disturb the sediments. Some of these activities include:
 - Recreational boating and the anchoring of boats;
 - Swimming, scuba diving, kayaking, canoeing and angling;
 - Field research and monitoring; and
 - Uncontrollable activities and occurrences such as emergency response (fire fighting, highway accidents and train derailments) and extreme storm events.
5. The City of Welland's current Official Plan does not include policy specific to the Impacted Area or the Area of Undertaking. The Official Plan is currently being reviewed and this provides a good opportunity to ensure that the Official Plan identifies the location of the contaminated sediment and provides criteria and conditions for the evaluation of specific development scenarios.
6. The St Lawrence Seaway Management Corporation (SLSMC) is the only agency that currently manages the canal pump station and the creek's base flow, which is a critical component to the long term health and maintenance of the creek. The SLSMC should be a partner in the Administrative Controls Protocol.
7. There is no education program to make the public, development industry, and agencies aware of the contaminated sediment or the current planning and permit review processes. Education and awareness should be considered an on-going component and a Community Outreach Program should be implemented to provide key messages

and information to property owners, recreationalists and other stakeholders through signage, news releases, fact sheets and on a website.

8. Although the need for monitoring and enforcement of non-permitted activities may be sporadic, continual vigilance is required to identify potential problems. There is a need for a responsible agency to prepare a monitoring plan and coordinate the monitoring of all activities within the Impacted Area, as well as monitor the effectiveness of Administrative Controls.

Recommendations

1. Administrative Control Protocol – Establish a protocol between agencies to clearly define roles and responsibilities and to establish a decision making process to ensure the review of any development or site alteration proposal that occurs within the Impacted Area and Area of Undertaking. The Niagara Peninsula Conservation Authority should be identified as the lead agency and coordinate the final review of all development and site alteration applications in the Impacted Area and the Area of Undertaking (Figure 2, page 7).
2. Establish Official Plan Policy – Establish official plan policy and zoning by-law provisions to prohibit development and site alteration activities that could disturb the contaminated sediment in the Impacted Area and the Area of Undertaking. The City of Welland should amend their Official Plan to identify these areas on a schedule, set policy for the protection of these areas, and require Impact Assessment Studies to be completed to ensure the contaminated sediment is not disturbed.
3. Prepare Development Guideline – Prepare a brief guideline for proponents of activities to increase their awareness of the approvals that are required. The guideline should provide a list of names and agencies to contact for more information and examples of mitigation measures to be considered to avoid the re-suspension of contaminated sediment.
4. Implement Community Awareness Protocol – Improve long-term public awareness and education about the contaminated sediment (e.g., content and location) and the effects of re-suspension. Target audiences should include the general public, the development industry, agency staff and others, and key messages should be provided through a variety of approaches as identified in Section 6.
5. Maintain a Central Library of Information – A central library of all background information and scientific reports should be available in hard copy or on the web for public review and for immediate access in the case of an emergency situation (e.g., disturbance caused by highway accident).

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Appendix 1 – List of Agencies in the Technical Advisory Group

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Niagara Peninsula Conservation Authority

1. Jocelyn Baker, Coordinator, Watershed Restoration
2. Valerie Cromie, Remedial Action Plan Coordinator
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5. Rick Day, Issues Project Coordinator, Niagara District Office

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6. Joad Durst, Area Supervisor
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10. Sandra Kok, Senior RAP Program Engineer
11. Dan McDonnell, RAP Program Officer

City of Welland

12. Eric Nickel, Engineering Department.

Niagara Region

13. Sunil Sharma, Manager of Design & Construction, Water & Wastewater Engineering

Stakeholders

14. St. Lawrence Seaway Management Corporation, Mr. Fraser Johnston, Technical Officer and Pierre Pesant, Standards and Services Engineer

Appendix 2 – Summary of Administrative Controls and Relevant Policies

The following provides a general description of the agencies and the planning and permit approvals that are required for development and site alteration activities in the Impacted Area and the Area of Undertaking (Map 2, page 7).

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1.0 Federal Legislation, Policies and Processes

Federal authorities and departments such as Environment Canada and Fisheries and Oceans Canada play a vital role in protecting the natural environment, renewable resources, and habitats from inappropriate development and site alteration under the authority of the *Canadian Environmental Assessment Act*, the *Fisheries Act* and the *Species at Risk Act*. Project proposals which may impact fish and species at risk habitat, water and wetland vegetation by disturbing the contaminated sediment, base flow in the creek, water quality, and in particular fish habitat could trigger the involvement of the federal authorities.

Environment Canada (EC) is a federal agency whose mandate under the *Department of the Environment Act* deals with:

- Preservation and enhancement of the quality of the natural environment;
- Renewable resources (including water, migratory birds and other non-domestic flora and fauna);
- Meteorology;
- Enforcement regulation arising from the advice of the Canada-U. S. International Joint Commission; and the
- Coordination of federal environmental policies and programs.

In support of the responsibilities of the Minister of the Environment, Environment Canada will consult with other departments and agencies, including Fisheries and Oceans Canada, and provide expert policy, technical and scientific analysis and advice on sustainable development and the potential environmental effects of policy, plan and program initiatives.

Canadian Environmental Assessment Agency – The Canadian Environmental Assessment (CEA) Agency is a federal body accountable to Environment Canada. The Agency

integrates Canada's environmental goals and works to provide Canadians with high-quality environmental assessments that contribute to informed decision-making, in support of sustainable development. The CEA Agency administers the *Canadian Environmental Assessment Act (CEAA)* and provides administrative and advisory support for review panels, mediations, comprehensive studies and class screenings. At the project level, the *Canadian Environmental Assessment Act* provides a legal framework for conducting environmental assessments on projects involving a prescribed government decision.

In support of the Minister of the Environment, the CEA Agency will promote the application of strategic environmental assessment to policy, plan and program proposals of the federal government. In consultation with other departments and agencies, it will provide guidance and training to improve the implementation of the strategic environmental assessment of policies, plans and programs.

Fisheries and Oceans Canada (DFO) is a federal agency which delivers programs and services that support sustainable use and development of:

- Safe and Accessible Waterways;
- Healthy and Productive Aquatic Ecosystems; and
- Sustainable Fisheries and Aquaculture.

DFO is responsible for developing and implementing policies and programs in support of Canada's scientific, ecological, social and economic interests in oceans and fresh waters.

DFO's guiding legislation includes the *Fisheries Act*, which confers responsibility to the Minister for the management of fisheries, habitat and aquaculture. The Department is also one of the three responsible authorities under the *Species at Risk Act*.

The Fish Habitat Management Program (FHMP) normally becomes involved in the environmental assessment process through a regulatory trigger. For example, the FHMP will conduct an environmental assessment when there is a need for an authorization under those sections of the *Fisheries Act* that trigger an environmental assessment, that is, those listed in the Law List Regulations. The most common *CEAA* regulatory trigger for the FHMP is subsection 35(2) of the *Fisheries Act* (i.e., no harmful alteration, disruption or destruction of fish habitat (HADD) unless authorized by DFO).

1.1 Federal Planning Process Approvals

Canadian Environmental Assessment Act (CEAA) – *CEAA* is the federal legislation that requires an Environmental Assessment (EA) to be undertaken whenever a federal authority has a specified decision-making responsibility in relation to a project, which is also known as a "trigger" for an Environmental Assessment. The term "federal authority" refers to a federal body (e.g., a department or agency) that may have

The **CEAA** is triggered whenever a federal authority:

- Proposes a project,
- Provides financial assistance to a proponent to enable a project to be carried out,
- Sells, leases, or otherwise transfers control or administration of federal land to enable a project to be carried out, or;
- Provides a license, permit or an approval that is listed in the *Law List Regulations* that enables a project to be carried out.

expertise or a mandate relevant to a proposed project, such as Environment Canada, Health Canada, Natural Resources Canada and Transport Canada.

The *CEAA* review process is a self-assessment of projects for environmental effects. Screenings, class screenings and comprehensive studies are the types of self-assessment processes available. If a screening identifies the need for further assessment, a comprehensive study may be required. A mediation or panel review is to be used in certain circumstances where a project may cause significant adverse environmental effects or where public concerns are apparent.

The major outcome of an environmental assessment is to determine whether or not a project is likely to cause a significant adverse environmental effect. The significance of the environmental effect is determined by a combination of scientific data, regulated thresholds, standards, social values and professional judgment. It must be determined in a transparent, systematic and supportable fashion.

Although municipal planning approvals do not apply to federal lands, regard for municipal planning policy is recommended in support of the Protocol partnership. A private sale and subsequent private development would, however, be subject to municipal approval.

1.2 Federal Permit Approval Process

Species at Risk Act – The *Species at Risk Act* (*SARA*) was created to prevent wildlife species from becoming extinct. The Act protects species at risk and their critical habitats, and also contains provisions to help manage species of special concern to prevent them from becoming endangered or extinct.

SARA provides for the preparation of policies, guidelines, standards, and codes of practice in relation to a wide range of issues. Guidelines and codes of practice may be prepared to indicate government policy direction for the implementation of certain provisions of *SARA*, however, such tools are not law but may form the basis for laws and regulations.

Under Section 73 of *SARA*, the competent Minister may enter into an agreement or issue a permit authorizing a person to engage in an activity affecting a listed wildlife species, any part of its critical habitat or its residences. If entered into or issued, the competent Minister must include an explanation of why this was entered into or issued in the Public Registry.

Agreements or Permits under SARA – *SARA* agreements or permits may be entered into or issued by EC (terrestrial) and/or DFO (aquatic) for the following purposes:

- The activity is scientific research relating to the conservation of the species and conducted by qualified persons;
- The activity benefits the species or is required to enhance its chance of survival in the wild; or
- Affecting the species is incidental to the carrying out of the activity.

Permits are required by those persons conducting activities that may affect species listed on Schedule 1 of *SARA*, as extirpated, endangered, or threatened and which contravene the Act's general or critical habitat prohibitions.

Fisheries Act Permits – Fisheries and Oceans Canada (DFO) has a Level II agreement with the NPCA to administer the review of non federal or provincial projects under section 35(1) of the *Fisheries Act* which states “no person shall carry on work or undertaking that results in the harmful alteration, disruption or destruction of fish habitat” (HADD). This agreement has been established for the conservation and protection of fish habitat while promoting the principles of good fisheries management and client service.

The NPCA screens and processes applications for DFO under the Level II agreement to determine whether a HADD will occur as a result of the works proposed. A HADD may occur as a result of any direct or indirect manipulation which changes, alters, disrupts or destroys habitat in or adjacent to the water or which induces probable changes to the conditions of habitat (including, but not limited to, temperature, light, dissolved gasses, water clarity, sediment load and other factors).

Upon review, if a HADD is deemed to occur, NPCA staff will provide the proponent with the following options:

- 1) Revise the application in order to avoid any impact to fish habitat;
- 2) Advise the proponent of mitigation measures necessary to avoid a HADD (actions taken during the planning, design, construction and operation of works and undertakings to prevent potential adverse effects on the productive capacity of fish habitats); or
- 3) Refer the project to DFO if the HADD is not mitigable, which will require the project to be reviewed by DFO staff.

Under the Level II agreement, NPCA staff is not responsible for facilitating the preparation of compensation plans with the proponent; this is the responsibility of the DFO.

Fish Habitat Referral Protocol – In the case of a HADD, the Fish Habitat Referral Protocol for Ontario (2009) is applied. This protocol provides a series of decision trees to define a review process in accordance with the legislation that the application applies to (e.g., *Drainage Act*, *Species at Risk Act*, *Planning Act*) and identifies roles and responsibilities for the following agencies, where applicable:

- Fisheries and Oceans Canada
- Parks Canada Agency
- Transport Canada
- Environment Canada
- Ontario Ministry of Natural Resources
- Ontario Ministry of Transportation
- Ontario Ministry of the Environment
- Ontario Ministry of Agriculture, Food and Rural Affairs
- Conservation Authorities

Navigable Waters Protection Act – The *Navigable Waters Protection Act (NWPA)* is administered by Transport Canada (TC) and ensures a balance between the public right of navigation and the need to build works, such as bridges, dams or docks in navigable

waters. The *NWPA* provides for the prohibition to build works in navigable waters, unless the work, its site and plans have been approved by the Minister of Transport on such terms and conditions as is deemed fit.

The Navigable Waters Protection Program (NWPP) is responsible for the protection of the public right to navigation and the protection of the environment through the administration of the *Navigable Waters Protection Act (NWPA)*. Specifically, the *NWPP*:

- approves any works built or placed in, on, over, under, through or across navigable water in Canada prior to construction of the work(s);
- removes obstructions to navigation including unauthorized works or other obstructions such as sunken or wrecked vessels;
- regulates the provision and maintenance of lights, markers, etc. required for safe navigation during and/or on completion of the construction of certain works;
- acts as the Receiver of Wreck by applying the *Canada Shipping Act 2001, Part 7*.

For new construction, the NWPP will review an application either as a "formal approval" or by the "work assessment" process. The formal approval process is followed when the work has the potential to substantially interfere with navigation. The work assessment process is followed when NWPP officials determine that the work does not substantially interfere with navigation. An application is also required under the *NWPA* for the repair, rebuilding or alteration of an existing work. The process to be followed and the type of approval will vary depending on the type and complexity of the proposed work.

The formal approval process usually takes longer, and requires additional steps, including the advertisement of the work and the completion of an environmental assessment in accordance with the requirements under the *Canadian Environmental Assessment Act (CEAA)*. The work assessment process takes less time to complete, and does not require formal advertisement or an environmental assessment.

If the formal approval process is required, the advertisement and *CEAA* process will provide an opportunity for people to comment on the project's potential impact on other waterway users and the environment. As a result of the advertising and the *CEAA* process, the approval may include terms and conditions which must be followed in order to mitigate certain impacts that any work may have on navigation and the environment.

2.0 Provincial Legislation, Policies and Processes

Provincial agencies such as the Ministries of the Environment and Natural Resources play a key role in sustainable management, conservation and protection of the province's natural resources under the authority of the *Planning Act, Endangered Species Act, Environmental Assessment Act, Environmental Protection Act, Lakes and Rivers Improvement Act, Public Lands Act* and the *Ontario Water Resources Act*, as well as many other pieces of provincial legislation. Project proposals which may impact species at risk individuals and their habitats, fish species, wetlands and provincial Crown land through disturbance, removal and disposal of the contaminated sediment, base flow in the creek, water quality and quantity, and in particular species at risk individuals and their habitat would trigger the involvement of the provincial agencies.

2.1 Provincial Planning Process Approvals

Planning Act and Provincial Policy Statement (2005) – Ministry of Municipal Affairs and Housing – The *Planning Act, R.S.O. 1990, c. P.13 (PA)* provides the authority for the province to issue policy statements about matters of provincial interest. The 2005 *Provincial Policy Statement (PPS)* provides policy direction on matters of provincial interest related to land use planning, development and site alteration, and it applies to all applications, matters or proceedings commenced on or after March 1, 2005. In respect of the exercise of any authority that affects a planning matter, Section 3 of the *Planning Act* requires that decisions affecting planning matters “shall be consistent with” policy statements issued under the Act.

Under the *Planning Act*, development is defined to mean the creation of a new lot, change in land use, or the construction of buildings and structures requiring approval under the *Planning Act*, but does not include:

- a) activities that create or maintain infrastructure authorized under the environmental assessment process;
- b) works subject to the *Drainage Act*; or
- c) for the purposes of policy 2.1.3(b), underground or surface mining of minerals or advanced exploration on mining in significant areas or mineral potential in Ecoregion 5E, where advanced exploration has the same meaning as under the *Mining Act*. Instead, those matters shall be subject to policy 2.1.4(a).

Furthermore, site alteration is defined to mean activities, such as grading, excavation and the placement of fill that would change the landform and natural vegetative characteristics of a site.

The *Provincial Policy Statement (PPS)* provides three key policies that are relevant to land use decisions (i.e., new Official Plan policy, and planning applications) regarding development and site alteration in the Area of Undertaking.

Policy 2.1.3 b) – Development and site alteration shall not be permitted in (provincially) significant wetlands in Ecoregions 5E, 6E and 7E.

Policy 3.1.1 b) – Development shall generally be directed to areas outside of hazardous lands adjacent to river, stream and small inland lake systems which are impacted by flooding hazards and/or erosion hazards.

Policy 3.2.2 – Contaminated sites shall be remediated as necessary prior to any activity on the site associated with the proposed use that there will be no adverse effects.

Policy 3.2.2 provides a policy context to ensure that the contaminated sediment is addressed in any new municipal planning policy such as the revised City of Welland Official Plan or through *Planning Act* applications such as a plan of subdivision or a zoning amendment (Personal Communication – Louis Bitonti, Ministry of Municipal Affairs and Housing). The operative legislation for determining no adverse effects is the *Environmental Assessment Act*.

Environmental Assessment Act – MOE – The Ontario *Environmental Assessment Act (EAA)* provides for the protection, conservation and wise management of the environment in Ontario by establishing a responsible and accountable process to make decisions. The *EAA* provides the legislative basis for the preparation, submission and review of various types of Environmental Assessment (EA) documents. Each of these EA documents is subject to public, government and agency review before the Minister makes a decision on the project.

The Ministry of the Environment (MOE) has two separate and distinct roles in the assessment process:

- 1) Administering the *EAA* and ensuring that the proponent meets the requirements of the Act.
- 2) Reviewing EA documents to ensure that proponents have adequately considered the Ministry's mandate based on the *Environmental Protection Act (EPA)*, the *Ontario Water Resources Act (OWRA)*, and the *Pesticides Act*; regulations under those Acts; technical procedures and guidelines; and policy and program areas including the *Provincial Policy Statement* issued under the *Planning Act*.

The *Environmental Assessment Act (EAA)* applies to projects being carried out by the Province, municipalities, or public bodies. Specific private sector projects may be designated by regulation passed under the Act. The *EAA* requires that the proponent of an undertaking subject to the Act must submit an Environmental Assessment (EA) document to the Minister of Environment.

The *EAA* prohibits the approval of a license, permit or consent required under any statute, regulation or by-law of the Province of Ontario, municipality or regulatory authority until the Environmental Assessment has been accepted and the undertaking has been approved under the *EAA*.

Environmental Assessment Act – MNR – Pursuant to the *Environmental Assessment Act (EAA)* the Ministry of Natural Resources has in place "A Class Environmental Assessment for MNR Resource Stewardship and Facility Development Projects". Consideration of this class assessment is triggered when a disposition of right to a Crown resource is required under the *Public Lands Act* or the *Lakes and Rivers Improvement Act*. MNR would review the requirements of the *Class EA for MNR Resource Stewardship and Facility Development Projects* and through this assessment, MNR would screen the project and determine the potential for environmental impacts and identify, whether further assessment, study or approval would be required. The screening would determine which category of review would be required.

- Category A – Low negative effect (Issue Approval)
- Category B – Low to medium negative effect (Notify Public)
- Category C – Medium to high negative effect (Require an Environmental Study Report)
- Category D – High negative effect (Require an individual EA)

If a Canadian Environmental Assessment is necessary, its requirements would be harmonized with the Ontario Environmental Assessment.

2.2 Provincial Permit Approval Process

Endangered Species Act – MNR – The *Endangered Species Act (ESA)* provides protection for species and their habitats listed on the Species at Risk in Ontario List as an extirpated, endangered or threatened species. When a species is classified endangered or threatened the habitat of that species is protected under a general definition. The *ESA* is also responsive to Ontario's *Environmental Bill of Rights* and proposed policies and regulations will be posted on the Environmental Registry for public review and comment.

There are several components of species at risk protection that, under the new Act are now legal regulations:

- The Species at Risk in Ontario (SARO) list;
- General regulations to provide greater flexibility;
- Habitat Regulations to describe the habitat of a species; and
- Permits to move species at risk individuals and/or encroach on their habitat may be provided, which may contain conditions and/or be amended or revoked. A permit authorizes a person to engage in an activity specified in the permit that would otherwise be prohibited by section 9 or 10 (2007, c. 6, s. 17 (1)) such as an activity:
 - i. Necessary for the protection of human health or safety;
 - ii. To assist in the protection or recovery of the species specified in the permit;
 - iii. That will not assist in the protection or recovery of the species specified in the permit, but provides benefit to the species imposed by conditions of the permit; or
 - iv. That will not assist in the protection or recovery of the species specified in the permit, but the activity will result in a significant social or economic benefit to Ontario.

Public Lands Act – MNR – The *Public Lands Act (PLA)* regulates the management, sale and disposition of public lands, which includes the beds of most lakes and rivers as well as seasonally flooded areas (shorelands).

Pursuant to *Ontario Regulation 453/96*, work permits are required for:

- Construction of a building on public land;
- Construction of a trail, road and water crossings on public lands;
- Dredging of shorelands (includes both crown and private land);
- Filling of shorelands;
- Removal of aquatic vegetation from specific shore lands; and
- Shoreline construction occupying 15 or more square metres.

Shorelands under this regulation are defined as the lands covered or seasonally inundated by the water of a lake, river, stream or pond; and dredge is defined to mean the removal or displacement of material from any shore lands, but does not include removal or

displacement relating to the installation of service cables, heat loops or water intakes for private residences.

Work permits may be refused where:

- the applicant is not an eligible applicant;
- the application, including maps, sketches or plans are of such poor quality that they do not provide sufficient information to locate the work site or to determine details of the work to be done;
- the proposed work will result in a significant, unwanted change in access patterns over public land, such as the creation of access to a previously inaccessible area;
- the proposed work will impact negatively on existing or potential public use of the work site or adjacent area;
- the proposed work will be on public land and does not meet the criteria outlined in the Free Use Policy PL 3.03.01, resulting in a requirement for land use occupational authority which the applicant refuses to obtain, or MNR is not prepared to issue;
- the proposed work will be on public land and the applicant is in arrears with respect to any rent or fee related to the occupation of any public lands under the PLA;
- the proposed work is inconsistent with the goals of a provincial policy statement issued under the *Planning Act*;
- the proposed work is contrary to the public interest and/or may result in liability to the Provincial Crown; and
- there are Aboriginal concerns.

Lakes and Rivers Improvement Act – MNR – The *Lakes and Rivers Improvement Act (LRIA)* provides policy for the use of water and to regulate improvements on Crown, municipal and private land that forwards, holds back or diverts water. *Ontario Regulation 454/96* requires the approval of a work permit for:

- Construction, decommission or improvement of dams;
- Private water crossings draining an area > 5 sq km;
- Channelizing a river or stream that may harmfully alter fish habitat;
- Enclosing or covering a length of river or stream > 20 m; or
- Installation of a cable or pipeline if it results in damming, forwarding or diverting water.

However, no LRIA approval is required where a permit is required by a Conservation Authority under Section 28 of the *Conservation Authority Act (CAA)* pertaining to water crossings, channelization, enclosing or covering, or installation of cables or pipelines. Furthermore, no approval is required under the *LRIA* for water crossings when the *Public Lands Act* applies. According to *Ontario Regulation 454/96*, “water crossings” includes a bridge, culvert or causeway that is constructed to provide access between two places separated by water and holds back, forwards or diverts water.

Permit to Take Water under the OWRA and EPA – MOE – Water takings in Ontario are governed by the *Ontario Water Resources Act (OWRA)*, *Regulation 387/04* and the Water

Taking and Transfer Regulation. The Ministry of the Environment sets limits on the total quantity of water each permit holder can take for the duration of the permit. Water taking permits are issued for a maximum period of up to 10 years. Section 34 of the Act requires anyone taking more than a total of 50,000 litres in a day from a lake, stream, river or groundwater source, with some exceptions, to obtain a Permit to Take Water (PTTW). Permits are not required for water taken for emergency fire fighting, watering of livestock, or private domestic use and water takings that require 50,000 litres or less in a day.

The Ministry of the Environment evaluates the proposed water taking application to ensure it meets the principles of the PTTW program including, protecting the natural functions of the ecosystem, preventing unacceptable interference with other water users, and fair sharing and conservation of the resource. The MOE is required under Section 7 of the *OWRA* to provide notice of application Lyons Creek East sub-watershed (i.e., Area of Undertaking) to the Niagara Region, City of Welland, and the NPCA for review and comment.

3.0 Local Agency Legislation, Policies and Processes

There are two 'local' agencies that have planning and permit approval processes in the Impacted Area: the City of Welland and the Niagara Peninsula Conservation Authority. The City of Welland plays a very important role in ensuring that contaminated sediment is not disturbed under the authority of the *Planning Act* and the *Provincial Policy Statement*. Municipalities are the primary agency involved in local land use planning and development decisions regarding the type and location of new permitted uses, buildings, structures, and site alterations that occur on private land.

Conservation Authorities are local watershed management agencies that deliver services and programs that protect and manage water and other natural resources in partnership with government, landowners and other organizations. Under Section 20 of the *Conservation Authorities Act* the Niagara Peninsula Conservation Authority (NPCA) can establish and undertake a program designed to further the conservation, restoration, development and management of natural resources other than gas, oil, coal and minerals.

Memorandum of Understanding – Improving the Planning Function in Niagara – In 2007, a Memorandum of Understanding (MOU) between the Niagara Peninsula Conservation Authority, Regional Municipality of Niagara and the City of Welland, as well as other municipalities within the Niagara Region, was signed. The MOU is primarily an instrument of improved relationship management among the signatories.

The Objectives that guide the MOU are those expressed and approved as follows:

- To identify respective roles and reduce duplication with regard to planning functions;
- To develop effective, efficient collaborative processes for policy development and development review;
- To develop a communication protocol for Regional and Local Planners to work together more effectively and efficiently; and,

- To hear and understand what the community wants; to ensure that community aspirations are considered and communicated in the planning process; to develop a transparent, easily understood process of community engagement.

The Parties agree that collaboration in Policy Planning will include the following measures for each Policy Planning project:

- Pre-consultation with relevant partners prior to project start-up to identify areas of common interest;
- Placement of appropriate representatives on project steering committees;
- Agreed-to milestone meetings, consultations, and document review;
- Mutually satisfactory review protocols with shared commitment to timeliness; and
- A fully integrated Geographic Information System.

Implementation Planning has been delegated to the Area Municipalities by the Region. Delegation of responsibility is predicated on compliance of area municipal Official Plans, Secondary Plans and Zoning By-laws with the Regional Policy Plan. This involves approval of zoning by-laws, plans of subdivision and condominium, consents, minor variances and site plan control. The Region may comment on these items from a Regional and Provincial perspective.

The Niagara Peninsula Conservation Authority is responsible for ensuring the proper review of all planning applications for impacts on the natural environment as required by various municipal planning documents and requirements under the *Planning Act* and Provincial *Policy Statement* as they relate to Natural Heritage and Natural Hazards.

The NPCA agrees to:

- Prepare and maintain, with the assistance of the Region and Area Municipalities, a Natural Environment Information Map for the Niagara Region;
- Provide both Provincial Plan Review Comments and/or Technical Clearance for those matters outlined in Schedule B to the MOU - Matters Subject to Conservation Authority Review and Technical Clearance Regarding Planning Applications Affecting the Natural Environment; and
- Provide staff as Planning and Technical Review experts to support the Region and Area.

The NPCA and the Region have agreed on a Protocol establishing the parameters for the services that the NPCA will provide to the Region. The Conservation Authority is to provide the Region with plan review and technical clearance services with respect to environmental impacts for all development applications consistent with the Niagara Region Official Plan and Provincial Policies and Plans and is to make recommendations to the City on behalf of the Region. The NPCA is to request the Region to provide comments on Regional Official Plan policies that the NPCA will incorporate into a single response to the approval authority.

3.1 City of Welland Planning Approval Process

Official Plan and Zoning By-law – Within all municipalities throughout Ontario, there is a hierarchy of land use policy and regulation tools. Official Plans provide the general land use policy that describes how land will be used, and Zoning By-laws provide a means to regulate the use and location of buildings and structures on the land.

Official Plans (OP) usually include a broad set of strategic objectives, land use designations and related policies, and a land use schedule in order to implement a range of local, regional and provincial policies, plans and strategies. Zoning By-laws implement official plan policy by identifying permitted uses, and regulating the height, size and location of permitted uses, buildings and structures. The City's Official Plan and Zoning By-law must be consistent with the Provincial Policy Statement and conform to the Regional Official Plan.

All development applications must be consistent with the Provincial Policy Statement and conform to Provincial Plans, Regional Policy Plan and Official Plan policy. When a proposed development does not conform to the Provincial Regional or City policies and plans or the Zoning By-law, the proponent must make an application to amend the applicable document. This development application and policy amendment process provides the City of Welland with an opportunity to identify and address the environmental impacts associated with the development in partnership with Niagara Region and the NPCA. The City may determine that the application should not be approved or may approve it subject to certain conditions being met.

The City of Welland Planning Division is responsible for the administration, review and processing of various applications submitted under the *Planning Act* which includes preparation of various agreements and By-laws for approval of Council. Other tools such as site plan control and building permits provide a means to ensure that the standards that are established in the Official Plan and Zoning By-law are adhered to.

The City of Welland is currently preparing a new Official Plan, which is to include updated policies and provide a long-range planning framework for the City. It is anticipated that the new City of Welland Official Plan will provide specific direction for the mitigation of impacts for development and site alteration that occurs in the Impacted Area and the Area of Undertaking. The new Official Plan will also have to conform to a variety of new provincial, regional policies such as the Regional Policy Plan Amendment 187 which covers a variety of environmental policies for:

- The Core Natural Heritage System;
- Guidelines for Environmental Impact Studies;
- Natural hazards;
- Natural vegetation and wildlife;
- Water resources and source water protection;
- Landforms, geology and soils; and,
- Shorelines.

According to the current Official Plan the lands within the Impacted Area are designated Open Space and the adjoining lands are a mixture of residential, agricultural and light industrial. According to Zoning By-law 2667 and 1538 (former Township of Crowland), the lands within the Area of Undertaking are zoned: Environmental Protection (EP), Industrial – Storage and Light Manufacturing, Open Space Public (O1), Open Space Public and Private (O2), Residential – Single Detached Dwelling (R1), and Rural Agricultural (RA).

Subdivision and Condominium Approvals – In 1996, subdivision approval authority was delegated to Niagara Region and, subsequently, delegated to the City of Welland. Applications to create new lots, either through a plan of subdivision or a consent application, are required to have regard to specific matters under Section 2 of the *Planning Act*, be consistent with the *Provincial Policy Statement*, Provincial Plans, the Regional Policy Plan and the City of Welland Official Plan. Subdivision and condominium applications are circulated to affected agencies in order to obtain comments related to the mandate of those agencies.

Specific policies in the *Provincial Policy Statement* (2005), such as Policy 2.1 Natural Heritage, Policy 3.1 Natural Hazards, and Policy 3.2 Human-made Hazards, impose conditions that require Environmental Impact Studies (EIS), Storm-water Management Plans, Construction Mitigation Plans, and other possible restrictions prior to approval and issuance of building permits.

3.2 City of Welland Permit Approval Process

Building Permit – Building permits are required by the City of Welland for the construction of buildings and structures greater than 10 square metres (108 sq. ft.) within the boundary of the municipality pursuant to the *Ontario Building Code Act*. Building permits cannot be issued unless the proposed building or structure conforms to other applicable law, especially the zoning by-law, or any other applicable law which in this case includes the *Conservation Authorities Act*. This means that the Chief Building Official must consult with the NPCA before issuing a building permit where the Conservation Authority Regulations apply. The City of Welland Building Department has a screening map to assist in red-flagging areas of potential concern, which includes the creek, the PSW and the flood plain.

Site Plan Control – Site plan control is another municipal tool that is used to deal with the specific siting of buildings and structures on private land, as well as landscaping matters and especially storm-water management. The process requires an applicant to prepare a site plan indicating the location of proposed buildings, landscaping, parking and driveways, among other matters. The *Planning Act* provides the municipality with the authority to enter into an agreement, which is registered on title to ensure that it is binding on future owners of the property. The City of Welland currently applies Site Plan Control (By-law 9973) to all lands within the City boundaries. All land uses in Lyons Creek East Area of Undertaking are subject to the Site Plan Control except for:

- i. one, two and three unit dwellings;
- ii. all buildings on farm operations;
- iii. underground storage tanks;

- iv. signs and fences, where such are not erected as part of a development;
- v. parking lots containing less than five (5) parking spaces;
- vi. expansions to existing industrial developments, including building additions, having a ground floor area not exceeding 25% of the existing development or building floor area, to a maximum of 9,300 square metres (100,000 square feet) unless the original development/building was the subject of a Site Plan Control or Development Control Agreement and provided the proposed expansion or building addition does not significantly alter existing drainage patterns or flows on the site as determined by a Professional Engineer and approved by the City Engineer; and
- vii. expansions to existing commercial developments, including building additions, having a ground floor area not exceeding 25% of the existing development or building, to a maximum of 2,325 square metres (25,000 square feet), unless the development/building was the subject of a Site Plan Control or Development Control Agreement and provided the proposed expansion or building addition does not significantly alter existing drainage patterns or flows on the site as determined by a Professional Engineer and approved by the City Engineer.

3.3 Niagara Peninsula Conservation Authority Planning Approval

Conservation Authorities Act, Ontario Regulation 155/06 – The primary mandates of the Niagara Peninsula Conservation Authority (NPCA), under the auspice of Section 20 and 21 of the *Conservation Authorities Act (CAA)*, are:

- Prevent the loss of life;
- Minimize property damage and social disruption;
- Reduce public and private expenditure for emergency operation, evacuation and restoration;
- Minimize the hazards and unnecessary development of riverine flood plains and flood and erosion susceptible shoreline areas which in future years may require expensive protection measures;
- Regulate works and development which, singularly or collectively may reduce riverine channel capacities to pass flood flows resulting in increased flood levels, and creating potential danger to upstream and downstream landowners;
- Control filling and/or draining of natural storage areas such as wetlands;
- Encourage the conservation of land through the control of construction and placement of fill on existing or potentially unstable valley slopes or shoreline bluffs;
- Reduce soil erosion and sedimentation from development activity;
- Control pollution or other degradation of existing and potential groundwater aquifer(s) and aquifer recharge areas, created by fill activities; and
- Control water pollution, sedimentation, and potential nuisances due to floating objects and debris.

The objects of the Niagara Peninsula Conservation Authority (NPCA) is to establish and undertake a program designed to further the conservation, restoration, development and management of natural resources other than gas, oil, coal and minerals within its jurisdiction (paraphrased from Section 20(1) of the *CAA*).

Subject to the approval of the Ministry of Natural Resources, Section 28(1) of the *CAA* states that the Niagara Peninsula Conservation Authority may make regulations applicable to Lyons Creek East, such as:

- Restricting and regulating the use of water in or from rivers, streams, inland lakes, ponds, wetlands and natural or artificially constructed depressions in rivers or streams;
- Prohibiting, regulating or requiring the permission of the authority for straightening, changing, diverting or interfering in any way with the existing channel of a river, creek, stream or watercourse, or for changing or interfering in any way with a wetland; and
- Prohibiting, regulating or requiring the permission of the authority for development if, in the opinion of the authority, the control of flooding, erosion, dynamic beaches or pollution or the conservation of land may be affected by the development;

The NPCA regulations shall not:

- Limit the use of water for domestic or livestock purposes;
- Interfere with any rights or powers conferred upon a municipality in respect of the use of water for municipal purposes;
- Interfere with any rights or powers of any board or commission that is performing its functions for or on behalf of the Government of Ontario; or
- Interfere with any rights or powers under the *Electricity Act, 1998* or the *Public Utilities Act* (1998, c. 15, Schedule E, s. 3 (8); 1998, c. 18, Schedule I, s. 12).

Policies, Procedures and Guidelines for the Administration of Ontario Regulation 155/06 and Land Use Planning Policy Document (December 2007, updated December 2009) – The purpose of this Policy document is to identify the NPCA watershed policies that guide development and site alteration within their jurisdiction. The policies are based on the interrelationship between environmental, physical and social factors that impact land use planning and development in the watershed and take guidance from the *Provincial Policy Statement (2005)*,

In addition to the permitting and enforcement programs associated with *Ontario Regulation 155/06*, other programs to further the conservation mandate include but are not limited to:

- Commenting on Environmental Assessments, Provincial Plans, municipal planning documents and applications;
- Participating in watershed and sub-watershed studies; and
- Providing stewardship assistance to landowners.

Environmental Assessment Act – Staff at the NPCA is responsible for reviewing Individual and Class Environmental Assessments prepared by provincial and municipal agencies pursuant to the ESA. Review and comments are based on the policies set out in the Guidelines for the Administration of *Ontario Regulation 155/06*, the ESA, the *Provincial Policy Statement (PPS)* and the Greenbelt Plan.

The Drainage Act – Local municipalities administer the provisions of the *Drainage Act (DA)*, while the Ministry of Agriculture and Food provides policy and program implementation assistance to municipalities. While many municipalities in Ontario have put in place a *Drainage Act By-law*, the City of Welland does not have one.

The *Drainage Act* outlines three types of ‘outlet’ drains that may be constructed under its provisions, including:

- 1) Mutual Agreement Drains (Section 2 of the DA)
- 2) Requisition Drains (Section 3 of the DA)
- 3) Petition Drains (Section 4 of the DA)

The most common types of drain proposals in the Niagara Peninsula are ‘Petition Drains’. Due to the watershed focus of Conservation Authorities (CAs), they have been specifically noted as commenting agencies for “Petition Drains” under various sections of the *Drainage Act*.

The *Drainage Act* states that the CAs are to receive notice of the filing of a petition; have the right to request an environmental appraisal as part of the project; receive preliminary and final engineering reports; and have a right to appeal content in the environmental appraisal and the final engineering report to the Drainage Tribunal.

In dealing with Drainage Reports, the NPCA interests involve:

- The control of sediment during construction;
- The stability of side slopes, given existing soil conditions;
- Proposed erosion protection measures at any bends in the drain;
- Gradient reduction measures, if necessary, to reduce velocities and to prevent erosion of the channel bed;
- The establishment of suitable vegetation cover subsequent to the grading work;
- The location of the disposal area for any removed sediment from the drain, during cleanout; and
- Permits under the *Ontario Regulation 155/06* where the drain inadvertently or ultimately results in the draining of a wetland (as defined by the *Conservation Authorities Act*) or imports water to a natural watercourse.

Approval for the drainage works will only be issued if it can be demonstrated that the hydraulic (base flow) and ecological impacts to the wetland and/or watercourse can be mitigated.

3.4 Niagara Peninsula Conservation Authority Permit Approval Process

Fill and Alteration to Waterway Regulation 155/06 Permit – Pursuant to the *Conservation Authorities Act RSO 1990, (CAA)* as amended, the Niagara Peninsula Conservation Authority (NPCA) is responsible for a number of programs and services relating to the conservation and protection of environmentally sensitive lands on the Niagara Peninsula, including the City of Welland. The NPCA regulations and authorities are fully articulated in the *Policies, Procedures and Guidelines for the Administration of Ontario Regulation 155/06 and Land Use Planning Policy Document* (December 12, 2007).

With respect to the Area of Undertaking (Figure 2, page 7), these responsibilities include the following:

- Administer flood plain regulations (Fill and Alteration to Waterway Regulations);
- Participate in the administration of the *Fisheries Act* in cooperation with the Fisheries and Oceans Canada (DFO);
- Provide input into other regulatory programs as requested by an agency or as required by process;
- Provide land use planning advice to all municipalities within their watershed;
- Participate in the preparation of resource management plans; and
- Co-ordinate proactive planning studies (e.g. urban drainage/sub-watershed planning).

NPCA's authority to regulate development comes from *Ontario Regulation 155/06 (Regulation of Development, Interference with Wetland and Alterations to Shorelines and Watercourses)*. With respect to the Impacted Area, the NPCA has the authority to prohibit development or grant an approval subject to conditions for projects within the following areas:

- Hazardous lands – includes lands unsafe for development because of flooding (1:100 year), erosion, dynamic beaches or unstable soil or bedrock (see Figure 3, page 8);
- Wetlands – includes areas seasonally or permanently covered by shallow water or has a water table close to or at its surface, connected with a surface watercourse, has hydric soils, a vegetation dominated by hydrophytic plants or water tolerant plants (see Figure 3, page 8); and
- Lands within 30 m of wetlands > 2ha in area but not including those where development has been approved pursuant to an application made under the *Planning Act* or other public planning or regulatory process; and
- Lands within 120 m of PSWs and wetlands > 2 ha.

Under the *CAA*, development means:

- The construction, reconstruction, erection or placing of a building or structure of any kind; or
- Any change to a building and structure that would have the effect of altering the use of potential use of the building or structure, increasing the size of the building or structure, or increasing the number of swelling units in the building or structure; or
- Site grading; or
- The temporary or permanent placing, dumping or removal of any material, originating on the site or elsewhere.

The NPCA has a Level II agreement with Fisheries and Oceans Canada (DFO) to provide a local presence in the evaluation and authorization of projects that could harmfully alter, disrupt or destroy (HADD) fish habitat. Under this agreement the NPCA will assess all proposals within its jurisdiction regardless of other permitting requirements unless agreed to by DFO under a separate agreement (e.g., some provincial projects). Under this agreement the NPCA will screen and process applications to determine if a HADD to fish

habitat will occur. Upon review, if a HADD is deemed to occur, NPCA staff will provide the proponent with the following options:

- 1) Applicant can revise the application in order to avoid any impact to fish habitat;
- 2) Advise the proponent of mitigation measures necessary to avoid a HADD; or
- 3) Refer the project to DFO if the HADD is not mitigable, which will require the project to be reviewed by DFO staff.

Under this Level II agreement, the DFO remain responsible for facilitating the preparation of compensation plans with the proponent, if required.

In addition, the NPCA maintains a database on shoreline resources and hazards. As well, the NPCA provides support and input into other regulatory programs including: municipal class environmental assessment, MNR work permits, MOE Permits to Take Water, and septic system approvals. The municipal land use planning component of this program generally includes input into official plan policies, comprehensive zoning bylaws, plans of subdivision, consent and variance applications, environmental assessments, property inquiries and municipal infrastructure.

Application for Permission – A signed application for permission to undertake development shall be filed with the NPCA and shall contain the following information:

- 1) Four copies of a plan of the area showing the type and location of the development.
- 2) The proposed use of the buildings and structures following completion of the development.
- 3) The start and completion dates of the development.
- 4) The elevations of existing buildings, if any, and grades and the proposed elevations of buildings and grades after development.
- 5) Drainage details before and after development.
- 6) A complete description of the type of fill proposed to be placed or dumped.
O. Reg. 155/06, s. 4.

4.0 Policies and Processes of Other Agencies

St. Lawrence Seaway Management Corporation – The St. Lawrence Seaway Management Corporation (SLSMC) is the sole agency responsible for the operation and maintenance of the pumping station at the head of Lyons Creek East. These pumps are the primary source of water for the top end of Lyons Creek East.

The pumphouse was installed in the 1970s when the Welland Canal By-pass was constructed and bisected Lyons Creek into 2 separate watersheds: west and east. The pumphouse contains two pumps, the main multi speed pump is capable of pumping 5 to 10 cubic feet per second (CFS), and the second backup pump can provide 10 CFS. However, a limiting factor to maintaining these flows is that the electrical feed to the pumphouse is by submarine cable, which is sized to provide power for only two 5 CFS pumps or one 10 CFS pump at the same time, and is not big enough to feed both pumps simultaneously. In the last ten years there may have been a few breakdowns or power

outages averaging 4± days during the summer and 2± days during the winter period; however this is difficult to quantify since it takes a few days to notice that the pumps are inactive.

In 1980, letters were exchanged between the Niagara Peninsula Conservation Authority (February 13, 1980) and the St. Lawrence Seaway Management Corporation (March 6, 1980) regarding the pump operation to maintain consistent base flows in Lyons Creek East (Appendix 3). According to these letters a pumping regime was established to run:

- the 10 cubic feet per second (CFS) pump from April 1st until November 30th (except for periods of maintenance or breakdown during which period the 5 CFS pump would run), and
- the 5 CFS pump from December 1st until March 31st except for the period that the canal water level is lowered and an ice cover exists.

The Niagara Peninsula Conservation Authority has commissioned a separate study to examine water flow and sedimentation rates in the creek and this will assist with understanding the effects of the water's flow and the sedimentation in the creek.

There is currently no protocol or formal agreement in place between agencies regarding the operation of the canal pumps. The St. Lawrence Seaway Management Corporation should be considered a partner in the Administrative Controls Protocol (see Section 5.0) to ensure that there is a process in place to manage and maintain the pumps and to ensure emergency contacts are available should the pump malfunction.

Appendix 3 - Pump Operation for Flow Augmentation in Lyons Creek East - Exchange of Letters between the St. Lawrence Seaway Management Corporation and the Niagara Peninsula Conservation Authority



The Niagara Peninsula Conservation Authority

BOX 460, FONTHILL, ONTARIO L0S 1E0

Phone 892-2621

February 13, 1980

S.L.S.A. - RECORDS
FILE NO.
15-79-1

St. Lawrence Seaway Authority
Western Region
508 Glendale Avenue
St. Catharines, Ontario

*I see no objection
to this proposal
10 - April to Nov 30
5 - Dec 1 to Mar 31*

Attention: Mr. M. Campbell, Director *Please see memo*

Dear Sir:

RE: Pump Operation for Flow Augmentation
in Lyons Creek

REFER	DATE	INITIAL
EA	02/14	/
MSK	03/05	MSK
E.A.	03/11	
	02/04	MW
FILE CHG'D. TO		

*Report filed in
manilla folder.*

Late in 1978, Acres Consulting Services Limited completed a report for the Niagara Peninsula Conservation Authority entitled "Environmental and Preliminary Engineering Study for Lyons Creek". A copy of this report is attached for your reference. The study indicated that the pumped flow from the Welland Ship Canal had not been sufficient to compensate for the original flow in the creek prior to the construction of the Welland by-pass.

The report recommends that a continuously pumped flow of 10 cfs be discharged into the creek during the 8 months of April to November, and 5 cfs be pumped during the 4 winter months. I would request the assistance of your Authority in implementing this recommendation.

A response on this request would be appreciated. Please contact the undersigned for further information.

1 - 10 cfs } Pumps installed
1 - 5 cfs }

Yours very truly,

J.C. Johnston
James C. Johnston, P.Eng.
Supervisor of Water Management

JCJ:LB

Encl.

CARRIED IN BY MSK FEB. 14/80

*MSK
W SUGGESTED
MAY BE
PRIORITY*

- PER MSK, 5 CFS WAS PROPOSED BY ESB DURING CONSTR. AT MAX. FLOW?
- SUGGEST WE REVIEW ACRES REPORT VS ESB STUDY TO RECONCILE THE TWO

LAND USE - FORESTRY - WATER - WILDLIFE - RECREATION

- HAVING ONE 10 CFS PUMP AVAILABLE ONLY LEAVES US WITH NO BACKUP

S.L.S.A. - RECORDS
FILE NO.
File: 15-79-1

Western Region
Box 370
St. Catharines
Ontario L2R 6V8

March 6, 1980

The Niagara Peninsula Conservation Authority,
P. O. Box 460,
Fonthill, Ontario.
LOS 180

Attention: Mr. James C. Johnston, P. Eng.
Supervisor of Water Management

Dear Sirs:

I have read with interest the report entitled "Environmental and Preliminary Engineering Study for Lyons Creek" and the recommendations with regard to the discharges into the creek. I would like to recapitulate actions taken by the Sewerage and make you aware of the limiting criteria that exist in completely meeting these recommendations.

Originally, the pumping plant for Lyons Creek consisted of two (2) - 5 CFS (12" dia. discharge) pumps to be activated by means of a float switch based on demand. In practice, however, this had to be changed so that both pumps were kept running continuously during the summer months. Repeated breakdowns of either one or the other pump caused periods of low flow and consequently, complaints from the adjoining property owners.

In early 1977, one of the 5 CFS pumps was replaced by a 10 CFS (16" discharge) pump in order to provide the 10 CFS flow more consistently with less chance of interruption.

One of the limiting factors is that the electrical feed to the pumphouse is by submarine cable which is sized to provide power for 2 - 5 CFS pumps or 1 - 10 CFS pump, but is not big enough to feed the 5 CFS and 10 CFS pump simultaneously.

The replacement of the 5 CFS pump with a 10 CFS pump made one (1) 5 CFS pump available as a spare, however, it can only be used to replace the 5 CFS pump and cannot be used as a spare for the 10 CFS pump since the discharge piping was changed from 12" to 16" diameter and also because the pump hoses are not interchangeable.

5 CFS = 12" DIA. DISCH
10 CFS = 16" DIA. DISCH.2

March 6, 1980

During the winter months (non-navigation season) the waterlevel in the canal is lowered to enable maintenance to the various structures and we have found that under these conditions, the pumps start to cavitate and vibrate severely especially when an ice cover exists at the intake.

Since 1977 the following operating instructions have been in effect:

- (a) The 10 CFS pump is to be run during the summer months;
- (b) The 5 CFS pump is to be run during the spring and fall when natural runoff adds to the flow;
- (c) Neither pump to be run when an ice cover exists on either the canal or on Lyons Creek;
- (d) The pumps should not be run together.

In order to implement the recommendations of the report as such as possible, but also taking into consideration the practical aspects covered above, I would like to suggest that the 10 CFS pump be run from April 1st until November 30th (except for periods of maintenance or breakdown during which period the 5 CFS pump would run), and the 5 CFS pump be used from December 1st until March 31st except for the period that the canal waterlevel is lowered and an ice cover exists.

I trust that the foregoing meets your requirements but should additional information be required please do not hesitate to contact me.

Yours very truly,

ORIGINAL SIGNED BY
M. S. CAMPBELL

M. S. Campbell, P. Eng.,
Regional Vice-President

EA/sf