



Henvey Inlet Wind LP

Henvey Inlet Wind Transmission Line

Appendix B6. Route B Waterbodies, Fish Habitat and Aquatic Ecosystems Environmental Baseline Report

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Water Bodies, Fish Habitat and Aquatic Ecosystems Environmental Baseline Report Route B Transmission Line

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List of Acronyms and Glossary

AECOM	AECOM Canada Ltd.
COSSARO	Committee on the Status of Species at Risk in Ontario
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CN	Canadian National
CP	Canadian Pacific
DFO.....	Department of Fisheries and Oceans
DO	Dissolved Oxygen
ERR.....	Environmental Review Report
ESA	<i>Endangered Species Act</i>
ha	Hectares
HIFN.....	Henvey Inlet First Nation
HIFN I.R.#2	Henvey Inlet First Nation Reserve No. 2
HONI	Hydro One Networks Inc.
IESO.....	Independent Electrical System Operator

km	Kilometres
km ²	Squared Kilometres
kV	Kilovolts
kW	Kilowatts
m	Metre
mASL	metres Above Sea Level
MNRF	Ontario Ministry of Natural Resources and Forestry
MOECC	Ontario Ministry of the Environment and Climate Change
MTO	Ontario Ministry of Transportation
MW	megawatt
NHIC	Natural Heritage Information Centre
Nigig.	Nigig Power Corporation
NRVIS	Natural Resource Values Information
OEB	Ontario Energy Board
OPA	Ontario Power Authority
O.Reg.	Ontario Regulation
ROW	Right-of-way
SAR	Species at Risk
SARA	<i>Species at Risk Act</i>
SARO	Species at Risk in Ontario
SOCC	Species of Conservation Concern
Stantec	Stantec Consulting Ltd.

1. Introduction

1.1 Project Description

Nigig Power Corporation (Nigig) received a Feed-in-Tariff (FIT) Contract from the Ontario Power Authority (OPA) in 2011 for a 300 megawatt (MW) wind energy generation centre. Henvey Inlet Wind LP (HIW), a limited partnership between Pattern Renewable Holdings Canada ULC and Nigig is proposing to develop the Henvey Inlet Wind Energy Centre (HIWEC), a 300 MW facility on Henvey Inlet First Nation Reserve No. 2 (HIFN I.R. #2). The HIWEC requires a new off-Reserve Transmission Line to deliver the electricity generated by the HIWEC to the Ontario electricity grid. AECOM Canada Ltd. (AECOM) was retained by HIW to conduct the Environmental Screening Process under Ontario Regulation (O.Reg.) 116/01 for the proposed off-Reserve Transmission Line.

The purpose of this Environmental Baseline Report is to present the findings of a baseline study on water bodies, fish habitat and aquatic ecosystems for Route B. The information presented in this Report has been assembled from data collected during 2015 field studies and review of background information available at the time of publishing. This report supports the Final Environmental Review Report (ERR) and forms the baseline against which potential environmental effects are assessed.

1.2 Location and Study Area

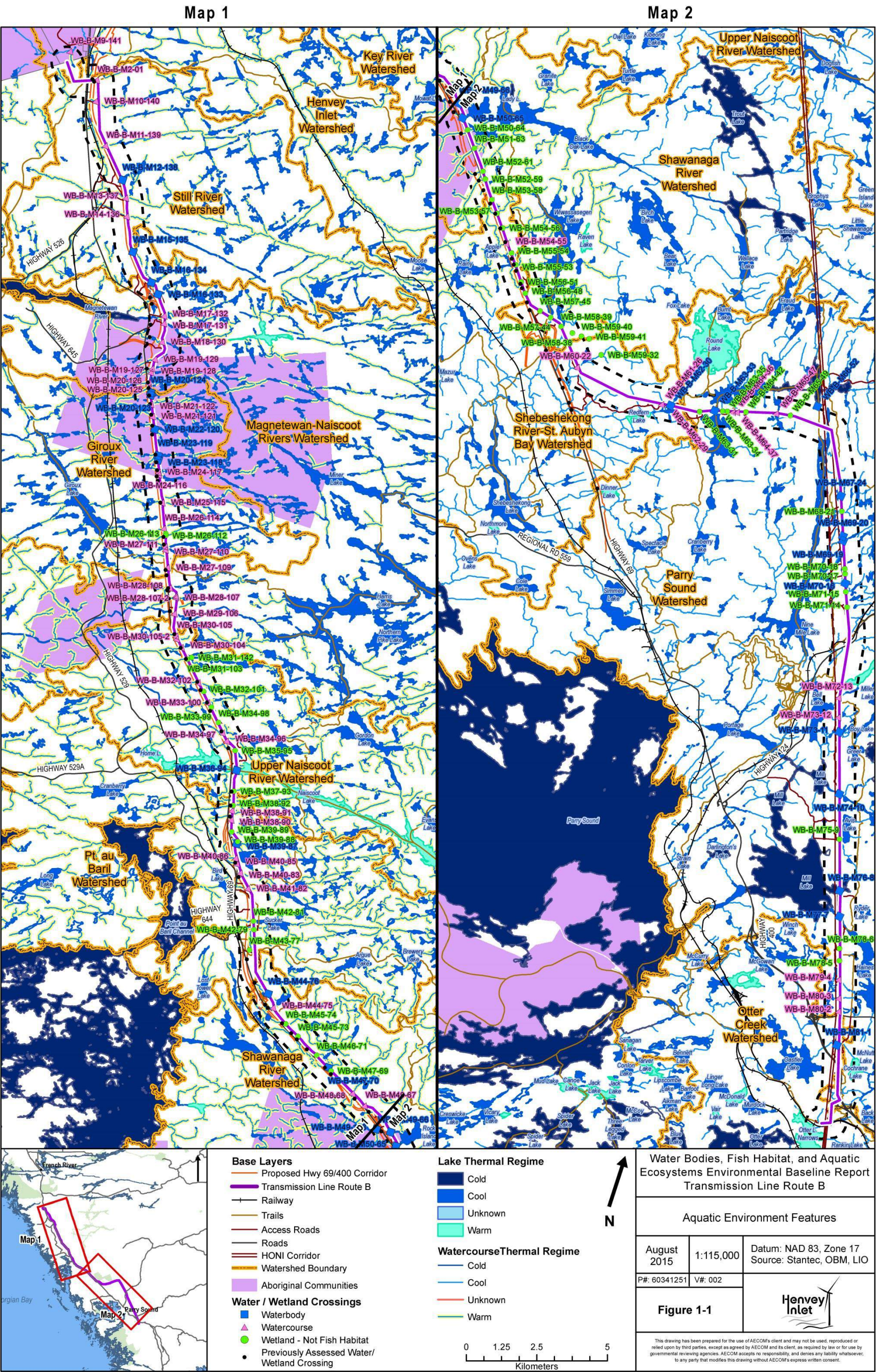
The proposed Route B Transmission Line is located within the Canadian Shield. The Shield is part of a vast horseshoe shaped area around Hudson Bay covering eastern and central Canada. The Transmission Line study area is characterised by exposed bedrock formations, bedrock barrens and bedrock plains with shallow soils and organic soil accumulations in low lying areas (Ecoplans, 2006). Much of the Canadian Shield rock has been carved and arranged by the last ice age, to form millions of lakes, ponds and wetlands (Wilkem, et al.).

The Route B Transmission Line study area extends approximately 86 km from HIFN I.R. #2 and travels south through the Unincorporated Townships of Henvey, Wallbridge and Harrison (under jurisdiction of the Archipelago Planning Board), before entering the Township of The Archipelago, Unincorporated Township of Shawanaga (under jurisdiction of the Parry Sound Area Planning Board), Carling Township, Municipality of McDougall, and Seguin Township. Route B also passes through the Reserve lands of Shawanaga Reserve No. 17 and the Magnetawan Reserve No. 1, of which Shawanaga First Nation and Magnetawan First Nation have the right to exclusive use and occupation (AADNC, 2013).

The proposed Route B Transmission Line is located predominantly on Crown-owned or managed lands. It runs parallel to Highway 69 for a distance of about 54.1 km, to a point south of Shawanaga First Nation at which point it diverts southeast from Highway 69 for 9.2 km, until it meets the existing 500-kilovolts (kV) Hydro One Networks Inc. (HONI) corridor. From there, the route extends along the HONI corridor south, for 23.8 km, to where it connects with the Parry Sound Transfer Station (TS). This route, which is approximately 87-km long, may require the construction of a new switching station (SS) at the connection point with the Parry Sound TS. The capacity of the Transmission Line is 230kV. The width of the Transmission Line is up to 30 m. The width of the Route B Transmission Line study area is 0.5 km on either side of the centreline of the Transmission Line for the background study and 50 m upstream and 50 m downstream of the centreline (CL) for the site investigation studies.

The study area includes many waterbodies, the larger of these being the Giroux River, the Magnetawan River, and the Still River. The study area limits are shown on (**Figure 1-1**).

Figure 1-1: Aquatic Environment Features – Route B



2. Methods

2.1 Background Review

A background review of aquatic natural heritage features and functions located within 0.5 km of the proposed Route B Transmission Line on either side of the centreline was conducted using the following resources:

Interactive Mapping Tools:

- MNRF Make-a-Map: Natural Heritage Areas Application;
- MNRF NHIC Rare Species Records;
- MNRF Species At Risk (SAR) by Area Online Search Tool (2014c)
- University of Guelph *FishMAP* Online Tool (University of Guelph, 2011)

MNRF's Natural Resources and Values Information System (NRVIS) mapping from Land Information Ontario (LIO) for:

- Waterbody, watercourse, wetland layers
- Thermal regime; and,
- Fish records.

Previous studies in the vicinity of the proposed Transmission Line:

- Highway 69 Four-Laning From North of Nobel to Highway 522 (MTO, 2008);
- Highway 69 Four-Laning From North of Nobel to Highway 522 Natural Heritage Background Interim Report (Ecoplans, 2006);
- Fisheries and Aquatic Habitat Ecosystems Report- Highway 69 Four-Laning From the South Study Limits Northerly for 1.6 km;
- Fisheries and Aquatic Habitat Ecosystems Report- Highway 69 Four-Laning From 1.7 km North of Highway 529 Northerly to Straight Lake;
- Fisheries and Aquatic Habitat Ecosystems Report- Highway 69 Four-Laning From Straight Lake Northerly to 3.9 km North of Highway 522;
- The Neegan Burnside Nigig Power Corp / Henvey Inlet Wind Project Preliminary Environmental Constraints Analysis (Neegan Burnside Ltd., 2011);
- Highway 69 Four-Laning Detail Design from 5.3 km South of Highway 529 (North Junction) northerly to 2.2 km North of Highway 529 (North Junction) Fish and Fish Habitat Report; and
- Results of Tulloch Environmental aquatic field investigations provided to AECOM in October 2014.

A request for information was submitted to MNRF's Parry Sound District office on January 27, 2015 and February 17, 2015 for any data gaps identified during the background information review.

A request for information was submitted to Fisheries and Oceans Canada (DFO) Fisheries Protection Program office in Burlington, Ontario on March 16, 2015 for any additional fishery or SAR data.

Data collected was confirmed and supplemented during fisheries and aquatic habitat field assessments completed by AECOM in 2015. All data has been summarized herein and will be used to support the effects assessment of the ERR.

2.2 Field Investigations

Site investigations were conducted for proposed transmission line water crossings within the Route B Transmission Line study area. Prior to conducting field surveys, a preliminary study of water bodies identified through the background review and through analysis of aerial imagery was undertaken to determine presence, composition, form and function of water bodies.

The area of site investigation for each aquatic feature was 50 m upstream and 50 m downstream of the centreline (CL) of the proposed transmission line alignment (hereafter referred to as the Transmission Line Field Study Area). This 100 m study area encompassed the entire portion of the waterbody that was within the Transmission Line Field Study Area. This approach allowed for a thorough characterization of the watercourse within the area most susceptible to impacts from the transmission line water crossing.

AECOM incorporated a three-step process to ensure all waterbodies within the study area were identified and physically investigated. Within this three-step process, protocols were developed for detailed field surveys (Step 1) provided below in **Section 2.2.1**. Detailed field surveys were undertaken for inland waterbodies identified through the background review and at sites where waterbodies were identified through aerial photography interpretation (Step 2).

To ensure additional accuracy, efforts were co-ordinated with the team of site investigators conducting the terrestrial environmental baseline study for the same area of investigation. During their site investigations in the study area, any seepage areas and waterbodies were recorded. These were cross-referenced with the mapping to determine whether sites were previously identified during the background review and initial site selection. If water was noted at these sites, a full water body and fish habitat assessment was conducted (Step 3).

2.2.1 Site Identifiers

Each location of a potential waterbody or watercourse crossed by the proposed Transmission Line alignment was mapped and assigned a unique identifier, as shown in the example provided in **Table 2-1** below.

Table 2-1: Description of Site Identifiers

	WB	B	M7	10
WB-B-M7-10	Waterbody	Route B Transmission Line	Map 7	Unique number for potential waterbody within Map 7

Each Site Feature was plotted on a map using aerial imagery for navigation by field crews. Each aquatic site was colour-coded to indicate whether the feature was identified in the background review as a water body (green), a watercourse (yellow) or a wetland (red). Additional features identified during field studies were labelled with an additional identifier. For example, WB-S-M36-53-2 where “2” represents the extra feature identified during the site visit.

To ensure additional detailed coverage of the entire study area, efforts were co-ordinated with the team of terrestrial ecologists conducting the terrestrial environmental baseline study for the same area of investigation. During their site investigations, any seepage areas and waterbodies were recorded. These were cross-referenced with the aquatic mapping to determine whether sites were previously identified during the background review and initial site selection. If water was noted at these sites, a full habitat assessment was conducted.

2.2.2 Water Body and Fish Habitat Assessments

Based on observations made at the time of the field visit, water bodies were identified and classified as either a permanent stream; an intermittent stream; pond; wetland; or a seepage area. Features such as wetland complexes, drainage paths, watercourses and overland flows were delineated using aerial imagery and mapping tools.

An electronic field work form (see **Appendix A**) was completed using electronic tablets for each waterbody investigated (or feature, if no waterbody was found). A Pond/Lake Assessment Form was typically completed for open-water lentic habitats as well as wetlands (e.g., thickets, fens, marshes, etc.) and features identified as not likely to directly support fish. A Stream/River Assessment Form was typically completed for water body features, permanent or intermittent, with evidence of uni-directional flow. Information recorded on both forms was similar, and included the date of assessment, field staff names, start and end time of assessment, weather conditions and location of the assessment. An overall assessment of the aquatic habitat was conducted based on a number of criteria, such as whether the watercourse was a natural feature or modified feature (*i.e.*, channelized, straightened), as well as the type of surrounding natural features and land uses.

Channel dimensions, substrate composition, channel morphology and bank stability were documented in the field. Measurements were taken at more than one location along the watercourse and mean values were calculated in the field and recorded, including:

- Mean wetted depth (MWD) (m);
- Mean bankfull depth (MBD) (m); and,
- Mean wetted width (MWW) (m);
- Mean bankfull width (MBW) (m)

Average annual high water mark data were not available from information sources contacted in the background review. Therefore, the protocol under the Department of Fisheries and Oceans (DFO) Fish Habitat Management Program (2005) was applied to determine the Ordinary High Water Mark (or bankfull width) using the active channel/bankfull measurement. Mean bankfull width and depth were collected by taking a measurement where indicators such as the active scour mark, bank inflection points, location of perennial vegetation and root hair exposure were located.

Stream morphology was assessed to describe habitat during the water body assessments, according to the following morphological units:

Runs: typically deep, fast moving water with little to no turbulence of water;

Riffles: shallow, fast moving water typically running over rocks. Riffles provide areas of highly oxygenated waters;

Flats: slow flowing water with a smooth un-agitated surface; and

Pools: deep pockets of water that provide refuge habitat for fish

Substrate composition (e.g., clay, silt, sand, gravel, cobble, rock, boulder, muck and detritus) was recorded in descending order of dominance. Visual observations of water clarity, water colour, presence and type of macrophytes and algal growth, evidence of runoff, and surrounding land use, were recorded as indicators for water quality. Basic field parameters of water chemistry (pH, conductivity, dissolved oxygen and temperature) were collected. Bank height measurements and presence of mature riparian vegetation, exposed root structures, and slumping or scouring were used to determine bank stability.

Observations of significant or limiting habitat features which may help determine the sensitivity of the aquatic habitat and general habitat observations, such as suitable substrate or vegetation for sport fish or aquatic Species at Risk (SAR) spawning habitat, barriers to fish passage, evidence of ongoing erosion, etc.

The quality and quantity of potential fish habitat was recorded, based on technical knowledge and the parameters recommended by DFO under its definition of fish habitat. Along with the Records Review, including thermal regime and species occurrence records, an assessment of the likelihood of fish presence was presented. These parameters include the availability and quality of habitat features such as in-stream and riparian covers, as well as morphological conditions and connectivity of the waterbodies to allow fish passage. Fish habitat was defined according to the federal *Fisheries Act*, 'spawning grounds and nursery, rearing, food supply, migration, and any other areas on which fish depend directly or indirectly in order to carry out their life processes'. The following characteristics were assessed and recorded for each water body and used in determination of habitat sensitivity for each water body.

In-stream cover was documented based on the percent of cover provided by woody debris, gravel (2-64 mm), cobble (64-256 mm diameter), boulders (>256 mm diameter), aquatic vegetation, and undercut banks. In-stream cover was classified as high if there was in-stream coverage between the areas of 76-100%; moderate 31-75%; and low 0-30%. Riparian vegetation canopy cover was provided as a percentage of cover over the site of investigation. Overall canopy cover was classified as high if between 61-100%; moderate if between 31-60%; and low if between 0-30%. Obstructions to fish passage were also noted within the area of site investigation, including low-flow barriers.

Adjacent land uses were noted for potential influences or impacts to the waterbodies. This included observation of residential, agriculture uses (crops and livestock), meadows, forests and wetland features. Pollution sources were recorded, such as point source discharges, road runoff and any other surface runoff features causing potential nutrient loading or sediment loading. Topography of the land located within the HIWEC study area was documented to identify areas of rolling hills or flat areas where water is more likely to accumulate in depressions versus flowing towards the watercourse.

During all site investigations, groundwater seepage areas were identified using the following indicators, as outlined in the Technical Guide to Renewable Energy Approvals (MOE, 2013):

- Occurrence of Watercress (*Nasturtium officinale*), Bittercress (*Cardamine pensylvanica*) and Water Speedwell (*Veronica anagallis-aquatica*);
- Presence of iron staining as indicated through red rust coloured soils along banks and stream beds;
- Bank seepage; and,
- Air bubbles in the stream bed.

Pond features were also assessed during the water assessment. Characteristics documented included type of pond (e.g., dugout, online, agriculture) and their surrounding land use, percentage and type of habitat, estimated size of the pond and observations of wildlife and fish.

A representative photographic log and detailed habitat mapping were completed to detail the general site layout as well as the layout of each water body investigated within the Route B Transmission Line Study Area.

2.3 Sensitivity Classification

To aid in the assessment of each waterbody and to inform the assessment of potential environmental effects and mitigation measures, a habitat sensitivity classification was designed and applied to each aquatic feature within the HIWEC Project Study Area. The overall objective was to assess the resiliency of the aquatic ecosystem – i.e. the ability of the system to recover from changes in environmental conditions. Each waterbody feature was classified as high, moderate or low sensitivity based on the parameters identified in Table 2-1 below. This system provided some objectivity to the assessment process and incorporated attributes such as: species sensitivity, habitat resiliency, species dependence on habitat, and rarity of the habitat feature. Not all indicators had to be present at a single waterbody for assignment into a particular classification; waterbodies were assigned a sensitivity rating

based on where the majority of indicators occurred. For example, a waterbody with a cold water regime could be classified as moderate sensitivity if it was a channelized channel with unstable banks and intermittent flow. Where there were an equal number of indicators, professional opinion and consideration of the overall site was used to assign the waterbody to one classification category.

Table 2-2: Sensitivity Classification Indicators

High Sensitivity	Moderate Sensitivity	Low Sensitivity
<ul style="list-style-type: none"> • Cool/cold water thermal regime • Headwater area • Permanent flow • Natural channel • Natural stream process observed (e.g., riffle/run/pool sequence and meanders) • Located in natural area (e.g., woodland, wetland) • Groundwater seepage indicators present • High quality and quantity fish habitat • No fish barriers • Water quality appears good (e.g., clear, no obvious agricultural runoff, no algae) 	<ul style="list-style-type: none"> • Cool/warm water thermal regime • Permanent or intermittent flow • Natural or channelized channel • Natural stream process observed (e.g., riffle/run/pool sequence and meanders) • In natural or impacted areas • Groundwater seepage indicators present • Overall moderate quality and quantity fish habitat • No fish barriers • Some concern for water quality (e.g., suspended solids or algae growth) 	<ul style="list-style-type: none"> • Warm water thermal regime • Permanent or intermittent flow • Natural or channelized channel • Uncontrolled stream processes (e.g., erosion, unstable banks) • Within highly impacted areas • No groundwater indicators present • Low quality and quantity fish habitat • Fish barriers • Concern for water quality (e.g., turbid water, high suspended solids or uncontrolled algae growth)
<p>System is generally considered not to be resilient to environmental perturbations and cannot easily buffer change.</p>	<p>System is somewhat stable and should be resilient to change and perturbation</p>	<p>System is quite stable and resilient to change and perturbation.</p>

3. Results

3.1 Summary of Site Investigations

Based on the aquatic field studies conducted (as outlined in **Section 2.2**), a summary of aquatic features crossed by the proposed Transmission Line is documented below (Table 3-1 to Table 3-10). These results include a description of the surrounding topography and general area, the physical features of the waterbody and the riparian zone, as well as an assessment of the sensitivity of the feature as described in **Section 2.3**. Representative photos are provided for each site. Physical characteristics were conducted on longer reaches than identified in the photos.

3.2 Water Bodies

Route B is situated within the Nineteen Georgian Bay Tributaries watershed (02EA), and transects ten subwatersheds within (**Figure 1-1**). These include Henvey Inlet, Still River, Magnetewan – Naiscoot Rivers, Giroux River, Upper Naiscoot River, Point au Baril, Shawanaga River, Shebeshekong River – St. Aubyn Bay, Parry Sound, and Otter Creek watersheds, from north to south.

The Nineteen Georgian Bay Tributaries watershed is dominated by Canadian Shield bedrock, with the majority of tributaries running along southeast to northwest depressions that drain into east to south major tributaries due to the scouring of retreating glaciers during the last glaciation. Wetlands are located in depressions left by the scouring, between exposed rock barrens. The tributary channels of these watercourses are frequently blocked with a series of active beaver dams which has resulted in a patchwork of cattail marshes and wet meadows that comprise the majority of aquatic habitat available (AECOM, 2013).

3.2.1 Henvey Inlet Watershed

The Henvey Inlet watershed (02EA-01) has two major drainages into Georgian Bay, the Key River to the north and Henvey Inlet to the south, with a 158 km² drainage area. Both drainages flow in an east to west direction. Route B Transmission Line has only one waterbody crossing located within this watershed (**Table 3-1**).

Table 3-1: Site Investigation Summaries for Tributaries in the Henvey Inlet Watershed

Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity
WB-B-M9-141	N/A	Unknown	<ul style="list-style-type: none"> Site was on private property with no granted access 	N/A	Unknown

3.2.1.1 Key River

The Key River is a relatively slow moving river that is moderately deep. It is important as a migratory route and supports warm, cool, and some cold water salmon species. The central unnamed wetland just to the west of the Route A Transmission Line, north of the Key River is likely a significant spawning and nursery area for Northern pike. There are also portions of the Key River shoreline that can function as spawning and nursery habitat as well. The mixed shallow aquatic wetland at the Key River supports a warm water baitfish community.

3.2.2 *Still River Watershed*

The Still River watershed (02EA-09) is situated south of the Henvey Inlet watershed and north of the Magnetewan-Naiscoot Rivers watershed. The main tributary, Still River, flows in a westerly direction but turns southwest after crossing Highway 69 to drain into Byng Inlet. The Still River drainage area is 227 km². Seven waterbody crossings are located within this subwatershed (**Table 3-2**).

3.2.2.1 **Still River**

The Still River is a small to medium-sized, low-gradient river that flows westerly into Georgian Bay. It is located south of the Key River. The Route B Transmission Line is located immediately west of an existing lamprey weir operated by DFO. The land use is mainly pasture lands to the south with a narrow riparian fringe of vegetation. This vegetation includes white birch, red maple, speckled alder along with grasses and sedges. The north bank rises sharply to a rock barren community that includes pine and oak species. The instream cover is a combination of boulders, cobble sand and silt. The river ranges from 7.8 m to 10.6 m in width throughout the reach with depths of 0.5 m to 1.8 m. (MTO, 2013). A number of beaver dams have been recorded along the Still River. Tributaries of the Still River provide a variety of habitat types for baitfish such as undercut banks and slow moving flows.

3.2.2.2 **Little Still River & Tributaries**

The Little Still River, located south of Still Lake is a well-defined meandering channel flowing through upland and wetland habitats. The substrates include sands, silts and clays. Sandy sediments in the floodplain indicate that it tops its banks frequently. Instream cover includes woody debris, undercut banks, overhanging vegetation and detritus. Riparian vegetation is a mixture of grasses, sedges and forbs along with speckled alder and occasional patches of black ash (MTO, 2013).

Table 3-2: Site Investigation Summaries for Tributaries in the Still River Watershed











Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M2-1	June 26 th , 2015	Permanent Stream	Low gradient forested slope south of unnamed side road, east of Highway 69 and CN Rail	<p>Defined channel flowing through heavily vegetated riparian zone and bordered by mixed forest. Banks are heavily vegetated. Some banks are undercut but no evidence of ongoing erosion. No aquatic vegetation present but grasses and herbaceous vegetation provide instream cover, while trees provide shade in over story. There is a potential velocity barrier for some fish through a corrugated steel pipe during high flows. Substrate consists of silt, sand, detritus, gravel, and clay. No groundwater indicators are observed.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>0.90</td></tr><tr><td>MBW (m)</td><td>1.15</td></tr><tr><td>MWD (m)</td><td>0.27</td></tr><tr><td>MBD (m)</td><td>0.45</td></tr></table>	Fish Habitat?	Direct	MWW (m)	0.90	MBW (m)	1.15	MWD (m)	0.27	MBD (m)	0.45	Moderate	No photograph available	
Fish Habitat?	Direct																
MWW (m)	0.90																
MBW (m)	1.15																
MWD (m)	0.27																
MBD (m)	0.45																
WB-A-M10-140	July 1 st , 2015	Permanent Stream	Stream bordered by forest with flat farm field above slope on south bank, east of Highway 69 and CN Rail, flowing west	<p>Slow moving channel through forested bedrock with dense riparian grasses. Trees provide some shade but most overhanging cover provided by grasses. Hummocks in-stream provide cover for fish. A 1 m tall beaver dam is located 25 m downstream of the crossing. Substrate consists of sand, silt and muck. No groundwater indicators are present. Fish observed at this location.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>7.7</td></tr><tr><td>MBW (m)</td><td>10.5</td></tr><tr><td>MWD (m)</td><td>0.70</td></tr><tr><td>MBD (m)</td><td>0.90</td></tr></table>	Fish Habitat?	Direct	MWW (m)	7.7	MBW (m)	10.5	MWD (m)	0.70	MBD (m)	0.90	Low		
Fish Habitat?	Direct																
MWW (m)	7.7																
MBW (m)	10.5																
MWD (m)	0.70																
MBD (m)	0.90																
WB-B-M11-139	July 1st, 2015	Permanent Stream	Stream east of Highway 69, north of Still River, surrounded by forest, flowing west	<ul style="list-style-type: none">River is dammed by 1.5 m tall beaver dam downstream, creating a beaver pond at the crossing. Water trickles through dam to downstream channel through wet, dense reed marsh. Downstream active channel consists of slow flats. Floodplain is characterized as a flat black ash swamp. Substrate consists of silt, sand and detritus. Low canopy coverage is provided by herbaceous vegetation. No indicators of groundwater seepage are present. <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>23.00</td></tr><tr><td>MBW (m)</td><td>23.25</td></tr><tr><td>MWD (m)</td><td>1.00</td></tr><tr><td>MBD (m)</td><td>1.10</td></tr></table>	Fish Habitat?	Direct	MWW (m)	23.00	MBW (m)	23.25	MWD (m)	1.00	MBD (m)	1.10	Low		
Fish Habitat?	Direct																
MWW (m)	23.00																
MBW (m)	23.25																
MWD (m)	1.00																
MBD (m)	1.10																

Table 3-2: Site Investigation Summaries for Tributaries in the Still River Watershed

Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M12-138	July 1st, 2015	Permanent Pond	Mixed coniferous deciduous forest atop undulating bedrock east of Highway 69, north of Old Still River	<p>Large bedrock island within small pond causes a channel-like circle around island. A poorly drained area south of pond causes a wetland to occur. Water input is from the northeast, where open water occurs, but pond dries to northwest and south where saturated vegetated area occurs. Open water is shallow with thick detritus, some floating emergents and sparse canopy. Crossing does not occur over open water. No groundwater indicators are observed.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>16.00</td></tr><tr><td>Depth (m)</td><td>0.00</td></tr></table>	Fish Habitat?	Direct	Width (m)	16.00	Depth (m)	0.00	Low						
Fish Habitat?	Direct																
Width (m)	16.00																
Depth (m)	0.00																
WB-B-M13-137	June 30th, 2015	Permanent Stream	Private property east of Highway 69, north of farm lane, between forest to the north and agriculture to the south, river flowing west	<p>Dammed, flowing river with sloped, vegetated banks. Sea lamprey control weir downstream of crossing with marked canoe and portage route around it on the south bank. Downstream banks consist of hard substrate while upstream banks consist of erodible soils which are exposed in some areas. There is a sandy bar upstream with an eroded south bank. The north bank is mostly stable bedrock. Suitable habitat for walleye and brook lamprey downstream of weir. No groundwater indicators are present at this location.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>15.70</td></tr><tr><td>MBW (m)</td><td>16.40</td></tr><tr><td>MWD (m)</td><td>1.30</td></tr><tr><td>MBD (m)</td><td>1.70</td></tr></table>	Fish Habitat?	Direct	MWW (m)	15.70	MBW (m)	16.40	MWD (m)	1.30	MBD (m)	1.70	Moderate		
Fish Habitat?	Direct																
MWW (m)	15.70																
MBW (m)	16.40																
MWD (m)	1.30																
MBD (m)	1.70																
WB-B-M14-136	June 30th, 2015	Permanent Stream	Along proposed MTO corridor, south of farm lane, flowing west	<p>Defined, slow moving channel bordered by 50 m wide flat meadow floodplain between steep, forested bedrock slopes. Banks are heavily vegetated but erodible soils are exposed and undercut, and slumped and fallen banks dump their sediment load in the creek bed. Dense riparian shrubs and grass provide moderate cover. Submergent and emergent grasses, arrowhead, star duckweed, and common duckweed are present in-stream over sand and silt substrates. There is no indication of groundwater seepage at this location.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>1.50</td></tr><tr><td>MBW (m)</td><td>3.10</td></tr><tr><td>MWD (m)</td><td>0.23</td></tr><tr><td>MBD (m)</td><td>1.04</td></tr></table>	Fish Habitat?	Direct	MWW (m)	1.50	MBW (m)	3.10	MWD (m)	0.23	MBD (m)	1.04	Low		
Fish Habitat?	Direct																
MWW (m)	1.50																
MBW (m)	3.10																
MWD (m)	0.23																
MBD (m)	1.04																

3.2.3 Magnetewan-Naiscoot Rivers Watershed

The Magnetewan –Naiscoot Rivers watershed (02EA-10) is a large watershed south of the Still River watershed, north of the Upper Naiscoot River watershed, and surrounds the Giroux River watershed from the east. The drainage area is 959 km², with the Magnetewan River draining into Byng Inlet to the north and the Naiscoot River draining into Georgian Bay to the south. Eleven waterbody crossings are located north of the Giroux River watershed, and three are located to the south (**Table 3-3**).

3.2.3.1 Magnetawan River

The Magnetawan River, a permanently flowing, cool water system in its lower reaches, drains the majority of the Route B study area with its bisecting west-flowing channel. This is a large river extending from its outlet in Georgian Bay east to beyond Highway 11 and into Algonquin Provincial Park. Within the Magnetawan Reserve No. 1, it flows as a series of slower moving and deeper ponded areas separated by rapids over the exposed bedrock and boulder clusters. The Magnetawan River channel is contained within a shallow valley in the surface bedrock with grasses and other herbaceous growth approaching the water's edge from the adjacent forest in some locations. The entire reach of the river for 100 m up and downstream is flat with rapids at each end. Broken rock litters the overbanks with a dense cover of spruce-pine-balsam fir forest just beyond. The pH and conductivity values were similar to those of other stations although DO values were high as would be expected in this large, fast moving system (Warme, 2014).

Table 3-3: Site Investigation Summaries for Tributaries in the Magnetawan-Naiscoot Rivers Watershed







Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M15-135	June 30th, 2015	Permanent Pond	South of farm lane, east of Hwy 69	<p>Shore fen/backwater bay at crossing, open water pond to the east, bordered by forested bedrock. No emergent or floating vegetation in main pond. Small white water lily and bladderwort present in backwater bay with terrestrial vegetation such as pine and birch and other wetland vegetation. Fish observed. Dimensions are at the bay where crossing occurs. There is no indication of groundwater seepage.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>44.00</td></tr><tr><td>Depth (m)</td><td>0.50</td></tr></table>	Fish Habitat?	Direct	Width (m)	44.00	Depth (m)	0.50	Low						
Fish Habitat?	Direct																
Width (m)	44.00																
Depth (m)	0.50																
WB-B-M16-133	June 8th, 2015	Intermittent Wetland	Coniferous forest on bedrock barrens	<p>Open water is present as pools and channels among saturated soils and detritus in large breached beaver pond. Successional vegetation appearing to form a wet meadow. There is no indication of groundwater seepage at this location.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>140.00</td></tr><tr><td>Depth (m)</td><td>0.25</td></tr></table>	Fish Habitat?	Direct	Width (m)	140.00	Depth (m)	0.25	Low						
Fish Habitat?	Direct																
Width (m)	140.00																
Depth (m)	0.25																
WB-B-M16-134	June 8th, 2015	Permanent Stream	Sedge meadow marsh with water tolerant vegetation, mixed deciduous/coniferous forest on rolling bedrock barrens	<p>Straight channel flowing from north to south with slow moving flats through sedge meadow marsh between bedrock opens up 20 m downstream from crossing into 45 m wide pond. Substrate consists of detritus, silt and sand. Overhanging grasses provide cover. Groundwater seepage does not appear to occur at this site.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>1.25</td></tr><tr><td>MBW (m)</td><td>20.00</td></tr><tr><td>MWD (m)</td><td>0.50</td></tr><tr><td>MBD (m)</td><td>0.70</td></tr></table>	Fish Habitat?	Direct	MWW (m)	1.25	MBW (m)	20.00	MWD (m)	0.50	MBD (m)	0.70	Low		
Fish Habitat?	Direct																
MWW (m)	1.25																
MBW (m)	20.00																
MWD (m)	0.50																
MBD (m)	0.70																

Table 3-3: Site Investigation Summaries for Tributaries in the Magnetawan-Naiscoot Rivers Watershed





Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M17-131	June 8th, 2015	Permanent Stream	Mixed coniferous/deciduous forest on rolling bedrock sloping toward Magnetawan River, Magnetawan River flows west	Magnetawan River; a large river that flows west into Georgian Bay. Large boulders and bedrock along shores of river, no undercutting present. Moderate flow with eddies occur in deep water. Depth is greater than 2 m but is too deep to determine by wading. Substrate is dominated by boulders, then sand, gravel and cobble. This river is dominantly run with some pools. Trees provide canopy cover. There is no indication of groundwater seepage at this site. <div><table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>50.00</td></tr><tr><td>MBW (m)</td><td>53.00</td></tr><tr><td>MWD (m)</td><td>2.00</td></tr><tr><td>MBD (m)</td><td>3.00</td></tr></table></div>	Fish Habitat?	Direct	MWW (m)	50.00	MBW (m)	53.00	MWD (m)	2.00	MBD (m)	3.00	High		
Fish Habitat?	Direct																
MWW (m)	50.00																
MBW (m)	53.00																
MWD (m)	2.00																
MBD (m)	3.00																
						Photo 1. View upstream of downstream limit ⬆	Photo 2. View of crossing from north bank ⬆										
WB-B-M17-132	June 8th, 2015	Permanent Pond	Pond east of Highway 69, north of Magnetawan River; mixed deciduous/coniferous forest on bedrock sloping towards middle of watercourse	Part of a series of beaver dams that flow into the Magnetawan River. Perched beaver pond upstream feeds into main pond from east. Beaver dam upstream and low flow create fish migration barriers. Aquatic and riparian vegetation and woody debris provide cover in addition to detritus on bedrock substate. Riparian vegetation and forest provide canopy cover. No indicators of groundwater are present. <div><table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>40.00</td></tr><tr><td>Depth (m)</td><td>1.00</td></tr></table></div>	Fish Habitat?	Direct	Width (m)	40.00	Depth (m)	1.00	Low						
Fish Habitat?	Direct																
Width (m)	40.00																
Depth (m)	1.00																
						Photo 1. View of beaver dam to west (downstream) of pond ⬆	Photo 2. View of crossing from south bank ⬆										
WB-B-M18-130	N/A	Unknown	Site was on private property with no granted access	N/A	Unknown	No photographs available.											
WB-B-M19-127	N/A	Unknown	Site was on private property with no granted access	N/A	Unknown	No photographs available.											
WB-B-M19-128	N/A	Unknown	Site was on private property with no granted access	N/A	Unknown	No photographs available.											
WB-B-M19-129	N/A	Unknown	Site was on private property with no granted access	N/A	Unknown	No photographs available.											
WB-B-M20-125	N/A	Unknown	Site was on private property with no granted access	N/A	Unknown	No photographs available.											

Table 3-3: Site Investigation Summaries for Tributaries in the Magnetawan-Naiscoot Rivers Watershed









Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M28-107	June 10th, 2015	Permanent Stream	Mixed deciduous/coniferous forest atop bedrock, creek flows to the west	<p>Meandering creek through grass meadow directly upstream of breached beaver dam. Soft banks with grass and weak root structure have given way to slumping and eroded banks. Grasses bordering channel were previously flooded by beaver dam. This creek has moderate flows over silt, sand, detritus and muck with submergent grasses and emergent lilies. There are no indicators of groundwater seepage present at this site</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>2.60</td></tr><tr><td>MBW (m)</td><td>4.40</td></tr><tr><td>MWD (m)</td><td>0.60</td></tr><tr><td>MBD (m)</td><td>0.90</td></tr></table>	Fish Habitat?	Direct	MWW (m)	2.60	MBW (m)	4.40	MWD (m)	0.60	MBD (m)	0.90	Low		
Fish Habitat?	Direct																
MWW (m)	2.60																
MBW (m)	4.40																
MWD (m)	0.60																
MBD (m)	0.90																
WB-B-M28-107-2	June 11th, 2015	Permanent Stream	360 m east of Highway 69 surrounded by meadow, wetland. At crossing there is a thicket on rolling bedrock sloping to watercourse to the east and wetland upstream	<p>At the upstream limit of the study area a saturated swale occurs, with no open water upstream. There may be flows here during the spring. At crossing there is a channel with defined bank. Approximately 25 m downstream channel dissipates through vegetation and no flow observed. There is a low flow barrier and slope barrier. Substrate consists of detritus and silt. There is no indication of groundwater seepage at this site.</p> <table><tr><td>Fish Habitat?</td><td>Indirect</td></tr><tr><td>MWW (m)</td><td>0.50</td></tr><tr><td>MBW (m)</td><td>0.80</td></tr><tr><td>MWD (m)</td><td>0.10</td></tr><tr><td>MBD (m)</td><td>0.20</td></tr></table>	Fish Habitat?	Indirect	MWW (m)	0.50	MBW (m)	0.80	MWD (m)	0.10	MBD (m)	0.20	Low		
Fish Habitat?	Indirect																
MWW (m)	0.50																
MBW (m)	0.80																
MWD (m)	0.10																
MBD (m)	0.20																
WB-B-M28-108	June 10th, 2015	Permanent Stream	Mixed coniferous/deciduous forest atop bedrock, stream flows west towards highway	<p>Area confined by active beaver dam upstream and breached beaver dam downstream. Area is transitioning from meadow to alder thicket after dam breach. There is a creek through dead alders and grassy meadow. Upstream beaver dam impedes fish migration. Substrate consists of detritus, sand and muck with algae and submergent grasses present. Lots of overhanging vegetation (grasses, herbaceous plants, and alders provide shade). No indicators of groundwater seepage are observed.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>0.82</td></tr><tr><td>MBW (m)</td><td>0.97</td></tr><tr><td>MWD (m)</td><td>0.17</td></tr><tr><td>MBD (m)</td><td>0.28</td></tr></table>	Fish Habitat?	Direct	MWW (m)	0.82	MBW (m)	0.97	MWD (m)	0.17	MBD (m)	0.28	Low		
Fish Habitat?	Direct																
MWW (m)	0.82																
MBW (m)	0.97																
MWD (m)	0.17																
MBD (m)	0.28																

Table 3-3: Site Investigation Summaries for Tributaries in the Magnetawan-Naiscoot Rivers Watershed

Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M29-106	June 11th, 2015	Permanent Stream	Surrounded by forest, 70 m south of Harris Lake Road and east of Highway 69, by recreational fishing and ATV trail. Harris River flows west	<p>Harris River is a fast flowing river with coarse substrate and steep bedrock slopes bordered by forest. Lots of woody debris is caught in pools downstream of rapids. There is a man-made concrete ridge in river upstream of rapids that may have been an old dam. It is not a barrier for fish that are able to swim up the high velocities. Substrate consists of boulders, bedrock, and cobble. Few emergent grasses are present in downstream pool. Area below rapids is suitable habitat for walleye staging spawning. No groundwater indicators are observed.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>14.00</td></tr><tr><td>MBW (m)</td><td>18.30</td></tr><tr><td>MWD (m)</td><td>1.00</td></tr><tr><td>MBD (m)</td><td>3.00</td></tr></table>	Fish Habitat?	Direct	MWW (m)	14.00	MBW (m)	18.30	MWD (m)	1.00	MBD (m)	3.00	Moderate	 <p>Photo 1. View of downstream from crossing where rapids occur ⬆</p>	 <p>Photo 2. View of man-made concrete structure from north bank ⬆</p>
Fish Habitat?	Direct																
MWW (m)	14.00																
MBW (m)	18.30																
MWD (m)	1.00																
MBD (m)	3.00																

3.2.4 Giroux River Watershed

The Giroux River watershed (02EA-04) is located between Georgian Bay to the west and Magnetawan-Naiscoot River watershed to the north, east, and south. The entire drainage area for this small watershed is 105 km². Sixteen crossings are located near the headwaters of this watershed, which drain into Giroux Lake, before entering Georgian Bay (**Table 3-4**).

The Giroux River is a permanently flowing watercourse with an approximate drainage area of 15 km². It is a slow moving, minor watercourse outletting directly to Georgian Bay 10 km south of the mouth of the Magnetawan River. The tributary sub-watersheds, in combination, drain approximately 10 km² and headwaters extend, in some cases, a kilometre or more (Warme, 2014).

The channel morphology, beaver dams and ponds up and downstream that are frequently confined between rock outcrops, is typical and represent very similar aquatic habitat conditions that occur at all Giroux River tributaries. Defined channels, when present, were 1 m or less in width and 0.1 m deep and frequently choked with vegetation – cattails, sedges, rushes and long grasses are dominant. Alder, buckthorn, dogwood and willow shrubs occupy adjacent areas. Water lilies, burreed, phragmites, duckweed and arrowhead are common floating and emergent species.

Based on observations made by Warme, 2014, the flows at most crossings were weak or undetectable by mid-summer. In the very dry latter part of 2012, all channels were dry with the exception of occasional refuge pools and within culvert barrels. Muck and organic detritus are the predominant streambed and wetland substrates. Dissolved oxygen (DO) levels were expectedly low (< 3 mg/L) with widely fluctuating conductivities (20 - 4420+ us/cm) (Warme, 2014).

Table 3-4: Site Investigation Summaries for Tributaries in the Giroux River Watershed







Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M25-115	June 9 th , 2015	Permanent Pond	Beaver pond east of Highway 69, south of Magnetawan Reserve, surrounded by mixed coniferous/deciduous forest on bedrock outcrops.	<p>Beaver pond with dam to the west. Water levels are low and dam appears to be draining. Substrate is soft with detritus, aquatic vegetation, and some woody debris providing in situ cover. There is little to no canopy cover. Minnows, leeches, and mudpuppies observed. No indicators of groundwater are present at this site.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>53.00</td></tr><tr><td>Depth (m)</td><td>1.00</td></tr></table>	Fish Habitat?	Direct	Width (m)	53.00	Depth (m)	1.00	Low						
Fish Habitat?	Direct																
Width (m)	53.00																
Depth (m)	1.00																
WB-B-M26-112	June 9th, 2015	Permanent Stream	Mixed deciduous/coniferous forest atop bedrock and sedge meadow east of Highway 69, south of Magnetawan Reserve. Stream flows to west	<p>West flowing flats in active channel in sedge meadow. Low lying sedge meadow floodplain is inundated with water during high flows, causing hummocks. Substrate consists of detritus, muck, silt and bedrock. Riparian shrubs do not provide notable amount of shade. Groundwater indicators are not observed at this site.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>4.00</td></tr><tr><td>MBW (m)</td><td>100.00</td></tr><tr><td>MWD (m)</td><td>0.40</td></tr><tr><td>MBD (m)</td><td>0.80</td></tr></table>	Fish Habitat?	Direct	MWW (m)	4.00	MBW (m)	100.00	MWD (m)	0.40	MBD (m)	0.80	Low		
Fish Habitat?	Direct																
MWW (m)	4.00																
MBW (m)	100.00																
MWD (m)	0.40																
MBD (m)	0.80																
WB-B-M26-113	June 9th, 2015	Permanent Stream	Mixed deciduous/coniferous forest on bedrock and sedge meadow east of Highway 69, stream flows to west	<p>Active channel within low lying sedge meadow that is inundated during high flows with channels and pools. Channel flows in westerly direction dominated by runs then some pools. There are large sedge hummocks along creek margins. Substrate dominated by sand, detritus, and muck. Little canopy cover is provided by grasses and some shrubs. Two beaver dams upstream may impede some fish movement. There is unexpectedly low dissolved oxygen considering some areas have water flowing over logs allow oxygenation of water. There are no groundwater indicators at this site.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>1.40</td></tr><tr><td>MBW (m)</td><td>100.00</td></tr><tr><td>MWD (m)</td><td>0.37</td></tr><tr><td>MBD (m)</td><td>0.50</td></tr></table>	Fish Habitat?	Direct	MWW (m)	1.40	MBW (m)	100.00	MWD (m)	0.37	MBD (m)	0.50	Low		
Fish Habitat?	Direct																
MWW (m)	1.40																
MBW (m)	100.00																
MWD (m)	0.37																
MBD (m)	0.50																

Table 3-4: Site Investigation Summaries for Tributaries in the Giroux River Watershed







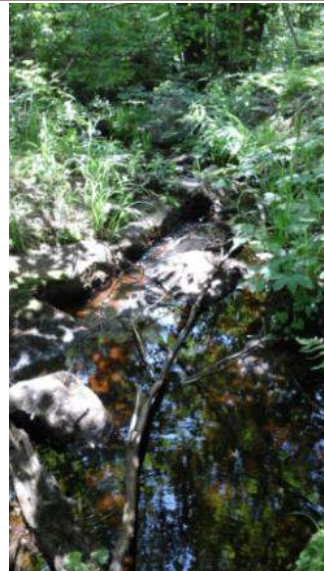

Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M26-114	June 9th, 2015	Permanent Stream	Creek east of Highway 69, south of Magnetawan Reserve, surrounded by mixed deciduous/coniferous forest on bedrock barrens and wetland upstream. Stream flows to west	<p>Water flows in southeast direction confined by bedrock outcrops. An abandoned beaver dam downstream has allowed draining. Previous flooding has deposited detritus on banks. There are moderate velocities upstream, but they decrease where channel widens. Beaver dam upstream of study area may impede passage upstream for some fish. Pond from west side of road joins this site and flows southwards downstream of study area. Downstream portion of study area transitions into pond. Measurements are of stream portion only. Substrate consists of detritus, sand, boulder and silt. River is predominantly flats. High cover is dominated by shrubs. Groundwater seepage does not seem to occur at this site.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>1.50</td></tr><tr><td>MBW (m)</td><td>1.40</td></tr><tr><td>MWD (m)</td><td>0.30</td></tr><tr><td>MBD (m)</td><td>0.40</td></tr></table>	Fish Habitat?	Direct	MWW (m)	1.50	MBW (m)	1.40	MWD (m)	0.30	MBD (m)	0.40	Low		
Fish Habitat?	Direct																
MWW (m)	1.50																
MBW (m)	1.40																
MWD (m)	0.30																
MBD (m)	0.40																
WB-B-M27-109	June 10th, 2015	Permanent Stream	Mixed deciduous/coniferous forest atop bedrock sloping toward watercourse, stream flows to west	<p>Small creek flowing east to west through forest and open area. This creek is characterized by low flow run over detritus, sand and muck with rooted vegetation on banks and moss-like submergents. Creek opens up into wide pond-like feature. Measurements below are of downstream. No indicators of groundwater seepage are observed.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>16.00</td></tr><tr><td>MBW (m)</td><td>17.00</td></tr><tr><td>MWD (m)</td><td>0.50</td></tr><tr><td>MBD (m)</td><td>0.60</td></tr></table>	Fish Habitat?	Direct	MWW (m)	16.00	MBW (m)	17.00	MWD (m)	0.50	MBD (m)	0.60	Low		
Fish Habitat?	Direct																
MWW (m)	16.00																
MBW (m)	17.00																
MWD (m)	0.50																
MBD (m)	0.60																
WB-B-M27-110	June 10th, 2015	Intermittent Stream	Mixed coniferous/deciduous forest atop bedrock, with beaver pond/wetland upstream east of Highway 69. Stream flows to west	<p>Low lying creek in forested area upstream to open wetland downstream. Water flows through channels and pools in grasses. Creek has low flows dominated by flats with some runs and pools. Substrate consists of detritus and muck. Cover is provided by shrubs and herbaceous plants in alder thicket. An oily sheen on water with orange tinge in some places may be due to groundwater seepage</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>15.00</td></tr><tr><td>MBW (m)</td><td>16.00</td></tr><tr><td>MWD (m)</td><td>0.20</td></tr><tr><td>MBD (m)</td><td>0.35</td></tr></table>	Fish Habitat?	Direct	MWW (m)	15.00	MBW (m)	16.00	MWD (m)	0.20	MBD (m)	0.35	Low		
Fish Habitat?	Direct																
MWW (m)	15.00																
MBW (m)	16.00																
MWD (m)	0.20																
MBD (m)	0.35																

Table 3-4: Site Investigation Summaries for Tributaries in the Giroux River Watershed

Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M27-111	June 9th, 2015	Permanent Stream	Creek east of Highway 69 with mixed coniferous/deciduous forest surrounding, stream flows to west	<div>From a beaver pond upstream, a small creek flows through a steep-sloped forest to open meadow and eventually under Highway 69. Banks are heavily vegetated but some undercutting is occurring. Substrate transition from coarse to fine substrate as slope decreases downstream. The creek is dominated with run morphological structure. There is no in-stream cover except for detritus, but shrubs, trees and some grasses provide shade. No indicators of groundwater seepage are present at this site.</div> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>0.50</td></tr><tr><td>MBW (m)</td><td>0.50</td></tr><tr><td>MWD (m)</td><td>0.50</td></tr><tr><td>MBD (m)</td><td>0.65</td></tr></table>	Fish Habitat?	Direct	MWW (m)	0.50	MBW (m)	0.50	MWD (m)	0.50	MBD (m)	0.65	Low	<div></div> <div>Photo 1. View of downstream from upstream limit. ⬆</div>	<div></div> <div>Photo 2. View of upstream from downstream limit. ⬆</div>
Fish Habitat?	Direct																
MWW (m)	0.50																
MBW (m)	0.50																
MWD (m)	0.50																
MBD (m)	0.65																
WB-B-M20-123	N/A	Unknown	Site was on private property with no granted access.	N/A	Unknown	N/A	N/A										
WB-B-M20-124	N/A	Unknown	Site was on private property with no granted access.	N/A	Unknown	N/A	N/A										
WB-B-M20-126	N/A	Unknown	Site was on private property with no granted access	N/A	Unknown	N/A	N/A										
WB-B-M21-121	N/A	Unknown	Site was on private property with no granted access	N/A	Unknown	N/A	N/A										
WB-B-M21-122	N/A	Unknown	Site was on private property with no granted access	N/A	Unknown	N/A	N/A										
WB-B-M22-120	N/A	Unknown	Site was on private property with no granted access	N/A	Unknown	N/A	N/A										
WB-B-M23-118	N/A	Unknown	Site was on private property with no granted access	N/A	Unknown	N/A	N/A										
WB-B-M23-119	N/A	Unknown	Site was on private property with no granted access	N/A	Unknown	N/A	N/A										
WB-B-M24-116	N/A	Unknown	Site was on private property with no granted access	N/A	Unknown	N/A	N/A										
WB-B-M24-117	N/A	Unknown	Site was on private property with no granted access	N/A	Unknown	N/A	N/A										

3.2.5 Upper Naiscoot River Watershed

The Upper Naiscoot River watershed (02EA-11) lies south of the Magnetewan-Naiscoot Rivers watershed. Many tributaries drain into Naiscoot Lake, which drains into the lower reaches of the Naiscoot River in the south region of the Magnetewan-Naiscoot Rivers watershed. This watershed is long in the east-west direction but narrows along the north-south axis, and drains 202 km². There are 14 water crossings within this watershed (**Table 3-5**).

Table 3-5: Site Investigation Summaries for Tributaries in the Upper Naiscoot River Watershed







Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M30-104	June 11th, 2015	Permanent Stream	East of Highway 69, surrounded by forest and wetland, stream flows to west	<p>Standing watercourse drains southwesterly from beaver dam 90m upstream to Highway 69 through corrugated steel pipe. The stream is heavily vegetated between bedrock slopes. Bedrock and riprap protection are present on highway embankment. Substrate consists of detritus, silt and muck. There is a diverse community of aquatic vegetation species. No groundwater indicators are present.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>14.00</td></tr><tr><td>MBW (m)</td><td>14.20</td></tr><tr><td>MWD (m)</td><td>0.80</td></tr><tr><td>MBD (m)</td><td>1.00</td></tr></table>	Fish Habitat?	Direct	MWW (m)	14.00	MBW (m)	14.20	MWD (m)	0.80	MBD (m)	1.00	Low		
Fish Habitat?	Direct																
MWW (m)	14.00																
MBW (m)	14.20																
MWD (m)	0.80																
MBD (m)	1.00																
						Photo 1. View of stream downstream of crossing. ⬆	Photo 2. View of stream upstream from crossing. ⬆										
WB-B-M30-105	June 12th, 2015	Permanent Stream	Mixed coniferous/deciduous forest atop bedrock east of Highway 69, stream flows to west	<p>West flowing channel through saturated meadow marsh with occasional pools and side channels in floodplain. Heavily vegetated, grassy banks border flat moving water over detritus, muck, and silt. A beaver dam 10 m upstream of study site impedes fish migration. No groundwater indicators are present.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>2.15</td></tr><tr><td>MBW (m)</td><td>54.6</td></tr><tr><td>MWD (m)</td><td>0.23</td></tr><tr><td>MBD (m)</td><td>0.42</td></tr></table>	Fish Habitat?	Direct	MWW (m)	2.15	MBW (m)	54.6	MWD (m)	0.23	MBD (m)	0.42	Low		
Fish Habitat?	Direct																
MWW (m)	2.15																
MBW (m)	54.6																
MWD (m)	0.23																
MBD (m)	0.42																
						Photo 1. View of stream upstream of downstream limit. ⬆	Photo 2. View of crossing from south bank. ⬆										
WB-B-M30-105-2	June 12th, 2015	Permanent Stream	Mixed coniferous/deciduous forest atop bedrock east of Highway 69, stream flows to west	<p>Drainage channel flowing through meadow to west flows into pool with another input from east and drained to north through breached beaver dam. Low to moderate flows with mixed morphological structure over bedrock, detritus, muck and silt have trees and grasses provide canopy and algae, emergent grasses, and floating emergent vegetation present in-stream. A low flow barrier prevents fish migration at this time. Groundwater seepage does not appear to occur at this site.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>5.00</td></tr><tr><td>MBW (m)</td><td>5.70</td></tr><tr><td>MWD (m)</td><td>0.23</td></tr><tr><td>MBD (m)</td><td>0.32</td></tr></table>	Fish Habitat?	Direct	MWW (m)	5.00	MBW (m)	5.70	MWD (m)	0.23	MBD (m)	0.32	Low		
Fish Habitat?	Direct																
MWW (m)	5.00																
MBW (m)	5.70																
MWD (m)	0.23																
MBD (m)	0.32																
						Photo 1. View of stream downstream of crossing ⬆	Photo 2. View of breached beaver dam provides outlet to north. ⬆										

Table 3-5: Site Investigation Summaries for Tributaries in the Upper Naiscoot River Watershed







Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity								
WB-B-M31-103	June 8th, 2015	Permanent Pond	East of Highway 69, south of unnamed gravel road, surrounded by bedrock and forest	<p>Large pond directly on east side of Highway 69. Cattails and grasses growing on banks, connected to pond on west side of highway via csp. Pond weed and lily pads provide in situ habitat. Vegetation may provide spawning habitat for pike, especially since this pond has connectivity. There is little to no canopy cover. There are no indicators of groundwater present.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>200</td></tr><tr><td>Depth (m)</td><td>1.00</td></tr></table>	Fish Habitat?	Direct	Width (m)	200	Depth (m)	1.00	Moderate		
Fish Habitat?	Direct												
Width (m)	200												
Depth (m)	1.00												
						<p>Photo 1. View of pond and highway from north side of pond facing west ↑</p>	<p>Photo 2. View of culvert on east bank of highway facing east ↑</p>						
WB-B-M31-142	June 8th, 2015	Permanent Wetland	East of Highway 69, surrounded by bedrock and forest. A large, flat gravel area that may have been used for highway construction	<p>Large, “U”-shaped pond with rock barren in middle. Large boulders dumped along banks (probably from previous construction). Pond weed and lily pad provide lots of in situ cover. Bedrock banks prevent trees from providing canopy cover. There are no indicators of groundwater present.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>80</td></tr><tr><td>Depth (m)</td><td>1</td></tr></table>	Fish Habitat?	Direct	Width (m)	80	Depth (m)	1	Moderate		
Fish Habitat?	Direct												
Width (m)	80												
Depth (m)	1												
						<p>Photo 1. View of both upper and lower reaches of wetland, and rock barren in middle looking west. ↑</p>	<p>Photo 2. View of lower branch of wetland taken from east. ↑</p>						
WB-B-M32-101	June 8th, 2015	Permanent Wetland	East of Highway 69	<p>Bog completely choked by wetland vegetation with a thick floating vegetated mat. There is no open water for fish to reside in. A culvert at Hwy 69 south west of the survey point has some water movement but not enough to suffice fish migration. No indicators of groundwater are present.</p> <table><tr><td>Fish Habitat?</td><td>Not Habitat</td></tr><tr><td>Width (m)</td><td>Not measured</td></tr><tr><td>Depth (m)</td><td>0.00</td></tr></table>	Fish Habitat?	Not Habitat	Width (m)	Not measured	Depth (m)	0.00	Low		
Fish Habitat?	Not Habitat												
Width (m)	Not measured												
Depth (m)	0.00												
						<p>Photo 1. View of bog from the north. ↑</p>	<p>Photo 2. View of study area from the east. ↑</p>						

Table 3-5: Site Investigation Summaries for Tributaries in the Upper Naiscoot River Watershed







Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M32-102	June 8th, 2015	Permanent Stream	East of Highway 69 surrounded by forest, stream flows to west	<p>Watercourse flowing west towards culvert at Highway 69. There appears to be an old marsh at the upstream limit of study area. Wet substrate and some water pooling in depression to the side probably connects to watercourse during precipitation events. Minnow observed. Undercutting occurs on both banks. Substrate is sand, silt and gravel. Little cover is provided by grasses, trees, herbaceous plants and shrubs. Creek has run, riffle, pool morphological structure. No indicators of groundwater seepage are observed.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>2.00</td></tr><tr><td>MBW (m)</td><td>3.00</td></tr><tr><td>MWD (m)</td><td>0.35</td></tr><tr><td>MBD (m)</td><td>0.40</td></tr></table>	Fish Habitat?	Direct	MWW (m)	2.00	MBW (m)	3.00	MWD (m)	0.35	MBD (m)	0.40	Moderate		
Fish Habitat?	Direct																
MWW (m)	2.00																
MBW (m)	3.00																
MWD (m)	0.35																
MBD (m)	0.40																
						Photo 1. View of stream upstream of crossing. ⬆	Photo 2. View of stream to west with highway in background. ⬆										
WB-B-M33-100	June 8th, 2015	Permanent Stream	East of Highway 69, stream flows perpendicular to road in west direction	<p>Natural, permanent watercourse flowing between bedrock and forest. Moderate flow conditions throughout watercourse. Substrate dominated by sand, then silt and organic material. Stream morphological structure is mostly run, then pool, then flat. Submergent grasses dominate aquatic vegetation. Grass on banks provide some canopy cover although not much because the watercourse is quite wide. Large beaver dam at upstream limit poses natural barrier to fish movement. Deep pools throughout channel mixed with shallow rifles. Groundwater seepage does not appear to occur at this site.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>0.75</td></tr><tr><td>MBW (m)</td><td>0.90</td></tr><tr><td>MWD (m)</td><td>0.15</td></tr><tr><td>MBD (m)</td><td>0.40</td></tr></table>	Fish Habitat?	Direct	MWW (m)	0.75	MBW (m)	0.90	MWD (m)	0.15	MBD (m)	0.40	Low		
Fish Habitat?	Direct																
MWW (m)	0.75																
MBW (m)	0.90																
MWD (m)	0.15																
MBD (m)	0.40																
						Photo 1. View of watercourse looking east from highway⬆	Photo 2. View of beaver dam located 25 m east of survey point. ⬆										
WB-B-M33-99	June 8th, 2015	Permanent Wetland	Wetland located east of Highway 69 surrounded by forest with small bedrock outcrops throughout study area.	<p>No open water or defined channel. Area is saturated and choked by wetland vegetation. Small bedrock outcrops are within the study area. No indicators of groundwater seepage occur at this site.</p> <table><tr><td>Fish Habitat?</td><td>Not Habitat</td></tr><tr><td>Width (m)</td><td>Not measured</td></tr><tr><td>Depth (m)</td><td>0.00</td></tr></table>	Fish Habitat?	Not Habitat	Width (m)	Not measured	Depth (m)	0.00	Low						
Fish Habitat?	Not Habitat																
Width (m)	Not measured																
Depth (m)	0.00																
						Photo 1. View of study area from southern limit. ⬆	Photo 2. View of study area from northern limit. ⬆										

Table 3-5: Site Investigation Summaries for Tributaries in the Upper Naiscoot River Watershed













Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M34-96	June 9th, 2015	Permanent Pond	East of Highway 69 and across large beaver pond. Surrounded by wetland.	<p>Large oval beaver pond with two dams. Majority of study area open water. Transmission line runs between beaver pond to the west and steep forested bedrock to the east. Mixture of open water and some vegetation hummocks. Grasses in pond provide shade and protection for fish in addition to lily pads and narrow-leaved cattails. Standing snags, and woody debris also provide habitat. Minnows observed in beaver pond. No groundwater indicators are present.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>50.00</td></tr><tr><td>Depth (m)</td><td>1.50</td></tr></table>	Fish Habitat?	Direct	Width (m)	50.00	Depth (m)	1.50	Low						
Fish Habitat?	Direct																
Width (m)	50.00																
Depth (m)	1.50																
WB-B-M34-97	June 9th, 2015	Permanent Stream	East of Highway 69. Stream flows perpendicular to road in west direction	<p>Defined channel splits in two and goes around a grassy island on one side and under an old beaver dam on the other. These two branches come back together after the island.. Channel flows through small cattail marsh area then small forested area with lots of deadfall/logs in and across stream. Stream ends at perched culvert east of highway 69, with lots of boulders in stream and in front of culvert, creating barrier to fish passage. Possible iron staining from groundwater seepage. Substrate is silt, sand, and some organic substrate. River is predominantly run, with riffle, pool and flats. Aquatic grasses and narrow-leaved cattails occur within the stream, while trees, shrubs and grasses provide minimal cover.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>0.60</td></tr><tr><td>MBW (m)</td><td>5.00</td></tr><tr><td>MWD (m)</td><td>0.12</td></tr><tr><td>MBD (m)</td><td>0.45</td></tr></table>	Fish Habitat?	Direct	MWW (m)	0.60	MBW (m)	5.00	MWD (m)	0.12	MBD (m)	0.45	Low		
Fish Habitat?	Direct																
MWW (m)	0.60																
MBW (m)	5.00																
MWD (m)	0.12																
MBD (m)	0.45																
WB-B-M34-98	June 9th, 2015	Permanent Wetland	East of Highway 69	<p>Pond covered in floating mats of vegetation. No open water. Bedrock may prevent water from draining. There is no indication of groundwater seepage at this site.</p> <table><tr><td>Fish Habitat?</td><td>Not habitat</td></tr><tr><td>Width (m)</td><td>Not measured</td></tr><tr><td>Depth (m)</td><td>0.00</td></tr></table>	Fish Habitat?	Not habitat	Width (m)	Not measured	Depth (m)	0.00	Low						
Fish Habitat?	Not habitat																
Width (m)	Not measured																
Depth (m)	0.00																

Table 3-5: Site Investigation Summaries for Tributaries in the Upper Naiscoot River Watershed

Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity								
WB-B-M35-95	May 5th, 2015	Permanent Pond	150 km east of Highway 60 on rock barren, wetland to the northwest, forested area to the southeast	<p>Same pond as WB-B-M34-96. Dammed to the northeast side. There are more floating mats of vegetation here. Substrate is soft and muck is dominant with vegetation and detritus providing cover. Many standing snags and fallen logs are present. Minnows observed. No groundwater indicators are present.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>90</td></tr><tr><td>Depth (m)</td><td>1.50</td></tr></table>	Fish Habitat?	Direct	Width (m)	90	Depth (m)	1.50	Low		
Fish Habitat?	Direct												
Width (m)	90												
Depth (m)	1.50												
						Photo 1. View of wetland east of crossing. ⬆	Photo 2. View of study area southeast of crossing. ⬆						
WB-B-M36-94	May 5th, 2015	Permanent Lake	Naiscoot Lake east of Highway 69, forested on north and south banks. Cottages upstream on Naiscoot Lake. Lake is long along its east-west axis and transected by highway	<p>Large lake with cottages upstream (east) of crossing. Assumed to be deeper than 1.5 m. Overhanging shrubs and trees provide canopy cover. Only bedrock (no aquatic vegetation) can be seen in water from vantage point. No groundwater indicators are present</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>170.00</td></tr><tr><td>Depth (m)</td><td>1.50</td></tr></table>	Fish Habitat?	Direct	Width (m)	170.00	Depth (m)	1.50	Moderate		
Fish Habitat?	Direct												
Width (m)	170.00												
Depth (m)	1.50												
						Photo 1. View of lake south of crossing toward highway. ⬆	Photo 2. View north bank where crossing will occur. ⬆						
WB-B-M37-93	June 10th, 2015	Permanent Pond	East of Highway 69	<p>Beaver dammed wetland to the west. Transmission line crosses over open water, more aquatic vegetation (grasses mostly) to the east. Lots of standing snags (birch). Approximate depth is greater than 1m. Aquatic grasses, submerged logs and fallen trees provide in situ habitat. Grasses, ferns and shrubs provide cover. No groundwater indicators are present.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>30.00</td></tr><tr><td>Depth (m)</td><td>1.00</td></tr></table>	Fish Habitat?	Direct	Width (m)	30.00	Depth (m)	1.00	Low		
Fish Habitat?	Direct												
Width (m)	30.00												
Depth (m)	1.00												
						Photo 1. View of pond east from crossing. ⬆	Photo 2. View of pond west from crossing, with beaver dam and highway. ⬆						

3.2.6 *Pointe au Baril Watershed*

The Pointe au Baril watershed (02EA-05) is south of the Upper Naiscoot River watershed and north of the Shawanaga River watershed. This watershed has a large shoreline of Georgian Bay, and has a drainage area of 113 km². This watershed has 13 water crossings continuing in a NNW to SSE direction (**Table 3-6**).

Table 3-6: Site Investigation Summaries for Tributaries in the Pointe au Baril Watershed

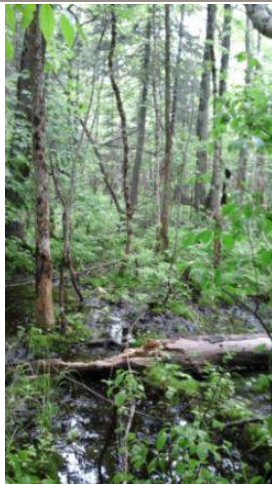





Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M38-90	June 10th, 2015	Permanent Swamp	East of Highway 69	<p>Green ash swamp consists of interconnecting pools of water (various saturated areas). Total width of wetted area 20m. Lots of ash trees, ferns, herbaceous and sphagnum moss growing in swamp. Mean depth of pools are 0.12 m. Surrounding topography slopes down towards swampy area. There is no indication of groundwater seepage at this site.</p> <table><tr><td>Fish Habitat?</td><td>Not habitat</td></tr><tr><td>Width (m)</td><td>20</td></tr><tr><td>Depth (m)</td><td>0.12</td></tr></table>	Fish Habitat?	Not habitat	Width (m)	20	Depth (m)	0.12	Low						
Fish Habitat?	Not habitat																
Width (m)	20																
Depth (m)	0.12																
						Photo 1. View of study area west from crossing. ⬆	Photo 2. View of study area from highway where swamp ends. ⬆										
WB-B-M38-91	June 10th, 2015	Intermittent Stream	East of highway 69 surrounded by wetland and forest, flows to the west	<p>Small meandering channel for ~14m before topography slopes upwards into the forest. Some evidence of water movement in forest (some small pools present), likely flowing east towards pond during spring melt or heavy rain events. Groundwater seepage does not appear to occur at this site.</p> <table><tr><td>Fish Habitat?</td><td>Not habitat</td></tr><tr><td>MWW (m)</td><td>Not measured</td></tr><tr><td>MBW (m)</td><td>Not measured</td></tr><tr><td>MWD (m)</td><td>Not measured</td></tr><tr><td>MBD (m)</td><td>Not measured</td></tr></table>	Fish Habitat?	Not habitat	MWW (m)	Not measured	MBW (m)	Not measured	MWD (m)	Not measured	MBD (m)	Not measured	Low		
Fish Habitat?	Not habitat																
MWW (m)	Not measured																
MBW (m)	Not measured																
MWD (m)	Not measured																
MBD (m)	Not measured																
						Photo 1. View of watercourse ending 14 m meandering from pond. ⬆	Photo 2. View of area where watercourse supposedly begins (west from pond). ⬆										
WB-B-M38-92	June 10th, 2015	Permanent Pond	East of Highway 69. Forest north and sound of pond. Survey point in wetland/beaver pond surrounded by steep bedrock cliffs and forest.	<p>Long pond stretching east from highway, open water divided by some large rectangular sections of shrubs. Beaver dam ~60 m upstream from centreline . Depth is over 1.5 m but too deep to wade. In-situ cover is dominated by aquatic vegetation and grasses on bedrock. Groundwater seepage does not appear to occur at this site.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>40.00</td></tr><tr><td>Depth (m)</td><td>1.50</td></tr></table>	Fish Habitat?	Direct	Width (m)	40.00	Depth (m)	1.50	Low						
Fish Habitat?	Direct																
Width (m)	40.00																
Depth (m)	1.50																
						Photo 1. View of study area west from crossing. ⬆	Photo 2. View of large beaver dam upstream (east) of crossing. ⬆										

Table 3-6: Site Investigation Summaries for Tributaries in the Pointe au Baril Watershed







Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M39-87	June 11th, 2015	Permanent Pond	East of Highway 69	<p>Large pond with abundance of fragrant white lilies, standing snags and fallen logs. Probably connected to larger Moose Lake east of the moose lake trading post. Painted turtle observed. . A small channel to the west flows into pond. Substrate was not determined. There is no indication of groundwater seepage at this site.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>30.00</td></tr><tr><td>Depth (m)</td><td>0.40</td></tr></table>	Fish Habitat?	Direct	Width (m)	30.00	Depth (m)	0.40	Moderate						
Fish Habitat?	Direct																
Width (m)	30.00																
Depth (m)	0.40																
						Photo 1. View of pond east from crossing. ⬆	Photo 2. View of pond west from crossing. ⬆										
WB-B-M39-88	June 11th, 2015	Permanent Stream	Wetland surrounded by forest.. Stream flows south, parallel 200 m east of Hwy 69 and 300 m north of Moose Trading Post.	<p>Water flows towards larger pond (WB-B-M39-87). Obvious wide channel with grasses growing in and on banks of watercourse. Some logs have fallen over top. Defined banks in main channel, but watercourse could flood to 12m in floodplain. 30m upstream of centerline the channel flows through 15m of small forested area; banks are taller and channel is smaller. Beaver dam at the end of survey site, water escaping to small pool and then flowing downstream into main channel. Watercourse slow moving over detritus for most of the survey site. Groundwater seepage does not appear to occur at this site.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>1.50</td></tr><tr><td>MBW (m)</td><td>2.00</td></tr><tr><td>MWD (m)</td><td>0.25</td></tr><tr><td>MBD (m)</td><td>0.35</td></tr></table>	Fish Habitat?	Direct	MWW (m)	1.50	MBW (m)	2.00	MWD (m)	0.25	MBD (m)	0.35	Low		
Fish Habitat?	Direct																
MWW (m)	1.50																
MBW (m)	2.00																
MWD (m)	0.25																
MBD (m)	0.35																
						Photo 1. View of banks and instream vegetation at crossing. ⬆	Photo 2. View of beaver dam at upstream end of survey location. ⬆										
WB-B-M39-89	June 11th, 2015	Permanent Wetland	Highway 69 to the west. Wetland surrounded by forest.	<p>Saturated fen with some deeper pools of water. Predominantly covered by floating mats of vegetation or shrubs. Rock barren outcrop in middle of wetland. Transmission line crossing approximately 30 m of this wetland to the bedrock outcrop. There is no indication of groundwater present.</p> <table><tr><td>Fish Habitat?</td><td>Not habitat</td></tr><tr><td>Width (m)</td><td>37.00</td></tr><tr><td>Depth (m)</td><td>0.50</td></tr></table>	Fish Habitat?	Not habitat	Width (m)	37.00	Depth (m)	0.50	Low						
Fish Habitat?	Not habitat																
Width (m)	37.00																
Depth (m)	0.50																
						Photo 1. View of saturated fen, east of crossing. ⬆	Photo 2. View of study area north of crossing. ⬆										

Table 3-6: Site Investigation Summaries for Tributaries in the Pointe au Baril Watershed







Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M40-83	July 7th, 2015	Permanent Wetland	Alder thicket swamp starts at road edge, east of Highway 69, south of unassumed road	No flow or open water. Occasional isolated pockets of water over sphagnum in saturated treed thicket swamp. Groundwater seepage does not appear to occur at this site. <table><tr><td>Fish Habitat?</td><td>Not habitat</td></tr><tr><td>Width (m)</td><td>190.00</td></tr><tr><td>Depth (m)</td><td>0.00</td></tr></table>	Fish Habitat?	Not habitat	Width (m)	190.00	Depth (m)	0.00	Low						
Fish Habitat?	Not habitat																
Width (m)	190.00																
Depth (m)	0.00																
WB-B-M40-85	June 11th, 2015	Permanent Wetland	East of Highway 69. Cattail marsh surrounded by forest on the northeast and south sides.	No defined channel; intermittent pockets of water throughout wetland. There is no indication of groundwater seepage at this site. <table><tr><td>Fish Habitat?</td><td>Not habitat</td></tr><tr><td>Width (m)</td><td>60.00</td></tr><tr><td>Depth (m)</td><td>0.40</td></tr></table>	Fish Habitat?	Not habitat	Width (m)	60.00	Depth (m)	0.40	Low						
Fish Habitat?	Not habitat																
Width (m)	60.00																
Depth (m)	0.40																
WB-B-M40-86	June 11th, 2015	Permanent Stream	East of Highway 69. Cottages and Moose Lake Trading Post along Moose Lake. Stream flows in west direction perpendicular to road	Water flowing west into channel from Moose Lake (70m upstream from centerline) over bedrock substrate. '40m upstream from centerline the channel splits in two, travelling around both sides of a treed rock barren. The north channel flows under fallen logs and meanders past large boulders and rocks in stream. High canopy coverage in this section. Watercourse widens before flowing through large culvert. Small rock barrier on west side of highway, probably placed to help slow down water flows in the spring melt or heavy rain events. Riffles, pools and runs observed. No evidence of groundwater seepage occurs at this site. <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>3.00</td></tr><tr><td>MBW (m)</td><td>5.00</td></tr><tr><td>MWD (m)</td><td>0.30</td></tr><tr><td>MBD (m)</td><td>0.45</td></tr></table>	Fish Habitat?	Direct	MWW (m)	3.00	MBW (m)	5.00	MWD (m)	0.30	MBD (m)	0.45	Low		
Fish Habitat?	Direct																
MWW (m)	3.00																
MBW (m)	5.00																
MWD (m)	0.30																
MBD (m)	0.45																

Table 3-6: Site Investigation Summaries for Tributaries in the Pointe au Baril Watershed









Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M41-82	June 12th, 2015	Permanent Lake	Beaver pond surrounded by forest approximately 400 m east of Hwy 69	<p>Large beaver pond, dammed at west end. Lots of water lilies. Small grassy channel with large riparian zone flowing into pond approx. 100 m upstream from centerline. Water passes through beaver dam and flows west into vegetated channel. Aquatic vegetation and some woody debris provide in stream cover. No groundwater indicators are present.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>140.00</td></tr><tr><td>Depth (m)</td><td>1.50</td></tr></table>	Fish Habitat?	Direct	Width (m)	140.00	Depth (m)	1.50	Low						
Fish Habitat?	Direct																
Width (m)	140.00																
Depth (m)	1.50																
						<p>Photo 1. View of pond taken from beaver dam at west limit. ⬆</p>	<p>Photo 2. View of old beaver dam 50 m downstream from crossing. ⬆</p>										
WB-B-M42-79	July 2nd, 2015	Permanent Stream	East of Highway 69 near Pointe au Baril. Stream flows southwest	<p>Watercourse confined by beaver dams upstream and downstream outside of study area. Small tributary to west provides little flow. Fish would not be able to migrate up tributary due to low flow over high gradient. Substrate consists of detritus, muck, and silt over bedrock. Little to no canopy cover is provided by trees. No indication of groundwater seepage is present.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>35.0</td></tr><tr><td>MBW (m)</td><td>40.0</td></tr><tr><td>MWD (m)</td><td>1.00</td></tr><tr><td>MBD (m)</td><td>1.15</td></tr></table>	Fish Habitat?	Direct	MWW (m)	35.0	MBW (m)	40.0	MWD (m)	1.00	MBD (m)	1.15	Low		
Fish Habitat?	Direct																
MWW (m)	35.0																
MBW (m)	40.0																
MWD (m)	1.00																
MBD (m)	1.15																
						<p>Photo 1. View of stream upstream of downstream limit. ⬆</p>	<p>Photo 2. View of small tributary to west that has low flow and high relief preventing fish migration. ⬆</p>										
WB-B-M42-81	July 2nd, 2015	Permanent Lake	“Sucker Lake,” east of Highway 69 near Pointe au Baril surrounded by coniferous dominant forest atop steep bedrock cliffs flows to the west. A bridge for snowmobiles is located downstream of study site.	<p>Large lake-like river flowing from west to east bordered by steep bedrock cliff to south. Beaver dam is located downstream of crossing. Substrate consists of detritus, sand, silt and muck on bedrock. Plenty of aquatic vegetation provides in-stream cover but little canopy cover is provided by trees and shrubs. There is no indication of groundwater seepage at this site.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>30.00</td></tr><tr><td>MBW (m)</td><td>35.00</td></tr><tr><td>MWD (m)</td><td>1.00</td></tr><tr><td>MBD (m)</td><td>1.10</td></tr></table>	Fish Habitat?	Direct	MWW (m)	30.00	MBW (m)	35.00	MWD (m)	1.00	MBD (m)	1.10	Moderate		
Fish Habitat?	Direct																
MWW (m)	30.00																
MBW (m)	35.00																
MWD (m)	1.00																
MBD (m)	1.10																
						<p>Photo 1. View of stream upstream of downstream limit ⬆</p>	<p>Photo 2. View of study area upstream of crossing. ⬆</p>										

Table 3-6: Site Investigation Summaries for Tributaries in the Pointe au Baril Watershed

Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity								
WB-B-M43-77	July 7th, 2015	Permanent Lake	East of Highway 69, south of Pointe au Baril	<div>Open pond with floating emergents and narrow emergent vegetation along margins; suitable habitat for pike spawning if pike are present. In-situ cover is dominated by aquatic vegetation with some woody debris present. Substrate is unknown. There is no indication of groundwater seepage.</div> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>71.00</td></tr><tr><td>Depth (m)</td><td>1.00</td></tr></table>	Fish Habitat?	Direct	Width (m)	71.00	Depth (m)	1.00	Moderate		<p>Photo 1. View of study area east from crossing across lake from southwest bank. Ideal pike spawning habitat in foreground. ⬆</p>
Fish Habitat?	Direct												
Width (m)	71.00												
Depth (m)	1.00												
							<p>Photo 2. View of study area looking southeast along crossing from southwest bank. ⬆</p>						

3.2.7 Shawanaga River Watershed

The Shawanaga River watershed (02EA-13) is south of the Pointe au Baril watershed and north of the Shebeshekong River-St. Aubyn Bay watershed. The Shawanaga River watershed has a large drainage area of 304 km², and has one large waterbody, the Shawanaga River, that flows west into Georgian Bay. There are 11 water crossings downstream of Rock Island Lake, five water crossing upstream of Rock Island Lake, and four water crossings upstream of Wiwassasegen Lake (**Table 3-7**).

Table 3-7: Site Investigation Summaries for Tributaries in the Shawanaga River Watershed





Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M44-75	June 26th, 2015	Permanent Wetland	East of Highway 69, north of Shawanaga Reserve	<p>Wet meadow downstream of open lake with occasional pools and channels. Water is choked with weeds and plants. Low dissolved oxygen and limited connectivity. Groundwater does not appear to be present at this site.</p> <table><tr><td>Fish Habitat?</td><td>Not habitat</td></tr><tr><td>Width (m)</td><td>52.00</td></tr><tr><td>Depth (m)</td><td>0.60</td></tr></table>	Fish Habitat?	Not habitat	Width (m)	52.00	Depth (m)	0.60	Low	No photographs available.					
Fish Habitat?	Not habitat																
Width (m)	52.00																
Depth (m)	0.60																
WB-B-M44-76	June 26th, 2015	Permanent Lake	East of Highway 69	<p>Large pond with bedrock jutting in from south and two bedrock islands. Pond is fed from northwest and drained in north east. Well vegetated banks provide cover in addition to floating emergents and submergents grasses and periphyton. There is no indication of groundwater seepage at this site.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>106.00</td></tr><tr><td>Depth (m)</td><td>2.00</td></tr></table>	Fish Habitat?	Direct	Width (m)	106.00	Depth (m)	2.00	Low	No photographs available.					
Fish Habitat?	Direct																
Width (m)	106.00																
Depth (m)	2.00																
WB-B-M45-73	June 15th, 2015	Permanent Stream	Mixed coniferous and deciduous forest atop bedrock open fen with sedges and herbaceous plants. Some dead trees. Stream flows perpendicular to road in north direction	<p>Defined channel in highly saturated wet meadow. Frequent side channels and pools. Potential fish habitat. . Waterbody fed by CSP and upstream wetland across highway 69. Potential beaver activity has led to flooded upstream conditions. Bedrock and heavily vegetated banks provide bank stability for low flows over detritus, muck, and some gravel over bedrock. Wetland plant species are present but there is no aquatic vegetation species. Upstream has minimal canopy cover while downstream has 100% cover. No groundwater indicators are present.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>3.30</td></tr><tr><td>MBW (m)</td><td>3.30</td></tr><tr><td>MWD (m)</td><td>0.70</td></tr><tr><td>MBD (m)</td><td>0.70</td></tr></table>	Fish Habitat?	Direct	MWW (m)	3.30	MBW (m)	3.30	MWD (m)	0.70	MBD (m)	0.70	Low	 <p>Photo 1. View of upstream from left bank at crossing. ⬆</p>	 <p>Photo 2. View of downstream from left bank at crossing. ⬆</p>
Fish Habitat?	Direct																
MWW (m)	3.30																
MBW (m)	3.30																
MWD (m)	0.70																
MBD (m)	0.70																
WB-B-M45-74	June 15th, 2015	Permanent Stream	Mixed deciduous coniferous forest atop bedrock, stream flows west, perpendicular to Highway 69	<p>West flowing river confined by vegetated bedrock. Low flows create flats over muck, detritus, silt, and bedrock. Narrow and floating emergent present in-stream. Watercourse is drained by CSP downstream. Suitable habitat for cyprinids and warm water tolerant fish species. Bullfrogs observed. There is no indication of groundwater seepage at this site.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>18.00</td></tr><tr><td>MBW (m)</td><td>19.25</td></tr><tr><td>MWD (m)</td><td>1.00</td></tr><tr><td>MBD (m)</td><td>1.80</td></tr></table>	Fish Habitat?	Direct	MWW (m)	18.00	MBW (m)	19.25	MWD (m)	1.00	MBD (m)	1.80	Low	 <p>Photo 1. View of upstream from centre line on south bank. ⬆</p>	 <p>Photo 2. View of downstream from centreline on south bank. ⬆</p>
Fish Habitat?	Direct																
MWW (m)	18.00																
MBW (m)	19.25																
MWD (m)	1.00																
MBD (m)	1.80																

Table 3-7: Site Investigation Summaries for Tributaries in the Shawanaga River Watershed






Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M46-71	June 15th, 2015	Permanent Wetland	East of Highway 69	<p>A wet meadow transitioning into a fen with no defined channel flows west through plastic culvert to wetland across the highway. System transitions from forest to alder thicket to wetland. Occasional pools are found throughout floodplain. No indicators of groundwater are present.</p> <table><tr><td>Fish Habitat?</td><td>Not habitat</td></tr><tr><td>Width (m)</td><td>43.00</td></tr><tr><td>Depth (m)</td><td>0.60</td></tr></table>	Fish Habitat?	Not habitat	Width (m)	43.00	Depth (m)	0.60	Low						
Fish Habitat?	Not habitat																
Width (m)	43.00																
Depth (m)	0.60																
WB-B-M47-69	June 15th, 2015	Permanent Stream	Highway 69 in close proximity to waterbody. Mixed deciduous forest further downstream. Water flows north from highway	<p>Waterbody serves as a drainage ditch from highway 69 and flows into downstream open waterbody. Suitable fish habitat.. Water drained through CSP culvert under highway 69. Watercourse characterized as low flow flats over detritus, muck and silt with some floating emergent and wetland species in-stream, with minimal cover from overhanging grasses. Groundwater seepage does not appear to occur at this site.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>18.70</td></tr><tr><td>MBW (m)</td><td>19.30</td></tr><tr><td>MWD (m)</td><td>0.45</td></tr><tr><td>MBD (m)</td><td>0.75</td></tr></table>	Fish Habitat?	Direct	MWW (m)	18.70	MBW (m)	19.30	MWD (m)	0.45	MBD (m)	0.75	Low		
Fish Habitat?	Direct																
MWW (m)	18.70																
MBW (m)	19.30																
MWD (m)	0.45																
MBD (m)	0.75																
WB-B-M47-70	June 15th, 2015	Permanent Pond	Inland lake that occurs east of highway 69. Transmission line does not cross waterbody, but lake is within disturbance area. Lake is southeast of a meteorological tower.	<p>Moderate sized inland lake with steep bedrock banks and small forested island. . Likely a quarry (evidence of blasting and rip rap). Depth unknown as lake is likely man-made. Large boulders observed in water but no aquatic vegetation seen from vantage point. Depth too deep to measure. Forest provides canopy cover along margins. No evidence of groundwater seepage is present. Large fish (catfish sp.) observed. .</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>123.00</td></tr><tr><td>Depth (m)</td><td>Not measured</td></tr></table>	Fish Habitat?	Direct	Width (m)	123.00	Depth (m)	Not measured	Moderate						
Fish Habitat?	Direct																
Width (m)	123.00																
Depth (m)	Not measured																

Table 3-7: Site Investigation Summaries for Tributaries in the Shawanaga River Watershed







Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M48-68	June 16th, 2015	Permanent Stream	Mixed coniferous deciduous forest on bedrock ATV trail with cobbles and gravel lain down. Water flows in southeast direction	<p>Slow moving water with no cover (pond-like) is emptied by culvert downstream where watercourse transitions into forested brook. ATV trail has a twin csp under cobble/gravel road that marks the centre line crossing and transition from slowing moving flat to forested brook. Centre line crosses brook again 85m downstream but was not assessed in this study area. High flows and bedrock ledges impede fish migration. Banks transition from stable bedrock upstream to moderately unstable downstream with undercuts occurring. Low flows over detritus, muck and silt upstream transition to high flows over gravel, cobble, bedrock and sand downstream as gradient increases and channel narrows. No groundwater indicators are present.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>10.20</td></tr><tr><td>MBW (m)</td><td>12.70</td></tr><tr><td>MWD (m)</td><td>0.63</td></tr><tr><td>MBD (m)</td><td>1.25</td></tr></table>	Fish Habitat?	Direct	MWW (m)	10.20	MBW (m)	12.70	MWD (m)	0.63	MBD (m)	1.25	Low		
Fish Habitat?	Direct																
MWW (m)	10.20																
MBW (m)	12.70																
MWD (m)	0.63																
MBD (m)	1.25																
WB-B-M49-143	July 9th, 2015	Permanent Stream	West of Highway 69, north of Shawanaga Reserve, Shawanaga River flows to the west	<p>Low-lying area with active channel slowly meanders in large floodplain flowing east to west. Aquatic vegetation consists of submergent grasses, floating emergents, and pickerel weed. Riparian vegetation does not provide significant cover for fish. No indicators of groundwater were observed.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>18.00</td></tr><tr><td>MBW (m)</td><td>21.50</td></tr><tr><td>MWD (m)</td><td>1.26</td></tr><tr><td>MBD (m)</td><td>1.48</td></tr></table>	Fish Habitat?	Direct	MWW (m)	18.00	MBW (m)	21.50	MWD (m)	1.26	MBD (m)	1.48	Moderate		
Fish Habitat?	Direct																
MWW (m)	18.00																
MBW (m)	21.50																
MWD (m)	1.26																
MBD (m)	1.48																
WB-B-M49-66	July 9th, 2015	Permanent Stream	East of Highway 69, north of Shawanaga Reserve, Shawanaga River flows in west direction perpendicular to highway. Residential buildings present on north bank upstream.	<p>Series of rapids and pools flowing east to west. Upper limit of study area is just downstream of some rapids. Trees provide little canopy coverage. In-stream aquatic vegetation consists of algae, floating emergents, emergent grasses and weeds. Groundwater seepage does not appear to occur at this site.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>15.60</td></tr><tr><td>MBW (m)</td><td>16.30</td></tr><tr><td>MWD (m)</td><td>1.50</td></tr><tr><td>MBD (m)</td><td>1.83</td></tr></table>	Fish Habitat?	Direct	MWW (m)	15.60	MBW (m)	16.30	MWD (m)	1.50	MBD (m)	1.83	Moderate		
Fish Habitat?	Direct																
MWW (m)	15.60																
MBW (m)	16.30																
MWD (m)	1.50																
MBD (m)	1.83																

Table 3-7: Site Investigation Summaries for Tributaries in the Shawanaga River Watershed







Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M49-67	July 7th, 2015	Intermittent Stream	North of Dumont Road, east of Highway 69	<div>Dried up water course with red mud (possibly from algae or iron staining) and intermittent stagnant pools. No other flow observed.. No indications of groundwater are present.</div> <table><tr><td>Fish Habitat?</td><td>Not habitat</td></tr><tr><td>MWW (m)</td><td>0.00</td></tr><tr><td>MBW (m)</td><td>3.00</td></tr><tr><td>MWD (m)</td><td>0.00</td></tr><tr><td>MBD (m)</td><td>0.20</td></tr></table>	Fish Habitat?	Not habitat	MWW (m)	0.00	MBW (m)	3.00	MWD (m)	0.00	MBD (m)	0.20	Low		
Fish Habitat?	Not habitat																
MWW (m)	0.00																
MBW (m)	3.00																
MWD (m)	0.00																
MBD (m)	0.20																
						Photo 1. View of upstream from crossing. ⬆	Photo 2. View of downstream from crossing. ⬆										
WB-B-M-50-64	N/A	Unknown	Site was on private property with no granted access	N/A	Unknown	No photographs available.											
WB-B-M50-65	N/A	Unknown	Site was on private property with no granted access	N/A	Unknown	No photographs available.											
WB-B-M51-63	N/A	Unknown	Site was on private property with no granted access	N/A	Unknown	No photographs available.											
WB-B-M52-59	June 3rd, 2015	Permanent Pond	East of Highway 69, mixed forest surrounding pond from northeast and south sides and road on west side	<div>Narrow channel from upstream lake feeds into beaver pond and drained by a csp on east side of road. Muck and detritus substrate dominant in the middle, with sand and silt dominant on banks with woody debris. Beaver dam possibly impeding fish passage. Upstream lake is also drained to the south by another stream that may be impacted by transmission line. Woody debris and aquatic vegetation provide in-situ cover. Forest is too far from pond to provide canopy cover. No indicators of groundwater are present.</div> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>55.00</td></tr><tr><td>Depth (m)</td><td>1.00</td></tr></table>	Fish Habitat?	Direct	Width (m)	55.00	Depth (m)	1.00	Low						
Fish Habitat?	Direct																
Width (m)	55.00																
Depth (m)	1.00																
						Photo 1. View of pond from western limit of study at the Highway embankment. ⬆	Photo 2. View from beaver dam approximately 20 m downstream of crossing. ⬆										
WB-B-M52-59-2	June 3rd, 2015	Intermittent Stream	Beaver meadow, scrub land bordered by highway and forest	<div>Mostly dry intermittent channel through scrub meadow. Approximately 10 m east of crossing stagnant water in channel between 2 old beaver dams. Potential intermittent fish habitat for tolerant cyprinids during high flows downstream of crossing however lack of channel form at crossing. Substrate consists of sand, silt and detritus in this exclusively pool system. Overhanging grasses provide most cover with some riparian shrubs providing canopy cover. There is no evidence of groundwater seepage.</div> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>0.30</td></tr><tr><td>MBW (m)</td><td>1.00</td></tr><tr><td>MWD (m)</td><td>0.20</td></tr><tr><td>MBD (m)</td><td>0.30</td></tr></table>	Fish Habitat?	Direct	MWW (m)	0.30	MBW (m)	1.00	MWD (m)	0.20	MBD (m)	0.30	Low		
Fish Habitat?	Direct																
MWW (m)	0.30																
MBW (m)	1.00																
MWD (m)	0.20																
MBD (m)	0.30																
						Photo 1. View of downstream from upstream (northwest) limit of study area. ⬆	Photo 2. View of intermittent channel at crossing. ⬆										

Table 3-7: Site Investigation Summaries for Tributaries in the Shawanaga River Watershed





Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M52-61	June 3rd, 2015	Permanent Stream	Two culverts converge on east side of Highway 69 in low lying area between two bedrock outcrops	<p>Two channels deriving from corrugated steel pipes come to a confluence east of highway in large, low lying riparian zone. The two channels are predominantly run over sand, silt, detritus, and gravel with the north channel more defined than the south channel with some undercutting. Overhanging grasses provide cover, with some aquatic emergents, submergents, and riparian plant species present. Beaver activity may impede fish migration in north channel. Groundwater seepage does not appear to occur at this site.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>2.25</td></tr><tr><td>MBW (m)</td><td>30.00</td></tr><tr><td>MWD (m)</td><td>0.50</td></tr><tr><td>MBD (m)</td><td>0.75</td></tr></table>	Fish Habitat?	Direct	MWW (m)	2.25	MBW (m)	30.00	MWD (m)	0.50	MBD (m)	0.75	Low		 Photo 2. Overview of study area from west. ⬆
Fish Habitat?	Direct																
MWW (m)	2.25																
MBW (m)	30.00																
MWD (m)	0.50																
MBD (m)	0.75																
						Photo 1. View of eastern branch looking upstream. ⬆											
WB-B-M56-48	June 16th, 2015	Permanent Wetland	East of Highway 69	<p>Marsh with sedges, cattails, and sweetgale in low lying area. No connectivity. Groundwater seepage does not appear to occur here.</p> <table><tr><td>Fish Habitat?</td><td>Not habitat</td></tr><tr><td>Width (m)</td><td>71.00</td></tr><tr><td>Depth (m)</td><td>0.20</td></tr></table>	Fish Habitat?	Not habitat	Width (m)	71.00	Depth (m)	0.20	Low						
Fish Habitat?	Not habitat																
Width (m)	71.00																
Depth (m)	0.20																
						Photo 1. View of marsh from road looking east. ⬆											
WB-B-M57-44	June 19th, 2015	Permanent Wetland	East of Highway 69, waterbody flows northeast into downstream wetland. Wetland feeds Round Lake Nature Reserve.	<p>Open water wetland transitioning into fen. Downstream pond a result of beaver activity. Emergent grasses, shrubs and sedges grow in water providing cover. Substrate unknown. No groundwater indicators are present.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>115.00</td></tr><tr><td>Depth (m)</td><td>1.50</td></tr></table>	Fish Habitat?	Direct	Width (m)	115.00	Depth (m)	1.50	Low						
Fish Habitat?	Direct																
Width (m)	115.00																
Depth (m)	1.50																
						Photo 1. View of waterbody looking east from crossing. ⬆											

Table 3-7: Site Investigation Summaries for Tributaries in the Shawanaga River Watershed








Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity									
WB-B-M57-45	June 19th, 2015	Permanent Wetland	East of Highway 69, inland bog.	<div>No open water present with ferns, sedges, and Sphagnum moss. There is no connectivity. There is no indication of groundwater seepage here.</div> <table><tr><td>Fish Habitat?</td><td>Not habitat</td></tr><tr><td>Width (m)</td><td>82.00</td></tr><tr><td>Depth (m)</td><td>0.00</td></tr></table>	Fish Habitat?	Not habitat	Width (m)	82.00	Depth (m)	0.00	Low		<p>Photo 1. View of study area looking southwest from east bank at crossing. ⬆</p>	
Fish Habitat?	Not habitat													
Width (m)	82.00													
Depth (m)	0.00													
WB-B-M58-38	July 6th, 2015	Seasonal Wetland	Meadow at crossing bordered by forest, northeast of water treatment plant	<div>Grassy moist meadow likely flooded seasonally from freshet/surface flows and from adjacent wetland. Groundwater seepage does not appear to occur here.</div> <table><tr><td>Fish Habitat?</td><td>Not habitat</td></tr><tr><td>Width (m)</td><td>21.00</td></tr><tr><td>Depth (m)</td><td>0.00</td></tr></table>	Fish Habitat?	Not habitat	Width (m)	21.00	Depth (m)	0.00	Low			<p>Photo 1. View of study area south from crossing. ⬆</p> <p>Photo 2. View of study area north from crossing. ⬆</p>
Fish Habitat?	Not habitat													
Width (m)	21.00													
Depth (m)	0.00													
WB-B-M58-39	July 6th, 2015	Permanent Wetland	East of Highway 69, north of Hoover Road	<div>Large wetland complex with interconnected channels on sphagnum mat downstream of beaver dam at Round Lake Provincial Nature Reserve. Just downstream of dam are very deep cut channels. Transmission line goes along northwest to southeast direction and splits at cl to go east-southeast as well. At deep cut channels there are narrow emergent vegetation that provide ideal pike spawning habitat. There is no indication of groundwater seepage at this site.</div> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>270.00</td></tr><tr><td>Depth (m)</td><td>0.14</td></tr></table>	Fish Habitat?	Direct	Width (m)	270.00	Depth (m)	0.14	Moderate			<p>Photo 1. View of study area from southeast bank. ⬆</p> <p>Photo 2. View of channels near crossing downstream of beaver pond. ⬆</p>
Fish Habitat?	Direct													
Width (m)	270.00													
Depth (m)	0.14													

Table 3-7: Site Investigation Summaries for Tributaries in the Shawanaga River Watershed

Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity								
WB-B-M59-40		Permanent Wetland	East of water treatment plant and Highway 69.	<div>Fen wetland bordered by forest/black ash, conifer swamp. No open water observed. A floating mat of vegetated sphagnum occurs. There are no indicators of groundwater seepage.</div> <table><tr><td>Fish Habitat?</td><td>Not habitat</td></tr><tr><td>Width (m)</td><td>180.00</td></tr><tr><td>Depth (m)</td><td>0.00</td></tr></table>	Fish Habitat?	Not habitat	Width (m)	180.00	Depth (m)	0.00	Low		
Fish Habitat?	Not habitat												
Width (m)	180.00												
Depth (m)	0.00												
						Photo 1. View of study area west along crossing. ↑	Photo 2. View of study area east along crossing. ↑						

3.2.8 *Shebeshekong River-St. Aubyn Bay Watershed*

South of the Shawanaga River watershed but north of the Parry Sound watershed, the Shebeshekong River-St. Aubyn Bay watershed occurs. Its drainage area is 193 km², and a large shoreline on the Georgian Bay. The Shebeshekong River flows west into Georgian Bay. Seven water crossings occur in the tributaries of Rainy Lake, while three occur in the eastern limits of the upper watershed (**Table 3-8**).

Table 3-8: Site Investigation Summaries for Tributaries in the Shebeshekong River – St. Aubyn Bay Watershed







Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M53-57	July 23rd. 2015	Permanent Pond	East of Highway 69, south of Shawanaga Reserve	<p>Standing pond of water between beaver dams. Heavily vegetated bedrock shorelines. Detritus over bedrock boulder. Downstream of beaver dam is trickle of water through marsh meadow to highway CSP. No fish passage through dam. Fish observed in pond just upstream of study area. No indication of groundwater seepage occurs here.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>15.00</td></tr><tr><td>Depth (m)</td><td>0.60</td></tr></table>	Fish Habitat?	Direct	Width (m)	15.00	Depth (m)	0.60	Low						
Fish Habitat?	Direct																
Width (m)	15.00																
Depth (m)	0.60																
						Photo 1. View of downstream from upstream limit of study area ↑	Photo 2. View of marsh meadow below beaver dam near downstream limit. ↑										
WB-B-M53-58	July 23rd. 2015	Permanent Wetland	East of Highway 69, south of Shawanaga Reserve	<p>Pooled water adjacent to highway is drained by channel in fen that connects to wetland on west side of highway by a csp. Open water is bordered by floating mat with wetland vegetation. Substrate is detritus. There is no indication of groundwater seepage. Open water consists of flats and pools. Groundwater seepage does not appear to occur here.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>130.00</td></tr><tr><td>Depth (m)</td><td>0.80</td></tr></table>	Fish Habitat?	Direct	Width (m)	130.00	Depth (m)	0.80	Low						
Fish Habitat?	Direct																
Width (m)	130.00																
Depth (m)	0.80																
						Photo 1. View of channel through fen. ↑	Photo 2. View of open water pocket in fen between crossing and highway, facing south from northern limit of study area. ↑										
WB-B-M54-55	N/A	Unknown	Site not assessed	N/A	Unknown	No photographs available.											
WB-B-M54-56	July 23rd, 2015	Intermittent Stream	East of Highway 69, south of Shawanaga Reserve. Surrounded by forested bedrock, beaver pond upstream. Downstream scrub meadow between bedrock. Water flows in southwest direction	<p>Dry, intermittent watercourse draining from upstream beaver pond. Dry, poorly defined channel in upstream section. Downstream is a swale with moist soils, no defined channel, and water-tolerant terrestrial vegetation. Fish habitat is located in upstream beaver pond only. Intermittent flow only through remainder of site (or small stagnant pockets). Downstream of centreline a series of beaver dams (3) with small, stagnant pockets of water choked with vegetation in between are not likely to support fish. There are no indicators of groundwater seepage at this site.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>45.00</td></tr><tr><td>MBW (m)</td><td>46.20</td></tr><tr><td>MWD (m)</td><td>0.75</td></tr><tr><td>MBD (m)</td><td>0.82</td></tr></table>	Fish Habitat?	Direct	MWW (m)	45.00	MBW (m)	46.20	MWD (m)	0.75	MBD (m)	0.82	Low		
Fish Habitat?	Direct																
MWW (m)	45.00																
MBW (m)	46.20																
MWD (m)	0.75																
MBD (m)	0.82																
						Photo 1. General view of watercourse looking west from crossing. ↑	Photo 2. View of upstream beaver dam and stagnant pool between two dams ↑										

Table 3-8: Site Investigation Summaries for Tributaries in the Shebeshekong River – St. Aubyn Bay Watershed







Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M55-53	June 16th, 2015	Permanent Stream	East of Highway 69, flowing southwest perpendicular to highway	<p>Slow moving river dammed by beavers. Flows through large CSP under Highway 69. Vegetated bedrock banks surround low flow flats over detritus, muck and silt with floating emergent, aquatic grasses and algae in-stream. No indicators of groundwater are present.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>24.00</td></tr><tr><td>MBW (m)</td><td>24.60</td></tr><tr><td>MWD (m)</td><td>1.50</td></tr><tr><td>MBD (m)</td><td>1.75</td></tr></table>	Fish Habitat?	Direct	MWW (m)	24.00	MBW (m)	24.60	MWD (m)	1.50	MBD (m)	1.75	Low		
Fish Habitat?	Direct																
MWW (m)	24.00																
MBW (m)	24.60																
MWD (m)	1.50																
MBD (m)	1.75																
WB-B-M55-54	June 16th, 2015	Permanent Pond	East of Highway 69	<p>Large pond perched on bedrock. Dead trees indicate this may not have always been a pond. Potential connectivity upstream but unknown. Epilithic periphyton and emergent vegetation provide most cover with some woody debris. No indication of groundwater seepage.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>94.00</td></tr><tr><td>Depth (m)</td><td>1.50</td></tr></table>	Fish Habitat?	Direct	Width (m)	94.00	Depth (m)	1.50	Low						
Fish Habitat?	Direct																
Width (m)	94.00																
Depth (m)	1.50																
WB-B-M56-51	June 16th, 2015	Permanent Wetland	East of Highway 69, flowing perpendicular to highway	<p>Southwest flowing creek through wet meadow with defined channel surrounded by occasional side channels and pools. Low flow during summer may prevent fish migration since only saturated areas are present at the time of investigation. Grasses provide moderate cover over low flow flats with narrow emergent and algae present in stream over detritus, muck, and silt. No evidence of groundwater seepage present.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>1.08</td></tr><tr><td>MBW (m)</td><td>3.92</td></tr><tr><td>MWD (m)</td><td>0.27</td></tr><tr><td>MBD (m)</td><td>0.33</td></tr></table>	Fish Habitat?	Direct	MWW (m)	1.08	MBW (m)	3.92	MWD (m)	0.27	MBD (m)	0.33	Low		
Fish Habitat?	Direct																
MWW (m)	1.08																
MBW (m)	3.92																
MWD (m)	0.27																
MBD (m)	0.33																

Table 3-8: Site Investigation Summaries for Tributaries in the Shebeshekong River – St. Aubyn Bay Watershed













Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M59-41	July 6th, 2015	Permanent Wetland	East of Highway 69, north of Hoover Road	<p>Braided channel in low lying saturated area between forested bedrock with very deep cut active channels. Floating vegetation, detritus, and algae provide cover in-stream, and overhanging grasses provide shade, but there is little canopy cover provided by trees. Substrate is unknown. No groundwater indicators were observed.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>34.00</td></tr><tr><td>Depth (m)</td><td>0.60</td></tr></table>	Fish Habitat?	Direct	Width (m)	34.00	Depth (m)	0.60	Low						
Fish Habitat?	Direct																
Width (m)	34.00																
Depth (m)	0.60																
						Photo 1. View of crossing from west bank. ⬆	Photo 2. View of study area downstream of crossing from west bank. ⬆										
WB-B-M59-32	July 6th, 2015	Permanent Pond	Open water pond bordered by forest east of Highway 69	<p>Heavily vegetated open water pond with shore fen border, vegetated hummocks. Abundant floating vegetation provides cover in addition to detritus over bedrock. No groundwater indicators observed.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>180.00</td></tr><tr><td>Depth (m)</td><td>1.00</td></tr></table>	Fish Habitat?	Direct	Width (m)	180.00	Depth (m)	1.00	Low						
Fish Habitat?	Direct																
Width (m)	180.00																
Depth (m)	1.00																
						Photo 1. View of pond looking east from north bank. ⬆	Photo 2. View of pond looking southwest from crossing on north bank. ⬆										
WB-B-M60-22	July 6th, 2015	Permanent Stream	North of Hoover Road, east of Highway 69, water flows west, parallel to Hoover Road	<p>Slow-moving flats in dammed, vegetated channel is bordered by forest. Substrate consists of detritus, muck, silt, and boulders. Riparian trees provide little shade while floating emergents and sedges provide in-stream cover. There is no indication of groundwater seepage at this site.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>22.30</td></tr><tr><td>MBW (m)</td><td>22.80</td></tr><tr><td>MWD (m)</td><td>0.86</td></tr><tr><td>MBD (m)</td><td>0.96</td></tr></table>	Fish Habitat?	Direct	MWW (m)	22.30	MBW (m)	22.80	MWD (m)	0.86	MBD (m)	0.96	Low		
Fish Habitat?	Direct																
MWW (m)	22.30																
MBW (m)	22.80																
MWD (m)	0.86																
MBD (m)	0.96																
						Photo 1. View of study area looking northwest from crossing. ⬆	Photo 2. View of study area from downstream limit. ⬆										

Table 3-8: Site Investigation Summaries for Tributaries in the Shebeshekong River – St. Aubyn Bay Watershed

Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M61-26	June 22nd, 2015	Permanent Stream	North of Hoover Road, water flows south perpendicular to road	<p>Series of beaver ponds flowing south. Low relief banks gently slope into watercourse without defined banks. Low flow over detritus, muck and silt create flats. Plenty of fallen trees and snags create structure. Low to moderate shade is provided due to dead trees. Pond adjacent to road is drained by a 4 inch PVC pipe. No indicators of groundwater seepage are present.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>31.20</td></tr><tr><td>MBW (m)</td><td>35.30</td></tr><tr><td>MWD (m)</td><td>0.80</td></tr><tr><td>MBD (m)</td><td>1.40</td></tr></table>	Fish Habitat?	Direct	MWW (m)	31.20	MBW (m)	35.30	MWD (m)	0.80	MBD (m)	1.40	Low		
Fish Habitat?	Direct																
MWW (m)	31.20																
MBW (m)	35.30																
MWD (m)	0.80																
MBD (m)	1.40																
						Photo 1. View of downstream from upstream limit on east bank. ⬆	Photo 2. View of upstream from downstream limit on east bank. ⬆										
WB-B-M62-29	June 22nd, 2015	Permanent Stream	South of Hoover Road, water flows southeast perpendicular from road	<p>Southward flowing creek, flows beneath road from swamp, through forest, to open wet meadow. Low flows over muck and silt with high canopy coverage may not be suitable for fish due to low flows (terrestrial vegetation growing in-stream) and thick, gelatinous red-brown algae. Fallen trees create ledges that help to aerate watercourse. No indication of groundwater seepage present.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>1.10</td></tr><tr><td>MBW (m)</td><td>2.70</td></tr><tr><td>MWD (m)</td><td>0.10</td></tr><tr><td>MBD (m)</td><td>0.30</td></tr></table>	Fish Habitat?	Direct	MWW (m)	1.10	MBW (m)	2.70	MWD (m)	0.10	MBD (m)	0.30	Low		
Fish Habitat?	Direct																
MWW (m)	1.10																
MBW (m)	2.70																
MWD (m)	0.10																
MBD (m)	0.30																
						Photo 1. View of upstream from downstream limit. ⬆	Photo 2. View of ledge barrier obstructing fish passage. ⬆										
WB-B-M62-30	June 22nd, 2015	Permanent Stream	South of Hoover Road, water flows southeast perpendicular from road	<p>Small brook crosses road and flows in south west direction. No migration upstream due to beaver dam south of centreline. Channel flows into open floodplain with lots of grasses. Low to moderate flows over gravel, sand, silt and bedrock give way to mixed morphological structure. High cover is present due to overhanging grasses. No indicators of groundwater present.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>0.30</td></tr><tr><td>MBW (m)</td><td>2.50</td></tr><tr><td>MWD (m)</td><td>0.18</td></tr><tr><td>MBD (m)</td><td>0.38</td></tr></table>	Fish Habitat?	Direct	MWW (m)	0.30	MBW (m)	2.50	MWD (m)	0.18	MBD (m)	0.38	Low		
Fish Habitat?	Direct																
MWW (m)	0.30																
MBW (m)	2.50																
MWD (m)	0.18																
MBD (m)	0.38																
						Photo 1. View of downstream from upstream limit. ⬆	Photo 2. View of upstream from downstream limit. ⬆										

3.2.9 *Parry Sound Watershed*

South of the Shebeshekong River-St. Aubyn Bay watershed, the Parry Sound watershed (02EA-14) occurs north of the Otter watershed. The Parry Sound watershed is the second largest drainage in the study area, with a drainage area of 611 km². Ten water crossings occur in the tributaries of the Upper Marsh and Marsh Lakes, which also receive input from Round Lake and Fraud Lake. Marsh Lake then drains into Cranberry Lake, which in turn drains into Spectacle Lake then Simmes Lake before draining into Georgian Bay. Eight water crossings occur in the east tributaries on Nine Mile Lake, which eventually drains into Portage Lake before entering Georgian Bay. Three water crossings occur in the west tributaries of Harris Lake drainage, which subsequently drains into Campbell Lake, then Strathdee Lake, Bell Lake, and Mill Lake before entering Georgian Bay. Two water crossings occur in the tributaries of Bell Lake, while another four water crossings occur in the tributaries of Mill Lake. One water crossing is within a bay of Mill Lake itself. Five water crossings occur in the western tributaries of Haines Lake, which drains into Mill Lake. Altogether, the Parry Sound watershed has 33 water crossings (**Table 3-9**).

Table 3-9: Site Investigation Summaries of Tributaries in the Parry Sound Watershed





Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity								
WB-B-M63-31	June 22nd, 2015	Permanent Wetland	East of Marsh Lake accessed through Hoover Road	<p>Sphagnum bog with no standing water. Not likely to support fish. No connectivity, very few pools. Sphagnum is damp to saturated. May not be adequate even for amphibians. North area may be more wet due to observation of cattails. Groundwater seepage does not appear to occur here.</p> <table><tr><td>Fish Habitat?</td><td>Not habitat</td></tr><tr><td>Width (m)</td><td>60.00</td></tr><tr><td>Depth (m)</td><td>0.00</td></tr></table>	Fish Habitat?	Not habitat	Width (m)	60.00	Depth (m)	0.00	Low		
Fish Habitat?	Not habitat												
Width (m)	60.00												
Depth (m)	0.00												
WB-B-M63-33	June 18th, 2015	Permanent Lake	Channel between Upper Marsh Lake and Marsh Lake	<p>Bedrock , boulders and cobbles slope into channel, with some sand on east bank. Little canopy cover provided by trees. No indication of groundwater present. Channel narrows 200 m to the north of centreline.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>33.0</td></tr><tr><td>Depth (m)</td><td>3.00</td></tr></table>	Fish Habitat?	Direct	Width (m)	33.0	Depth (m)	3.00	Moderate		
Fish Habitat?	Direct												
Width (m)	33.0												
Depth (m)	3.00												
WB-B-M63-34	June 18th, 2015	Permanent Wetland	South of Upper Marsh Lake	<p>Inland marsh, likely connected to Upper Marsh Lake to the north. Dead trees, fallen logs and floating emergents provide cover. Forest provides canopy cover over margins of wetland. Marsh dammed to the south. There are no indicators of groundwater seepage.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>83.00</td></tr><tr><td>Depth (m)</td><td>1.00</td></tr></table>	Fish Habitat?	Direct	Width (m)	83.00	Depth (m)	1.00	Low		
Fish Habitat?	Direct												
Width (m)	83.00												
Depth (m)	1.00												

Table 3-9: Site Investigation Summaries of Tributaries in the Parry Sound Watershed







Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity								
WB-B-M63-35	N/A	Permanent Wetland	Part of same wetland as WB-B-M63-34	N/A	Low	Photographs not available.							
WB-B-M64-36	June 24th, 2015	Permanent Pond	South of Upper Marsh Lake	<div>Pond is not wadeable, estimated depth over 1 m. Standing water with beaver dams, floating mats of shrubs and ferns. Standing snags and fallen logs provide cover in addition to grasses and floating emergents. Substrate unknown. No evidence of groundwater seepage.</div> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>65.00</td></tr><tr><td>Depth (m)</td><td>1.00</td></tr></table>	Fish Habitat?	Direct	Width (m)	65.00	Depth (m)	1.00	Low		
Fish Habitat?	Direct												
Width (m)	65.00												
Depth (m)	1.00												
WB-B-M64-37	June 24th, 2015	Permanent Wetland	South of Upper Marsh Lake	<div>Wetland in between forested area and bedrock. Mountain Holly thicket with very saturated soils. Water flows north through thicket from small stream ~50m south of centerline. Bedrock cliffs on east side of wetland. Shrubs provide lots of cover. Groundwater may be present due to reddish hue to water.</div> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>40.00</td></tr><tr><td>Depth (m)</td><td>0.30</td></tr></table>	Fish Habitat?	Direct	Width (m)	40.00	Depth (m)	0.30	Low		
Fish Habitat?	Direct												
Width (m)	40.00												
Depth (m)	0.30												
WB-B-M64-42	June 24th, 2015	Permanent Pond	Beaver pond / dammed watercourse south of Upper Marsh Lake	<div>Standing water with abundant grassy hummocks and snags has no canopy cover but emergent sedges and grasses provide shade. Substrate was not noted. No indication of groundwater. Fish observed.</div> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>65.00</td></tr><tr><td>Depth (m)</td><td>1.--</td></tr></table>	Fish Habitat?	Direct	Width (m)	65.00	Depth (m)	1.--	Low		
Fish Habitat?	Direct												
Width (m)	65.00												
Depth (m)	1.--												

Table 3-9: Site Investigation Summaries of Tributaries in the Parry Sound Watershed






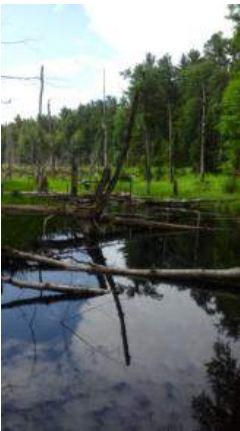
Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M65-47	June 24th, 2015	Permanent Stream	Flowing north to Wolf lake, northwest of Nine Mile Lake.	<p>Wetland upstream (south) of study area flows into deep channel between two bedrock outcrops that is dammed downstream by beavers (within study area). Predominantly flats, this watercourse has moderate flows with very dark colour. There is no aquatic vegetation species present and little canopy cover. The substrate consists of sand and silt upstream of beaver dam. There is no indication of groundwater seepage present.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>14.20</td></tr><tr><td>MBW (m)</td><td>17.30</td></tr><tr><td>MWD (m)</td><td>0.90</td></tr><tr><td>MBD (m)</td><td>2.00</td></tr></table>	Fish Habitat?	Direct	MWW (m)	14.20	MBW (m)	17.30	MWD (m)	0.90	MBD (m)	2.00	Low		
Fish Habitat?	Direct																
MWW (m)	14.20																
MBW (m)	17.30																
MWD (m)	0.90																
MBD (m)	2.00																
WB-B-M65-49	June 24th, 2015	Permanent Wetland	South of lake to east of Upper Marsh Lake	<p>Large wet meadow with saturated Sphagnum and sedges. No trees nearby provide shade. No standing water as pools or channels. Area is damp in low lying depression surrounded by bedrock. No groundwater indicators present</p> <table><tr><td>Fish Habitat?</td><td>Not habitat</td></tr><tr><td>Width (m)</td><td>82.00</td></tr><tr><td>Depth (m)</td><td>0.00</td></tr></table>	Fish Habitat?	Not habitat	Width (m)	82.00	Depth (m)	0.00	Low						
Fish Habitat?	Not habitat																
Width (m)	82.00																
Depth (m)	0.00																
WB-B-M66-52	June 24th, 2015	Permanent Stream	North of Nine Mile Lake to west of Hydro One Corridor, flowing north to Wolf Lake	<p>Series of beaver dams (4) cause pooling of water and lots of fallen logs provide cover. Low relief slopes and vegetation stabilize banks. Low to stagnant flows in pools and flats have submergent and emergent vegetation over silt, sand and detritus. Moderate cover is provided by mature trees on both banks. There is no indication of groundwater.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>11.20</td></tr><tr><td>MBW (m)</td><td>17.00</td></tr><tr><td>MWD (m)</td><td>0.55</td></tr><tr><td>MBD (m)</td><td>1.50</td></tr></table>	Fish Habitat?	Direct	MWW (m)	11.20	MBW (m)	17.00	MWD (m)	0.55	MBD (m)	1.50	Low		
Fish Habitat?	Direct																
MWW (m)	11.20																
MBW (m)	17.00																
MWD (m)	0.55																
MBD (m)	1.50																



Table 3-9: Site Investigation Summaries of Tributaries in the Parry Sound Watershed

Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M67-24	June 25th, 2015	Permanent Stream	East of Nine Mile Lake near Hydro One corridor, flowing south, parallel to hydro corridor	<p>Creek connecting two long north-south flowing lakes that has been dammed by beaver activity. There is some signs of erosion downstream of beaver dam in soft soils. Upstream substrate consists of silt, detritus and bedrock, while downstream has sand, silt and gravel. Downstream of beaver dam, some channels dry and reappear further downstream. There are floating emergent and algae present in-stream. Trees provide moderate canopy cover. Low flow may inhibit fish migration, especially at steep portion of creek downstream of beaver pond. There is no indication of groundwater seepage.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>13.10</td></tr><tr><td>MBW (m)</td><td>16.50</td></tr><tr><td>MWD (m)</td><td>0.73</td></tr><tr><td>MBD (m)</td><td>1.20</td></tr></table>	Fish Habitat?	Direct	MWW (m)	13.10	MBW (m)	16.50	MWD (m)	0.73	MBD (m)	1.20	Low	Photographs not available.	
Fish Habitat?	Direct																
MWW (m)	13.10																
MBW (m)	16.50																
MWD (m)	0.73																
MBD (m)	1.20																
WB-B-M68-21	June 25th, 2015	Permanent Stream	East of Nine Mile Lake, flowing west perpendicular to hydro corridor	<p>Stream courses through low-lying grass and sedge meadow. Flats over muck and silt have floating and narrow emergent as well as submergent aquatic vegetation with little to no canopy cover. There is no indication of groundwater seepage.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>1.70</td></tr><tr><td>MBW (m)</td><td>157.60</td></tr><tr><td>MWD (m)</td><td>0.36</td></tr><tr><td>MBD (m)</td><td>0.62</td></tr></table>	Fish Habitat?	Direct	MWW (m)	1.70	MBW (m)	157.60	MWD (m)	0.36	MBD (m)	0.62	Low	Photographs not available.	
Fish Habitat?	Direct																
MWW (m)	1.70																
MBW (m)	157.60																
MWD (m)	0.36																
MBD (m)	0.62																
WB-B-M69-19	June 25th, 2015	Permanent Stream	East of Nine Mile Lake, flowing west perpendicular to hydro corridor	<p>Small creek flowing southeast with no tree cover. Banks are stable with moss and rooted vegetation and plenty of cover provided by grasses. Dominated by flats, low flows over sand, gravel, and bedrock have submergent grasses and floating emergents. No groundwater indicators are present.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>0.63</td></tr><tr><td>MBW (m)</td><td>3.30</td></tr><tr><td>MWD (m)</td><td>0.17</td></tr><tr><td>MBD (m)</td><td>0.50</td></tr></table>	Fish Habitat?	Direct	MWW (m)	0.63	MBW (m)	3.30	MWD (m)	0.17	MBD (m)	0.50	Low	Photographs not available.	
Fish Habitat?	Direct																
MWW (m)	0.63																
MBW (m)	3.30																
MWD (m)	0.17																
MBD (m)	0.50																
WB-B-M69-20	June 25th, 2015	Permanent Stream	East of Nine Mile Lake, flowing west perpendicular to corridor	<p>Beaver dammed creek moves through bedrock outcrops as flat over muck, silt, and detritus with plenty of aquatic vegetation and canopy coverage. No indicators of groundwater are present.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>15.30</td></tr><tr><td>MBW (m)</td><td>22.70</td></tr><tr><td>MWD (m)</td><td>0.30</td></tr><tr><td>MBD (m)</td><td>0.67</td></tr></table>	Fish Habitat?	Direct	MWW (m)	15.30	MBW (m)	22.70	MWD (m)	0.30	MBD (m)	0.67	Low	Photographs not available.	
Fish Habitat?	Direct																
MWW (m)	15.30																
MBW (m)	22.70																
MWD (m)	0.30																
MBD (m)	0.67																
WB-B-M70-16	June 25th, 2015	Permanent Pond	East of Nine Mile Lake	<p>Large open beaver pond with some white water lilies and water shield and a few standing snags. Substrate is unknown. No indicators of groundwater seepage are present.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>75.00</td></tr><tr><td>Depth (m)</td><td>1.50</td></tr></table>	Fish Habitat?	Direct	Width (m)	75.00	Depth (m)	1.50	Low	Photographs not available.					
Fish Habitat?	Direct																
Width (m)	75.00																
Depth (m)	1.50																

Table 3-9: Site Investigation Summaries of Tributaries in the Parry Sound Watershed





Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M70-17	June 25th, 2015	Permanent Stream	East of Nine Mile Lake along hydro corridor, flowing south parallel to hydro corridor	<p>Marsh wetland with poorly defined channel and standing water surrounded by forest. Marsh floodplain narrows upstream. Banks are heavily vegetated. Occasional pools of stagnant water are found throughout marsh. Upstream of centreline is drier. Watercourse substrate consists of detritus and muck and morphological structure is completely flats. Plenty of wetland vegetation and some floating emergents are present. Low to moderate cover is provided by overhanging grasses. There is no indication of groundwater seepage present.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>10.50</td></tr><tr><td>MBW (m)</td><td>11.50</td></tr><tr><td>MWD (m)</td><td>0.36</td></tr><tr><td>MBD (m)</td><td>0.45</td></tr></table>	Fish Habitat?	Direct	MWW (m)	10.50	MBW (m)	11.50	MWD (m)	0.36	MBD (m)	0.45	Low	Photographs not available.	
Fish Habitat?	Direct																
MWW (m)	10.50																
MBW (m)	11.50																
MWD (m)	0.36																
MBD (m)	0.45																
WB-B-M70-17-3	June 29th, 2015	Intermittent Stream	Adjacent to hydro corridor, bordered by forested bedrock	<p>Dammed intermittent watercourse drains pond from the west. Stagnant ponded water above beaver dam with connectivity to pond upstream. Downstream of dam stagnant pockets of water in dry, intermittent, poorly-defined channel seeps from dam and connects to saturated marsh. This watercourse likely flows in high water conditions. Substrate consists of detritus and silt over bedrock. Abundant aquatic vegetation includes floating emergents and submergents. Conifer overstory provides most of shade. No groundwater indicators are present.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>3.50</td></tr><tr><td>MBW (m)</td><td>5.80</td></tr><tr><td>MWD (m)</td><td>0.25</td></tr><tr><td>MBD (m)</td><td>0.53</td></tr></table>	Fish Habitat?	Direct	MWW (m)	3.50	MBW (m)	5.80	MWD (m)	0.25	MBD (m)	0.53	Low	 <p>Photo 1. General view of watercourse facing upstream (southwest) from crossing. ⬆</p>	 <p>Photo 2. General view of dry channel downstream of crossing, facing southeast. ⬆</p>
Fish Habitat?	Direct																
MWW (m)	3.50																
MBW (m)	5.80																
MWD (m)	0.25																
MBD (m)	0.53																
WB-B-M70-18	June 29th, 2015	Permanent Pond	East of hydro corridor, east of Nine Mile Lake	<p>Long lake, bordered by forested bedrock, has abundant floating vegetation and woody debris. Water is too deep to determine substrate. There is no indication of groundwater seepage.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>42.00</td></tr><tr><td>Depth (m)</td><td>2.00</td></tr></table>	Fish Habitat?	Direct	Width (m)	42.00	Depth (m)	2.00	Low	 <p>Photo 1. View of western limit of study area, facing north on south bank. ⬆</p>	 <p>Photo 2. View of study area from south bank at crossing looking east. ⬆</p>				
Fish Habitat?	Direct																
Width (m)	42.00																
Depth (m)	2.00																

Table 3-9: Site Investigation Summaries of Tributaries in the Parry Sound Watershed



Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M70-18-2	June 29th, 2015	Permanent Stream	East of Nine Mile Lake, adjacent to hydro corridor	<p>Short watercourse with stagnant water connects two beaver ponds. Downstream substrate consists of sand, gravel and detritus while upstream consists of detritus and muck over bedrock. Trees provide little canopy coverage while some floating and narrow emergents are present in-stream. There is no indication of groundwater seepage. Fish was observed at this location</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>12.50</td></tr><tr><td>MBW (m)</td><td>16.00</td></tr><tr><td>MWD (m)</td><td>1.00</td></tr><tr><td>MBD (m)</td><td>1.40</td></tr></table>	Fish Habitat?	Direct	MWW (m)	12.50	MBW (m)	16.00	MWD (m)	1.00	MBD (m)	1.40	Low	 <p>Photo 1. View of watercourse and beaver dam upstream from crossing. ⬆</p>	 <p>Photo 2. View of watercourse downstream from crossing. ⬆</p>
Fish Habitat?	Direct																
MWW (m)	12.50																
MBW (m)	16.00																
MWD (m)	1.00																
MBD (m)	1.40																
WB-B-M71-14	June 25th, 2015	Permanent Wetland	North of Kirkham Road	<p>Very large pond east of hydro corridor, forest on north and south banks stretching east. Dead snags and small stumps in pond. White water lilies dominating pond surface. Tall grasses and three-way sedge surrounding wetland, creating riparian zone. Centreline crossing small portion of wetland. Marshy area to the west of study location, under hydro corridor. Substrate dominated by detritus. No indicators of groundwater seepage.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>60.00</td></tr><tr><td>Depth (m)</td><td>1.00</td></tr></table>	Fish Habitat?	Direct	Width (m)	60.00	Depth (m)	1.00	Low	No photographs available.					
Fish Habitat?	Direct																
Width (m)	60.00																
Depth (m)	1.00																
WB-B-M71-15	June 25th, 2015	Permanent Wetland	East of Nine Mile Lake along hydro corridor	<p>Marsh wetland with no open water other than stagnant pocket in southern portion. Mainly saturated sphagnum with sedges, grasses and other water tolerant vegetation. Marsh separated by bedrock island, old beaver dam in southern portion. Pocket of open water in south portion only is potential low sensitivity fish habitat. No indication of groundwater seepage.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>47.00</td></tr><tr><td>Depth (m)</td><td>0.50</td></tr></table>	Fish Habitat?	Direct	Width (m)	47.00	Depth (m)	0.50	Low	No photographs available.					
Fish Habitat?	Direct																
Width (m)	47.00																
Depth (m)	0.50																

Table 3-9: Site Investigation Summaries of Tributaries in the Parry Sound Watershed







Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M72-13	June 22nd, 2015	Permanent Stream	South of Long Lake Estates Road and Highway 124	<p>Fast flowing rapids with riffle/run/pool sequences over coarse substrate. Aerated, clean coarse substrates (cobble gravel boulder) at base of riffle 50 m downstream of crossing is suitable spawning habitat for walleye, or maybe white sucker. Overhanging trees provide high coverage. High velocity and slope may impede passage for fish with low burst speed. There is no indication of groundwater seepage present.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>11.00</td></tr><tr><td>MBW (m)</td><td>13.00</td></tr><tr><td>MWD (m)</td><td>0.40</td></tr><tr><td>MBD (m)</td><td>0.60</td></tr></table>	Fish Habitat?	Direct	MWW (m)	11.00	MBW (m)	13.00	MWD (m)	0.40	MBD (m)	0.60	Moderate		
Fish Habitat?	Direct																
MWW (m)	11.00																
MBW (m)	13.00																
MWD (m)	0.40																
MBD (m)	0.60																
						Photo 1. View of upstream from crossing. ⬆	Photo 2. View of downstream from crossing. ⬆										
WB-B-M73-11	June 22nd, 2015	Permanent Pond	East of hydro corridor south of Pinewood Drive, east of Bell Lake	<p>Large oval pond stretching east to west. Proposed transmission line cuts approx. 30 m north northwest to south southeast across pond. Some fallen logs in water, providing shade for aquatic species. Very old stumps. Dammed to the west. Standing snags, fallen logs and aquatic vegetation provide cover. Detritus assumed to be substrate. No groundwater indicators are present.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>30.00</td></tr><tr><td>Depth (m)</td><td>1.50</td></tr></table>	Fish Habitat?	Direct	Width (m)	30.00	Depth (m)	1.50	Low						
Fish Habitat?	Direct																
Width (m)	30.00																
Depth (m)	1.50																
						Photo 1. View of eastern limit of survey, facing west toward crossing. ⬆	Photo 2. View of western limit of survey, facing east toward crossing. ⬆										
WB-B-M73-12	June 22nd, 2015	Permanent Wetland	East of hydro corridor, south of Long Lake Estates Road.	<p>Pond bordered by scrub land with occasional saturated areas with cattail. Lots of fragrant white water lilies, pickerel weed, meadowsweet, sweet gale, cattails, blueberries and marsh cinque-foil. Wetland bordered by upland forest. DO is low but cyprinids were observed. No indication of groundwater is present.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>45.00</td></tr><tr><td>Depth (m)</td><td>1.00</td></tr></table>	Fish Habitat?	Direct	Width (m)	45.00	Depth (m)	1.00	Low						
Fish Habitat?	Direct																
Width (m)	45.00																
Depth (m)	1.00																
						Photo 1. View of northwest wetland at crossing. ⬆	Photo 2. View of southeast wetland at crossing. ⬆										

Table 3-9: Site Investigation Summaries of Tributaries in the Parry Sound Watershed







Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M74-10	July 8th, 2015	Permanent Stream	Mountain chute, east of Mountain Basin, east of Highway 124, flowing west	<p>Fast flowing rapids through steep bedrock channel flowing east to west with bedrock outcrop that is closed upstream (east) but open downstream (west). This divides rapids from warm pool that likely receives input during high flows and precipitation events. Suitable walleye spawning and nursery habitat; clean coarse substrate below rapids and outcrop of bedrock near centreline provides a sheltered embayment to north with clean coarse substrate that is suitable nursery habitat in warm shallow waters protected from rapids. Substrate consists of cobble and boulder atop bedrock. Due to high flows only epilithic periphyton is present. Little canopy coverage is provided by trees. No groundwater indicators present at this location.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>18.00</td></tr><tr><td>MBW (m)</td><td>18.24</td></tr><tr><td>MWD (m)</td><td>1.13</td></tr><tr><td>MBD (m)</td><td>1.48</td></tr></table>	Fish Habitat?	Direct	MWW (m)	18.00	MBW (m)	18.24	MWD (m)	1.13	MBD (m)	1.48	High		
Fish Habitat?	Direct																
MWW (m)	18.00																
MBW (m)	18.24																
MWD (m)	1.13																
MBD (m)	1.48																
WB-B-M75-9	July 8th, 2015	Permanent Pond	Adjacent to hydro corridor, east of Burnside Bridge Road.	<p>Open, standing water beaver pond bordered by rocky, forested shoreline and steep rocky ridge. Small channel from beaver dam flowing east to Avis Lake. Very steep rock slope down to pond. Suitable spawning habitat for northern pike at north and south shorelines of pond where channel occurs through marsh. Floating and emergent vegetation present but substrate is unknown. No indication of groundwater seepage.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>230.00</td></tr><tr><td>Depth (m)</td><td>2.00</td></tr></table>	Fish Habitat?	Direct	Width (m)	230.00	Depth (m)	2.00	Moderate						
Fish Habitat?	Direct																
Width (m)	230.00																
Depth (m)	2.00																
WB-B-M76-8	July 8th, 2015	Permanent Pond	East bay of Mill Lake along hydro corridor	<p>Small sheltered bays within bay of Mill Lake has fine substrate and gradual slopes or bedrock/boulder shoreline with steep drop offs. Northern pike observed, bass (potentially smallmouth) nest in suitable bass spawning habitat on north shoreline at centreline. Coarse gravel/cobble substrate on quiet shoreline with few boulder/stumps/logs for cover) along north shoreline at centreline. Some submergent grasses floating emergents, and shoregrass present. Steep bedrock cliffs to north and south provide some shade. There is no indication of groundwater seepage.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>193.00</td></tr><tr><td>Depth (m)</td><td>3.00</td></tr></table>	Fish Habitat?	Direct	Width (m)	193.00	Depth (m)	3.00	Moderate						
Fish Habitat?	Direct																
Width (m)	193.00																
Depth (m)	3.00																

Table 3-9: Site Investigation Summaries of Tributaries in the Parry Sound Watershed





Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M77-7	June 23rd, 2015	Permanent Stream	North of McDougall Road between Mill Lake and Haines Lake, flowing west from Mill Lake to Haines Lake	<p>River flows in northwesterly direction, dammed upstream outside of study area by large man-made water control dam. Channel is confined by steep cliffs to east and man-made gravel trail to west. Watercourse is characterized as moderate flow run over silt, sand, muck and cobble, with abundant emergent and submergent aquatic vegetation. Since watercourse is so wide little cover is provided by trees and vegetation on banks. Indicators of groundwater seepage were absent at this site.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>46.70</td></tr><tr><td>MBW (m)</td><td>47.70</td></tr><tr><td>MWD (m)</td><td>1.00</td></tr><tr><td>MBD (m)</td><td>1.20</td></tr></table>	Fish Habitat?	Direct	MWW (m)	46.70	MBW (m)	47.70	MWD (m)	1.00	MBD (m)	1.20	Moderate		
Fish Habitat?	Direct																
MWW (m)	46.70																
MBW (m)	47.70																
MWD (m)	1.00																
MBD (m)	1.20																
						Photo 1. View of upstream from crossing. ⬆	Photo 2. View of downstream from crossing. ⬆										
WB-B-M78-5	June 23rd, 2015	Permanent Wetland	South of McDougall Road along hydro corridor	<p>Low-lying area between bedrock outcrops along hydro corridor likely catches all overland flow. This has made this area a wet meadow with no open water dominated by wetland vegetation. Some damp pockets but no evidence of channels. No indication of groundwater present.</p> <table><tr><td>Fish Habitat?</td><td>Not habitat</td></tr><tr><td>Width (m)</td><td>160.00</td></tr><tr><td>Depth (m)</td><td>0.00</td></tr></table>	Fish Habitat?	Not habitat	Width (m)	160.00	Depth (m)	0.00	Low						
Fish Habitat?	Not habitat																
Width (m)	160.00																
Depth (m)	0.00																
						Photo 1. View of wet meadow from the east. ⬆											
WB-B-M78-6	June 23rd, 2015	Intermittent Wetland	East of hydro corridor, south of McDougall Road	<p>Low-lying forest floor collects overland flow. Mostly damp with intermittent pools. Creek to the northeast but not in study area. No groundwater indicators present.</p> <table><tr><td>Fish Habitat?</td><td>Not habitat</td></tr><tr><td>Width (m)</td><td>110.00</td></tr><tr><td>Depth (m)</td><td>0.05</td></tr></table>	Fish Habitat?	Not habitat	Width (m)	110.00	Depth (m)	0.05	Low						
Fish Habitat?	Not habitat																
Width (m)	110.00																
Depth (m)	0.05																
						Photo 1. View of swamp from west bank. ⬆											

Table 3-9: Site Investigation Summaries of Tributaries in the Parry Sound Watershed








Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M79-4	June 23rd, 2015	Permanent Stream	North of Highway 518 along hydro corridor	<p>Stream morphology changes east and west of centreline. To the west of centreline, watercourse meanders through grassy meadow under hydro corridor. Sand and gravel substrate and overhanging grasses dominate watercourse. To the east of the centreline, watercourse flows through forested area with boulders, cobbles, sand and gravel. Trees dominate canopy, giving lots of shade to stream. Natural riffles and pools created by boulders in watercourse. There is no indication of groundwater seepage present.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>MWW (m)</td><td>2.40</td></tr><tr><td>MBW (m)</td><td>2.54</td></tr><tr><td>MWD (m)</td><td>0.12</td></tr><tr><td>MBD (m)</td><td>0.24</td></tr></table>	Fish Habitat?	Direct	MWW (m)	2.40	MBW (m)	2.54	MWD (m)	0.12	MBD (m)	0.24	Low		
Fish Habitat?	Direct																
MWW (m)	2.40																
MBW (m)	2.54																
MWD (m)	0.12																
MBD (m)	0.24																
<p>Photo 1. View of upstream of crossing. ⬆</p> <p>Photo 2. View of downstream of crossing. ⬆</p>																	
WB-B-M80-2	June 23rd, 2015	Seasonal Wetland	North of Highway 518 and east of hydro corridor	<p>Low-lying area with moist soils and water-tolerant terrestrial vegetation. No open water or evidence of channel or flow. Seasonal drainage, not likely to support fish. No evidence of groundwater present.</p> <table><tr><td>Fish Habitat?</td><td>Not habitat</td></tr><tr><td>Width (m)</td><td>10.00</td></tr><tr><td>Depth (m)</td><td>0.00</td></tr></table>	Fish Habitat?	Not habitat	Width (m)	10.00	Depth (m)	0.00	Low						
Fish Habitat?	Not habitat																
Width (m)	10.00																
Depth (m)	0.00																
<p>Photo 1. View of study area west from crossing. ⬆</p> <p>Photo 2. View of study area east from crossing. Fence is private property delineation. ⬆</p>																	
WB-B-M80-2-2	June 23rd, 2015	Permanent Wetland	North of Highway 518 along hydro corridor	<p>Large wetland on private property, lots of aquatic vegetation provides cover along with some standing snags. Substrate unknown but likely to be dominated by detritus. No indication of groundwater seepage.</p> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>80.00</td></tr><tr><td>Depth (m)</td><td>1.00</td></tr></table>	Fish Habitat?	Direct	Width (m)	80.00	Depth (m)	1.00	Low						
Fish Habitat?	Direct																
Width (m)	80.00																
Depth (m)	1.00																
<p>Photo 1. View of study area from western limit facing east. ⬆</p>																	



Table 3-9: Site Investigation Summaries of Tributaries in the Parry Sound Watershed

Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity												
WB-B-M80-3	June 23rd, 2015	Intermittent Stream	North of Highway 518 along hydro corridor	<p>In hydro corridor, watercourse is surface drained with saturated soils down slope. In private, wooded property channel becomes more defined but still no flow at this time. Not direct fish habitat, no connectivity upstream. Surface runoff seasonal drainage only. No indicators of groundwater seepage were observed.</p> <table><tr><td>Fish Habitat?</td><td>Indirect</td></tr><tr><td>MWW (m)</td><td>0.10</td></tr><tr><td>MBW (m)</td><td>0.50</td></tr><tr><td>MWD (m)</td><td>0.02</td></tr><tr><td>MBD (m)</td><td>0.18</td></tr></table>	Fish Habitat?	Indirect	MWW (m)	0.10	MBW (m)	0.50	MWD (m)	0.02	MBD (m)	0.18	Low		
Fish Habitat?	Indirect																
MWW (m)	0.10																
MBW (m)	0.50																
MWD (m)	0.02																
MBD (m)	0.18																
						<p>Photo 1. View from west of property line, looking east along channel ↗</p>	<p>Photo 2. View of moist overland drainage within hydro corridor facing northeast ↗</p>										

3.2.10 Otter Lake Watershed

The southern limit of the study area occurs in Otter Lake watershed (02EA-15), south of the Parry Sound watershed. The single water crossing in this watershed occurs at a lake that drains into Oastler Lake, which drains west into Georgian Bay (**Table 3-10**).

Table 3-10: Site Investigation Summaries of Tributaries in the Otter Creek Watershed

Feature ID	Investigation Date	Type of Waterbody	Description of Site	Feature Description	Feature Sensitivity								
WB-B-M81-1	June 23rd, 2015	Permanent Pond	South of Highway 518 along hydro corridor	<div>Pond long in east to west direction. Some floating emergent, standing snags, fallen logs, and hummocks with grass growth, beaver dam at western limit of study area. Substrate unknown but likely to be dominated by detritus. There is no indication of groundwater seepage.</div> <table><tr><td>Fish Habitat?</td><td>Direct</td></tr><tr><td>Width (m)</td><td>30.00</td></tr><tr><td>Depth (m)</td><td>1.00</td></tr></table>	Fish Habitat?	Direct	Width (m)	30.00	Depth (m)	1.00	Low		
Fish Habitat?	Direct												
Width (m)	30.00												
Depth (m)	1.00												
						<p>Photo 1. View of study area facing east from western limit. ↑</p>	<p>Photo 2. View of study area facing west from eastern limit. ↑</p>						

3.3 Fish and Fish Habitat

Major aquatic systems in the Route B Transmission Line study area include the Magnetawan, Key, Still and Little Still Rivers and all support sport fish and bait fish communities typical of central / northern Ontario. The area is used widely for recreational sportfish anglers as well as by local communities including Magnetawan First Nation, Shawanaga First Nation, and Henvey Inlet First Nations members. Areas identified by community members as used for fishing include Two-Foot Rapids, Byng Inlet, and Miner's Lake. The Georgian Bay coastline was also identified to be of importance to community members, mainly in sheltered areas with weed-beds suitable for Bass, Walleye and Northern Pike (Neegan Burnside Limited, 2011), previous studies completed on watercourses within the Route B Transmission Line study area were listed as references at the beginning of **Section 2.1**. A summary of fish species caught in study area waterbodies during previous studies overlapping the Route B Transmission Line alignment are presented in **Table 3-11** below.

Table 3-11: Fish Species Caught within Route B Transmission Line Study Area During Previous Studies

Common Name	Scientific Name	Magnetawan River	Key River Wetland	Still River	Still River Tributaries	Little Still River	Little Still River Tributaries	Sources
Finescale Dace	<i>Phoxinus neogaeus</i>		X					Tulloch Environmental, 2013; FRi, 2013a.
Northern Redbelly Dace	<i>Chrosomus eos</i>		X	X	X			Tulloch Environmental, 2013; Warme, 2014; FRi, 2013a.
Fathead Minnow	<i>Pimephales promelas</i>							Tulloch Environmental, 2013
Central Mudminnow	<i>Umbra limi</i>			X	X			Tulloch Environmental, 2013; Warme, 2014
Pumpkinseed	<i>Lepomis gibbosus</i>	X				X		Tulloch Environmental, 2013; MNRF Species Records
Brown Bullhead	<i>Ameiurus nebulosus</i>	X				X		Tulloch Environmental, 2013; MNRF Species Records
Smallmouth Bass	<i>Micropterus dolomieu</i>	X						Warme, 2014
Largemouth Bass	<i>Micropterus salmoides</i>	X						Warme, 2014
Walleye	<i>Sander vitreus</i>	X						Warme, 2014
Northern Pike	<i>Esox lucius</i>	X						Warme, 2014
Lake Sturgeon	<i>Acipenser fulvescens</i>	X						Warme, 2014
Logperch	<i>Percina caprodes</i>	X						Warme, 2014
Pearl Dace	<i>Margariscus margarita</i>	X						Warme, 2014
Iowa Darter	<i>Etheostoma exile</i>	X						Warme, 2014
White Sucker	<i>Catostomus commersoni</i>	X				X		Warme, 2014
Redhorse Sucker	<i>Moxostoma macrolepidotum</i>	X						Warme, 2014
Brassy Minnow	<i>Hybognathus hakinsoni</i>		X					FRi, 2014
Brook Stickleback	<i>Culaea inconstans</i>		X	X	X			FRi, 2014
Yellow Perch	<i>Perca flavescens</i>	X						Warme, 2014
Rock Bass	<i>Ambloplites rupestris</i>	X						Warme, 2014
Creek Chub	<i>Semotilus atromaculatus</i>			X	X	X		Warme, 2014
Common Shiner	<i>Luxilus cornutus</i>					X		Warme, 2014

3.3.1.1 Rare Aquatic Species

Rare species include species with designations by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), species listed as SAR in Ontario by the Committee on the Status of Species at Risk in Ontario (COSSARO), as well as Provincially Ranked S1 to S3 species. The Make-a-map: Natural Heritage Areas Application (MNR, 2015a) was used to search for NHIC rare species records within any of the 1 km UTM squares that intersected the Route B study area. As shown in **Table 3-12** below, the search resulted in a total of two (2) provincially rare species including one (1) protected species designated as Threatened (Lake Sturgeon (*Acipenser fulvescens*)). .

Table 3-12: Rare Species Records within the Vicinity of the Route B Study Area

Taxon	Common Name	Scientific Name	S-Rank1	ESA Status	COSEWIC Status	Year Last Observed
Fish	Lake Sturgeon (Great Lakes - Upper St. Lawrence River population)	<i>Acipenser fulvescens</i>	S2	THR	THR	1990s
Fish	Deepwater Sculpin §	<i>Myoxocephalus thompsoni</i>	S3	NAR	SC	1976-04-20
Fish	Northern Brook Lamprey	<i>Ichthyomyzon fossor</i>	S3	SC	SC	SC
Fish	Silver Lamprey (Great Lakes – Upper St. Lawrence population)	<i>Ichthyomyzon unicuspis</i>	S3	SC	SC	No Schedule

Notes: For all notes pertaining to this table please see the end of Section 4.3.2.1
Species marked with “§” are considered historical records

The search also resulted in two species designated as Special Concern which have been documented within the transmission line study area and have the potential to occur where suitable habitat is present. The University of Guelph *FishMAP* online tool, MNR SAR range mapping and COSEWIC status reports indicate the presence of Northern Brook Lamprey (*Ichthyomyzon fossor*) and Silver Lamprey (*Ichthyomyzon unicuspis*) in the Henvey Inlet watershed, particularly in the French River which, like Henvey Inlet, flows westerly into Georgian Bay on the eastern coastline. Both species are currently designated as Special Concern under the ESA. Species designated as Special Concern under the ESA do not receive additional habitat protection under this Act.

3.3.1.1.1 Federal

The Deepwater sculpin is a designated at-risk fish species in Canada and is listed as a species of Special Concern under Canada’s SARA. This species has historical records in the Route B Transmission Line study area; however, it is not expected to be currently present (COSEWIC, 2000). The record for Deepwater Sculpin is historical (more than 30 years old) and is not considered conclusive evidence of the species’ continued presence within the Route B study area.

The Deepwater Sculpin is a bottom-dwelling fish that is found in cold (<7°C), well-oxygenated, deep lakes. In the Great Lakes, adults usually live between 60 and 150 m in depth. Its distribution ranges from the Great Bear Lake of Canada to the Great Lakes. It is a designated at-risk fish species in Canada, listed as a species of Special Concern under SARA (COSEWIC, 2000).

Waterbodies in the Route B Transmission Line study area do not exceed 40 m in depth, and are therefore not deep enough to provide habitat for the Deepwater Sculpin.

3.3.1.1.2 Provincial

Lake Sturgeon (Great Lakes - Upper St. Lawrence River population) is listed as a threatened species under the Ontario *ESA*, 2007.

Lake Sturgeon inhabits large rivers and lakes, inland deltas and the mouths of large rivers; however detailed habitat information for this species is limited (COSEWIC, 2000). Adults of this species are known to forage for invertebrates in aquatic habitats with depths of 5 to 10 m with substrates of mud, clay, sand or gravel (COSEWIC, 2000). Spawning habitats are fast-flowing waters that contain a fine to medium sized gravel and boulders with spawning sites often located below waterfalls, rapids, or dams (COSEWIC, 2000). Young-of-the-year are typically associated with shallower waterbodies with sand bars, fine gravel or cobble substrates (COSEWIC, 2000).

The study area is well within the range of Lake Sturgeon, which stretches from western Alberta to the St. Lawrence drainage of Quebec, and from southern Hudson Bay to the lower Mississippi. Identified Lake Sturgeon waters within the study area include the Key River, Magnetawan River, Giroux River, and Naiscoot River (Kerr 2011). Although extant populations are at these locations (Kerr 2002, DFO 2008), the staging areas, spawning areas, nursery habitat, feeding areas, and overwintering areas for Lake Sturgeon at these sites are currently unknown (Kerr 2011). Lake Sturgeon in the Seguin River of Parry Sound is believed to be extirpated (Pratt 2008), while population status at Shawanaga River and Shebeshekong River are unknown (Kerr 2011).

Recorded captures of Lake Sturgeon include:

- In a spring Walleye trap netting program in late 1990s in the mouth of the Magnetawan River (Kerr 2011);
- Anecdotal information of Lake Sturgeon presence in the Naiscoot River from local Conservation Officers (Kerr 2011);
- Lake Sturgeon observed by MNR staff circa 1994 in Seguin River (Kerr 2011); and
- Lake Sturgeon caught in Wiwassasegen Lake, part of Round Lake Provincial Nature Reserve (ROM, 2015)

Much of the Route B study area has not been studied for Lake Sturgeon presence, and waterbodies not identified should not be assumed to be void of Lake Sturgeon.

Notes for Table 3-12

¹S-rank:

The Natural Heritage provincial ranking system (provincial S-rank) is used by the MNRF NHIC to set protection priorities for rare species and natural communities. Definitions are as follows:

- S1.....Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.
- S2.....Very rare in Ontario; usually between five (5) and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.
- S3.....Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances. Most species with an S3 rank are assigned to the watch list, unless they have a relatively high global rank.
- S4.....Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.
- S5.....Very common and demonstrably secure in Ontario.
- SH.....Possibly Extirpated (Historical). Species or community occurred historically in the nation or state/province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.
- S#S#.....A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.
- S#.....Rank uncertain.

² ESA Status:

The ESA 2007 (ESA) protects species listed as Threatened and Endangered on the Species at Risk in Ontario (SARO) List on provincial and private land. The Minister lists species on the SARO list based on recommendations from the COSSARO, which evaluates the conservation status of species occurring in Ontario. The following are the categories of at risk:

- END** (Endangered)A species facing imminent extinction or extirpation in Ontario.
- THR** (Threatened)Any native species that, on the basis of the best available scientific evidence, is at risk of becoming endangered throughout all or a significant portion of its Ontario range if the limiting factors are not reversed.

SC (Special Concern) A species that may become threatened or endangered due to a combination of biological characteristics and identified threats.

NAR (Not at Risk) A species that has been evaluated and found to be not at risk.

³COSEWIC Status:

COSEWIC evaluates a federal status ranking for all species that it assesses. Rankings include the following:

END (Endangered) A species facing imminent extirpation or extinction throughout its range.

THR (Threatened) A species likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction

SC (Special Concern) A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events, but does not include an extirpated, endangered or threatened species.

NAR (Not at Risk) A species that has been evaluated and found to be not at risk.

⁴SARA Status:

The SARA (SARA protects SAR designated as Endangered, Threatened and Extirpated listed under Schedule 1, including their habitats on federal land. Schedule 1 of SARA is the official list of wildlife SAR in Canada and includes species listed as Extirpated, Endangered, Threatened and of Special Concern. Once a species is listed on Schedule 1, they receive protection and recovery measures that are required to be developed and implemented under SARA. Species that were designated at risk by COSEWIC before SARA need to be reassessed based on the new criteria of the Act before they can be listed under Schedule 1. These species that are waiting to be listed under Schedule 1 do not receive official protection under SARA. Once the species on other schedules (2 and 3) have been reassessed, the other schedules are eliminated and the species is either listed under Schedule 1 or is not listed under the Act.

The following are definitions of the SARA status rankings assigned to each species in the tables above:

END (Schedule 1) These species are listed as Endangered under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.

THR (Schedule 1) These species are listed as Threatened under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.

SC (Schedule 1) These species are listed as Special Concern under Schedule 1 of SARA and receive management initiatives under SARA to prevent them from becoming endangered and threatened.

No Status (No schedule).... These species are evaluated and designated by COSEWIC but are not listed under Schedule 1 and therefore do not receive protection under SARA.

NAR (Not at Risk) These species have either been assessed by COSEWIC as Not at Risk or there is not enough sufficient data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

Not Applicable (N/A) These species have either been assessed by COSEWIC as Not at Risk or there is not enough sufficient data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

Source:

Government of Canada, 2009: Frequently Asked Questions: What are the SARA schedules? Accessed on February 2015. Available: <http://www.dfo-mpo.gc.ca/species-especes/faq/faq-eng.htm>

3.4 Surface Water Quality

Three Provincial Water Quality Monitoring Network (PWQMN) stations are located on the Magnetawan River, Naiscoot River, and Shawanaga River in the Transmission Line B study area. However, they were last sampled in 2005 or earlier, and records are therefore considered not current (MOECC, 2015).

Previous studies completed by Tulloch Environmental (2013) found water quality for waterbodies near the Route B Transmission Line study area to be lower than average for dissolved oxygen and pH parameters. This is commonly observed in bog and fen-type environments and is not unexpected in the Route B study area.

A Fisheries Impact Assessment Study was completed in 2014 by AECOM for MTO, within the Unincorporated Township of Wallbridge and on Magnetawan First Nation Reserve No. 1. Water quality parameters were tested in the field, upstream of many waterbody crossings of the proposed Highway 69/400 widening, generally located west of the Route B study area, where fish habitat was identified. The results of this study show that water quality was within acceptable and expected ranges for the area (MTO, 2014).

In situ surface water quality data was collected by AECOM at water crossings along the Route B Transmission Line during field investigations from May to August 2015 (Refer to Table 3-14 below). In general, field findings indicated that the water crossings in this study area are characterized by slightly acidic pH, low conductivity, low dissolved oxygen and clear and colourless water, which is typical of bog and fen-type environments.

A summary of water quality results recorded by AECOM in 2015 is included in **Table 3-13**.

Table 3-13: Surface Water Quality Data for Route B Transmission Line Water Crossings

Site	Air Temperature (°C)	Water Temperature (°C)	pH	Conductivity (s/cm)	D.O. (mg/L)	Water Colour	Water Clarity
WB-B-M2-01	18.0	17.4	6.3	0.02	7.07	Yellow/Brown	Clear
WB-B-M10-140	21.0					Yellow/Brown	Clear
WB-B-M11-139	21.7	22.3	5.7	0.02	6.50	Yellow/Brown	Clear
WB-B-M12-138	15.7	18.7	5.3	0.02	3.10	Yellow/Brown	Clear
WB-B-M13-137	22.0	22.3	5.9	0.02	9.00	Colourless	Clear
WB-B-M14-136	19.0	16.4	5.5	0.02	6.90	Yellow/Brown	Clear
WB-B-M15-135	22.5	22.6	5.2	0.01	10.10	Yellow/Brown	Clear
WB-B-M16-133	16.3	19.5	5.2	0.01	7.80	Colourless	Clear
WB-B-M16-134	16.4	16.6	4.8	0.01	5.50	Yellow/Brown	Clear
WB-B-M17-131	17.5	17.6	5.8	0.02	9.30	Colourless	Clear
WB-B-M17-132	16.3	17.5	4.8	0.01	6.30	Yellow/Brown	Clear
WB-B-M25-115	19.6	22.8	5.3	0.02	7.80	Colourless	Clear
WB-B-M26-112	18.0	16.4	4.9	0.01	6.70	Colourless	Clear
WB-B-M26-113	17.7	16.2	4.7	0.03	5.60	Colourless	Clear
WB-B-M26-114	20.3	17.6	4.9	0.02	6.10	Colourless	Clear
WB-B-M27-109	14.5	12.7	4.8	0.01	6.70	Colourless	Clear
WB-B-M27-110	16.3	14.0	5.1	0.06	5.40	Yellow/Brown	Turbid
WB-B-M27-111	24.3	18.6	5.1	0.01	6.40	Colourless	Clear
WB-B-M28-107	19.0	17.9	4.8	0.01	8.70	Colourless	Clear
WB-B-M28-107-2	16.8	13.6	5.1	0.01	7.30	Colourless	Clear
WB-B-M28-108	17.2	15.6	4.9	0.01	7.25	Colourless	Clear
WB-B-M29-106	19.1	18.4	5.5	0.02	9.40	Colourless	Clear
WB-B-M30-104	18.0	18.6	5.1	0.01	5.10	Colourless	Clear
WB-B-M30-105	15.1	15.0	5.1	0.07	6.10	Colourless	Clear
WB-B-M30-105-2	18.0	13.4	5.1	0.12	5.60	Colourless	Clear
WB-B-M31-103	13.0	17.2	5.5	0.08	0.00	Colourless	Clear
WB-B-M31-142	16.0	18.3	5.9	0.01	0.00	Colourless	Clear
WB-B-M32-102	20.0	17.5	4.6		2.08	Colourless	Clear
WB-B-M33-100	17.0	17.9	5.0		7.16	Yellow/Brown	Clear
WB-B-M34-96	22.0	17.9	5.9	0.11	3.81	Colourless	Clear
WB-B-M34-97	18.0	17.8	5.6		5.07	Colourless	Clear
WB-B-M35-95	22.0	16.9	5.2	0.01	0.38	Colourless	Clear
WB-B-M36-94	16.0	18.3	5.6	0.00	6.63	Colourless	Clear
WB-B-M37-93	18.0	16.6	5.5	0.00	2.34	Yellow/Brown	Clear
WB-B-M38-91	19.0					Colourless	Clear
WB-B-M38-92	19.0	18.0	4.8	0.00	3.54	Yellow/Brown	Clear
WB-B-M39-87	18.0	17.7	5.8	0.18	1.56	Colourless	Clear
WB-B-M39-88	18.0	15.5	6.3	0.33	0.63	Yellow/Brown	Clear
WB-B-M39-89	18.0					Colourless	Clear
WB-B-M40-83	16.0					Colourless	Clear
WB-B-M40-86	20.0	20.1	5.8	0.02	7.65	Colourless	Clear
WB-B-M41-82	16.5	18.0	5.1	0.01	5.27	Colourless	Clear
WB-B-M42-79	18.9	24.7	5.2	0.01	8.60	Colourless	Clear
WB-B-M42-81	18.7	23.2	5.6	0.01	8.35	Colourless	Clear
WB-B-M43-77	19.6	21.2	4.5	0.01	4.90	Yellow/Brown	Clear
WB-B-M44-75	14.0	15.4	5.5	0.01	0.00	Yellow/Brown	Clear
WB-B-M44-76	17.0	21.9	6.1	0.10	6.40	Colourless	Clear

Site	Air Temperature (°C)	Water Temperature (°C)	pH	Conductivity (s/cm)	D.O. (mg/L)	Water Colour	Water Clarity
WB-B-M45-73	19.9	17.5	5.4	0.13	3.20	Colourless	Clear
WB-B-M45-74	17.6	18.7	4.4	0.01	7.00	Colourless	Clear
WB-B-M46-71	19.6	18.3	4.5	0.01	5.10	Colourless	Clear
WB-B-M47-69	21.3	21.7	6.2	2.60	6.70	Colourless	Clear
WB-B-M47-70	20.9	20.4	7.0	0.02	9.60	Colourless	Clear
WB-B-M48-68	19.6	18.1	3.9	0.00	3.60	Colourless	Clear
WB-B-M49-143	17.8	21.9	5.7	0.02	7.70	Colourless	Clear
WB-B-M49-66	20.4	22.5	5.7	0.02	8.26	Colourless	Clear
WB-B-M52-59	18.0	18.8	5.0	0.02	7.60	Yellow/Brown	Clear
WB-B-M52-59-2	18.0					Yellow/Brown	Turbid
WB-B-M52-61	15.4	17.3	4.7	0.06	6.70	Yellow/Brown	Clear
WB-B-M53-57	18.5	24.6	5.9	0.02	8.00	Colourless	Clear
WB-B-M53-58	19.0	19.6	5.8	0.75	3.70	Yellow/Brown	Clear
WB-B-M54-56	21.2	24.2	5.2	0.01	9.60	Yellow/Brown	Clear
WB-B-M55-53	24.6	21.7	5.0	0.12	5.65	Colourless	Clear
WB-B-M55-54	20.7	21.5	5.1	0.00	7.50	Colourless	Clear
WB-B-M56-51	17.5	20.5	5.0	0.02	1.20	Colourless	Clear
WB-B-M57-44	15.6	17.6	5.3	0.08	1.60	Colourless	Clear
WB-B-M58-38	18.0	20.8	5.6	0.17	8.00	Yellow/Brown	Clear
WB-B-M58-39	20.4	16.8	4.8	0.02	5.30	Yellow/Brown	Clear
WB-B-M59-41	21.7	21.2	4.4	0.01	4.10	Yellow/Brown	Clear
WB-B-M60-22	26.0	26.3	5.1	0.01	7.40	Yellow/Brown	Clear
WB-B-M61-26	20.7	22.3	5.3	0.00	2.80	Colourless	Clear
WB-B-M62-29	19.6	18.2	5.1	0.00	6.00	Yellow/Brown	Turbid
WB-B-M62-30	20.6	23.2	4.5	0.00	5.10	Colourless	Clear
WB-B-M63-33	19.1	21.7	5.4	0.00	8.70	Colourless	Clear
WB-B-M63-34	21.5	22.2	4.6	0.00	8.70	Colourless	Clear
WB-B-M64-36	21.0	20.6	4.6	0.01	4.57	Colourless	Clear
WB-B-M64-37	20.5	16.7	5.5	0.03	4.50	Colourless	Clear
WB-B-M64-42	21.0	20.1	4.8	0.01	4.55	Colourless	Clear
WB-B-M65-47	19.2	23.3	5.3	0.00	4.10	Yellow/Brown	Clear
WB-B-M66-52	17.2	18.5	5.4	0.01	3.80	Yellow/Brown	Clear
WB-B-M67-24	17.2	15.5	5.2	0.00	4.70	Yellow/Brown	Clear
WB-B-M68-21	18.5	19.2	5.7	0.02	7.80	Colourless	Clear
WB-B-M69-19	18.0					Colourless	Clear
WB-B-M69-20	21.0	21.9	5.8	0.00	5.80	Yellow/Brown	Clear
WB-B-M70-16	21.0	22.9	5.6	0.01	8.45	Colourless	Clear
WB-B-M70-17	20.0	16.8	6.0	0.11	2.79	Colourless	Clear
WB-B-M70-17-3	17.1	15.2	6.0	0.02	3.50	Yellow/Brown	Clear
WB-B-M70-18	18.5	19.2	5.1	0.01	5.40	Colourless	Clear
WB-B-M70-18-2	18.0	18.1	4.7	0.01	4.55	Colourless	Clear
WB-B-M71-14	18.0	20.8	5.4	0.02	7.20	Colourless	Clear
WB-B-M71-15	19.8	19.0	5.4	0.01	7.33	Yellow/Brown	Clear
WB-B-M72-13	17.5	21.7	5.7	0.03	7.39	Colourless	Clear
WB-B-M73-11	24.0	24.8	5.1	0.01	7.27	Colourless	Clear
WB-B-M73-12	24.0	19.1	5.6	0.08	4.00	Yellow/Brown	Clear
WB-B-M74-10	17.3	21.6	5.9	0.02	7.95	Colourless	Clear
WB-B-M75-9	25.0					Colourless	Clear
WB-B-M76-8	23.5	22.4	5.5	0.03	8.20	Colourless	Clear
WB-B-M77-7	17.5	19.7	6.1	0.02	4.40	Colourless	Clear
WB-B-M78-6	19.3	16.0	6.2	0.02	0.00	Colourless	Clear
WB-B-M80-2-2	19.8	22.8	5.4	0.07	4.80	Colourless	Clear
WB-B-M80-3	20.0					Turbid	Turbid
WB-B-M81-1	19.0	22.7	4.9	0.01	6.40	Colourless	Clear

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Appendix A

Site Investigation Field Data

Pond Lake Assessment

Site ID	WB-B-M52-59	Field Crew	Amy Ingriselli Jessica Mendoza		87
Study Area	TLINE B				
Location	On east side of hwy 400/69				
Project Number	60341251	Air Temp. (degC)	18.0	Weather Notes	
Tablet	AECOM17	Wind Speed (beaufort)	4		
Start Date	6/3/2015 11:26:31 AM	Precipitation	0		
End Date	2015-06-03 12:19:42	Cloud Cover	100.00		
Site Features					
Feature Description	798	Feature Location			
From western limit of study/ highway embankment area looking at pond facing southeast		Latitude:45.532001,Longitude:-80.256163,Altitude:207.8,Speed:0.02057777,Accuracy:1.5,Provider:gps,Time:06/03/2015 11:29:12 EDT			
Feature Description	801	Feature Location			
Facing DS from beaver dam towards highway embankment and csp		Latitude:45.531771,Longitude:-80.25604,Altitude:216.2,Speed:0.03601111,Accuracy:1.5,Provider:gps,Time:06/03/2015 11:57:06 EDT			
Feature Description	804	Feature Location			
Looking across pond from approximately CL facing north		Latitude:45.531881,Longitude:-80.255676,Altitude:217.4,Speed:0.11317778,Accuracy:1.75,Provider:gps,Time:06/03/2015 12:00:19 EDT			
Feature Description	807	Feature Location			
Facing DS/west from US/eastern limit of study area		Latitude:45.532178,Longitude:-80.255369,Altitude:217.6,Speed:0.06687775,Accuracy:1.5,Provider:gps,Time:06/03/2015 12:03:35 EDT			

Pond Lake Assessment

Feature Description	810	Feature Location			
Beaver dam ~20m DS of CL	Latitude:45.531775,Longitude:-80.255866,Altitude:216.3,Speed:0.03601111,Accuracy:1.5,Provider:gps,Time:06/03/2015 12:07:15 EDT				
Surrounding Land Use	Forest,Other				
	Mixed forest surrounding pond from north east and south sides and road on west side				
Type of Pond	Natural,Permanent,Online				
	CL crosses beaver pond on east side of beaver dam and drained by a csp beneath road, fed by narrow channel from lake from the southeast.				
In-Situ Water Quality					
WT (deg. C)	18.8	AT (degC)	18.0	Water Quality Notes	
pH	5.0	Cond. (s/cm)	0.02		
D.O. (mg/L)	7.6	Water Colour	Yellow/Brown		
Water Clarity	Clear				
Seepage Indicators	None				
Fish & Wildlife Observations	Frogs heard old beaver dam observed dragonflies				
In-Situ Habitat	Standing pond, wood and vegetation provide cover				
Physical Characteristics					
Estimated Size	55.00	Estimated Depth	1.00		
Notes	Muck detritus dominant in middle. Sand silt dominant on banks with woody debris. Beaver dam impeding, but not completely restricting, fish passage.				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
50.00			50.00		60.00
Aquatic Vegetation Species Present	Bladderwort fragrant lily yellow lily grasses periphyton				
Description & Width of Riparian Vegetation	30m grasses marsh St Johns wort meadow sweet moss				

Execution Time 8/17/2015 10:08:22 AM

Filter Start Date 4/1/2015

Filter End Date 8/17/2015





Pond Lake Assessment

Study Area Comments


Upstream lake is also drained to the south by another stream that may be impacted by transmission line.





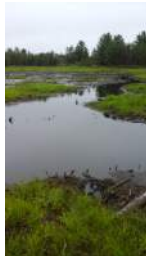

Pond Lake Assessment

Site ID	WB-B-M17-132	Field Crew	Amy Ingriselli Jessica Mendoza		90
Study Area	TLINE B				
Location	Pond east of hwy 69 north of magnetawan river				
Project Number	60341251	Air Temp. (degC)	16.0	Weather Notes	
Tablet	AECOM10	Wind Speed (beaufort)	0	Rained overnight	
Start Date	6/8/2015 9:01:20 AM	Precipitation	0		
End Date	2015-06-08 09:50:11	Cloud Cover	100.00		
Site Features					
Feature Description	870	Feature Location			
Looking north along cl		Latitude:45.776767,Longitude:-80.490819,Altitude:196.3,Speed:0.17491111,Accuracy:1.75,Provider:gps,Time:06/08/2015 09:14:26 EDT			
Feature Description	873	Feature Location			
Eastern most point of pond looking west		Latitude:45.776979,Longitude:-80.490269,Altitude:194.3,Speed:0.07202222,Accuracy:2.1,Provider:gps,Time:06/08/2015 09:21:42 EDT			
Feature Description	876	Feature Location			
Perched beaver pond upstream feeds into main pond from east		Latitude:45.776944,Longitude:-80.490123,Altitude:196.8,Speed:0.025722222,Accuracy:2.0,Provider:gps,Time:06/08/2015 09:23:11 EDT			
Feature Description	879	Feature Location			
Beaver dam to west of pond		Latitude:45.776453,Longitude:-80.491372,Altitude:192.3,Speed:0.041155554,Accuracy:2.1,Provider:gps,Time:06/08/2015 09:29:23 EDT			
Surrounding Land Use	Forest				
	Mixed deciduous coniferous forest on bedrock sloping towards middle				


Pond Lake Assessment

Type of Pond	Natural,Permanent,Dammed,Online Beaver dam pond along river system. Dam 60m west from centre line. Barrier to fish passage upstream at beaver dam. Trickle of water from beaver dam also low flow barrier. 40m wide at downstream and CL but 18m wide at upstream. About 80m along east west				
In-Situ Water Quality					
WT (deg. C)	17.5	AT (degC)	16.3	Water Quality Notes	
pH	4.8	Cond. (s/cm)	0.01	Recent precipitation	
D.O. (mg/L)	6.3	Water Colour	Yellow/Brown		
Water Clarity	Clear				
Seepage Indicators	None				
Fish & Wildlife Observations	Frogs heard turtle seen but species not identified				
In-Situ Habitat	Aquatic and riparian veg, fallen trees & logs				
Physical Characteristics					
Estimated Size	40.00	Estimated Depth	1.00		
Notes	Longer on east west axis than north south axis. Detritus atop bedrock for substrate. Over 1m deep in middle				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
45.00	5.00		50.00		80.00
Aquatic Vegetation Species Present	Emergent and submergent grasses, yellow lily				
Description & Width of Riparian Vegetation	3m emergent grasses, mosses, herbaceous plants, shrubs, Marsh St johns wort, sweet gale, low sweet blueberry, royal fern, woodland strawberry, wild rose, wild columbine				
Study Area Comments					
Tributary to Magnetawan River. Passage upstream of study area impeded by dam. Access to study area from Magnetawan appears to be impeded by series of beaver dams (from air photo)					




Pond Lake Assessment

Site ID	WB-B-M16-133		Field Crew	Amy Ingriselli Jessica Mendoza		93
Study Area	TLINE B					
Location	50m upstream and downstream of CI in large breached beaver pond					
Project Number	60341251	Air Temp. (degC)	16.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	3	Recent precipitation overnight		
Start Date	6/8/2015 2:09:06 PM	Precipitation	0			
End Date	2015-06-08 14:45:24	Cloud Cover	100.00			
Site Features						
Feature Description	900	Feature Location				
Stream entering beaver pond from east of pond on north bank		Latitude:45.782978,Longitude:-80.49805,Altitude:194.2,Speed:0.08231111,Accuracy:2.1,Provider:gps,Time:06/08/2015 02:17:10 EDT				
Feature Description	903	Feature Location				
Looking southeast along CI from northwest bank		Latitude:45.783049,Longitude:-80.497111,Altitude:198.9,Speed:0.04115554,Accuracy:2.7,Provider:gps,Time:06/08/2015 02:22:08 EDT				
Feature Description	906	Feature Location				
Representative area of pond in transition state. Taken from north east shore		Latitude:45.782925,Longitude:-80.497802,Altitude:195.9,Speed:0.03601111,Accuracy:2.1,Provider:gps,Time:06/08/2015 02:43:09 EDT				
Feature Description	909	Feature Location				
Beaver pond on southwest part of pond taken from northeast bank		Latitude:45.782926,Longitude:-80.497798,Altitude:195.7,Speed:0.015433333,Accuracy:1.75,Provider:gps,Time:06/08/2015 02:44:18 EDT				
Surrounding Land Use	Forest					
	Coniferous forest on bedrock barrens					


Pond Lake Assessment

Type of Pond	Natural,Dammed,Online				
	Once flooded beaver pond draining with saturated and pooling occurring. Some open water still present.				
In-Situ Water Quality					
WT (deg. C)	19.5	AT (degC)	16.3	Water Quality Notes	
pH	5.2	Cond. (s/cm)	0.01	Recent precipitation overnight	
D.O. (mg/L)	7.8	Water Colour	Colourless		
Water Clarity	Clear				
Seepage Indicators	None				
Fish & Wildlife Observations	Song sparrow				
In-Situ Habitat	Detritus, woody debris				
Physical Characteristics					
Estimated Size	140.00	Estimated Depth	0.25		
Notes	Pond is draining; what used to be open water is now pools with emergent vegetation appearing. Active channels are becoming present while detritus remains saturated				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
90.00			10.00		80.00
Aquatic Vegetation Species Present	Yellow lily emergent grasses and sedges meadow sweet moss				
Description & Width of Riparian Vegetation	2m sedges				
Study Area Comments					
Pond in transition to meadow due to breached dam with lots of saturated detritus, active channels and pooling					





Pond Lake Assessment

Site ID	WB-B-M25-115		Field Crew	Amy Ingriselli Jessica Mendoza		96
Study Area	TLINE B					
Location	Beaver pond east of hwy 69 south of magnetawan reserve					
Project Number	60341251	Air Temp. (degC)	19.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	1			
Start Date	6/9/2015 12:16:11 PM	Precipitation	0			
End Date	2015-06-09 13:02:59	Cloud Cover	15.00			
Site Features						
Feature Description	945	Feature Location				
50m downstream of cl	Latitude:45.719754,Longitude:-80.466445,Altitude:186.3,Speed:0.10288889,Accuracy:1.5,Provider:gps,Time:06/09/2015 12:15:29 EDT					
Feature Description	948	Feature Location				
Cl from south shore looking north	Latitude:45.719758,Longitude:-80.466104,Altitude:193.0,Speed:0.05658889,Accuracy:2.1,Provider:gps,Time:06/09/2015 12:27:10 EDT					
Feature Description	951	Feature Location				
50m upstream of Cl looking downstream from south shore	Latitude:45.719792,Longitude:-80.465061,Altitude:191.3,Speed:0.8694111,Accuracy:2.1,Provider:gps,Time:06/09/2015 01:00:45 EDT					
Surrounding Land Use	Forest Mixed coniferous deciduous forest on bedrock outcrops					
Type of Pond	Natural,Permanent,Online Drained Beaver pond with dam to the west. Flow from east to west					



Pond Lake Assessment

In-Situ Water Quality					
WT (deg. C)	<input type="text" value="22.8"/>	AT (degC)	<input type="text" value="19.6"/>	Water Quality Notes	
pH	<input type="text" value="5.3"/>	Cond. (s/cm)	<input type="text" value="0.02"/>		
D.O. (mg/L)	<input type="text" value="7.8"/>	Water Colour	<input type="text" value="Colourless"/>		
Water Clarity	<input type="text" value="Clear"/>				
Seepage Indicators	<input type="text" value="None"/>				
	<input type="text"/>				
Fish & Wildlife Observations	<input type="text" value="Minnows leeches mudpuppiesWolf tracksBull moose tracks"/>				
In-Situ Habitat	<input type="text" value="Pond with soft substrate"/>				
Physical Characteristics					
Estimated Size	<input type="text" value="53.00"/>	Estimated Depth	<input type="text" value="1.00"/>		
Notes	<input type="text" value="Sand silt with layer of detritus"/>				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text" value="20.00"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="80.00"/>	<input type="text"/>	<input type="text" value="25.00"/>
Aquatic Vegetation Species Present	<input type="text" value="Watershield, fragrant lily, yellow lily, bladderwort, pond weed species"/>				
Description & Width of Riparian Vegetation	<input type="text" value="5m grasses shrubs"/>				
Study Area Comments					
<input type="text" value="Detritus layer likely to provide some cover for fish"/>					

Pond Lake Assessment

Site ID	WB-B-M31-103	Field Crew	Ami Arsenault Justin Munro		99
Study Area	TLINE B				
Location	East of highway 69/400. Parked on small gravel road before pond begins and walked to site.				
Project Number	60341251	Air Temp. (degC)	13.0	Weather Notes	
Tablet	AECOM12	Wind Speed (beaufort)	2	Rain event previous day	
Start Date	6/8/2015 9:06:38 AM	Precipitation	0		
End Date	2015-06-08 10:19:36	Cloud Cover	100.00		
Site Features					
Feature Description	987	Feature Location			
Taken on north east side of pond facing south		Latitude:45.675512,Longitude:-80.434155,Altitude:196.9,Speed:0.025722222,Accuracy:2.1,Provider:gps,Time:06/08/2015 09:07:39 EDT			
Feature Description	990	Feature Location			
Picture taken from north side of pond facing west towards hwy 69/400		Latitude:45.675461,Longitude:-80.43427,Altitude:200.7,Speed:0.15433334,Accuracy:2.1,Provider:gps,Time:06/08/2015 09:27:30 EDT			
Feature Description	993	Feature Location			
Slope of highway leading to pond		Latitude:45.674934,Longitude:-80.434812,Altitude:195.9,Speed:0.10288889,Accuracy:2.1,Provider:gps,Time:06/08/2015 10:10:36 EDT			
Feature Description	996	Feature Location			
Culvert on east side of highway 69/400 in pond		Latitude:45.674531,Longitude:-80.434332,Altitude:202.5,Speed:0.0051444443,Accuracy:2.1,Provider:gps,Time:06/08/2015 10:12:54 EDT			

Pond Lake Assessment

Feature Description		999	Feature Location		
Culvert on west side of highway 69/400 connecting our study area with this other pond on opposite side of highway		Latitude:45.674466,Longitude:-80.434619,Altitude:199.0,Speed:0.051444445,Accuracy:1.8,Provider:gps,Time:06/08/2015 10:14:38 EDT			
Feature Description		1002	Feature Location		
Facing east from highway 69/400 at pond		Latitude:45.674728,Longitude:-80.434624,Altitude:201.8,Speed:1.3375555,Accuracy:1.8,Provider:gps,Time:06/08/2015 10:16:32 EDT			
Surrounding Land Use		Wetland,Other			
		Pond is on east side of hwy 400/hwy 69. Surrounded by bedrock and forest			
Type of Pond		Natural,Permanent,Online			
		Large pond on east side of hwy 69/400. Cattails and grasses growing on banks of pond. Surrounded by bedrock. Floating veg (pond weed,lily pads). Connected to pond on west side of highway			
In-Situ Water Quality					
WT (deg. C)	17.2	AT (degC)	13.0	Water Quality Notes	
pH	5.5	Cond. (s/cm)	0.08		
D.O. (mg/L)	0.0	Water Colour	Colourless		
Water Clarity	Clear				
Seepage Indicators		None			
Fish & Wildlife Observations		Broken turtle egg on bedrock up from pond. 3 Beaver lodges within pond limits. No other fish or wildlife observed.			
In-Situ Habitat		Pond weed and lily pads for in situ habitat.			
Physical Characteristics					
Estimated Size	200.00	Estimated Depth	1.00		
Notes	Estimated width taken along where transmission line is going (north and south). Estimated depth is greater than 1.5m, too deep to wade.				

Pond Lake Assessment

In-Situ Cover

Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
5.00	0.00	0.00	90.00	5.00	40.00





Aquatic Vegetation Species Present	Pond weed , fragrant white lily pads, grasses and ferns along banks
Description & Width of Riparian Vegetation	0.5m riparian edge (grasses, cattails) then bedrock

Study Area Comments


Very large pond east of highway 69/400. Lots of open water. Transmission line running very close to highway, not through pond. Surrounded by bedrock.







Pond Lake Assessment

Site ID	WB-B-M31-142		Field Crew	Ami Arsenault Justin Munro		102
Study Area	TLINE B					
Location	East of highway 69/400. Parked on small gravel road 50m north of M31-103 survey spot and walked approx 150m to site.					
Project Number	60341251	Air Temp. (degC)	16.0	Weather Notes		
Tablet	AECOM12	Wind Speed (beaufort)	2			
Start Date	6/8/2015 9:44:00 AM	Precipitation	0			
End Date	2015-06-08 10:22:04	Cloud Cover	100.00			
Site Features						
Feature Description	1005	Feature Location				
Photo of upper branch of wetland taken from east	Latitude:45.676033,Longitude:-80.432398,Altitude:192.4,Speed:0.010288889,Accuracy:1.8,Provider:gps,Time:06/08/2015 10:28:23 EDT					
Feature Description	1008	Feature Location				
Photo of lower branch of wetland taken from east	Latitude:45.676033,Longitude:-80.432398,Altitude:192.4,Speed:0.025722222,Accuracy:2.1,Provider:gps,Time:06/08/2015 10:28:44 EDT					
Feature Description	1011	Feature Location				
Photo of both upper and lower reaches of wetland, and rock barren in the middle. Taken from east.	Latitude:45.675968,Longitude:-80.432453,Altitude:194.4,Speed:0.015433333,Accuracy:1.8,Provider:gps,Time:06/08/2015 10:29:14 EDT					
Feature Description	1014	Feature Location				
Facing west towards WB-B-M31-103.	Latitude:45.675977,Longitude:-80.432371,Altitude:196.0,Speed:0.010288889,Accuracy:1.8,Provider:gps,Time:06/08/2015 10:29:54 EDT					
Surrounding Land Use	Forest,Wetland,Other					
	Wetland surrounded by bedrock and forests, as well as hwy 69/400 to the west. This site was also probably used by construction crews during the making of the highway - large flat gravel area where they would have kept machinery etc.					


Pond Lake Assessment

Type of Pond	Natural, Permanent, Online				
	Oddly shaped survey location due to rock barren in the middle of this section of the pond, creating two branches of the watercourse. Shaped almost like a 'U' *see photo. Floating aquatic veg, large boulders dumped along banks (probably from previous con				
In-Situ Water Quality					
WT (deg. C)	18.3	AT (degC)	16.0	Water Quality Notes DO reading 0, will need to calibrate tonight	
pH	5.9	Cond. (s/cm)	0.01		
D.O. (mg/L)	0.0	Water Colour	Colourless		
Water Clarity	Clear				
Seepage Indicators	None				
Fish & Wildlife Observations	None. Beaver lodge on opposite side of bank from survey location. Toonie-sized Midland painted turtle found on top of rock barren.				
In-Situ Habitat	Pond weed and lily pads				
Physical Characteristics					
Estimated Size	80.00	Estimated Depth	1.00		
Notes	Estimated width of both wetland branches: upper reach is ~80m and lower reach is ~40m. Estimated depth is over 1m, too deep to wade.				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
	5.00		95.00		90.00
Aquatic Vegetation Species Present	Pondweed and white water lilies. Grasses growing on some hummocks close to banks				
Description & Width of Riparian Vegetation	0m; Bedrock				
Study Area Comments					
Large wetland split in two sections due to rock barren in the middle. This wetland is attached to study area WB-B-M31-103. Surveyed from circular shaped bedrock point where transmission line crosses into pond.					





Pond Lake Assessment

Site ID	WB-B-M32-101	Field Crew	Ami Arsenault Justin Munro		105
Study Area	TLINE B				
Location	Parked on side of highway 69/400 beside survey point location and walked there				
Project Number	60341251	Air Temp. (degC)	16.0	Weather Notes	
Tablet	AECOM12	Wind Speed (beaufort)	4		
Start Date	6/8/2015 12:50:01 PM	Precipitation	0		
End Date	2015-06-08 13:10:24	Cloud Cover	100.00		
Site Features					
Feature Description	1017	Feature Location			
Facing south towards centerline (standing 50m north)		Latitude:45.666678,Longitude:-80.422578,Altitude:201.1,Speed:0.030866666,Accuracy:1.75,Provider:gps,Time:06/08/2015 12:51:39 EDT			
Feature Description	1020	Feature Location			
Facing west towards centerline (standing 50m east)		Latitude:45.666378,Longitude:-80.421847,Altitude:200.7,Speed:0.0051444443,Accuracy:2.1,Provider:gps,Time:06/08/2015 12:56:19 EDT			
Feature Description	1023	Feature Location			
North to centerline (standing 50m south)		Latitude:45.666605,Longitude:-80.421694,Altitude:204.6,Speed:0.025722222,Accuracy:1.75,Provider:gps,Time:06/08/2015 01:00:45 EDT			
Feature Description	1026	Feature Location			
Culvert south west of survey location at highway 69/400. Whatever water is pooled in bog runs off here?		Latitude:45.666286,Longitude:-80.423041,Altitude:194.8,Speed:0.09774444,Accuracy:1.5,Provider:gps,Time:06/08/2015 01:14:34 EDT			
Surrounding Land Use	Wetland,Other				
	Highway 69/400 to the west of survey point M32-10.Survey location in a wetland (bog)				


Pond Lake Assessment

Type of Pond	Natural,Permanent,Offline				
	Wetland completely choked by vegetation (spagnum moss, grasses, labrador tea, bog laurel and blueberry plants) sponge like texture when walked upon				
In-Situ Water Quality					
WT (deg. C)		AT (degC)	16.0	Water Quality Notes	
pH		Cond. (s/cm)		None - no open water	
D.O. (mg/L)		Water Colour			
Water Clarity					
Seepage Indicators	None				
Fish & Wildlife Observations	Moose in bog				
In-Situ Habitat	Floating mats of vegetation				
Physical Characteristics					
Estimated Size		Estimated Depth	0.00		
Notes	Bog wetland, completely choked by vegetation				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
					0.00
Aquatic Vegetation Species Present	Labrador tea, bog laurel grasses spagnum moss blueberry bushes				
Description & Width of Riparian Vegetation	Study area consisting of floating mats of vegetation, and forest surrounding				
Study Area Comments					
Whole study area east of centerline is a bog wetland with floating mats of vegetation with no open water. There is a culvert located south west of the survey point at hwy 69 with some water movement but not enough to suffice fish migration. The water flow					





Pond Lake Assessment

Site ID	WB-B-M33-99		Field Crew	Ami Arsenault Justin Munro		108
Study Area	TLINE B					
Location	East of highway 69/400, walked south to survey location from parking spot at M33-100.					
Project Number	60341251	Air Temp. (degC)	17.0	Weather Notes		
Tablet	AECOM12	Wind Speed (beaufort)	3			
Start Date	6/8/2015 1:20:42 PM	Precipitation	0			
End Date	2015-06-08 13:53:29	Cloud Cover	100.00			
Site Features						
Feature Description	1029	Feature Location				
Facing north from survey point M33-99		Latitude:45.66234,Longitude:-80.416776,Altitude:201.0,Speed:0.051444445,Accuracy:1.5,Provider:gps,Time:06/08/2015 01:34:22 EDT				
Feature Description	1032	Feature Location				
Facing south from survey point M33-99		Latitude:45.662343,Longitude:-80.41677,Altitude:201.0,Speed:0.0051444443,Accuracy:1.5,Provider:gps,Time:06/08/2015 01:35:00 EDT				
Feature Description	1035	Feature Location				
Facing north towards survey point M33-99 at at 50m downstream limit		Latitude:45.661999,Longitude:-80.416665,Altitude:196.2,Speed:0.030866666,Accuracy:1.8,Provider:gps,Time:06/08/2015 01:44:57 EDT				
Feature Description	1038	Feature Location				
Facing south towards survey point M33-99 at 50m upstream limit		Latitude:45.662926,Longitude:-80.416796,Altitude:193.5,Speed:0.015433333,Accuracy:1.5,Provider:gps,Time:06/08/2015 01:48:29 EDT				
Surrounding Land Use	Forest,Wetland,Other					
	Wetland located east of highway 69/400. Forest surrounding. Small bedrock outcrops within study area.					


Pond Lake Assessment

Type of Pond	Natural,Permanent,Online				
	No open water. No defined channel. Saturated area. Wetland choked in vegetation (grasses blueberry shrubs).				
In-Situ Water Quality					
WT (deg. C)		AT (degC)	17.0	Water Quality Notes	
pH		Cond. (s/cm)		No water chemistry taken as there is no open water	
D.O. (mg/L)		Water Colour			
Water Clarity					
Seepage Indicators	None				
Fish & Wildlife Observations	None				
In-Situ Habitat	None. No open water				
Physical Characteristics					
Estimated Size		Estimated Depth	0.00		
Notes	No open water. No defined channel. Saturated area. Wetland choked in vegetation (grasses blueberry shrubs).				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
					0.00
Aquatic Vegetation Species Present	None				
Description & Width of Riparian Vegetation	No change, 0m				
Study Area Comments					
No open water within 100m (total) upstream and downstream of survey point M33-99. Saturated area, choked with vegetation (mosses, grassss, blueberry shrubs and some small white pines, tamarack and poplars). No fish observed. Some small bedrock outcrops wi					

Pond Lake Assessment

Site ID	WB-B-M34-98		Field Crew	Ami Arsenault Justin Munro		111
Study Area	TLINE B					
Location	East of highway 69/400. Parked in small area on east side south of hydro pole C520. Right beside survey point M34-98.					
Project Number	60341251	Air Temp. (degC)	17.0	Weather Notes		
Tablet	AECOM12	Wind Speed (beaufort)	3			
Start Date	6/9/2015 8:21:33 AM	Precipitation	0			
End Date	2015-06-09 08:50:37	Cloud Cover	40.00			
Site Features						
Feature Description	1068	Feature Location				
Facing west towards centerline (and highway) from 50m u/s	Latitude:45.658452,Longitude:-80.411243,Altitude:201.4,Speed:0.015433333,Accuracy:1.8,Provider:gps,Time:06/09/2015 08:32:10 EDT					
Feature Description	1071	Feature Location				
Photo at the outermost eastern limit - more saturated, surrounded by bedrock. Water pooled here. Possible bedrock substrate keeps water pooled in this area?	Latitude:45.658366,Longitude:-80.410723,Altitude:207.9,Speed:0.066877775,Accuracy:1.5,Provider:gps,Time:06/09/2015 08:36:05 EDT					
Feature Description	1074	Feature Location				
Vegetation (mosses, grasses, blueberry shrubs, bog laurel and some small black spruce and tamarack)	Latitude:45.658155,Longitude:-80.41122,Altitude:208.2,Speed:0.05658889,Accuracy:1.5,Provider:gps,Time:06/09/2015 08:41:16 EDT					
Feature Description	1077	Feature Location				
Facing west from centerline to highway 69/400	Latitude:45.658332,Longitude:-80.411756,Altitude:206.3,Speed:0.025722222,Accuracy:1.5,Provider:gps,Time:06/09/2015 08:43:51 EDT					

Pond Lake Assessment

Feature Description	1080	Feature Location			
Facing east from centerline	Latitude:45.658333,Longitude:-80.41176,Altitude:206.4,Speed:0.010288889,Accuracy:1.75,Provider:gps,Time:06/09/2015 08:44:30 EDT				
Surrounding Land Use	Wetland,Other				
	Wetland and highway 69/400				
Type of Pond	Natural,Permanent,Offline				
	Pond covered in floating mats of vegetation. No open water. Some areas more saturated then others.				
In-Situ Water Quality					
WT (deg. C)		AT (degC)	17.0		
pH		Cond. (s/cm)			
D.O. (mg/L)		Water Colour			
Water Clarity		No chemistry taken, no open water			
Seepage Indicators	None				
Fish & Wildlife Observations	Baby bird flushed out of ground nest				
In-Situ Habitat	No open water, vegetation choking wetland				
Physical Characteristics					
Estimated Size		Estimated Depth	0.00		
Notes	Wetland covered in floating mats of vegetation (mosses, grasses, blueberry shrubs, bog laurel and some small black spruce and tamarack). No open water.				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
			100.00		100.00
Aquatic Vegetation Species Present	Floating mats dominated by moss, grass, blueberry shrubs, bog laurel , small black spruce and tamarack trees				
Description & Width of Riparian Vegetation	0m; Bedrock				

Execution Time 8/17/2015 10:08:22 AM

Filter Start Date 4/1/2015

Filter End Date 8/17/2015





Pond Lake Assessment

Study Area Comments




Area comprised of floating mats of vegetation, no open water.



Pond Lake Assessment

Site ID	WB-B-M34-96		Field Crew	Ami Arsenault Justin Munro		114
Study Area	TLINE B					
Location	East of highway 69/400 and across large beaver pond. Walked across dam and along bedrock banks on proposed transmission line. 50m NW & SE along pond edge and transmission line					
Project Number	60341251	Air Temp. (degC)	22.0	Weather Notes		
Tablet	AECOM12	Wind Speed (beaufort)	3			
Start Date	6/9/2015 12:05:27 PM	Precipitation	0			
End Date	2015-06-09 13:00:52	Cloud Cover	20.00			
Site Features						
Feature Description	1119	Feature Location				
Facing north on transmission line at survey point M34-96		Latitude:45.653733,Longitude:-80.405078,Altitude:180.5,Speed:0.08231111,Accuracy:2.1,Provider:gps,Time:06/09/2015 12:10:09 EDT				
Feature Description	1122	Feature Location				
Facing west on transmission line looking across pond towards highway 69		Latitude:45.653722,Longitude:-80.40508,Altitude:181.1,Speed:0.0463,Accuracy:2.4,Provider:gps,Time:06/09/2015 12:11:06 EDT				
Feature Description	1125	Feature Location				
Facing south on transmission line, pond and bedrock forested slope		Latitude:45.653719,Longitude:-80.405068,Altitude:181.4,Speed:0.066877775,Accuracy:1.75,Provider:gps,Time:06/09/2015 12:11:41 EDT				
Feature Description	1128	Feature Location				
Facing east from transmission line at bedrock forested slope (pond to the west of this picture)		Latitude:45.653717,Longitude:-80.405066,Altitude:181.3,Speed:0.025722222,Accuracy:2.0,Provider:gps,Time:06/09/2015 12:12:26 EDT				

Pond Lake Assessment

Feature Description	1131	Feature Location	
Second beaver dam pond south of M34-96		Latitude:45.653604,Longitude:-80.404799,Altitude:180.0,Speed:0.015433333,Accuracy:1.5,Provider:gps,Time:06/09/2015 12:31:37 EDT	
Feature Description	1134	Feature Location	
More Hummocky/floating mats of vegetation south of second beaver dam - 70m south along transmission line from survey point M34-96		Latitude:45.653509,Longitude:-80.404419,Altitude:176.1,Speed:0.03601111,Accuracy:1.5,Provider:gps,Time:06/09/2015 12:35:36 EDT	
Feature Description	1137	Feature Location	
First Beaver dam to come across <50m u/s from survey point		Latitude:45.653703,Longitude:-80.405804,Altitude:182.0,Speed:0.0463,Accuracy:2.4,Provider:gps,Time:06/09/2015 01:00:21 EDT	
Surrounding Land Use	Wetland,Other Highway 69/400 and wetland		
Type of Pond	Natural,Permanent,Dammed,Online Large oval shaped pond following transmission line. There is no evidence of a stream along the banks of this area as shown in aerial photo. Majority of study area open water.		
In-Situ Water Quality			
WT (deg. C)	<input type="text" value="17.9"/>	AT (degC)	<input type="text" value="22.0"/>
pH	<input type="text" value="5.9"/>	Cond. (s/cm)	<input type="text" value="0.11"/>
D.O. (mg/L)	<input type="text" value="3.8"/>	Water Colour	<input type="text" value="Colourless"/>
Water Clarity	<input type="text" value="Clear"/>	<div style="border: 1px solid black; height: 60px;"></div>	
Seepage Indicators	<input type="text" value="None"/>		
Fish & Wildlife Observations	<input type="text" value="Minnows observed in beaver pond"/>		


Execution Time

8/17/2015 10:08:22 AM




Filter Start Date 4/1/2015

Filter End Date 8/17/2015


Pond Lake Assessment

In-Situ Habitat	Standing snags, grassy vegetation, logs				
Physical Characteristics					
Estimated Size	50.00	Estimated Depth	1.50		
Notes	Wetted width taken from survey point M34-96 (yellow dot on map). Estimated depth is greater than 1.5m - too deep to wade into.				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
40.00			60.00		40.00
Aquatic Vegetation Species Present	Grasses growing in pond, providing shade and protection for fish, lily pads and narrow leaved cattails.				
Description & Width of Riparian Vegetation	0m; Rock barren				
Study Area Comments					
Large oval beaver pond with two dams. Beaver pond runs west of transmission line and a rock barren/forest runs east of transmission line (steep slopes here). Mixture of open water and some vegetation hummocks.					




Pond Lake Assessment

Site ID	WB-B-M35-95		Field Crew	Ami Arsenault Justin Munro		117
Study Area	TLINE B					
Location	150km east of highway 69/400 on rock barren point transmission line passes through					
Project Number	60341251	Air Temp. (degC)	22.0	Weather Notes		
Tablet	AECOM12	Wind Speed (beaufort)	4			
Start Date	6/9/2015 1:25:55 PM	Precipitation	0			
End Date	2015-06-09 14:30:27	Cloud Cover	30.00			
Site Features						
Feature Description	1140	Feature Location				
Facing northwest towards survey point M35-95 and proposed transmission line standing south east of tranmission line	Latitude:45.651226,Longitude:-80.40039,Altitude:177.0,Speed:0.015433333,Accuracy:3.0,Provider:gps,Time:06/09/2015 01:28:17 EDT					
Feature Description	1143	Feature Location				
Facing southeast to the rest of the wetland, east of centerline	Latitude:45.651269,Longitude:-80.400337,Altitude:183.4,Speed:0.087455556,Accuracy:2.1,Provider:gps,Time:06/09/2015 01:51:53 EDT					
Feature Description	1146	Feature Location				
Where transmission line crosses wetland and continues into forest (photo taken from bedrock point where transmission line crosses)	Latitude:45.651252,Longitude:-80.400372,Altitude:185.4,Speed:0.0463,Accuracy:2.1,Provider:gps,Time:06/09/2015 01:53:02 EDT					
Surrounding Land Use	Forest,Wetland,Other					
	Highway 69/400, wetland to the northwest of survey point M35-95, forested area to the south east along transmission line					
Type of Pond	Natural,Permanent,Dammed,Online					
	This pond is the same as M34-96, and is dammed to the north east side (see photos from M34-96). There are much more floating mats of vegetation here (grasses, blueberry shrubs and narrow leaved cattails). Mucky substrate. Beaver lodge. Standing snags. Fal					


Pond Lake Assessment

In-Situ Water Quality					
WT (deg. C)	<input type="text" value="16.9"/>	AT (degC)	<input type="text" value="22.0"/>	Water Quality Notes <div></div>	
pH	<input type="text" value="5.2"/>	Cond. (s/cm)	<input type="text" value="0.01"/>		
D.O. (mg/L)	<input type="text" value="0.4"/>	Water Colour	<input type="text" value="Colourless"/>		
Water Clarity	<input type="text" value="Clear"/>				
Seepage Indicators	<div>None</div> <div></div>				
Fish & Wildlife Observations	<div>Minnows observed</div>				
In-Situ Habitat	<div>Vegetation detritus, grasses, cattails, blueberry</div>				
Physical Characteristics					
Estimated Size	<input type="text" value="90.00"/>	Estimated Depth	<input type="text" value="1.50"/>		
Notes	<div>Estimated pond width measured from point of survey (bedrock point) to the opposite bank, where the transmission route is proposed. Estimated depth over 1.5m, too deep to wade.</div>				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text" value="30.00"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="70.00"/>	<input type="text"/>	<input type="text" value="70.00"/>
Aquatic Vegetation Species Present	<div>Aquatic grasses, narrow leaved cattails, pondweed and lily pads</div>				
Description & Width of Riparian Vegetation	<div>0m; Bedrock</div>				
Study Area Comments					
<div>Transmission line cuts across this wetland from the northwest and into the forest to the southeast. This pond is the same as surveyed on M34-96, has at least 3 Beaver dams, a beaver lodge and many standing snags and fallen submerged logs. This area seems</div>					





Pond Lake Assessment

Site ID	WB-B-M36-94		Field Crew	Ami Arsenault Justin Munro		120
Study Area	TLINE B					
Location	South of Lake Naiscoot, east on Flicker Trail, walked north to centerline location					
Project Number	60341251	Air Temp. (degC)	16.0	Weather Notes		
Tablet	AECOM12	Wind Speed (beaufort)	1	Possible thunderstorms later today		
Start Date	6/10/2015 8:12:05 AM	Precipitation	0			
End Date	2015-06-10 08:33:33	Cloud Cover	100.00			
Site Features						
Feature Description	1218	Feature Location				
Facing northern banks of Naiscoot Lake from centerline	Latitude:45.644711,Longitude:-80.396777,Altitude:159.9,Speed:0.020577777,Accuracy:2.4,Provider:gps,Time:06/10/2015 08:14:39 EDT					
Feature Description	1221	Feature Location				
Facing cottages upstream (east) of centerline	Latitude:45.644915,Longitude:-80.396587,Altitude:171.0,Speed:0.066877775,Accuracy:2.1,Provider:gps,Time:06/10/2015 08:22:45 EDT					
Feature Description	1224	Feature Location				
Facing downstream (west) of centerline towards highway	Latitude:45.644918,Longitude:-80.396585,Altitude:171.4,Speed:0.010288889,Accuracy:2.1,Provider:gps,Time:06/10/2015 08:23:21 EDT					
Surrounding Land Use	Residential,Forest,Other					
	Site is just east of highway 69/400.Naiscoot Lake is forested on north and south side.Cottages upstream on Naiscoot Lake.					
Type of Pond	Natural,Permanent,Online					
	Large lake, approx 170m across centerline. Cottages upstream (east of centerline). Assumed to be deeper then 1.5m, could not wade in further. Forested on north and south sides of Lake. Overhanging vegetation along banks (shrubs mostly).					



Pond Lake Assessment

In-Situ Water Quality					
WT (deg. C)	<input type="text" value="18.3"/>	AT (degC)	<input type="text" value="16.0"/>	Water Quality Notes <input type="text"/>	
pH	<input type="text" value="5.6"/>	Cond. (s/cm)	<input type="text" value="0.00"/>		
D.O. (mg/L)	<input type="text" value="6.6"/>	Water Colour	<input type="text" value="Colourless"/>		
Water Clarity	<input type="text" value="Clear"/>				
Seepage Indicators	<input type="text" value="None"/> <input type="text"/>				
Fish & Wildlife Observations	<input type="text" value="None observed"/>				
In-Situ Habitat	<input type="text" value="Can only see bedrock from vantage point"/>				
Physical Characteristics					
Estimated Size	<input type="text" value="170.00"/>	Estimated Depth	<input type="text" value="1.50"/>		
Notes	<input type="text" value="Estimated width of Lake along centerline. Water depth over 1.5m."/>				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="0.00"/>
Aquatic Vegetation Species Present	<input type="text" value="None observed - very clear and open water with no visible aquatic vegetation near vantage point"/>				
Description & Width of Riparian Vegetation	<input type="text" value="Bedrock and forest"/>				
Study Area Comments					
<input type="text" value="Large lake off highway 69/400. Surveyed site from south side along Flicker Trail, standing on proposed centerline. Cottages east of survey location. Bedrock substrate from what we could see at vantage point. Forested to the north and south."/>					

Pond Lake Assessment

Site ID	WB-B-M37-93		Field Crew	Ami Arsenault Justin Munro		123
Study Area	TLINE B					
Location	East of highway 69/400. Parked on east side of road and walked east to centerline and then south to survey point. Surveyed pond from north and south banks (30m)					
Project Number	60341251	Air Temp. (degC)	18.0	Weather Notes		
Tablet	AECOM12	Wind Speed (beaufort)	1	Thunderstorm occurred less than hour ago		
Start Date	6/10/2015 10:38:48 AM	Precipitation	2			
End Date	2015-06-10 11:19:30	Cloud Cover	100.00			
Site Features						
Feature Description	1227	Feature Location				
Facing south across centerline from centerline	Latitude:45.638937,Longitude:-80.395546,Altitude:183.8,Speed:0.06173333,Accuracy:2.1,Provider:gps,Time:06/10/2015 10:53:05 EDT					
Feature Description	1230	Feature Location				
Facing east from centerline, vegetation	Latitude:45.638941,Longitude:-80.395558,Altitude:184.5,Speed:0.0926,Accuracy:2.1,Provider:gps,Time:06/10/2015 10:53:45 EDT					
Feature Description	1233	Feature Location				
Facing west from centerline - beaver dam, highway	Latitude:45.638939,Longitude:-80.395557,Altitude:184.9,Speed:0.025722222,Accuracy:2.1,Provider:gps,Time:06/10/2015 10:54:18 EDT					
Feature Description	1236	Feature Location				
Facing north across centerline from centerline	Latitude:45.638779,Longitude:-80.39537,Altitude:187.9,Speed:0.12346666,Accuracy:2.1,Provider:gps,Time:06/10/2015 10:57:49 EDT					

Pond Lake Assessment

Feature Description	1239	Feature Location	
Beaver dam on west side of pond		Latitude:45.638818,Longitude:-80.39579,Altitude:186.9,Speed:0.0051444443,Accuracy:2.1,Provider:gps,Time:06/10/2015 11:02:32 EDT	
Feature Description	1242	Feature Location	
Facing east towards pond from highway 69/400. Study area behind line of trees in photo.		Latitude:45.63803,Longitude:-80.396973,Altitude:191.8,Speed:0.020577777,Accuracy:2.1,Provider:gps,Time:06/10/2015 11:18:24 EDT	
Surrounding Land Use	Forest,Wetland,Other		
	Highway 69/400 to the west of pond. Surveying wetland. Forested on north and south side of wetland.		
Type of Pond	Natural,Permanent,Dammed,Online		
	Beaver dammed wetland to the west. Open water where proposed transmission line is passing through/over, more aquatic vegetation (grasses mostly) to the east of transmission line. Lots of standing snags (birch). Approximate depth is greater then 1m. Water		
In-Situ Water Quality			
WT (deg. C)	16.6	AT (degC)	18.0
pH	5.5	Cond. (s/cm)	0.00
D.O. (mg/L)	2.3	Water Colour	Yellow/Brown
Water Clarity	Clear		
Seepage Indicators	None		
Fish & Wildlife Observations	Green frogs heard		
In-Situ Habitat	Aquatic grasses, submerged logs, fallen trees		
Physical Characteristics			
Estimated Size	30.00	Estimated Depth	1.00
Notes	Estimated the width of the pond a log centreline. Depth is greater then 1m near banks.		

Pond Lake Assessment

In-Situ Cover

Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
20.00			80.00		70.00





Aquatic Vegetation Species Present	Aquatic grasses
Description & Width of Riparian Vegetation	North bank: 1.5m of riparian before bedrock. Mainly ferns, grasses and small shrubs. South bank: 3m of riparian before bedrock. Grasses, some small shrubs.

Study Area Comments

Focused more on surveying area where centerline crosses wetland. 50m west of centerline, beaver pond flows into larger marsh area with lots of grass vegetation and pockets of open water. Culvert on 69/400.



Pond Lake Assessment

Site ID	WB-B-M38-92	Field Crew	Ami Arsenault Justin Munro		126
Study Area	TLINE B				
Location	Parked on east side of highway 69/400, north of guardrails and walked east on bedrock cliffs to centreline.				
Project Number	60341251	Air Temp. (degC)	19.0	Weather Notes	
Tablet	AECOM12	Wind Speed (beaufort)	3	Thunderstorm earlier this morning	
Start Date	6/10/2015 11:45:00 AM	Precipitation	0		
End Date	2015-06-10 12:30:46	Cloud Cover	95.00		
Site Features					
Feature Description	1245	Feature Location			
Large beaver dam upstream (east) of centreline		Latitude:45.635058,Longitude:-80.393289,Altitude:167.5,Speed:0.025722222,Accuracy:2.1,Provider:gps,Time:06/10/2015 11:51:24 EDT			
Feature Description	1248	Feature Location			
Facing south on centreline across pond		Latitude:45.634861,Longitude:-80.39382,Altitude:174.8,Speed:0.020577777,Accuracy:2.1,Provider:gps,Time:06/10/2015 11:57:29 EDT			
Feature Description	1251	Feature Location			
Facing west on centreline towards highway		Latitude:45.634861,Longitude:-80.39382,Altitude:174.8,Speed:0.015433333,Accuracy:1.8,Provider:gps,Time:06/10/2015 11:58:07 EDT			
Feature Description	1254	Feature Location			
Facing east on centreline		Latitude:45.63486,Longitude:-80.393837,Altitude:175.5,Speed:0.010288889,Accuracy:2.1,Provider:gps,Time:06/10/2015 11:58:39 EDT			

Pond Lake Assessment

Feature
Description

1257

Feature Location

Facing east from highway towards
centreline

Latitude:45.634044,Longitude:-
80.395625,Altitude:196.3,Speed:0.072
02222,Accuracy:2.1,Provider:gps,Time:
06/10/2015 12:31:02 EDT



Surrounding Land
Use

Forest,Wetland,Other

Highway east of centreline.Forested north and south of pond.Survey point in wetland/beaver pond.

Type of Pond

Natural,Permanent,Dammed,Online

Surrounded by bedrock cliffs and forest. Long pond stretching east from highway, open water divided by some large rectangular sections of vegetation (shrubs mostly). Beaver dam ~60m upstream from centreline crossing whole pond (see photo). Estimated wid

In-Situ Water Quality

WT (deg. C)

18.0

AT (degC)

19.0

Water Quality Notes

pH

4.8

Cond. (s/cm)

0.00

Taken near centreline

D.O. (mg/L)

3.5

Water Colour

Yellow/Brown

Water Clarity

Clear

Seepage Indicators

None

Fish & Wildlife
Observations

Green frogs heard

In-Situ Habitat

Shrub Vegetation in large rectangular sections

Physical Characteristics

Estimated Size

40.00

Estimated Depth

1.50

Notes

Estimated width taken where centreline crosses pond. Depth over 1.5m, too deep to wade.

In-Situ Cover

Woody Debris

Boulders

Cobble

Aquatic Vegetation

Structures

Total Instream Cover

100.00

50.00

Aquatic Vegetation
Species Present

Some grasses. Most cover coming from large rectangular mats of shrubs in pond upstream from centerline.

Description & Width
of Riparian
Vegetation

0m; Bedrock

Execution Time

8/17/2015 10:08:22 AM

Filter Start Date 4/1/2015

Filter End Date 8/17/2015




Pond Lake Assessment

Study Area Comments


Steep bedrock cliffs sloping towards beaver pond. Beaver dam 60m upstream of centreline. Open water west of centerline, shrubby vegetation mats to the east. Surveyed from North side of pond.







Pond Lake Assessment

Site ID	WB-B-M39-89		Field Crew	Ami Arsenault Justin Munro		129
Study Area	TLINE B					
Location	East of highway 69. Parked on highway and walked east across wetland to rock barren outcrop. Survey location just on east side of barren.					
Project Number	60341251	Air Temp. (degC)	18.0	Weather Notes		
Tablet	AECOM12	Wind Speed (beaufort)	2			
Start Date	6/11/2015 8:20:58 AM	Precipitation	0			
End Date	2015-06-11 08:42:26	Cloud Cover	0.00			
Site Features						
Feature Description	1344	Feature Location				
Facing north on centreline	Latitude:45.626408,Longitude:-80.390899,Altitude:198.4,Speed:0.015433333,Accuracy:1.75,Provider:gps,Time:06/11/2015 08:27:07 EDT					
Feature Description	1347	Feature Location				
Saturated fen , facing eastward from centerline	Latitude:45.626412,Longitude:-80.390809,Altitude:197.7,Speed:0.025722222,Accuracy:2.1,Provider:gps,Time:06/11/2015 08:28:04 EDT					
Feature Description	1350	Feature Location				
Facing south along centerline, where it crosses a rock barren outcrop 30m into the wetland. Photo taken on the northern tip of rock barren where centerline begins to cross.	Latitude:45.626347,Longitude:-80.390904,Altitude:197.7,Speed:0.03601111,Accuracy:1.75,Provider:gps,Time:06/11/2015 08:29:51 EDT					
Surrounding Land Use	Forest,Wetland,Other Highway 69/400 to the west. Wetland surrounded by forest.					
Type of Pond	Natural,Permanent,Online Large wetland covered in blueberry, sheep laurel and other shrubs. Very saturated, probably absorbed lots of rain water from yesterday's thunder showers. Sphagnum moss growth in wetland, some algae growth. No water chemistry taken. Depth greater than 50c					


Pond Lake Assessment

In-Situ Water Quality					
WT (deg. C)	<input type="text"/>	AT (degC)	<input type="text" value="18.0"/>	Water Quality Notes No chemisrry taken. Stagnant water, algae growth, and some areas covered in floating mats of vegetation.	
pH	<input type="text"/>	Cond. (s/cm)	<input type="text"/>		
D.O. (mg/L)	<input type="text"/>	Water Colour	<input type="text" value="Colourless"/>		
Water Clarity	<input type="text" value="Clear"/>				
Seepage Indicators		<input type="text" value="None"/>			
		<input type="text"/>			
Fish & Wildlife Observations		<input type="text" value="None observed"/>			
In-Situ Habitat		<input type="text" value="Shrubs, Floating mats of vegetation"/>			
Physical Characteristics					
Estimated Size	<input type="text" value="37.00"/>	Estimated Depth	<input type="text" value="0.50"/>		
Notes	<input type="text" value="Estimated width taken from where centreline will cross wetland"/>				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="100.00"/>	<input type="text"/>	<input type="text" value="100.00"/>
Aquatic Vegetation Species Present	<input type="text" value="Narrow leaved cattails, some moss"/>				
Description & Width of Riparian Vegetation	<input type="text" value="0m; wetland surrounded by bedrock and forest, no riparian section"/>				
Study Area Comments					
<input type="text" value="Saturated wetland with some deeper pools of water. Predominantly covered by floating mats of vegetation or shrubs. Rock barren outcrop in middle of wetland. Transmission line crossing approx 30m of this wetland to the bedrock outcrop. No water chemistry t"/>					





Pond Lake Assessment

Site ID	WB-B-M39-87		Field Crew	Ami Arsenault Justin Munro		132
Study Area	TLINE B					
Location	East of highway 150m. Parked at moose trading post and hiked north on highway 150m and then headed east into forest towards survey point.					
Project Number	60341251	Air Temp. (degC)	18.0	Weather Notes		
Tablet	AECOM12	Wind Speed (beaufort)	2			
Start Date	6/11/2015 9:21:49 AM	Precipitation	0			
End Date	2015-06-11 09:51:00	Cloud Cover	50.00			
Site Features						
Feature Description	1353	Feature Location				
North on centreline across pond	Latitude:45.623149,Longitude:-80.386948,Altitude:201.0,Speed:0.16462222,Accuracy:2.1,Provider:gps,Time:06/11/2015 09:24:27 EDT					
Feature Description	1356	Feature Location				
Facing east from centreline at pond	Latitude:45.623154,Longitude:-80.386956,Altitude:201.5,Speed:0.010288889,Accuracy:2.1,Provider:gps,Time:06/11/2015 09:25:12 EDT					
Feature Description	1359	Feature Location				
Facing west from centreline towards small channel in pond	Latitude:45.623156,Longitude:-80.386953,Altitude:202.3,Speed:0.030866666,Accuracy:2.1,Provider:gps,Time:06/11/2015 09:26:26 EDT					
Feature Description	1362	Feature Location				
Facing south on centreline at pond	Latitude:45.623341,Longitude:-80.387235,Altitude:193.4,Speed:0.17491111,Accuracy:2.4,Provider:gps,Time:06/11/2015 09:50:36 EDT					
Surrounding Land Use	Forest,Wetland,Other					
	Highway 69/400 west of forested pond.					


Pond Lake Assessment

Type of Pond	Natural,Permanent,Online				
Large pond with abundance of fragrant white lillies. Probably connected to larger Moose Lake east of the moose lake trading post. Standing snags, fallen logs. Painted turtle observed. Width ~30m where transmission line crosses pond. Depth around edges of					
In-Situ Water Quality					
WT (deg. C)	17.7	AT (degC)	18.0	Water Quality Notes	
pH	5.8	Cond. (s/cm)	0.18		
D.O. (mg/L)	1.6	Water Colour	Colourless		
Water Clarity	Clear				
Seepage Indicators	None				
Fish & Wildlife Observations	Midland painted turtle basking on log in pond				
In-Situ Habitat	Fragrant white lilies, logs, grasses				
Physical Characteristics					
Estimated Size	30.00	Estimated Depth	0.40		
Notes	Measured estimated width where transmission line crosses pond.				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
25.00			75.00		60.00
Aquatic Vegetation Species Present	Fragrant white pond lilies				
Description & Width of Riparian Vegetation	~2m grassy vegetation before bedrock and forest				
Study Area Comments					
Transmission line will have to pass through forested area and 30m of pond. A small channel to the west of TLine, approx 0.5m wide, flows into pond. Lots of fragrant white lily pads.					





Pond Lake Assessment

Site ID	WB-B-M40-85		Field Crew	Ami Arsenault Justin Munro		135
Study Area	TLINE B					
Location	East of highway 69/400. Parked car at Moose Lake Trading Post and walked south to survey point. Cement culvert on east side of road. Perimeter of cattail marsh					
Project Number	60341251	Air Temp. (degC)	20.0	Weather Notes		
Tablet	AECOM12	Wind Speed (beaufort)	3			
Start Date	6/11/2015 2:10:42 PM	Precipitation	0			
End Date	2015-06-11 14:34:56	Cloud Cover	90.00			
Site Features						
Feature Description	1401	Feature Location				
Facing east towards centerline, standing west of centerline	Latitude:45.617513,Longitude:-80.383762,Altitude:196.1,Speed:0.05658889,Accuracy:2.7,Provider:gps,Time:06/11/2015 02:12:03 EDT					
Feature Description	1404	Feature Location				
Facing south at centerline	Latitude:45.617499,Longitude:-80.383529,Altitude:199.5,Speed:0.0463,Accuracy:2.4,Provider:gps,Time:06/11/2015 02:19:42 EDT					
Feature Description	1407	Feature Location				
Facing north at centerline	Latitude:45.617504,Longitude:-80.383517,Altitude:199.8,Speed:0.066877775,Accuracy:2.4,Provider:gps,Time:06/11/2015 02:20:17 EDT					
Feature Description	1410	Feature Location				
Facing west towards highway from centerline	Latitude:45.617504,Longitude:-80.383513,Altitude:200.0,Speed:0.010288889,Accuracy:2.4,Provider:gps,Time:06/11/2015 02:20:45 EDT					
Surrounding Land Use	Forest,Wetland,Other					
	East of highway 69/400. Cattail marsh surrounded by forest on the north east and south sides.					


Pond Lake Assessment

Type of Pond	Natural,Permanent,Online				
	Approx 60m in length and 30m wide, cattail marsh is surrounded by forest to the north east and south, and the highway on the west. Standing water in marsh.				
In-Situ Water Quality					
WT (deg. C)	<input type="text"/>	AT (degC)	<input type="text"/>	Water Quality Notes	
pH	<input type="text"/>	Cond. (s/cm)	<input type="text"/>	<input type="text"/>	
D.O. (mg/L)	<input type="text"/>	Water Colour	<input type="text"/>		
Water Clarity	<input type="text"/>				
Seepage Indicators	None				
	<input type="text"/>				
Fish & Wildlife Observations	Frog observed				
In-Situ Habitat	Cattails and ferns spagnum moss				
Physical Characteristics					
Estimated Size	<input type="text" value="60.00"/>	Estimated Depth	<input type="text" value="0.40"/>		
Notes	Estimated length of marsh (north to south). Water depth up to 40cm.				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="100.00"/>	<input type="text"/>	<input type="text" value="95.00"/>
Aquatic Vegetation Species Present	Sedge species, cattails, ferns and mosses				
Description & Width of Riparian Vegetation	Highway and forest (white pine, spruce, maple). Width of forest unknown.				
Study Area Comments					
<input type="text" value="Studied perimeter of cattail marsh. No defined channel, wet throughout. Lots of new growth. No water quality taken, intermittant pockets of water throughout wetland"/>					

Pond Lake Assessment

Site ID	WB-B-M40-83		Field Crew	Ami Arsenault Justin Munro		138
Study Area	TLINE B					
Location	East of highway 69/400. Parked on dirt road north of survey location (barb wire fence just past parking spot) . Walked east to centerline and then south east to survey location through thick alder swamp.					
Project Number	60341251	Air Temp. (degC)	16.0	Weather Notes		
Tablet	AECOM12	Wind Speed (beaufort)	1			
Start Date	6/12/2015 8:38:47 AM	Precipitation	1			
End Date	2015-06-12 09:16:12	Cloud Cover	100.00			
Site Features						
Feature Description	1455	Feature Location				
Facing north on centerline	Latitude:45.614842,Longitude:-80.38101,Altitude:199.1,Speed:0.020577777,Accuracy:2.0,Provider:gps,Time:06/12/2015 08:41:51 EDT					
Feature Description	1458	Feature Location				
Facing east from centerline	Latitude:45.61484,Longitude:-80.381009,Altitude:199.3,Speed:0.0463,Accuracy:1.75,Provider:gps,Time:06/12/2015 08:42:42 EDT					
Feature Description	1461	Feature Location				
Facing south on centerline	Latitude:45.614835,Longitude:-80.381006,Altitude:199.3,Speed:0.010288889,Accuracy:2.0,Provider:gps,Time:06/12/2015 08:43:16 EDT					
Feature Description	1464	Feature Location				
Facing east on centerline	Latitude:45.61483,Longitude:-80.38099,Altitude:199.4,Speed:0.020577777,Accuracy:1.75,Provider:gps,Time:06/12/2015 08:43:53 EDT					

Pond Lake Assessment

Feature Description	1467	Feature Location			
Alder swamp	Latitude:45.614831,Longitude:-80.380982,Altitude:199.5,Speed:0.030866666,Accuracy:1.75,Provider:gps,Time:06/12/2015 08:44:22 EDT				
Surrounding Land Use	Forest,Wetland,Other				
	Highway 69/400 west of survey location. Alder swamp bordered by forest.				
Type of Pond	Natural,Permanent,Online				
	Alder thicket beginning south of unassumed dirt road for approx 150m. Survey point M40-83 in the middle of thicket. No defined channel, interconnected pools of water over spagnum moss growth. Spruce, labrador tea and herbaceous ground cover plants growi				
In-Situ Water Quality					
WT (deg. C)		AT (degC)	16.0	Water Quality Notes No water chemistry taken	
pH		Cond. (s/cm)			
D.O. (mg/L)		Water Colour	Colourless		
Water Clarity	Clear				
Seepage Indicators	None				
Fish & Wildlife Observations	None observed				
In-Situ Habitat	Spagnum moss				
Physical Characteristics					
Estimated Size	150.00	Estimated Depth	0.40		
Notes	Alder thicket beginning south of unassumed dirt road for approx 150m along proposed centerline. Some deep pockets of water above 0.50m, but mean estimated depth is 0.4m				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
			100.00		100.00
Aquatic Vegetation Species Present	Spagnum mosses, ferns, alder shrubs, labrador tea, mayflower				
Description & Width of Riparian Vegetation	0m; No riparian zones were observed during today's survey event				
Execution Time	8/17/2015 10:08:22 AM		Filter Start Date 4/1/2015		
			Filter End Date 8/17/2015		





Pond Lake Assessment

Study Area Comments

Survey point M40-82 situated in large alder thicket. Lots of water in area due to rain events this week. There is no defined watercourse within study area. Deep pockets of water intermixed with vegetated hummocks and alder shrubs. The alder thicket looks



Pond Lake Assessment



Site ID	WB-B-M41-82		Field Crew	Ami Arsenault Justin Munro		141
Study Area	TLINE B					
Location	Parked on small dirt road east of highway 69/400. Walked north east on old quad trail and then cut east to survey site location.					
Project Number	60341251	Air Temp. (degC)	15.0	Weather Notes		
Tablet	AECOM12	Wind Speed (beaufort)	1			
Start Date	6/12/2015 9:46:06 AM	Precipitation	1			
End Date	2015-06-12 10:13:43	Cloud Cover	100.00			
Site Features						
Feature Description	1470	Feature Location				
Facing east from centerline	Latitude:45.611028,Longitude:-80.375952,Altitude:198.5,Speed:0.03601111,Accuracy:2.7,Provider:gps,Time:06/12/2015 10:02:24 EDT					
Feature Description	1473	Feature Location				
Facing west from centerline	Latitude:45.611028,Longitude:-80.375952,Altitude:198.5,Speed:0.0463,Accuracy:2.7,Provider:gps,Time:06/12/2015 10:02:52 EDT					
Feature Description	1476	Feature Location				
Facing south on centerline (where would cross)	Latitude:45.611029,Longitude:-80.375954,Altitude:198.5,Speed:0.030866666,Accuracy:3.3,Provider:gps,Time:06/12/2015 10:03:27 EDT					
Feature Description	1479	Feature Location				
Old beaver dam 50m downstream from centerline	Latitude:45.610943,Longitude:-80.376429,Altitude:198.4,Speed:0.09774444,Accuracy:2.7,Provider:gps,Time:06/12/2015 10:09:39 EDT					

Execution Time 8/17/2015 10:08:22 AM

Filter Start Date 4/1/2015

Filter End Date 8/17/2015

Pond Lake Assessment

Feature Description	1482	Feature Location	
View of vegetated channel flowing west from beaver dam		Latitude:45.610899,Longitude:-80.376505,Altitude:200.9,Speed:0.030866666,Accuracy:2.7,Provider:gps,Time:06/12/2015 10:12:27 EDT	
Feature Description	1485	Feature Location	
Overview of pond taken from beaver dam at west end		Latitude:45.610899,Longitude:-80.376508,Altitude:200.7,Speed:0.015433333,Accuracy:2.7,Provider:gps,Time:06/12/2015 10:13:08 EDT	
Surrounding Land Use	Forest,Wetland,Other		
	Highway 69/400 approx 400m west of location. Beaver pond surrounded by forest.		
Type of Pond	Natural,Permanent,Dammed,Online		
	Large beaver pond with bedrock and forested banks. Fragrant white water lillies dominate in stream cover. Fallen logs, some short tree stumps. Vegetated beaver dam. Water flows west from dam through vegetated channel.		
In-Situ Water Quality			
WT (deg. C)	17.6	AT (degC)	15.0
pH	5.5	Cond. (s/cm)	0.00
D.O. (mg/L)	3.3	Water Colour	Yellow/Brown
Water Clarity	Clear		
Seepage Indicators	None		
Fish & Wildlife Observations	Great blue heron observed in pond, green frog heard		
In-Situ Habitat	White pond lillies, submerged logs, grasses		
Physical Characteristics			
Estimated Size	140.00	Estimated Depth	1.50
Notes	Total length of pond east to west is 140m, total length of transmission line crossing pond is 45m. Estimated depth greater then 1.5m, too deep to wade.		

Execution Time 8/17/2015 10:08:22 AM

Filter Start Date 4/1/2015

Filter End Date 8/17/2015

Pond Lake Assessment

In-Situ Cover

Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
25.00			75.00		50.00





Aquatic Vegetation Species Present	Water tolerant grasses, white pond lilies, pond weed
Description & Width of Riparian Vegetation	0.5m, grasses and herbaceous ground cover

Study Area Comments


Large beaver pond, dammed at west end. Lots of water lilies. Small channel flowing into pond approx 100m upstream from centerline, this area more grassy and larger riparian zone. Water passes through beaver dam and flows west into vegetated channel.



Pond Lake Assessment

Site ID	WB-B-M46-71	Field Crew	Jessica Mendoza Kalynn Parrott	144
Study Area	TLINE B			
Location	East of highway 69. 50 m upstream and downstream of centre line.			
Project Number	60341251	Air Temp. (degC)	19.0	Weather Notes
Tablet	AECOM17	Wind Speed (beaufort)	1	
Start Date	6/15/2015 11:14:02 AM	Precipitation	0	
End Date	2015-06-15 12:00:09	Cloud Cover	100.00	
Site Features				
Feature Description	1518	Feature Location		
On south bank looking northwest along centre line	Latitude:45.566647,Longitude:-80.323576,Altitude:207.8,Speed:0.07716667,Accuracy:3.0,Provider:gps,Time:06/15/2015 11:12:19 EDT			
Feature Description	1521	Feature Location		
Centre line looking downstream from south side	Latitude:45.566647,Longitude:-80.323592,Altitude:208.1,Speed:0.07202222,Accuracy:1.75,Provider:gps,Time:06/15/2015 11:13:30 EDT			
Feature Description	1524	Feature Location		
Centre line looking upstream from south side	Latitude:45.566647,Longitude:-80.323592,Altitude:208.1,Speed:0.020577777,Accuracy:1.5,Provider:gps,Time:06/15/2015 11:13:51 EDT			
Feature Description	1527	Feature Location		
Upstream 50 m looking downstream from north side. Standing in alder thicket.	Latitude:45.566874,Longitude:-80.322616,Altitude:223.2,Speed:0.03601111,Accuracy:1.75,Provider:gps,Time:06/15/2015 11:29:09 EDT			

Pond Lake Assessment

Feature Description	1530	Feature Location			
Downstream 50m looking upstream from north side.	Latitude:45.566631,Longitude:-80.323882,Altitude:220.6,Speed:0.030866666,Accuracy:1.5,Provider:gps,Time:06/15/2015 11:39:34 EDT				
Surrounding Land Use	Forest				
	Mixed deciduous coniferous forest				
Type of Pond	Natural,Permanent,Online				
	Wet meadow to transitional fen. No defined channel. Flows downstream through plastic culvert attaching to wetland across the highway. Transitions from forest to alder thicket to wetland. Occasional pools.				
In-Situ Water Quality					
WT (deg. C)	18.3	AT (degC)	19.6		
pH	4.5	Cond. (s/cm)	0.01		
D.O. (mg/L)	5.1	Water Colour	Colourless		
Water Clarity	Clear				
Seepage Indicators	None				
Fish & Wildlife Observations	None observed				
In-Situ Habitat	Highly vegetated pools and channels.				
Physical Characteristics					
Estimated Size	43.00	Estimated Depth	0.60		
Notes	Low lying area between forested bedrock				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
			100.00		100.00
Aquatic Vegetation Species Present	Sphagnum moss, sedges, cattails, blue flag iris, meadowsweet				
Description & Width of Riparian Vegetation	Approximately 1m of low lying shrubs and sedges				

Execution Time 8/17/2015 10:08:22 AM

Filter Start Date 4/1/2015

Filter End Date 8/17/2015


Pond Lake Assessment

Study Area Comments

No defined channel, not suitable fish habitat. Overland flow fed wetland, with intermittent forest streams and pools.



Pond Lake Assessment

Site ID	WB-B-M47-70		Field Crew	Jessica Mendoza Kalynn Parrott		147
Study Area	TLINE B					
Location	East of highway 69. Inland lake. Transmission line does not cross waterbody, but lake is within disturbance area.					
Project Number	60341251	Air Temp. (degC)	20.0	Weather Notes		
Tablet	AECOM17	Wind Speed (beaufort)	3			
Start Date	6/15/2015 1:29:28 PM	Precipitation	0			
End Date	2015-06-15 14:07:35	Cloud Cover	60.00			
Site Features						
Feature Description	1548	Feature Location				
Overview of lake. On west bank looking east.		Latitude:45.564432,Longitude:-80.317081,Altitude:230.7,Speed:0.03601111,Accuracy:1.25,Provider:gps,Time:				
Surrounding Land Use	Forest Mixed deciduous coniferous forest. Met tower nearby.					
Type of Pond	Natural,Permanent,Online Inland lake, bedrock banks. Low flow. Small forested island.					
In-Situ Water Quality						
WT (deg. C)	20.4	AT (degC)	20.9	Water Quality Notes		
pH	7.0	Cond. (s/cm)	0.02			
D.O. (mg/L)	9.6	Water Colour	Colourless			
Water Clarity	Clear					
Seepage Indicators	None					
Fish & Wildlife Observations	Gulls, one large fish observed (species unknown), evidence of fish coming to surface. Great Blue Heron flying overhead. Bullfrog tadpoles observed along bank.					
In-Situ Habitat	Cattails, grasses, sedges, irises, lichen					

Pond Lake Assessment

Physical Characteristics

Estimated Size	<input type="text" value="123.00"/>	Estimated Depth	<input type="text" value="0.00"/>
Notes	Moderate size inland lake. Likely a quarry (evidence of blasting and rip rap). Depth unknown as lake is likely man-made.		

In-Situ Cover

Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text" value="100.00"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="5.00"/>

Aquatic Vegetation Species Present	None observed
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Description & Width of Riparian Vegetation	Approximately 10 m, only occasional ferns, moss, lichen, some shrubs and herbaceous. Mostly bare bedrock.
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Study Area Comments


Suitable fish habitat. Likely very deep wetted depth. Propose moving t line b route further towards highway 69 (westward) to reduce footprint and met tower is already in place approximately 20 m down the t line b route.




Pond Lake Assessment

Site ID	WB-B-M55-54	Field Crew	Jessica Mendoza Kalynn Parrott	150
Study Area	TLINE B			
Location	East of hwy 69			
Project Number	60341251	Air Temp. (degC)	20.0	Weather Notes
Tablet	AECOM17	Wind Speed (beaufort)	1	
Start Date	6/16/2015 9:44:54 AM	Precipitation	0	
End Date	2015-06-16 10:04:10	Cloud Cover	0.00	
Site Features				
Feature Description	1590	Feature Location		
Representative picture from west bank looking east	Latitude:45.513963,Longitude:-80.231276,Altitude:224.4,Speed:0.03601111,Accuracy:1.8,Provider:gps,Time:06/16/2015 09:50:35 EDT			
Feature Description	1593	Feature Location		
Looking southeast along CI from west bank	Latitude:45.513932,Longitude:-80.231301,Altitude:224.3,Speed:0.08231111,Accuracy:2.1,Provider:gps,Time:06/16/2015 09:53:22 EDT			
Surrounding Land Use	Forest			
	Coniferous forest on bedrock			
Type of Pond	Natural,Permanent,Online			
	Large pond perched on bedrock			
In-Situ Water Quality				
WT (deg. C)	21.5	AT (degC)	20.7	Water Quality Notes
pH	5.1	Cond. (s/cm)	0.00	
D.O. (mg/L)	7.5	Water Colour	Colourless	
Water Clarity	Clear			
Seepage Indicators	None			

Pond Lake Assessment

Fish & Wildlife Observations	Loon heard, green frog				
In-Situ Habitat	Shallow pond with epilithic periphyton & emergent vegetation				
Physical Characteristics					
Estimated Size	94.00	Estimated Depth	1.50		
Notes	Dead trees indicate this may not have always been a pond				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
20.00			80.00		90.00
Aquatic Vegetation Species Present	Fragrant water lily yellow pond lily emergent grasses water shield algae				
Description & Width of Riparian Vegetation	1m ferns and grasses				
Study Area Comments					
Potential connectivity upstream but unknown					

Pond Lake Assessment

Site ID	WB-B-M56-48	Field Crew	Jessica Mendoza Kalynn Parrott	153
Study Area	TLINE B			
Location	East of hwy 69			
Project Number	60341251	Air Temp. (degC)	24.0	Weather Notes
Tablet	AECOM17	Wind Speed (beaufort)	4	
Start Date	6/16/2015 12:38:04 PM	Precipitation	0	
End Date	2015-06-16 12:52:02	Cloud Cover	70.00	
Site Features				
Feature Description	1626	Feature Location		
Representative photo of marsh from road looking east	Latitude:45.50384,Longitude:-80.21868,Altitude:224.8,Speed:0.020577777,Accuracy:2.1,Provider:gps,Time:06/16/2015 12:43:49 EDT			
Surrounding Land Use	Forest,Other Mixed coniferous deciduous forest atop bedrock			
Type of Pond	Natural Not a pond. This is a marsh with sedges cattails sweetgale in low lying area. No connectivity.			
In-Situ Water Quality				
WT (deg. C)		AT (degC)	22.0	Water Quality Notes No water quality measurement were taken due to absence of water
pH		Cond. (s/cm)		
D.O. (mg/L)		Water Colour		
Water Clarity				
Seepage Indicators	None 			
Fish & Wildlife Observations	Canada warbler			
In-Situ Habitat	Saturated grasses and sedges			

Pond Lake Assessment

Physical Characteristics

Estimated Size Estimated Depth

Notes

In-Situ Cover

Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="0.00"/>




Aquatic Vegetation Species Present

Description & Width of Riparian Vegetation


Study Area Comments




Pond Lake Assessment

Site ID	WB-B-M63-33	Field Crew	Jessica Mendoza Kalynn Parrott	156
Study Area	TLINE B			
Location	Along east-west part of the line b. Accessed by west hike from nine mile lake			
Project Number	60341251	Air Temp. (degC)	19.0	Weather Notes
Tablet	AECOM17	Wind Speed (beaufort)	4	
Start Date	6/18/2015 11:58:43 AM	Precipitation	0	
End Date	2015-06-18 12:18:01	Cloud Cover	100.00	
Site Features				
Feature Description	1632	Feature Location		
Along CI looking west from east bank	Latitude:45.495222,Longitude:-80.117441,Altitude:185.5,Speed:0.0463,Accuracy:2.4,Provider:gps,Time:06/18/2015 12:02:05 EDT			
Feature Description	1635	Feature Location		
Looking north from cl on east bank	Latitude:45.495204,Longitude:-80.11745,Altitude:185.5,Speed:0.12346666,Accuracy:2.1,Provider:gps,Time:06/18/2015 12:04:21 EDT			
Feature Description	1638	Feature Location		
Looking south from cl on east bank	Latitude:45.495202,Longitude:-80.11746,Altitude:185.5,Speed:0.0051444443,Accuracy:2.1,Provider:gps,Time:06/18/2015 12:04:50 EDT			
Surrounding Land Use	Forest Coniferous dominated forest			
Type of Pond	Natural,Permanent,Online Channel that connects two large lakes to the north and south			

Pond Lake Assessment

In-Situ Water Quality					
WT (deg. C)	<input type="text" value="21.7"/>	AT (degC)	<input type="text" value="19.1"/>	Water Quality Notes <input type="text"/>	
pH	<input type="text" value="5.4"/>	Cond. (s/cm)	<input type="text" value="0.00"/>		
D.O. (mg/L)	<input type="text" value="8.7"/>	Water Colour	<input type="text" value="Colourless"/>		
Water Clarity	<input type="text" value="Clear"/>				
Seepage Indicators	<input type="text" value="None"/> <input type="text"/>				
Fish & Wildlife Observations	<input type="text" value="Grey tree frog heard, pair of loons seen"/>				
In-Situ Habitat	<input type="text" value="Bedrock and boulders & cobbles slope into channel"/>				
Physical Characteristics					
Estimated Size	<input type="text" value="33.00"/>	Estimated Depth	<input type="text" value="5.00"/>		
Notes	<input type="text" value="Some vegetated sand on east bank"/>				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text" value="80.00"/>	<input type="text"/>	<input type="text" value="20.00"/>	<input type="text"/>	<input type="text" value="20.00"/>
Aquatic Vegetation Species Present	<input type="text" value="Fragrant pond lily, broadleaf arrowhead, emergent grasses, periphyton"/>				
Description & Width of Riparian Vegetation	<input type="text" value="8m grass, aster sp. Meadow sweet, ferns, moss, juniper"/>				
Study Area Comments					
<input type="text" value="Smaller crossing 200m to north"/>					

Pond Lake Assessment

Site ID	WB-B-M63-34	Field Crew	Jessica Mendoza Kalynn Parrott	159
Study Area	TLINE B			
Location	Along east/west portion of t line b			
Project Number	60341251	Air Temp. (degC)	21.0	Weather Notes
Tablet	AECOM17	Wind Speed (beaufort)	0	Rain approaching
Start Date	6/18/2015 12:47:10 PM	Precipitation	0	
End Date	2015-06-18 13:00:28	Cloud Cover	100.00	
Site Features				
Feature Description	1641	Feature Location		
Looking north at wetland from south Bank	Latitude:45.495516,Longitude:-80.113867,Altitude:185.5,Speed:0.19548889,Accuracy:2.1,Provider:gps,Time:06/18/2015 01:11:00 EDT			
Surrounding Land Use	Forest Conifer dominated forest			
Type of Pond	Natural,Permanent Inland marsh, likely connected to nearby lake.			
In-Situ Water Quality				
WT (deg. C)	22.2	AT (degC)	21.5	Water Quality Notes
pH	4.6	Cond. (s/cm)	0.00	
D.O. (mg/L)	8.7	Water Colour	Colourless	
Water Clarity	Clear			
Seepage Indicators	None 			
Fish & Wildlife Observations	Mink frog heard			
In-Situ Habitat	Meadowsweet, watershield, periodic grasses			

Pond Lake Assessment

Physical Characteristics

Estimated Size Estimated Depth

Notes

In-Situ Cover

Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="100.00"/>	<input type="text"/>	<input type="text" value="90.00"/>

Aquatic Vegetation Species Present


Description & Width of Riparian Vegetation

Study Area Comments

Potential fish habitat. High DO likely attributed to dense vegetation. Connected to nearby lake system.



Pond Lake Assessment

Site ID	WB-B-M57-44		Field Crew	Jessica Mendoza Kalynn Parrott		162
Study Area	TLINE B					
Location	East of Highway 69, waterbody flows north east into downstream wetland. Wetland feeds Round Lake Nature Reserve.					
Project Number	60341251	Air Temp. (degC)	15.0	Weather Notes		
Tablet	AECOM17	Wind Speed (beaufort)	4	Sunny, no chance of rain		
Start Date	6/19/2015 9:17:02 AM	Precipitation	0			
End Date	2015-06-19 09:40:04	Cloud Cover	15.00			
Site Features						
Feature Description	1644	Feature Location				
At centre line, looking east across waterbody		Latitude:45.500511,Longitude:-80.203881,Altitude:200.2,Speed:0.020577777,Accuracy:2.1,Provider:gps,Time:06/19/2015 09:25:40 EDT				
Surrounding Land Use		Forest Mixed deciduous forest, conifer dominated				
Type of Pond		Natural,Permanent,Online Open water wetland to transitional fen. Downstream pond a result of beaver activity.				
In-Situ Water Quality						
WT (deg. C)	17.6	AT (degC)	15.6	Water Quality Notes		
pH	5.3	Cond. (s/cm)	0.08	Precipitation in the past 24 hours.		
D.O. (mg/L)	1.6	Water Colour	Colourless			
Water Clarity	Clear					
Seepage Indicators	None					
Fish & Wildlife Observations Great Blue Heron observed, Sandhill Cranes heard and observed. Red-winged blackbird observed. Canada warbler heard.						
In-Situ Habitat	Emergent grasses, shrubs and sedges. Beaver Dam.					

Pond Lake Assessment

Physical Characteristics

Estimated Size	<input type="text" value="115.00"/>	Estimated Depth	<input type="text" value="1.50"/>
Notes	<input type="text" value="Wetland and pond situated between bedrock outcrops slowly sloping toward Waterbody."/>		


In-Situ Cover

Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="100.00"/>	<input type="text"/>	<input type="text" value="90.00"/>
Aquatic Vegetation Species Present	<input type="text" value="Algae, periphyton, mesdowsweet, cattails, sedges, alder, emergent grasses"/>				
Description & Width of Riparian Vegetation	<input type="text" value="0m. Bedrock meets wetland. No riparian zone."/>				

Study Area Comments



Pond Lake Assessment

Site ID	WB-B-M57-45	Field Crew	Jessica Mendoza Kalynn Parrott	165
Study Area	TLINE B			
Location	East of highway 69, inland bog.			
Project Number	60341251	Air Temp. (degC)	15.0	Weather Notes Sunny, light cloud.
Tablet	AECOM17	Wind Speed (beaufort)	4	
Start Date	6/19/2015 10:10:07 AM	Precipitation	0	
End Date	2015-06-19 10:23:54	Cloud Cover	40.00	
Site Features				
Feature Description	1647	Feature Location		
At centre line on the east bank looking southwest.	Latitude:45.500948,Longitude:-80.208196,Altitude:218.2,Speed:0.0463,Accuracy:2.4,Provider:gps,Time:06/19/2015 10:05:20 EDT			
Surrounding Land Use	Forest Mixed deciduous forest, conifer dominated			
Type of Pond	Natural,Permanent,Offline Saturated inland bog. No open water.			
In-Situ Water Quality				
WT (deg. C)		AT (degC)	15.0	Water Quality Notes Water quality not taken due to lack of open water.
pH		Cond. (s/cm)		
D.O. (mg/L)		Water Colour		
Water Clarity				
Seepage Indicators	None 			
Fish & Wildlife Observations	None observed			
In-Situ Habitat	Ferns, sedges, Sphagnum moss			

Pond Lake Assessment

Physical Characteristics

Estimated Size Estimated Depth

Notes

In-Situ Cover

Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="100.00"/>	<input type="text"/>	<input type="text" value="100.00"/>


Aquatic Vegetation Species Present

Description & Width of Riparian Vegetation

Study Area Comments



Pond Lake Assessment

Site ID	WB-B-M63-31	Field Crew	Jessica Mendoza Justin Munro	168
Study Area	TLINE B			
Location	East of marsh lake accessed through Hoover road			
Project Number	60341251	Air Temp. (degC)	17.0	Weather Notes
Tablet	AECOM10	Wind Speed (beaufort)	4	
Start Date	6/22/2015 11:05:58 AM	Precipitation	0	
End Date	2015-06-22 11:06:01	Cloud Cover	95.00	
Site Features				
Feature Description	1650	Feature Location		
Looking perpendicularly to cl from south east side		Latitude:45.492663,Longitude:-80.123537,Altitude:220.8,Speed:0.066877775,Accuracy:1.75,Provider:gps,Time:06/22/2015 11:08:18 EDT		
Surrounding Land Use	Forest			
	Mixed coniferous deciduous forest atop bedrock			
Type of Pond	Natural,Offline			
	Sphagnum bog with no standing water			
In-Situ Water Quality				
WT (deg. C)		AT (degC)	17.0	Water Quality Notes
pH		Cond. (s/cm)		No water to take measurements
D.O. (mg/L)		Water Colour		
Water Clarity				
Seepage Indicators	None			
Fish & Wildlife Observations	Hawk heard			
In-Situ Habitat	None - not likely to support fish or amphibians			

Pond Lake Assessment

Physical Characteristics

Estimated Size Estimated Depth

Notes

In-Situ Cover

Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="0.00"/>

Aquatic Vegetation Species Present	<input type="text" value="Sphagnum sp., Meadow sweet, sheep laurel, ferns, herbaceous plants, grass, young saplings, tamarack"/>
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Description & Width of Riparian Vegetation	<input type="text" value="1m sweet low blueberry maple sapling"/>
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Study Area Comments


Not likely to support fish. No connectivity, very few puddles. Sphagnum is damp to saturated. May not be adequate even for amphibians. North area may be more wet due to observation of cattail







Pond Lake Assessment

Site ID	WB-B-M73-11	Field Crew	Amy Ingriselli Ami Arsenault		171
Study Area	TLINE B				
Location	East of HONI corridor. Followed creek from the corridor east to pond.				
Project Number	60341251	Air Temp. (degC)	24.0	Weather Notes	
Tablet	AECOM12	Wind Speed (beaufort)	4		
Start Date	6/22/2015 1:38:50 PM	Precipitation	0		
End Date	2015-06-22 14:29:34	Cloud Cover	30.00		
Site Features					
Feature Description	1719	Feature Location			
Facing south along centerline from north shore		Latitude:45.418044,Longitude:-80.006059,Altitude:262.0,Speed:0.34467778,Accuracy:1.8,Provider:gps,Time:06/22/2015 02:05:40 EDT			
Feature Description	1722	Feature Location			
Eastern limit of survey, facing west towards centerline		Latitude:45.418433,Longitude:-80.005472,Altitude:261.2,Speed:0.07716667,Accuracy:2.1,Provider:gps,Time:06/22/2015 02:15:57 EDT			
Feature Description	1725	Feature Location			
Western limits of study area facing east towards centerline. Standing on beaver dam		Latitude:45.417852,Longitude:-80.006491,Altitude:257.8,Speed:0.015433333,Accuracy:2.1,Provider:gps,Time:06/22/2015 02:28:04 EDT			
Feature Description	1728	Feature Location			
Beaver dam at west end of limit		Latitude:45.417852,Longitude:-80.006491,Altitude:257.8,Speed:0.087455556,Accuracy:2.1,Provider:gps,Time:06/22/2015 02:27:31 EDT			
Surrounding Land Use	Forest,Wetland,Other				
	Pond surrounded by forest. Hydro corridor to the west of survey location.				

Pond Lake Assessment

Type of Pond	Natural,Permanent,Dammed,Online				
Large oval pond stretching east to west. Proposed transmission line cuts approx 30m northnorthwest to southsouth east across pond. Some fallen logs in water, providing shade for aquatic species. Very old stumps. Dammed to the west.					
In-Situ Water Quality					
WT (deg. C)	24.8	AT (degC)	24.0	Water Quality Notes	
pH	5.1	Cond. (s/cm)	0.01		
D.O. (mg/L)	7.3	Water Colour	Colourless		
Water Clarity	Clear				
Seepage Indicators	None				
Fish & Wildlife Observations	Green frog, minnows observed				
In-Situ Habitat	Standing snags, fallen logs and aquatic vegetation as cover. Assumed detritus substrate				
Physical Characteristics					
Estimated Size	30.00	Estimated Depth	1.50		
Notes	Pond approx 1.5m deep and approx 30m wide. Surrounding topography slopes towards pond. Bedrock slopes with ~1m riparian vegetation (sweet gale, grasses and other shrub species).				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
60.00	10.00		30.00		40.00
Aquatic Vegetation Species Present	Yellow pond lilies, tape grass, bladder wort				
Description & Width of Riparian Vegetation	Bedrock slopes with approx 1m of small shrubbery and grasses				
Study Area Comments					
Decently sized pond with some standing snags, fallen logs and aquatic vegetation as cover. Assumed detritus substrate. Centerline to cut across 30m of pond. Pond discharges into a small western channel and into a dammed beaver pond.					

Pond Lake Assessment

Site ID	WB-B-M73-12		Field Crew	Amy Ingriselli Ami Arsenault		174
Study Area	TLINE B					
Location	T line b east of existing hydro line south of long lake estates road. Wetland at centreline plus 50 m up and downstream					
Project Number	60341251	Air Temp. (degC)	24.0	Weather Notes		
Tablet	AECOM12	Wind Speed (beaufort)	0			
Start Date	6/22/2015 3:07:45 PM	Precipitation	0			
End Date	2015-06-22 16:00:02	Cloud Cover	5.00			
Site Features						
Feature Description	1731	Feature Location				
Facing northwest across wetland at centreline	Latitude:45.422184,Longitude:-80.008726,Altitude:242.2,Speed:0.015433333,Accuracy:2.4,Provider:gps,Time:06/22/2015 02:59:14 EDT					
Feature Description	1734	Feature Location				
Facing southeast across wetland at centreline	Latitude:45.422188,Longitude:-80.008761,Altitude:242.3,Speed:0.015433333,Accuracy:2.4,Provider:gps,Time:06/22/2015 03:05:30 EDT					
Feature Description	1737	Feature Location				
Southeastern limit of study area at edge of scrub wetland facing west towards centreline	Latitude:45.421881,Longitude:-80.008286,Altitude:240.8,Speed:0.08231111,Accuracy:2.1,Provider:gps,Time:06/22/2015 03:46:33 EDT					
Feature Description	1740	Feature Location				
View of wetland from rock barren facing northeast	Latitude:45.421585,Longitude:-80.009021,Altitude:244.1,Speed:0.10288889,Accuracy:1.75,Provider:gps,Time:06/22/2015 03:56:49 EDT					

Pond Lake Assessment

Feature
Description

1743

Feature Location

Western limit of study area facing
wetland from trail on hydro line

Latitude:45.42151,Longitude:-
80.009275,Altitude:242.0,Speed:0.010
288889,Accuracy:1.75,Provider:gps,Ti
me:06/22/2015 03:59:22 EDT



Surrounding Land
Use

Forest,Wetland,Other

Pond bordered by scrub land with occasional saturated areas with cattail. Wetland bordered by upland forest, crossed by existing hydro line

Type of Pond

Natural,Permanent,Online

Heavily vegetated pond bordered by scrub land with saturated pockets of cattail

In-Situ Water Quality

WT (deg. C)

19.1

AT (degC)

24.0

Water Quality Notes

pH

5.6

Cond. (s/cm)

0.08

DO is low but cyprinids were
observed

D.O. (mg/L)

4.0

Water Colour

Yellow/Brown

Water Clarity

Clear

Seepage Indicators

None

Fish & Wildlife
Observations

Turtle basking on log, cyprinids observed

In-Situ Habitat

Heavily vegetated pond bordered by scrub

Physical Characteristics

Estimated Size

45.00

Estimated Depth

1.00

Notes

Standing water. Scrub/sweet gale border with occasional saturated pockets. Estimated size of whole wetland (pond plus scrub) @ centreline is 100m

In-Situ Cover

Woody Debris

Boulders

Cobble

Aquatic Vegetation

Structures

Total Instream Cover

5.00

95.00

95.00

Aquatic Vegetation
Species Present

Water shield, small fragrant water lilly, pickerelweed

Description & Width
of Riparian
Vegetation

Pond bordered by low, flat scrub land with saturated pockets with cattail. Scrub border mean 20 m

Execution Time

8/17/2015 10:08:22 AM

Filter Start Date 4/1/2015

Filter End Date 8/17/2015


Pond Lake Assessment

Study Area Comments

Pond bordered by scrub land with occasional saturated areas with cattail. Lots of fragrant white water lilies, pickerel weed, meadowsweet, sweet gale, cattails, blueberries and marsh cinquefoil. Wetland bordered by upland forest



Pond Lake Assessment

Site ID	WB-B-M78-6	Field Crew	Jessica Mendoza Justin Munro	177
Study Area	TLINE B			
Location	East of hydro one corridor south of mcdougall road			
Project Number	60341251	Air Temp. (degC)	19.0	Weather Notes
Tablet	AECOM10	Wind Speed (beaufort)	4	Recent precipitation overnight. Gusty winds
Start Date	6/23/2015 9:59:34 AM	Precipitation	0	
End Date	2015-06-23 10:28:13	Cloud Cover	95.00	
Site Features				
Feature Description	1746	Feature Location		
Looking perpendicular across cl (east) from west edge	Latitude:45.355013,Longitude:-79.965758,Altitude:225.9,Speed:0.47843334,Accuracy:3.3,Provider:gps,Time:06/23/2015 10:25:42 EDT			
Surrounding Land Use	Forest,Other Mixed coniferous deciduous forest and hydro one corridor			
Type of Pond	Natural,Offline Intermittent puddles with limited connectivity drain overland flow along lowlying forest floor which could be classified as a "swamp"			
In-Situ Water Quality				
WT (deg. C)	16.0	AT (degC)	19.3	Water Quality Notes May be impacted by recent precipitation
pH	6.2	Cond. (s/cm)	0.02	
D.O. (mg/L)	0.0	Water Colour	Colourless	
Water Clarity	Clear			
Seepage Indicators	None			
Fish & Wildlife Observations	Hawk heard			
In-Situ Habitat	Not fish habitat due to limited connectivity			

Pond Lake Assessment

Physical Characteristics

Estimated Size Estimated Depth

Notes

In-Situ Cover

Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text" value="100.00"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="50.00"/>


Aquatic Vegetation Species Present

Description & Width of Riparian Vegetation

Study Area Comments



Pond Lake Assessment

Site ID	WB-B-M78-5	Field Crew	Jessica Mendoza Justin Munro	180
Study Area	TLINE B			
Location	South of mcdougall road along hydro one corridor			
Project Number	60341251	Air Temp. (degC)	17.0	Weather Notes
Tablet	AECOM10	Wind Speed (beaufort)	5	
Start Date	6/23/2015 10:47:17 AM	Precipitation	0	
End Date	2015-06-23 11:06:04	Cloud Cover	100.00	
Site Features				
Feature Description	1749	Feature Location		
Looking perpendicular (west) to cl from east side of wetland		Latitude:45.351535,Longitude:-79.963219,Altitude:202.9,Speed:0.10803334,Accuracy:3.0,Provider:gps,Time:06/23/2015 10:50:37 EDT		
Surrounding Land Use	Forest,Other Hydro one corridor. Mixed deciduous coniferous forest			
Type of Pond	Natural,Permanent,Offline Wet meadow with no open water			
In-Situ Water Quality				
WT (deg. C)		AT (degC)	16.0	Water Quality Notes No water quality reading due to absence of water
pH		Cond. (s/cm)		
D.O. (mg/L)		Water Colour		
Water Clarity				
Seepage Indicators	None 			
Fish & Wildlife Observations	Canada warbler			
In-Situ Habitat	None			

Pond Lake Assessment

Physical Characteristics

Estimated Size Estimated Depth

Notes

In-Situ Cover

Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="0.00"/>





Aquatic Vegetation Species Present	<input type="text" value="Cattail, herbaceous plants, fragrant pond lily, cinquefoil, sedge, moss, blue iris, shrubs, willow, larch"/>
------------------------------------	--

Description & Width of Riparian Vegetation	<input type="text" value="10m sedge shrub"/>
--	--


Study Area Comments




Pond Lake Assessment

Site ID	WB-B-M80-2		Field Crew	Amy Ingriselli Ami Arsenault		183
Study Area	TLINE B					
Location	North of highway 518 and east of hydro line. From centreline to 50m west due to private property east of centreline.					
Project Number	60341251	Air Temp. (degC)	20.0	Weather Notes		
Tablet	AECOM12	Wind Speed (beaufort)	5			
Start Date	6/23/2015 9:29:30 AM	Precipitation	0			
End Date	2015-06-23 09:46:45	Cloud Cover	30.00			
Site Features						
Feature Description	1767	Feature Location				
Facing east from centreline in private property and limit of study area	Latitude:45.33687,Longitude:-79.954208,Altitude:243.6,Speed:0.030866666,Accuracy:1.75,Provider:gps,Time:06/23/2015 09:38:22 EDT					
Feature Description	1770	Feature Location				
Facing west from centreline	Latitude:45.336842,Longitude:-79.954184,Altitude:243.4,Speed:0.041155554,Accuracy:1.75,Provider:gps,Time:06/23/2015 09:39:58 EDT					
Feature Description	1773	Feature Location				
Looking at low moist seasonal drainage spot at centreline facing east	Latitude:45.336811,Longitude:-79.954325,Altitude:248.0,Speed:0.020577777,Accuracy:1.75,Provider:gps,Time:06/23/2015 09:41:07 EDT					
Feature Description	1776	Feature Location				
Facing northeast from from southwest limit of study area	Latitude:45.336576,Longitude:-79.954188,Altitude:245.3,Speed:0.020577777,Accuracy:1.5,Provider:gps,Time:06/23/2015 09:46:11 EDT					
Surrounding Land Use	Residential,Other					
	Hydro corridor to the west, mostly scrubland. East is residence					

Pond Lake Assessment

Type of Pond	Seasonal				
Low-lying area with moist soils and water-tolerant terrestrial vegetation. No open water or evidence of channel or flow. Seasonal drainage, not likely to support fish					
In-Situ Water Quality					
WT (deg. C)		AT (degC)	20.0	Water Quality Notes	
pH		Cond. (s/cm)		No water	
D.O. (mg/L)		Water Colour			
Water Clarity					
Seepage Indicators	None				
Fish & Wildlife Observations	None observed				
In-Situ Habitat	None, not fish habitat				
Physical Characteristics					
Estimated Size	10.00	Estimated Depth	0.00		
Notes	Estimated width of low lying moist area at centreline is 10m across				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
					0.00
Aquatic Vegetation Species Present	None. Water-tolerant terrestrial vegetation includes ferns, grasses				
Description & Width of Riparian Vegetation	No transition in vegetation between vegetation in swale and surrounding vegetation in hydro corridor.				
Study Area Comments					
Not fish habitat, low lying seasonal surface drainage, moist soils only, no evidence of flows. No access to property east of t-line. 50 m west only assessed					

Pond Lake Assessment

Site ID	WB-B-M80-2-2		Field Crew	Amy Ingriselli Ami Arsenault		186
Study Area	TLINE B					
Location	Parked in hydro one gravel area north on highway 518 and hiked through hydro corridor to site. Visual assessment facing centerline					
Project Number	60341251	Air Temp. (degC)	19.0	Weather Notes		
Tablet	AECOM12	Wind Speed (beaufort)	5			
Start Date	6/23/2015 10:06:08 AM	Precipitation	0			
End Date	2015-06-23 10:23:08	Cloud Cover	100.00			
Site Features						
Feature Description	1779	Feature Location				
Western limits of survey area facing east		Latitude:45.337548,Longitude:-79.954619,Altitude:236.5,Speed:0.010288889,Accuracy:1.8,Provider:gps,Time:06/23/2015 10:20:39 EDT				
Surrounding Land Use	Residential,Forest,Wetland,Other					
	Highway 518 to south of survey location and east of highway 400. Residential property to the west of survey location (denied access). Forest surrounding wetland.					
Type of Pond	Natural,Permanent,Online					
	Large wetland on private property, lots of aquatic cover and some standing snags					
In-Situ Water Quality						
WT (deg. C)	22.8	AT (degC)	19.8	Water Quality Notes		
pH	5.4	Cond. (s/cm)	0.07			
D.O. (mg/L)	4.8	Water Colour	Colourless			
Water Clarity	Clear					
Seepage Indicators	None					
Fish & Wildlife Observations	None observed					
In-Situ Habitat	Water lilies, grasses, standing snags fallen logs					

Pond Lake Assessment


Physical Characteristics

Estimated Size	<input type="text" value="80.00"/>	Estimated Depth	<input type="text" value="1.00"/>
Notes	<input type="text" value="Estimated length and depth taken along where centerline crosses pond. Visual assessment only, denied access to property by landowner."/>		





In-Situ Cover

Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text" value="25.00"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="75.00"/>	<input type="text"/>	<input type="text" value="80.00"/>
Aquatic Vegetation Species Present	<input type="text" value="White water lilies, grasses, water shield"/>				
Description & Width of Riparian Vegetation	<input type="text" value="Approx 6m grassy riparian edges before forest begins"/>				


Study Area Comments

<input type="text" value="Completed visual survey from east of centerline. Denied permission to access property. Centerline running through corner of wetland, approx 25m east into wetland. This area was not indicated as a survey point, but centerline clearly runs through location."/>	
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Pond Lake Assessment

Site ID	WB-B-M81-1	Field Crew	Amy Ingriselli Ami Arsenault		189
Study Area	TLINE B				
Location	South of highway 518, parked in hydro corridor parking and hiked south to site.				
Project Number	60341251	Air Temp. (degC)	21.0	Weather Notes	
Tablet	AECOM12	Wind Speed (beaufort)	5		
Start Date	6/23/2015 2:44:54 PM	Precipitation	0		
End Date	2015-06-23 15:20:28	Cloud Cover	40.00		
Site Features					
Feature Description	1806	Feature Location			
Facing south at survey point	Latitude:45.326511,Longitude:-79.948677,Altitude:219.4,Speed:0.0926,Accuracy:2.1,Provider:gps,Time:06/23/2015 02:46:13 EDT				
Feature Description	1809	Feature Location			
Facing west towards survey location at 50m eastern limit	Latitude:45.326439,Longitude:-79.948212,Altitude:230.3,Speed:0.041155554,Accuracy:2.0,Provider:gps,Time:06/23/2015 03:10:56 EDT				
Feature Description	1812	Feature Location			
Facing east towards survey point at 50m western limit. On beaver dam.	Latitude:45.326593,Longitude:-79.949071,Altitude:213.9,Speed:0.051444445,Accuracy:2.0,Provider:gps,Time:06/23/2015 03:17:37 EDT				
Feature Description	1815	Feature Location			
Beaver dam at Western limits of study area	Latitude:45.326586,Longitude:-79.949102,Altitude:214.3,Speed:0.09774444,Accuracy:2.0,Provider:gps,Time:06/23/2015 03:18:14 EDT				
Surrounding Land Use	Forest,Wetland,Other				
	Beaver pond east of hydro corridor, forest surrounding				


Pond Lake Assessment

Type of Pond	Natural,Permanent,Dammed,Online				
Long pond east to west. Surveyed 100m portion where survey point is located on map. Water shield, white water lilies, standing snags, fallen logs hummocks with grass growth.					
In-Situ Water Quality					
WT (deg. C)	22.7	AT (degC)	19.0	Water Quality Notes	
pH	4.9	Cond. (s/cm)	0.01		
D.O. (mg/L)	6.4	Water Colour	Colourless		
Water Clarity	Clear				
Seepage Indicators	None				
Fish & Wildlife Observations	None observed				
In-Situ Habitat	Watershield, white water lilies, fallen logs, detritus				
Physical Characteristics					
Estimated Size	30.00	Estimated Depth	1.00		
Notes	Estimated width and depth taken from across survey point. (North bank to south bank). Depth greater than 1m				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
30.00			70.00		60.00
Aquatic Vegetation Species Present	Watershield, white water lilies, milfoil, water tolerant grasses				
Description & Width of Riparian Vegetation	3m of shrub vegetation				
Study Area Comments					
Studied 50m east and west of survey point on map. Worked from north shore.					





Pond Lake Assessment

Site ID	WB-B-M65-49	Field Crew	Jessica Mendoza Justin Munro		192
Study Area	TLINE B				
Location	North of 9 mile lake west of hydro one corridor				
Project Number	60341251	Air Temp. (degC)	16.0	Weather Notes	
Tablet	AECOM10	Wind Speed (beaufort)	4		
Start Date	6/24/2015 12:31:08 PM	Precipitation	0		
End Date	2015-06-24 12:51:19	Cloud Cover	70.00		
Site Features					
Feature Description	1833	Feature Location			
Looking along cl (west) from bedrock outcrop to east		Latitude:45.503647,Longitude:-80.084994,Altitude:228.7,Speed:0.010288889,Accuracy:2.4,Provider:gps,Time:06/24/2015 12:32:07 EDT			
Feature Description	1836	Feature Location			
Looking north from cl on bedrock outcrop to east		Latitude:45.503645,Longitude:-80.084995,Altitude:228.7,Speed:0.03601111,Accuracy:2.1,Provider:gps,Time:06/24/2015 12:32:58 EDT			
Feature Description	1839	Feature Location			
Looking south from cl on bedrock outcrop to east		Latitude:45.503645,Longitude:-80.084996,Altitude:228.7,Speed:0.010288889,Accuracy:2.4,Provider:gps,Time:06/24/2015 12:33:47 EDT			
Surrounding Land Use	Forest				
	Coniferous dominant forest atop bedrock				
Type of Pond	Natural,Online				
	Large wet meadow with saturated Sphagnum and sedges. Open- no trees provide shade. No standing water.				

Pond Lake Assessment

In-Situ Water Quality					
WT (deg. C)	<input type="text"/>	AT (degC)	<input type="text" value="16.0"/>	Water Quality Notes No water to measure water quality	
pH	<input type="text"/>	Cond. (s/cm)	<input type="text"/>		
D.O. (mg/L)	<input type="text"/>	Water Colour	<input type="text"/>		
Water Clarity	<input type="text"/>				
Seepage Indicators	<input type="text" value="None"/> <input type="text"/>				
Fish & Wildlife Observations	<input type="text" value="Pine bugs heard, oven birds heard, yellow throated warbler heard, odonata observed"/>				
In-Situ Habitat	<input type="text" value="Not enough water for fish or amphibians"/>				
Physical Characteristics					
Estimated Size	<input type="text" value="82.00"/>	Estimated Depth	<input type="text" value="0.00"/>		
Notes	<input type="text" value="No water to support fish"/>				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="0.00"/>
Aquatic Vegetation Species Present	<input type="text" value="Sphagnum sedges"/>				
Description & Width of Riparian Vegetation	<input type="text" value="3m ferns blueberry sheep laurel"/>				
Study Area Comments					
<input type="text" value="Not enough water for fish or amphibians, but damp enough to prevent tree growth"/>					

Pond Lake Assessment

Site ID	WB-B-M64-36	Field Crew	Amy Ingriselli Ami Arsenault		195
Study Area	TLINE B				
Location	T line b map 64 west of 9 mile lake				
Project Number	60341251	Air Temp. (degC)	21.0	Weather Notes	
Tablet	AECOM12	Wind Speed (beaufort)	2		
Start Date	6/24/2015 12:47:08 PM	Precipitation	0		
End Date	2015-06-24 13:34:01	Cloud Cover	100.00		
Site Features					
Feature Description	1857	Feature Location			
Northern limit of study area, facing south towards centreline		Latitude:45.497707,Longitude:-80.10958,Altitude:207.7,Speed:0.44756666,Accuracy:3.0,Provider:gps,Time:06/24/2015 12:43:58 EDT			
Feature Description	1860	Feature Location			
View of pond facing north from Centre point		Latitude:45.497303,Longitude:-80.109346,Altitude:228.2,Speed:0.0051444443,Accuracy:1.75,Provider:gps,Time:06/24/2015 01:14:01 EDT			
Feature Description	1863	Feature Location			
Looking across wetland from Centre point facing southwest		Latitude:45.497293,Longitude:-80.109344,Altitude:228.3,Speed:0.010288889,Accuracy:1.5,Provider:gps,Time:06/24/2015 01:14:56 EDT			
Feature Description	1866	Feature Location			
View of pond from Centre point facing south		Latitude:45.49728,Longitude:-80.109339,Altitude:229.2,Speed:0.0051444443,Accuracy:1.5,Provider:gps,Time:06/24/2015 01:16:37 EDT			

Pond Lake Assessment

Feature
Description

1869

Feature Location

Facing north towards Centre point from Southern limit of study area

Latitude:45.497013,Longitude:-80.108884,Altitude:218.6,Speed:0.08231111,Accuracy:1.75,Provider:gps,Time:06/24/2015 01:33:03 EDT



Surrounding Land
Use

Forest,Wetland

Conifer forest

Type of Pond

Natural,Permanent,Dammed

Large pond with many snags and floating shrubby mats

In-Situ Water Quality

WT (deg. C)

20.6

AT (degC)

21.0

Water Quality Notes

pH

4.6

Cond. (s/cm)

0.01

D.O. (mg/L)

4.6

Water Colour

Colourless

Water Clarity

Clear

Seepage Indicators

None

Fish & Wildlife
Observations

Great crested flycatcher, eastern wood pewee, least flycatcher, pleated woodpecker, swamp sparrow. Two stick nests on snag on adjacent pond to the west, green frog, beaver dams

In-Situ Habitat

Standing water with ample vegetation, woody debris

Physical Characteristics

Estimated Size

65.00

Estimated Depth

1.00

Notes

Pond is not wadeable, estimated depth over 1 m. Standing water with beaver dams, Floating mats of shrubs and ferns

In-Situ Cover

Woody Debris

Boulders

Cobble

Aquatic Vegetation

Structures

Total Instream Cover

40.00

60.00

95.00

Aquatic Vegetation
Species Present

Watershield, three way sedge, wild calla lily, marsh st. John's wort

Description & Width
of Riparian
Vegetation

Up to 5 m of grasses, sedges, leatherleaf, ferns

Execution Time

8/17/2015 10:08:22 AM

Filter Start Date 4/1/2015

Filter End Date 8/17/2015





Pond Lake Assessment

Study Area Comments


Site was double labeled as wb-b-m63-35





Pond Lake Assessment

Site ID	WB-B-M64-37	Field Crew	Amy Ingriselli Ami Arsenault		198
Study Area	TLINE B				
Location	100m east of WB-B-M64-36. 9 mile lake boat access				
Project Number	60341251	Air Temp. (degC)	21.0	Weather Notes	
Tablet	AECOM12	Wind Speed (beaufort)	3		
Start Date	6/24/2015 1:50:48 PM	Precipitation	0		
End Date	2015-06-24 14:20:15	Cloud Cover	60.00		
Site Features					
Feature Description	1872	Feature Location			
Facing east along centerline from the west bank		Latitude:45.497685,Longitude:-80.108013,Altitude:210.3,Speed:0.10288889,Accuracy:1.8,Provider:gps,Time:06/24/2015 01:51:35 EDT			
Feature Description	1875	Feature Location			
Channel outflow south of mountain holly thicket		Latitude:45.497514,Longitude:-80.107613,Altitude:221.5,Speed:0.4732889,Accuracy:3.0,Provider:gps,Time:06/24/2015 02:08:18 EDT			
Feature Description	1878	Feature Location			
Facing north towards centerline from south bank		Latitude:45.497508,Longitude:-80.107592,Altitude:213.4,Speed:0.49386665,Accuracy:3.6,Provider:gps,Time:06/24/2015 02:13:53 EDT			
Feature Description	1881	Feature Location			
Facing west along centerline from east bank		Latitude:45.497842,Longitude:-80.107524,Altitude:225.4,Speed:0.025722222,Accuracy:2.4,Provider:gps,Time:06/24/2015 02:16:53 EDT			
Surrounding Land Use	Forest,Wetland				
	Wetland in between forested area and bedrock				

Pond Lake Assessment

Type of Pond	Permanent,Online				
Mountain Holly thicket wetland is approx 40m wide where centerline will cross. Stagnant standing water throughout thicket, mean of 0.3m deep. Small channel to the south of centerline flowing north through thicket.					
In-Situ Water Quality					
WT (deg. C)	16.7	AT (degC)	20.5	Water Quality Notes	
pH	5.5	Cond. (s/cm)	0.03		
D.O. (mg/L)	4.5	Water Colour	Colourless		
Water Clarity	Clear				
Seepage Indicators	None				
Fish & Wildlife Observations	None observed				
In-Situ Habitat	Shaded completely by mountain holly				
Physical Characteristics					
Estimated Size	40.00	Estimated Depth	0.30		
Notes	Estimated width and depth taken from where centerline will cross wetland				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
			100.00		100.00
Aquatic Vegetation Species Present	No aquatic veg, completely shaded by mountain holly shrubs				
Description & Width of Riparian Vegetation	None, forest edges are bedrock cliff right on wetland				
Study Area Comments					
Mountain Holly thicket with very saturated soils. Water flows north through thicket from small stream ~50m south of centerline. Bedrock cliffs on east side of wetland.					

Pond Lake Assessment

Site ID	WB-B-M64-42	Field Crew	Amy Ingriselli Ami Arsenault		201
Study Area	TLINE B				
Location	Approx 270m east of WB-B-M64-37. TLine Map B.				
Project Number	60341251	Air Temp. (degC)	21.0	Weather Notes	
Tablet	AECOM12	Wind Speed (beaufort)	1		
Start Date	6/24/2015 2:47:32 PM	Precipitation	0		
End Date	2015-06-24 15:27:29	Cloud Cover	10.00		
Site Features					
Feature Description	1884	Feature Location			
Southern/downstream limit of study area,facing north towards centreline	Latitude:45.497993,Longitude:-80.104841,Altitude:231.0,Speed:0.020577777,Accuracy:2.4,Provider:gps,Time:06/24/2015 02:49:48 EDT				
Feature Description	1887	Feature Location			
Looking northeast along centreline from west bank of wetland	Latitude:45.498613,Longitude:-80.104976,Altitude:215.7,Speed:0.24693333,Accuracy:3.6,Provider:gps,Time:06/24/2015 03:09:42 EDT				
Feature Description	1890	Feature Location			
Looking north/upstream from centreline	Latitude:45.498595,Longitude:-80.104957,Altitude:217.2,Speed:0.06173333,Accuracy:3.9,Provider:gps,Time:06/24/2015 03:11:15 EDT				
Feature Description	1893	Feature Location			
Facing south/downstream from centreline	Latitude:45.498607,Longitude:-80.104921,Altitude:224.8,Speed:0.10288889,Accuracy:3.0,Provider:gps,Time:06/24/2015 03:12:32 EDT				

Pond Lake Assessment

Feature Description	1896	Feature Location			
Facing south from upstream limit of study area	Latitude:45.499114,Longitude:-80.104906,Altitude:235.2,Speed:0.12346666,Accuracy:2.7,Provider:gps,Time:06/24/2015 03:26:42 EDT				
Surrounding Land Use	Forest,Wetland				
	Conifer forest				
Type of Pond	Natural,Permanent,Dammed				
	Beaver pond/dammed watercourse, standing water with abundant grassy hummocks and snags				
In-Situ Water Quality					
WT (deg. C)	20.1	AT (degC)	21.0	Water Quality Notes	
pH	4.8	Cond. (s/cm)	0.01		
D.O. (mg/L)	4.6	Water Colour	Colourless		
Water Clarity	Clear				
Seepage Indicators	None				
Fish & Wildlife Observations	Beaver dams, green frog, fish				
In-Situ Habitat	Standing open water with grassy hummocks/islands				
Physical Characteristics					
Estimated Size	65.00	Estimated Depth	1.00		
Notes	Wetland is 65 m across along centreline of t line, wetted width is approximately 50m at centre point				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
60.00			40.00		90.00
Aquatic Vegetation Species Present	Emergent sedges and grasses				
Description & Width of Riparian Vegetation	0m; no riparian zone, wetland bordered on both banks by conifer forest				

Execution Time 8/17/2015 10:08:22 AM

Filter Start Date 4/1/2015

Filter End Date 8/17/2015

Pond Lake Assessment

Study Area Comments



Pond Lake Assessment

Site ID	WB-B-M44-75		Field Crew	Jessica Mendoza Justin Munro		204
Study Area	TLINE B					
Location	East of hwy 69 north of shawanaga					
Project Number	60341251	Air Temp. (degC)	14.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	0			
Start Date	6/26/2015 9:10:06 AM	Precipitation	0			
End Date	2015-06-26 09:29:31	Cloud Cover	0.00			
Site Features						
Feature Description	1959	Feature Location				
Looking northwest along cl from south bank	Latitude:45.57711,Longitude:-80.348369,Altitude:215.6,Speed:0.020577777,Accuracy:1.8,Provider:gps,Time:06/26/2015 09:12:56 EDT					
Feature Description	1962	Feature Location				
Looking upstream at cl from south bank	Latitude:45.577113,Longitude:-80.348365,Altitude:215.5,Speed:0.041155554,Accuracy:1.8,Provider:gps,Time:06/26/2015 09:14:22 EDT					
Feature Description	1965	Feature Location				
Looking downstream at cl from south bank	Latitude:45.577113,Longitude:-80.348364,Altitude:215.3,Speed:0.030866666,Accuracy:2.4,Provider:gps,Time:06/26/2015 09:15:26 EDT					
Surrounding Land Use	Forest					
	Conifer dominant forest atop bedrock					
Type of Pond	Natural,Online					
	Wet meadow downstream of open lake with occasional pools and channels					

Pond Lake Assessment

In-Situ Water Quality					
WT (deg. C)	<input type="text" value="15.4"/>	AT (degC)	<input type="text" value="14.0"/>	Water Quality Notes <input type="text"/>	
pH	<input type="text" value="5.5"/>	Cond. (s/cm)	<input type="text" value="0.01"/>		
D.O. (mg/L)	<input type="text" value="0.0"/>	Water Colour	<input type="text" value="Yellow/Brown"/>		
Water Clarity	<input type="text" value="Clear"/>				
Seepage Indicators	<input type="text" value="None"/> <input type="text"/>				
Fish & Wildlife Observations	<input type="text" value="Dragonflies mosquitoes black flies birds heard"/>				
In-Situ Habitat	<input type="text" value="Water is choked with weeds and plants"/>				
Physical Characteristics					
Estimated Size	<input type="text" value="52.00"/>	Estimated Depth	<input type="text" value="0.60"/>		
Notes	<input type="text" value="Occasional deep and shallow spots"/>				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text" value="5.00"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="95.00"/>	<input type="text"/>	<input type="text" value="100.00"/>
Aquatic Vegetation Species Present	<input type="text" value="Broadleaf arrowhead, sedges, ferns, raspberry, meadow sweet, fragrant pond lily, periphyton"/>				
Description & Width of Riparian Vegetation	<input type="text" value="7m meadow sweet, raspberry, moss, pine, maple"/>				
Study Area Comments					
<input type="text" value="Not ideal fish habitat due to low oxygen and limited connectivity"/> <input type="text"/>					

Pond Lake Assessment

Site ID	WB-B-M44-76	Field Crew	Jessica Mendoza Justin Munro		207
Study Area	TLINE B				
Location	East of hwy 69				
Project Number	60341251	Air Temp. (degC)	17.0	Weather Notes	
Tablet	AECOM10	Wind Speed (beaufort)	0		
Start Date	6/26/2015 10:01:13 AM	Precipitation	0		
End Date	2015-06-26 10:23:31	Cloud Cover	5.00		
Site Features					
Feature Description	1968	Feature Location			
Looking northwest along cl from northern tip of rock barren that juts into lake from the south east		Latitude:45.58021,Longitude:-80.352556,Altitude:199.8,Speed:0.12861112,Accuracy:1.8,Provider:gps,Time:06/26/2015 10:07:50 EDT			
Feature Description	1971	Feature Location			
Looking east of centreline from northern tip of rock barren that juts into lake from the south east		Latitude:45.580257,Longitude:-80.35258,Altitude:200.5,Speed:0.041155554,Accuracy:1.8,Provider:gps,Time:06/26/2015 10:08:01 EDT			
Feature Description	1974	Feature Location			
Looking west of cl from northern tip of rock barren that juts into lake from the south east		Latitude:45.580335,Longitude:-80.352669,Altitude:200.7,Speed:0.066877775,Accuracy:1.8,Provider:gps,Time:06/26/2015 10:08:42 EDT			
Surrounding Land Use	Forest				
	Coniferous dominant forest atop bedrock				
Type of Pond	Natural,Permanent,Online				
	Large pond with bedrock jutting in from south and two bedrock islands. Is fed from northwest and drained in north east				

Pond Lake Assessment

In-Situ Water Quality					
WT (deg. C)	<input type="text" value="21.9"/>	AT (degC)	<input type="text" value="17.0"/>	Water Quality Notes <input type="text"/>	
pH	<input type="text" value="6.1"/>	Cond. (s/cm)	<input type="text" value="0.10"/>		
D.O. (mg/L)	<input type="text" value="6.4"/>	Water Colour	<input type="text" value="Colourless"/>		
Water Clarity	<input type="text" value="Clear"/>				
Seepage Indicators	<input type="text" value="None"/> <input type="text"/>				
Fish & Wildlife Observations	<input type="text" value="Deer flies, dragonflies, birds heard"/>				
In-Situ Habitat	<input type="text" value="Well vegetated banks provide cover"/>				
Physical Characteristics					
Estimated Size	<input type="text" value="106.00"/>	Estimated Depth	<input type="text" value="2.00"/>		
Notes	<input type="text" value="Greater than 2m but too deep to measure"/>				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="100.00"/>	<input type="text"/>	<input type="text" value="10.00"/>
Aquatic Vegetation Species Present	<input type="text" value="Yellow water lily, broadleaf arrowhead, water shield, fragrant pond lily, submergent grass, periphyton"/>				
Description & Width of Riparian Vegetation	<input type="text" value="2m meadow sweet, sheep laurel, bog laurel"/>				
Study Area Comments					
<input type="text" value="Likely to be good fish habitat"/>					

Pond Lake Assessment

Site ID	WB-B-M71-14	Field Crew	Amy Ingriselli Ami Arsenault		210
Study Area	TLINE B				
Location	North of Kirkham road, T line b map 71				
Project Number	60341251	Air Temp. (degC)	18.0	Weather Notes	
Tablet	AECOM12	Wind Speed (beaufort)	3		
Start Date	6/25/2015 11:17:36 AM	Precipitation	0		
End Date	2015-06-25 11:51:45	Cloud Cover	100.00		
Site Features					
Feature Description	1977	Feature Location			
Facing north towards survey point from south bank		Latitude:45.454916,Longitude:-80.025889,Altitude:241.2,Speed:0.030866666,Accuracy:2.4,Provider:gps,Time:06/25/2015 11:19:13 EDT			
Feature Description	1980	Feature Location			
Facing east from centerline at Southern bank		Latitude:45.454955,Longitude:-80.025974,Altitude:246.7,Speed:0.087455556,Accuracy:2.4,Provider:gps,Time:06/25/2015 11:40:11 EDT			
Feature Description	1983	Feature Location			
Facing west from centerline at Southern bank (facing marshy area under hydro corridor)		Latitude:45.454956,Longitude:-80.025975,Altitude:246.5,Speed:0.0926,Accuracy:3.0,Provider:gps,Time:06/25/2015 11:40:45 EDT			
Feature Description	1986	Feature Location			
Facing west towards centerline from 50m eastern limit		Latitude:45.455365,Longitude:-80.025361,Altitude:244.7,Speed:0.015433333,Accuracy:2.4,Provider:gps,Time:06/25/2015 11:43:41 EDT			

Pond Lake Assessment

Feature Description	1989	Feature Location			
Facing east towards centerline from 50m western limit	Latitude:45.454947,Longitude:-80.0266,Altitude:248.3,Speed:0.010288889,Accuracy:2.4,Provider:gps,Time:06/25/2015 11:50:54 EDT				
Surrounding Land Use	Forest,Wetland,Other				
	Wetland study area surrounded by forest, east of hydro lines				
Type of Pond	Natural,Permanent,Online				
	Very large pond east of hydro corridor, forest on north and south banks stretching east. Dead snags and small stumps in pond. White water lilies dominating pond surface. Tall grasses and three-way sedge surrounding wetland, creating riparian zone approx				
In-Situ Water Quality					
WT (deg. C)	20.8	AT (degC)	18.0	Water Quality Notes	
pH	5.4	Cond. (s/cm)	0.02		
D.O. (mg/L)	7.2	Water Colour	Colourless		
Water Clarity	Clear				
Seepage Indicators	None				
Fish & Wildlife Observations	None observed				
In-Situ Habitat	Detritus bottom, white water lillies, submerged logs				
Physical Characteristics					
Estimated Size	60.00	Estimated Depth	1.00		
Notes	Estimated width of wetland taken along centerline. Approx 1m deep.				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
10.00			90.00		90.00
Aquatic Vegetation Species Present	White water lilies, watershield, three-way sedge, sphagnum, water tolerant grasses				
Description & Width of Riparian Vegetation	Approx 5m of grassy veg along wetland edges, larger marshy area to the west of study area under hydro lines				

Execution Time 8/17/2015 10:08:22 AM

Filter Start Date 4/1/2015

Filter End Date 8/17/2015

Pond Lake Assessment

Study Area Comments

Centerline crossing small portion of wetland. Dominated by white water lilies and water shield. Some standing snags and small stumps, assuming some submerged logs in wetland. Marshy area to the west of study location, under hydro corridor.

Pond Lake Assessment

Site ID	WB-B-M71-15	Field Crew	Amy Ingriselli Ami Arsenault		213
Study Area	TLINE B				
Location	On t line b east of nine mile lake along hydro corridor				
Project Number	60341251	Air Temp. (degC)	19.0	Weather Notes	
Tablet	AECOM12	Wind Speed (beaufort)	1		
Start Date	6/25/2015 12:12:21 PM	Precipitation	0		
End Date	2015-06-25 13:15:11	Cloud Cover	100.00		
Site Features					
Feature Description	1992	Feature Location			
Facing southeast looking across wetland along centreline from northwest bank	Latitude:45.459713,Longitude:-80.029605,Altitude:243.1,Speed:0.0463,Accuracy:3.0,Provider:gps,Time:06/25/2015 12:12:54 EDT				
Feature Description	1995	Feature Location			
Looking across wetland along CL facing northeast from south bank	Latitude:45.459183,Longitude:-80.029202,Altitude:257.7,Speed:0.0926,Accuracy:2.4,Provider:gps,Time:06/25/2015 12:54:56 EDT				
Feature Description	1998	Feature Location			
Looking US (east) from west limit of study area towards south portion of wetland	Latitude:45.459013,Longitude:-80.029738,Altitude:259.9,Speed:0.066877775,Accuracy:2.7,Provider:gps,Time:06/25/2015 12:57:23 EDT				
Feature Description	2001	Feature Location			
Looking DS southwest from approx CL in south portion of wetland	Latitude:45.459375,Longitude:-80.029263,Altitude:253.7,Speed:0.041155554,Accuracy:2.4,Provider:gps,Time:06/25/2015 01:00:54 EDT				

Pond Lake Assessment

Feature Description	2004	Feature Location
Facing US northeast from approx CL of south portion		Latitude:45.459372,Longitude:-80.029249,Altitude:253.4,Speed:0.0463,Accuracy:2.4,Provider:gps,Time:06/25/2015 01:01:59 EDT

Feature Description	2007	Feature Location
From northeastern limit of study area looking towards CL south portion		Latitude:45.459939,Longitude:-80.029086,Altitude:246.9,Speed:0.051444445,Accuracy:3.6,Provider:gps,Time:06/25/2015 01:07:39 EDT

Feature Description	2010	Feature Location
North portion from northeastern limit of study area towards CL		Latitude:45.459853,Longitude:-80.029373,Altitude:253.2,Speed:0.34467778,Accuracy:3.6,Provider:gps,Time:06/25/2015 01:09:17 EDT

Feature Description	2013	Feature Location
Southern limit of study area towards CL		Latitude:45.459101,Longitude:-80.029766,Altitude:256.6,Speed:0.030866666,Accuracy:2.4,Provider:gps,Time:06/25/2015 01:12:29 EDT

Surrounding Land Use	Forest,Wetland,Other
	Marsh wetland bordered by forested bedrock, hydro corridor

Type of Pond	Natural,Permanent,Dammed,Online
	Marsh wetland with no open water other than stagnant pocket in southern portion. Mainly saturated sphagnum with sedges, grasses and other water tolerant vegetation. Marsh separated by bedrock island, old beaver dam in southern portion

In-Situ Water Quality				
WT (deg. C)	19.0	AT (degC)	19.8	Water Quality Notes
pH	5.4	Cond. (s/cm)	0.01	
D.O. (mg/L)	7.3	Water Colour	Yellow/Brown	
Water Clarity	Clear			

Execution Time 8/17/2015 10:08:22 AM

Filter Start Date 4/1/2015

Filter End Date 8/17/2015

Pond Lake Assessment

Seepage Indicators	None				
Fish & Wildlife Observations	Ruby throated hummingbird, red squirrel				
In-Situ Habitat	Little open water or connectivity to support fish				
Physical Characteristics					
Estimated Size	47.00	Estimated Depth	0.50		
Notes	Saturated marsh with bedrock island in Centre along t line. Wetland width across at CL including island is 47 m. North side of wetland is 27 m across, bedrock island is 10 m and south side of wetland is 10m. Pocket of open water in south portion only is potential low sensitivity fish habitat				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
15.00			85.00		100.00
Aquatic Vegetation Species Present	Marsh wetland with grasses, sedges, ferns, meadowsweet, wild calla lily, sweet gale, three way sedge, blue flag iris, bladderwort, royal fern, tamarack, marsh st. John's wort				
Description & Width of Riparian Vegetation	Mean 0.5m of ferns between marsh and upland forest				
Study Area Comments					
Potential for low sensitivity fish habitat in southern portion only. North side no open water, saturated sphagnum					




Pond Lake Assessment

Site ID	WB-B-M70-16	Field Crew	Amy Ingriselli Ami Arsenault		216
Study Area	TLINE B				
Location	T line b map 71				
Project Number	60341251	Air Temp. (degC)	18.0	Weather Notes	
Tablet	AECOM12	Wind Speed (beaufort)	3		
Start Date	6/25/2015 1:32:07 PM	Precipitation	0		
End Date	2015-06-25 14:08:01	Cloud Cover	100.00		
Site Features					
Feature Description	2016	Feature Location			
Facing east towards centerline from the western end of survey point (50m)	Latitude:45.461634,Longitude:-80.031663,Altitude:263.2,Speed:0.22635555,Accuracy:24.3,Provider:gps,Time:06/25/2015 01:53:00 EDT				
Feature Description	2019	Feature Location			
Facing north towards centerline from south bank	Latitude:45.461536,Longitude:-80.030963,Altitude:258.1,Speed:0.030866666,Accuracy:2.1,Provider:gps,Time:06/25/2015 01:59:42 EDT				
Feature Description	2022	Feature Location			
Facing east from centerline (island in middle)	Latitude:45.461534,Longitude:-80.030961,Altitude:258.1,Speed:0.030866666,Accuracy:2.4,Provider:gps,Time:06/25/2015 02:00:12 EDT				
Feature Description	2025	Feature Location			
Facing west from centerline	Latitude:45.461684,Longitude:-80.031167,Altitude:257.7,Speed:0.0051444443,Accuracy:2.1,Provider:gps,Time:06/25/2015 02:02:29 EDT				
Surrounding Land Use	Forest,Other				
	Pond surrounded by forest and hydro corridor to the west of survey location				


Pond Lake Assessment

Type of Pond	Natural,Permanent,Dammed,Online				
Large open body of water. Some white water lilies and water shield on surface. A few standing snags. Hydro lines run over the western portion of the pond, approx 60m west of centerline. Small treed island approx 17m east of centerline and is approx 40m in					
In-Situ Water Quality					
WT (deg. C)	22.9	AT (degC)	21.0	Water Quality Notes	
pH	5.6	Cond. (s/cm)	0.01		
D.O. (mg/L)	8.5	Water Colour	Colourless		
Water Clarity	Clear				
Seepage Indicators	None				
Fish & Wildlife Observations	None observed				
In-Situ Habitat	White water lilies and water shield on surface. A few standing snags				
Physical Characteristics					
Estimated Size	75.00	Estimated Depth	1.50		
Notes	Estimated width taken along proposed centerline. Depth is grater then 1.5m.				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
30.00			70.00		50.00
Aquatic Vegetation Species Present	White water lilies, watershield, water tolerant grasses				
Description & Width of Riparian Vegetation	0.5m of water tolerant grasses				
Study Area Comments					
Large beaver pond with lots of open water. Small island east of survey location approx 40m in length. Centerline crossing approx 75m of pond from north to south. Hydro corridor crosses pond to the west approx 60m from centerline.					




Pond Lake Assessment

Site ID	WB-B-M70-18	Field Crew	Amy Ingriselli Jessica Mendoza		219
Study Area	TLINE B				
Location	T line b map70 just east of hydro corridor, east of nine mile lake				
Project Number	60341251	Air Temp. (degC)	18.0	Weather Notes	
Tablet	AECOM10	Wind Speed (beaufort)	0		
Start Date	6/29/2015 11:17:03 AM	Precipitation	0		
End Date	2015-06-29 11:49:30	Cloud Cover	100.00		
Site Features					
Feature Description	2082	Feature Location			
Western limit of study area, general view of pond facing along CL (north), on south bank		Latitude:45.465626,Longitude:-80.034514,Altitude:252.2,Speed:0.015433333,Accuracy:1.8,Provider:gps,Time:06/29/2015 11:11:46 EDT			
Feature Description	2085	Feature Location			
Looking west from centreline on south bank		Latitude:45.465969,Longitude:-80.034151,Altitude:252.7,Speed:0.35496667,Accuracy:2.75,Provider:gps,Time:06/29/2015 11:37:39 EDT			
Feature Description	2088	Feature Location			
Looking east from CL on south bank		Latitude:45.465959,Longitude:-80.034186,Altitude:254.7,Speed:0.025722222,Accuracy:2.0,Provider:gps,Time:06/29/2015 11:38:35 EDT			
Surrounding Land Use	Forest,Wetland,Other				
	Conifer forest on bedrock bordering pond, eastly adjacent to hydro corridor				
Type of Pond	Natural,Permanent,Online				
	Long lake, bordered by forested bedrock				


Pond Lake Assessment

In-Situ Water Quality					
WT (deg. C)	<input type="text" value="19.2"/>	AT (degC)	<input type="text" value="18.5"/>	Water Quality Notes <input type="text"/>	
pH	<input type="text" value="5.1"/>	Cond. (s/cm)	<input type="text" value="0.01"/>		
D.O. (mg/L)	<input type="text" value="5.4"/>	Water Colour	<input type="text" value="Colourless"/>		
Water Clarity	<input type="text" value="Clear"/>				
Seepage Indicators	<input type="text" value="None"/> <input type="text"/>				
Fish & Wildlife Observations	<input type="text" value="Pileated woodpecker, blue headed vireo, yellow warbler"/>				
In-Situ Habitat	<input type="text" value="Pond with abundant floating vegetation, woody debris"/>				
Physical Characteristics					
Estimated Size	<input type="text" value="42.00"/>	Estimated Depth	<input type="text" value="2.00"/>		
Notes	<input type="text" value="Pond bordered by bedrock. 42 m wide across along CL"/>				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text" value="60.00"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="40.00"/>	<input type="text"/>	<input type="text" value="80.00"/>
Aquatic Vegetation Species Present	<input type="text" value="Watershield, fragrant pond lily, dwarf fragrant pond lily"/>				
Description & Width of Riparian Vegetation	<input type="text" value="0.75 mean riparian zone with leatherleaf, grass, iris"/>				
Study Area Comments					
<input type="text"/>					




Pond Lake Assessment

Site ID	WB-B-M15-135	Field Crew	Amy Ingriselli Jessica Mendoza		222
Study Area	TLINE B				
Location	T line b map 15 south of farm lane				
Project Number	60341251	Air Temp. (degC)	22.0	Weather Notes	
Tablet	AECOM10	Wind Speed (beaufort)	1		
Start Date	6/30/2015 12:10:25 PM	Precipitation	0		
End Date	2015-06-30 12:52:42	Cloud Cover	80.00		
Site Features					
Feature Description	2118	Feature Location			
Looking northwest along CL from south shore		Latitude:45.793654,Longitude:-80.513875,Altitude:203.8,Speed:0.015433333,Accuracy:1.8,Provider:gps,Time:06/30/2015 12:41:33 EDT			
Feature Description	2121	Feature Location			
View of flooded bay and pond from south shore at CL facing north		Latitude:45.793654,Longitude:-80.513874,Altitude:203.7,Speed:0.041155554,Accuracy:2.1,Provider:gps,Time:06/30/2015 12:42:30 EDT			
Feature Description	2124	Feature Location			
Looking northwest at small flooded bay which CL crosses from southwest bank		Latitude:45.793649,Longitude:-80.513282,Altitude:200.7,Speed:0.15947777,Accuracy:2.1,Provider:gps,Time:06/30/2015 12:50:55 EDT			
Surrounding Land Use	Forest,Wetland				
	Open water pond to the east, bordered by forested bedrock				
Type of Pond	Permanent,Online				
	Open water pond with vegetated bedrock shoreline or shore fen (at CL)				


Pond Lake Assessment

In-Situ Water Quality					
WT (deg. C)	<input type="text" value="22.6"/>	AT (degC)	<input type="text" value="22.5"/>	Water Quality Notes <input type="text" value="DO pretty high"/>	
pH	<input type="text" value="5.2"/>	Cond. (s/cm)	<input type="text" value="0.01"/>		
D.O. (mg/L)	<input type="text" value="10.1"/>	Water Colour	<input type="text" value="Yellow/Brown"/>		
Water Clarity	<input type="text" value="Clear"/>				
Seepage Indicators	<input type="text" value="None"/> <input type="text"/>				
Fish & Wildlife Observations	<input type="text" value="Fish observed"/>				
In-Situ Habitat	<input type="text" value="Vegetated pond, shore fen at CL"/>				
Physical Characteristics					
Estimated Size	<input type="text" value="44.00"/>	Estimated Depth	<input type="text" value="0.50"/>		
Notes	<input type="text" value="Dimensions are of bay which CL crosses, at crossing location. In the main pond, no emergent or floating vegetation visible mid-pond,, estimate ate greater than 1.5 m deep, not wadeable from shore, 140 m wide"/>				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text" value="30.00"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="70.00"/>	<input type="text"/>	<input type="text" value="70.00"/>
Aquatic Vegetation Species Present	<input type="text" value="Small white water lily, bladderwort"/>				
Description & Width of Riparian Vegetation	<input type="text" value="1m Grasses and herbaceous plants on bedrock, or shore fen with sweet gale, meadowsweet, sheep laurel, cattail"/>				
Study Area Comments					
<input type="text" value="Transmission line crosses small backwater bay of main pond only. Bay is flooded; terrestrial vegetation such as pine and birch is found in water"/>					





Pond Lake Assessment

Site ID	WB-B-M12-138		Field Crew	Amy Ingriselli Jessica Mendoza		225
Study Area	TLINE B					
Location	East of hwy 69 north of old still river					
Project Number	60341251	Air Temp. (degC)	15.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	1			
Start Date	7/1/2015 9:04:47 AM	Precipitation	0			
End Date	2015-07-01 09:33:38	Cloud Cover	100.00			
Site Features						
Feature Description	2139	Feature Location				
Looking southeast along cl where cl crosses wetland south of pond from southwest bank		Latitude:45.814052,Longitude:-80.528119,Altitude:194.7,Speed:0.025722222,Accuracy:2.1,Provider:gps,Time:07/01/2015 09:06:24 EDT				
Feature Description	2142	Feature Location				
Looking north at bedrock island from south bank		Latitude:45.814041,Longitude:-80.528078,Altitude:194.9,Speed:0.025722222,Accuracy:1.8,Provider:gps,Time:07/01/2015 09:13:12 EDT				
Feature Description	2145	Feature Location				
Looking northwest across wetland along Cl from southeast shore		Latitude:45.813732,Longitude:-80.528192,Altitude:197.4,Speed:0.041155554,Accuracy:2.1,Provider:gps,Time:07/01/2015 09:45:04 EDT				
Surrounding Land Use	Forest Mixed coniferous deciduous forest atop bedrock					
Type of Pond	Natural,Permanent,Offline Pond with large bedrock island in middle. Input from northeast. Northeast has open water but northwest to south is saturated vegetated soil.					

Pond Lake Assessment

In-Situ Water Quality					
WT (deg. C)	<input type="text" value="18.7"/>	AT (degC)	<input type="text" value="15.7"/>	Water Quality Notes <input type="text"/>	
pH	<input type="text" value="5.3"/>	Cond. (s/cm)	<input type="text" value="0.02"/>		
D.O. (mg/L)	<input type="text" value="3.1"/>	Water Colour	<input type="text" value="Yellow/Brown"/>		
Water Clarity	<input type="text" value="Clear"/>				
Seepage Indicators	<input type="text" value="None"/> <input type="text"/>				
Fish & Wildlife Observations	<input type="text" value="White throated sparrow, Winter wren, hermit thrush, common yellow throat"/>				
In-Situ Habitat	<input type="text" value="Shallow water with thick detritus & sparse canopy"/>				
Physical Characteristics					
Estimated Size	<input type="text" value="16.00"/>	Estimated Depth	<input type="text" value="0.00"/>		
Notes	<input type="text" value="This describes where the cl crosses, not where there is open water"/>				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text" value="5.00"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="95.00"/>	<input type="text"/>	<input type="text" value="100.00"/>
Aquatic Vegetation Species Present	<input type="text" value="Yellow pond lily, water shield, algae"/>				
Description & Width of Riparian Vegetation	<input type="text" value="7m meadow sweet, sedges, mosses, grasses"/>				
Study Area Comments					
<input type="text" value="Area to northeast is open water (0.25m deep) but northwest to south is only damp to saturated soil with vegetation. The cl does not cross the open water portion. Insitu cover is mainly detritus"/>					

Pond Lake Assessment

Site ID	WB-B-M41-82	Field Crew	Amy Ingriselli Jessica Mendoza		228
Study Area	TLINE B				
Location	T line b east of highway 69				
Project Number	60341251	Air Temp. (degC)	16.0	Weather Notes	
Tablet	AECOM10	Wind Speed (beaufort)	1		
Start Date	7/2/2015 9:00:30 AM	Precipitation	0		
End Date	2015-07-02 09:45:56	Cloud Cover	0.00		
Site Features					
Feature Description	2178	Feature Location			
Looking across pond along centreline facing southeast from north bank	Latitude:45.611186,Longitude:-80.375722,Altitude:183.8,Speed:0.005144443,Accuracy:4.8,Provider:gps,Time:07/02/2015 09:03:19 EDT				
Feature Description	2181	Feature Location			
Looking downstream from shore at Centrepoint on north bank	Latitude:45.611187,Longitude:-80.375723,Altitude:184.3,Speed:0.10803334,Accuracy:3.0,Provider:gps,Time:07/02/2015 09:04:26 EDT				
Feature Description	2184	Feature Location			
Looking US from centrepoint on north bank	Latitude:45.61119,Longitude:-80.375724,Altitude:184.6,Speed:0.087455556,Accuracy:5.4,Provider:gps,Time:07/02/2015 09:05:58 EDT				
Feature Description	2187	Feature Location			
Looking downstream from upstream limit of study area from north bank	Latitude:45.61135,Longitude:-80.374972,Altitude:180.4,Speed:0.10803334,Accuracy:2.4,Provider:gps,Time:07/02/2015 09:24:55 EDT				

Execution Time 8/17/2015 10:08:22 AM

Filter Start Date 4/1/2015

Filter End Date 8/17/2015

Pond Lake Assessment

Feature
Description

2190

Feature Location

Looking upstream from Down stream
limit of study area from north bank

Latitude:45.610963,Longitude:-
80.376474,Altitude:189.6,Speed:0.025
722222,Accuracy:2.7,Provider:gps,Tim
e:07/02/2015 09:45:58 EDT



Surrounding Land
Use

Forest

Forested bedrock

Type of Pond

Natural,Permanent,Online

Dammed watercourse, open water beaver pond with bedrock shoreline, floating. Veg

In-Situ Water Quality

WT (deg. C)

18.0

AT (degC)

16.5

Water Quality Notes

pH

5.1

Cond. (s/cm)

0.01

D.O. (mg/L)

5.3

Water Colour

Colourless

Water Clarity

Clear

Seepage Indicators

None

Fish & Wildlife
Observations

Great crested flycatcher, mink frog, green frog, broad-winged hawk, red squirrel, red breasted nuthatch, Ovenbird, black-throated green warbler, black capped chickadee

In-Situ Habitat

Open water with floating veg, woody debris

Physical Characteristics

Estimated Size

38.00

Estimated Depth

1.00

Notes

Not wadeable, estimated depth greater or equal than 1.5 m. Detritus, bedrock boulder shoreline. 40-50 m upstream of centreline channel is approximately 2 m wide 1 m deep through Sphagnum mat/shore fen before draining to open water pond

Execution Time

8/17/2015 10:08:22 AM

Filter Start Date 4/1/2015

Filter End Date 8/17/2015

Pond Lake Assessment

In-Situ Cover





Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
50.00			50.00		80.00

Aquatic Vegetation Species Present	Fragrant water lily, watershield, three-way sedge, grasses and sedges, wild Calla lily. Upstream saturated meadow Marsh bordering channel also includes sundew, Sphagnum, meadowsweet, sensitive fern, marsh St. John's wort
Description & Width of Riparian Vegetation	Mean 1 m wide of grasses, sedges mostly on bedrock, reeds.

Study Area Comments



Pond Lake Assessment

Site ID	WB-B-M58-39	Field Crew	Amy Ingriselli Jessica Mendoza		231
Study Area	TLINE B				
Location	East of hwy 69 north of Hoover road				
Project Number	60341251	Air Temp. (degC)	20.0	Weather Notes	
Tablet	AECOM10	Wind Speed (beaufort)	1		
Start Date	7/6/2015 9:57:09 AM	Precipitation	0		
End Date	2015-07-06 11:13:09	Cloud Cover	100.00		
Site Features					
Feature Description	2229	Feature Location			
Looking northwest from centre point on south east bank	Latitude:45.498815,Longitude:-80.196074,Altitude:218.9,Speed:0.087455556,Accuracy:3.3,Provider:gps,Time:07/06/2015 10:09:32 EDT				
Feature Description	2232	Feature Location			
Channels near centre point (representative habitat) downstream of beaver pond	Latitude:45.498794,Longitude:-80.196067,Altitude:221.9,Speed:0.14918889,Accuracy:2.7,Provider:gps,Time:07/06/2015 10:17:58 EDT				
Feature Description	2235	Feature Location			
Looking east from centre point	Latitude:45.498795,Longitude:-80.196066,Altitude:221.8,Speed:0.463,Accuracy:2.7,Provider:gps,Time:07/06/2015 10:18:50 EDT				
Feature Description	2238	Feature Location			
Looking north from CL at open water	Latitude:45.498793,Longitude:-80.196091,Altitude:215.1,Speed:0.066877775,Accuracy:2.1,Provider:gps,Time:07/06/2015 11:13:51 EDT				

Pond Lake Assessment

Feature
Description

2241

Feature Location

Looking south from CL at pool/channel
in thicket/fen

Latitude:45.498786,Longitude:-
80.196091,Altitude:215.1,Speed:0.936
2889,Accuracy:2.1,Provider:gps,Time:0
7/06/2015 11:13:42 EDT



Surrounding Land
Use

Forest,Wetland

Mixed coniferous deciduous forest atop bedrock

Type of Pond

Natural,Permanent,Online

Large wetland complex with interconnected channels on sphagnum mat downstream of beaver dam at round lake provincial nature reserve. Just downstream of dam are very deep cut channels.

In-Situ Water Quality

WT (deg. C)

16.8

AT (degC)

20.4

Water Quality Notes

pH

4.8

Cond. (s/cm)

0.02

D.O. (mg/L)

5.3

Water Colour

Yellow/Brown

Water Clarity

Clear

Seepage Indicators

None

Fish & Wildlife
Observations

Chickadee black and white warbler, gray catbird, bluejay

In-Situ Habitat

Interconnected channels with detritus and algae

Physical Characteristics

Estimated Size

270.00

Estimated Depth

0.14

Notes

Cut channels are 1m deep. Transmission line cross 200m of wetland

In-Situ Cover

Woody Debris

Boulders

Cobble

Aquatic Vegetation

Structures

Total Instream Cover

100.00

100.00

Aquatic Vegetation
Species Present

Sedge, alder, bladderwort, Calla lily, grass, Sphagnum, cattails, holly, sweet gale, swamp loosestrife, swamp candles, fragrant pond lily, reeds

Description & Width
of Riparian
Vegetation

3m raspberry, fern, moss, white pine

Execution Time

8/17/2015 10:08:22 AM

Filter Start Date 4/1/2015

Filter End Date 8/17/2015




Pond Lake Assessment

Study Area Comments


Transmission line goes along northwest to south east direction and splits at cl to go eastsoutheast as well. At deep cut channels there are narrow emergents that provide ideal pike spawning habitat





Pond Lake Assessment

Site ID	WB-B-M58-38	Field Crew	Amy Ingriselli Jessica Mendoza		234
Study Area	TLINE B				
Location	T line band map 58 northeast of water treatment plant				
Project Number	60341251	Air Temp. (degC)	21.0	Weather Notes	
Tablet	AECOM10	Wind Speed (beaufort)	4		
Start Date	7/6/2015 11:28:29 AM	Precipitation	0		
End Date	2015-07-06 11:46:03	Cloud Cover	100.00		
Site Features					
Feature Description	2244	Feature Location			
Looking east across meadow along CL from west bank	Latitude:45.498844,Longitude:-80.191044,Altitude:214.2,Speed:0.82825553,Accuracy:2.7,Provider:gps,Time:07/06/2015 11:43:54 EDT				
Feature Description	2247	Feature Location			
Looking south at meadow from CL	Latitude:45.498836,Longitude:-80.190945,Altitude:217.2,Speed:0.05658889,Accuracy:2.4,Provider:gps,Time:07/06/2015 11:46:02 EDT				
Feature Description	2250	Feature Location			
Looking north from CL	Latitude:45.498829,Longitude:-80.190939,Altitude:217.2,Speed:0.025722222,Accuracy:2.1,Provider:gps,Time:07/06/2015 11:46:09 EDT				
Surrounding Land Use	Forest,Meadow				
	Meadow at crossing bordered by forest				
Type of Pond	Seasonal,Online				
	Grassy moist meadow likely flooded seasonally from freshet/surface flows and from adjacent wetland				


Pond Lake Assessment

In-Situ Water Quality					
WT (deg. C)	<input type="text"/>	AT (degC)	<input type="text" value="21.0"/>	Water Quality Notes No water quality taken due to absence of water	
pH	<input type="text"/>	Cond. (s/cm)	<input type="text"/>		
D.O. (mg/L)	<input type="text"/>	Water Colour	<input type="text"/>		
Water Clarity	<input type="text"/>				
Seepage Indicators	<input type="text" value="None"/> <input type="text"/>				
Fish & Wildlife Observations	<input type="text" value="Yellow bellied sapsucker"/>				
In-Situ Habitat	<input type="text" value="Not fish habitat"/>				
Physical Characteristics					
Estimated Size	<input type="text" value="21.00"/>	Estimated Depth	<input type="text" value="0.00"/>		
Notes	<input type="text" value="Moist grassy meadow with no evidence of channel"/>				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="0.00"/>
Aquatic Vegetation Species Present	<input type="text" value="Wild Calla lily"/>				
Description & Width of Riparian Vegetation	<input type="text" value="No channel, no riparian zone. Meadow vegetation includes grasses, wild Calla lily, swamp candles, ferns, spotted Joe pye weed, sphagnum"/>				
Study Area Comments					
<input type="text" value="No flow, moist Sphagnum only at time of assessment. Meadow is likely seasonally flooded but poor connectivity to fish habitat. Not likely to directly support fish"/>					




Pond Lake Assessment

Site ID	WB-B-M59-40	Field Crew	Amy Ingriselli Jessica Mendoza		237
Study Area	TLINE B				
Location	T line b map 59 east of water treatment and highway 69. Along CL plus 50m north and south of CL				
Project Number	60341251	Air Temp. (degC)	23.0	Weather Notes	
Tablet	AECOM10	Wind Speed (beaufort)	1		
Start Date	7/6/2015 12:22:53 PM	Precipitation	0		
End Date	2015-07-06 13:04:17	Cloud Cover	100.00		
Site Features					
Feature Description	2253	Feature Location			
From centrepoint looking west along centreline	Latitude:45.498986,Longitude:-80.186782,Altitude:224.2,Speed:0.010288889,Accuracy:1.8,Provider:gps,Time:07/06/2015 12:24:14 EDT				
Feature Description	2256	Feature Location			
From centrepoint looking east along CL	Latitude:45.498984,Longitude:-80.186777,Altitude:224.2,Speed:0.020577777,Accuracy:1.8,Provider:gps,Time:07/06/2015 12:25:05 EDT				
Surrounding Land Use	Forest,Wetland Fen wetland bordered by forest/black ash, conifer swamp				
Type of Pond	Natural,Permanent,Offline No open water observed, floating mat of vegetated sphagnum				
In-Situ Water Quality					
WT (deg. C)		AT (degC)	23.0	Water Quality Notes	
pH		Cond. (s/cm)			
D.O. (mg/L)		Water Colour			
Water Clarity					
Seepage Indicators	None				


Pond Lake Assessment

Fish & Wildlife Observations	Swamp sparrow, Ovenbird, red eyed vireo				
In-Situ Habitat	Not fish habitat				
Physical Characteristics					
Estimated Size	180.00	Estimated Depth	0.00		
Notes	180 m across at centreline. No open water, wet floating mat of vegetated sphagnum				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
			100.00		100.00
Aquatic Vegetation Species Present	Floating mat of Sphagnum with sedges, wild Calla lily, swamp candles, leatherleaf, cottongrass, wild calla				
Description & Width of Riparian Vegetation	0m; no transition area; fen wetland is bordered by forest/treed swamp including black ash, sweet gale				
Study Area Comments					
No open water. Floating mat fen not expected to directly support fish					




Pond Lake Assessment

Site ID	WB-B-M59-41	Field Crew	Amy Ingriselli Jessica Mendoza		240
Study Area	TLINE B				
Location	East of hwy 69 north of Hoover road				
Project Number	60341251	Air Temp. (degC)	21.0	Weather Notes	
Tablet	AECOM10	Wind Speed (beaufort)	3		
Start Date	7/6/2015 1:17:10 PM	Precipitation	0		
End Date	2015-07-06 13:40:33	Cloud Cover	100.00		
Site Features					
Feature Description	2259	Feature Location			
Looking east along cl from west bank	Latitude:45.499324,Longitude:-80.183365,Altitude:212.6,Speed:0.020577777,Accuracy:2.1,Provider:gps,Time:07/06/2015 01:18:57 EDT				
Feature Description	2262	Feature Location			
Upstream (north) of CI from west bank	Latitude:45.499339,Longitude:-80.183326,Altitude:212.6,Speed:0.025722222,Accuracy:2.4,Provider:gps,Time:07/06/2015 01:20:47 EDT				
Feature Description	2265	Feature Location			
Downstream (south) of CI from west bank	Latitude:45.49934,Longitude:-80.183303,Altitude:212.9,Speed:0.025722222,Accuracy:2.1,Provider:gps,Time:07/06/2015 01:21:36 EDT				
Surrounding Land Use	Forest Mixed coniferous deciduous forest				
Type of Pond	Natural,Permanent,Online Braided channel in lowlying saturated area between forested bedrock				


Pond Lake Assessment

In-Situ Water Quality					
WT (deg. C)	<input type="text" value="21.2"/>	AT (degC)	<input type="text" value="21.7"/>	Water Quality Notes <div></div>	
pH	<input type="text" value="4.4"/>	Cond. (s/cm)	<input type="text" value="0.01"/>		
D.O. (mg/L)	<input type="text" value="4.1"/>	Water Colour	<input type="text" value="Yellow/Brown"/>		
Water Clarity	<input type="text" value="Clear"/>				
Seepage Indicators	<div>None</div> <div></div>				
Fish & Wildlife Observations	<div>Swamp sparrow</div>				
In-Situ Habitat	<div>Floating vegetation, detritus, and algae provide cover</div>				
Physical Characteristics					
Estimated Size	<input type="text" value="34.00"/>	Estimated Depth	<input type="text" value="0.60"/>		
Notes	<div>Open water is 6m wide but water column including detritus is over 1m. Channel width is 1m at cl</div>				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text" value="1.00"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="99.00"/>	<input type="text"/>	<input type="text" value="100.00"/>
Aquatic Vegetation Species Present	<div>Watershield, 3 way sedge, bladderwort, algae, sphagnum, leather leaf, marsh St john Wort, swamp candles, fragrant pond lily</div>				
Description & Width of Riparian Vegetation	<div>1.5m blueberry, leatherleaf, Sphagnum, pine</div>				
Study Area Comments			<div></div> <div></div>		



Pond Lake Assessment

Site ID	WB-B-M59-32	Field Crew	Amy Ingriselli Jessica Mendoza		243
Study Area	TLINE B				
Location	T line b map 59. Along centreline plus 50m NE and SW of centreline				
Project Number	60341251	Air Temp. (degC)	23.0	Weather Notes	
Tablet	AECOM10	Wind Speed (beaufort)	3		
Start Date	7/6/2015 2:33:44 PM	Precipitation	0		
End Date	2015-07-06 14:50:10	Cloud Cover	100.00		
Site Features					
Feature Description	2268	Feature Location			
Looking southeast across pond along CL from north shore	Latitude:45.496576,Longitude:-80.175603,Altitude:219.0,Speed:0.03601111,Accuracy:2.4,Provider:gps,Time:07/06/2015 02:43:48 EDT				
Feature Description	2271	Feature Location			
Looking east at pond from centreline on north bank	Latitude:45.496552,Longitude:-80.175595,Altitude:221.2,Speed:0.03601111,Accuracy:2.4,Provider:gps,Time:07/06/2015 02:44:35 EDT				
Feature Description	2274	Feature Location			
Looking southwest at pond from centreline on north bank	Latitude:45.496545,Longitude:-80.17558,Altitude:221.3,Speed:0.010288889,Accuracy:2.7,Provider:gps,Time:07/06/2015 02:45:48 EDT				
Surrounding Land Use	Forest,Wetland				
	Open water pond bordered by forest				
Type of Pond	Natural,Permanent,Online				
	Heavily vegetated open water pond with shore fen border, vegetated hummocks				


Pond Lake Assessment

In-Situ Water Quality					
WT (deg. C)	<input type="text"/>	AT (degC)	<input type="text"/>	Water Quality Notes <input type="text"/>	
pH	<input type="text"/>	Cond. (s/cm)	<input type="text"/>		
D.O. (mg/L)	<input type="text"/>	Water Colour	<input type="text"/>		
Water Clarity	<input type="text"/>				
Seepage Indicators	<div>None</div> <div></div>				
Fish & Wildlife Observations	Swamp sparrow, hermit thrush, American robin, green frog				
In-Situ Habitat	Openwater pond. Fish habitat				
Physical Characteristics					
Estimated Size	<input type="text" value="180.00"/>	Estimated Depth	<input type="text" value="1.00"/>		
Notes	Mean water depth estimate 1 m. Not wadeable, floating vegetation is abundant, detritus over bedrock. Bedrock or shrubby shore fen shorelines. 180 m across at CL.				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text" value="30.00"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="70.00"/>	<input type="text"/>	<input type="text" value="100.00"/>
Aquatic Vegetation Species Present	Fragrant water lily, bladderwort				
Description & Width of Riparian Vegetation	Mean 10m, meadowsweet, wide laurel, leatherleaf, grasses, speckled alder				
Study Area Comments					
<div>Water quality data was not saved on tablet</div>					




Pond Lake Assessment

Site ID	WB-B-M40-83	Field Crew	Amy Ingriselli Jessica Mendoza		246
Study Area	TLINE B				
Location	Map 40 east of hwy 69. 50m along and NE and SW of centreline				
Project Number	60341251	Air Temp. (degC)	23.0	Weather Notes	
Tablet	AECOM10	Wind Speed (beaufort)	0		
Start Date	7/7/2015 10:28:10 AM	Precipitation	2		
End Date	2015-07-07 10:42:57	Cloud Cover	100.00		
Site Features					
Feature Description	2313	Feature Location			
Looking northeast at swamp from centrepoint	Latitude:45.614957,Longitude:-80.381233,Altitude:192.7,Speed:0.0051444443,Accuracy:2.1,Provider:gps,Time:07/07/2015 10:42:22 EDT				
Feature Description	2316	Feature Location			
Looking southwest from centrepoint	Latitude:45.614958,Longitude:-80.381241,Altitude:192.8,Speed:0.041155554,Accuracy:1.8,Provider:gps,Time:07/07/2015 10:43:17 EDT				
Surrounding Land Use	Forest,Wetland Treed thicket swamp bordered by forest, highway nearby				
Type of Pond	Natural,Offline No flow or open water. Saturated Sphagnum throughout, few isolated pockets of water over sphagnum. Sphagnum conifer thicket swamp				
In-Situ Water Quality					
WT (deg. C)		AT (degC)	23.0	Water Quality Notes	
pH		Cond. (s/cm)			
D.O. (mg/L)		Water Colour			
Water Clarity					
Seepage Indicators	None				


Pond Lake Assessment

Fish & Wildlife Observations	None observed				
In-Situ Habitat	Not fish habitat				
Physical Characteristics					
Estimated Size	190.00	Estimated Depth	0.00		
Notes	Saturated Sphagnum treed thicket swamp. Occasional isolated pockets of water over Sphagnum. Estimated width is along east-west axis of thicket.				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
			100.00		100.00
Aquatic Vegetation Species Present	Water tolerant terrestrial vegetation and some emergent vegetation throughout swamp including sphagnum, wild Calla lily, ferns, Canada mayflower, Labrador tea, wild lily of the valley, holly, black spruce				
Description & Width of Riparian Vegetation	None; thicket starts at road edge				
Study Area Comments					
Not likely to directly support fish, no evidence of flow or open water. Big saturated conifer thicket swamp.					





Pond Lake Assessment

Site ID	WB-B-M43-77		Field Crew	Amy Ingriselli Jessica Mendoza		249
Study Area	TLINE B					
Location	East of Hwy 69 south of Pointe au Baril					
Project Number	60341251	Air Temp. (degC)	19.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	3			
Start Date	7/7/2015 11:44:30 AM	Precipitation	1			
End Date	2015-07-07 12:25:54	Cloud Cover	100.00			
Site Features						
Feature Description	2304	Feature Location				
Looking southeast along cl from southwest bank	Latitude:45.592184,Longitude:-80.367013,Altitude:186.7,Speed:0.025722222,Accuracy:1.8,Provider:gps,Time:07/07/2015 12:05:07 EDT					
Feature Description	2307	Feature Location				
Looking east from cl across lake from southwest bank	Latitude:45.592222,Longitude:-80.367054,Altitude:188.9,Speed:0.041155554,Accuracy:1.8,Provider:gps,Time:07/07/2015 12:07:02 EDT					
Feature Description	2310	Feature Location				
Ideal pike spawning habitat	Latitude:45.592251,Longitude:-80.366983,Altitude:199.9,Speed:0.03601111,Accuracy:2.1,Provider:gps,Time:07/07/2015 12:17:43 EDT					
Surrounding Land Use	Forest					
	Mixed coniferous deciduous forest atop bedrock					
Type of Pond	Natural,Permanent,Online					
	Open pond with floating emergents with narrow emergents along margins suitable for pike spawning habitat if pike are present					

Pond Lake Assessment

In-Situ Water Quality					
WT (deg. C)	<input type="text" value="21.2"/>	AT (degC)	<input type="text" value="19.6"/>	Water Quality Notes <div></div>	
pH	<input type="text" value="4.5"/>	Cond. (s/cm)	<input type="text" value="0.01"/>		
D.O. (mg/L)	<input type="text" value="4.9"/>	Water Colour	<input type="text" value="Yellow/Brown"/>		
Water Clarity	<input type="text" value="Clear"/>				
Seepage Indicators	<div>None</div> <div></div>				
Fish & Wildlife Observations	<div>Raven, frog</div>				
In-Situ Habitat	<div>Narrow emergents in shallow area border pond</div>				
Physical Characteristics					
Estimated Size	<input type="text" value="71.00"/>	Estimated Depth	<input type="text" value="1.00"/>		
Notes	<div>Probably over 1m depth on average. Estimated width is east-west across pond</div>				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text" value="10.00"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="90.00"/>	<input type="text"/>	<input type="text" value="70.00"/>
Aquatic Vegetation Species Present	<div>Fragrant pond lily, 3 way sedge, Sphagnum, grasses, watershield, alder saplings, Calla lily</div>				
Description & Width of Riparian Vegetation	<div>2m ferns, bunchberry, grasses, sedges, maple saplings</div>				
Study Area Comments					
<div>CI crosses edge of pond where ideal pike habitat occurs. Open water is within 50m disturbance area for transmission line.</div>					

Pond Lake Assessment




Site ID	WB-B-M76-8	Field Crew	Amy Ingriselli Jessica Mendoza		252
Study Area	TLINE B				
Location	T line b and Mill Lake map76. Approximately 50 m east and west of centreline				
Project Number	60341251	Air Temp. (degC)	23.0	Weather Notes	
Tablet	AECOM10	Wind Speed (beaufort)	1		
Start Date	7/8/2015 9:25:18 AM	Precipitation	0		
End Date	2015-07-08 10:39:52	Cloud Cover	100.00		
Site Features					
Feature Description	2319	Feature Location			
Looking southwest along south shoreline, from eastern limit of study area		Latitude:45.372048,Longitude:-79.975509,Altitude:192.2,Speed:0.45785555,Accuracy:2.1,Provider:gps,Time:07/08/2015 09:26:39 EDT			
Feature Description	2322	Feature Location			
Looking west along north shoreline, from eastern limit of study area		Latitude:45.372471,Longitude:-79.975946,Altitude:190.9,Speed:0.19034444,Accuracy:2.0,Provider:gps,Time:07/08/2015 09:33:57 EDT			
Feature Description	2325	Feature Location			
Looking east along southern shoreline from western limit of study area		Latitude:45.371075,Longitude:-79.976655,Altitude:193.2,Speed:0.0926,Accuracy:1.8,Provider:gps,Time:07/08/2015 09:41:18 EDT			
Feature Description	2328	Feature Location			
Looking east along northern shoreline from western limit of study area		Latitude:45.372571,Longitude:-79.977398,Altitude:194.7,Speed:0.11832222,Accuracy:1.75,Provider:gps,Time:07/08/2015 09:46:36 EDT			

Execution Time 8/17/2015 10:08:22 AM

Filter Start Date 4/1/2015

Filter End Date 8/17/2015

Pond Lake Assessment


Feature Description	2331	Feature Location	
One sunfish sp. (Suspected Smallmouth bass) nest observed and suitable habitat (coarse gravel cobble substrate on quiet shoreline with few boulder/stumps/log for cover) along shoreline at centreline and east up to 20 m along shoreline		Latitude:45.372594,Longitude:-79.976811,Altitude:193.0,Speed:0.041155554,Accuracy:1.75,Provider:gps,Time:07/08/2015 09:51:42 EDT	
Feature Description	2334	Feature Location	
Looking at south shoreline at centreline		Latitude:45.371276,Longitude:-79.976109,Altitude:204.3,Speed:0.21606667,Accuracy:2.0,Provider:gps,Time:07/08/2015 10:37:26 EDT	
Feature Description	2337	Feature Location	
Looking north at north shoreline at centreline		Latitude:45.372323,Longitude:-79.976628,Altitude:203.1,Speed:0.82825553,Accuracy:2.4,Provider:gps,Time:07/08/2015 10:40:26 EDT	
Surrounding Land Use	Residential,Forest,Other		
	Forest, cottages and hydro corridor		
Type of Pond	Natural,Permanent		
	Bay in Mill Lake with sheltered small bays with fine substrate and gradual slope, or bedrock/boulder shoreline with dropped.		
In-Situ Water Quality			
WT (deg. C)	22.4	AT (degC)	23.5
pH	5.5	Cond. (s/cm)	0.03
D.O. (mg/L)	8.2	Water Colour	Colourless
Water Clarity	Clear		
	Water Quality Notes		
	Taken below surface		
Seepage Indicators	None		
Fish & Wildlife Observations	Bluejay, Northern Pike observed		

Execution Time 8/17/2015 10:08:22 AM




Filter Start Date 4/1/2015

Filter End Date 8/17/2015


Pond Lake Assessment

In-Situ Habitat	Coarse shoreline and sheltered bays with soft substrate				
Physical Characteristics					
Estimated Size	193.00	Estimated Depth	3.00		
Notes	At least 2 m in centre. South shore gradual slope. North shore mean 0.5 m in bay, steep dropoff at bedrock shorelines (at least 1.5 m)				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
15.00	50.00	20.00	15.00		60.00
Aquatic Vegetation Species Present	Water shield, tapegrass, shoregrass				
Description & Width of Riparian Vegetation	0m; mainly bedrock boulder along the shoreline with some white pine, white cedar, white birch				
Study Area Comments					
Northern pike observed, potential smallmouth bass nest in suitable bass spawning habitat on north shoreline at centreline					



Pond Lake Assessment

Site ID	WB-B-M75-9		Field Crew	Amy Ingriselli Jessica Mendoza		255
Study Area	TLINE B					
Location	T line b adjacent to hydro line map 75, east of Burnside Bridge road. Along CL plus 40 m east and 50 m west of cL					
Project Number	60341251	Air Temp. (degC)	25.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	1			
Start Date	7/8/2015 3:14:44 PM	Precipitation	0			
End Date	2015-07-08 15:43:09	Cloud Cover	100.00			
Site Features						
Feature Description	2361	Feature Location				
Looking east at north end of pond from top of ridge to west		Latitude:45.387494,Longitude:-79.98741,Altitude:241.5,Speed:0.0463,Accuracy:2.4,Provider:gps,Time:07/08/2015 03:34:27 EDT				
Feature Description	2364	Feature Location				
Looking southeast at pond from top of ridge to west		Latitude:45.387494,Longitude:-79.987392,Altitude:242.8,Speed:0.030866666,Accuracy:1.8,Provider:gps,Time:07/08/2015 03:37:17 EDT				
Feature Description	2367	Feature Location				
Looking south from west ridge at wet marsh and suitable Pike spawning habitat		Latitude:45.387491,Longitude:-79.987467,Altitude:239.6,Speed:0.11832222,Accuracy:2.1,Provider:gps,Time:07/08/2015 03:55:48 EDT				
Surrounding Land Use	Forest,Other					
	Pond bordered by forest, adjacent to Hydro corridor					
Type of Pond	Natural,Permanent,Dammed,Online					
	Open, standing water beaver pond bordered by rocky, forested shoreline and steep rocky ridge. Small channel from beaver dam flowing east to Avis Lake					


Pond Lake Assessment

In-Situ Water Quality					
WT (deg. C)	<input type="text"/>	AT (degC)	<input type="text" value="25.0"/>	Water Quality Notes Extremely steep slope down to pond, water quality not taken	
pH	<input type="text"/>	Cond. (s/cm)	<input type="text"/>		
D.O. (mg/L)	<input type="text"/>	Water Colour	<input type="text" value="Colourless"/>		
Water Clarity	<input type="text" value="Clear"/>				
Seepage Indicators		<input type="text" value="None"/>			
		<input type="text"/>			
Fish & Wildlife Observations		<input type="text" value="Common Yellowthroat, Eastern Towhee, Eastern chipmunk, American goldfinch, white breasted nuthatch"/>			
In-Situ Habitat		<input type="text" value="Open water pond, suitable esocid spawning"/>			
Physical Characteristics					
Estimated Size	<input type="text" value="230.00"/>	Estimated Depth	<input type="text" value="2.00"/>		
Notes	<input type="text" value="Length of wetland along CL is 230 m (north south). Wetted width across CL at centrepont is 95m. Depth estimated greater then 1.5m"/>				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text" value="30.00"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="70.00"/>	<input type="text"/>	<input type="text" value="65.00"/>
Aquatic Vegetation Species Present	<input type="text" value="Yellow pond lily, tapegrass, emergent grasses and sedges, watershield"/>				
Description & Width of Riparian Vegetation	<input type="text" value="Mean 1 m of ferns and grasses"/>				
Study Area Comments					
<input type="text" value="Very steep rock slope down to pond. Waterbody was assessed from top of ridge, water quality not taken for safety concerns. Suitable spawning habitat for northern pike at north and south shorelines of pond where channel occurs through marsh"/>					





Pond Lake Assessment

Site ID	WB-B-M53-57	Field Crew	Amy Ingriselli	261
Study Area	TLINE B			
Location	Map 53 east side of highway 69, south of Shawanaga First Nation			
Project Number	60341251	Air Temp. (degC)	18.0	Weather Notes
Tablet	AECOM16	Wind Speed (beaufort)	3	
Start Date	7/23/2015 2:29:32 PM	Precipitation	0	
End Date	2015-07-23 15:33:10	Cloud Cover	0.00	
Site Features				
Feature Description	2448	Feature Location		
Looking across pond facing north, at centrepont from south (right) bank		Latitude:45.523689,Longitude:-80.244513,Altitude:208.0,Speed:0.020577777,Accuracy:2.1,Provider:gps,Time:07/23/2015 02:41:11 EDT		
Feature Description	2451	Feature Location		
Looking east towards centrepont from DS limit of study area; marsh meadow below beaver dam		Latitude:45.523651,Longitude:-80.244475,Altitude:210.0,Speed:0.14404444,Accuracy:2.4,Provider:gps,Time:07/23/2015 02:45:01 EDT		
				
Feature Description	2454	Feature Location		
Looking west\DS towards centrepont from beaver dam at US limit of study area		Latitude:45.524066,Longitude:-80.244412,Altitude:208.8,Speed:0.07202222,Accuracy:3.0,Provider:gps,Time:07/23/2015 02:50:49 EDT		
				
Surrounding Land Use	Forest,Other			
	Highway 69, forested bedrock			
Type of Pond	Natural,Permanent,Dammed,Online			
	Heavily vegetated pond (dammed watercourse) in between 2 beaver dams			

Pond Lake Assessment

In-Situ Water Quality					
WT (deg. C)	<input type="text" value="24.6"/>	AT (degC)	<input type="text" value="18.5"/>	Water Quality Notes <div></div>	
pH	<input type="text" value="5.9"/>	Cond. (s/cm)	<input type="text" value="0.02"/>		
D.O. (mg/L)	<input type="text" value="8.0"/>	Water Colour	<input type="text" value="Colourless"/>		
Water Clarity	<input type="text" value="Clear"/>				
Seepage Indicators	<div>None</div> <div></div>				
Fish & Wildlife Observations	<div>Fish observed in pond just upstream of study area</div>				
In-Situ Habitat	<div>Likely able to support tolerant cyprinids</div>				
Physical Characteristics					
Estimated Size	<input type="text" value="15.00"/>	Estimated Depth	<input type="text" value="0.60"/>		
Notes	<div>Standing pond of water between beaver dams. Heavily vegetated bedrock shorelines. Detritus over bedrock boulder. Downstream of beaver dam is trickle of water through marsh meadow to highway CSP. No fish passage through dam</div>				
In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text" value="25.00"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="75.00"/>	<input type="text"/>	<input type="text" value="95.00"/>
Aquatic Vegetation Species Present	<div>Fragrant water lily, watershield, broadleaf arrowhead, wild Calla, northern milfoil, common Bladderwort</div>				
Description & Width of Riparian Vegetation	<div>Mean 2 m grass, leatherleaf, meadowsweet</div>				
Study Area Comments			<div></div> <div></div>		

Pond Lake Assessment

Site ID	WB-B-M53-58	Field Crew	Amy Ingriselli	264
Study Area	TLINE B			
Location	East side of highway 69 south of Shawanaga			
Project Number	60341251	Air Temp. (degC)	19.0	Weather Notes
Tablet	AECOM16	Wind Speed (beaufort)	4	
Start Date	7/23/2015 3:40:37 PM	Precipitation	0	
End Date	2015-07-23 16:37:50	Cloud Cover	0.00	
Site Features				
Feature Description	2457	Feature Location		
Looking south across wetland along centreline from north bank and northern limit of study area		Latitude:45.527687,Longitude:-80.250441,Altitude:208.1,Speed:0.020577777,Accuracy:2.1,Provider:gps,Time:07/23/2015 04:16:05 EDT		
Feature Description	2460	Feature Location		
Looking at pocket of open water in fen between centreline and highway, facing south from northern limit of study area		Latitude:45.527611,Longitude:-80.250547,Altitude:209.0,Speed:0.010288889,Accuracy:2.1,Provider:gps,Time:07/23/2015 04:17:13 EDT		
Feature Description	2463	Feature Location		
Highway CSP at south limit of study area		Latitude:45.526391,Longitude:-80.248846,Altitude:214.0,Speed:0.0051444443,Accuracy:1.8,Provider:gps,Time:07/23/2015 04:23:10 EDT		
Feature Description	2466	Feature Location		
Looking north at channel through fen		Latitude:45.526426,Longitude:-80.248822,Altitude:215.5,Speed:0.030866666,Accuracy:1.8,Provider:gps,Time:07/23/2015 04:24:59 EDT		
Surrounding Land Use	Forest, Wetland, Other			
	Fen, forest, highway			

Pond Lake Assessment

Type of Pond	Permanent,Offline				
	Pooling water adjacent to highway. Fen with open pocket of standing water and standing water in channel through fen. Connects to wetland on west side of highway				

In-Situ Water Quality					
WT (deg. C)	<input type="text" value="19.6"/>	AT (degC)	<input type="text" value="19.0"/>	Water Quality Notes	
pH	<input type="text" value="5.8"/>	Cond. (s/cm)	<input type="text" value="0.75"/>		
D.O. (mg/L)	<input type="text" value="3.7"/>	Water Colour	<input type="text" value="Yellow/Brown"/>		
Water Clarity	<input type="text" value="Clear"/>				


Seepage Indicators	None				

Fish & Wildlife Observations	Frogs				
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In-Situ Habitat	Fen, likely supports tolerant fish				
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Physical Characteristics					
Estimated Size	<input type="text" value="130.00"/>	Estimated Depth	<input type="text" value="0.80"/>		
Notes	Pocket of open standing water, standing open water in channel through fen to highway CSP. Overland flow and highway drainage. Detritus. Entire fen is 130 m long (north-south) and 35 m wide. Open water pond is 70 m long and 20 m wide. Channel from pond to CSP is 1 m wide and 0.6 deep				

In-Situ Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text" value="20.00"/>	<input type="text" value="5.00"/>	<input type="text"/>	<input type="text" value="75.00"/>	<input type="text"/>	<input type="text" value="85.00"/>
Aquatic Vegetation Species Present	Fragrantwater lily, fern pondweed, northern milfoil, wild Calla lily, iris sp, marsh cinquefoil				
Description & Width of Riparian Vegetation	Open water bordered by fen, floating mat with sedges, meadowsweet, sweet gale, leatherleaf, cattails. Mean 15m				

Study Area Comments	

Stream/River Assessment


Site ID	WB-B-M11-139		Field Crew	Amy Ingriselli Jessica Mendoza		261
Study Area	TLINE B					
Location	T line b map 11 east of highway 69 north of Still river					
Project Number	60341251	Air Temp. (degC)	21.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	2			
Start Date	7/1/2015 12:00:37 PM	Precipitation	0			
End Date	7/1/2015 1:31:36 PM	Cloud Cover	70.00			
Upstream Endpoint	Latitude:45.823116,Longitude:-80.539124,Altitude:186.1,Speed:0.010288889,Accuracy:2.1,Provider:gps,Time:07/01/2015 12:47:21 EDT					
Downstream Endpoint	Latitude:45.822778,Longitude:-80.540262,Altitude:180.8,Speed:0.025722222,Accuracy:2.4,Provider:gps,Time:07/01/2015 12:58:14 EDT					
Site Features						
Feature Description	2148	Feature Location				
View of watercourse along centreline from beaver dam facing southeast		Latitude:45.822961,Longitude:-80.539819,Altitude:181.4,Speed:0.041155554,Accuracy:1.8,Provider:gps,Time:07/01/2015 12:02:00 EDT				
Feature Description	2151	Feature Location				
Looking upstream from approximately centrepont		Latitude:45.822946,Longitude:-80.539803,Altitude:181.6,Speed:0.09774444,Accuracy:1.8,Provider:gps,Time:07/01/2015 12:03:25 EDT				
Feature Description	2154	Feature Location				
Looking downstream from beaver dam just below centrepont		Latitude:45.82294,Longitude:-80.539797,Altitude:181.7,Speed:0.03601111,Accuracy:1.8,Provider:gps,Time:07/01/2015 12:04:05 EDT				
Feature Description	2157	Feature Location				
Looking DS from US limit of study area		Latitude:45.823116,Longitude:-80.539124,Altitude:186.1,Speed:0.025722222,Accuracy:2.1,Provider:gps,Time:07/01/2015 12:47:28 EDT				

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Stream/River Assessment

Feature Description	2160	Feature Location		
Looking US from DS limit of study area		Latitude:45.822776,Longitude:-80.540264,Altitude:181.0,Speed:0.03601111,Accuracy:2.4,Provider:gps,Time:07/01/2015 12:58:49 EDT		
Surrounding Land Use	Forest			
	Forest			
Type of Watercourse	Permanent,Natural Channel			
	River dammed, standing water in beaver pond. Water trickling through dam through wet, dense reed marsh, channel through reeds			
Input Description	Watercourse plus overland flow			
Water Body Underground / Not As Mapped?	No			
Surrounding Land Topography	Bordered by flat floodplain and black ash swamp			
In-Situ Water Quality				
WT (deg. C)	<input type="text" value="22.3"/>	AT (degC)	<input type="text" value="21.7"/>	Water Quality Notes
pH	<input type="text" value="5.7"/>	Cond. (s/cm)	<input type="text" value="0.02"/>	
D.O. (mg/L)	<input type="text" value="6.5"/>	Water Colour	<input type="text" value="Yellow/Brown"/>	
Water Clarity	<input type="text" value="Clear"/>			
Seepage Indicators	<input type="text" value="None"/>			
Stream Morphology				
Site Length (m)	<input type="text" value="100.00"/>	Bank Stability		
Channel Dimensions	Left Bank		<input type="text" value="23.00"/>	
	Right Bank		<input type="text" value="23.25"/>	
Mean Wetted Width (m)	<input type="text" value="23.00"/>	Mean Wetted Depth (m)	<input type="text" value="1.00"/>	Notes <input type="text" value="Heavily vegetated"/>
Mean Bankfull Width (m)	<input type="text" value="23.25"/>	Mean Bankfull Depth (m)	<input type="text" value="1.10"/>	
Mean Top of Bank Width (m)	<input type="text" value="23.25"/>	Mean Top of Bank Depth (m)	<input type="text" value="1.10"/>	
Flow Description	Standing water above dam, trickling through dam, slow flats downstream of dam, active channel 4 m wide			

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Stream/River Assessment

Habitat					
Substrate Description	Silt sand detritus				
Morphological Structure (%)					
Pool	Riffle	Run	Flat		
			100.00		
Notes					
Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
Undercut Banks					
Average Depth(m)		Percent Cover (%)			
Aquatic Vegetation Species Present	Algae, common duckweed, narrow-leaf arrowhead, submergent grasses, floating-leaf pondweed				
Canopy Cover					
Percent Closed Cover (%)	60-30%				
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
			100.00		
Cover Description	Below beaver dam channel through dense reeds. Above dam open; little canopy cover from riparian shrubs				
Left Bank Riparian Vegetation			Right Bank Riparian Vegetation		
5m mean above dam: grass, sweet gale, meadowsweet, spotted Joe pye weed, black spruce, speckled alder, ferns, meadow rue. 6m mean below dam: Dense reeds in wetted width bordering active channel, riparian speckled alder			3m mean above dam: black spruce, black ash, grass, ferns, sweet gale, meadowsweet, speckled alder. Mean 6m below dam: dense reeds in wetted width bordering active channel with speckled alder riparian		
Overhanging Vegetation (%)	60.00				
	Grasses, herbaceous vegetation on banks in some areas but not providing significant overhanging vegetation above dam. Below dam reeds bordering active channel overhang				
Obstruction to Fish Passage	Natural				
	Beaver dam				
Barrier Height (M)	1.5				

Stream/River Assessment

Study Area Comments





Cedar Waxwing, yellow warbler, swamp sparrow, graycatbird, yellow-bellied Sapsucker, black-capped chickadee, bluejay, veery



Horizontal View of Channel



Stream/River Assessment


Site ID	WB-B-M10-140	Field Crew	Amy Ingriselli Jessica Mendoza		264
Study Area	TLINE B				
Location	Map 10 T line b east of rail and highway				
Project Number	60341251	Air Temp. (degC)	21.0	Weather Notes	
Tablet	AECOM10	Wind Speed (beaufort)	2		
Start Date	7/1/2015 2:50:16 PM	Precipitation	0		
End Date	7/1/2015 3:46:20 PM	Cloud Cover	60.00		
Upstream Endpoint	Latitude:45.835684,Longitude:-80.549731,Altitude:167.5,Speed:0.030866666,Accuracy:2.1,Provider:gps,Time:07/01/2015 03:37:42 EDT				
Downstream Endpoint	Latitude:45.835258,Longitude:-80.550756,Altitude:170.5,Speed:0.010288889,Accuracy:2.4,Provider:gps,Time:07/01/2015 03:21:11 EDT				
Site Features					
Feature Description	2163	Feature Location			
Looking across channel at CL		Latitude:45.835405,Longitude:-80.550127,Altitude:183.7,Speed:0.025722222,Accuracy:2.4,Provider:gps,Time:07/01/2015 03:11:58 EDT			
Feature Description	2166	Feature Location			
Looking US from CL		Latitude:45.835415,Longitude:-80.550118,Altitude:182.2,Speed:0.015433333,Accuracy:2.1,Provider:gps,Time:07/01/2015 03:13:51 EDT			
Feature Description	2169	Feature Location			
Looking DS from CL		Latitude:45.835415,Longitude:-80.550118,Altitude:182.2,Speed:0.020577777,Accuracy:2.1,Provider:gps,Time:07/01/2015 03:14:09 EDT			
Feature Description	2172	Feature Location			
Looking US from DS limit of study area		Latitude:45.835258,Longitude:-80.550756,Altitude:170.5,Speed:0.015433333,Accuracy:2.1,Provider:gps,Time:07/01/2015 03:21:20 EDT			

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Stream/River Assessment

Feature Description		2175	Feature Location		
Looking DS from US limit of study area		Latitude:45.835699,Longitude:-80.549734,Altitude:167.8,Speed:0.030866666,Accuracy:2.1,Provider:gps,Time:07/01/2015 03:37:49 EDT			
Surrounding Land Use		Residential,Agriculture,Forest			
		Bordered by forest with field nearby farm			
Type of Watercourse		Permanent			
		Slow moving channel through forested bedrock with dense riparian grasses			
Input Description		Watercourse, overland flow			
Water Body Underground / Not As Mapped?		No			
Surrounding Land Topography		Forested bedrock sloping to watercourse. Flat field above slope on left bank			
In-Situ Water Quality					
WT (deg. C)	<input type="text"/>	AT (degC)	<input type="text" value="21.0"/>	Water Quality Notes Water quality was not measured	
pH	<input type="text"/>	Cond. (s/cm)	<input type="text"/>		
D.O. (mg/L)	<input type="text"/>	Water Colour	<input type="text" value="Yellow/Brown"/>		
Water Clarity	<input type="text" value="Clear"/>				
Seepage Indicators		<input type="text" value="None"/>			
Stream Morphology					
Site Length (m)		<input type="text" value="100.00"/>		Bank Stability	
Channel Dimensions				Left Bank	<input type="text" value="7.70"/>
				Right Bank	<input type="text" value="10.50"/>
Mean Wetted Width (m)	<input type="text" value="7.70"/>	Mean Wetted Depth (m)	<input type="text" value="0.70"/>	Notes	<input type="text" value="Heavily vegetated with grasses and bedrock above"/>
Mean Bankfull Width (m)	<input type="text" value="10.50"/>	Mean Bankfull Depth (m)	<input type="text" value="0.90"/>		
Mean Top of Bank Width (m)	<input type="text" value="10.50"/>	Mean Top of Bank Depth (m)	<input type="text" value="0.90"/>		
Flow Description		<input type="text" value="Standing water"/>			

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Stream/River Assessment

Habitat					
Substrate Description		Sand silt muck			
Morphological Structure (%)					
Pool	Riffle	Run	Flat		
			100.00		
Notes					
Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
Undercut Banks					
Average Depth(m)			Percent Cover (%)		
Aquatic Vegetation Species Present		Submergent grasses, floating leaf pondweed, broadleaf arrowhead, emergent grasses, bladderwort			
Canopy Cover					
Percent Closed Cover (%)		60-30%			
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
20.00		80.00			
Cover Description		Trees providing some shade but most overhanging cover provided by grasses			
Left Bank Riparian Vegetation			Right Bank Riparian Vegetation		
Grass, ferns 3 m			Grass, iris, ferns 2 m		
Overhanging Vegetation (%)		95.00			
		Dense grasses along the banks and hummocks/islands in stream provides most of available in-stream cover for fish			
Obstruction to Fish Passage		Natural			
		Beaver dam			
Barrier Height (M)		1.0			

Stream/River Assessment

Study Area Comments





Beaver and fish observed, ovenbird, red winged blackbird



Horizontal View of Channel



Stream/River Assessment


Site ID	WB-B-M42-79		Field Crew	Amy Ingriselli Jessica Mendoza		267
Study Area	TLINE B					
Location	East of hwy 69. Near point au baril					
Project Number	60341251	Air Temp. (degC)	18.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	4			
Start Date	7/2/2015 11:03:50 AM	Precipitation	0			
End Date	7/2/2015 12:00:13 PM	Cloud Cover	0.00			
Upstream Endpoint	Latitude:45.599399,Longitude:-80.367543,Altitude:195.4,Speed:0.041155554,Accuracy:2.1,Provider:gps,Time:07/02/2015 11:43:36 EDT					
Downstream Endpoint	Latitude:45.598584,Longitude:-80.36829,Altitude:202.2,Speed:0.051444445,Accuracy:2.4,Provider:gps,Time:07/02/2015 11:31:05 EDT					
Site Features						
Feature Description	2193	Feature Location				
Looking along cl	Latitude:45.599005,Longitude:-80.367889,Altitude:198.0,Speed:0.07716667,Accuracy:2.4,Provider:gps,Time:07/02/2015 11:14:38 EDT					
Feature Description	2196	Feature Location				
Looking upstream of cl	Latitude:45.599002,Longitude:-80.367883,Altitude:197.8,Speed:0.025722222,Accuracy:2.4,Provider:gps,Time:07/02/2015 11:15:06 EDT					
Feature Description	2199	Feature Location				
Looking downstream of cl	Latitude:45.599002,Longitude:-80.367882,Altitude:197.8,Speed:0.066877775,Accuracy:2.1,Provider:gps,Time:07/02/2015 11:16:05 EDT					
Feature Description	2202	Feature Location				
Looking upstream from 50m downstream	Latitude:45.598584,Longitude:-80.36829,Altitude:202.2,Speed:0.015433333,Accuracy:2.4,Provider:gps,Time:07/02/2015 11:31:11 EDT					


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Stream/River Assessment

Feature Description	2205	Feature Location	
Small tributary to west has low flow and high relief preventing fish migration		Latitude:45.599027,Longitude:-80.368098,Altitude:199.7,Speed:0.5144445,Accuracy:2.4,Provider:gps,Time:07/02/2015 11:36:30 EDT	

Feature Description	2208	Feature Location	
Looking downstream from 50m upstream of cl		Latitude:45.599428,Longitude:-80.367545,Altitude:195.5,Speed:0.0051444443,Accuracy:2.1,Provider:gps,Time:07/02/2015 11:40:40 EDT	

Surrounding Land Use	Forest
	Mixed coniferous deciduous forest atop bedrock

Type of Watercourse	Permanent,Natural Channel
	River running southwest confined by beaver dams upstream and downstream

Input Description	Overland flow
Water Body Underground / Not As Mapped?	No
Surrounding Land Topography	Rolling bedrock sloping towards watercourse

In-Situ Water Quality				
WT (deg. C)	24.7	AT (degC)	18.9	Water Quality Notes
pH	5.2	Cond. (s/cm)	0.01	
D.O. (mg/L)	8.6	Water Colour	Colourless	
Water Clarity	Clear			

Seepage Indicators	None

Stream/River Assessment

Stream Morphology				Bank Stability	
Site Length (m)		<input type="text" value="100.00"/>		Left Bank <input type="text" value="35.00"/>	
Channel Dimensions				Right Bank <input type="text" value="40.00"/>	
Mean Wetted Width (m)		<input type="text" value="35.00"/>	Mean Wetted Depth (m)		<input type="text" value="1.00"/>
Mean Bankfull Width (m)		<input type="text" value="40.00"/>	Mean Bankfull Depth (m)		<input type="text" value="1.15"/>
Mean Top of Bank Width (m)		<input type="text" value="40.00"/>	Mean Top of Bank Depth (m)		<input type="text" value="1.15"/>
Notes <div style="border: 1px solid black; padding: 5px; min-height: 50px;">Bedrock or vegetated banks provide stability</div>					
Flow Description		<input type="text" value="Low"/>			
Habitat					
Substrate Description		<input type="text" value="Detritus muck silt bedrock"/>			
Morphological Structure (%)					
Pool		Riffle		Run	
<input type="text"/>		<input type="text"/>		<input type="text" value="100.00"/>	
Notes		<input type="text"/>			
Instream Cover					
Woody Debris		Boulders		Cobble	
<input type="text"/>		<input type="text"/>		<input type="text"/>	
Aquatic Vegetation		Structures		Total Instream Cover	
<input type="text"/>		<input type="text"/>		<input type="text"/>	
Undercut Banks					
Average Depth(m)		<input type="text"/>		Percent Cover (%) <input type="text"/>	
Aquatic Vegetation Species Present		<input type="text" value="Epilithic periphyton, tape grass, floating filamentous algae, watershield, small white lily, narrowleaf arrowhead"/>			
Canopy Cover					
Percent Closed Cover (%)		<input type="text" value="30-1%"/>			
Trees		Shrubs		Grasses	
<input type="text" value="90.00"/>		<input type="text"/>		<input type="text" value="10.00"/>	
Herbaceous		Man Made		Other	
<input type="text"/>		<input type="text"/>		<input type="text"/>	
Cover Description		<input type="text" value="Large pines on bedrock banks with grassy undergrowth"/>			
Left Bank Riparian Vegetation			Right Bank Riparian Vegetation		
<input type="text" value="3m grass herbaceous plants driftwood"/>			<input type="text" value="2m grass herbaceous plants"/>		



Execution Time

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Filter Start Date 7/1/2015

Filter End Date 8/1/2015

Stream/River Assessment

Overhanging Vegetation (%)	<div>5.00</div>	
	Low pine boughs and grasses	
Obstruction to Fish Passage	Natural	
	Beaver dam upstream and downstream both outside of study area	
Barrier Height (M)	<div>0.8</div>	
<div>Study Area Comments</div> <div>Small tributary to west provides little flow. Fish would not be able to migrate due to low flow over small area of high relief (1m)</div> <div></div>		
<div>Horizontal View of Channel</div> <div></div>		

Stream/River Assessment


Site ID	WB-B-M42-81		Field Crew	Amy Ingriselli Jessica Mendoza		270
Study Area	TLINE B					
Location	East of hwy 69 near point au baril "sucker lake"					
Project Number	60341251	Air Temp. (degC)	18.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	2			
Start Date	7/2/2015 12:30:41 PM	Precipitation	0			
End Date	7/2/2015 1:06:33 PM	Cloud Cover	0.00			
Upstream Endpoint	Latitude:45.601089,Longitude:-80.368467,Altitude:158.1,Speed:0.2778,Accuracy:3.9,Provider:gps,Time:07/02/2015 12:32:14 EDT					
Downstream Endpoint	Latitude:45.601114,Longitude:-80.369548,Altitude:165.4,Speed:0.041155554,Accuracy:3.6,Provider:gps,Time:07/02/2015 12:58:57 EDT					
Site Features						
Feature Description	2211	Feature Location				
Looking downstream from 50m upstream of CL	Latitude:45.601279,Longitude:-80.368557,Altitude:165.2,Speed:0.18005556,Accuracy:2.1,Provider:gps,Time:07/02/2015 12:37:34 EDT					
Feature Description	2214	Feature Location				
Looking along cl	Latitude:45.601194,Longitude:-80.368983,Altitude:164.5,Speed:0.010288889,Accuracy:2.7,Provider:gps,Time:07/02/2015 12:42:04 EDT					
Feature Description	2217	Feature Location				
Looking downstream of cl	Latitude:45.601192,Longitude:-80.36899,Altitude:164.8,Speed:0.0051444443,Accuracy:2.7,Provider:gps,Time:07/02/2015 12:42:41 EDT					
Feature Description	2220	Feature Location				
Looking upstream from cl	Latitude:45.601196,Longitude:-80.369055,Altitude:165.5,Speed:0.051444445,Accuracy:2.4,Provider:gps,Time:07/02/2015 12:53:31 EDT					


Execution Time 8/19/2015 8:12:04 AM

Filter Start Date 7/1/2015

Filter End Date 8/1/2015

Stream/River Assessment

Feature Description	2223	Feature Location	
Small beaver dam at downstream end of study area		Latitude:45.601114,Longitude:-80.369548,Altitude:165.4,Speed:0.05658889,Accuracy:3.6,Provider:gps,Time:07/02/2015 12:59:00 EDT	

Feature Description	2226	Feature Location	
Looking upstream from 50m downstream		Latitude:45.60112,Longitude:-80.369607,Altitude:168.2,Speed:0.0463,Accuracy:2.7,Provider:gps,Time:07/02/2015 01:00:13 EDT	

Surrounding Land Use	Forest
	Coniferous dominant forest atop bedrock

Type of Watercourse	Permanent,Natural Channel
	Large river flowing west to east

Input Description	Overland flow
Water Body Underground / Not As Mapped?	No
Surrounding Land Topography	Rolling bedrock sloping towards watercourse



In-Situ Water Quality				
WT (deg. C)	23.2	AT (degC)	18.7	Water Quality Notes
pH	5.6	Cond. (s/cm)	0.01	
D.O. (mg/L)	8.4	Water Colour	Colourless	
Water Clarity	Clear			

Seepage Indicators	None





Stream/River Assessment

Stream Morphology				Bank Stability	
Site Length (m)		<input type="text" value="100.00"/>		Left Bank <input type="text" value="30.00"/>	
Channel Dimensions				Right Bank <input type="text" value="35.00"/>	
Mean Wetted Width (m)	<input type="text" value="30.00"/>	Mean Wetted Depth (m)	<input type="text" value="1.00"/>	Notes 45° angled bedrock forested with shrubs grasses and sedges at water margin	
Mean Bankfull Width (m)	<input type="text" value="35.00"/>	Mean Bankfull Depth (m)	<input type="text" value="1.10"/>		
Mean Top of Bank Width (m)	<input type="text" value="35.00"/>	Mean Top of Bank Depth (m)	<input type="text" value="1.10"/>		
Flow Description		<input type="text" value="Moderate"/>			
Habitat					
Substrate Description		<input type="text" value="Detritus sand silt muck on bedrock"/>			
Morphological Structure (%)					
Pool	Riffle	Run	Flat		
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="100.00"/>		
Notes		<input type="text"/>			
Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Undercut Banks					
Average Depth(m)		<input type="text"/>	Percent Cover (%)		<input type="text"/>
Aquatic Vegetation Species Present		<input type="text" value="Tape grass, pickerel weed, bladderwort, water shield, white water lily"/>			
Canopy Cover					
Percent Closed Cover (%)		<input type="text" value="30-1%"/>			
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
<input type="text" value="80.00"/>	<input type="text" value="20.00"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Cover Description		<input type="text" value="Trees on steep bedrock bank provide shade as well as shrubs on north bank"/>			
Left Bank Riparian Vegetation			Right Bank Riparian Vegetation		
<input type="text" value="5m shrubs and ferns"/>			<input type="text" value="0m moss and juniper on bedrock"/>		

Stream/River Assessment

Overhanging Vegetation (%)		3.00
	Grasses	
Obstruction to Fish Passage	Natural	
	Beaver pond downstream of centreline	
Barrier Height (M)	0.4	
Study Area Comments		
Horizontal View of Channel		

Stream/River Assessment

Site ID	WB-B-M60-22		Field Crew	Amy Ingriselli Jessica Mendoza		273
Study Area	TLINE B					
Location	Map 60 on Hoover property east of hwy 69					
Project Number	60341251	Air Temp. (degC)	26.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	2			
Start Date	7/6/2015 3:33:45 PM	Precipitation	0			
End Date	7/6/2015 4:44:50 PM	Cloud Cover	100.00			
Upstream Endpoint	Latitude:45.490164,Longitude:-80.181869,Altitude:216.3,Speed:0.025722222,Accuracy:3.0,Provider:gps,Time:07/06/2015 04:04:39 EDT					
Downstream Endpoint	Latitude:45.489278,Longitude:-80.182188,Altitude:211.5,Speed:0.10288889,Accuracy:2.4,Provider:gps,Time:07/06/2015 04:19:14 EDT					
Site Features						
Feature Description	2277	Feature Location				
Looking northwest across watercourse at CL	Latitude:45.489766,Longitude:-80.182259,Altitude:239.4,Speed:0.11317778,Accuracy:3.9,Provider:gps,Time:07/06/2015 03:56:31 EDT					
Feature Description	2280	Feature Location				
Looking downstream at beaver dam near the upstream limit of study area	Latitude:45.490029,Longitude:-80.182006,Altitude:221.9,Speed:0.025722222,Accuracy:3.0,Provider:gps,Time:07/06/2015 04:01:24 EDT					
Feature Description	2283	Feature Location				
Looking DS from US limit of study area	Latitude:45.490164,Longitude:-80.181869,Altitude:216.3,Speed:0.066877775,Accuracy:3.0,Provider:gps,Time:07/06/2015 04:04:47 EDT					
Feature Description	2286	Feature Location				
Looking US from DS limit of study area	Latitude:45.489278,Longitude:-80.182188,Altitude:211.5,Speed:0.020577777,Accuracy:2.1,Provider:gps,Time:07/06/2015 04:19:47 EDT					

Stream/River Assessment

Surrounding Land Use	Forest			
	Mixed forest			
Type of Watercourse	Permanent			
	Slow-moving flats in dammed vegetated channel bordered by forest			
Input Description	Online watercourse plus surface water drainage			
Water Body Underground / Not As Mapped?	No			
Surrounding Land Topography	Gradual forested slope to watercourse			
In-Situ Water Quality				
WT (deg. C)	26.3	AT (degC)	26.0	Water Quality Notes
pH	5.1	Cond. (s/cm)	0.01	
D.O. (mg/L)	7.4	Water Colour	Yellow/Brown	
Water Clarity	Clear			
Seepage Indicators	None			
Stream Morphology				
Site Length (m)	100.00	Bank Stability		
Channel Dimensions		Left Bank	22.30	
		Right Bank	22.80	
Mean Wetted Width (m)	22.30	Mean Wetted Depth (m)	0.86	Notes Heavily vegetated, stable soils
Mean Bankfull Width (m)	22.80	Mean Bankfull Depth (m)	0.96	
Mean Top of Bank Width (m)	22.80	Mean Top of Bank Depth (m)	0.96	
Flow Description	Standing			
Habitat				
Substrate Description	Detritus muck silt boulder			

Stream/River Assessment

Morphological Structure (%)					
Pool	Riffle	Run	Flat		
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="100.00"/>		
Notes		<input type="text"/>			

Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Undercut Banks					
Average Depth(m)		<input type="text"/>	Percent Cover (%)		<input type="text"/>
Aquatic Vegetation Species Present		<input type="text" value="Three way sedge, algae, yellow pond lily, small fragrant water lily"/>			

Canopy Cover					
Percent Closed Cover (%)		<input type="text" value="30-1%"/>			
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
<input type="text" value="100.00"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Cover Description		<input type="text" value="Riparian trees providing some shade"/>			

Left Bank Riparian Vegetation		Right Bank Riparian Vegetation	
<input type="text" value="0.7 m Sphagnum, ferns, grasses, sedges"/>		<input type="text" value="0.7 m Sphagnum, ferns, grasses, sedges"/>	

Overhanging Vegetation (%)	<input type="text" value="5.00"/>
	<input type="text" value="Riparian and emergent herbaceous vegetation present but not providing notable overhanging cover"/>
Obstruction to Fish Passage	<input type="text" value="Natural"/>
	<input type="text" value="2 beaver dams upstream of centreline"/>
Barrier Height (M)	<input type="text" value="2.0"/>

Stream/River Assessment





Study Area Comments



Horizontal View of Channel



Stream/River Assessment


Site ID	WB-B-M49-67		Field Crew	Amy Ingriselli Jessica Mendoza		276
Study Area	TLINE B					
Location	North of dumont road east of hwy 69					
Project Number	60341251	Air Temp. (degC)	22.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	4			
Start Date	7/7/2015 8:36:06 AM	Precipitation	0			
End Date	7/7/2015 9:34:12 AM	Cloud Cover	100.00			
Upstream Endpoint	Latitude:45.555181,Longitude:-80.289435,Altitude:204.7,Speed:0.0463,Accuracy:2.4,Provider:gps,Time:07/07/2015 09:14:47 EDT					
Downstream Endpoint	Latitude:45.5549,Longitude:-80.29005,Altitude:191.0,Speed:0.13375555,Accuracy:2.4,Provider:gps,Time:07/07/2015 09:20:46 EDT					
Site Features						
Feature Description	2289	Feature Location				
Looking northwest along cl from south bank	Latitude:45.555165,Longitude:-80.289535,Altitude:193.1,Speed:0.05658889,Accuracy:2.4,Provider:gps,Time:07/07/2015 08:37:47 EDT					
Feature Description	2292	Feature Location				
Looking downstream from cl	Latitude:45.555182,Longitude:-80.289485,Altitude:188.6,Speed:0.43213335,Accuracy:3.0,Provider:gps,Time:07/07/2015 08:41:26 EDT					
Feature Description	2295	Feature Location				
Looking upstream from cl	Latitude:45.555188,Longitude:-80.289563,Altitude:187.0,Speed:0.0926,Accuracy:2.4,Provider:gps,Time:07/07/2015 08:42:28 EDT					
Feature Description	2298	Feature Location				
50m upstream from cl looking downstream	Latitude:45.555271,Longitude:-80.289188,Altitude:186.6,Speed:0.32924443,Accuracy:2.7,Provider:gps,Time:07/07/2015 08:49:12 EDT					

Execution Time 8/19/2015 8:12:04 AM

Filter Start Date 7/1/2015

Filter End Date 8/1/2015

Stream/River Assessment

Feature Description		2301	Feature Location		
50m downstream from cl looking upstream		Latitude:45.554924,Longitude:-80.290412,Altitude:181.5,Speed:0.05658889,Accuracy:2.7,Provider:gps,Time:07/07/2015 08:59:27 EDT			
Surrounding Land Use		Forest			
		Mixed coniferous deciduous forest			
Type of Watercourse		Intermittent,Natural Channel			
		Dried up water course with red mud (from algae or iron?). With intermittent stagnant puddles.			
Input Description		Overland flow, standing open water pond upstream			
Water Body Underground / Not As Mapped?		No			
Surrounding Land Topography		Rolling bedrock sloping towards watercourse			
In-Situ Water Quality					
WT (deg. C)	<input type="text"/>	AT (degC)	<input type="text" value="19.0"/>	Water Quality Notes No water quality taken due to absence of water	
pH	<input type="text"/>	Cond. (s/cm)	<input type="text"/>		
D.O. (mg/L)	<input type="text"/>	Water Colour	<input type="text"/>		
Water Clarity	<input type="text"/>				
Seepage Indicators		None			
Stream Morphology					
Site Length (m)		<input type="text" value="100.00"/>		Bank Stability	
Channel Dimensions				Left Bank	<input type="text" value="0.00"/>
				Right Bank	<input type="text" value="3.00"/>
Mean Wetted Width (m)	<input type="text" value="0.00"/>	Mean Wetted Depth (m)	<input type="text" value="0.00"/>	Notes	Soft mud banks
Mean Bankfull Width (m)	<input type="text" value="3.00"/>	Mean Bankfull Depth (m)	<input type="text" value="0.20"/>		
Mean Top of Bank Width (m)	<input type="text" value="3.00"/>	Mean Top of Bank Depth (m)	<input type="text" value="0.20"/>		
Flow Description		Stagnant where there are puddles. One puddle of stagnant water approximately 4 m long and 0.3 m deep and 4.5 m wide. Other than that pool no flow in study area, wet mud only			

Execution Time

8/19/2015 8:12:04 AM

Filter Start Date 7/1/2015

Filter End Date 8/1/2015

Stream/River Assessment

Habitat					
Substrate Description		Muck			
Morphological Structure (%)					
Pool	Riffle	Run	Flat		
100.00					
Notes					
Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
Undercut Banks					
Average Depth(m)			Percent Cover (%)		
Aquatic Vegetation Species Present					
Canopy Cover					
Percent Closed Cover (%)		100-90%			
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
80.00		20.00			
Cover Description					
Left Bank Riparian Vegetation			Right Bank Riparian Vegetation		
0.3m grasses mosses fern			0.3m grasses mosses fern		
Overhanging Vegetation (%)		80.00			
		Grasses ferns			
Obstruction to Fish Passage		Low Flow Barrier			
		No flow			
Barrier Height (M)					

Stream/River Assessment

Study Area Comments





No fish habitat or potential intermittent, low sensitivity and/or indirect fish habitat only. Drying creek bed with soft wet mud



Horizontal View of Channel



Stream/River Assessment




Site ID	WB-B-M74-10		Field Crew	Amy Ingriselli Jessica Mendoza		279
Study Area	TLINE B					
Location	Mountain chute east of mountain basin east of hwy 124					
Project Number	60341251	Air Temp. (degC)	17.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	1	Recent precipitation over last 24 hrs		
Start Date	7/8/2015 11:45:44 AM	Precipitation	0			
End Date	7/8/2015 1:03:22 PM	Cloud Cover	20.00			
Upstream Endpoint	Latitude:45.399828,Longitude:-79.993754,Altitude:201.5,Speed:0.20577778,Accuracy:3.0,Provider:gps,Time:07/08/2015 12:27:10 EDT					
Downstream Endpoint	Latitude:45.399933,Longitude:-79.994469,Altitude:197.6,Speed:0.0926,Accuracy:2.1,Provider:gps,Time:07/08/2015 12:45:43 EDT					
Site Features						
Feature Description	2340	Feature Location				
Where cl crosses stream on south side of island	Latitude:45.399923,Longitude:-79.994467,Altitude:202.4,Speed:0.020577777,Accuracy:2.4,Provider:gps,Time:07/08/2015 12:11:08 EDT					
Feature Description	2343	Feature Location				
Looking upstream from cl	Latitude:45.399942,Longitude:-79.994447,Altitude:204.5,Speed:0.041155554,Accuracy:2.7,Provider:gps,Time:07/08/2015 12:17:03 EDT					
Feature Description	2346	Feature Location				
Looking downstream from cl	Latitude:45.399947,Longitude:-79.994447,Altitude:204.6,Speed:0.0463,Accuracy:2.7,Provider:gps,Time:07/08/2015 12:17:48 EDT					
Feature Description	2349	Feature Location				
Small back channel on north side of island at cl (looking north)	Latitude:45.400002,Longitude:-79.994461,Altitude:205.1,Speed:0.19034444,Accuracy:2.7,Provider:gps,Time:07/08/2015 12:19:03 EDT					

Execution Time 8/19/2015 8:12:04 AM

Filter Start Date 7/1/2015

Filter End Date 8/1/2015

Stream/River Assessment

Feature Description		2352	Feature Location		
Looking downstream from 50m upstream		Latitude:45.399901,Longitude:-79.993815,Altitude:198.7,Speed:0.066877775,Accuracy:2.7,Provider:gps,Time:07/08/2015 12:24:36 EDT			
Feature Description		2355	Feature Location		
Looking west at embayment		Latitude:45.399828,Longitude:-79.993754,Altitude:201.5,Speed:0.05658889,Accuracy:3.0,Provider:gps,Time:07/08/2015 12:27:47 EDT			
Feature Description		2358	Feature Location		
Looking upstream 50m downstream on north bank		Latitude:45.400132,Longitude:-79.99499,Altitude:192.0,Speed:0.16976666,Accuracy:3.3,Provider:gps,Time:07/08/2015 01:03:36 EDT			
Surrounding Land Use		Forest			
		Mixed coniferous deciduous forest atop bedrock			
Type of Watercourse		Permanent,Natural Channel			
		Fast flowing rapids through steep bedrock channel flowing east to west with bedrock outcrop that is closed upstream (east) but open downstream (west). This divides rapids from warm pool that likely receives input during high flows and precipitation events.			
Input Description		Overland flow			
Water Body Underground / Not As Mapped?		No			
Surrounding Land Topography		Forested bedrock cliffs with steep rock faces			
In-Situ Water Quality					
WT (deg. C)	21.6	AT (degC)	17.3	Water Quality Notes Recent precipitation over last 24 hours	
pH	5.9	Cond. (s/cm)	0.02		
D.O. (mg/L)	8.0	Water Colour	Colourless		
Water Clarity	Clear				

Execution Time 8/19/2015 8:12:04 AM

Filter Start Date 7/1/2015

Filter End Date 8/1/2015

Stream/River Assessment

Seepage Indicators	<div>None</div>				
Stream Morphology			Bank Stability		
Site Length (m)	<div>100.00</div>		Left Bank	<div>18.00</div>	
Channel Dimensions			Right Bank	<div>18.24</div>	
Mean Wetted Width (m)	<div>18.00</div>	Mean Wetted Depth (m)	<div>1.13</div>	Notes	<div>Fractured bedrock banks with old cedar pine and maple growth</div>
Mean Bankfull Width (m)	<div>18.24</div>	Mean Bankfull Depth (m)	<div>1.48</div>		
Mean Top of Bank Width (m)	<div>18.24</div>	Mean Top of Bank Depth (m)	<div>1.48</div>		
Flow Description	<div>High; rapids</div>				
Habitat					
Substrate Description	<div>Cobble boulder bedrock</div>				
Morphological Structure (%)					
Pool	Riffle	Run	Flat		
<div>40.00</div>	<div>50.00</div>	<div>10.00</div>			
Notes	<div></div>				
Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
Undercut Banks					
Average Depth(m)	<div></div>	Percent Cover (%)	<div></div>		
Aquatic Vegetation Species Present	<div>Epilithic periphyton</div>				
Canopy Cover					
Percent Closed Cover (%)	<div>30-1%</div>				
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
<div>80.00</div>	<div></div>	<div></div>	<div>20.00</div>	<div></div>	<div></div>
Cover Description	<div></div>				

Stream/River Assessment

Left Bank Riparian Vegetation

1m ferns

Right Bank Riparian Vegetation

1m ferns and moss

Overhanging Vegetation (%)		10.00
	Pine and yellow birch boughs	
Obstruction to Fish Passage	None Observed	
Barrier Height (M)		

Study Area Comments





Suitable walleye spawning and nursery habitat; clean coarse substrate below rapids and outcrop of bedrock near centreline provides a sheltered embayment to north with clean coarse substrate that is suitable nursery habitat in warm shallow waters protected from rapids.



Horizontal View of Channel



Stream/River Assessment


Site ID	WB-B-M49-143		Field Crew	Amy Ingriselli Jessica Mendoza		282
Study Area	TLINE B					
Location	West of hwy 69, north of shawanaga reserve					
Project Number	60341251	Air Temp. (degC)	17.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	1			
Start Date	7/9/2015 8:41:49 AM	Precipitation	0			
End Date	7/9/2015 9:42:01 AM	Cloud Cover	90.00			
Upstream Endpoint	Latitude:45.549898,Longitude:-80.287004,Altitude:197.2,Speed:0.43213335,Accuracy:2.4,Provider:gps,Time:07/09/2015 09:26:01 EDT					
Downstream Endpoint	Latitude:45.54955,Longitude:-80.287804,Altitude:198.3,Speed:0.03601111,Accuracy:2.1,Provider:gps,Time:07/09/2015 08:43:31 EDT					
Site Features						
Feature Description	2370	Feature Location				
Looking upstream from 50m downstream		Latitude:45.549554,Longitude:-80.287823,Altitude:197.6,Speed:0.0926,Accuracy:1.8,Provider:gps,Time:07/09/2015 08:54:36 EDT				
Feature Description	2373	Feature Location				
Looking downstream from cl		Latitude:45.54997,Longitude:-80.28768,Altitude:197.7,Speed:0.68421113,Accuracy:2.4,Provider:gps,Time:07/09/2015 09:14:43 EDT				
Feature Description	2376	Feature Location				
Looking upstream from cl		Latitude:45.550006,Longitude:-80.287621,Altitude:197.8,Speed:0.03601111,Accuracy:2.4,Provider:gps,Time:07/09/2015 09:16:19 EDT				
Feature Description	2379	Feature Location				
Looking southeast along cl		Latitude:45.550007,Longitude:-80.28762,Altitude:197.8,Speed:0.07202222,Accuracy:3.0,Provider:gps,Time:07/09/2015 09:16:59 EDT				

Execution Time 8/19/2015 8:12:04 AM

Filter Start Date 7/1/2015

Filter End Date 8/1/2015

Stream/River Assessment

Feature Description		2382	Feature Location		
Looking downstream from 50m upstream		Latitude:45.549923,Longitude:-80.286968,Altitude:197.6,Speed:0.08231111,Accuracy:2.4,Provider:gps,Time:07/09/2015 09:26:30 EDT			
Surrounding Land Use		Forest			
		Mixed coniferous deciduous forest			
Type of Watercourse		Permanent,Natural Channel			
		Lowlying area with active channel slowly meanders in large floodplain flowing east to west			
Input Description		Overland flow			
Water Body Underground / Not As Mapped?		No			
Surrounding Land Topography		Relatively flat forested ground slowly slopes towards watercourse			
In-Situ Water Quality					
WT (deg. C)	<input type="text" value="21.9"/>	AT (degC)	<input type="text" value="17.8"/>	Water Quality Notes	
pH	<input type="text" value="5.7"/>	Cond. (s/cm)	<input type="text" value="0.02"/>		
D.O. (mg/L)	<input type="text" value="7.7"/>	Water Colour	<input type="text" value="Colourless"/>		
Water Clarity	<input type="text" value="Clear"/>				
Seepage Indicators		<input type="text" value="None"/>			
Stream Morphology					
Site Length (m)		<input type="text" value="100.00"/>		Bank Stability	
Channel Dimensions				Left Bank	<input type="text" value="18.00"/>
				Right Bank	<input type="text" value="21.50"/>
Mean Wetted Width (m)	<input type="text" value="18.00"/>	Mean Wetted Depth (m)	<input type="text" value="1.26"/>	Notes	<input type="text" value="Heavily vegetated with strip of emergents and riparian plants, no exposed soil"/>
Mean Bankfull Width (m)	<input type="text" value="21.50"/>	Mean Bankfull Depth (m)	<input type="text" value="1.48"/>		
Mean Top of Bank Width (m)	<input type="text" value="21.50"/>	Mean Top of Bank Depth (m)	<input type="text" value="1.48"/>		
Flow Description		<input type="text" value="Low flow"/>			

Execution Time

8/19/2015 8:12:04 AM

Filter Start Date 7/1/2015

Filter End Date 8/1/2015

Stream/River Assessment

Habitat

Substrate Description Sand silt detritus

Morphological Structure (%)

Pool

Riffle

Run

Flat

Notes

Instream Cover

Woody Debris

Boulders

Cobble

Aquatic Vegetation

Structures

Total Instream Cover

Undercut Banks

Average Depth(m)

Percent Cover (%)

Aquatic Vegetation
Species Present

Submergent grasses, fragrant pond lily, yellow pond lily, pickerel weed

Canopy Cover

Percent Closed Cover (%)

Trees

Shrubs

Grasses

Herbaceous

Man Made

Other

Cover Description

Herbaceous plants and Pickerel weed

Left Bank Riparian Vegetation

98m Meadow sweet ferns sweet gale spotted Joe pie weed

Right Bank Riparian Vegetation

135m Meadow sweet ferns sweet gale spotted Joe pie weed

Overhanging
Vegetation (%)

3.00

Riparian vegetation not providing significant cover for fish

Obstruction to Fish
Passage

None Observed

Barrier Height (M)

Execution Time

8/19/2015 8:12:04 AM

Filter Start Date 7/1/2015

Filter End Date 8/1/2015

Stream/River Assessment





Study Area Comments



Horizontal View of Channel



Stream/River Assessment


Site ID	WB-B-M49-66		Field Crew	Amy Ingriselli Jessica Mendoza		285
Study Area	TLINE B					
Location	East of hwy 69, north of shawanga reserve					
Project Number	60341251	Air Temp. (degC)	20.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	1			
Start Date	7/9/2015 10:23:33 AM	Precipitation	0			
End Date	7/9/2015 11:19:32 AM	Cloud Cover	80.00			
Upstream Endpoint	Latitude:45.550539,Longitude:-80.280255,Altitude:195.5,Speed:0.63276666,Accuracy:2.4,Provider:gps,Time:07/09/2015 10:50:56 EDT					
Downstream Endpoint	Latitude:45.550379,Longitude:-80.281611,Altitude:193.4,Speed:0.015433333,Accuracy:2.1,Provider:gps,Time:07/09/2015 10:24:37 EDT					
Site Features						
Feature Description	2385	Feature Location				
Looking upstream from 50m downstream	Latitude:45.550379,Longitude:-80.281611,Altitude:193.4,Speed:0.07202222,Accuracy:2.1,Provider:gps,Time:07/09/2015 10:24:53 EDT					
Feature Description	2388	Feature Location				
Looking downstream from 50m upstream	Latitude:45.550465,Longitude:-80.280144,Altitude:195.0,Speed:0.07716667,Accuracy:2.4,Provider:gps,Time:07/09/2015 10:51:21 EDT					
Feature Description	2391	Feature Location				
Looking northwest along cl from south bank	Latitude:45.550424,Longitude:-80.280808,Altitude:199.5,Speed:0.27265555,Accuracy:2.4,Provider:gps,Time:07/09/2015 11:09:21 EDT					
Feature Description	2394	Feature Location				
Looking downstream from cl	Latitude:45.550391,Longitude:-80.28092,Altitude:194.5,Speed:0.087455556,Accuracy:2.7,Provider:gps,Time:07/09/2015 11:10:18 EDT					

Execution Time 8/19/2015 8:12:04 AM

Filter Start Date 7/1/2015

Filter End Date 8/1/2015

Stream/River Assessment

Feature Description	2397	Feature Location	
Looking upstream from cl	Latitude:45.550393,Longitude:-80.280919,Altitude:194.5,Speed:0.025722222,Accuracy:2.7,Provider:gps,Time:07/09/2015 11:10:53 EDT		
Surrounding Land Use	Forest, Residential		
	Mixed coniferous deciduous forest atop bedrock		
Type of Watercourse	Permanent,Natural Channel		
	Series of rapids and pools flowing east to west		
Input Description	Overland flow		
Water Body Underground / Not As Mapped?	No		
Surrounding Land Topography	Rolling bedrock sloping towards watercourse		
In-Situ Water Quality			
WT (deg. C)	22.5	AT (degC)	20.4
pH	5.7	Cond. (s/cm)	0.02
D.O. (mg/L)	8.3	Water Colour	Colourless
Water Clarity	Clear		
Seepage Indicators	None		
Stream Morphology	Bank Stability		
Site Length (m)	100.00	Left Bank	15.60
Channel Dimensions		Right Bank	16.30
Mean Wetted Width (m)	15.60	Mean Wetted Depth (m)	1.50
Mean Bankfull Width (m)	16.30	Mean Bankfull Depth (m)	1.83
Mean Top of Bank Width (m)	16.30	Mean Top of Bank Depth (m)	1.83
Flow Description	Moderate to high		

Execution Time

8/19/2015 8:12:04 AM

Filter Start Date 7/1/2015

Filter End Date 8/1/2015

Stream/River Assessment

Habitat

Substrate Description Gravel boulders detritus

Morphological Structure (%)

Pool

Riffle

Run

Flat

20.00

20.00

60.00

Notes

Instream Cover

Woody Debris

Boulders

Cobble

Aquatic Vegetation

Structures

Total Instream Cover

Undercut Banks

Average Depth(m)

Percent Cover (%)

Aquatic Vegetation
Species Present

Algae, fragrant pond lily, emergent grasses, pickerel weed

Canopy Cover

Percent Closed Cover (%)

30-1%

Trees

Shrubs

Grasses

Herbaceous

Man Made

Other

100.00

Cover Description

Left Bank Riparian Vegetation

1m ferns and herbaceous plants

Right Bank Riparian Vegetation

2m ferns grasses and herbaceous plants

Overhanging
Vegetation (%)

20.00

Ferns on banks

Obstruction to Fish
Passage

None Observed

Barrier Height (M)

Execution Time

8/19/2015 8:12:04 AM

Filter Start Date 7/1/2015

Filter End Date 8/1/2015

Stream/River Assessment

Study Area Comments





Residential homes on left bank of upper limit. Upper limit is just downstream of rapids



Horizontal View of Channel



Stream/River Assessment



Site ID	WB-B-M54-56	Field Crew	Amy Ingriselli	582
Study Area	TLINE B			
Location	Map 54 on east side of highway 69, south of Shawanaga First Nation			
Project Number	60341251	Air Temp. (degC)	21.0	Weather Notes
Tablet	AECOM16	Wind Speed (beaufort)	3	
Start Date	7/23/2015 12:29:08 PM	Precipitation	0	
End Date	7/23/2015 2:17:22 PM	Cloud Cover	15.00	
Upstream Endpoint	Latitude:45.520401,Longitude:-80.23898,Altitude:219.1,Speed:0.020577777,Accuracy:2.7,Provider:gps,Time:07/23/2015 01:21:28 EDT			
Downstream Endpoint	Latitude:45.519897,Longitude:-80.240149,Altitude:215.1,Speed:0.0463,Accuracy:2.1,Provider:gps,Time:07/23/2015 02:02:44 EDT			
Site Features				
Feature Description	2430	Feature Location		
View of the watercourse at CL looking south from north side of watercourse		Latitude:45.520148,Longitude:-80.239632,Altitude:222.7,Speed:0.025722222,Accuracy:1.75,Provider:gps,Time:07/23/2015 12:34:05 EDT		
Feature Description	2433	Feature Location		
General view of watercourse looking west from CL		Latitude:45.520142,Longitude:-80.239642,Altitude:221.9,Speed:0.051444445,Accuracy:1.75,Provider:gps,Time:07/23/2015 12:35:42 EDT		
Feature Description	2436	Feature Location		
General view of watercourse looking east from CL		Latitude:45.520127,Longitude:-80.239633,Altitude:221.8,Speed:0.020577777,Accuracy:1.5,Provider:gps,Time:07/23/2015 12:36:31 EDT		
Feature Description	2439	Feature Location		
Looking US at beaver dam and stagnant pool in-between 2 dams (facing east from other beaver dam)		Latitude:45.520219,Longitude:-80.239385,Altitude:219.8,Speed:0.14918889,Accuracy:1.75,Provider:gps,Time:07/23/2015 12:40:17 EDT		

Execution Time 8/19/2015 8:12:04 AM

Filter Start Date 7/1/2015

Filter End Date 8/1/2015

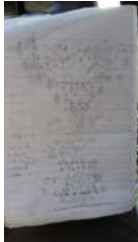

Stream/River Assessment

Feature Description	2442	Feature Location		
Looking DS from US limit of study area	Latitude:45.520401,Longitude:-80.23898,Altitude:219.1,Speed:0.030866666,Accuracy:2.7,Provider:gps,Time:07/23/2015 01:21:36 EDT			
Feature Description	2445	Feature Location		
Looking US east) from one of the beaver dams DS of CL, looking at small, drained pond between dams	Latitude:45.519971,Longitude:-80.24003,Altitude:215.7,Speed:0.015433333,Accuracy:2.1,Provider:gps,Time:07/23/2015 01:59:46 EDT			
Surrounding Land Use	Forest,Meadow,Wetland,Other			
	Highway 69, forested bedrock, beaver pond upstream. Downstream scrubmeadow between bedrock.			
Type of Watercourse	Intermittent,Natural Channel			
	Dry, intermittent watercourse draining from US beaver pond. Dry, poorly defined channel in US section. DS is dry with moist soils, swale with no defined channel, water-tolerant terrestrial vegetation			
Input Description	Overland, highway drainage and upstream beaver pond			
Water Body Underground / Not As Mapped?	No			
Surrounding Land Topography	Forested rolling bedrock, gradual slope to watercourse			
In-Situ Water Quality				
WT (deg. C)	24.2	AT (degC)	21.2	Water Quality Notes Water quality taken in beaver pond. DO higher than expected
pH	5.2	Cond. (s/cm)	0.01	
D.O. (mg/L)	9.6	Water Colour	Yellow/Brown	
Water Clarity	Clear			
Seepage Indicators	None			




Stream/River Assessment

Stream Morphology				Bank Stability	
Site Length (m)		<input type="text" value="20.00"/>		Left Bank <input type="text" value="45.00"/>	
Channel Dimensions				Right Bank <input type="text" value="46.20"/>	
Mean Wetted Width (m)	<input type="text" value="45.00"/>	Mean Wetted Depth (m)	<input type="text" value="0.75"/>	Notes <div style="border: 1px solid black; padding: 5px;">Mostly bedrock</div>	
Mean Bankfull Width (m)	<input type="text" value="46.20"/>	Mean Bankfull Depth (m)	<input type="text" value="0.82"/>		
Mean Top of Bank Width (m)	<input type="text" value="46.20"/>	Mean Top of Bank Depth (m)	<input type="text" value="0.82"/>		
Flow Description		<div style="border: 1px solid black; padding: 5px;">Standing water in beaver pond from which the intermittent channel through the remainder of the site flows</div>			
Habitat					
Substrate Description		<div style="border: 1px solid black; padding: 5px;">Detritus over bedrock, muck, silt</div>			
Morphological Structure (%)					
Pool	Riffle	Run	Flat		
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="100.00"/>		
Notes		<div style="border: 1px solid black; height: 30px;"></div>			
Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Undercut Banks					
Average Depth(m)		<input type="text"/>	Percent Cover (%)		<input type="text"/>
Aquatic Vegetation Species Present		<div style="border: 1px solid black; padding: 5px;">Fragrant water lily, watershield, shoregrass, pondweed sp., common reed, burreed, yellow pond lily</div>			
Canopy Cover					
Percent Closed Cover (%)		<input type="text" value="0"/>			
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Cover Description		<div style="border: 1px solid black; padding: 5px;">Trees in adjacent forest, riparian vegetation not providing shade to beaver pond</div>			
Left Bank Riparian Vegetation			Right Bank Riparian Vegetation		
<div style="border: 1px solid black; padding: 5px;">1 m Sphagnum moss, meadowsweet, grass, leatherleaf</div>			<div style="border: 1px solid black; padding: 5px;">3 m grass, sedges, meadowsweet</div>		




Stream/River Assessment

Overhanging Vegetation (%)	0.00
	Riparian vegetation not providing notable overhanging cover
Obstruction to Fish Passage	Natural
	4 beaver dams and low flow in between dams
Barrier Height (M)	3.0
Study Area Comments	
Fish habitat in upstream beaver pond only. Intermittent flow only through remainder of site (or small stagnant pockets). Habitat description is of fish habitat in upstream beaver pond. Downstream of centreline series of beaver dams (3) with small, stagnant pockets of water choked with vegetation in between not likely to support fish.	
Horizontal View of Channel	

Stream/River Assessment

Site ID	WB-B-M52-61		Field Crew	Amy Ingriselli Jessica Mendoza		105
Study Area	TLINE B					
Location	50m upstream and downstream of Cl.Two culverts converge on east side of hwy 400/69 in lowlying area between two bedrock outcrops					
Project Number	60341251	Air Temp. (degC)	15.0	Weather Notes		
Tablet	AECOM17	Wind Speed (beaufort)	4			
Start Date	6/3/2015 10:00:33 AM	Precipitation	0			
End Date	6/3/2015 11:14:05 AM	Cloud Cover	75.00			
Upstream Endpoint	Latitude:45.533558,Longitude:-80.258467,Altitude:201.8,Speed:0.020577777,Accuracy:1.75,Provider:gps,Time:06/03/2015 11:12:15 EDT					
Downstream Endpoint	Latitude:45.53443,Longitude:-80.258454,Altitude:204.6,Speed:0.066877775,Accuracy:2.0,Provider:gps,Time:06/03/2015 10:16:58 EDT					
Site Features						
Feature Description	780	Feature Location				
Facing US from DS limit of study area (approximately 50m DS of CL)	Latitude:45.53443,Longitude:-80.258454,Altitude:204.6,Speed:0.066877775,Accuracy:2.0,Provider:gps,Time:06/03/2015 10:16:58 EDT					
Feature Description	783	Feature Location				
Western branch looking upstream	Latitude:45.534003,Longitude:-80.258443,Altitude:206.8,Speed:0.025722222,Accuracy:1.75,Provider:gps,Time:06/03/2015 10:39:45 EDT					
Feature Description	786	Feature Location				
Eastern branch looking upstream	Latitude:45.533943,Longitude:-80.258425,Altitude:205.0,Speed:0.07716667,Accuracy:2.0,Provider:gps,Time:06/03/2015 10:46:00 EDT					

Stream/River Assessment

Feature Description		789	Feature Location		
At CI looking downstream		Latitude:45.533885,Longitude:-80.258414,Altitude:204.2,Speed:0.020577777,Accuracy:2.0,Provider:gps,Time:06/03/2015 10:50:13 EDT			
Feature Description		792	Feature Location		
At CI looking upstream		Latitude:45.533949,Longitude:-80.258436,Altitude:205.8,Speed:0.10288889,Accuracy:1.75,Provider:gps,Time:06/03/2015 10:54:48 EDT			
Feature Description		795	Feature Location		
Facing DS towards CL from approximately 50 m US of CL and limit of study area		Latitude:45.533558,Longitude:-80.258467,Altitude:201.8,Speed:0.020577777,Accuracy:1.75,Provider:gps,Time:06/03/2015 11:12:15 EDT			
Surrounding Land Use		Forest,Wetland,Other			
		Hwy 400/69 to west of site: mixed deciduous coniferous forest on outcrops. Wetland species throughout watercourse			
Type of Watercourse		Permanent,Natural Channel			
		Two channels deriving from corrugated steel pipes come to a confluence downstream of highway			
Input Description		Overland flow, Road runoff			
Water Body Underground / Not As Mapped?		No			
Surrounding Land Topography		Rolling bedrock outcrops slope toward channels			
In-Situ Water Quality					
WT (deg. C)	17.3	AT (degC)	15.4	Water Quality Notes	
pH	4.7	Cond. (s/cm)	0.06		
D.O. (mg/L)	6.7	Water Colour	Yellow/Brown		
Water Clarity	Clear				

Execution Time 8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Seepage Indicators	None				
Stream Morphology			Bank Stability		
Site Length (m)	100.00		Left Bank	2.25	
Channel Dimensions			Right Bank	30.00	
Mean Wetted Width (m)	2.25	Mean Wetted Depth (m)	0.50	Notes	Left channel has undefined channel upstreamright channel has defined channel upstream with some undercuttingJoined channel is well defined with some undercutting
Mean Bankfull Width (m)	30.00	Mean Bankfull Depth (m)	0.75		
Mean Top of Bank Width (m)	30.00	Mean Top of Bank Depth (m)	0.75		
Flow Description	Stagnant to moderate flow				
Habitat					
Substrate Description	Sand silt detritus gravel				
Morphological Structure (%)					
Pool	Riffle	Run	Flat		
20.00	2.00	58.00	20.00		
Notes					
Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
Undercut Banks					
Average Depth(m)	0.20	Percent Cover (%)	20.00		
Aquatic Vegetation Species Present	Wetland grasses aster cattailBladderwort fragrant pond lily algae				
Canopy Cover					
Percent Closed Cover (%)	100-90%				
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
		100.00			
Cover Description	Overhanging grasses				

Stream/River Assessment

Left Bank Riparian Vegetation

6m alder sweet gale Willow

Right Bank Riparian Vegetation

13m alder sweet gale willow

Overhanging Vegetation (%)		90.00
	Grasses	
Obstruction to Fish Passage	Natural	
	Some beaver dam activity. Low flow conditions especially at beaver dam locations. Fish can still move upstream through other channel.	
Barrier Height (M)	0.5	

Study Area Comments





Two culverts converge on east side of hwy 400/69 in low lying area between two bedrock outcrops



Horizontal View of Channel



Stream/River Assessment

Site ID	WB-B-M52-59-2		Field Crew	Amy Ingriselli Jessica Mendoza		108
Study Area	TLINE B					
Location	T line b					
Project Number	60341251	Air Temp. (degC)	18.0	Weather Notes		
Tablet	AECOM17	Wind Speed (beaufort)	2			
Start Date	6/3/2015 12:37:05 PM	Precipitation	0			
End Date	6/3/2015 1:03:00 PM	Cloud Cover	60.00			
Upstream Endpoint	Latitude:45.530417,Longitude:-80.253349,Altitude:217.1,Speed:0.0,Accuracy:1.75,Provider:gps,Time:06/03/2015 12:38:07 EDT					
Downstream Endpoint	Latitude:45.529942,Longitude:-80.253771,Altitude:212.3,Speed:0.06173333,Accuracy:1.5,Provider:gps,Time:06/03/2015 12:45:47 EDT					
Site Features						
Feature Description	813	Feature Location				
Facing DS from US/ northwest limit of study area	Latitude:45.530417,Longitude:-80.253349,Altitude:217.1,Speed:0.0,Accuracy:1.75,Provider:gps,Time:06/03/2015 12:38:07 EDT					
Feature Description	816	Feature Location				
Intermittent channel at CL	Latitude:45.530081,Longitude:-80.253637,Altitude:214.1,Speed:0.030866666,Accuracy:1.8,Provider:gps,Time:06/03/2015 12:43:18 EDT					
Feature Description	819	Feature Location				
Facing North along CL	Latitude:45.53008,Longitude:-80.253628,Altitude:214.2,Speed:0.010288889,Accuracy:1.8,Provider:gps,Time:06/03/2015 12:44:06 EDT					
Feature Description	822	Feature Location				
Facing US from highway and limit of study area	Latitude:45.529942,Longitude:-80.253771,Altitude:212.3,Speed:0.06173333,Accuracy:1.5,Provider:gps,Time:06/03/2015 12:45:47 EDT					

Stream/River Assessment

Surrounding Land Use	Forest,Meadow		
	Beaver meadow, scrub land bordered by highway and forest		
Type of Watercourse	Intermittent		
	Mostly dry intermittent channel through meadow. Approximately 10 m east/US of CL stagnant water in channel between 2 old beaver dams		
Input Description	Overland drainage and fed from upstream pond		
Water Body Underground / Not As Mapped?	Not mapped, not an identified feature on field maps. Site was observed in the field and added.		
Surrounding Land Topography	Flat meadow/ scrubland		
In-Situ Water Quality			
WT (deg. C)		AT (degC)	18.0
pH		Cond. (s/cm)	
D.O. (mg/L)		Water Colour	Yellow/Brown
Water Clarity	Turbid		
Seepage Indicators	None		
Stream Morphology			
Site Length (m)	100.00	Bank Stability	
Channel Dimensions		Left Bank	0.30
		Right Bank	1.00
Mean Wetted Width (m)	0.30	Mean Wetted Depth (m)	0.20
Mean Bankfull Width (m)	1.00	Mean Bankfull Depth (m)	0.30
Mean Top of Bank Width (m)	1.00	Mean Top of Bank Depth (m)	0.30
		Notes	Intermittent flow, no evidence of erosion observed
Flow Description	No flow, approximately 30m of stagnant water out of 100m study area		
Habitat			
Substrate Description	Sand silt detritus		

Stream/River Assessment

Morphological Structure (%)					
Pool	Riffle	Run	Flat		
100.00					
Notes					

Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover

Undercut Banks	
Average Depth(m)	0.25 Percent Cover (%) 0.00
Aquatic Vegetation Species Present	Grass

Canopy Cover					
Percent Closed Cover (%)		90-60%			
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
	40.00	60.00			
Cover Description	Mostly overhanging grasses with some riparian shrubs providing canopy cover				

Left Bank Riparian Vegetation		Right Bank Riparian Vegetation	
20m scrubland, beaver meadow		25m scrub/ beaver meadow	

Overhanging Vegetation (%)	80.00
	Grasses

Obstruction to Fish Passage	Low Flow Barrier
	Most of study area dry, old beaver dams as well
Barrier Height (M)	0.0

Stream/River Assessment

Study Area Comments





Not mapped or identified as a feature. Potential intermittent fish habitat for tolerant cyprinids during high flows DS of CL however lack of channel form at CL



Horizontal View of Channel



Stream/River Assessment

Site ID	WB-B-M53-58		Field Crew	Amy Ingriselli Jessica Mendoza		111
Study Area	TLINE B					
Location	Width of wetland along T Line b ~200m					
Project Number	60341251	Air Temp. (degC)	18.0	Weather Notes		
Tablet	AECOM17	Wind Speed (beaufort)	2			
Start Date	6/3/2015 1:35:54 PM	Precipitation	0			
End Date	6/3/2015 2:21:26 PM	Cloud Cover	70.00			
Upstream Endpoint	Latitude:45.527776,Longitude:-80.250538,Altitude:206.1,Speed:0.0051444443,Accuracy:2.1,Provider:gps,Time:06/03/2015 02:10:57 EDT					
Downstream Endpoint	Latitude:45.526401,Longitude:-80.248725,Altitude:207.6,Speed:0.10288889,Accuracy:2.1,Provider:gps,Time:06/03/2015 01:48:31 EDT					
Site Features						
Feature Description	825	Feature Location				
Highway csp facing west	Latitude:45.526445,Longitude:-80.248927,Altitude:212.1,Speed:0.066877775,Accuracy:1.8,Provider:gps,Time:06/03/2015 01:46:31 EDT					
Feature Description	828	Feature Location				
Southern limit of study area, looking along tline facing north	Latitude:45.526401,Longitude:-80.248725,Altitude:207.6,Speed:0.10288889,Accuracy:2.1,Provider:gps,Time:06/03/2015 01:48:31 EDT					
Feature Description	831	Feature Location				
View of channel flowing through fen facing north	Latitude:45.526489,Longitude:-80.248969,Altitude:207.6,Speed:0.17491111,Accuracy:1.8,Provider:gps,Time:06/03/2015 01:50:19 EDT					
Feature Description	834	Feature Location				
Facing south from northern limit of study area looking along tline	Latitude:45.527776,Longitude:-80.250538,Altitude:206.1,Speed:0.0051444443,Accuracy:2.1,Provider:gps,Time:06/03/2015 02:10:57 EDT					

Stream/River Assessment

Feature Description	837	Feature Location		
View of pond at north edge of wetland facing southeast		Latitude:45.527598,Longitude:-80.25068,Altitude:205.7,Speed:0.05658889,Accuracy:2.1,Provider:gps,Time:06/03/2015 02:12:33 EDT		
Surrounding Land Use	Forest,Wetland,Other			
	Existing hydro line and highway			
Type of Watercourse	Permanent			
	Pond and channel through fen and cattail marsh			
Input Description	Overland and highway drainage.			
Water Body Underground / Not As Mapped?	No			
Surrounding Land Topography	Fen wetland bordered by mixed forest			
In-Situ Water Quality				
WT (deg. C)	<input type="text" value="20.8"/>	AT (degC)	<input type="text" value="18.0"/>	Water Quality Notes
pH	<input type="text" value="5.6"/>	Cond. (s/cm)	<input type="text" value="0.17"/>	
D.O. (mg/L)	<input type="text" value="8.0"/>	Water Colour	<input type="text" value="Yellow/Brown"/>	
Water Clarity	<input type="text" value="Clear"/>			
Seepage Indicators	<input type="text" value="None"/>			
Stream Morphology		Bank Stability		
Site Length (m)	<input type="text" value="200.00"/>	Left Bank	<input type="text" value="1.50"/>	
Channel Dimensions		Right Bank	<input type="text" value="53.00"/>	
Mean Wetted Width (m)	<input type="text" value="1.50"/>	Mean Wetted Depth (m)	<input type="text" value="1.00"/>	Notes <input type="text" value="Shore fen and shore marsh"/>
Mean Bankfull Width (m)	<input type="text" value="53.00"/>	Mean Bankfull Depth (m)	<input type="text" value="1.05"/>	
Mean Top of Bank Width (m)	<input type="text" value="53.00"/>	Mean Top of Bank Depth (m)	<input type="text" value="1.05"/>	
Flow Description	Standing water in channel through saturated fen. Bankfull width is that of wetland, wetted is that of active channel. Shore fen/marsh saturated with occasional pools of standing water. Pond at head of channel. No connectivity US.			

Execution Time 8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Habitat					
Substrate Description	Detritus				
Morphological Structure (%)					
Pool	Riffle	Run	Flat		
40.00			60.00		
Notes					
Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
Undercut Banks					
Average Depth(m)		Percent Cover (%)			
Aquatic Vegetation Species Present	Bladderwort fragrant water lily cattails grasses. Floating mat of fen vegetation. Detritus also providing cover.				
Canopy Cover					
Percent Closed Cover (%)	60-30%				
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
	85.00		15.00		
Cover Description	Floating mat of veg with overhanging sweet gale				
Left Bank Riparian Vegetation			Right Bank Riparian Vegetation		
Floating mat of fen vegetation ~25 m cattails, sweet gale, speckled alder, Sphagnum moss, Labrador tea, leatherleaf, marsh cinquefoil, tamarack			~15m same veg as LB		
Overhanging Vegetation (%)	80.00				
	Float mat, overhanging fen shrubs				
Obstruction to Fish Passage	None Observed				
	None in study area, east of highway small beaver dam impeding passage but likely not in high flows				
Barrier Height (M)					

Stream/River Assessment

Study Area Comments




Watercourse continues through highway csp and west of highway through large fen. No connection to other waterbodies upstream. Fed by highway drainage and overland flow, precipitation.



Horizontal View of Channel



Stream/River Assessment

Site ID	WB-B-M17-131		Field Crew	Amy Ingriselli Jessica Mendoza		114
Study Area	TLINE B					
Location	50m upstream and downstream of CI across Magnetawan River east of Highway 69					
Project Number	60341251	Air Temp. (degC)	17.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	2	Recent precipitation overnight		
Start Date	6/8/2015 10:18:59 AM	Precipitation	0			
End Date	6/8/2015 11:12:56 AM	Cloud Cover	100.00			
Upstream Endpoint	Latitude:45.774804,Longitude:-80.489276,Altitude:165.7,Speed:0.051444445,Accuracy:2.75,Provider:gps,Time:06/08/2015 10:28:12 EDT					
Downstream Endpoint	Latitude:45.775006,Longitude:-80.490497,Altitude:185.0,Speed:0.0463,Accuracy:2.0,Provider:gps,Time:06/08/2015 11:10:22 EDT					
Site Features						
Feature Description	882	Feature Location				
Upstream 50m of CI looking downstream on north bank		Latitude:45.774808,Longitude:-80.489184,Altitude:166.9,Speed:0.1389,Accuracy:6.25,Provider:gps,Time:06/08/2015 10:36:12 EDT				
Feature Description	885	Feature Location				
On north shore looking across cl		Latitude:45.774843,Longitude:-80.489953,Altitude:180.8,Speed:0.06173333,Accuracy:2.25,Provider:gps,Time:06/08/2015 10:50:28 EDT				
Feature Description	888	Feature Location				
50m downstream of CI on north shore looking upstream		Latitude:45.775006,Longitude:-80.490497,Altitude:185.0,Speed:0.07202222,Accuracy:2.0,Provider:gps,Time:06/08/2015 11:10:39 EDT				
Surrounding Land Use	Forest					
	Mixed coniferous deciduous forest on bedrock sloping toward river					
Type of Watercourse	Permanent,Natural Channel					
	Large river flows to Georgian bay					

Stream/River Assessment

Input Description	Overland flow			
Water Body Underground / Not As Mapped?	No			
Surrounding Land Topography	Rolling bedrock sloping toward river			
In-Situ Water Quality				
WT (deg. C)	17.6	AT (degC)	17.5	Water Quality Notes Recent precipitation overnight
pH	5.8	Cond. (s/cm)	0.02	
D.O. (mg/L)	9.3	Water Colour	Colourless	
Water Clarity	Clear			
Seepage Indicators	None			
Stream Morphology		Bank Stability		
Site Length (m)	100.00	Left Bank	50.00	
Channel Dimensions		Right Bank	53.00	
Mean Wetted Width (m)	50.00	Mean Wetted Depth (m)	2.00	Notes Large boulders and bedrock along margins of river, no undercutting
Mean Bankfull Width (m)	53.00	Mean Bankfull Depth (m)	3.00	
Mean Top of Bank Width (m)	53.00	Mean Top of Bank Depth (m)	3.00	
Flow Description	Moderate flow with eddies			
Habitat				
Substrate Description	Boulder sand gravel cobble			
Morphological Structure (%)				
Pool	Riffle	Run	Flat	
10.00		90.00		
Notes				


Stream/River Assessment

Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Undercut Banks					
Average Depth(m)	<input type="text"/>	Percent Cover (%)		<input type="text"/>	
Aquatic Vegetation Species Present	<input type="text" value="Algae"/>				

Canopy Cover					
Percent Closed Cover (%)		<input type="text" value="30-1%"/>			
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
<input type="text" value="100.00"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Cover Description	<input type="text" value="Trees in overstory provide shade"/>				

Left Bank Riparian Vegetation	Right Bank Riparian Vegetation
<input type="text" value="2m, sweet low blueberry meadow, sweet gale grasses, poison ivy"/>	<input type="text" value="1.5m see left bank vegetation"/>

Overhanging Vegetation (%)	<input type="text" value="3.00"/>
	<input type="text" value="Only tree boughs"/>
Obstruction to Fish Passage	<input type="text" value="None Observed"/>
	<input type="text"/>
Barrier Height (M)	<input type="text"/>




Study Area Comments	
<input type="text" value="Depth of channel is greater than 2m"/>	

Stream/River Assessment

Horizontal View of Channel



Stream/River Assessment

Site ID	WB-B-M16-134		Field Crew	Amy Ingriselli Jessica Mendoza		117
Study Area	TLINE B					
Location	Upstream and downstream of CI on northern edge of map 16 of t line b					
Project Number	60341251	Air Temp. (degC)	16.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	1	Recent precipitation overnight		
Start Date	6/8/2015 12:52:21 PM	Precipitation	0			
End Date	6/8/2015 1:39:18 PM	Cloud Cover	100.00			
Upstream Endpoint	Latitude:45.785954,Longitude:-80.501652,Altitude:196.9,Speed:0.0051444443,Accuracy:2.1,Provider:gps,Time:06/08/2015 01:01:02 EDT					
Downstream Endpoint	Latitude:45.785054,Longitude:-80.500937,Altitude:200.0,Speed:0.015433333,Accuracy:1.5,Provider:gps,Time:06/08/2015 01:30:44 EDT					
Site Features						
Feature Description	891	Feature Location				
50m upstream of CI looking downstream		Latitude:45.785956,Longitude:-80.501654,Altitude:196.8,Speed:0.025722222,Accuracy:2.1,Provider:gps,Time:06/08/2015 01:02:01 EDT				
Feature Description	894	Feature Location				
On west bank of creek looking across cl		Latitude:45.785599,Longitude:-80.50132,Altitude:201.0,Speed:0.58646667,Accuracy:1.5,Provider:gps,Time:06/08/2015 01:22:49 EDT				
Feature Description	897	Feature Location				
50m downstream of CI looking upstream from west bank		Latitude:45.785076,Longitude:-80.500997,Altitude:201.8,Speed:0.030866666,Accuracy:1.8,Provider:gps,Time:06/08/2015 01:29:28 EDT				
Surrounding Land Use	Forest,Wetland					
	Sedge meadow marsh with water tolerant vegetation mixed deciduous coniferous forest on rock barrens					

Stream/River Assessment

Type of Watercourse	Permanent,Natural Channel			
	Straight channel flowing north to south			
Input Description	Overland flow			
Water Body Underground / Not As Mapped?	No			
Surrounding Land Topography	Rolling bedrock sloping toward watercourse			
In-Situ Water Quality				
WT (deg. C)	16.6	AT (degC)	16.4	Water Quality Notes Recent precipitation overnight
pH	4.8	Cond. (s/cm)	0.01	
D.O. (mg/L)	5.5	Water Colour	Yellow/Brown	
Water Clarity	Clear			
Seepage Indicators	None			
Stream Morphology	Bank Stability			
Site Length (m)	100.00	Left Bank	1.25	
Channel Dimensions		Right Bank	20.00	
Mean Wetted Width (m)	1.25	Mean Wetted Depth (m)	0.50	Notes Slow moving creek through meadow marsh between bedrock
Mean Bankfull Width (m)	20.00	Mean Bankfull Depth (m)	0.70	
Mean Top of Bank Width (m)	20.00	Mean Top of Bank Depth (m)	0.70	
Flow Description	Low			
Habitat				
Substrate Description	Detritus silt sand			
Morphological Structure (%)				
Pool	Riffle	Run	Flat	
			100.00	
Notes				


Stream/River Assessment

Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Undercut Banks					
Average Depth(m)	<input type="text"/>	Percent Cover (%)		<input type="text"/>	
Aquatic Vegetation Species Present	<input type="text" value="Emergent sedges"/>				

Canopy Cover					
Percent Closed Cover (%)	<input type="text" value="0"/>				
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Cover Description	<input type="text" value="Grasses provide shade overhanging creek 70%"/>				

Left Bank Riparian Vegetation	Right Bank Riparian Vegetation
<input type="text" value="0.5 m, shrubs very little transition between meadow and upland vegetation"/>	<input type="text" value="Same as left bank"/>

Overhanging Vegetation (%)	<input type="text" value="70.00"/>
	<input type="text" value="Grasses and sedges"/>
Obstruction to Fish Passage	<input type="text" value="None Observed"/>
	<input type="text"/>
Barrier Height (M)	<input type="text"/>




Study Area Comments	
<input type="text" value="Creek is 1.25m wide but opens into ponded water 45m wide 20m downstream of cl"/>	

Stream/River Assessment

Horizontal View of Channel



Stream/River Assessment

Site ID	WB-B-M26-112		Field Crew	Amy Ingriselli Jessica Mendoza		120
Study Area	TLINE B					
Location	50m upstream and downstream of CI on river east of hwy 69 south of Magnetawan Reserve					
Project Number	60341251	Air Temp. (degC)	18.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	2			
Start Date	6/9/2015 8:25:33 AM	Precipitation	0			
End Date	6/9/2015 9:03:32 AM	Cloud Cover	40.00			
Upstream Endpoint	Latitude:45.710317,Longitude:-80.459507,Altitude:195.0,Speed:0.087455556,Accuracy:1.75,Provider:gps,Time:06/09/2015 08:54:05 EDT					
Downstream Endpoint	Latitude:45.709993,Longitude:-80.460745,Altitude:196.6,Speed:0.010288889,Accuracy:1.5,Provider:gps,Time:06/09/2015 08:29:18 EDT					
Site Features						
Feature Description	912	Feature Location				
50m downstream from CI looking upstream		Latitude:45.709993,Longitude:-80.460745,Altitude:196.6,Speed:0.015433333,Accuracy:1.5,Provider:gps,Time:06/09/2015 08:29:21 EDT				
						
Feature Description	915	Feature Location				
Looking north across centre line from south bank		Latitude:45.710165,Longitude:-80.46009,Altitude:197.1,Speed:0.020577777,Accuracy:1.5,Provider:gps,Time:06/09/2015 08:47:00 EDT				
						
Feature Description	918	Feature Location				
50m upstream of CI looking downstream from south bank		Latitude:45.710317,Longitude:-80.459507,Altitude:195.0,Speed:0.015433333,Accuracy:1.75,Provider:gps,Time:06/09/2015 08:54:21 EDT				
						
Surrounding Land Use	Forest,Meadow,Other					
	Mixed deciduous coniferous forest atop bedrock, sedge meadow, Hwy 69					

Stream/River Assessment

Type of Watercourse	Permanent,Natural Channel			
	West flowing creek in low lying sedge meadow			
Input Description	Overland flow			
Water Body Underground / Not As Mapped?	No			
Surrounding Land Topography	Rolling bedrock sloping toward watercourse			
In-Situ Water Quality				
WT (deg. C)	16.4	AT (degC)	18.0	Water Quality Notes
pH	4.9	Cond. (s/cm)	0.01	
D.O. (mg/L)	6.7	Water Colour	Colourless	
Water Clarity	Clear			
Seepage Indicators	None			
Stream Morphology		Bank Stability		
Site Length (m)	100.00	Left Bank	4.00	
Channel Dimensions		Right Bank	100.00	
Mean Wetted Width (m)	4.00	Mean Wetted Depth (m)	0.40	Notes Bedrock
Mean Bankfull Width (m)	100.00	Mean Bankfull Depth (m)	0.80	
Mean Top of Bank Width (m)	100.00	Mean Top of Bank Depth (m)	0.80	
Flow Description	Low			
Habitat				
Substrate Description	Detritus muck silt bedrock			
Morphological Structure (%)				
Pool	Riffle	Run	Flat	
			100.00	
Notes				


Stream/River Assessment

Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Undercut Banks					
Average Depth(m)	<input type="text"/>	Percent Cover (%)		<input type="text"/>	
Aquatic Vegetation Species Present	Yellow lily marsh cinquefoil white lily algae smartweed				

Canopy Cover					
Percent Closed Cover (%)		<input type="text" value="0"/>			
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Cover Description	Riparian shrubs not providing notable amount of shade				

Left Bank Riparian Vegetation	Right Bank Riparian Vegetation
<div>7m shrubs</div>	<div>5m shrubs willow</div>

Overhanging Vegetation (%)	<div>15.00</div>
	Carex sp
Obstruction to Fish Passage	None Observed
Barrier Height (M)	<input type="text"/>





Study Area Comments	
Wetted width is active channel. Sedge meadow floodplain gets inundated with water during high flows	

Stream/River Assessment

Horizontal View of Channel



Stream/River Assessment


Site ID	WB-B-M26-113	Field Crew	Amy Ingriselli Jessica Mendoza	123
Study Area	TLINE B			
Location	50m upstream and downstream of Cl.			
Project Number	60341251	Air Temp. (degC)	17.0	Weather Notes
Tablet	AECOM10	Wind Speed (beaufort)	2	
Start Date	6/9/2015 9:20:31 AM	Precipitation	0	
End Date	6/9/2015 10:13:19 AM	Cloud Cover	20.00	
Upstream Endpoint	Latitude:45.710995,Longitude:-80.460396,Altitude:201.1,Speed:0.041155554,Accuracy:1.5,Provider:gps,Time:06/09/2015 10:04:27 EDT			
Downstream Endpoint	Latitude:45.710289,Longitude:-80.460805,Altitude:197.2,Speed:0.030866666,Accuracy:1.75,Provider:gps,Time:06/09/2015 09:28:22 EDT			
Site Features				
Feature Description	921	Feature Location		
50m downstream looking upstream from north bank		Latitude:45.710288,Longitude:-80.460811,Altitude:198.8,Speed:0.03601111,Accuracy:1.75,Provider:gps,Time:06/09/2015 09:26:04 EDT		
Feature Description	924	Feature Location		
Looking across centre line from north bank		Latitude:45.710677,Longitude:-80.460499,Altitude:197.7,Speed:0.65334445,Accuracy:1.8,Provider:gps,Time:06/09/2015 09:40:15 EDT		
Feature Description	927	Feature Location		
Centre line from north bank		Latitude:45.710734,Longitude:-80.460471,Altitude:197.4,Speed:0.066877775,Accuracy:1.5,Provider:gps,Time:06/09/2015 09:43:19 EDT		
Feature Description	930	Feature Location		
Beaver dam taken from north bank		Latitude:45.710888,Longitude:-80.460267,Altitude:198.6,Speed:0.010288889,Accuracy:1.75,Provider:gps,Time:06/09/2015 10:02:08 EDT		

Execution Time 8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Feature Description	933	Feature Location	
50 m upstream from CI looking downstream	Latitude:45.710995,Longitude:-80.460396,Altitude:201.1,Speed:0.051444445,Accuracy:1.5,Provider:gps,Time:06/09/2015 10:04:30 EDT		
Surrounding Land Use	Forest,Meadow,Other		
	Mixed deciduous coniferous forest. On bedrock sedge meadow. Hwy 69		
Type of Watercourse	Permanent,Natural Channel		
	Active channel within lowlying sedge meadow that is inundated during high flows with channels and pools. Channel flows in westerly direction.		
Input Description	Overland flow		
Water Body Underground / Not As Mapped?	No		
Surrounding Land Topography	Rolling bedrock slopes toward watercourse		
In-Situ Water Quality			
WT (deg. C)	16.2	AT (degC)	17.7
pH	4.7	Cond. (s/cm)	0.03
D.O. (mg/L)	5.6	Water Colour	Colourless
Water Clarity	Clear		
Seepage Indicators	None		
Stream Morphology		Bank Stability	
Site Length (m)	100.00	Left Bank	1.40
Channel Dimensions		Right Bank	100.00
Mean Wetted Width (m)	1.40	Mean Wetted Depth (m)	0.37
Mean Bankfull Width (m)	100.00	Mean Bankfull Depth (m)	0.50
Mean Top of Bank Width (m)	100.00	Mean Top of Bank Depth (m)	0.50
		Notes	Large sedge hummocks along creek margins
Flow Description	Moderate		

Execution Time

8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Habitat

Substrate Description Sand detritus muck

Morphological Structure (%)

Pool

Riffle

Run

Flat

15.00

85.00

Notes

Instream Cover

Woody Debris

Boulders

Cobble

Aquatic Vegetation

Structures

Total Instream Cover

Undercut Banks

Average Depth(m)

0.20

Percent Cover (%)

30.00

Aquatic Vegetation
Species Present

Algae submergence grass yellow lily

Canopy Cover

Percent Closed Cover (%)

30-1%

Trees

Shrubs

Grasses

Herbaceous

Man Made

Other

5.00

95.00

Cover Description

Overhanging grasses

Left Bank Riparian Vegetation

7m shrubs

Right Bank Riparian Vegetation

5m shrubs

Overhanging
Vegetation (%)

90.00

Grasses and sedges

Obstruction to Fish
Passage

Natural

Beaver dam

Barrier Height (M)

0.5

Execution Time

8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Study Area Comments




Unexpectedly low dissolved oxygen considering some areas have water flowing over logs and oxygenating water



Horizontal View of Channel



Stream/River Assessment

Site ID	WB-B-M26-114		Field Crew	Amy Ingriselli Jessica Mendoza		126
Study Area	TLINE B					
Location	50m upstream and downstream of CL crossing creek on east side of hwy 69. South of Magnetawan Reserve.					
Project Number	60341251	Air Temp. (degC)	20.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	2			
Start Date	6/9/2015 10:44:44 AM	Precipitation	0			
End Date	6/9/2015 11:58:02 AM	Cloud Cover	15.00			
Upstream Endpoint	Latitude:45.712692,Longitude:-80.461319,Altitude:203.0,Speed:0.06173333,Accuracy:1.8,Provider:gps,Time:06/09/2015 10:48:53 EDT					
Downstream Endpoint	Latitude:45.711875,Longitude:-80.461884,Altitude:195.8,Speed:0.030866666,Accuracy:1.8,Provider:gps,Time:06/09/2015 11:22:43 EDT					
Site Features						
Feature Description	936	Feature Location				
Upstream 50m of CI looking downstream from northwest bank	Latitude:45.712692,Longitude:-80.461319,Altitude:203.0,Speed:0.025722222,Accuracy:1.8,Provider:gps,Time:06/09/2015 10:48:54 EDT					
Feature Description	939	Feature Location				
Centre line from north bank	Latitude:45.712246,Longitude:-80.461422,Altitude:196.4,Speed:0.03601111,Accuracy:1.5,Provider:gps,Time:06/09/2015 11:13:00 EDT					
Feature Description	942	Feature Location				
50m downstream of CI looking upstream from north bank	Latitude:45.711875,Longitude:-80.461884,Altitude:195.8,Speed:0.015433333,Accuracy:1.8,Provider:gps,Time:06/09/2015 11:22:53 EDT					
Surrounding Land Use	Forest,Wetland					
	Mixed deciduous coniferous forest on bedrock barrens. Wetland upstream.					

Stream/River Assessment

Type of Watercourse	Permanent,Natural Channel			
	Water flows in southeast direction confined by bedrock outcrops. Abandoned beaver dam downstream has allowed draining. Previous flooding has deposited detritus on banks			
Input Description	Overland flow			
Water Body Underground / Not As Mapped?	No			
Surrounding Land Topography	Rolling bedrock sloping toward watercourse			
In-Situ Water Quality				
WT (deg. C)	17.6	AT (degC)	20.3	Water Quality Notes
pH	4.9	Cond. (s/cm)	0.02	
D.O. (mg/L)	6.1	Water Colour	Colourless	
Water Clarity	Clear			
Seepage Indicators	None			
Stream Morphology	Bank Stability			
Site Length (m)	100.00	Left Bank	1.50	
Channel Dimensions		Right Bank	1.40	
Mean Wetted Width (m)	1.50	Mean Wetted Depth (m)	0.30	Notes Highly saturated banks with deposited sediment
Mean Bankfull Width (m)	1.40	Mean Bankfull Depth (m)	0.40	
Mean Top of Bank Width (m)	1.40	Mean Top of Bank Depth (m)	0.40	
Flow Description	Moderate velocities upstream. Velocities decrease where channel widens.			
Habitat				
Substrate Description	Detritus sand boulder silt			
Morphological Structure (%)				
Pool	Riffle	Run	Flat	
10.00	10.00	20.00	60.00	
Notes				

Stream/River Assessment

Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Undercut Banks					
Average Depth(m)	<input type="text" value="0.20"/>	Percent Cover (%)		<input type="text" value="10.00"/>	
Aquatic Vegetation Species Present	<input type="text" value="Algae bladderwortDetritus providing significant cover"/>				


Canopy Cover					
Percent Closed Cover (%)	<input type="text" value="90-60%"/>				
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
<input type="text"/>	<input type="text" value="80.00"/>	<input type="text" value="20.00"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Cover Description	<input type="text" value="Alder reeds and sedges border the creek margins"/>				

Left Bank Riparian Vegetation	Right Bank Riparian Vegetation
<input type="text" value="5m Alder reeds sedges grasses"/>	<input type="text" value="5m Alder sedges grasses"/>

Overhanging Vegetation (%)	<input type="text" value="70.00"/>
	<input type="text" value="Alder sedges grasses"/>

Obstruction to Fish Passage	<input type="text" value="Natural"/>
	<input type="text" value="Beaver dam upstream of study area may be impeding passage upstream for some fish"/>

Barrier Height (M)	<input type="text" value="1.0"/>
--------------------	----------------------------------




Study Area Comments	
<input type="text" value="Pond from west side of road joins this site and flows southwards downstream of study area. Downstream portion of study area transitions into pond. Measurements of average depth does not include pond measurements"/>	

Stream/River Assessment

Horizontal View of Channel



Stream/River Assessment

Site ID	WB-B-M27-111		Field Crew	Amy Ingriselli Jessica Mendoza		387
Study Area	TLINE B					
Location	Creek on east side of hwy 69					
Project Number	60341251	Air Temp. (degC)	24.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	3			
Start Date	6/9/2015 1:30:23 PM	Precipitation	0			
End Date	6/9/2015 3:01:33 PM	Cloud Cover	20.00			
Upstream Endpoint	Latitude:45.707364,Longitude:-80.458039,Altitude:187.1,Speed:0.030866666,Accuracy:2.1,Provider:gps,Time:06/09/2015 02:11:03 EDT					
Downstream Endpoint	Latitude:45.707173,Longitude:-80.45923,Altitude:190.0,Speed:0.03601111,Accuracy:1.8,Provider:gps,Time:06/09/2015 01:33:09 EDT					
Site Features						
Feature Description	954	Feature Location				
50m downstream of centre line looking upstream	Latitude:45.707168,Longitude:-80.45923,Altitude:189.6,Speed:0.0051444443,Accuracy:1.8,Provider:gps,Time:06/09/2015 01:31:36 EDT					
Feature Description	957	Feature Location				
On south bank looking along cl	Latitude:45.707113,Longitude:-80.458548,Altitude:179.6,Speed:0.05658889,Accuracy:1.8,Provider:gps,Time:06/09/2015 01:45:55 EDT					
Feature Description	960	Feature Location				
50m upstream of cl looking downstream	Latitude:45.707364,Longitude:-80.458039,Altitude:187.1,Speed:0.03601111,Accuracy:2.1,Provider:gps,Time:06/09/2015 02:11:05 EDT					
Surrounding Land Use	Forest					
	Mixed coniferous deciduous forest on bedrock					
Type of Watercourse	Permanent,Natural Channel					
	Small creek flowing through forest to open meadow eventually under hwy69					

Execution Time 8/19/2015 7:56:12 AM


Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Input Description	Overland flow			
Water Body Underground / Not As Mapped?	No			
Surrounding Land Topography	Rolling bedrock sloping toward water course			
In-Situ Water Quality				
WT (deg. C)	18.6	AT (degC)	24.3	Water Quality Notes
pH	5.1	Cond. (s/cm)	0.01	
D.O. (mg/L)	6.4	Water Colour	Colourless	
Water Clarity	Clear			
Seepage Indicators	None			
Stream Morphology				
Site Length (m)	20.00	Bank Stability		
Channel Dimensions		Left Bank	0.50	
		Right Bank	0.50	
Mean Wetted Width (m)	0.50	Mean Wetted Depth (m)	0.50	Notes Heavily vegetated with grasses but some banks undercut
Mean Bankfull Width (m)	0.50	Mean Bankfull Depth (m)	0.65	
Mean Top of Bank Width (m)	0.50	Mean Top of Bank Depth (m)	0.65	
Flow Description	Low			
Habitat				
Substrate Description	Detritus sand silt for meadow downstream detritus sand silt for low slope in forest in mid reaches Boulder gravel bedrock for high slope in forest upstream			
Morphological Structure (%)				
Pool	Riffle	Run	Flat	
15.00	5.00	50.00	30.00	
Notes				

Stream/River Assessment





Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Undercut Banks					
Average Depth(m)	<input type="text" value="0.10"/>	Percent Cover (%)		<input type="text" value="15.00"/>	
Aquatic Vegetation Species Present	<input type="text" value="Detritus only"/>				
Canopy Cover					
Percent Closed Cover (%)	<input type="text" value="100-90%"/>				
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
<input type="text" value="30.00"/>	<input type="text" value="60.00"/>	<input type="text" value="10.00"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Cover Description	<input type="text" value="Grasses provide cover in downstream meadow while trees provide most cover in forest"/>				
Left Bank Riparian Vegetation			Right Bank Riparian Vegetation		
<input type="text" value="6m speckled alder beaked hazel royal fern grass"/>			<input type="text" value="4m see left bank description for vegetation"/>		
Overhanging Vegetation (%)	<input type="text" value="95.00"/>				
	<input type="text" value="Shrubs Grasses ferns alder herbaceous"/>				
Obstruction to Fish Passage	<input type="text" value="Natural"/>				
	<input type="text" value="Beaver pond at upper limit of study area. Large boulders and bedrock on steep slope might limit migration of fish upstream."/>				
Barrier Height (M)	<input type="text" value="0.2"/>				
Study Area Comments					
<input type="text" value="From beaver dam river flows along steep slope with large boulders and gravel on bedrock than slope decreases and substrate turns into sand detritus than forest opens into meadow and river substrate is detritus and sand."/>					

Stream/River Assessment

Horizontal View of Channel



Stream/River Assessment





Site ID	WB-B-M32-102		Field Crew	Ami Arsenault Justin Munro		132
Study Area	TLINE B					
Location	East of highway 69. Parked 20m north and walked along highway to stream site.					
Project Number	60341251	Air Temp. (degC)	20.0	Weather Notes		
Tablet	AECOM12	Wind Speed (beaufort)	3			
Start Date	6/8/2015 10:55:44 AM	Precipitation	0			
End Date	6/8/2015 12:21:33 PM	Cloud Cover	100.00			
Upstream Endpoint	Latitude:45.668637,Longitude:-80.424707,Altitude:167.0,Speed:0.05658889,Accuracy:2.7,Provider:gps,Time:06/08/2015 11:17:40 EDT					
Downstream Endpoint	Latitude:45.668329,Longitude:-80.425948,Altitude:202.8,Speed:0.030866666,Accuracy:2.1,Provider:gps,Time:06/08/2015 12:19:48 EDT					
Site Features						
Feature Description	963	Feature Location				
Facing west towards culvert and highway 69/400	Latitude:45.668703,Longitude:-80.426191,Altitude:196.0,Speed:0.0463,Accuracy:3.0,Provider:gps,Time:06/08/2015 10:56:18 EDT					
Feature Description	966	Feature Location				
Facing east across watercourse and towards forest at upstream limits	Latitude:45.668541,Longitude:-80.424568,Altitude:177.7,Speed:0.07716667,Accuracy:3.0,Provider:gps,Time:06/08/2015 11:23:20 EDT					
Feature Description	969	Feature Location				
Facing upstream in watercourse	Latitude:45.668658,Longitude:-80.425272,Altitude:194.9,Speed:0.020577777,Accuracy:2.7,Provider:gps,Time:06/08/2015 11:45:40 EDT					
Feature Description	972	Feature Location				
Facing downstream in watercourse	Latitude:45.668683,Longitude:-80.425373,Altitude:195.5,Speed:0.030866666,Accuracy:2.7,Provider:gps,Time:06/08/2015 11:46:44 EDT					

Execution Time 8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Feature Description		975	Feature Location		
Facing west towards centerline location and highway 69		Latitude:45.66876,Longitude:-80.425726,Altitude:199.1,Speed:0.010288889,Accuracy:3.0,Provider:gps,Time:06/08/2015 11:52:59 EDT			
Feature Description		978	Feature Location		
Facing east from centerline		Latitude:45.66874,Longitude:-80.425842,Altitude:199.2,Speed:0.015433333,Accuracy:3.3,Provider:gps,Time:06/08/2015 11:54:22 EDT			
Feature Description		981	Feature Location		
Facing west from centerline		Latitude:45.668739,Longitude:-80.425843,Altitude:199.0,Speed:0.025722222,Accuracy:3.0,Provider:gps,Time:06/08/2015 11:54:56 EDT			
Feature Description		984	Feature Location		
Facing west from highway 69/400 (opposite side of road from survey point)		Latitude:45.668641,Longitude:-80.426847,Altitude:204.9,Speed:0.2417889,Accuracy:2.1,Provider:gps,Time:06/08/2015 12:16:01 EDT			
Surrounding Land Use	Forest,Other				
	Stream survey location just east of highway 69/400				
Type of Watercourse	Permanent,Natural Channel				
	Watercourse flowing west towards culvert at highway 69/400. Appears to be an old marsh at the upstream end of our survey location (50m upstream); wet substrate and some water pooling in depressions which probably connects to our watercourse during rain events.				
Input Description	Flowing watercourse, overland flow, highway drainage				
Water Body Underground / Not As Mapped?	No				
Surrounding Land Topography	Forest on either side of stream sloping towards watercourse				

Stream/River Assessment

In-Situ Water Quality					
WT (deg. C)	<input type="text" value="17.5"/>	AT (degC)	<input type="text" value="20.0"/>	Water Quality Notes Conductivity doesn't seem to be working properly	
pH	<input type="text" value="4.6"/>	Cond. (s/cm)	<input type="text"/>		
D.O. (mg/L)	<input type="text" value="2.1"/>	Water Colour	<input type="text" value="Colourless"/>		
Water Clarity	<input type="text" value="Clear"/>				
Seepage Indicators		<input type="text" value="None"/>			
		<input type="text"/>			
Stream Morphology					
Site Length (m)		<input type="text" value="100.00"/>		Bank Stability	
Channel Dimensions				Left Bank	<input type="text" value="2.00"/>
				Right Bank	<input type="text" value="3.00"/>
Mean Wetted Width (m)	<input type="text" value="2.00"/>	Mean Wetted Depth (m)	<input type="text" value="0.35"/>	Notes	<input type="text" value="Both left and right banks have areas of weakness throughout 50m walk. Some banks washed out. Undercut banks observed."/>
Mean Bankfull Width (m)	<input type="text" value="3.00"/>	Mean Bankfull Depth (m)	<input type="text" value="0.40"/>		
Mean Top of Bank Width (m)	<input type="text" value="3.00"/>	Mean Top of Bank Depth (m)	<input type="text" value="0.55"/>		
Flow Description	<input type="text" value="Moderate flow conditions in watercourse. Rain event previous day."/>				
Habitat					
Substrate Description	<input type="text" value="Sand , silt , gravel"/>				
Morphological Structure (%)					
Pool	Riffle	Run	Flat		
<input type="text" value="15.00"/>	<input type="text" value="35.00"/>	<input type="text" value="50.00"/>	<input type="text"/>		
Notes	<input type="text"/>				
Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Undercut Banks					
Average Depth(m)	<input type="text" value="0.15"/>	Percent Cover (%)	<input type="text" value="40.00"/>		
Aquatic Vegetation Species Present	<input type="text" value="Grasses"/>				

Stream/River Assessment

Canopy Cover

Percent Closed Cover (%)

30-1%

Trees

Shrubs

Grasses

Herbaceous

Man Made

Other

25.00

15.00

40.00

20.00

Cover Description

Lots of herbaceous ground cover and tall grasses lining both banks. White pine, alders birch, poplar and red maples in nearby forest contributing some canopy cover to stream

Left Bank Riparian Vegetation

5m of riparian veg - grasses, ferns and herbaceous ground cover

Right Bank Riparian Vegetation

5m of riparian veg - grasses, ferns and herbaceous ground cover

Overhanging
Vegetation (%)

100.00

Grasses and herbaceous plants leaning over edges of banks

Obstruction to Fish
Passage

None Observed

Barrier Height (M)

Study Area Comments

One minnow observed during survey. Lots of riffles and pools, vegetation and undercut banks for cover.



Horizontal View of Channel







Execution Time

8/19/2015 7:56:12 AM






Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Site ID	WB-B-M33-100		Field Crew	Ami Arsenault Justin Munro		135
Study Area	TLINE B					
Location	East of highway 69/400. Parked on east side of road and walked into stream location.					
Project Number	60341251	Air Temp. (degC)	17.0	Weather Notes		
Tablet	AECOM12	Wind Speed (beaufort)	3			
Start Date	6/8/2015 2:00:09 PM	Precipitation	0			
End Date	6/8/2015 3:06:23 PM	Cloud Cover	100.00			
Upstream Endpoint	Latitude:45.663826,Longitude:-80.418011,Altitude:190.7,Speed:0.05658889,Accuracy:1.5,Provider:gps,Time:06/08/2015 02:01:13 EDT					
Downstream Endpoint	Latitude:45.663523,Longitude:-80.419076,Altitude:197.0,Speed:0.015433333,Accuracy:1.5,Provider:gps,Time:06/08/2015 02:17:28 EDT					
Site Features						
Feature Description	1041	Feature Location				
Facing east at upstream end point of survey (large beaver dam ponded)	Latitude:45.663826,Longitude:-80.418011,Altitude:190.7,Speed:0.025722222,Accuracy:1.5,Provider:gps,Time:06/08/2015 02:01:20 EDT					
Feature Description	1044	Feature Location				
Facing west at upstream end point of survey (beaver dam)	Latitude:45.663834,Longitude:-80.418012,Altitude:191.0,Speed:0.03601111,Accuracy:1.5,Provider:gps,Time:06/08/2015 02:02:08 EDT					
Feature Description	1047	Feature Location				
Beaver dam acting as natural fish barrier, located 25m east of survey point M33-100.	Latitude:45.663838,Longitude:-80.418117,Altitude:191.7,Speed:0.066877775,Accuracy:1.5,Provider:gps,Time:06/08/2015 02:05:11 EDT					
Feature Description	1050	Feature Location				
Looking downstream (west) from survey point M33-100	Latitude:45.66365,Longitude:-80.418558,Altitude:201.9,Speed:0.010288889,Accuracy:1.5,Provider:gps,Time:06/08/2015 02:11:49 EDT					

Stream/River Assessment

Feature Description		1053	Feature Location		
Facing upstream (east) from survey point M33-100		Latitude:45.663646,Longitude:-80.418562,Altitude:201.7,Speed:0.08231111,Accuracy:1.5,Provider:gps,Time:06/08/2015 02:12:37 EDT			
Feature Description		1056	Feature Location		
Facing upstream at downstream end of survey point M33-100		Latitude:45.663523,Longitude:-80.419076,Altitude:197.0,Speed:0.11832222,Accuracy:1.5,Provider:gps,Time:06/08/2015 02:17:35 EDT			
Feature Description		1059	Feature Location		
Facing downstream (west) at downstream end of survey point M33-100		Latitude:45.663518,Longitude:-80.419079,Altitude:196.8,Speed:0.010288889,Accuracy:1.5,Provider:gps,Time:06/08/2015 02:19:08 EDT			
Feature Description		1062	Feature Location		
Facing east towards watercourse from highway 69/400		Latitude:45.663392,Longitude:-80.419268,Altitude:199.7,Speed:0.010288889,Accuracy:2.1,Provider:gps,Time:06/08/2015 02:45:50 EDT			
Feature Description		1065	Feature Location		
Looking downstream from west side of highway 69/400		Latitude:45.663256,Longitude:-80.419455,Altitude:197.5,Speed:0.030866666,Accuracy:1.8,Provider:gps,Time:06/08/2015 02:48:01 EDT			
Surrounding Land Use	Forest,Wetland,Other				
	Survey point M33-100 east of highway 69/400. North of wetland surveyed on map33-99				
Type of Watercourse	Permanent,Natural Channel				
	Natural, permanent watercourse flowing between bedrock and forest.				

Execution Time 8/19/2015 7:56:12 AM


Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Input Description	Overland flow (waterfall approx 60m upstream of survey point M33-100 in beaver pond), highway drainage ditch			
Water Body Underground / Not As Mapped?	No			
Surrounding Land Topography	Forest and rock barren, everything sloping towards watercourse			
In-Situ Water Quality				
WT (deg. C)	17.9	AT (degC)	17.0	Water Quality Notes Water slightly tea colored. Conductivity not measuring properly
pH	5.0	Cond. (s/cm)		
D.O. (mg/L)	7.2	Water Colour	Yellow/Brown	
Water Clarity	Clear			
Seepage Indicators	None			
Stream Morphology		Bank Stability		
Site Length (m)	100.00	Left Bank	2.50	
Channel Dimensions		Right Bank	4.00	
Mean Wetted Width (m)	2.50	Mean Wetted Depth (m)	0.40	Notes Both banks moderately unstable. Washout has occurred in many places and there are some undercut banks.
Mean Bankfull Width (m)	4.00	Mean Bankfull Depth (m)	0.60	
Mean Top of Bank Width (m)	5.00	Mean Top of Bank Depth (m)	0.65	
Flow Description	Moderate flow conditions through watercourse. Some flooding in areas/very saturated soils may be due to previous days rain event.			
Habitat				
Substrate Description	Sand dominant, silt, organic substrate			
Morphological Structure (%)				
Pool	Riffle	Run	Flat	
30.00		40.00	20.00	
Notes				

Stream/River Assessment




Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Undercut Banks					
Average Depth(m)	<input type="text" value="0.05"/>	Percent Cover (%)		<input type="text" value="5.00"/>	
Aquatic Vegetation Species Present	Submergent grasses dominate aquatic veg in watercourse. Two yellow pond lily's growing in large pool near downstream end of survey point 100.				
Canopy Cover					
Percent Closed Cover (%)		<input type="text" value="30-1%"/>			
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
<input type="text" value="30.00"/>	<input type="text"/>	<input type="text" value="70.00"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Cover Description	Trees do not provide canopy cover as they are too far away from watercourse. Grasses growing on banks provide some canopy cover for watercourse although not much because the watercourse is quite wide.				
Left Bank Riparian Vegetation			Right Bank Riparian Vegetation		
<input type="text" value="6m of riparian veg leading from watercourse to edge of forest, blueberry shrubs, poplar saplings, grasses and so herbaceous plants."/>			<input type="text" value="4m riparian veg from watercourse to edge of forest. More grasses then shrubs here, narrower then left bank riparian zone due to proximity to bedrock slope."/>		
Overhanging Vegetation (%)	<input type="text" value="100.00"/>				
	<input type="text" value="Grasses overhang into watercourse"/>				
Obstruction to Fish Passage	<input type="text" value="Natural"/>				
	<input type="text" value="Beaver dam"/>				
Barrier Height (M)	<input type="text" value="1.5"/>				
Study Area Comments					
<p>Large beaver dam at upstream limit of survey location poses natural barrier to fish movement. Sandy silty substrate bottom. Abundance of grasses in water and on the watercourse banks providing shade and shelter for potential fish population. Deep pools throughout channel mixed with shallow riffles. Some flooded areas off of direct channel, may be due to previous day's rain event. Small broken beaver dam downstream of survey point M33-100 near culvert at highway 69/400.</p>					

Stream/River Assessment



Horizontal View of Channel






Stream/River Assessment

Site ID	WB-B-M34-97	Field Crew	Ami Arsenault Justin Munro		138
Study Area	TLINE B				
Location	Site located east of highway 69/400. Accessed stream by walking approx 400m south on highway from parking spot (east side of highway, south of hydro pole C520 - beside survey point M34-98) and over guardrails at slight slope in road.				
Project Number	60341251	Air Temp. (degC)	18.0	Weather Notes	
Tablet	AECOM12	Wind Speed (beaufort)	3		
Start Date	6/9/2015 9:10:59 AM	Precipitation	0		
End Date	6/9/2015 11:00:22 AM	Cloud Cover	30.00		
Upstream Endpoint	Latitude:45.655944,Longitude:-80.407689,Altitude:176.3,Speed:0.015433333,Accuracy:2.1,Provider:gps,Time:06/09/2015 09:26:32 EDT				
Downstream Endpoint	Latitude:45.656021,Longitude:-80.409125,Altitude:195.0,Speed:0.051444445,Accuracy:2.25,Provider:gps,Time:06/09/2015 10:19:54 EDT				
Site Features					
Feature Description	1083	Feature Location			
Looking upstream from centerline		Latitude:45.655985,Longitude:-80.408663,Altitude:182.6,Speed:0.07202222,Accuracy:2.4,Provider:gps,Time:06/09/2015 09:11:33 EDT			
Feature Description	1086	Feature Location			
Facing downstream from centerline		Latitude:45.655981,Longitude:-80.408647,Altitude:182.2,Speed:0.20577778,Accuracy:2.1,Provider:gps,Time:06/09/2015 09:12:19 EDT			
Feature Description	1089	Feature Location			
Large beaver pond and dam 100m upstream of centerline		Latitude:45.656082,Longitude:-80.407231,Altitude:170.0,Speed:0.015433333,Accuracy:2.7,Provider:gps,Time:06/09/2015 09:21:13 EDT			

Stream/River Assessment

Feature Description	1092	Feature Location	
Facing downstream from upstream limit of reach (50m from centerline)		Latitude:45.655943,Longitude:-80.407695,Altitude:176.4,Speed:0.087455556,Accuracy:2.1,Provider:gps,Time:06/09/2015 09:27:30 EDT	
Feature Description	1095	Feature Location	
Facing upstream from upstream limit of reach (50m from centerline)		Latitude:45.655939,Longitude:-80.407708,Altitude:176.8,Speed:0.010288889,Accuracy:2.0,Provider:gps,Time:06/09/2015 09:29:22 EDT	
Feature Description	1098	Feature Location	
In stream veg and banks at upper portions of reach		Latitude:45.655929,Longitude:-80.40784,Altitude:181.7,Speed:0.020577777,Accuracy:2.4,Provider:gps,Time:06/09/2015 09:36:56 EDT	
Feature Description	1101	Feature Location	
Watercourse splits in two and flows around grassy island (left) or through old beaver dam (right)		Latitude:45.655902,Longitude:-80.408015,Altitude:186.4,Speed:0.020577777,Accuracy:2.4,Provider:gps,Time:06/09/2015 09:43:47 EDT	
Feature Description	1104	Feature Location	
Channel running through small Cattail marsh, more flooded area		Latitude:45.65592,Longitude:-80.408317,Altitude:190.4,Speed:0.0051444443,Accuracy:1.75,Provider:gps,Time:06/09/2015 10:00:57 EDT	
Feature Description	1107	Feature Location	
Iron staining from stagnant water or groundwater seepage?		Latitude:45.655961,Longitude:-80.408384,Altitude:193.8,Speed:0.030866666,Accuracy:1.75,Provider:gps,Time:06/09/2015 10:02:29 EDT	

Stream/River Assessment

Feature Description	1110	Feature Location	
Woody debris in channel downstream from cattails marsh- potential fish barriers		Latitude:45.655975,Longitude:-80.40851,Altitude:194.2,Speed:0.03601111,Accuracy:1.75,Provider:gps,Time:06/09/2015 10:06:07 EDT	
Feature Description	1113	Feature Location	
Perched culvert and boulders blocking fish passage at end of downstream survey area (30 from centerline)		Latitude:45.655956,Longitude:-80.408973,Altitude:198.1,Speed:0.020577777,Accuracy:3.3,Provider:gps,Time:06/09/2015 10:15:57 EDT	
Feature Description	1116	Feature Location	
West side of highway 69/400, steep bank, can see channel		Latitude:45.65588,Longitude:-80.409487,Altitude:192.0,Speed:0.030866666,Accuracy:1.75,Provider:gps,Time:06/09/2015 10:59:34 EDT	
Surrounding Land Use	Forest,Other		
	Forest and highway 69/400		
Type of Watercourse	Permanent,Natural Channel		
	<p>Large beaver pond and dam 100m upstream of centerline. This watercourse is being fed by water flowing through dam. Defined channel in upper portions of the reach (50m from centerline) but with larger saturated areas as well. Watercourse splits in two and goes around a grassy island on one side and under an old beaver dam on the other- majority of water flowing around the grassy island. These two watercourse branches come back together after the island. Lots of grass growth on sides of banks. In some narrow areas grass completely covers stream. Measuring bank full widths and depths from main channel, but there is evidence of higher water levels from past spring melts or rain events - area could easily overtop banks. Channel flows through small cattail marsh area, flooding approx 12m. Watercourse then flows through small forested area with lots of deadfall/logs in and across stream. Finished survey at culvert east of highway 69/400, lots of boulders in stream and in front of culvert, creating barrier to fish passage.</p>		
Input Description	Overland flow, highway ditch runoff		
Water Body Underground / Not As Mapped?	No		
Surrounding Land Topography	Topography slopes towards watercourse.		

Stream/River Assessment

In-Situ Water Quality					
WT (deg. C)	<input type="text" value="17.8"/>	AT (degC)	<input type="text" value="18.0"/>	Water Quality Notes Calibrated horriba this morning but conductivity still saying 0...	
pH	<input type="text" value="5.6"/>	Cond. (s/cm)	<input type="text"/>		
D.O. (mg/L)	<input type="text" value="5.1"/>	Water Colour	<input type="text" value="Colourless"/>		
Water Clarity	<input type="text" value="Clear"/>				
Seepage Indicators		<input type="text" value="Iron Staining"/> <input type="text" value="Red hue to water."/>			
Stream Morphology					
Site Length (m)		<input type="text" value="100.00"/>		Bank Stability	
Channel Dimensions				Left Bank	<input type="text" value="0.60"/>
				Right Bank	<input type="text" value="5.00"/>
Mean Wetted Width (m)	<input type="text" value="0.60"/>	Mean Wetted Depth (m)	<input type="text" value="0.12"/>	Notes	Sandy silty substrate but lots of vegetation holding banks together, very defined channel with no slumping shoulders, can see main channel in more wet/flooded areas (cattail marsh).
Mean Bankfull Width (m)	<input type="text" value="5.00"/>	Mean Bankfull Depth (m)	<input type="text" value="0.45"/>		
Mean Top of Bank Width (m)	<input type="text" value="15.00"/>	Mean Top of Bank Depth (m)	<input type="text" value="1.31"/>		
Flow Description	<input type="text" value="Moderate flow conditions"/>				
Habitat					
Substrate Description	<input type="text" value="Silt, sand, some organic substrate"/>				
Morphological Structure (%)					
Pool	Riffle	Run	Flat		
<input type="text" value="15.00"/>	<input type="text" value="20.00"/>	<input type="text" value="50.00"/>	<input type="text" value="15.00"/>		
Notes	<input type="text"/>				
Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Undercut Banks					
Average Depth(m)	<input type="text"/>	Percent Cover (%)	<input type="text"/>		
Aquatic Vegetation Species Present	<input type="text" value="Grasssss and narrow leaved cattails"/>				

Stream/River Assessment

Canopy Cover

Percent Closed Cover (%)

30-1%

Trees

Shrubs

Grasses

Herbaceous

Man Made

Other

60.00

20.00

20.00

Cover Description

Grasses, trees in forested area and boulders closer to culvert

Left Bank Riparian Vegetation

4m of grassy and/or shrubs before forest or bedrock

Right Bank Riparian Vegetation

3m of grass or shrubs before forest or bedrock

Overhanging
Vegetation (%)

60.00

Mostly grasses and some small shrubs

Obstruction to Fish
Passage

Natural

Beaver dams (2), boulder blockage (creating small waterfall) and boulders in front of culvert at highway 69/400 could create barrier for fish passage.

Barrier Height (M)

0.5

Study Area Comments

From watercourse beginning at beaver dam 100m upstream from centerline, watercourse flows through an open grassy area with evidence of previous flooding events. It then flows through small cattail marsh, where flooding occurs in area ~12m wide. Watercourse flows through small forested area with logs within and spanning across channel which provide in stream cover. Lastly, watercourse flows through area with boulders towards the culvert at highway 69/400 - boulders coming from construction of highway. One large boulder blocking most of culvert and creating fish passage barrier.



Horizontal View of Channel




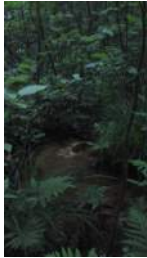

Execution Time

8/19/2015 7:56:12 AM


Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Site ID	WB-B-M27-110		Field Crew	Amy Ingriselli Jessica Mendoza		141
Study Area	TLINE B					
Location	Low lying creek in forested area upstream to open wetland downstream. Flow is in east to west direction. East of hwy 69. Site area is 50m upstream and downstream of centre line.					
Project Number	60341251	Air Temp. (degC)	16.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	0	2-5mm rain in thunderstorm forecast		
Start Date	6/10/2015 8:29:33 AM	Precipitation	1			
End Date	6/10/2015 10:25:35 AM	Cloud Cover	100.00			
Upstream Endpoint	Latitude:45.706011,Longitude:-80.45713,Altitude:197.5,Speed:0.08745556,Accuracy:2.1,Provider:gps,Time:06/10/2015 08:34:18 EDT					
Downstream Endpoint	Latitude:45.705993,Longitude:-80.45864,Altitude:198.9,Speed:0.015433333,Accuracy:2.4,Provider:gps,Time:06/10/2015 09:08:41 EDT					
Site Features						
Feature Description	1161	Feature Location				
50m upstream from cl looking downstream	Latitude:45.706009,Longitude:-80.457137,Altitude:197.5,Speed:0.06173333,Accuracy:2.1,Provider:gps,Time:06/10/2015 08:31:39 EDT					
Feature Description	1164	Feature Location				
Looking north across centre line from south bank	Latitude:45.705988,Longitude:-80.457785,Altitude:197.7,Speed:0.33953333,Accuracy:2.4,Provider:gps,Time:06/10/2015 08:51:10 EDT					
Feature Description	1167	Feature Location				
50m downstream of CL on south bank looking upstream	Latitude:45.705993,Longitude:-80.45864,Altitude:198.9,Speed:0.015433333,Accuracy:2.4,Provider:gps,Time:06/10/2015 09:08:46 EDT					

Stream/River Assessment

Feature Description	1170	Feature Location	
Water colour downstream of CL		Latitude:45.706005,Longitude:-80.458649,Altitude:199.2,Speed:0.020577777,Accuracy:2.1,Provider:gps,Time:06/10/2015 09:09:59 EDT	
Surrounding Land Use	Forest,Wetland		
	Mixed coniferous and deciduous forest atop bedrock. Beaver pond wetland upstream		
Type of Watercourse	Intermittent,Natural Channel		
	Water flowing through channels and pools in grasses. Low lying creek in forested area upstream to open wetland downstream. Flow is in east to west direction.		
Input Description	Overland flow		
Water Body Underground / Not As Mapped?	No		
Surrounding Land Topography	Rolling bedrock slopes toward watercourse		
In-Situ Water Quality			
WT (deg. C)	14.0	AT (degC)	16.3
pH	5.1	Cond. (s/cm)	0.06
D.O. (mg/L)	5.4	Water Colour	Yellow/Brown
Water Clarity	Turbid	Water Quality Notes Oily in some spots and turbid orange in others	
Seepage Indicators	None		
Stream Morphology			
Site Length (m)	100.00	Bank Stability	
Channel Dimensions	Left Bank		15.00
	Right Bank		16.00
Mean Wetted Width (m)	15.00	Mean Wetted Depth (m)	0.20
Mean Bankfull Width (m)	16.00	Mean Bankfull Depth (m)	0.35
Mean Top of Bank Width (m)	16.00	Mean Top of Bank Depth (m)	0.35
Flow Description	Low		
Notes Heavily vegetated, no evidence of erosion			

Execution Time

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Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Habitat					
Substrate Description	Detritus muck				
Morphological Structure (%)					
Pool	Riffle	Run	Flat		
10.00		20.00	70.00		
Notes					
Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
Undercut Banks					
Average Depth(m)		Percent Cover (%)			
Aquatic Vegetation Species Present	Emergent grasses and riparian shrubs				
Canopy Cover					
Percent Closed Cover (%)	90-60%				
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
	60.00		40.00		
Cover Description	Alder thicket				
Left Bank Riparian Vegetation			Right Bank Riparian Vegetation		
1m alder shrubs meadow sweet grass raspberries			1m see left bank description		
Overhanging Vegetation (%)	100.00				
	Grasses				
Obstruction to Fish Passage	None Observed				
Barrier Height (M)					

Stream/River Assessment

Study Area Comments




Very oily sheen on surface of water likely due to humic acids at some points
Very murky orange colour to water



Horizontal View of Channel




Stream/River Assessment

Site ID	WB-B-M27-109		Field Crew	Amy Ingriselli Jessica Mendoza		288
Study Area	TLINE B					
Location	T line b					
Project Number	60341251	Air Temp. (degC)	14.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	0	2-5mm forecast in thunderstorm		
Start Date	6/10/2015 9:27:41 AM	Precipitation	1			
End Date	6/10/2015 10:25:48 AM	Cloud Cover	100.00			
Upstream Endpoint	Latitude:45.703629,Longitude:-80.455715,Altitude:196.9,Speed:0.07202222,Accuracy:2.4,Provider:gps,Time:06/10/2015 10:03:15 EDT					
Downstream Endpoint	Latitude:45.703432,Longitude:-80.457078,Altitude:205.9,Speed:0.0463,Accuracy:2.1,Provider:gps,Time:06/10/2015 09:23:58 EDT					
Site Features						
Feature Description	1173	Feature Location				
50m downstream looking upstream from south bank		Latitude:45.703432,Longitude:-80.457078,Altitude:205.9,Speed:0.03601111,Accuracy:2.4,Provider:gps,Time:06/10/2015 09:24:10 EDT				
Feature Description	1176	Feature Location				
Looking north along cl from south bank		Latitude:45.703633,Longitude:-80.456513,Altitude:199.1,Speed:0.06173333,Accuracy:2.1,Provider:gps,Time:06/10/2015 09:35:02 EDT				
Feature Description	1179	Feature Location				
50m upstream looking downstream		Latitude:45.703623,Longitude:-80.456154,Altitude:201.6,Speed:0.10288889,Accuracy:2.7,Provider:gps,Time:06/10/2015 10:00:05 EDT				
Surrounding Land Use	Forest					
	Mixed deciduous coniferous deciduous forest atop bedrock					
Type of Watercourse	Permanent,Channelized					
	Small creek flowing east to west through forest and open area					

Stream/River Assessment

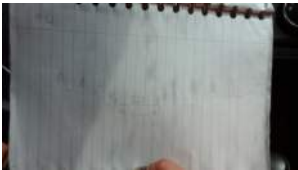
Input Description	Overland flow			
Water Body Underground / Not As Mapped?	No			
Surrounding Land Topography	Rolling bedrock slopes toward watercourse			
In-Situ Water Quality				
WT (deg. C)	12.7	AT (degC)	14.5	Water Quality Notes
pH	4.8	Cond. (s/cm)	0.01	
D.O. (mg/L)	6.7	Water Colour	Colourless	
Water Clarity	Clear			
Seepage Indicators	None			
Stream Morphology				
Site Length (m)	30.00	Bank Stability		
Channel Dimensions		Left Bank	16.00	
		Right Bank	17.00	
Mean Wetted Width (m)	16.00	Mean Wetted Depth (m)	0.50	Notes Rooted vegetation on banks
Mean Bankfull Width (m)	17.00	Mean Bankfull Depth (m)	0.60	
Mean Top of Bank Width (m)	17.00	Mean Top of Bank Depth (m)	0.60	
Flow Description	Low			
Habitat				
Substrate Description	Detritus sand muck			
Morphological Structure (%)				
Pool	Riffle	Run	Flat	
15.00		85.00		
Notes				

Stream/River Assessment




Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Undercut Banks					
Average Depth(m)	<input type="text" value="0.05"/>	Percent Cover (%)		<input type="text" value="5.00"/>	
Aquatic Vegetation Species Present	<input type="text" value="Moss like submergent"/>				
Canopy Cover					
Percent Closed Cover (%)	<input type="text" value="90-60%"/>				
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
<input type="text" value="60.00"/>	<input type="text" value="10.00"/>	<input type="text"/>	<input type="text" value="30.00"/>	<input type="text"/>	<input type="text"/>
Cover Description	<input type="text" value="Trees in overstory provides most shade. Riparian shrubs and herb. Veg. provides some shade"/>				
Left Bank Riparian Vegetation			Right Bank Riparian Vegetation		
<input type="text" value="0.3m ferns shrubs grasses sphagnum"/>			<input type="text" value="Same as left bank"/>		
Overhanging Vegetation (%)	<input type="text" value="70.00"/>				
	<input type="text" value="Ferns herbaceous"/>				
Obstruction to Fish Passage	<input type="text" value="None Observed"/>				
	<input type="text"/>				
Barrier Height (M)	<input type="text"/>				
Study Area Comments					

Stream/River Assessment

Horizontal View of Channel



Stream/River Assessment

Site ID	WB-B-M28-108		Field Crew	Amy Ingriselli Jessica Mendoza		147
Study Area	TLINE B					
Location	T line b					
Project Number	60341251	Air Temp. (degC)	17.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	0	Just rained		
Start Date	6/10/2015 10:49:34 AM	Precipitation	0			
End Date	6/10/2015 11:13:13 AM	Cloud Cover	90.00			
Upstream Endpoint	Latitude:45.695102,Longitude:-80.449993,Altitude:179.2,Speed:0.15433334,Accuracy:2.1,Provider:gps,Time:06/10/2015 11:26:27 EDT					
Downstream Endpoint	Latitude:45.694869,Longitude:-80.451136,Altitude:183.7,Speed:0.03601111,Accuracy:1.8,Provider:gps,Time:					
Site Features						
Feature Description	1182	Feature Location				
50m downstream of cl looking upstream (just upstream of breached beaver dam)		Latitude:45.694877,Longitude:-80.451066,Altitude:184.3,Speed:0.11832222,Accuracy:1.8,Provider:gps,Time:06/10/2015 11:00:03 EDT				
Feature Description	1185	Feature Location				
Looking north along cl from south bank		Latitude:45.694875,Longitude:-80.451063,Altitude:183.5,Speed:0.05144445,Accuracy:2.1,Provider:gps,Time:06/10/2015 11:01:18 EDT				
Feature Description	1188	Feature Location				
50m upstream of cl looking downstream (just downstream of beaver dam)		Latitude:45.695089,Longitude:-80.449992,Altitude:178.8,Speed:0.01028889,Accuracy:2.1,Provider:gps,Time:06/10/2015 11:24:39 EDT				
Surrounding Land Use	Forest					
	Mixed coniferous deciduous forest atop bedrock					
Type of Watercourse	Permanent,Natural Channel					
	Breached beaver dam downstream is now creek through dead alders and grassy meadow. A beaver dam impedes fish migration just upstream of site area. Water flows west towards highway					

Stream/River Assessment

Input Description	Overland flow			
Water Body Underground / Not As Mapped?	No			
Surrounding Land Topography	Rolling bedrock toward watercourse			
In-Situ Water Quality				
WT (deg. C)	15.6	AT (degC)	17.2	Water Quality Notes
pH	4.9	Cond. (s/cm)	0.01	
D.O. (mg/L)	7.3	Water Colour	Colourless	
Water Clarity	Clear			
Seepage Indicators	None			
Stream Morphology				
Site Length (m)	100.00	Bank Stability		
Channel Dimensions		Left Bank	0.82	
		Right Bank	0.97	
Mean Wetted Width (m)	0.82	Mean Wetted Depth (m)	0.17	Notes Large grasses and dead alders along the banks
Mean Bankfull Width (m)	0.97	Mean Bankfull Depth (m)	0.28	
Mean Top of Bank Width (m)	0.97	Mean Top of Bank Depth (m)	0.28	
Flow Description	Moderate			
Habitat				
Substrate Description	Detritus sand silt muck			
Morphological Structure (%)				
Pool	Riffle	Run	Flat	
5.00		45.00	50.00	
Notes				


Stream/River Assessment

Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Undercut Banks					
Average Depth(m)	<input type="text"/>	Percent Cover (%)		<input type="text"/>	
Aquatic Vegetation Species Present	<input type="text" value="Algae submergent grasses"/>				

Canopy Cover					
Percent Closed Cover (%)		<input type="text" value="30-1%"/>			
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
<input type="text"/>	<input type="text" value="20.00"/>	<input type="text" value="80.00"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Cover Description	<input type="text" value="Mostly overhanging grasses"/>				

Left Bank Riparian Vegetation	Right Bank Riparian Vegetation
<input type="text" value="1m alder shrubs and ferns"/>	<input type="text" value="4m alder shrubs and ferns"/>

Overhanging Vegetation (%)	<input type="text" value="100.00"/>
	<input type="text" value="Grasses herbaceous plants ferns alder"/>
Obstruction to Fish Passage	<input type="text" value="None Observed"/>
	<input type="text"/>
Barrier Height (M)	<input type="text"/>





Study Area Comments	
<p>Area confined by active beaver dam upstream and breached dam downstream. Area is transitioning from meadow to alder thicket after dam breach. Meadow is 33 m across the cl. Riparian is on edges of meadow. Watercourse is 10m north of map depiction</p>	

Stream/River Assessment

Horizontal View of Channel



Stream/River Assessment

Site ID	WB-B-M28-107		Field Crew	Amy Ingriselli Jessica Mendoza		150
Study Area	TLINE B					
Location	T line b					
Project Number	60341251	Air Temp. (degC)	19.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	4			
Start Date	6/10/2015 12:46:38 PM	Precipitation	0			
End Date	6/10/2015 1:55:49 PM	Cloud Cover	100.00			
Upstream Endpoint	Latitude:45.692615,Longitude:-80.446351,Altitude:200.4,Speed:0.020577777,Accuracy:1.75,Provider:gps,Time:06/10/2015 01:43:51 EDT					
Downstream Endpoint	Latitude:45.69239,Longitude:-80.447511,Altitude:198.8,Speed:0.77166665,Accuracy:1.8,Provider:gps,Time:06/10/2015 12:56:43 EDT					
Site Features						
Feature Description	1191	Feature Location				
50m downstream from cl looking upstream from north bank	Latitude:45.692324,Longitude:-80.447416,Altitude:200.6,Speed:0.07202222,Accuracy:1.8,Provider:gps,Time:06/10/2015 12:57:10 EDT					
Feature Description	1194	Feature Location				
Looking south across cl from north bank (only area with pool)	Latitude:45.692332,Longitude:-80.447425,Altitude:200.2,Speed:0.015433333,Accuracy:1.8,Provider:gps,Time:06/10/2015 12:58:14 EDT					
Feature Description	1197	Feature Location				
50m upstream of cl looking downstream from north bank	Latitude:45.692652,Longitude:-80.44634,Altitude:197.5,Speed:0.11317778,Accuracy:1.8,Provider:gps,Time:06/10/2015 01:06:49 EDT					
Feature Description	1200	Feature Location				
Slumping and erosional banks	Latitude:45.69263,Longitude:-80.446322,Altitude:200.2,Speed:0.06173333,Accuracy:1.75,Provider:gps,Time:06/10/2015 01:44:29 EDT					

Stream/River Assessment

Surrounding Land Use	Forest			
	Mixed deciduous coniferous forest atop bedrock			
Type of Watercourse	Permanent,Natural Channel			
	Meandering creek through grass meadow directly upstream of breached beaver dam			
Input Description	Overland flow			
Water Body Underground / Not As Mapped?	No			
Surrounding Land Topography	Rolling bedrock sloping towards watercourse			
In-Situ Water Quality				
WT (deg. C)	17.9	AT (degC)	19.0	Water Quality Notes
pH	4.8	Cond. (s/cm)	0.01	
D.O. (mg/L)	8.7	Water Colour	Colourless	
Water Clarity	Clear			
Seepage Indicators	None			
Stream Morphology		Bank Stability		
Site Length (m)	100.00	Left Bank	2.60	
Channel Dimensions		Right Bank	4.40	
Mean Wetted Width (m)	2.60	Mean Wetted Depth (m)	0.60	Notes Soft banks with grass with weak root structure. Evidence of slumping and eroded banks
Mean Bankfull Width (m)	4.40	Mean Bankfull Depth (m)	0.90	
Mean Top of Bank Width (m)	4.40	Mean Top of Bank Depth (m)	0.90	
Flow Description	Moderate			
Habitat				
Substrate Description	Silt sand detritus muck			

Stream/River Assessment

Morphological Structure (%)					
Pool	Riffle	Run	Flat		
10.00		50.00	40.00		
Notes					

Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
Undercut Banks					
Average Depth(m)		Percent Cover (%)			
Aquatic Vegetation Species Present	Submerged aquatic grasses yellow lily emergent grasses				

Canopy Cover					
Percent Closed Cover (%)		30-1%			
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
5.00	5.00	90.00			
Cover Description	Mostly overhanging grasses				

Left Bank Riparian Vegetation		Right Bank Riparian Vegetation	
7m Ferns meadow sweet grass spotted Joe piweed alder		10m see lb for vegetation	

Overhanging Vegetation (%)	10.00
	Grasses
Obstruction to Fish Passage	None Observed
Barrier Height (M)	

Stream/River Assessment

Study Area Comments





Grasses bordering channel were previously flooded by beaver dam. Beaver meadow bordered by 10m strip of riparian shrubs. Mean width of beaver meadow is 33m.



Horizontal View of Channel



Stream/River Assessment

Site ID	WB-B-M38-91		Field Crew	Ami Arsenault Justin Munro		153
Study Area	TLINE B					
Location	Parked on east side of highway 69/400 and hiked through the bush to centerline.					
Project Number	60341251	Air Temp. (degC)	19.0	Weather Notes		
Tablet	AECOM12	Wind Speed (beaufort)	2	Thunderstorms earlier today		
Start Date	6/10/2015 1:29:32 PM	Precipitation	1			
End Date	6/10/2015 2:10:43 PM	Cloud Cover	100.00			
Upstream Endpoint						
Downstream Endpoint						
Site Features						
Feature Description	1260	Feature Location				
Facing north at centreline, on yellow survey point. On top of bedrock mound. Forest surrounding.		Latitude:45.633086,Longitude:-80.393217,Altitude:191.5,Speed:0.0463,Accuracy:2.1,Provider:gps,Time:06/10/2015 01:31:40 EDT				
Feature Description	1263	Feature Location				
Facing south along centreline, at yellow survey point. On bedrock mound.		Latitude:45.633083,Longitude:-80.393197,Altitude:191.6,Speed:0.07716667,Accuracy:2.1,Provider:gps,Time:06/10/2015 01:32:51 EDT				
Feature Description	1266	Feature Location				
Facing the north east corner of the pond where watercourse supposedly flows from. ~70m west of centerline.		Latitude:45.63336,Longitude:-80.392182,Altitude:183.2,Speed:0.17491111,Accuracy:2.4,Provider:gps,Time:06/10/2015 01:41:19 EDT				
Feature Description	1269	Feature Location				
Facing area where watercourse supposedly begins (west from pond)		Latitude:45.63338,Longitude:-80.392204,Altitude:184.5,Speed:0.06173333,Accuracy:2.4,Provider:gps,Time:06/10/2015 01:42:57 EDT				




Execution Time

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Filter Start Date 6/1/2015

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Stream/River Assessment

Feature Description		1272	Feature Location		
Channel beginning from pond		Latitude:45.633459,Longitude:-80.392492,Altitude:177.1,Speed:0.23664445,Accuracy:1.8,Provider:gps,Time:06/10/2015 01:45:34 EDT			
Feature Description		1275	Feature Location		
Watercourse ends 14m meandering from pond		Latitude:45.633473,Longitude:-80.392529,Altitude:177.2,Speed:0.07716667,Accuracy:2.1,Provider:gps,Time:06/10/2015 01:46:11 EDT			
Feature Description		1278	Feature Location		
Facing east along supposed watercourse.		Latitude:45.63321,Longitude:-80.3932,Altitude:174.9,Speed:0.12861112,Accuracy:2.4,Provider:gps,Time:06/10/2015 01:51:31 EDT			
Surrounding Land Use		Forest			
		Wetland, forest, highway			
Type of Watercourse		Ephemeral			
		NA			
Input Description		NA			
Water Body Underground / Not As Mapped?		No			
Surrounding Land Topography		NA			
In-Situ Water Quality					
WT (deg. C)	<input type="text"/>	AT (degC)	<input type="text"/>	Water Quality Notes No chemistry taken. No water in study area.	
pH	<input type="text"/>	Cond. (s/cm)	<input type="text"/>		
D.O. (mg/L)	<input type="text"/>	Water Colour	Colourless		
Water Clarity	Clear				

Execution Time

8/19/2015 7:56:12 AM

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Filter End Date 6/30/2015

Stream/River Assessment

Seepage Indicators	<div style="border: 1px solid black; padding: 2px; min-height: 40px;">None</div>				
Stream Morphology			Bank Stability		
Site Length (m) <div style="border: 1px solid black; width: 150px; height: 20px; display: inline-block;"></div>			Left Bank <div style="border: 1px solid black; width: 250px; height: 20px; display: inline-block;"></div>		
Channel Dimensions			Right Bank <div style="border: 1px solid black; width: 250px; height: 20px; display: inline-block;"></div>		
Mean Wetted Width (m)	<div style="border: 1px solid black; width: 50px; height: 20px; display: inline-block;"></div>	Mean Wetted Depth (m)	<div style="border: 1px solid black; width: 50px; height: 20px; display: inline-block;"></div>	Notes <div style="border: 1px solid black; width: 250px; height: 60px; display: inline-block;"></div>	
Mean Bankfull Width (m)	<div style="border: 1px solid black; width: 50px; height: 20px; display: inline-block;"></div>	Mean Bankfull Depth (m)	<div style="border: 1px solid black; width: 50px; height: 20px; display: inline-block;"></div>		
Mean Top of Bank Width (m)	<div style="border: 1px solid black; width: 50px; height: 20px; display: inline-block;"></div>	Mean Top of Bank Depth (m)	<div style="border: 1px solid black; width: 50px; height: 20px; display: inline-block;"></div>		
Flow Description		<div style="border: 1px solid black; width: 700px; height: 30px; display: inline-block;"></div>			
Habitat					
Substrate Description <div style="border: 1px solid black; width: 750px; height: 20px; display: inline-block;"></div>					
Morphological Structure (%)					
Pool	Riffle	Run	Flat		
<div style="border: 1px solid black; width: 100px; height: 20px; display: inline-block;"></div>	<div style="border: 1px solid black; width: 100px; height: 20px; display: inline-block;"></div>	<div style="border: 1px solid black; width: 100px; height: 20px; display: inline-block;"></div>	<div style="border: 1px solid black; width: 100px; height: 20px; display: inline-block;"></div>		
Notes		<div style="border: 1px solid black; width: 750px; height: 30px; display: inline-block;"></div>			
Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<div style="border: 1px solid black; width: 100px; height: 20px; display: inline-block;"></div>	<div style="border: 1px solid black; width: 100px; height: 20px; display: inline-block;"></div>	<div style="border: 1px solid black; width: 100px; height: 20px; display: inline-block;"></div>	<div style="border: 1px solid black; width: 100px; height: 20px; display: inline-block;"></div>	<div style="border: 1px solid black; width: 100px; height: 20px; display: inline-block;"></div>	<div style="border: 1px solid black; width: 100px; height: 20px; display: inline-block;"></div>
Undercut Banks					
Average Depth(m)	<div style="border: 1px solid black; width: 50px; height: 20px; display: inline-block;"></div>	Percent Cover (%)	<div style="border: 1px solid black; width: 50px; height: 20px; display: inline-block;"></div>		
Aquatic Vegetation Species Present	<div style="border: 1px solid black; width: 750px; height: 30px; display: inline-block;"></div>				
Canopy Cover					
Percent Closed Cover (%)	<div style="border: 1px solid black; width: 50px; height: 20px; display: inline-block;"></div>				
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
<div style="border: 1px solid black; width: 100px; height: 20px; display: inline-block;"></div>	<div style="border: 1px solid black; width: 100px; height: 20px; display: inline-block;"></div>	<div style="border: 1px solid black; width: 100px; height: 20px; display: inline-block;"></div>	<div style="border: 1px solid black; width: 100px; height: 20px; display: inline-block;"></div>	<div style="border: 1px solid black; width: 100px; height: 20px; display: inline-block;"></div>	<div style="border: 1px solid black; width: 100px; height: 20px; display: inline-block;"></div>
Cover Description	<div style="border: 1px solid black; width: 750px; height: 30px; display: inline-block;"></div>				

Stream/River Assessment

Left Bank Riparian Vegetation

Right Bank Riparian Vegetation

Overhanging
Vegetation (%)

Obstruction to Fish
Passage

NA

NA





Barrier Height (M)

Study Area Comments



Ephemeral stream. Hiked to pond where watercourse originates (as seen on map). Can see small meandering channel for ~14m before topography slopes upwards into the forest. Some evidence of water movement in forest (some small pools in one area, but most likely from rain event this morning*see photo), likely flowing east towards pond during spring melt or heavy rain events. No watercourse observed at centreline and survey point M38-91.

Horizontal View of Channel

Stream/River Assessment

Site ID	WB-B-M38-90		Field Crew	Ami Arsenault Justin Munro		156
Study Area	TLINE B					
Location	Parked on east side of highway 69/400 and hiked along existing trail to centerline, hiked north to survey location.					
Project Number	60341251	Air Temp. (degC)	19.0	Weather Notes		
Tablet	AECOM12	Wind Speed (beaufort)	2			
Start Date	6/10/2015 2:23:29 PM	Precipitation	0			
End Date	6/10/2015 2:57:04 PM	Cloud Cover	100.00			
Upstream Endpoint	Latitude:45.629751,Longitude:-80.392266,Altitude:192.8,Speed:0.9465778,Accuracy:3.3,Provider:gps,Time:06/10/2015 02:52:01 EDT					
Downstream Endpoint						
Site Features						
Feature Description	1281	Feature Location				
Facing north on centreline - wet area with lots of pooling	Latitude:45.630145,Longitude:-80.392308,Altitude:188.3,Speed:0.16462222,Accuracy:3.0,Provider:gps,Time:06/10/2015 02:42:50 EDT					
Feature Description	1284	Feature Location				
Facing south on centreline	Latitude:45.630096,Longitude:-80.392323,Altitude:189.3,Speed:0.14918889,Accuracy:2.7,Provider:gps,Time:06/10/2015 02:43:38 EDT					
Feature Description	1287	Feature Location				
Facing east on centreline - higher slopes	Latitude:45.630096,Longitude:-80.392323,Altitude:189.3,Speed:0.23664445,Accuracy:3.0,Provider:gps,Time:06/10/2015 02:44:11 EDT					
Feature Description	1290	Feature Location				
Facing west from centerline	Latitude:45.630091,Longitude:-80.392268,Altitude:193.7,Speed:0.25722224,Accuracy:3.0,Provider:gps,Time:06/10/2015 02:44:50 EDT					


Stream/River Assessment

Feature Description	1293	Feature Location	
50m south of survey location on centreline , facing the centerline		Latitude:45.629787,Longitude:-80.392285,Altitude:190.7,Speed:0.066877775,Accuracy:4.5,Provider:gps,Time:06/10/2015 02:52:12 EDT	
Feature Description	1296	Feature Location	
Facing east at highway where swamp ends		Latitude:45.631066,Longitude:-80.39454,Altitude:202.9,Speed:0.41155556,Accuracy:2.1,Provider:gps,Time:06/10/2015 03:03:00 EDT	
Surrounding Land Use	NA		
	NA		
Type of Watercourse	NA		
	NA		
Input Description	NA		
Water Body Underground / Not As Mapped?	No		
Surrounding Land Topography	NA		
In-Situ Water Quality			
WT (deg. C)	<input type="text"/>	AT (degC)	<input type="text"/>
pH	<input type="text"/>	Cond. (s/cm)	<input type="text"/>
D.O. (mg/L)	<input type="text"/>	Water Colour	<input type="text"/>
Water Clarity	<input type="text"/>	<input type="text"/>	
Seepage Indicators	None		
	<input type="text"/>		





Stream/River Assessment

Stream Morphology				Bank Stability	
Site Length (m) <input style="width: 150px;" type="text"/>		Left Bank <input style="width: 250px;" type="text"/>			
Channel Dimensions		Right Bank <input style="width: 250px;" type="text"/>			
Mean Wetted Width (m) <input style="width: 50px;" type="text"/>	Mean Wetted Depth (m) <input style="width: 50px;" type="text"/>	Notes <div style="border: 1px solid black; height: 60px; width: 250px;"></div>			
Mean Bankfull Width (m) <input style="width: 50px;" type="text"/>	Mean Bankfull Depth (m) <input style="width: 50px;" type="text"/>				
Mean Top of Bank Width (m) <input style="width: 50px;" type="text"/>	Mean Top of Bank Depth (m) <input style="width: 50px;" type="text"/>				
Flow Description <div style="border: 1px solid black; height: 30px; width: 700px;"></div>					
Habitat					
Substrate Description <input style="width: 700px;" type="text"/>					
Morphological Structure (%)					
Pool	Riffle	Run	Flat		
<input style="width: 100px;" type="text"/>	<input style="width: 100px;" type="text"/>	<input style="width: 100px;" type="text"/>	<input style="width: 100px;" type="text"/>		
Notes <div style="border: 1px solid black; height: 30px; width: 700px;"></div>					
Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input style="width: 100px;" type="text"/>	<input style="width: 100px;" type="text"/>	<input style="width: 100px;" type="text"/>	<input style="width: 100px;" type="text"/>	<input style="width: 100px;" type="text"/>	<input style="width: 100px;" type="text"/>
Undercut Banks					
Average Depth(m) <input style="width: 50px;" type="text"/>		Percent Cover (%) <input style="width: 50px;" type="text"/>			
Aquatic Vegetation Species Present <div style="border: 1px solid black; height: 30px; width: 700px;"></div>					
Canopy Cover					
Percent Closed Cover (%) <input style="width: 50px;" type="text"/>					
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
<input style="width: 100px;" type="text"/>	<input style="width: 100px;" type="text"/>	<input style="width: 100px;" type="text"/>	<input style="width: 100px;" type="text"/>	<input style="width: 100px;" type="text"/>	<input style="width: 100px;" type="text"/>
Cover Description <div style="border: 1px solid black; height: 30px; width: 700px;"></div>					
Left Bank Riparian Vegetation			Right Bank Riparian Vegetation		
<div style="border: 1px solid black; height: 100px; width: 400px;"></div>			<div style="border: 1px solid black; height: 100px; width: 400px;"></div>		

Stream/River Assessment

Overhanging Vegetation (%)	
Obstruction to Fish Passage	NA
	NA
Barrier Height (M)	
<div>Study Area Comments</div> <div>Followed the aerial map to assumed watercourse but discovered area is more of a green ash swamp, with interconnecting pools of water (various saturated areas), rather than a stream. Total width of wetted area approx 20m. Lots of ash trees, ferns, herbaceous and spagnum moss growing in swamp. Mean depth of pools are 12cm. Surrounding topography slopes down towards swampy area. Took photo of channel at highway 69/400, also looks like large swampy area (for reference).</div> <div></div> <div>Horizontal View of Channel</div>	

Stream/River Assessment

Site ID	WB-B-M28-107-2		Field Crew	Amy Ingriselli Jessica Mendoza		159
Study Area	TLINE B					
Location	360 m east of Highway 69 on transmission line B.					
Project Number	60341251	Air Temp. (degC)	16.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	1			
Start Date	6/11/2015 10:38:00 AM	Precipitation	0			
End Date	6/11/2015 11:23:35 AM	Cloud Cover	10.00			
Upstream Endpoint	Latitude:45.693161,Longitude:-80.446599,Altitude:188.7,Speed:0.025722222,Accuracy:1.8,Provider:gps,Time:06/11/2015 10:41:28 EDT					
Downstream Endpoint	Latitude:45.692554,Longitude:-80.447203,Altitude:193.2,Speed:0.31895554,Accuracy:1.75,Provider:gps,Time:06/11/2015 11:17:38 EDT					
Site Features						
Feature Description	1299	Feature Location				
50 m upstream of centreline looking downstream	Latitude:45.693163,Longitude:-80.446573,Altitude:186.9,Speed:0.020577777,Accuracy:1.75,Provider:gps,Time:06/11/2015 10:40:42 EDT					
Feature Description	1302	Feature Location				
Looking upstream (northeast) from approximately centreline	Latitude:45.692918,Longitude:-80.447061,Altitude:199.5,Speed:0.020577777,Accuracy:2.1,Provider:gps,Time:06/11/2015 11:01:05 EDT					
Feature Description	1305	Feature Location				
Looking downstream from centreline	Latitude:45.692919,Longitude:-80.447059,Altitude:199.6,Speed:0.020577777,Accuracy:2.4,Provider:gps,Time:06/11/2015 11:01:49 EDT					
Feature Description	1308	Feature Location				
Facing upstream from downstream limit of study area where channel meets watercourse at my-28-107. Channel/flow low and dissipates through veg. And. Shrubs	Latitude:45.692544,Longitude:-80.447191,Altitude:193.4,Speed:0.4990111,Accuracy:1.75,Provider:gps,Time:06/11/2015 11:15:47 EDT					

Stream/River Assessment

Surrounding Land Use	Meadow, Wetland			
	Watercourse to the east. At site rolling bedrock sloping to watercourse, thicket			
Type of Watercourse	Permanent, Natural Channel			
	Small channel flowing southerly with low flow but defined bank. Flows to watercourse at site WB-but-m28-107			
Input Description	Overland, online drainage from wetland further upstream. At upstream limit of study area little to no flow, saturated swale with water tolerant terrestrial vegetation.			
Water Body Underground / Not As Mapped?	Yes. Watercourse was not mapped, was observed on route to WB-B-M28-107.			
Surrounding Land Topography	Rolling rock barren forest sloping to watercourse.			
In-Situ Water Quality				
WT (deg. C)	13.6	AT (degC)	16.8	Water Quality Notes
pH	5.1	Cond. (s/cm)	0.01	
D.O. (mg/L)	7.3	Water Colour	Colourless	
Water Clarity	Clear			
Seepage Indicators	None			
Stream Morphology				
Site Length (m)	100.00	Bank Stability		
Channel Dimensions		Left Bank	0.50	
		Right Bank	0.80	
Mean Wetted Width (m)	0.50	Mean Wetted Depth (m)	0.10	Notes Heavily vegetated, low flows, no exposed. Soils
Mean Bankfull Width (m)	0.80	Mean Bankfull Depth (m)	0.20	
Mean Top of Bank Width (m)	0.80	Mean Top of Bank Depth (m)	0.20	
Flow Description	Low. Upstream saturated swale only, no open water from 40-50m upstream of CL (approximately) . ~25 m downstream of CL channel dissipates through vegetation and no flow or channel observed. Rest of site around CL channel with defined bank. Flows to water			
Habitat				
Substrate Description	Detritus silt			

Stream/River Assessment

Morphological Structure (%)					
Pool	Riffle	Run	Flat		
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="100.00"/>		
Notes	<input type="text"/>				

Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Undercut Banks	
Average Depth(m)	<input type="text" value="0.05"/> Percent Cover (%) <input type="text" value="30.00"/>
Aquatic Vegetation Species Present	<input type="text" value="None"/>

Canopy Cover					
Percent Closed Cover (%)	<input type="text" value="100-90%"/>				
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
<input type="text" value="20.00"/>	<input type="text" value="50.00"/>	<input type="text" value="10.00"/>	<input type="text" value="20.00"/>	<input type="text"/>	<input type="text"/>
Cover Description	<input type="text" value="Riparian shrubs and tree canopy. In downstream wetland open canopy but increase in herbaceous overhanging vegetaton."/>				

Left Bank Riparian Vegetation		Right Bank Riparian Vegetation	
<input type="text" value="1 m beaked hazel wild sarsaparilla ferns"/>		<input type="text" value="Same as LB"/>	

Overhanging Vegetation (%)	<input type="text" value="25.00"/>
	<input type="text" value="Beaked hazel herbaceous vegetation present"/>

Obstruction to Fish Passage	<input type="text" value="Low Flow Barrier"/>
	<input type="text" value="Low flows, bit of a slope. Barrier. Defined channel disappears approximately 25. M. Downstream of CL, water seeps through vegetation"/>
Barrier Height (M)	<input type="text" value="0.0"/>

Stream/River Assessment

Study Area Comments





No fish observed. Small channel was observed on route to adjacent site. No passage upstream except seasonally in high flows. Downstream passage from wetland restricted by low flow and slope barrier. Does not likely directly support fish.




Horizontal View of Channel



Stream/River Assessment

Site ID	WB-B-M29-106		Field Crew	Amy Ingriselli Jessica Mendoza		162
Study Area	TLINE B					
Location	70 m. South of Harris lake road, Harris River					
Project Number	60341251	Air Temp. (degC)	19.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	1			
Start Date	6/11/2015 12:16:14 PM	Precipitation	0			
End Date	6/11/2015 1:20:17 PM	Cloud Cover	20.00			
Upstream Endpoint	Latitude:45.687532,Longitude:-80.444349,Altitude:178.6,Speed:0.020577777,Accuracy:3.0,Provider:gps,Time:06/11/2015 12:18:57 EDT					
Downstream Endpoint	Latitude:45.687823,Longitude:-80.445891,Altitude:183.1,Speed:0.041155554,Accuracy:3.3,Provider:gps,Time:06/11/2015 01:11:08 EDT					
Site Features						
Feature Description	1311	Feature Location				
Upstream limit of study area, facing downstream (west).	Latitude:45.687438,Longitude:-80.444426,Altitude:161.9,Speed:0.62247777,Accuracy:3.0,Provider:gps,Time:06/11/2015 12:32:05 EDT					
Feature Description	1314	Feature Location				
Man-made concrete structure, perhaps old. Dam.. not. A. Barrier for fish. But velocity and height may impede passage for some. Facing across channel. (South)	Latitude:45.68743,Longitude:-80.44457,Altitude:169.9,Speed:0.32924443,Accuracy:3.0,Provider:gps,Time:06/11/2015 12:38:12 EDT					
Feature Description	1317	Feature Location				
Looking across channel at centreline. Facing south	Latitude:45.687419,Longitude:-80.445086,Altitude:183.5,Speed:0.0051444443,Accuracy:2.4,Provider:gps,Time:06/11/2015 12:53:27 EDT					
Feature Description	1320	Feature Location				
Looking upstream from CL	Latitude:45.687394,Longitude:-80.445075,Altitude:186.1,Speed:0.041155554,Accuracy:2.4,Provider:gps,Time:06/11/2015 12:54:39 EDT					

Stream/River Assessment

Feature Description	1323	Feature Location	
Looking downstream from CL		Latitude:45.687378,Longitude:-80.445044,Altitude:188.7,Speed:0.78195554,Accuracy:3.6,Provider:gps,Time:06/11/2015 12:55:43 EDT	

Feature Description	1326	Feature Location
Facing upstream from downstream limit of study area		Latitude:45.687826,Longitude:-80.445897,Altitude:182.8,Speed:0.28294444,Accuracy:3.0,Provider:gps,Time:06/11/2015 01:11:17 EDT

Surrounding Land Use	Forest,Other
	Forest, Harris lake road and highway 69 nearby, recreational fishing and ATV trail

Type of Watercourse	Permanent
	Harris river. Flowing river with coarse substrate bordered by forested. Bedrock slopes

Input Description	River and overland drainage. Drainage from Harris Lake roadside ditch
Water Body Underground / Not As Mapped?	No
Surrounding Land Topography	Steep sloping bedrock

In-Situ Water Quality				
WT (deg. C)	18.4	AT (degC)	19.1	Water Quality Notes
pH	5.5	Cond. (s/cm)	0.02	
D.O. (mg/L)	9.4	Water Colour	Colourless	
Water Clarity	Clear			

Seepage Indicators	None

Stream/River Assessment

Stream Morphology				Bank Stability	
Site Length (m)		<input type="text" value="100.00"/>		Left Bank <input type="text" value="14.00"/>	
Channel Dimensions				Right Bank <input type="text" value="18.30"/>	
Mean Wetted Width (m)		<input type="text" value="14.00"/>	Mean Wetted Depth (m)		<input type="text" value="1.00"/>
Mean Bankfull Width (m)		<input type="text" value="18.30"/>	Mean Bankfull Depth (m)		<input type="text" value="3.00"/>
Mean Top of Bank Width (m)		<input type="text" value="18.30"/>	Mean Top of Bank Depth (m)		<input type="text" value="3.00"/>
Notes <input type="text" value="Bedrock, coarse substrates"/>					

Flow Description	<input type="text" value="High flows, logs and woody debris in pool"/>
------------------	--

Habitat					
Substrate Description <input type="text" value="Boulder bedrock cobble"/>					



Morphological Structure (%)					
Pool	Riffle	Run	Flat		
<input type="text" value="20.00"/>	<input type="text" value="60.00"/>	<input type="text" value="20.00"/>	<input type="text"/>		
Notes	<input type="text"/>				

Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Undercut Banks					
Average Depth(m)	<input type="text"/>	Percent Cover (%)		<input type="text"/>	
Aquatic Vegetation Species Present	<input type="text" value="Few emergent grasses in downstream pool"/>				





Canopy Cover					
Percent Closed Cover (%)		<input type="text" value="60-30%"/>			
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
<input type="text" value="100.00"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Cover Description	<input type="text" value="Shoreline trees providing shade"/>				

Left Bank Riparian Vegetation		Right Bank Riparian Vegetation	
<input type="text" value="1 m grass and herbaceous vegetation, ferns"/>		<input type="text" value="0.5 few ferns and grasses"/>	


Stream/River Assessment

Overhanging Vegetation (%)	<div>0.00</div>
	Riparian trees and vegetation not really overhanging, not providing in-stream cover for fish
Obstruction to Fish Passage	None Observed
	Man-made. Concrete ridge in river perhaps old dam not a barrier for fish but may impede passage for some due to high velocities.
Barrier Height (M)	<div></div>
Study Area Comments	<div><p>Area below rapids suitable spawning habitat for walleye. According to bear guard, area below rapids just downstream of study area is popular spear fishing area for walleye during spawning and staging</p></div> <div></div>
Horizontal View of Channel	<div></div>

Stream/River Assessment

Site ID	WB-B-M30-104		Field Crew	Amy Ingriselli Jessica Mendoza		165
Study Area	TLINE B					
Location	T line b					
Project Number	60341251	Air Temp. (degC)	16.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	4			
Start Date	6/11/2015 2:01:37 PM	Precipitation	0			
End Date	6/11/2015 3:04:15 PM	Cloud Cover	60.00			
Upstream Endpoint	Latitude:45.677805,Longitude:-80.437314,Altitude:187.3,Speed:0.020577777,Accuracy:2.1,Provider:gps,Time:06/11/2015 02:53:57 EDT					
Downstream Endpoint	Latitude:45.677521,Longitude:-80.438259,Altitude:197.3,Speed:0.06173333,Accuracy:1.8,Provider:gps,Time:					
Site Features						
Feature Description	1329	Feature Location				
Downstream limit of study area at highway embankment		Latitude:45.677517,Longitude:-80.438253,Altitude:197.4,Speed:0.07202222,Accuracy:1.8,Provider:gps,Time:06/11/2015 02:04:27 EDT				
Feature Description	1332	Feature Location				
Looking across channel at centreline, facing north		Latitude:45.677627,Longitude:-80.437802,Altitude:191.7,Speed:0.08231111,Accuracy:2.1,Provider:gps,Time:06/11/2015 02:30:13 EDT				
Feature Description	1335	Feature Location				
Facing downstream from centreline		Latitude:45.67765,Longitude:-80.437815,Altitude:194.7,Speed:0.020577777,Accuracy:2.1,Provider:gps,Time:06/11/2015 02:36:34 EDT				
Feature Description	1338	Feature Location				
Facing upstream from CL		Latitude:45.677646,Longitude:-80.437818,Altitude:195.1,Speed:0.010288889,Accuracy:2.1,Provider:gps,Time:06/11/2015 02:37:14 EDT				

Stream/River Assessment

Feature Description		1341		Feature Location			
Facing downstream from upstream limit of study area				Latitude:45.677778,Longitude:-80.437356,Altitude:192.0,Speed:0.0463,Accuracy:2.1,Provider:gps,Time:06/11/2015 02:45:19 EDT			
Surrounding Land Use		Forest,Other					
		Forest and highway					
Type of Watercourse		Permanent					
		Standing watercourse drains southwesterly under highway through csp, heavily vegetated between bedrock slopes					
Input Description		Overland and highway drainage inputs					
Water Body Underground / Not As Mapped?		No					
Surrounding Land Topography		Bedrock and highway embankment sloping towards watercourse					
In-Situ Water Quality							
WT (deg. C)	18.6	AT (degC)	16.3	Water Quality Notes DO higher than. Expexted			
pH	4.3	Cond. (s/cm)	0.01				
D.O. (mg/L)	10.6	Water Colour	Colourless				
Water Clarity	Clear						
Seepage Indicators		None					
Stream Morphology							
Site Length (m)		80.00		Bank Stability			
Channel Dimensions				Left Bank		14.00	
				Right Bank		14.20	
Mean Wetted Width (m)		14.00	Mean Wetted Depth (m)		0.80	Notes Bedrock and riprap protection on highway embankment	
Mean Bankfull Width (m)		14.20	Mean Bankfull Depth (m)		1.00		
Mean Top of Bank Width (m)		14.20	Mean Top of Bank Depth (m)		1.00		
Flow Description		Standing water					

Execution Time

8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Habitat

Substrate Description

Morphological Structure (%)

Pool

Riffle

Run

Flat

Notes

Instream Cover

Woody Debris

Boulders

Cobble

Aquatic Vegetation

Structures

Total Instream Cover

Undercut Banks

Average Depth(m)

Percent Cover (%)

Aquatic Vegetation
Species Present

Bladderwort, emergent grasses, fragrant water lily, submergent grasses, marsh cinquefoil, three-way sedge, marsh St. John's word, pipewort

Canopy Cover

Percent Closed Cover (%)

Trees

Shrubs

Grasses

Herbaceous

Man Made

Other

Cover Description

Narrow emergent and riparian vegetation abundant but not providing notable shade. Trees providing little shade.

Left Bank Riparian Vegetation

1 m meadow sweet, grasses, blue flag iris, ferns

Right Bank Riparian Vegetation

Same as left bank

Overhanging
Vegetation (%)

10.00

Riparian vegetation not overhanging or providing in-stream cover for fish

Obstruction to Fish
Passage

None Observed

Barrier Height (M)

Execution Time

8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Study Area Comments




Red-eyed vireo, green frog, yellow warbler observed






Horizontal View of Channel



Stream/River Assessment

Site ID	WB-B-M39-88	Field Crew	Ami Arsenault Justin Munro	168
Study Area	TLINE B			
Location	East of highway 150m. Parked at moose trading post and hiked north on highway 150m and then headed east into forest towards survey point.			
Project Number	60341251	Air Temp. (degC)	18.0	Weather Notes
Tablet	AECOM12	Wind Speed (beaufort)	2	
Start Date	6/11/2015 10:15:28 AM	Precipitation	0	
End Date	6/11/2015 11:11:10 AM	Cloud Cover	20.00	
Upstream Endpoint	Latitude:45.624146,Longitude:-80.387474,Altitude:210.3,Speed:0.066877775,Accuracy:2.1,Provider:gps,Time:06/11/2015 10:46:14 EDT			
Downstream Endpoint	Latitude:45.623708,Longitude:-80.386566,Altitude:189.9,Speed:0.041155554,Accuracy:2.4,Provider:gps,Time:06/11/2015 10:17:17 EDT			
Site Features				
Feature Description	1365	Feature Location		
Facing north on centreline		Latitude:45.623989,Longitude:-80.386837,Altitude:198.1,Speed:0.010288889,Accuracy:2.1,Provider:gps,Time:06/11/2015 10:28:37 EDT		
Feature Description	1368	Feature Location		
Facing south on centreline		Latitude:45.624011,Longitude:-80.386879,Altitude:197.6,Speed:0.025722222,Accuracy:1.8,Provider:gps,Time:06/11/2015 10:29:18 EDT		
Feature Description	1371	Feature Location		
Banks and in stream veg at centreline		Latitude:45.624023,Longitude:-80.386895,Altitude:197.1,Speed:0.16976666,Accuracy:2.1,Provider:gps,Time:06/11/2015 10:29:56 EDT		

Stream/River Assessment

Feature Description		1374	Feature Location		
Facing east on centreline		Latitude:45.624049,Longitude:-80.386953,Altitude:199.3,Speed:0.041155554,Accuracy:1.8,Provider:gps,Time:06/11/2015 10:31:11 EDT			
Feature Description		1377	Feature Location		
Facing west on centerline		Latitude:45.624052,Longitude:-80.386966,Altitude:200.3,Speed:0.0463,Accuracy:2.1,Provider:gps,Time:06/11/2015 10:31:47 EDT			
Feature Description		1380	Feature Location		
Beaver dam at upstream end of survey location		Latitude:45.624177,Longitude:-80.387389,Altitude:209.6,Speed:0.015433333,Accuracy:1.8,Provider:gps,Time:06/11/2015 10:44:47 EDT			
Surrounding Land Use		Forest,Wetland,Other			
		Highway to the west of survey point. Wetland surrounded by forest. Moose trading post also within 300m of site.			
Type of Watercourse		Permanent,Natural Channel			
		Water flows towards larger pond previously assessed (M39-87). Obvious wide channel with grasses growing in and on banks of watercourse. Some logs have fallen ovetop. Defined banks in main channel, but watercourse could flood to 12m in floodplain. 30m ustream of centerline the channel flows through 15m of small forested area; banks are taller and channel is smaller. Beaver dam at the end of survey site, water escaping to small pool and then flowing downstream into main channel. Watercourse slow and languid moving for most of the survey site.			
Input Description		Overland flow, highway ditch runoff			
Water Body Underground / Not As Mapped?		No			
Surrounding Land Topography		Forested perimeter slopes towards watercourse. Water flowing southeast towards M39-87 pond.			

Stream/River Assessment

In-Situ Water Quality					
WT (deg. C)	<input type="text" value="15.5"/>	AT (degC)	<input type="text" value="18.0"/>	Water Quality Notes <input type="text"/>	
pH	<input type="text" value="6.3"/>	Cond. (s/cm)	<input type="text" value="0.33"/>		
D.O. (mg/L)	<input type="text" value="0.6"/>	Water Colour	<input type="text" value="Yellow/Brown"/>		
Water Clarity	<input type="text" value="Clear"/>				
Seepage Indicators		<input type="text" value="None"/> <input type="text"/>			
Stream Morphology					
Site Length (m)	<input type="text" value="100.00"/>	Bank Stability			
Channel Dimensions		Left Bank	<input type="text" value="1.50"/>		
		Right Bank	<input type="text" value="2.00"/>		
Mean Wetted Width (m)	<input type="text" value="1.50"/>	Mean Wetted Depth (m)	<input type="text" value="0.25"/>	Notes	<input type="text" value="Lots of vegetation holding banks together, although made of soft material. Not high waterlevel"/>
Mean Bankfull Width (m)	<input type="text" value="2.00"/>	Mean Bankfull Depth (m)	<input type="text" value="0.35"/>		
Mean Top of Bank Width (m)	<input type="text" value="5.50"/>	Mean Top of Bank Depth (m)	<input type="text" value="0.50"/>		
Flow Description	<input type="text" value="Lots of rain from yesterday's rain event but channel is moving very slowly."/>				
Habitat					
Substrate Description	<input type="text" value="Detritus"/>				
Morphological Structure (%)					
Pool	Riffle	Run	Flat		
<input type="text" value="7.00"/>	<input type="text" value="3.00"/>	<input type="text"/>	<input type="text" value="90.00"/>		
Notes	<input type="text"/>				
Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Undercut Banks					
Average Depth(m)	<input type="text"/>	Percent Cover (%)	<input type="text"/>		
Aquatic Vegetation Species Present	<input type="text" value="Water tolerant grasses"/>				

Stream/River Assessment

Canopy Cover					
Percent Closed Cover (%)		30-1%			
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
10.00		90.00			
Cover Description	Black spruce dominating small forested section watercourse flows through				

Left Bank Riparian Vegetation	Right Bank Riparian Vegetation
6m of grasses before forest	7m of grasses before forest

Overhanging Vegetation (%)	100.00
	Grasses
Obstruction to Fish Passage	Natural
	Large beaver dam at upstream location of survey
Barrier Height (M)	2.0

Study Area Comments




Beaver dam located at the upstream starting point of our survey. Watercourse is small with defined banks and flows through 15m of forested area before widening into a wetland for the majority of the survey site. Centerline crossing 15m of wetland. Defined channel throughout, but could easily flood 12m riparian area during snow melt or heavy rain events.






Horizontal View of Channel



Stream/River Assessment

Site ID	WB-B-M40-86		Field Crew	Ami Arsenault Justin Munro		171
Study Area	TLINE B					
Location	East of highway 69/400. Parked car at Moose Lake Trading Post and walked south to survey point. Large culvert under highway.					
Project Number	60341251	Air Temp. (degC)	20.0	Weather Notes		
Tablet	AECOM12	Wind Speed (beaufort)	2			
Start Date	6/11/2015 12:40:44 PM	Precipitation	0			
End Date	6/11/2015 2:02:35 PM	Cloud Cover	60.00			
Upstream Endpoint	Latitude:45.6193,Longitude:-80.384057,Altitude:195.4,Speed:0.015433333,Accuracy:2.1,Provider:gps,Time:06/11/2015 12:43:03 EDT					
Downstream Endpoint	Latitude:45.618917,Longitude:-80.385342,Altitude:175.2,Speed:0.13375555,Accuracy:2.1,Provider:gps,Time:06/11/2015 01:32:56 EDT					
Site Features						
Feature Description	1383	Feature Location				
70m uostream of centerline where moose lake drains into channel. PVC drainage pipes situated in channel to help prevent flooding in area		Latitude:45.61931,Longitude:-80.38409,Altitude:198.0,Speed:0.07202222,Accuracy:2.1,Provider:gps,Time:06/11/2015 12:45:02 EDT				
Feature Description	1386	Feature Location				
Rock barrier to fish passage		Latitude:45.619138,Longitude:-80.38446,Altitude:192.0,Speed:0.05144445,Accuracy:2.1,Provider:gps,Time:06/11/2015 01:19:49 EDT				
Feature Description	1389	Feature Location				
Facing upstream at Southern branch of channel, waterfall		Latitude:45.619096,Longitude:-80.384604,Altitude:190.0,Speed:0.17491111,Accuracy:2.1,Provider:gps,Time:06/11/2015 01:22:41 EDT				

Stream/River Assessment

Feature Description	1392	Feature Location	
Facing upstream at centerline - under culvert		Latitude:45.619045,Longitude:-80.384852,Altitude:190.6,Speed:0.05658889,Accuracy:2.1,Provider:gps,Time:06/11/2015 01:25:03 EDT	
Feature Description	1395	Feature Location	
Facing downstream to centerline (culvert)		Latitude:45.619019,Longitude:-80.384879,Altitude:191.8,Speed:0.03601111,Accuracy:2.4,Provider:gps,Time:06/11/2015 01:26:09 EDT	
Feature Description	1398	Feature Location	
Downstream, west side of highway past culvert. Small anthropogenic rock barrier.		Latitude:45.618937,Longitude:-80.38532,Altitude:174.3,Speed:0.05658889,Accuracy:2.1,Provider:gps,Time:06/11/2015 01:29:47 EDT	
Surrounding Land Use	Residential,Forest,Other		
	Cottages and Moose Lake Trading Post along Moose Lake. Highway 69/400 west of centerline.		
Type of Watercourse	Permanent,Natural Channel		
	Water flowing west into channel from Moose Lake (70m upstream from centerline). Bedrock substrate. Some flooding on left bank (maybe from yesterday's rain event). 40m upstream from centerline the channel splits in two, travelling around both sides of a treed rock barren. The north channel flows under fallen logs and meanders past large boulders and rocks in stream. Lots of canopy cover in this section. Watercourse widens before flowing through large culvert. Small rock barrier on west side of highway, probably placed to help slow down water flows in the spring melt or heavy rain events.		
Input Description	Moose lake, highway drainage, overland flow		
Water Body Underground / Not As Mapped?	No		
Surrounding Land Topography	Moose Lake upstream from centerline. Forested edges slope towards channel.		

Stream/River Assessment

In-Situ Water Quality					
WT (deg. C)	<input type="text" value="20.1"/>	AT (degC)	<input type="text" value="20.0"/>	Water Quality Notes <div></div>	
pH	<input type="text" value="5.8"/>	Cond. (s/cm)	<input type="text" value="0.02"/>		
D.O. (mg/L)	<input type="text" value="7.7"/>	Water Colour	<input type="text" value="Colourless"/>		
Water Clarity	<input type="text" value="Clear"/>				
Seepage Indicators		<input type="text" value="None"/> <div></div>			
Stream Morphology					
Site Length (m)		<input type="text" value="100.00"/>		Bank Stability	
Channel Dimensions				Left Bank	<input type="text" value="3.00"/>
				Right Bank	<input type="text" value="5.00"/>
Mean Wetted Width (m)	<input type="text" value="3.00"/>	Mean Wetted Depth (m)	<input type="text" value="0.30"/>	Notes	<div>Mostly bedrock banks, some areas of Sandy banks</div>
Mean Bankfull Width (m)	<input type="text" value="5.00"/>	Mean Bankfull Depth (m)	<input type="text" value="0.45"/>		
Mean Top of Bank Width (m)	<input type="text" value="8.00"/>	Mean Top of Bank Depth (m)	<input type="text" value="1.50"/>		
Flow Description	<div>Moderate flow conditions. Riffles, pools and runs observed.</div>				
Habitat					
Substrate Description	<div>Bedrock, algael growth on rocks. Some sand deposits after riffles.</div>				
Morphological Structure (%)					
Pool	Riffle	Run	Flat		
<input type="text" value="15.00"/>	<input type="text" value="25.00"/>	<input type="text" value="60.00"/>	<input type="text"/>		
Notes	<div></div>				
Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Undercut Banks					
Average Depth(m)	<input type="text"/>	Percent Cover (%)	<input type="text"/>		
Aquatic Vegetation Species Present	<div>Pickerel weed, water tolerant grasses at upstream location</div>				

Stream/River Assessment

Canopy Cover

Percent Closed Cover (%)

30-1%

Trees

Shrubs

Grasses

Herbaceous

Man Made

Other

60.00

40.00

Cover Description

Forested cover in middle of channel survey. Poplars, maples, birch and balsam fir. More open canopy then cover overall.

Left Bank Riparian Vegetation

3m near upstream start of survey, grassy area before forest and bedrock began

Right Bank Riparian Vegetation

Bedrock/forest

Overhanging
Vegetation (%)

30.00

Shrubs over hanging banks in forested area

Obstruction to Fish
Passage

Natural

Large boulders blocking stream. Stream flowing under boulders. During higher water levels maybe fish could jump over structure.

Barrier Height (M)

2.0

Study Area Comments

Channel is fed from Moose Lake, approx 70m upstream from centerline. Bedrock substrate throughout study area with some algael growth on rocks. Watercourse flows through small floodplain (12m saturated area) then branches off to go around bedrock island. Followed northern branch as shown on aerial map. Watercourse flows through forested area with slightly steeper and more defined banks. Boulders and cobble rocks have fallen into stream and created a natural fish passage barrier, water flows underneath boulders and towards wider more open canopied area towards culvert.



Horizontal View of Channel







Execution Time

8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment


Site ID	WB-B-M30-105		Field Crew	Amy Ingriselli Jessica Mendoza		174
Study Area	TLINE B					
Location	T line b					
Project Number	60341251	Air Temp. (degC)	15.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	0	2-4mm		
Start Date	6/12/2015 9:40:27 AM	Precipitation	1			
End Date	6/12/2015 10:20:19 AM	Cloud Cover	100.00			
Upstream Endpoint	Latitude:45.680802,Longitude:-80.44141,Altitude:200.5,Speed:0.40126666,Accuracy:2.1,Provider:gps,Time:06/12/2015 10:04:10 EDT					
Downstream Endpoint	Latitude:45.680942,Longitude:-80.442734,Altitude:202.8,Speed:0.015433333,Accuracy:2.1,Provider:gps,Time:06/12/2015 09:42:22 EDT					
Site Features						
Feature Description	1419	Feature Location				
50m downstream of cl looking upstream		Latitude:45.680944,Longitude:-80.442727,Altitude:203.0,Speed:0.03601111,Accuracy:2.4,Provider:gps,Time:06/12/2015 09:43:14 EDT				
Feature Description	1422	Feature Location				
Looking north along cl		Latitude:45.680857,Longitude:-80.442092,Altitude:201.6,Speed:0.43727776,Accuracy:2.1,Provider:gps,Time:06/12/2015 09:50:31 EDT				
Feature Description	1425	Feature Location				
Looking upstream at cl		Latitude:45.680858,Longitude:-80.442039,Altitude:203.5,Speed:0.15947777,Accuracy:2.1,Provider:gps,Time:06/12/2015 09:52:09 EDT				
Feature Description	1428	Feature Location				
Looking downstream at centreline		Latitude:45.680861,Longitude:-80.44204,Altitude:203.6,Speed:0.06173333,Accuracy:2.4,Provider:gps,Time:06/12/2015 09:52:49 EDT				

Execution Time 8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Feature Description	1431	Feature Location	
50m upstream of cl looking downstream	Latitude:45.680772,Longitude:-80.441412,Altitude:201.2,Speed:0.030866666,Accuracy:2.4,Provider:gps,Time:06/12/2015 10:06:07 EDT		
Surrounding Land Use	Forest,Other		
	Mixed coniferous deciduous forest atop bedrock Hwy 69		
Type of Watercourse	Permanent,Natural Channel		
	Northeast flowing channel through saturated meadow marsh and occasional pools and side channels		
Input Description	Overland flow		
Water Body Underground / Not As Mapped?	No		
Surrounding Land Topography	Rolling bedrock sloping towards watercourse		
In-Situ Water Quality			
WT (deg. C)	15.0	AT (degC)	15.1
pH	5.1	Cond. (s/cm)	0.07
D.O. (mg/L)	6.1	Water Colour	Colourless
Water Clarity	Clear		
Seepage Indicators	None		
Stream Morphology		Bank Stability	
Site Length (m)	100.00	Left Bank	2.15
Channel Dimensions		Right Bank	54.60
Mean Wetted Width (m)	2.15	Mean Wetted Depth (m)	0.23
Mean Bankfull Width (m)	54.60	Mean Bankfull Depth (m)	0.42
Mean Top of Bank Width (m)	54.60	Mean Top of Bank Depth (m)	0.42
Flow Description		Notes	
Low		Heavily vegetated, no evidence of erosion	

Stream/River Assessment

Habitat					
Substrate Description	Detritus muck silt				
Morphological Structure (%)					
Pool	Riffle	Run	Flat		
			100.00		
Notes					
Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
Undercut Banks					
Average Depth(m)		Percent Cover (%)			
Aquatic Vegetation Species Present	Emergent grasses				
Canopy Cover					
Percent Closed Cover (%)	90-60%				
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
10.00	5.00	85.00			
Cover Description	Overhanging grass				
Left Bank Riparian Vegetation			Right Bank Riparian Vegetation		
15m grasses			10m grasses		
Overhanging Vegetation (%)		100.00			
		Grasses			
Obstruction to Fish Passage		Natural			
		Beaver dam 10m upstream of study area impedes fish migration			
Barrier Height (M)		2.0			

Stream/River Assessment

Study Area Comments





Northeast flowing channel through saturated meadow marsh and occasional pools and side channels



Horizontal View of Channel



Stream/River Assessment




Site ID	WB-B-M30-105-2		Field Crew	Amy Ingriselli Jessica Mendoza		177
Study Area	TLINE B					
Location	T line b					
Project Number	60341251	Air Temp. (degC)	18.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	0	Light rain		
Start Date	6/12/2015 8:43:02 AM	Precipitation	1			
End Date	6/12/2015 9:39:14 AM	Cloud Cover	100.00			
Upstream Endpoint	Latitude:45.679734,Longitude:-80.441309,Altitude:203.2,Speed:0.010288889,Accuracy:2.1,Provider:gps,Time:06/12/2015 09:00:39 EDT					
Downstream Endpoint	Latitude:45.679734,Longitude:-80.441297,Altitude:204.3,Speed:0.0051444443,Accuracy:2.1,Provider:gps,Time:					
Site Features						
Feature Description	1434	Feature Location				
50m upstream of cl looking upstream		Latitude:45.679734,Longitude:-80.441297,Altitude:204.3,Speed:0.025722222,Accuracy:1.8,Provider:gps,Time:06/12/2015 08:45:05 EDT				
Feature Description	1437	Feature Location				
Looking south along cl from north bank		Latitude:45.679968,Longitude:-80.440841,Altitude:200.5,Speed:0.43727776,Accuracy:1.8,Provider:gps,Time:06/12/2015 08:54:48 EDT				
Feature Description	1440	Feature Location				
Looking upstream at centre line		Latitude:45.67994,Longitude:-80.440851,Altitude:200.5,Speed:0.11317778,Accuracy:2.1,Provider:gps,Time:06/12/2015 08:56:02 EDT				
Feature Description	1443	Feature Location				
Looking downstream at centre line		Latitude:45.679935,Longitude:-80.44086,Altitude:200.7,Speed:0.08231111,Accuracy:2.1,Provider:gps,Time:06/12/2015 08:56:57 EDT				

Execution Time 8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Feature Description		1446	Feature Location		
Breached beaver dam provides outlet to north		Latitude:45.680068,Longitude:-80.440588,Altitude:201.1,Speed:0.0,Accuracy:2.1,Provider:gps,Time:06/12/2015 09:03:43 EDT			
Feature Description		1449	Feature Location		
East input into pool looking downstream		Latitude:45.680018,Longitude:-80.440281,Altitude:202.7,Speed:0.010288889,Accuracy:2.1,Provider:gps,Time:06/12/2015 09:08:01 EDT			
Feature Description		1452	Feature Location		
50m downstream of CI looking upstream		Latitude:45.680225,Longitude:-80.440519,Altitude:203.9,Speed:0.11832222,Accuracy:2.1,Provider:gps,Time:06/12/2015 09:19:00 EDT			
Surrounding Land Use		Forest,Other			
		Mixed coniferous deciduous forest atop bedrock Hwy 69			
Type of Watercourse		Permanent,Natural Channel			
		Drainage channel flowing through meadow to west flows into pool with input from east and drained to north through breached beaver dam			
Input Description		Overland flow			
Water Body Underground / Not As Mapped?		No			
Surrounding Land Topography		Rolling bedrock sloping towards watercourse			
In-Situ Water Quality					
WT (deg. C)	13.4	AT (degC)	18.0	Water Quality Notes Raining	
pH	5.1	Cond. (s/cm)	0.12		
D.O. (mg/L)	5.6	Water Colour	Colourless		
Water Clarity	Clear				

Stream/River Assessment

Seepage Indicators	None				
Stream Morphology			Bank Stability		
Site Length (m)	100.00		Left Bank	5.00	
Channel Dimensions			Right Bank	5.70	
Mean Wetted Width (m)	5.00	Mean Wetted Depth (m)	0.23	Notes Vegetated, no evidence of erosion	
Mean Bankfull Width (m)	5.70	Mean Bankfull Depth (m)	0.32		
Mean Top of Bank Width (m)	5.70	Mean Top of Bank Depth (m)	0.32		
Flow Description	Low to moderate				
Habitat					
Substrate Description	Bedrock detritus muck silt				
Morphological Structure (%)					
Pool	Riffle	Run	Flat		
30.00	20.00	20.00	30.00		
Notes					
Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
Undercut Banks					
Average Depth(m)	0.30	Percent Cover (%)	2.00		
Aquatic Vegetation Species Present	Algae emergent grasses fragrant lily.				
Canopy Cover					
Percent Closed Cover (%)	60-30%				
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
45.00	10.00	45.00			
Cover Description	Trees in overstory and riparian grasses providing shade to the watercourse				

Stream/River Assessment

Left Bank Riparian Vegetation

10m, Meadow shrubs and grades

Right Bank Riparian Vegetation

20m see lb vegetation

Overhanging Vegetation (%)		100.00
	Grasses meadow sweet	
Obstruction to Fish Passage	Low Flow Barrier	
	Insufficient water depth for fish passage at time of assessment	
Barrier Height (M)		





Study Area Comments




Horizontal View of Channel



Stream/River Assessment

Site ID	WB-B-M45-74		Field Crew	Jessica Mendoza Kalynn Parrott		180
Study Area	TLINE B					
Location	T line b					
Project Number	60341251	Air Temp. (degC)	17.0	Weather Notes		
Tablet	AECOM17	Wind Speed (beaufort)	0			
Start Date	6/15/2015 8:25:34 AM	Precipitation	0			
End Date	6/15/2015 9:17:20 AM	Cloud Cover	100.00			
Upstream Endpoint	Latitude:45.573374,Longitude:-80.340627,Altitude:202.3,Speed:0.0051444443,Accuracy:2.1,Provider:gps,Time:06/15/2015 09:00:31 EDT					
Downstream Endpoint	Latitude:45.5731,Longitude:-80.341534,Altitude:200.1,Speed:0.16976666,Accuracy:1.8,Provider:gps,Time:06/15/2015 08:27:27 EDT					
Site Features						
Feature Description	1488	Feature Location				
50m downstream looking upstream from south bank		Latitude:45.573064,Longitude:-80.34161,Altitude:198.1,Speed:0.041155554,Accuracy:2.4,Provider:gps,Time:06/15/2015 08:29:10 EDT				
Feature Description	1491	Feature Location				
Looking across centre line from south bank.		Latitude:45.573262,Longitude:-80.341128,Altitude:200.4,Speed:0.09774444,Accuracy:2.1,Provider:gps,Time:06/15/2015 08:47:40 EDT				
Feature Description	1494	Feature Location				
Looking downstream on centre line from south bank		Latitude:45.573253,Longitude:-80.341126,Altitude:201.0,Speed:0.010288889,Accuracy:2.1,Provider:gps,Time:06/15/2015 08:49:59 EDT				
Feature Description	1497	Feature Location				
Looking upstream from centre line on south bank		Latitude:45.573271,Longitude:-80.34112,Altitude:200.6,Speed:0.015433333,Accuracy:1.8,Provider:gps,Time:06/15/2015 08:50:45 EDT				

Stream/River Assessment

Feature Description	1500	Feature Location	
50 m upstream looking downstream on south bank		Latitude:45.573402,Longitude:-80.340642,Altitude:203.3,Speed:0.025722222,Accuracy:2.1,Provider:gps,Time:06/15/2015 08:59:12 EDT	
Surrounding Land Use	Forest		
	Mixed deciduous coniferous forest atop bedrock		
Type of Watercourse	Permanent,Natural Channel		
	West flowing river confined by north and south vegetated bedrock		
Input Description	Overland flowRoad runoff		
Water Body Underground / Not As Mapped?	No		
Surrounding Land Topography	Rolling bedrock sloping towards watercourse		
In-Situ Water Quality			
WT (deg. C)	18.7	AT (degC)	17.6
pH	4.4	Cond. (s/cm)	0.01
D.O. (mg/L)	7.0	Water Colour	Colourless
Water Clarity	Clear		
Seepage Indicators	None		
Stream Morphology		Bank Stability	
Site Length (m)	100.00	Left Bank	18.00
Channel Dimensions		Right Bank	19.25
Mean Wetted Width (m)	18.00	Mean Wetted Depth (m)	1.00
Mean Bankfull Width (m)	19.25	Mean Bankfull Depth (m)	1.80
Mean Top of Bank Width (m)	19.25	Mean Top of Bank Depth (m)	1.80
Flow Description		Notes	
Low flow		Mostly bedrock	

Execution Time 8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Habitat					
Substrate Description <input type="text" value="Muck, detritus, silt and bedrock"/>					
Morphological Structure (%)					
Pool	Riffle	Run	Flat		
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="100.00"/>		
Notes <input type="text"/>					
Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Undercut Banks					
Average Depth(m)		<input type="text"/>	Percent Cover (%)		<input type="text"/>
Aquatic Vegetation Species Present		<input type="text" value="Arrowhead, yellow palm lily, fragrant water lily"/>			
Canopy Cover					
Percent Closed Cover (%)		<input type="text" value="60-30%"/>			
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
<input type="text" value="50.00"/>	<input type="text" value="30.00"/>	<input type="text"/>	<input type="text" value="20.00"/>	<input type="text"/>	<input type="text"/>
Cover Description		<input type="text" value="Both emergent and submergent vegetation present, some overhanging coniferous tree cover."/>			
Left Bank Riparian Vegetation			Right Bank Riparian Vegetation		
<input type="text" value="Approximately 2 m, mostly meadowsweet and intermittent grasses"/>			<input type="text" value="3 m mostly grasses, aster sp., other herbaceous"/>		
Overhanging Vegetation (%)		<input type="text" value="5.00"/>			
		<input type="text" value="Grass and herbaceous"/>			
Obstruction to Fish Passage		<input type="text" value="None Observed"/>			
		<input type="text"/>			
Barrier Height (M)		<input type="text"/>			

Stream/River Assessment

Study Area Comments





Drained by CSP downstream. Suitable habitat for cyprinids and warm water species. Bullfrogs observed.



Horizontal View of Channel



Stream/River Assessment


Site ID	WB-B-M45-73		Field Crew	Jessica Mendoza Kalynn Parrott		183
Study Area	TLINE B					
Location	T line b					
Project Number	60341251	Air Temp. (degC)	19.0	Weather Notes		
Tablet	AECOM17	Wind Speed (beaufort)	1			
Start Date	6/15/2015 9:43:15 AM	Precipitation	0			
End Date	6/15/2015 10:51:02 AM	Cloud Cover	100.00			
Upstream Endpoint	Latitude:45.570508,Longitude:-80.333693,Altitude:209.2,Speed:0.03601111,Accuracy:1.8,Provider:gps,Time:06/15/2015 09:46:09 EDT					
Downstream Endpoint	Latitude:45.570585,Longitude:-80.334784,Altitude:200.8,Speed:0.20063333,Accuracy:2.4,Provider:gps,Time:06/15/2015 10:18:09 EDT					
Site Features						
Feature Description	1503	Feature Location				
50m upstream looking downstream from left bank		Latitude:45.570502,Longitude:-80.333693,Altitude:208.5,Speed:0.025722222,Accuracy:2.1,Provider:gps,Time:06/15/2015 09:44:30 EDT				
Feature Description	1506	Feature Location				
At center line looking upstream from left bank		Latitude:45.570668,Longitude:-80.33406,Altitude:212.0,Speed:0.03601111,Accuracy:2.1,Provider:gps,Time:				
Feature Description	1509	Feature Location				
At centre line looking downstream from left bank		Latitude:45.570683,Longitude:-80.334062,Altitude:211.6,Speed:0.05658889,Accuracy:1.8,Provider:gps,Time:06/15/2015 10:07:41 EDT				
Feature Description	1512	Feature Location				
50 m downstream looking upstream from left bank		Latitude:45.570583,Longitude:-80.334758,Altitude:200.8,Speed:0.07716667,Accuracy:2.4,Provider:gps,Time:06/15/2015 10:16:00 EDT				

Execution Time 8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Feature Description	1515	Feature Location	
At centre line looking across from right bank		Latitude:45.570596,Longitude:-80.333979,Altitude:206.2,Speed:0.1389,Accuracy:2.1,Provider:gps,Time:06/15/2015 10:31:03 EDT	
Surrounding Land Use	Forest,Wetland		
	Mixed coniferous and deciduous forest atop bedrock open fen with sedges and herbaceous plants. Some dead trees		
Type of Watercourse	Permanent		
	Main defined channel in highly saturated wet meadow. Frequent channels and pools.		
Input Description	Overland flow and highway runoff		
Water Body Underground / Not As Mapped?	No		
Surrounding Land Topography	Bedrock outcrops sloping toward wetted area.		
In-Situ Water Quality			
WT (deg. C)	17.5	AT (degC)	19.9
pH	5.4	Cond. (s/cm)	0.13
D.O. (mg/L)	3.2	Water Colour	Colourless
Water Clarity	Clear		
Seepage Indicators	None		
Stream Morphology		Bank Stability	
Site Length (m)	100.00	Left Bank	3.30
Channel Dimensions		Right Bank	3.30
Mean Wetted Width (m)	3.30	Mean Wetted Depth (m)	0.70
Mean Bankfull Width (m)	3.30	Mean Bankfull Depth (m)	0.70
Mean Top of Bank Width (m)	3.30	Mean Top of Bank Depth (m)	0.70
Flow Description		Notes	
Low flow		Bedrock and heavily vegetated banks	

Execution Time

8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Habitat

Substrate Description

Morphological Structure (%)

Pool

Riffle

Run

Flat

Notes

Instream Cover

Woody Debris

Boulders

Cobble

Aquatic Vegetation

Structures

Total Instream Cover

Undercut Banks

Average Depth(m)

Percent Cover (%)

Aquatic Vegetation
Species Present

Canopy Cover

Percent Closed Cover (%)

Trees

Shrubs

Grasses

Herbaceous

Man Made

Other

Cover Description

Left Bank Riparian Vegetation

Right Bank Riparian Vegetation

Overhanging
Vegetation (%)

Obstruction to Fish
Passage

Barrier Height (M)

Execution Time

8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Study Area Comments





Potential fish habitat. Waterbody flows in an east and northerly direction. Waterbody fed by CSP and upstream wetland across highway 69. Potential beaver activity has led to flooded upstream conditions.




Horizontal View of Channel



Stream/River Assessment

Site ID	WB-B-M47-69		Field Crew	Jessica Mendoza Kalynn Parrott		186
Study Area	TLINE B					
Location	T line b					
Project Number	60341251	Air Temp. (degC)	21.0	Weather Notes		
Tablet	AECOM17	Wind Speed (beaufort)	2			
Start Date	6/15/2015 12:17:11 PM	Precipitation	0			
End Date	6/15/2015 1:20:23 PM	Cloud Cover	100.00			
Upstream Endpoint	Latitude:45.562982,Longitude:-80.315156,Altitude:222.7,Speed:0.33953333,Accuracy:1.5,Provider:gps,Time:06/15/2015 12:19:27 EDT					
Downstream Endpoint	Latitude:45.56376,Longitude:-80.314059,Altitude:222.2,Speed:0.05658889,Accuracy:1.5,Provider:gps,Time:06/15/2015 12:55:37 EDT					
Site Features						
Feature Description	1533	Feature Location				
Upstream 50 m looking downstream on right bank		Latitude:45.562983,Longitude:-80.315169,Altitude:221.7,Speed:0.030866666,Accuracy:2.1,Provider:gps,Time:06/15/2015 12:18:20 EDT				
Feature Description	1536	Feature Location				
Centre line looking across from left bank		Latitude:45.563318,Longitude:-80.315032,Altitude:229.7,Speed:0.0051444443,Accuracy:1.5,Provider:gps,Time:06/15/2015 12:35:46 EDT				
Feature Description	1539	Feature Location				
Centre line looking downstream from left bank		Latitude:45.563315,Longitude:-80.315046,Altitude:230.0,Speed:0.08231111,Accuracy:1.5,Provider:gps,Time:06/15/2015 12:37:25 EDT				
Feature Description	1542	Feature Location				
Centre line looking upstream from left bank		Latitude:45.563311,Longitude:-80.315036,Altitude:230.2,Speed:0.025722222,Accuracy:1.5,Provider:gps,Time:06/15/2015 12:37:52 EDT				

Stream/River Assessment

Feature Description	1545	Feature Location		
50 m downstream looking upstream on left bank		Latitude:45.563759,Longitude:-80.314067,Altitude:221.4,Speed:0.015433333,Accuracy:1.5,Provider:gps,Time:06/15/2015 12:56:07 EDT		
Surrounding Land Use	Other			
	Highway 69 in close proximity to waterbody. Mixed deciduous forest further downstream.			
Type of Watercourse	Permanent			
	Waterbody serves as a drainage ditch from highway 69. Flows into downstream open waterbody			
Input Description	Highway runoff, some overland flow			
Water Body Underground / Not As Mapped?	No			
Surrounding Land Topography	Bedrock outcrops sloping toward waterbody			
In-Situ Water Quality				
WT (deg. C)	<input type="text" value="21.7"/>	AT (degC)	<input type="text" value="21.3"/>	Water Quality Notes
pH	<input type="text" value="6.2"/>	Cond. (s/cm)	<input type="text" value="2.60"/>	
D.O. (mg/L)	<input type="text" value="6.7"/>	Water Colour	<input type="text" value="Colourless"/>	
Water Clarity	<input type="text" value="Clear"/>			
Seepage Indicators	None			
Stream Morphology		Bank Stability		
Site Length (m)	<input type="text" value="100.00"/>	Left Bank	<input type="text" value="18.70"/>	
Channel Dimensions		Right Bank	<input type="text" value="19.30"/>	
Mean Wetted Width (m)	<input type="text" value="18.70"/>	Mean Wetted Depth (m)	<input type="text" value="0.45"/>	Notes Stable, bedrock outcrops
Mean Bankfull Width (m)	<input type="text" value="19.30"/>	Mean Bankfull Depth (m)	<input type="text" value="0.75"/>	
Mean Top of Bank Width (m)	<input type="text" value="19.30"/>	Mean Top of Bank Depth (m)	<input type="text" value="0.75"/>	
Flow Description	Low flow			

Execution Time

8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Habitat

Substrate Description

Morphological Structure (%)

Pool

Riffle

Run

Flat

0.00

100.00

Notes

Instream Cover

Woody Debris

Boulders

Cobble

Aquatic Vegetation

Structures

Total Instream Cover

Undercut Banks

Average Depth(m)

Percent Cover (%)

Aquatic Vegetation
Species Present

Blueflag iris, fragrant water lily, sedges, cattails, grasses

Canopy Cover

Percent Closed Cover (%)

30-1%

Trees

Shrubs

Grasses

Herbaceous

Man Made

Other

80.00

20.00

Cover Description

No overhanging trees.

Left Bank Riparian Vegetation

Approximately 2m, mostly ferns and some herbaceous understory

Right Bank Riparian Vegetation

Approximately 1m, mostly ferns and herbaceous understory

Overhanging
Vegetation (%)

15.00

Grasses and sedges

Obstruction to Fish
Passage

None Observed

Barrier Height (M)

Execution Time

8/19/2015 7:56:12 AM

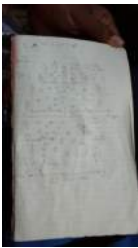
Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Study Area Comments





Suitable fish habitat. Gulls observed. Upstream drainage ditch flows into open slow moving waterbody. Water drained through CSP culvert under highway 69.



Horizontal View of Channel



Stream/River Assessment




Site ID	WB-B-M48-68		Field Crew	Jessica Mendoza Kalynn Parrott		192
Study Area	TLINE B					
Location	T line b					
Project Number	60341251	Air Temp. (degC)	19.0	Weather Notes		
Tablet	AECOM17	Wind Speed (beaufort)	0			
Start Date	6/16/2015 8:14:00 AM	Precipitation	0			
End Date	6/16/2015 9:16:57 AM	Cloud Cover	5.00			
Upstream Endpoint	Latitude:45.558737,Longitude:-80.302505,Altitude:222.2,Speed:0.03601111,Accuracy:2.4,Provider:gps,Time:06/16/2015 08:26:01 EDT					
Downstream Endpoint	Latitude:45.558645,Longitude:-80.302079,Altitude:215.2,Speed:0.69964445,Accuracy:3.0,Provider:gps,Time:06/16/2015 08:49:53 EDT					
Site Features						
Feature Description	1569	Feature Location				
Looking along Cl from south side of road crossing		Latitude:45.558766,Longitude:-80.302462,Altitude:216.4,Speed:0.03601111,Accuracy:3.0,Provider:gps,Time:06/16/2015 08:21:08 EDT				
Feature Description	1572	Feature Location				
Looking upstream from cl		Latitude:45.558741,Longitude:-80.302548,Altitude:223.6,Speed:0.08745556,Accuracy:2.1,Provider:gps,Time:06/16/2015 08:24:27 EDT				
Feature Description	1575	Feature Location				
Looking downstream from cl		Latitude:45.558737,Longitude:-80.302508,Altitude:222.4,Speed:0.36011112,Accuracy:2.4,Provider:gps,Time:06/16/2015 08:25:26 EDT				
Feature Description	1578	Feature Location				
Looking downstream from 50m upstream cl on south bank		Latitude:45.559149,Longitude:-80.302506,Altitude:221.7,Speed:0.03086666,Accuracy:2.1,Provider:gps,Time:06/16/2015 08:31:11 EDT				

Execution Time 8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Feature Description		1581	Feature Location		
Looking upstream from 50m upstream of cl on south bank		Latitude:45.559148,Longitude:-80.302507,Altitude:221.8,Speed:0.066877775,Accuracy:2.4,Provider:gps,Time:06/16/2015 08:32:00 EDT			
Feature Description		1584	Feature Location		
Looking upstream from 50m downstream of cl on west bank		Latitude:45.558747,Longitude:-80.301835,Altitude:217.5,Speed:0.14918889,Accuracy:2.7,Provider:gps,Time:06/16/2015 08:51:21 EDT			
Feature Description		1587	Feature Location		
Looking downstream from 50m downstream of cl on west bank		Latitude:45.558822,Longitude:-80.301697,Altitude:175.6,Speed:0.16976666,Accuracy:2.7,Provider:gps,Time:06/16/2015 08:52:17 EDT			
Surrounding Land Use		Forest,Other Mixed coniferous deciduous forest on bedrock ATV trail with cobbles and gravel lain down			
Type of Watercourse		Permanent,Natural Channel Slow moving water with no cover (pond-like) is emptied by culvert downstream where watercourse transitions into forested brook.			
Input Description		Overland flow			
Water Body Underground / Not As Mapped?		No			
Surrounding Land Topography		Rolling bedrock slopes toward watercourse			
In-Situ Water Quality					
WT (deg. C)	18.1	AT (degC)	19.6	Water Quality Notes Conductivity is a true reading. Water is surprisingly acidic	
pH	3.9	Cond. (s/cm)	0.00		
D.O. (mg/L)	3.6	Water Colour	Colourless		
Water Clarity	Clear				

Execution Time 8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Seepage Indicators	None				
Stream Morphology			Bank Stability		
Site Length (m)	100.00		Left Bank	10.20	
Channel Dimensions			Right Bank	12.70	
Mean Wetted Width (m)	10.20	Mean Wetted Depth (m)	0.63	Notes	The bank consists of bedrock and boulders upstream. Banks are mossy downstream but have some undercut banks about signs of erosion downstream. Upstream is stable while downstream is moderately unstable
Mean Bankfull Width (m)	12.70	Mean Bankfull Depth (m)	1.25		
Mean Top of Bank Width (m)	12.70	Mean Top of Bank Depth (m)	1.25		
Flow Description	Low upstreamHigh downstream				
Habitat					
Substrate Description	Upstream: detritus muck siltDownstream: gravel cobble bedrock sand				
Morphological Structure (%)					
Pool	Riffle	Run	Flat		
5.00	10.00	35.00	50.00		
Notes					
Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
Undercut Banks					
Average Depth(m)	0.10	Percent Cover (%)	30.00		
Aquatic Vegetation Species Present	Watershield yellow water lily fragrant water lily				
Canopy Cover					
Percent Closed Cover (%)	90-60%				
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
90.00	10.00				
Cover Description	Low upstream but 100% upstream				

Stream/River Assessment

Left Bank Riparian Vegetation

Upstream: 5m meadow sweet Downstream: 1m grasses herbaceous plants

Right Bank Riparian Vegetation

Upstream: 1m meadow sweet shrubs and grasses Downstream: 1m herbaceous ferns grasses aster

Overhanging Vegetation (%)	60.00
	Meadow sweet shrubs upstream. Herbaceous plants and grasses downstream
Obstruction to Fish Passage	Natural
	Water flowing quickly over bedrock may impede fish migration
Barrier Height (M)	1.0

Study Area Comments





ATV trail has two cps side by side under cobble/gravel road that mark the centre line crossing and transition from slowing moving flat to forested brook. Centre line crosses brook again 85m downstream but was not assessed in this study area. High flow and bedrock ledges impede fish migration.



Horizontal View of Channel



Stream/River Assessment


Site ID	WB-B-M55-53		Field Crew	Jessica Mendoza Kalynn Parrott		195
Study Area	TLINE B					
Location	East of hwy 69, 50m upstream and downstream of CL					
Project Number	60341251	Air Temp. (degC)	24.0	Weather Notes		
Tablet	AECOM17	Wind Speed (beaufort)	3			
Start Date	6/16/2015 10:17:07 AM	Precipitation	0			
End Date	6/16/2015 11:04:07 AM	Cloud Cover	0.00			
Upstream Endpoint	Latitude:45.511211,Longitude:-80.226797,Altitude:215.7,Speed:0.066877775,Accuracy:2.1,Provider:gps,Time:06/16/2015 10:54:41 EDT					
Downstream Endpoint	Latitude:45.510834,Longitude:-80.227156,Altitude:212.2,Speed:0.8488333,Accuracy:2.1,Provider:gps,Time:06/16/2015 11:04:04 EDT					
Site Features						
Feature Description	1596	Feature Location				
50m downstream of CL looking upstream	Latitude:45.510941,Longitude:-80.227886,Altitude:215.3,Speed:0.05658889,Accuracy:2.1,Provider:gps,Time:06/16/2015 10:24:29 EDT					
Feature Description	1599	Feature Location				
Looking along CL from south bank	Latitude:45.510997,Longitude:-80.227331,Altitude:213.8,Speed:0.041155554,Accuracy:2.1,Provider:gps,Time:06/16/2015 10:36:06 EDT					
Feature Description	1602	Feature Location				
Looking downstream from CL on south bank	Latitude:45.510995,Longitude:-80.227328,Altitude:213.9,Speed:0.2675111,Accuracy:2.1,Provider:gps,Time:06/16/2015 10:37:26 EDT					
Feature Description	1605	Feature Location				
Looking upstream from CL on south bank	Latitude:45.510995,Longitude:-80.227328,Altitude:213.8,Speed:0.030866666,Accuracy:2.1,Provider:gps,Time:06/16/2015 10:38:04 EDT					

Execution Time 8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Feature Description	1608	Feature Location	
Looking downstream from 50m upstream	Latitude:45.51121,Longitude:-80.226796,Altitude:215.8,Speed:0.020577777,Accuracy:2.4,Provider:gps,Time:06/16/2015 10:53:46 EDT		
Surrounding Land Use	Forest Mixed coniferous/deciduous forest atop bedrock		
Type of Watercourse	Permanent,Natural Channel Slow westward moving river dammed by beavers. Flows through large CSP under Hwy 69.		
Input Description	Overland flow		
Water Body Underground / Not As Mapped?	No		
Surrounding Land Topography	Rolling bedrock sloping towards watercourse		
In-Situ Water Quality			
WT (deg. C)	21.7	AT (degC)	24.6
pH	5.0	Cond. (s/cm)	0.12
D.O. (mg/L)	5.7	Water Colour	Colourless
Water Clarity	Clear		
Seepage Indicators	None		
Stream Morphology	Bank Stability		
Site Length (m)	100.00	Left Bank	24.00
Channel Dimensions		Right Bank	24.60
Mean Wetted Width (m)	24.00	Mean Wetted Depth (m)	1.50
Mean Bankfull Width (m)	24.60	Mean Bankfull Depth (m)	1.75
Mean Top of Bank Width (m)	24.60	Mean Top of Bank Depth (m)	1.75
Flow Description	Low		

Stream/River Assessment

Habitat					
Substrate Description <input type="text" value="Detritus muck silt"/>					
Morphological Structure (%)					
Pool	Riffle	Run	Flat		
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="100.00"/>		
Notes <input type="text"/>					
Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Undercut Banks					
Average Depth(m)		<input type="text"/>	Percent Cover (%)		<input type="text"/>
Aquatic Vegetation Species Present		<input type="text" value="Fragrant Pond Lily, Emergent Grasses, Water Shield, Algae"/>			
Canopy Cover					
Percent Closed Cover (%)		<input type="text" value="60-30%"/>			
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
<input type="text" value="50.00"/>	<input type="text"/>	<input type="text" value="50.00"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Cover Description		<input type="text"/>			
Left Bank Riparian Vegetation			Right Bank Riparian Vegetation		
<input type="text" value="0.5m grasses & shrubs"/>			<input type="text" value="1m grasses & shrubs"/>		
Overhanging Vegetation (%)		<input type="text" value="5.00"/>			
		<input type="text" value="Grasses"/>			
Obstruction to Fish Passage		<input type="text" value="Natural"/>			
		<input type="text" value="Beaver dam"/>			
Barrier Height (M)		<input type="text" value="2.0"/>			

Stream/River Assessment





Study Area Comments



Horizontal View of Channel



Stream/River Assessment


Site ID	WB-B-M56-51		Field Crew	Jessica Mendoza Kalynn Parrott		198
Study Area	TLINE B					
Location	East of hwy 69, 50m upstream and downstream of CL					
Project Number	60341251	Air Temp. (degC)	20.0	Weather Notes		
Tablet	AECOM17	Wind Speed (beaufort)	4			
Start Date	6/16/2015 11:25:14 AM	Precipitation	0			
End Date	6/16/2015 12:10:00 PM	Cloud Cover	40.00			
Upstream Endpoint	Latitude:45.507223,Longitude:-80.221944,Altitude:221.8,Speed:0.1028889,Accuracy:2.1,Provider:gps,Time:06/16/2015 11:57:06 EDT					
Downstream Endpoint	Latitude:45.506446,Longitude:-80.2217,Altitude:218.6,Speed:0.041155554,Accuracy:1.8,Provider:gps,Time:06/16/2015 11:29:02 EDT					
Site Features						
Feature Description	1611	Feature Location				
50m downstream of CL looking upstream on west bank	Latitude:45.506446,Longitude:-80.221694,Altitude:218.5,Speed:0.06173333,Accuracy:1.8,Provider:gps,Time:06/16/2015 11:27:04 EDT					
Feature Description	1614	Feature Location				
Looking north along CL from south bank	Latitude:45.506446,Longitude:-80.2217,Altitude:218.6,Speed:0.03086666,Accuracy:1.8,Provider:gps,Time:06/16/2015 11:29:05 EDT					
Feature Description	1617	Feature Location				
Looking downstream of CL	Latitude:45.506872,Longitude:-80.22175,Altitude:223.8,Speed:0.07716667,Accuracy:1.8,Provider:gps,Time:06/16/2015 11:40:11 EDT					
Feature Description	1620	Feature Location				
Looking upstream of CL	Latitude:45.506875,Longitude:-80.221769,Altitude:223.1,Speed:0.01028889,Accuracy:1.8,Provider:gps,Time:06/16/2015 11:41:21 EDT					

Execution Time 8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Feature Description		1623		Feature Location			
50m upstream of CL looking downstream				Latitude:45.50722,Longitude:-80.221947,Altitude:222.0,Speed:0.03601111,Accuracy:2.1,Provider:gps,Time:06/16/2015 11:55:39 EDT			
Surrounding Land Use		Forest,Other					
		Mixed coniferous/deciduous forest atop bedrock					
Type of Watercourse		Permanent,Natural Channel					
		Southwest flowing creek through wet meadow with defined channel					
Input Description		Overland flow, Road runoff					
Water Body Underground / Not As Mapped?		No					
Surrounding Land Topography		Rolling bedrock sloping towards watercourse					
In-Situ Water Quality							
WT (deg. C)	<input type="text" value="20.5"/>	AT (degC)	<input type="text" value="17.5"/>	Water Quality Notes			
pH	<input type="text" value="5.0"/>	Cond. (s/cm)	<input type="text" value="0.02"/>				
D.O. (mg/L)	<input type="text" value="1.2"/>	Water Colour	<input type="text" value="Colourless"/>				
Water Clarity	<input type="text" value="Clear"/>						
Seepage Indicators		<input type="text" value="None"/>					
Stream Morphology							
Site Length (m)		<input type="text" value="100.00"/>		Bank Stability			
Channel Dimensions				Left Bank		<input type="text" value="1.08"/>	
				Right Bank		<input type="text" value="3.92"/>	
Mean Wetted Width (m)		<input type="text" value="1.08"/>	Mean Wetted Depth (m)		<input type="text" value="0.27"/>	Notes Rooted grasses and cattails along banks	
Mean Bankfull Width (m)		<input type="text" value="3.92"/>	Mean Bankfull Depth (m)		<input type="text" value="0.33"/>		
Mean Top of Bank Width (m)		<input type="text" value="3.92"/>	Mean Top of Bank Depth (m)		<input type="text" value="0.33"/>		
Flow Description		<input type="text" value="Low to stagnant"/>					

Execution Time

8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Habitat					
Substrate Description <input type="text" value="Detritus muck silt"/>					
Morphological Structure (%)					
Pool	Riffle	Run	Flat		
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="100.00"/>		
Notes <input type="text"/>					
Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Undercut Banks					
Average Depth(m)		<input type="text"/>	Percent Cover (%)		<input type="text"/>
Aquatic Vegetation Species Present		<input type="text" value="Algae, Broadleaf arrowhead, Emergent Grasses"/>			
Canopy Cover					
Percent Closed Cover (%)		<input type="text" value="90-60%"/>			
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
<input type="text"/>	<input type="text"/>	<input type="text" value="100.00"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Cover Description		<input type="text"/>			
Left Bank Riparian Vegetation			Right Bank Riparian Vegetation		
<input type="text" value="1m along road, Aster, Raspberry"/>			<input type="text" value="2m between wet meadow and forest: ferns and shrubs"/>		
Overhanging Vegetation (%)		<input type="text" value="100.00"/>			
		<input type="text" value="Grasses"/>			
Obstruction to Fish Passage		<input type="text" value="Low Flow Barrier"/>			
		<input type="text" value="Low flow during summer may prevent fish migration since only saturated areas are present at the time of investigation"/>			
Barrier Height (M)		<input type="text"/>			

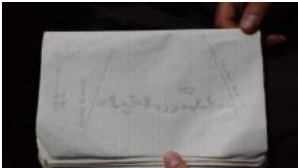
Stream/River Assessment

Study Area Comments





Wet meadow with occasional pools and channels alongside active channel. Connectivity may be low, especially during low flow periods in the summer. Not ideal fish habitat.




Horizontal View of Channel




Stream/River Assessment

Site ID	WB-B-M62-30		Field Crew	Jessica Mendoza Justin Munro		201
Study Area	TLINE B					
Location	South of Hoover Road					
Project Number	60341251	Air Temp. (degC)	20.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	1			
Start Date	6/22/2015 12:23:28 PM	Precipitation	0			
End Date	6/22/2015 1:49:57 PM	Cloud Cover	30.00			
Upstream Endpoint	Latitude:45.491059,Longitude:-80.136687,Altitude:213.6,Speed:0.030866666,Accuracy:2.1,Provider:gps,Time:06/22/2015 12:25:03 EDT					
Downstream Endpoint	Latitude:45.49051,Longitude:-80.13622,Altitude:220.0,Speed:0.07716667,Accuracy:2.1,Provider:gps,Time:06/22/2015 12:51:58 EDT					
Site Features						
Feature Description	1653	Feature Location				
Looking downstream from 50m upstream	Latitude:45.491059,Longitude:-80.136687,Altitude:213.6,Speed:0.010288889,Accuracy:2.1,Provider:gps,Time:06/22/2015 12:25:26 EDT					
Feature Description	1656	Feature Location				
Looking southwest across CL	Latitude:45.490689,Longitude:-80.136564,Altitude:211.4,Speed:0.03601111,Accuracy:1.75,Provider:gps,Time:06/22/2015 12:34:49 EDT					
Feature Description	1659	Feature Location				
Looking downstream from CL	Latitude:45.490614,Longitude:-80.136696,Altitude:213.5,Speed:0.025722222,Accuracy:1.75,Provider:gps,Time:06/22/2015 12:36:59 EDT					
Feature Description	1662	Feature Location				
Looking upstream from CL	Latitude:45.490616,Longitude:-80.136687,Altitude:214.2,Speed:0.030866666,Accuracy:2.0,Provider:gps,Time:06/22/2015 12:38:01 EDT					

Stream/River Assessment

Feature Description	1665	Feature Location	
Beaver dam		Latitude:45.490613,Longitude:-80.13668,Altitude:215.9,Speed:0.07716667,Accuracy:1.75,Provider:gps,Time:06/22/2015 12:45:41 EDT	

Feature Description	1668	Feature Location	
Looking upstream 50m downstream from CL		Latitude:45.490461,Longitude:-80.136172,Altitude:219.6,Speed:0.05144445,Accuracy:1.75,Provider:gps,Time:06/22/2015 12:53:09 EDT	

Surrounding Land Use	Forest
	Mixed coniferous/deciduous forest

Type of Watercourse	Permanent,Natural Channel
	Small brook crosses road and flows in south west direction

Input Description	Overland flow
Water Body Underground / Not As Mapped?	No
Surrounding Land Topography	Rolling bedrock slopes toward watercourse

In-Situ Water Quality				
WT (deg. C)	23.2	AT (degC)	20.6	Water Quality Notes
pH	4.5	Cond. (s/cm)	0.00	
D.O. (mg/L)	5.1	Water Colour	Colourless	
Water Clarity	Clear			

Seepage Indicators	None

Stream/River Assessment

Stream Morphology				Bank Stability	
Site Length (m)		<input type="text" value="100.00"/>		Left Bank <input type="text" value="0.30"/>	
Channel Dimensions				Right Bank <input type="text" value="2.50"/>	
Mean Wetted Width (m)		<input type="text" value="0.30"/>	Mean Wetted Depth (m)		<input type="text" value="0.18"/>
Mean Bankfull Width (m)		<input type="text" value="2.50"/>	Mean Bankfull Depth (m)		<input type="text" value="0.38"/>
Mean Top of Bank Width (m)		<input type="text" value="2.50"/>	Mean Top of Bank Depth (m)		<input type="text" value="0.38"/>
Notes <input type="text" value="Vegetated banks or bedrock"/>					

Flow Description	<input type="text" value="Low to moderate"/>
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Habitat
Substrate Description <input type="text" value="Gravel sand silt and boulder"/>



Morphological Structure (%)			
Pool	Riffle	Run	Flat
<input type="text" value="20.00"/>	<input type="text" value="25.00"/>	<input type="text" value="5.00"/>	<input type="text" value="50.00"/>
Notes	<input type="text"/>		

Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Undercut Banks					
Average Depth(m)	<input type="text"/>	Percent Cover (%)		<input type="text"/>	
Aquatic Vegetation Species Present	<input type="text" value="Algae aquatic grasses yellow pond lily"/>				





Canopy Cover					
Percent Closed Cover (%)		<input type="text" value="100-90%"/>			
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
<input type="text" value="10.00"/>	<input type="text"/>	<input type="text" value="90.00"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Cover Description	<input type="text"/>				

Left Bank Riparian Vegetation		Right Bank Riparian Vegetation	
<input type="text" value="4m grass"/>		<input type="text" value="6m grass"/>	



Stream/River Assessment

Overhanging Vegetation (%)		100.00
	Grasses	
Obstruction to Fish Passage	Natural	
	Old beaver dam 4m wide allows water to seep but not fish passage	
Barrier Height (M)	2.0	
Study Area Comments		
No migration upstream due to beaver dam. Open floodplain with lots of grasses		
		
Horizontal View of Channel		
		

Stream/River Assessment

Site ID	WB-B-M62-29	Field Crew	Jessica Mendoza Justin Munro		204
Study Area	TLINE B				
Location	South of Hoover Road				
Project Number	60341251	Air Temp. (degC)	19.0	Weather Notes	
Tablet	AECOM10	Wind Speed (beaufort)	1		
Start Date	6/22/2015 1:14:05 PM	Precipitation	0		
End Date	6/22/2015 1:55:54 PM	Cloud Cover	40.00		
Upstream Endpoint	Latitude:45.491052,Longitude:-80.137666,Altitude:220.5,Speed:0.030866666,Accuracy:1.75,Provider:gps,Time:06/22/2015 01:38:37 EDT				
Downstream Endpoint	Latitude:45.490111,Longitude:-80.137501,Altitude:220.0,Speed:0.030866666,Accuracy:1.75,Provider:gps,Time:06/22/2015 01:18:09 EDT				
Site Features					
Feature Description	1671	Feature Location			
Looking upstream from 50m downstream	Latitude:45.49011,Longitude:-80.137482,Altitude:219.1,Speed:0.025722222,Accuracy:2.1,Provider:gps,Time:06/22/2015 01:16:26 EDT				
Feature Description	1674	Feature Location			
Ledge barrier	Latitude:45.490111,Longitude:-80.137501,Altitude:220.0,Speed:0.06173333,Accuracy:1.75,Provider:gps,Time:06/22/2015 01:18:12 EDT				
Feature Description	1677	Feature Location			
Looking along CL	Latitude:45.49025,Longitude:-80.13754,Altitude:220.2,Speed:0.010288889,Accuracy:2.1,Provider:gps,Time:06/22/2015 01:24:57 EDT				
Feature Description	1680	Feature Location			
Looking upstream from CL	Latitude:45.490507,Longitude:-80.137606,Altitude:222.3,Speed:0.015433333,Accuracy:2.4,Provider:gps,Time:06/22/2015 01:27:15 EDT				

Stream/River Assessment

Feature Description	1683	Feature Location		
Looking downstream from CL	Latitude:45.490508,Longitude:-80.137606,Altitude:222.3,Speed:0.26236665,Accuracy:2.1,Provider:gps,Time:06/22/2015 01:27:51 EDT			
Feature Description	1686	Feature Location		
Looking downstream from 50m upstream	Latitude:45.490998,Longitude:-80.137643,Altitude:219.5,Speed:0.38583332,Accuracy:2.1,Provider:gps,Time:06/22/2015 01:37:38 EDT			
Surrounding Land Use	Forest			
	Mixed coniferous/deciduous forest			
Type of Watercourse	Permanent,Natural Channel			
	Southward flowing creek, flows into wet meadow beneath road			
Input Description	Overland flow			
Water Body Underground / Not As Mapped?	No			
Surrounding Land Topography	Rolling bedrock sloping toward watercourse			
In-Situ Water Quality				
WT (deg. C)	18.2	AT (degC)	19.6	Water Quality Notes Lots of red brown gelatinous algae
pH	5.1	Cond. (s/cm)	0.00	
D.O. (mg/L)	6.0	Water Colour	Yellow/Brown	
Water Clarity	Turbid			
Seepage Indicators	None			

Stream/River Assessment

Stream Morphology				Bank Stability	
Site Length (m)		<input type="text" value="100.00"/>		Left Bank <input type="text" value="1.10"/>	
Channel Dimensions				Right Bank <input type="text" value="2.70"/>	
Mean Wetted Width (m)		<input type="text" value="1.10"/>	Mean Wetted Depth (m)		<input type="text" value="0.10"/>
Mean Bankfull Width (m)		<input type="text" value="2.70"/>	Mean Bankfull Depth (m)		<input type="text" value="0.30"/>
Mean Top of Bank Width (m)		<input type="text" value="2.70"/>	Mean Top of Bank Depth (m)		<input type="text" value="0.30"/>
				Notes <div>Mossy and vegetated banks</div>	

Flow Description	<div>Low</div>
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Habitat	
Substrate Description	<div>Muck silt</div>

Morphological Structure (%)			
Pool	Riffle	Run	Flat
<input type="text" value="15.00"/>	<input type="text" value="10.00"/>	<input type="text" value="45.00"/>	<input type="text" value="30.00"/>
Notes	<div></div>		

Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Undercut Banks					
Average Depth(m)	<input type="text"/>	Percent Cover (%)	<input type="text"/>		
Aquatic Vegetation Species Present	<div>Algae emergent grass</div>				

Canopy Cover					
Percent Closed Cover (%)		<input type="text" value="100-90%"/>			
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
<input type="text" value="30.00"/>	<input type="text" value="20.00"/>	<input type="text" value="40.00"/>	<input type="text" value="10.00"/>	<input type="text"/>	<input type="text"/>
Cover Description	<div>Plants are growing in low flow and shallow areas</div>				

Left Bank Riparian Vegetation	Right Bank Riparian Vegetation
<div>1.5m ferns, saplings, herbaceous plants</div>	<div>2m ferns, saplings, herbaceous plants</div>



Execution Time

8/19/2015 7:56:12 AM





Filter Start Date 6/1/2015

Filter End Date 6/30/2015


Stream/River Assessment

Overhanging Vegetation (%)	<div>90.00</div>	
	Grasses, herbaceous plants and shrubs	
Obstruction to Fish Passage	Natural	
	Ledges created by fallen trees	
Barrier Height (M)	<div>0.5</div>	
Study Area Comments	<div>Lots of algae throughout shaded watercourse</div> <div></div>	
Horizontal View of Channel	<div></div>	

Stream/River Assessment

Site ID	WB-B-M61-26		Field Crew	Jessica Mendoza Justin Munro		207
Study Area	TLINE B					
Location	North of Hoover Road					
Project Number	60341251	Air Temp. (degC)	20.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	1			
Start Date	6/22/2015 2:33:25 PM	Precipitation	0			
End Date	6/22/2015 4:59:12 PM	Cloud Cover	15.00			
Upstream Endpoint	Latitude:45.490634,Longitude:-80.140652,Altitude:218.0,Speed:0.1389,Accuracy:1.75,Provider:gps,Time:06/22/2015 02:36:27 EDT					
Downstream Endpoint	Latitude:45.489676,Longitude:-80.140015,Altitude:230.9,Speed:0.32924443,Accuracy:2.4,Provider:gps,Time:06/22/2015 03:01:44 EDT					
Site Features						
Feature Description	1689	Feature Location				
50m upstream of CL on east bank looking downstream		Latitude:45.490634,Longitude:-80.140651,Altitude:216.5,Speed:0.025722222,Accuracy:1.75,Provider:gps,Time:06/22/2015 02:35:00 EDT				
Feature Description	1692	Feature Location				
Looking west along CL		Latitude:45.49023,Longitude:-80.140329,Altitude:225.3,Speed:0.4167,Accuracy:2.0,Provider:gps,Time:06/22/2015 02:47:07 EDT				
Feature Description	1695	Feature Location				
Looking upstream from CL		Latitude:45.490105,Longitude:-80.140291,Altitude:223.9,Speed:0.051444445,Accuracy:1.75,Provider:gps,Time:06/22/2015 02:48:38 EDT				
Feature Description	1698	Feature Location				
Looking downstream from CL		Latitude:45.4901,Longitude:-80.140287,Altitude:224.5,Speed:0.015433333,Accuracy:1.75,Provider:gps,Time:06/22/2015 02:49:38 EDT				

Stream/River Assessment

Feature Description		1701 Feature Location			
50m downstream from CL looking upstream		Latitude:45.489599,Longitude:-80.140106,Altitude:232.1,Speed:0.0051444443,Accuracy:2.1,Provider:gps,Time:06/22/2015 03:03:22 EDT			
Surrounding Land Use		Forest			
		Mixed coniferous/deciduous forest atop bedrock			
Type of Watercourse		Permanent,Natural Channel			
		Series of beaver ponds flowing south			
Input Description		Overland flow			
Water Body Underground / Not As Mapped?		No			
Surrounding Land Topography		Rolling bedrock sloping towards watercourse			
In-Situ Water Quality					
WT (deg. C)	<input type="text" value="22.3"/>	AT (degC)	<input type="text" value="20.7"/>	Water Quality Notes	
pH	<input type="text" value="5.3"/>	Cond. (s/cm)	<input type="text" value="0.00"/>		
D.O. (mg/L)	<input type="text" value="2.8"/>	Water Colour	<input type="text" value="Colourless"/>		
Water Clarity	<input type="text" value="Clear"/>				
Seepage Indicators		<input type="text" value="None"/>			
Stream Morphology					
Site Length (m)		<input type="text" value="100.00"/>			
Channel Dimensions		Bank Stability			
Mean Wetted Width (m)		<input type="text" value="31.20"/>	Mean Wetted Depth (m)	<input type="text" value="0.80"/>	Notes Low relief causes banks to gently slope and not erode into water
Mean Bankfull Width (m)		<input type="text" value="35.30"/>	Mean Bankfull Depth (m)	<input type="text" value="1.40"/>	
Mean Top of Bank Width (m)		<input type="text" value="35.30"/>	Mean Top of Bank Depth (m)	<input type="text" value="1.40"/>	
Flow Description		<input type="text" value="Low"/>			

Execution Time

8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Habitat					
Substrate Description	Detritus, muck and silt				
Morphological Structure (%)					
Pool	Riffle	Run	Flat		
10.00	10.00		80.00		
Notes					
Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
Undercut Banks					
Average Depth(m)		Percent Cover (%)			
Aquatic Vegetation Species Present	Bladderwort periphyton				
Canopy Cover					
Percent Closed Cover (%)	60-30%				
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
100.00					
Cover Description	Dead trees				
Left Bank Riparian Vegetation			Right Bank Riparian Vegetation		
1m herbaceous plants and saplings			1m herbaceous plants and saplings		
Overhanging Vegetation (%)	0.00				
	None				
Obstruction to Fish Passage	Natural				
	Beaver dams				
Barrier Height (M)	3.0				

Stream/River Assessment

Study Area Comments





A series of beaver dams, water flows south to Hoover Road. River moves downstream under road via a 4inch pipe.




Horizontal View of Channel



Stream/River Assessment

Site ID	WB-B-M72-13	Field Crew	Amy Ingriselli Ami Arsenault		210
Study Area	TLINE B				
Location	On T line b south of Long Lake Estates Road and Highway 124				
Project Number	60341251	Air Temp. (degC)	17.0	Weather Notes	
Tablet	AECOM12	Wind Speed (beaufort)	0		
Start Date	6/22/2015 10:21:54 AM	Precipitation	0		
End Date	6/22/2015 11:27:24 AM	Cloud Cover	0.00		
Upstream Endpoint	Latitude:45.428462,Longitude:-80.012127,Altitude:226.4,Speed:0.05658889,Accuracy:1.5,Provider:gps,Time:06/22/2015 11:25:47 EDT				
Downstream Endpoint	Latitude:45.427627,Longitude:-80.012618,Altitude:221.6,Speed:0.12861112,Accuracy:1.75,Provider:gps,Time:06/22/2015 10:24:57 EDT				
Site Features					
Feature Description	1704	Feature Location			
Downstream limit of study area 50 m DS of t line. Facing upstream		Latitude:45.427625,Longitude:-80.012605,Altitude:220.2,Speed:0.01028889,Accuracy:1.75,Provider:gps,Time:06/22/2015 10:23:46 EDT			
Feature Description	1707	Feature Location			
Looking upstream from base of rapids		Latitude:45.427907,Longitude:-80.012534,Altitude:234.6,Speed:0.03601111,Accuracy:2.25,Provider:gps,Time:06/22/2015 10:49:39 EDT			
Feature Description	1710	Feature Location			
Facing downstream (south) from approx centreline		Latitude:45.427996,Longitude:-80.012456,Altitude:222.3,Speed:0.11832222,Accuracy:2.1,Provider:gps,Time:06/22/2015 11:07:33 EDT			
Feature Description	1713	Feature Location			
Facing upstream from approximately CL		Latitude:45.427996,Longitude:-80.012456,Altitude:222.3,Speed:0.01543333,Accuracy:2.1,Provider:gps,Time:06/22/2015 11:08:04 EDT			

Stream/River Assessment

Feature Description		1716	Feature Location		
Facing downstream from upstream limit of study area		Latitude:45.428463,Longitude:-80.012127,Altitude:227.1,Speed:0.010288889,Accuracy:1.5,Provider:gps,Time:06/22/2015 11:25:55 EDT			
Surrounding Land Use		Forest			
		Forest and bedrock sloping toward watercourse			
Type of Watercourse		Permanent			
		Flowing watercourse with riffle/run/pool sequences over coarse substrate			
Input Description		Watercourse and some overland flow from sloped upland forest			
Water Body Underground / Not As Mapped?		No			
Surrounding Land Topography		Forested bedrock sloping towards watercourse			
In-Situ Water Quality					
WT (deg. C)	<input type="text" value="21.7"/>	AT (degC)	<input type="text" value="17.5"/>	Water Quality Notes	
pH	<input type="text" value="5.7"/>	Cond. (s/cm)	<input type="text" value="0.03"/>		
D.O. (mg/L)	<input type="text" value="7.4"/>	Water Colour	<input type="text" value="Colourless"/>		
Water Clarity	<input type="text" value="Clear"/>				
Seepage Indicators		<input type="text" value="None"/>			
Stream Morphology					
Site Length (m)		<input type="text" value="100.00"/>		Bank Stability	
Channel Dimensions				Left Bank	<input type="text" value="11.00"/>
				Right Bank	<input type="text" value="13.00"/>
Mean Wetted Width (m)	<input type="text" value="11.00"/>	Mean Wetted Depth (m)	<input type="text" value="0.40"/>	Notes	<input type="text" value="Banks composed of rock and/or are heavily vegetated"/>
Mean Bankfull Width (m)	<input type="text" value="13.00"/>	Mean Bankfull Depth (m)	<input type="text" value="0.60"/>		
Mean Top of Bank Width (m)	<input type="text" value="14.00"/>	Mean Top of Bank Depth (m)	<input type="text" value="0.87"/>		
Flow Description		<input type="text" value="High. Riffles down gradual slope. Water level appears to be high, terrestrial vegetation on island is submerged"/>			

Execution Time

8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Habitat					
Substrate Description <input type="text" value="Gravel, cobble, boulder, sand, bedrock"/>					
Morphological Structure (%)					
Pool	Riffle	Run	Flat		
<input type="text" value="15.00"/>	<input type="text" value="60.00"/>	<input type="text" value="25.00"/>	<input type="text"/>		
Notes <input type="text"/>					
Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Undercut Banks					
Average Depth(m)		<input type="text" value="0.25"/>	Percent Cover (%)		<input type="text" value="15.00"/>
Aquatic Vegetation Species Present		<input type="text" value="Tapegrass, algae"/>			
Canopy Cover					
Percent Closed Cover (%)		<input type="text" value="100-90%"/>			
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
<input type="text" value="70.00"/>	<input type="text" value="10.00"/>	<input type="text"/>	<input type="text" value="20.00"/>	<input type="text"/>	<input type="text"/>
Cover Description		<input type="text" value="Overhanging trees providing most of shade. Overhanging ferns abundant"/>			
Left Bank Riparian Vegetation			Right Bank Riparian Vegetation		
<input type="text" value="6 m royal fern, mountain holly, grasses"/>			<input type="text" value="2 m eastern white cedar, royal fern"/>		
Overhanging Vegetation (%)		<input type="text" value="60.00"/>			
		<input type="text" value="Overhanging royal ferns are abundant"/>			
Obstruction to Fish Passage		<input type="text" value="Natural"/>			
		<input type="text" value="Slope and high velocity, rapids over bedrock/boulder slope impedes passage for some fish with low burst speed"/>			
Barrier Height (M)		<input type="text" value="3.0"/>			

Stream/River Assessment

Study Area Comments





Aerated, clean coarse substrates (cobble gravel boulder) at base of riffle 50 m DS of t line is suitable spawning habitat for walleye, maybe white sucker. Egg masses observed in backwater pools. Not an amphibian mass or string. Snail?




Horizontal View of Channel



Stream/River Assessment

Site ID	WB-B-M77-7		Field Crew	Jessica Mendoza Justin Munro		213
Study Area	TLINE B					
Location	North of McDougall Rd., Haines Creek southwest bank					
Project Number	60341251	Air Temp. (degC)	17.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	5			
Start Date	6/23/2015 11:55:23 AM	Precipitation	0			
End Date	6/23/2015 12:48:57 PM	Cloud Cover	100.00			
Upstream Endpoint	Latitude:45.363962,Longitude:-79.970777,Altitude:184.8,Speed:0.17491111,Accuracy:2.4,Provider:gps,Time:06/23/2015 12:34:30 EDT					
Downstream Endpoint	Latitude:45.364023,Longitude:-79.972037,Altitude:196.3,Speed:0.1389,Accuracy:2.4,Provider:gps,Time:06/23/2015 12:31:27 EDT					
Site Features						
Feature Description	1752	Feature Location				
Looking along CL		Latitude:45.363861,Longitude:-79.97121,Altitude:165.1,Speed:0.025722222,Accuracy:2.4,Provider:gps,Time:06/23/2015 11:58:01 EDT				
Feature Description	1755	Feature Location				
Looking downstream from CL		Latitude:45.363938,Longitude:-79.971232,Altitude:185.2,Speed:0.39097777,Accuracy:2.4,Provider:gps,Time:06/23/2015 12:14:06 EDT				
Feature Description	1758	Feature Location				
Looking upstream from CL		Latitude:45.364,Longitude:-79.971436,Altitude:190.2,Speed:0.12346666,Accuracy:2.4,Provider:gps,Time:06/23/2015 12:16:22 EDT				
Feature Description	1761	Feature Location				
Downstream 50m looking upstream		Latitude:45.363959,Longitude:-79.97213,Altitude:196.2,Speed:0.020577777,Accuracy:3.0,Provider:gps,Time:06/23/2015 12:29:48 EDT				

Stream/River Assessment

Feature Description	1764	Feature Location	
Looking downstream from 50m upstream	Latitude:45.363988,Longitude:-79.970743,Altitude:184.2,Speed:0.05658889,Accuracy:2.4,Provider:gps,Time:06/23/2015 12:35:04 EDT		
Surrounding Land Use	Forest Mixed deciduous/coniferous forest		
Type of Watercourse	Permanent,Natural Channel River flows in northeasterly direction, dammed upstream outside of study area		
Input Description	Overland flow		
Water Body Underground / Not As Mapped?	No		
Surrounding Land Topography	Rolling bedrock sloping toward watercourse. Some cliffs present to the north		
In-Situ Water Quality			
WT (deg. C)	19.7	AT (degC)	17.5
pH	6.1	Cond. (s/cm)	0.02
D.O. (mg/L)	4.4	Water Colour	Colourless
Water Clarity	Clear	Water Quality Notes 20mm precipitation overnight	
Seepage Indicators	None		
Stream Morphology	Bank Stability		
Site Length (m)	100.00	Left Bank	46.70
Channel Dimensions		Right Bank	47.70
Mean Wetted Width (m)	46.70	Mean Wetted Depth (m)	1.00
Mean Bankfull Width (m)	47.70	Mean Bankfull Depth (m)	1.20
Mean Top of Bank Width (m)	47.70	Mean Top of Bank Depth (m)	1.20
Flow Description	Moderate; dam released some water at 9am		
Notes Vegetated banks with good roots, boulders present on LB of US study area			

Execution Time

8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Habitat

Substrate Description Silt, sand, muck, cobble

Morphological Structure (%)

Pool

Riffle

Run

Flat

100.00

Notes

Instream Cover

Woody Debris

Boulders

Cobble

Aquatic Vegetation

Structures

Total Instream Cover

Undercut Banks

Average Depth(m)

Percent Cover (%)

Aquatic Vegetation
Species Present

Emergent vegetation: broadleaf arrowhead, fragrant pond lily, yellow pond lily. Submergent vegetation: grasses and filamentous algae.

Canopy Cover

Percent Closed Cover (%)

30-1%

Trees

Shrubs

Grasses

Herbaceous

Man Made

Other

90.00

10.00

Cover Description

Left Bank Riparian Vegetation

5m shrubs and saplings

Right Bank Riparian Vegetation

10m ferns, pines, dogwood saplings

Overhanging
Vegetation (%)

1.00

Tree branches of firs, pines, maples

Obstruction to Fish
Passage

Man-Made

Weir just downstream of McDougall Rd.

Barrier Height (M)

Execution Time

8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Study Area Comments




Recent precipitation (20mm overnight) and release of dam upstream at 9am make river more swollen than normal



Horizontal View of Channel




Stream/River Assessment

Site ID	WB-B-M80-3		Field Crew	Amy Ingriselli Ami Arsenault		216
Study Area	TLINE B					
Location	North of highway 518, in hydro corridor					
Project Number	60341251	Air Temp. (degC)	20.0	Weather Notes		
Tablet	AECOM12	Wind Speed (beaufort)	5			
Start Date	6/23/2015 10:43:36 AM	Precipitation	0			
End Date	6/23/2015 11:14:00 AM	Cloud Cover	100.00			
Upstream Endpoint	Latitude:45.340467,Longitude:-79.956807,Altitude:229.3,Speed:0.15433334,Accuracy:1.5,Provider:gps,Time:06/23/2015 10:52:10 EDT					
Downstream Endpoint	Latitude:45.340467,Longitude:-79.956807,Altitude:229.3,Speed:0.13375555,Accuracy:1.5,Provider:gps,Time:06/23/2015 10:52:20 EDT					
Site Features						
Feature Description	1782	Feature Location				
Facing downstream/east from edge of property line, looking along channel towards CL (approximately 20 m from CL).	Latitude:45.340647,Longitude:-79.956733,Altitude:229.4,Speed:0.087455556,Accuracy:1.5,Provider:gps,Time:06/23/2015 10:44:50 EDT					
Feature Description	1785	Feature Location				
Upstream limit of study area, facing east	Latitude:45.340476,Longitude:-79.956804,Altitude:229.7,Speed:0.17491111,Accuracy:1.5,Provider:gps,Time:06/23/2015 10:49:34 EDT					
Feature Description	1788	Feature Location				
View of moist overland drainage within hydro corridor, facing northeast	Latitude:45.340476,Longitude:-79.956804,Altitude:229.7,Speed:0.05658889,Accuracy:1.5,Provider:gps,Time:06/23/2015 10:50:13 EDT					
Surrounding Land Use	Residential,Meadow,Other					
	Hydro corridor and private property. Hydro controls vegetation growth. Private property forested					

Stream/River Assessment

Type of Watercourse	Intermittent		
	In hydro corridor, watercourse is surface drained with saturated soils down slope. In private, wooded property channel becomes more defined but still no flow at this time. Not direct fish habitat, no connectivity upstream. Surface runoff seasonal drainage only.		
Input Description	Surface water drain only		
Water Body Underground / Not As Mapped?	No		
Surrounding Land Topography	Hydro meadow in row sloping towards forest in private property		
In-Situ Water Quality			
WT (deg. C)		AT (degC)	20.0
pH		Cond. (s/cm)	
D.O. (mg/L)		Water Colour	Turbid
Water Clarity	Turbid		
Seepage Indicators	None		
Stream Morphology	Bank Stability		
Site Length (m)	40.00	Left Bank	0.10
Channel Dimensions		Right Bank	0.50
Mean Wetted Width (m)	0.10	Mean Wetted Depth (m)	0.02
Mean Bankfull Width (m)	0.50	Mean Bankfull Depth (m)	0.18
Mean Top of Bank Width (m)	0.40	Mean Top of Bank Depth (m)	0.18
		Notes	No flow, heavily vegetated in hydro corridor.
Flow Description	No flow. Few small stagnant shallow pools.		
Habitat			
Substrate Description	Silt sand bedrock detritus		
Morphological Structure (%)			
Pool	Riffle	Run	Flat
			100.00
Notes			

Stream/River Assessment





Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Undercut Banks					
Average Depth(m)	<input type="text" value="0.10"/>	Percent Cover (%)		<input type="text" value="10.00"/>	
Aquatic Vegetation Species Present	<input type="text" value="None"/>				
Canopy Cover					
Percent Closed Cover (%)	<input type="text" value="100-90%"/>				
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
<input type="text" value="50.00"/>	<input type="text"/>	<input type="text" value="50.00"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Cover Description	<input type="text" value="Dense overhanging grasses in hydro row, trees in forested private property"/>				
Left Bank Riparian Vegetation			Right Bank Riparian Vegetation		
<input type="text" value="2 m grass in hydro row, 1 m ferns in forest"/>			<input type="text" value="2 m grass in hydro row, 1 m ferns in forest"/>		
Overhanging Vegetation (%)	<input type="text" value="50.00"/>				
	<input type="text" value="Grasses in hydro row only. Ferns in forest but scarce"/>				
Obstruction to Fish Passage	<input type="text" value="Low Flow Barrier"/>				
	<input type="text" value="Seasonal/intermittent flow only. Surface runoff drainage down slope in hydro row, channel does not continue upstream of row"/>				
Barrier Height (M)	<input type="text" value="3.0"/>				
Study Area Comments					
<input type="text" value="Does not directly support fish. Intermittent, low flow, seasonal surface drainage runoff from hydro row only, no connectivity upstream. No access to private property east of hydro row. Only watercourse west of CL was assessed."/>					

Stream/River Assessment

Horizontal View of Channel



Stream/River Assessment


Site ID	WB-B-M79-4	Field Crew	Amy Ingriselli Ami Arsenault		219
Study Area	TLINE B				
Location	North of highway 518, in hydro corridor				
Project Number	60341251	Air Temp. (degC)	20.0	Weather Notes	
Tablet	AECOM12	Wind Speed (beaufort)	5		
Start Date	6/23/2015 11:56:05 AM	Precipitation	0		
End Date	6/23/2015 1:23:08 PM	Cloud Cover	100.00		
Upstream Endpoint	Latitude:45.345926,Longitude:-79.960166,Altitude:207.1,Speed:0.041155554,Accuracy:2.0,Provider:gps,Time:06/23/2015 11:57:33 EDT				
Downstream Endpoint	Latitude:45.345771,Longitude:-79.959038,Altitude:207.2,Speed:0.03601111,Accuracy:2.1,Provider:gps,Time:06/23/2015 12:15:07 EDT				
Site Features					
Feature Description	1791	Feature Location			
Taken at upstream end of survey location, facing downstream towards centerline		Latitude:45.345925,Longitude:-79.96017,Altitude:207.7,Speed:0.03601111,Accuracy:2.0,Provider:gps,Time:06/23/2015 11:58:06 EDT			
Feature Description	1794	Feature Location			
Facing upstream from centerline		Latitude:45.345961,Longitude:-79.959563,Altitude:210.5,Speed:0.025722222,Accuracy:2.4,Provider:gps,Time:06/23/2015 12:40:25 EDT			
Feature Description	1797	Feature Location			
Facing downstream at centerline		Latitude:45.34597,Longitude:-79.959571,Altitude:210.5,Speed:0.07202222,Accuracy:2.4,Provider:gps,Time:06/23/2015 12:40:53 EDT			
Feature Description	1800	Feature Location			
Facing upstream (east) at downstream end location		Latitude:45.345722,Longitude:-79.959018,Altitude:209.2,Speed:0.05658889,Accuracy:1.75,Provider:gps,Time:06/23/2015 12:28:18 EDT			

Execution Time 8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Feature Description	1803	Feature Location		
Meadow stream and slumped banks	Latitude:45.346065,Longitude:-79.959802,Altitude:214.0,Speed:0.010288889,Accuracy:2.0,Provider:gps,Time:06/23/2015 12:58:24 EDT			
Surrounding Land Use	Forest,Meadow,Other			
	Hydro corridor to the west of centerline location. Watercourse runs through a forest to the east and meadow to the west of centerline			
Type of Watercourse	Permanent,Natural Channel			
	Watercourse morphology changes east and west of centerline. East of centerline stream flows through a steeply sloped forested area. Large boulders and cobbles dominate most of the watercourse substrate, with sand and gravel. Tree canopy quite dense in the forest, large trees offering shade for watercourse. Shrubs (hobble bush, maples) and ferns provide bank stabilization and overhanging shade. Some large woody debris crossing stream in forest. Large boulders in stream creating natural riffles and pools. No riparian zone due to steep bank slopes of forest. To the west of centerline, the stream runs through a meadow in the hydro corridor right-of-way. Meadow is dominated by tall grasses and herbaceous plants (goldenrod, mint, spotted Joe pieweed). Watercourse banks are slightly unstable, with evidence of slumping, exposed soils and undercut banks. Watercourse is more narrow here. Estimated riparian zone 18m (total), comprised of grasses and herbaceous plants.			
Input Description	Overland flow from surrounding topography			
Water Body Underground / Not As Mapped?	No			
Surrounding Land Topography	Forested area: steep forest slopes on either side of watercourse. Meadow area: rounded hills slope towards watercourse in hydro corridor right of way			
In-Situ Water Quality				
WT (deg. C)	<input type="text"/>	AT (degC)	<input type="text"/>	Water Quality Notes <input type="text"/>
pH	<input type="text"/>	Cond. (s/cm)	<input type="text"/>	
D.O. (mg/L)	<input type="text"/>	Water Colour	<input type="text"/>	
Water Clarity	<input type="text"/>			
Seepage Indicators	None			
	<input type="text"/>			

Stream/River Assessment

Stream Morphology				Bank Stability	
Site Length (m)		<input type="text" value="100.00"/>		Left Bank <input type="text" value="2.40"/>	
Channel Dimensions				Right Bank <input type="text" value="2.54"/>	
Mean Wetted Width (m)		<input type="text" value="2.40"/>	Mean Wetted Depth (m)		<input type="text" value="0.12"/>
Mean Bankfull Width (m)		<input type="text" value="2.54"/>	Mean Bankfull Depth (m)		<input type="text" value="0.24"/>
Mean Top of Bank Width (m)		<input type="text" value="2.54"/>	Mean Top of Bank Depth (m)		<input type="text" value="0.24"/>
Notes <div>Within meadow, few fallen banks, slumping and some exposed soils. No problem with forested bank stability</div>					
Flow Description		<div>Moderate flow conditions (rain event last night)</div>			
Habitat					
Substrate Description		<div>In forested area: sand, gravel, boulder, cobble, bedrock. In open grassy meadow: sand, gravel, silt.</div>			
Morphological Structure (%)					
Pool		Riffle		Run	
<input type="text" value="20.00"/>		<input type="text" value="15.00"/>		<input type="text" value="65.00"/>	
Flat		<input type="text"/>			
Notes		<div></div>			
Instream Cover					
Woody Debris		Boulders		Cobble	
<input type="text"/>		<input type="text"/>		<input type="text"/>	
Aquatic Vegetation		Structures		Total Instream Cover	
<input type="text"/>		<input type="text"/>		<input type="text"/>	
Undercut Banks					
Average Depth(m)		<input type="text" value="0.15"/>	Percent Cover (%)		<input type="text" value="75.00"/>
Aquatic Vegetation Species Present		<div>Water tolerant grasses</div>			
Canopy Cover					
Percent Closed Cover (%)		<input type="text" value="30-1%"/>			
Trees		Shrubs		Grasses	
<input type="text" value="90.00"/>		<input type="text" value="10.00"/>		<input type="text"/>	
Herbaceous		Man Made		Other	
<input type="text"/>		<input type="text"/>		<input type="text"/>	
Cover Description		<div>Tree canopy dominated cover</div>			

Left Bank Riparian Vegetation

Riparian in meadow section of watercourse estimated at 6m. No riparian zone in forested section of watercourse.

Right Bank Riparian Vegetation





Riparian in meadow section of watercourse estimated at 12m - dominated by grasses and herbaceous plants. No riparian zone in forested section of watercourse due to steep forested slopes.

Stream/River Assessment

Overhanging Vegetation (%)	80.00
	Holly bush, maple saplings, ferns, grasses
Obstruction to Fish Passage	None Observed
Barrier Height (M)	
<div>Study Area Comments</div> <div>Stream morphology changes east and west of centerline. To the west of centerline, watercourse meanders through grassy meadow under hydro corridor. Sand and gravel substrate and overhanging grasses dominate watercourse. To the east of the centerline, watercourse flows through forested area with boulders, cobbles, sand and gravel. Trees dominate canopy, giving lots of shade to stream. Natural riffles and pools created by boulders in watercourse. Water quality was not collected.</div> <div>Horizontal View of Channel</div>	



Stream/River Assessment


Site ID	WB-B-M66-52		Field Crew	Jessica Mendoza Justin Munro		222
Study Area	TLINE B					
Location	North of Nine Mile Lake, west of Hydro One corridor					
Project Number	60341251	Air Temp. (degC)	17.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	4			
Start Date	6/24/2015 10:16:18 AM	Precipitation	0			
End Date	6/24/2015 11:02:18 AM	Cloud Cover	50.00			
Upstream Endpoint	Latitude:45.509339,Longitude:-80.075621,Altitude:225.4,Speed:0.0463,Accuracy:2.4,Provider:gps,Time:06/24/2015 10:26:02 EDT					
Downstream Endpoint	Latitude:45.510247,Longitude:-80.075779,Altitude:232.8,Speed:0.44756666,Accuracy:2.4,Provider:gps,Time:06/24/2015 10:57:20 EDT					
Site Features						
Feature Description	1818	Feature Location				
50m upstream of CL looking downstream (atop beaver dam)	Latitude:45.509339,Longitude:-80.075621,Altitude:225.4,Speed:0.025722222,Accuracy:2.4,Provider:gps,Time:06/24/2015 10:26:03 EDT					
Feature Description	1821	Feature Location				
Looking west along CL	Latitude:45.509332,Longitude:-80.075642,Altitude:225.5,Speed:0.020577777,Accuracy:3.0,Provider:gps,Time:06/24/2015 10:27:14 EDT					
Feature Description	1824	Feature Location				
Looking upstream from CL (on breached beaver dam)	Latitude:45.509725,Longitude:-80.075775,Altitude:229.0,Speed:0.05658889,Accuracy:2.1,Provider:gps,Time:06/24/2015 10:33:02 EDT					
Feature Description	1827	Feature Location				
Looking downstream from CL (on breached beaver dam)	Latitude:45.509744,Longitude:-80.0758,Altitude:227.7,Speed:0.030866666,Accuracy:3.0,Provider:gps,Time:06/24/2015 10:35:18 EDT					

Execution Time 8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Feature Description	1830	Feature Location		
Looking upstream from 50m downstream	Latitude:45.510289,Longitude:-80.075766,Altitude:231.9,Speed:0.10288889,Accuracy:2.4,Provider:gps,Time:06/24/2015 10:58:08 EDT			
Surrounding Land Use	Forest Pine dominant mixed coniferous/deciduous forest			
Type of Watercourse	Permanent,Natural Channel Series of beaver dams (4) cause pooling of water and lots of fallen logs provide cover.			
Input Description	Overland flow			
Water Body Underground / Not As Mapped?	Water course not mapped.			
Surrounding Land Topography	Rolling bedrock sloping towards watercourse			
In-Situ Water Quality				
WT (deg. C)	18.5	AT (degC)	17.2	Water Quality Notes
pH	5.4	Cond. (s/cm)	0.01	
D.O. (mg/L)	3.8	Water Colour	Yellow/Brown	
Water Clarity	Clear			
Seepage Indicators	None			
Stream Morphology	Bank Stability			
Site Length (m)	100.00	Left Bank	11.20	
Channel Dimensions		Right Bank	17.00	
Mean Wetted Width (m)	11.20	Mean Wetted Depth (m)	0.55	Notes Low relief and vegetation prevent high erosion or undercuts
Mean Bankfull Width (m)	17.00	Mean Bankfull Depth (m)	1.50	
Mean Top of Bank Width (m)	17.00	Mean Top of Bank Depth (m)	1.50	
Flow Description	Low to stagnant			

Execution Time

8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Habitat					
Substrate Description	Silt sand detritus				
Morphological Structure (%)					
Pool	Riffle	Run	Flat		
50.00			50.00		
Notes					
Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
Undercut Banks					
Average Depth(m)		Percent Cover (%)			
Aquatic Vegetation Species Present	Submergent vegetation, Emergent grasses				
Canopy Cover					
Percent Closed Cover (%)	90-60%				
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
90.00		10.00			
Cover Description	Mature trees on both banks provide cover				
Left Bank Riparian Vegetation			Right Bank Riparian Vegetation		
5m grasses, herbaceous plants, sedges, ferns			3m grasses, herbaceous plants, sedges, ferns		
Overhanging Vegetation (%)	10.00				
	Grasses				
Obstruction to Fish Passage	Natural				
	Beaver dam upstream prevents fish migration, while 2 beaver dams downstream impede migration				
Barrier Height (M)	1.5				

Stream/River Assessment





Study Area Comments
Beaver ponds feed into large lake to north



Horizontal View of Channel



Stream/River Assessment

Site ID	WB-B-M65-47	Field Crew	Jessica Mendoza Justin Munro	225
Study Area	TLINE B			
Location	North of Nine Mile Lake between Marsh Lake and the Hydro One corridor			
Project Number	60341251	Air Temp. (degC)	19.0	Weather Notes
Tablet	AECOM10	Wind Speed (beaufort)	2	
Start Date	6/24/2015 1:28:00 PM	Precipitation	0	
End Date	6/24/2015 2:13:18 PM	Cloud Cover	95.00	
Upstream Endpoint	Latitude:45.502092,Longitude:-80.090838,Altitude:227.5,Speed:0.20577778,Accuracy:2.4,Provider:gps,Time:06/24/2015 01:51:07 EDT			
Downstream Endpoint	Latitude:45.503014,Longitude:-80.091342,Altitude:227.4,Speed:0.19034444,Accuracy:2.4,Provider:gps,Time:06/24/2015 01:59:56 EDT			
Site Features				
Feature Description	1842	Feature Location		
Looking along CL (west)	Latitude:45.50269,Longitude:-80.091085,Altitude:217.3,Speed:0.3704,Accuracy:3.0,Provider:gps,Time:06/24/2015 01:32:35 EDT			
Feature Description	1845	Feature Location		
Looking upstream from CL	Latitude:45.502528,Longitude:-80.091115,Altitude:227.3,Speed:0.066877775,Accuracy:2.4,Provider:gps,Time:06/24/2015 01:34:16 EDT			
Feature Description	1848	Feature Location		
Looking downstream from CL	Latitude:45.502511,Longitude:-80.091129,Altitude:227.7,Speed:0.12346666,Accuracy:2.4,Provider:gps,Time:06/24/2015 01:35:04 EDT			
Feature Description	1851	Feature Location		
Looking downstream from 50m upstream	Latitude:45.502216,Longitude:-80.090881,Altitude:225.1,Speed:0.66877776,Accuracy:1.8,Provider:gps,Time:06/24/2015 01:49:32 EDT			

Execution Time 8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Feature Description		1854	Feature Location		
Looking upstream from 50m downstream		Latitude:45.502946,Longitude:-80.091258,Altitude:226.2,Speed:0.67392224,Accuracy:2.1,Provider:gps,Time:06/24/2015 01:57:28 EDT			
Surrounding Land Use		Forest			
		Coniferous dominant forest			
Type of Watercourse		Permanent,Natural Channel			
		Wetland upstream of study area flows into deep channel between two bedrock outcrops that is dammed downstream by beavers (within study area)			
Input Description		Overland flow			
Water Body Underground / Not As Mapped?		No			
Surrounding Land Topography		Rolling bedrock sloping towards watercourse			
In-Situ Water Quality					
WT (deg. C)	<input type="text" value="23.3"/>	AT (degC)	<input type="text" value="19.2"/>	Water Quality Notes	
pH	<input type="text" value="5.3"/>	Cond. (s/cm)	<input type="text" value="0.00"/>		
D.O. (mg/L)	<input type="text" value="4.1"/>	Water Colour	<input type="text" value="Yellow/Brown"/>		
Water Clarity	<input type="text" value="Clear"/>				
Seepage Indicators		<input type="text" value="None"/>			
Stream Morphology					
Site Length (m)		<input type="text" value="100.00"/>		Bank Stability	
Channel Dimensions				Left Bank	<input type="text" value="14.20"/>
				Right Bank	<input type="text" value="17.30"/>
Mean Wetted Width (m)	<input type="text" value="14.20"/>	Mean Wetted Depth (m)	<input type="text" value="0.90"/>	Notes	<input type="text" value="White quartz bedrock slopes into channel"/>
Mean Bankfull Width (m)	<input type="text" value="17.30"/>	Mean Bankfull Depth (m)	<input type="text" value="2.00"/>		
Mean Top of Bank Width (m)	<input type="text" value="17.30"/>	Mean Top of Bank Depth (m)	<input type="text" value="2.00"/>		
Flow Description		<input type="text" value="Moderate"/>			

Execution Time

8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Habitat

Substrate Description Sand, silt before dam

Morphological Structure (%)

Pool

Riffle

Run

Flat

10.00

5.00

10.00

75.00

Notes

Instream Cover

Woody Debris

Boulders

Cobble

Aquatic Vegetation

Structures

Total Instream Cover

Undercut Banks

Average Depth(m)

Percent Cover (%)

Aquatic Vegetation
Species Present

No vegetation

Canopy Cover

Percent Closed Cover (%)

30-1%

Trees

Shrubs

Grasses

Herbaceous

Man Made

Other

95.00

5.00

Cover Description

Mainly open watercourse with little cover provided by canopy

Left Bank Riparian Vegetation

2m grass

Right Bank Riparian Vegetation

2m grass

Overhanging
Vegetation (%)

0.00

None- bedrock and sand on banks prevents vegetation establishment/growth

Obstruction to Fish
Passage

Natural

Beaver dam at downstream reach

Barrier Height (M)

0.5

Execution Time

8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Study Area Comments

Channel is confined by bedrock and is likely prone to high flow during spring that would result in fast moving, deep water due to inability to expand laterally



Horizontal View of Channel



Stream/River Assessment

Site ID	WB-B-M67-24	Field Crew	Jessica Mendoza Justin Munro	228
Study Area	TLINE B			
Location	East of Nine Mile Lake near Hydro One corridor			
Project Number	60341251	Air Temp. (degC)	17.0	Weather Notes
Tablet	AECOM10	Wind Speed (beaufort)	1	
Start Date	6/25/2015 9:51:41 AM	Precipitation	0	
End Date	6/25/2015 10:56:58 AM	Cloud Cover	100.00	
Upstream Endpoint	Latitude:45.486899,Longitude:-80.050112,Altitude:247.0,Speed:0.0926,Accuracy:3.6,Provider:gps,Time:06/25/2015 09:55:17 EDT			
Downstream Endpoint	Latitude:45.486957,Longitude:-80.049228,Altitude:234.5,Speed:0.20063333,Accuracy:2.4,Provider:gps,Time:06/25/2015 10:30:35 EDT			
Site Features				
Feature Description	1899	Feature Location		
50m upstream of CL looking downstream (east)		Latitude:45.4869,Longitude:-80.050119,Altitude:247.0,Speed:0.041155554,Accuracy:3.6,Provider:gps,Time:06/25/2015 09:55:54 EDT		
Feature Description	1902	Feature Location		
Beaver pond at CL		Latitude:45.486866,Longitude:-80.050196,Altitude:248.1,Speed:0.066877775,Accuracy:2.25,Provider:gps,Time:06/25/2015 10:07:31 EDT		
Feature Description	1905	Feature Location		
Looking upstream from 50m downstream		Latitude:45.486874,Longitude:-80.048823,Altitude:248.9,Speed:0.025722222,Accuracy:3.0,Provider:gps,Time:06/25/2015 10:33:50 EDT		
Feature Description	1908	Feature Location		
Looking upstream from CL		Latitude:45.486945,Longitude:-80.048991,Altitude:247.8,Speed:0.21606667,Accuracy:3.6,Provider:gps,Time:06/25/2015 10:37:32 EDT		

Stream/River Assessment

Feature Description	1911	Feature Location		
Looking downstream from CL	Latitude:45.486813,Longitude:-80.049447,Altitude:240.6,Speed:0.051444445,Accuracy:2.4,Provider:gps,Time:06/25/2015 10:50:39 EDT			
Surrounding Land Use	Forest Coniferous dominant forest atop bedrock			
Type of Watercourse	Permanent,Natural Channel Creek connecting two long north-south flowing lakes that has been dammed by beaver activity			
Input Description	Overland flow			
Water Body Underground / Not As Mapped?	No			
Surrounding Land Topography	Rolling bedrock sloping towards watercourse			
In-Situ Water Quality				
WT (deg. C)	15.5	AT (degC)	17.2	Water Quality Notes
pH	5.2	Cond. (s/cm)	0.00	
D.O. (mg/L)	4.7	Water Colour	Yellow/Brown	
Water Clarity	Clear			
Seepage Indicators	None			
Stream Morphology	Bank Stability			
Site Length (m)	100.00	Left Bank	13.10	
Channel Dimensions		Right Bank	16.50	
Mean Wetted Width (m)	13.10	Mean Wetted Depth (m)	0.73	Notes Confined by vegetated bedrock that gently slopes into watercourse upstream of beaver dam. Downstream of beaver dam, water flows through soft soil with evidence of erosion and slumping and older dried up channels
Mean Bankfull Width (m)	16.50	Mean Bankfull Depth (m)	1.20	
Mean Top of Bank Width (m)	16.50	Mean Top of Bank Depth (m)	1.20	

Execution Time

8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Flow Description	LowSome water courses under dried creek beds and appears downstream				
Habitat					
Substrate Description	Silt detritus bedrock upstream. Sand silt gravel downstream				
Morphological Structure (%)					
Pool	Riffle	Run	Flat		
20.00	20.00		60.00		
Notes					
Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
Undercut Banks					
Average Depth(m)	0.10	Percent Cover (%)	10.00		
Aquatic Vegetation Species Present	Water shield, yellow pond lily, periphyton, meadowsweet				
Canopy Cover					
Percent Closed Cover (%)	90-60%				
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
90.00	10.00				
Cover Description	Pines and maples on banks provide shade while meadow sweet along banks and in water provide cover				
Left Bank Riparian Vegetation			Right Bank Riparian Vegetation		
1m meadow sweet herbaceous plants ferns saplings			1m see lb vegetation		
Overhanging Vegetation (%)	30.00				
	Meadowsweet and grasses				

Stream/River Assessment

Obstruction to Fish Passage	Natural
	Beaver pond
Barrier Height (M)	0.3
Study Area Comments	
Low flow may inhibit fish migration, especially at steep portion of creek downstream of beaver pond. This site (WB-B-M67-24) is hydrologically connected to WB-B-M68-21, and proposed transmission line runs along the north-south axis of the downstream lake of this site but is not considered part of this study area. Consider moving transmission line to the east to decrease ecological footprint.	
Horizontal View of Channel	

Stream/River Assessment

Site ID	WB-B-M68-21	Field Crew	Jessica Mendoza Justin Munro	231
Study Area	TLINE B			
Location	East of 9 mile lake			
Project Number	60341251	Air Temp. (degC)	18.0	Weather Notes
Tablet	AECOM10	Wind Speed (beaufort)	0	
Start Date	6/25/2015 11:12:56 AM	Precipitation	0	
End Date	6/25/2015 11:55:16 AM	Cloud Cover	100.00	
Upstream Endpoint	Latitude:45.482291,Longitude:-80.046093,Altitude:248.2,Speed:0.020577777,Accuracy:2.4,Provider:gps,Time:06/25/2015 11:39:47 EDT			
Downstream Endpoint	Latitude:45.482359,Longitude:-80.046895,Altitude:245.0,Speed:0.0051444443,Accuracy:2.1,Provider:gps,Time:06/25/2015 11:14:07 EDT			
Site Features				
Feature Description	1914	Feature Location		
Looking upstream from 50m downstream	Latitude:45.482359,Longitude:-80.046895,Altitude:245.0,Speed:0.07202222,Accuracy:2.1,Provider:gps,Time:06/25/2015 11:14:16 EDT			
Feature Description	1917	Feature Location		
Looking across cl	Latitude:45.482289,Longitude:-80.046071,Altitude:248.7,Speed:0.025722222,Accuracy:2.1,Provider:gps,Time:06/25/2015 11:37:59 EDT			
Feature Description	1920	Feature Location		
Looking downstream from cl	Latitude:45.482288,Longitude:-80.046075,Altitude:248.6,Speed:0.06173333,Accuracy:2.4,Provider:gps,Time:06/25/2015 11:38:41 EDT			
Feature Description	1923	Feature Location		
Looking upstream from cl	Latitude:45.482289,Longitude:-80.046075,Altitude:248.5,Speed:0.07716667,Accuracy:2.4,Provider:gps,Time:06/25/2015 11:39:16 EDT			

Execution Time 8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Feature Description	1926	Feature Location		
Looking downstream from 50m upstream	Latitude:45.482364,Longitude:-80.045589,Altitude:239.7,Speed:0.2212111,Accuracy:2.4,Provider:gps,Time:06/25/2015 11:43:45 EDT			
Surrounding Land Use	Forest,Meadow			
	Conifer dominant forest and grass and sedge dominant meadow			
Type of Watercourse	Permanent,Natural Channel			
	Stream courses through lowlying grass and sedge meadow			
Input Description	Overland flow			
Water Body Underground / Not As Mapped?	No			
Surrounding Land Topography	Rolling bedrock slopes towards meadow			
In-Situ Water Quality				
WT (deg. C)	19.2	AT (degC)	18.5	Water Quality Notes
pH	5.7	Cond. (s/cm)	0.02	
D.O. (mg/L)	7.8	Water Colour	Colourless	
Water Clarity	Clear			
Seepage Indicators	None			
Stream Morphology				
Site Length (m)	100.00	Bank Stability		
Channel Dimensions	Left Bank		1.70	
	Right Bank		157.60	
Mean Wetted Width (m)	1.70	Mean Wetted Depth (m)	0.36	Notes Very low relief prevents high erosion
Mean Bankfull Width (m)	157.60	Mean Bankfull Depth (m)	0.62	
Mean Top of Bank Width (m)	157.60	Mean Top of Bank Depth (m)	0.62	
Flow Description	Low			

Stream/River Assessment

Habitat

Substrate Description

Morphological Structure (%)

Pool

Riffle

Run

Flat

Notes

Instream Cover

Woody Debris

Boulders

Cobble

Aquatic Vegetation

Structures

Total Instream Cover

Undercut Banks

Average Depth(m)

Percent Cover (%)

Aquatic Vegetation
Species Present

Yellow pond lily, broadleaf arrowhead, emergent grasses, submergent weeds

Canopy Cover

Percent Closed Cover (%)

Trees

Shrubs

Grasses

Herbaceous

Man Made

Other

Cover Description

No trees on bank to provide cover and grasses do not provide much cover

Left Bank Riparian Vegetation

33m grasses and sedges

Right Bank Riparian Vegetation

33m grasses and sedges

Overhanging
Vegetation (%)

5.00

Grasses do not overhang

Obstruction to Fish
Passage

None Observed

Barrier Height (M)

Execution Time

8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Study Area Comments

Horizontal View of Channel

Stream/River Assessment

Site ID	WB-B-M69-20	Field Crew	Jessica Mendoza Justin Munro	234
Study Area	TLINE B			
Location	East of nine mile lake			
Project Number	60341251	Air Temp. (degC)	21.0	Weather Notes
Tablet	AECOM10	Wind Speed (beaufort)	2	
Start Date	6/25/2015 1:12:45 PM	Precipitation	0	
End Date	6/25/2015 2:12:09 PM	Cloud Cover	100.00	
Upstream Endpoint	Latitude:45.475701,Longitude:-80.040541,Altitude:248.2,Speed:0.23664445,Accuracy:2.1,Provider:gps,Time:06/25/2015 01:46:44 EDT			
Downstream Endpoint	Latitude:45.475078,Longitude:-80.041292,Altitude:257.0,Speed:0.78195554,Accuracy:2.4,Provider:gps,Time:06/25/2015 02:02:28 EDT			
Site Features				
Feature Description	1929	Feature Location		
Looking along cl	Latitude:45.475306,Longitude:-80.041124,Altitude:248.0,Speed:0.05658889,Accuracy:2.1,Provider:gps,Time:06/25/2015 01:14:49 EDT			
Feature Description	1932	Feature Location		
Looking upstream from cl	Latitude:45.475326,Longitude:-80.041107,Altitude:247.8,Speed:0.17491111,Accuracy:2.4,Provider:gps,Time:06/25/2015 01:16:09 EDT			
Feature Description	1935	Feature Location		
Looking downstream from cl	Latitude:45.475352,Longitude:-80.041102,Altitude:247.5,Speed:0.28294444,Accuracy:2.7,Provider:gps,Time:06/25/2015 01:17:06 EDT			
Feature Description	1938	Feature Location		
Looking downstream from 50m upstream	Latitude:45.475809,Longitude:-80.040584,Altitude:250.5,Speed:0.087455556,Accuracy:2.4,Provider:gps,Time:06/25/2015 01:47:32 EDT			

Stream/River Assessment

Feature Description	1941	Feature Location		
Looking upstream from 50m downstream	Latitude:45.475116,Longitude:-80.041628,Altitude:260.5,Speed:0.030866666,Accuracy:2.4,Provider:gps,Time:06/25/2015 02:04:02 EDT			
Surrounding Land Use	Forest			
	Conifer dominant forest atop bedrock			
Type of Watercourse	Permanent,Natural Channel			
	Dammed creek moves through bedrock outcrops			
Input Description	Overland flow			
Water Body Underground / Not As Mapped?	No			
Surrounding Land Topography	Rolling bedrock sloping towards watercourse			
In-Situ Water Quality				
WT (deg. C)	21.9	AT (degC)	21.0	Water Quality Notes
pH	5.8	Cond. (s/cm)	0.00	
D.O. (mg/L)	5.8	Water Colour	Yellow/Brown	
Water Clarity	Clear			
Seepage Indicators	None			
Stream Morphology		Bank Stability		
Site Length (m)	100.00	Left Bank	15.30	
Channel Dimensions		Right Bank	22.70	
Mean Wetted Width (m)	15.30	Mean Wetted Depth (m)	0.30	Notes Low relief or bedrock outcrops
Mean Bankfull Width (m)	22.70	Mean Bankfull Depth (m)	0.67	
Mean Top of Bank Width (m)	22.70	Mean Top of Bank Depth (m)	0.67	
Flow Description	Low flow			

Stream/River Assessment

Habitat					
Substrate Description		Muck silt detritus			
Morphological Structure (%)					
Pool	Riffle	Run	Flat		
			100.00		
Notes					
Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
Undercut Banks					
Average Depth(m)			Percent Cover (%)		
Aquatic Vegetation Species Present		Emergent vegetation. Sedges, bog laurel, periphyton, yellow pond lily, water shield, bladderwort, sundew			
Canopy Cover					
Percent Closed Cover (%)		90-60%			
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
10.00	30.00	30.00	30.00		
Cover Description		Downstream and at cl emergent vegetation provides 100% cover while open water can be seen upstream			
Left Bank Riparian Vegetation			Right Bank Riparian Vegetation		
4m Meadow sweet, raspberry, alder, fern, sphagnum			3m Meadow sweet, raspberry, alder, fern, sphagnum		
Overhanging Vegetation (%)		5.00			
		Tall grasses			
Obstruction to Fish Passage		Natural			
		Beaver dam			
Barrier Height (M)		1.0			

Stream/River Assessment

Study Area Comments

More a series of connected ponds than a stream or river

Horizontal View of Channel

Stream/River Assessment

Site ID	WB-B-M69-19	Field Crew	Jessica Mendoza Justin Munro	237
Study Area	TLINE B			
Location	East of nine mile lake			
Project Number	60341251	Air Temp. (degC)	18.0	Weather Notes
Tablet	AECOM10	Wind Speed (beaufort)	3	
Start Date	6/25/2015 2:17:19 PM	Precipitation	0	
End Date	6/25/2015 3:42:13 PM	Cloud Cover	100.00	
Upstream Endpoint	Latitude:45.474432,Longitude:-80.039792,Altitude:252.0,Speed:0.087455556,Accuracy:3.9,Provider:gps,Time:06/25/2015 02:31:26 EDT			
Downstream Endpoint	Latitude:45.473842,Longitude:-80.04068,Altitude:252.5,Speed:0.07716667,Accuracy:2.4,Provider:gps,Time:06/25/2015 02:18:30 EDT			
Site Features				
Feature Description	1944	Feature Location		
50m downstream of cl looking upstream		Latitude:45.473842,Longitude:-80.04068,Altitude:252.5,Speed:0.08231111,Accuracy:3.0,Provider:gps,Time:06/25/2015 02:18:39 EDT		
Feature Description	1947	Feature Location		
Looking along cl		Latitude:45.474166,Longitude:-80.040214,Altitude:253.9,Speed:0.2315,Accuracy:2.7,Provider:gps,Time:06/25/2015 02:25:05 EDT		
Feature Description	1950	Feature Location		
Looking upstream of cl		Latitude:45.474164,Longitude:-80.040176,Altitude:256.8,Speed:0.11317778,Accuracy:2.7,Provider:gps,Time:06/25/2015 02:27:42 EDT		
Feature Description	1953	Feature Location		
Looking downstream from cl		Latitude:45.474166,Longitude:-80.040177,Altitude:256.9,Speed:0.025722222,Accuracy:2.7,Provider:gps,Time:06/25/2015 02:28:38 EDT		

Stream/River Assessment

Feature Description	1956	Feature Location		
Looking downstream from 50m upstream	Latitude:45.474423,Longitude:-80.039768,Altitude:254.6,Speed:0.18005556,Accuracy:2.4,Provider:gps,Time:06/25/2015 02:30:32 EDT			
Surrounding Land Use	Forest			
	Mixed coniferous deciduous forest atop bedrock			
Type of Watercourse	Permanent,Natural Channel			
	Small creek flowing southeast with no tree cover			
Input Description	Overland flow			
Water Body Underground / Not As Mapped?	No			
Surrounding Land Topography	Rolling bedrock sloping towards watercourse			
In-Situ Water Quality				
WT (deg. C)		AT (degC)	18.0	Water Quality Notes Water quality not taken at this site due to impending thunderstorm
pH		Cond. (s/cm)		
D.O. (mg/L)		Water Colour	Colourless	
Water Clarity	Clear			
Seepage Indicators	None			
Stream Morphology			Bank Stability	
Site Length (m)	100.00		Left Bank	0.63
Channel Dimensions			Right Bank	3.30
Mean Wetted Width (m)	0.63	Mean Wetted Depth (m)	0.17	Notes Moss and rooted vegetation along banks
Mean Bankfull Width (m)	3.30	Mean Bankfull Depth (m)	0.50	
Mean Top of Bank Width (m)	3.30	Mean Top of Bank Depth (m)	0.50	
Flow Description	Low			

Execution Time 8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Habitat					
Substrate Description		Sand gravel bedrock			
Morphological Structure (%)					
Pool	Riffle	Run	Flat		
	5.00	20.00	75.00		
Notes					
Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
Undercut Banks					
Average Depth(m)			Percent Cover (%)		
Aquatic Vegetation Species Present		Submergent grasses, yellow pond lily			
Canopy Cover					
Percent Closed Cover (%)		90-60%			
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
		100.00			
Cover Description					
Left Bank Riparian Vegetation			Right Bank Riparian Vegetation		
15m herbaceous and grass			20m herbaceous and grass		
Overhanging Vegetation (%)		30.00			
		Grasses			
Obstruction to Fish Passage		None Observed			
Barrier Height (M)					

Stream/River Assessment

Study Area Comments

Horizontal View of Channel

Stream/River Assessment

Site ID	WB-B-M70-17		Field Crew	Amy Ingriselli Ami Arsenault		240
Study Area	TLINE B					
Location	T line b east of nine mile lake along hydro corridor					
Project Number	60341251	Air Temp. (degC)	20.0	Weather Notes		
Tablet	AECOM12	Wind Speed (beaufort)	0			
Start Date	6/25/2015 2:27:34 PM	Precipitation	0			
End Date	6/25/2015 3:20:38 PM	Cloud Cover	100.00			
Upstream Endpoint	Latitude:45.465239,Longitude:-80.033142,Altitude:242.8,Speed:0.0463,Accuracy:2.5,Provider:gps,Time:06/25/2015 03:05:12 EDT					
Downstream Endpoint	Latitude:45.464243,Longitude:-80.0332,Altitude:259.7,Speed:0.015433333,Accuracy:2.5,Provider:gps,Time:06/25/2015 02:31:22 EDT					
Site Features						
Feature Description	2028	Feature Location				
Western downstream limit of study area, view of watercourse looking towards CL	Latitude:45.464282,Longitude:-80.033187,Altitude:259.4,Speed:0.066877775,Accuracy:2.4,Provider:gps,Time:06/25/2015 02:28:57 EDT					
Feature Description	2031	Feature Location				
Facing downstream south from centrepont. General view of watercourse	Latitude:45.464697,Longitude:-80.033169,Altitude:259.7,Speed:0.020577777,Accuracy:2.7,Provider:gps,Time:06/25/2015 03:01:22 EDT					
Feature Description	2034	Feature Location				
General view of watercourse facing north upstream from cL	Latitude:45.4647,Longitude:-80.033169,Altitude:259.7,Speed:0.03601111,Accuracy:2.7,Provider:gps,Time:06/25/2015 03:02:16 EDT					
Feature Description	2037	Feature Location				
Facing CL from US limit of study area	Latitude:45.465239,Longitude:-80.033142,Altitude:242.8,Speed:0.087455556,Accuracy:3.0,Provider:gps,Time:06/25/2015 03:05:21 EDT					

Stream/River Assessment

Surrounding Land Use	Forest,Wetland,Other			
	Marsh wetland with channel, bordered by mix forest, hydro corridor			
Type of Watercourse	Permanent			
	Marsh wetland with poorly defined channel with standing water. Shore marsh border narrows upstream			
Input Description	Overland, channel flowing from ponded water in marsh			
Water Body Underground / Not As Mapped?	No			
Surrounding Land Topography	Marsh bordered by forest with slight slope towards wetland			
In-Situ Water Quality				
WT (deg. C)	16.8	AT (degC)	20.0	Water Quality Notes
pH	6.0	Cond. (s/cm)	0.11	
D.O. (mg/L)	2.8	Water Colour	Colourless	
Water Clarity	Clear			
Seepage Indicators	None			
Stream Morphology				
Site Length (m)	100.00	Bank Stability		
Channel Dimensions		Left Bank	10.50	
		Right Bank	11.50	
Mean Wetted Width (m)	10.50	Mean Wetted Depth (m)	0.36	Notes Shore marsh bordering channel, heavily vegetated
Mean Bankfull Width (m)	11.50	Mean Bankfull Depth (m)	0.45	
Mean Top of Bank Width (m)	11.50	Mean Top of Bank Depth (m)	0.45	
Flow Description	Channel stagnant water. Marsh saturated sphagnum, pockets of stagnant water. Upstream of CL channel less defines, wet marsh with pockets of standing water throughout. Dry upstream of study area. Width of DS active channel is 3 m and depth 0.36 mean			
Habitat				
Substrate Description	Detritus, muck			

Stream/River Assessment

Morphological Structure (%)					
Pool	Riffle	Run	Flat		
<input type="text"/>	<input type="text"/>	<input type="text"/>	100.00		
Notes		<input type="text"/>			

Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Undercut Banks					
Average Depth(m)	<input type="text"/>	Percent Cover (%)		<input type="text"/>	
Aquatic Vegetation Species Present	Grasses, sedges, marsh cinquefoil, blue flag iris, sensitive fern, yellow pond lily, swampcandles, spotted Joe pye weed				

Canopy Cover					
Percent Closed Cover (%)	<input type="text"/>				
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
<input type="text"/>	<input type="text"/>	100.00	<input type="text"/>	<input type="text"/>	<input type="text"/>
Cover Description	Overhanging grasses				

Left Bank Riparian Vegetation		Right Bank Riparian Vegetation	
0.25 m little riparian zone, quick transition to upland forest, conifers		0.5 m small riparian or meadowsweet, conifers	

Overhanging Vegetation (%)	<input type="text"/>	90.00
	Shore marsh grasses and sedges	
Obstruction to Fish Passage	None Observed	
	<input type="text"/>	
Barrier Height (M)	<input type="text"/>	

Stream/River Assessment

Study Area Comments
Massasauga rattlesnake observed

Horizontal View of Channel

Stream/River Assessment

Site ID	WB-B-M30-104	Field Crew	Amy Ingriselli Ami Arsenault	243
Study Area	TLINE B			
Location	East of highway 69/400.			
Project Number	60341251	Air Temp. (degC)	18.0	Weather Notes
Tablet	AECOM12	Wind Speed (beaufort)	4	
Start Date	6/26/2015 8:29:02 AM	Precipitation	0	
End Date	6/26/2015 9:29:33 AM	Cloud Cover	0.00	
Upstream Endpoint	Latitude:45.678106,Longitude:-80.437028,Altitude:202.4,Speed:0.010288889,Accuracy:2.25,Provider:gps,Time:06/26/2015 08:39:19 EDT			
Downstream Endpoint	Latitude:45.677645,Longitude:-80.438146,Altitude:189.9,Speed:0.08231111,Accuracy:1.75,Provider:gps,Time:06/26/2015 09:28:04 EDT			
Site Features				
Feature Description	2040	Feature Location		
Facing south at survey point, from north bank		Latitude:45.677868,Longitude:-80.437565,Altitude:196.2,Speed:0.0463,Accuracy:2.0,Provider:gps,Time:06/26/2015 08:29:44 EDT		
Feature Description	2043	Feature Location		
Facing west towards survey point, from beaver dam 90m upstream		Latitude:45.678164,Longitude:-80.436498,Altitude:203.0,Speed:0.025722222,Accuracy:1.75,Provider:gps,Time:06/26/2015 08:41:39 EDT		
Feature Description	2046	Feature Location		
Facing west to survey location from 50m eastern limit		Latitude:45.678047,Longitude:-80.437025,Altitude:196.8,Speed:0.0926,Accuracy:1.5,Provider:gps,Time:06/26/2015 08:51:40 EDT		
Feature Description	2049	Feature Location		
Facing east to survey point from Western 50m limit		Latitude:45.67764,Longitude:-80.438147,Altitude:189.8,Speed:0.015433333,Accuracy:2.0,Provider:gps,Time:06/26/2015 09:28:18 EDT		

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Stream/River Assessment

Feature Description	2052	Feature Location		
Highway embankment 60m west of Centerpoint	Latitude:45.677637,Longitude:-80.438148,Altitude:189.9,Speed:0.030866666,Accuracy:1.75,Provider:gps,Time:06/26/2015 09:29:00 EDT			
Surrounding Land Use	Forest,Wetland,Other			
	Highway 69/400 west of survey location, wetland and forest surrounding			
Type of Watercourse	Permanent,Natural Channel			
	Stream originates from beaver dam 90m upstream from survey location. Approx 1.5m wide and 40cm deep, surrounding 6m saturated with standing water. 10m downstream from beaver dam, main watercourse widens to 15m, surrounding 3m of standing water with grasses. At 50m east of survey location, stream width measures 20m, with white water lilies, marsh candle, green leaved sedge and other water tolerant grasses. More open water near middle of channel, 1.0m of riparian veg before sloping towards forest. At centerline location watercourse is 13m wide with more grasses than lilies, submergent bladderwort.			
Input Description	Overland flow, highway ditch runoff			
Water Body Underground / Not As Mapped?	No			
Surrounding Land Topography	Bedrock sloping towards watercourse			
In-Situ Water Quality				
WT (deg. C)	18.6	AT (degC)	18.0	Water Quality Notes
pH	5.1	Cond. (s/cm)	0.01	
D.O. (mg/L)	5.1	Water Colour	Colourless	
Water Clarity	Clear			
Seepage Indicators	None			
Stream Morphology		Bank Stability		
Site Length (m)	100.00	Left Bank	18.00	
Channel Dimensions		Right Bank	18.25	
Mean Wetted Width (m)	18.00	Mean Wetted Depth (m)	0.80	Notes
Mean Bankfull Width (m)	18.25	Mean Bankfull Depth (m)	1.00	
Mean Top of Bank Width (m)	18.25	Mean Top of Bank Depth (m)	1.00	
Bedrock slopes				

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Stream/River Assessment

Flow Description	Low flow conditions, standing water				
Habitat					
Substrate Description	Detritus, bedrock				
Morphological Structure (%)					
Pool	Riffle	Run	Flat		
			100.00		
Notes					
Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
Undercut Banks					
Average Depth(m)		Percent Cover (%)			
Aquatic Vegetation Species Present	Algae, bladderwort, white water lilies, reeds, grasses, sedge, swamp candle, marsh saint John weed, smartweed, iris				
Canopy Cover					
Percent Closed Cover (%)	30-1%				
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
80.00		10.00	10.00		
Cover Description	Trees on rock barren edges, grasses and herbaceous plants				
Left Bank Riparian Vegetation			Right Bank Riparian Vegetation		
0.5m grasses, meadowsweet, ferns			0.5m grasses, meadowsweet, ferns		
Overhanging Vegetation (%)	30.00				
	Meadowsweet, grasses, ferns				
Obstruction to Fish Passage	Natural				
	Old beaver dam 90m upstream from survey location				
Barrier Height (M)	0.7				

Execution Time 8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Study Area Comments

Survey location between beaver dam (upstream), and highway embankment, made with boulders. Can see slow water movement, evidence of a channel between rock barren slopes. In stream vegetation includes grass, water lilies, bladderwort, sedges, rushes.

Horizontal View of Channel

Stream/River Assessment

Site ID	WB-B-M2-01	Field Crew	Amy Ingriselli Ami Arsenault		246
Study Area	TLINE B				
Location	South of unnamed sideroad, east of highway 69 in terrestrial map 2				
Project Number	60341251	Air Temp. (degC)	18.0	Weather Notes	
Tablet	AECOM12	Wind Speed (beaufort)	3		
Start Date	6/26/2015 11:29:29 AM	Precipitation	0		
End Date	6/26/2015 12:59:59 PM	Cloud Cover	40.00		
Upstream Endpoint	Latitude:45.842013,Longitude:-80.552617,Altitude:189.9,Speed:0.015433333,Accuracy:2.4,Provider:gps,Time:06/26/2015 12:53:12 EDT				
Downstream Endpoint	Latitude:45.841355,Longitude:-80.553508,Altitude:184.2,Speed:0.041155554,Accuracy:2.4,Provider:gps,Time:06/26/2015 12:46:22 EDT				
Site Features					
Feature Description	2055	Feature Location			
General view of watercourse facing downstream from centreline	Latitude:45.841968,Longitude:-80.552713,Altitude:182.5,Speed:0.051444445,Accuracy:2.7,Provider:gps,Time:06/26/2015 12:39:13 EDT				
Feature Description	2058	Feature Location			
General view of watercourse looking upstream from CL	Latitude:45.841756,Longitude:-80.553116,Altitude:196.1,Speed:0.11317778,Accuracy:2.1,Provider:gps,Time:06/26/2015 12:43:05 EDT				
Feature Description	2061	Feature Location			
General view facing US from DS limit of study area	Latitude:45.841391,Longitude:-80.553503,Altitude:184.7,Speed:0.5144445,Accuracy:2.1,Provider:gps,Time:06/26/2015 12:45:31 EDT				
Feature Description	2064	Feature Location			
CSP in channel from suspected overgrown logging road/trail. Looking at inlet, facing downstream	Latitude:45.841355,Longitude:-80.553508,Altitude:184.2,Speed:0.041155554,Accuracy:2.4,Provider:gps,Time:06/26/2015 12:46:27 EDT				

Stream/River Assessment

Feature Description	2067	Feature Location		
Looking DS from US limit of study area	Latitude:45.842012,Longitude:-80.552618,Altitude:190.0,Speed:0.03601111,Accuracy:2.4,Provider:gps,Time:06/26/2015 12:52:38 EDT			
Surrounding Land Use	Forest,Wetland,Other			
	Highway 69/400 and CN rail west of survey location, side road to the north. Channel bordered by mix forest			
Type of Watercourse	Permanent,Natural Channel			
	Defined channel flowing through heavily vegetated riparian/forest			
Input Description	Overland, roadside ditch input, groundwater			
Water Body Underground / Not As Mapped?	Watercourse/Transmission line crossing not previously identified in field maps. Was reported by terrestrial crew.			
Surrounding Land Topography	Low gradient forested slope			
In-Situ Water Quality				
WT (deg. C)	17.4	AT (degC)	18.0	Water Quality Notes
pH	6.3	Cond. (s/cm)	0.02	
D.O. (mg/L)	7.1	Water Colour	Yellow/Brown	
Water Clarity	Clear			
Seepage Indicators	None			
Stream Morphology		Bank Stability		
Site Length (m)	100.00	Left Bank	0.90	
Channel Dimensions		Right Bank	1.15	
Mean Wetted Width (m)	0.90	Mean Wetted Depth (m)	0.27	Notes Banks are heavily vegetated. Some undercut but no evidence of ongoing erosion
Mean Bankfull Width (m)	1.15	Mean Bankfull Depth (m)	0.45	
Mean Top of Bank Width (m)	1.15	Mean Top of Bank Depth (m)	0.45	
Flow Description	Moderate flow			

Stream/River Assessment

Habitat					
Substrate Description <input type="text" value="Silt sand detritus gravel clay"/>					
Morphological Structure (%)					
Pool	Riffle	Run	Flat		
<input type="text" value="5.00"/>	<input type="text" value="5.00"/>	<input type="text" value="30.00"/>	<input type="text" value="60.00"/>		
Notes <input type="text"/>					
Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Undercut Banks					
Average Depth(m)	<input type="text" value="0.08"/>	Percent Cover (%)		<input type="text" value="20.00"/>	
Aquatic Vegetation Species Present	<input type="text" value="No aquatic vegetation present. Overhanging grasses and herbaceous vegetation providing in stream cover, including grass, violet sp., marsh marigold, ferns, meadow rue, spotted Joe pye weed, bedstraw"/>				
Canopy Cover					
Percent Closed Cover (%)	<input type="text" value="100-90%"/>				
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
<input type="text" value="35.00"/>	<input type="text"/>	<input type="text" value="25.00"/>	<input type="text" value="35.00"/>	<input type="text" value="5.00"/>	<input type="text"/>
Cover Description	<input type="text" value="Trees in over story providing shade but banks heavily vegetated with overhanging vegetation providing overhanging cover"/>				
Left Bank Riparian Vegetation			Right Bank Riparian Vegetation		
<input type="text" value="5m meadow rue, grass, ferns, spotted Joe pye weed, rough bedstraw"/>			<input type="text" value="2m meadow rue, grass, ferns, spotted Joe pye weed, rough bedstraw"/>		
Overhanging Vegetation (%)					
<input type="text" value="100.00"/>					
<input type="text" value="Mostly herbaceous water-tolerant terrestrial vegetation with few trees"/>					
Obstruction to Fish Passage					
<input type="text" value="Possible velocity barrier for some fish through CSP during high flows but none at this time"/>					
Barrier Height (M)					
<input type="text"/>					





Stream/River Assessment

Study Area Comments

Site was discovered by terrestrial crew, not previously mapped.
Suitable fish habitat. Existing CSP crossing watercourse,
suspected overgrown old logging road

Horizontal View of Channel

Stream/River Assessment

Site ID	WB-B-M70-17-3		Field Crew	Amy Ingriselli Jessica Mendoza		249
Study Area	TLINE B					
Location	T line b east of hydro corridor					
Project Number	60341251	Air Temp. (degC)	17.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	0			
Start Date	6/29/2015 10:09:24 AM	Precipitation	0			
End Date	6/29/2015 11:17:19 AM	Cloud Cover	100.00			
Upstream Endpoint	Latitude:45.464715,Longitude:-80.033738,Altitude:262.4,Speed:0.0463,Accuracy:2.1,Provider:gps,Time:06/29/2015 10:55:17 EDT					
Downstream Endpoint	Latitude:45.465478,Longitude:-80.033278,Altitude:254.0,Speed:0.15947777,Accuracy:2.7,Provider:gps,Time:06/29/2015 10:34:10 EDT					
Site Features						
Feature Description	2070	Feature Location				
General view of watercourse facing downstream (north) from CL		Latitude:45.465201,Longitude:-80.033662,Altitude:251.2,Speed:0.07202222,Accuracy:2.7,Provider:gps,Time:06/29/2015 10:14:07 EDT				
Feature Description	2073	Feature Location				
General view of watercourse facing upstream (southwest) from CL		Latitude:45.465192,Longitude:-80.033678,Altitude:251.4,Speed:0.03601111,Accuracy:2.4,Provider:gps,Time:06/29/2015 10:15:06 EDT				
Feature Description	2076	Feature Location				
General view of dry channel DS of CL, facing DS(southeast)		Latitude:45.465549,Longitude:-80.033366,Altitude:250.7,Speed:0.07202222,Accuracy:2.4,Provider:gps,Time:06/29/2015 10:35:19 EDT				
Feature Description	2079	Feature Location				
Looking DS (north) from US limit of study area		Latitude:45.464715,Longitude:-80.033738,Altitude:262.4,Speed:0.05658889,Accuracy:2.1,Provider:gps,Time:06/29/2015 10:55:29 EDT				

Stream/River Assessment

Surrounding Land Use	Forest,Wetland,Other			
	Adjacent to hydro corridor, bordered by forested bedrock			
Type of Watercourse	Intermittent			
	Dammed intermittent watercourse which drains from pond from the west. Stagnant ponded water above beaver dam with connectivity to pond upstream. Downstream of dam and CL stagnant pockets of water in dry, ephemeral, poorly-defined channel which seeps from dam and likely flows in high water conditions.			
Input Description	Water seeps from pond to the west, plus overland input, seasonal			
Water Body Underground / Not As Mapped?	Yes, this water crossing not identified as a site in field maps			
Surrounding Land Topography	Bordered by sloping forested bedrock			
In-Situ Water Quality				
WT (deg. C)	15.2	AT (degC)	17.1	Water Quality Notes
pH	6.0	Cond. (s/cm)	0.02	
D.O. (mg/L)	3.5	Water Colour	Yellow/Brown	
Water Clarity	Clear			
Seepage Indicators	None			
Stream Morphology		Bank Stability		
Site Length (m)	100.00	Left Bank	3.50	
Channel Dimensions		Right Bank	5.80	
Mean Wetted Width (m)	3.50	Mean Wetted Depth (m)	0.25	Notes Vegetated banks, bordered by bedrock, low flows
Mean Bankfull Width (m)	5.80	Mean Bankfull Depth (m)	0.53	
Mean Top of Bank Width (m)	5.80	Mean Top of Bank Depth (m)	0.53	
Flow Description	Stagnant. Intermittent channel from upstream pond dammed. Stagnant pool upstream of beaver dam and centreline, downstream of centreline few stagnant pockets of water in otherwise dry, poorly-defined channel which connects to saturated marsh (WB-b-m70-17-			
Habitat				
Substrate Description	Detritus over bedrock, silt			

Stream/River Assessment

Morphological Structure (%)					
Pool	Riffle	Run	Flat		
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="100.00"/>		
Notes		<input type="text"/>			

Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Undercut Banks	
Average Depth(m)	<input type="text"/> Percent Cover (%) <input type="text"/>
Aquatic Vegetation Species Present	<input type="text" value="Water shield, bladderwort, marsh cinquefoil, grasses, sedges, iris, yellow pond lily, wild Calla lily, fragrant water lily"/>

Canopy Cover					
Percent Closed Cover (%)		<input type="text" value="90-60%"/>			
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
<input type="text" value="90.00"/>	<input type="text"/>	<input type="text" value="5.00"/>	<input type="text" value="5.00"/>	<input type="text"/>	<input type="text"/>
Cover Description	<input type="text" value="Conifer overstory providing most of the shade. Few overhanging riparian and emergent grasses/herbaceous vegetation"/>				

Left Bank Riparian Vegetation		Right Bank Riparian Vegetation	
<input type="text" value="1.5m grasses, ferns, conifers, leatherleaf"/>		<input type="text" value="1m grasses, ferns, conifers"/>	

Overhanging Vegetation (%)	<input type="text" value="30.00"/>
	<input type="text" value="Ferns, grasses and some emergent in upstream ponds"/>

Obstruction to Fish Passage	<input type="text" value="Low Flow Barrier"/>
	<input type="text" value="Channel downstream of centreline/beaver dam dry other than stagnant pockets of water. Beaver dam also a barrier"/>
Barrier Height (M)	<input type="text" value="0.8"/>

Stream/River Assessment

Study Area Comments





Not previously identified as a site. Upstream of centreline likely low sensitivity fish habitat. Downstream of CL not fish habitat. There's a small beaver dam right at CL where US is ponded water and downstream is mostly dry.



Horizontal View of Channel



Stream/River Assessment

Site ID	WB-B-M70-18-2		Field Crew	Amy Ingriselli Jessica Mendoza		504
Study Area	TLINE B					
Location	T line b east of nine mile lake, adjacent to hydro corridor					
Project Number	60341251	Air Temp. (degC)	18.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	0			
Start Date	6/29/2015 12:00:09 PM	Precipitation	0			
End Date	6/29/2015 12:46:43 PM	Cloud Cover	100.00			
Upstream Endpoint	Latitude:45.467687,Longitude:-80.034514,Altitude:248.2,Speed:0.03601111,Accuracy:1.75,Provider:gps,Time:06/29/2015 12:33:47 EDT					
Downstream Endpoint	Latitude:45.466654,Longitude:-80.034724,Altitude:253.5,Speed:0.015433333,Accuracy:2.0,Provider:gps,Time:06/29/2015 12:02:33 EDT					
Site Features						
Feature Description	2091	Feature Location				
Looking US towards CL from DS limit of study area		Latitude:45.46666,Longitude:-80.034656,Altitude:252.6,Speed:0.020577777,Accuracy:2.25,Provider:gps,Time:06/29/2015 12:01:30 EDT				
Feature Description	2094	Feature Location				
General view of watercourse facing DS from CL		Latitude:45.467156,Longitude:-80.035037,Altitude:259.9,Speed:0.010288889,Accuracy:2.1,Provider:gps,Time:06/29/2015 12:28:03 EDT				
Feature Description	2097	Feature Location				
View of watercourse and beaver dam looking US from CL		Latitude:45.467151,Longitude:-80.03504,Altitude:260.3,Speed:0.0051444443,Accuracy:2.4,Provider:gps,Time:06/29/2015 12:29:04 EDT				
Feature Description	2100	Feature Location				
General view of pond looking DS towards CI from US limit of study area		Latitude:45.467676,Longitude:-80.034519,Altitude:248.1,Speed:0.05658889,Accuracy:2.0,Provider:gps,Time:06/29/2015 12:32:12 EDT				

Stream/River Assessment

Surrounding Land Use	Forest,Other			
	Flows to pond, bordered by forest and adjacent to hydro corridor			
Type of Watercourse	Permanent			
	Dammed watercourse; beaver pond upstream of centre line and dam, downstream of dam and centreline standing water in channel draining to pond			
Input Description	Short watercourse flowing from one beaver pond to the next			
Water Body Underground / Not As Mapped?	Yes, water crossing not identified on field maps; added site			
Surrounding Land Topography	Conifer dominated forest on bedrock, bedrock sloping to channel			
In-Situ Water Quality				
WT (deg. C)	18.1	AT (degC)	18.0	Water Quality Notes
pH	4.7	Cond. (s/cm)	0.01	
D.O. (mg/L)	4.6	Water Colour	Colourless	
Water Clarity	Clear			
Seepage Indicators	None			
Stream Morphology				
Site Length (m)	60.00	Bank Stability		
Channel Dimensions		Left Bank	12.50	
		Right Bank	16.00	
Mean Wetted Width (m)	12.50	Mean Wetted Depth (m)	1.00	Notes Vegetated banks, low flows between bedrock
Mean Bankfull Width (m)	16.00	Mean Bankfull Depth (m)	1.40	
Mean Top of Bank Width (m)	16.00	Mean Top of Bank Depth (m)	1.40	
Flow Description	Standing water. Channel widens closer to outlet to pond. 3 m wide below beaver dam			
Habitat				
Substrate Description	Downstream channel sand, gravel, detritus. Upstream pond detritus over bedrock and muck			

Stream/River Assessment

Morphological Structure (%)					
Pool	Riffle	Run	Flat		
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="100.00"/>		
Notes		<input type="text"/>			

Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Undercut Banks					
Average Depth(m)	<input type="text"/>	Percent Cover (%)		<input type="text"/>	
Aquatic Vegetation Species Present	<input type="text" value="Dwarf fragrant water lily, narrow emergent, shoregrass"/>				

Canopy Cover					
Percent Closed Cover (%)		<input type="text" value="30-1%"/>			
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
<input type="text" value="100.00"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Cover Description	<input type="text" value="Conifers from bedrock bordering channel providing little shade"/>				

Left Bank Riparian Vegetation		Right Bank Riparian Vegetation	
<input type="text" value="0.5m mean. Grasses, leatherleaf, sensitive fern, royal fern, sphagnum"/>		<input type="text" value="1.5 m mean. Grasses, leatherleaf, sensitive fern, royal fern, sphagnum"/>	

Overhanging Vegetation (%)	<input type="text" value="10.00"/>
	<input type="text" value="Some riparian grasses and narrow emergents but not providing significant amount of overhanging cover"/>
Obstruction to Fish Passage	<input type="text" value="Natural"/>
	<input type="text" value="Beaver dam approximately 10 m upstream of centreline"/>
Barrier Height (M)	<input type="text" value="2.0"/>

Stream/River Assessment

Study Area Comments





This crossing was not identified/mapped as a site. Fish observed.



Horizontal View of Channel



Stream/River Assessment


Site ID	WB-B-M14-136	Field Crew	Amy Ingriselli Jessica Mendoza	255
Study Area	TLINE B			
Location	Along t line b proposed mnto corridor south of farm lane			
Project Number	60341251	Air Temp. (degC)	19.0	Weather Notes
Tablet	AECOM10	Wind Speed (beaufort)	1	
Start Date	6/30/2015 9:33:50 AM	Precipitation	0	
End Date	6/30/2015 10:44:02 AM	Cloud Cover	90.00	
Upstream Endpoint	Latitude:45.803383,Longitude:-80.519715,Altitude:179.9,Speed:0.03601111,Accuracy:1.75,Provider:gps,Time:06/30/2015 10:14:54 EDT			
Downstream Endpoint	Latitude:45.803521,Longitude:-80.521018,Altitude:183.3,Speed:0.0926,Accuracy:1.75,Provider:gps,Time:06/30/2015 10:26:11 EDT			
Site Features				
Feature Description	2103	Feature Location		
Unstable, fallen bank and sediment load. Facing US (east)		Latitude:45.803462,Longitude:-80.520083,Altitude:177.8,Speed:0.15433334,Accuracy:2.1,Provider:gps,Time:06/30/2015 10:10:10 EDT		
Feature Description	2106	Feature Location		
General view of stream from US limit of study area facing DS (west)		Latitude:45.803367,Longitude:-80.519807,Altitude:180.1,Speed:0.041155554,Accuracy:1.8,Provider:gps,Time:06/30/2015 10:13:14 EDT		
Feature Description	2109	Feature Location		
General view of stream looking US from CL		Latitude:45.803516,Longitude:-80.520335,Altitude:179.0,Speed:0.010288889,Accuracy:1.5,Provider:gps,Time:06/30/2015 10:20:04 EDT		
Feature Description	2112	Feature Location		
General view of stream looking DS from cL		Latitude:45.803517,Longitude:-80.520341,Altitude:178.8,Speed:0.025722222,Accuracy:1.5,Provider:gps,Time:06/30/2015 10:21:04 EDT		

Execution Time 8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Feature Description	2115	Feature Location		
Looking US from DS limit of study area		Latitude:45.803521,Longitude:-80.521018,Altitude:183.3,Speed:0.28294444,Accuracy:1.75,Provider:gps,Time:06/30/2015 10:26:19 EDT		
Surrounding Land Use	Forest,Meadow			
	Channel bordered by 50m wide meadow floodplain, bordered by forested bedrock			
Type of Watercourse	Permanent,Natural Channel			
	Defined, slow moving channel with high bankfull depth and defined 50 m wide floodplain, dense riparian shrubs			
Input Description	Watercourse with overland flow			
Water Body Underground / Not As Mapped?	No			
Surrounding Land Topography	Flat floodplain between steep forested bedrock slopes			
In-Situ Water Quality				
WT (deg. C)	<input type="text" value="16.4"/>	AT (degC)	<input type="text" value="19.0"/>	Water Quality Notes
pH	<input type="text" value="5.5"/>	Cond. (s/cm)	<input type="text" value="0.02"/>	
D.O. (mg/L)	<input type="text" value="6.9"/>	Water Colour	<input type="text" value="Yellow/Brown"/>	
Water Clarity	<input type="text" value="Clear"/>			
Seepage Indicators	<input type="text" value="None"/>			
Stream Morphology		Bank Stability		
Site Length (m)	<input type="text" value="100.00"/>	Left Bank	<input type="text" value="1.50"/>	
Channel Dimensions		Right Bank	<input type="text" value="3.10"/>	
Mean Wetted Width (m)	<input type="text" value="1.50"/>	Mean Wetted Depth (m)	<input type="text" value="0.23"/>	Notes Banks heavily vegetated but exposed, erodible soils, slumped and fallen banks, undercut banks, sediment load in creekbed
Mean Bankfull Width (m)	<input type="text" value="3.10"/>	Mean Bankfull Depth (m)	<input type="text" value="1.04"/>	
Mean Top of Bank Width (m)	<input type="text" value="3.10"/>	Mean Top of Bank Depth (m)	<input type="text" value="1.04"/>	
Flow Description	<input type="text" value="Low, standing water, flats"/>			

Execution Time

8/19/2015 7:56:12 AM

Filter Start Date 6/1/2015

Filter End Date 6/30/2015

Stream/River Assessment

Habitat					
Substrate Description Mostly sand, silt					
Morphological Structure (%)					
Pool	Riffle	Run	Flat		
5.00		20.00	75.00		
Notes					
Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
Undercut Banks					
Average Depth(m)	0.20	Percent Cover (%)		20.00	
Aquatic Vegetation Species Present	Submergent and emergent grasses, arrowhead, star duckweed, common duckweed				
Canopy Cover					
Percent Closed Cover (%)	90-60%				
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
	50.00	50.00			
Cover Description	Dense riparian shrubs and or grasses				
Left Bank Riparian Vegetation			Right Bank Riparian Vegetation		
2-3m strip of riparian shrubs plus approximately 25m wide meadow floodplain. Riparian includes speckled alder, grass, herbaceous plants, dense overhanging shrubs and grasses.			Same as LB. Approximately 3 m mean zone or riparian shrubs but channel bordered by mostly meadow floodplain 25 m wide		
Overhanging Vegetation (%)	90.00				
	Dense overhanging shrubs and grasses				
Obstruction to Fish Passage	None Observed				
Barrier Height (M)					

Stream/River Assessment

Study Area Comments





Fish observed



Horizontal View of Channel



Stream/River Assessment

Site ID	WB-B-M13-137		Field Crew	Amy Ingriselli Jessica Mendoza		258
Study Area	TLINE B					
Location	Saati property east of highway 69 north of farm lane					
Project Number	60341251	Air Temp. (degC)	22.0	Weather Notes		
Tablet	AECOM10	Wind Speed (beaufort)	3			
Start Date	6/30/2015 2:28:26 PM	Precipitation	0			
End Date	6/30/2015 3:31:07 PM	Cloud Cover	80.00			
Upstream Endpoint	Latitude:45.808906,Longitude:-80.523017,Altitude:180.4,Speed:0.0463,Accuracy:2.4,Provider:gps,Time:06/30/2015 03:02:43 EDT					
Downstream Endpoint	Latitude:45.808821,Longitude:-80.524356,Altitude:179.3,Speed:0.03601111,Accuracy:2.25,Provider:gps,Time:06/30/2015 02:49:56 EDT					
Site Features						
Feature Description	2127	Feature Location				
View of river from DS limit of study area		Latitude:45.808821,Longitude:-80.524356,Altitude:179.3,Speed:0.16976666,Accuracy:2.25,Provider:gps,Time:06/30/2015 02:50:02 EDT				
Feature Description	2130	Feature Location				
Cobble, boulder, man-made shoal in river may be suitable spawning habitat for walleye. Potential compensation measure for dam?		Latitude:45.808862,Longitude:-80.524281,Altitude:176.2,Speed:0.0926,Accuracy:2.25,Provider:gps,Time:06/30/2015 02:52:25 EDT				
Feature Description	2133	Feature Location				
Sea lamprey control dam from south bank		Latitude:45.808824,Longitude:-80.523895,Altitude:178.4,Speed:0.10288889,Accuracy:2.0,Provider:gps,Time:06/30/2015 02:54:49 EDT				
Feature Description	2136	Feature Location				
View of river looking DS from US limit of study area		Latitude:45.808902,Longitude:-80.523016,Altitude:180.4,Speed:0.03601111,Accuracy:2.4,Provider:gps,Time:06/30/2015 03:02:59 EDT				

Stream/River Assessment

Surrounding Land Use	Agriculture,Forest,Livestock,Other			
	North side of river is forest. South is agriculture. Sea lamprey control downstream of CL. Marked canoe and portage route			
Type of Watercourse	Permanent			
	Flowing, dammed river with sloped, vegetated banks bordered by forest and agricultural field			
Input Description	River and overland flow.			
Water Body Underground / Not As Mapped?	No			
Surrounding Land Topography	North/left bank steep sloping bedrock. South/right bank sloped with flag agricultural field above sloped bank			
In-Situ Water Quality				
WT (deg. C)	22.3	AT (degC)	22.0	Water Quality Notes
pH	5.9	Cond. (s/cm)	0.02	
D.O. (mg/L)	9.0	Water Colour	Colourless	
Water Clarity	Clear			
Seepage Indicators	None			
Stream Morphology				
Site Length (m)	100.00	Bank Stability		
Channel Dimensions		Left Bank	15.70	
		Right Bank	16.40	
Mean Wetted Width (m)	15.70	Mean Wetted Depth (m)	1.30	Notes Downstream of dam banks are heavily vegetated or consist of hard substrates. Upstream of dam right bank consists of erodible soils which are exposed in some areas. Sandy bar and eroded bank. Left bank bedrock more prevalent
Mean Bankfull Width (m)	16.40	Mean Bankfull Depth (m)	1.70	
Mean Top of Bank Width (m)	16.40	Mean Top of Bank Depth (m)	1.70	
Flow Description	High at dam, otherwise slow-moving flats			
Habitat				
Substrate Description	Sand silt dominant. Some bedrock. Boulder cobble			

Stream/River Assessment

Morphological Structure (%)					
Pool	Riffle	Run	Flat		
<input type="text"/>	<input type="text" value="5.00"/>	<input type="text" value="10.00"/>	<input type="text" value="85.00"/>		
Notes	<input type="text"/>				

Instream Cover					
Woody Debris	Boulders	Cobble	Aquatic Vegetation	Structures	Total Instream Cover
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Undercut Banks	
Average Depth(m)	<input type="text"/> Percent Cover (%) <input type="text"/>
Aquatic Vegetation Species Present	<input type="text" value="Tapegrass, emergent grasses"/>

Canopy Cover					
Percent Closed Cover (%)	<input type="text" value="60-30%"/>				
Trees	Shrubs	Grasses	Herbaceous	Man Made	Other
<input type="text" value="60.00"/>	<input type="text" value="20.00"/>	<input type="text" value="20.00"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Cover Description	<input type="text" value="Riparian trees and shrubs providing most of available shade and canopy cover"/>				

Left Bank Riparian Vegetation		Right Bank Riparian Vegetation	
<input type="text" value="3m grasses, black ash, speckled alder"/>		<input type="text" value="6m white birch, grasses, ferns, speckled alder"/>	

Overhanging Vegetation (%)	<input type="text" value="50.00"/>
	<input type="text" value="Some patches of overhanging grasses, some overhanging shrubs"/>

Obstruction to Fish Passage	<input type="text" value="Man-Made"/>
	<input type="text" value="Sea lamprey migration barrier dam"/>

Barrier Height (M)	<input type="text" value="2.0"/>
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Stream/River Assessment

Study Area Comments

Potential suitable spawning habitat for walleye below dam.
Potential suitable nursery habitat for silver or northernbrook lamprey



Horizontal View of Channel



Appendix B

Fish Habitat Sensitivity Summary

Appendix B: Fish Habitat Sensitivity Summary, Transmission Line B

Tributaries in the Henvey Inlet Watershed

Waterbody Site ID	UTM	Sensitivity	Fish Habitat?	Species Present	Thermal Regime	Suggested Timing Window (in-water work permitted)
WB-B-M9-141	45.8513 -80.5507	Unknown	Unknown	Unknown	Warm	July 16 to March 14
WB-B-M2-1	45.842013 -80.552617	Moderate	Direct	Unknown	Cool	July 16 to March 14
WB-B-M10-140	45.835684 -80.549731	Low	Direct	Unknown	Warm	July 16 to March 14
WB-B-M11-139	45.823116 -80.539124	Low	Direct	Unknown	Warm	July 16 to March 14
WB-B-M12-138	45.814041 -80.528078	Low	Direct	Unknown	Cool	July 16 to March 14
WB-B-M13-137	45.808906 -80.519715	Moderate	Direct	Walleye & Brook Lamprey Suspected	Warm	July 16 to March 14
WB-B-M14-136	45.803383 -80.519715	Low	Direct	Unknown	Warm	July 16 to March 14
WB-B-M15-135	45.793654 -80.513875	Low	Direct	Unknown	Cool	July 16 to March 14
WB-B-M16-133	45.782978 -80.49805	Low	Direct	N/A	Cool	July 16 to March 14
WB-B-M16-134	45.785954 -80.501652	Low	Direct	Unknown	Cool	July 16 to March 14
WB-B-M17-131	45.774804 -80.489276	High	Direct	Unknown	Warm	July 16 to March 14
WB-B-M17-132	45.776767 -80.490819	Low	Direct	Unknown	Warm	July 16 to March 14
WB-B-M18-130	45.7687 -80.4893	Unknown	Unknown	Unknown	Warm	July 16 to March 14
WB-B-M19-127	45.7582 -80.4894	Unknown	Unknown	Unknown	Warm	July 16 to March 14
WB-B-M19-128	45.7594 -80.7594	Unknown	Unknown	Unknown	Warm	July 16 to March 14
WB-B-M19-129	45.7626 -80.4894	Unknown	Unknown	Unknown	Warm	July 16 to March 14

Tributaries in the Henvey Inlet Watershed

Waterbody Site ID	UTM	Sensitivity	Fish Habitat?	Species Present	Thermal Regime	Suggested Timing Window (in-water work permitted)
WB-B-M20-125	45.7537 -80.4873	Unknown	Unknown	Unknown	Warm	July 16 to March 14
WB-B-28-107	45.692615 -80.446351	Low	Direct	Unknown	Warm	July 16 to March 14
WB-B-28-107-2	45.693161 -80.446599	Low	Indirect	Unknown	Warm	none
WB-B-28-108	45.695102 -80.449993	Low	Direct	Unknown	Warm	July 16 to March 14
WB-B-29-106	45.687532 -80.444349	Moderate	Direct	Walleye Suspected	Warm	July 16 to March 14

Tributaries in the Giroux River Watershed

Waterbody Site ID	UTM	Sensitivity	Fish Habitat?	Species Present	Thermal Regime	Suggested Timing Window (in-water work permitted)
WB-B-M20-123	45.7514 -80.4859	Unknown	Unknown	Unknown	Cool	July 16 to March 14
WB-B-M20-124	45.7522 -80.4864	Unknown	Unknown	Unknown	Cool	July 16 to March 14
WB-B-M20-126	45.7551 -80.4882	Unknown	Unknown	Unknown	Warm	July 16 to March 14
WB-B-M21-121	45.7453 -80.482	Unknown	Unknown	Unknown	Warm	July 16 to March 14
WB-B-M21-122	45.7488 -80.4842	Unknown	Unknown	Unknown	Warm	July 16 to March 14
WB-B-M22-120	45.7414 -80.4795	Unknown	Unknown	Unknown	Cool	July 16 to March 14
WB-B-M23-118	45.7323 -80.4738	Unknown	Unknown	Unknown	Cool	July 16 to March 14
WB-B-M23-119	45.7336 -80.4746	Unknown	Unknown	Unknown	Cool	July 16 to March 14
WB-B-M24-116	45.7278 -80.4709	Unknown	Unknown	Unknown	Warm	July 16 to March 14

Tributaries in the Giroux River Watershed

Waterbody Site ID	UTM	Sensitivity	Fish Habitat?	Species Present	Thermal Regime	Suggested Timing Window (in-water work permitted)
WB-B-M24-117	45.7289 -80.4716	Unknown	Unknown	Unknown	Warm	July 16 to March 14
WB-B-M25-115	45.719754 -80.466445	Low	Direct	Cyprinids Observed	Warm	July 16 to March 14
WB-B-M26-112	45.710317 -80.459507	Low	Direct	Unknown	Warm	July 16 to March 14
WB-B-M26-113	45.710995 -80.460396	Low	Direct	Unknown	Warm	July 16 to March 14
WB-B-M26-114	45.712692 -80.451319	Low	Direct	Unknown	Warm	July 16 to March 14
WB-B-M27-109	45.703629 -80.455715	Low	Direct	Unknown	Warm	July 16 to March 14
WB-B-M27-110	45.706011 -80.45713	Low	Direct	Unknown	Warm	July 16 to March 14
WB-B-M27-111	45.707364 -80.458039	Low	Direct	Unknown	Warm	July 16 to March 14

Tributaries in the Upper Naiscoot River Watershed

Waterbody Site ID	UTM	Sensitivity	Fish Habitat?	Species Present	Thermal Regime	Suggested Timing Window (in-water work permitted)
WB-B-M30-104	45.678106 -80.437028	Low	Direct	Unknown	Warm	July 16 to March 14
WB-B-M30-105	45.680802 -80.44141	Low	Direct	Unknown	Warm	July 16 to March 14
WB-B-M30-105-2	45.679734 -80.441309	Low	Direct	Unknown	Warm	July 16 to March 14
WB-B-M31-103	45.675512 -80.434155	Moderate	Indirect	Unknown	Cool	July 16 to March 14
WB-B-M31-142	45.676033 -80.432398	Moderate	Direct	Unknown	Warm	July 16 to March 14

Tributaries in the Upper Naiscoot River Watershed

Waterbody Site ID	UTM	Sensitivity	Fish Habitat?	Species Present	Thermal Regime	Suggested Timing Window (in-water work permitted)
WB-B-M32-101	45.666286 -80.423041	Low	No	N/A	Warm	none
WB-B-M32-102	45.668637 -80.424707	Moderate	Direct	Cyprinids Observed	Warm	July 16 to March 14
WB-B-M33-100	45.663826 -80.418011	Low	Direct	Unknown	Warm	July 16 to March 14
WB-B-M33-99	45.66234 -80.416776	Low	No	N/A	Warm	none
WB-B-M34-96	45.653733 -80.405078	Low	Direct	Cyprinids Observed	Warm	July 16 to March 14
WB-B-M34-97	45.655944 -80.407689	Low	Direct	Unknown	Warm	July 16 to March 14
WB-B-M34-98	45.658452 -80.411243	Low	No	N/A	Warm	none
WB-B-M35-95	45.651252 -80.400372	Low	Direct	Cyprinids Observed	Cool	July 16 to March 14
WB-B-M36-94	45.644711 -80.396777	Moderate	Direct	Unknown	Warm	July 16 to March 14
WB-B-M37-93	45.63803 -80.396973	Low	Direct	Unknown	Warm	July 16 to March 14
WB-B-M38-90	45.629751 -80.392266	Low	No	N/A	Warm	none
WB-B-M38-91	45.6331 -80.3933	Low	No	N/A	Warm	none
WB-B-M38-92	45.634044 -80.395625	Low	Direct	Unknown	Warm	July 16 to March 14
WB-B-M39-87	45.623149 -80.386948	Moderate	Direct	Unknown	Cool	July 16 to March 14
WB-B-M39-88	45.624146 -80.387474	Low	Direct	Unknown	Cool	July 16 to March 14
WB-B-M39-89	45.626408 -80.390899	Low	No	N/A	Warm	none
WB-B-M40-83	45.614831 -80.380982	Low	No	N/A	Warm	None

Tributaries in the Upper Naiscoot River Watershed

Waterbody Site ID	UTM	Sensitivity	Fish Habitat?	Species Present	Thermal Regime	Suggested Timing Window (in-water work permitted)
WB-B-M40-85	45.617513 -80.383762	Low	No	N/A	Warm	None
WB-B-M40-86	45.6193 -80.384057	Low	Direct	N/A	Warm	July 16 to March 14
WB-B-M41-82	45.611028 -80.375952	Low	Direct	Unknown	Warm	July 16 to March 14
WB-B-M42-79	45.599399 -80.367543	Low	Direct	Unknown	Warm	July 16 to March 14
WB-B-M42-81	45.601089 -80.333693	Moderate	Direct	Unknown	Cool	July 16 to March 14
WB-B-M43-77	45.592184 -80.367013	Moderate	Direct	Unknown	Warm	July 16 to March 14

Tributaries in the Shawanaga River Watershed

Waterbody Site ID	UTM	Sensitivity	Fish Habitat?	Species Present	Thermal Regime	Suggested Timing Window (in-water work permitted)
WB-B-M44-75	45.57711 -80.348369	Low	No	N/A	Warm	none
WB-B-M44-76	45.580335 -80.352669	Low	Direct	Unknown	Cool	July 16 to March 14
WB-B-M45-73	45.570508 -80.333693	Low	Direct	Unknown	Warm	July 16 to March 14
WB-B-M45-74	45.573374 -80.340627	Low	Direct	Unknown	Warm	July 16 to March 14
WB-B-M46-71	45.566647 -80.323576	Low	No	Unknown	Warm	none
WB-B-M47-69	45.562982 -80.315156	Low	Direct	Unknown	Cool	July 16 to March 14

Tributaries in the Shawanaga River Watershed

Waterbody Site ID	UTM	Sensitivity	Fish Habitat?	Species Present	Thermal Regime	Suggested Timing Window (in-water work permitted)
WB-B-M47-70	45.564432 -80.317081	Moderate	Direct	Unknown	Cool	July 16 to March 14
WB-B-M48-68	45.558737 -80.302505	Low	Direct	Unknown	Warm	July 16 to March 14
WB-B-M49-66	45.550539 -80.280255	Moderate	Direct	Unknown	Cool	July 16 to March 14
WB-B-M49-67	45.555181 -80.283435	Low	No	N/A	Warm	none
WB-B-M50-64	45.5426 -80.2737	Unknown	Unknown	Unknown	Unknown	July 16 to March 14
WB-B-M50-65	45.547 -80.2793	Unknown	Unknown	Unknown	Cool	July 16 to March 14
WB-B-M51-63	45.5373 -80.2676	Unknown	Unknown	Unknown	Warm	July 16 to March 14
WB-B-M52-59	45.5295 -80.2541	Low	Direct	Unknown	Warm	July 16 to March 14
WB-B-M52-59-2	45.530471 -80.253349	Low	Direct	Unknown	Warm	July 16 to March 14
WB-B-M52-61	45.533558 -80.258467	Low	Direct	Unknown	Warm	July 16 to March 14
WB-B-M56-48	45.50384 -80.21868	Low	No	N/A	Cool	None
WB-B-M57-44	45.500511 -80.203881	Low	Direct	Unknown	Cool	July 16 to March 14
WB-B-M57-45	45.500948 -80.208196	Low	No	N/A	Cool	none
WB-B-M58-38	45.498844 -80.191044	Low	No	N/A	Cool	none
WB-B-M58-39	45.498815 -80.196074	Moderate	Indirect	Unknown	Cool	July 16 to March 14
WB-B-M59-40	45.498984 -80.191044	Low	No	N/A	Cool	none

Tributaries in the Shebeshekong River – St Aubyn Bay Watershed

Waterbody Site ID	UTM	Sensitivity	Fish Habitat?	Species Present	Thermal Regime	Suggested Timing Window (in-water work permitted)
WB-B-M53-57	45.523689 -80.244513	Low	Direct	Cyprinids Observed	Warm	July 16 to March 14
WB-B-M53-58	45.526426 -80.248822	Low	Direct	Unknown	Warm	July 16 to March 14
WB-B-M54-55	45.5169 -80.2352	Unknown	Unknown	Unknown	Warm	July 16 to March 14
WB-B-M54-56	45.520401 -80.23898	Low	Direct	Unknown	Warm	July 16 to March 14
WB-B-M55-53	45.511511 -80.226797	Low	Direct	Unknown	Warm	July 16 to March 14
WB-B-M55-54	45.513963 -80.231276	Low	Direct	Unknown	Warm	July 16 to March 14
WB-B-M56-51	45.507223 -80.221944	Low	Unknown	Unknown	Warm	July 16 to March 14
WB-B-M59-41	45.499324 -80.183365	Low	Direct	Unknown	Cool	July 16 to March 14
WB-B-M59-32	45.496545 -80.17558	Low	Direct	Unknown	Cool	July 16 to March 14
WB-B-M60-22	45.490164 -80.181869	Low	Direct	Unknown	Cool	July 16 to March 14
WB-B-M61-26	45.490634 -80.140652	Low	Direct	Unknown	Cool	July 16 to March 14
WB-B-M62-29	45.491052 -80.137666	Low	Direct	Unknown	Cool	July 16 to March 14
WB-B-M62-30	45.491059 -80.136687	Low	Direct	Unknown	Cool	July 16 to March 14
WB-B-M63-31	45.492663 -80.123537	Low	No	N/A	Cool	None
WB-B-M63-33	45.495222 -80.117441	Moderate	Direct	Unknown	Cool	July 16 to March 14
WB-B-M63-34	45.495516 -80.113867	Low	Direct	Unknown	Cool	July 16 to March 14
WB-B-M63-35	45.4964 -80.1123	Low	Indirect	Unknown	Cool	July 16 to March 14

Tributaries in the Shebeshekong River – St Aubyn Bay Watershed

Waterbody Site ID	UTM	Sensitivity	Fish Habitat?	Species Present	Thermal Regime	Suggested Timing Window (in-water work permitted)
WB-B-M64-36	45.497707 -80.10958	Low	Direct	Unknown	Cool	July 16 to March 14
WB-B-M64-37	45.497842 -80.10958	Low	Indirect	Unknown	Cool	July 16 to March 14
WB-B-M64-42	45.497993 -80.104841	Low	Direct	Unknown	Cool	July 16 to March 14
WB-B-M65-47	45.502092 -80.090838	Low	Direct	Unknown	Cool	July 16 to March 14
WB-B-M65-49	45.503647 -80.084994	Low	No	N/A	Cool	None
WB-B-M66-52	45.509339 -80.075621	Low	Direct	Unknown	Cold	July 16 to March 14
WB-B-M67-24	45.486899 -80.050112	Low	Direct	Unknown	Cool	July 16 to March 14
WB-B-M68-21	45.482291 -80.046093	Low	Direct	Unknown	Cool	July 16 to March 14
WB-B-M69-19	45.474432 -80.039792	Low	Direct	Unknown	Cool	July 16 to March 14
WB-B-M69-20	45.475701 -80.040541	Low	Direct	Unknown	Cool	
WB-B-M70-16	45.467634 -80.031663	Low	Direct	Unknown	Cool	July 16 to March 14
WB-B-M70-17	45.465239 -80.033142	Low	Direct	Unknown	Cool	July 16 to March 14
WB-B-M70-17-3	45.464715 -80.033738	Low	Direct	Unknown	Cool	July 16 to March 14
WB-B-M70-18	45.465626 -80.034514	Low	Direct	Unknown	Cool	July 16 to March 14
WB-B-M70-18-2	45.467687 -80.034514	Low	Direct	Cyprinids Observed	Cool	July 16 to March 14
WB-B-M71-14	45.454916 -80.025889	Low	Direct	Unknown	Cool	July 16 to March 14
WB-B-M71-15	45.459101 -80.029766	Low	Direct	Unknown	Cool	July 16 to March 14
WB-B-M72-13	45.428462	Moderate	Direct	Walleye & White Sucker Suspected	Cool	July 16 to March 14

Tributaries in the Shebeshekong River – St Aubyn Bay Watershed

Waterbody Site ID	UTM	Sensitivity	Fish Habitat?	Species Present	Thermal Regime	Suggested Timing Window (in-water work permitted)
	-80.012127					
WB-B-M73-11	45.418044 -80.0066059	Low	Direct	Unknown	Cool	July 16 to March 14
WB-B-M73-12	45.427881 -80.008286	Low	Direct	Cyprinids Observed	Cool	July 16 to March 14
WB-B-M74-10	45.399828 -79.993754	High	Direct	Walleye Suspected	Cool	July 16 to March 14
WB-B-M75-9	45.387494 -79.98741	Moderate	Direct	Northern Pike Suspected	Cool	July 16 to March 14
WB-B-M76-8	45.372048 -79.975509	Moderate	Direct	Northern Pike Observed	Cold	July 16 to March 14
WB-B-M77-7	45.363962 -79.970777	Moderate	Direct	Unknown	Cool	July 16 to March 14
WB-B-M78-5	45.351535 -79.963219	Low	No	N/A	Cool	July 16 to March 14
WB-B-M78-6	45.355013 -79.965758	Low	No	N/A	Cool	None
WB-B-M79-4	45.345926 -79.960166	Low	Direct	Unknown	Cool	None
WB-B-M80-2	45.336576 -79.954188	Low	No	N/A	Cool	July 16 to March 14
WB-B-M80-2-2	45.337548 -79.954619	Low	Direct	Unknown	Cool	None
WB-B-M80-3	45.340467 -79.956807	Low	Indirect	Unknown	Cool	July 16 to March 14
WB-B-M81-1	45.326439 -79.948212	Low	Direct	Unknown	Cool	none