Town of Cobourg

Massey Creek Flood Reduction Study

Addendum to the 2011 Municipal Class Environmental Assessment

November 2022

C14-0453

CIMA+

415 Baseline Road West, 2nd Floor
Bowmanville, ON L1C 5M2
T 905 697-4464 **F** 905 697-0443
cima.ca

Contact

Steve May, C.E.T.
Steve.May@cima.ca
T 905 697-4464, 6908

Engineering for **people**

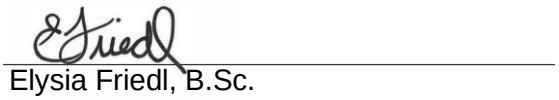
Town of Cobourg

Municipal Class EA Addendum

Massey Creek Flood Reduction Study

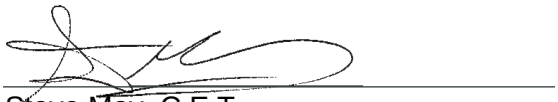
Project no C14-0453

PREPARED BY:



Elysia Friedl, B.Sc.

VERIFIED BY:



Steve May, C.E.T.

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1 Introduction

In November 2011, The Town of Cobourg and The Ganaraska Region Conservation Authority (GRCA) completed a Schedule 'B' Municipal Class Environmental Assessment (EA) for the Massey Creek Flood Reduction Study. The study aimed to identify and confirm the best possible flood reduction option within the Lucas Point Business Industrial Park, to reduce the flood plain along the reach of Massey Creek and to increase the extent of developable land within the industrial park. After the review of five (5) different options, the preferred solution was to design a diversion channel on the west side of the Massey Creek with a flow control structure and a cross-over structure.

As 10 years have elapsed since the original EA was completed, and the project has not been implemented, the Town has completed an EA Addendum process to update the original EA. The purpose of this EA Addendum was to provide an update to the original EA to reflect, the current site conditions, the current policy framework established by the Provincial and local approval agencies, including the current Municipal Class EA process and to confirm the originally selected solution is still valid today. The results of this process are described in this EA Addendum Report.

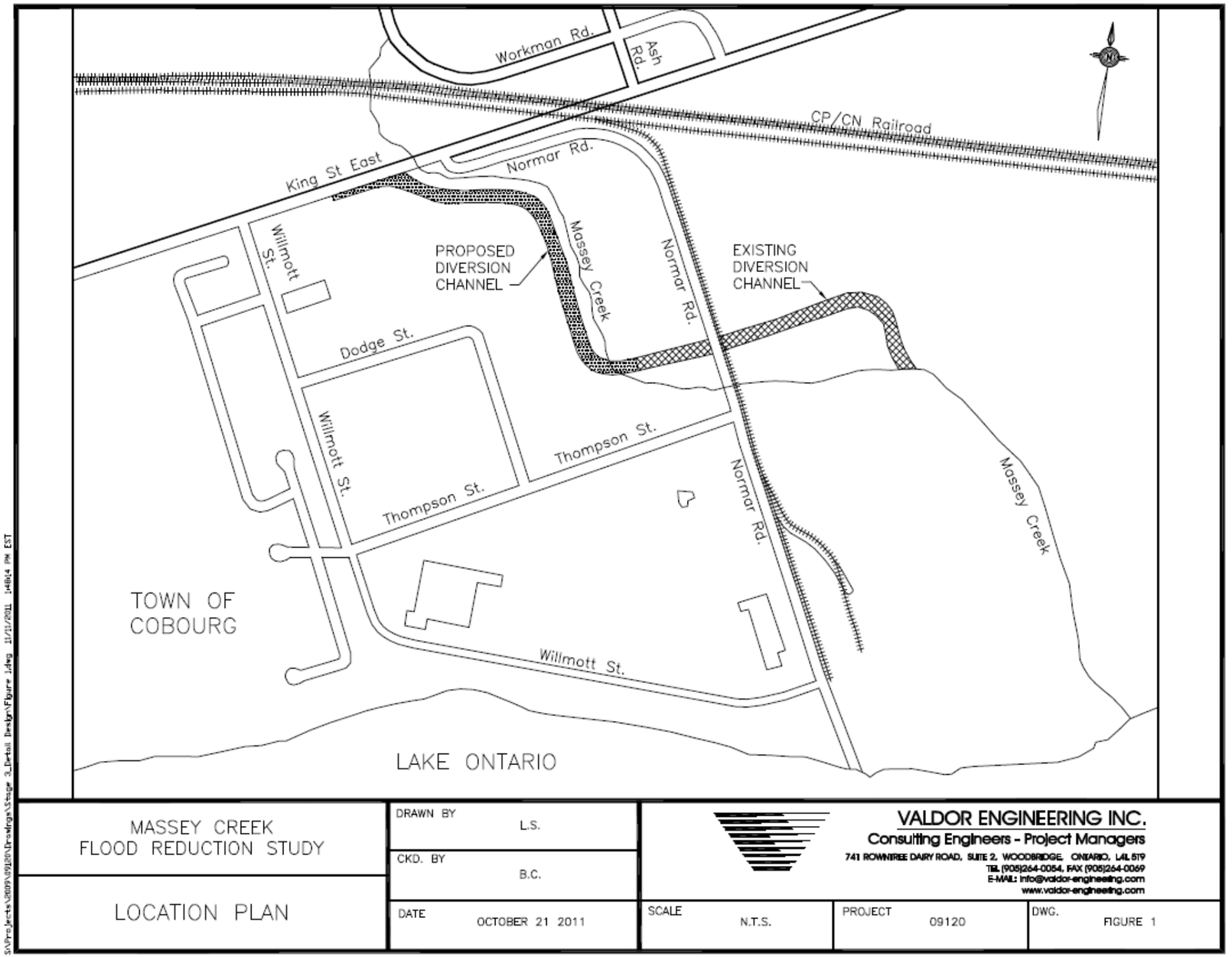
2 Background Information

2.1 2011 Municipal Class Environmental Assessment

2.1.1 Study Area

The Study Area (**Figure 1**) is located in east end of The Town of Cobourg between King Street and the existing flood diversion channel that extends across Normar Road, meeting with the existing Massey Creek further downstream.

Figure 1: Study Area



2.1.2 Purpose of the 2011 EA

The first phase of flood mitigation measures for the industrial park was completed in the 1980s with the partial construction of a flood diversion channel that extends from approximately 190 m upstream of Normar Road to its meeting with Massey Creek approximately 390 m downstream of Normar Road. In 2010, a flooding event caused a spill on King Street and ponded water on Thompson Street and thus renewed the efforts to continue with flood reduction measures in the area.

The 2011 EA was initiated to provide engineering options to complete an engineering analysis of Massey Creek and the partially constructed diversion channel, and to investigate the options of extending the bypass channel upstream to reduce the floodplain within the Lucas Point Business and Industrial Park area.

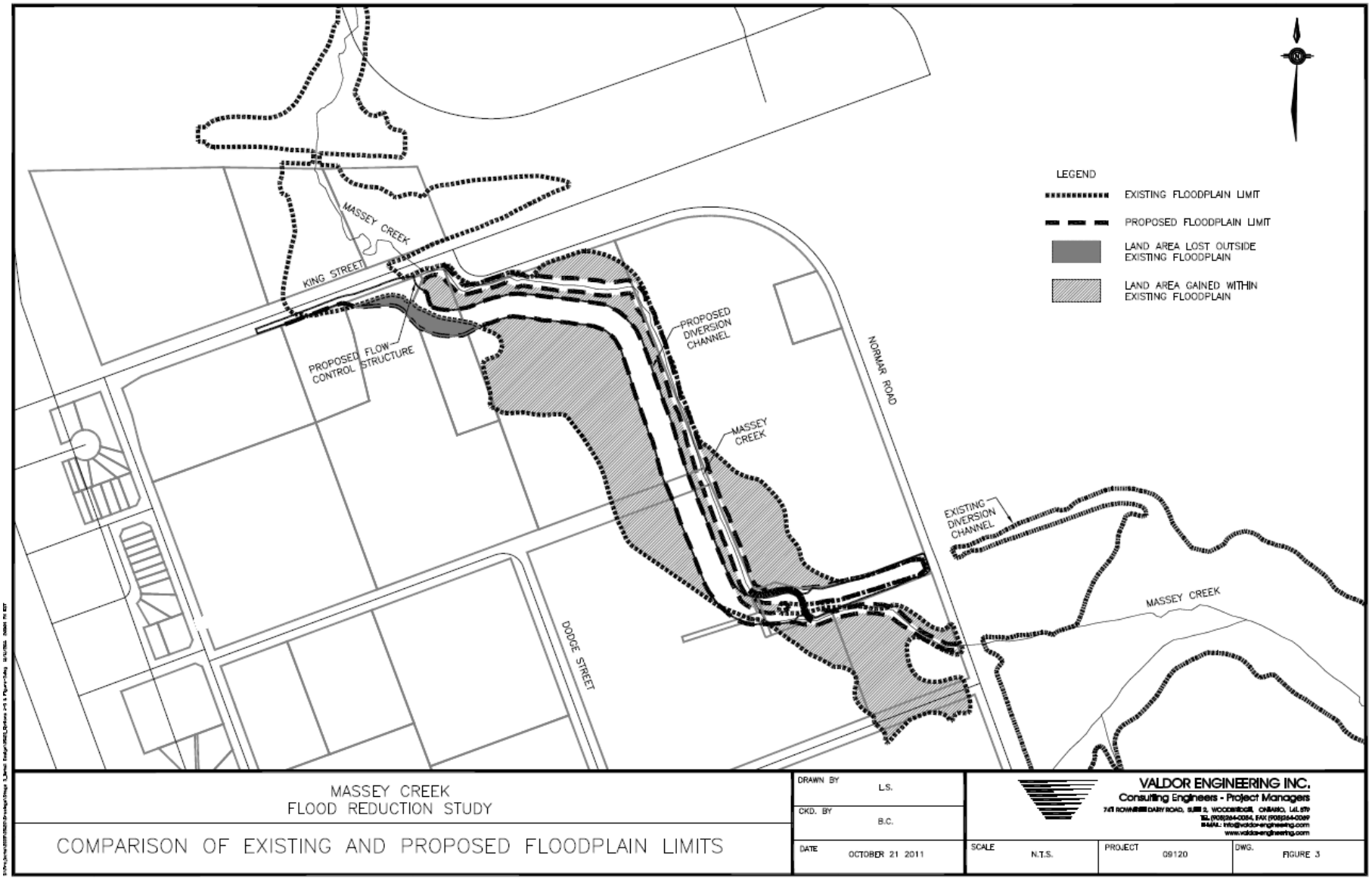
2.1.3 2011 Preferred Solution

The study examined five (5) different flood reduction options, and option 2b was ranked as the preferred option as its impact on the environment would be minimal and it would result in social and economic benefits for the area. Option 2b included a diversion channel that starts downstream of King Street and connects with the existing diversion channel upstream of Normar Road. The following provides a summary of the conveyance of flows:

- Flows less than or equal to the 2-year storm flow will be conveyed through Massey Creek;
- Flows more than the 2-year flow amount will flow into the diversion channel, while Massey Creek will receive a flow slightly higher than the 2-year amount; and
- In an extreme event like a Regional event, Massey flow will be below the 5-year flow amount.

To enable a proper flow split between the diversion channel and Massey Creek, an inline and lateral hydraulic structure are proposed to be constructed at the upstream end of the channel. A crossover structure would also be required to be design within the channel to covey the flow from the existing creek across the diversion channel. Along with this cross over structure, a portion of the creek will need to be realigned near the structure. **Figure 2** depicts the preferred solution from the 2011 EA and the associated changes to the floodplain and the developable land area that would be gained by implementing this solution.

Figure 2: Preferred Option 2b from the 2011 EA



3 Municipal Class Environmental Assessment (MCEA) Addendum Process

The MCEA process requires a review of the original EA when a ten (10) year time period has passed after the filing of the original EA. In these cases, the proponent will be required to review the planning and design process and the current environmental setting to ensure all recommendations from the original EA are still valid given the current planning context. This review shall be recorded in an Addendum Report and be placed on the public record for a minimum of 30-days. As stated in the MCEA manual, only proposed changes and recommendations in this Addendum are open for review.

3.1 Notice of Filing

The EA Addendum Report for this study is available for a 30-calendar day public review during which comments/concerns can be submitted. As per the MCEA process, only the changes proposed in the Addendum are open for review. The review period was announced with the publication of the Notice of Filing on November 10, 2022. As detailed in the notice, interested persons may provide written comments to the project team by December 10, 2022. All comments and concerns should be sent directly to Terry Hoekstra at the Town of Cobourg.

Terry Hoekstra, C.E.T., LET, rcca
Manager, Engineering and Capital Projects
Town of Cobourg
905-372-9971, ext. 4371
thoekstra@cobourg.ca

The Municipal Class EA process includes an appeal provision. The Minister of the Environment, Conservation and Parks has the authority and discretion to make an Order under Section 16 of the *Environmental Assessment Act*.

A Section 16 Order may require that the proponent of a project going through a Class Environmental Assessment (Class EA) process:

- Submit an application for approval of the project before they proceed. This is generally referred to as an Individual Environmental Assessment (individual EA).
- Meet further conditions in addition to the conditions in the Class EA. This could include conditions for: further study, monitoring and/or consultation

The minister can also refer a matter in relation to a section 16(6) Order request to mediation.

Before making an Order, the minister must consider the factors set out in section 16(5) of the *Environmental Assessment Act*. If a Section 16 Order request is made, the project proponent cannot proceed with the project until the minister makes a decision on the request. If the minister makes a Section 16 Order, the proponent may only proceed with the project if they follow the conditions in the Order.

Note, Section 16 Order requests were previously known as Part II Order requests.

Reasons for Requesting an Order

A concerned party may ask the minister to make a Section 16(6) Order if:

- they have outstanding concerns that a project going through a Class EA process may have a potential adverse impact on constitutionally protected Aboriginal and treaty rights;
- they believe that an Order may prevent, mitigate or remedy this impact.

A Section 16(6) Order request cannot be made to simply delay or stop the planning and implementation of a project that is going through a Class EA process. Prior to making a Section 16(6) Order request, the concerned party should first try to resolve any concerns directly with the project proponent, in this case, the Town of Cobourg.

Timing for an Order Request

During the 30-day public comment period, anyone can review the documentation, submit any comments or concerns to the proponent, and request a Section 16(6) Order

To request a Section 16 Order for a project, on the grounds that an Order may prevent, mitigate or remedy potential adverse impacts on constitutionally protected, Aboriginal and treaty rights, a concerned party must make the request before the public comment period is complete.

How to make a request

To submit a Section 16(6) Order request, the following information must be provided:

- name, address and email address;
- project name;
- proponent name;
- what kind of Order is being requested i.e., a request for additional conditions or a request for an individual environmental assessment;
- details about the concerns about potential adverse impacts on constitutionally protected Aboriginal or treaty rights and how the proposed Order may prevent, mitigate or remedy the identified adverse impacts;
- whether the concerned party belongs to, represents or has spoken with an Indigenous community who's constitutionally protected Aboriginal or treaty rights may be adversely impacted by the proposed project;
- whether the concerned party has raised their concerns with the proponent, the proponent's response (if any) and why the concerns could not be resolved with the proponent;
- any other information to support the request.

Section 16 Order requests are made to the Minister of Environment, Conservation and Parks and the Director of Environmental Assessment Branch:

Minister
Ministry of the Environment, Conservation and Parks
777 Bay Street, 5th Floor
Toronto ON M7A 2J3
Minister.mecp@ontario.ca

Director
Environmental Assessment Branch
Ministry of the Environment, Conservation and Parks
135 St. Clair Avenue West, 1st Floor
Toronto ON M4V 1P5
EABDirector@ontario.ca

There is no appeal of the minister's decision with respect to a Section 16 Order. If the request for a Section 16(6) Order is denied by the minister, the proponent can proceed with the project. If the minister makes an Order, the proponent may only proceed with the project if they follow the conditions in the Order.

The above discussion is intended as an overview of the process only. For more information and specific instruction, please visit:

https://www.ontario.ca/page/class-environmental-assessments-section-16-order

4 Existing Environment (2021)

To update the environmental setting for the EA Addendum process, the CIMA+ team obtained background information and completed a field visit to the site in summer of 2021. The same study area was used for the EA Addendum process (**Figure 3**). The following sections provide an updated summary of the existing environmental setting.

Figure 3: Study Area 2021

4.1 Land Use / Socio-Economic Environment

The Site currently consists of wooded areas, areas of low-lying vegetation and re-growth, agricultural fields, private property (residence), and a segment of Massey Creek. The Town of Cobourg Official Plan (OP) designates the area as an Employment Area and the floodplain around Massey Creek as an Environmental Constraint Area and it is apart of the Greenlands System. These subject lands have areas with sensitive environmental features and floodplain limitations. During major rainfall events the upstream area adjacent to King Street as well as the Business and Industrial Parks are subject to flooding and potential damages. This currently limits the amount of developable land available to the Town and thus limits the potential income associated with developing these lands.

4.2 Archaeology

AMICK Consultants Limited completed a Stage 1 Archaeological Assessment in 2009, and a Stage 2 Archaeological Assessment in 2010 for the original EA. As a result of the physical site assessment completed in May 2010 as part of the Stage 2 work, no archaeological resources were encountered, and the site was cleared of any further requirement for archaeological fieldwork. Therefore, no further archaeological assessments were completed as part of this EA Addendum.

4.3 Geotechnical

A soil investigation was completed in 2010 by Soil Engineers Ltd., determining the subsurface conditions and engineering properties of the soils for the proposed flood diversion channel. The investigation was completed along the west side of Massey Creek, south of King Street East.

The report determined that beneath a layer of topsoil fill / earth fill, the site is underlain by soft to hard silty clay, dense silty sand and sandy silt tills. Bedrock / boulders were also encountered at a depth of 3.2 m on site. Groundwater was detected at a depth of 1.5 m.

During on-site investigation work, CIMA+ noted that there has been recent placement of fill near the project limits but no further information on the fill was available to CIMA+. A geotechnical investigation was not completed as part of this addendum, as the timing of detailed design and construction are unknown at this time, however further investigations will be required once the further work on this project commences. As it is anticipated that there will be significant excavation work for the project, the new Ontario Excess Soil Regulation O. Reg. 406/19 must be followed during future design work.

4.4 Hydraulic Assessment / Geomorphic Investigations

Ganaraska Region Conservation Authority (GRCA) completed hydraulic modelling of Massey Creek in 2008 which was updated/modified by Valdor Engineering in 2011 as part of the Massey Creek Diversion Class EA. It is recommended that an updated hydraulic assessment and fluvial geomorphic investigation be completed as part of this project during the detailed design phase to better reflect the conditions at that time and inform any design concepts. Any

channel works must incorporate natural channel design principles to ensure fisheries and aquatic habitat requirements are satisfied, and any impacts are mitigated.

4.5 Natural Environment

As part of the EA Addendum process, a Natural Heritage Assessment (NHA) was completed to document existing conditions related to natural heritage features present within the study area. Available existing natural heritage information was obtained from GRCA, and other agencies (MECP and Ministry of Northern Development, Mines, Natural Resources and Forestry) and field investigations were completed to confirm findings. A summary of the existing condition is provided below, and the recommendations and mitigation measures proposed are provided in **Section 9**. A copy of this report is provided in **Appendix B**.

Based on the background review and on-site conditions, it was determined that:

- There are no significant woodlands, significant valley lands, Areas of Natural or Scientific Interest (ANSIs) or Provincially Significant Wetlands (PSWs);
- The area is designated as an Environmental Constraint Area / Floodplain on Schedule A of the Town of Cobourg's Official Plan;
- The Department of Fisheries and Oceans' (DFO) aquatic species at risk (ASAR) map indicated no known ASAR habitat within a 1 km buffer of the Site;
- Four fish species (Atlantic Salmon, Creek Chub, White Sucker, and Brook Stickleback) were captured within the reach where the proposed flood diversion channel would be created;
- That that there is potential for seven (7) species at risk (SAR) and their habitat to be impacted by this project and avoidance and mitigation measures were identified in to address potential impacts to SAR and their habitat.

4.5.1 Assessment of Design Options

Based on a review of the design alternatives and the current conditions of the Site, Option #4, the "do nothing" alternative, will result in the fewest impacts to the natural environment as it retains existing conditions across the site. However, this alternative does not address any of the issues with respect to the management of flows or provide any of the benefits associated with the other proposed alternatives. Based on this, Option # 3 was selected has having the least potential impact to the natural environment while still providing similar benefits regarding flood management enabling Site development.

5 Consultation

Although not specifically required by the MCEA, the Town consulted with stakeholders on the study prior to the filing of the Addendum. Since the entirety of the project took place during the COVID-19 pandemic and emergency orders prohibiting public gatherings were in place, the Town made efforts to notify all interested parties in a variety of ways (website posting, emails, and hard copy mail-outs).

A stakeholder list was compiled for the project, representing all parties that were expected to have an interest or regulatory authority over some portion of the project. The stakeholder list was comprised of members of the adjacent property owners, government review agencies, municipal staff, Indigenous Communities, and any other organizations or individuals that expressed an interest in the project. The stakeholder list is provided in **Appendix A**.

5.1 Notice of Filing

A Notice of Filing was prepared to announce the completion of the EA Addendum Study and notify interested parties of the 30-day calendar review period. The Notice was posted on the Town's website and was emailed to agencies, stakeholders, interested residents and Indigenous Communities. A hard copy of the Notice was also mailed via Canada Post to the adjacent property owners. A copy of the Notice is included in **Appendix A**.

5.2 Indigenous Community Consultation

The Crown has a legal duty to consult with Indigenous Communities when it has knowledge of the existence or potential existence of an Aboriginal Treaty or right that may be impacted by the proposed project. The Crown has delegated this duty to the Town of Cobourg for this Project, and as such provided the following list of Indigenous Communities for the Town to consult with in their letter dated August 26, 2021.

- Mohawks of the Bay of Quinte
- Chippewas of Rama First Nation
- Chippewas of Georgina Island
- Beausoleil First Nation
- Alderville First Nation
- Curve Lake First Nation
- Hiawatha First Nation
- Mississaugas of Scugog Island First Nation

Formal letters were emailed to the Indigenous Communities identified by the Ministry of the Environment, Conservation and Parks (MECP) on September 21, 2021. The letters provided a brief project background, reasoning as to why the study was being undertaken and the goals of the EA Addendum, the project location and the contact information of the project managers so comments could be provided. The responses from the Indigenous Communities are summarized in **Table 1.**

Table 1: Summary of Responses from Indigenous Communities

Community	Summary of Comments	Summary of Project Team Responses
Alderville First Nation	Expressed interest in the environmental impacts of the project.	The Project Team noted their interested and advised the reports would be circulated for comment once completed.

Due to COVID-19 and working-from-home situations, opportunities for consultation were limited, however the Town commits to continuing outreach and engagement will all Indigenous Communities that may have interest in the study area during detailed design and construction. All future correspondence will be documented and submitted with any subsequent applications to the MECP.

5.3 Stakeholder Consultation

As part of the consultation process, formal letters were mailed to adjacent property owners providing a brief project background, reasoning as to why the study was being undertaken and the goals of the EA Addendum and the project location. A copy of this letter is provided in **Appendix A.**

A virtual stakeholder meeting was also held with members of the Town, CIMA+ and GRCA on August 31, 2021, to discuss the details of the EA Addendum and gather any background information on the project. The GRCA were a co-proponent of the 2011 EA, and the project site is under their regulation. The GRCA reviewed the draft EA Addendum report and their comments have been included in **Appendix A**.

5.4 Notice of Addendum Filing

As per the Municipal Class EA process, a Notice of Addendum Filing was prepared by the Project Team and circulated to all contacts via email and via Canada Post for those without email addresses. A copy of the Notice is provided in **Appendix A**. The Notice was also published on the Town's website and social media accounts and published in Northumberland News on November 10, 2022. The Notice provided a brief project background, reasoning for the EA Addendum, notification of the 30-calendar day comment period, where to review the report and the contact information for the project managers.

6 Alternative Solutions

The five (5) alternatives from the 2011 EA Study were carried forward to this Addendum report and they are described below and are shown on **Figure 4.**

6.1 Option #1 – SWM Facility

The first alternative from the 2011 EA was to construct a large stormwater management (SWM) facility upstream of the industrial park area to control the flows moving south and thus reduce the existing floodplain for the proposed development lands.

6.2 Option #2a – Diversion Channel (West Side of Creek)

The second alternative from the 2011 EA was to construct a diversion channel on the west side of the creek to convey flows greater than the 2-year storm event thus reducing the existing floodplain. Any flows less than or equal to the 2-year storm event would be conveyed by the creek and the diversion channel would only be used for flows greater than the 2-year event. This option would use a hydraulic structure at the upstream end of the diversion channel to enable a proper flow split. A crossover structure would also be required at the downstream end of the diversion channel to convey flow from the creek across the proposed diversion channel.

6.3 Option #2b – Diversion Channel (West Side of Creek)

The third alternative from the 2011 EA was to construct a diversion channel on the west side of the creek to convey flows greater than the 2-year storm event and thus reduce the existing floodplain. Any flows less than or equal to the 2-year storm event would be largely conveyed through the creek, but during larger events, a large portion of the flow (in excess of the 2-year flow amount) would flow into the diversion channel. With this option, Massey Creek would receive a bit higher than the 2-year amount, however in any extreme events, the Massey Creek flow will be below the 5-year storm flow amount. This option would utilize both an inline and lateral hydraulic structure at the upstream end of the channel to enable for a proper flow split between the channel and the creek. A crossover structure would also be required at the downstream end of the diversion channel to convey flow from the creek across the proposed diversion channel. This option would also require a portion of the existing creek to be realigned in the area of the crossover structure.

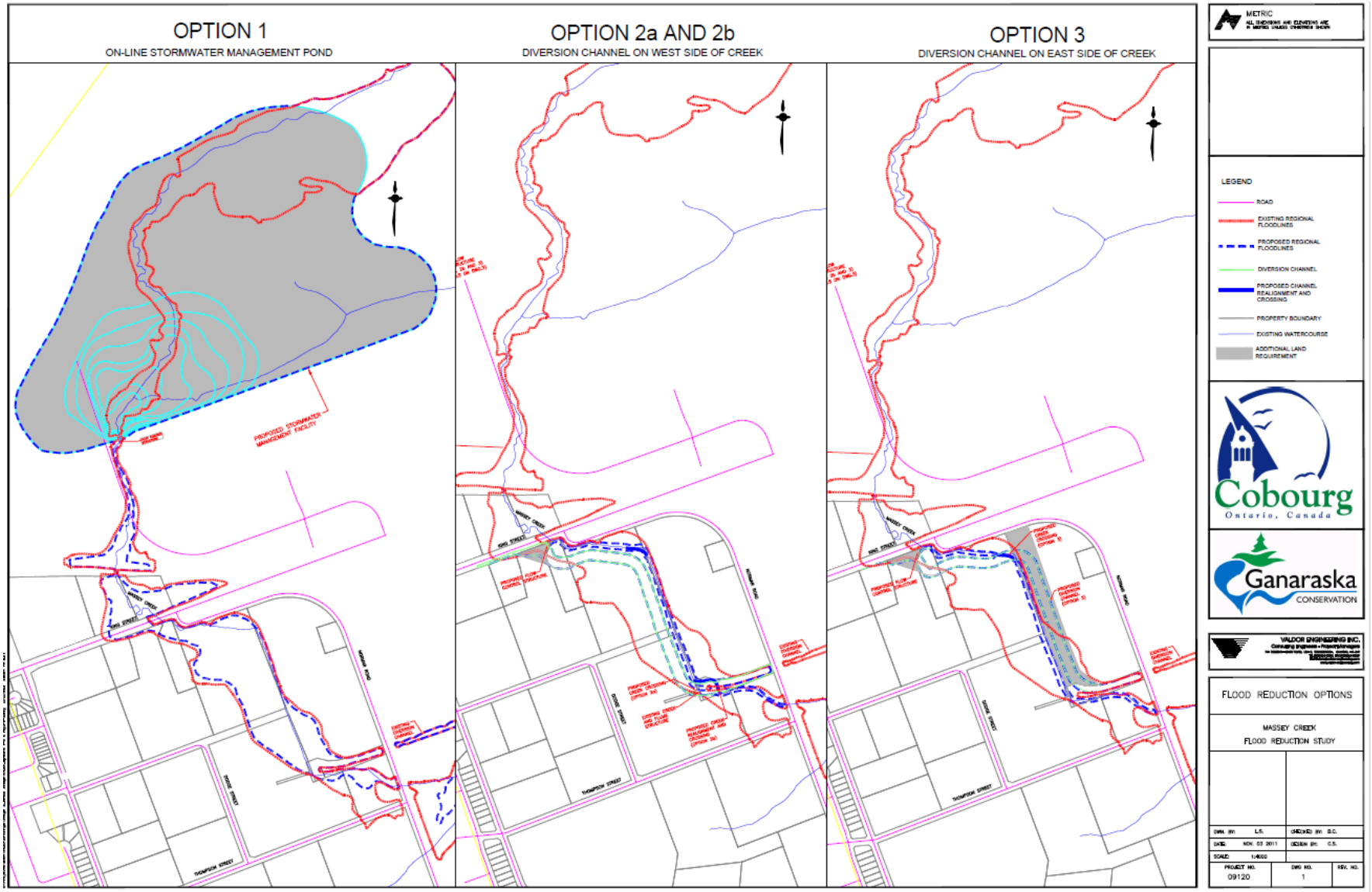
6.4 Option #3 - Diversion Channel (East Side of Creek)

The fourth alternative from the 2011 EA was to construct a diversion channel on the east side of the creek to convey flows greater than the 2-year storm event thus reducing the existing floodplain. Any flows less than or equal to the 2-year storm event would be conveyed by the creek and the diversion channel would only be used for flows greater than the 2-year event. This option would use a hydraulic structure at the upstream end of the diversion channel to enable a proper flow split. A crossover structure would also be required at the downstream end of the diversion channel to convey flow from the creek across the proposed diversion channel.

6.5 Option #4 – Do Nothing

The fifth option from the 2011 EA was the “Do Nothing” option. In this case, no effort would be made to reduce the existing floodplain.

Figure 4: Alternative Solutions



7 Evaluation of Alternatives

To update the original EA, the project team evaluated the five (5) alternatives against comprehensive evaluation criteria to reflect today's MCEA process and planning context. Like in the original EA, the evaluation criteria were given a "Normalized Priority Value" (NPV) based on the importance of each criterion. This importance was based on the professional judgement from the Town, CIMA+, the Conservation Authority and other stakeholders who provided comments and input during the study. The total of the NPVs is 1.00. The alternative solutions were then ranked in order of best (1) to worst (5) for each of the evaluation criteria. To determine the preferred solution, the sum of the total project of rank and NPV was calculated to obtain a total weighted score and the lowest total weighted score was determined to be the preferred solution. The evaluation results can be seen in **Table 2**.

Based on the lowest total weighted score, **Option #2b** was selected as being the preferred solution.

Table 2: Evaluation of Alternatives

Evaluation Criteria	Option #1 – SWM Facility	Option #2a – Diversion Channel West Side	Option #2b – Diversion Channel West Side	Option #3 – Diversion Channel East Side	Option #4 – Do Nothing
Natural Environment (NPV=0.20)	• This option requires the largest footprint upstream and thus has the highest impact on the environment. **Ranking 5**	• This option would have less of an impact than Option 2b because no creek realignment is required. **Ranking 3**	• This option requires Massey Creek to be realigned in the area of the crossover structure and thus has more impacts to the environment. **Ranking 4**	• This option presents the least impact as most of the footprint occurs within already developed agricultural land. **Ranking 2**	• No impacts to the natural environment as it retains existing conditions on the site. **Ranking 1**
Constructability and Engineering (NPV = 0.10) • Ease of implementation • Operation and maintenance	• This option will require a large amount of earthworks. • This option will still require flow structures. • The engineering is not as complex for this option. **Ranking 5**	• This option requires the design and construction one hydraulic structure near the upstream of the channel to divert flow and crossover structure further downstream. **Ranking 2**	• This option utilizes both an inline and lateral hydraulic structure at the upstream end and a crossover structure further downstream. **Ranking 3**	• This option requires the design and construction one hydraulic structure near the upstream of the channel to divert flow and crossover structure further downstream. **Ranking 2**	• No design or construction required. **Ranking 1**
Capital Cost (NPV = 0.25)	• This option will be the most expensive due to the large amount of property acquisition required and the large amount of earthworks. **Ranking 5**	• This option requires the least amount of property (other than Option 4) and does not have as many flow structures associated with it. **Ranking 2**	• In addition to property requirements, more flow structures will need to be build for this option making it more expensive than Option 2a. **Ranking 3**	• This option will require more property than option 2A and 2B. **Ranking 4**	• There is no cost associated with this option. **Ranking 1**
Socio-economic Factors (NPV = 0.35) • Property Impacts • Developable Land / Economic Benefits • Disruption for construction • Use of already existing channel • Aesthetics	• This option does not significantly increase the amount of developable land for the Town. • Will require a significant amount of property. **Ranking 4**	• This option increases the amount of developable land and has economic benefits for the Town. • Utilizes the already existing diversion channel built downstream. • Will require a small portion of property on the north side of King Street West. **Ranking 3**	• This option increases the amount of developable land and has economic benefits for the Town. • Utilizes the already existing diversion channel built downstream. • Will require a small portion of property on the north side of King Street West. • This option also has more flow control due to the use of an orifice plate inside of the box culvert. **Ranking 1**	• This option increases the amount of developable land and has economic benefits for the Town. • Utilizes the already existing diversion channel built downstream. • Requires a portion of property north of King Street West and an additional portion to the east of the Creek. **Ranking 2**	• This option does not increase the amount of developable land and thus has no economic benefits for the Town. • Does not utilize the already existing diversion channel built downstream. • No property required with this option. **Ranking 5**

Evaluation Criteria	Option #1 – SWM Facility	Option #2a – Diversion Channel West Side	Option #2b – Diversion Channel West Side	Option #3 – Diversion Channel East Side	Option #4 – Do Nothing
Cultural Heritage / Archaeology (NPV = 0.10)	No impacts to cultural heritage or archaeology. **Ranking 1**	No impacts to cultural heritage or archaeology. **Ranking 1**	No impacts to cultural heritage or archaeology. **Ranking 1**	No impacts to cultural heritage or archaeology. **Ranking 1**	No impacts to cultural heritage or archaeology. **Ranking 1**
Total Weighted Score	4.15	2.45	**2.30**	2.50	2.40
Overall Recommendation	While this option has less environmental impact and provides developable land for the town (reduces the flood plain), it has the highest environmental impact and highest cost due to the amount of earthworks required.	While this option has less environmental impact and provides developable land for the town, it has less flood control than Option 2b.	Based on the evaluation, this is the preferred solution. While very similar to Option 2a, this option has a better management of the flows, and thus provides more developable land for the Town.	While this option has less environmental impact and provides developable land for the town (reduces the flood plain), it requires the acquisition of more land and thus is more expensive.	While this option has no cost implications, environmental impacts or property requirements, it does not address any of the issues with respect to the management of flows and thus does not provide additional developable land or economic benefits.

8 Preferred Solution

Based on the evaluation in **Section 7** of this report, the preferred solution is Option 2b: – Diversion Channel (West Side of Creek). As described earlier, any flows less than or equal to the 2-year storm event would be conveyed by the creek and the diversion channel would only be used for flows greater than the 2-year event. This option would use a hydraulic structure at the upstream end of the diversion channel to enable a proper flow split. A crossover structure would also be required at the downstream end of the diversion channel to convey flow from the creek across the proposed diversion channel.

For the purposes of this EA Addendum and since site conditions remain relatively unchanged, we have assumed that the preferred solution would be designed as specified in the original EA.

8.1 Updated Cost of Preferred Solution

As part of this EA Addendum, updated high-level cost estimates were calculated for the preferred solution using updated values for 2021. A more refined cost estimate will be completed during the detailed design phase of the project.

This estimate includes the cost of land purchase, site preparations, earthworks, flow control and crossover structures and creek realignment. Costing was based on recent construction contracts in the Town and local land values. Annual maintenance costs, permits and fees associated with construction administration and inspection are not included in these estimates.

The estimate also includes totals for the interim works (just the diversion channel) and the ultimate condition (post widening of King Street in the future completed by Northumberland County).

Because no level of detailed design has been undertaken by the Town, there is no information on a plan for any excess soil that is produced from the construction of the diversion channel. As such, two different cost estimates were prepared for the preferred solution 2b – one with soil remaining on the site and one with disposal off-site. **Table 3** below provides the updated cost estimate with soils remaining on site. **Table 4** below provides the updated cost estimate for with soil disposal off-site.

Table 3: Cost Estimate of Option #2b (soil remains on-site)

Item Description	Approx. Quantity	Unit	Unit Price	Amount
Land Purchase (Based on 2021 Values)	0.59	acre	$68,489.00	$40,408.51
Diversion Works (Interim Condition)				

Item Description	Approx. Quantity	Unit	Unit Price	Amount
Supply install and maintain sediment fence around work area (based upon one side of the diversion channel).	1000	m	$19.20	$19,200.00
Clear and grub all trees and shrubs with the diversion channel excavation works including removal of all stumps and cuttings.	1	LS	$7,500.00	$7,500.00
Construct mud mat / access route including all maintenance dust and mud control as required.	1	LS	$5,000.00	$5,000.00
Strip topsoil within diversion channel and stockpile on site for future use on diversion channel.	5260	m^3	$15.00	$78,900.00
Cut diversion channel to pre-grade elevation. Including stockpile of material on site for future use.	32409	m^3	$13.50	$437,521.50
Load topsoil from site stockpile and place and spread on the diversion channel to a final thickness of 180 mm.	5071	m^3	$15.00	$76,065.00
Hydro seed diversion channel following the placement of topsoil as per specifications	26317	m^2	$1.80	$47,370.60
Supply and installation of 7.5 m – 1 x 2100 x 900 mm reinforced concrete box culvert under driveway as per details including removing existing twin CSP culvert, excavation of driveway, bedding cover, backfill and final grading complete.	1	LS	$25,000.00	$25,000.00
Excavate, supply and place 9 x 2130 x 1400 HEL-COR pipe-arch culverts for crossover structure as per details including metal sheet headwall for two sides, bedding, backfill, liner, access route, complete (14 m Length).	1	LS	$225,000.00	$225,000.00

Item Description	Approx. Quantity	Unit	Unit Price	Amount
Form and pour 150 mm thick concrete pad atop box culverts forming a base for the proposed Massey Creek cross over including reinforcing	322	m^2	$100.00	$32,200.00
Supply and install armourstone wingwalls/retaining wall at crossover structure.	18	m^2	$640.00	$11,520.00
Form and pour concrete toe wall including water stop on either side of the concrete pad atop the box culverts.	46	m	$225.00	$10,350.00
Excavate, supply and place 7.5 m – 2 x 1630 mm x 1200 mm CMP culverts at ditch south of King Street, as per details including bedding, backfill, regrading and resurfacing.	1	LS	$12,800.00	$12,800.00
Excavate, supply and place 7.5 m – 600 mm dia. CMP circular pipe culvert at ditch south of King Street, as per details including bedding, backfill, regrading and resurfacing.	1	LS	$6,400.00	$6,400.00
Supply and installation of 50 m armourstone/concrete retaining wall in the south side of the ditch along King Street.	72	m^2	$640.00	$46,080.00
Total (Interim)				**$1,081,315.61**
Post Widening of King St. - New Culverts at King St. (Ultimate Condition)				
Strip topsoil within diversion channel and stockpile on site for future replacement on diversion channel.	100	m^3	$15.00	$1,500.00
Cut the upstream area to pre-grade elevation Including stockpile of material on site for future use.	400	m^3	$13.50	$5,400.00

Item Description	Approx. Quantity	Unit	Unit Price	Amount
Load topsoil from site stockpile and place and spread on the area to a final thickness of 180 mm.	90	m^3	$15.00	$1,350.00
Hydro seed diversion channel following placement of topsoil as per specifications.	500	m^2	$1.80	$900.00
Excavate, supply and place 5 x 2130 x 1400 HEL-COR pipe-arch at King Street, including bedding, headwalls, and backfill, complete. (25m length). Notes. Cost includes installation of culverts and backfill to bottom of road base only - it is assumed that cost of widening and resurfacing of King St. to be done by County.	1	LS	$218,880.00	$218,880.00
Total (Ultimate)				**$228,030.00**

Table 4: Cost Estimate of Option #2b (soil disposed off-site)

Item Description	Approx. Quantity	Unit	Unit Price	Amount
Land Purchase (Based on 2021 values)	0.59	acre	$68,489.00	$40,408.51
Diversion Works (Interim Condition)				
Supply install and maintain sediment fence around work area (based upon one side of the diversion channel).	1000	m	$19.20	$19,200.00
Clear and grub all trees and shrubs with the diversion channel excavation works including removal of all stumps and cuttings.	1	LS	$7,500.00	$7,500.00
Construct mud mat / access route including all maintenance dust and mud control as required.	1	LS	$5,000.00	$5,000.00
Strip topsoil within diversion channel and dispose off site to a dump location arranged by	189	m^3	$30.00	$5,670.00

Item Description	Approx. Quantity	Unit	Unit Price	Amount
the contractor. Topsoil based upon a thickness of 0.2 m.				
Strip topsoil within diversion channel and stockpile on site for future replacement on diversion channel.	5071	m^3	$15.00	$76,065.00
Cut diversion channel to pre-grade elevation Including disposal of excavated material off site to a dump location arranged by the contractor.	32409	m^3	$18.50	$599,566.50
Load topsoil from site stockpile and place and spread on the diversion channel to a final thickness of 180 mm.	5071	m^3	$15.00	$76,065.00
Hydro seed diversion channel following the placement of topsoil as per specifications.	26317	m^2	$1.80	$47,370.60
Supply and installation of 7.5 m – 1 x 2100 x 900 mm reinforced concrete box culvert under driveway as per details including removing existing twin CSP culvert, excavation of driveway, bedding cover, backfill and final grading complete.	1	LS	$25,000.00	$25,000.00
Excavate, supply and place 9 x 2130 x 1400 HEL-COR pipe-arch culverts for crossover structure as per details including metal sheet headwall for two sides, bedding, backfill, liner, access route, complete (14 m length).	1	LS	$225,000.00	$225,000.00
Form and pour 150 mm thick concrete pad atop box culverts forming a base for the proposed Massey Creek cross over including reinforcing.	322	m^2	$100.00	$32,200.00
Supply and install armourstone wingwalls/retaining wall at crossover structure.	18	m^2	$640.00	$11,520.00

Item Description	Approx. Quantity	Unit	Unit Price	Amount
Form and pour concrete toe wall including water stop on either side of the concrete pad atop the box culverts.	46	m	$225.00	$10,350.00
Excavate, supply and place 7.5 m – 2 x 1630 mm x 1200 mm CMP culverts at ditch south of King Street, as per details including bedding, backfill, regrading and resurfacing.	1	LS	$12,800.00	$12,800.00
Excavate, supply and place 7.5m – 600 mm dia. CMP circular pipe culvert at ditch south of King Street, as per details including bedding, backfill, regrading and resurfacing.	1	LS	$6,400.00	$6,400.00
Supply and installation of 50 m armourstone/concrete retaining wall in the south side of the ditch along King Street.	72	m^2	$640.00	$46,080.00
Total (Interim)				**$1,246,195.61**
Post Widening of King St. - New Culverts at King St. (Ultimate Condition)				
Strip topsoil within the upstream of new box culvert dispose off site to a dump location arranged by the contractor topsoil based upon a thickness of 0.2 m.	100	m^3	$30.00	$3,000.00
Cut the upstream area to pre-grade elevation. Including disposal of excavated material off site to a dump location arranged by the contractor	400	m^3	$18.50	$7,400.00
Load topsoil from site stockpile and place and spread on the area to a final thickness of 180 mm.	90	m^3	$15.00	$1,350.00
Hydro seed diversion channel following placement of topsoil as per specifications.	500	m^2	$1.80	$900.00

Item Description	Approx. Quantity	Unit	Unit Price	Amount
Excavate, supply and place 5 x 2130 x 1400 HEL-COR pipe-arch at King Street, including bedding, headwalls and backfill (25 m length). Notes. Cost includes installation of culverts and backfill to bottom of road base only - it is assumed that cost of widening and resurfacing of King St. to be done by County	1	LS	$218,880.00	$218,880.00
Total (Ultimate)				**$231,530.00**

Based on the above estimates, the estimated total for the preferred solution with soils remaining on site is $1,081,315.61 (for the interim solution) with an overall total of $228,030.00 once the ultimate scenario is implemented. If soils are to be removed and disposed of off-site, then the estimated totals are estimated to be $1,246,195.61 (for the interim solution) and $231,530.00 once the ultimate scenario is implemented. As stated previously, this is a high-level estimate that reflects 2021 values and will need to be further refined at the detailed design phase of the project.

9 Recommendations / Mitigation Measures

Throughout the study, subjects of interest were identified by the team and stakeholders, which are relevant to the planning, design, and construction of this project. **Table 5** outlines the Town's commitments as it relates to this project.

Table 5: Planning, Design and Construction Commitments

Subjects of Interest Identified During the EA	Action Taken during Project Planning	Measures to be Incorporated into Design	Measures to be Implemented during Construction
Source Water Protection	Study Area was confirmed to be located within Intake Protection Zone 2.	Must incorporate best management practices for the application of road salt into the design and future Operations and Maintenance.	An emergency spill response kit, including the appropriate absorbency materials, will be on site at all times and in the event that a spill occurs. Proper containment, clean up and reporting, in accordance with provincial requirements, is required.
Climate Change	The Province's Guide for Consideration of Climate Change in Environmental Assessments was reviewed. The proposed works were reviewed to identify the effects of the project on climate change, the effects of climate change on the project, and means of minimizing negative effects during project design. The effects of climate change on the project were considered in the evaluation of stormwater flow rates.	Landscaping plans for will include re-vegetation to the area to help sequester carbon and to reduce urban heat impact. All trees lost through construction are to be replaced.	Construction equipment is to be kept in good working order with approved emission controls in place. Work is to be planned efficiently to reduce overall length of construction time and need for heavy equipment.
Planning and Policy	Federal, Provincial, Regional, and Local Plans and Policies were reviewed as they pertain to the study area. Policy conformance is summarized in **Section 10**.	Refer to the 'Policy Conformance' in **Section 10**.	Refer to the 'Policy Conformance' in **Section 10**.
Air Quality and Dust	It was noted that there will likely be an increase in dust created during construction, which could impact sensitive receptors nearby, including residents and businesses.	Refer to the measures listed for 'Climate Change'.	Refer to the measures listed for 'Climate Change'. Machinery will be kept in a state of good repair and have appropriate exhaust controls or dust collectors as appropriate. Non-chloride dust suppressants will be used as necessary to control dust on the site during construction, in addition to regular street cleaning. All loads on haul trucks will be covered. Burning of waste materials to be prohibited.

Subjects of Interest Identified During the EA	Action Taken during Project Planning	Measures to be Incorporated into Design	Measures to be Implemented during Construction
Noise	Sensitive receptors were identified including local residences and commercial businesses; however, the proposed solution is not expected to increase the noise levels of the surrounding area.	The proposed solution is not expected to increase the noise levels of the surrounding area; however, the replanting of any vegetation will help muffle noise from the creek and/or diversion channel.	Construction will adhere to Town noise by-laws. Speed limits shall be respected and the speed of vehicles on the work site shall be limited. Machinery will be kept in a state of good repair and have noise mitigation devices as appropriate. Equipment will be shut off when not in use. Nearby residents and businesses will be advised of construction schedule, specifically for work that generates specific nuisances.
Ecosystem Protection and Restoration	A Natural Heritage Assessment was undertaken as part of the Addendum process to update the environmental conditions within the project site. This report is provided under separate cover to this Addendum Report.	Further assessments (SAR etc.) and consultation with MECP will be required to be completed by the Town once detailed design has commenced. As the project involves alteration, disturbance, diverting, etc. of Massey Creek, a permit from GRCA will be required for any channelization or development along Massey Creek. Development of a Tree Protection Plan during detailed design. The presence of Rainbow Trout indicated that Massey Creek is a cold-water system and in-turn will restrict any in-water works occurring before July 1st or after September 30th of any calendar year, however timing restrictions for in-water work to be confirmed with MNDMNRF.	Removal of vegetation will not occur during the breeding bird/bat season from April 15 - September 30 inclusive, unless a qualified biologist has searched the Site for nests/maternity roosts and concluded that no nests/roosts are present, no more than 2 days prior to clearing. If nests/roosts are found, a protective buffer around the location will be required until such time that the nest/roost is abandoned. If work must occur during the peak activity period for reptiles and amphibians, exclusion fencing shall be installed prior to the peak activity period (April 1) and shall be properly maintained and monitored for the duration of construction. Grade changes and construction activities that could cause soil compaction will be kept away from trees as much as possible. If roots will be damaged by excavation equipment, roots will be cut cleanly with sharp pruning tools. If branches are likely to hang in the way of passing equipment, the branches will be pruned by a qualified arborist to avoid tearing and undue injury to the tree. Equipment and materials will not be stored near trees, and equipment will not be left idling where exhaust could burn foliage.

Subjects of Interest Identified During the EA	Action Taken during Project Planning	Measures to be Incorporated into Design	Measures to be Implemented during Construction
			In order to limit the spread of invasive species, the Clean Equipment Protocol for Industry will be implemented during construction.
Fluvial Geomorphology	Hydraulic Modelling was updated in 2011.	During detailed design, a fluvial geomorphic assessment should be completed for the channel and the design should incorporate natural channel design principles into any channel works in order to mitigate fisheries and aquatic habitat impacts	In-water works will conform to the timing restrictions as provided by MNDMNRF during the detailed design phase.
Surface Water	Massey Creek is located within the study area.	Sediment and erosion control plans will be developed during detailed design to ensure no sediment or construction debris enters the creek.	Sediment and erosion controls will be detailed on the contract drawings and monitored regularly during construction. Excess sediment will be removed as required to ensure that controls remain functioning.
Geotechnical / Excess Materials Management	A geotechnical report was completed in 2010 as part of the original EA. As the timing of detailed design / implementation is not known at this time, an updated study was not completed as part of this Addendum process.	An updated geotechnical investigation will be required as part of the detailed design process, including an excess materials plan (if required) as per On-Site and Excess Soil Management O. Reg.406/19.	For any soils that are to be moved off-site, testing will be conducted to determine contaminant levels and appropriate disposal options, consistent with Part XV.1 of the Environmental Protection Act and the On-Site and Excess Soil Management O. Reg.406/19.
Servicing and Facilities	None.	Utility Circulations will be required during the detailed design phase.	Implement specific utility protection measures identified by each agency through the design process.
Mitigation and Monitoring	Existing condition assessments were completed to identify potential environmental risks and propose suitable mitigation measures. The approach proposed for this project focuses on prevention and minimization of impacts, and restoration of affected areas. Appropriate mitigation and monitoring recommendations were made for the design, construction and post-construction phases of the project.	Include all measures identified in this table.	Monitoring of all mitigation measures will occur regularly throughout construction. All construction-related mitigation measures will be incorporated into contract documents and communicated to contractors to ensure that all environmental standards are met.
Consultation with Indigenous Communities	Indigenous communities were identified through the process recommended by the MECP and contacted throughout the Class EA process. Correspondence records and a summary of consultation is provided in **Section 5** of this report.	Continued consultation as required with the Indigenous Communities during detailed design.	Continued consultation as required with the Indigenous Communities during construction. If a burial site is discovered, the police or coroner will be immediately notified, as well as the Registrar of Cemeteries

Subjects of Interest Identified During the EA	Action Taken during Project Planning	Measures to be Incorporated into Design	Measures to be Implemented during Construction
			at the Ministry of Consumer Services. Indigenous communities on the stakeholder list will also be contacted.
Class EA Process	The proposed works triggered the Municipal Class Environmental Assessment (MCEA) process. The planning process for the MCEA was followed and documented in this EA Addendum Report. Policy conformance and permit requirements are summarized separately in **Section 10**.	None required.	None required.
Archaeological Resources	AMICK Consultants Limited completed Stage 1 and 2 Assessments in 2009/2010 and the site was cleared of any further requirement for archaeological fieldwork.	None required.	Should previously undocumented archaeological resources be discovered during construction, the person discovering the archaeological resources will cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48(1) of the Ontario Heritage Act. If a burial site is discovered, the police or coroner will be immediately notified, as well as the Registrar of Cemeteries at the Ministry of Consumer Services. Indigenous communities on the stakeholder list will also be contacted.
Private Property and Business Impacts	Contact information for private property and business owners within the study area was obtained, and project notification / information was sent these contacts for review and comment.	Consultation and property negotiations will be required as part of the detailed design process. Ensure design and construction staging plans incorporate measures to ensure access to driveways is maintained for both businesses and residents. Refer to the measures listed for ‘Ecosystem Protection and Restoration’.	Refer to the measures listed for ‘Air Quality and Dust’, ‘Noise’, and ‘Transportation Improvements and Traffic Operations’. Driveway access will be maintained during the majority of construction, with only localized closures for short periods of time. Residents and businesses will be informed well in advance of any planned disruptions or localized closures of driveway access.

10 Legislation / Policy Conformance

Based on the preferred solution selected through the Municipal Class Environmental Assessment, the following legislation and policies apply:

Table 6: Legislation and Policy Conformance

Legislation / Policy / Plan	Project Conformance
Growth Plan for the Greater Golden Horseshoe	The planning and preliminary design of the proposed road improvements is consistent with the Stormwater Management section of the Plan. Specifically: From Policy 3.2.7 – Stormwater Management • Incorporate the need for stormwater retrofits where appropriate; and • Examine the cumulative environmental impacts of stormwater from existing and planned development, including an assessment of how extreme weather events will exacerbate these impacts and the identification of appropriate adaptation strategies.
Provincial Policy Statement	The planning and proposed solution for flood reduction is with the policies of the Statement. Specifically: • Minimize erosion and changes in water balance, and prepare for the impacts of a changing climate through the effective management of stormwater, including the use of green infrastructure; • Promote stormwater management best practices, including stormwater attenuation and re-use, water conservation and efficiency, and low impact development; and • Protects natural features and functions.
Fisheries Act	Modifications to flow management, timing and direct impacts to fish habitat related to the proposed flood diversion project will result in an authorization under the *Fisheries Act* being required.
Environmental Assessment Act	Project planning was conducted under the MECP approved Municipal Class Environmental Assessment process, as required under the *Act* for municipal infrastructure projects.
Environmental Protection Act	For any soils that are to be moved off-site during construction, testing will be conducted to determine contaminant levels and appropriate disposal options, consistent with the On-Site and Excess Soil Management O. Reg. 406/19.

Legislation / Policy / Plan	Project Conformance
Endangered Species Act	Although no endangered or threatened SAR were observed during the 2020 field investigations, there is habitat present for seven (7) SAR that may be impacted by construction activities; however, it is anticipated that implementation of standard best management practices and mitigations measures prior to and during construction will reduce impacts to these SAR because of the project.
Migratory Birds Convention Act	To comply with *MBCA* requirements, vegetation clearing activities will be required to adhere to established timing windows to prevent impacts to breeding birds.
Conservation Authorities Act	The Study Area is within an area regulated by Ganaraska Region Conservation Authority under O. Reg. 42/06: Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses. A permit from the GRCA under O. Reg. 42/06 will be sought.
Clean Water Act	Study Area is within an Intake Protection Zone 2. Policies under the Conservation Authorities Source Protection Plan will apply.
Ontario Heritage Act	No cultural heritage resources are present in the study area. If previously undocumented archaeological resources are discovered during construction, the person discovering the archaeological resources will cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48(1) of the *Act*.
Northumberland County Official Plan	The Northumberland County Official Plan (NCOP, 2016) was drafted, reviewed, and adopted in conformity with the requirements of the Planning Act and the content of the Plan is consistent with the PPS. The NCOP states that 'Where the policies of this Plan require that an Environmental Impact Study ('EIS') be prepared, such an EIS shall be prepared in accordance with the requirements of this section of the Plan'. The Town will continue communication with the County and have them review any detailed designs to ensure they are in agreement with the project as County Road 2 is under their jurisdiction and as per the OP the widening of County Road 2 is being considered and could be coordinated with this project.

Legislation / Policy / Plan	Project Conformance
Town of Cobourg Official Plan	Staff at the Town have reviewed the proposed solution to ensure that all relevant policies of the Official Plan have been addressed.

11 Conclusion

As required by the MCEA process, when a ten (10) year time period has passed after the filing of the original EA, the proponent is required to review the planning and design process and the current environmental setting to ensure all recommendations from the original EA are still valid in today's planning context.

After a review of the natural environment and current policies and legislation, it was confirmed that the preferred alternative from the 2011 EA is still valid today. Updated recommendations and mitigation measures have been provided along with an update to today's planning policies and legislation. Since the Town does not have a timeline on the implementation of this project, some recommendation and mitigation measures may need to be revisited at a later date along with ensuring the project follows all current policies and legislation at that time.

A

Appendix A: Consultation

Notice of Filing

Notice of Filing of Addendum
Massey Creek Flood Reduction Schedule 'B' Municipal Class Environmental Assessment

The Study

In 2011, the Town of Cobourg and the Ganaraska Region Conservation Authority completed a Schedule 'B' Municipal Class Environmental Assessment (EA) for the Massey Creek Flood Reduction Study. The 2011 EA study aimed to identify and confirm the best possible flood reduction option within the Lucas Point Business Industrial Park, to reduce the flood plain along the reach of Massey Creek to increase the extent of developable land within the industrial park. After the review of 5 different options, the preferred solution included the use of a diversion channel, a flow control structure and a cross-over structure to reduce the flood plain and provide greater controls of the flow in the area.

As the original EA is past the 10-year mark, and the project has not been implemented, the Town and CIMA Canada Inc. (CIMA+) have completed an EA Addendum to update the original EA. The Addendum Report details current site conditions, updated policy framework and confirmation that the original findings of the 2011 EA are still valid today.

The study area for the Addendum is the same as 2011 EA and can be seen in Figure 1 below.

Figure 1: Study Area

The Process

The addendum is being conducted as outlined in the Municipal Engineers Association Municipal Class Environmental Assessment (EA) document (2000, as amended in 2007, 2011 and 2015), as approved under the *Ontario Environmental Assessment Act*. By this Notice, the Addendum is being placed on the public record for review in accordance with the requirements of the Municipal Class Environmental Assessment. Please note that only the changes proposed in the Addendum are open for review. The addendum is available for review at

https://www.cobourg.ca/en/town-hall/Reports-Studies-and-Plans.aspx

Comments

Interested persons should provide written comment within **30-calendar days** from the date of this Notice. Comments should be directed to the parties listed below.

Terry Hoekstra, C.E.T., LET, rcca
Manager, Engineering and Capital Projects
Town of Cobourg
905-372-9971 x 4371
thoekstra@cobourg.ca

Steve May, C.E.T.
Director, Associate Partner
CIMA+
905-697-4464 x 6908
steve.may@cima.ca

Section 16 Order

In addition, a request may be made to the Ministry of Environment, Conservation and Parks for an order requiring a higher level of study (i.e., requiring an individual / comprehensive EA approval before being able to proceed), or that conditions be imposed (e.g., require further studies), only on the grounds that the requested order may prevent, mitigate or remedy adverse impacts on constitutionally protected Aboriginal and treaty rights. Requests on other grounds will not be considered. The request should be sent in writing or by email to:

Minister
Ministry of the Environment, Conservation and Parks
777 Bay Street, 5th Floor
Toronto, ON M7A 2J3
minister.mecp@ontario.ca

Director
Ministry of the Environment, Conservation and Parks
135 St. Clair Ave. W., 1st Floor
Toronto, ON M4V 1P5
EABDirector@ontario.ca

Requests should also be sent to **Terry Hoekstra** by mail or by email.

Please visit the ministry's website for more information on requests for orders under section 16 of the *Environmental Assessment Act* at: https://www.ontario.ca/page/class-environmental-assessments-section-16-order

All personal information included in your request – such as name, address, telephone number and property location – is collected, under the authority of section 30 of the *Environmental Assessment Act* and is collected and maintained for the purpose of creating a record that is available to the general public. As this information is collected for the purpose of a public record, the protection of personal information provided in the *Freedom of Information and Protection of Privacy Act* (FIPPA) does not apply (s.37). Personal information you submit will become part of a public record that is available to the general public unless you request that your personal information remain confidential.

Notice Published: November 10, 2022

Stakeholder List

Stakeholder Group	Organization Name	First	Last	Title	Address	City	Province	Postal Code	Phone Number	Email
Indigenous Community	Mohawks of the Bay of Quinte	Charlotte	Gurnsey		24 Meadow Drive	Tyendinaga Mohawk Territory	ON	K0K 1X0	613-396-3424, 155	consultation@mbq-tmt.org
Indigenous Community	Chippewas of Rama First Nation	Sharday	James	Community Consultation	5884 Rama Road, Suite 200	Rama	ON	L3V 6H6	905-325-3611, 1633	shardayj@ramafirstnation.ca
Indigenous Community	Chippewas of Georgina Island	Nancy	Carr	Lands Assistant	R.R.#2 Box N-13	Sutton West	ON	L0E 1R0	705-437-1337	nancy.carr@georginaisland.com
Indigenous Community	Beausoleil First Nation	Jane	Copegog	Lands Manager	11 O'Gemaa Miikaan	Christian Island	ON	L9M 0A9	705-247-2051	jcopegog@chimnissing.ca
Indigenous Community	Alderville First Nation	Dave	Simpson	Consultation Coordinator	11696 Second Line Road	Alderville	ON	K0K 2X0	905-352-2011	consultation@alderville.ca
Indigenous Community	Curve Lake First Nation	Kaitlin	Hill	Resource Consultation	22 Winookeedaa Road	Curve Lake	ON	K0L 1R0	705-657-8042, 222	kaitlinh@curvelake.ca
Indigenous Community	Hiawatha First Nation	Tom	Cowie	Lands/Resource Consultation	431 Hiawatha Line	Hiawatha	ON	K9J 0E6	705-295-4421, 216	tcowie@hiawathafn.ca
Indigenous Community	Mississaugas of Scugog Island First Nation	Waverly	Birch	Community Consultation Specialist	Administration Building 22521 Island Road	Port Perry	ON	L9L 1B6	905-985-3337, 229	consultation@scugogfirstnation.com
Indigenous Community		Karry	Sandy-McKenzie	Williams Treaties First Nations Process Co-ordinator						inquiries@williamstreatiesfirstnation.ca
Provincial Agency	Ministry of the Environment, Conservation and Parks			Director, Environmental Approvals Branch	135 St. Clair West, 1st Floor	Toronto	ON	M4V 1L5	416-314-7213	enviropermissions@ontario.ca
Provincial Agency	Ministry of the Environment, Conservation and Parks	Jon	Orpana	Environmental Planner & Environmental Assessment Coordinator, Kingston	PO Box 22032, 1259 Gardiners Road	Kingston	ON	K7M 8S5	613-548-6918	jon.orpana@ontario.ca
Provincial Agency	Ministry of Municipal Affairs & Housing	Connor	Lund	Policy Advisor, Municipal Affairs	8 Estate Lane	Kingston	ON	K7M 9A8	613-545-2100	Connor.Lund@ontario.ca
Provincial Agency	Ganaraska Region Conservation Authority	Ken	Thajer	Planning and Regulations Coordinator	10585 Cold Springs Camp Road	Campbellcroft	ON	L0A 1B0	905-885-8173, 245	kthajer@grca.on.ca
Provincial Agency	Ganaraska Region Conservation Authority	Leslie	Benson	Water Resources Engineer	10585 Cold Springs Camp Road	Campbellcroft	ON	L0A 1B0	905-885-8173	lbenson@grca.on.ca
Provincial Agency	Ganaraska Region Conservation Authority	Lindsay	Champagne		10585 Cold Springs Camp Road	Campbellcroft	ON	L0A 1B0	905-885-8173	lchampagne@grca.on.ca
Provincial Agency	Ministry of Northern Development, Mines, Natural Resources and Forestry	Sam	Short	Regional Planner	300 Water Street	Peterborough	ON	K9J 3C7	705-772-9329	Sam.Short@ontario.ca
Municipality	Northumberland County	Denise	Marshall	Manager, Project Engineering	555 Courthouse Road	Cobourg	ON	K9A 5J6	905-372-3329	marshalld@northumberlandcounty.ca
Property Owner	196 Normar Road									
Property Owner	190 Normar Road									
Property Owner	570 King St. E.									
Property Owner	550 King St. E.									
Property Owner	551 King St. E.									
Property Owner	LiLUNA Local 183 (560 Dodge St.)									info@liuna193.ca
Property Owner	105 Normar Road									
Property Owner	1292168 Ontario Inc. In Trust									

Copies of Original Correspondence

From: Elysia Friedl
To: Dave Simpson
Cc: Terry Hoekstra; Steve May
Subject: RE: Massey Creek EA Addendum Commencement, Town of Cobourg (C14-0453)
Date: Wednesday, September 22, 2021 10:10:00 AM

Hello,

Thank you for the quick response and interest in the study.

Once our Environmental Impact Study (EIS) Report is drafted, we will be sure to circulate a copy for your review and we would be happy to schedule a call / virtual meeting to go over any questions / concerns.

Thank you again,

ELYSIA FRIEDL
Project Coordinator, Infrastructure
T ~~905 697-4464 ext. 6930~~
CIMA+

From: Dave Simpson <consultation@alderville.ca>
Sent: Wednesday, September 22, 2021 9:57 AM
To: Elysia Friedl <Elysia.Friedl@cima.ca>
Subject: RE: Massey Creek EA Addendum Commencement, Town of Cobourg (C14-0453)

EXTERNAL EMAIL

Alderville is very interested in any work or modifications to a waterway in our area. We would like to see what, and if any impact this project will have on species at risk, the environment , plants and perhaps any invasive species that are in the scope of the project.

Thank you

Consultation coordinator
Dave Simpson
Alderville First Nation
consultation@alderville.ca
(905) 352-2662

From: Elysia Friedl <Elysia.Friedl@cima.ca>
Sent: September 22, 2021 9:42 AM
To: Dave Simpson <consultation@alderville.ca>
Cc: Terry Hoekstra <thoekstra@cobourg.ca>; Steve May <Steve.May@cima.ca>; inquiries@williamstreatiesfirstnations.ca
Subject: Massey Creek EA Addendum Commencement, Town of Cobourg (C14-0453)

Hello,

On behalf of the Town of Cobourg, please find attached a letter detailing the commencement of an

EA Addendum for the 2011 Schedule 'B' Municipal Class Environmental Assessment (MCEA) for the Massey Creek Flood Reduction Study.

If you have any questions, please submit your comments to one of the Project Managers on the letter.

Thank you,

ELYSIA FRIEDL
Project Coordinator

T ~~905-697-4464 ext. 6930~~
415 Baseline Road West, 2nd Floor, Bowmanville, ON L1C 5M2 CANADA

NOTICE – Please be advised that because of COVID-19, I am currently working from home. Please communicate by email.

From: Elysia Friedl
To: consultation@mbq-tmt.org
Cc: Terry Hoekstra; Steve May; inquiries@williamstreatiesfirstnations.ca
Subject: Massey Creek EA Addendum Commencement, Town of Cobourg (C14-0453)
Date: Tuesday, September 21, 2021 4:13:00 PM
Attachments: C14-0453-L-Mohawks of the Bay of Quinte.pdf

Good Afternoon,

On behalf of the Town of Cobourg, please find attached a letter detailing the commencement of an EA Addendum for the 2011 Schedule 'B' Municipal Class Environmental Assessment (MCEA) for the Massey Creek Flood Reduction Study.

If you have any questions, please submit your comments to one of the Project Managers listed in the letter.

Thank you,

ELYSIA FRIEDL
Project Coordinator

T ~~905 697 4464 ext. 6930~~
415 Baseline Road West, 2nd Floor, Bowmanville, ON L1C 5M2 CANADA

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Engineering for people

From: Elysia Friedl
To: jcopegog@chimnissing.ca
Cc: Terry Hoekstra; Steve May; inquiries@williamstreatiesfirstnations.ca
Subject: Massey Creek EA Addendum Commencement, Town of Cobourg (C14-0453)
Date: Tuesday, September 21, 2021 4:14:00 PM
Attachments: C14-0453-L-Beausoleil First Nation.pdf

Good Afternoon,

On behalf of the Town of Cobourg, please find attached a letter detailing the commencement of an EA Addendum for the 2011 Schedule 'B' Municipal Class Environmental Assessment (MCEA) for the Massey Creek Flood Reduction Study.

If you have any questions, please submit your comments to one of the Project Managers listed in the letter.

Thank you,

ELYSIA FRIEDL
Project Coordinator

T ~~905 697 4464 ext. 6930~~
415 Baseline Road West, 2nd Floor, Bowmanville, ON L1C 5M2 CANADA

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CIMA+ Engineering for people 30 YEARS

KINCENTRIC Best Employer CANADA 2019

From: Elysia Friedl
To: kaitlinh@curvelake.ca
Cc: Terry Hoekstra; Steve May; inquiries@williamstreatiesfirstnations.ca
Subject: Massey Creek EA Addendum Commencement, Town of Cobourg (C14-0453)
Date: Tuesday, September 21, 2021 4:14:00 PM
Attachments: C14-0453-L-Curve Lake FN.pdf

Good Afternoon,

On behalf of the Town of Cobourg, please find attached a letter detailing the commencement of an EA Addendum for the 2011 Schedule 'B' Municipal Class Environmental Assessment (MCEA) for the Massey Creek Flood Reduction Study.

If you have any questions, please submit your comments to one of the Project Managers listed in the letter.

Thank you,

ELYSIA FRIEDL
Project Coordinator

T ~~905 697 4464 ext. 6930~~
415 Baseline Road West, 2nd Floor, Bowmanville, ON L1C 5M2 CANADA

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CIMA+ Engineering for people 30 YEARS

KINCENTRIC Best Employer CANADA 2019

From: Elysia Friedl
To: nancy.carr@georginaisland.com
Cc: Terry Hoekstra; Steve May; inquiries@williamstreatiesfirstnations.ca
Subject: Massey Creek EA Addendum Commencement, Town of Cobourg (C14-0453)
Date: Tuesday, September 21, 2021 4:14:00 PM
Attachments: C14-0453-L-Chippewas of Georgina Island FN.pdf

Good Afternoon,

On behalf of the Town of Cobourg, please find attached a letter detailing the commencement of an EA Addendum for the 2011 Schedule 'B' Municipal Class Environmental Assessment (MCEA) for the Massey Creek Flood Reduction Study.

If you have any questions, please submit your comments to one of the Project Managers listed in the letter.

Thank you,

ELYSIA FRIEDL
Project Coordinator

T ~~905 697 4464 ext. 6930~~
415 Baseline Road West, 2nd Floor, Bowmanville, ON L1C 5M2 CANADA

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CIMA+ Engineering for people 30 YEARS

KINCENTRIC Best Employer CANADA 2019

From: Leslie Benson
To: Elysia Friedl; thoekstra@cobourg.ca
Cc: Steve May; Kai Markvorsen; Ken Thajer; Cory Harris
Subject: RE: Massey Creek EA Addendum - Draft Reports
Date: Tuesday, March 29, 2022 10:44:54 AM
Attachments: C30CB37204C04B63A16944B54928338C.png
D48849DF5E3A45ED9A7C352DAE91D93B.jpg
E14F5D08AEA64D89B5A0B9A88D838A62.png

EXTERNAL EMAIL

Good morning Elysia,

Thank you very much for circulating this EA Addendum to GRCA. The only thing that I noticed is that there is no specific reference to "natural channel design" of the by-pass. I did bring this up in our meeting last August, and this element of the design is also identified in Valdor's 2011 study. May I suggest the following wording in Sect. 4.4- Hydraulic Assessment/Geomorphic Investigations:

"Ganaraska Region Conservation Authority (GRCA) completed hydraulic modelling of Massey Creek in 2008 which was updated/modified by Valdor Engineering in 2011 as part of the Massey Creek Diversion Class EA. It is recommended that an updated hydraulic assessment and fluvial geomorphic investigation be completed as part of this project to better reflect current conditions and inform any design concepts advanced as part of the EA. Any channel works must incorporate natural channel design principles to ensure fisheries and aquatic habitat requirements are satisfied, and any impacts are mitigated, through the design work."

As well, we request that a row should be added to Table 5 to include the requirement/commitment to undertake a fluvial geomorphic assessment of the channel and incorporate natural channel design principles into any channel works in order to mitigate fisheries and aquatic habitat impacts.

I believe that this addition is what others will recall in our conversation last year. Feel free to contact me at any time regarding this study. Many thanks again.

Leslie Benson, P.Eng.
Water Resources Engineer

Sent from Mail for Windows

From: Elysia Friedl
Sent: March 22, 2022 11:18 AM
To: thoekstra@cobourg.ca; Leslie Benson; Ken Thajer
Cc: Steve May; Kai Markvorsen
Subject: Massey Creek EA Addendum - Draft Reports

Good Morning,

At the OneDrive link below, please find the draft EA Addendum Report and the Draft Natural Heritage Assessment for your review and comment.

C14-0453-Massey Creek EA Addendum

Please note that for the main Addendum Report, Appendix A: Consultation has not been included as

the Notice of Filing as not been finalized and the stakeholder list will be updated prior to the Notice Circulation.

Terry can you please confirm how the Town plans on posting the report for public review, for how long, and where the Notice will be published (website, social media, newspapers, etc.)? Those details will need to be added to the report and the Notice of Filing.

If there are any questions or issues accessing the files please let me know.

Thank you,
ELYSIA FRIEDL
Project Coordinator, Infrastructure

T ~~905 697-4464 ext. 6930~~
415 Baseline Road West, 2nd Floor, Bowmanville, ON L1C 5M2 CANADA

From: Elysia Friedl
To: kthajer@grca.on.ca; lchampagne@grca.on.ca; lbenson@grca.on.ca
Cc: Steve May; Kai Markvorsen; thoekstra@cobourg.ca
Subject: Massey Creek Flood Diversion EA Addendum - Introductory Meeting
Date: Tuesday, August 17, 2021 11:46:00 AM

Good Morning,

CIMA+ has been retained by the Town of Cobourg to complete an EA Addendum for the 2011 Massey Creek Flood Diversion MCEA that was undertaken by the Town and GRCA. We have recently visited the site to confirm the existing conditions and would like to set up an introductory meeting to go over the project and gather more information.

We kindly ask that you provide us with a few date/time options over the next couple of weeks that work for your team and we will set up a virtual meeting to discuss the project.

Please let us know if you have any questions.

Thank you,

ELYSIA FRIEDL
Project Coordinator, Infrastructure

T ~~905 697-4464 ext. 6930~~
415 Baseline Road West, 2nd Floor, Bowmanville, ON L1C 5M2 CANADA

Engineering for people

From: Elysia Friedl
To: tcowie@hiawathafn.ca
Cc: Terry Hoekstra; Steve May; inquiries@williamstreatiesfirstnations.ca
Subject: Massey Creek EA Addendum Commencement, Town of Cobourg (C14-0453)
Date: Tuesday, September 21, 2021 4:14:00 PM
Attachments: C14-0453-L-Hiawatha FN.pdf

Good Afternoon,

On behalf of the Town of Cobourg, please find attached a letter detailing the commencement of an EA Addendum for the 2011 Schedule 'B' Municipal Class Environmental Assessment (MCEA) for the Massey Creek Flood Reduction Study.

If you have any questions, please submit your comments to one of the Project Managers listed in the letter.

Thank you,

ELYSIA FRIEDL
Project Coordinator

T ~~905 697 4464 ext. 6930~~
415 Baseline Road West, 2nd Floor, Bowmanville, ON L1C 5M2 CANADA

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Ontario

Ministry of the Environment, Conservation and Parks

Environmental Assessment Branch

1st Floor
135 St. Clair Avenue W
Toronto ON M4V 1P5
Tel.: 416 314-8001
Fax.: 416 314-8452

Ministère de l'Environnement, de la Protection de la nature et des Parcs

Direction des évaluations environnementales

Rez-de-chaussée
135, avenue St. Clair Ouest
Toronto ON M4V 1P5
Tél. : 416 314-8001
Téléc. : 416 314-8452

By email only

August 26, 2021

Town of Coubourg

Attention: Terry Hoekstra, C.E.T., LET, rcca
Manager, Engineering and Capital Projects
thoekstra@cobourg.ca

Dear Mr. Hoekstra,

Re: Town of Cobourg Notification of Commencement – Massy Creek EA Addendum - Municipal Class Environmental Assessment Schedule B

Thank you for the Notification of Commencement provided in an email letter from the Town of Cobourg dated August 16th, 2021. The notice indicates that the Town of Cobourg has initiated an EA Addendum to the 2011 Schedule "B" Municipal Class Environmental Assessment (Class EA).

The original 2011 MCEA study aimed to identify and confirm the best possible flood reduction option within the Lucas Point Business Park, to reduce the flood plain along the reach of the Massey Creek to increase the extent of developable land within the industrial park. After a review of 5 different options, the preferred solution included a diversion channel, a flow control structure and a cross-over structure. Due to the lapse of time 910 years) between the original EA and the fact that the project has not been

implemented, the Town has retained CIMA Canada Inc to complete and EA Addendum to update the original EA as required my the MCEA process.

The Town and CIMA+ will provide an update to the original EA to reflect the current MCEA process, the current site conditions and the current policy framework established by the Provincial and Local approval agencies.

Here are MECP preliminary comments on the project. Please consider these comments as you proceed through the Class EA process. The comments are grouped under these headings:

- Class EA process,
- MECP technical review issues,
- Aboriginal consultation.

Class Environmental Assessment Process

We normally recommend that intermediate / draft reports or Technical Memoranda, be prepared and circulated for comment before the final Addendum Report is prepared. This is not a requirement of the Municipal Class Environmental Assessment (Class EA) process; however, it can ensure that consultation with review agencies is carried out in an effective way and that technical comments are received from agencies before the report is finalized.

Notification

As the Regional EA Coordinator for this project, I will be responsible for circulating project notices and information to MECP reviewers (Drinking Water – District staff) and coordinating the MECP response during the Class EA process. I am a mandatory contact for all Notices issued for the project. In addition, I request copies of other relevant information such as information updates, technical studies related to MECP's mandate, interim reports and technical memoranda, and two copies of the final report when it is available.

My preferred methods of correspondence are email for notices, one hard copy of technical reports and final reports, and one copy of the report on a thumb drive. It is helpful to provide scanned copies of the notices as they appear in newspapers, and confirm the dates of publication.

My contact information is:

Jon Orpana, Environmental Planner and Environmental Assessment Coordinator
Ministry of the Environment, Conservation and Parks
1259 Gardiners Road
P.O. Box 22032
Kingston, Ontario
K7M 8S5

telephone: (613) 548 6918
email: jon.orpana@ontario.ca

Notice of Completion

Once the ESR/Addendum is finalized, the proponent must issue a Notice of Filing of Addendum providing a minimum 30-day period during which documentation may be reviewed and comment and input can be submitted to the Proponent.

Please ensure that the Notice of Filing advises that outstanding concerns are to be directed to the proponent for a response, and that in the event there are outstanding concerns regarding potential adverse impacts to constitutionally protected Aboriginal and treaty rights, Part II Order requests on those matters should be addressed in writing to:

Minister Jeff Yurek
Ministry of Environment, Conservation and Parks
777 Bay Street, 5th Floor
Toronto ON M7A 2J3
minister.mecp@ontario.ca

and

Director, Environmental Assessment Branch
Ministry of Environment, Conservation and Parks
135 St. Clair Ave. W, 1st Floor
Toronto ON, M4V 1P5
EABDirector@ontario.ca

Please note the proponent cannot proceed with the project until at least 30 days after the end of the comment period provided for in the Notice of Completion.

Further, the proponent may not proceed after this time if:

- a Part II Order request has been submitted to the ministry regarding potential adverse impacts to constitutionally protected Aboriginal and treaty rights, or
- the Director has issued a Notice of Proposed order regarding the project.

The public has the ability to request a higher level of assessment on a project if they are concerned about potential adverse impacts to constitutionally protected Aboriginal and treaty rights. In addition, the Minister may issue an order on his or her own initiative within a specified time period. The Director will issue a Notice of Proposed Order to the proponent if the Minister is considering an order for the project within 30 days after the conclusion of the comment period on the Notice of Completion. At this time, the Director may request additional information from the proponent.

Once the requested information has been received, the Minister will have 30 days within which to make a decision or impose conditions on your project.

Consultation with Review Agencies

In addition to public consultation, consultation with review agencies is an important component of the Class EA process. Please ensure that you contact review agencies directly to determine their interest in the project at the Notice of Commencement stage.

The MECP Regional office is a mandatory contact for all notices. In addition, other ministries and agencies that may have an interest in the project are listed in section A.3.6 and Appendices 3 and 7. The provincial ministries that are most often involved in Class EA project review include the Ministry of Municipal Affairs (for example, expansion of settlement boundaries, consistency with Growth Plan), Ministry of Natural Resources and Forestry (for example, endangered species, significant wetlands), and Ministry of Tourism, Culture and Sport (for example, cultural heritage or archaeological resources).

The final report should include information on correspondence with review agencies, issues raised by reviewers, and how these issues will be addressed. This could include technical studies or other information, and commitments to obtain specific approvals or permits.

The Class EA project should if applicable consider any impacts to servicing policies for the area. For example, the Province does not support growth on partial services. In addition, expansion of settlement boundaries may have implications for the Official Plan. We recommend that you include the Ministry of Municipal Affairs Municipal Services Office in Kingston on this project.

<u>MECP Technical Review</u>

This Ministry's interest in the project includes:

- impacts to groundwater and surface water quality and quantity,

- potential for encountering, contaminated soil, contaminated sediment or
- contaminated groundwater,
- impacts to source water protection vulnerable areas,
- species at risk
- climate change
- stormwater management.

These environmental issues, and appropriate mitigation measures, should be addressed during the Class EA process. Appended to this letter are some resources that may be useful in some aspects of your project and study.

We recommend that you contact this office as soon as possible during the environmental assessment process if you become aware of:

- contaminated sites in the study area or influence area of the project,
- a source water protection vulnerable area in the vicinity of the project, or
- issues that are contentious to the general public, aboriginal communities or review agencies.

The following comments are standard MECP comments and may not all apply to the proposed project.

If the construction involves taking, dewatering, storage or diversion of water in excess of 50,000 litres per day, the activity may be required to be registered on the Environmental Activity and Sector Registry (EASR) or may require a Permit To Take Water. The process to be used depends on the source of the water, the quantity of water taken, and the type of construction activity. EASR requirements for water takings for construction dewatering are prescribed in Ontario Regulation 63/16 under the Environmental Protection Act. The Permit To Take Water requirements are prescribed in Section 34, Ontario Water Resources Act.

Where dredging is required, consideration should be given to appropriate storage, handling, dewatering and disposal of excavated material.

Guidance on nearshore construction and dredging may be obtained from this Ministry's *Guidelines for Evaluating Construction Activities Impacting on Water Resources* dated January 1995 and *Evaluating Construction Activities Impacting on Water Resources, Part III A, Part III B, and Part III C* dated February 1994.

Proponents undertaking a Municipal Class EA project must identify early in the process whether a project is occurring within a source water protection vulnerable area. This must be clearly documented in a Master Plan, Project File report or Environmental Study Report. If the project is occurring in a vulnerable area, then there may be policies

in the local Source Protection Plan (SPP) that need to be addressed (requirements under the Clean Water Act). The proponent should contact and consult with the appropriate Conservation Authority/Source Protection Authority (CA/SPA) to discuss potential considerations and policies in the SPP that apply to the project.

Stormwater management should be in accordance with the MECP *Stormwater Management Planning and Design Manual*. Stormwater infrastructure requires approval under section 53 of the Ontario Water Resources Act.

Spills should be reported to the Spills Action Centre at 1-800-268-6060.

Consultation with First Nation and Métis Communities

The Crown has a legal duty to consult Aboriginal communities when it has knowledge, real or constructive, of the existence or potential existence of an Aboriginal or treaty right and contemplates conduct that may adversely impact that right. Before you can proceed with this project, the Crown must ensure that its duty to consult has been fulfilled, where such a duty is triggered. Although the duty to consult with Aboriginal peoples is a duty of the Crown, the Crown may delegate procedural aspects of this duty to project proponents while retaining oversight of the process.

Your proposed project may have the potential to affect Aboriginal or treaty rights protected under Section 35 of Canada's *Constitution Act* 1982. Where the Crown's duty to consult is triggered in relation to your proposed project, **the MECP is delegating the procedural aspects of rights-based consultation to you through this letter.** The Crown intends to rely on the delegated consultation process in discharging its duty to consult and maintains the right to participate in the consultation process as it sees fit.

Based on new information we recognize that this consultation list is different than that supplied for the 2011 study.

In addition, based on information you have provided to date and the Crown`s preliminary assessment you are required to consult with the following Aboriginal communities who have been identified as potentially affected by your proposed project:

- **Mohawks of the Bay of Quinte**
- **Chippewas of Rama First Nation**
- **Chippewas of Georgina Island**
- **Beausoleil First Nation**
- **Alderville First Nation**
- **Curve Lake First Nation**
- **Hiawatha First Nation**

- **Mississaugas of Scugog Island First Nation**

For the above Williams Treaties communities, please cc Karry Sandy McKenzie, William Treaties First Nations Process Co-ordinator, inquiries@williamstreatiesfirstnations.ca

Steps that you may need to take in relation to Aboriginal consultation for your proposed project are outlined in the "Code of Practice for Consultation in Ontario's Environmental Assessment Process" which can be found at the following link:

https://www.ontario.ca/document/consultation-ontarios-environmental-assessment-process

Additional information related to Ontario's Environmental Assessment Act is available online at: www.ontario.ca/environmentalassessments

You must contact the Director of Environmental Assessment Branch under the following circumstances subsequent to initial discussions with the communities identified by MECP:

- Aboriginal or treaty rights impacts are identified to you by the communities
- You have reason to believe that your proposed project may adversely affect an Aboriginal or treaty right
- Consultation with Indigenous communities or other stakeholders has reached an impasse
- A Part II Order request is expected on the basis of impacts to Aboriginal or treaty rights

The Ministry will then assess the extent of any Crown duty to consult for the circumstances and will consider whether additional steps should be taken, including what role you will be asked to play should additional steps and activities be required.

Should you or any members of your project team have any questions regarding the material above, please contact me at (613) 548 6918.

Yours sincerely,

Jon K. Orpana
Environmental Planner & Environmental Assessment Coordinator
Ministry of the Environment, Conservation and Parks
Kingston Regional Office
PO Box 22032, 1259 Gardiners Road

Kingston, Ontario
K7M 8S5

Phone: (613) 548-6918
Fax: (613) 548-6908
Email: jon.orpana@ontario.ca

MECP, Victor Castro; Victor.castro@ontario.ca
MECP, Courtney Redmond; Courtney Redmond@ontario.ca

Climate Change

Ontario is leading the fight against climate change through the Climate Change Action Plan (https://www.ontario.ca/page/climate-change-action-plan). Recently released, the plan lays out the specific actions Ontario will take in the next five years to meet its 2020 greenhouse gas reduction targets and establishes the framework necessary to meet its long-term targets. As a commitment of the action plan, **the province has now finalized a guide, "Considering Climate Change in the Environmental Assessment Process" (Guide) (https://www.ontario.ca/page/considering-climate-change-environmental-assessment-process)**

The Guide is now a part of the Environmental Assessment program's Guides and Codes of Practice. The Guide sets out the MECP's expectation for considering climate change in the preparation, execution and documentation of environmental assessment studies and processes. The guide provides examples, approaches, resources, and references to assist proponents with consideration of climate change in EA. **Proponents should review this Guide in detail.**

- The MECP expects proponents to:

Consider during the assessment of alternative solutions and alternative designs, the following:

a. the project's expected production of greenhouse gas emissions and impacts on carbon sinks (climate change mitigation); and
b. resilience or vulnerability of the undertaking to changing climatic conditions (climate change adaptation).

2. Include a discrete section in the report detailing how climate change was considered in the EA.

How climate change is considered can be qualitative or quantitative in nature and should be scaled to the project's level of environmental effect. In all instances, both a project's impacts on climate change (mitigation) and impacts of climate change on a project (adaptation) should be considered.

- The MECP has also prepared another guide to support provincial land use planning direction related to the completion of energy and emission plans. The "Community Emissions Reduction Planning: A Guide for Municipalities" (https://ero.ontario.ca/notice/013-2083?_ga=2.113331267.532557834.1525694946-2101883328.1501507205) document is designed to educate stakeholders on the municipal opportunities to reduce energy and greenhouse gas emissions, and to provide guidance on methods and techniques to incorporate consideration of energy and greenhouse gas emissions into municipal activities of all types. We encourage you to review the Guide for information.

Excess Materials Management

- In December 2019, MECP released a new regulation under the Environmental Protection Act, titled "On-Site and Excess Soil Management" (O. Reg. 406/19) to support improved management of excess construction soil. This regulation is a key step to support proper management of excess soils, ensuring valuable resources don't go to waste and to provide clear rules on managing and reusing excess soil. New risk-based standards referenced by this regulation help to facilitate local beneficial reuse which in turn will reduce greenhouse gas emissions from soil transportation, while ensuring strong protection of human health and the environment. The new regulation is being phased in over time, with the first phase set to come into effect on January 1, 2021. Please visit https://www.ontario.ca/page/handling-excess-soil.

- Activities involving the management of excess soil should be completed in accordance with O. Reg. 406/19 and the MECP's current guidance document titled "Management of Excess Soil – A Guide for Best Management Practices" (2014) (https://www.ontario.ca/page/management-excess-soil-guide-best-management-practices).

All waste generated during construction must be disposed of in accordance with ministry requirements

Species at Risk

- The Ministry of the Environment, Conservation and Parks has now assumed responsibility of Ontario's Species at Risk program. For any questions related to consideration of SAR and subsequent permit requirements, please contact SAROntario@ontario.ca.

Elysia Friedl

From: Orpana, Jon (MECP) <Jon.Orpana@ontario.ca>
Sent: Tuesday, October 18, 2022 8:48 AM
To: Elysia Friedl
Cc: 'Terry Hoekstra'; Steve May
Subject: RE: Massy Creek Flood Diversion Channel Schedule B MEA Class EA Town of Cobourg

Follow Up Flag: Follow up
Flag Status: Completed

EXTERNAL EMAIL

Hello Elysia,

Apologies for the late response.

I am happy with the response outlined below. I would however like to see somewhere in the Project File and or the Notice a commitment that when the Town does proceed with the project, further assessments (SAR etc.) and consultation with MECP will be undertaken at the appropriate time.

Thanks for reaching out.

Regards,

Jon

Jon K. Orpana
Regional Environmental Planner
Environmental Assessment Branch
Ministry of the Environment, Conservation and Parks
Kingston Regional Office
PO Box 22032, 1259 Gardiners Road
Kingston, Ontario
K7M 8S5

Phone: (613) 548-6918
Fax: (613) 548-6908
Email: jon.orpana@ontario.ca

From: Elysia Friedl <Elysia.Friedl@cima.ca>
Sent: October 14, 2022 1:20 PM
To: Orpana, Jon (MECP) <Jon.Orpana@ontario.ca>
Cc: 'Terry Hoekstra' <thoekstra@cobourg.ca>; Steve May <Steve.May@cima.ca>
Subject: RE: Massy Creek Flood Diversion Channel Schedule B MEA Class EA Town of Cobourg

Hi Jon,

Just following up again. Was the below response sufficient for the MECP or is any further clarification are required? We just want to confirm if we are ok to proceed with finalizing and filing the report on public record.

Thank you,

ELYSIA FRIEDL
Project Coordinator
CIMA+

From: Elysia Friedl
Sent: Thursday, July 14, 2022 10:51 AM
To: 'Orpana, Jon (MECP)' <Jon.Orpana@ontario.ca>
Cc: 'Terry Hoekstra' <thoekstra@cobourg.ca>; Steve May <Steve.May@cima.ca>
Subject: RE: Massy Creek Flood Diversion Channel Schedule B MEA Class EA Town of Cobourg

Hi Jon,

Just following up on the response we provided to the MECP. Was the below response sufficient or is any further clarification are required? We just want to confirm if we are ok to proceed with finalizing and filing the report on public record.

Thank you,

ELYSIA FRIEDL
Project Coordinator, Infrastructure
T ~~905 697 4464 ext. 6930~~
CIMA+

From: Elysia Friedl
Sent: Tuesday, May 24, 2022 8:37 AM
To: Orpana, Jon (MECP) <Jon.Orpana@ontario.ca>
Cc: 'Terry Hoekstra' <thoekstra@cobourg.ca>; Steve May <Steve.May@cima.ca>
Subject: RE: Massy Creek Flood Diversion Channel Schedule B MEA Class EA Town of Cobourg

Hi Jon,

The intent of the site assessment, including the assessment for SAR, was limited to informing a high level re-evaluation of the alternatives as presented in the original Class EA to reflect the current site conditions. It is our understanding that the Town does not intend to proceed with project implementation in the immediate future. When the Town does proceed with the project, further assessments and consultation with MECP will be required at that time.

Please let us know if any further clarifications are required or if we are ok to proceed with finalizing and filing the report on public record.

Thank you,

ELYSIA FRIEDL
Project Coordinator, Infrastructure
T ~~905 697 4464 ext. 6930~~
CIMA+

From: Orpana, Jon (MECP) <Jon.Orpana@ontario.ca>
Sent: Thursday, May 19, 2022 11:42 AM
To: Elysia Friedl <Elysia.Friedl@cima.ca>
Cc: 'Terry Hoekstra' <thoekstra@cobourg.ca>; Steve May <Steve.May@cima.ca>
Subject: RE: Massy Creek Flood Diversion Channel Schedule B MEA Class EA Town of Cobourg

EXTERNAL EMAIL

Hello Elysia,

Thanks for checking in.

My review of the Addendum Report indicates MECP's subject areas of interest have been considered per our Notice of Commencement response letter and that the report has been updated as required reflecting new legislation and ministry responsibilities such as Excess Soils and SAR.

I also note that there was a comprehensive review of policy and legislation conformance in section 10. Premised on my review it appears as proposed that no MECP will be required for this study.

Species at Risk:

One question has the proponent been in contact with MECP's Species at Risk Branch through development of the report?

It also appears that there are no MECP - SAR authorizations or permissions anticipated although habitat for 7 SAR species were identified during 2020 field investigations (per Table 6)?

It would be appreciated if you could clarify the above point.

Regards,

Jon

Jon K. Orpana
Regional Environmental Planner
Environmental Assessment Branch

Ministry of the Environment, Conservation and Parks
Kingston Regional Office
PO Box 22032, 1259 Gardiners Road
Kingston, Ontario
K7M 8S5

Phone: (613) 548-6918
Fax: (613) 548-6908
Email: jon.orpana@ontario.ca

From: Elysia Friedl <Elysia.Friedl@cima.ca>
Sent: May 18, 2022 4:27 PM
To: Orpana, Jon (MECP) <Jon.Orpana@ontario.ca>
Cc: 'Terry Hoekstra' <thoekstra@cobourg.ca>; Steve May <Steve.May@cima.ca>
Subject: RE: Massy Creek Flood Diversion Channel Schedule B MEA Class EA Town of Cobourg

Hi Jon,

We are following up on the MECP's review of the draft EA Addendum report for Massey Creek. Is there an update on when we can expect comments?

Thank you,

ELYSIA FRIEDL
Project Coordinator, Infrastructure
T ~~905 697 4464 ext. 6930~~
CIMA+

From: Elysia Friedl
Sent: Thursday, April 7, 2022 12:01 PM
To: Orpana, Jon (MECP) <Jon.Orpana@ontario.ca>
Cc: Terry Hoekstra <thoekstra@cobourg.ca>; Steve May <Steve.May@cima.ca>; Kai Markvorsen <Kai.Markvorsen@cima.ca>
Subject: RE: Massy Creek Flood Diversion Channel Schedule B MEA Class EA Town of Cobourg

Hi Jon,

At the OneDrive link below, please find the Draft EA Addendum Report for the MECP's review.

C14-0453-Massey Creek EA Addendum

If you have any questions or issues accessing the file please let me know.

Thank you,

ELYSIA FRIEDL
Project Coordinator, Infrastructure

T ~~905-697-4464 ext. 6930~~
415 Baseline Road West, 2nd Floor, Bowmanville, ON L1C 5M2 CANADA

From: Terry Hoekstra <thoekstra@cobourg.ca>
Sent: Thursday, August 26, 2021 11:50 AM
To: Steve May <Steve.May@cima.ca>; Elysia Friedl <Elysia.Friedl@cima.ca>
Subject: FW: Massy Creek Flood Diversion Channel Schedule B MEA Class EA Town of Cobourg

EXTERNAL EMAIL

Good morning,
Please see response back from MECP.
Thanks

Regards,

Terry Hoekstra, C.E.T., LET, rcca
Manager, Engineering and Capital Projects

The Corporation of the Town of Cobourg
Public Works Division, Engineering Department
740 Division Street, Building #7, Cobourg, ON, K9A 0H6
P: 905-372-9971 x 4371 | cobourg.ca

****Due to the COVID-19 pandemic, please be advised that The Town of Cobourg has closed public access to most Municipal Buildings to ensure the health and safety of the public and employees. Town staff remain committed to moving the business of the municipality forward and encourage all business to be done through email, phone, video-conferencing or courier. In-person appointments can also be made upon request.*

*For deliveries and other activities requiring direct access to municipal buildings, the Town of Cobourg has established strict screening and sign-in protocols for all visitors in the name of health and safety. Please contact our office to determine if alternatives are possible. We will make this transition as seamless as possible to minimize any service disruptions. For a complete list of Program and Service updates visit www.cobourg.ca/covid19 ****

From: Orpana, Jon (MECP) <Jon.Orpana@ontario.ca>
Sent: August 26, 2021 10:35 AM
To: Terry Hoekstra <thoekstra@cobourg.ca>
Cc: Redmond, Courtney (MECP) <Courtney.Redmond@Ontario.ca>; Castro, Victor (MECP) <Victor.Castro@ontario.ca>
Subject: (EXTERNAL SOURCE) Massy Creek Flood Diversion Channel Schedule B MEA Class EA Town of Cobourg

Hello Terry,

Please find attached MECP's preliminary comments on the above mentioned project.

Regards,

Jon K. Orpana
Regional Environmental Planner
Environmental Assessment Branch
Ministry of the Environment, Conservation and Parks
Kingston Regional Office
PO Box 22032, 1259 Gardiners Road
Kingston, Ontario
K7M 8S5

Phone: (613) 548-6918
Fax: (613) 548-6908
Email: jon.orpana@ontario.ca

From: Elysia Friedl
To: shardayj@ramafirstnation.ca
Cc: Terry Hoekstra; Steve May; inquiries@williamstreatiesfirstnations.ca
Subject: Massey Creek EA Addendum Commencement, Town of Cobourg (C14-0453)
Date: Tuesday, September 21, 2021 4:14:00 PM
Attachments: C14-0453-L-Chippewas of Rama FN.pdf

Good Afternoon,

On behalf of the Town of Cobourg, please find attached a letter detailing the commencement of an EA Addendum for the 2011 Schedule 'B' Municipal Class Environmental Assessment (MCEA) for the Massey Creek Flood Reduction Study.

If you have any questions, please submit your comments to one of the Project Managers listed in the letter.

Thank you,

ELYSIA FRIEDL
Project Coordinator

T ~~905-697-4464 ext. 6930~~
415 Baseline Road West, 2nd Floor, Bowmanville, ON L1C 5M2 CANADA

NOTICE – Please be advised that because of COVID-19, I am currently working from home. Please communicate by email.

From: Elysia Friedl
To: info@scugogfirstnation.com
Cc: Terry Hoekstra; Steve May; inquiries@williamstreatiesfirstnations.ca
Subject: Massey Creek EA Addendum Commencement, Town of Cobourg (C14-0453)
Date: Tuesday, September 21, 2021 4:13:00 PM
Attachments: C14-0453-L-MSIFN.pdf

Good Afternoon,

On behalf of the Town of Cobourg, please find attached a letter detailing the commencement of an EA Addendum for the 2011 Schedule 'B' Municipal Class Environmental Assessment (MCEA) for the Massey Creek Flood Reduction Study.

If you have any questions, please submit your comments to one of the Project Managers listed in the letter.

Thank you,

ELYSIA FRIEDL
Project Coordinator

T ~~905 697 4464 ext. 6930~~
415 Baseline Road West, 2nd Floor, Bowmanville, ON L1C 5M2 CANADA

NOTICE – Please be advised that because of COVID-19, I am currently working from home. Please communicate by email.

CIMA+ Engineering for people 30 YEARS

KINCENTRIC Best Employer CANADA 2019

Property Owner Letter

September 15, 2021

[redacted]

VIA MAIL

Attention: [redacted]

RE: [redacted]

NOTIFICATION OF COMMENCEMENT - MASSEY CREEK EA ADDENDUM, TOWN OF COBOURG

The Town of Cobourg (Town) has initiated an EA Addendum to the 2011 Schedule 'B' Municipal Class Environmental Assessment (MCEA) for the Massey Creek Flood Reduction Study. The original 2011 MCEA study aimed to identify and confirm the best possible flood reduction option within the Lucas Point Business Industrial Park, to reduce the flood plain along the reach of Massey Creek to increase the extent of developable land within the industrial park. After the review of 5 different options, the preferred solution included a diversion channel, a flow control structure and a cross-over structure. The study area from the original EA and the proposed changes to the flood plain can be seen in the figures attached to this letter.

As the original EA is reaching the 10-year mark and the project has not been implemented, the Town has retained CIMA Canada Inc. (CIMA+) to complete an EA Addendum to update the original EA. The addendum is being conducted in compliance with the Municipal Engineers' Association, and as required under the *Environmental Assessment Act*.

The Town and CIMA+ will provide an update to the original EA to reflect the current MCEA process, the current site conditions, the current policy framework and to confirm that the original preferred solution is still valid today. The study is aimed to be completed by the end of November 2021 at which time there will be a 30-day public review period for the Addendum Report.

If you have any questions or wish to discuss this project, we kindly request that you contact one of the Project Managers listed below.

Terry Hoekstra, C.E.T., LET, rcca
Manager, Engineering and Capital Projects
Town of Cobourg
905-372-9971 x 4371
thoekstra@cobourg.ca

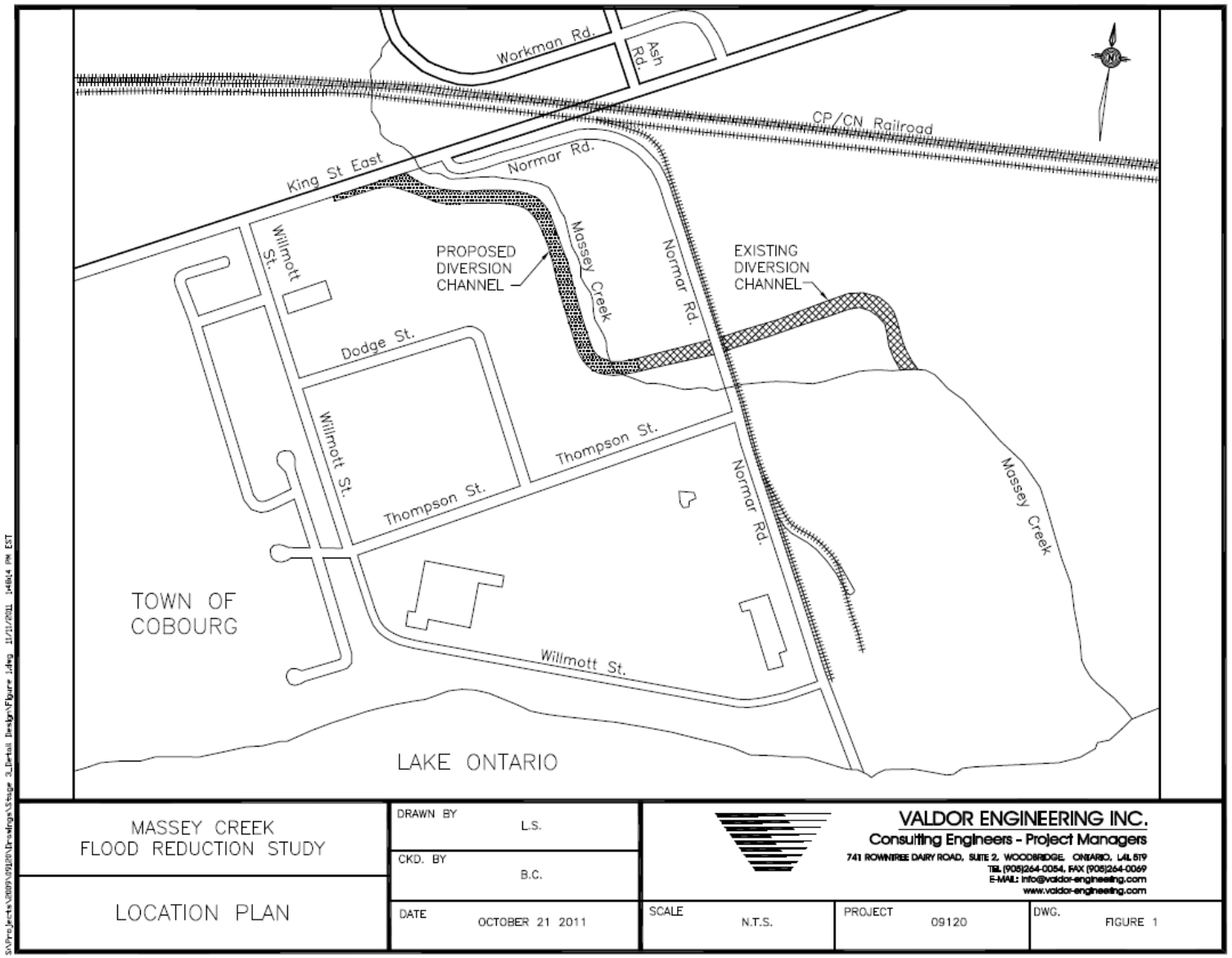
Steve May, C.E.T.
Senior Project Manager, Associate Partner
CIMA+
905-697-4464 x 6908
steve.may@cima.ca

Sincerely,

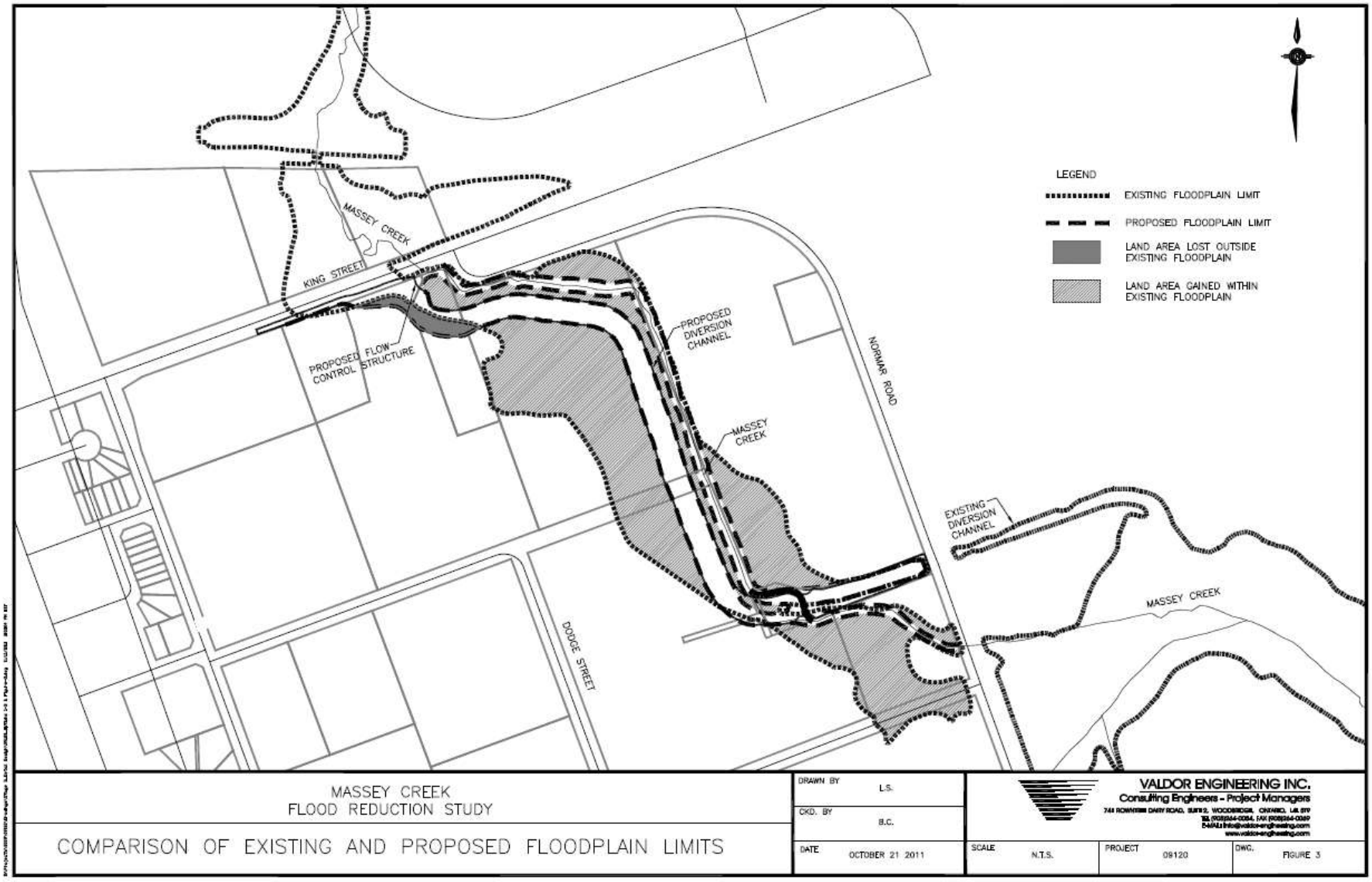
Terry Hoekstra, C.E.T., LET, rcca

Encl: Study Area & Flood Plain Maps

[redacted]


Workman Rd.
Ash Rd.
CP/CN Railroad
King St East
Normar Rd.
Willmott St.
PROPOSED DIVERSION CHANNEL
Massey Creek
Normar Rd.
EXISTING DIVERSION CHANNEL
Dodge St.
Willmott St.
Thompson St.
Thompson St.
Normar Rd.
Massey Creek
TOWN OF COBOURG
Willmott St.
LAKE ONTARIO
MASSEY CREEK FLOOD REDUCTION STUDY
LOCATION PLAN
DRAWN BY L.S.
CKD. BY B.C.
DATE OCTOBER 21 2011
SCALE N.T.S.
PROJECT 09120
DWG. FIGURE 1
VALDOR ENGINEERING INC.
Consulting Engineers - Project Managers
741 ROWNTREE DAIRY ROAD, SUITE 2, WOODBRIDGE, ONTARIO, L4L 5T9
TEL (905)264-0054, FAX (905)264-0069
E-MAIL: info@valdor-engineering.com
www.valdor-engineering.com

[redacted]


LEGEND
EXISTING FLOODPLAIN LIMIT
PROPOSED FLOODPLAIN LIMIT
LAND AREA LOST OUTSIDE EXISTING FLOODPLAIN
LAND AREA GAINED WITHIN EXISTING FLOODPLAIN
MASSEY CREEK
KING STREET
PROPOSED FLOW CONTROL STRUCTURE
PROPOSED DIVERSION CHANNEL
NORMAR ROAD
MASSEY CREEK
EXISTING DIVERSION CHANNEL
MASSEY CREEK
DODGE STREET
MASSEY CREEK
FLOOD REDUCTION STUDY
COMPARISON OF EXISTING AND PROPOSED FLOODPLAIN LIMITS
DRAWN BY L.S.
CKD. BY B.C.
DATE OCTOBER 21 2011
VALDOR ENGINEERING INC.
Consulting Engineers - Project Managers
SCALE N.T.S.
PROJECT 09120
DWG. FIGURE 3

B

Appendix B: Natural Heritage Assessment (CIMA+, 2022)

Massey Creek Flood Reduction EA Addendum

Town of Coburg, Ontario

Natural Heritage Assessment

CIMA+ file number: C14-0453
October 2022

Massey Creek Flood Reduction EA Addendum

Town of Cobourg, Ontario

Natural Heritage Assessment

Prepared by:

Jamieson-Lee Scott, B.Sc.
Senior Technologist

Casey Little, DipEM
Biologist

Reviewed by:

Kai Markvorsen, B.Sc.
Project Manager

240 Catherine Street, Suite 110, Ottawa, Ontario
Canada K2P 2G8

CIMA+ file number: C14-0453
October 2022

Confidentiality and ownership

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1. Introduction

CIMA+ was retained by the Town of Cobourg (Town) to complete a Natural Heritage Assessment (NHA) in support of the Addendum to the Municipal Class Environmental Assessment (Class EA) for Massey Creek Flood Reduction Study (Valdor Engineering Inc., 2011). The intent of the 2011 EA was to identify the optimal flood plain reduction solution as an extension to a partially constructed flood diversion channel within the Lucas Point Business Industrial Park.

As part of the addendum, the primary objective of the NHA was to provide an updated assessment of the natural heritage features present on the site. The scope of the NHA included a background review, a vegetation assessment, aquatic habitat assessment, and a seasonally appropriate field survey for natural features and species, including species at risk (SAR) potentially present on the site. **CIMA+** has also completed a review of the proposed flood reduction options considered during the 2011 flood reduction study to assess the potential effects of the project and identify mitigative measures to address or offset potential impacts.

1.1 Site Identification

The Site is located in the town of Cobourg, ON, within the Lucas Point Business Industrial Park on the north side of Thompson Street. The Project Area is described as parts of Lot 8, 9, and 10, Concession A and B, Hamilton Geographic Township, Town of Cobourg in the County of Northumberland. The discrete legal and property description in formation follows in **Table 1** below. This Site has an approximate surface area of 123,393 m^2.

Table 1: Property Information

Owner	Proposed Garland Subdivision
Municipal Address	Normar Road, Cobourg, Ontario (approx.)
Legal Description	Part of Lot 8, 9, and 10, Concession A and B, Hamilton Geographic Township, Town of Cobourg in the County of Northumberland
Land Use Designation/Zoning	Environmental Constraint (EC), Light industrial (LM), Transporation Corridor (TC)

1.2 Project Area and Site Description

The Project Area is defined as the area where changes or disturbances will occur related to the project (e.g., construction, operation, and maintenance) hereinafter referred to as the “Site”. The Site consists of several properties within the Lucas Point Business Industrial Park. The Site is generally bounded by King Street/County Road 2 to the north, Normar Road to the east, Thompson Street to the south, and Dodge Street and already developed lands to the east.

The Site is generally flat, with a gentle slope to the north. The “Study Area” consists of the adjacent (i.e., within 120 meters (m)) land around the perimeter of the Site.

The adjacent lands consist of the following:

+ North: King Street/County Rd 2, residential land, railways, and agricultural land beyond;
+ South: Thompson Street with commercial and industrial developments beyond;
+ East: Normar Road, railways, and vacant land and wetlands beyond; and

+ West: Dodge Street, forested land, agricultural land, as well as commercial and industrial developments beyond.

The Site and the features described above are presented on **Figure 1** provided in **Appendix A**.

1.3 Existing and Past Land Use

The Site currently consists of wooded areas, areas of low-lying vegetation and re-growth, agricultural fields, a residence and associated garage in the north, and a segment of Massey Creek. A review of available air photo imagery from Google Earth indicates that the Site has been in its current configuration since 2009 (Google Earth, 2021).

1.4 Description of Proposed Project

The proposed development is intended to expand upon an existing, partially complete, diversion channel that was constructed from west/upstream of Normar Road to where it would meet with the existing creek east/downstream of Normar Road. As part of the 2011 Class EA process, five (5) different flood reduction alternatives were analyzed. All the options are briefly summarized in the following sub-sections--labeled as they appeared in the flood reduction study--with a more detailed description of the preferred option to follow.

1.4.1 Option 1

The proposed development would involve the construction of a stormwater management facility upstream of the Lucas Point Business Industrial Park. The intent of the facility would be to control flows and reduce the flood plain without the addition of a diversion channel.

1.4.2 Option 2a

Construction of a diversion channel to the west of the existing creek to direct flows and reduce the floodplain within the Lucas Point Business Industrial Park. This option also includes an associated flow control structure (ie. culvert) at the end(downstream) of the diversion channel, and a cross-over structure to connect the existing creek across the proposed diversion channel.

1.4.3 Option 2b

Option 2b was designated as the Preferred Alternative of the 2011 Class EA. The proposed development will involve the construction of an approximately 900m long diversion channel, a 150m long ditch, an associated flow control structure (ie. culvert), and a cross-over structure. The diversion channel will begin immediately south of King Street/County Road 2, tying into the existing segment of Massey Creek. It will continue south-southeast where it will connect to the existing diversion channel upstream of Normar Road.

A portion of the existing creek will also be realigned in the vicinity of the proposed crossover structure to facilitate the construction of the diversion channel.

1.4.4 Option 3

Construction of a diversion channel to the west of the existing creek to direct flows and reduce the floodplain with the Lucas Point Business Industrial Park. This option also includes an associated hydraulic structure and a cross-over structure to connect the existing creek across the proposed diversion channel.

1.4.5 Option 4

The “do nothing” option, involving no development to reduce the floodplain.

Conceptual design drawings from the flood reduction study are provided in **Appendix B**.

1.5 Purpose

The purpose of the NHA is to identify and describe valued ecosystem components which are present on the Site or adjacent lands; and to identify and assess whether the proposed development will result in potential impacts to the ecologically significant components and propose measures to avoid or mitigate impacts so that the development can proceed. Specifically, this NHA has been prepared to support an EA Addendum, which was initiated to update the original EA (Municipal Class Environmental Assessment for Massey Creek Flood Reduction Study) as required by the Class EA process.

2. Methods for Data Gathering and Analysis

The Site and adjacent natural heritage features were examined and analyzed by the review of available information from desktop research, consultation with the applicable authorities and on-Site ecological surveys.

2.1 Background Information

The following publicly available sources were reviewed and analyzed for Site specific applicable information as part of the desktop research process:

2.1.1 Federal Sources

- Natural Resources Canada (NRC) Topographic Map 031G06 (NRC, 2021);
- Fisheries and Oceans (DFO) Aquatic Species at Risk Mapping (DFO, 2021).

2.1.2 Provincial Sources

- Geographic information from Land Information Ontario (LIO, 2021);
- AgMaps - Ministry of Agriculture, Food and Rural Affairs (AFRA, 2020);
- The Ministry of Northern Development, Mines, Natural Resources and Forestry’s (MNDMNRF) Natural Heritage Information Center (NHIC) database squares # 17QJ3072 and # 17QJ3071 – search completed June 22, 2021, (NHIC, 2020);
- Atlas of Breeding Birds of Ontario square # 17QJ37 (Cadman et al., 2007);
- Herps of Ontario Project square # 17QJ37 (iNaturalist, 2020);

- Ontario Butterfly Atlas Online square # 17QJ37 (Toronto Entomologists' Association, 2021);
- Atlas of the Mammals of Ontario (Dobbyn, 1994);
- Ecosystems of Ontario, Part 1 Ecozones and Ecoregions (MNRF, 2009);
- Ecological Land Classification for Southern Ontario (MNRF, 1998);
- Significant Wildlife Habitat Technical Guide (MNRF, 2000);
- Ganaraska Conservation Authority (GRCA);
  - Conservation Lands Web Mapping (GRCA, 2021);
  - Massey Creek Fisheries Memo (GRCA, 2009);
  - Massey Creek Site Terrestrial Natural Heritage Inventory (GRCA, 2009); and
- Ontario Geological Survey Map M2556 (OGS, 2010).

2.1.3 Municipal Sources

- Northumberland County Official Plan (NCOP, 2016);
- Town of Cobourg Official Plan (COP, 2018).

2.1.4 Other Sources

- Aerial/Satellite imagery (Google Earth Pro, 2021);
- Massey Creek Flood Reduction Study (Valdor Engineering Inc., 2011);
- Massey Creek Fisheries Sampling (AECOM, 2009).

2.2 Consultation

A request for information and comment as part of the letter of Notification of the commencement of the Massey Creek EA Addendum was sent on behalf of the Town to the Ontario Ministry of Environment, Conservation and Parks (MECP), and the Ganaraska Region Conservation Authority (GRCA) on Monday, August 16, 2021.

CIMA+ coordinated a roundtable meeting to discuss the details of the EA Addendum. The meeting was held on August 31, 2021, attended by representatives of the Town and the GRCA.

All agency correspondence is included in **Appendix C**.

2.3 Site Characterization

The on-Site and adjacent characterization of the natural heritage features was conducted by a qualified **CIMA+** employee (i.e., biologist) by visual assessment of the terrestrial and aquatic components on and adjacent to the Site during one (1) site visit. On the following page, **Table 2** presents the details of the visit in terms of date, times, survey focus and weather conditions.

Table 2: Site Investigations

Date	Start/End Time	Field Surveys	Weather Conditions	Investigators
2021/07/16	0615 - 1335	• Breeding Bird Inventory • Ecological Land Classification • Species at Risk Assessment • General Wildlife • Aquatic Habitat Assessment for Massey Creek between King St and Normar Road	Temperature: 18°C - 26°C Wind (Beaufort scale): 2 Cloud cover: 60% - 90%	Casey Little, Biologist

2.3.1 Ecological Lands Classification and Vegetation Survey

Ecological community characterization was completed in general accordance with the MNRF Ecological Land Classification (ELC) for Southern Ontario (Lee et al. 1998). During the field investigations, vegetation was characterized using ELC to classify and map ecological communities to the vegetation level. The ecological community boundaries were generally defined through the review of aerial photography and further refined during field investigations. The protocol recommends that a vegetation community be a minimum of 0.5 hectares (ha) in size before it is defined. Based on the composition of vegetation communities within the Site, patches of vegetation less than 0.5 ha or disturbed/planted vegetation were described (if required), provided they clearly fit within an ELC vegetation type. The information was documented and classified according to species and locational data was gathered using a hand-held GPS.

2.3.2 General Wildlife and Species at Risk Survey

Incidental wildlife and wildlife habitat observations (auditory, visual, tracks, scat, burrows, nests, etc.) were conducted within the Site boundaries on July 16th, 2021, to determine presence/absence. Bird, herpetofauna, insect, and mammal data was compiled for the general area. The Site visit included the collection of bird data through incidental observations following the Ontario Breeding Bird Atlas survey protocol (OBBS, 2001). Identification and general classification of wildlife habitat was identified following the Significant Wildlife Habitat Technical Guide (MNRF, 2000) and supporting documentation. SAR and/or potential habitats on and adjacent to the Site was considered and analyzed in relation to the background information review in comparison with on-Site visual observations.

2.3.3 Aquatic Habitat Assessment

An aquatic habitat assessment was completed along Massey Creek within the Site which included the collection of general aquatic habitat information such as substrate type, watercourse morphology and aquatic vegetation, as well as an overall determination of the presence/absence and quality of fish habitat.

3. Site Description and Existing Natural Heritage Components

3.1 Background Review and Consultation Results

3.1.1 Significant Woodlands

There are no significant woodlands identified on the Town of Cobourg's Official Plan (COP 2018), or the Northumberland County Official Plan (NCOP, 2016).

3.1.2 Significant Valleylands

There are no significant valleylands presently mapped on or adjacent to the Site (COP 2018), or the or the Northumberland County Official Plan (NCOP, 2016)

3.1.3 Significant Wetlands

There are no Provincially Significant Wetlands (PSWs) on or adjacent to the Site (COP 2018, NCOP 2016; MNRF 2021). However, there is an unevaluated wetland within the Study Area.

3.1.4 Areas of Natural and Scientific Interest

There is no Area of Natural and Scientific Interest on or adjacent to the Site (COP 2018, NCOP 2016; MNRF 2021).

3.1.5 Environmental Constraint Area

The Town of Cobourg's Official Plan (COP 2018) identifies an Environmental Constraint Area/Floodplain on Schedule A – Land Use Plan within the Study Area. These subject lands have areas with sensitive environmental features and floodplain limitations. As part of Site Plan Approval, the Town and/or GRCA shall require the submission of detailed site design, engineering, stormwater management and/or landscape plans to ensure that there will be no adverse impacts on the Environmental Constraint Areas (ECA) and/or floodplain. Minor modifications to the ECA may occur upon review of the said drawings and subject to written approval of the Town and GRCA without an amendment to this Plan (COP 2018).

3.1.6 Geology and Topography

The overburden consists of a combination of silt and clay, minor sand and gravel with fine-textured glaciolacustrine deposits and reworked till (OGS, 2010).

Underlying bedrock geology for the area consists of limestone, dolostone, shale, arkose, and sandstone from the Cobourg formation (OGS, 2010).

The site is relatively flat with an elevation of approximately 85 meters above sea level (masl), sloping slightly to the north (NRC, 2020). Topographic, Bedrock and Surficial geology mapping is provided in **Appendix A**.

3.1.7 Vegetation

The Site and adjacent properties are located within Ecoregion 6E (Lake Simcoe-Rideau Ontario), the second most densely populated ecoregion in Ontario. More than 57% of the ecoregion exists as cropland (44.4%), and pasture and abandoned fields (12.8%). Forest cover includes deciduous (16.0%), coniferous (5.3%), and mixed forest (8.8%). Water covers 4% of the ecoregion. The vegetation is relatively diverse across the region and include hardwood forests dominated by Sugar Maple (*Acer saccharum*), American Beech (*Fagus grandifolia*), White Ash (*Fraxinus americana*), Eastern Hemlock (*Tsuga canadensis*), and numerous other species are found where substrates are well developed on upland sites. Lowlands, including rich floodplain forests, are often established with Green Ash (*Fraxinus pennsylvanica*), Silver Maple (*Acer saccharinum*), Red Maple (*Acer rubrum*), Eastern White Cedar (*Thuja occidentalis*), Yellow Birch (*Betula alleghaniensis*), Balsam Fir (*Abies balsamea*), and Black Ash (*Fraxinus nigra*). Peatlands (including fens, rarely bogs), often established with Black Spruce (*Picea mariana*) and Tamarack (*Larix laricina*), occur along the northern edge and in the eastern portion of the ecoregion. This ecoregion is part of the Mixed wood Plains Ecozone of Southern Ontario, characterized by relatively diverse vegetation (Crins, 2009).

Based on air photo interpretation, the Site appears to be dominated by a mix of active agricultural fields and deciduous forested lands.

3.1.8 Surface Water and Fish Habitat

Massey Creek traverses the Site from north to south, and eventually drains into Lake Ontario to the south. According to the most recent mapping data provided the GRCA, the segment of Massey Creek within the boundaries of the Site appears to be a part of GRCA Regulated Areas. The Site and adjacent properties are within the East Lake Ontario Watershed (WS). The headwaters of the Massey Creek originate north of Cobourg, Ontario and drains into Lake Ontario (GRCA, 2021).

The Department of Fisheries and Oceans' (DFO) aquatic species at risk (ASAR) map indicated no known ASAR habitat within a 1 km buffer of the Site.

Information provided by GRCA about fish sampling which occurred in 2009 stated that four fish species (Atlantic Salmon, Creek Chub, White Sucker, and Brook Stickleback) were captured within the reach where the proposed flood diversion channel would be created.

3.1.9 Species at Risk

The Ontario *Endangered Species Act, 2007* (ESA) prohibits killing or damaging the habitat of species that are listed on the SAR in Ontario list. The background information review resulted in a list of 16 SAR that have been previously documented to have potential to occur within the Study Area. **Appendix D** provides this list of potential SAR including their common and scientific name, status under federal *Species at Risk Act* (SARA) and provincial ESA, and a general description of their preferred habitat based on federal/provincial SAR Registry Species Profiles.

3.1.10 Consultation Results

The MECP responded on August 26, 2021, indicating that species at risk should be considered as part of the EA process. In addition, the Ministry requested that a preliminary screening, site visits, and preliminary report be completed before further correspondence.

Following the roundtable meeting held on August 31, 2021, the GRCA Watershed Biologist responded on September 9, 2021, providing a 2009 memo addressing fisheries concerns for the diversion channel project, an accompanying fisheries report, and a 2009 Terrestrial Natural Heritage Inventory.

All correspondence is included in **Appendix C**.

3.2 Field Observations

3.2.1 Ecological Land Classification

The Ontario ELC system enables planners and ecologists to organize ecological information into logical integrated units to enable landscape planning and monitoring. The Site was classified and mapped to the vegetation level in accordance with the ELC for Southern Ontario (Lee et al. 1998).

The Site is dominated by a mix of active agricultural fields, mixed meadow, mixed marsh, and deciduous forested lands. The agricultural fields were planted with soybean (*Glycine max*) at the time the 2021 field inventory took place. Areas in the northern extents of the Site adjacent to Massey Creek were comprised of both Dry-Fresh Mixed Meadow and Fresh-Moist Mixed Meadow habitats dominated by Wild Carrot (*Daucus carota*), Aster (Aster spp.), Goldenrod (*Solidago* sp.), Willow (*Salix*) species, and Alsike clover (*Trifolium hybridum*). There were also Mixed Meadow Marsh areas adjacent to Massey Creek which appear to be exposed to seasonal flooding comprised of Reed canary grass (*Phalaris arundinacea*), Joe Pye weed (*Eutrochium purpureum*), Jewelweed (*Impatiens capensis*), Narrow-leaved Cattail (*Typha angustifolia*) and Purple Loosestrife (*Lythrum salicaria*). A small Willow Thicket inclusion is also present on the northeast side of Massey Creek. The Massey Creek riparian areas in the centre of the Site transition into a Willow Deciduous Forest dominated by tree and shrub species associated with disturbance and regeneration; Willow, Manitoba Maple (*Acer negundo*), dead/dying Green Ash, American Elm (*Ulmus americana*), Common Buckthorn (*Rhamnus cathartica*), Red-osier Dogwood (*Cornus sericea*), Fly Honeysuckle (*Lonicera canadensis*), Riverbank Grape (*Vitis riparia*), Virginia Creeper (*Parthenocissus quinquefolia*), and Dog-strangling vine (*Vincetoxicum rossicum*). The forest transitions into another Mixed Meadow Marsh community where Massey Creek flows east towards Normar Road, and is comprised of Reed-canary grass, goldenrod, and various shrub species. Another Mixed Marsh community dominated by Reed canary grass, Joe Pye weed, Jewelweed, and Purple Loosestrife is situated south of the Willow Deciduous Forest which transitions into a Red-osier Dogwood Thicket just north of Thompson Street. A small, fenced-in Green Lands ecosite is present west of the Red-osier Dogwood Thicket in the southern extent of the Site, which was comprised of mowed lawn.

Eleven ELC community classes were identified within the Site. A summary of community class findings is outlined in **Table 3** ELC Communities, and the locations of the various vegetation communities present within the Site are outlined in **Appendix A – Figure 5.** No rare vegetation species or SAR were observed within the Site.

Table 3: ELC Communities

ELC Community	Dominant Vegetation Species	Area Onsite (approximate m²)
CVI_1 Transportation	This community is comprised of Highway 2 and Normar Road throughout the Site.	9,441
CVR_4 Rural Property	There was one residential property in the northwest extent of the Site; located at the corner of Highway 2 and Normar Road.	2,384
FODM7-3 Fresh-Moist Willow Lowland Deciduous Forest	Tree species within the forest included Willow, Green Ash, American Elm, and Common Buckthorn. The understory was dominated by Dogwood, Honeysuckle, Joe-Pye weed, Purple Loosestrife, and Dog-strangling Vine.	38,798
FODM11 Naturalized Deciduous Hedgerow	Two narrow naturalized deciduous hedgerows are present within the Site; one along Normar Road, and one separating two soybean fields, both of which are situated in the northern extent of the Site.	2,011
MAMM1-3 Reed-canary Grass Graminoid Mineral Meadow Marsh	A small Reed-canary grass marsh inclusion is present on the east side of Massey Creek.	2,044
MAMM3 Mixed Mineral Meadow Marsh	Several mixed meadow marsh ecosites are present within the Site, all of which are comprised of Reed canary grass, Joe Pye weed, Jewelweed, goldenrod, and Purple Loosestrife, with scattered Willow shrubs.	15,104
MEMM3 Dry-Fresh Mixed Meadow	The dry-fresh mixed meadow ecosites are situated in the northern extent of the Site adjacent to Highway 2 and Normar Road. These communities are comprised of common species located within disturbed sites, such as Wild Carrot, Aster, Goldenrod, and clover.	4,311
MEMM4 Fresh-Moist Mixed Meadow	The fresh-moist mixed meadow ecosite is in the northern extent of the Site and contains similar species as the dry-fresh mixed meadow ecosite adjacent but also contained species found in areas subjected to flooding such as Willow, Reed-canary grass and Joe-Pye weed.	2,469
OAGM1 Annual Row Crop	The Annual Row Crop within the Site was planted with Soybean during the 2021 field investigations.	41,959
SWT2-5 Red-osier Dogwood Mineral Deciduous Thicket Swamp	The Red-osier Dogwood thicket swamp is situated north of Thompson Street in the southeast corner of the Site, and is comprised mainly of dogwood shrubs, Joe-Pye weed, and purple loosestrife.	1,975
SWTM3-6 Mixed Willow Mineral Deciduous Thicket Swamp	The Willow thicket swamp was situated on the northeast side of Massey Creek and was dominated by two varieties of Willow, Wild Parsnip (*Pastinaca sativa*), goldenrod, sedges, and grasses.	2,296

3.2.2 Surface Water, Watercourse, Wetlands and Fish Habitat

Massey Creek flows south through a 3m x 3m box culvert under County Road 2 in the northern extent of the Site. It meanders in a southeast direction for approximately 260 m, then flows south for approximately 380 m before heading east at the southern extent of the agricultural fields for another 180 m where it then passes through a double box culvert under Normar Road.

Based on the mid-summer survey observations, the channel had an unwetted width of approximately 1 to 2 meters wide. The entire length of the channel contained steady flowing water with depths between 30 cm and 70 cm. There was no fish sampling completed during the 2021 field investigations. No obstructions to fish movement were observed within the Site.

Substrates within the creek consist of loam, sand, silt and muck. No submergent or emergent aquatic vegetation is present within the channel and riparian vegetation generally consists of reed canary grass, purple loosestrife, wildflowers, and various shrubs.

There were four (4) wetland communities identified on Site, based on results of the 2021 ELC classification for Southern Ontario; MAMM1-3 – Reed-canary Grass Graminoid Mineral Meadow Marsh, MAMM3 – Mixed Mineral Meadow Marsh, SWT2-5 – Red-osier Dogwood Mineral Deciduous Thicket Swamp, and SWTM3-6 – Mixed Willow Mineral Deciduous Thicket Swamp. All four (4) wetland communities are associated with the riparian areas of Massey Creek.

3.2.3 Wildlife

Wildlife habitat observed within the Site was typical of a disturbed setting and based on field observation common species are expected to be present within these habitat features all with secure habitats in Ontario.

Insects

Four (4) Insects were observed during the 2021 field investigations: Cabbage White (*Pieris rapae*), Monarch (*Danaus plexippus*), Mourning Cloak (*Nymphalis antiopa*), and Northern Crescent (*Phyciodes cocyta*). All insect species were observed within the MEMM3 – Dry-Fresh Mixed Meadow ecosite adjacent to Normar Road.

Amphibians and Reptiles

Due to the timing of the 2021 field investigations, Green Frog (*Lithobates clamitans*) was the only amphibian confirmed to be present on Site.

No turtle species were observed on Site during the 2021 field investigations. Massey Creek provides suitable habitat for turtle foraging, mating, thermoregulation, summer inactivity, and movement. Areas of the creek within the Site did not appear to have deep enough water to support suitable overwintering conditions for turtles.

Mammals

White-tailed Deer (*Odocoileus virginianus*) tracks was the only mammal sign observed within the Site during the 2021 field investigation. The deer tacks were observed in the MAMM3 – Mixed Mineral Meadow Marsh ecosite adjacent Massey Creek.

The FODM7-3 – Fresh-Moist Willow Lowland Deciduous Forest ecosite may provide habitat suitable for bat maternity roosting.

Birds

Twenty-four (24) common bird species were identified within the Site by sight and/or sound. No bird nests were observed during the Site visit.

3.2.4 Species at Risk

No endangered or threatened SAR were observed on or adjacent to the Site during the 2021 field investigations.

The only SAR listed as special concern observed within the Site was Monarch. As the MEMM3 – Dry-Fresh Mixed Meadow ecosite is frequently disturbed due to it being situated adjacent to Normar Road, it is anticipated conditions within the Site are not suitable to provide significant habitat for this species.

Massey Creek provides suitable habitat for SAR turtle foraging, mating, thermoregulation, summer inactivity, and movement. Surveys were not conducted at the appropriate time of year to detect the presence of Western Chorus Frog; however, as Massey Creek supports fish habitat, it is anticipated that this feature does not support breeding habitat for this species. The forest habitat within the Site may provide breeding habitat for SAR birds and maternity roosting habitat for SAR bats.

Additionally, the structures within the CVC_1 community may provide suitable Barn Swallow nesting habitat though no birds or evidence of nesting was noted during the field investigations.

Upon completion of the 2021 field investigations, the list of the 16 potential SAR identified during the background review (**Appendix D**) was assessed and updated to determine which SAR have the potential to occur on or adjacent to the Site (**Table 4**). The outcome of this assessment determined that there is potential for seven (7) SAR and their habitat to be impacted by this project.

Table 4: Assessment of Potential SAR

Common Name Scientific Name Status	Species observed on Site	Potential Habitat on Site	Potential Habitat Adjacent to Site	Comments
Butternut *Juglans cinereal* Federal - **END** Provincial - **END**	No	No	No	No Butternut were observed within the Site.
Monarch *Danaus plexippus* Federal- **SC** Provincial - **SC**	Yes	Yes	Yes	Monarch was observed and there were a few individual Common Milkweed (*Asclepias syriaca*) plants observed in the MEMM3 – Dry - Fresh Mixed Meadow ecosite adjacent to Normar Road; but due to frequent disturbance in this area, habitat to support significant nectaring, egg laying, or reproductive processes for this species is not available on Site.

Common Name Scientific Name Status	Species observed on Site	Potential Habitat on Site	Potential Habitat Adjacent to Site	Comments
Eastern Milksnake *Lampropeltis triangulum* Federal – **SC** Provincial - **SC**	No	No	No	Suitable microhabitats for specific activities such as egg laying, or thermoregulation is not present on Site.
Snapping Turtle *Chelydra serpentina* Federal- **SC** Provincial - **SC**	No	Yes	Yes	No Snapping Turtle were observed on Site; however, Massey Creek may provide adequate habitat for the species to use for mating, foraging, thermoregulation, summer inactivity, and/or movement.
Western Chorus Frog (Great Lakes – St. Lawrence Population *Pseudacris triseriata* Federal – **THR** Provincial – **Not listed**	No	No	No	As Massey Creek is fish bearing it is not considered suitable for Western Chorus Frog critical habitat.
Bank Swallow *Riparia riparia* Federal - **THR** Provincial - **THR**	No	No	No	No natural and/or human-made vertical faces in silt and sand deposits for Bank Swallow to nest were observed on or adjacent to the Site.
Barn Swallow *Hirundo rustica* Federal - **THR** Provincial - **THR**	No	No	No	No human-made structures such as open barns, bridges or culverts were observed for Barn Swallow to build their cup-shaped mud nests were observed on or adjacent to the Site.
Bobolink *Dolichonyx oryzivorus* Federal - **THR** Provincial - **THR**	No	No	No	No suitable breeding habitat (grasslands and/or hayfields) for Bobolink was observed on Site.
Canada Warbler *Cardellina canadensis* Federal – **THR** Provincial – **SC**	No	Yes	Yes	No Canada Warbler were observed on Site; however, the FODM7-3 - Fresh-Moist Willow Lowland Deciduous Forest ecosite may provide suitable breeding habitat for the species.
Chimney Swift *Chaetura pelagica* Federal – **THR** Provincial – **THR**	No	No	No	No suitable breeding habitat (manmade chimneys) for Chimney Swift was observed on Site.
Eastern Meadowlark *Sturnella magna* Federal - **THR** Provincial - **THR**	No	No	No	No suitable breeding habitat (grasslands and/or hayfields) for Eastern Meadowlark was observed on Site.

Common Name Scientific Name Status	Species observed on Site	Potential Habitat on Site	Potential Habitat Adjacent to Site	Comments
Eastern Wood-Pewee *Contopus virens* Federal- **SC** Provincial - **SC**	No	Yes	Yes	No Eastern Wood-Pewee were observed on Site; however, the FODM7-3 - Fresh-Moist Willow Lowland Deciduous Forest ecosite may provide suitable breeding habitat for the species.
Grasshopper Sparrow *Ammodramus savannarum* Federal- **SC** Provincial - **SC**	No	No	No	No suitable breeding habitat (grasslands and/or hayfields) for Grasshopper Sparrow was observed on Site.
Wood Thrush *Hylocichla mustelina* Federal - **THR** Provincial - **SC**	No	Yes	Yes	No Wood Thrush were observed on Site; however, the FODM7-3 - Fresh-Moist Willow Lowland Deciduous Forest ecosite may provide suitable breeding habitat for the species.
Little Brown Myotis *Myotis lucifugus* Federal - **END** Provincial - **END**	No	Yes	Yes	The FODM7-3 - Fresh-Moist Willow Lowland Deciduous Forest ecosite may provide suitable habitat for SAR bat maternity roosting.
Tri-colored Bat *Perimyotis subflavus* Federal - **END** Provincial - **END**	No	Yes	Yes	The FODM7-3 - Fresh-Moist Willow Lowland Deciduous Forest ecosite may provide suitable habitat for SAR bat maternity roosting.

END – Endangered **THR** – Threatened **SC** – Special Concern

Based on results of the SAR screening assessment through background data review coupled with on-Site investigations, there is potential for seven (7) SAR and its habitat present within the Site; Monarch, Snapping Turtle, Canada Warbler, Eastern Wood-Pewee, Wood Thrush, Little Brown Myotis, and Tri-colored Bat. Avoidance and mitigation measures are identified in Section 6.4 to address potential impacts to SAR and their habitat.

4. Regulatory Requirements

4.1 Federal

The *Fisheries Act* is administered by the Department of Fisheries and Oceans Canada (DFO) and is intended to provide a framework for the management of threats to fish and fish habitat, including the prevention of pollution, regardless of their attachment to a fishery. Section 34.4 of the Act prohibits the carrying on of any work, undertaking or activity, that results in the death of fish or the "harmful alteration, disruption or destruction of fish habitat" (HADD). Fish habitat is defined as spawning grounds and any other areas frequented by fish, including nursery, rearing, food supply and migration areas, on which fish depend directly or indirectly to carry out their life processes (Government of Canada, 1985).

Fisheries sampling completed by GRCA and AECOM in 2009, determined the presence of yearling Rainbow Trout and Atlantic Salmon (Ontario species at risk – extirpated), indicating that Massey Creek is supporting one species protected under the Ontario ESA. The presence of Rainbow Trout indicated that Massey Creek is a cold-water system and in-turn will restrict any in-water works occurring before July 1st or after September 30th of any calendar year. Overall, it is likely that the modifications to flow management, timing and direct impacts to fish habitat related to the proposed flood diversion project will result in an authorization under the *Fisheries Act* being required.

The *Migratory Birds Convention Act, 1994 (MBCA)* regulates the protection and conservation of migratory birds as populations and individuals and protects their nests. The Act applies to any areas that provide potential for nesting habitat of migratory birds. Section 6 of the Migratory Bird Regulations (2020) prohibits the disturbance, destruction of nests, eggs of migratory birds (Government of Canada, 1994). To comply with MBCA requirements, vegetation clearing activities will be required to adhere to established timing windows to prevent impacts to breeding birds.

Federally protected species are listed in 'Schedule 1' of the *Species at Risk Act* (SARA). SARA protects habitat and individuals of wildlife species designated as endangered, threatened, or extirpated in Canada. SARA is applicable on lands under federal jurisdiction, and within areas defined as 'critical habitat' on lands under provincial jurisdiction. Where it is deemed that protection measures under a provincial law fail to adequately protect a species, the federal government may issue an emergency order. There were no federally listed species that are not protected under the ESA observed within the Site.

4.2 Provincial

The Provincial Policy Statement (PPS) is issued under the authority of Section 3 of the *Planning Act* and came into effect on April 30, 2014. The government held a public consultation on proposed changes to the PPS in summer and early fall of 2019 as part of a review process. The updated PPS came into effect on May 1, 2020. An assessment of the natural heritage features and functions within the Study Area was undertaken to consider and address the conditions set out in the PPS.

The Northumberland County Official Plan (NCOP, 2016) was drafted, reviewed, and adopted in conformity with the requirements of the *Planning Act* and the content of the Plan is consistent with the PPS. The NCOP states that 'Where the policies of this Plan require that an Environmental Impact Study ('EIS') be prepared, such an EIS shall be prepared in accordance with the requirements of this section of the Plan'.

The Ontario *Conservation Authorities Act* gives individual conservation authorities the power to regulate development and activities in or adjacent to river or stream valleys, Great Lakes and large inland lakes and shorelines, watercourses, hazardous lands and wetlands. Regulations made under the Act specify the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulations managed by individual Conservation Authorities. These regulations apply to lands within river or stream valleys, flood plains, wetlands, watercourses, lakes, hazardous lands or lands within 120 meters of a PSW or wetlands greater than 2 hectares, or lands within 30 meters of non-provincially significant wetlands. Development or site alteration within these regulated areas may be permitted provided development is conducted in accordance with existing policies (Government of Ontario, 1990).

For this project the GRCA is required to review development and alteration applications under the *Conservation Authorities Act* (O. Reg. 174/06) as the project site is located within the regulatory limit of GRCA. As the project also involves development within the regulatory limit, a permit from GRCA will be required.

The Ontario ESA prohibits killing or damaging the habitat of species that are listed on the SAR in Ontario list. Endangered (END) indicates that the species lives in the wild in Ontario but is facing imminent extinction or extirpation. Threatened (THR) indicates the species lives in the wild in Ontario, is not endangered, but is likely to become endangered if steps are not taken to address factors threatening it. Special Concern (SC) means the species lives in the wild in Ontario, is not endangered or threatened, but may become threatened or endangered due to a combination of biological characteristics and identified threats. (MNRF, 2019).

Only species which are considered endangered or threatened receive specific protections under the ESA. Some exemptions exist under O. Reg. 242/08 of the Act, related to particular species and activities. If a proposed undertaking is covered under one of the exemptions, a streamlined notification process applies. If none of the exemptions apply, a permit under section 17(1) of the Act is required. Although no endangered or threatened SAR were observed during the 2021 field investigations, there is habitat present for seven (7) SAR that may be impacted because of the flood diversion process; Monarch, Snapping Turtle, Canada Warbler, Eastern Wood-Pewee, Wood Thrush, Little Brown Myotis, and Tri-colored Bat. Impacts, mitigation measures and approval requirements related to SAR are discussed in **Section 5**.

5. Assessment of Design Options

Based on the high-level assessment completed in support of the original 2011 Class EA the impact assessment documented assumed worst-case impacts to the environment associated with all alternatives, including the “do nothing” alternative (Option 4). While consideration of impacts to the natural environment was considered in the selection of the preferred alternative the assumption of worst-case impacts for all alternatives resulted in the analysis not influencing the results.

Option 1 proposes the construction of a large stormwater management facility upstream of the Lucas Point Business Industrial Park. The intent of the facility would be to control flows and reduce the flood plain without the addition of a diversion channel. Design information within the original 2011 Class EA is limited; however, it is apparent that the footprint of the facility would impact a significantly larger footprint upstream. This facility would similarly alter downstream flows through the assessed area to achieve the desired floodplain reduction.

With respect to impacts to the natural environment, Options 2a and 2b are largely identical with similar footprints and design requirements. The overall project footprint is smaller than in Option 1.

Option 3 proposes the construction of the flow diversion channel on the east side of the existing Creek, with a similar flow diversion structure further upstream. With respect to impacts to the environment, this option presents the least impact (other than Option 4) as most of the footprint occurs within already developed agricultural land and therefore impacts to the natural environment are less than in the other Options.

Option 4, the “do nothing” alternative, will result in the fewest impacts to the natural environment as it retains existing conditions across the site. However, this alternative does not address any of the issues with respect to the management of flows or provide any of the benefits associated with the other proposed alternatives.

As noted above, Option 2b was identified as the preferred design in the original 2011 EA. However, based on a review of the design alternatives and the current conditions of the Site, Option 3 has the least potential impact to the natural environment while still providing similar benefits regarding flood management enabling Site development.

6. Potential Impacts, Environmental Constraints and Mitigation Measures

The assessment of alternatives outlined above is based on the conceptual design as defined in the original 2011 EA. No further design work or implementation plans are being pursued at this time. Accordingly, detailed mitigation measures are not being proposed in this NHA. However, based on the conceptual design and review of potential environmental impacts on existing conditions, the following environmental constraints and general mitigation measures are recommended. The list of constraints and proposed mitigation measures should be reviewed and updated based on detailed design and existing conditions at that time.

6.1 Vegetation, Tree Cover, and Significant Woodlands

Tree and vegetation removal are anticipated to occur on Site to construct the proposed flow control structure and diversion channel. No impacts or affects are anticipated to vegetation adjacent to Site. Since the design is preliminary in nature the exact extent of the tree and vegetation removal is unknown.

Recommended mitigation measures to protect terrestrial habitat and vegetation to adjacent areas include:

+ Vegetation removal will be minimized and clearly delineated on construction drawings;
+ Clearing of vegetation in adjacent areas should be kept to a minimum whenever possible, and existing trails, roads or cut lines should be used to avoid disturbance to vegetation and prevent soil compaction;
+ Develop a Tree Protection Plan which identifies locations to be preserved;
+ The root system, trunk or branches of any tree not designated for removal will be protected from damage;
+ In the event of accidental damage to trees, or unexpected vegetation removal, vegetation shall be replaced / restored with native species;
+ Construction vehicles will have designated access routes from and to the construction area.

6.2 Drainage, Erosion, Sediment Control and Protection of Fish Habitat

For this project the GRCA is required to review development and alteration applications under the *Conservation Authorities Act* (O.Reg. 174/06) as the project involves alteration, disturbance, diverting, etc. of the identified watercourse development; therefore, a permit from GRCA will be required.

Massey Creek provides fish habitat, and the thermal classification is cool water. While it is anticipated that the detailed design of the project will consider flows, fish habitat, vegetative buffers and revegetation as part of the overall design it is likely that the modifications to flow management, timing and direct impacts to fish habitat related to the proposed flood diversion project will result in an Authorization under the *Fisheries Act* being required.

Following the application of avoidance and mitigative measures, any residual impacts must be addressed by offsetting measures which will need to be considered as part of detailed design.

The following mitigation measures are proposed to avoid or mitigate impacts associated with temporary construction activities:

- No in-water work will occur during in-water work timing restrictions. Timing restrictions to be confirmed with MNDMNRF;
- An erosion and sediment control (ESC) plan will be developed by the contractor with the goal of controlling erosion and the movement of sediment laden water offsite;
- The contractor will be responsible to ensure that the ESC measures chosen are appropriate for the site and are functioning as intended;
- No work will occur in or within 30 m of the water until the appropriate ESC measures have been properly implemented. These will be designed to prevent the movement of suspended sediments and concrete outside of the site preparation and construction work areas;
- The contractor will maintain and monitor ESC measures, provide the results of monitoring, and ensure adjustments as needed are made on a continuous basis;
- ESC structures are to be left in place until vegetation is re-established and/or all exposed soils are stabilized;
- If blasting activities are required, they will follow Measures to Avoid Causing harm to Fish and Fish Habitat for explosives;
- There will be no use of herbicides in clearing of vegetation.

6.3 Wildlife and Migratory Birds

Several wildlife species were documented through background data review and have been confirmed through field investigations. Wildlife and associated habitat observed within the Site was typical of natural setting and based on field observation common species are expected to be present within these habitat features all with secure habitats in Ontario.

Many bird species were observed, and the Site provides suitable breeding bird and bat habitat. Construction activities have the potential to damage nests and/or disturb breeding birds within the Site. Massey Creek and the adjacent riparian habitat provide habitat for common mammal, insect, and herpetofauna species. Direct impacts to wildlife are likely to occur as a result of the proposed flow control structure and diversion channel.

Project construction has the potential to directly impact the forested, meadow, wetland, and riparian habitat of general wildlife required for site preparation and disturbance during construction. Vegetation clearing, use of heavy machinery, increased human presence and noise and light pollution, soil compaction, stockpiled earth, and sedimentation of existing terrestrial habitat has the potential to indirectly impact a variety of wildlife. However, with proper implementation of avoidance and mitigations such as site clearing outside of the active season, and proper isolation of the construction areas, these impacts are anticipated to be temporary and methods to restore the disturbed areas post-construction should be implemented.

The following mitigation measures are proposed to avoid or mitigate impacts:

+ Removal of woody vegetation will not occur during the breeding bird/bat season from April 15 - September 30 inclusive, unless a qualified biologist has searched the Site for nests/maternity roosts and concluded that no nests/roosts are present, no more than 2 days prior to clearing. If nests/roosts are found, a protective buffer around the location will be required until such time that the nest/roost is abandoned;
+ Removal of natural vegetation will be minimized and clearly delineated on construction drawings;
+ Workforce will be educated on potential wildlife which could occur in the vicinity of the work area and measures to avoid wildlife;
+ Harassment and/or harm to wildlife during construction is prohibited;
+ If work must occur during the peak activity period for reptiles and amphibians, exclusion fencing shall be installed prior to the peak activity period (April 1) and shall be properly maintained and monitored for the duration of construction. The goal of exclusion fencing is to prevent or minimize the risk of harm to herpetofauna and their nests and/or eggs by physically preventing them from entering the work areas at any time prior to and during construction:
    - Fence installation shall be consistent with the methods prescribed in the Pembroke District MNRF's *Turtle Mitigation for Road and Highway Projects* (MNRF 2014).
+ When possible, work will be completed during daylight hours. If nighttime lights are used, they will be installed to illuminate the work area only to minimize impacts to nighttime activities of wildlife;
+ Vehicles and equipment will have the appropriate mufflers installed;
+ Vehicle and equipment engine idling will be minimized;
+ Construction vehicles will have designated access routes from and to the construction area;
+ Stockpiled materials will be surrounded by sediment control fencing to prevent nesting by turtles and snakes;
+ Existing access roads will be used as much as possible and speed limits will be clearly posted on site access and construction roads to minimize the potential for turtle road mortality.

6.4 Species at Risk

At this time, no endangered or threatened SAR have been identified within the Site; however, the project has the potential to directly impact 7 SAR and/or their habitat: Monarch, Snapping Turtle, Canada Warbler, Eastern Wood-Pewee, Wood Thrush, Little Brown Myotis, and Tri-colored Bat. A summary of these potential adverse effects is listed below.

Habitat is present for Monarch, However, as the dry-fresh mixed meadow ecosite is frequently disturbed (i.e. mowed) due to it being situated adjacent to Normar Road, it is anticipated conditions within the Site are not suitable to provide significant habitat for this species.

Habitat for Snapping Turtle is present within Massey Creek and the adjacent wetlands. Direct impacts are possible in these areas during site clearing and construction activities. However, it is anticipated that these features will be available for this species after project completion.

Depending on the alternative proposes, some forested habitat may be permanently removed because of the proposed diversion channel construction. The forests within the Site may provide habitat for the three (3) SAR forest birds (i.e., Canada Warbler, Eastern Wood-pewee, and Wood Thrush) and potentially Little Brown Myotis, and Tri-colored Bat. It is assumed that due to the amount of contiguous forested habitat remaining both west and south of the proposed development after construction is complete, there will not be a significant negative impact to these species' habitats because of the project.

Refer to **Section 0** above to review the recommended avoidance and mitigations measures proposed to protect general wildlife including birds, bats and herpetofauna. To ensure compliance under Section 9 and/or Section 10 of the ESA, and to protect SAR and SAR habitat during development and operations of the proposed project activities, the following general mitigation measures are recommended:

+ A worker awareness program shall be provided to all on-site personnel that includes species at risk identification and habitat characteristics and provides general species-specific guidance with respect to appropriate actions to be taken whenever these species are encountered;
+ A daily pre-construction search of the machinery and the work area shall be implemented to identify presence of species at risk, as animals may be found hiding or basking around equipment, rocks, debris piles etc.;
+ If endangered or threatened species are observed in or near the study area, work shall stop immediately, a photograph shall be taken of the species (if possible) and the SAR shall be allowed to move out of the work area on its own. The MECP shall be notified (as required).

7. Summary and Recommendations/Conclusions

This NHA provides an analysis of the potential impacts to the valued ecosystem components that may result from the proposed development alternatives for the Massey Creek Flood Reduction Study based on an updated background review, assessment of existing site conditions and applicable regulations.

The original 2011 EA identified Option 2b, which involves the construction of a flood diversion channel on the west side of Massey Creek, as the preferred design alternative. However, Option 3 which shifts the construction of the flood reduction channel to the east side of Massey Creek onto already developed agricultural lands, will result in fewer and less significant impacts to identified natural heritage features. Therefore, Option 3 has the least potential impact while still providing similar benefits regarding flood management enabling site development and is the preferred alternative from the perspective of the NHA.

GRCA reviews development and alteration applications under the *Conservation Authorities Act* (O.Reg. 174/06). As the project involves alteration, disturbance, diverting, etc. of the identified watercourse development a permit from GRCA will be required for any channelization or development along Massey Creek.

Massey Creek provides fish habitat. While it is anticipated that the detailed design of the project will consider flows, fish habitat, vegetative buffers and revegetation as part of the overall design it is likely that the modifications to flow management, timing and direct impacts to fish habitat related to the proposed flood diversion project will result in an Authorization under the *Fisheries Act* being required.

7.1 Study Limitations and Constraints

CIMA+ completed diligent and reasonable research in the conduct of this evaluation, with respect to the recognized laws and standards of practice.

The facts presented in this report are strictly limited to the period of investigation. The conclusions presented in this report are based on the available information and documents, the observations made during the Site visit and the information obtained from communications with various contacts. The interpretation presented in this report is limited to this data.

CIMA+ is not responsible for erroneous conclusions due to voluntary abstention or the non-availability of pertinent information. Any opinion expressed in relation to legal or regulatory conformity is technical and should not be, in any case, considered as legal advice.

8. References

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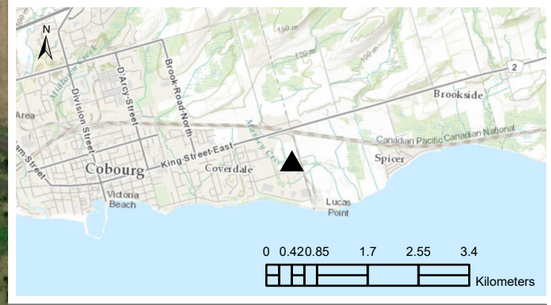
A

Appendix A
Figures

Site boundary

120m - Study Area



Spatial Reference:

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GCS: GCS North American 1983 CSRS
Datum: North American 1983 CSRS
Projection: Transverse Mercator
Scale: 1:6,184

Sources:

- Terrestrial Survey, CIMA+, 2021
- Basemap : Town of Cobourg, Province of Ontario, Ontario MNR, Esri Canada, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, NGA, EPA, USDA, AAFC, NRCan, Maxar

General Notes:

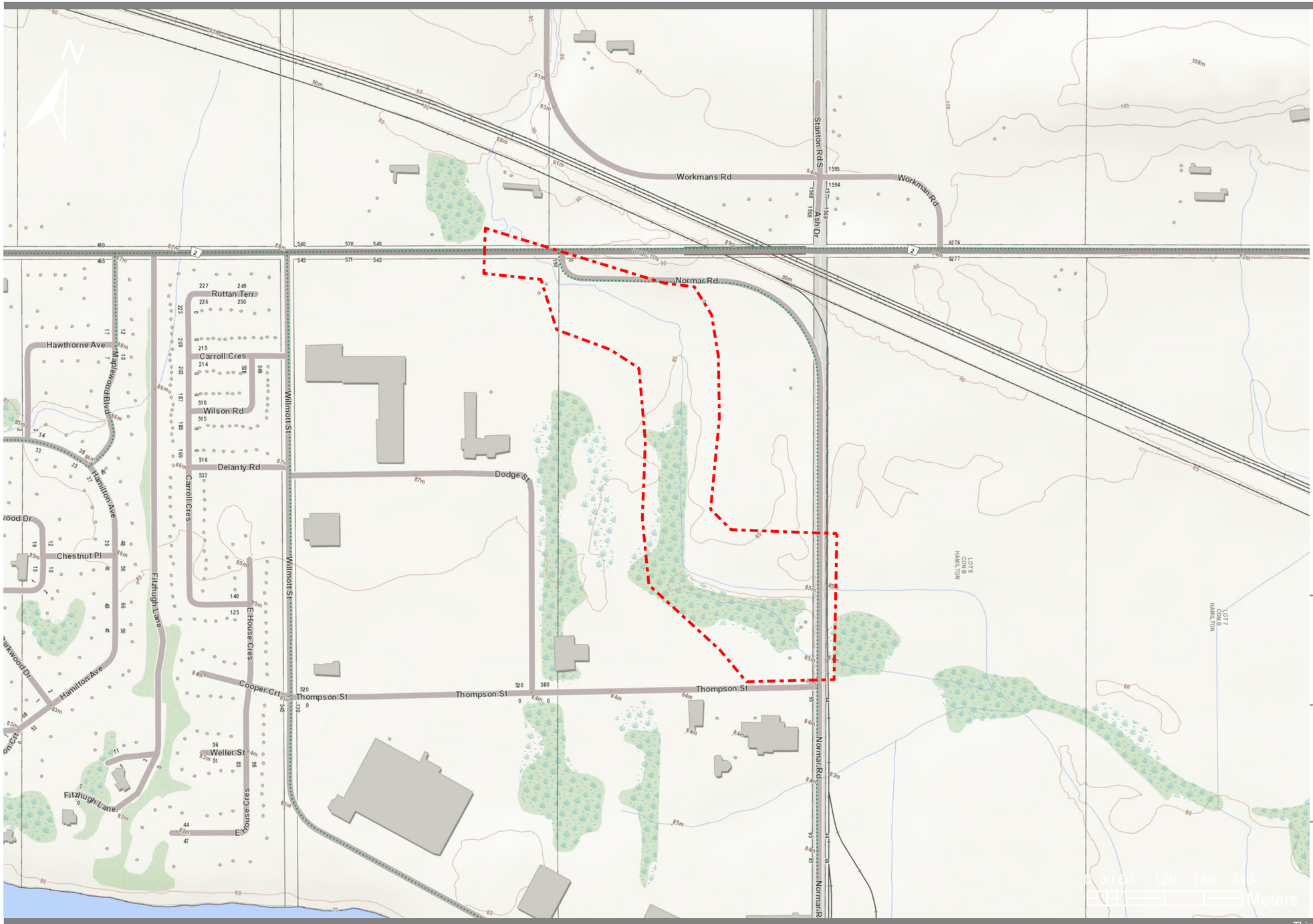
Dimensions on the plan should be read and not measured.
Any errors or omissions should be reported to CIMA +. The boundaries, areas, and title deeds must be verified by a surveyor.

Figure 1 - Site Location Map

Environmental Impact Statement - Massey Creek Flood Diversion Channel
Normar Road, Cobourg, ON
The Town of Cobourg

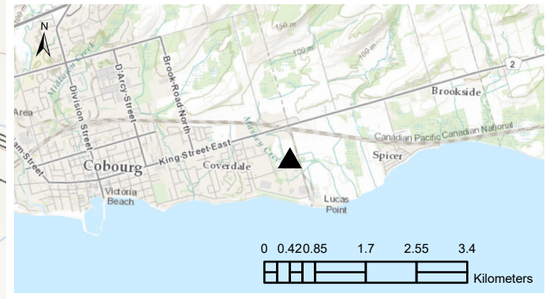
Ref # : C14-0453-100-080

Survey by : C. Little
Figure by : J. Scott
Concept by : J. Scott
Verified by : K. Markvorsen



Site boundary

Building as Symbol
Building to Scale
208 Spot Height
200 Index Contour
Contour
Wooded Area
Wetland
Waterbody
184 Waterbody Elevation
Watercourse



Spatial Reference:

PCS: NAD 1983 CSRS UTM Zone 17N
GCS: GCS North American 1983 CSRS
Datum: North American 1983 CSRS
Projection: Transverse Mercator
Scale: 1:6,184

Sources:

- Terrestrial Survey, CIMA+, 2021
- Basemap : Land Information Ontario, 2021

General Notes:

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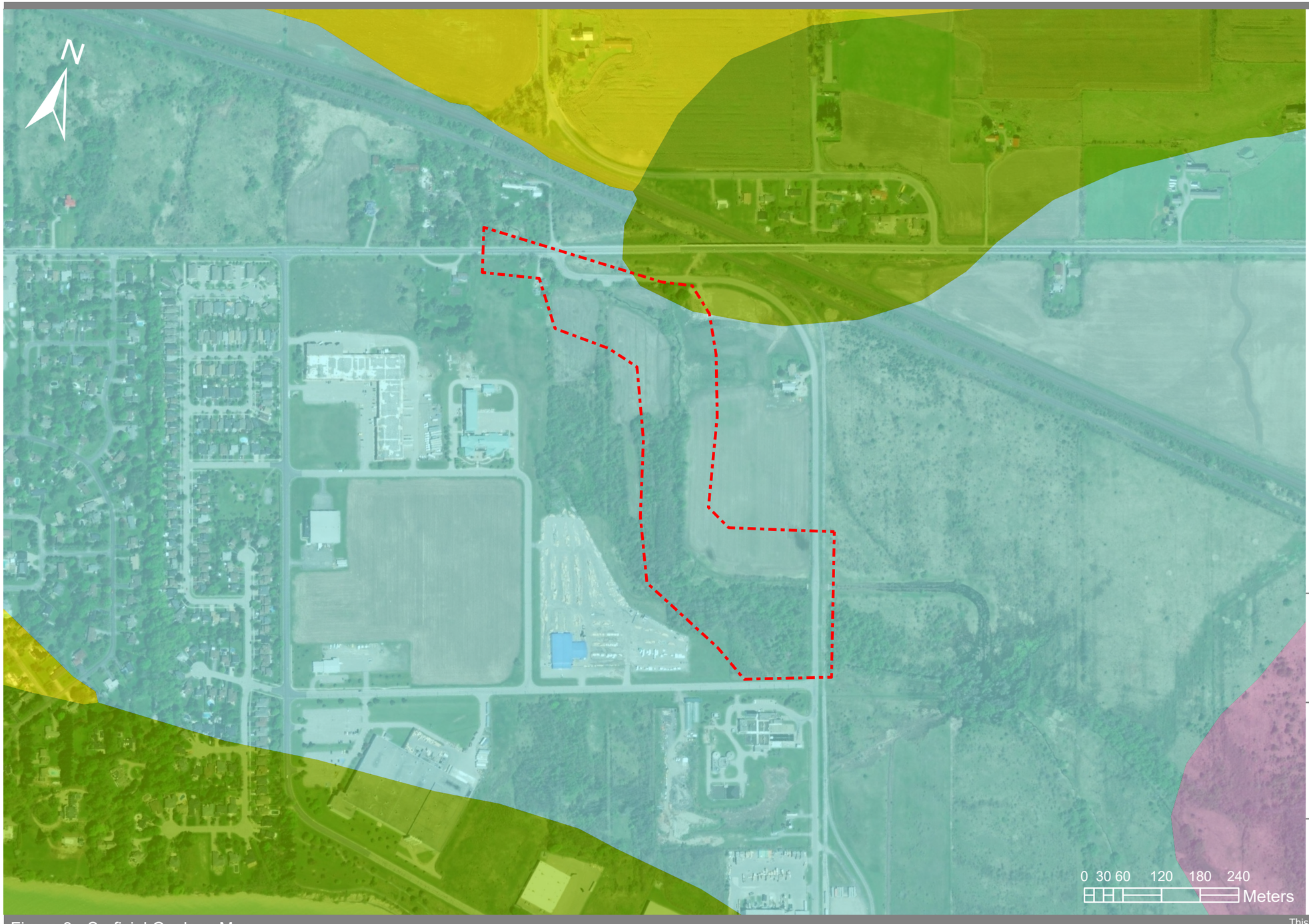
Any errors or omissions should be reported to CIMA +. The boundaries, areas, and title deeds must be verified by a surveyor.

Figure 2 - Topography Map

Environmental Impact Statement - Massey Creek Flood Diversion Channel
Normar Road, Cobourg, ON
The Town of Cobourg

Ref # : C14-0453-100-080

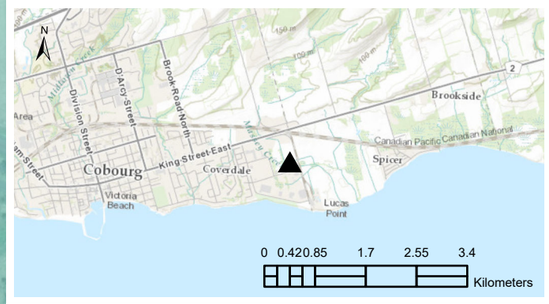
Survey by : C. Little
Figure by : J. Scott
Concept by : J. Scott
Verified by : K. Markvorsen



Site boundary

Surficial Geology

- 3: Paleozoic bedrock
- 5b: Stone-poor, carbonate-derived silty to sandy till
- 8a: Massive-well laminated
- 9c: Foreshore-basinal deposits



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GCS: GCS North American 1983 CSRS
Datum: North American 1983 CSRS
Projection: Transverse Mercator
Scale: 1:6,184

Sources:

- Ontario Geological Survey 2010. Surficial geology of southern Ontario; Ontario Geological Survey, Miscellaneous Release—Data 128 – Revised.
- Basemap : Town of Cobourg, Province of Ontario, Ontario MNR, Esri Canada, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, NGA, EPA,

General Notes:

Dimensions on the plan should be read and not measured.
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Figure 3 - Surficial Geology Map

Environmental Impact Statement - Massey Creek Flood Diversion Channel
Normar Road, Cobourg, ON
The Town of Cobourg

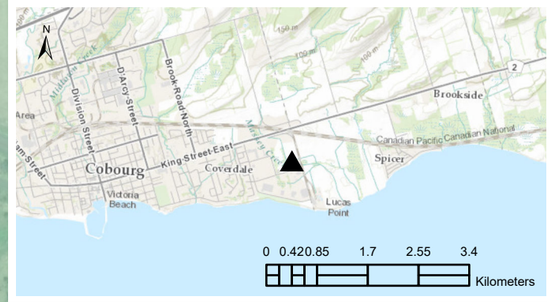
Ref # : C14-0453-100-080

Survey by : C. Little
Figure by : J. Scott
Concept by : J. Scott
Verified by : K. Markvorsen

Site boundary

Bedrock Geology

54a,Limestone, dolostone, shale, arkose, sandstone



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PCS: NAD 1983 CSRS UTM Zone 17N
GCS: GCS North American 1983 CSRS
Datum: North American 1983 CSRS
Projection: Transverse Mercator
Scale: 1:6,184

Sources:

- Ontario Geological Survey 2011. 1:25,000 scale - bedrock geology of Ontario; Ontario Geological Survey, Miscellaneous Release—Data 126 – Rev 1.
- Basemap : Town of Cobourg, Ontario Base Map, Province of Ontario, Ontario MNR, Esri Canada, Esri, © OpenStreetMap contributors, HERE, Garmin,

General Notes:

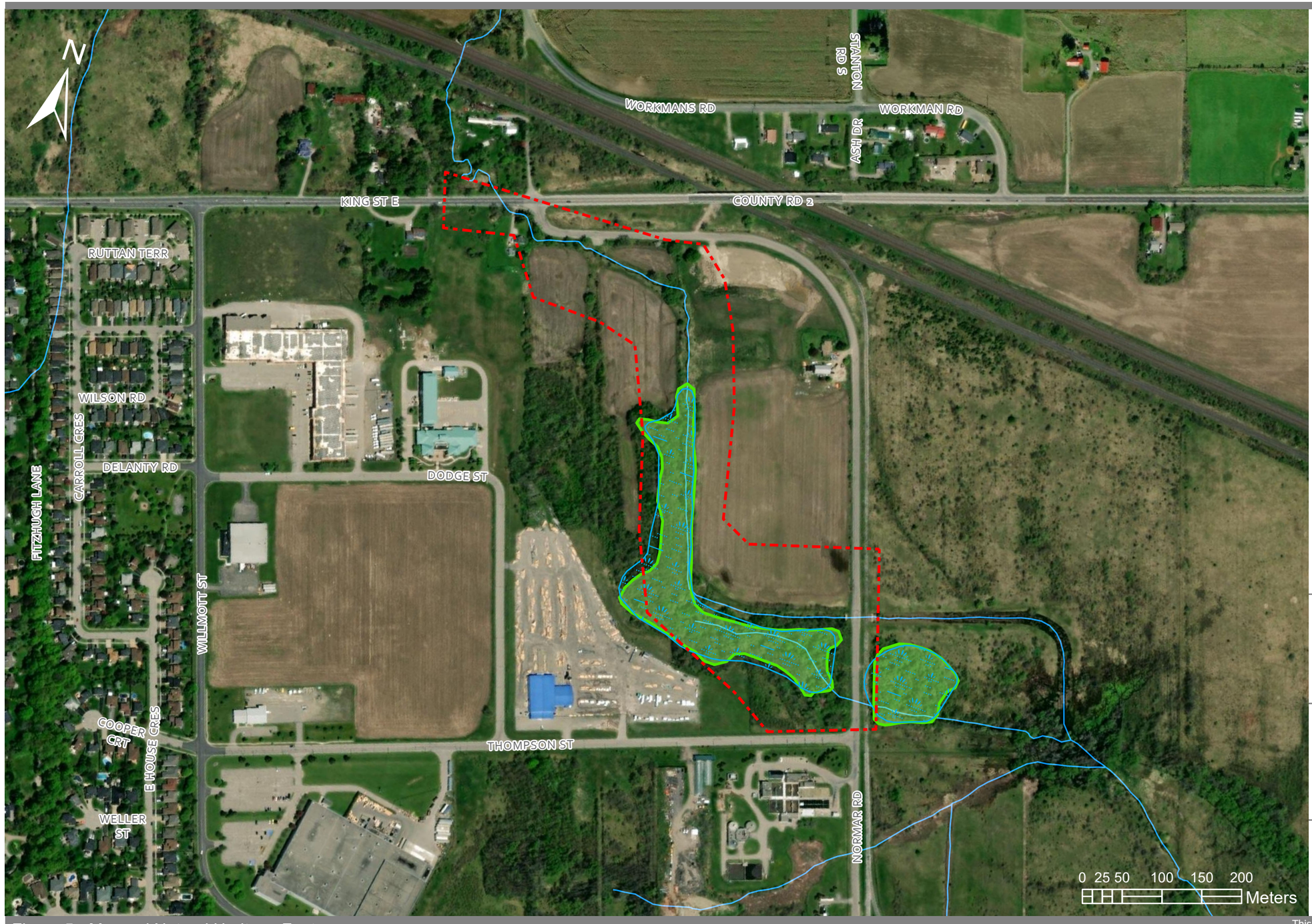
Dimensions on the plan should be read and not measured.
Any errors or omissions should be reported to CIMA +. The boundaries, areas, and title deeds must be verified by a surveyor.

Figure 4 - Bedrock Geology Map

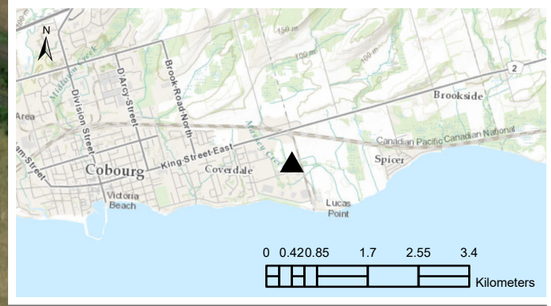
Environmental Impact Statement - Massey Creek Flood Diversion Channel
Normar Road, Cobourg, ON
The Town of Cobourg

Ref # : C14-0453-100-080

Survey by : C. Little
Figure by : J. Scott
Concept by : J. Scott
Verified by : K. Markvorsen



Site boundary
Watercourse
Unevaluated Wetlands
Wooded Area



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GCS: GCS North American 1983 CSRS
Datum: North American 1983 CSRS
Projection: Transverse Mercator
Scale: 1:5,000

Sources:

- Terrestrial Survey, CIMA+, 2021
- Watercourse, Woodland, Wetland, LIO, 2021
- Basemap : Town of Cobourg, Province of Ontario, Ontario MNR, Esri Canada, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, NGA, EPA, USDA, AAFC, NRCan, Maxar

General Notes:

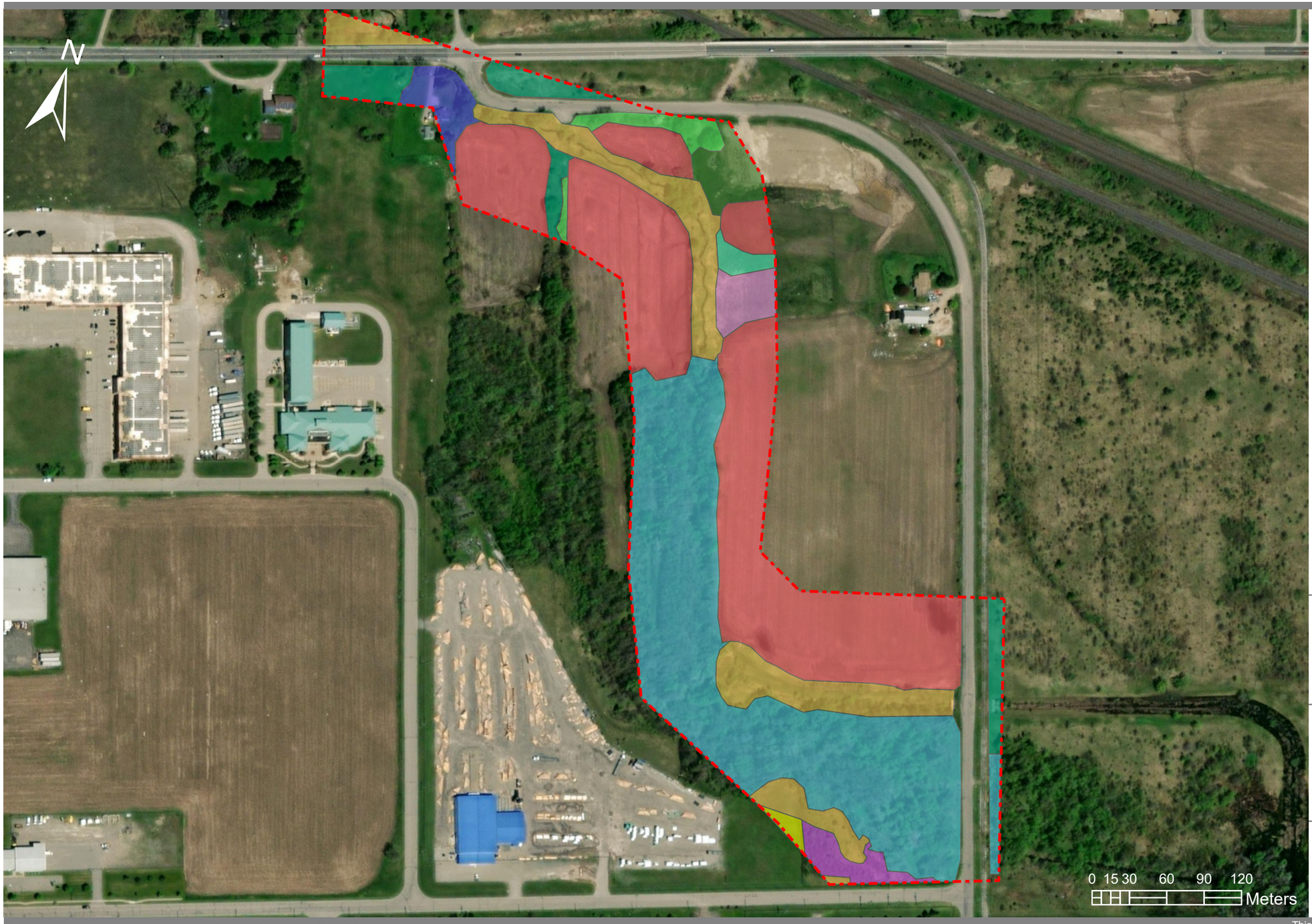
Dimensions on the plan should be read and not measured.
Any errors or omissions should be reported to CIMA +. The boundaries, areas, and title deeds must be verified by a surveyor.

Figure 5 - Mapped Natural Heritage Features

Environmental Impact Statement - Massey Creek Flood Diversion Channel
Normar Road, Cobourg, ON
The Town of Cobourg

Ref # : C14-0453-100-080

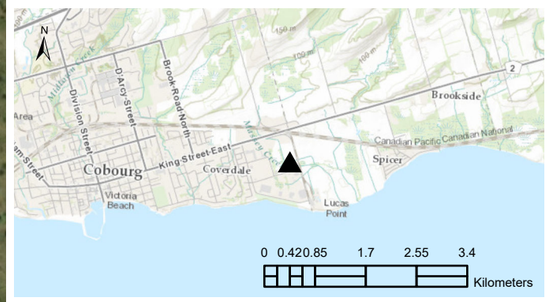
Survey by : C. Little
Figure by : J. Scott
Concept by : J. Scott
Verified by : K. Markvorsen



Site boundary

ELC Communities

- CGL - Green Lands
- CVR-4 - Rural Property
- FODM11 - Naturalized Deciduous Hedge-row
- FODM7-3 - Fresh-Moist Willow Lowland Deciduous Forest
- MAMM1-3 - Reed-canary Grass Graminoid Mineral Meadow Marsh
- MAMM3 - Mixed Mineral Meadow Marsh
- MEMM3 - Dry-Fresh Mixed Meadow
- MEMM4 - Fresh-Moist Mixed Meadow
- OAGM1 - Annual Row Crop (soy)
- SWT2-5 - Red-osier Dogwood Mineral Deciduous Thicket Swamp
- SWTM3-6 - Mixed Willow Mineral Deciduous Thicket Swamp



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Projection: Transverse Mercator
Scale: 1:3,200

Sources:

- Terrestrial Survey, CIMA+, 2021
- Basemap : Maxar, Microsoft, Town of Cobourg, Province of Ontario, Ontario MNR, Esri Canada, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, NGA, EPA, USDA, AAFC, NRCan

General Notes:

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Figure 6 - Ecological Land Classification (ELC) Map

Environmental Impact Statement - Massey Creek Flood Diversion Channel
Normar Road, Cobourg, ON
The Town of Cobourg

Ref # : C14-0453-100-080

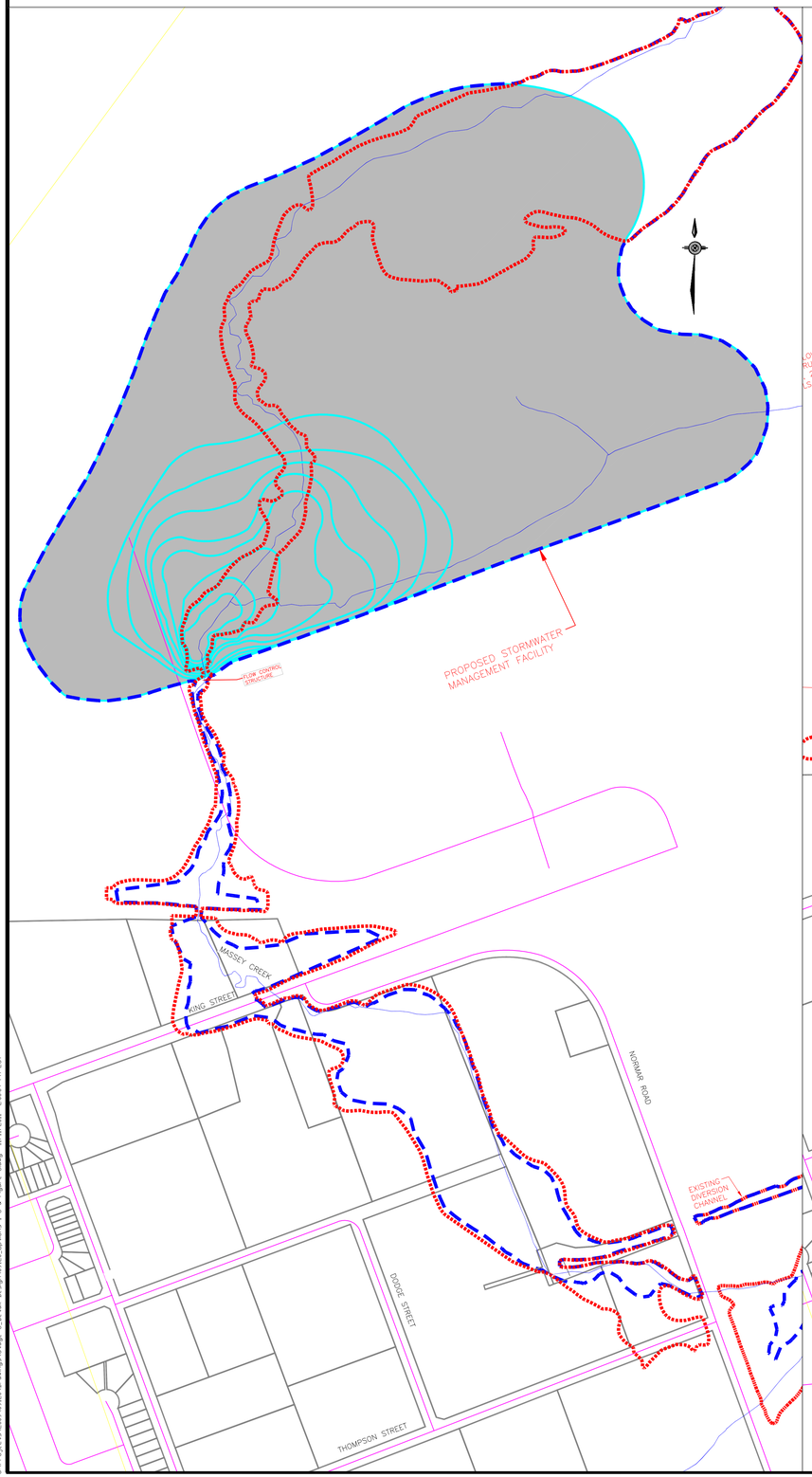
Survey by : C. Little
Figure by : J. Scott
Concept by : J. Scott
Verified by : K. Markvorsen

B

Appendix B
Preliminary Design

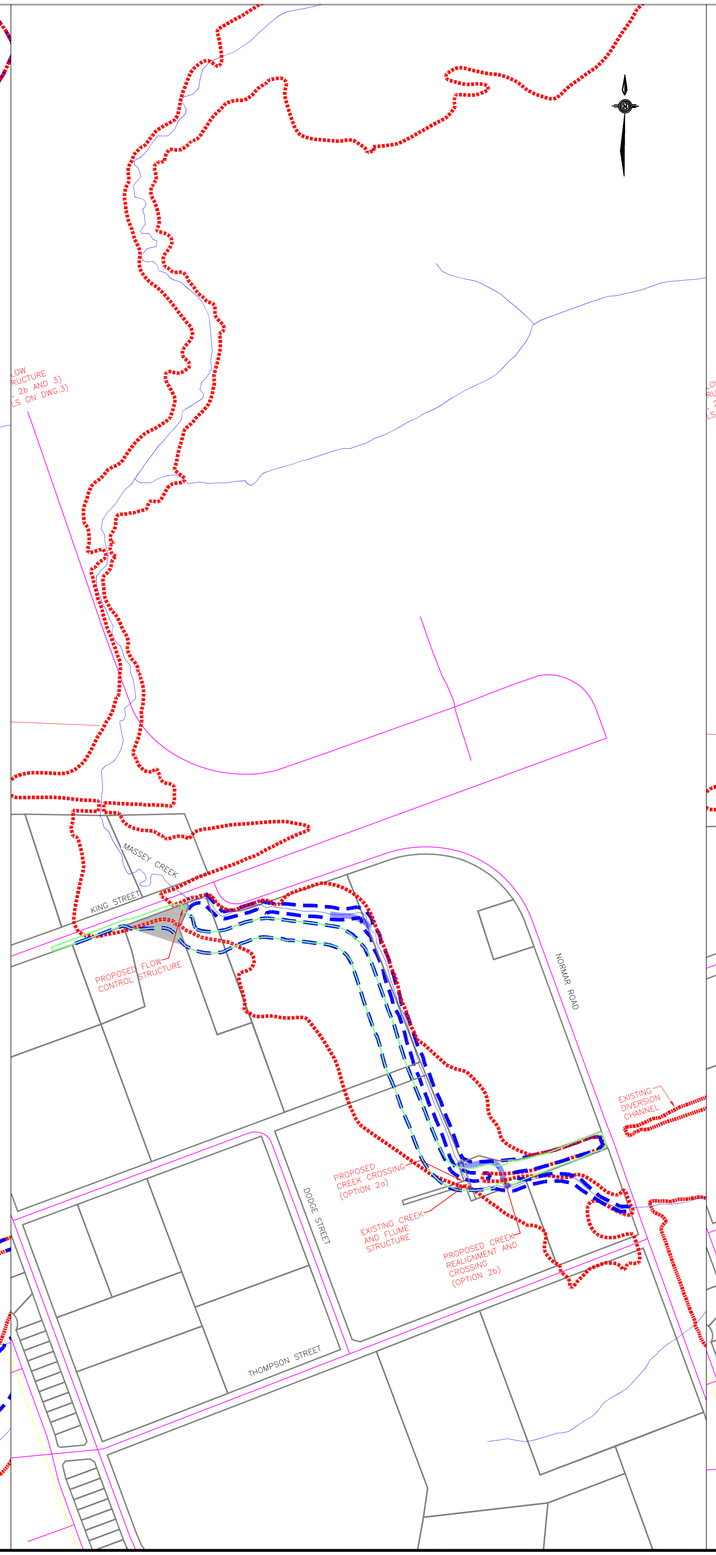
OPTION 1

ON-LINE STORMWATER MANAGEMENT POND



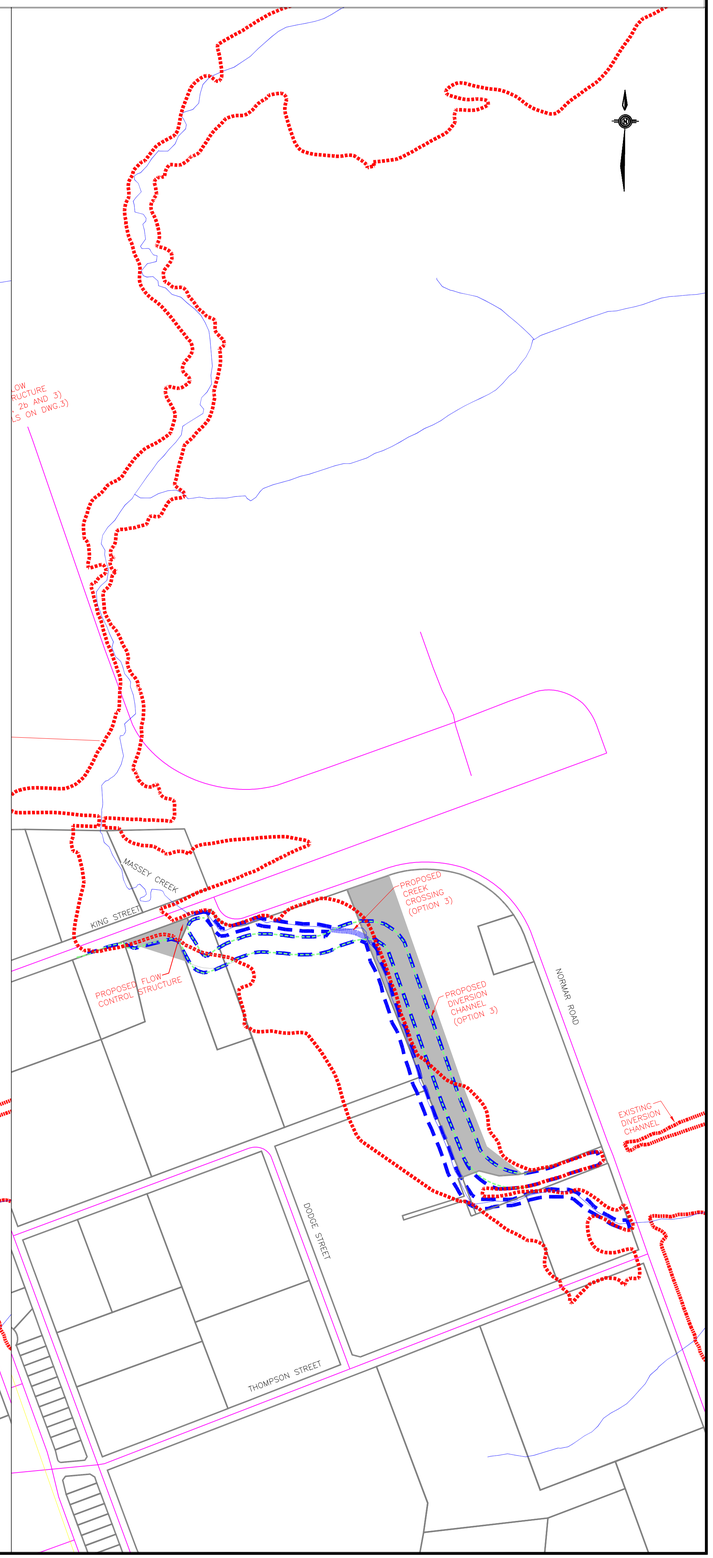
OPTION 2a AND 2b

DIVERSION CHANNEL ON WEST SIDE OF CREEK



OPTION 3

DIVERSION CHANNEL ON EAST SIDE OF CREEK



METRIC

ALL DIMENSIONS AND ELEVATIONS ARE IN METRES UNLESS OTHERWISE SHOWN

LEGEND

- ROAD
- EXISTING REGIONAL FLOODLINES
- PROPOSED REGIONAL FLOODLINES
- DIVERSION CHANNEL
- PROPOSED CHANNEL REALIGNMENT AND CROSSING
- PROPERTY BOUNDARY
- EXISTING WATERCOURSE
- ADDITIONAL LAND REQUIREMENT

Cobourg
Ontario, Canada

Ganaraska CONSERVATION

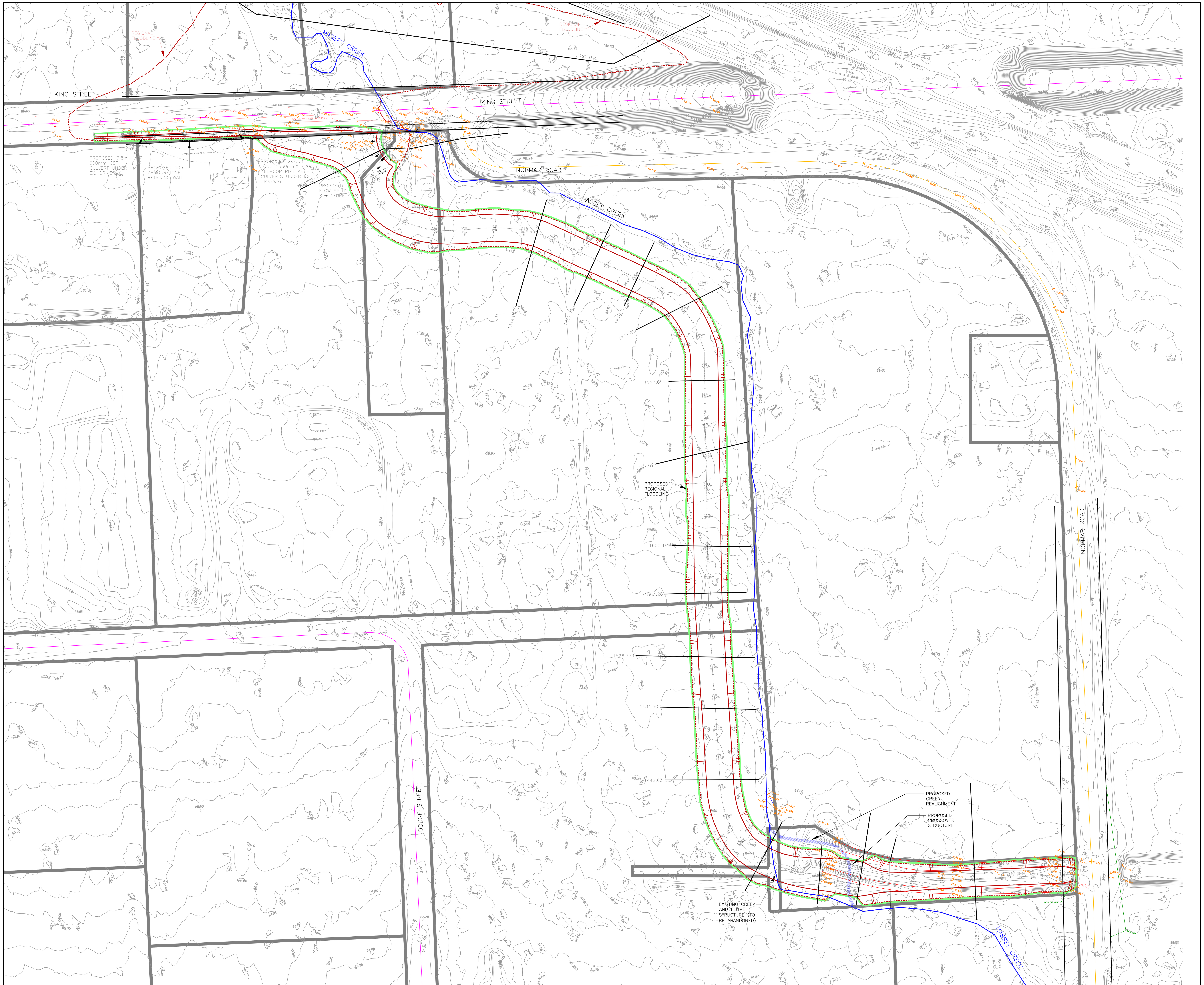
VALDOR ENGINEERING INC.
Consulting Engineers - Project Managers
741 ROWNTREE DAIRY ROAD, UNIT 2, WOODBRIDGE, ONTARIO, L4L 8Y9
TEL (905)264-0054, FAX (905)264-0269
E-MAIL: info@valdor-engineering.com
www.valdor-engineering.com

FLOOD REDUCTION OPTIONS

MASSEY CREEK
FLOOD REDUCTION STUDY

DWN. BY: L.S.	CHECKED BY: B.C.
DATE: NOV. 03 2011	DESIGN BY: C.S.
SCALE: 1:4000	

PROJECT NO.	DWG NO.	REV. NO.
09120	1	



METRIC
ALL DIMENSIONS AND ELEVATIONS ARE IN METRES UNLESS OTHERWISE SHOWN

LEGEND

- ROADS
- DIVERSION CHANNEL TOP BANK
- DIVERSION CHANNEL BOTTOM
- HEC-RAS CROSS SECTION
- EXISTING WATERCOURSE
- PROPERTY BOUNDARY
- PROPOSED ELEVATION / CHAINAGE / EXISTING ELEVATION
- EXISTING CONTOUR & LABEL

Cobourg
Ontario, Canada

Ganaraska CONSERVATION

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741 ROWNTREE DAIRY ROAD, UNIT 2, WOODBRIDGE, ONTARIO, L4L 5T9
TEL (905)264-0054, FAX (905)264-0069
E-MAIL: info@valdor-engineering.com
www.valdor-engineering.com

PREFERRED FLOOD REDUCTION
OPTION 2(b)
DIVERSION CHANNEL – INTERIM CONDITIONS

MASSEY CREEK
FLOOD REDUCTION STUDY

DRAWN. BY: L.S.	CHECKED BY: B.C.
DATE: NOV. 03 2011	DESIGN BY: A.B./B.C.
SCALE: 1:750	

PROJECT NO.	DWG NO.	REV. NO.
09120	2	

C

Appendix C
Consultation & Correspondance

FISHERIES MEMO

Date: June 30, 2009
To: Mark Peacock, Director, Watershed Services
From: Brian Morrison, Fisheries Biologist
GRCA File:
Development Name: Massey Creek flood diversion channel

COMMENTS:

Fisheries sampling by AECOM during the summer of 2009 noted the presence of yearling Rainbow Trout, indicating that Massey Creek is a coldwater system. GRCA is currently awaiting AECOM fisheries collection records to document the entire fish assemblage at their sampling location(s). The coldwater classification will restrict any in-water works occurring before July 1st or after September 30th of any calendar year. Further fisheries sampling will be conducted by GRCA staff to determine the summer distribution of coldwater species and determine the fish assemblage of Massey Creek within the study area. GRCA is awaiting a scientific collector's permit from the Peterborough District office of the Ministry of Natural Resources (application submitted June 8, 2009). Once GRCA receives the permit, three sites will be sampled for fish community structure using the Ontario Stream Assessment Protocol (Figure 1) as well as coarse-scale physical habitat conditions. It is estimated that it will take approximately 1.5 days to sample the three sites.

Fisheries concerns related to the proposed flood diversion structure include a decrease of surface runoff occurring at the site during flood events post-construction. Examination of how this reduction in flood flow will impact the fluvial geomorphology of the creek should be conducted. Variation in discharge (e.g. bankfull discharge) performs vital functions such as channel formation, pool and riffle formation, creation and migration of riparian vegetation, and floodplain integration. Optimum flows should be established for

each season taking into account natural flow variability and fish community requirements.

Figure 1. Massey Creek GRCA Fisheries Sampling Locations

Elysia Friedl

From: Lindsay Champagne <lchampagne@grca.on.ca>
Sent: Wednesday, September 1, 2021 1:28 PM
To: Steve May; Leslie Benson; Terry Hoekstra
Cc: Kai Markvorsen; Ken Thajer; Joanne May; Cory Harris
Subject: Re: Massey Creek Diversion
Attachments: Massey Creek Fisheries Report.doc; Massey Creek.jpg; Brian's Memo-June 30, 2009.doc; MASSEY CREEK NATURAL HERITAGE FEATURES.doc

EXTERNAL EMAIL

Hi everyone,

Attached are ecology notes that I found from the past.

Brian's memo expresses some of the concerns that relate to fisheries, and the Massey Creek Fisheries report has what species were caught where.

The only terrestrial stuff I could find was the natural heritage report by Ken Towle. It should also be noted that Rob Franklin and myself went out to this site and there are wetland communities present.

Lindsay Champagne, B.Sc.
Watershed Biologist

Celebrating 75 Years of Conservation 1946 - 2021
Ganaraska CONSERVATION

2216 County Rd 28, Port Hope
(905) 885-8173 ext. 229

From: Steve May <Steve.May@cima.ca>
Sent: Wednesday, September 1, 2021 8:45 AM
To: Leslie Benson <lbenson@grca.on.ca>; Terry Hoekstra <thoekstra@cobourg.ca>
Cc: Lindsay Champagne <lchampagne@grca.on.ca>; Kai Markvorsen <Kai.Markvorsen@cima.ca>
Subject: RE: Massey Creek Diversion

Hey Leslie

That you be appreciated, thank you

STEVE MAY, C.E.T.
Associate Partner / Senior Project Manager / Infrastructure

T 905 697-4464 ext. 6908 **M** 289-685-6035
415 Baseline Road West, 2nd Floor, Bowmanville, ON L1C 5M2 CANADA

Notice to our customers on the COVID-19

CIMA+ Engineering for people 30 YEARS

KINCENTRIC Best Employer CANADA 2019

From: Leslie Benson <lbenson@grca.on.ca>
Sent: Wednesday, September 1, 2021 8:44 AM
To: Steve May <Steve.May@cima.ca>; Terry Hoekstra <thoekstra@cobourg.ca>
Cc: Lindsay Champagne <lchampagne@grca.on.ca>; Kai Markvorsen <Kai.Markvorsen@cima.ca>
Subject: RE: Massey Creek Diversion

EXTERNAL EMAIL

Thanks Steve,
Might those archaeological reports be of interest to you? I could give them to Joanne if they are. Please advise.
Leslie

Sent from Mail for Windows

From: Steve May
Sent: August 31, 2021 4:56 PM
To: Leslie Benson; Terry Hoekstra
Cc: Lindsay Champagne; Kai Markvorsen
Subject: RE: Massey Creek Diversion

Hey Leslie

Kai contact info below.

KAI MARKVORSEN
Environment Professional / Urban Planning and Environment

T 613-860-2462 ext. 6644 **M** 343-996-4951 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

Regards

STEVE MAY, C.E.T.
Associate Partner / Senior Project Manager / Infrastructure

T 905 697-4464 ext. 6908 **M** 289-685-6035
415 Baseline Road West, 2nd Floor, Bowmanville, ON L1C 5M2 CANADA

Notice to our customers on the COVID-19

CIMA+ Engineering for people 30 YEARS

KINCENTRIC Best Employer CANADA 2019

From: Leslie Benson <lbenson@grca.on.ca>
Sent: Tuesday, August 31, 2021 2:30 PM
To: Terry Hoekstra <thoekstra@cobourg.ca>; Steve May <Steve.May@cima.ca>
Cc: Lindsay Champagne <lchampagne@grca.on.ca>
Subject: Massey Creek Diversion

EXTERNAL EMAIL

Good afternoon gents (sorry, I don't have Kai's email address, and neither my new laptop nor my phone is giving me any information right now),
Subsequent to this morning's meeting, I looked further in my Massey Creek Diversion box. Mostly it's internal communications and copies of proposals, etc., but I did find Stage 1 Archeological Background Research of Massey Creek Channelization (February 22, 2010) and Stage 2 Archeological Assessment of Massey Creek Channelization (June 2, 2010) both by Amick Consultants Limited. Is that of any use to anyone?
Regards, Leslie

Sent from my Bell Samsung device over Canada's largest network.

Massey Creek Fisheries Sampling

A fish community survey was conducted at four sites on Massey Creek during the summer of 2009. AECOM consulting sampled on May 29th, north of Hwy 2 west of Normar Road, 50 upstream of the CN tracks and captured:

Species	Number captured
Creek Chub	1
Finescale Dace	1
Blacknose Dace	1
Northern Redbelly Dace	1

AECOM sampled 100m downstream of the CN tracks and captured:

Species	Number captured
Creek Chub	8
Rainbow Trout	1
Northern Redbelly Dace	4
White Sucker	2
Blacknose Dace	6
Brook Stickleback	2

GRCA staff sampled at two locations. The first location was upstream of the Normar Rd crossing, adjacent to the existing flood diversion channel (730612 E, 4871911 N). 44.5 meters of stream were sampled, and it was noted that there was poor instream habitat at this location. Four species of fish were captured:

Species	Number captured
Creek Chub	27
White Sucker	6
Blacknose Dace	6
Brook Stickleback	7

The second location was adjacent to Normar Rd. south of King Street within the reach where a proposed flood diversion channel would be created (730228 E, 4872282 N). 24.5 meters of stream were sampled, and four species of fish were captured:

Species	Number captured
Atlantic Salmon	1
Creek Chub	33
White Sucker	6
Brook Stickleback	11

Fisheries sampling determined the presence of yearling Rainbow Trout and Atlantic Salmon (Ontario species at risk – extirpated), indicating that Massey Creek is a coldwater system, and is supporting one species protected under the Ontario Species at Risk Act.

MASSEY CREEK SITE TERRESTRIAL NATURAL HERITAGE INVENTORY
July 13, 2009

Inventory Methodology

The site was visited for approximately 2 hours on June 15th, starting at 9 am by two GRCA staff. The weather was sunny and calm, with a temperature of 20 degrees C.

The survey was timed to coincide with peak breeding season for birds. The method used for recording species present was active searching. This involved walking the entire site and recording species as they were encountered based on sight, sound, or their sign (e.g. tracks).

Results

All of the vegetation on the site can be considered early to mid-successional, with some areas comprising old field habitat, and others young forest with a dense understorey of saplings, primarily ash. The principal Ecological Land Classification vegetation types are FOD7-2 (fresh-moist ash lowland deciduous forest type) and CUM (cultural meadow). Riverbank grape and Virginia creeper are dominant in the woodland herbaceous and understorey levels. The cultural meadows have a large sedge and grass component with species indicating moist conditions. It is likely that these conditions tend to dry as the summer proceeds. All communities reflect a disturbed moist habitat. No significant or rare plant species were observed. Dog-strangling vine and European buckthorn were two major terrestrial invasive plants that were present in a number of areas. Dame's Rocket, another invasive plant species, was common within the woodlands and forest edges. Conditions are otimum for garlic mustard, another major invasive species that is moving into this part of the province. However, this species was not detected.

Bird diversity on the site further reflects these predominantly early successional and moist conditions. All of the species recorded are common, and could be recorded in almost any young forest in this part of Ontario. None reflect any special conditions such as old growth or high quality habitat. No forest interior or area-sensitive birds were recorded.

All mammal, amphibian and butterfly species recorded on the site are common and typical of successional habitat such as old field or young forest where there are moist conditions and the presence of a stream.

Appendix: Species Recorded on Site

Birds
House Wren
Downy Woodpecker
Northern Flicker
Mourning Dove
Eastern Kingbird
Eastern Phoebe
Cedar Waxwing
European Starling
Blue Jay
American Crow
Common Grackle
Brown-headed Cowbird
Baltimore Oriole
Gray Catbird
American Robin
Red-eyed Vireo
Mourning Warbler
Yellow Warbler
Red-winged Blackbird
American Goldfinch
Rose-breasted Grosbeak
Song Sparrow

Mammals
Meadow Vole
Raccoon
Coyote
White-tailed Deer

Amphibians
American Toad
Leopard Frog

Butterflies
Morning Cloak
Spring Azure
Monarch
Ornate Ringlet
Orange Crescent


Hormar Road
Sample Site 1
Sample Site 2
Sample Site 3
Sample Site 4
Sample Site 5
Wilmot Street

Ministry of the Environment, Conservation and Parks

Environmental Assessment Branch

1st Floor
135 St. Clair Avenue W
Toronto ON M4V 1P5
Tel.: 416 314-8001
Fax.: 416 314-8452

Ministère de l'Environnement, de la Protection de la nature et des Parcs

Direction des évaluations environnementales

Rez-de-chaussée
135, avenue St. Clair Ouest
Toronto ON M4V 1P5
Tél. : 416 314-8001
Téléc. : 416 314-8452

By email only

August 26, 2021

Town of Coubourg

Attention: Terry Hoekstra, C.E.T., LET, rcca
Manager, Engineering and Capital Projects
thoekstra@cobourg.ca

Dear Mr. Hoekstra,

Re: Town of Cobourg Notification of Commencement – Massy Creek EA Addendum - Municipal Class Environmental Assessment Schedule B

Thank you for the Notification of Commencement provided in an email letter from the Town of Cobourg dated August 16th, 2021. The notice indicates that the Town of Cobourg has initiated an EA Addendum to the 2011 Schedule "B" Municipal Class Environmental Assessment (Class EA).

The original 2011 MCEA study aimed to identify and confirm the best possible flood reduction option within the Lucas Point Business Park, to reduce the flood plain along the reach of the Massey Creek to increase the extent of developable land within the industrial park. After a review of 5 different options, the preferred solution included a diversion channel, a flow control structure and a cross-over structure. Due to the lapse of time 910 years) between the original EA and the fact that the project has not been

implemented, the Town has retained CIMA Canada Inc to complete and EA Addendum to update the original EA as required my the MCEA process.

The Town and CIMA+ will provide an update to the original EA to reflect the current MCEA process, the current site conditions and the current policy framework established by the Provincial and Local approval agencies.

Here are MECP preliminary comments on the project. Please consider these comments as you proceed through the Class EA process. The comments are grouped under these headings:

- Class EA process,
- MECP technical review issues,
- Aboriginal consultation.

Class Environmental Assessment Process

We normally recommend that intermediate / draft reports or Technical Memoranda, be prepared and circulated for comment before the final Addendum Report is prepared. This is not a requirement of the Municipal Class Environmental Assessment (Class EA) process; however, it can ensure that consultation with review agencies is carried out in an effective way and that technical comments are received from agencies before the report is finalized.

Notification

As the Regional EA Coordinator for this project, I will be responsible for circulating project notices and information to MECP reviewers (Drinking Water – District staff) and coordinating the MECP response during the Class EA process. I am a mandatory contact for all Notices issued for the project. In addition, I request copies of other relevant information such as information updates, technical studies related to MECP's mandate, interim reports and technical memoranda, and two copies of the final report when it is available.

My preferred methods of correspondence are email for notices, one hard copy of technical reports and final reports, and one copy of the report on a thumb drive. It is helpful to provide scanned copies of the notices as they appear in newspapers, and confirm the dates of publication.

My contact information is:

Jon Orpana, Environmental Planner and Environmental Assessment Coordinator
Ministry of the Environment, Conservation and Parks
1259 Gardiners Road
P.O. Box 22032
Kingston, Ontario
K7M 8S5

telephone: (613) 548 6918
email: jon.orpana@ontario.ca

Notice of Completion

Once the ESR/Addendum is finalized, the proponent must issue a Notice of Filing of Addendum providing a minimum 30-day period during which documentation may be reviewed and comment and input can be submitted to the Proponent.

Please ensure that the Notice of Filing advises that outstanding concerns are to be directed to the proponent for a response, and that in the event there are outstanding concerns regarding potential adverse impacts to constitutionally protected Aboriginal and treaty rights, Part II Order requests on those matters should be addressed in writing to:

Minister Jeff Yurek
Ministry of Environment, Conservation and Parks
777 Bay Street, 5th Floor
Toronto ON M7A 2J3
minister.mecp@ontario.ca

and

Director, Environmental Assessment Branch
Ministry of Environment, Conservation and Parks
135 St. Clair Ave. W, 1st Floor
Toronto ON, M4V 1P5
EABDirector@ontario.ca

Please note the proponent cannot proceed with the project until at least 30 days after the end of the comment period provided for in the Notice of Completion.

Further, the proponent may not proceed after this time if:

- a Part II Order request has been submitted to the ministry regarding potential adverse impacts to constitutionally protected Aboriginal and treaty rights, or
- the Director has issued a Notice of Proposed order regarding the project.

The public has the ability to request a higher level of assessment on a project if they are concerned about potential adverse impacts to constitutionally protected Aboriginal and treaty rights. In addition, the Minister may issue an order on his or her own initiative within a specified time period. The Director will issue a Notice of Proposed Order to the proponent if the Minister is considering an order for the project within 30 days after the conclusion of the comment period on the Notice of Completion. At this time, the Director may request additional information from the proponent.

Once the requested information has been received, the Minister will have 30 days within which to make a decision or impose conditions on your project.

Consultation with Review Agencies

In addition to public consultation, consultation with review agencies is an important component of the Class EA process. Please ensure that you contact review agencies directly to determine their interest in the project at the Notice of Commencement stage.

The MECP Regional office is a mandatory contact for all notices. In addition, other ministries and agencies that may have an interest in the project are listed in section A.3.6 and Appendices 3 and 7. The provincial ministries that are most often involved in Class EA project review include the Ministry of Municipal Affairs (for example, expansion of settlement boundaries, consistency with Growth Plan), Ministry of Natural Resources and Forestry (for example, endangered species, significant wetlands), and Ministry of Tourism, Culture and Sport (for example, cultural heritage or archaeological resources).

The final report should include information on correspondence with review agencies, issues raised by reviewers, and how these issues will be addressed. This could include technical studies or other information, and commitments to obtain specific approvals or permits.

The Class EA project should if applicable consider any impacts to servicing policies for the area. For example, the Province does not support growth on partial services. In addition, expansion of settlement boundaries may have implications for the Official Plan. We recommend that you include the Ministry of Municipal Affairs Municipal Services Office in Kingston on this project.

<u>MECP Technical Review</u>

This Ministry's interest in the project includes:

- impacts to groundwater and surface water quality and quantity,

- potential for encountering, contaminated soil, contaminated sediment or
- contaminated groundwater,
- impacts to source water protection vulnerable areas,
- species at risk
- climate change
- stormwater management.

These environmental issues, and appropriate mitigation measures, should be addressed during the Class EA process. Appended to this letter are some resources that may be useful in some aspects of your project and study.

We recommend that you contact this office as soon as possible during the environmental assessment process if you become aware of:

- contaminated sites in the study area or influence area of the project,
- a source water protection vulnerable area in the vicinity of the project, or
- issues that are contentious to the general public, aboriginal communities or review agencies.

The following comments are standard MECP comments and may not all apply to the proposed project.

If the construction involves taking, dewatering, storage or diversion of water in excess of 50,000 litres per day, the activity may be required to be registered on the Environmental Activity and Sector Registry (EASR) or may require a Permit To Take Water. The process to be used depends on the source of the water, the quantity of water taken, and the type of construction activity. EASR requirements for water takings for construction dewatering are prescribed in Ontario Regulation 63/16 under the Environmental Protection Act. The Permit To Take Water requirements are prescribed in Section 34, Ontario Water Resources Act.

Where dredging is required, consideration should be given to appropriate storage, handling, dewatering and disposal of excavated material.

Guidance on nearshore construction and dredging may be obtained from this Ministry's *Guidelines for Evaluating Construction Activities Impacting on Water Resources* dated January 1995 and *Evaluating Construction Activities Impacting on Water Resources, Part III A, Part III B, and Part III C* dated February 1994.

Proponents undertaking a Municipal Class EA project must identify early in the process whether a project is occurring within a source water protection vulnerable area. This must be clearly documented in a Master Plan, Project File report or Environmental Study Report. If the project is occurring in a vulnerable area, then there may be policies

in the local Source Protection Plan (SPP) that need to be addressed (requirements under the Clean Water Act). The proponent should contact and consult with the appropriate Conservation Authority/Source Protection Authority (CA/SPA) to discuss potential considerations and policies in the SPP that apply to the project.

Stormwater management should be in accordance with the MECP *Stormwater Management Planning and Design Manual*. Stormwater infrastructure requires approval under section 53 of the Ontario Water Resources Act.

Spills should be reported to the Spills Action Centre at 1-800-268-6060.

Consultation with First Nation and Métis Communities

The Crown has a legal duty to consult Aboriginal communities when it has knowledge, real or constructive, of the existence or potential existence of an Aboriginal or treaty right and contemplates conduct that may adversely impact that right. Before you can proceed with this project, the Crown must ensure that its duty to consult has been fulfilled, where such a duty is triggered. Although the duty to consult with Aboriginal peoples is a duty of the Crown, the Crown may delegate procedural aspects of this duty to project proponents while retaining oversight of the process.

Your proposed project may have the potential to affect Aboriginal or treaty rights protected under Section 35 of Canada's *Constitution Act* 1982. Where the Crown's duty to consult is triggered in relation to your proposed project**, the MECP is delegating the procedural aspects of rights-based consultation to you through this letter.** The Crown intends to rely on the delegated consultation process in discharging its duty to consult and maintains the right to participate in the consultation process as it sees fit.

Based on new information we recognize that this consultation list is different than that supplied for the 2011 study.

In addition, based on information you have provided to date and the Crown`s preliminary assessment you are required to consult with the following Aboriginal communities who have been identified as potentially affected by your proposed project:

- **Mohawks of the Bay of Quinte**
- **Chippewas of Rama First Nation**
- **Chippewas of Georgina Island**
- **Beausoleil First Nation**
- **Alderville First Nation**
- **Curve Lake First Nation**
- **Hiawatha First Nation**

- **Mississaugas of Scugog Island First Nation**

For the above Williams Treaties communities, please cc Karry Sandy McKenzie, William Treaties First Nations Process Co-ordinator, inquiries@williamstreatiesfirstnations.ca

Steps that you may need to take in relation to Aboriginal consultation for your proposed project are outlined in the "Code of Practice for Consultation in Ontario's Environmental Assessment Process" which can be found at the following link:

https://www.ontario.ca/document/consultation-ontarios-environmental-assessment-process

Additional information related to Ontario's Environmental Assessment Act is available online at: www.ontario.ca/environmentalassessments

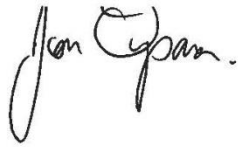
You must contact the Director of Environmental Assessment Branch under the following circumstances subsequent to initial discussions with the communities identified by MECP:

- Aboriginal or treaty rights impacts are identified to you by the communities
- You have reason to believe that your proposed project may adversely affect an Aboriginal or treaty right
- Consultation with Indigenous communities or other stakeholders has reached an impasse
- A Part II Order request is expected on the basis of impacts to Aboriginal or treaty rights

The Ministry will then assess the extent of any Crown duty to consult for the circumstances and will consider whether additional steps should be taken, including what role you will be asked to play should additional steps and activities be required.

Should you or any members of your project team have any questions regarding the material above, please contact me at (613) 548 6918.

Yours sincerely,



Jon K. Orpana
Environmental Planner & Environmental Assessment Coordinator
Ministry of the Environment, Conservation and Parks
Kingston Regional Office
PO Box 22032, 1259 Gardiners Road

Kingston, Ontario
K7M 8S5

Phone: (613) 548-6918
Fax: (613) 548-6908
Email: jon.orpana@ontario.ca

MECP, Victor Castro; Victor.castro@ontario.ca
MECP, Courtney Redmond; Courtney Redmond@ontario.ca

Guidance:

Climate Change

Ontario is leading the fight against climate change through the Climate Change Action Plan (https://www.ontario.ca/page/climate-change-action-plan). Recently released, the plan lays out the specific actions Ontario will take in the next five years to meet its 2020 greenhouse gas reduction targets and establishes the framework necessary to meet its long-term targets. As a commitment of the action plan, **the province has now finalized a guide, "Considering Climate Change in the Environmental Assessment Process" (Guide) (https://www.ontario.ca/page/considering-climate-change-environmental-assessment-process)**

The Guide is now a part of the Environmental Assessment program's Guides and Codes of Practice. The Guide sets out the MECP's expectation for considering climate change in the preparation, execution and documentation of environmental assessment studies and processes. The guide provides examples, approaches, resources, and references to assist proponents with consideration of climate change in EA. **Proponents should review this Guide in detail.**

- The MECP expects proponents to:

Consider during the assessment of alternative solutions and alternative designs, the following:

a. the project's expected production of greenhouse gas emissions and impacts on carbon sinks (climate change mitigation); and
b. resilience or vulnerability of the undertaking to changing climatic conditions (climate change adaptation).

2. Include a discrete section in the report detailing how climate change was considered in the EA.

How climate change is considered can be qualitative or quantitative in nature and should be scaled to the project's level of environmental effect. In all instances, both a project's impacts on climate change (mitigation) and impacts of climate change on a project (adaptation) should be considered.

- The MECP has also prepared another guide to support provincial land use planning direction related to the completion of energy and emission plans. The "Community Emissions Reduction Planning: A Guide for Municipalities" (https://ero.ontario.ca/notice/013-2083?_ga=2.113331267.532557834.1525694946-2101883328.1501507205) document is designed to educate stakeholders on the municipal opportunities to reduce energy and greenhouse gas emissions, and to provide guidance on methods and techniques to incorporate consideration of energy and greenhouse gas emissions into municipal activities of all types. We encourage you to review the Guide for information.

Excess Materials Management

- In December 2019, MECP released a new regulation under the Environmental Protection Act, titled “On-Site and Excess Soil Management” (O. Reg. 406/19) to support improved management of excess construction soil. This regulation is a key step to support proper management of excess soils, ensuring valuable resources don’t go to waste and to provide clear rules on managing and reusing excess soil. New risk-based standards referenced by this regulation help to facilitate local beneficial reuse which in turn will reduce greenhouse gas emissions from soil transportation, while ensuring strong protection of human health and the environment. The new regulation is being phased in over time, with the first phase set to come into effect on January 1, 2021. Please visit https://www.ontario.ca/page/handling-excess-soil.

- Activities involving the management of excess soil should be completed in accordance with O. Reg. 406/19 and the MECP’s current guidance document titled “Management of Excess Soil – A Guide for Best Management Practices” (2014) (https://www.ontario.ca/page/management-excess-soil-guide-best-management-practices).

All waste generated during construction must be disposed of in accordance with ministry requirements

Species at Risk

- The Ministry of the Environment, Conservation and Parks has now assumed responsibility of Ontario’s Species at Risk program. For any questions related to consideration of SAR and subsequent permit requirements, please contact SAROntario@ontario.ca.

D

Appendix D
Potential SAR

Appendix D - Table 1: Potential Species at Risk

Common Name Scientific Name Status	Species Specific Information
Butternut *Juglans cinereal* Federal - **END** Provincial - **END**	Butternut is a medium-sized tree that can reach up to 30 m in height. It belongs to the walnut family and produces edible nuts in the fall. The bark of younger trees is grey and smooth, becoming ridged as it ages. Butternut is easily recognized by its compound leaves, which are made up of 11 to 17 leaflets (each nine to 15 centimeters long) arranged in a feather-like pattern. Butternut usually grows alone or in small groups in deciduous forests. It prefers moist, well-drained soil and is often found along streams.
Monarch *Danaus plexippus* Federal- **SC** Provincial - **SC**	The Monarch is a showy orange and black butterfly with small white spots, with a relatively large wingspan reaching 93-105 millimeters. The Monarch's caterpillar has black, white and yellow stripes and can be found feeding on milkweed plants. Throughout their life cycle, Monarchs use three different types of habitats. Only the caterpillars feed on milkweed plants and are confined to meadows and open areas where milkweed grows. Adult butterflies can be found in more diverse habitats where they feed on nectar from a variety of wildflowers. Monarchs spend the winter in Oyamel Fir forests found in central Mexico.
Eastern Milksnake *Lampropeltis triangulum* Federal – **SC** Provincial – **SC**	Eastern Milksnake are habitat generalists but prefer open habitats, including rock outcrops and meadows. They require suitable microhabitats for specific activities such as egg laying or thermoregulation. Eastern Milksnakes are well known for occupying barns, sheds and houses in rural landscapes. Eastern Milksnake habitat in portions of southwestern Ontario and parts of southwestern Quebec (e.g. urban regions and areas subject to intensive agriculture) is fragmented and consists of relatively small, natural areas
Snapping Turtle *Chelydra serpentina* Federal- **SC** Provincial - **SC**	Snapping Turtles have large black, olive or brown shells. They typically inhabit shallow waters and hide under the soft mud and leaf litter. From early to mid-summer, females travel overland in search of a suitable nesting site, usually gravelly or sandy areas along streams but they will also nest in man-made structures including the gravel shoulders of roads, dams and aggregate pits.

Common Name Scientific Name Status	Species Specific Information
Western Chorus Frog (Great Lakes – St. Lawrence Population *Pseudacris triseriata* Federal – **THR** Provincial – **Not listed**	The Western Chorus Frog is primarily a terrestrial species. In marshes or wooded wetland areas, it is found on the ground or in low shrubs and grass and very rarely in permanent ponds. The Western Chorus Frog requires both terrestrial and aquatic habitats in proximity and it requires seasonally dry temporary ponds devoid of predators, particularly fish for breeding and tadpole development.
Bank Swallow *Riparia riparia* Federal - **THR** Provincial - **THR**	The Bank Swallow is a small songbird with brown upperparts, white underparts and a distinctive dark breast band. It averages 12 cm long and weighs between 10 and 18 grams. Males and females are similar in size and colour. Bank swallows' nest in burrows in natural and human-made settings where there are vertical faces in silt and sand deposits. Many nests are on banks of rivers and lakes, but they are also found in active sand and gravel pits or former ones where the banks remain suitable.
Barn Swallow *Hirundo rustica* Federal - **THR** Provincial - **THR**	The Barn Swallow is a medium-sized songbird (about 15 to 18 centimeters long). Males have a glossy steel-blue back and upper wings, a rusty-red forehead and throat, a short bill and a broad blue breast band above its tawny underbelly. The male has long tail feathers which form a distinctive, deep fork and a line of white spots across the outer end of the upper tail. Barn Swallows often live-in close association with humans, building their cup-shaped mud nests almost exclusively on human-made structures such as open barns, under bridges and in culverts.
Bobolink *Dolichonyx oryzivorus* Federal - **THR** Provincial - **THR**	The Bobolink is a medium sized songbird found in grasslands and hayfields. Bobolinks often build their small nests on the ground in dense grasses. Bobolinks spend much of their time out of sight on the ground feeding on insects and seeds.
Canada Warbler *Cardellina canadensis* Federal – **THR** Provincial – **SC**	The Canada Warbler is a small, brightly- coloured songbird; males are more brightly coloured than females, with bluish-grey upperparts and tail and bright yellow underparts. The head is bluish with a black forehead and "sideburns," which join to form a distinctive necklace of black stripes across its chest. It breeds in a range of deciduous and coniferous, usually wet forest types, all with a well- developed, dense shrub layer. Its primary breeding range is in the Boreal Shield, although it breeds at low densities across its range, in Ontario, it is most abundant along the Southern Shield.
Chimney Swift *Chaetura pelagica* Federal – **THR** Provincial – **THR**	The Chimney Swift spends most of its time flying and even forages in the air, catching its prey (flying insects) in flight. Primarily found in and around urban settlements where they nest and roost (rest or sleep) in chimneys

Common Name Scientific Name Status	Species Specific Information
	and other manmade structures. They also tend to stay close to water as this is where the flying insects that they eat congregate.
Eastern Meadowlark *Sturnella magna* Federal - **THR** Provincial - **THR**	Eastern Meadowlarks are most common in native grasslands and prairies, but they also occur in pastures, hayfields, agricultural fields, airports, and other grassy areas.
Eastern Wood-Pewee *Contopus virens* Federal- **SC** Provincial - **SC**	The Eastern wood-pewee is a small forest bird that grows to about 15 cm long. Adults are generally greyish-olive on their upper parts and pale on the under parts with pale bars on their wings. They live in the mid-canopy layer of forest clearings and edges of deciduous and mixed forests. It is most abundant in intermediate-age mature forest stands with little understory vegetation.
Grasshopper Sparrow *Ammodramus savannarum* Federal- **SC** Provincial - **SC**	The Grasshopper Sparrow is a small brown songbird with a streaked back and buffy white underparts. It has a white stripe down the centre of its crown and a flat look to the top of its head. It lives in open grassland areas with well-drained, sandy soil. It will also nest in hayfields and pasture, as well as alvars, prairies and occasionally grain crops such as barley. It prefers areas that are sparsely vegetated.
Wood Thrush *Hylocichla mustelina* Federal - **THR** Provincial - **SC**	The wood thrush lives in deciduous and mixed forests. They seek moist stands of trees with well-developed undergrowth and tall trees for singing perches. They prefer large mature forests but will also use smaller stands of trees. They build their nests in living saplings, trees, or shrubs, usually in sugar maple or American beech.
Little Brown Myotis *Myotis lucifugus* Federal - **END** Provincial - **END**	Little Brown Myotis inhabit forested lands near water but may also be found in dry climates where water is not readily available. They prefer to roost in buildings, trees, under rocks, and in piles of wood.
Tri-colored Bat *Perimyotis subflavus* Federal - **END** Provincial - **END**	The Tri-colored Bat is found in a variety of forested habitats with day roosts and maternity colonies in older forest and occasionally in barns or other structures. They forage over water and along streams in the forest. At the end of the summer, they swarm, generally near the cave or underground location where they will overwinter.

END – Endangered **THR** – Threatened **SC** – Special Concern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