

MITIGATION PLAN - BURL'S CREEK EVENT GROUNDS, TOWNSHIP OF ORO-MEDONTE

Burl's Creek Event Grounds Inc.

Project No. 151-03995-00
February 2016
Distribution:
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February 3, 2015

Mr. Ryan Howes
Burl's Creek Event Grounds Inc.
180 8th Line South
Oro-Medonte, Ontario
L0L 2X0

**Subject: Mitigation Plan – Burl's Creek Event Grounds
Burl's Creek Event Grounds Inc.
Township of Oro-Medonte, County of Simcoe
Project No. 151-03995-00**

Dear Mr. Howes,

WSP Canada Inc. (WSP) is pleased to provide you with a Mitigation Plan for the property described as Part of Lot 21, Concession 8, Lot 22, Concession 8, Part of Lot 22, Concession 9, Part of Lot 23, Concession 9; Township of Oro-Medonte, County of Simcoe, municipal address of 180 Line 8 South. Assessment Parcel/Roll Numbers include 434601000905200, 434601000905300 (part), 43460100096500, 434601000906600, 434601000906700, 434601000907400, and 434601000907500, Township of Oro-Medonte, Ontario. The property is located South of Highway 11, between Line 7 and Line 9, northeast of Barrie, Ontario.

This report outlines the proposed mitigation for the recently completed Site alteration activities to ensure conformity to the Lake Simcoe Region Conservation Authority (LSRCA) Ontario Regulation 179/06 and Watershed Development Policies. Mitigation has been proposed for the Area 1 Wetland and Significant Woodland and the Area 1 Open Water Ponds and Burl's Creek culverts. These mitigations will serve to maintain and enhance, to the extent possible, the form and function of the natural heritage features found on and within the Burl's Creek Event Grounds.

Thank you for the opportunity to complete this assignment. Please contact the undersigned with any questions or comments.

Yours truly,
WSP Canada Inc.



Austin Adams, B.Sc., EP
Biologist
AA:nah

TABLE OF CONTENTS

1	INTRODUCTION.....	1
2	AREA 1.....	1
2.1	ENVIRONMENTAL CONDITIONS.....	1
2.2	LSRCA REQUIREMENTS	2
2.3	PROPOSED MITIGATION	3
2.3.1	WETLAND MITIGATION	3
2.3.1.1	FINANCIAL COMPENSATION FORUMLA.....	4
2.3.2	SIGNIFICANT WOODLAND MITIGATION AND PLANTING PLAN	4
2.3.2.1	TREE PLANTING IMPLEMENTATION PLAN	7
2.3.2.2	MEASURES FOR SUCCESSFUL PLANTING	7
3	AREA 3.....	7
3.1	ENVIRONMENTAL CONDITIONS.....	7
3.2	LSRCA REQUIREMENTS	8
3.2.1	GRAVEL PAD DEVELOPMENT BY OPEN WATER PONDS	8
3.2.2	AREA 3 CULVERT REPLACEMENTS	8
3.3	PROPOSED MITIGATION	9
3.3.1	GRAVEL PAD DEVELOPMENT BY OPEN WATER PONDS	9
3.3.1.1	FISH HABITAT AND KEY HYDROLOGIC FEATURES MITIGATION MEASURES	9
3.3.2	AREA 3 CULVERT REPLACEMENTS	10
3.3.2.1	FISH HABITAT AND KEY HYDROLOGIC FEATURES MITIGATION MEASURES	10
3.3.2.2	RECOMMENDED COMPENSATION FOR FISH HABITAT AND KEY HYDROLOGIC FEATURES.....	11
3.3.2.3	AREA 3 CULVERT REPLACEMENTS TREE PLANTING PLAN	12
4	CONCLUSIONS.....	14
5	CLOSURE.....	14
6	LIMITATIONS	14
7	LITERATURE CITED.....	15

TABLES

TABLE 1	TREE COMPENSATION PLAN FOR TREE PLANTING – AREA 1
TABLE 2	TREE COMPENSATION PLAN FOR TREE PLANTING – CULVERT 2
TABLE 3	TREE COMPENSATION PLAN FOR TREE PLANTING – CULVERT 3

FIGURES

FIGURE 1	SITE LOCATION
FIGURE 2	MITIGATION
FIGURE 3	TREE PLANTING OPTIONS

APPENDICES

APPENDIX A	LSRCA REGULATION 179/06 LETTER
APPENDIX B	SEPARATE COVERS REGRADING LSRCA REGULATION 179/06 LETTER
APPENDIX C	LSPP CONCORDANCE TABLE

1 INTRODUCTION

Site alteration work for the Burl's Creek Event Grounds in the Township of Oro-Medonte, Ontario (Figure 1) has recently been carried out with the purpose of improving the operational effectiveness of the existing event space suitable for a range of small to large scale outdoor events, while retaining the rural agricultural character of the land. Site alteration work consisted primarily of improving and expanding laneways and minor grading and sodding throughout the Site. As the proposed impacts have already occurred, an Environmental Impact Study (EIS) that describes the development and its potential impacts, and that proposes general Site mitigation has been prepared (WSP, 2015).

Portions of these Site improvements have occurred in lands regulated by the Lake Simcoe Region Conservation Authority (LSRCA). As such, these portions of the work are subject to Ontario Regulation 179/06 (Ontario, 2006) and the LSRCA Watershed Development Policies (LSRCA, 2014). To this effect, in a letter to Innovative Planning Solutions Consulting Inc. dated June 24, 2015, the LSRCA have detailed the actions required by Burl's Creek Event Grounds Inc. in order to comply with the Regulation and Policies (Appendix A). The areas in question are described in the letter as:

- Area 1 – 329 Line 8, Con 9 – woodland clearing for fill placement for a laneway;
- Area 3 – 180 Line 8 South – Lot 22, Con 8 – fill placement, concrete pad, replace 2 culverts; and,
- Area 6 – 241 Line South/240 Line 8 South, Lot 22, Concession 8 – bridge crossing.

This report describes the environmental and hydrological mitigations proposed to respond to the LSRCA requirements. In general, the engineering, drafting and other requirements are provided under separate covers, largely incorporated in this report as Appendix B. Confirming the statements in the LSRCA letter, the plans for a bridge crossing in Area 6 have been abandoned for the time being and are not discussed in this report.

A review of the Lake Simcoe Protection Plan (LSPP; Ontario, 2009b) policies relevant to EIS/Natural Heritage Evaluation has been conducted (Appendix C) to ensure conformity to the extent possible. A table listing the relevant policies and the location where those policies are addressed within the EIS (WSP, 2015) and this Mitigation Plan is presented in tabular form for reference. Proposed mitigation to bring site alterations within the Burl's Creek Event Grounds into conformity with the LSPP are described in the following sections.

2 AREA 1

2.1 ENVIRONMENTAL CONDITIONS

Development of the laneway in the southeast corner of the Site (Figure 2) has created impacts to the Black Ash Mineral Deciduous Swamp (SWD2-1) (Lee *et al.*, 1998) and the Significant Woodland at that location. A portion of the wetland system falls within a LSRCA regulated area (Appendix A). This swamp was observed in lower points in the topography but the water collecting there had receded by the July 2015 Site visits conducted by WSP and is expected to be dry in late summers. Water from this wetland appears to drain north-easterly towards the property line, where it meets a built drainage channel running directly east-west; however, flowing surface water was not apparent. The laneway and parking area developed in this area (Figure 2) cleared approximately 0.5 hectares (ha) of this wetland and a gravel surface was placed generally at grade.

Efforts have been made to minimize the impact to vegetation on the Site. Nevertheless, to permit the proposed development, it is estimated that approximately 1,300 trees from 1.3 ha of Dry – Fresh Sugar Maple – Beech Deciduous Forest Type (FOD5-2) were removed to accommodate the laneway. This estimate is based on the *Forestry Act* R.S.O. 1990, Chapter F.26 (Ontario, 2009a), which most basic definition of woodlands is “A treed area with at least 1,000 trees of any size, per hectare”. From Site visits, it is anticipated that most of the trees removed are Sugar Maple (*Acer saccharum* ssp. *saccharum*) and American Beech (*Fagus grandifolia*), with some Basswood (*Tilia americana*). Towards the woodland interior, Butternut (*Juglans cinerea*) trees were observed at elevated portions of the local topography. Based on this evidence, there is a low potential that clearing of the laneway affected Butternut on the Site. This species is listed as Endangered and is protected under the *Endangered Species Act, 2007* (Ontario, 2007).

2.2 LSRCA REQUIREMENTS

The LSRCA note that the development of this laneway does not comply with the Lake Simcoe Protection Plan (LSPP) Policy 6.23-DP that specifies that development and site alteration is not permitted within a key natural heritage feature, a key hydrologic feature and within a regulated protection zone (Ontario, 2009b).

As an alternative to laneway removal, the LSRCA has requested a compensation strategy that includes the development of an EIS/Natural Heritage Evaluation in accordance to Policy 6.26-DP of the LSPP and a compensation plan for wetland lost, at a 3:1 ratio (wetland area created: wetland area lost) as per Policy 11.4.3 of the LSRCA Watershed Development Policies (LSRCA, 2014). Section 2.3 of this report describes the mitigation proposed in order to comply with these requirements. Additional LSRCA requirements include:

- **Environmental Impact Study:** The LSRCA required the submission of an Environmental Impact Study (EIS) in order to assess the laneway’s potential impact of the wetland feature. This study is to include a hydrologic study to demonstrate that the hydrological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the wetland as a result of the fill placement.
 - An EIS that details the impacts of the laneway on the wetland and Significant Woodland are provided under a separate cover (WSP, 2015). The requested hydrologic studies have also been prepared as separate covers (C.C. Tatham, 2015a and 2015b). C.C. Tatham (2015a) has been provided as a standalone report, while C.C. Tatham (2015b) has been included in Appendix B. The mitigation proposed for the wetland and Significant Woodland are detailed in Section 2.3, below.
- **Grading and Drainage Plan:** The LSRCA required a detailed grading/drainage plan prepared by an Ontario Land Surveyor or Registered Professional Engineer.
 - Grading and drainage plans relevant to the wetland are provided within the separate cover (C.C. Tatham, 2015c) included in Appendix B.
- **Culvert Drawings:** The LSRCA required detailed drawings for the culvert installation prepared by a qualified professional consultant.
 - A detailed drawing of the planned culverts and overland flow spillway that will maintain the water balance in the area is provided in Appendix B (C.C. Tatham, 2015c – Appendix B).

- **Planting Plan:** The LSRCA requested that a planting plan consisting of native, non-invasive vegetation for the areas immediately adjacent to the wetland and water courses. The planting buffers are to be a minimum of 15 metres in width.
 - As this wetland is found within a Significant Woodland, it is our opinion that compensation planting would affect the established ecological balance of this Key Natural Heritage Feature and System, and is therefore not appropriate for the Site.
 - In Section 2.3, financial compensation is proposed for the wetland. A planting plan consisting of native, non-invasive vegetation appropriate to the specific site, including native tree species within a 15 m buffer of the wetland should be developed by the wetland construction agency (e.g. Ducks Unlimited Canada). The planting plan should be appropriate to the specific site chosen, considering topography, water availability and hydrological regime, ecoregion location and dominant species in nearby similar wetlands.
- **Certified Fill:** The LSRCA requested proof of certification that all fill brought into the property is clean and meets MOEE Table 1 requirements.
 - A letter certifying the fill used are virgin material is provided under a separate cover (Appendix B).

2.3 PROPOSED MITIGATION

The following mitigation is proposed to compensate for Site alteration in Area 1, including the 0.5 ha of wetland lost and the 1.3 ha of Significant Woodland, including approximately 1,300 trees.

2.3.1 WETLAND MITIGATION

A hydrologic study of the wetland has been completed under separate covers (C.C. Tatham, 2015a; and 2015b – Appendix B). Through analysis of topography and catchment flows, and the development of the detailed design for a culvert installation for the wetland, it is demonstrated that the hydrological functions of the wetland will be maintained and further impacts to the hydrological regime of the area are not anticipated. The installation of the culvert will reduce the potential for flooding of the area, caused by the impoundment on the south side of the laneway. The culverts were designed to pass the peak flow from frequent storm events (up to the 5-year return period storm), ensuring that water levels within the swamp would experience normal seasonal fluctuations associated with swamps, without interference due to the placement of the road. As such, provided installation of the culvert before the next growing season, impacts to trees and vegetation via root system drowning are not anticipated.

The laneway in this area is required infrastructure for the Event Grounds, and will be retained. Alternative laneway placements within the owned property would have created greater impacts to this wetland and surrounding Significant Woodland, thus impacts were reduced to the extent possible. Compensation will require the creation or compensation of wetland area, as per the LSRCA Watershed Development Policies (LSRCA, 2014) at a 3:1 ratio. As such, 1.5 ha of wetland will need to be created as compensation. Opportunities for wetland development on-Site are limited; therefore, Burl's Creek Event Grounds Ltd. proposes to develop a financial compensation option with the LSRCA, appropriate for the creation or enhancement of an off-site wetland by a qualified compensation wetland developer. A suggested formula for compensation is provided below.

2.3.1.1 FINANCIAL COMPENSATION FORMULA

In many Canadian jurisdictions, for development that cannot conserve wetlands on-Site, financial compensation is often provided in-lieu of wetland creation (City of Calgary, 2004; DUC, 2011). This has the advantages of allowing for development, while providing funding to agencies and organizations with wetland creation expertise, such as Ducks Unlimited Canada. In Calgary (City of Calgary, 2004), financial compensation is developed using the formula **(C1 x EC) + C2 = funds to be provided as compensation**, where:

- C1 = cost per square metre (m²) to enhance and/or create wetland(s) to ensure No Net Loss of functions on the site where the disturbance or loss occurred;
- EC = the number of square metres (m²) of a wetland(s) to be enhanced or created as determined in the approved Mitigation Plan to ensure No Net Loss of functions; and,
- C2 = the cost of the land at the site(s) where the disturbance or loss occurred.

Burl's Creek Event Grounds Ltd. is prepared to work with the LSRCA to provide funding for wetland compensation of a negotiated amount based on this formula. Providing funds to an organization such as Ducks Unlimited will allow for the efficient creation of compensation wetlands at a reasonable cost.

2.3.2 SIGNIFICANT WOODLAND MITIGATION AND PLANTING PLAN

To protect the remaining trees on the property and to compensate for the removal of approximately 1,300 trees, a tree planting plan has been developed. Plantings provide an opportunity to extend or enhance the existing significant woodland, increase forest cover by planting in open areas on the Site. By maintaining native diversity and promoting succession of native vegetation communities on the Site, the ecological functions of the wooded areas will be improved. The implementation of the planting plan will restore on-Site woodland cover; therefore, the proposed development is considered appropriate and in keeping with the Township of Oro-Medonte Official Plan (2007).

Conceptual planting plan areas have been identified on-Site, as shown on Figure 3. To restore a Site and compensate for the loss of trees within an area of impact, Burl's Creek Event Grounds Ltd. is prepared to work with the LSRCA to provide on Site tree planting as compensation at a negotiated ratio appropriate to the Site. Figure 3 demonstrates that there is ample room on Site to accommodate the plantings in the Preferred Areas. Burl's Creek Event Grounds Ltd. has also provided for Additional Tree Planting Areas (Figure 3) should additional space be required.

A tree planting program will be established for mitigation for the Significant Woodland. Areas to be planted include the widening of Fencerows in the Site, and the creation of new Fencerows that will also be designed to manage pedestrian traffic during events.

The tree planting plan should be carried out by a qualified tree planting company. As an alternative, partnering with a local environmental organization to plant the trees under the supervision of a Landscape Architect or Certified Arborist is proposed. Shrubs can also be included to create a more natural woodland community. The ultimate species proportion and placement of individual trees is left to the determination of the qualified tree planting company, Landscape Architect or Certified Arborist, based on micro-site conditions and variation, in consultation with planners from Burl's Creek Event Grounds Inc.

Recommended species for the Tree Planting are listed in Table 1. The species selected for planting should consider the FOD5: Dry – Fresh Sugar Maple Deciduous Forest ELC ecosystem type (Lee *et al.*, 1998), the common forest type in the surrounding area. Sugar Maple is a dominant species in the FOD5 forest type, with smaller numbers of common associates, including American Beech, Red Oak (*Quercus rubra*), White Oak (*Quercus alba*), Ironwood (*Ostrya virginiana*), Basswood, Black Cherry (*Prunus serotina*), Bitternut Hickory (*Carya cordiformis*), Shagbark Hickory (*Carya ovata*), White Ash (*Fraxinus americana*), Red Maple (*Acer rubrum*), White Birch (*Betula papyrifera*), Trembling Aspen (*Populus tremuloides*), and Largetooth Aspen (*Populus grandidentata*). Other species of native trees and shrubs could also be planted to introduce diversity onto the Site, as specific planting location conditions warrant.

The recommended tree and shrub species for planting (Table 1) have been divided into the FOD5 species commonly found on Site that are available from LSRCA nursery stock (“Trees/Shrubs Common to Burl’s Creek”), but could include any of the above FOD5 species as situations warrant and nursery stock allows. “Alternative Tree Species” (Table 1) have also been proposed for the Site as secondary choices; these trees and shrubs are native species, and would introduce a greater diversity of species onto the Site. Ash species are not recommended to ensure the survival of tree plantings in expectation of the advance of Emerald Ash Borer (EAB) from southern Ontario. If possible, it is recommended that Butternut also be incorporated as a species in the tree planning program proposed.

Table 1 Tree Compensation Plan for Tree Planting – Area 1

VEGETATION TYPE	SPECIES	SIZES ¹	SPACING	SHADE TOLERANCE	PREFERRED MOISTURE REGIME
Trees Common to Burl’s Creek	Sugar Maple	150 cm or whip	3.0 - 3.5 m	High shade tolerance	Grows best in deep, well drained soils
	Basswood	150 cm	3.0 - 3.5 m	Intermediate shade tolerance	Grows best on moist, well-drained loamy soils
	Black Cherry	150 cm	3.0 - 3.5 m	Shade intolerant	Grows best on well-drained, rich loamy soils
	Red Maple	150 cm or whip	3.0 - 3.5 m	High shade tolerance	Grows best on deep, moist, well-drained soils
	Eastern White Cedar	150 cm or whip	3.0 - 3.5 m	High shade tolerance	Grows well on a wide range of soil
	Red Oak	150 cm or whip	3.0 - 3.5 m	Intermediate shade tolerance	Grows best in fresh to moist, well-drained loamy soils
	White Birch	150 cm	3.0 - 3.5 m	Intermediate shade tolerance	Grows best on moist, rich, well-drained soils
Additional Tree Species Proposed	Red Maple (clump)	150 cm	3.0 - 3.5 m	High shade tolerance	Grows best on deep, moist, well-drained soils
	Sugar Maple (Clump)	150 cm	3.0 - 3.5 m	High shade tolerance	Grows best in deep, well drained soils
	Bur Oak White Spruce (<i>Quercus macrocarpa</i>)	150 cm	3.0 - 3.5 m	Intermediate shade tolerance	Grows best in rich, well-drained loam
	White Spruce (<i>Picea glauca</i>)	150 cm	3.0 - 3.5 m	Tolerant	Moist sands to sandy and clay loams
	Eastern White Pine (<i>Pinus strobus</i>)	150 cm or whip	3.0 - 3.5 m	Intermediate shade tolerance	Grows well on a wide range of soils

VEGETATION TYPE	SPECIES	SIZES ¹	SPACING	SHADE TOLERANCE	PREFERRED MOISTURE REGIME
	Balsam Poplar (<i>Populus balsamifera</i>)	Whip	3.0 - 3.5 m	Intolerant	Grows best in moist, rich, low lying soils
	Trembling Aspen (<i>Populus tremuloides</i>)	Whip	3.0 - 3.5 m	Intolerant	Grows best on moist, well-drained soils
Shrubs Common to Burl's Creek	Alternate-leaved Dogwood	40 - 60 cm	1.5 - 2.0 m	High shade tolerance	Grows best on moist loam soils
	Beaked Hazel	40 - 60 cm	1.5 - 2.0 m	High shade tolerance	Grows well in rich, moist soils
Additional Shrub Species Proposed	Serviceberry (<i>Amelanchier canadensis</i>)	25 - 60 cm bare root	1.5 - 2.0 m	Full to partial sun	Moist to dry sandy, acidic soils
	Chokeberry (<i>Aronia melanocarpa</i>)	40 - 60 cm	1.5 - 2.0 m	Full sun	Grows well in most soil types
	Grey Dogwood (<i>Cornus racemosa</i>)	25 - 60 cm bare root	1.5 - 2.0 m	Full to partial sun	Moist to well- drained sandy soils
	Red-osier Dogwood (<i>Cornus sericea</i>)	25 - 60 cm bare root	1.5 - 2.0 m	Full to partial sun	Fertile, acidic soils, moist to wet sites
	Ninebark (<i>Physocarpus opulifolius</i>)	40 - 60 cm	1.5 - 2.0 m	Full sun	Best in sandy loams to loams
	Staghorn Sumac (<i>Rhus typhina</i>)	25 - 60 cm bare root	1.5 - 2.0 m	Full sun	Can grow in very dry, poor conditions
	Peachleaf Willow (<i>Salix amygdaloides</i>)	40 - 60 cm	1.5 - 2.0 m	Full sun	Grow best in damp soil
	Common Elderberry (<i>Sambucus canadensis</i>)	25 - 60 cm bare root	1.5 - 2.0 m	Full to partial sun	Sandy to loamy acidic soils
	Meadowsweet (<i>Spirea alba</i>)	40 - 60 cm	1.5 - 2.0 m	Full to partial sun	Grows well in a variety of moist soils
	Wild Raisin (<i>Viburnum cassinoides</i>)	40 - 60 cm	1.5 - 2.0 m	Full to partial sun	Grows best in moist soils
	Nannyberry (<i>Viburnum lentago</i>)	25 - 60 cm bare root	1.5 - 2.0 m	Full to partial sun	Moist to well- drained sandy soils
	High-bush Cranberry (<i>Viburnum trilobum</i>)	40 - 60 cm	1.5 - 2.0 m	Full to partial sun	Grows in well-drained to poorly drained soils

¹ Sizes are based on the LSRCA list of hardwood tree species available (http://www.lsrca.on.ca/leap/list_hardwood_species.php).

2.3.2.1 TREE PLANTING IMPLEMENTATION PLAN

Burl's Creek Event Grounds Inc. will establish an implementation and monitoring plan in collaboration with the LSRCA. It is proposed that the compensation trees be planted over a ten year period, allowing for proactive planning, budgeting and monitoring of tree establishment during the guarantee periods. For each year, an annual letter report, detailing the annual planting plan and inspection of previous year's tree establishment is proposed. Once all compensatory trees have been planted, Burl's Creek Event Grounds Inc. will provide the LSRCA with a summary report providing the final layout, numbers and general condition and health of the plantings.

2.3.2.2 MEASURES FOR SUCCESSFUL PLANTING

To ensure survivability of the newly planted plants, the following measures are proposed:

- Plantings should be done by hand to reduce the potential for mechanical compaction of soils and should be performed by a qualified and knowledgeable tree planter to ensure plantings are placed in suitable sun exposures and moisture regimes.
- Guying and staking should be avoided if possible, following the recommendations of the contracted qualified tree planter.
- Planting is best done during the spring season (May to early June). Fall plantings can be suitable and should prove successful, provided healthy stock is used, planting follows recommendations for individual species, and plants receive sufficient water prior to the winter months. These seasons capture periods of root growth that will ensure the greatest opportunity of establishment. If possible, planting should be avoided in hot summer months, when tree energy is focused on leaf growth.
- Plantings should be monitored regularly to ensure the plantings are continuing to thrive. Dead plantings should be replaced with other appropriate, native species to ensure future sustainability.

3 AREA 3

3.1 ENVIRONMENTAL CONDITIONS

In Area 3, development of a gravel pad parking lot/activity space in the northeast portion of the Site (Figure 2) approaches a system of four Open Water Ponds within the LSRCA 30 m Regulated Area. These ponds are part of the provincially non-significant Allingham Creek Swamp (OM7) wetland, as identified under the Natural Heritage Areas Mapping (MNRF, 2015). The Open Water Pond system is however considered a locally significant wetland under the Township of Oro-Medonte Official Plan (2007). The Pond System is connected via a twin culvert from Pond 1 to the Allingham Creek Swamp wetland system to the east, with a large cement cube at the surface which appears to act as an outlet to the east, under Line 8. The Pond System has been incorporated into the Burl's Creek Event Grounds landscaping, and is a permanent storm water management area with a volume dependent on seasonal release and runoff conditions.

Area 3 of the Burl's Creek Event Grounds also includes a north to south channelized portion of Burl's Creek (Figure 2). Two existing culverts (Culverts 2 and 3) require replacement in order to improve flow through this channelized portion of the creek (Figure 2). Major vegetation species along this portion of the creek were planted trees, primarily White Spruce with Apple (*Malus* sp.) and White Ash; though Norway Spruce (*Picea abies*), Red Oak and White Elm were also observed. Shrubs included Red-osier Dogwood (*Cornus stolonifera*) and Bebb's Willow (*Salix bebbiana*). Reed Canary Grass (*Phalaris arundinacea*) and Smooth Brome (*Bromus inermis* ssp. *inermis*) were also abundant grass-species along the creek.

3.2 LSRCA REQUIREMENTS

3.2.1 GRAVEL PAD DEVELOPMENT BY OPEN WATER PONDS

Development of the gravel pad does not currently comply with the Lake Simcoe Protection Plan (LSPP) Policy 6.23-DP that specifies that development and site alteration is not permitted within a key natural heritage feature, a key hydrologic feature, and within a regulated protection zone (Ontario, 2009b). As development was within the 30 m LSRCA Regulated Area, the gravel pad is subject to Ontario Regulation 179/06 (Ontario, 2006) and the LSRCA Watershed Development Policies (LSRCA, 2014).

To ensure compliance to the relevant policies for the development of the gravel pad near Open Water Ponds 1 and 2, the LSRCA submitted the following requirements:

- **Environmental Impact Study:** The LSRCA required the submission of an EIS to demonstrate that the hydrological function of the adjacent lands has been evaluated and it has been demonstrated through submission of a hydrologic study that there will be no negative impacts on the wetland as a result of the fill placement.
 - An EIS that details the current conditions of the Open Water Ponds is provided under a separate cover (WSP, 2015). The requested hydrologic study has also been prepared as a separate cover (C.C. Tatham, 2015a). The impacts of the gravel pad on the Open Water Ponds and mitigation proposed is detailed in Section 3.3, below.
- **Grading and Drainage Plan:** The LSRCA requires a detailed grading/drainage plan prepared by an Ontario Land Surveyor or Registered Professional Engineer for the fill placement/site grading within the regulated area.
 - Grading and drainage plans relevant to the Open Water Ponds will be provided under a separate cover by C. C. Tatham and Associates Ltd.
- **Planting Plan:** The LSRCA requires a planting plan consisting of native, non-invasive vegetation for the areas immediately adjacent to the Open Water Ponds.
 - As impacts during construction appeared negligible and a grassed buffer remains between the gravel pad and the Open Water Ponds, a planting plan is not proposed for this area.

3.2.2 AREA 3 CULVERT REPLACEMENTS

As Burl's Creek is within the 30 m LSRCA Regulated Area, the replacement of existing culverts is subject to Ontario Regulation 179/06 (Ontario, 2006) and the LSRCA Watershed Development Policies (LSRCA, 2014). For the proposed replacement of two culverts along Burl's Creek, the LSRCA submitted the following requirements:

- **Detailed Drawings:** The LSRCA requested that detailed drawings prepared by a qualified professional consultant (e.g. professional engineer, engineering technologist). The culvert[s] is to be designed so that it is sized appropriately to convey flows.
 - Detailed drawing of the planned culverts (Culverts 2 and 3) that will maintain the water balance in the area is provided in Appendix B (C.C. Tatham, 2015d – Appendix B). In Appendix B, Culvert 2 is represented by Drawing CUL-1 and Culvert 3 by Drawing CUL-2.
- **Culverts:** The LSRCA note that the installation of open bottom culverts is preferred.
 - Culverts that are embedded 20% to allow for a naturalized channel bottom have been incorporated into the design plans for the culvert replacements, as shown in Appendix B (C.C. Tatham, 2015d – Appendix B).

- **Flooding:** The LSRCA require that the culvert plans demonstrate that there will be no impact or increases to upstream flooding as a result of the culvert placements.
 - Consideration for upstream flooding has been incorporated into the design plans for the culvert replacements, as shown in Appendix B (C.C. Tatham, 2015d – Appendix B).
- **Planting Plan:** The LSRCA require a planting plan consisting of native, non-invasive vegetation for the areas immediately adjacent to the watercourse.
 - Planting plans for Culverts 2 and 3 are proposed as part of the mitigation proposed below in Section 3.3.2.

3.3 PROPOSED MITIGATION

3.3.1 GRAVEL PAD DEVELOPMENT BY OPEN WATER PONDS

The Open Water Ponds (Figure 2) fall within the LSRCA Regulated Area, and consequently, activities to construct the gravel pad directly south of Ponds 1 and 2 fell within the 30 m buffer of the Ponds. The Functional Servicing & Preliminary Stormwater Management Report for the project (C.C. Tatham, 2015a) demonstrates that the hydrological function of the Ponds will be maintained and that Allingham Creek system will not be adversely impacted by the development. Concrete was not placed on the pad, and therefore, the gravel pad area remains a permeable surface.

During development, there was the potential for disruption of wildlife, specifically birds due to construction activities and noise. However, observations during Breeding Bird and Amphibian surveys (WSP, 21015) which were conducted during construction show that the use of the ponds by birds does not seem to have been negatively impacted by development. Other potential impacts to the Ponds included erosion and sedimentation during construction. During the Site Investigation, it was observed that a sedimentation and erosion control fence had been properly erected on the south side of the pond, and no significant impacts were anticipated in this area from the development. By association, impacts to the unevaluated wetland/Allingham Wetland system to the east of the Site are also not anticipated.

The following measures provide additional mitigation and should be implemented as much as possible, considering that construction has occurred.

3.3.1.1 FISH HABITAT AND KEY HYDROLOGIC FEATURES MITIGATION MEASURES

Fish habitat, as defined by the *Fisheries Act*, c. F-14, includes the spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes. The Act also includes a broader definition of fish as shellfish, crustaceans, and marine mammals at all stages of their life cycles.

Fish are sensitive to environmental impacts that physically alter, destroy, or reduce the size of preferred habitats or spawning areas. Impacts that reduce fringe vegetation required for reproduction processes will also significantly affect species viability. Fish are also intolerant of substantial variations in temperature, substrate siltation, water toxicity, oxygen depletion, or turbidity. Erosion and sedimentation effects associated with vegetation removal on Site have the potential to directly impact the Open Water Ponds 1 and 2 and if mitigation measures are not in place.

The Natural Heritage Reference Manual (MNRF, 2010) recommends the establishment and/or retention of natural vegetated cover for the protection of fish habitat. Typically a minimum buffer of 15 m is required for fish habitat, with the extended setback of at least 30 m required from coldwater fish habitat (MNRF, 2010).

In order to minimize impacts associated with construction activities, the following mitigation measures are recommended for any future works in or around the Open Water Ponds:

- A row of non-woven siltation fencing should be secured along the banks of the Open Water Pond areas and inspected regularly to ensure efficiency.
- Open Water Ponds 1 and 2 are hydrologically connected to Allingham Creek and as such in-water work at these locations should occur outside of the timing window restriction for the most sensitive fish species (Brook Trout; October 1 – May 31), or as recommended by MNRF during detailed design.
- Appropriate permits and approvals should be in place prior to any construction activities (e.g. Permit to Take Water, approval under the Fisheries Act, LSRCA and/or MNRF approval).
- Ensure a Spills Management Plan (including materials, instructions regarding their use, education of contract personnel, emergency contact numbers) is onsite at all times for implementation in event of an accidental spill during construction. Adequate measures to prevent or capture and contain debris and spills resulting from construction activities should be kept onsite in sufficient quantities. Staff should be orientated as to the location of materials and their proper use and disposal. All measures and procedures should conform to pertinent provincial requirements.

3.3.2 AREA 3 CULVERT REPLACEMENTS

Along Burl's Creek, all of the culverts observed and assessed were at least partially perched, creating several barriers to fish migration along this reach of the Creek. As part of the Project, replacement of Culverts 2 and 3 is proposed. New, open bottom culverts should be embedded into the creek bed a minimum of 10% of the diameter of the culvert, in consultation with the LSRCA and/or the Ministry of Natural Resources and Forestry (MNRF). Detailed design of these culverts is provided under a separate cover (C.C. Tatham, 2015d – Appendix B). In Appendix B, Culvert 2 is represented by Drawing CUL-1 and Culvert 3 by Drawing CUL-2.

Considering the condition of the current culverts, replacement will result in a net environmental benefit to Burl's Creek by enhancing its natural flow regime and fish habitat capabilities.

3.3.2.1 FISH HABITAT AND KEY HYDROLOGIC FEATURES MITIGATION MEASURES

Fish habitat, as defined by the *Fisheries Act*, c. F-14, includes the spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes. The Act also includes a broader definition of fish as shellfish, crustaceans, and marine mammals at all stages of their life cycles.

Fish are sensitive to environmental impacts that physically alter, destroy, or reduce the size of preferred habitats or spawning areas. Impacts that reduce fringe vegetation required for reproduction processes will also significantly affect species viability. Fish are also intolerant of substantial variations in temperature, substrate siltation, water toxicity, oxygen depletion, or turbidity. Erosion and sedimentation effects associated with vegetation removal on Site have the potential to directly impact Burl's Creek if mitigation measures are not in place.

Culvert replacement is proposed for Culverts 2 and 3 on Burl's Creek. Any crossings, under or over a watercourse should be screened against the *Fisheries Act* and the Government of Canada Department of Fisheries and Ocean's (DFO) self-assessment criteria and conditions. Approval under the *Fisheries Act* may be necessary and will be evaluated and applied for as necessary.

The Natural Heritage Reference Manual (MNRF, 2010) recommends the establishment and/or retention of natural vegetated cover for the protection of fish habitat. Typically a minimum buffer of 15 m is required for fish habitat, with the extended setback of at least 30 m required from coldwater fish habitat (OMNR, 2010).

In order to minimize impacts associated with construction activities, the following mitigation measures are recommended for any future works in or around Burl's Creek:

- A row of non-woven siltation fencing should be secured along the banks of the existing watercourse and inspected regularly to ensure efficiency.
- In-water work within Burl's Creek watercourse should occur outside of the timing window restriction for the most sensitive fish species (Brook Trout; October 1 – May 31 or as recommended by MNRF during detailed design.
- All construction work, such as culvert replacements, should occur in the dry. The contractor shall make their own assessment of anticipated water levels and de-watering levels required. Water levels are likely to fluctuate seasonally. .
- Appropriate permits and approvals should be in place prior to any construction activities (e.g. Permit to Take Water, approval under the *Fisheries Act*, LSRCA and/or MNRF approval).
- Where surficial water is present, a coffer dam will be placed upstream and downstream of the proposed excavation and infilling area. It may be necessary to complete small sections at a time. Fish and wildlife stranded within the work area shall be captured and released live in suitable habitat downstream of the work area under the supervision of a qualified aquatic biologist. A permit from the MNRF is required.
- Watercourse crossing designs (e.g. bridges, culverts) should be screened by an environmental professional prior to undertaking any in-water work, to ensure work occurs in accordance with the *Fisheries Act*. Consultation with the DFO may be necessary.
- Ensure a Spills Management Plan (including materials, instructions regarding their use, education of contract personnel, emergency contact numbers) is onsite at all times for implementation in event of an accidental spill during construction. Adequate measures to prevent or capture and contain debris and spills resulting from construction activities should be kept onsite in sufficient quantities. Staff should be orientated as to the location of materials and their proper use and disposal. All measures and procedures should conform to pertinent provincial requirements.

3.3.2.2 RECOMMENDED COMPENSATION FOR FISH HABITAT AND KEY HYDROLOGIC FEATURES

- Remove barbed wire under Bridge 6 (nearest the speedway) to prevent injury to wildlife using the creek bed as a corridor.
- Discuss alteration or removal of excess gravel between Culvert 2 and Bridge 1 with the MNRF and the LSRCA. This gravel is not consistent with substrate in adjacent reaches of the creek and is likely a barrier to fish migration during low water conditions.
- Discuss alteration or removal of cobble/gravel present along the channelized reach of Burl's Creek with the MNRF and the LSRCA. This cobble/gravel is not consistent with substrate in adjacent reaches of the creek and is likely a barrier to fish migration during low water conditions.
- The natural vegetated buffer around this reach of Burl's Creek is between 2 m and 6 m from bankfull width. An enhanced, widened natural buffer for the creek would decrease runoff from the adjacent manicured lawn and provide greater cover for wildlife using the creek as a movement corridor.

- At several locations along the reach of Burl's Creek it appears that old agricultural tile drains are outlet into the creek. Discussions with MNR and LSRCA are recommended regarding the potential disconnection of these drains from the fields to promote in-situ infiltration of precipitation and prevent inputs of runoff potentially high in organic pollutants such as lawn fertilizers, herbicide or pesticides.

3.3.2.3 AREA 3 CULVERT REPLACEMENTS TREE PLANTING PLAN

Replacement of Culvert 2 (Figure 3) will potentially affect one Apple tree on the east side, and 6 small White Ash and 2 small Trembling Aspen on the west side. To restore a Site and compensate for the loss of trees within an area of impact, Burl's Creek Event Grounds Ltd. is prepared to work with the LSRCA to provide tree planting as compensation at a negotiated ratio appropriate to the Culvert 2 area

The tree planting plan should be carried out by a qualified tree planting company. Shrubs can also be included to create a more natural woodland community. The ultimate species proportion and placement of individual trees within the reclaimed culvert area is left to the determination of the qualified tree planting company based on micro-site conditions and variation. Once the compensatory trees have been planted, the Client should provide the Lake Simcoe Region Conservation Authority (LSRCA) with a letter providing the details of the compensatory plantings. This letter may be included as part of the annual tree planting letter report proposed in Section 2.3.2.

Recommended species for Tree Planting are listed in Table 2. These species similar to tree species in the Burl's Creek channel and the forest type in the surrounding area. Ash species were not recommended to ensure the survival of tree plantings in expectation of the advance of EAB from southern Ontario.

Table 2 Tree Compensation Plan for Tree Planting – Culvert 2

VEGETATION TYPE	SPECIES	SIZES ¹	SPACING	SHADE TOLERANCE	PREFERRED MOISTURE REGIME
Trees	Sugar Maple	150 cm	3.0 - 3.5 m	High shade tolerance	Grows best in deep, well drained soils
	Eastern Cottonwood	150 cm	3.0 - 3.5 m	Shade intolerant	Wet soils bordering streams
	Balsam Poplar	150 cm	3.0 - 3.5 m	Shade intolerant	Grows best in moist, rich, low lying soils, mainly near streambanks
Shrubs	Alternate-leaved Dogwood	40 - 60 cm	1.5 - 2.0 m	High shade tolerance	Grows best on moist loam soils
	Beaked Hazel	40 - 60 cm	1.5 - 2.0 m	High shade tolerance	Grows well in rich, moist soils

¹ Sizes are based on the LSRCA list of hardwood tree species available (http://www.lsrca.on.ca/leap/list_hardwood_species.php).

Replacement of Culvert 3 (Figure 3) will potentially affect a planted Red Oak, White Spruce and a Bebb's Willow. To compensate for these native trees and shrub removed during site preparation, Burl's Creek Event Grounds Ltd. is prepared to work with the LSRCA to provide tree planting as compensation at a negotiated ratio appropriate to the Culvert 3 area. The ultimate species proportion and placement of individual trees and shrubs within the reclaimed culvert area is left to the determination of the qualified tree planting company based on micro-site conditions and variation. Once the compensatory trees have been planted, the Client should provide the Lake Simcoe Region Conservation Authority (LSRCA) with a letter providing the details of the compensatory plantings. This letter may be included as part of the annual tree planting letter report proposed in Section 2.3.2.

Recommended species for Tree Planting are listed in Table 3. These species similar to tree species in the Burl's Creek channel and will match the trees planted along this section of the channel. While White Spruce and Red Oak will match best, Sugar Maple is found throughout the area as well, and should be considered a backup choice.

Table 3 Tree Compensation Plan for Tree Planting – Culvert 3

VEGETATION TYPE	SPECIES	SIZES ¹	SPACING	SHADE TOLERANCE	PREFERRED MOISTURE REGIME
Trees	White Spruce	15 – 40 cm bare root	3.0 - 3.5 m	Shade tolerance	Suits a range of soils from moist sands to sandy and clay loams
	Red Oak	150 cm	3.0 - 3.5 m	Intermediate shade tolerance	Grows best in fresh to moist, well-drained loamy soils
	Sugar Maple	150 cm	3.0 - 3.5 m	High shade tolerance	Grows best in deep, well drained soils
Shrubs	Pussy Willow	25 - 60 cm	1.5 - 2.0 m	Best in full sun, partially tolerant	Moist sandy, silty, or gravelly soils along streambanks and wet thickets
	Alternate-leaved Dogwood	40 - 60 cm	1.5 - 2.0 m	High shade tolerance	Grows best on moist loam soils
	Beaked Hazel	40 - 60 cm	1.5 - 2.0 m	High shade tolerance	Grows well in rich, moist soils

¹ Sizes are based on the LSRCA list of hardwood tree species available (http://www.lsrca.on.ca/leap/list_hardwood_species.php).

In addition to tree plantings, the following recommendations should be implemented:

- Areas adjacent to the watercourse should be stabilized with native species and in accordance with the naturalized channel design:
 - A minimum of 15 cm of contaminant and weed-free topsoil should be applied to disturbed areas prior to application of a site appropriate seedmix (see below).
 - Erosion control measures, including a row of non-woven siltation fence should remain in place, until vegetation has established (i.e. 80% cover).

For bank stabilization, exposed soils within low-lying areas adjacent to the culvert replacements should be stabilized with a native seed mix, such as the Ontario Seed Company Ltd. Woodland Seed Mix (No. 8275):

Ontario Seed Company Ltd. Woodland Seed Mix (No. 8275)

6%	Foxglove Beardtongue (<i>Penstemon digitalis</i>)
1%	Bebb's Sedge (<i>Carex bebbii</i>)
6%	Nodding/Fringed Sedge (<i>Carex crinata</i>)
40%	Fowl Bluegrass (<i>Poa palustris</i>)
5%	Showy Tick Trefoil (<i>Desmodium canadensis</i>)
1%	Spotted Joe Pye Weed (<i>Eupatorium maculatum</i>)
40%	Creeping Bentgrass (<i>Agrostis stolonifera</i>)

4 CONCLUSIONS

The Site improvements made at the Burl's Creek Event Grounds have increased the operational effectiveness of the existing event space, while retaining the rural agricultural character of the land. The recommended mitigation outlined within this report strives to eliminate or minimize the potential for impacts to the Area 1 Wetland and Significant Woodland and the Area 1 Open Water Ponds and Burl's Creek culverts. With the implementation of the proposed mitigation, the site alteration design provides conformity with the policies and requirements of the Provincial Policy Statement (OMAHH, 2014), the Lake Simcoe Protection Plan (Ontario, 2009b), the Township of Oro-Medonte (2007) and the County of Simcoe (2013) Official Plans, and the requirements of the LSRCA Watershed Development Policies (2014).

This report is based upon a review of background materials, discussions with appropriate regulating agencies and the proponent, and site visits to document the biophysical features present on the Site, and is written based on conditions on the Site during the time of the site investigations.

5 CLOSURE

This report has been prepared by WSP Canada Inc. The assessment represents the conditions at the subject property only at the time of the assessment, and is based on the information referenced and contained in the report. The conclusions presented herein respecting current conditions represent the best judgment of the assessors based on current environmental standards. WSP attests that to the best of our knowledge, the information presented in this report is accurate. The use of this report for other projects without written permission of the client and WSP is solely at the user's own risk.

6 LIMITATIONS

The contents of this report are confidential; any commercial and financial information contained herein is the sole property of Burl's Creek Event Grounds Inc. Any public release may prejudice its competitive position, and is therefore prohibited.

Thank you for the opportunity to complete this report. We trust that this information is satisfactory for your current requirements. Please contact us if we can be of further assistance.

Report prepared by:
WSP Canada Inc.



Austin Adams, B.Sc., EP
Biologist

Reviewed by:



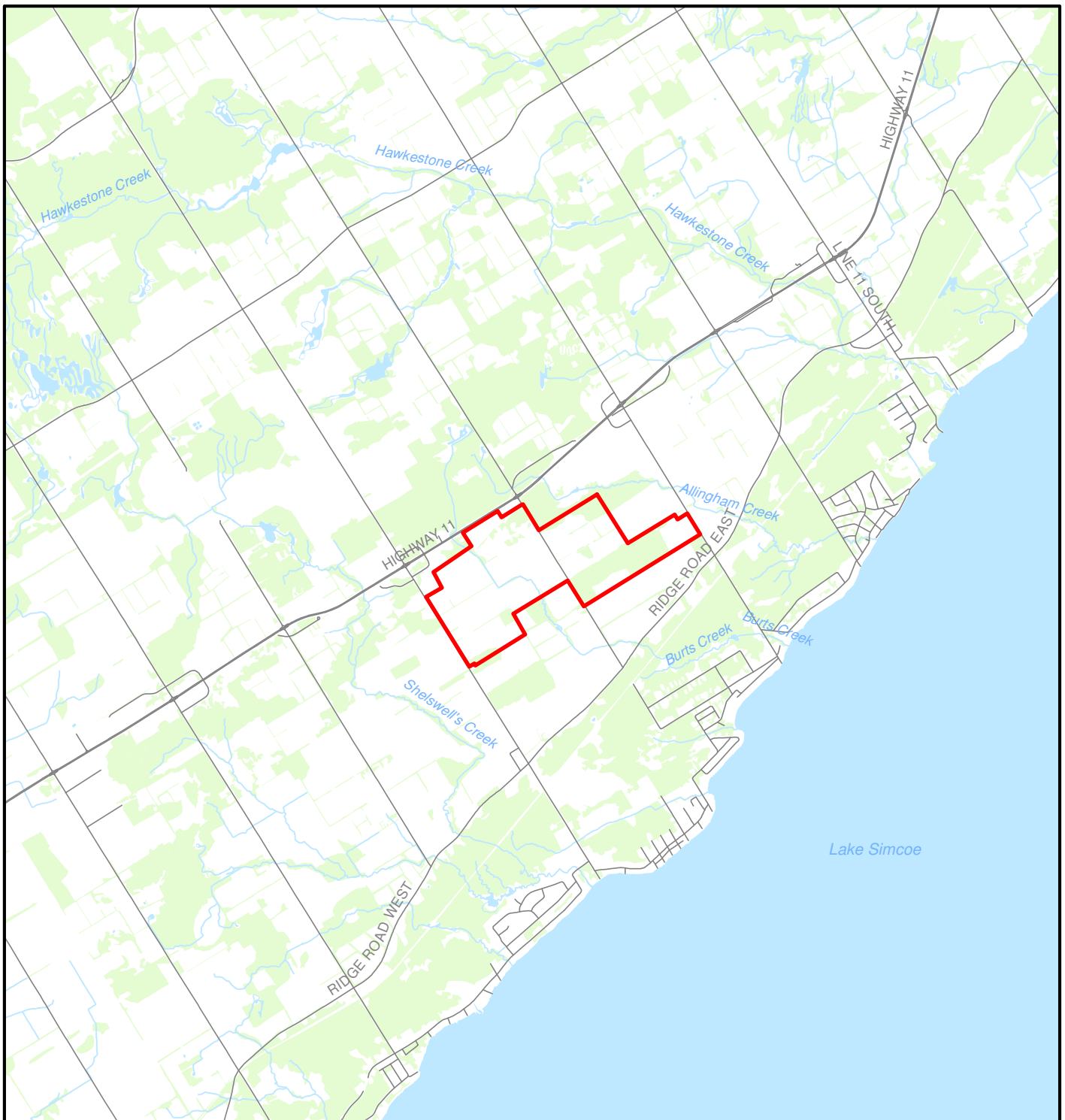
Dan Reeves, M.Sc.
Project Biologist

7 LITERATURE CITED

- C.C. Tatham and Associates Ltd. (C.C. Tatham). 2015a. Burl's Creek Event Grounds, Township of Oro-Medonte - Functional Servicing and Stormwater Management Report. Prepared for Burl's Creek Event Grounds Inc.
- C.C. Tatham and Associates Ltd. (C.C. Tatham). 2015b. Burl's Creek Event Grounds Permit Application for Wetland Restoration – Area 1, 329 Line 8 S, Lot 23, Concession 9, Township of Oro-Medonte. Prepared for Burl's Creek Event Grounds Inc.
- C.C. Tatham and Associates Ltd. (C.C. Tatham). 2015c. Wetland Restoration Plan, Drawing WTLD-1. Prepared for Burl's Creek Event Grounds Inc.
- C.C. Tatham and Associates Ltd. (C.C. Tatham). 2015d. Culvert Replacement Plans, Drawings CUL-1 and CUL-2. Prepared for Burl's Creek Event Grounds Inc.
- City of Calgary (Calgary). 2004. City of Calgary Wetland Compensation Plan. Available at: http://www.calgary.ca/_layouts/cocis/DirectDownload.aspx?target=http%3a%2f%2fwww.calgary.ca%2fCSPS%2fParks%2fDocuments%2fPlanning-and-Operations%2fNatural-Areas-and-Wetlands%2fwetland_conservation_plan.pdf&noredirect=1&sf=1
- Ducks Unlimited Canada (DUC). 2011. A Business Case for Wetland Conservation: The Black River Subwatershed. Available at: http://www.ducks.ca/assets/2012/06/duc_blackriver_case.pdf
- Government of Ontario (Ontario). 2006. O. Reg. 179/06: Lake Simcoe Region Conservation Authority: Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses. Available at: <http://www.ontario.ca/laws/regulation/r06179>.
- Government of Ontario. 2007. Endangered Species Act (ESA). Available online: http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_07e06_e.htm
- Government of Ontario. 2009a. Forestry Act, R.S.O. 1990, c. F.26. Available at: <http://www.ontario.ca/laws/statute/90f26>
- Government of Ontario. 2009b. Lake Simcoe Protection Plan. Available at: <http://www.ontario.ca/environment-and-energy/lake-simcoe-protection-plan>
- Lake Simcoe Region Conservation Authority (LSRCA). 2014. Lake Simcoe Region Conservation Authority Watershed Development Policies. Available at: http://www.lsrca.on.ca/pdf/watershed_development_policies.pdf
- Lake Simcoe Region Conservation Authority (LSRCA). 2015. LEAP Program website – Planting Trees and Shrubs webpage. Available at: http://www.lsrca.on.ca/leap/projects/trees_shrubs.php
- Lee, H.T., Bakowsky, W.D., Riley, J., Bowles, J., Puddister, M., Uhlig, P., and S. McMurray. 1998. Ecological Land Classification for Southern Ontario: First Approximation and Its Application. Ontario Ministry of Natural Resources, Southcentral Science Section, Science Development and Transfer Branch. SCSS Field Guide FG-02.
- Ontario Ministry of Natural Resources (OMNR). 2010. Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement. Second Edition. Queen's Printer for Ontario.
- Ontario Ministry of Natural Resources and Forestry (MNR). 2015. Natural Heritage Areas Mapping Make-a-Map Online Tool. Available at: <http://www.giscopeapp.lrc.gov.on.ca/web/MNR/NHLUPS/NaturalHeritage/Viewer/Viewer.html>.

- Township of Oro-Medonte. 2007. Official Plan and Schedules. Available at: <http://www.oro-medonte.ca/municipal-services/planning-information/planning-documents>
- WSP Canada Inc. (WSP). 2015. Environmental Impact Study – Burl's Creek Event Grounds, Oro-Medonte, Ontario. Prepared for Burl's Creek Event Grounds Inc.

Figures



LEGEND

 SITE BOUNDARY



Data Source: Ministry of Natural Resources,
Ontario Base Mapping, March 2014.



SITE LOCATION

MITIGATION PLAN
 BURL'S CREEK EVENT GROUNDS
 Oro-Medonte, Ontario
 For Burl's Creek Event Grounds Inc.

DATE: DECEMBER 2015

SCALE: 1:60000

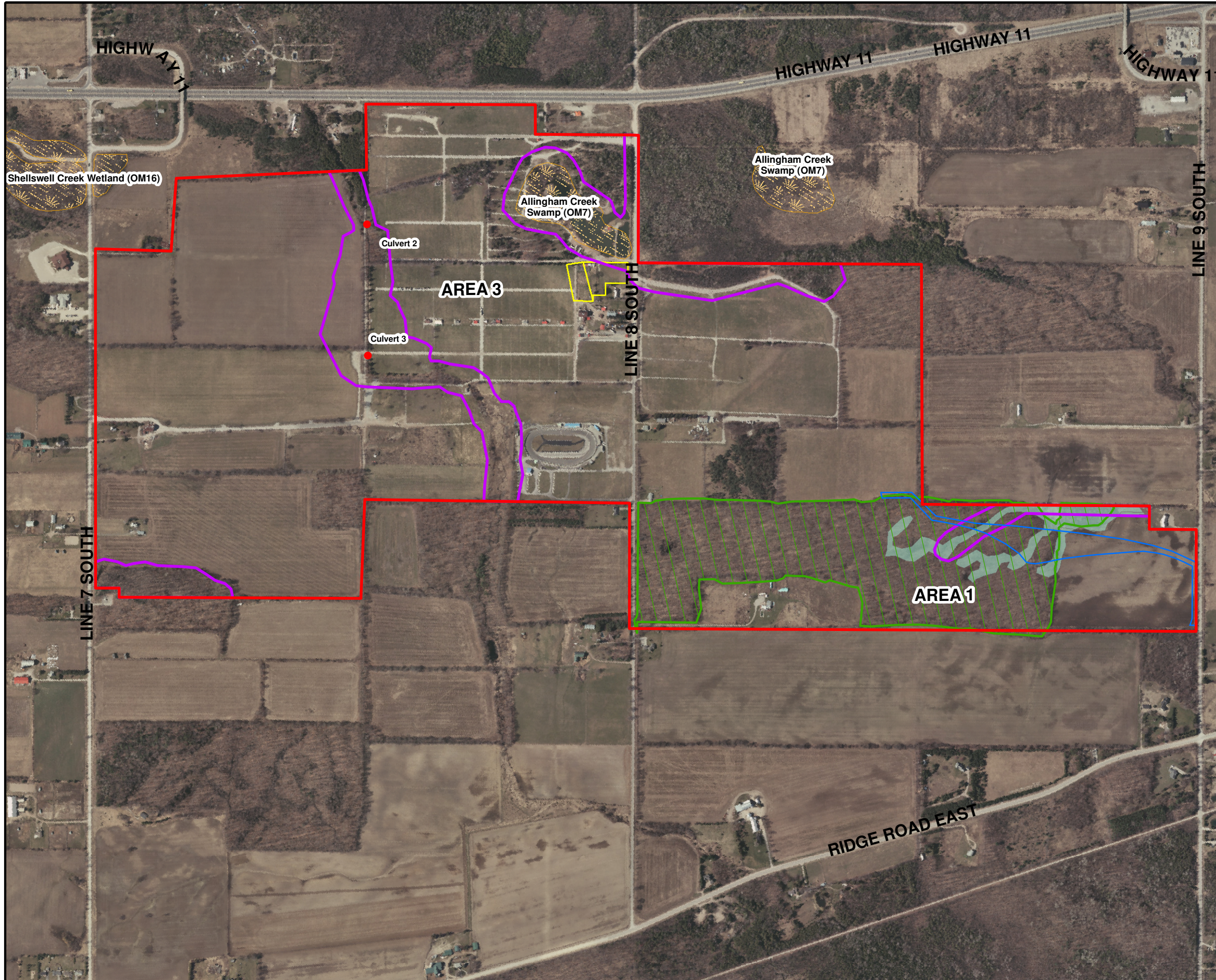
PROJECT: 151-03995-00 123

FILE. NO.:151-03995-00 123 F1



FIGURE

1



LEGEND

- SITE BOUNDARY
- LSRCA REGULATION LIMIT (APPROXIMATE)
- SIGNIFICANT WOODLAND
- EVALUATED WETLAND - OTHER
- BLACK ASH MINERAL DECIDUOUS SWAMP (SWD2-
- GRAVEL PADS
- NEW LANEWAYS
- CULVERT LOCATIONS

Data Source: Ministry of Natural Resources, Ontario Base Mapping, March 2014. Imagery, County of Simcoe, 2011.

0 300 m

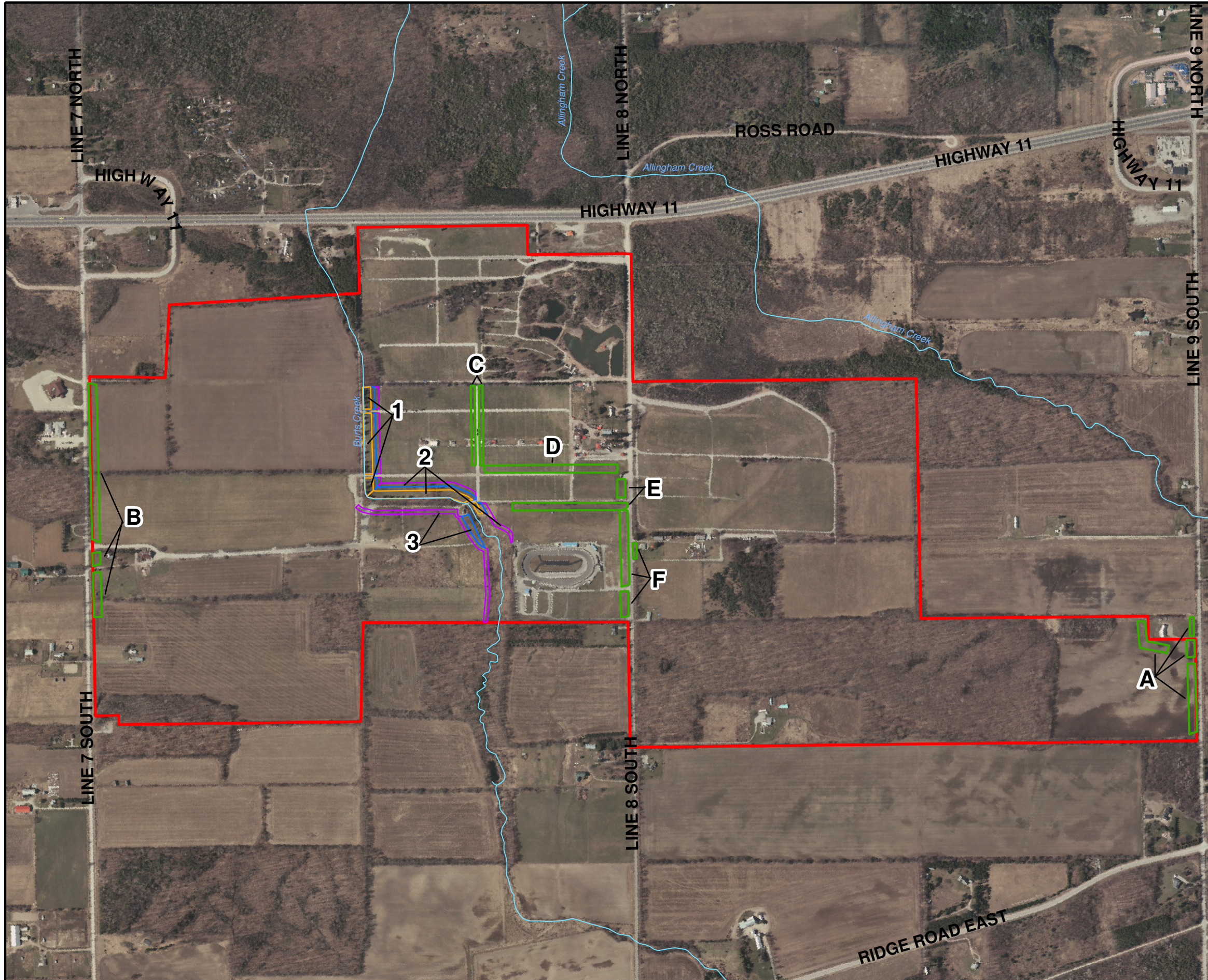
MITIGATION LOCATIONS

MITIGATION PLAN
BURL'S CREEK EVENT GROUNDS
Oro-Medonte, Ontario
For Burl's Creek Event Grounds Inc.

DATE: DECEMBER 2015	SCALE: 1:10000
PROJECT: 151-03995-00 123	FILE NO.: 151-03995-00 123 F2

FIGURE

2



LEGEND

- SITE BOUNDARY
- PREFERRED TREE PLANTING**
- 40,886 m²
- AREA A - 7,323 m²
- AREA B - 10,911 m²
- AREA C - 3,947 m²
- AREA D - 6,627 m²
- AREA E - 6,481 m²
- AREA F - 5,597 m²
- ADDITIONAL TREE PLANTING**
- OPTION 1 - 10,634 m²
- OPTION 2 - 17,239 m² (INCLUDES OPTION 1 AREA)
- OPTION 2 - 27,031 m² (INCLUDES OPTION 1 AND OPTION 2 AREAS)
- AREA 1:
- OPTION 1 - 5,232 m²
- OPTION 2 - 2,394 m²
- OPTION 3 - 2,306 m²
- AREA 1 TOTALS - 9,932 m²
- AREA 2:
- OPTION 1 - 5,402 m²
- OPTION 2 - 2,929 m²
- OPTION 3 - 3,113 m²
- AREA 2 TOTALS - 11,444 m²
- AREA 3:
- OPTION 1 - N/A
- OPTION 2 - 1,282 m²
- OPTION 3 - 5,655 m²
- AREA 3 TOTALS - 6,937 m²

Data Source: Ministry of Natural Resources,
Ontario Base Mapping, March 2014.
Imagery, County of Simcoe, 2011.



TREE PLANTING OPTIONS

MITIGATION PLAN
BURL'S CREEK EVENT GROUNDS
Oro-Medonte, Ontario
For Burl's Creek Event Grounds Inc.

DATE: FEBRUARY 2016	SCALE: 1:10000
PROJECT: 151-03995-00 123	FILE. NO.: 151-03995-00 123 F3 v2

	FIGURE 3
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Appendices

Appendix A

LSRCA REGULATION 179/06 LETTER



Sent Via E-mail: gbarker@ipsconsultinginc.com

June 24, 2015

IMS File Nos.: RPCLF 100003; RPMAR100095
and RPCOMR10010

Innovative Planning Solutions
150 Dunlop Street, Suite 201
Barrie, Ontario.
L4M 1B1
Attention: Mr. Greg Barker, Senior Planner

Dear Mr. Barker:

Re: Ontario Regulation 179/06
Burls Creek Events Ground Inc.
Part of Lots 22 & 23, Concession 9; and Part of Lots 21 & 22, Concession 8
Township of Oro-Medonte, County of Simcoe

This letter is in regard to the three (3) applications submitted to the Lake Simcoe Region Conservation Authority (LSRCA) for permission under Ontario Regulation 179/06 to undertake a variety of development activities on various portions of the property as outlined below. The areas correspond to a drawing prepared by your firm illustrating the land parcels which comprise Burls Creek Events ground Inc.

- Area 1 – 329 Line 8 South – Lot 23, Con 9 – woodland clearing for fill placement for a laneway;
- Area 3 – 180 Line 8 South – Lot 22, Con 8 – fill placement, concrete pad, replace 2 culverts;
- Area 6 – 241 Line 7 South/240 Line 8 South, Lot 22, Concession 8 – bridge crossing.

It should be noted that the applications in areas 1 and 3 are retroactive applications, as the work has commenced without a permit in contravention of Ontario Regulation 179/06. The applications submitted by Burl's Creek Events Ground Inc. were received prior to June 1, 2015. For this reason, they will be subject to the Authority's Watershed Development Policies. A copy of this document is attached for your reference.

The LSRCA has reviewed each of the applications submitted and we provide the following general comments for your consideration. Each of the applications noted above has been deemed incomplete by the LSRCA, as they have not been accompanied by the necessary drawings, reports/studies and background information. The drawings that have been submitted with these applications do not provide all of the necessary detail. In general, drawings are needed for each

Page 1 of 5

Ontario Regulation 179/06
Burls Creek Events Ground Inc.
June 24, 2015
Page 2 of 5

of the applications which provide the location and dimensions of all work proposed, setback distances to watercourses/wetlands, cross-sectional drawings showing the difference between original grades and proposed grades. When culverts are being replaced, the diameter and length of the proposed culvert as well as the diameter and length of the new culvert are required. The applicant must also demonstrate that the proposed culverts have been appropriately sized to convey flood flows. Further these drawings need to be prepared by a qualified professional engineer. These general requirements apply to all applications.

In addition to the general comments noted above the following specific comments apply to the individual applications as follows:

Area 1 – 329 Line 8 South – Lot 23, Con 9 Township of Oro-Medonte

This parcel is partially regulated by LSRCA for a watercourse that traverses the north east part of the property and its associated meanderbelt (erosion hazard) as well as an unevaluated wetland.

All development which has taken place on this parcel has taken place without the necessary approvals from the LSRCA under Ontario Regulation 179/06.

The drawings submitted with the application do not appear to match the work that was observed at this location on May 5, 2015. The original site contained an unevaluated wetland and a watercourse. The watercourse and wetland features have been destroyed at this location.

Please note that the Lake Simcoe Protection Plan (LSPP) Policy 6.23-DP specifies that development and site alteration is not permitted within a key natural heritage feature, a key hydrologic feature and within a related vegetation protection zone. Permits issued by the LSRCA under Ontario Regulation 179/06 are prescribed instruments under the LSPP. This information was previously communicated in a letter from the LSRCA to the Township of Oro-Medonte regarding a zoning by-law amendment (2014-ZBA-02) dated May 8, 2015.

As the development undertaken at this portion of the property is contrary to the LSRCA's Watershed Development Policies and the LSPP, the LSRCA requires the removal of all fill placed

Ontario Regulation 179/06
Burls Creek Events Ground Inc.
June 24, 2015
Page 3 of 5

within the wetland and watercourse and the restoration of these features to their original condition.

As an option, the LSRCA may consider a compensation strategy for the features that have been damaged and destroyed. The LSRCA would require the preparation of a natural heritage evaluation in accordance with the guidelines outlined in Policy 6.26 – DP of the LSPP and the preparation of a compensation strategy prepared to the satisfaction of the LSRCA. In accordance with the LSRCA's Watershed Development Policies (Policy 11.4.3) – the LSRCA may require that an area of wetland be created at a 3:1 ratio (wetland area created : wetland area lost).

The LSRCA will also require the following:

- Submission of an Environmental Impact Study (EIS) in order to assess the roads potential impact on the wetland feature. This study is also to include a hydrologic study to demonstrate that the hydrological function of adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the wetland as a result of the fill placement.
- Detailed grading/drainage plan prepared by an Ontario Land Surveyor or Registered Professional Engineer.
- Detailed drawings for the culvert installation prepared by a qualified professional consultant.
- A planting plan consisting of native, non-invasive vegetation for the areas immediately adjacent to the wetland and watercourses. The planting buffers are to be a minimum of 15 metres in width.
- Certification that all fill brought into the property is clean fill and meets MOEE Table 1 requirements.

Area 3 – 180 Line 8 South – Lot 22, Con 8, Township of Oro-Medonte

This parcel is partly regulated by LSRCA for a watercourse that traverses down the western property line and its associated floodplain and meanderbelt (erosion hazard). There is also a Ministry of Natural Resources and Forestry (MNRF) locally significant wetland at the north east corner of the property.

Ontario Regulation 179/06
Burls Creek Events Ground Inc.
June 24, 2015
Page 4 of 5

The LSRCA requires the submission of the following information:

- an Environmental Impact Study (EIS) to demonstrate that the hydrological function of adjacent lands has been evaluated and it has been demonstrated through the submission of a hydrologic study that there will be no negative impacts on the wetland as a result of the fill placement;
- a detailed grading/drainage plan prepared by an Ontario Land Surveyor or Registered Professional Engineer for the fill placement/site grading within the regulated area;
- A planting plan consisting of native, non-invasive vegetation for the areas immediately adjacent to the wetland.

Based on a site meeting of January 8, 2015, the LSRCA understands that you also intend to install a replacement culvert at the south west corner of the property. This area is regulated by LSRCA for floodplain and meanderbelt, which are both natural hazards associated with Burl's Creek. The following additional information is required for this application:

- Detailed drawings prepared by a qualified professional consultant (e.g. professional engineer, engineering technologist). The culvert is to be designed so that it is sized appropriately to convey flows;
- The installation of open bottom culverts is preferred;
- Demonstrate that there will be no impact or increases to upstream flooding as a result of the culvert replacement;
- A planting plan consisting of native, non-invasive vegetation for the areas immediately adjacent to the watercourse (Burl's Creek).

Area 6 – 241 Line 7 South/240 Line 8 South, Lot 22, Concession 8, Township of Oro-Medonte

It is my understanding from a discussion with Mr. Ryan Howes, (Vice President, Venue Operations & Business Development – Burl's Creek Event Grounds) that the proposal to construct a bridge over Burls Creek in area 6 has been abandoned.

This property is partly regulated by LSRCA for a watercourse and its associated floodplain, meanderbelt, and apparent valleyland/steep slopes.

Should you decide to pursue this application, the LSRCA will require the following:

Ontario Regulation 179/06
Burls Creek Events Ground Inc.
June 24, 2015
Page 5 of 5

- Detailed drawings prepared by a professional engineer. The bridge is to span the floodplain and valley system associated with Burl's Creek.
- Geotechnical Investigation identifying stable top of bank and appropriate construction practices so that the location of the bridge and associated footings will not aggravate slope stability or erosion.

If you have any questions, please do not hesitate to contact the undersigned.

Regards,



Beverley G. Booth
Manager, Planning, Regulations & Enforcement

cc. Andria Leigh, Director, Development Services, Township of Oro-Medonte E-mail aleigh@oro-medonte.ca
Tammi Taylor, Venue Operations & Community Relations, Burl's Creek E-mail tammi@burlscreek.com
Lisa-Beth Bulford, Development Planner, LSRCA E-mail l.bulford@lsrca.on.ca
Evan MacDonald, Environmental Compliance Officer, LSRCA E-mail e.macdonald@lsrca.on.ca
Taylor Stevenson, Environmental Analyst, LSRCA E-mail t.stevenson@lsrca.on.ca

H:\BeverleyB\Correspondence\Burls Creek June 2015docx

Appendix B

**SEPARATE COVERS REGRADING LSRCA REGULATION 179/06
LETTER**

September 18, 2015

via email (b.booth@lsrca.on.ca)
CCTA File 115032

Beverley G. Booth
Manager Planning, Regulations & Enforcement
Lake Simcoe Region Conservation Authority
120 Bayview Parkway, Box 282
Newmarket, Ontario L3Y 4X1

Re: Burls Creek Event Grounds
Permit Application for Wetland Restoration Works- Area 1
329 Line 8 S, Lot 23, Concession 9, Township of Oro-Medonte

Dear Beverley:

As you are aware, Burl's Creek is seeking permit approval from LSRCA for a number of specific activities within the Regulated limit. In response to your letter dated June 24, 2015 we wish to address the works undertaken in Area 1. During construction of the expansion to the Burl's Creek Event Grounds this past spring, fill was placed within the limits of an unmapped wetland. As acknowledged by LSRCA staff on-site, it would be very difficult to restore the wetland to its previous condition and that instead, a compensation approach could be taken, including restoring the connection of the remaining wetland to its outlet.

The wetland compensation plan will be addressed by WSP Canada Inc. (WSP) in their Environmental Impact Statement. The intent of this letter is to address the wetland restoration requirement, which will address reconnecting the wetland to the downstream drainage course.

Hydrologic Function of Wetland

A detailed analysis of the hydrologic function of the wetland could not be completed due to a lack of information pertaining to the pre-construction condition of the wetland. Minimal information was available on the condition of the wetland before the fill was placed. The outlet function could not be confirmed nor could the exact extents of the wetland.

A wetland delineation provided by LSRCA was used to determine the pre-construction extent of the wetland. Through field review, WSP determined the post-construction extents of the wetland and verified LSRCA's pre-construction wetland boundary. A comparison of the pre and post-construction wetland limits indicated that 0.5 ha of wetland area was destroyed by the fill placement, which was undertaken to create a gravel access road and entrance/staging area for the camping area to the east. The creation

of this access road resulted in the post-construction wetland area to become disconnected from its natural outlet to the north.

A topographic survey of the gravel access road and portions of the post-construction wetland area was completed by CCTA on August 20, 2015. The wetland, identified as the Black Ash Mineral Deciduous Swamp, is approximately 0.3 - 0.5 m deep and was found to have no standing water in it. In order to re-establish a connection with the outlet location, structures are required through the gravel access road. Based on a site visit by CCTA staff and review of the topographic survey, it was determined there are two natural draws which serve as outlet locations which are shown on the attached Drawing WTLD-1 as Outlets A and B. The best approximation is that each of the two outlets would receive roughly half of the outflow. As the wetland is known to be a swamp with a seasonal hydroperiod, it was determined that the primary function of the outlets should be to allow frequent flows to be conveyed from the wetland without significant backup.

Outlet Design

Outlet culverts were sized to provide conveyance of the 5-year peak flow. A 450 mm dia. corrugated steel pipe (CSP) culvert is specified for Outlet A and twin 300 mm dia. CSP culverts have been specified at Outlet B.

It was determined that 30.1 ha of the 42.5 ha drainage area of Catchment 203 drains into the wetland. A weighted average was applied to the 5-year peak flow rate from Catchment 203, resulting in a peak flow rate of 0.162 m³/s. This flow rate does not account for storage effects in the wetland, and can be considered conservative. The combined discharge rate conveyed by the culverts is 0.185 m³/s. Supporting calculations are attached in Appendix B.

Conveyance of larger storm events is proposed via an overland flow route that will be created across the gravel access road. The 100-year peak flow rate of the area contributing to wetland is 0.441 m³/s. The overland flow route for the larger storm events has the capacity to convey 0.295 m³/s, which in combination with 0.185 m³/s capacity of the culvert outlets, provides a total conveyance capacity of 0.48 m³/s. which exceeds the 100-year peak flow. Supporting calculations are attached in Appendix B and Drawing WTLD-1, which details the proposed outlet design, is appended.

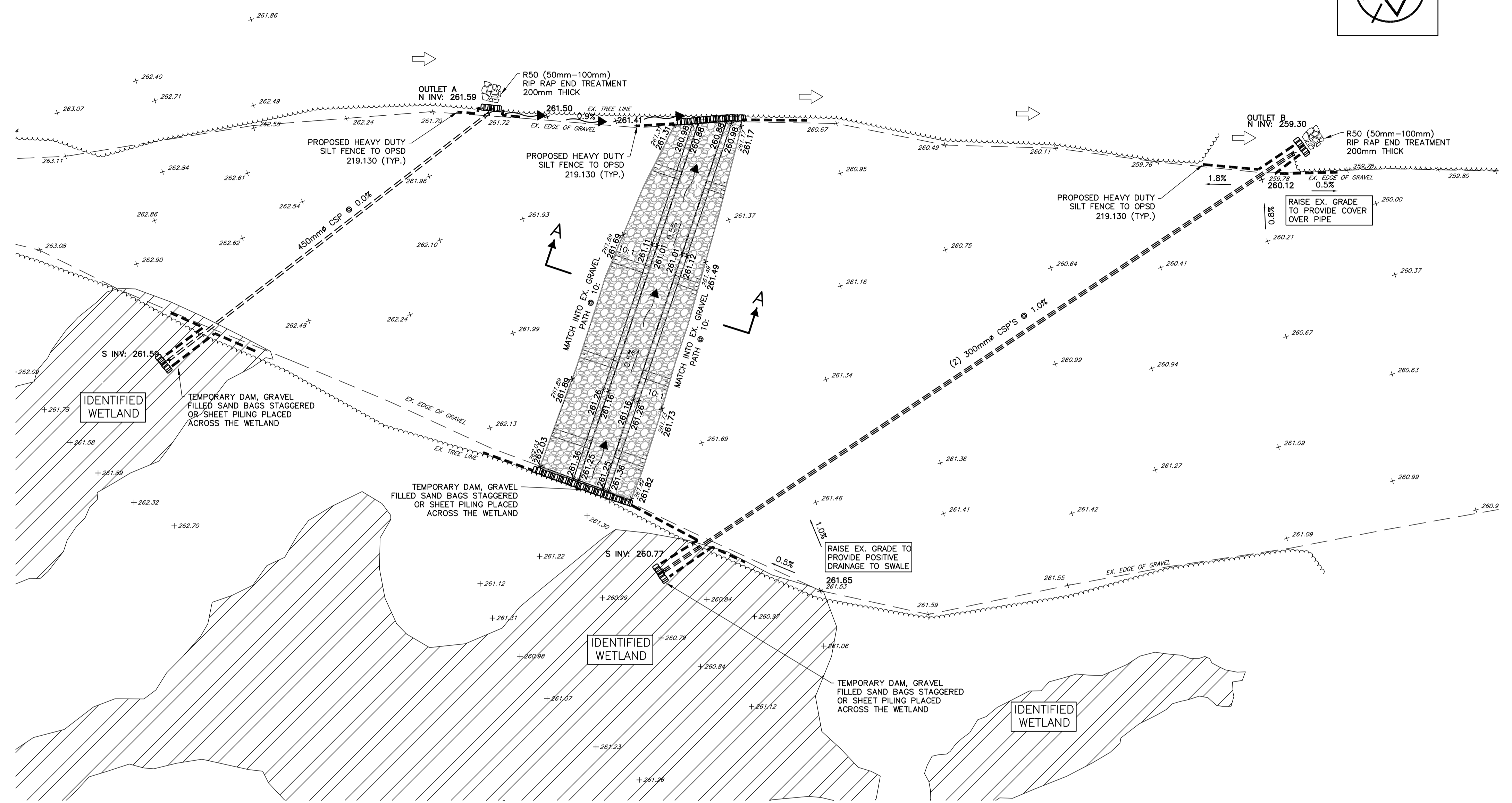
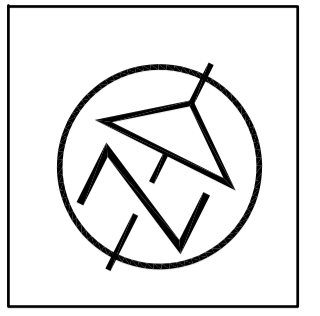
Yours truly,
C.C. Tatham & Associates Ltd.

Amanda Kellett, B.Sc.Eng., P.Eng.
Project Manager

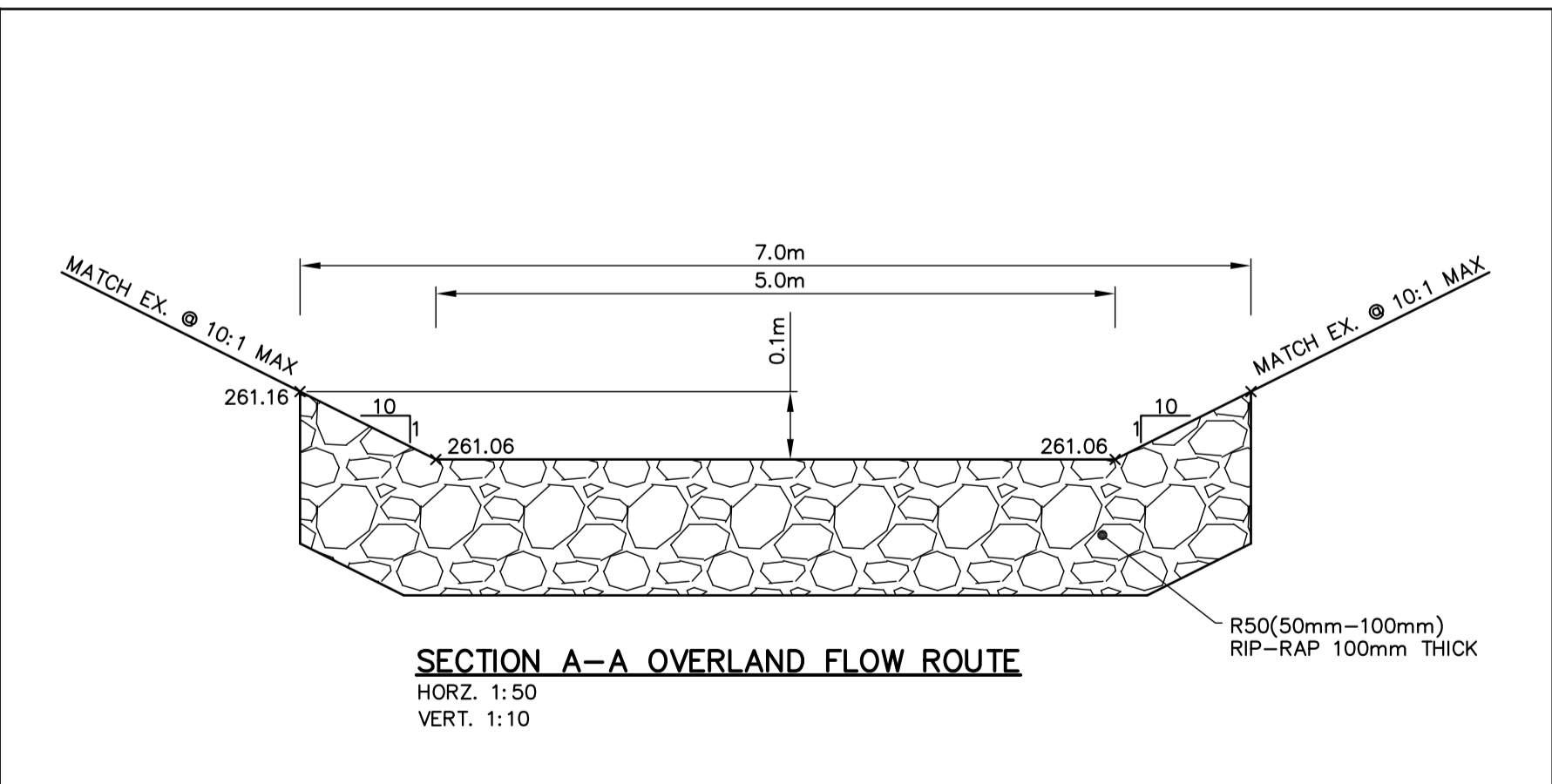
ALK:mw

copy: Greg Barker, (via email gbarker@ipsconsultinginc.com)

I:\2015 Projects\115032 - Burls Creek\Documents\Letter\L - Burl's Creek Sept 2015.docx



- GENERAL NOTES**
1. ALL STANDARDS, MANUALS, AND CODES REFERENCED IN THIS SET OF DRAWINGS REFER TO THE MOST RECENTLY IMPLEMENTED VERSION/EDITION.
 2. ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT OF ONTARIO.
 3. THE CONTRACTOR SHALL EXAMINE ALL DRAWINGS, CHECK ALL DIMENSIONS AND REPORT ANY DISCREPANCIES BEFORE PROCEEDING WITH WORK.
 4. THE CULVERT INSTALLATION SHALL INCLUDE ALL EXCAVATION, DEWATERING, SUPPLY, PLACEMENT AND COMPACTION OF BEDDING, COVER AND BACKFILL NECESSARY TO COMPLETE THE WORK.
 5. THE CULVERT WORKS SHALL BE CONSTRUCTED UNDER DRY CONDITIONS. THE CONTRACTOR SHALL MAKE ALL PROVISIONS NECESSARY TO PREVENT FLOW OF WATER INTO THE EXCAVATION AND SHALL PROVIDE AND KEEP IN OPERATION ON EACH SECTION OF THE WORK WHEN AND WHERE NECESSARY, DEWATERING SYSTEMS OF SUFFICIENT CAPACITY TO KEEP THE BOTTOM OF THE EXCAVATION TRENCH DRY AND FREE FROM WATER AT ALL TIMES UNTIL THE SECTION OF WORK HAS BEEN COMPLETED.
 6. CONTRACTOR TO CONFIRM RELATED DIMENSIONS IN THE FIELD BEFORE PROCEEDING WITH THE WORK.
 7. ALL ELEVATIONS ARE IN METRES AND ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
 8. NATIVE SEED MIX TO BE ONTARIO SEED COMPANY "SIMCOE COUNTY NATIVE SEED MIX" (OR APPROVED EQUIVALENT)
 2% NEW ENGLAND ASTER (ASTER NOVAE-ANGLIAE)
 12% BLACK EYED SUSAN (RUDBECKIA HIRTA)
 20% SAND DROPSSEED (SPOROBOLUS CRYPTANDRUS)
 20% CANADA WILD RYE (ELYMUS CANADENSIS)
 4% CANADA GOLDEN ROD (SOLIDAGO CANADENSIS)
 1% WILD BERGAMOT (MONARDO FISTULOSA)
 1% SMOOTH BLUE ASTER (ASTER LAEVIS)
 20% LITTLE BLUESTEM (ANDROPOGON SCOPARIUS)
 20% INDIAN GRASS (SORGHASTRUM NUTANS)
 ANNUAL RYE NURSE CROP TO BE APPLIED AT TIME OF NATIVE SEED MIXTURE AT A RATE OF 12kg PER HECTARE
 9. CONTRACTOR TO RESTORE ALL DISTURBED AREAS AS SHOWN. ANY AREAS DISTURBED OUTSIDE THE AREAS SHOWN ARE TO BE REINTEGRATED WITH 150mm TOPSOIL, SEED AND MULCH AT CONTRACTORS EXPENSE.



LEGEND

	EXISTING EDGE OF GRAVEL
	EXISTING OVERLAND FLOW
	EXISTING GRADE
	PROPOSED GRADE
	PROPOSED CULVERT
	TEMPORARY DAM
	PROPOSED RIP-RAP
	PROPOSED SWALE
	PROPOSED HEAVY DUTY SILT FENCE TO OPSD 219.130 (TYP.)

CONTRACT DRAWINGS
 CONTRACTOR MUST VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER BEFORE COMMENCING WORK. DRAWINGS ARE NOT TO BE SCALED.
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NO.	REVISIONS	DATE	INITIAL

APPROVED

BURL'S CREEK EVENT GROUNDS
180 8TH LINE SOUTH, ORO MEDONTE, ON L0L2X0

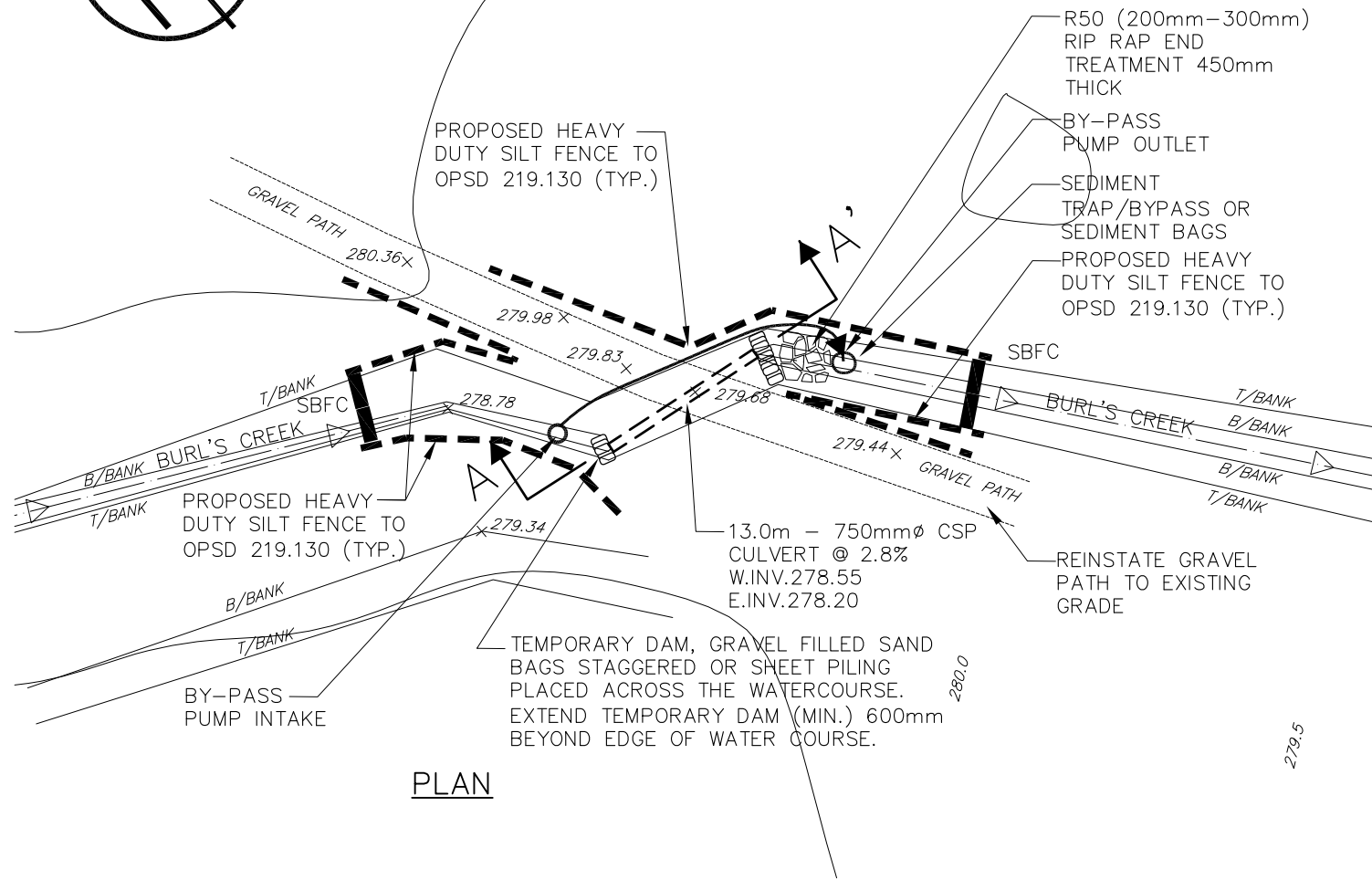
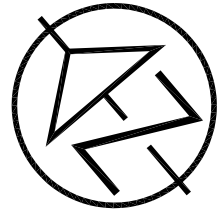
WETLAND RESTORATION PLAN

C.C. Tatham & Associates Ltd.
 Consulting Engineers

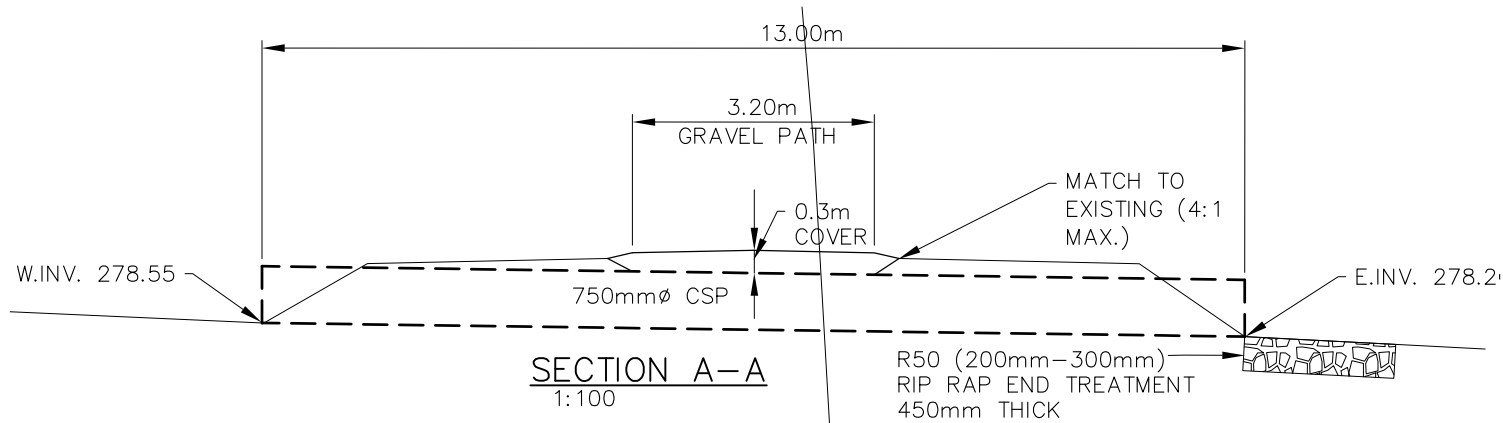
Collingwood Bracebridge Orillia Barrie

SCALE: 1:500
 DESIGN: AR CHECKED: ALK
 DRAWN: SD DATE: SEPT. 2015

JOB NO. 115032
 DWG. **WTLD-1**



PLAN



SECTION A-A
1:100

CONTRACT DRAWINGS
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LEGEND	
	PROPOSED HEAVY DUTY SILT FENCE TO OPSD 219.130 (TYP.)
	PROPOSED STRAW BALE FLOW CHECK (AS PER OPSD 219.180)
	EXISTING WATERCOURSE

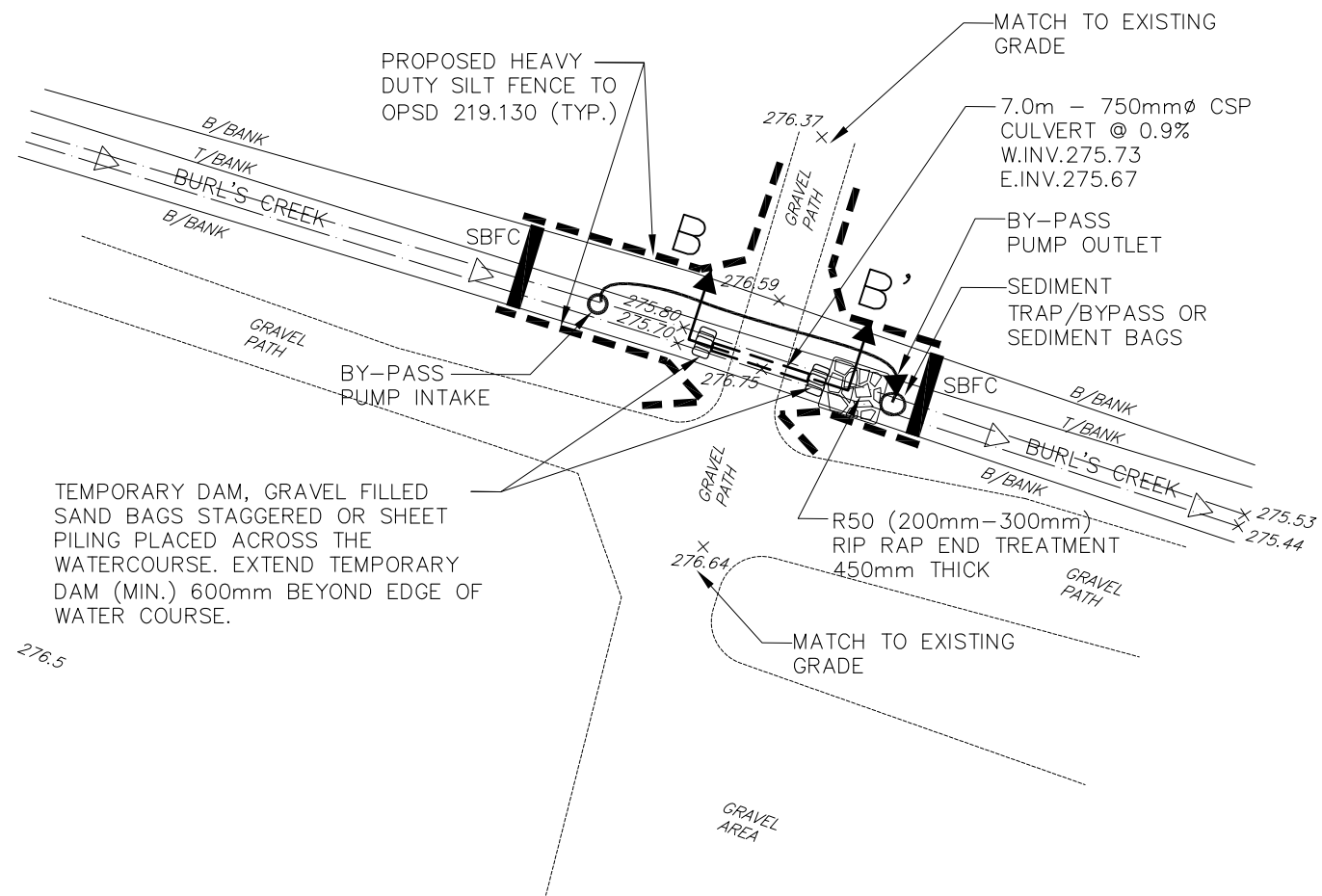
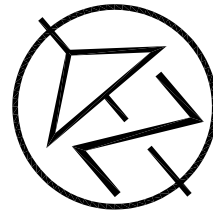
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- NATIVE SEED MIX TO BE ONTARIO SEED COMPANY "SIMCOE COUNTY NATIVE SEED MIX" (OR APPROVED EQUIVALENT)
- CONTRACTOR TO RESTORE ALL DISTURBED AREAS AS SHOWN. ANY AREAS DISTURBED OUTSIDE THE AREAS SHOWN ARE TO BE REINTEGRATED WITH 150mm TOPSOIL, SEED AND MULCH AT CONTRACTORS EXPENSE.

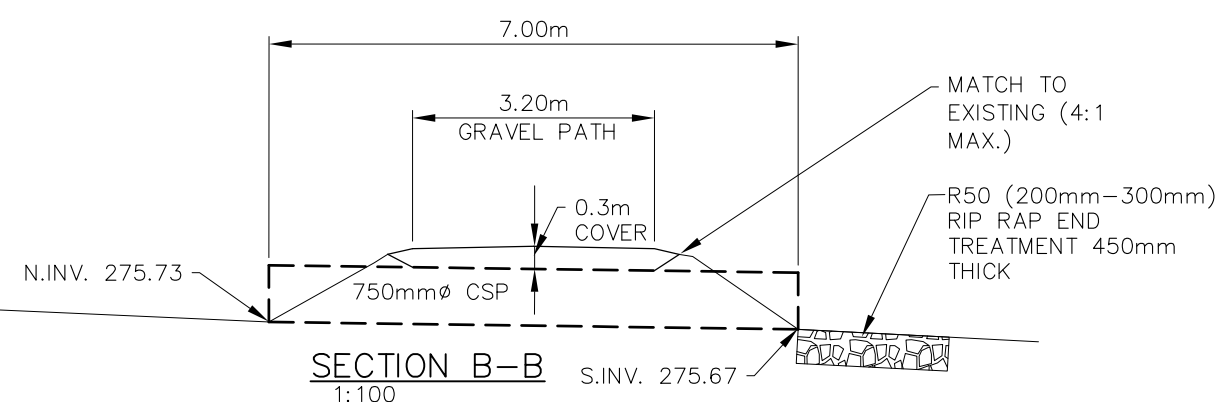
ENVIRONMENTAL MITIGATION:

- PRIOR TO DEWATERING THE ACTIVE WORK AREA, FISH REMOVAL AND RELOCATION WILL BE REQUIRED USING A BACKPACK ELECTROFISHING UNIT, TO BE COMPLETED BY A QUALIFIED BIOLOGIST AFTER A LICENCE TO COLLECT FISH FOR SCIENTIFIC PURPOSES HAS BEEN ACQUIRED FROM THE MINISTRY OF NATURAL RESOURCES. FISH CAPTURED ARE TO BE SAFELY RELOCATED DOWNSTREAM FROM THE ACTIVE WORK AREA.
- THE CONTRACTOR IS REQUIRED TO MAINTAIN EXISTING STREAM FLOWS DURING CONSTRUCTION. ALL WORK IS TO BE DONE DURING LOW/BASE FLOW PERIODS.
- NO WORK SHALL BE CONDUCTED PRIOR TO THE INSTALLATION OF ALL SEDIMENT AND EROSION CONTROL MEASURES.
- SEDIMENT CONTROL MEASURES SHALL BE INSPECTED REGULARLY DURING THE COURSE OF THE WORK AND ALL NECESSARY REPAIRS SHALL BE MADE IF DAMAGE IS DISCOVERED.
- SILT FENCE TO BE CONSTRUCTED TO PROVIDE REQUIRED WORK SPACE TO ALLOW CONSTRUCTION OF NEW CULVERT FILL SLOPE WITHOUT ALLOWING CONTAMINANTS TO ENTER THE STREAM.
- ANY MACHINERY REQUIRED FOR CONSTRUCTION SHALL BE OPERATED IN A MANNER THAT MINIMIZES DISTURBANCE TO THE BANKS OR BED OF THE WATER BODY. MACHINERY IS TO ARRIVE ON SITE IN A CLEAN CONDITION AND IS TO BE MAINTAINED FREE OF FLUID LEAKS.
- ALL EXCAVATED AND REMOVED MATERIAL SHALL BE DISPOSED OF IN A LOCATION ABOVE THE ORDINARY HIGH WATER MARK OF ANY WATER BODY AND STABILIZED TO PREVENT MATERIAL FROM ENTERING THE WATER BODY.
- ALL DISTURBED AREAS SHALL BE STABILIZED AND/OR RE-VEGETATED WITH DEEP ROOTED NATIVE PLANTS UPON COMPLETION OF THE WORK AND RESTORED TO A PRE-DISTURBED STATE OR BETTER.
- THE CONTRACTOR SHALL COMPLY WITH REQUIREMENTS WHICH MAY BE STIPULATED IN THE PERMIT FROM LAKE SIMCOE REGION CONSERVATION AUTHORITY.

C.C. Tatham & Associates Ltd. Consulting Engineers Collingwood Bracebridge Orillia Barrie	BURL'S CREEK EVENT GROUNDS NORTH (B) CULVERT PLAN	DWG. No. CUL-1
	SCALE: 1:500	DATE: NOV./15



TEMPORARY DAM, GRAVEL FILLED SAND BAGS STAGGERED OR SHEET PILING PLACED ACROSS THE WATERCOURSE. EXTEND TEMPORARY DAM (MIN.) 600mm BEYOND EDGE OF WATER COURSE.



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LEGEND	
	PROPOSED HEAVY DUTY SILT FENCE TO OPSD 219.130 (TYP.)
	PROPOSED STRAW BALE FLOW CHECK (AS PER OPSD 219.180)
	EXISTING WATERCOURSE

C.C. Tatham & Associates Ltd. Consulting Engineers <small>Collingwood Bracebridge Orillia Barrie</small>	BURL'S CREEK EVENT GROUNDS SOUTH (A) CULVERT PLAN	DWG. No. CUL-2
	SCALE: 1:500	DATE: NOV./15



January 6, 2015

Attention: Tammi Taylor

Dear Tammi:

Re: Coldwater Crusher Runs

This letter is to confirm that the 50-0 mm Crusher Run and 20-0 mm Crusher Run material being supplied to you from our Coldwater Quarry (Inventory Number P22-035) is virgin material.

If you have any questions or concerns, please feel free to contact me at 905-977-7363.

Yours truly,

A handwritten signature in blue ink, appearing to read 'Chris Thomas', with a long horizontal flourish extending to the right.

Chris Thomas, C.E.T.
Quality Coordinator, West GTA

Appendix C

LSPP CONCORDANCE TABLE

LSP Policy #	Policy Text	Applicability / Conformity
1.1-DP	In relation to any matter affected by a policy in this Plan, the boundary of the <i>Lake Simcoe watershed</i> that applies to the matter is the boundary that was in effect at the time the matter is commenced. Whether a matter is considered commenced shall be determined in accordance with the rules specified in the <i>General Regulation</i> under the Lake Simcoe Protection Act, 2008.	The Burl's Creek Event Grounds are located north of the northwest shores of Lake Simcoe, off Highway 11 between Barrie and Orilla. The Site is within the boundary of the Lake Simcoe Watershed and subject to all applicable policies of the Lake Simcoe Protection Plan.
6.9-DP	The alteration of the shore of Lake Simcoe, other <i>lakes</i> or any <i>permanent or intermittent stream</i> for the purpose of establishing or altering drainage works such as those works under the <i>Drainage Act, infrastructure</i> or for stabilization, erosion control or protection purposes shall only be permitted if it is demonstrated that natural shoreline treatments (e.g. planting of natural vegetation, <i>bioengineering</i>) that maintain the natural contour of the shoreline will be used where practical, and a vegetative <i>riparian area</i> will be established to the extent feasible. In relation of such works, lands used for agricultural purposes do not require the establishment of a vegetative <i>riparian area</i> if the land is, and will continue to be, used for agricultural purposes.	Planting Plans for the planned replacements of Culverts 2 and 3 along Burl's Creek will use native species and are described in Section 3.3.2.
6.10-DP	Where, in accordance with the policies of the Plan, <i>development</i> or <i>site alteration</i> is permitted within 120 metres of the <i>Lake Simcoe shoreline</i> , other <i>lakes</i> in the <i>Lake Simcoe watershed</i> , or any <i>permanent or intermittent stream</i> or a <i>wetland</i> , the <i>development</i> or <i>site alteration</i> should be integrated with and should not constrain ongoing or planned stewardship and remediation efforts.	The integration of planned stewardship activities near Burl's Creek and the Open Water Ponds, namely Tree Planting Plans, are outlined in Section 2.3.2.
6.11-DP	Where, in accordance with the policies of this Plan, a proposal for <i>development</i> or <i>site alteration</i> is permitted within 30 metres of the <i>Lake Simcoe shoreline</i> , other <i>lakes</i> in the <i>Lake Simcoe watershed</i> , or a <i>permanent or intermittent stream</i> or <i>wetland</i> outside of settlement areas and the Greenbelt area and Oak Ridges Moraine area, the proposal for <i>development</i> or <i>site alteration</i> shall comply with the following where applicable: <ul style="list-style-type: none"> a. maintain, and where possible, increase or improve <i>fish habitat</i> in the Lake, stream or <i>wetland</i>, and any adjacent <i>riparian areas</i>; b. to the extent possible, enhance the ecological features and functions associated with the Lake, stream or <i>wetland</i>; c. minimize erosion, sedimentation, and the introduction of excessive nutrients or other pollutants and utilize planning, design, and construction practices that maintain and improve water quality; and d. integrate landscaping and habitat restoration into the design of the proposal to enhance the ability of native plants and animals to use the area as both <i>wildlife habitat</i> and a movement corridor. 	Site alterations have occurred the Open Water Ponds on Site, and culvert replacement is planned for 2 locations on Burl's Creek. <ul style="list-style-type: none"> a & b) Works to improve shoreline habitat (specifically planting plans, culvert replacement procedures, and future work controls) for the Open Water Ponds and Burl's Creek, including fish habitat and ecological functions are described in Sections 3.3.1 and 3.3.2. Mitigation for wetlands is Described in Section 2.3.1. c) Work procedures and controls for erosion and sedimentation control near the Open Water Ponds are described in Section 8.4 of the EIS (WSP, 2015). Controls for future work are described in Section 3.3.1 of this Report. d) Planting plans that will enhance the Site for wildlife use are described in Sections 2.3.2, 3.3.1 and 3.3.2.
6.20-DP	Policies 6.20 – 6.29 apply to those areas outside of <i>existing settlement areas</i> and outside of the Greenbelt area and Oak Ridges Moraine area.	The Burl's Creek Event Grounds are outside an Existing Settlement Area, the Greenbelt Area, and the Oak Ridges Moraine Area. Policies 6.20 – 6.29 apply.
6.21-DP	Key natural heritage features are <i>wetlands, significant woodlands, significant valleylands</i> , and natural areas abutting Lake Simcoe.	This Policy applies to the Burl's Creek Event Grounds, and the relevant Natural Heritage Features are considered in the EIS (WSP, 2015), and Mitigation Plan.
6.22-DP	Key hydrologic features are <i>wetlands, permanent and intermittent streams</i> , and <i>lakes</i> other than Lake Simcoe.	This Policy applies to the Burl's Creek Event Grounds, and the relevant Key Hydrologic Features are considered in the EIS (WSP, 2015), and Mitigation Plan.
6.23-DP	<i>Development</i> or <i>site alteration</i> is not permitted within a key natural heritage feature, a key hydrologic feature and within a related vegetation protection zone referred to in policy 6.24, except in relation to the following: <ul style="list-style-type: none"> a. Forest, fish, and wildlife management; b. Stewardship, conservation, restoration and remediation undertakings; c. <i>Existing uses</i> as specified in policy 6.45; d. Flood or erosion control projects but only if the projects have been demonstrated to be necessary in the public interest after all alternatives have been considered; e. Retrofits of existing <i>stormwater management works</i> (i.e. improving the provision of stormwater services to existing <i>development</i> in the watershed where no feasible alternative exists)but not new <i>stormwater management works</i>; f. New <i>mineral aggregate operations</i> and wayside pits and quarries pursuant to policies 6.41 – 6.44; g. <i>Infrastructure</i>, but only if the need for the project has been demonstrated through an Environmental Assessment of other similar environmental approval and there is no reasonable alternative; and h. Low-intensity recreational uses that require very little terrain or vegetation modification and few, if any, buildings or structures, including but not limited to the following: <ul style="list-style-type: none"> i. non-motorized trail use; ii. natural heritage appreciation; iii. unserviced camping on public and institutional land; and iv. accessory uses to existing buildings or structures. 	Mitigation for site alterations as noted by the LSRCA in a letter to Innovative Planning Solutions Consulting Inc. dated June 24, 2015, in relation to this policy are discussed in Sections 2.0 and 3.0. This policy is further addressed in the Planning Justification Report for the Site (Innovative Planning Solutions, 2015).
6.24-DP	The minimum vegetation protection zone for all key natural heritage features and key hydrologic features is the area within 30 metres of the key natural heritage feature and key hydrologic feature, or larger if determined appropriate by an evaluation required by policy 6.25.	This Policy applies to the Burl's Creek Event Grounds, and the relevant Minimum Vegetation Protection Zones are considered in the EIS (WSP, 2015), and this Mitigation Plan.
6.25-DP	An application for <i>development</i> or <i>site alteration</i> within 120 metres of a key natural heritage feature or key hydrologic feature shall be accompanied by a natural heritage evaluation meeting the requirements of policy 6.26, unless the <i>development</i> or <i>site alteration</i> is for a purpose specified by policy 6.23.	This Mitigation Plan describes the proposed mitigation specific to Policy 6.23-DP. The EIS describing the Natural Heritage Evaluation for site alteration within 120 metres of key natural heritage features and key hydrologic features is provided in WSP, 2015.

LSP Policy #	Policy Text	Applicability / Conformity
6.26-DP	<p>A natural heritage evaluation referred to in policies 6.3 and 6.25 shall be carried out in accordance with guidelines developed by the MNR and shall:</p> <ol style="list-style-type: none"> demonstrate that the <i>development</i> or <i>site alteration</i> applied for will have no <i>adverse effects</i> on the key natural heritage feature, key hydrologic feature, Lake Simcoe and its associated vegetation protection zone, or on the related <i>ecological functions</i>; identify planning, design and construction practices that will maintain and, where feasible, improve or restore the health, diversity and size of the key natural heritage feature or key hydrologic feature and its <i>connectivity</i> with other key natural heritage features or key hydrologic features as well as <i>connectivity</i> and linkages to natural heritage systems identified in Provincial Plans or by municipalities, the LSRCA or MNR; demonstrate how <i>connectivity</i> within and between key natural heritage features and key hydrologic features will be maintained and, where possible, improved or restored before, during and after construction to allow for the effective dispersal and movement of plants and animals; determine if the minimum vegetation protection zone is sufficient to protect the <i>ecological functions</i> of the feature and the area being evaluated, in particular where this feature or area is adjacent to a coldwater stream, headwaters, freshwater estuaries, steep slope or is acting as or has been identified as a wildlife corridor to ensure that the area will continue to effectively act and function as a wildlife corridor; determine if the minimum vegetation protection zone is sufficient to protect areas adjacent to existing features that would be appropriate for restoration or renaturalization to enhance the ecological functioning of that feature, such as lands that provide for rounding out or filling of gaps in <i>significant woodlands</i>; and if the minimum vegetation protection zone is not sufficient to protect the function of the feature or protect opportunities for feature enhancement, specify the dimensions of the required vegetation protection zone. 	<p>The EIS (WSP, 2015) and this Mitigation Plan provide the Natural Heritage Evaluation for the Site.</p> <ol style="list-style-type: none"> Section 9.0 of the EIS (WSP, 2015) describes the effects of site alteration related to the project on Natural Features. The Mitigation Plan describes the proposed mitigation to address the impacts related to Policy 6.23-DP. The Mitigation Plan Sections 2.0 and 3.0 describe the planning and design of proposed mitigation that will maintain, improve and restore Natural Features within the Site. The limited site alteration is predicted to have a negligible effect on connectivity. The Planting Plans Described in Sections 2.3.2 and 3.3.2 will improve the connectivity of the Site along Burl's Creek and the Site in general. The project will not appreciable alter the existing ecological functions of Burl's Creek and the Open Water Ponds. Mitigation for wetlands within the Significant Forest are described in Section 2.3.1. Opportunities for restoration adjacent to Burl's Creek and the Open Water Ponds is described in Section 3.3.2. Not applicable
6.27-DP	<p>A proposal for new <i>development</i> or <i>site alteration</i> within 120 metres of the <i>Lake Simcoe shoreline</i>, a key natural heritage feature or a key hydrologic feature shall provide for the establishment and maintenance of <i>natural self-sustaining vegetation</i> to the extent and width of the associated vegetation protection zone required by the policies in this Chapter, except in relation to uses and structures in the vegetation protection zone that are permitted by the policies of this Chapter.</p>	<p>The planting plans described in Sections 2.3.2, 3.3.1 and 3.3.2 all recommend only native species, with sizes and techniques designed for the establishment of natural self-sustaining vegetation. Planting will be done to the extent practical, balancing with the existing Site uses.</p>
6.28-DP	<p>Where, through an application for <i>development</i> or <i>site alteration</i>, a buffer or vegetation protection zone is required to be established as a result of the application of the policies in this Plan, the buffer or vegetation protection zone shall be composed of and maintained as <i>natural self-sustaining vegetation</i>.</p>	<p>The planting plans described in Sections 2.3.2, 3.3.1 and 3.3.2 all recommend only native species, with sizes and techniques designed for the establishment of natural self-sustaining vegetation. Planting will buffer the natural features to the extent practical, balancing with the existing Site uses.</p>
6.29-DP	<p>If the <i>natural self-sustaining vegetation</i> is removed along the <i>Lake Simcoe shoreline</i>, from a key natural heritage feature, a key hydrologic feature or from any related vegetation protection zone, as a result of any <i>development</i> or <i>site alteration</i> permitted under policies 6.1, 6.23, 6.43 and 6.45, the <i>natural self sustaining vegetation</i> shall be re-established to the extent feasible following completion of that activity.</p>	<p>The planting plans described in Sections 2.3.2, 3.3.1 and 3.3.2 all recommend only native species, with sizes and techniques designed for the establishment of natural self-sustaining vegetation. Planting will be done to the extent practical, balancing with the existing Site uses.</p>