REPORT

Environmental Assessment Registration
Russell Lake West Wetland Alteration

CLAYTON DEVELOPMENTS LIMITED

PROJECT NO. NSD19184

REPORT NO. NSD19184

REPORT TO	Clayton Developments Limited 255 Lacewood Drive Halifax, NS B3M 3Y7
FOR/ON	Russell Lake West Wetland Alteration

September 19, 2005

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1.0 PROPONENT AND PROJECT INFORMATION

1.1 Proponent Information

Clayton Developments Limited (Clayton) was established in Atlantic Canada in 1959. With the Shaw Group Limited as their parent company, they represent a major business success in Atlantic Canada and have created housing for over 40,000 people while producing in excess of a billion dollars in developed real estate. As a full service real estate development company, they have built a variety of high quality award winning residential and commercial real estate development projects that have been recognized for excellence in design and execution while realizing above average appreciation in value. From the beginning, Clayton has been committed to quality. With protective covenants and architectural controls, they ensure all Clayton communities develop and grow as warm, pleasant neighbourhoods with enduring beauty and value.

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Signature of Company Representative

Sept 20/2005
Date

1.2 Project Information

Name of the Undertaking: Russell Lake West Wetland Alteration

Location of the Undertaking: Dartmouth, Nova Scotia

2.0 PROJECT INFORMATION

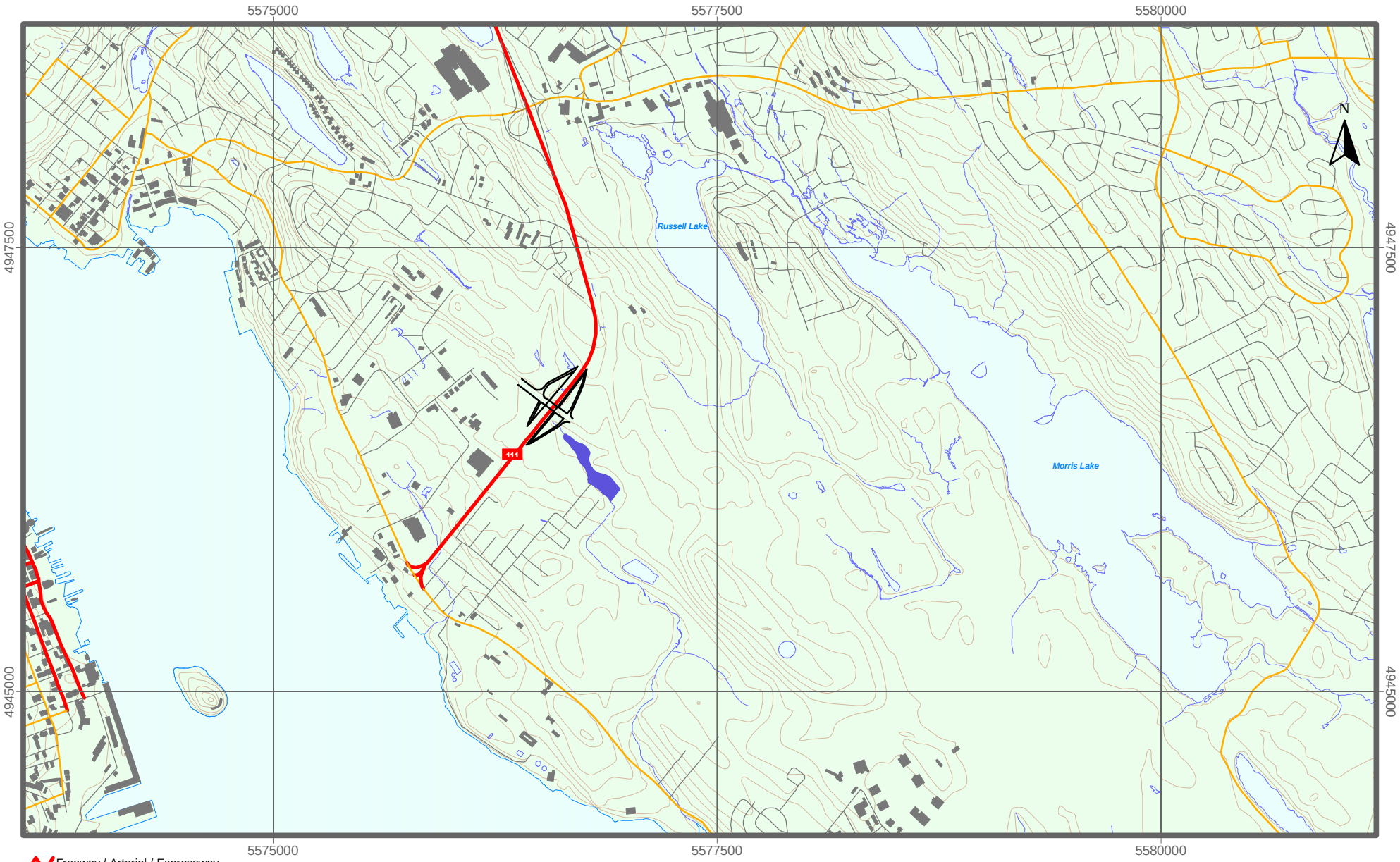
2.1 Background

The Halifax Regional Municipality (HRM) has been working towards a means of solving the traffic problem on Portland Street for the last number of years; without further action, Portland Street will reach its traffic threshold in 2006. In May of 2004, HRM announced construction of the Mount Hope/Caldwell Road connector initiative. The project is intended to provide long-term relief to traffic problems along Portland Street while at the same time opening 100s of acres of serviceable lands for future development. New development will be guided by policies and procedures contained within the Morris-Russell Lake Master Plan.

The northbound on-ramps and exit-ramps of the interchange will be constructed on lands presently owned by Clayton Developments Limited (Clayton) (Figure 2.1). Clayton has no objections to the interchange nor are they opposed to the location of the proposed Caldwell Road connector and the intersection with Baker Drive. Clayton recognizes that the location and alignment of the collector road is governed by specific design standards that must be employed to facilitate safe and efficient movement of vehicles to and from the interchange. Clayton also recognizes that the interchange will provide an excellent opportunity to develop their landholdings for a variety of commercial and/or residential purposes. In this regard they have agreed to assume a significant equity position in the construction of Phase I.

The construction of a new interchange on Hwy 111 and immediately connecting it to Baker Drive was the first phase of this solution. The eventual connection from the interchange by a major arterial to Caldwell Road is the final solution. Funding for these types of solutions is hard to achieve and the HRM has developed a Capitol Cost Contribution (CCC) policy to assist in funding such initiatives. This means that all levels of government contribute as well as future residents, of the areas to be serviced, by means of a combination of per person and trip generation calculations applied to the adjacent lands. Partial funding for the interchange will come from the Canada-Nova Scotia Infrastructure program.

In working with the various levels of government, Clayton agreed to a CCC formula that will fund a portion of this project as well as agreeing to construct Baker Drive in its entirety from Home Depot to the Interchange for its opening next year. During the trip generation calculations, the HRM assumed that the lands around the interchange would be developable for commercial purposes.



Freeway / Arterial / Expressway
Collector / Minor Collector
Interchange
Local Street
Watercourse
Contour (5m)
Wetland
Building
Land
Waterbody

Figure 2.1

Wetland Project Site and Highway Interchange

0 500 1000 Meters

Map Parameters
Projection: MTM-ATS77-ZONE5
Scale - 1:30,000
Date: September 9, 2005
Project: NSD19184

Jacques Whitford

The province and HRM commenced constructing the major interchange adjacent to the wetland. The location of the interchange was chosen by the province. Because of the funding source for the interchange, the federal government conducted its own environmental assessment of the interchange and noted that it was to be constructed in an area characterized by rolling terrain and low areas of impaired drainage or natural bog. The federal government recognized that the decision to locate the interchange in this area was necessary in order to ensure an effective interface with the Woodside Business Park; furthermore, the Department of Transportation and Public Works had directed that the interchange be constructed at this location almost 20 years ago.

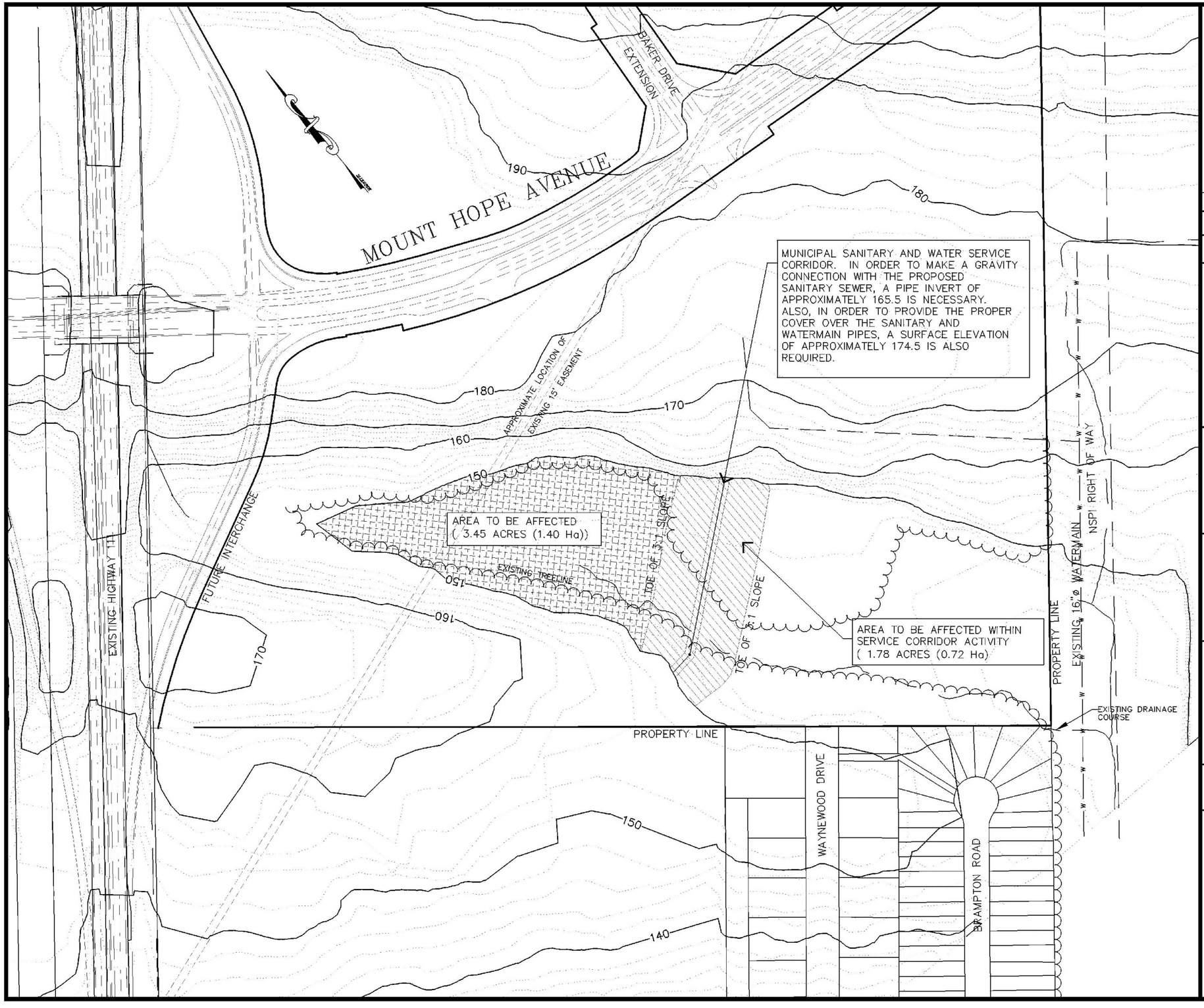
That an interchange is to be constructed on or adjacent to a wetland is not an uncommon occurrence in Nova Scotia. Nova Scotia Environment and Labour (NSEL) has been directly involved in the approval and construction of many new interchanges throughout the Province and has an established protocol for evaluating construction plans including progressive methods for limiting the intrusion and impact on existing wetlands.

The requirement to construct a trunk sewer to service not only the lower portion of the Russell Lake West project but also the future development of the Shearwater lands along with the provision of a trunk watermain to the Woodside Industrial Park requires the construction of a service corridor through the wetland adjacent to the interchange (Figure 2.2). The corridor required for the installation of these services must bisect the wetland and in order to provide a gravity system and avoid an additional lift station, a berm about 28 ft high above the existing wetland elevation will have to be constructed with a 20 ft travel way on the surface and 3:1 side slopes. Therefore, a swath about 200 ft wide will be infilled through the wetland. The portion of the wetland to the west of this corridor will be separated from the main wetland area and due to the design of the interchange and the major arterial, the overland drainage which fed this portion of the wetland will be redirected away from this area thus compromising the likelihood of its survival. Therefore, Clayton is proposing infilling this area for commercial development.

2.2 Description of the Undertaking

A wetland is situated at the south edge of the site boundary adjacent to Waynewood Drive and Brompton Road (Figure 2.2). This wetland is a small headwater component of a larger wetland complex which drains via an urbanized watercourse into Halifax Harbour in Eastern Passage.

Clayton is required by HRM to construct a berm across this wetland and install within it sewer and water mains as described in Section 2.1. They propose to infill the northwest part of the wetland and install a stormwater retention facility adjacent to the wetland for stormwater control.



No	Description	Date	By

Revision or Issue

THE SHAW GROUP

MAC WILLIAMS ENGINEERING LIMITED

Project

RUSSELL LAKE PROPERTY
DARTMOUTH, N.S.

Drawing

INFILL FOR SERVICE CORRIDOR
& PROPOSED INFILL BY
CLAYTON DEVELOPMENTS LIMITED

Scale 1"=200'

Figure 2.2

Date SEPT. 9, 2005		Drawn RJA
Design	Check DMW	Approv.
Project No. 04544		Sheet Of 1 1
Drawing No. 04544–S01		Rev.

The purpose of this Environmental Assessment Registration is to address potential environmental effects of the proposed developments on resources in the environment, evaluate the significance of potential effects and to provide mitigation to minimize those effects.

For this project, the provincial approval process for altering a wetland requires an application under Divisions I, III and VI of the *Activities Designation Regulations* made pursuant to the Nova Scotia *Environment Act* indicated in the Wetland Directive (1995). As the wetland is greater than two hectares (*i.e.,* 3.7 ha.) in area, the Nova Scotia Department of Environment Wetlands Directive requires a formal wetland evaluation using the North American Wetlands Conservation Council (Canada) Wetland Guide. Because the proposed project will affect more than two hectares of the wetland the project will require a registration according to *Environmental Assessment Regulations* under the Nova Scotia *Environment Act*.

Jacques Whitford Limited (Jacques Whitford) has been engaged to prepare this Environmental Assessment Registration document.

2.3 Geographical Location

The wetland is located on a proposed development site in Dartmouth which is bounded by Hwy 111 to the west, residential streets Waynewood Drive and Brompton Road to the east and the Irving Oil lands to the south. The wetland area is 3.7 hectares in size. The surrounding area is comprised of woodlands.

3.0 SCOPE

3.1 Scope of the Undertaking

The proposed wetland alteration consists of the construction of a berm for the installation of sewer and water mains through the middle of the wetland, and infilling the northwest half of the wetland. This section describes the spatial and temporal boundaries of the proposed project to be considered in the assessment.

On the project site there exists a small lowland with some defined characteristics of a watercourse. Jacques Whitford's field assessment of this area characterised the watercourse and the wetland as having been severely impacted by previous developments including, but not limited to the construction of a road, the construction of a large diameter water transmission line, urban development, and the ongoing changes and expansion to the Imperial Oil refinery. These activities have served to impair drainage in this area to the extent that the watercourse has expanded well beyond its original limits.

This area discharges into a small brook that has been highly urbanized over the past several decades. The brook meanders through several industrialised properties and eventually discharges to Halifax Harbour. This brook appears to have little environmental significance and is void of fish habitat. Sections of the brook are impacted by periodic flooding and unauthorized infill, and much of the brook flows through culverts. With the eventual development of the watershed, it is important that downstream locations be protected from additional flooding.

While the location and alignment of the new interchange and Caldwell Road connector appears to meet appropriate traffic design standards, the location of the interchange and connector road is fixed – and the surrounding lands afford only limited options for development. Stormwater from the interchange is being routed down Hwy 111 to drain into Halifax Harbour. Thus the surface flow which once fed this wetland, is being redirected and there will be significantly less water to recharge the wetland.

It is Clayton's intention to infill approximately half of the wetland adjacent to Hwy 111 in order to allow for construction of a commercial/ retail area (the land is currently zoned I-2 General Industrial). As part of its construction plans for the sewer and water mains berm, Clayton will be providing a right-of-way on top of the berm to HRM in order to allow for the pedestrian interconnection of the South Woodside area with the new interchange. This area contains approximately 150 homes along with an oil storage facility. Irving Oil Limited also owns approximately 50 acres of undeveloped lands, currently zoned I-2. The area is only accessible from Pleasant Street.

The proposed schedule for construction of the berm is in early 2006 while work is underway on the Baker Drive extension. Installation of the sewer

and water lines will be during mid-summer in 2006. The infilling component of the project activities will occur after the completion of the berm installation and prior to the sewer and water lines being installed.

3.2 Purpose and Need for the Undertaking

HRM requires construction of a new interchange to alleviate traffic problems on Portland Street. A portion of this works is occurring on Clayton's lands. HRM is also requiring Clayton to construct a gravity-fed sewer and water mains system that requires a large elevated berm bisecting the wetland. This project also occurs on Clayton's lands. Due to the encroachment of other HRM projects, Clayton is limited in their area of development. The lands require developing to make their projects financially feasible.

The entire wetland will be lost solely due to the HRM projects because of the hydrologic loss that feeds the wetland. Clayton is capable of maintaining the southern portion of the wetland by providing treated and controlled stormwater as a source of water.

3.3 Project Alternatives

Alternative means for the project are defined as methods of similar technical character or methods that are functionally the same (CEA Agency 1997). Construction practices to be used for this project are routine, there are no defined alternative methods for construction of the berm.

Alternatives to the project are defined as functionally different ways of achieving the same end (CEA Agency 1997). One alternative to the project is the null alternative, or "do-nothing" scenario. Development in the area requires sewer and water mains, therefore, the "do-nothing" scenario is not a viable option.

Lift stations are very costly and require an overflow during periods of power outages and surges. The receiver for the overflow would be the wetland which is not serving the public good or the environment good. Therefore, a lift station is not a viable option.

The other alternative to the wetland alteration project is not to infill the northwestern half. However, the wetland hydrology in this section will be significantly altered by the installation of the highway interchange and water and sewer mains embedded in the berm. Wetland alteration is inevitable thus, there is no feasible alternative to the project at this time.

3.4 Scope of the Environmental Assessment

The Nova Scotia *Environmental Assessment Regulations* require that any enterprise, activity, project, structure or work, which disrupts a total of two hectares or more of any wetland, requires an Environmental Registration to be completed. The proposed project will result in direct alteration to 1.4

hectares of the existing wetland, within additional 0.72 hectares altered by installation of the municipal service lines. The project must be registered as a Class I Undertaking. This report fulfils the primary requirements for project registration under this legislation.

Other relevant legislation and policies include the Nova Scotia Storm Drainage Works Approval Policy, Nova Scotia Department of Natural Resources (NSDNR) Forest/Wildlife Guidelines and Standards for Nova Scotia, the federal *Species at Risk Act*, and the Federal Policy on Wetland Conservation.

The scope of the environmental assessment in relation to the proposed project has been determined by Clayton and Jacques Whitford and is based upon the proposed project elements and activities, the professional judgement and expert knowledge of the study team, consultations with the public and regulatory authorities on this and similar projects, and the results of field studies conducted in support of this environmental assessment. Clayton and Jacques Whitford met with provincial regulatory agencies (NSEL and NSDNR) to discuss the location of the proposed project wetland and elements and activities with the proposed project, in an effort to scope the assessment. Landowners adjacent to the entire development project area were invited to an HRM sponsored public information meeting for the purposes of issues identification (Appendix A).

This environmental assessment evaluates the potential environmental effects of the proposed wetland elements and activities with regard to each Valued Environmental Component (VEC) and Valued Socio-economic Component (VSC). By assessing potential impacts on VECs/VSCs within the study boundaries, a meaningful evaluation of project effects on relevant environmental parameters is achieved. Components evaluated include:

- hydrology
- rare and sensitive flora;
- wildlife (including herpetiles and birds);
- archaeological and heritage resources; and
- land use.

4.0 PUBLIC INVOLVEMENT

4.1 Methods of Involvement

In early 2005, Clayton met with NSEL representatives on several occasions to discuss their plans for the development on the Russell Lake West project. Two public meetings were held to present the entire development plan, of which the wetland is a minor component. A public information meeting was held at Bel Ayr Elementary School in Dartmouth on January 31, 2005. The project was presented in the Morris-Russell Lake Secondary Planning Strategy at a Halifax Regional Council Meeting on March 22, 2005. These venues provided the public with opportunity to raise concerns.

4.2 Stakeholder Comments and Steps Taken to Address Issues

The minutes from both meetings are provided in Appendix A. Table 4.1 summarizes the comments received and issues raised with respect to the wetland as well as results of meetings with and submissions to NSEL (November 2004, January and February 2005).

TABLE 4.1 Summary of Comments and Concerns Raised by Stakeholders

Raised by:	Issue/Concern	Response/Proposed Resolution
James Reid – Brompton Rd resident at the Jan 31, 2005 public information meeting.	Stormwater runoff concerns to his property and what precautions will be taken to prevent the existing poor runoff management system.	Clayton committed to conduct a site inspection with Mr. Reid.
James Reid – Brompton Rd resident at the Jan 31, 2005 public information meeting.	Would the berm be placed on his property?	No alteration to private property. Clayton will speak with Irving Oil about sizing their culvert.

Information of the proposed wetland alteration was sent to NSEL on January 3, 2005, followed up with a meeting with NSEL representatives to discuss the plans. Clayton was informed in a letter dated February 8, 2005 of the requirements for a Class 1 environmental assessment and water approval for the proposed alteration.

5.0 VALUED ENVIRONMENTAL/SOCIO-ECONOMIC COMPONENTS (VEC/VSC) AND EFFECTS MANAGEMENT

5.1 Methodology

Field surveys of the wetland were conducted by Jacques Whitford wetland ecologists on November 9, 2004 and on June 18, 2005 to investigate and establish the existing conditions and to determine appropriate mitigation, if necessary, to minimize environmental effects from the proposed wetland alteration project. These surveys consisted of a vegetation survey; bird survey; and mammal survey. It was not possible to do a breeding bird survey or a herpetile survey during the late fall survey. In addition, the lateness of the plant survey resulted in some vascular plant species likely being overlooked, as they were entering or had already entered winter senescence. Following the survey, a formal wetland evaluation using the North American Wetlands Conservation Council (Canada) Wetland Guide was undertaken and is presented in Appendix B. This evaluation was submitted to NSEL for their review in January 2005. Clayton initiated a late spring survey in 2005 to record the birds, plants and herptiles in the wetland during an appropriate ecologically productive season.

Additional information, in support of the field studies and the assessment, was gathered through a review of: air photos; site mapping; and other information sources, such as the NSDNR and the Atlantic Canada Conservation Data Centre (ACCDC) database for a list of all rare species encountered in the past within a 5 km radius of the wetland. An assessment of potential archaeological and heritage resources was also undertaken by a qualified archaeologist.

Temporal and spatial boundaries encompass those periods and areas within which the VECs and VSCs are likely to interact with, or be influenced by, the project. Both the temporal and spatial boundaries for the assessment vary according to the VEC. Temporal boundaries are generally limited to the duration of, and for a period of time after, the project activities. Spatial boundaries are generally limited to the immediate project area unless otherwise noted.

To assess the potential environmental effects of a project and determine the significance of an effect, it is important to consider the magnitude, frequency, duration, geographical extent and reversibility of the potential effect. The study team has considered these elements for each VEC/VSC as well as the following:

- negative effects on the health of biota;
- loss of rare or endangered species;
- reductions in biological diversity;
- loss of critical/productive habitat;

- discharge of persistent and/or toxic chemicals;
- fragmentation of habitat or interruption of movement corridors and migration routes;
- transformation of natural landscapes; and
- loss of current use of lands and resources.

5.2 Hydrology

5.2.1 Description of the Existing Environment

Alterations to wetlands and watercourses can result in changes in local hydrological patterns in many ways. Urbanisation can result in decreased interception of rainfall, reduced soil infiltration, increased overland flow, and channel incision.

Within this project area, wetland hydrology has been modified by urban development, namely for highway, commercial and residential purposes. Highway ditches now intercept flow and direct a portion of the flow into and out of the wetlands. Imperial Oil's Dartmouth refinery is downstream of the site wetland. The refinery was founded in 1918 and has grown continuously, now occupying 400 hectares (840 acres). A review of current and historical air photos show progressive construction in the area. A waterline runs along the western property boundary which intercepts surface flow from the project wetland which is then channelised along the fence line. Water then crosses the road below the upper tank area and flows into a wetland of about the same size north of the tank farm. The hydrologic connection between the site wetland and the tank farm wetland has been altered. A water impoundment may or may not withdraw water from or discharge into this watercourse and wetland area. East of the refinery tank farm, the wetland continues along the property line. The water flow is directed south along the property line, after which it is enclosed in the storm drainage system. Water appears to flow into a small mechanical system that is open at the intersection of Belmont Avenue and Pleasant Street. The water re-enters the storm drainage system and then discharges into Halifax Harbour at Eisner Cove.

Visible on air photos is a cutline for an old 16 inch waterline that intersects the upper portion of the wetland. The easement was given in 1963 to the former City of Dartmouth, and presumably the water main was installed then. HRM plans to upgrade the water line to a 24 inch capacity which requires construction through the wetland. Clayton is required to install a water and sewer main through the wetland to accommodate HRM services.

5.2.2 Potential Effect, Proposed Mitigation, Monitoring and Follow-up

The construction of the berm through the wetland and the adjacent interchange will result in a significantly decreased wetland. Stormwater from a portion of Clayton's lands will be directed into the wetland below the berm from a stormwater retention facility. This water source may ameliorate the reduced flow from the highway interchange.

The objectives of the stormwater management plan follow the policies set out in the Municipal Planning Strategy and Land Use Bylaw Amendments for Dartmouth, Eastern Passage / Cow Bay and Cole Harbour / Westphal (1999) and Master Development Plan (Morris-Russell Lake Public Participation Committee (2000):

- Ensure that the quality of the runoff is as close to predevelopment conditions as possible, while ensuring the runoff coefficient does not exceed the industry standard for single family development.
- Prevention of deterioration of adjacent water bodies. Minimize erosion and mobilization of sediments.
- Maximize removal of mobilized sediments on the site.
- Water quality on and leaving the site will remain suitable for public health and aesthetic uses.

These documents also categorised four environmental protection mechanisms. The design and development control mechanisms provide recommendations that address, in part, the hydrological aspect of stormwater management planning. Policy ML-10 (a) encourages development to reproduce the predevelopment hydrological conditions while (d) and (e) encourage the minimization of disturbance to the topography while preserving and utilizing the natural drainage systems. As it is impossible to achieve (a) without ignoring (d) and (e) it was decided that the important issue in (a) was the quality of the water not the quantity. Therefore, the quality of the water will be the driving force for the design of the stormwater system.

The Quantity / Rate of Flow will be controlled by an overall c-factor of 0.55 which is the industry standard for single-family development.

Non-structural approaches to stormwater management are typically considered at the planning stages of the development project and include site planning techniques to minimize runoff, to achieve no-net runoff, and maintenance practices. Non-structural approaches applied to this development will consider: preserving natural vegetation, and maximizing dispersion (downspout dispersion, sheet flow dispersion, *etc.*).

Structural approaches use systems that include discharge reduction and velocity strategies. Such strategies incorporate designs to minimize and

treat runoff and to provide source controls. Structural approaches applied to this development will consider:

- Parking lot storage;
- Gross pollutant traps;
- Swales;
- Infiltration trench; and
- An extended detention wet pond.

An extended detention basin is proposed to be incorporated adjacent to the existing wetland on the northern boundary. The purpose of an extended detention pond is to reduce peak discharge by providing storage and gradual release. Considering that the watercourse has been altered, the upland development will impose potential flooding problems downstream unless the hydrology is controlled on site. The combination of lot storage, swales, infiltration trenches and a detention pond will work cumulatively to control runoff at source, in conveyance design and finally at end-of-pipe. The detention pond will be constructed to ensure that the 1 in 5 and 1 in 100 year storm water flows to the remaining wetlands match the pre development conditions.

A component of stormwater management is monitoring and maintenance of all stormwater facilities to ensure proper functionality according to the design. HRM will be taking over the responsibility for the berm and wetland.

5.2.3 Summary

In summary, the highway interchange and the berm will reduce the wetland hydrology and subsequently its area. Clayton's infilling the northern portion of the wetland is a matter of consequence of these other projects and will not adversely affect the remaining portion. Clayton will construct a stormwater retention facility to treat their stormwater as well as ameliorate the reduced recharge into the southern portion of the wetland. The detention pond will balance the pre & post flows into the remaining wetland and the installation of a CDS unit will protect the quality of the runoff.

5.3 Rare and Sensitive Flora

5.3.1 Description of the Existing Environment

The wetland occupies a relatively narrow basin running from northwest to southeast including the origins of a small stream that flows out of the wetland via a culvert past the fence of the adjacent Imperial Refinery storage area and across a cut line. A small stream, (possibly intermittent) enters this wetland from the western side about midway of it's length. The wetland occupies an area of at least 3.7 ha. The residences of a suburban neighbourhood border the wetland's south end. The rest of this wetland is

bordered by mature coniferous dominated mixed wood forest growing on the upland slopes that define the wetland margins. These upland forests, particularly larger dominant red spruce (*Picea rubens*), were heavily damaged from 2003's Hurricane Juan.

At the time of the survey in early November 2004, the deciduous trees and shrubs had essentially lost their foliage. They and the herbaceous plant species had also experienced several frosts and were in varying degrees of winter senescence. While many plants could be accurately identified, others were less certainly identifiable and it is quite likely certain vascular plant species were overlooked, or not able to be detected. Similarly, due to the lateness of the growing season, no direct observations of amphibians and reptiles, or breeding birds using this habitat was possible. This deficiency in data was supplemented with the June 2005 wetland survey.

The outline of the wetland was defined in the field by taking GPS waypoints (WP) along the wetland margin. The broad plant communities within the wetland were characterized using a percentage estimate of apparent cover and abundance of the dominant species in each of the growth classes (trees, shrubs, and ground vegetation). The wetland is composed of seven plant community types as described below and outlined on Figure 5.1.

5.3.1.1 Project Site Wetland Types

Mature Coniferous Treed Bog

The tree layer is comprised primarily of mature black spruce (*Picea mariana*) (40%). A few American larch (*Larix laricina*) (1%) are present as well as fewer birch (*Betula papyrifera* or *B. cordifolia*, and *Betula populifolia*), and balsam fir (*Abies balsamea*). The shrub layer is relatively sparse, especially under the thickest growth of adult black spruce and is made up mostly of young black spruce (10%), mountain holly (*Nemopanthus mucronata)* (15%), possum-haw viburnum (*Viburnum nudum*) (1%) and sheep-laurel (*Kalmia angustifolia*) (1%). The ground vegetation layer dominants include sphagnum mosses (*Sphagnum spp*.) (80%), cinnamon fern (*Osmunda cinnamomea*) (20%) and diffuse to more dense, three-seed sedge (*Carex trisperma*) (5-10%), with some tawny cotton-grass (*Eriophorum virginicum*) appearing in more open patches.

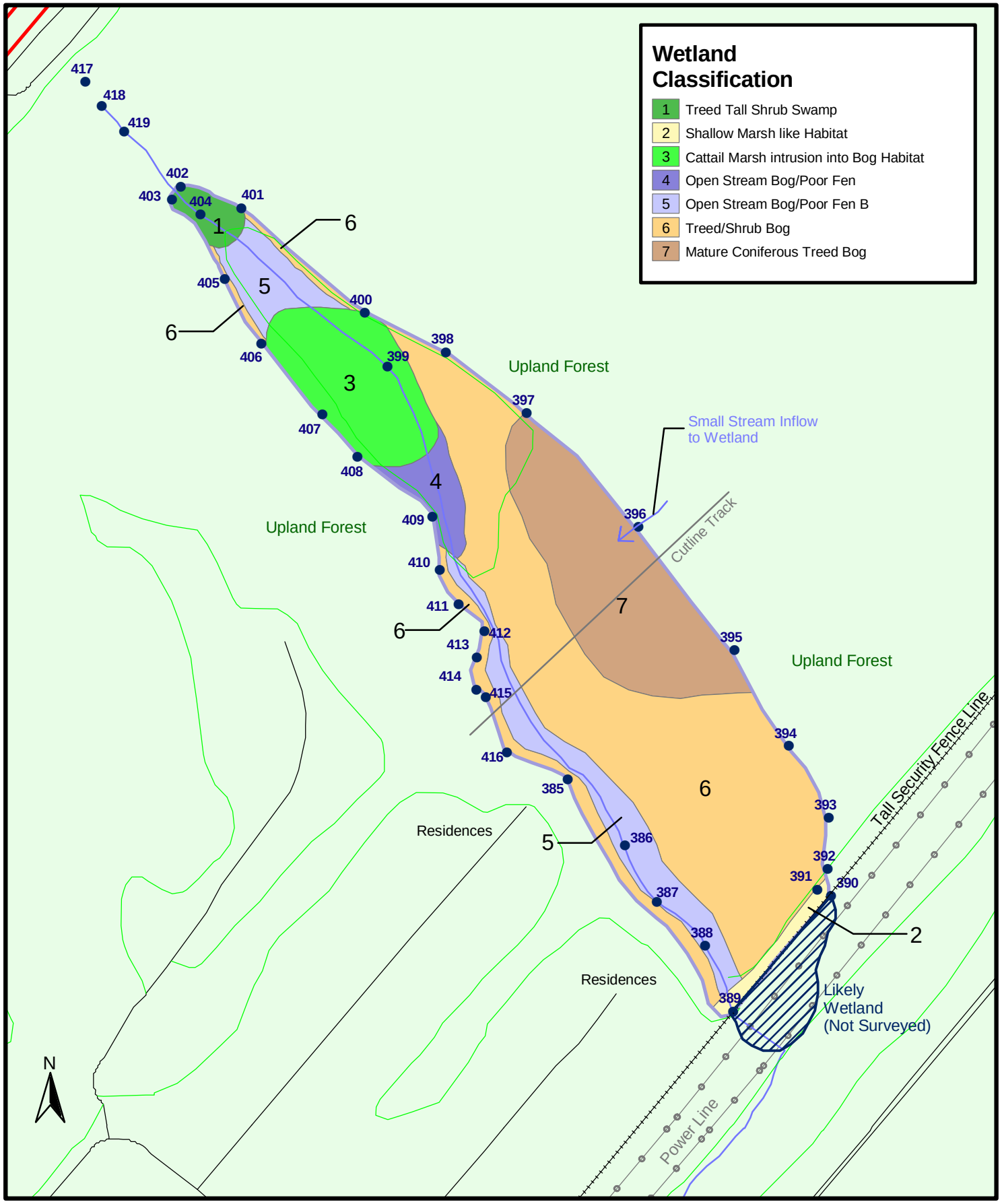


Figure 5.1
Wetland Survey - November 9, 2004

Map Features
- Approximate Stream
- Tree Line Edge
- GPS Locations
- Delineated Wetland (3.7 ha)

0 25 50 75 100 125 150
Metres

Map Projection: UTM
Datum: NAD83, Zone 20
Scale 1:2500
Project: NSD19184
Date: November 19, 2004

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Treed Shrub Bog

This habitat occupies much of the wetland's margin, as well as a fair portion of the interior, and varies from place to place in terms of dominant vegetation. In general, it is more open with fewer and less dense tree class vegetation than the mature coniferous treed bog and has more shrub class representation. One example has black spruce (25%), American larch (5%), balsam fir (2%) red maple (2%) and some species of birch in the tree class. The shrub layer consists primarily of young black spruce (20%), mountain holly (15%, rhodora (Rhododendron canadense), sheep-laurel (15%) birches (Betula populifolia and B. cordifolia) (5%), American larch (2%), and some black huckleberry (Gaylussacia baccata), and common Labrador tea. Ground vegetation consists of sphagnum mosses (85%), cinnamon fern (10-20%), three-seed sedge (10-30%), other sedges mainly Carex paupercula (5%) as well as a diversity of other herbaceous species such as dwarf dogwood (Cornus canadense).

Marsh-like Fringe

This habitat occurs near the outflow of the stream across the security fence at the southeast end of the wetland and occurs as a relatively narrow sliver extending east along the fence line. The impoundment of stream water by the road track that occurs on the other side of the fence, and perhaps increased mineral inputs from the road track has fostered a graminoid rich marsh like community. A single shrub is prominent; hardhack spiraea (*Spiraea tomentosa*) (2%). Dominant ground vegetation includes a lower level covering of sphagnum mosses (90%). Canada manna-grass (40%), soft rush (*Juncus effusus*) (10%), blue-joint reedgrass (*Calamagostis canadensis*) (10%) large cranberry (*Vaccinium macrocarpon*) (10%), broad-leaf cattail (5%), cottongrass bulrush (*Scirpus cyperinus*) (5%), and (*Euthamnia graminifolia*) (2%) make up the rest of the dominant vegetation.

Cattail Marsh-like Intrusion on Formerly Open Treed Stream Bog

This habitat occupies a position downstream of the inflow from the virtual northwest end of the wetland. A canopy tree layer is absent save for some scattered small standing snags likely of black spruce (10%). Small shallow pools occur in a network with higher hummocks of sphagnum with the higher hummocks hosting a scattered shrub class cover. The dominants here consist of black spruce (10%), mountain holly 10%, American larch (1%), red maple (1%), and occasional northern bayberry (*Myrica pennsylvanica*). The ground vegetation is dominated by sphagnum mosses (70%), broad-leaf cattail (*Typha latifolia*) (70%), as well as bog aster (*Aster nemoralis*) (5%), bog goldenrod (*Solidago uliginosa*) (3%), tawny cotton-grass 2% and some sedges (*Carex spp*.). This area of the wetland, which occupies an extensive area, has evidently been subject to increased water level, as indicated by the spruce snags, and an increased nutrient inflow as indicated by the cattails. Immediately downstream, a similar open, stream bog/poor fen occurs, but apparently is less fertile with minerals and lacks cattails.

Open, Stream Bog/Poor Fen

This habitat is primarily centered on the slow stream and it's associated pools that flow through the wetland, starting some distance downstream from the cattail marsh-like intrusion on formerly open treed bog.

Trees are absent except for some snags (10%). The shrub layer is confined largely to higher hummocks and consists of false holly (15%), black spruce (8%), and sheep-laurel (3%). Other shrubs present, with about 1% each cover/abundance, include speckled alder (*Alnus incana*), common Labrador tea (*Ledum groenlandicum*), red maple, and balsam fir. The ground vegetation is dominated by sphagnum moss (70%). Patches of cinnamon fern (30%), Canada rush (*Juncus canadensis*) (5%) are mostly found clustered along stream and pool edges. Minor amounts of narrow-head rush (*Juncus brevicaudatus*), tawny cotton-grass are present, and some goldthread (*Coptis trifolia*) occurs on higher hummocks. Greater bladder-wort (*Utricularia vulgaris*) was noted from the slow stream channel and in larger pools here and in the more widespread variant of this habitat.

Open Stream Bog/Poor Fen B

This habitat is generally proximal to the slow stream edge and varies in width. This habitat essentially displays inter-gradation with the edges of adjacent drier habitats, but is lower and wetter and with some moderation of acidic conditions or increased nutrient availability. Open pools and peaty mires are present.

Tree-size vegetation is typically absent occurring only towards the edges. Dominant shrubs include black spruce (10%), American larch (5%), rhodora (5%), mountain holly (5%), sheep-laurel (2%), with lesser amounts of gray birch (*Betula populifolia*) and red maple. Dominant ground cover elements consist of sphagnum mosses (80%) and clumps of cinnamon fern (20%) that are more peripheral, to the stream, pools and other low spots. Wetter areas have a cover of sphagnum mosses intermixed with small cranberry (*Vaccinium oxycoccos*) which transitions to stands of brown-fruited rush (*Juncus pelocarpus*) and northern yellow-eyed-grass (*Xyris montana*) in the wetter areas near the stream. The old flower stalks of horned bladderwort (*Utricularia cornuta*) and spoon-leaved sundew (*Drosera intermedia*), are sometimes prominent in this habitat.

Treed Tall Shrub Stream Swamp

A minor element of this habitat is found at the point where the small stream, originating near the highway, enters the wetland basin. The tree class is dominated by black spruce (10%) and red maple (*Acer rubrum*) (5%). The shrub layer dominants include speckled alder (25%), black spruce (5%), and black holly (*Ilex verticillata*) (2%). The ground vegetation is dominated by sphagnum mosses (80%), cinnamon fern (25%), other ferns, mostly apparently New York and marsh fern (*Thelypteris noveboracensis*, and *T. palustris*) 20% and Canada manna-grass (10%).

5.3.1.2 Uncommon and Rare Plant Species

Sixty-three species of vascular plants were detected in this wetland during the November survey. An additional 25 plant species were identified in the June survey for a total of 88 vascular plant species (Appendix C). All species of vascular plants encountered during the vegetation survey were identified and their population status in Nova Scotia were determined through a review of the General Status of Species in Nova Scotia (NSDNR 2002), the list of species contained in the Nova Scotia *Endangered Species Act* (NSDNR 2003), and the Committee on the Status of Endangered Wildlife in Canada (COSEWIC 2003). None of the species found in these lists are considered rare in Nova Scotia.

Due to the late date of the 2004 fall survey and advanced senescence and dormancy of many species it was not possible to state with a high degree of confidence that no rare species were present in the wetland or that the total wetland flora was closely recorded. Instead, a habitat modeling exercise was used to determine if there was potential for species of special status to be present on the property. The first step in the modeling was to collect existing information regarding the presence of uncommon, rare or endangered species in the vicinity of the study area. This was done by means of a data request to the Atlantic Canada Conservation Data Centre (ACCDC). The ACCDC data request provided all uncommon, rare and endangered species for an area having a 5 km radius around the study area. The habitat preferences of these species were then compared to the types of habitats available in the study area to determine if suitable habitat was available in the study area. Table 5.1 presents the results of the rare plant species habitat modeling.

The ACCDC data base survey revealed that 13 rare species of plant have been reported from within a 5 km radius of the watershed. However, none of these species were reported from within the wetland, and the modeling exercise indicates that there is no potential for any of these species to be present. Most of the rare plant species recorded within 5 km of the site prefer dry areas, and so they would not be expected to be present in a wetland. One species, larger Canadian St. John's Wort (*Hypericum majus*) prefers moist areas, but is listed by NSDNR as extinct. ACCDC lists this plant as very rare. This plant has never been reported from the wetland, nor is it expected to be present.

TABLE 5.1 Habitat Preferences of Uncommon and Rare Plant Species Recorded in the Vicinity of the Russell Lake Wetland

Common Name	Scientific Name	ACCDC Status	NSDNR Provincial Status	*SARA* Status	Habitat	Suitable Habitat Present
Grass-leaved Goldenrod	*Euthamia caroliniana*	S3	Yellow	None	Dry sandy soils and beaches	No
Kalm's Hawkweed	*Hieracium kalmii var. kalmii*	S2?	Undetermined	None	Roadsides, rough ground, clearings, and thickets	No
Hairy Goldenrod	*Solidago hispida*	S1?	Undetermined	None	Dry wooded banks, roadsides and rocky shores	No
Mountain Sandwort	*Arenaria groenlandica*	S2	Yellow	None	Granitic ledges and gravel on coasts at higher elevations	No
American Sea-Blite	*Suaeda calceoliformis*	S2S3	Undetermined	None	Salt marshes and sandy beaches	No
Golden Heather	*Hudsonia ericoides*	S2	Yellow	None	Dry rocky and sandy barrens. Recently disturbed areas or on open sandy soils	No
Larger Canadian St. John's Wort	*Hypericum majus*	S1	Blue	None	Wet or dry open soil	No
Rock Crowberry	*Empetrum eamesii*	S2S3	Yellow	None	Headlands	No
Racemed Milkwort	*Polygala polygama*	S1SE	Undetermined	None	Dry open soil	No
Field Milkwort	*Polygala sanguinea*	S2S3	Yellow	None	Poor or acidic fields, damp slopes and open woods or bush	No
Black-seed Plantain	*Plantago rugelii*	S1SE	Undetermined	None	Lawns, roadsides and sometimes in fields and pastures	No
Greene's Rush	*Juncus greenei*	S1S2	Yellow	None	Sandy soils and dune hollows	No
Wiegand's Wild Rye	*Elymus wiegandii*	S1	Red	None	Stream banks and meadows	No
Atlantic Canada Conversation data Centre (ACCDC) General Status						
S1	Very Rare					
S2	Rare					
S3	Uncommon					
S4	Fairly Common					
SE	Exotic					
Note: A combination of S ranks (eg. S3S4) or the presence of a question mark denotes uncertainty regarding the population of status of species						
Nova Scotia Department of Natural Resources (NSDNR) General Status Ranks						
Blue	Extinct					
Red	Known to be or thought to be at risk					
Yellow	Sensitive to human activities or natural events					
Undetermined	Insufficient data exists to assess status					
Green	Secure					
Source: ACCDC 2004; NSDNR 2002; Ehrlich et al(1999); Gilhen(1984); Roland and Zinck (1998)						

All of the plant species are considered to be rare by the ACCDC; however, the NSDNR lists them as status undetermined, indicating that there is insufficient data to assess the population status of these species in Nova Scotia. The uncertainty regarding the population status of Kalm's hawkweed, hairy goldenrod and black-seed plantain is attributable to the difficulty in distinguishing these species from closely related common species. The population status of racemed milkwort and black-seed plantain are also uncertain due to the fact that it is not known for certain whether the Nova Scotia populations of these species are native or introduced.

The 2005 June wetland survey confirmed the absence of provincially rare vascular plant species.

5.3.1.3 Regional Wetlands

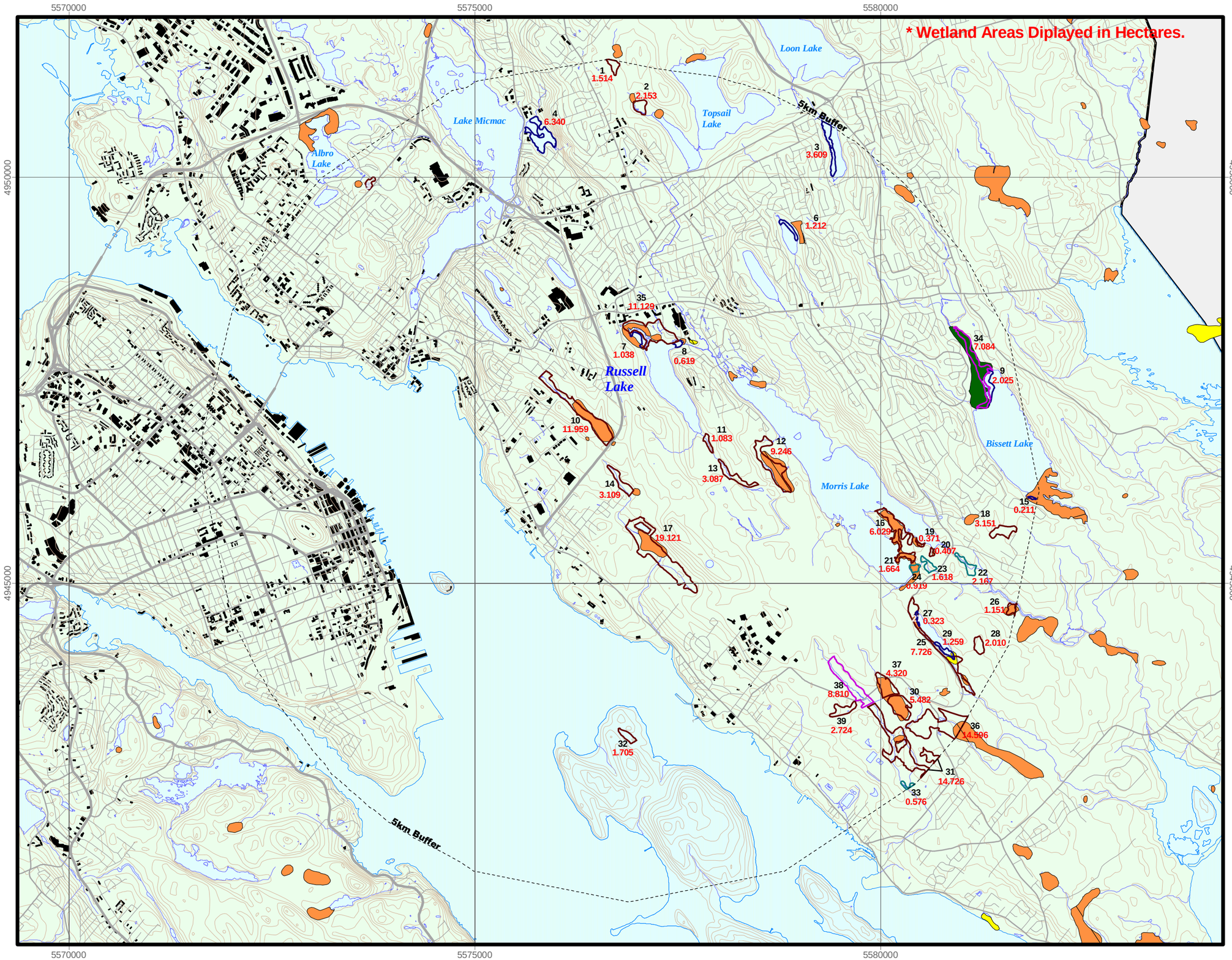
As evidence by digital aerial photography provided by the NSDNR, there are 38 other wetlands with a 5 km radius of the project wetland (Figure 5.2). Of the 39 total wetlands, 24 are classified by NSDNR as predominately bog, 2 are fens, 9 are lakeshore wetlands, and 4 are shrub swamp environments. A limitation of the NSDNR mapping is that treed swamp areas are not distinguishable from forested areas, with the result that treed swamps are probably underrepresented in the NSDNR system. Thus, there may be additional wetlands in the form of treed swamps within the 5 km radius which are not apparent from the NSDNR mapping. In addition, the DNR mapping generally does not include wetlands less that 1 hectare in area, thus, small wetlands are not usually described, although small wetlands which are very evident on the aerial photography may be included.

The total area of the 39 wetlands within a 5 km radius of the wetland in question is 167.3 ha, as determined by examination of the NSDNR aerial photography. Of this area, 77.4% (129.4 ha) consist of bog, while 9.5% (15.9 ha) is fen, 9.9% is lakeshore wetland (16.6 ha) and 3.2% (5.3 ha) are shrub swamp.

The average size of bogs in the 5 km radius is 5.6 ha, slightly larger than the 3.7 ha bog at the project site. Our wetland is classified by NSDNR as a shrub bog, one of seven within the 5 km radius. This is the most common type of bog within the radius as well. See Table 5.2 for a matrix of wetland types with a 5 km radius of the proposed wetland alteration, determined by NSDNR digital aerial photography.

Figure 5.2

Dartmouth Area Wetlands



CWS Wetland Golet Score
- 3 - High
- 2 - Med
- 1 - Low

NSDNR Freshwater Wetlands
- Bog
- Fen
- Lakeshore Wetland
- Shrub Swamp

Topography
- Freeway / Arterial / Expressway
- Arterial / Major Collector
- Local Street
- Contour (5m)
- Watercourse
- Building / Structure
- Waterbody

- 5km Buffer

N

0 500 1000 1500 2000

Meters

Map Parameters
Projection: UTM-NAD83-Z20
Scale - 1:45,000
Data: April 27, 2005
Project: NSD19184

Jacques Whitford

TABLE 5.2 Number of Each Wetland Type Within a 5 km Radius

WETLAND SUBCLASS	Bog	Bog And Fen	Fen	Lakeshore Wetland	Shrub Swamp
Shrub Fen	0	0	1	0	0
Tall Shrub Swamp And Compact Shrub Swamp	0	0	0	0	1
Treed Bog	4	0	0	0	0
Emergents Lakeshore Wetland	0	0	0	2	0
Tall Shrub Swamp	0	0	0	0	3
Treed Bog And Shrub Fen	0	1	0	0	0
Floating Leaf Wetland	0	0	0	6	0
Treed Bog And Shrub Bog	3	0	0	0	0
Treed Fen And Shrub Fen	0	0	1	0	0
Shrub Bog, Open Bog And Treed Bog	1	0	0	0	0
Floating Leaf Lakeshore Wetland And Robust Lakeshore Wetland	0	0	0	1	0
Shrub Bog	7	0	0	0	0
Open Bog And Treed Bog	1	0	0	0	0
Shrub Bog And Open Bog	1	0	0	0	0
Shrub Bog And Open Bog, Shrub Fen And Treed Fen	0	1	0	0	0
Shrub Bog And Treed Bog	4	0	0	0	0
Treed Bog, Shrub Bog And Shrub Fen	0	1	0	0	0
Totals	21	3	2	9	4

Source: NSDNR Digital Wetland Mapping

A description of each wetland shown in Figure 5.2 can also be found in Table 5.3.

TABLE 5.3 Description and Size of Each Wetland Within a 5 km Radius

Wetland ID	Wetland Type 1	Wetland Type 2	Wetland Subclass 1	Wetland Subclass 2	Wetland Subclass 3	Wetland Subclass 4	Area (hectares)
1	Bog		Shrub Bog (60%)	Treed Bog (40%)			1.51
2	Bog		Open Bog (85%)	Treed Bog (15%)			2.15
3	Lakeshore Wetland		Floating Leaf Lakeshore Wetland (100%)				3.61
4	Lakeshore Wetland		Floating Leaf Lakeshore Wetland (100%)				6.34
5	Bog		Shrub Bog (100%)				0.98
6	Lakeshore Wetland		Floating Leaf Lakeshore Wetland (100%)				1.21
7	Lakeshore Wetland		Emergents Lakeshore Wetland (100%)				1.04

TABLE 5.3 Description and Size of Each Wetland Within a 5 km Radius

Wetland ID	Wetland Type 1	Wetland Type 2	Wetland Subclass 1	Wetland Subclass 2	Wetland Subclass 3	Wetland Subclass 4	Area (hectares)
8	Lakeshore Wetland		Emergents Lakeshore Wetland (100%)				0.62
9	Lakeshore Wetland		Floating Leaf Lakeshore Wetland (60%)	Robust Lakeshore Wetland (40%)			2.02
10	Bog		Shrub Bog (100%)				11.96
11	Bog		Treed Bog (100%)				1.08
12	Bog		Shrub Bog (75%)	Open Bog (25%)			9.25
13	Bog		Shrub Bog (100%)				3.09
14	Bog		Shrub Bog (100%)				3.11
15	Lakeshore Wetland		Floating Leaf Lakeshore Wetland (100%)				0.21
16	Bog		Shrub Bog (75%)	Treed Bog (25%)			6.03
17	Bog		Treed Bog (50%)	Open Bog (25%)	Shrub Bog (25%)		19.12
18	Bog		Treed Bog (65%)	Shrub Bog (35%)			3.15
19	Bog		Shrub Bog (100%)				0.37
20	Bog		Shrub Bog (100%)				0.41
21	Bog		Shrub Bog (80%)	Treed Bog (20%)			1.66
22	Shrub Swamp		Tall Shrub Swamp (80%)	Compact Shrub Swamp (20%)			2.17
23	Shrub Swamp		Tall Shrub Swamp (100%)				1.62
24	Shrub Swamp		Tall Shrub Swamp (100%)				0.92
25	Bog		Treed Bog (100%)				7.73
26	Bog	Fen	Treed Bog (50%)	Shrub Bog (25%)	Shrub Fen (25%)		1.15
27	Lakeshore Wetland		Floating Leaf Lakeshore Wetland (100%)				0.32
28	Bog		Treed Bog (100%)				2.01
29	Lakeshore Wetland		Floating Leaf Lakeshore Wetland (100%)				1.26

TABLE 5.3 Description and Size of Each Wetland Within a 5 km Radius

Wetland ID	Wetland Type 1	Wetland Type 2	Wetland Subclass 1	Wetland Subclass 2	Wetland Subclass 3	Wetland Subclass 4	Area (hectares)
30	Bog		Treed Bog (70%)	Shrub Bog (30%)			5.48
31	Bog	Fen	Treed Bog (50%)	Shrub Fen (50%)			14.73
32	Bog		Treed Bog (100%)				1.70
33	Shrub Swamp		Tall Shrub Swamp (100%)				0.57
34	Fen		Shrub Fen (100%)				7.08
35	Bog		Shrub Bog (60%)	Treed Bog (40%)			11.13
36	Bog	Fen	Shrub Bog (35%)	Open Bog (30%)	Shrub Fen (25%)	Treed Fen (10%)	14.60
37	Bog		Shrub Bog (100%)				4.32
38	Fen		Treed Fen (50%)	Shrub Fen (50%)			8.81
39	Bog		Treed Bog (50%)	Shrub Bog (50%)			2.72

Source: NSDNR Digital Wetland Mapping

It is difficult to assign value to wetlands that accurately reflect the value of an individual wetland to the various ecological roles it may play. One rating system, the Golet score, is often applied, although it determines wetland value based on importance to waterfowl, and thus is biased in this respect. However, as a better rating system does not exist, Golet scores have been used to give rough estimates of the value of some of the wetlands within the 5 km radius (Figure 5.2). The limitations of the Golet system, however, result in all bogs and fens being considered low value wetlands since they do not support waterfowl, despite the fact that they could support to rare species of plants or animals or be unique habitat types.

The Golet scores for the wetlands came from the Canadian Wildlife Service (CWS) Wetland Atlas (1981), and several wetlands are shown which are not apparent in the more recent NSDNR digital mapping. Some of these wetlands may no longer exist due to residential development in the area.

5.3.2 Potential Effect, Proposed Mitigation, Monitoring and Follow-up

Clayton proposes to construct a berm that bisects the wetland and to infill the northern part of the wetland which accounts for 1.4 ha of the 3.7 ha wetland area.

The loss of a portion of the wetland may affect the basic functioning of the remaining wetland. Changes to patterns of water, mineral, and nutrient inflow into the remnant wetland may change conditions and initiate variance in vegetation patterns and species assemblages from present conditions. Increased amplitude in run-off volumes associated with development of the

watershed of the wetland may result in fluctuations in water level within the wetland; however, the stormwater management plan incorporates lot drainage controls, conveyance controls and a retention pond to balance pre and post flows over the site.

A stormwater management plan will be submitted to HRM and NSEL to address the control of stormwater quantity (see Section 5.2.2) and quality. There are two main sources of water quality effects from urban development: the construction practices, and the post-development landowner practices. The Municipal Planning Strategy and Land Use Bylaw Amendments for Dartmouth, Eastern Passage / Cow Bay and Cole Harbour/Westphal (1999) categorised four environmental protection mechanisms. Policies for design and development control, public awareness and education programs, and stormwater management mechanisms provide recommendations that address water quality aspects of stormwater management planning.

The majority of the stormwater management practices above apply to landowner use on their property. HRM addresses some aspects of source control measures through their educational *Naturally Green Program*. Land developer/builder practices are controlled solely by the HRM Municipal Service System (Red Book), by-laws and the MPS. The last two best management practices are the responsibility of HRM engineering and maintenance departments.

To prevent deterioration of the wetland water quality, the stormwater runoff from upland construction will be treated on the site. During construction of residential and commercial lots, an erosion and sediment minimization plan will be followed to minimize sediment mobilization. Mobilized sediments will be contained by the use of silt fences and stormwater ponding on site. Post-construction runoff will be controlled by a series of lot controls and conveyance measures. Bioretention is a vegetative treatment system which directs runoff from a parking lot into a long filtering system composed of a stone, grass strip and a wooded strip. A swale system will be incorporated around each commercial lot for infiltration.

Under the envisioned development modification to the wetland and the surrounding upland, much of the wetlands present character and many of the species present in the wetland, or using it periodically, can be maintained. Mitigation will be developed in consultation with NSEL, however, suggested mitigation of alteration to the wetland may include:

- Retaining as many of the values of the wetland in terms of the habitat and species the wetland presently hosts.

- Retaining and enhancing the wetland's value as the green space/green belt it presently offers to the neighbourhood. This could possibly be affected by providing an access point or overlook to the resulting wetland with a bench or observation shelter and some educational/interpretive signage. The post development area will include commercial properties. Clayton will retain and provide something of a green belt/green space value to the area. Retaining a buffer zone enhances this green belt value, as much upland buffer about the wetland as is possible. The wetland will offer an area for residents, workers and visitors to enjoy nature. Recreational values such as this could be enhanced and combined with educational values by providing access to viewing area situated overlooking the wetland. Provision of enhanced access into the wetland would likely be inadvisable due to wetland protection and liabilities. Indeed interpretive information media could include information about the inadvisability of venturing into the wetland not only to protect ones own person but also the wetland inhabitants.

5.3.3 Summary

About 1.4 ha of wetland will be lost due to berm installation and infilling. An additional 0.72 ha of the wetland will be altered due to the installation of municipal service lines. The remaining 1.58 ha will be maintained through retention pond facilities providing the surface flow. The drainage design for 1:5 and 1: 100 storm events will permit water flow out of the wetland at the same rate as it experiences naturally.

5.4 Wildlife

5.4.1 Description of the Existing Environment

An inventory of bird, mammal and herpetile species present was compiled for the site in early November 2004 and a follow-up survey was completed in mid-June 2005. Because the fall wetland inventory was rather limited as it took place too late in the season for reliable assessments of the presence or absence of many species, herpetiles in particular. Instead, a habitat modeling exercise was used to determine if there was potential for species of special status to be present on the property. The first step in the modeling was to collect existing information regarding the presence of uncommon, rare or endangered species in the vicinity of the study area. This was done by means of a data request to the ACCDC. The ACCDC data request provided all uncommon, rare and endangered species for an area having a 5 km radius around the study area. The habitat preferences of these species were then compared to the types of habitats available in the study area to determine if suitable habitat was available in the study area.

Birds

A breeding bird survey was not possible in the fall. The few species of birds observed in and about the wetland consisted of a small group of five Black-capped Chickadees (*Poecile atracapilla*), a Mourning Dove (*Zenaida macroura*), as well as one Common Raven (*Corvus corax*), and two American Crows (*Corvus brachyrhynchos*) flying over. The wetland has limited potential for breeding or other use by waterfowl species.

Table 5.4 provides a list of birds and their activities from the June 2005 census. None of the birds noted are rare nor uncommon to the region.

Table 5.5 presents the results of the rare bird species habitat modeling. The ACCDC database showed that ten rare species of bird have been reported from within a 5 km radius of the watershed. However, none of these species were reported from within the wetland, and the modeling exercise indicates that there is little potential for any of these species to be present, as none of the species rely on wetland areas. Thus, the wetland is not considered to be critical habitat for any of the rare bird species listed in the ACCDC request.

Mammals

During both the November and June surveys, red squirrels (*Tamiascurius hudsonicus*) were heard and seen at the edge of the wetland and undoubtedly utilize the more wooded portions as part of their foraging ranges. Meadow voles (*Microtus pennsylvanicus*) were also observed. Some sign of varying hare (*Lepus americanus*) white-tailed deer (*Odocoileus virginianus*) was noted in the wetland. Domestic cats were observed at the wetland margin near area residences. No rare or uncommon mammal species are expected from this wetland.

TABLE 5.4 Bird and Breeding Bird Survey Observed in the Russell Lake West Wetland

Birds/BirdCount/#agg	Birds/BirdName	Birds/BirdNote	Birds/BreedingCode	Birds/HabitatCode
1	Alder Flycatcher		H - HABITAT	IH - Immature Hardwood
1	American Goldfinch		H - HABITAT	FO - Flew Over
1	American Redstart		H - HABITAT	IM - Immature Mixedwood
1	American Robin		H - HABITAT	MM - Mature Mixedwood
1	American Robin	treed bog	X - No indication Breeding	TB - Treed Bog
1	American Robin		NB - NEST BUILDING	CTS - Coniferous Treed Swamp
1	Black-and-white Warbler		H - HABITAT	TS - Tall Shrub Swamp
2	Black-capped Chickadee		H - HABITAT	CTS - Coniferous Treed Swamp
1	Black-throated Green Warbler		H - HABITAT	MS - Mature Softwood
1	Blue Jay		H - HABITAT	MS - Mature Softwood
2	Blue Jay		H - HABITAT	MM - Mature Mixedwood
1	Common Yellowthroat	treed bog	H - HABITAT	TB - Treed Bog
1	Common Yellowthroat	treed bog	H - HABITAT	TB - Treed Bog
1	Common Yellowthroat	treed bog	H - HABITAT	TB - Treed Bog
1	Dark-eyed Junco	treed bog	H - HABITAT	TB - Treed Bog
1	Dark-eyed Junco		X - No indication Breeding	CTS - Coniferous Treed Swamp
2	Dark-eyed Junco		H - HABITAT	CTS - Coniferous Treed Swamp
1	Golden-crowned Kinglet		H - HABITAT	CTS - Coniferous Treed Swamp
1	Golden-crowned Kinglet	treed bog	H - HABITAT	TB - Treed Bog
1	Hermit Thrush		H - HABITAT	MS - Mature Softwood
1	Magnolia Warbler		H - HABITAT	CTS - Coniferous Treed Swamp
1	Magnolia Warbler		H - HABITAT	CTS - Coniferous Treed Swamp
1	Magnolia Warbler		H - HABITAT	CTS - Coniferous Treed Swamp
1	Nashville Warbler		X - No indication Breeding	CTS - Coniferous Treed Swamp
1	Song Sparrow		H - HABITAT	IH - Immature Hardwood
1	Swamp sparrow		H - HABITAT	FM - Fresh Marsh
2	Swamp sparrow		T - TERRITORY	FM - Fresh Marsh
1	White-throated Sparrow	treed bog	H - HABITAT	TB - Treed Bog
1	White-throated Sparrow	treed bog	X - No indication Breeding	TB - Treed Bog
2	White-throated Sparrow	treed bog	H - HABITAT	TB - Treed Bog
1	Yellow-bellied Flycatcher		H - HABITAT	CTS - Coniferous Treed Swamp
1	Yellow-rumped Warbler	treed bog	H - HABITAT	TB - Treed Bog
1	Yellow-rumped Warbler		H - HABITAT	CTS - Coniferous Treed Swamp

TABLE 5.5 Habitat Preferences of Uncommon and Rare bird Species Recorded in the Vicinity of the Russell Lake Wetland

Common Name	Scientific Name	ACCDC Status	NSDNR Provincial Status	*SARA* Status	Habitat	Suitable Habitat Present
Merlin	*Falco columbarius*	S3S4	Green	None	Nests mainly in open woodland, savanna, occasionally in cities	No
Common Tern	*Sterna hirundo*	S3	Yellow	None	Usually nests on islands or coastal beaches with sparse vegetation	No
Black-backed Woodpecker	*Picoides arcticus*	S3S4	Green	None	Coniferous forest, especially windfalls and burned areas with standing dead trees, swamps	No
Great-crested Flycatcher	*Myiarchus crinitus*	S2S3	Green	None	Deciduous forest edge, woodland, orchards, parks	No
Boreal Chickadee	*Poecile hudsonica*	S3S4	Green	None	Boreal coniferous forest and mixedwood forest	No
Northern Mockingbird	*Mimus polyglottos*	S3	Green	None	Habitat generalist: wide range of open and partly open habitats, abundant in suburbs	No
Brown Thrasher	*Toxostoma rufum*	S1	Green	None	Brush and shrubland, deciduous forest edge and clearings, suburbs	No
Scarlet Tanager	*Piranga olivacea*	S3	Green	None	Deciduous forest and woodland	No
Rusty Blackbird	*Euphagus carolinus*	S3S4	Green	None	Moist coniferous woodland, bogs, riparian habitats	No
Baltimore Oriole	*Icterus galbula*	S3	Green	None	Open and riparian woodland, deciduous forest edge, open areas with scattered trees, around human habitation	No
Atlantic Canada Conversation data Centre (ACCDC) General Status						
S1	Very Rare					
S2	Rare					
S3	Uncommon					
S4	Fairly Common					
SE	Exotic					
Note: A combination of S ranks (eg. S3S4) or the presence of a question mark denotes uncertainty regarding the population of status of species						
Nova Scotia Department of Natural Resources (NSDNR) General Status Ranks						
Blue	Extinct					
Red	Known to be or thought to be at risk					
Yellow	Sensitive to human activities or natural events					
Undetermined	Insufficient data exists to assess status					
Green	Secure					
Source: ACCDC 2004; NSDNR 2002; Ehrlich et al(1999); Gilhen(1984); Roland and Zinck (1998)						

Herpetiles

During the June 2005 survey, no reptiles were noted from the wetland and any species (primarily snake species) likely to be present are common and widespread in the Province. Several amphibian species were encountered in the wetland including Northern Green Frog (*Rana clamitans*), Pickerel Frog (*Rana palustris*), and Northern Spring Peeper (*Pseudacris crucifer*). A moderate level of searching for nesting Four-toed Salamander (*Hemidactylium scutatum*) was made but no Four-toed Salamanders were encountered. The habitat appeared reasonable for this species but the potential moss nesting sites often had sub-optimal characteristics. If this species is present in this wetland evidently the density is very low in contrast to the large populations known from stream swamps in the Burnside area. Several Red-back Salamanders (*Plethodon cinereus*) were located in moss within the wetland during searches for Four-toed Salamanders. This common upland species is also found in such bog and swamp type wetlands.

The ACCDC database showed that two rare species of herptiles, four-toed salamander and wood turtle, have been reported from within a 5 km radius of the watershed; neither has been reported from within the wetland (Table 5.6).

According to the existing information, one *SARA* listed species, wood turtle, has been found within the general area of the wetland. The wood turtle is listed as a species of special concern on Schedule 3 of *SARA*. There are two records of wood turtle within a 5 km radius of the wetland, although both turtles were dead when found. These records are believed to represent unauthorized wood turtle introductions or wood turtles that have escaped from captivity (A. Hebda pers. com.). Removal and inappropriate release of wood turtles is an important factor affecting wood turtle populations in Nova Scotia. Given the fact that it is not believed that a viable wood turtle population is present in the area around the wetland, this species is not expected to be present on the wetland. The modeling exercise also indicates that there is little potential for wood turtles to be present. Wood turtles are typically associated with riparian habitats along slow meandering rivers that provide sand and gravel banks suitable for nesting, none of which can be found near the wetland.

TABLE 5.6 Habitat Preferences of Uncommon and Rare Reptile and Amphibian Species Recorded in the Vicinity of the Russell Lake Wetland

Common Name	Scientific Name	ACCDC Status	NSDNR Provincial Status	*SARA* Status	Habitat	Suitable Habitat Present
Four-toed Salamander	*Hemydactylium scutatum*	S3	Yellow	None	Sphagnum hummocks near pools or sluggish streams in bogs or swamps	No
Wood Turtle	*Glyptemys insculpta*	S3	Yellow	Species of Special Concern, Schedule 3	Slow moving meandering intervale streams with sandy or gravelly banks	No
Atlantic Canada Conversation data Centre (ACCDC) General Status						
S1	Very Rare					
S2	Rare					
S3	Uncommon					
S4	Fairly Common					
SE	Exotic					
Note: A combination of S ranks (eg. S3S4) or the presence of a question mark denotes uncertainty regarding the population of status of species						
Nova Scotia Department of Natural Resources (NSDNR) General Status Ranks						
Blue	Extinct					
Red	Known to be or thought to be at risk					
Yellow	Sensitive to human activities or natural events					
Undetermined	Insufficient data exists to assess status					
Green	Secure					
Source: ACCDC 2004; NSDNR 2002; Ehrlich et al(1999); Gilhen(1984); Roland and Zinck (1998)						

5.4.2 Potential Effect, Proposed Mitigation, Monitoring and Follow-up

None of the bird species recorded during the wetland surveys are listed under the NS *Endangered Species Act*, are considered to be rare in Nova Scotia (Erskine 1992), or particularly sensitive to anthropogenic activities (NSDNR 2002).

No critical areas for mammals such as deer wintering areas are known to exist in the study area. The species recorded in the study area are generally typical of woodland habitats. The field surveys and a review of existing records (ACCDC) did not reveal the presence of any rare mammal species in the vicinity of the study area. The habitats present in the study area are commonly encountered throughout the province and are unlikely to provide habitat for rare small mammal species.

5.4.3 Summary

In summary, with mitigation significant project-related effects on birds, mammals and herpetiles are not likely to occur. This wetland does not host populations of rare animal species.

5.5 Archaeological and Heritage Resources

5.5.1 Description of the Existing Environment

For the purposes of this assessment, archaeological and heritage resources are defined as physical remains that inform us of the human use of and interaction with the physical environment. These resources may be above or below the surface of the ground and cover the earliest Pre-contact times to the relatively recent past. Heritage resources are generally considered to include historic period sites such as cemeteries, heritage buildings and sites, monuments, and areas of significance to First Nations or other groups. Pre-contact refers to the time before the arrival of non-Aboriginal peoples.

Examination of historic maps revealed no recorded archaeological sites within the general area of the wetland. The area is considered to have low potential for native archaeological resources, particularly given the proximity of Dartmouth Cove, which was heavily used by the Mi'kmaq. The wetland does not form part of the historical/cultural heritage of any regional populations, nor is it currently utilized for cultural events or cultural renewal.

The study area has only low potential for identifiable human use in the pre-Contact and historic periods. No archaeological/heritage resources or areas of elevated heritage potential were identified in the study area during the visual reconnaissance. It is assumed that no areas beyond study area will be disturbed during the partial infilling of the wetland and construction of the berm. As such, development and operation of the proposed wetland

infill are not expected to have any adverse environmental effects on heritage resources.

5.5.2 Potential Effect, Proposed Mitigation, Monitoring and Follow-up

Certain activities associated with the project (*i.e.,* grubbing, grading), could affect archaeological or heritage sites if they were present within the zone of surficial and subsurface disturbance. These disturbances, if unmitigated, could result in the loss of resources and the potential knowledge to be gained from its interpretation.

If archeological or heritage resources are discovered during development of the project, the find will be immediately reported to the Curator of Archaeology and the Curator of Special Places at the Nova Scotia Museum. If the resources are thought to belong to First Nations, the Chief of the nearest Mi'kmaq band will also be contacted. In the case of suspected human remains, the RCMP will be called. The appropriate authorities will determine further actions to be undertaken which could include avoidance and further assessment.

5.5.3 Summary

In summary, assuming appropriate measures are undertaken in the event archaeological or heritage resources are discovered, significant project-related effects on these resources are not likely to occur.

5.6 Land Use

5.6.1 Description of the Existing Environment

The nearby area is heavily developed commercially, with a large intersection (Hwy 111 and Pleasant Street) less than 1 km from the wetland. The Irving Oil Refinery is also within a few kilometres of the wetland. The wetland is located on a property which is located in an area zoned I-2 General Industrial which permits a wide variety of industrial and general business uses "by-right", with residential areas located nearby.

Local use of the wetland appears to be insignificant. As the wetland is proximal to residential areas it was not unusual to find evidence of rough stepping bridges erected to cross the stream at several points. A small dumpsite was found at a point where a cut line trail crossed the wetland. Paint cans, a hot water heater and other refuse were found at this site. Edible berry populations were not extensive in this wetland and any wild fruit gathering opportunities would be limited and local. Due to the proximity of the wetland to residences and its location within city limits hunting would not occur here.

Due to the wetland's small size alone, there is no commercial peat production potential.

5.6.2 Potential Effect, Proposed Mitigation, Monitoring and Follow-up

This area will be developed commercially in consultation with HRM and in accordance with the development agreement. This development will result in economic and societal benefits, including employment, traffic solutions, and ongoing business opportunities.

5.6.3 Summary

In summary, significant effects on land use are not likely to occur as the zoning will remain the same. Recreational use of the wetland may increase with the installation of a recreational trail.

6.0 EFFECTS OF PROJECT ON ENVIRONMENT

The project will involve berm construction and infilling of the northwest half of the wetland. This will result in loss of 1.5 hectares of wetland habitat. Construction of the highway interchange and berm through the wetland will result in changes in hydrological patterns downstream. However, the design for the outflow of Clayton's stormwater retention facility will be such that it replicates a natural discharge rate over a 24 hour period or less in the southern portion of the wetland.

Compensation for the infilling of the northwest portion of the wetland will include several initiatives within the watershed of the wetland, as well as in the adjacent watershed of Russell Lake. The compensation measures are listed as follows.

1. The HRM will receive 23 additional acres of park and open space in the Russell Lake subdivision above and beyond the mandatory 10% dedication.
2. 50% of the Russell Lake frontage has been donated to the HRM.
3. The remaining 50% that is in private ownership has had a 100 ft lake shore buffer imposed on it that will be administered by both the HRM and Clayton.
4. Approximately 10,000 linear feet of walking trails will be constructed, as well as a paved multiuse trail.
5. Storm water treatment devices will be installed at the outfalls from this development into Russell Lake.
6. Storm water treatment devices will be installed at the outfall from this development into the wetland that will be impacted.
7. The pre and post 5 and 100 year runoff will be balanced prior to it entering the wetland.
8. Clayton has committed to testing and monitoring water quality for Russell Lake for the duration of the project and will fund continued monitoring for an additional 5 years past completion of the project.
9. Clayton has committed to testing and monitoring water quality from the outfall entering the impacted wetland for the duration of the project and will fund continued monitoring for an additional 5 years past completion of the project.
10. Clayton will construct a walkway linking this development with Waynewood Drive and construct interpretive signage along the walkway which will border on the impacted wetland to educate the residents in regard to the adjacent wetland.
11. Clayton will fund a yearly mailing by the local resident association for Portland/Russell Lake area reminding them of the impact of fertilizer on the lakes in their community.
12. Clayton will assist the residents on Brompton Drive in solving the flooding problem that they have been enduring over the last decades as they are adjacent to this wetland.

7.0 EFFECTS OF ENVIRONMENT ON PROJECT

The definition of an environmental effect often includes any changes to the project that may be caused by the environment. For this project, potential effects are limited to climate, and meterological conditions, specifically precipitation. Wet weather, snow and ice conditions may affect water levels and adequate drainage of the wetland.

Mitigation measures include designing and installing erosion and sediment control structures and stormwater facilities to accommodate appropriate levels of precipitation and consideration of weather conditions when scheduling activities.

In summary, climate and meteorological conditions are not anticipated to significantly affect the berm.

8.0 OTHER APPROVALS REQUIRED

Correspondence from NSEL stipulates that a Water Approval is required from that Department for the alteration of the wetland.

Approval is also required from the Department for any water distribution systems and sanitary or storm sewer collection systems that must be installed to service the proposed development.

9.0 FUNDING

The commercial development project that encompasses the wetland alteration will be 100% privately funded. The installation of trunk watermains and sewers will be jointly funded by the HRM and surrounding landowners through a CCC agreement.

10.0 ADDITIONAL INFORMATION

No additional information is provided in support of this document.

11.0 REFERENCES

Atlantic Canada Conservation Data Centre (ACCDC) 2005. Data search request to Stefen Gerriets, April 2005.

Committee on the Status of Endangered Wildlife in Canada (COSEWIC) 2003. Results of the May 2003 COSWEIC Species Assessment Meeting. Internet Publication" http://www.cosewic.gc.ca/eng/sct0/index_e.cfm. Last updated February 2001.

Erskine, A.J. 1992 . Atlas of Breeding Birds of the Maritime Provinces. Nimbus Publishing and the Nova Scotia Museum, Halifax, NS. 270 pp

Nova Scotia Department of Natural Resources (NSDNR). 2004a. General Status Ranks of Wild Species in Nova Scotia. Internet Publication. http://www.gov.ns.ca/natr/wildlife/genstatus/. Last updated November 2002.

NSDNR 2004b. Wildlife Species protected under the *Endangered Species Act in* Nova Scotia. Internet publication: http://www.gov.ns.ca/natr/wildlife/endngrd/specieslist.htm#2003. Last updated October 2003.

11.1 Personal Communications

Andrew Hebda, Curator of Zoology, Nova Scotia Museum of Natural History, March 2005.

Appendix A

Public Information Meeting Minutes
Halifax Regional Council Minutes

Public Information Meeting **Attachment C**

January 31, 2005
Bel Ayr Elementary School , Dartmouth

STAFF: Paul Morgan, Regional Planner
Austin French, Manager of Regional Planning
Hilary Campbell, Planning Technician
Kurt Pyle, Regional planner
Kenda MacKenzie, Development Engineer
Samantha Charron, Administrative Support

CLAYTON DEVELOPMENTS
REPRESENTATIVES: Mike Hanusiak
Earl Richardson
Andrew Connors
Kevin Meade
Bill MacIntyre

MORRIS-RUSSELL LAKE
PUBLIC PARTICIPATION
COMMITTEE
MEMBERS: Phil Elliott, Chair
Hugh Millward, Vice Chair
Dennis Richards
Nateleen Zinck
Norman Wiechert
Mike Hanusiak

MEMBERS OF
THE PUBLIC: 110 estimated

The meeting commenced at approximately 7 p.m.

1. <u>PAUL MORGAN, PLANNING SERVICES</u>

Paul Morgan welcomed attendees and Councillors in attendance Bill Karsten , Andrew Younger, Jim Smith and Harry McInroy. Mr. Morgan then introduced the members of the Public Participation Committee Hugh Millward, Phil Elliott, Denis Richards, Tom Wishart & Nataline Zinck.

Paul Morgan gave a brief history of the committees involvement in the Morris/Russell Lake plan. He stated in 1999 the committee was appointed by the Harbour East Community Council. He then discussed the process of the application, assuring the attendees there would be no decision made this evening. Mr. Morgan continued by explaining Regional Council and Community

Council would have a role in any subsequent approvals. He explains the Committee and staff have been working toward a plan for all of Morris/Russell Lake area, at the December meeting the policy proposals were brought forward for future development of these lands. The policy proposals are currently in the process of being reviewed by the Harbour East Community Council, in fact the will be deliberating on them this Thursday, February 3, 2005.

Once they have been reviewed by the Harbour East Community Council a recommendation will be made to the Regional Council before a Public Hearing is scheduled. Paul Morgan then indicated by signing the meeting attendance sheet, attendees would automatically be notified of any future public consultation in the matter.

Paul Morgan then introduced Halifax Regional Municipality Representatives in attendance and introduced himself as the planner assigned to this application mentioning all would be available to discuss any questions after Clayton Developments presentation. Paul Morgan then introduced Clayton Developments as the applicant for the purposed development.

Mike Hanusiack ,Clayton Developments

Mike Hanusiak, senior planner for Clayton Developments began by introducing Clayton staff in attendance Earl Richardson, Andrew Connors, Kevin Meade & Bill MacIntyre. He introduced technical and professional consultants involved Sue Belford and Dan McQuinn representing Jacques Whitford Ltd.(Stormwater management, runoff and lake monitoring inquiries) also Ken O'Brien & Greg O'Brien, (Atlantic Group and Traffic Management) Traffic Consultants.

Mike Hanusiak thanked everyone for attending and expressed his appreciation for the opportunity to have first-hand interaction with all involved. He went on to explain the why Clayton Developments were doing this presentation tonight.

Mike Hanusiak began with an overview of its planned approach to the development of approximately 270 acres of land adjacent to Highway 111 and Russell Lake. This plan is the culmination of many hours of productive discussion with HRM staff, the Morris-Russell Lake Public Participation Committee (sub-committee), a Regional Planning peer review group, various government agencies, and the Dartmouth Lakes Advisory Committee. We are extremely grateful for the direction and commentary provided to date and we are especially grateful to the many citizen volunteers who have taken time from their busy schedules to help perfect this plan.

The requirement for a Development Agreement is set forth in the Municipal Planning Strategy for Dartmouth. A number of the Plan's existing policies have been undergoing refinement and expansion as part of the Morris-Russell Lake Master Plan. The Plan is currently before Harbour East Community Council.

Approval of this development is required in order to permit the extension of Baker Drive from Home Depot to the new Mount Hope Avenue Interchange, which is scheduled for completion in 2006. While the Interchange has been approved by Halifax Regional Municipality under the

Canada-Nova Scotia Infrastructure Program and can be constructed "as-of-right", Baker Drive is situated on lands that are currently zoned CDD (Comprehensive Development District). Both the MPS and Land-Use By-law for Dartmouth require such lands be developed by way of a Development Agreement. Clayton has agreed to construct Baker Drive in two phases and to complete the road in time for the opening of the new Interchange.

Morris-Russell Lake Master Plan

On December 9, 2004 the PPC presented its revised Master Plan recommendations at an Open House. Central to the Plan is a strategy to improve traffic conditions along Portland Street. The PPC in consultation with municipal staff have presented a two-phase approach to infrastructure spending that is intended to reduce traffic congestion while at the same time allowing new development to occur within the "serviceable" boundaries of Dartmouth and the former County of Halifax. The approach is very similar to that which was endorsed by the Harbour East Community Council in 2000.

The first phase is the construction of the Interchange with connections to Mount Hope Avenue and Baker Drive. The second phase is an extension of Mount Hope Avenue from its intersection with Baker Drive to the Caldwell Road. The design of the Interchange has been approved by the Province of Nova Scotia in consultation with the HRM.

It is our understanding that construction of the Interchange will begin in 2005 with completion in the fall of 2006. Clayton has been working with the HRM and the Department of Transportation and Public Works in order to co-ordinate road alignments and construction schedules. Under the Municipality's *Capital Cost Contribution* policy, it is anticipated that Clayton will make a financial contribution to the Interchange. It is also anticipated that the policy will extend to other future developments that will benefit from the Interchange and its feeder roads.

About the Development

Land Use & Density

Our application is comprised of two separate but inter-related development areas. The first area consists of approximately 165 acres abutting Russell Lake and Highway 111. These lands are entirely within the Morris-Russell Lake watershed.

The second component (approximately 100 acres) is located outside the Morris-Russell Lake watershed and is intended for general commercial and/or higher-density residential uses. Approximately half of this area is currently zoned I-2 (General Industrial) Zone, which permits a wide variety of industrial and general business uses "by-right".

We have volunteered to bring these lands into the Master Plan and Development Agreement processes in order to ensure the proper distribution of municipal water and sewer services

through our land holdings. We are not proposing a through-street connection to the neighborhood of South Woodbine. However, we have been asked and will construct a walkway connection to the new Mount Hope Avenue extension. We have also agreed to forgo the possibility of future industrial development in favor of general commercial and/or higher-density residential in select areas.

For Sub-Area 1, our proposal consists of a residential mixed-use development containing approximately 410 low-density housing units (singles and townhouses), a retirement campus of approximately 150 progressive care units, and approximately 545 higher-density units (condominiums and apartments). The proposed density is less than the 8-unit per acre guideline as set forth in the Dartmouth Municipal Planning Strategy.

The distribution of land uses will be in accordance with the Dartmouth MPS and the "land use" designations contained within the new Morris- Russell Lake Master Plan. Both documents call for a mix of housing types with multiple-unit dwellings to be located on or immediately adjacent to Baker Drive and/or the future collector street at the southern end of the site. Local commercial uses are to be located within walking distances of nearby residential homes. Streets have been aligned relative to the site's sloping terrain. Approximately 25% of the site will be retained in its natural state – this is a requirement of the MPS.

The attached plan provides a reasonably accurate layout of the residential component. While some of the building configurations may change, the location and design of individual buildings will be guided by specific design requirements contained within the Development Agreement. These include provisions for parking, landscaping, height, and set back distances.

The Development Agreement will also contain specific design requirements for the commercial components of Sub-Area 2. Many of these requirements are already contained within the Land Use By-law for Dartmouth. We have requested that the D.A. provide additional provisions regarding landscaping, parking, building heights, internal pedestrian walkways, access, etc.

It is impossible to guarantee a specific site plan for Sub-Area 2 as a complete list of future tenants (along with their specific site needs) is unknown. The Municipality has anticipated this relative to other commercial areas in Dartmouth and employs a "site approval" process as a means of controlling development via a pre-determined set of design requirements. These requirements will be contained within the Development Agreement. A large area of natural buffer is proposed between the commercial development and the neighboring South Woodbine, including the Imperial Oil property.

Transportation

The residential component contains a hierarchy of streets consistent with the Master Plan. Our intention is to complete Baker Drive (a major collector) over two construction seasons and to open the road in time for the opening of the new Interchange.

A traffic study for this area has been prepared by *Atlantic Road and Traffic Management.* The parameters for the study were determined by HRM staff in consultation with the Province of Nova Scotia. The study determined among other things:

- The impact of this development at "full" build-out on the new Interchange.
- The design requirements for Mount Hope Avenue extension.
- The functional design requirements for the new intersection of Baker Drive and Mount Hope Avenue.

This study is an extension of the functional design study prepared by ARTM for the HRM/Province for the Interchange itself. Under various simulated traffic situations, the Interchange along with the Baker Drive/Mount Hope intersection functioned well within acceptable limits.

In is not anticipated that this development will have a negative impact on Portland Street. On the contrary, Phase I is intended to initiate long-term relief along the Portland Valley while at the same time generating new development (and taxes) within the serviceable core. Notwithstanding, we have agreed to participate with HRM relative to additional traffic improvements at Norman Newman Drive and Eisner Blvd.

Park and Open Space

A significant amount of park and open space is proposed for Sub-Area 1 (approximately 36 acres or 22% of the total land mass). Just over half of the entire frontage along Russell Lake will be conveyed to the Municipality. These areas will be improved to contain walking trails and neighborhood parks. We will be making the required improvements at our cost.

A large wooded area in the centre of the residential community will be retained. A woods trail will be constructed through the area to connect to a major walking/cycling trial along the NSPI power line that crosses the site from north to south. This trail will further connect to an active park area adjacent to Sub-Area 2 and the Municipality's proposed regional trail system abutting Mount Hope Avenue extension. We have also been asked to incorporate a dual pedestrian/cyclist trail along the east side of Baker Drive. While we have no objections to the idea, we must await specific design details from HRM staff in order to ensure that the trail can be accommodated within the road reserve.

Stormwater Management & Lake Protection

The Morris-Russell Lake Master Plan requires that a Storm Water Management Plan accompany this development. A plan has been prepared by Jacques Whitford Limited in consultation with McWilliams Engineering Limited. The plan has been reviewed by the Dartmouth Lakes Advisory Board and provides for among other things:

- Retention of a 100 ft buffer along the shores of Russell Lake. Within this area only trees approved for removal due to hurricane damage, beetle infestation, or best practices

as certified by an accredited arborist will be permitted. The HRM not the developer will decide which trees if any will be removed.

- Pre-construction protective measures such as settlement ponds and construction booms.
- Balancing of pre and post-development flows as directed by the Department of the Environment.
- Comprehensive site grading plans for all residential building lots (including multiple sites).
- CDS Units (or approved equivalents) at various storm water out falls.
- Buffers of a minimum 50ft. along inland streams.
- Phasing of development in order to minimize open ground conditions.

Although not part of the Morris-Russell Lake watershed, we will be managing storm water flows from the general commercial area abutting South Woodbine. This will be accomplished by constructing a series of oversized storm pipes within the various development parcels as well as the installation of flood control dykes along the previously mentioned buffer area abutting Imperial Oil. Clayton has submitted its management plan to the Department of Environment for the necessary approvals.

Our intention is to work with the HRM relative to the long-term recovery of Russell Lake. To this end we will continue the "arms-length" monitoring procedures initiated for Portland Hills through Jacques Whitford Limited. JWL's monitoring reports are prepared at various times of the years (specifically after major storm events) and the finding turned over to HRM staff. We are prepared to continue this practice along with any other procedures as required by authorities having jurisdiction in these matters. This includes participation in a baseline study for Russell Lake prior to the commencement of construction.

Mike Hanusiak then gave a brief history of Clayton developments stating Clayton Developments Limited has been in operation since 1959. A subsidiary of the *Shaw Group*, CDL communities total over 16,000 residential units and 1,000,000 square feet of commercial and/or institutional space. Mr. Hanusiak then gave a description of the more notable communities in order of their entry into the marketplace.

Mike Hanusiak then indicated each of Clayton Developments communities are guided by municipally approved "Master Plans", wherein the interests of the general public along with concerns of special interest groups are reflected in land-use distributions, tree retention and replanting, and storm water management. Unlike smaller subdivisions, our focus has and continues to be the development of full-service communities. To this end, we are proud of the value-added services that we provide to our customers, namely:

- The reviews and approval of all site and building plans prior to construction. Each home is reviewed against a master grading plan to ensure proper storm drainage in relation to adjacent homes.

- Rigorous enforcement of protective covenants. Covenants that have been in place for over forty years in Clayton Park are still enforced by in-house staff. On occasion we have had to refer matters to our legal representatives.

- Proud sponsor and leading advocate of the R-2000 housing program. R-2000 homes are constructed to exacting standards and are intended to provide long-term protection to the consumer.

- CDL staff are active members of various building and planning advisory groups including but not limited to, the Nova Scotia Home Builders Association, the Urban Development Institute, and the Development Liaison

2. QUESTIONS AND COMMENTS

James Reid (Brompton Rd, South Woodside) stated his property will border the south west corner of the development. Mr. Reid expressed concern for the stormwater runoff and asked what precautions will be taken to prevent an already poor runoff management system. He indicated the stormwater culvert located on the Imperial Oil property cannot handle the flow now and wonders what will happen with future development. Mr. Reid indicated a portion of the brook runs through his property and asked how this water will be dealt with.

Earl Richardson and Mike Hanusiak replied that this issue would be addressed and that Clayton representatives including engineers and surveyors would come out and do an on-site inspection.

James Reid (Brompton Road, South Woodside) asked if the development of a berm would be located on a portion of his and neighbouring lands?

Earl Richardson replied Clayton has no intention of altering your land or your neighbours**,** but we may speak with Imperial Oil about up sizing their culvert.

Henry Charest (Portland Estates Blvd) wanted to voice his concerns regarding an already increasing traffic flow along Portland Estates Blvd. He feels residents living north of Portland Street will use Portland Estates Blvd to get to the purposed shopping area and for access to Highway 111. Henry Charest requests on behalf of Portland Estates Blvd residents to have a review of that area and to take steps to make sure traffic is kept at a minimum. He would prefer that the connector between Baker Drive and Portland Estates Blvd west would never be completed. Henry Charest made a statement on behalf of neighbouring residents and himself, we do not want to see Portland Estates Blvd service all of Dartmouth to satisfy the commercial aspects of this development.

Mike Hanusiak replied some of these issues are as important to Clayton as they are to residents, to explain why he stated these connections cannot be made until the connection of Caldwell Rd is made. He went on to explain the intent of the minor collector roads are not meant to undermine what the residents had been provided for before. Mike Hanusiak indicated there is

room for flexibility regarding the mentioned connections. He also indicated HRM would be responsible for the timing, fate and configuration of the connector roads and there would probably be a few years before that would be decided.

An unknown speaker asked if the intersection at Norman Newman would be addressed and would there be a possibility to widen the road to alleviate traffic backup to the Superstore?

Mike Hanusiak indicated Clayton has suggested to the city that the intersection at Norman Newman Blvd and Baker Drive should be widened to accommodate left hand movement and allow vehicles to turn left and proceed down Baker Drive. Mike Hanusiak indicated that Clayton Developments intends to cost share on the traffic signals at that intersection. Clayton has also looked at Norman Newman and Eisener Dr as a potential upgrade and some additional work on Eisener at Portland Street, in terms of left hand movement off Portland onto Eisener. Review of these intersections is underway.

Paul Morgan added one of the city's goals in designing the interchange was to allow cyclists to get between Morris/Russell Lake community and up to Woodside Ferry Terminal safely. The interchange is being designed with a multipurpose trail on one side which is essentially a larger sidewalk. It will have as purposed a sidewalk on both sides but on the Harbour side which would be the south side will have the multi purpose trail, that side was chosen because much heavier traffic movement will be on the opposite side. This would allow cyclists and pedestrians to cross with minimum traffic disruption. Mr. Morgan went on to explain future trail construction.

Mike Hanusiak had additional comments regarding the support of all parties involved in the trails integration with the regional plan. He reiterated the importance of the communities support.

Hugh Millward provided a brief description of the Regional Plan and the significance of active transportation ie; walking, biking, blading, driving and also to public transport. Hugh Millward stated they are also hoping to see a transit terminal of some kind, integrating all aspects of active transportation.

Ivano Andriani (Bayswater Road) commented in respect to the future development plan, in theory it all sounds great, but at what point do we address the traffic around the Regional Plan? He asked when an official traffic study would be done to assess the traffic issues that will arise from the beginning of construction to the time of it's completion.

Mike Hanusiak stated as far as Clayton Developments is concerned we do not feel there will be an increase in the traffic flow from the beginning of construction to the completion. He went on to state the amount of commercial land that will end up there is unknown, we do not think it will cause any further problems to the transportation grid. Mike Hanusiak stated HRM, Councillors & the Province have seen fit to work on Phase 1now and to work on Phase 2, the connection to Caldwell Road. Next Mike Hanusiak indicated Traffic Services prepared a study in 1999 on the Portland Valley. A portion of the study stated that there would be a critical point of exhaustion at Baker Drive and Portland Street in the year 2006. Five years ago HRM identified Phase 1 of Baker Drive route as the start of a bigger Regional initiative. Baker Drive connection will

provide crucial relief to the Portland Valley when you include the Portland Hills loop (which our company is completing this year). It is the big fix but everyone that has been involved with this for the last five years realizes this is the critical first step in a long term plan. Mike Hanusiak stated he did not feel the traffic flow would worsen on Portland Street.

Ken O'Brien stated right now Portland Street traffic in the morning has about 400 vehicles per hour coming along Portland Street down to the Valley turning left to get onto the interchange. Then in the afternoon when that comes back there is approximately 200 to 300 vehicles coming along the Circumferential Highway per hour turning right onto Portland Street. A large percent of that traffic is now using Portland Street and when the interchange is built motorists will have the opportunity to use the new interchange and Baker Drive to avoid that part of Portland Street. The area that we are talking about that Mike Hanusiak indicated as the seven year build out area, will be a mixed use development. We expect that most of the shopping done in this area will be by the residents living in the area. We feel traffic problems should improve.

George McKelvie (Russell Lake Drive) expressed concerns regarding the protection of the lake and wanted to know what precautions will be taken to protect the lake while construction is underway, and if something different will be done compared to development around Morris Lake?

Mike Hanusiak indicated there will be a study to identify the existing condition of the lake and where some of the trouble spots are. This development will be built incrementally we do have a phasing plan. It is not our intent to develop right across the lake, again the focus is to build pieces of this at a time. So the amount of exposure to the lake is relatively small, considerably smaller then Morris Lake. We will also as part of the subdivision proposal process be proposing protective booms be in place prior to construction around the lake. Mike Hanusiak then asked consultants Sue Belford and Dan McQuinn from Jacques Whitford Ltd. to explain in a little more detail.

Dan McQuinn explained in order to develop the property there must be an erosion and sediment control plan in place for construction. That is designed by Engineers and approved by Department of Environment and Halifax Regional Municipality. Without going into too many details essentially the property is developed in phases and water that comes off from stripping the land which cannot be avoided is collected in sediment ponds. For severe storms we pump it back up into the vegetated areas. Compared to Morris Lake what will be done differently will be to minimize the open areas at one given time also we will prepare for storm events. Pumps will be available to contractors and we will make sure the water does not get overwhelming for the systems we have in place.

Mike Hanusiak indicated when a sediment plan is in place and the Department of Environment must be involved.

Ken Hauschild (Russell Lake Drive) asked as a followup question to the last comment regarding the rules, regulations and By-Laws for lake protection, who will enforce these regulations and who is eventually responsible to clean up any damage that has been done?

Mike Hanusiak indicated there are three controlling bodies the first is Halifax Regional Municipality the second is the Department of Environment and if the Department of Fisheries and Oceans gets involved they would be the third. If there is damage to the lake or penalties to be incurred those agencies have the power to go after the violators.

Ken Hauschild (Russell Lake Drive) asked if anyone in the past violating regulations has been penalized?

Kenda MacKenzie indicated the Province is the primary body that regulates the erosion and control of the lakes and the quality of the lakes. Kenda MacKenzie indicated there was no-one in attendance tonight from the Department of Environment that could comment weather or not violators have been fined or penalized in the past. Kenda MacKenzie went on to explain HRM conducts site inspections on a regular basis, especially before major rainfalls. Site inspectors will go out and do a site evaluation to co-ordinate with the developer to protect any spots they feel that may be exposed to damaging rail fall.

Ken Hauschild (Russell Lake Drive) gave his opinion regarding same rights for homeowners on opposite sides of the lake, regarding private and public buffer zones. He feels the same rules should apply on both sides of the lake. He finds it hard to believe that within the same Municipality, using same City By-Laws and development principles that different rules would apply for the same Lake. There seems to be no logical explanation. Ken Hauschild feels private ownership of a buffer is nonsense and will lead to future enforcement problems.

Mike Hanusiak indicated whether the land located within the100 ft buffer around the lake is privately or publically owned before subdivision approval is granted, Clayton will retain an arborist to go with HRM and a representative of the Dartmouth Lakes Advisory Committee they will walk that area and it will be the arborist in consultation with HRM's development engineers that will decide which trees can or will be removed. There will be protective covenants within the subdivision limiting the cutting of any additional trees without the approval of the arborist.

Ken Hauschild (Russell Lake Drive) asked if there would be a legal document signed by the private property owner to insure these protective covenants?

Kurt Pyle indicated tree cutting would be at a minimum and would require approval by HRM and an arborist.

Ken Hauschild (Russell Lake Drive) commented he has noticed a significant increase in ducks around the lake and asked if there is anything that can be done to limit the feeding of ducks around the lake?

Mike Hanusiak asked if Sue Belford, consultant for Jacques Whitford if she could provide an answer for Mr. Hauschild inquiry?

Sue Belford indicated there will be a baseline study of the lake. Her explanation included all technical aspects of the testing.

Ken Hauschild asked if there was a less technical explanation that could be given to the attendees?

Sue Belfort indicated at that time she was unable to do so. She did indicate she was not aware of any duck population controlling methods. The study will be looking at choliform issues for the lake. This would be more of a pet ownership issue which is a problem within HRM more so then ducks themselves.

Ken Hauschild (Russell Lake Drive) commented the lake is fragile and once damaged it will take extraordinary efforts and money to correct problems. An ounce of prevention will be worth a pound of cure. Ken Hauschild feels special precautions should be taken when permits for development are issued then diligent enforcement of rules and regulations by the authorities are key to prevention of long-lasting environmental damage to yet another Dartmouth lake.

Hector Muise (Russell Lake Drive) has concerns regarding private properties that will be constructed on the west side of Russell Lake. He asked if construction will be permitted within the buffer zone down to the lake, including docks?

Mike Hanusiak indicated the Harbour East Community Council would make that decision, with the recommendation of staff and the Public Participation Committee. He continued to explain the future outlook from Clayton Developments perspective regarding minimal changes within the buffer zone and water front area.

Hector Muise (Russell Lake Drive) asked what type of water craft were permitted on Russell Lake.

Mike Hanusiak indicated Clayton Developments does not promote motorized boat use on the lake now nor will they in the future. The proposed boat launch for the Halifax Regional Fire Services will only be for their use. He explained Claytons suggested idea to the city for canoe lockers around the lake, rented by HRM. Mike Hanusiak emphasized the importance of the tranquil setting now and in the future around the lake.

An unknown speaker expressed concerns regarding clear cutting on lots around the lake and indicated he had seen this happen to lots previously and would like to know this will not be allowed to happen in the future. The unknown speaker also commented on the traffic study and how he fails to see how traffic will decrease on Portland Street.

Mike Hanusiak indicated any cutting done in phase 1 of the Morris/Russell Lake development, he feels was a result of hurricane damage. He further explained portions of that area were completely devastated. Mike Hanusiak then asked the speaker to stay after the meeting and discuss specific properties he was concerned about clear cutting. At this time Mike Hanusiak closed the question and answer period and invited anyone with additional questions or clarification on anything discussed tonight to stay and speak with himself or Clayton representatives.

Paul Morgan then indicated if anyone would like to make written submissions regarding this proposal they could forward them by e-mail or fax. All submissions will be made available to community council for review.

3. ADJOURNMENT

The meeting adjourned at approximately 9:15 p.m.

HALIFAX REGIONAL MUNICIPALITY

HALIFAX REGIONAL COUNCIL
MINUTES
March 22, 2005

PRESENT: Mayor Peter J. Kelly
Deputy Mayor Goucher
Councillors: Steve Streatch
David Hendsbee
Harry McInroy
Gloria McCluskey
Bill Karsten
Becky Kent
Jim Smith
Mary Wile
Patrick Murphy
Dawn Sloane
Sue Uteck
Sheila Fougere
Russell Walker
Debbie Hum
Stephen D. Adams
Robert P. Harvey
Reg Rankin
Gary Meade

REGRETS: Councillors: Krista Snow
Andrew Younger
Linda Mosher
Brad Johns

STAFF: Mr. George McLellan, Chief Administrative Officer
Mr. Wayne Anstey, Municipal Solicitor
Ms. Jan Gibson, Municipal Clerk
Ms. Patti Halliday, Legislative Assistant

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1. INVOCATION

Mayor Kelly called the meeting to order at 6:00 p.m. with the Invocation led by Councillor Walker.

MOMENT OF SILENCE

A **Moment of Silence** was observed in memory of Mr. Mike Kavanagh, Metro Transit, who passed away on March 16, 2005, and Mr. Don Shea, By-law Enforcement, who passed away on March 8, 2005.

2. APPROVAL OF MINUTES - March 1 & 8, 2005

MOVED by Councillor McCluskey, seconded by Councillor Sloane, that the minutes of March 1 & 8, 2005 be approved, as circulated. MOTION PUT AND PASSED UNANIMOUSLY.

3. APPROVAL OF THE ORDER OF BUSINESS AND APPROVAL OF ADDITIONS AND DELETIONS

The following items were added to the agenda:

12.1 Correspondence - Maritime Forces Atlantic - Request for Military Flypast to Commemorate V-E Day - May 8, 2005.

12.2 Property Matter - Leased Premises - Alderney Gate, Dartmouth

Councillor Smith requested that Item 10.3.1 (i) Development and Peace - Water Resolution be moved up on the agenda to follow Presentations.

MOVED by Deputy Mayor Goucher, seconded by Councillor Karsten, that the Agenda and Order of Business be approved, as amended. MOTION PUT AND PASSED UNANIMOUSLY.

4. BUSINESS ARISING OUT OF THE MINUTES

5. MOTIONS OF RECONSIDERATION - NONE

6. MOTIONS OF RESCISSION - NONE

7. CONSIDERATION OF DEFERRED BUSINESS - NONE

8. PUBLIC HEARINGS

8.1 Morris - Russell Lake Secondary Planning Strategy

- A staff report dated February 8, 2005 was before Council for its consideration.

- Correspondence from the following people was before Council for its consideration:
  - Mr. Shalom Mandaville, Soil and Water Conservation Society of Metro Halifax, dated February 26, 2005
  - Mr. Henri Charest, dated March 10, 2005
  - Mr. Paul Morgan, Planning and Development Services, dated March 22, 2005

- A document entitled *Rush to Development: A Call for Interim Reconsideration of the Proposed Morris - Russell Lake Secondary Planning Strategy*, from the Harbour East Friends of the Environment Society, dated March 22, 2005, was before Council for its consideration.

Mr. Paul Morgan, Planner, presented the report to Council. Copies of his presentation were circulated.

Mr. Morgan, Mr. Paul Dunphy, Director, Planning and Development Services; and Mr. Ken Reashor, Manager, Traffic and Right of Way Services, responded to questions of clarification from Council, making the following points:

- Staff supported the Public Participation Committee's recommendations regarding publicly owned lands, and they believe a minimum of 50% is a considerable achievement. If Council wants to purchase additional land, there is nothing in the policy to preclude that.
- The Municipal Government Act states HRM can demand a maximum of 10 percent of the development area for parkland. In this particular case, HRM is receiving roughly 30 percent.
- Council could amend the policy and demand more buffer around the lake, but it would be at the expense of other public land (ie. playgrounds, trails, etc.) elsewhere in the development.
- Staff does not anticipate that Portland Street Blvd. will be a major shortcutting route or thoroughfare. If concerns are raised, traffic counts will be taken.
- If Council approves the policies, the matter of the location of the public land will go before the Harbour East Community Council to make a determination.
- The Public Participation Committee made specific recommendations as to what can and cannot be placed in the buffer zone.

Concern was expressed by some members of Council regarding the late receipt of the Harbour East Friends of the Environment Society document. Mr. McLellan clarified that the document was just received by HRM today. Mayor Kelly indicated if Council felt it

needed more time to review the information or comments made during the Public Hearing, there is an option to defer the matter. Councillor Uteck suggested there should be a cutoff date for submissions so as they could be included in the regular Council agenda package.

Mayor Kelly called for members of the public wishing to speak either in favour of or against the proposal.

Mr. Maurice Lloyd, Dartmouth Save the Lakes Coalition

Mr. Lloyd addressed Council making the following points:

- The Dartmouth Save the Lakes Coalition is not an anti-development group rather it supports responsible development.
- The Coalition believes a minimum 30m buffer should be maintained around all lakes, streams and wetlands and be held in public ownership.
- The 50ft buffer on Maynard Lake proved not to be sufficient to provide protection.
- The Coalition requested Council to reserve at least a 100ft buffer around Russell Lake.
- There are a number of lakes in HRM where the municipality owns the entire buffer area.
- This type of policy should be carried forward to the Regional Plan as it is developed and presented to the public for review and comment.

Dr. Hugh Millward, Dartmouth Lakes Advisory Board representative on the Public Participation Committee

Speaking in support of the plan, Dr. Millward made the following points:

- This plan, while not perfect, does a great deal more for water and lake protection than any existing plans in HRM.
    - It protects all steeply sloping land from development to prevent erosion.
    - It limits the percentage of area that may be built as impermeable surfaces which prevents excessive runoff.
    - It retains at least 25 percent of the area in natural vegetation within any particular development agreement.
    - It requires the developers to prepare erosion and sedimentation minimization plans.
    - All wetlands in the plan area will have buffers and be exempt from development.
    - All lake shores and water courses will have buffers.
    - There is excellent lake access provided as well as excellent provision of public trails.

In closing, Dr. Millward stated he believes the plan incorporates many goals of Council in the development of the Regional Plan.

(Councillor Walker left the meeting at 6:50 p.m.)

Mr. Blair Mitchell, Harbour East Friends of the Environment Society

Mr. Mitchell addressed Council making the following points:

- The Society requests that Council not pass the amendments to the Municipal Planning Strategy and that Council join with the Society in requesting the Province to conduct a full environmental assessment of the habitant in lakelands represented by the property covered by this plan.
- This is a $30 million decision and it deserves very careful close consideration.
- The Society shares the view of a public owned buffer. This view was also shared by Regional Planning until two years ago, as stated in correspondence included in the Society`s submission.

Mr. Phil Elliott, Chair, Public Participation Committee

Mr. Elliott addressed Council making the following points:

- The amendments before Council are a culmination of five years of work by the Committee, comprised of residents and landowners in the area, with much input from HRM staff.
- No one got everything they wanted, but they worked hard to arrive at a compromise.
- The process has been a long and thorough five year review of the issues involved including land use, central services, environmental protection, transportation and infrastructure charges, with continual public input.
- The environmental protection mechanisms in this plan deal with design and development controls, public awareness and education programs, stormwater management, monitoring of the lakes and maintaining water levels on Morris Lake.
- The Committee is confident that access to the Circumferential Highway and the completion of Baker Drive will begin the relieve traffic problems in the Portland Valley.
- This is a good, solid, well-developed plan that has the support of the majority of residents and landowners in the area, the Dartmouth Lakes Advisory Board and the Public Participation Committee.

Mr. Shalom Mandaville, Soil and Water Conservation Society of Metro Halifax

Mr. Mandaville addressed Council making the following points:

- The Society is generally disappointed with some of the recommendations.
- His greatest concern was that the CCME framework for phosphorous was not utilized. Further information on this issue was provided in Mr. Mandaville`s written submission.
- CCME guidelines clearly state that phosphorous concentrations should not increase more than 50 percent of the baseline levels. Morris Lake is three times the national background level and Russell Lake is six times.
- Based on testing conducted by the Society, Russell Lake is hypereutrophic.
- Russell Lake is not headwater lake.

Mr. Norman Wiechert, Portland Estates

Mr. Wiechert addressed Council making the following points:

- He has been actively involved in this issue and fully supports the proposed amendments.
- The community has been very much involved throughout the process and the majority are in support of the plan.
- Public meetings on this issue have been held for many years and all parties have worked together to develop this plan.
- Amendments to the plan can be made later if needed, but if it is not approved now it may die and the process will have to start all over again.
- Public ownership of lands does not guarantee protection.
- The lakes should be protected regardless of ownership.
- The plan provides a good foundation for the future.

Mr. Henri Charest, Portland Estates

Mr. Charest expressed concern with traffic using Portland Estates Boulevard for a throughway to the new box store area. He stated the residents of this street are opposed to the direct link. He suggested vehicles should use Baker Drive to Hwy 111 and not use a residential area for a throughway. Mr. Charest asked staff to reconsider this and perhaps cul de sac the proposed connector to prevent the use of his street as a thoroughfare.

Mr. Ken Hauschildt, Russell Lake Drive

Mr. Hauschildt addressed Council expressing a concern with the quality of water in Russell Lake stating he does not see the necessary precautions for lake protection being undertaken. Mr. Hauschildt noted the plan has plenty of loopholes that will not protect the lake. He further stated that not all residents were involved in the planning process, and he urged Council to delay the project and undertake an environmental assessment so Russell Lake does suffer as have other lakes in Dartmouth.

Ms. Nancy Witherspoon, Portland Estates, Past Member of Executive of Residents Association

Ms. Witherspoon rebutted Mr. Hauschildt`s comments about community participation noting there was a representative from his community on the Public Participation Committee.

Mayor Kelly called three times for any further speakers. Hearing none, the following motion was put:

MOVED by Councillor Sloane, seconded by Deputy Mayor Goucher, that the Public Hearing be closed. MOTION PUT AND PASSED UNANIMOUSLY.

COUNCIL DECISION

MOVED by Councillor Sloane, seconded by Councillor McCluskey, that this matter be deferred for one week to allow Council further time to review all the information received. MOTION PUT AND DEFEATED.

MOVED by Councillor Karsten , seconded by Councillor Kent, that Regional Council give Second Reading to the proposed amendments to the Municipal Planning Strategies for Dartmouth, Cole Harbour/Westphal and Eastern Passage/Cow Bay, and the Land Use By-Laws for Dartmouth and Cole Harbour/Westphal, as Attachments I to V of the staff report dated February 8, 2005.

Responding to a question of Councillor McCluskey regarding the opinion expressed by staff in the May 5, 2003 correspondence included in the document from the Harbour East Friends of the Environment Society, Mr. Dunphy clarified there is nothing in the policies before Council which is inconsistent with the existing Dartmouth plan with respect to acquisition of land along the lakes for protection of the lake. Policies in the Dartmouth plan talk about the municipality budgeting money in the capital budget to purchase land. There is nothing that prevents HRM from purchasing land along the lake. Given that, staff have negotiated a minimum of 50 percent of the land at no expense to taxpayer.

Several Councillors spoke in support of the MPS and LUB amendments and expressed thanks to all those involved in the process.

Mr. George McLellan, Chief Administrative Officer, stated the process this plan followed is the way HRM should work and expressed thanks to the public for their involvement.

Responding to a question of Councillor Hendsbee, Mr. Morgan stated there will be

specifics regarding the buffer zones in the development agreement and clear cutting will not be permitted. However, the Committee is proposing a limited amount of development in the buffer zone.

Councillor Harvey noted that public access and buffer zones are no guarantee of lake protection.

Councillor McCluskey expressed congratulations to the public for their involvement. The Councillor stated she is not against this development, but she has concerns with private ownership around lake. The Councillor stated the lakes are for the people and they should be able to walk around them.

MOTION PUT AND PASSED.

APPENDIX B

North American Wetlands Conservation Council (Canada) Wetland Guide

WETLAND VALUES

	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function (Provide Highlights Only)
LIFE SUPPORT VALUES: Hydrological Values Value of the wetland in contributing to surface and groundwater stocks				
* Does the wetland contribute to recharge of regional water supply aquifers?	N	NA	NA	
* Does the wetland provide flood protection benefits?	P	L to M	L	All basin wetlands present along the drainage line provide potential regulation of potential flooding event. Residences immediate to the wetland's southwest edge have their lower edge of lawn that could be subject to some minor flooding if the water level rises post-development. A berm is proposed to be placed along this side of the wetland.
Does the wetland contribute to usable surface water?	N	NA	NA	
Does the wetland provide erosion control?	N	NA	NA	Presently the wetland does not accept erosion material. This role may increase with area development if not mitigated.
Does the wetland provide flow augmentation to users through a headwater position in the catchment basin?	N	NA	NA	
* Does the wetland reduce tidal impacts?	N	NA	NA	
LIFE SUPPORT VALUES: Biogeochemical Values Value of the wetland in contributing to surface and groundwater quality				
* Does the wetland receive significant pollution of a type amenable to amelioration by wetlands?	N	NA	NA	
Does the wetland provide storage for agricultural runoff?	N	NA	NA	
*Does the wetland provide for containment of toxics contained in surface run-off or through discharge flow?	N	NA	NA	
Does the wetland provide for sediment flow stabilization?	N	NA	NA	
Does the wetland have high nutrient levels which support significant wildlife populations?	N	NA	NA	Some areas of wetland exhibit increased nutrient levels, most of the wetland is low nutrient level. No sign wildlife populations (e.g. waterfowl or use by deer) indicate generally poor nutrient.
LIFE SUPPORT VALUES: Habitat Values Role of the wetland in contributing to the well-being of important plant and animal values				
* Are there any rare, threatened or endangered animal or plant species present?	N	NA	NA	Surveys conducted in November 2004 and June 2005, there are no rare, threatened or endangered animal or plant species.

WETLAND VALUES

	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function (Provide Highlights Only)
* Does the wetland contain high quality significant habitats for migratory birds?	N	L	L	Surveys show this area is not significant for migratory birds. The small size of the wetland and the lack of waterfowl habitat in addition to urban land use surrounding the area argue against the descriptors of high quality and significance.
Does the wetland provide habitat for sport and/or commercial fish?	N	NA	NA	
Does the wetland provide significant habitat for reptiles and amphibians?	L	L	M	This wetland has streams and pools without fish and undoubtedly hosts populations of local ephemeral pool breeding species that require adjacent upland woodland habitat. Additionally it provides habitat for more amphibian species like green frog that are more able to exist without significant upland habitat.
Does the wetland provide significant habitat for crustaceans?	N	NA	NA	
Does the wetland provide significant habitat for mammals?	P	L	M	While the wetland is too small to provide significant for large mammals, some may use it and smaller species are likely present.
* Does the wetland support a significant animal or plant species in unusual abundance?	N	NA	NA	Surveys conducted in November 2004 and June 2005, there were no unusual abundance of any rare or otherwise significant element of native flora and fauna.
Does the wetland and its associated vegetation protect natural shorelines?	N	NA	NA	
* Is the wetland ranked as a Class I, II, or III wetland by Canada Land Inventory or other accepted evaluation system?	N	NA	NA	
LIFE SUPPORT VALUES: <u>Ecological Values</u> Role of the wetland in stimulating relations of plant and animal communities				
Does the wetland support an extensive ecosystem complex including uplands?	Y	L	L	This wetland is imbedded at present in a largely intact upland woodland and via its drainage system it acts as a headwater to and connected to wetland further downstream.
* Has a regional threshold been reached where the significance of wetland ecosystems for the entire region will be compromised by further degradation?	N	NA	NA	

WETLAND VALUES

	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function (Provide Highlights Only)
* Is the wetland considered a classic example of its type?	N	L	M	This wetland is largely a basin stream bog and fen complex. Such wetlands are not uncommon in a 20 km radius on the area and not uncommon in the province. While a "classic" example of this type in a certain sense, this wetland has not gained any national, local or provincial acclaim as a classic representative of its kind.
Are there few remaining natural, unimpacted wetlands of this type in the region?	N	NA	NA	
Does the wetland contain, owe its existence to, or is it a part of or ecologically associated with, a geological feature which is an excellent representation of its type?	N	NA	NA	
Does the wetland form an integral part of an important water drainage system?	N	NA	NA	
* Does the wetland display biological diversity that is of interest?	N	NA	NA	This wetland lacks the size or extensive intersection of varied habitat features and nutrient levels that promote a particularly high level or unique aspect of biodiversity.
SOCIAL/CULTURAL VALUES: <u>Aesthetic Values</u> Role of the wetland in the quality of the scenic environment				
Is the wetland visible from a provincial/territorial highway, a designated scenic highway/road or a passenger railway?	N	NA	NA	
Does the wetland provide a valuable aesthetic or open space function?	N	NA	NA	Refuse dumping.
Does the wetland add substantially to the visual diversity of the landscape?	P	L	L	At present this wetland does not have high visibility even to local residents. Increasing development the wetland, even in modified forms envisioned, will be more generally visible and provide green space.
* Is the wetland an important sightseeing locale?	N	NA	NA	
SOCIAL/CULTURAL VALUES: <u>Recreational Values</u> Role of the wetland in the quality of the scenic environment				
Does the wetland provide a base for viewing or photographing large numbers of wildlife?	N	NA	NA	
Does the wetland provide opportunities for boating?	N	NA	NA	
Does the wetland provide winter recreation opportunities?	N	NA	NA	The wetland has insufficient water bodies for ice hockey or skating and would not provide X-county skiing or snowshoeing opportunities.

WETLAND VALUES

	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function (Provide Highlights Only)
Does the wetland provide high quality sport hunting or fishing?	N	NA	NA	
SOCIAL/CULTURAL VALUES: Education and Public Awareness Values Role of the wetland in stimulating public values and understanding				
Is the wetland used for scientific research?	N	NA	NA	
* Is the wetland used for educational and interpretation purposes?	N	NA	NA	
Does the wetland exist close to a large urban population?	Y	L	H	The wetland is located within 10s of metres of residential area and immediately adjacent to the Imperial Oil Refinery.
Does the wetland receive large numbers of visitors?	N	NA	NA	
SOCIAL/CULTURAL VALUES: Public Status Values Role of the wetland in creating a sense of public ownership				
Is the wetland part of the pattern of settlement and rural/urban lifestyle?	N	NA	NA	Ironically other than some pathways into the stream areas of the wetland the only evidence (public ownership) was garbage dumped into the wetland
Is the wetland a designated site of special public interest?	N	NA	NA	
* Is the wetland a unique national, provincial or regional resource?	N	NA	NA	
Are there policies/programs to support conservation/restoration of the wetland?	Y	P	H	NSDEL Wetland Directive, the Federal Policy on Wetland Conservation
Does the wetland provide for easy public access?	Y	L	H	The wetland is easily accessed by a path emanating from two residential streets, and an old excavation site to the south and from Highway 111.
Is the wetland public land?	N	NA	NA	
SOCIAL/CULTURAL VALUES: Cultural Attribute Values Role of the wetland in the identity of the people in the area				
Does the wetland form part of the historical/cultural heritage of a regional population?	N	NA	NA	
* Does the wetland contain archaeological or paleontological resources?	N	NA	NA	
Is the wetland utilised for cultural events or cultural renewal?	N	NA	NA	
*Does the wetland form part of a native traditional use area?	N	NA	NA	

WETLAND VALUES

	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function (Provide Highlights Only)
WETLAND PRODUCTION VALUES: Agricultural Values Role of the wetland in contributing to agricultural production				
Does the wetland provide water for livestock?	N	NA	NA	
Does the wetland provide a source of forage?	N	NA	NA	
* Does the wetland provide a source of water for crop irrigation?	N	NA	NA	
Does the wetland serve to reduce topsoil erosion?	N	NA	NA	
Does the wetland serve to increase soil moisture and enhance agricultural crop production?	N	NA	NA	
WETLAND PRODUCTION VALUES: Renewable Resource Values Role of the wetland in contributing to the viability of renewable resource harvest				
* Is the wetland used for commercial or subsistence hunting, trapping and fishing?	N	NA	NA	
Does the wetland provide opportunities for non-commercial uses of fish, wildlife, crustaceans and/or water resources?	Y	L	M	There is a possibly albeit limited for varying hare trapping and minor cranberry or other berry harvesting but only to immediate to local residents
Can forest resources of the wetland be harvested?	N	NA	NA	
* Are there other commercial uses of the wetland, such as harvesting opportunities for wild rice, cranberries, or gathering crabs and oysters?	N	NA	NA	
WETLAND PRODUCTION VALUES: Non-renewable Resource Values Role of the wetland in contributing non-renewable resources for consumption				
* Is the wetland used as a commercial source of peat for horticulture or energy?	N	NA	NA	
Does the wetland occur over known mineral or gas and oil deposits?	N	NA	NA	
WETLAND PRODUCTION VALUES: Tourism and Recreational Values Role of the wetland in stimulating tourism and recreation economic benefits				
* Does the wetland represent an important local, regional, or provincial tourism or recreation attraction?	N	NA	NA	
Does the wetland contribute to the local, regional, or provincial tourism and recreation economy?	N	NA	NA	

WETLAND VALUES

	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function (Provide Highlights Only)
Does the wetland contribute to national and international tourism development?	N	NA	NA	
WETLAND PRODUCTION VALUES: Urban Values Role of the wetland in contributing to urban economic values				
* Is the wetland used to provide water for industry?	N	NA	NA	
* Is the wetland used as a means of sewage treatment?	N	NA	NA	
* Is the wetland a direct source of domestic water supply?	N	NA	NA	
Does the wetland enhance residential, commercial or industrial development values?	Y	L	M	The presence of the wetland provide for local green space and buffer between proposed commercial and existing residential areas. The wetland provides, and is envisioned to provide more storage for runoff form the surrounding area
Does the wetland contribute to urban flood protection and associated land values?	P	L	L	The water flow passing through the wetland is present of negligible flood threat with increasing development, flows increase and the wetland function in flood protection is expect to increase. It is proposed that modifications be made to ensure flood protection function.

Key: **Are Criteria Present?:**	**Level of Criterion Significance:**	**Expected Impact of project Upon Wetland Values:**
Y = Yes: confirmed presence L = Likely: data suggests the presence but the presence is unconfirmed P = Possibly: location and circumstance suggests presence but no data are available N = No: not present U = Unknown	N = National P = Provincial R = Regional L = Local NE = Negligible NA = Not Applicable	H = High M = Moderate L = Low NA = Not Applicable

Appendix C

Vascular Plant Species Found in the Wetland

Vascular Plant Species Found in the Wetland

Common Name	Binomial	Population Status (ACCDC)
Balsam Fir	*Abies balsamea*	S5
Red Maple	*Acer rubrum*	S5
Speckled Alder	*Alnus incana*	S5
Running Serviceberry	*Amelanchier x intermedia*	N/A
Wild Sarsaparilla	*Aralia nudicaulis*	S5
Red Chokeberry	*Aronia arbutifolia*	S4S5
Black Chokeberry	*Aronia melanocarpa*	S5
Whorled Aster	*Aster acuminatus*	S5
Rough-Leaved Aster	*Aster radula*	S5
Parasol White-Top	*Aster umbellatus*	S5
a hybrid White Panicled American-Aster	*Aster X blakei*	N/A
Heart-Leaved Paper Birch	*Betula cordifolia*	S5
Paper Birch	*Betula papyrifera*	S5
Gray Birch	*Betula populifolia*	S5
Blue-Joint Reedgrass	*Calamagrostis canadensis*	S5
Hoary Sedge	*Carex canescens*	S5
Long Sedge	*Carex folliculata*	S5
Black Sedge	*Carex nigra*	S5
A Sedge	*Carex papercula var. irrigua*	S5
Three-Seed Sedge	*Carex trisperma*	S5
Goldthread	*Coptis trifolia*	S5
Dwarf Dogwood	*Cornus canadensis*	S5
Spoon-Leaved Sundew	*Drosera intermedia*	S5
Roundleaf Sundew	*Drosera rotundifolia*	S5
Spinulose Shield Fern	*Dryopteris carthusiana*	S5
Crested Shield Fern	*Dryopteris cristata*	S5
Blunt Spike-Rush	*Eleocharis obtusa*	S4S5
Field Horsetail	*Equisetum arvense*	S5
Tawny Cotton-Grass	*Eriophorum virginicum*	S5
Flat-Top Fragrant-Golden-Rod	*Euthamia graminifolia*	S5
Creeping Snowberry	*Gaultheria hispidula*	S5
Black Huckleberry	*Gaylussacia baccata*	S5
Canada Manna-Grass	*Glyceria canadensis*	S5
Pale St. John's-Wort	*Hypericum ellipticum*	S5
Black Holly	*Ilex verticillata*	S5
Blueflag	*Iris versicolor*	S5
Narrow-Panicled Rush	*Juncus brevicaudatus*	S5
Canada Rush	*Juncus canadensis*	S5
Soft Rush	*Juncus effusus*	S5
Brown-Fruited Rush	*Juncus pelocarpus*	S5
Sheep-Laurel	*Kalmia angustifolia*	S5
American Larch	*Larix laricina*	S5
Common Labrador Tea	*Ledum groenlandicum*	S5
Tree Clubmoss	*Lycopodium obscurum*	S5
Northern Bugleweed	*Lycopus uniflorus*	S5
Swamp Loosestrife	*Lysimachia terrestris*	S5
Wild Lily-of-The-Valley	*Maianthemum canadense*	S5
Indian Cucumber-Root	*Medeola virginiana*	S5
Indian-Pipe	*Monotropa uniflora*	S5

Vascular Plant Species Found in the Wetland

Common Name	Binomial	Population Status (ACCDC)
Northern Bayberry	*Myrica pensylvanica*	S5
Mountain Holly	*Nemopanthus mucronata*	S5
Sensitive Fern	*Onoclea sensibilis*	S5
Cinnamon Fern	*Osmunda cinnamomea*	S5
Black Spruce	*Picea mariana*	S5
Large-Tooth Aspen	*Populus grandidentata*	S5
Quaking Aspen	*Populus tremuloides*	S5
Three-Leaved Rattlesnake-root	*Prenanthes trifoliolata*	S5
Northern Red Oak	*Quercus rubra*	S5
Rhodora	*Rhododendron canadense*	S5
White Beakrush	*Rhynchospora alba*	S5
Bristly Dewberry	*Rubus hispidus*	S5
Cottongrass Bulrush	*Scirpus cyperinus*	S5
Small-Fruit Bulrush	*Scirpus microcarpus*	S5
Three-Leaf Solomon's-Plume	*Smilacina trifolia*	S4S5
Rough-Leaf Goldenrod	*Solidago rugosa*	S5
Bog Goldenrod	*Solidago uliginosa*	S5
American Mountain-Ash	*Sorbus americana*	S5
American Bur-Reed	*Sparganium americanum*	S5
Narrow-Leaved Meadowsweet	*Spiraea alba*	S5
Hardhack Spiraea	*Spiraea tomentosa*	S5
New York Fern	*Thelypteris noveboracensis*	S5
Bog Fern	*Thelypteris simulata*	S4S5
Mars Fern	*Thelypteris palustris*	S5
Marsh St. John's-Wort	*Triadenum fraseri*	S5
Northern Starflower	*Trientalis borealis*	S5
Painted Trillium	*Trillium undulatum*	S5
Colt's Foot	*Tussilago farfara*	SE
Broad-Leaf Cattail	*Typha latifolia*	S5
Horned Bladderwort	*Utricularia cornuta*	S5
Greater Bladder-Wort	*Utricularia vulgaris*	S5
Late Lowbush Blueberry	*Vaccinium angustifolium*	S5
Large Cranberry	*Vaccinium macrocarpon*	S5
Velvetleaf Blueberry	*Vaccinium myrtilloides*	S5
Small Cranberry	*Vaccinium oxycoccos*	S5
Possum-Haw Viburnum	*Viburnum nudum*	S5
Lance-Leaf Violet	*Viola lanceolata*	S5
Smooth White Violet	*Viola macloskeyi*	S5
Northern Yellow-Eyed-Grass	*Xyris montana*	S4