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Item No. 10.1.1
North West Community Council
April 9, 2018
May 14, 2018

TO: Chair and Members of North West Community Council

SUBMITTED BY: Original Signed
Steven Higgins, Acting Director, Planning and Development

DATE: March 28, 2018

SUBJECT: **Case 21012: Development Agreement for reduction in Environmental Setback, Damascus Road and Duke Street, Bedford**

ORIGIN

- Application by WSP Canada Inc.
- September 5, 2017, Regional Council approval MPS amendment to enable gas stations in the ILI Zone, Bedford Common Commercial area.

LEGISLATIVE AUTHORITY

Halifax Regional Municipality Charter (HRM Charter), Part VIII, Planning & Development

RECOMMENDATION

It is recommended that North West Community Council:

1. Give notice of motion to consider the proposed development agreement, as set out in Attachment A of this report, to alter an environmentally sensitive area and to reduce an environmental setback at Damascus Road and Duke Street, Bedford and schedule a public hearing;

2. Approve the proposed development agreement, which shall be substantially of the same form as set out in Attachment A of this report; and

3. Require the agreement be signed by the property owner within 120 days, or any extension thereof granted by Council on request of the property owner, from the date of final approval by Council and any other bodies as necessary, including applicable appeal periods, which is later; otherwise this approval will be void and obligations arising hereunder shall be at an end.

BACKGROUND

WSP Canada Inc., on behalf of Banc Developments Limited and Hamton Holdings Limited, has applied to enter in to a development agreement to alter an environmentally sensitive area and to reduce an environmental setback to allow the development of an access driveway, a parking area and a car wash for a commercial development which includes a gas bar and commercial retail units at Damascus Road and Duke Street, Bedford (Attachment H).

Subject Site	PID 41376856 (no civic address assigned)	
Location	Southern Corner of Damascus Road and Duke Street - Bedford	
Regional Plan Designation	Urban Settlement / Industrial Park	
Community Plan Designation (Map 1)	IND –Industrial (Map 1)	
Zoning (Map 2)	ILI – Light Industrial Zone (Map 2)	
Size of Site	9,771.4 sq. m. (105,181 sq. ft.) in area	
Street Frontage	228 metres (748 feet) of frontage on two streets	
Current Land Use(s)	vacant	
Surrounding Use(s)	North: South: East: West	Bedford Common commercial centre Wetland / Rocky Lake Dome arena Bedford Industrial Park including: • Kel-Ann Organics (Soil Manufacture); and • Strescon – Concrete Products Bedford Common commercial centre • Multiple tenant commercial building

Proposal Details
The applicant proposes to alter an existing wetland and reduce the environmental setback to create an additional driveway access, additional parking lot aisles, parking spaces and a car wash. The major aspects of the proposal are as follows:

- the partial alteration of a wetland;
- the creation of an underground water retention chamber to maintain stormwater capacity;
- the creation of a new driveway access to Duke Street;
- the creation of parking lot aisles and parking areas
- the construction of a car wash;
- the reestablishment of a new watercourse buffer to create a 50-foot setback with vegetation which enhances the ecological functions of the area, encourages ground water recharge and creates a viable riparian habitat.; and
- a stormwater management plan and an erosion and sedimentation control plan;

Enabling Policy and LUB Context
Provincial Jurisdiction
The Province of Nova Scotia through the Environment Act and other legislation and regulation controls the alterations of watercourse and wetlands. The Municipality is the successor to any outcomes of such alterations.

The design and operation of service stations (gas bars or gas stations) are stringently regulated by Nova Scotia Environment (NSE) under the *Environment Act* and through *Petroleum Management Regulations*.

Municipal Policies and Regulations
The Regional MPS (Attachment B) and Bedford MPS (Attachment C) acknowledge that the Province of Nova Scotia ultimately controls alterations of wetlands. Further, the Regional MPS includes a policy path that enables development within and adjacent to wetlands by development agreement subject to Provincial approval. Provincial approval to reduce the size of a wetland as proposed in this case are relatively common. Should wetlands and watercourse be made suitable for development through the Provincial approval process, relevant MPS policies and LUB regulations would apply.

Regional MPS – The Regional MPS (RMPS) sets high level environmental policy for the Municipality. Policies E-15 and E-16 prohibit development within wetlands 2000 sq. m. or greater and set specific riparian buffers (environmental setbacks). In this instance the Regional MPS acknowledges protection of the wetland until such a time that the Province (NS Environment) determines that it is suitable for development. Further the RMPS and does not require a riparian buffer around the wetland on the subject site.

Community Plan (Bedford MPS) – The Bedford MPS requires a 30.5 m (100 feet) setback from watercourses and environmentally sensitive areas and prohibits development in environmentally sensitive areas (including the wetland on the subject site). The Bedford MPS setback requirement takes precedent even though the Regional MPS does not require a riparian buffer. However, wetlands may be developed and/or the environmental setback may be reduced to a minimum of 50 feet by development agreement subject to a determination that there are no negative impacts.

The MPS permits light industrial uses on the subject lands including commercial developments, gas stations and car washes.

Bedford Land Use By-law (LUB) - Regional MPS and Bedford MPS policies are implemented through regulations in Part 4, Clause 3 (Development Agreements) and Part 5, Clause 21 (Riparian Buffers) of the Bedford Land Use By-law.

In summary, policies enable the consideration of a development agreement for an alteration of the subject wetland and a reduction in the environmental setback.

COMMUNITY ENGAGEMENT

The community engagement process has been consistent with the intent of the HRM Community Engagement Strategy. The level of community engagement was consultation, achieved through providing information and seeking comments through the HRM website, signage posted on the subject site, letters mailed to property owners within the notification area and a public information meeting held on April 3, 2017. No members of the public attended the meeting. One public comment was received (Attachment F).

A public hearing must be held by North West Community Council before they can consider approval of the proposed development agreement. Should Community Council decide to proceed with a public hearing on this application, in addition to the published newspaper advertisements, property owners within the notification area shown on Map 3 will be notified of the hearing by regular mail.

The proposal will potentially impact local residents and property owners, community or neighbourhood organizations, and businesses.

DISCUSSION

Staff has reviewed the proposal relative to all relevant policies and advise that it is consistent with the intent of the MPS. Attachment B and C provides an evaluation of the proposed development agreement in relation to the relevant RMPS and MPS policies.

Proposed Development Agreement
Attachment A contains the proposed development agreement for the subject site and the conditions under which the development may occur. The proposed development agreement addresses the following matters:

- erosion and sedimentation control;
- stormwater management;
- the creation of an underground water retention chamber to create stormwater storage;
- site design including a new driveway access to Duke Street and the creation of parking lot aisles and parking areas, and the construction of a building for a car wash; and

- the reestablishment of a new wetland buffer to create a minimum 50 foot setback with vegetation which enhances the ecological functions of the area, encourages ground water recharge and creates a viable riparian habitat.

The attached development agreement permits the alteration of a portion of the wetland and a reduction of the environmental setback from 100 feet to 50 feet, subject to the controls identified above. Of the matters addressed by the proposed development agreement to satisfy the RMPS and MPS criteria as shown in Attachment B and C, the following have been identified for detailed discussion.

Can the property be reasonably developed without a reduction in the setback and alteration – The proposed site is bounded by two roads Damascus Road and Duke Street. Damascus Road is a two-lane street with a boulevard and Duke Street is a two lane road. The lot frontages on both streets are primarily controlled by Nova Scotia Transportation and Infrastructure Renewal (NSTIR) and all driveways must meet their requirements.

Due to the boulevard in front of the Damascus Road driveway and the proximity to the adjacent traffic signals at Duke Street, only a right-in and right-out driveway movements are possible. Because access at this driveway is limited, a second access is required on Duke Street to allow for a more complete set of traffic turns. Without this second driveway on Duke Street, the site access would be compromised to the point of rendering the site impractical to develop. No other available access options have been identified.

A second Duke Street driveway requires alteration of the wetland to place a driveway at a location acceptable to NSTIR.

Staff believe that without the Duke Street driveway, the site is undevelopable for the light industrial uses permitted in the MPS and the LUB.

Alteration to the Wetland and a reduced setback – NS Environment has issued a permit for the alteration of the wetland on the site to make additional land developable. The permit requires the construction of underground storage chambers to maintain the capacity of the wetland to manage stormwater in this area. Details of the underground storage are provided in Attachment G. Above the underground storage area parking and a driveway area are proposed and a car wash is proposed adjacent to the storage tanks. After construction, Halifax Water will be granted an easement and they will take over responsibility for the maintenance of the underground storage chambers.

The alterations and proposed development meet the requirements of MPS policy and will create a new 50-foot environmental setback. Elements within this setback will:

- be designed by a landscape architect;
- promote infiltration of surface water and to be low maintenance;
- be mulched and planted with woody shrubs and supplemented with perennial low groundcover herbaceous plants. Grasses shall not be permitted; and
- vegetated with native species unless determined to be inappropriate or unavailable;

These requirements were recommended by the applicant's environmental consultant.

Land Uses proposed inside the environmental setback – The land uses proposed inside the required 100 feet environmental setback include a driveway, parking aisle, parking area and a car wash. All uses are permitted by the Light Industrial (ILI) Zone.

Adjacent Land Uses outside the environmental setback – The adjacent proposed land use is a gas bar and retail outlets (to be determined), These land uses are located outside the required 100 feet environmental setback and permitted by the Light Industrial (ILI) Zone. These uses are located outside the 100 feet environmental setback and are not regulated by the development agreement which only impacts activities located within the setback.

Car Wash and Site Drainage – All water used in the car will be treated by an oil and grit separator prior to entering the sanitary sewer system. Carwash water will not be directed towards the storm water system.

All stormwater will be directed away from the wetland with an on-site stormwater collection system and no water will be directly discharged into the wetland.

North West Planning Advisory Committee
On May 3, 2017, the North West Planning Advisory Committee (PAC) recommended that North West Community Council reject the application due to traffic concerns due to a busy intersection on Duke and Damascus and second entrance on Duke Street, environmental impact of infilling the wetland, and concerns over the role of Halifax Water in the ownership and maintenance of the hydro storage water and/or drainage technology.

Regional Waters Advisory Board
On April 12, 2017, the Regional Waters Advisory Board (RWAB) recommended that the application be approved subject to best management construction and sediment control practices being followed by the developer to minimize any negative impacts to the wetland noting that a redesigned buffer enhances the ecological functions of the area, encourages ground water recharge and creates a viable riparian habitat.

Conclusion
Staff have reviewed the proposal in terms of all relevant policy criteria and advise that the proposal is consistent with the intent of the MPS. An environmental study has concluded that no negative impacts are expected if the setback is reduced from 100ft to 50ft. provided the developer follows the applicable guidelines and suggested best practices Further, all proposed land uses are permitted in the existing Light Industrial (ILI) Zone. Therefore, staff recommend that the North West Community Council approve the proposed development agreement.

FINANCIAL IMPLICATIONS

There are no budget implications. The applicant will be responsible for all costs, expenses, liabilities and obligations imposed under or incurred in order to satisfy the terms of this proposed development agreement. The administration of the proposed development agreement can be carried out within the approved 2018/2019 budget and with existing resources.

RISK CONSIDERATION

There are no significant risks associated with the recommendations contained within this report. This application may be considered under existing MPS policies. Community Council has the discretion to make decisions that are consistent with the MPS, and such decisions may be appealed to the N.S. Utility and Review Board. Information concerning risks and other implications of adopting the proposed development agreement are contained within the Discussion section of this report.

ENVIRONMENTAL IMPLICATIONS

No additional concerns were identified beyond those raised in this report.

ALTERNATIVES

1. North West Community Council may choose to approve the proposed development agreement subject to modifications. Such modifications may require further negotiation with the applicant and may require a supplementary report or another public hearing. A decision of Council to approve this development agreement is appealable to the N.S. Utility & Review Board as per Section 262 of the *HRM Charter*.

2. North West Community Council may choose to refuse the proposed development agreement, and in doing so, must provide reasons why the proposed agreement does not reasonably carry out the intent of the MPS. A decision of Council to refuse the proposed development agreement is appealable to the N.S. Utility & Review Board as per Section 262 of the *HRM Charter*.

ATTACHMENTS

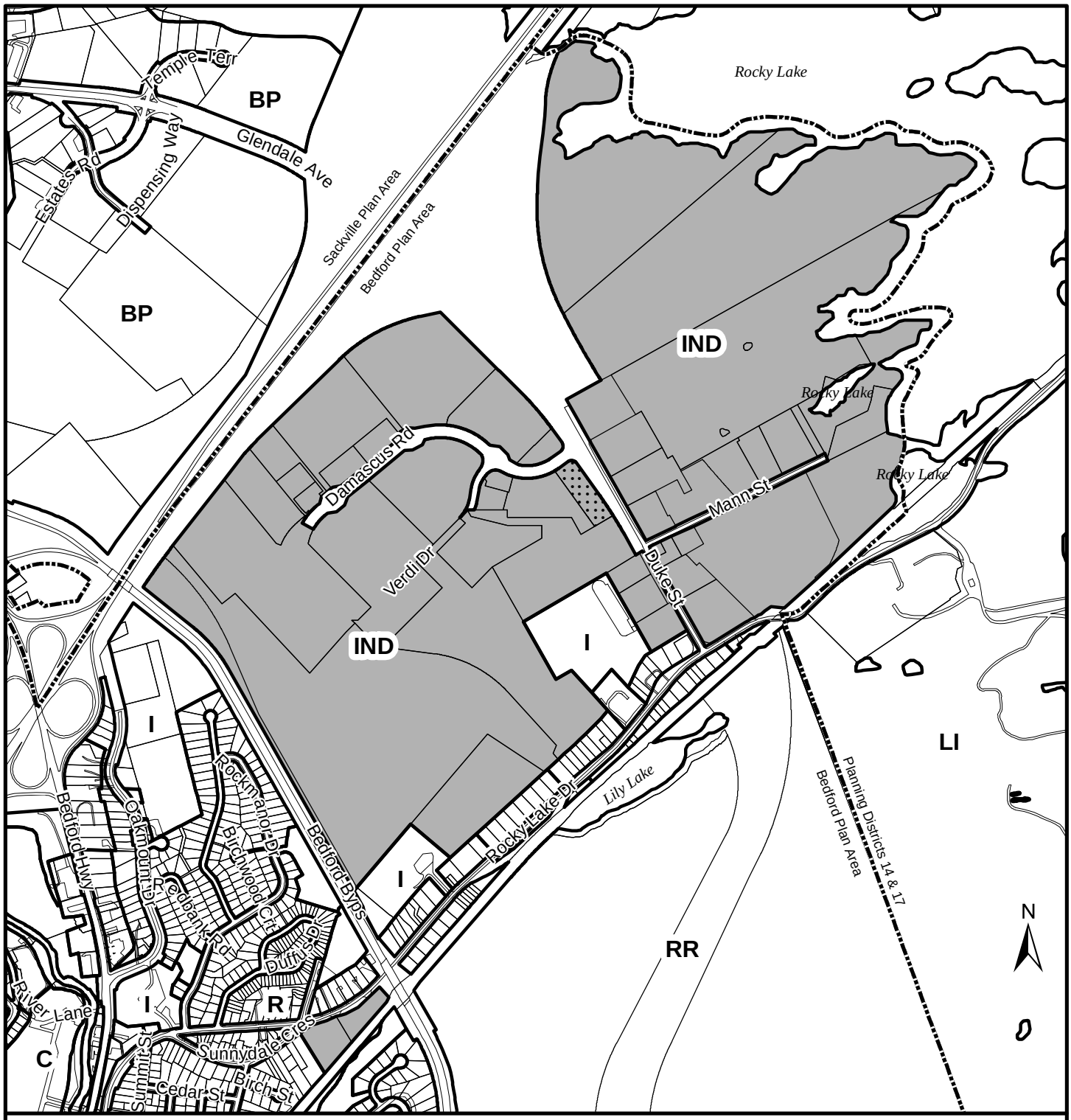
Map 1	Generalized Future Land Use Map
Map 2	Zoning Map
Map 3	Notification Area
Map 4	Schedule C-3 Service Stations as a Permitted Use in the ILI (Light Industrial) Zone
Attachment A	Proposed Development Agreement
Attachment B	Review of Relevant Regional MPS Policies
Attachment C	Review of Relevant Bedford MPS Policies
Attachment D	Relevant Bedford LUB Regulations
Attachment E	Legislative Authority
Attachment F	Public Comments Received
Attachment G	Environmental Impact Study
Attachment H	Conceptual Renderings

Available Upon Request
Case 20211 - Initiation Report - June 21, 2016
Case 20211 – Final Report – July 17, 2017

A copy of this report can be obtained online at http://www.halifax.ca/council/agendasc/cagenda.php then choose the appropriate meeting date, or by contacting the Office of the Municipal Clerk at 902.490.4210, or Fax 902.490.4208.

Report Prepared by: Andrew Bone, Planner III, 902.490.6743

Report Approved by: Original Signed
_____
Maggie Holm, Principal Planner, Urban Enabled Applications, 902.293.9496



Map 1 - Generalized Future Land Use
Eastern Bedford Area

HALIFAX

Industrial Designation

Subject Site

Plan Area Boundary

Bedford Plan Area

Bedford Designations

R	Residential
RR	Residential Reserve
C	Commercial
IND	Industrial
I	Instituional

Sackville Designations

BP	Business Park

Planning Districts 14 & 17 Designations

LI	Light Industrial

0 100 200 300 400 500 m

This map is an unofficial reproduction of a portion of the Generalized Future Land Use Map for the plan area indicated.

The accuracy of any representation on this plan is not guaranteed.

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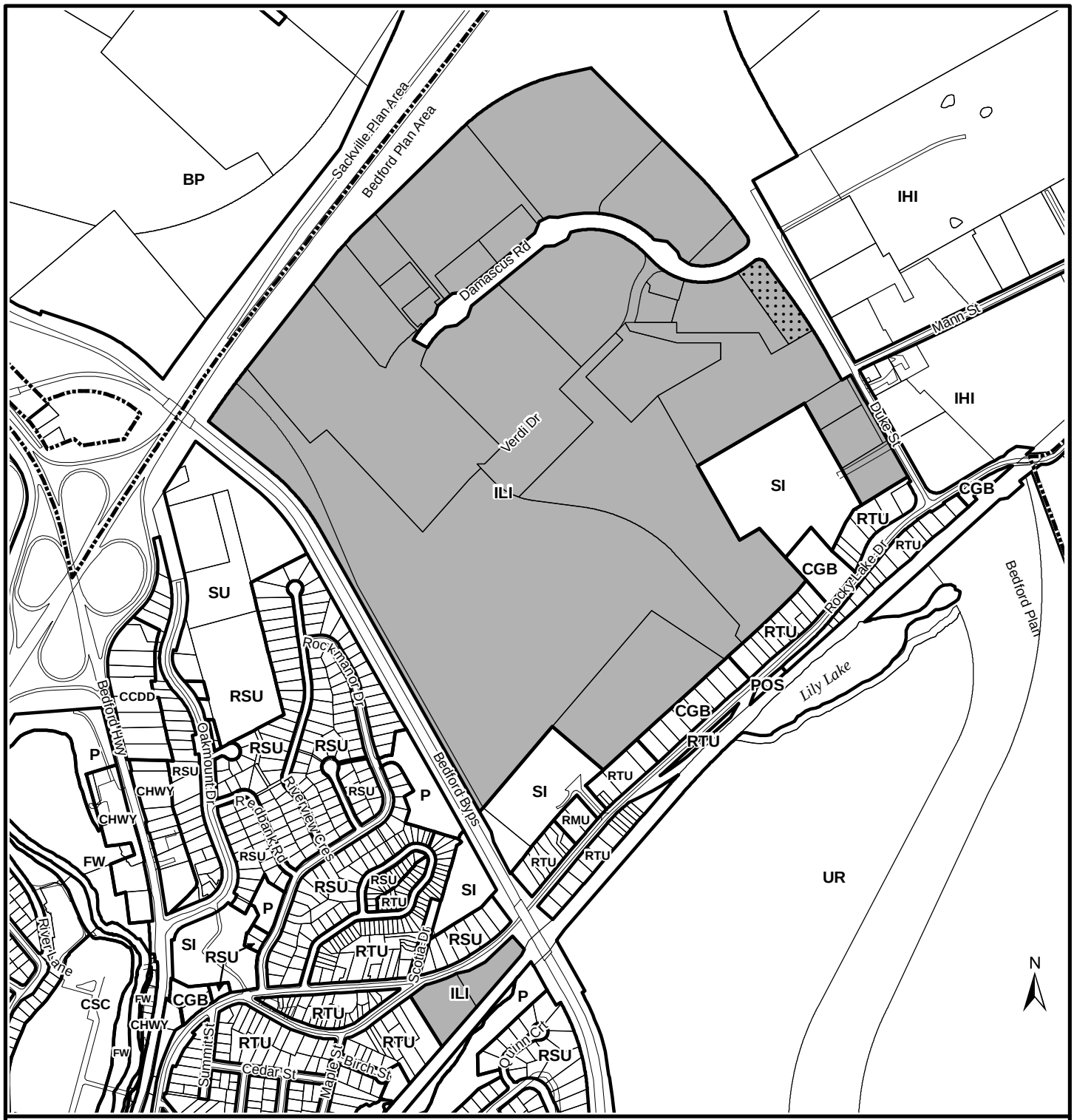


Map 2 - Zoning
Eastern Bedford Area

Lands Zoned (ILI) Light Industrial

Subject Site

Plan Area Boundary

Bedford Land Use By-Law Area

Zone

Bedford	RSU	Single Unit Dwelling
	RTU	Two Unit Dwelling
	RMU	Multiple Dwelling Unit
	CGB	General Business District
	CSC	Shopping Centre
	CHWY	Highway Oriented Commercial
	CCDD	Commercial Comprehensive Development District
	LIL	Light Industrial
	IHI	Heavy Industrial
	SI	Institutional
	P	Park
	FW	Floodway
	UR	Urban Reserve
Sackville	BP	Business Park

HALIFAX

0 100 200 300 400 m

This map is an unofficial reproduction of a portion of theZoning Map for the plan area indicated.

The accuracy of any representation on this plan is not guaranteed.

Attachment A – Proposed Development Agreement

THIS AGREEMENT made this day of **[Insert Month]**, 20__,

BETWEEN:

[Insert Name of Corporation/Business LTD.]
a body corporate, in the Province of Nova Scotia
(hereinafter called the "Developer")

OF THE FIRST PART

- and -

HALIFAX REGIONAL MUNICIPALITY
a municipal body corporate, in the Province of Nova Scotia
(hereinafter called the "Municipality")

OF THE SECOND PART

WHEREAS the Developer is the registered owner of certain lands located at PID 41376856, Damascus Road, Bedford and which said lands are more particularly described in Schedule A hereto (hereinafter called the "Lands");

AND WHEREAS the Developer has requested that the Municipality enter into a Development Agreement to allow for a reduction in an environmental setback, alteration of a wetland, and to enable a driveway, parking lot, underground stormwater storage, a commercial (car wash) building and landscaping related to a gas bar and retail unit on the Lands pursuant to the provisions of the *Halifax Regional Municipality Charter* and pursuant to Policies) E-8, E-14 and Z-3 of the Bedford Municipal Planning Strategy and Part 4, clause 3(a)(m) and (h) of the Bedford Land Use By-law;

AND WHEREAS the North West Community Council for the Municipality approved this request at a meeting held on [**Insert - Date**], referenced as Municipal Case Number Case 21012;

THEREFORE, in consideration of the benefits accrued to each party from the covenants herein contained, the Parties agree as follows:

PART 1: GENERAL REQUIREMENTS AND ADMINISTRATION

1.1 Applicability of Agreement

1.1.1 The Developer agrees that the Lands shall be developed and used only in accordance with and subject to the terms and conditions of this Agreement.

1.2 Applicability of Land Use By-law and Subdivision By-law

1.2.1 Except as otherwise provided for herein, the development, use and subdivision of the Lands shall comply with the requirements of the Land Use By-law for Bedford and the Regional Subdivision By-law, as may be amended from time to time.

1.3 Applicability of Other By-laws, Statutes and Regulations

1.3.1 Further to Section 1.2, nothing in this Agreement shall exempt or be taken to exempt the Developer, lot owner or any other person from complying with the requirements of any by-law of the Municipality applicable to the Lands (other than the Land Use By-law to the extent varied by

this Agreement), or any statute or regulation of the Provincial/Federal Government and the Developer or Lot Owner agree(s) to observe and comply with all such laws, by-laws and regulations, as may be amended from time to time, in connection with the development and use of the Lands.

1.3.2 The Developer shall be responsible for securing all applicable approvals associated with the on-site and off-site servicing systems required to accommodate the development, including but not limited to sanitary sewer system, water supply system, stormwater sewer and drainage system, and utilities. Such approvals shall be obtained in accordance with all applicable by-laws, standards, policies, and regulations of the Municipality and other approval agencies. All costs associated with the supply and installation of all servicing systems and utilities shall be the responsibility of the Developer. All design drawings and information shall be certified by a Professional Engineer or appropriate professional as required by this Agreement or other approval agencies.

1.4 Conflict

1.4.1 Where the provisions of this Agreement conflict with those of any by-law of the Municipality applicable to the Lands (other than the Land Use By-law to the extent varied by this Agreement) or any provincial or federal statute or regulation, the higher or more stringent requirements shall prevail.

1.4.2 Where the written text of this Agreement conflicts with information provided in the Schedules attached to this Agreement, the written text of this Agreement shall prevail.

1.5 Costs, Expenses, Liabilities and Obligations

1.5.1 The Developer shall be responsible for all costs, expenses, liabilities and obligations imposed under or incurred to satisfy the terms of this Agreement and all Federal, Provincial and Municipal laws, by-laws, regulations and codes applicable to the Lands.

1.6 Provisions Severable

1.6.1 The provisions of this Agreement are severable from one another and the invalidity or unenforceability of one provision shall not affect the validity or enforceability of any other provision.

PART 2: DEFINITIONS

2.1 Words Not Defined under this Agreement

2.1.1 All words unless otherwise specifically defined herein shall be as defined in the applicable Land Use By-law and Subdivision By-law, if not defined in these documents their customary meaning shall apply.

PART 3: USE OF LANDS, SUBDIVISION AND DEVELOPMENT PROVISIONS

3.1 Schedules

3.1.1 The Developer shall develop the Lands in a manner, which, in the opinion of the Development Officer, conforms with the following Schedules attached to this Agreement and filed in the Halifax Regional Municipality as Case Number 21012:

Schedule A	Legal Description of the Lands
Schedule B	Site Plan - Wetland Alteration
Schedule C	Site Plan – Land Use Concept

3.2 Requirements Prior to Approval

3.2.1 Prior to the issuance of a Lot Grading Permit, the Developer shall provide the following to the Development Officer, unless otherwise permitted by the Development Officer:

(a) Provide a detailed Site Disturbance Plan prepared by a Professional Engineer in accordance with Section 5.2.1 (a) of this Agreement;

(b) Provide a detailed Erosion and Sedimentation Control Plan prepared by a Professional Engineer in accordance with Section 5.2.1 (b) of this Agreement;

(c) Provide a detailed Site Grading and Stormwater Management Plan prepared by a Professional Engineer in accordance with Section 5.2.1 (c) of this Agreement; and

(d) Copies of all permits required by Nova Scotia Environment to enable the alteration of the wetland as shown on the Schedules of this Agreement.

3.2.2 Prior to the issuance of a Development Permit, the Developer shall provide the following to the Development Officer, unless otherwise permitted by the Development Officer:

(a) Landscaping plan in accordance with Section 3.6 of this Agreement.

3.2.3 Prior to the issuance of the first Municipal Occupancy Permit for any building on the lands, the Developer shall provide the following to the Development Officer, unless otherwise permitted by the Development Officer:

(a) Written confirmation from a qualified professional which the Development Officer may accept as sufficient record of compliance with the Landscape Plan required by Section 3.6.

3.2.4 Notwithstanding any other provision of this Agreement, the Developer shall not occupy or use the Lands for any of the uses permitted by this Agreement unless an Occupancy Permit has been issued by the Municipality. No Occupancy Permit shall be issued by the Municipality unless and until the Developer has complied with all applicable provisions of this Agreement and the Land Use By-law (except to the extent that the provisions of the Land Use By-law are varied by this Agreement) and with the terms and conditions of all permits, licenses, and approvals required to be obtained by the Developer pursuant to this Agreement.

3.3 General Description of Land Use

3.3.1 The use(s) of the Lands permitted by this Agreement are the following:

(a) On land within 100 feet of the existing edge of the wetland, identified on Schedule B, a driveway, parking lot, including parking area, driveway aisles, underground stormwater storage, commercial uses permitted in the ILI Zone, and a new 15.24 metres (50 feet) environmental buffer as shown on Schedules B and C; and

(b) Any uses permitted within the existing zone applied to the Lands subject to the provisions contained within the Land Use By-law for Bedford, as amended from time to time.

3.4 Parking, Circulation and Access

3.4.1 The parking area shall be sited as shown on Schedule C. The parking area shall be hard surfaced, and the limits of the parking area shall be defined by fencing or landscaping or curb.

3.5 Outdoor Lighting

3.5.1 Lighting shall be directed to driveways, parking areas, loading area, building entrances and walkways and shall be arranged to divert the light away from streets, adjacent lots and buildings.

3.6 Landscaping

3.6.1 All plant material shall conform to the Canadian Nursery Trades Association Metric Guide Specifications and Standards and sodded areas to the Canadian Nursery Sod Growers' Specifications.

3.6.2 Prior to the issuance of a Development Permit, the Developer agrees to provide Landscape Plan which comply with the provisions of this section and generally conforms with this agreement's overall intentions. The Landscape Plan shall be prepared by a Landscape Architect (a full member, in good standing with Canadian Society of Landscape Architects) and comply with all provisions of this section.

3.6.3 The landscape plan shall include:

(a) detailed provisions for the landscaping of any site disturbance within 100 feet of the new wetland edge which are not used for parking, driveways or buildings.

(b) a new 15.24 metre (50 feet) environmental buffer which shall be:

(i) vegetated to prevent erosion and subsequent siltation;

(ii) designed to promote infiltration of surface water and to be low maintenance;

(iii) mulched and planted with woody shrubs and supplemented with perennial low groundcover herbaceous plants. Grasses shall not be permitted; and

(iv) vegetated with native species unless determined to be inappropriate or unavailable as determined by the Landscape Architect. The buffer area is not intended to be an ornamental landscaped area and ornamental vegetation shall not be permitted;

3.6.3 Prior to issuance of the first Occupancy Permit the Developer shall submit to the Development Officer a letter prepared by a member in good standing of the Canadian Society of Landscape Architects certifying that all landscaping has been completed according to the terms of this Development Agreement.

3.6.4 Notwithstanding Section 3.6.3, where the weather and time of year do not allow the completion of the outstanding landscape works prior to the issuance of the Occupancy Permit, the Developer may supply a security deposit in the amount of 110 percent of the estimated cost to complete the landscaping. The cost estimate is to be prepared by a member in good standing of the Canadian Society of Landscape Architects. The security shall be in favour of the Municipality and shall be in the form of a certified cheque or automatically renewing, irrevocable letter of credit issued by a chartered bank. The security shall be returned to the Developer only upon completion of the work as described herein and illustrated on the Schedules, and as approved by the Development Officer. Should the Developer not complete the landscaping within twelve months of issuance of the Occupancy Permit, the Municipality may use the deposit to complete the landscaping as set out in this section of the Agreement. The Developer shall be responsible for all costs in this regard exceeding the deposit. The security deposit or unused portion of the security deposit shall be returned to the Developer upon completion of the work and its certification.

3.7 Maintenance

3.7.1 The Developer shall maintain and keep in good repair all portions of the development on the Lands, including but not limited to, the exterior of the building, fencing, walkways, recreational amenities, parking areas and driveways, and the maintenance of all landscaping including the replacement of damaged or dead plant stock, trimming and litter control, garbage removal and snow and ice control, salting of walkways and driveways.

3.7.2 With the exception of permitted disturbance, all disturbed areas shall be reinstated to original condition or better.

3.8 Reinstatement

3.8.1 All disturbed areas shall be reinstated to original condition or better.

3.9 Signs

3.9.1 The sign requirements shall be accordance with the Bedford Land Use By-law as amended from time to time.

3.10 Temporary Construction Building

3.10.1 A building shall be permitted on the Lands for housing equipment, materials and office related matters relating to the construction and sale of the development in accordance with this Agreement. The construction building shall be removed from the Lands prior to the issuance of the last Occupancy Permit.

PART 4: STREETS AND MUNICIPAL SERVICES

4.1 General Provisions

4.1.1 All design and construction of primary and secondary service systems shall satisfy the most current edition of the Municipal Design Guidelines, and Halifax Water Design and Construction Specifications, and Nova Scotia Transportation and Renewal regulations, unless otherwise provided for in this Agreement and shall receive written approval from the Development Engineering prior to undertaking the work.

4.2 Off-Site Disturbance

4.2.1 Any disturbance to existing off-site infrastructure resulting from the development, including but not limited to, streets, sidewalks, curbs and gutters, street trees, landscaped areas and utilities, shall be the responsibility of the Developer, and shall be reinstated, removed, replaced or relocated by the Developer as directed by the Development Officer, in consultation with the Development Engineer.

4.3 Outstanding Site Work

4.3.1 Securities for the completion of outstanding on-site paving and landscaping work (at the time of issuance of the first Occupancy Permit) may be permitted. Such securities shall consist of a security deposit in the amount of 110 percent of the estimated cost to complete the work. The security shall be in favour of the Municipality and may be in the form of a certified cheque or irrevocable automatically renewing letter of credit issued by a chartered bank. The security shall be returned to the Developer by the Development Officer when all outstanding work is satisfactorily completed.

PART 5: ENVIRONMENTAL PROTECTION MEASURES

5.1 All private storm water facilities shall be maintained in good order to maintain full storage capacity by the owner of the lot on which they are situated.

5.2 Stormwater Management Plans and Erosion and Sedimentation Control Plan

5.2.1 Prior to the commencement of any site work on the Lands, including earth movement or tree removal other than that required for preliminary survey purposes, or associated off-site works, the Developer shall:

(a) Submit to the Development Officer a detailed Site Disturbance Plan, prepared by a Professional Engineer indicating the sequence and phasing of construction and the areas to be disturbed or undisturbed;

(b) Submit to the Development Officer a detailed Erosion and Sedimentation Control Plan prepared by a Professional Engineer in accordance with the Erosion and Sedimentation Control Handbook for Construction Sites as prepared and revised from time to time by Nova Scotia Environment. Notwithstanding other sections of this Agreement, no work is permitted on the Lands until the requirements of this clause have been met and implemented. The Erosion and Sedimentation Control Plan shall indicate the sequence of construction, all proposed detailed erosion and sedimentation control measures and interim stormwater management measures to be put in place prior to and during construction; and

(c) Submit to the Development Officer a detailed Site Grading and Stormwater Management Plan prepared by a Professional Engineer.

5.3 Sulphide Bearing Materials

5.3.1 The Developer agrees to comply with the legislation and regulations of the Province of Nova Scotia with regards to the handling, removal, and disposal of sulphide bearing materials, which may be found on the Lands.

PART 6: AMENDMENTS

6.1 Non-Substantive Amendments

6.1.1 The following items are considered by both parties to be not substantive and may be amended by resolution of Council:

(a) The granting of an extension to the date of commencement of construction as identified in Section 7.3 of this Agreement.

6.2 Substantive Amendments

6.2.1 Amendments to any matters not identified under Section 6.1 shall be deemed substantive and may only be amended in accordance with the approval requirements of the *Halifax Regional Municipality Charter*.

PART 7: REGISTRATION, EFFECT OF CONVEYANCES AND DISCHARGE

7.1 Registration

7.1.1 A copy of this Agreement and every amendment or discharge of this Agreement shall be recorded at the Registry of Deeds or Land Registry Office at Halifax, Nova Scotia and the Developer shall incur all costs in recording such documents.

7.2 Subsequent Owners

7.2.1 This Agreement shall be binding upon the parties hereto, their heirs, successors, assigns, mortgagees, lessees and all subsequent owners, and shall run with the Lands which are the subject of this Agreement until this Agreement is discharged by Council.

7.2.2 Upon the transfer of title to any lot(s), the subsequent owner(s) thereof shall observe and perform the terms and conditions of this Agreement to the extent applicable to the lot(s).

7.3 Commencement of Development

7.3.1 If development on the Lands has not commenced within five years from the date of registration of this Agreement at the Registry of Deeds or Land Registry Office, as indicated herein, the Agreement shall have no further force or effect and henceforth the development of the Lands shall conform with the provisions of the Land Use By-law.

7.3.2 For this section, commencement of development shall mean issuance of a Building Permit.

7.3.3 For this section, Council may consider granting an extension of the commencement of development time period through a resolution under Section 6.1, if the Municipality receives a written request from the Developer at least sixty (60) calendar days prior to the expiry of the commencement of development time period.

7.4. Completion of Development

7.4.1 Upon the completion of the whole development or complete phases of the development, Council may review this Agreement, in whole or in part, and may:

(a) retain the Development Agreement in its present form;
(b) negotiate a new Agreement;
(c) discharge this Agreement; or
(d) for those portions of the development which are completed, discharge this Agreement and apply appropriate zoning pursuant to the Bedford Municipal Planning Strategy and Bedford Land Use By-law, as may be amended from time to time.

7.5 Discharge of Agreement

7.5.1 If the Developer fails to complete the development after seven years from the date of registration of this Agreement at the Registry of Deeds or Land Registration Office Council may review this Agreement, in whole or in part, and may:

(a) retain the Agreement in its present form;
(b) negotiate a new Agreement; or
(c) discharge this Agreement.

PART 8: ENFORCEMENT AND RIGHTS AND REMEDIES ON DEFAULT

8.1 Enforcement

8.1.1 The Developer agrees that any officer appointed by the Municipality to enforce this Agreement shall be granted access onto the Lands during all reasonable hours without obtaining consent of the Developer. The Developer further agrees that, upon receiving written notification from an officer of the Municipality to inspect the interior of any building located on the Lands, the Developer agrees to allow for such an inspection during any reasonable hour within twenty four hours of receiving such a request.

8.2 Failure to Comply

8.2.1 If the Developer fails to observe or perform any condition of this Agreement after the Municipality has given the Developer 30 days written notice of the failure or default, then in each such case:

(a) The Municipality shall be entitled to apply to any court of competent jurisdiction for injunctive relief including an order prohibiting the Developer from continuing such default and the Developer hereby submits to the jurisdiction of such Court and waives any defence based upon the allegation that damages would be an adequate remedy;

(b) The Municipality may enter onto the Lands and perform any of the covenants contained in this Agreement or take such remedial action as is considered necessary to correct a breach of the Agreement, whereupon all reasonable expenses whether arising out of the entry onto the Lands or from the performance of the covenants or remedial action, shall be a first lien on the Lands and be shown on any tax certificate issued under the *Assessment Act*;

(c) The Municipality may by resolution discharge this Agreement whereupon this Agreement shall have no further force or effect and henceforth the development of the Lands shall conform with the provisions of the Land Use By-law; or

(d) In addition to the above remedies, the Municipality reserves the right to pursue any other remedy under the *Halifax Regional Municipality Charter* or Common Law in order to ensure compliance with this Agreement.

IN WITNESS WHEREAS the said parties to these presents have hereunto set their hands and affixed their seals the day and year first above written.

SIGNED, SEALED AND DELIVERED in the presence of:

(Insert Registered Owner Name)

Per:_____

_____
Witness

HALIFAX REGIONAL MUNICIPALITY

SIGNED, DELIVERED AND ATTESTED to by the proper signing officers of Halifax Regional Municipality, duly authorized in that behalf, in the presence of:

_____
Witness

Per:_____
MAYOR

_____
Witness

Per:_____
MUNICIPAL CLERK

PROVINCE OF NOVA SCOTIA
COUNTY OF HALIFAX

On this _____ day of _____, A.D. 20____, before me, the subscriber personally came and appeared _____ a subscribing witness to the foregoing indenture who having been by me duly sworn, made oath and said that _____, _____ of the parties thereto, signed, sealed and delivered the same in his/her presence.

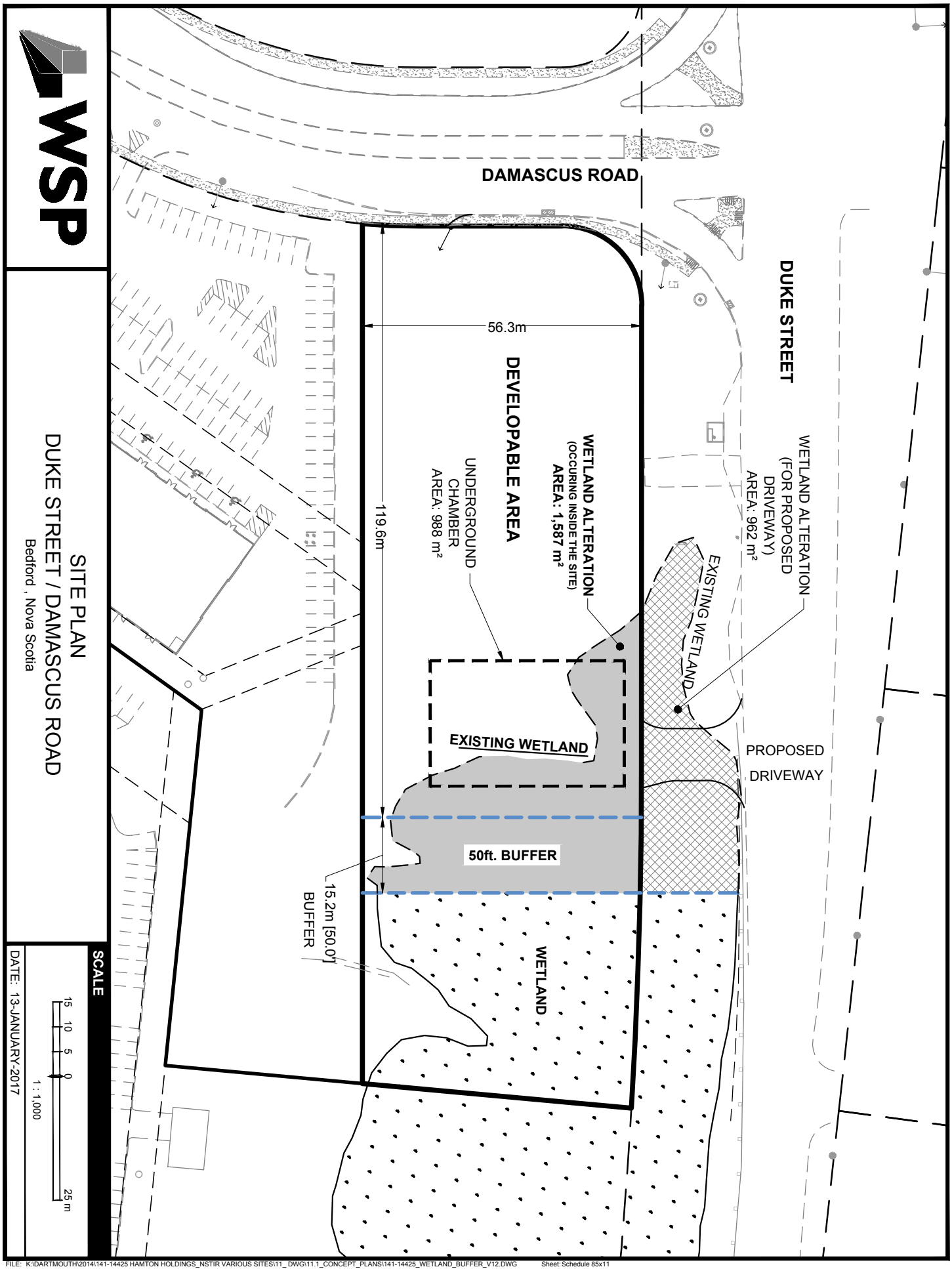
_____
A Commissioner of the Supreme Court
of Nova Scotia

PROVINCE OF NOVA SCOTIA
COUNTY OF HALIFAX

On this _____ day of _____, A.D. 20___, before me, the subscriber personally came and appeared _____ the subscribing witness to the foregoing indenture who being by me sworn, made oath, and said that Mike Savage, Mayor and Cathy Mellett, Clerk of the Halifax Regional Municipality, signed the same and affixed the seal of the said Municipality thereto in his/her presence.

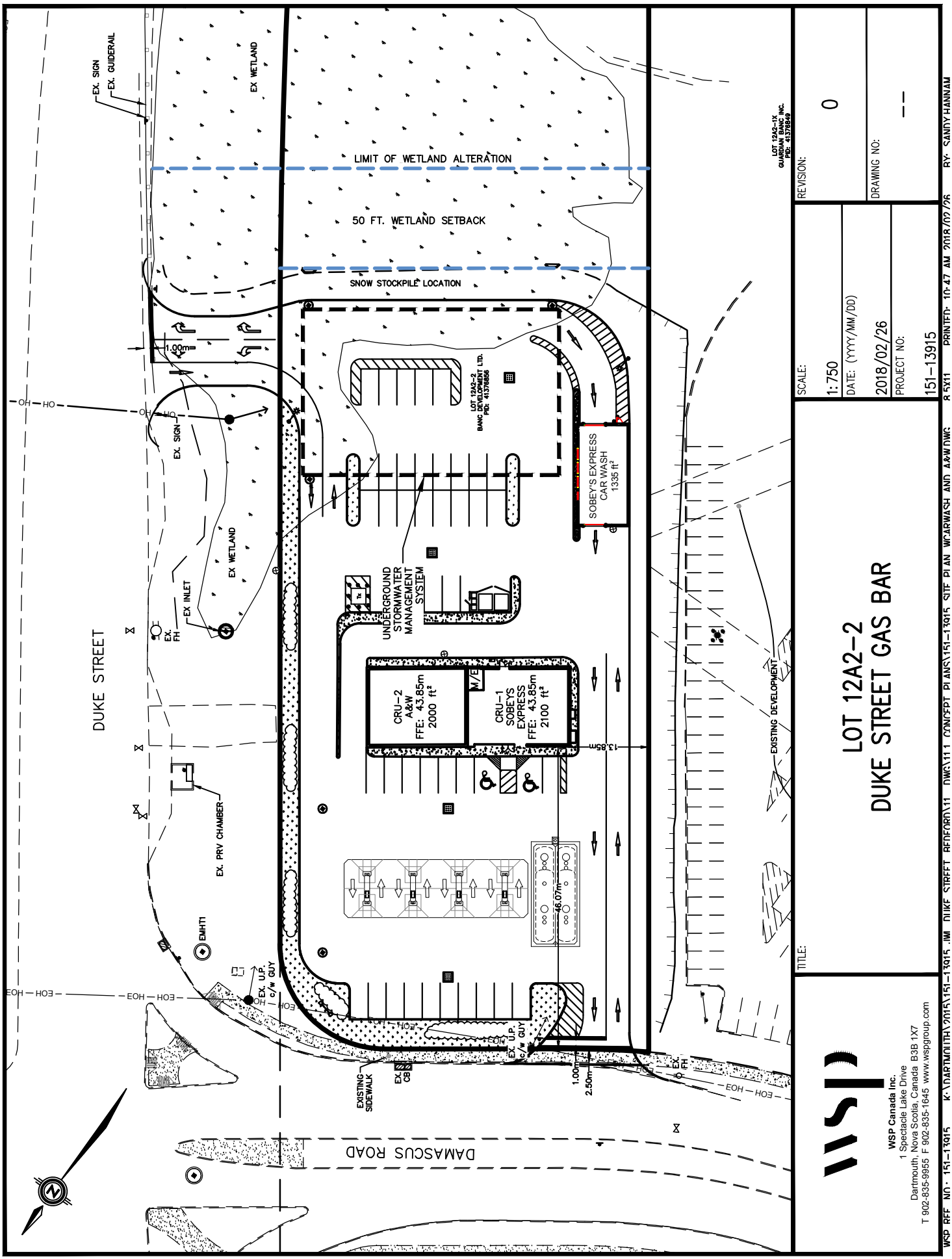
_____
A Commissioner of the Supreme Court
of Nova Scotia

Schedule B: Site Plan - Wetland Alteration



FILE: K:\DARTMOUTH\2014\141-14425 HAMTON HOLDINGS_NSTIR VARIOUS SITES\11_ DWG\11.1_CONCEPT_PLANS\141-14425_WETLAND_BUFFER_V12.DWG Sheet: Schedule 85x11

Schedule C - Site Plan: Land Use Concept



Attachment B

Review of Relevant Policies of the Regional MPS

2.3.2 Wetlands Protection

Wetlands and other watercourses are vital components of the hydrological cycle and affect the quality and quantity of groundwater. They are natural filters for removing sediment, contaminants and excessive nutrients which are drawn up by the vegetation and settle out naturally before entering groundwater. They absorb peak stormwater flows, reducing the risk of flooding downstream while offsetting groundwater extraction to reduce the risk of wells running dry. Wetlands also provide habitat for fish and wildlife and provide opportunities for education and research. Moreover, while enhancing the overall aesthetics of a community, wetlands are unsuitable for development as they pose a hazard for the stability of structures. It is essential that wetlands are protected.

The alteration of wetlands falls under provincial jurisdiction. Wetlands less than 2 hectares in area are assessed under the *Nova Scotia Wetland Conservation Policy* and those more than 2 hectares in area require an environmental impact assessment reviewed under the *Environmental Assessment Act*. Through this Plan, it is HRM's intent to prohibit the development of wetlands until such time as they are made suitable for development in accordance with provincial requirements.

E-15	HRM shall, through the applicable land use by-law, establish a Wetlands Schedule to be used as a reference in determining the presence of wetlands 2000 m² or greater in area. On all applications for development approval, the by-law shall require the proponent to verify the existence and extent of any wetland shown on the schedule. The by-law shall prohibit development within any such wetland except as required to allow for public infrastructure. HRM may consider amending the restrictions made under the land use by-laws from time to time to conform to any guidelines or Statement of Provincial Interest adopted by the Province.	The subject lands are identified on the Wetlands Schedule. It is HRM's intent to prohibit the development of wetlands until such time as they are made suitable for development in accordance with provincial requirements. Further, NS Environment has indicated that they would permit alteration of the wetland to enable the proposed development. Such an approved alteration is enabled under policy.

2.3.3 Riparian Buffers

Retaining riparian buffers around watercourses and along the coastline is important for the protection of water quality, wildlife and the protection of property from the natural hazards of flooding. In addition to the functions of flood regulation, riparian buffers reduce the impacts of sedimentation, erosion and nutrient loading on watercourses, regulate the temperature of adjacent watercourses, provide important wildlife habitat and add aesthetic value to HRM.

The *Water Resource Management Study*[9] recommends the adoption of riparian buffers as established by the Department of Natural Resources. These setbacks are considered adequate for stream bank stability, water temperature regulation and aesthetic value. They also provide minimal protection of wildlife, flood mitigation and partial benefits for sediment removal. They will be used as general riparian buffer protection for the whole of HRM until buffers that meet the specific needs of each watershed can be determined through the watershed studies and implemented through secondary planning processes.

To maximize the protection benefits of riparian buffers, the trees, shrubs, ground cover vegetation and soils must be protected. Retaining native vegetation and native soils enhances runoff storage capacity, infiltration, and nutrient recycling. The canopy should also be retained over watercourses, soil erosion should be prevented, and activities or land uses which introduce nutrients or contaminants into watercourses need to be excluded. In some cases it may also be determined that HRM should consider the ownership of riparian buffers to protect public interest and public access.

E-16	HRM shall, through the applicable land use by-law, require the retention of a minimum 20 metre wide riparian buffer along all watercourses throughout HRM to protect the chemical, physical and biological functions of marine and freshwater resources. Through a secondary planning process, the width of the riparian buffer may be increased. Lands designated Halifax Harbour on the Generalized Future Land Use Map (Map 2), industrial lands within the port of Sheet Harbour and lands within the Waterfront Residential (R-1C) Zone under the Shubenacadie Lakes Secondary Planning Strategy shall be exempted from the buffer requirement. Development within the riparian buffer shall generally be prohibited but provisions may be made to permit water control structures, boardwalks, walkways and trails of limited width, fences, public road crossings, driveway crossings, wastewater, storm and water infrastructure, marine dependent uses, fisheries uses, boat ramps, wharfs, small-scale accessory buildings or structures and attached decks, conservation uses, parks on public lands and historical sites and monuments within the buffer. In addition, no alteration of land levels or the removal of vegetation in relation to development will be permitted.	This policy enables development adjacent to wetlands which are not part of a watercourse. The wetlands is an isolated man made wetland and are not part of a natural watercourse, they discharge stormwater via man made infrastructure to a drainage corridor on the northeast side of Duke Street. As a result the Regional Plan does not require a riparian buffer around the subject wetland.

E-17	Further to policy E-16, where a development may be considered by development agreement, HRM shall consider the acquisition of riparian buffers as public open space	Due to the small size of the wetland, it qualities, location and other relevant characteristics, the acquisition of the land for public open space has limited value.

[9] Dillon Consulting Ltd. *HRM Water Resource Management Study*. Dec. 2002. Halifax.

Attachment C
Review of Relevant Policies of the Bedford MPS

Policy CP-8: It shall be the intention of Town Council to encourage the active participation of residents in Town planning and development matters through the Planning Advisory Committee (BPAC) as set out in the Planning Act, through the Bedford Waters Advisory Committee (BWAC) where appropriate, and by placing notices on the community notice boards (Policy CP-5).	The proposal was reviewed by the North West Planning Advisory Committee, a successor body to BPAC, and by the Regional Waters Advisory Board, a successor to BWAC. Comments from these advisory bodies can be found under separate report and is discussed in the main body of the report.
Policy CP-9: It shall be the intention of Town Council to hold a public information meeting on all rezoning and development applications prior to BPAC forwarding a recommendation to Town Council. The proponent shall participate in these public information meetings. Notices for such meetings shall be distributed to owners/occupants of dwellings within 500 feet of the area proposed for rezoning or a development agreement and a notice shall appear in the newspaper at least seven days in advance of the meeting.	A public information meeting was held but no members of the public participated. Notices were distributed and meet or exceed the requirements of this policy.
Policy I-2: It shall be the intention of Town Council to direct and encourage industrial development in areas designated "Industrial" on the Generalized Future Land Use Map. The following industrial zones shall be applied within the Industrial designation: a) Light Industrial Zone (ILI) which permits industrial uses, including but not limited to, manufacturing, processing, assembly or warehousing operations, shopping centre commercial uses, commercial uses permitted within the General Business District (CGB) Zone, and utility (SU) uses. Commercial office uses permitted within the GBD Zone shall be permitted by development agreement. Light industrial and permitted commercial uses shall be encouraged to locate in the Atlantic Acres Industrial Park, in immediately adjacent industrial areas, and in the southern portion of the Bedford Industrial Park. Service station and gas bar uses shall be permitted in portions of the Bedford Industrial Park, specifically on lands which have direct access to Damascus Drive in the existing Bedford Common commercial area. (RC-Sep5/17;E-Oct21/17)	The proposal is within the Industrial Designation and is zoned Light Industrial (ILI) Zone. The proposed land use is a gas bar and retail unit which are permitted land uses within the ILI Zone.
Policy E-3: It shall be the intention of Town Council to encourage the use of innovative storm water management systems which reduce the impact \of urban development on the environment. Such systems include incorporation of stormwater retention/detention ponds into the storm sewer system, use of velocity breaks and drop manholes on storm sewers which discharge to watercourses,	The proposed development includes an innovative storm water management system which would maintain storm water capacities which would be lost with the infill of the wetland. The proposed system must meet the requirements of Nova Scotia Environment and Halifax Water has indicated they will requires a service easement over the underground storage chambers to own, operate and maintain the off-street infrastructure. HRWC

use of open ditch drainage systems where appropriate, and directing roof drains to the surface rather than connecting directly to the storm sewer system where appropriate. Storm sewer systems are to avoid the direct discharge of stormwater into water bodies where possible.	will maintain the stormwater infrastructure to the manufacture's specification.
Policy E-6: It shall be the intention of Town Council to request that the Bedford Waters Advisory Committee provide a written comment on developments being undertaken by a development agreement pursuant to Policy E-4 and *E-8* prior to a recommendation being made by the Bedford Planning Advisory Committee.	The proposal was reviewed by the Regional Waters Advisory Board, a successor to BWAC. Comments from this advisory body can be found under separate report and is discussed in the main body of the report.
Policy E-8: In areas where Industrial ILI or IHI Zones, Institutional Zones (RC-Mar 18/03;E-May 10/03), or Commercial Zones abut a watercourse or water retention area identified on the map showing environmentally sensitive areas in the Town, Town Council shall prohibit the erection of any structure, or the excavation or filling in of land within 100 feet of the watercourse or water retention area. This 100 ft. area shall be maintained with existing vegetation or landscaped. A reduction in the buffer from 100' to 50' may be considered by Town Council by a development agreement, where it is demonstrated that a property can not be reasonably developed by complying with the 100 foot setback and site disturbance provisions. A development agreement shall be subject to the provisions of Policy Z-3, and the undertaking of an environmental study which addresses the issues of runoff, erosion, siltation and any other impacts on the watercourse during and after construction. The development agreement shall outline the specific measures to be used to ensure a no net loss in the effectiveness of the natural 100' buffer in terms of protecting the watercourse. The setback and site disturbance provisions of this policy are applicable also to commercial uses in an RCDD zone and multiple unit dwellings in all zones. Single unit dwellings, two unit dwellings and townhouses in all zones are subject to the setback provisions of Policy E-4. Policy E-8 shall not apply to properties abutting the Bedford Basin.	The proposed development agreement enables a reduction in the environmental buffer from 100 feet to 50 feet from the edge of the altered wetland. Policy E-13 enables the consideration of a development agreement to permit the infill of a wetland. Further review can be found below with regards to Policy E-13. The above report discusses the question of complying to the 100 foot setback and its implications on developability of the lands. Staff are of the opinion that the reduction to 50 feet is justified by the access details for the lot. An environmental study has been completed and is attached to this report. The study reviews the proposed use of engineered underground water retention chambers to maintain the capacity of the wetland. The study concludes that "provided the developer follow applicable guidelines and suggested best practices, no negative impacts from this project are expected to result if the setback requirement is reduced from 100ft to 50ft.
Policy E-13: It shall be the intention of Town Council to identify on a map areas which are environmentally sensitive to development. This map shall be known as the Environmentally Sensitive Areas Map. These areas, which require special consideration in their development because of the presence of certain hydrologic and geomorphic features, are slopes which exceed 20% and water retention areas [lakes, ponds, swamps, bogs, marshes]. Environmentally sensitive areas within the two large undeveloped portions of the Town located within the Residential Development Boundary have been studied and	The wetland located on the site is identified on the Environmental Sensitive Areas Map as a water retention area.

identified: a) Union Street RCDD, and b) Papermill Lake RCDD.	
Policy E-14: Town Council shall require that environmentally sensitive areas as identified in Policy E-13 remain in a natural state, unless as part of a development agreement the proponent undertakes an environmental impact study to determine whether the environmental constraints are non-existent or can be overcome without adversity to the environment. The study shall identify the area's sensitivities through consideration of the items listed in the chart within Appendix A. The study shall address the impact of the proposed development on the area's identified sensitivities and how the impact(s) may be mitigated. The study shall also establish a means of monitoring any potential impacts during the development phase and for a specific time following development. Proposals considered under this policy shall be subject to the evaluation criteria contained in Policy Z-3.	An environmental study has been completed and is attached to this report. The study reviews the proposed use of engineered underground water retention chambers to maintain the capacity of the wetland and the reduction in environmental setback from 100 feet to 50 feet. The study concludes that "provided the developer follow applicable guidelines and suggested best practices, no negative impacts from this project are expected to result if the setback requirement is reduced from 100ft to 50ft. The study follows the format proposed in Attachment A. The Nova Scotia Environment wetland alteration Approval requires the installation of a shallow monitoring well within remaining wetland habitat at the property line between the subject property and the southern adjacent property in order to establish baseline surface water levels and demonstrate there is no effect on the remaining wetland. Staff are of the opinion that such testing as required by NSE complies with this policy.
Policy Z-3: It shall be the policy of Town Council when considering zoning amendments and development agreements [excluding the WFCDD area] with the advice of the Planning Department, to have regard for all other relevant criteria as set out in various policies of this plan as well as the following matters:	
l. That the proposal is in conformance with the intent of this Plan and with the requirements of all other Town By-laws and regulations, and where applicable, Policy R-16 is specifically met;	The proposal complies with this policy.
2. That the proposal is compatible with adjacent uses and the existing development form in the neighbourhood in terms of the use, bulk, and scale of the proposal;	The proposal is compatible with the adjacent development form (big box commercial and light industrial land uses) in terms of use, bulk and scale.
3. That provisions are made for buffers and/or separations to reduce the impact of the proposed development where incompatibilities with adjacent uses are anticipated;	No incompatibilities with adjacent uses have been identified. Adequate environmental buffers (50 feet) are maintained under the proposed development agreement.
4. That provisions are made for safe access to the project with minimal impact on the adjacent street network;	NSTIR and the Municipality have reviewed and approved in principle the proposed access points. Final approval will take place at permitting.
5. That a written analysis of the proposal is provided by staff which addresses whether the proposal is premature or inappropriate by reason of: i) the financial capability of the Town to absorb any capital or operating costs relating to the development; ii) the adequacy of sewer services within the proposed development and the surrounding area, or if services are not provided, the adequacy of physical site conditions for private on-site sewer and water systems; iii) the adequacy of water services for domestic	This analysis and the attached report fulfil this requirement. i)No capital costs have been identified and any operating costs can be managed through existing approved budgets. The developer is responsible for all costs related to onsite and offsite works. ii) Existing sewer services are adequate for the treatment of sanitary services. Upgrades to the existing storm system are proposed at the developers cost. Halifax Water has indicated they will take over operation and maintenance of the storm upgrades when the upgrades are complete. iii) No deficiencies in water services have been

services and fire flows at Insurers Advisory Organization (I.A.O.) levels; the impact on water services of development on adjacent lands is to be considered;	identified.
iv) precipitating or contributing to a pollution problem in the area relating to emissions to the air or discharge to the ground or water bodies of chemical pollutants;	iv) The proposed adjacent gas station and car wash must meet all requirements of NS Environment.
v) the adequacy of the storm water system with regard to erosion and sedimentation on adjacent and downstream areas (including parklands) and on watercourses;	v) It is not anticipated that this development will have an impact on adjacent and downstream erosion and sedimentation. The proposal requires that best practices be followed at all times.
vi) the adequacy of school facilities within the Town of Bedford including, but not limited to, classrooms, gymnasiums, libraries, music rooms, etc.;	vi) Not applicable.
vii) the adequacy of recreational land and/ or facilities;	vii) Not applicable.
viii) the adequacy of street networks in, adjacent to, or leading toward the development regarding congestion and traffic hazards and the adequacy of existing and proposed access routes;	viii) The proposal has been reviewed by NSTIR and Municipal Engineering and all accesses have received conceptual approval. Further engineering, analysis and review will take place prior to permitting
ix) impact on public access to rivers, lakes, and Bedford Bay shorelines;	ix) Not applicable.
x) the presence of significant natural features or historical buildings and sites;	x) The site includes a small man-made water retention area and is not considered significant.
xi) creating a scattered development pattern which requires extensions to trunk facilities and public services beyond the Primary Development Boundary;	xi) The proposal is an extension of existing development and does not create a scattered development pattern.
xii) impact on environmentally sensitive areas identified on the Environmentally Sensitive Areas Map; and,	xii) The site includes a small wetland which is identified on the Environmentally Sensitive Areas Map. The subject review and analysis is with regards to the impact on this area. An environmental study has been completed and is attached to this report. The study reviews the proposed use of engineered underground water retention chambers to maintain the capacity of the wetland. The study concludes that “provided the developer follow applicable guidelines and suggested best practices, no negative impacts from this project are expected to result if the setback requirement is reduced from 100ft to 50ft.
xiii) suitability of the proposed development's siting plan with regard to the physical characteristics of the site.	xiii) Subsequent to the approved alteration to the wetland and landscaping of the 50 foot environmental setback, the proposed development will be suitable for the subject site.
6. Where this plan provides for development agreements to ensure compatibility or reduce potential conflicts with adjacent land uses, such agreements may relate to, but are not limited to, the following: i) type of use, density, and phasing; ii) traffic generation, access to and egress from the site, and parking; iii) open storage and landscaping; iv) provisions for pedestrian movement and safety;	The purpose of the proposed development agreement is to manage the reduction of an environmental setback. Drainage, both natural and subsurface is the only applicable issue. Drainage and stormwater flow are specifically dealt with in the proposed design. The proposed alteration meets all municipal and provincial requirements. Further engineering and analysis will take place prior to permitting.

v) provision and development of open space, parks, and walkways; vi) drainage, both natural and subsurface; vii) the compatibility of the structure(s) in terms of external design and external appearance with adjacent uses; and, viii) the implementation of measures during construction to minimize and mitigate adverse impacts on watercourses.	
7. Any other matter enabled by Sections 73 and 74 of the Planning Act.	No other relevant matters have been identified.
8. In addition to the foregoing, all zoning amendments and development agreements shall be prepared in sufficient details to: i) provide Council with a clear indication of the nature of the proposed development; and ii) permit staff to assess and determine the impact such development would have on the proposed site and the surrounding community.	The proposal meets these requirements.
9. To assist in the evaluation of applications to enter into development agreements, Council shall encourage proponents to provide the following information: a) a plan to a scale of 1":100' or 1":40' showing such items as: i) an overall concept plan showing the location of all proposed land uses; ii) each residential area indicating the number of dwelling units of each type and an indication of the number of bedrooms; iii) description, area, and location of all proposed commercial, cultural, mixed-use projects proposed; iv) location, area, shape, landscaping and surface treatment of all public and private open spaces and/or park areas; v) plan(s) showing all proposed streets, walkways, sidewalks, bus bays and bike routes; vi) a description of any protected viewplanes; and, vii) an indication of how the phasing and scheduling is to proceed. b) For individual phases of a development more detailed concept plans are to be provided indicating such items as maximum building heights, location and configuration of parking lots, landscaping plans, and any additional information required to be able to assess the proposal in terms of the provisions of the Municipal Planning Strategy. c) Plans to the scale of 1":100' showing schematics of the proposed sanitary and storm sewer systems and, water distribution system.	Plans submitted provided reasonable detail to determine appropriate information and detail about the proposal.
10. Within any designation, where a holding zone has been established pursuant to AInfrastructure Charges - Policy IC-6", Subdivision Approval shall be subject to the provisions of the Subdivision By-	Not applicable.

law respecting the maximum number of lots created per year, except in accordance with the development agreement provisions of the MGA and the AInfrastructure Charges@ Policies of this MPS. (RC-Jul 2/02;E-Aug 17/02)	

APPENDIX A

TABLE OF CONTENTS
IMPACT ASSESSMENT REPORT

Attachment D
Relevant Bedford LUB Regulations

PART 2 DEFINITIONS

Automobile Service Station or Service Station - means a building or part of a building or a clearly defined space on a lot used for the retail sale of lubricating oils and gasolines and may include the sale of automobile accessories and the servicing and minor repairing essential to the actual operation of motor vehicles other than auto body repairs or an automobile sales establishment. Further Service Satiations may include a gas bar and related accessory uses. (RC-Sep5/17;E-Oct21/17)

Gas Bars - means development used for the retail sale of gasoline, other petroleum products and incidental automotive accessories. This use does not include service stations but may include a car wash or drive-thru restaurant as an accessory use. (RC-May 20/14;E-Jun 14/14)

PART 4 USES PERMITTED BY DEVELOPMENT AGREEMENT

1. Council may by resolution under the authority of Section 55 or 56 of the Planning Act, approve any specific Development proposal as provided for in the policies in the Municipal Planning Strategy.

2. Approval by Council under Part 4, Section 1 shall only be granted subject to the condition that the registered owner of the land upon which the development is to occur shall enter into an agreement with Council containing such terms and conditions as enabled by the Planning Act.

3. The Municipal Planning Strategy provides that the following shall be dealt with by Development Agreement in accordance with Residential Policies R-8 to R-17, R-27, **R-27A, R-27B (RC-Jan 13/09;E-Feb 28/09),** R-28 **and R-31 (RC-Mar 6/07;E-Apr 7/07)**; Commercial Policies C-4, **C-4a (RC-Mar 6/07;E-Apr 7/07)**, C-5, C-7 to C-15, C-18, C-20, C-29A, C-31 to C-32; Waterfront Policies WF-20 to WF-23; Industrial Policies I-2, I-4 and I-7; Institutional Policy S-7 ; Environmental Policies E-4 to E-8, E-11, E-14 and E-45; and Implementation Policy Z-2.

h) Within areas identified as environmentally sensitive, a development agreement may be considered to permit the development of environmentally sensitive lands consistent with the zoning on the property, subject to an environmental study being undertaken (Policy E-14);

m) Within all commercial zones and the ILI, IHI, and **SI** Zones, a development agreement may be considered to permit the erection of a commercial, **institutional,** industrial, or multiple unit residential structure or excavation or in-filling of land within 100 feet but not less than 50 feet of any watercourse or water retention area identified on the map showing environmentally sensitive areas in the Town, following the completion of an environmental study (Policy E-8); **(RC-Mar 18/03;E-May 10/03)**

PART 5 GENERAL PROVISIONS FOR ALL ZONES

21. Watercourse Setbacks and Buffers (RC-Jun 25/14;E-Oct 18/14)

(1) (a) No development permit shall be issued for any development within 20m of the ordinary highwater mark of any watercourse.

(b) Where the average positive slopes within the 20m buffer are greater than 20%, the buffer shall be increased by 1 metre for each additional 2% of slope, to a maximum of 60m.

(c) Within the required buffer pursuant to clauses (a) and (b), no excavation, infilling, tree, stump and other vegetation removal or any alteration of any kind shall be permitted in relation to a development.

(d) Within the required buffer pursuant to clauses (a) and (b), activity shall be limited to the placement of one accessory structure or one attached deck not exceeding a footprint of 20 m² ora combination of an accessory structure and

attached deck not exceeding 20 m² , fences, boardwalks, walkways and trails not exceeding 3 metres in width, wharfs, boat ramps, marine dependent uses, fisheries uses, conservation uses, parks

on public lands, historic sites and monuments, and public road crossings, driveway crossings and wastewater, storm and water infrastructure, and water control structures.

(e) **Notwithstanding clause (a), the required buffer for construction and demolition operations shall be as specified under the applicable CD Zone.**

(f) **Within the buffer required pursuant to clause (e), no excavation, infilling, tree, stump and other vegetation removal or any alteration of any kind shall be permitted in relation to a development.**

(g) **Notwithstanding clause (a), multiple unit dwellings, and commercial buildings shall be setback a minimum of 30.5 m from any watercourse or water retention area shown on the Environmentally Sensitive Areas map or as determined by the Province of Nova Scotia under the Environment Act and no excavation or infilling shall be permitted within this buffer area except by development agreement.**

(h) **Notwithstanding clause (a), in all commercial zones and the ILI and IHI industrial zones, and the SI institutional zone, no building structure or use shall be permitted within 30.5 m of any watercourse or water retention area shown on the Zoning or Environmentally Sensitive Areas Map or as determined by the Province of Nova Scotia under the Environment Act, and no excavation or infilling within this area shall be permitted, except possibly through the provisions of a development agreement through the provisions of Policy E-8. The 30.5 m area shall be maintained with existing vegetation or shall be landscaped. Single unit, two unit and townhouses within the CCDD Zone shall be regulated by**

(a) above.

(i) **Activity within the required buffer pursuant to clauses (g) and (h), shall be limited to the placement of board walks, walkways and trails, conservation uses, parks on public lands, historic sites and monuments, public roads and wastewater, storm and water infrastructure, and water control structures.**

(2) **Notwithstanding subsection (1), where an existing residential building is located within the required buffer, accessory structures, subject to meeting other requirements of this by-law, shall be permitted provided they are located no closer to the watercourse than the existing main building.**

(3) **Where the configuration of any existing lot, including lots approved as a result of completed tentative and final subdivisions applications on file prior to August 26, 2006, is such that no main building could be located on the lot, the buffer distance shall be reduced in a manner which would provide the greatest possible separation from a watercourse having regard to other yard requirements.**

(4) **Notwithstanding subsection (1), nothing in this by-law shall prohibit the removal of windblown, diseased or dead trees, deemed to be hazardous or unsafe.**

(5) **Notwithstanding subsection (1), the selective removal of vegetation to maintain the overall health of the buffer may be authorized by the Development Officer where a management plan is submitted by a qualified arborist, landscape architect, forester or forestry technician.**

(6) **Every application for a development permit for a building or structure to be erected pursuant to this section, shall be accompanied by plans drawn to an appropriate scale showing the required buffers, existing vegetation limits and contours and other information including professional opinions, as the Development Officer may**

require, to determine that the proposed building or structure will meet the requirements of this section.

(7) **Subsection (1) does not apply to lands within the area designated on the Generalized Future Land Use Map in the Regional Municipal Planning Strategy as Harbour.**

37E. Appendix D – Wetlands (RC-Jun 25/14;E-Oct 18/14)

Every application for a development permit shall be accompanied by plans, drawn to an appropriate scale, showing the location of all wetlands identified on Appendix D attached to this by-law, within and adjacent to the lot. Notwithstanding any other provision of this by-law, no development of any kind shall be permitted within any such wetland.

PART 17 LIGHT INDUSTRIAL (ILI) ZONE

No development permit shall be issued in a Light Industrial (ILI) Zone except for one or more of the following uses:

a) warehouses and storage and distribution centres
b) manufacturing, processing, assembly, recycling, or warehousing operations which are not objectionable uses;
c) parking and or storage of industrial or heavy commercial vehicles, equipment and similar goods;
d) trade centres
e) building supplies sales
f) auto service and supplies centres/outlets
g) uses permitted in the Shopping Centre Zone (CSC);
h) wholesalers
i) full service and take-out restaurants
j) furniture stores
k) uses permitted in the CGB Zone, except office buildings, subject to CGB Zone provisions
l) day care facilities; (RC-Mar 3/09;E-Mar 21/09)
m) dry cleaning depot
n) recycling depot
o) uses permitted in the SU Zone
p) bingo halls
q) billiard/snooker club
qa) Auto body repair shops on properties identified on Schedules C-1 and C-2 **(NWCC-Mar 21/16; E-Apr 2/16)**
qb) **Service stations and gas bars on properties identified on Schedule C-3 (RC-Sep5/17;E-Oct21/17)**
r) any uses accessory to the foregoing uses.

ZONE REQUIREMENTS ILI

In any Light Industrial (ILI) Zone no development permit shall be issued except in conformity with the following requirements:

Minimum Lot Area ……5,000 sq. ft. Minimum Lot Frontage..... 50 ft.
Minimum Front Yard ..... 30 ft. setback
Minimum Rear Yard ..... 0 ft. except 40 ft. where abutting a residential zone
Minimum Side Yard ..... 0 ft. except 40 ft. where abutting a residential zone
Maximum Height of Building..... 52 ft.
Maximum Lot Coverage 70%

SPECIAL REQUIREMENTS: LANDSCAPING/ OUTDOOR DISPLAY AND STORAGE

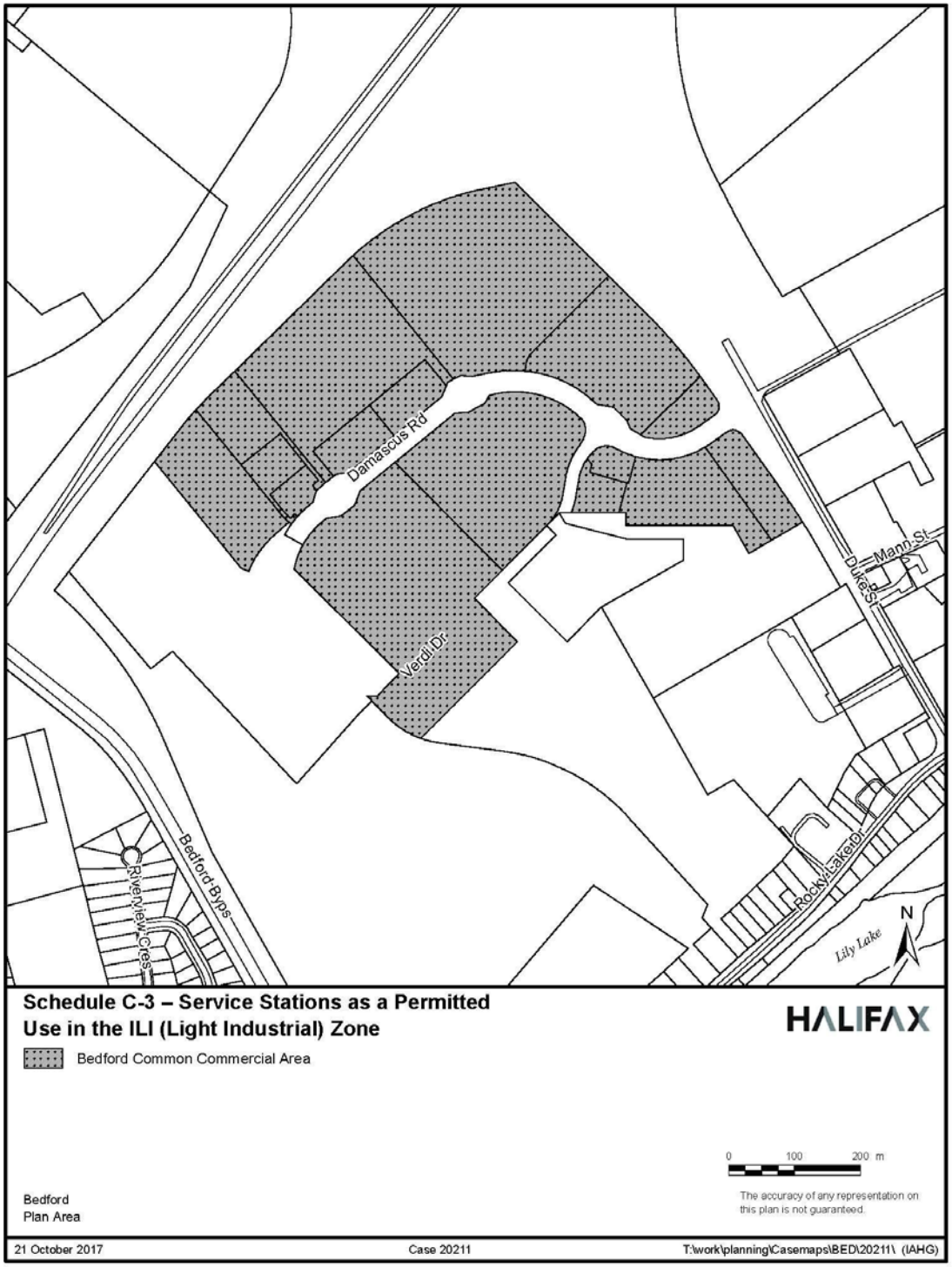
a) There shall be a landscaped area of at least 15 feet in depth running the length of and directly abutting the front lot line. This landscaped area shall extend the length of the front lot line and of the flankage lot line for a corner lot. Landscaping shall consist of existing vegetation and/or plantings as per *Part 5, Section 32*.

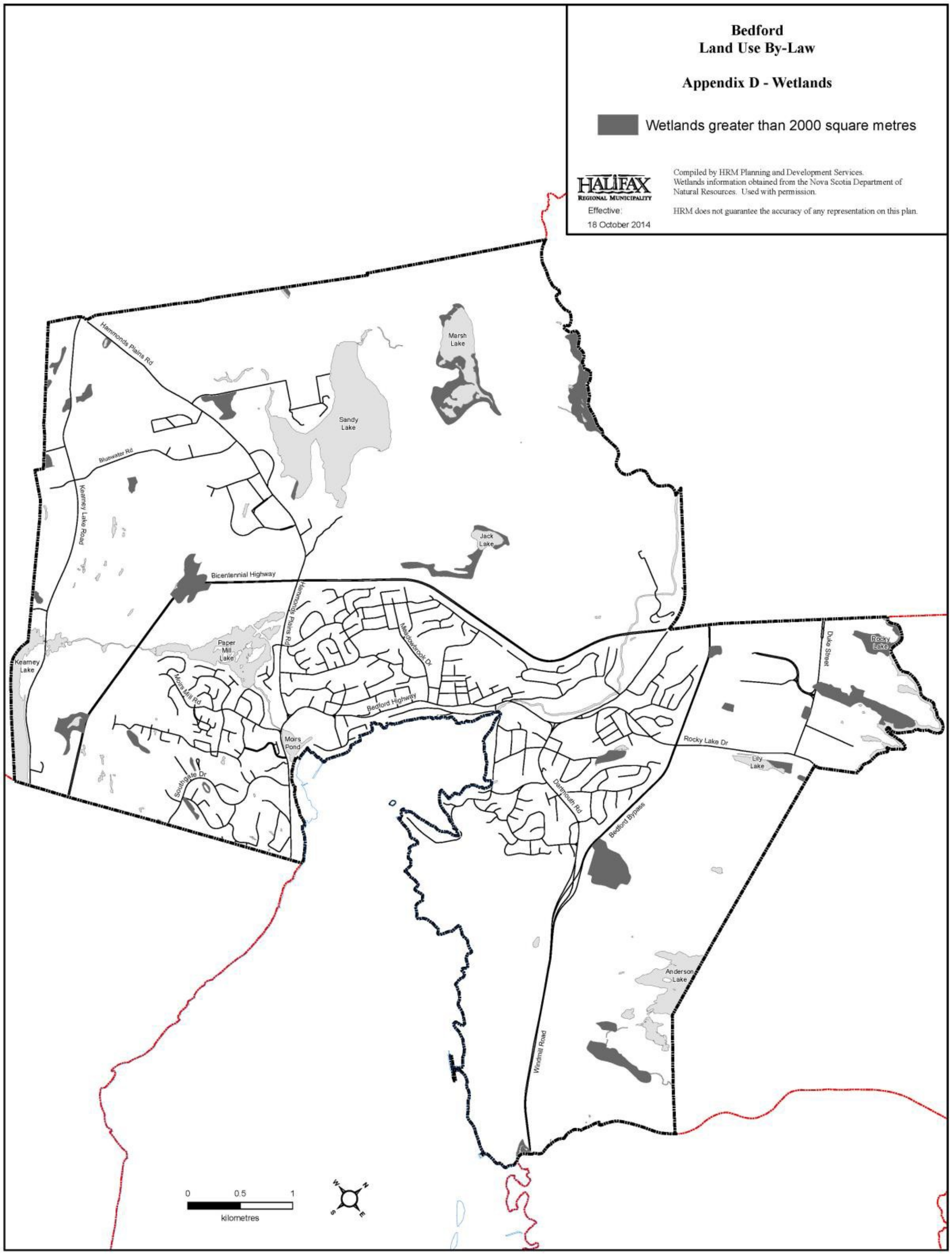
b) A buffer 40 feet wide, beginning at the property line, shall be required for the for side or rear yards in an Industrial Zone which abut an existing residential use, vacant land zoned for residential use, or a Park or Institutional Zone.

c) No outdoor storage shall be located:
   i) within any required yard; nor
   ii) within any yard which abuts lands fronting on an arterial road; except where a fence or other visual barrier is provided to completely screen the use.

d) Outdoor display may be permitted provided it does not occur on the required 15 Ft. landscaped area described above and required abutting yards as per Part 5, Section 24 b).

e) External fuel storage tanks shall be screened unless located at the rear of the building.


Damascus Rd
Verdi Dr
Mann St
Duke St
Rockwell Lake Dr
Bedford Byps
Riverview Cres
Lily Lake
N
Schedule C-3 – Service Stations as a Permitted Use in the ILI (Light Industrial) Zone
HALIFAX
Bedford Common Commercial Area
0 100 200 m
The accuracy of any representation on this plan is not guaranteed.
Bedford Plan Area
21 October 2017
Case 20211
T:\work\planning\Casemaps\BED\20211\ (IAHG)


Bedford
Land Use By-Law
Appendix D - Wetlands
Wetlands greater than 2000 square metres
HALIFAX
Regional Municipality
Compiled by HRM Planning and Development Services.
Wetlands information obtained from the Nova Scotia Department of Natural Resources. Used with permission.
Effective:
18 October 2014
HRM does not guarantee the accuracy of any representation on this plan.
Hammonds Plains Rd
Marsh Lake
Sandy Lake
Bluewater Rd
Kearney Lake Road
Jack Lake
Bicentennial Highway
Paper Mill Lake
Kearney Lake
Moirs Mill Rd
Bedford Highway
Moirs Pond
Southgate Dr
Dartmouth Rd
Bedford Bypass
Rocky Lake Dr
Lily Lake
Duke Street
Rocky Lake
Anderson Lake
Windmill Road
0
0.5
1
kilometres

Attachment E – Legislative Authority

Development Agreements By Community Council

The *Community Council Administrative Order*, subsection 3 (1) "Subject to subsection (3) of this section, sections 29, 30 and 31 of the *Halifax Regional Municipality Charter* apply to each Community Council."

Halifax Regional Municipality Charter:

Development agreements by community councils

31 **(1)** This Section applies to a community council if the Council so provides in the policy establishing the community council.

(2) Where a municipal planning strategy of the Municipality provides for development by agreement, the community council stands in the place and stead of the Council and Part VIII applies with all necessary changes.

(3) A development agreement, or amendment to a development agreement, entered into by a community council must be signed by the Mayor and the Clerk on behalf of the Municipality.

(4) Where a development agreement entered into by a community council purports to commit the Municipality to an expenditure, the commitment has no force or effect until approved by the Council. 2008, c. 39, s. 31.

HRM Charter, Part VIII, Planning and Development, including:

Development agreements

240 **(1)** The Council may consider development by development agreement where a municipal planning strategy identifies

(a) the developments that are subject to a development agreement;
(b) the area or areas where the developments may be located; and
(c) the matters that the Council must consider prior to the approval of a development agreement.

(2) The land-use by-law must identify the developments to be considered by development agreement. 2008, c. 39, s. 240.

Content of development agreements

242 **(1)** A development agreement may contain terms with respect to

(a) matters that a land-use by-law may contain;
(b) hours of operation;
(c) maintenance of the development;
(d) easements for the construction, maintenance or improvement of watercourses, ditches, land drainage works, stormwater systems, wastewater facilities, water systems and other utilities;
(e) grading or alteration in elevation or contour of the land and provision for the disposal of storm and surface water;
(f) the construction, in whole or in part, of a stormwater system, wastewater facilities and water system;
(g) the subdivision of land;
(h) security or performance bonding.

(2) A development agreement may include plans or maps.

(3) A development agreement may

(a) identify matters that are not substantive or, alternatively, identify matters that are substantive;
(b) identify whether the variance provisions are to apply to the development agreement;
(c) provide for the time when and conditions under which the development agreement may be discharged with or without the concurrence of the property owner;
(d) provide that upon the completion of the development or phases of the development, the development agreement, or portions of it, may be discharged by the Council;
(e) provide that, where the development does not commence or is not completed within the time specified in the development agreement, the development agreement or portions of it may be discharged by the Council without the concurrence of the property owner. 2008, c. 39, s. 242.

Requirements for effective development agreement

243 **(1)** A development agreement must not be entered into until
(a) the appeal period has elapsed and no appeal has been commenced; or
(b) all appeals have been abandoned or disposed of or the development agreement has been affirmed by the Board.

(2) The Council may stipulate that a development agreement must be signed by the property owner within a specified period of time.

(3) A development agreement does not come into effect until
(a) the appeal period has elapsed and no appeal has been commenced or all appeals have been abandoned or disposed of or the development agreement has been affirmed by the Board;
(b) the development agreement is signed by the property owner, within the specified period of time, if any, and the Municipality; and
(c) the development agreement is filed by the Municipality in the registry.

(4) The Clerk shall file every development agreement, amendment to a development agreement and discharge of a development agreement in the registry. 2008, c. 39, s. 243.

Attachment F
Public Comments Received

Dear Mr. Bone:

I am the [redacted] and [redacted] of [redacted]. which owns property on Duke St. I have the following comments regarding the aforementioned application:

- Currently the existing wetland is used to reduce downstream storm water flow.
- It is proposed to reclaim a substantial portion of this wetland.

I am concerned that there is potential for flooding of the properties located downstream during minor (5 year) as well as major (100 year) storm events. HRM or Halifax Water should take the lead in managing the storm water facilities that would prevent this.

Regards,

[redacted]

Englobe
Soils Materials Environment

Hampton Holdings

Impact Assessment – Lot 12A-2 Duke Street, Bedford, Nova Scotia

Report

Date: January 23, 2017
Ref. N°: B-0015573-1

Englobe

Hampton Holdings

Impact Assessment, Lot 12A-2 Duke Street, Bedford, Nova Scotia

Report | B-0015573-1

Prepared by: Original Signed

Jenna Walker, B.Env.Sc., M.F., CET.
Environmental Professional, Environmental Engineering

Approved by : Original Signed

for **Aven Cole, M.Sc.E., P.Eng.**
Project Manager, Environmental Engineering

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REVISION AND PUBLICATION REGISTER		
Revision N°	**Date**	**Modification And/Or Publication Details**
00	2016-12-12	Report Issued
01	2017-01-23	Report Revised

Englobe

EXECUTIVE SUMMARY

Hampton Holdings Limited currently plans to construct two commercial buildings and a gas bar on Lot 12A-2 Duke Street, in a commercial area of Bedford, Nova Scotia called "Bedford Common."

The subject property contains a single wetland (Wetland 1) which is considered an environmentally sensitive area according to the 2015 Bedford Municipal Planning Strategy (MPS). Policy E-8 of the MPS states that it is prohibited to erect any structure or excavate or fill any land within 100 ft of a water retention area. A reduction in the buffer from 100 ft to 50 ft may be considered by a development agreement, where it is demonstrated that a property cannot be reasonably developed by complying with the 100 ft setback and site disturbance provisions.

A development agreement is being requested to reduce the buffer due to the fact that the Nova Scotia Department of Transportation and Infrastructure Renewal (NSTIR) will not allow for the driveway to be any closer to the intersection of Duke Street and Damascus Road than where it is shown on the site development plan in Appendix 1. As such, if the buffer is more than 50 ft, the site cannot be reasonably developed as there won't be full access to the site.

An impact assessment regarding a reduction in the buffer is presented in this report, and contains those items as indicated in Appendix A of the MPS. Topics include soils, surficial geology, and groundwater conditions, and respective limitations for development.

Where organic materials are encountered in the proposed building areas at the subject property, all fill and organic deposits should be removed and replaced with structural fill. Temporary stockpiles should not be placed near the wetland on the subject or adjacent properties, in order to prevent runoff, erosion and siltation. To further minimize the effects of the proposed development on the wetland and to assist in required earthworks, a geotechnical barrier will be constructed between the developable area and the buffer. Environmental controls will be introduced prior to site works, including an anchored silt boom, silt fencing, etc.

A Nova Scotia Environment wetland alteration *Approval* has been issued to alter the wetland. In the parking areas that overly the wetland, subsurface water retention will be incorporated into the parking structure design allowing for storm water to infiltrate the ground instead of running off and therefore reducing the siltation potential of the wetland. Ideally the buffer zone will be vegetated with shrubs and trees to further prevent erosion and subsequent siltation, or promote infiltration.

Shallow perched water will be controlled by the stormwater management plan that has been designed by Designpoint Engineering and Surveying Ltd. (2015) to replace the lost storage area offered by the wetland within the boundaries of the subject property. The proposed plan involved the construction of an underground stormwater management system. Preliminary design has shown that this system can be constructed to manage all stormwater that is currently being held by

the on-site portion of the wetland. The underground system will feed into the wetland and therefore will ensure that the water level in the wetland remains generally the same.

Provided the developer follow applicable guidelines and suggested best practices, no negative impacts from this project are expected to result if the setback requirement is reduced from 100ft to 50ft.

1 INTRODUCTION

Hampton Holdings Limited currently plans to construct two commercial buildings and a gas bar on Lot 12A-2 Duke Street (herein referred to as the subject property) in a commercial area of Bedford, Nova Scotia called "Bedford Common."

1.1 Site Description

The subject property contains a single wetland (Wetland 1) which is considered an environmentally sensitive area according to the 2015 *Bedford Municipal Planning Strategy* (MPS). The wetland is located on the west side of Duke Street, between Mann Street and Damascus Road. The entire wetland straddles two private properties (PID Nos. 41376856 and 41395831) and the Duke Street right-of-way. The entire wetland is 9114 m^2 in size, and the proposed development involves infilling 1587 m^2 of the 5222 m^2 of Wetland 1 that is within the subject property. It is planned that a portion of Wetland 1 will remain within the subject property to the south of the infill, following development. Refer to Figure 1-1 below for a site location map and Appendix 1 for site photographs and site development plans.

Figure 1-1. Site Location Map

Directly to the northwest, and beyond the narrow band of trees to the west, is Bedford Commons, a large commercial retail development. A former stormwater retention pond that was subsequently infilled, is present immediately north of the wetland. A narrow band of trees is present surrounding the wetland on the south side. Commercial developments are present to the south. Industrial activity is present beyond Duke Street to the east. The lands immediately

upgradient of the wetland are developed and asphalt surfaced; downgradient, the historic low lying lands between the wetland and Rocky Lake have been largely infilled for the construction of Duke Street and the development of the industrial properties.

1.2 Wetland

The following is a summary of the ecological character of Wetland 1, as described by Macallum Environmental Ltd. (MEL), in the Alteration Application submitted in September 2015.

Wetland 1 is a terrene outflow fresh water marsh in a headwater position. It receives passive overland drainage from adjacent uplands all of which is stormwater. There is a drainage outlet that flows through a culvert at the northern edge of the wetland under Damascus Drive. Overflow stormwater will backflow from the culvert at the northern end of the wetland and provide additional stormwater inflow into the wetland during severe storm events. The drainage pathways are described in more detail in Section 1.3. Standing water is present across approximately 90% of the wetland, to a depth exceeding 100cm. Highly decomposed saturated organic soil is present to a depth of 15cm restricted by rock. The vegetation is dominated by Broadleaved cattail, Canada Rush and American White Water Lily. There was no tree cover observed although small amounts of Red Maple saplings were observed. Trace amounts of exotic Yellow Iris was identified and trace amounts of Purple Loosestrife was also observed.

MEL determined that this wetland is an isolated, fresh water marsh with a drainage outlet flowing through a culvert which drains north along Duke Street. This drainage outlet also acts as an overflow inlet through the designed stormwater system during peak storm flows. Through the outlet culvert from Wetland 1, there is a direct connectivity with Sucker Brook (east of Duke Street). Sucker Brook has been infilled downstream and re-routed, limiting current connectivity with Rocky Lake. It is possible that resident fish (species unknown) are present within Wetland 1, but continued fish passage to Wetland 1 from downstream surface water systems has been compromised. Wetland 1 provides potential habitat for amphibians, reptiles, waterbirds, and waterfowl although it is located in a highly industrial and commercial area of Bedford. No species at risk were identified during site visit within its boundaries or within its associated upland buffers. The wetland type is common in Nova Scotia and the vegetation community is not unique or rare.

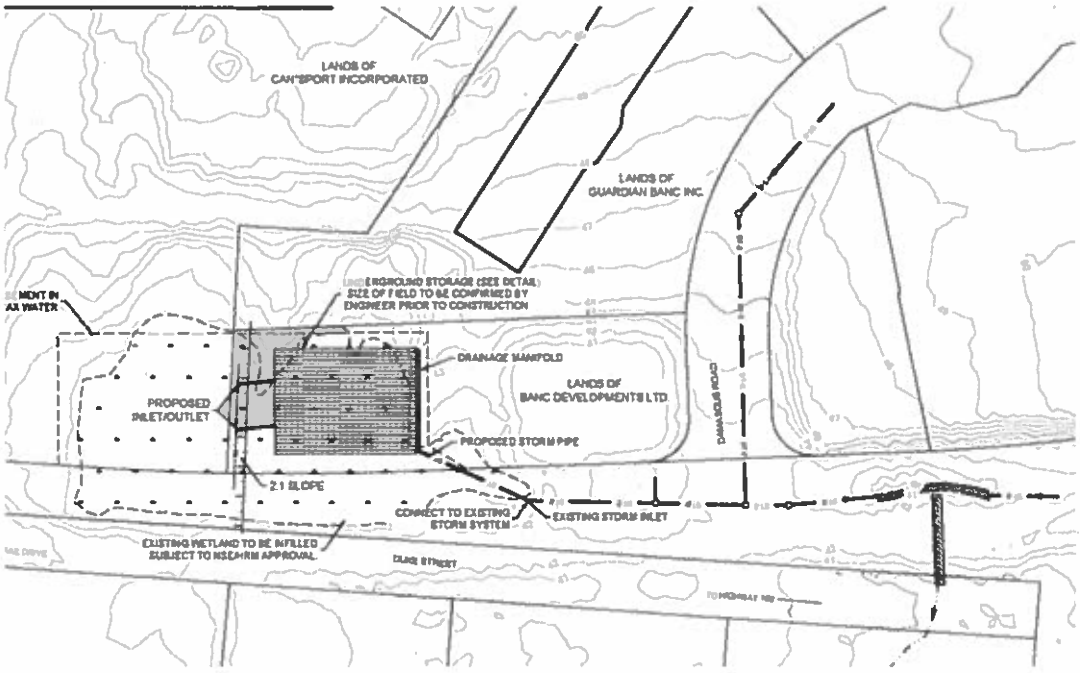
1.3 Site Drainage

Two drainage pipes (carrying surface water into Wetland 1 during precipitation events), each along Duke Street and the south western edge of Wetland 1, were observed. A culvert is located at the most northern extent of the wetland (corner of Duke and Damascus). Overflow stormwater will backflow from the culvert at the northern end of the wetland and provide additional stormwater inflow into the wetland during severe storm events. Standing water is present across approximately most of the wetland.

Currently the Bedford Commons retail/office development has a piped storm drainage system that discharges to a control storm manhole at the intersection of Duke Street and Damascus Road. At this control manhole the flow is split with the 1 in 5 year predevelopment flow amount being directed towards the northwest along Duke Street to an 1800mm diameter culvert crossing Duke Street, from this point the water flows in Sucker Brook to Rocky Lake.

The flow to the control manhole in excess of the 1 in 5 year predevelopment flow is directed towards the southeast in a pipe parallel to Duke Street where it discharges to Wetland 1. This wetland fills up during the peak of a rainstorm and drains back down through the control manhole once the storm has passed. The normal wetland water elevation is 40.0m and during the peak of a 1 in 5 year storm it would be as high as approx. 41.2m (Designpoint Engineering and Surveying Ltd, 2015). The stormwater patterns are depicted in Figure 1-2, below.

Figure 1-2. Stormwater flow pathways, Designpoint Engineering and Surveying Ltd.



Policy E-8 of the MPS states that it is prohibited to erect any structure or excavate or fill any land within 100 ft of a water retention area. The 100 ft area shall be maintained with existing vegetation or landscaped. A reduction in the buffer from 100 ft to 50 ft may be considered by a Development Agreement, where it is demonstrated that a property cannot be reasonably developed by complying with the 100 ft setback and site disturbance provisions. A development agreement shall be subject to the provisions of Policy Z-3, and the undertaking of an environmental study (i.e. this report) which addresses the issues of runoff, erosion, siltation and any other impacts on the water retention area during and after construction.

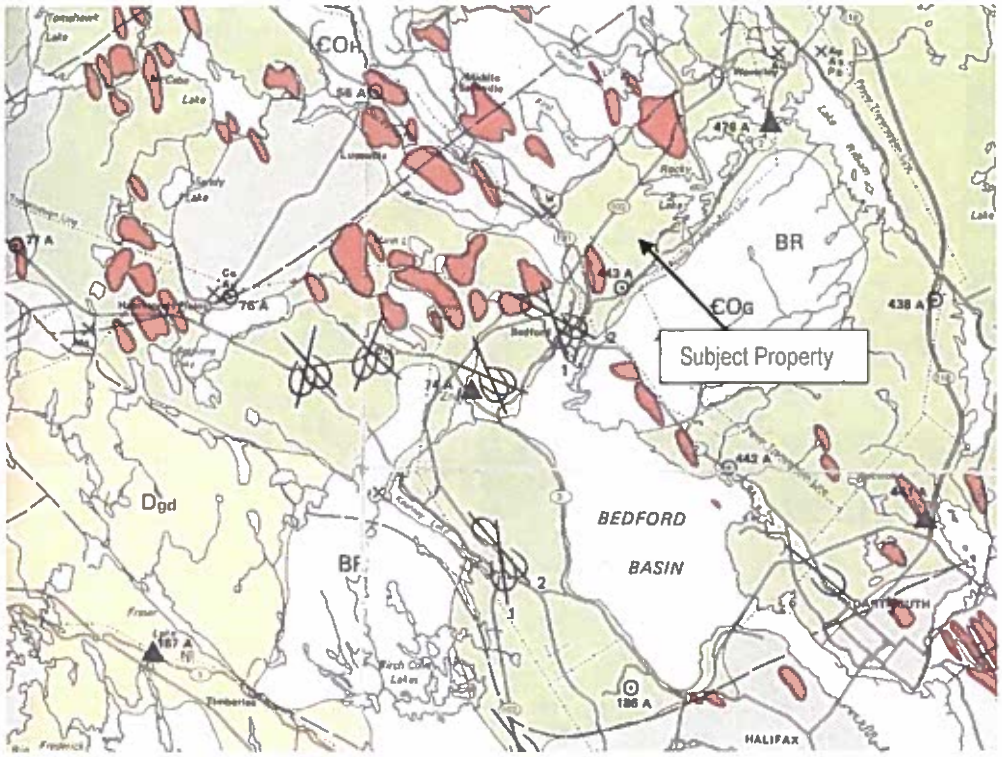
An impact assessment regarding the proposed commercial development and specifically, a reduction in the buffer from 100 ft to 50 ft, is presented in this report, and contains those items as indicated in Appendix A of the MPS. Topics include soils, surficial geology, and groundwater conditions, and respective limitations for development. A Development Agreement is being requested to reduce the buffer due to the fact that the Nova Scotia Department of Transportation and Infrastructure Renewal (NSTIR) will not allow for the driveway to be any closer to the intersection of Duke Street and Damascus Road than where it is shown on the site development plan in Appendix 1. As such, if the buffer is more than 50 ft, the site cannot be reasonably developed, as there won't be full access to the site.

2 SUBSURFACE CONDITIONS

The surficial geology of the area has been compiled and mapped by R.R. Stea and D. Hemsworth, 1978, and published by Nova Scotia Department of Mines and Energy, Sheet 4, Central Nova Scotia, Scale = 1:100,000, 1980 (refer to Figure 2-1).

The surficial geology mapping indicates that the native soils in this area are glacial deposits known regionally as Quartzite Till and are comprised of bluish-grey sands and/or silty sands with abundant gravel, cobble and boulder sizes. These glacial deposits are derived from the underlying bedrock geology.

Figure 2-1. Surficial Geology Mapping



2.1 Methodology

A geotechnical investigation of the subject property was carried out by Englobe on March 9 2016, to assess the subsurface conditions at select areas of the site. Seven (7) test pits were put down within the proposed development area (refer to the site development plan in Appendix 1 for test pit locations and Appendix 2 for test pit logs). Permission to access the existing wetland area was not available at the time of investigation. In summary, the soil conditions encountered were somewhat variable. Groundwater was encountered at 6 of 7 test pits. The following paragraphs further describe the subsurface conditions at the site.

Grass/Topsoil

A layer of grass/topsoil has been encountered at the surface of test pit TP 7. Minor vegetation was encountered at the surface of TP 1 and TP 5.

Fill

Fill deposits were encountered either below the organic soils or at the surface of all test pits. The fill generally varied from rockfill with large to small boulders and cobbles and trace gravel and silt, to silty sand, some boulders/cobbles, gravel and organic materials, and trace clay. Observations of the insitu deposits indicated that the material was loose to compact and light

brown to black in colour and its moisture content was described as moist to saturated. The fill was proven to a total depth of 5.5 metres below the existing ground surface at test pit TP 7.

Peat

Peat deposits are expected within the wetland area located to the southwest, beyond the area currently investigated. Permission to access this wetland area was not granted at time of investigation.

Previous probing of the current development area in 2009 indicated approximately 0.1 to 1.7 metre (0.3 to 5.5 feet) of soft deposits above more competent soils within the wetland areas .

Glacial Till

At all test pits site-native glacial deposits were encountered below the fill deposits. The glacial soil consisted of a mixture of silt, sand, and gravel with trace clay and occasional cobbles. Observations of the insitu deposits indicated that the material was compact, light brown to greyish brown in colour and its moisture content was described as wet to saturated. The site till deposits were proven to a total depth of 6.4 metres below the existing ground surface at test pit TP 7.

Bedrock

Bedrock was not confirmed during the current investigation; however, practical refusal on bedrock or large boulders was encountered at select test pits, below water level. Geology mapping of the area indicates the site is underlain by quartzite/greywacke. This corresponds with observations of nearby outcropping. Typically, bedrock in this area has only nominal natural soil cover.

Wetland

Field investigation of accessible wetland areas was conducted by Englobe on March 18, 2009. This was carried out by hand probing with small diameter fiberglass rods at strategic locations. Generally, shallow to moderate depth of organic deposit (0.1 to 1.7 metre (0.3 to 5.5 feet)) was inferred at the probe locations, below a shallow layer of surface water. Field results indicated refusal on bedrock (and possibly boulders) below the organic deposit. Exposed surface bedrock and boulders was observed in adjacent site areas, and is indicative of the local geology.

McCallum Environmental Ltd. (2016) completed a soil pit within the wetland to test for hydric soil conditions. They found highly decomposed saturated organic soil present to a depth of 15cm restricted by rock.

Other Considerations

The local topography in the subject property area is generally flat, and slopes do not exceed 20%. No areas of slumping or mass wasting, or unstable slopes were observed during field reconnaissance.

Soil erosion potential is not expected to be high based on the soil types observed during the field investigation.

2.2 Limitations for Development

The lot configuration, including the location of the wetland, is a limitation for development. The proximity of the subject property's frontage on Damascus Road in relation to the intersection of Damascus Road and Duke Street, as well as the existing boulevard layout of Damascus Road adjacent to the site, prohibits a principle access (right & left turn in and right & left turn out) to be provided to the site from Damascus Road. Therefore, in order to provide a principle access to the site, it must be located off Duke Street. The NSTIR does not allow a principle access driveway to be located off Duke Street any closer to the intersection of Damascus Street and Duke Street then what is currently shown on the Site Development Plan. Consequently, 962 m^2 of wetland must be infilled in order to construct the access driveway in the location required by NSTIR.

Peat can give rise to geotechnical problems in the area of settlement, stability, stabilisation and construction. There is therefore a tendency to either avoid building on these soils, or, when this is not possible, to simply remove or replace soils. Where organic materials are encountered in the proposed building areas at the subject property, all fill and organic deposits should be removed and replaced with structural fill. Organic soils are to be disposed of off-site or at approved green areas of the site. Temporary stockpiles should not be placed near the wetland on the subject or adjacent properties, in order to prevent runoff, erosion and siltation. To further minimize the effects of the proposed development on the wetland and to assist in required earthworks, a geotechnical barrier will be constructed between the developable area and the buffer. Environmental controls will be introduced prior to site works, including an anchored silt boom, silt fencing, etc. After completion of the geotechnical barrier, earthworks within the remaining lot area would be possible with expected minimal impact on the Wetland 1. A Nova Scotia Environment wetland alteration *Approval* has been issued to alter the wetland. In the parking areas that overly the wetland, subsurface water retention will be incorporated into the parking structure design (more details are presented below), allowing for storm water to infiltrate the ground instead of running off and therefore reducing the siltation potential of the remaining wetland. Ideally the buffer zone will be vegetated with shrubs and trees to further prevent erosion and subsequent siltation, or promote infiltration.

As noted above, soil erosion potential is not expected to be high. However, to minimize the effects of the proposed development on the wetland area south of the infill, a geotechnical barrier will be constructed adjacent to the property boundary. Environmental controls will be introduced prior to site works, including an anchored silt boom, silt fencing, etc. After

completion of the geotechnical barrier, development within the remaining lot area would be possible with expected minimal impact on the adjacent remaining wetland areas.

3 GROUNDWATER

Elevations in the subject property area of the Bedford Common along Duke Street are generally flat, being located near the primary watershed divide between the Sackville River and Shubenacadie River watersheds. The site gradient slopes gently downwards in the north-northeast direction towards Rocky Lake. Local groundwater flow direction usually follows topography and therefore is presumed to flow towards Rocky Lake.

The subsurface conditions through the site and surrounding area consist of very thin glacial till overlying quartzite bedrock. Based on the subsurface characteristics of this area of the HRM, there is insufficient glacial till to support large quantities of shallow groundwater within the overburden. The groundwater table is typically within bedrock and deeper drilled bedrock well depths in this geologic unit (i.e. Goldenville Formation) range between 30 and 115 metres. The surrounding area is fully serviced and does not use groundwater resources for potable water.

3.1 Methodology

The geotechnical investigation by Englobe (2016) encountered shallow perched groundwater in all test pits except test pit TP 7 at depths ranging from 0.3 to 0.6 metres. In some cases, water was observed as high inflow from adjacent porous fill materials. Seasonal fluctuations in groundwater levels can be expected. This shallow perched groundwater ultimately drains into the wetland before it is redirected through the stormwater system into Sucker Brook and ultimately Rocky Lake as described above.

3.2 Limitations for Development

Shallow perched water will be controlled by the stormwater management plan that has been designed by Designpoint Engineering and Surveying Ltd. (2015) to replace the lost storage area offered by the wetland within the boundaries of the subject property. The proposed plan involves the construction of an underground stormwater management system. Preliminary design has shown that this system can be constructed to manage all stormwater that is currently being held by the on-site portion of the wetland. The underground system will feed into the wetland and therefore will ensure that the water level in the wetland remains generally the same and not introduce sediment into the remaining wetland. Details of the storage system are provided in Appendix 3.

The Nova Scotia Environment wetland alteration *Approval* requires the installation of a shallow monitoring well within remaining wetland habitat at the property line between the subject property and the southern adjacent property in order to establish baseline surface water levels and demonstrate there is no effect on the remaining wetland.

4 CONCLUSION

Based on the existing space constraints and site entrance requirements from Duke Street, the proposed site development cannot maintain the 100ft buffer (Policy E-8 of the MPS) between the developable area and the wetland. Based on previous reports and the information gathered and observations made during site reconnaissance, the assessment has revealed that there are no major soil, topographical, geological or groundwater limitations to development of the project. Provided the developer follow applicable guidelines and suggested best practices, no negative impacts from this project are expected to result if the setback requirement is reduced from 100ft to 50ft.

5 REPORT USE AND CONDITIONS

This report was prepared for the exclusive use of Hampton Holdings and is based on data and information obtained during a site visit by Englobe on the subject property; and is based solely upon the condition of the property on the date of such inspection, supplemented by information obtained and described herein.

The evaluation and conclusions contained in this report have been prepared in light of the expertise and experience of Englobe. In evaluating the property, Englobe has relied in good faith upon representation and information furnished by individuals noted in the report with respect to operations and existing property conditions and the historic use of the property to the extent that they have not been contradicted by data obtained by other sources. Accordingly, Englobe accepts no responsibility for any deficiency or inaccuracy in this report as a result of omissions, misstatements or misrepresentations of the persons interviewed. In addition, Englobe will not accept liability for loss, injury, claim or damage arising from any use or reliance on this report as a result of misrepresentation or fraudulent information.

Environmental conditions are dynamic in nature and changing circumstances in the environment and in the use of the property can alter radically the conclusions and information contained herein.

Appendix 1 Site Photographs and Site Development Plan

Englobe

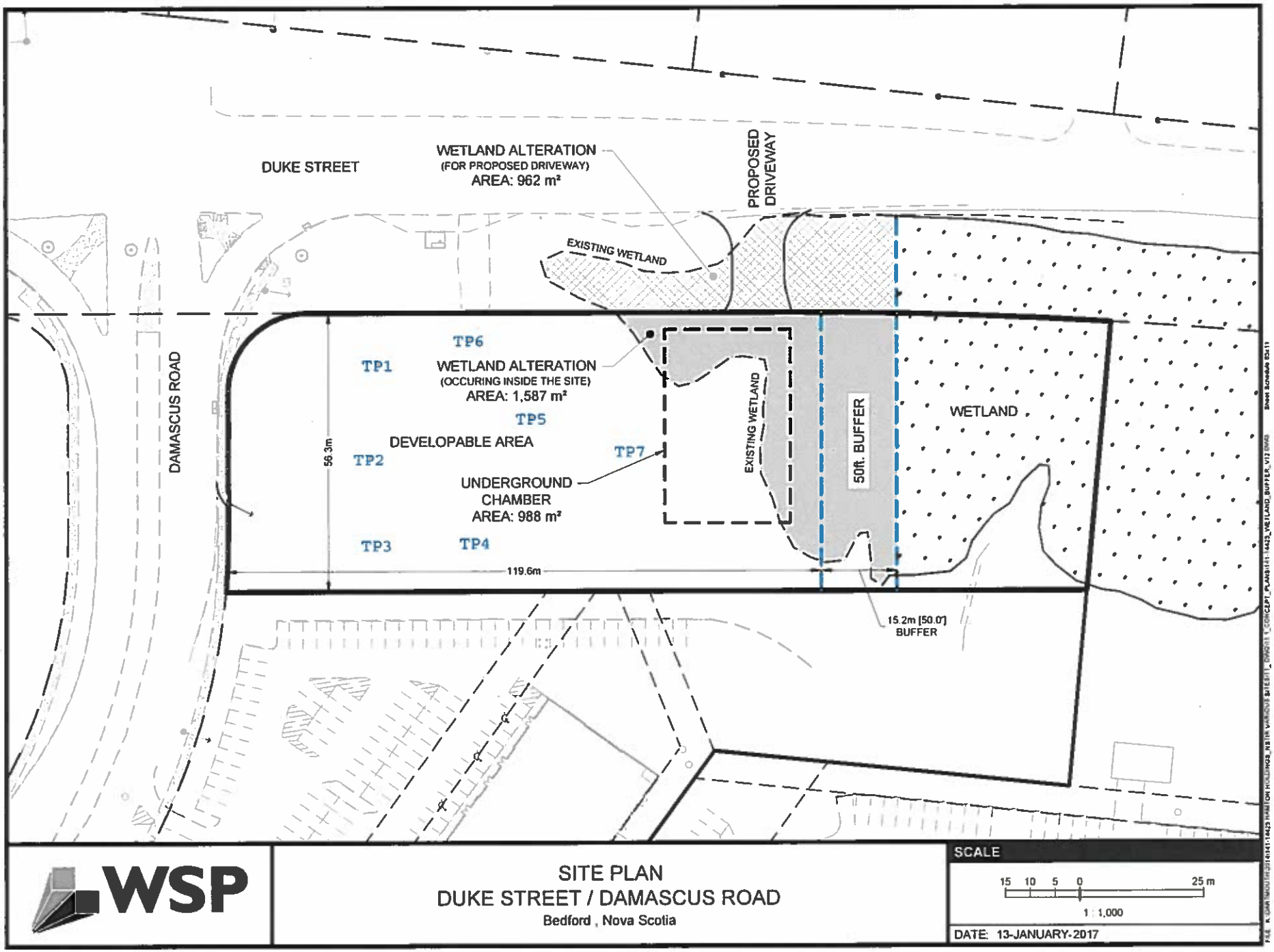
Photo 1: View of the subject property located at Lot 12-A2 Duke Street, from the east side of Duke Street (November 14, 2016).

Photo 2: View of the subject property located at Lot 12-A2 Duke Street, from the west side of Duke Street (November 14, 2016).

Photo 3: View of the north subject property boundary located at Lot 12-A2 Duke Street (November 14, 2016).

Photo 4: Looking south towards the subject property located at Lot 12-A2 Duke Street from the north property boundary (November 14, 2016).

Photo 5: View of the wetland to the south on the adjacent property (November 14, 2016).



Note: This drawing has been modified by Englobe to include the test pit (TP) locations. TP locations are approximate.

Appendix 2 Test Pit Logs

Englobe

Englobe

TEST PIT LOG

PROJECT
Geotechnical Investigation
Lot 12A2 Damascus Road, Bedford, NS

LOGGED/DWN. NMD	CKD. SS	DATE OF INVEST. 3/9/16	JOB NO. 21394	TEST PIT TP 1

WC % wp-□ w-● wl-△ 10 20 30 40 50	DEPTH ft	DEPTH m	MODIFIED USCS	SOIL SYMBOL	SOIL DESCRIPTION DATUM Existing Ground Surface SURFACE ELEVATION	SOIL SAMPLE COND.	SOIL SAMPLE TYPE	SOIL SAMPLE POCKET PENE.	BACKHOE TYPE / OTHER TESTS
	1				FILL: rockfill, large to small boulders and cobbles, trace gravel and silt, compact, moist to saturated, grey, voids present within coarse rockfill. Minor surface vegetation.		G1		Excavator
	2								
	3	1							
	4								
	5								
	6				FILL: rockfill, large to small boulders and cobbles, some organics/peat, trace gravel and silt, compact, saturated, grey/black.		G2		
	7	2							
	8				TILL: sandy gravelly silt, trace clay, compact, saturated, dark brown.				
	9				End of Test Pit at 2.4 metres in Till. Groundwater encountered in Test Pit at 0.5 metres below ground surface.				
	10	3							
	11								
	12								
	13	4							
	14								
	15								
	16	5							
	17								
	18								
	19								
	20	6							

PLATE 1

Englobe

TEST PIT LOG

PROJECT
Geotechnical Investigation
Lot 12A2 Damascus Road, Bedford, NS

LOGGED/DWN. NMD	CKD. SS	DATE OF INVEST.3/9/16	JOB NO. 21394	TEST PIT TP 2

WC % wp-□ w-● wl-△ 10 20 30 40 50	DEPTH ft	DEPTH m	MODIFIED USCS	SOIL SYMBOL	SOIL DESCRIPTION DATUM Existing Ground Surface SURFACE ELEVATION	SOIL SAMPLE COND.	SOIL SAMPLE TYPE	SOIL SAMPLE POCKET PENE.	BACKHOE TYPE / OTHER TESTS
	1				FILL: rockfill, large to small boulders and cobbles, trace gravel and silt, compact, moist to saturated, grey, voids present within coarse rockfill.				Excavator
▼	2								
	3	1							
	4								
	5								
	6								
	7	2			TILL: sandy gravelly silt, trace clay, compact, saturated, light to greyish brown.		G1		
	8				End of Test Pit at 2.3 metres in Till. Groundwater encountered in Test Pit at 0.6 metres below ground surface.				
	9								
	10	3							
	11								
	12								
	13	4							
	14								
	15								
	16	5							
	17								
	18								
	19								
	20	6							

PLATE 2

Englobe

TEST PIT LOG

PROJECT
Geotechnical Investigation
Lot 12A2 Damascus Road, Bedford, NS

LOGGED/DWN. NMD	CKD. SS	DATE OF INVEST.3/9/16	JOB NO. 21394	TEST PIT TP 3

WC % wp-□ w-● wl-△ 10 20 30 40 50	DEPTH ft	DEPTH m	MODIFIED USCS	SOIL SYMBOL	SOIL DESCRIPTION DATUM Existing Ground Surface SURFACE ELEVATION	SOIL SAMPLE COND.	SOIL SAMPLE TYPE	SOIL SAMPLE POCKET PENE.	BACKHOE TYPE Excavator OTHER TESTS
▼	1				FILL: rockfill, large to small boulders and cobbles, trace gravel and silt, loose to compact, moist to saturated, grey, voids present within coarse rockfill.				
	2								
	3	1							
	4								
	5								
	6				TILL: sandy gravelly silt, trace clay, compact, saturated, brown.	X	G1		
	7	2			End of Test Pit at 1.8 metres in Till. Groundwater encountered in Test Pit at 0.6 metres below ground surface.				
	8								
	9								
	10	3							
	11								
	12								
	13	4							
	14								
	15								
	16	5							
	17								
	18								
	19								
	20	6							

PLATE 3

TEST PIT LOG

Englobe

PROJECT
Geotechnical Investigation
Lot 12A2 Damascus Road, Bedford, NS

LOGGED/DWN. NMD	CKD. SS	DATE OF INVEST.3/9/16	JOB NO. 21394	TEST PIT TP 4

WC % wp-□ w-● wl-△ 10 20 30 40 50	DEPTH ft	DEPTH m	MODIFIED USCS	SOIL SYMBOL	SOIL DESCRIPTION DATUM Existing Ground Surface SURFACE ELEVATION	SOIL SAMPLE COND.	SOIL SAMPLE TYPE	SOIL SAMPLE POCKET PENE.	BACKHOE TYPE / OTHER TESTS
▼	1				FILL: rockfill, large to small boulders and cobbles, trace gravel and silt, loose to compact, moist to saturated, grey, voids present within coarse rockfill.				Excavator
	2								
	3	1							
	4								
	5				FILL: rockfill, large to small boulders and cobbles, some organic material (wood/peat), trace gravel and silt, compact, saturated, grey/black.	X	G1		
	6				Refusal of excavator bucket at 2.0 metre depth - Possible large boulder or bedrock. Groundwater encountered in Test Pit at 0.3 metres below ground surface.				
	7	2							
	8								
	9								
	10	3							
	11								
	12								
	13	4							
	14								
	15								
	16	5							
	17								
	18								
	19								
	20	6							

PLATE 4

TEST PIT LOG

Englobe

PROJECT
Geotechnical Investigation
Lot 12A2 Damascus Road, Bedford, NS

LOGGED/DWN. NMD	CKD. SS	DATE OF INVEST. 3/9/16	JOB NO. 21394	TEST PIT TP 5

WC % wp-□ w-● wl-△ (10 20 30 40 50)

DEPTH ft	DEPTH m	MODIFIED USCS	SOIL SYMBOL	SOIL DESCRIPTION DATUM Existing Ground Surface SURFACE ELEVATION	SOIL SAMPLE COND.	SOIL SAMPLE TYPE	SOIL SAMPLE POCKET PENE.	BACKHOE TYPE / OTHER TESTS
1–5	1			FILL: rockfill, large to small boulders and cobbles, trace gravel and silt, compact, moist to saturated, grey, voids present within coarse rockfill. Minor surface vegetation.				Excavator
5–6	1–2			TILL: sandy gravelly silt, trace clay, compact, saturated, brownish grey.				
6–7	2			End of Test Pit at 1.7 metres in Till. Groundwater encountered in Test Pit at 0.5 metres below ground surface.				
7–20	2–6							

PLATE 5

Englobe

TEST PIT LOG

PROJECT
Geotechnical Investigation
Lot 12A2 Damascus Road, Bedford, NS

LOGGED/DWN. NMD	CKD. SS	DATE OF INVEST.3/9/16	JOB NO. 21394	TEST PIT TP 6

WC % wp-□ w-● wl-△ 10 20 30 40 50	DEPTH ft	DEPTH m	MODIFIED USCS	SOIL SYMBOL	SOIL DESCRIPTION DATUM Existing Ground Surface SURFACE ELEVATION	SOIL SAMPLE COND.	SOIL SAMPLE TYPE	SOIL SAMPLE POCKET PENE.	BACKHOE TYPE / OTHER TESTS
▼	1				FILL: rockfill, large to small boulders and cobbles, trace gravel and silt, compact, moist to saturated, grey, voids present within coarse rockfill.				Excavator
	2								
	3	1							
	4								
	5								
	6				FILL: rockfill, large to small boulders and cobbles, some organics/peat, trace gravel and silt, compact, saturated, grey/black.				
	7	2			TILL: sandy gravelly silt, trace clay, compact, wet, dark brown to grey.		G1		
	8				End of Test Pit at 2.1 metres in Till.				
	9				Groundwater encountered in Test Pit at 0.3 metres below ground surface.				
	10	3							
	11								
	12								
	13	4							
	14								
	15								
	16	5							
	17								
	18								
	19								
	20	6							

PLATE 6

Englobe

TEST PIT LOG

PROJECT
Geotechnical Investigation
Lot 12A2 Damascus Road, Bedford, NS

LOGGED/DWN. NMD	CKD. SS	DATE OF INVEST.3/9/16	JOB NO. 21394	TEST PIT TP 7

WC % wp-□ w-● wl-△ 10 20 30 40 50	DEPTH ft	DEPTH m	MODIFIED USCS	SOIL SYMBOL	SOIL DESCRIPTION DATUM Existing Ground Surface SURFACE ELEVATION	SOIL SAMPLE COND.	SOIL SAMPLE TYPE	SOIL SAMPLE POCKET PENE.	BACKHOE TYPE Excavator OTHER TESTS
	1				Topsoil/Organic Soils. Rootmat at 0.33 metres below surface.				
	2				FILL: sand, gravel, cobbles, some boulders, zones of silty sand with trace of clay, loose with compact zones, moist to wet, light brown.				
	3	1							
	4								
	5								
	6								
	7	2							
	8								
	9								
	10	3							
	11								
	12								
	13	4							
	14								
	15								
	16	5							
	17				FILL: boulders and cobbles, some grubbings/organic material, loose, wet, grey/black.				
	18				TILL: Silty sand, some gravel, occasional cobble, compact, wet, brown.				
	19								
	20	6							

PLATE 7

Englobe

TEST PIT LOG

PROJECT
Geotechnical Investigation
Lot 12A2 Damascus Road, Bedford, NS

LOGGED/DWN. NMD	CKD. SS	DATE OF INVEST.3/9/16	JOB NO. 21394	TEST PIT TP 7

WC % wp-□ w-● wl-△ 10 20 30 40 50	DEPTH ft	DEPTH m	MODIFIED USCS	SOIL SYMBOL	SOIL DESCRIPTION	SOIL SAMPLE COND.	SOIL SAMPLE TYPE	SOIL SAMPLE POCKET PENE.	BACKHOE TYPE / OTHER TESTS
					DATUM Existing Ground Surface SURFACE ELEVATION				Excavator
	22				End of Test Pit at 6.4 metres in Till. Test Pit dry upon completion.				
	23	7							
	24								
	25								
	26	8							
	27								
	28								
	29								
	30	9							
	31								
	32								
	33	10							
	34								
	35								
	36	11							
	37								
	38								
	39	12							
	40								
	41								

PLATE 8

Appendix 3 Details of Underground Storage System

Englobe

HydroStor™

THE SYSTEM FOR EXPERTS

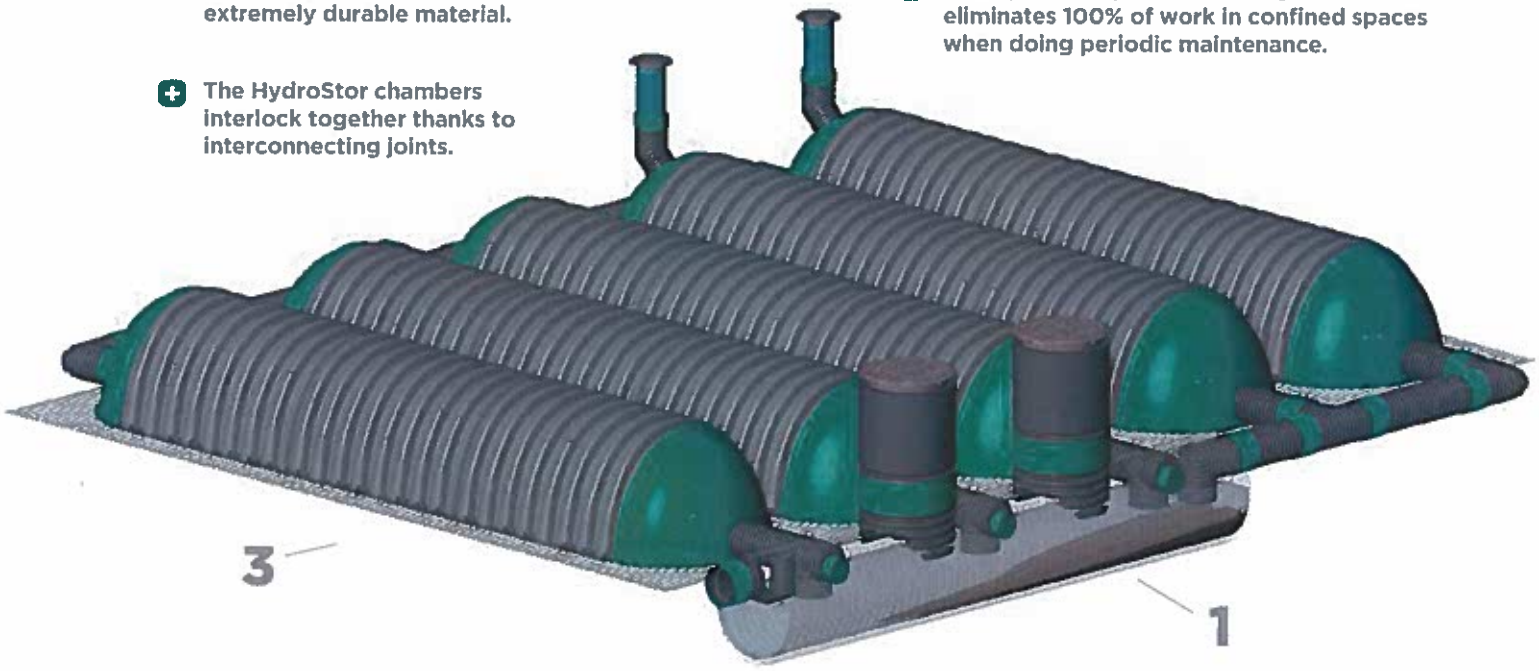
Eliminates all risk of clogging

HydroStor™

RETENTION & DETENTION SYSTEMS

The HydroStor™ storage system is exceptionally efficient. It effectively prevents the spread of sediment, eliminating any risk of clogging. The pretreatment unit captures hydrocarbons and floating debris, thus preserving the quality of the water table.

- **The system is made of a fully recyclable, extremely durable material.**
- **The HydroStor chambers interlock together thanks to interconnecting joints.**
- **The HydroStor pretreatment system eliminates 100% of work in confined spaces when doing periodic maintenance.**



1 The HydroStor pretreatment unit which is included in the system upstream of the diffuser eliminates the possibility of sediment migration to the chambers. Fine particles, obeying the Stokes law*, remain trapped there. With its unique design, the system prevents the dispersion of hydrocarbons and floating debris.

2 Because it's factory-made, the performance of the HydroStor pretreatment system never depends on the quality of the installation.

3 The HydroStor geogrid ensures a solid and stable foundation to the base of the chambers, by distributing linear loads over a larger surface.

No geotextile underneath the chambers of the Hydrostor system eliminates any risk of clogging.

*Stokes law defines the behaviour of settling solid particles in a fluid.

LEED® CANADA-NC :

SS 6.1
Our retention basins with groundwater replenishment may directly help in obtaining Stormwater Design credit: Quantity Control, when integrated in a development plan to maintain natural storm water flows by promoting infiltration.

SS Precondition 1
Our detention systems can directly contribute to obtaining the Storm Water Management Rate and Quantity credit, as they facilitate the reuse of storm water for purposes that do not require potable water such as landscaping irrigation and building and automobile maintenance.

MR 4.1 / 4.2 / 5.1 / 5.2
All our solutions qualify for earning points in the Materials and Resources category.

STORAGE

Alternative system configurations

HydroStor pretreatment system **using Aqua-Swirl hydrodynamic separation** from Soleno

Basin without groundwater replenishment **with waterproof geomembrane**

System without pretreatment, **with diffuser**

We recommend contacting Soleno Technical Services before specifying a HydroStor system without pretreatment.

Options

Aqua-Swirl

HydroStor pretreatment

Diffuser

Collector

Access port

Flow regulator

Technical Data

HS75

Designed for projects with limited burial depth. The HydroStor HS75 chamber stores 1 m³ rainwater per linear meter or 2.12 m³ per chamber.*

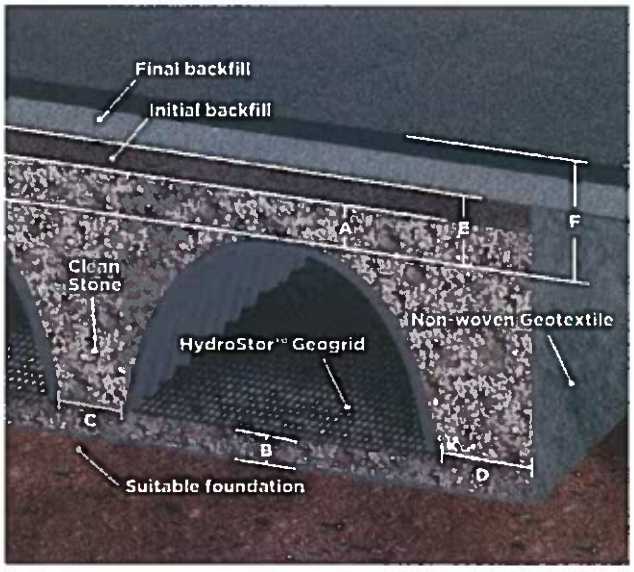
HS180

Designed for high volume projects or when space is restricted. The HydroStor HS180 chamber stores 2.4 m³ of rainwater per linear meter or 5.1 m³ per chamber.*

2.12 m³ (75 ft³) per chamber	Installed Storage Capacity	5.1 m³ (180 ft³) per chamber
754 mm (29.7 in)	Height	1156 mm (45.5 in)
1295 mm (51 in)	Width	1976 mm (77.8 in)
2212 mm (87.1 in)	Length	2253 mm (88.7 in)
2157 mm (84.9 in)	Installed length	2166 mm (85.3 in)
31.8 kg (70 lbs)	Weight	57.6 kg (127 lbs)
Integrated handles	Special Feature	Integrated handles

The two retention chambers meet CSA B184.2, ASTM F2418 and ASTM F2787 standards.

Installation Requirements



HS75		HS180
150 mm (6 in) minimum	**A** Clean stone above the chambers	300 mm (12 in) minimum
150 mm (6 in) minimum	**B** Bedding	225 mm (9 in) minimum
150 mm (6 in)	**C** Space between chambers	200 mm (8 in)
300 mm (12 in)	**D** Backfill along the periphery of the system	300 mm (12 in)
457 mm (18 in)	**E** Minimum backfill height	597 mm (23.5 in)
2.44 m (8 ft)	**F** Maximum backfill height	2.44 m (8 ft)

* Installed Storage Capacity

Details that make the difference

4 integrated handles streamline the installation onsite

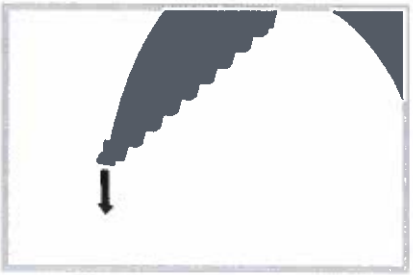
Two people can easily unload each unit using the lifting handles and molded spacers.

Sturdy pallet supports 17 HS180 units or 32 HS75 units **safely.**

Building on a solid foundation thanks to the HydroStor geogrid

The HydroStor geogrid is used to distribute the load at the foot of the arches and to prevent the stone from being displaced under the flow of water. It must be installed underneath all chambers.

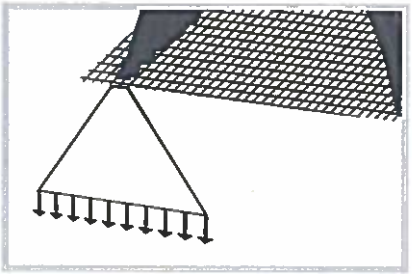
Load sharing **without** the HydroStor geogrid



Without geogrid

Non-distributed loads create critical pressure points.

Load sharing principle **with** the HydroStor geogrid



With geogrid

The loads are evenly distributed.

The storage system with the easiest maintenance

The HydroStor pretreatment system captures sediment, hydrocarbons and floating debris. Maintenance is made simple with two access ports and requires **no work in confined space.** To operate at full efficiency, the system must be maintained regularly.

Contact your Soleno representative for more information on the services offered by Soleno Services or see our maintenance guide, at soleno.com/hydrostor

Our **expertise** is **always** available

At Soleno, our solutions excellence is based on our **specialized consulting services** and expertise developed over the years with designers, water system managers and contractors responsible for the installation and maintenance of civil infrastructure.

Our engineers are available to help you identify and implement the best management practices to protect water resources that might be impacted by water runoff in urban or rural areas.

Visit soleno.com/hydrostor/en to learn more about the HydroStor system. See our installation video, installation guide, technical specifications and estimates.

Soleno is accredited ISO 9001
(Saint-Jean-Sur-Richelieu plant only)

Our HDPE and PP products and solutions are designed and manufactured as per the most rigorous industry standards.

Soleno is a member of the following associations:

PLASTICS PIPE INSTITUTE®

Réseau Environnement

Soleno complies with all ECORESPONSIBLE sustainable development program criteria and was awarded the LEVEL 1 certification – ENGAGEMENT from the Council of Sustainable Industries.

1160, route 133 C.P. 837, succ. Iberville Saint-Jean-sur-Richelieu, QC Canada J2X 4J5 Toll free : 800.363.1471 Website : soleno.com

REV 0012.2016.06.01A

SOLENO
Mastering Storm Water

66232 SOLENO HYDROSTOR HS180 SYSTEM 176 CHAMBERS 950m³

PROJECT: DUKE STREET GAS BAR
JOB LOCATION: HALIFAX (NS)
CONTACT: RYAN BARKHOUSE
OWNER/ENGINEERING FIRM/CONTRACTOR NAME: WSP CANADA

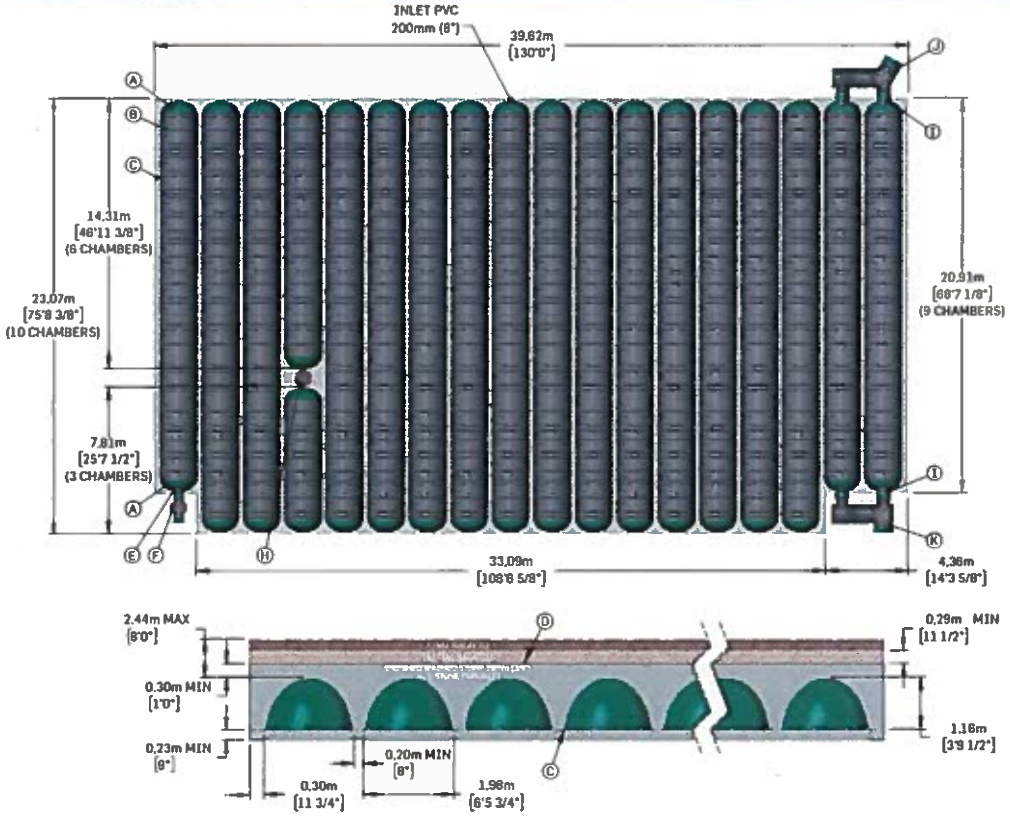
1. INSTALLATION MUST BE MADE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS
2. SYSTEM IS DESIGNED TO WITHSTAND A CL-625 (H-20) LIVE LOAD

APPROVAL: _____

REVISION 0
2016-06-09

SOLENO
Mastering Storm Water

66232 SOLENO HYDROSTOR HS180 SYSTEM 176 CHAMBERS 950m³



PART	DESCRIPTION	QTY
A	HYDROSTOR END CAP HS180	38
B	HYDROSTOR CHAMBER HS180	178
C	STABILIZATION NETTING HYDROSTOR	7
D	SOLENO TX-90 SEPARATION GEOTEXTILE (PROVIDED BY OTHERS)	3
E	STD LENGHT 6m (236") SOLFLO MAX 450mm (18")	1
F	MHT-6. MANHOLE SOLFLO MAX 750mm (30") WITH INLET SOLFLO MAX 450mm (18") BIGC AND OULET SOLFLO MAX 450mm (18") BIGC. ADJUSTABLE FRAME AND COVER (BY DISTRIBUTOR)	1
G	STD LENGHT 6m (236") SOLFLO MAX 200mm (8")	1
H	CB-4. CATCH BASIN SOLFLO MAX 750mm (30") WITH OUTLET SOLFLO MAX 200mm (8") DBIG. ADJUSTABLE FRAME AND GRATE (BY DISTRIBUTOR)	1
I	STD LENGHT 6m (236") SOLFLO MAX 600mm (24")	1
J	MHT-3. MANIFOLD -REDUCER 2 STUBS SOLFLO MAX 900mm (36") - 600mm (24") WITH OUTLET SOLFLO MAX 900mm (36") BIGC. ADJUSTABLE FRAME AND COVER (BY DISTRIBUTOR)	1
K	MHT-5. MANIFOLD -REDUCER 2 STUBS SOLFLO MAX 900mm (36") - 600mm (24") WITH INLET SOLFLO MAX 900mm (36") BIGC. ADJUSTABLE FRAME AND COVER (BY DISTRIBUTOR)	1

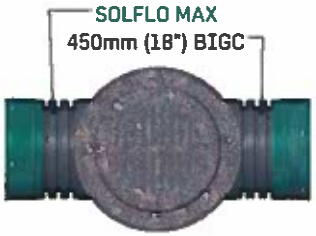
APPROVAL: _____

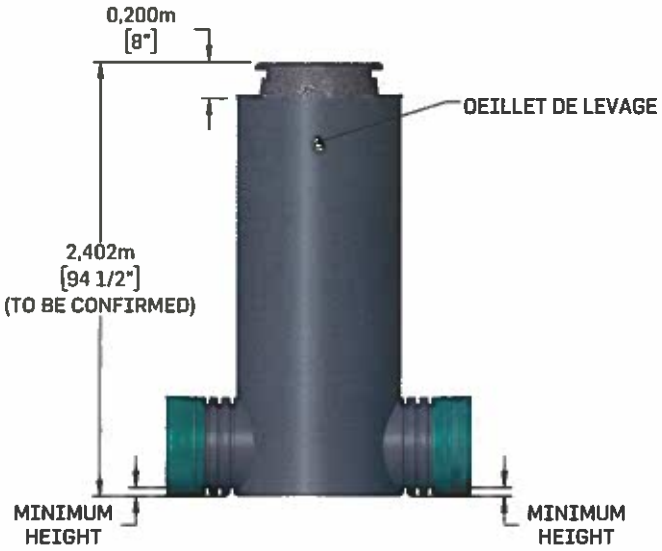
REVISION 0
2018-06-09

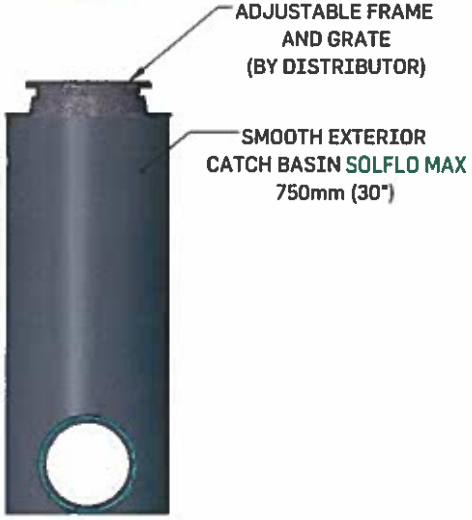
SOLENO
Mastering Storm Water

66232 PART F

PART	QTY
F	1







APPROVAL: _____

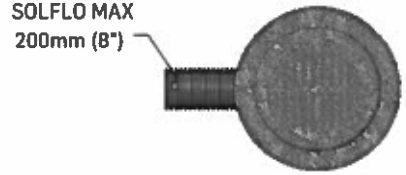
TOLERANCES: ± 1 CORRUGATION

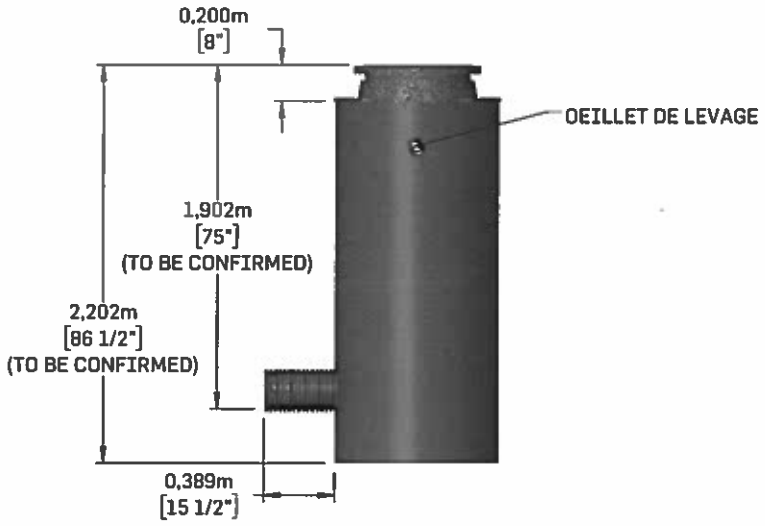
REVISION 0
2016-06-09

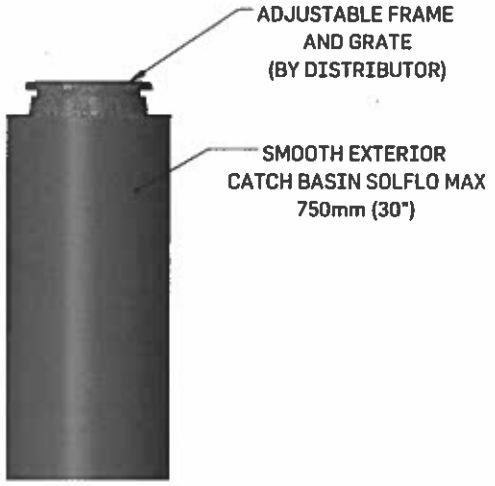
SOLENO
Mastering Storm Water

66232 PART H

PART	QTY
H	1







APPROVAL: _____

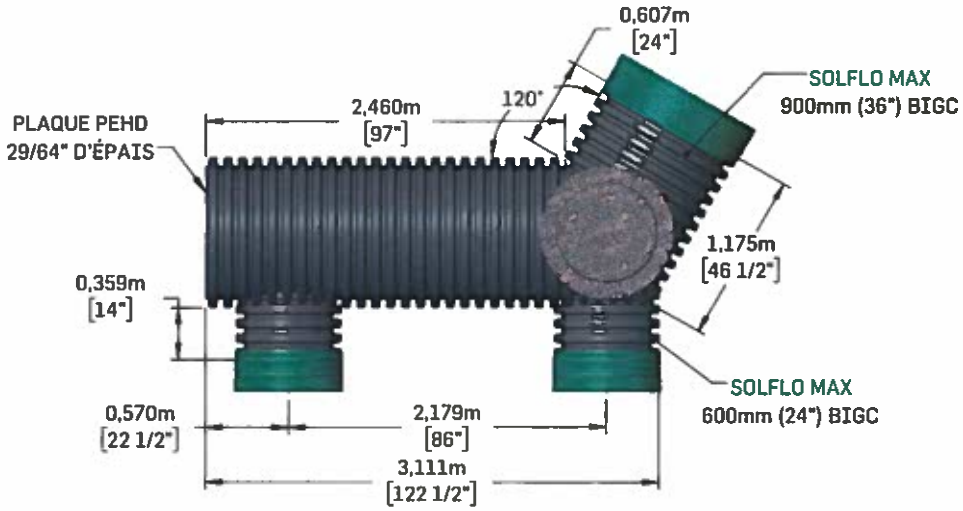
TOLERANCES: ± 1 CORRUGATION

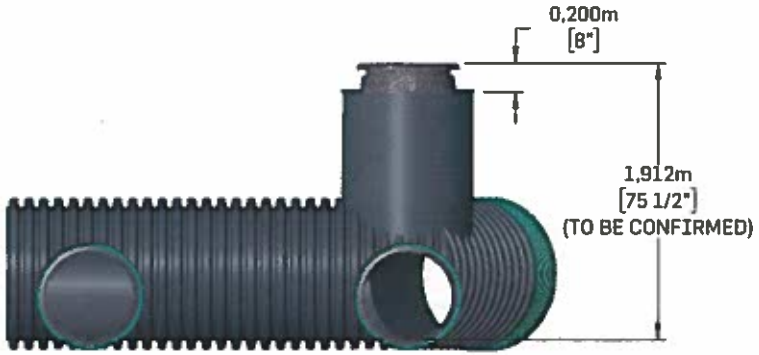
REVISION 0
2016-06-09

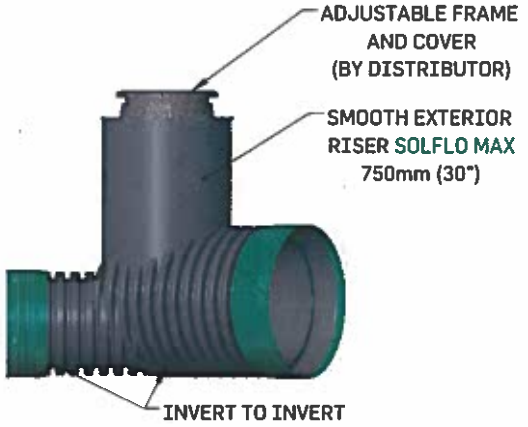
SOLENO
Mastering Storm Water

66232 PART J

PART	QTY
J	1







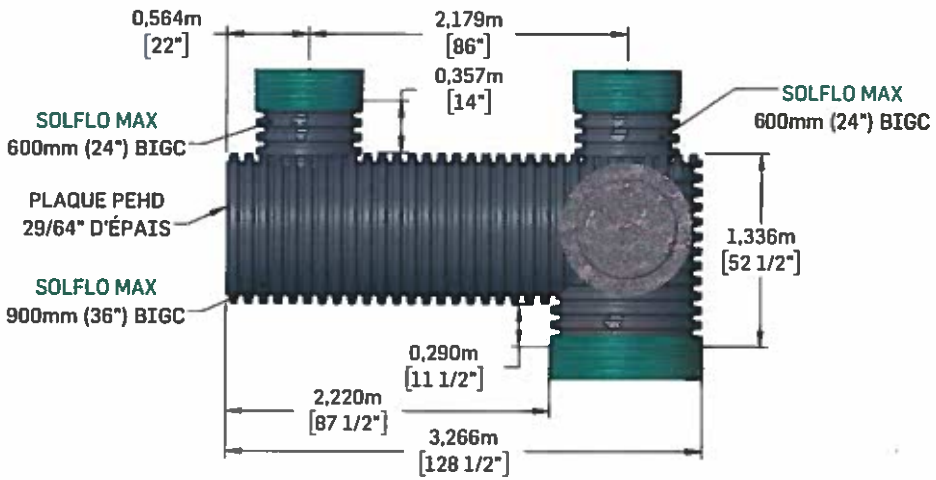
APPROVAL: _____

TOLERANCES: ± 1 CORRUGATION

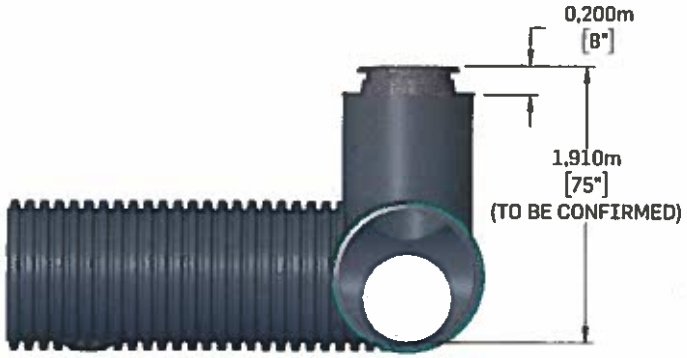
REVISION 0
2016-06-09

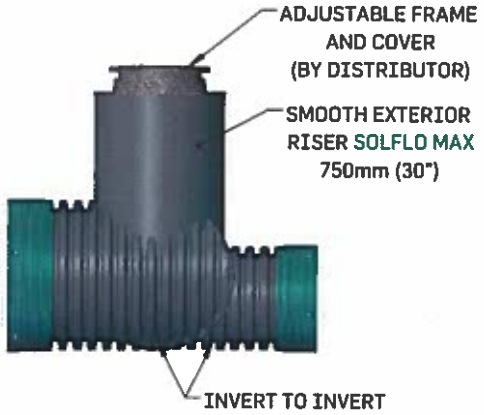
SOLENO
Mastering Storm Water

66232 PART K



PART	QTY
K	1





APPROVAL: _____

TOLERANCES: ± 1 CORRUGATION

REVISION 0
2016-06-09

Street View -1

Street View -2


Bulk Barn
Reitmans
Tip Top Tailors
Verdi Dr
Duke St
Drysdale Ave
Drysdale Ave
Drysdale Ave
Damascus Rd
Damascus Rd
Damascus Rd
Damascus Rd
Damascus Rd
Duke St
Duke St
Duke St
Duke St
Zsa Zsa's Hair Salon
(formally Sharkey's...
Global Pet Foods
St. Josephs
Childrens Centre
Tim Hortons
Kel-Ann Organics

Site Plan