

**NATURAL ENVIRONMENT PROTECTION REPORT FOR A C&D
PROCESSING FACILITY AT BLOCK 2 NO. 7 HWY, PORTERS
LAKE, NOVA SCOTIA (PID 40740276)**

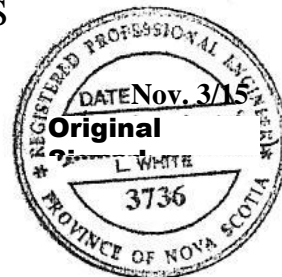
Prepared for: Kiann Management Ltd.

Original Signed

Prepared by:  Julie White, EIT

Original Signed

Reviewed by: Lawrence White, P. Eng, PQS



Sherwood Enterprise Inc.
38 Dillon Crescent
Halifax, Nova Scotia
B3M 4A8
(902)443-3020
sherwoodinc@eastlink.ca
November 3, 2015

EXECUTIVE SUMMARY

A Natural Environmental Protection Report (NEPR) was completed by Sherwood Enterprises Inc. for Kiann Management for a CD-2 rezoning application to allow a Construction and Demolition (C&D) Processing Facility on a portion of land at Block 2 No. 7 Hwy, Porters Lake, Nova Scotia (PID 40740276). It assesses the effectiveness of environmental measures used to protect the natural environment from the construction, and operation of C&D processing facility, and outlines the minimum requirements to ensure a sustainable C&D processing facility can be established on the property.

Due to their unique land use requirements, applications for C&D operations are considered via a rezoning process, where only lands not located within residential, community facility, or environmentally sensitive designated areas are allowed to be considered. During the rezoning process, new proposals for C&D operations are initially evaluated for compliance with MPS policies, LUB provisions, Halifax C&D License By-law and provincial requirements.

C&D Processing Facilities receives non-hazardous C&D materials which are sorted, processed, stored short term, and finally moved offsite, with the majority of materials being recycled or reused. These operations are important for reducing and diverting waste from landfills, however, they can pose a risk to the natural environment if environmental measures are not effective in protection.

An environmental analysis of the property and surrounding area was carried out, from which a portion of land was proposed for rezoning to the CD-2 zone because it avoided the most significant environmental features of the property. A Concept Site Plan was developed to demonstrate how the land is intended to be utilized, and a Cross Section shows that the line-of-sight from No. 7 Hwy to the facility would be adequately buffered. Potential environmental impacts, both pre-construction and post-construction, were identified, environmental measures were proposed, and their effectiveness at mitigating the impacts were discussed.

Potential environmental impacts of the construction and operation of a C&D processing facility on the property include contamination of groundwater, watercourses, wetlands, undisturbed land and neighbouring properties, noise disturbance, and odour, air, dust and debris pollution. These direct environmental impacts would in turn have indirect impacts on other aspects of the environment including, wildlife and other species.

Pre-construction environmental measures used to mitigate the potential impacts include the development of an Erosion and Sedimentation Control Plan (ESCP) prior to construction commencing. The ESCP would include a gravel pad at the entrance, a temporary settling pond to collect runoff, filter fabric barriers around the perimeter, diversion ditches with check dams to control runoff, straw barriers to filter runoff, identification of the watercourse buffer to ensure no disturbance of sensitive areas, and proper grading to ensure minimum erosion. As well, the 1:100 Year Floodplain was calculated and identified on the plans to ensure no risk to flooding.

Post-construction environmental measures used to mitigate the potential impacts present during the operation of a C&D processing facility included a Stormwater Management Plan to be developed during the detailed design of the facility, and included proper grading to minimize erosion, drainage ditches/swales with check dams to control runoff, and berms to balance stormwater flow. Other measures included a sorting pad to control spills, covered areas for materials with potential to produce leachate or odour, vegetative front property buffer, watercourse buffers and a perimeter fence to control pollution. As well, a surface and groundwater monitoring program will ensure early detection of any inadequate measure or failure.

This report provides information on the proposed operation and demonstrates how it addresses the Municipal Planning Strategy Policies, Land Use By-law provisions, the HRM Licensing By-law and provincial requirements. The proposal is capable of satisfying all these regulations and therefore, we find that the site is suitable and appropriate for a CD-2 Zoned processing facility.

TABLE OF CONTENTS

	page
EXECUTIVE SUMMARY	II
TABLE OF CONTENTS.....	IV
LIST OF TABLES	V
LIST OF FIGURES	VI
1.0 INTRODUCTION	1
2.0 BACKGROUND	2
3.0 SITE AND PROJECT DESCRIPTION.....	5
4.0 ASSESSMENT AND MITIGATION OF NATURAL ENVIRONMENTAL IMPACTS.....	13
5.0 CONCLUSION & FINAL REMARKS	20

LIST OF TABLES

	page
Table 3.1 Pre-Construction Proposed Environmental Measures, and Their Effectiveness at Mitigating Potential Environmental Impacts	14
Table 3.2 Post-Construction Proposed Environmental Measures, and Their Effectiveness at Mitigating Potential Environmental Impacts	16

LIST OF FIGURES

	page
Figure 2.3.1 Block 2 (PID 40740276), Hwy 7, Porters Lake, NS.....	5
Figure 3.2 Rezoning Plan showing area proposed for rezoning to CD-2 zone (dwg RZ-1)	7
Figure 3.3 Concept Plan showing the C&D Processing Facility (dwg RZ-2).....	9
Figure 3.4 Cross Section through the C&D Processing Facility (dwg RZ-3).....	11

1.0 INTRODUCTION

A Natural Environmental Protection Report (NEPR) is part of a CD-2 rezoning application, which is the first step in the approval process for a Construction and Demolition (C&D) Processing Facility. The NEPR addresses the criteria item under Policy P-46F (h) of Planning Districts 8 & 9 MPS, which states;

“Applicant shall provide a report that addresses the effectiveness of environmental measures used to protect the natural environment (ie. watercourse, groundwater, etc.)”

It assesses the effectiveness of environmental measures used to protect the natural environment from the construction, and operation of Construction and Demolition (C&D) processing facility. The natural environment includes the neighbouring properties, undeveloped portions of the property, groundwater, and watercourses. Its purpose is to outline the minimum requirements and ensure that a sustainable C&D processing facility could be established on the property.

Kiann Management is proposing to construct and operate a C&D Processing Facility, which falls under the CD-2 Zoning of Planning Districts 8 & 9 Land Use Bylaw (LUB). C&D Processing Facilities receive non-hazardous C&D materials which are sorted, processed, stored short term, and finally moved offsite, with a requirement that 75% of materials being recycled or reused. These operations are important for reducing and diverting waste from landfills, however, they can pose a risk to the natural environment if environmental measures are not effective in protection. It is important to note hazardous materials are not accepted at these facilities and are regulated by provincial legislation and can only be transported to designated sites.

An environmental analysis of Block 2 No. 7 Hwy, Porters Lake, Nova Scotia (PID 40740276) was carried out by Sherwood Enterprises Inc. for Kiann Management from which the NEPR was developed. The NEPR contains a description of the site, assessment and mitigation of identified hazards via environmental measures, concept site plans for pre-construction and post-construction, and conclusions and final remarks.

2.0 BACKGROUND

Halifax Regional Municipality's (HRM) Integrated Waste/Resource Management Strategy (IWMS) was developed in 1995 to help achieve a national diversion target of 50% by 2000. It is made up of components which are to be implemented together to minimize the material going to landfills. A key component of the IWMS is the C&D Waste Management Strategy, which has the following objectives;

- i. Maximize diversion from landfill through recycling of construction and demolition debris in keeping with the Halifax Regional Municipality Solid Waste Resources Strategy;
- ii. Increase economic activity and value added processing through recovery of construction and demolition debris;
- iii. Provide an opportunity to properly dispose of construction and demolition debris that cannot be recycled; and
- iv. Minimize environmental, land use and nuisance impacts from the operation of construction and demolition debris transfer, processing and disposal operations.

These objectives are achieved through the municipal planning policies, which recognize the unique land use requirements of the C&D operations, and the L-200 Licensing By-law to regulate the operation of facilities. Due to their unique land use requirements, applications for C&D operations are considered via a rezoning process, where only lands not located within residential, community facility, or environmentally sensitive designated areas are allowed to be considered. The following table summarizes the approval process for a C&D operation;

	APPROVAL REQUIRED	PROCESS
1	REZONING APPROVAL	Applicant applies to have a property rezoned to a CD Zone (either CD-1, CD-2, CD-3). Application evaluated by staff for compliance with MPS policy, Land Use By-law provisions, Halifax C&D License By-law, and provincial requirements. Public hearing held, Community Council reviews the application, and makes decision to approve or reject rezoning.
2	SITE PLAN APPROVAL	Applicant applies for Site Plan approval, which is reviewed by the Halifax Development Officer against evaluation criteria outlined in the Land Use By-law. If criteria is satisfied, approval is given and property owners within 30m of subject property are notified. There is a right to appeal the development officer's approval and the

		matter would be referred to Community Council for a final decision.
3	C&D LICENSE APPROVAL	Applicant applies for a C&D License, which is reviewed by Halifax staff to ensure compliance with the L-200 C&D Licensing Bylaw. Requires an approved site plan, and also covers items such as, insurance, operations plan, fire/emergency plans, etc.
4	NOVA SCOTIA ENVIRONMENT (NSE) REVIEW	Applicant applies to NSE for the application to be reviewed by provincial staff.
5	FINAL DECISION BY MINISTER OF ENVIRONMENT	Recommendation to Minister made from NSE staff review, from which the Minister makes a final decision.

During the rezoning process, new proposals for C&D operations are initially evaluated for compliance with MPS policies, LUB provisions, Halifax C&D License By-law and provincial requirements. If the proposal is consistent with MPS policies, capable of complying with the requirements of the LUB zone, no major deficiencies are identified that would exclude the proposal from consideration for Site Plan Approval, Halifax Solid Waste indicates the proposal meets the intent of the C&D License By-law, and the Province indicates there are no specific issues which would prohibit a recommendation on the proposal, then the land should be rezoned.

Halifax currently has 3 sites zoned and licensed for various C&D operations;

- Halifax C&D Recycling Ltd. – 16 Mills Drive, Goodwood, NS – Zoned CD-2 – Existing Use – C&D Transfer Stations, and Processing Facility
- Halifax C&D Recycling Ltd. – 188 Ross Road, Dartmouth, NS – Zoned CD-1 – Existing Use – C&D Transfer Station.
- Halifax C&D Recycling Ltd. – 4185 Old Guysborough Road, Antrim, NS – Zoned CD-3 – Existing Use – C&D Processing & Disposal Facility

When the new C&D planning policies were established in 2002, both the Processing Facility, and Transfer Stations at 16 Mills Drive, Goodwood, NS, and 188 Ross Road, Dartmouth, NS existed and were rezoned as-is, and permitted to continue operation. Therefore, it should be noted that these facilities do not meet the current LUB requirements, and are not required to comply with the MPS policies. The only proposals

which were subject to the new policies and approval process for a C&D operations were for a C&D Disposal & Processing Facility (CD-3) at 4185 Old Guysborough Road, Antrim, NS, and a modest expansion of the existing facility at 16 Mills Drive, Goodwood, NS.

There have been no other proposals to come forward for C&D operations since the new 2002 policies. However, Halifax's economy and subsequent waste generation have continued to grow. As well, C&D materials within Halifax are prohibited from being transported outside of Halifax, and must be taken to a licensed C&D facility. Therefore, in the best interest of the public, and according to the objectives of the C&D Waste Management Strategy, opportunities to maximize diversion and operate effectively must be implemented. The city needs additional C&D disposal sites within its boundaries.

3.0 SITE AND PROJECT DESCRIPTION

Block 2 (PID 40740276) is located on Nova Scotia Highway No. 7 approximately 3 km west of the intersection of W Porters Lake Road and Nova Scotia Highway No. 7 in Porters Lake. The property is 2,073,656 ft² (47.6 acres) as shown on Figure 1 below in red.



Figure 2.3.1 Block 2 (PID 40740276), Hwy 7, Porters Lake, NS

Its current zoning is Rural Enterprise (RE), a mixed use zone, and Residential A (R-A), a residential zone with mixed use designation. Both zonings allow a variety of uses including residential, commercial, industrial, resource, and community uses (see zoning provisions attached). The portion of the property which is being requested for rezoning is 640,674 sq. ft. or 14.7 acres (an average of 850ft by 782ft, ~31% of total area of property) and located on a portion of the RE zoned land an average of 695ft from the southwest property boundary.

The land has never been developed and was previously burned in the 2008 Porters Lake Forest Fire. A topographic survey map from Service Nova Scotia (Sheet 10 447000 63300), and a survey of the property completed by Myra Surveying Ltd (included in CD-2 Rezoning Application.) was reviewed. The area was selected to avoid environmentally significant features of the property, such as a steep slope and intermittent drainage on the southwest, and a watercourse and subsequent wetland on the northeast portion, both flow towards Grand Lake approximately 6,864 ft (1.3 miles, 2.1 km) downstream.

The area being rezoned is relatively flat and has little slope. There is a wetland located on the southwest corner, approximately 132ft from the front property boundary, of the rezoned area with no water source flowing to or from.

Geological maps of Nova Scotia were reviewed, and a site visit was completed with the owner. This identified that the property is part of the Goldenville formation, and consists mostly of quartzite.

The portion of Highway 7 where the property is located is fairly undeveloped. There are no developments or active planning applications on any lands immediately bordering the property, and are as follows;

- Northwest – Grant 1032 No. 7 Hwy, Lake Echo, PID 40519563, Rural Enterprise (RE) Zone, No development or use.
- Southwest – 25 Amos Walter Dr., North Preston, PID 00497701, Mixed Resource (MR) Zone, No development or use.
- Southeast – Block 3 No. 7 Hwy, Lake Echo, PID 40519571, RE Zone, No development or use.
- Northwest – Lot Hp-6 Old Dartmouth Rd., Porters Lake, PID 00628875, RE Zone, No development or use.
- Northeast – Lot Hp-3 Parker Ln, Porters Lake, PID 00628818, Residential

The closest residential houses are 11 Parker Lane, 556ft, and 3629 Highway 7, Lake Echo, approximately 2,578 feet from the proposed rezoning area.

As part of the HRM Rezoning Application a Rezoning Plan, Concept Site Plan, and Cross Section were completed to illustrate how the site is intended to be utilized as a C&D Processing Facility. Reduced size versions are included below.

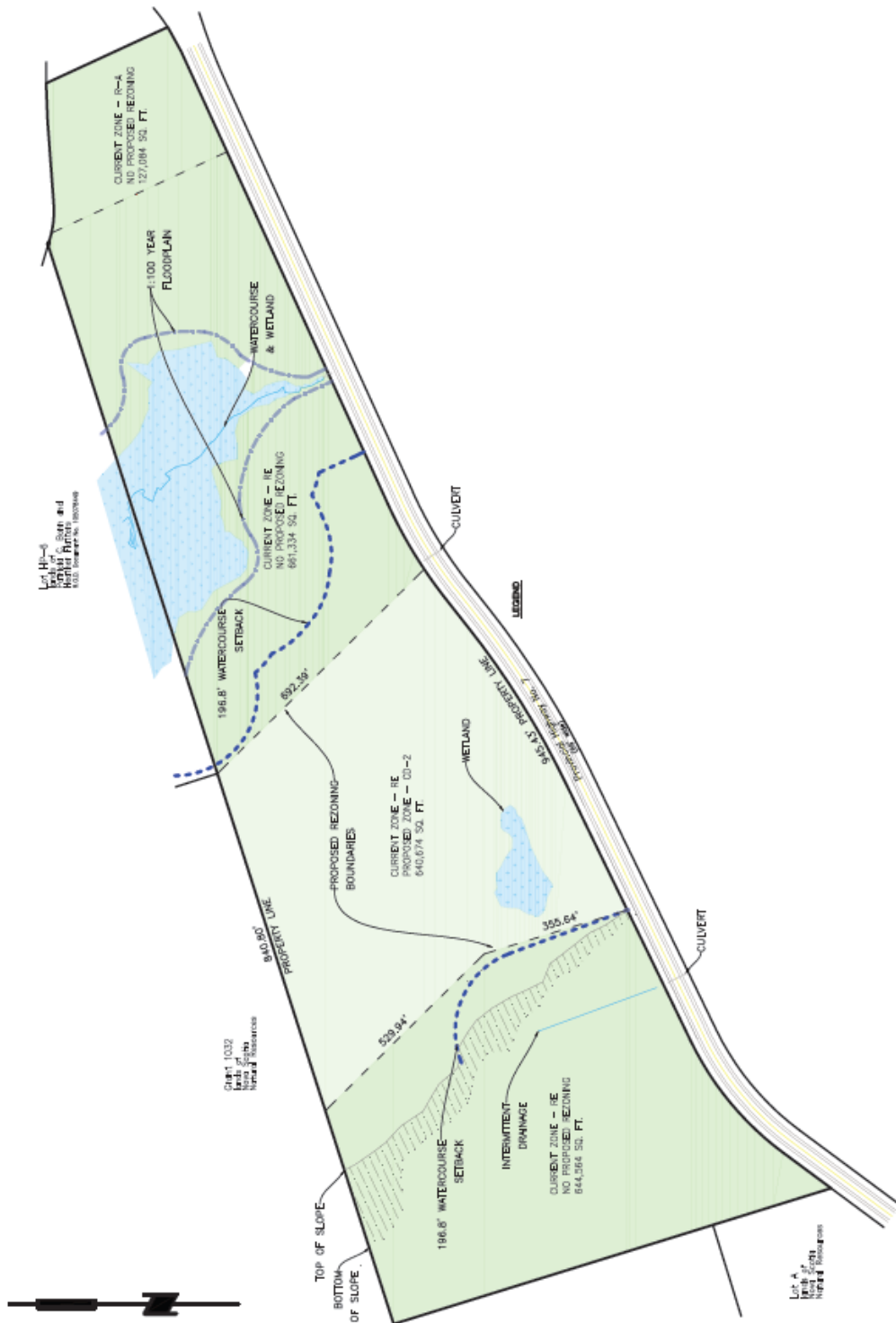


Figure 3.2 Rezoning Plan showing area proposed for rezoning to CD-2 zone (dwg RZ-1)

The Rezoning Plan illustrates the location of the significant environmental features, required setbacks from these features, and the area proposed for rezoning. The significant environmental features include watercourses and wetlands. There is a 196.8' (60m) setback required for watercourses from any building, structure or area used for processing, and from the face of stockpiles. The area proposed for rezoning was selected to avoid the significant environmental features and their setbacks. The wetland located within the proposed rezoning area does not have water flowing to or from it. It is not intended for this wetland to be changed or altered. An application to Nova Scotia Environment under the Wetland Alteration Approval process is required for any alteration to a wetland.

The area to be rezoned is approximately 640,674 square feet or 14.7 acres in size. It has over 800 feet of frontage on Highway #7 and is approximately 600 feet deep. Because the rezoning area is just a portion of the overall property, the remaining lands on either side of the rezoning area provides additional buffering and separation for the adjacent land owners to the east and west. The immediately adjacent lands on all sides are vacant, with the nearest residential home being approximately 2578 feet away.

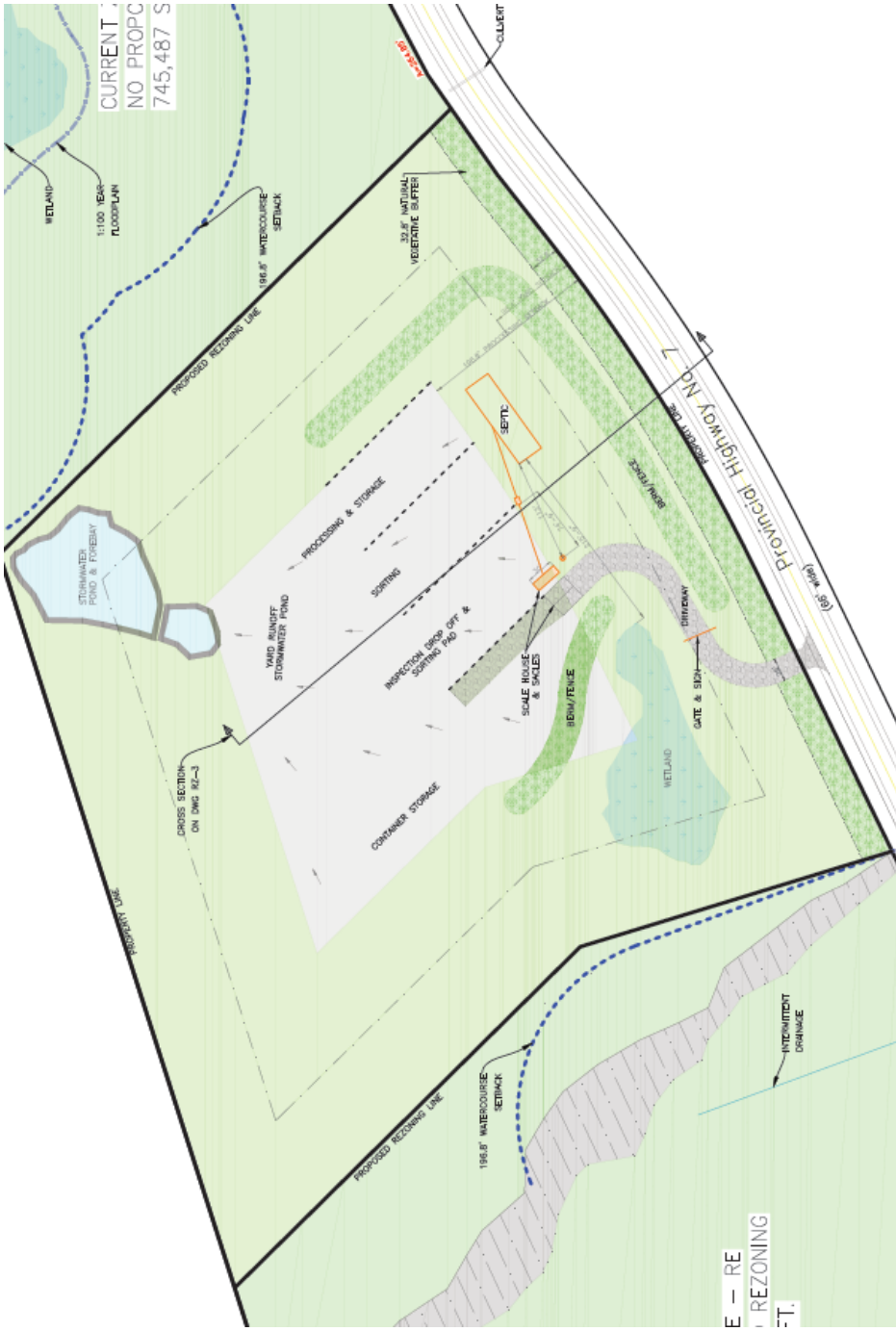


Figure 3.3 Concept Plan showing the C&D Processing Facility (dwg RZ-2)

The Concept Site Plan shows how the proposed rezoning area is intended to be utilized. It includes a 32.8' (10 m) natural vegetative buffer, a 98.4' (30 m) front yard setback, and a 196.8' (60 m) processing setback. Access to the facility will be via a driveway equipped with a gate and sign to ensure no unauthorized access. The driveway will proceed around the wetland to scales and a scale house, where trucks will weigh-in, and weigh-out as required. The majority of the facility and operations will be located 196.8' (60 m) from the front property boundary. Within the processing area trucks will unload C&D materials, loaders will sort and move C&D materials for processing. C&D materials will be stockpiled to a maximum height of 20' (as per the L-200 bylaw) prior to be reloaded and transported offsite to be recycled, reused, or disposed of at the C&D Disposal Facility located at 4185 Old Guysborough Road, Antrim, NS.

In addition to the generous setbacks that contain existing vegetation, new landscaping features, such as a berm with either a fence or new trees, will be utilized to further screen the operation from the passing traffic on Highway #7. The final details of this feature will be discussed during the rezoning process and finalized at detailed design phase.

The site is large enough to be serviced with onsite services including septic, and well water. The adequacy of the site to accommodate these services is addressed in a letter from a Professional Engineer and is included in the Rezoning Application. The exact location, size, and type of system will be established during the detailed design phase.

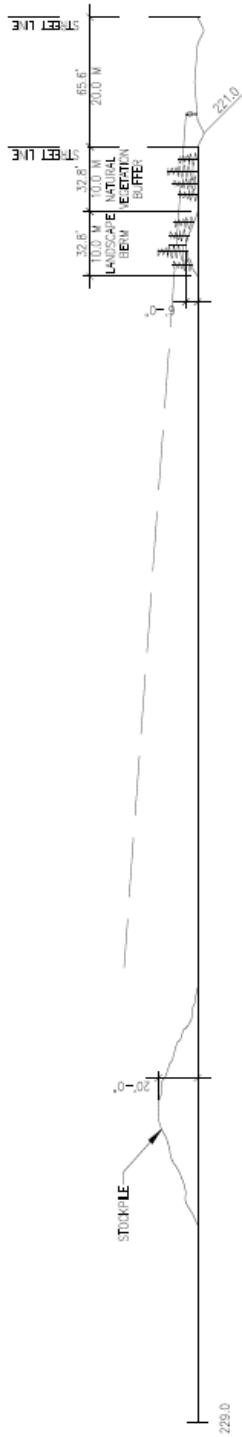


Figure 3.4 Cross Section through the C&D Processing Facility (dwg RZ-3)

The Cross Section illustrates that the land has very little grade change between the road and the operation site. The landscaping berms will be sufficient to buffer the C&D Processing Facility from the line-of-sight from the road. The grade of the operation could be lowered so that it is even less visible from the road. Final grading plans will be prepared during the detailed design phase.

4.0 ASSESSMENT AND MITIGATION OF NATURAL ENVIRONMENTAL IMPACTS

The operation of the facility and processing of C&D waste is regulated by the provincial and municipal legislation, and owners are required to have procedures and processes in place to ensure safety and protection of the environment. The natural environment is also protected via environmental measures which makes the development inherently safer, and provides safeguards for unexpected events, such as human error or mechanical failure. This is determined through the identification of environmental impacts, from which environmental measures are proposed, and their effectiveness to mitigate (ie. avoid, reduce, and/or eliminate) the impacts are discussed.

Potential environmental impacts include, impacts present during construction, pre-construction, and those present during operation of the facility, post-construction.

4.1 Pre-Construction

During the construction of the facility, land (ie. soil, rocks, and trees) is disturbed in order to re-graded according to the design. This can cause erosion and sedimentation which in turn can have negative environmental impacts. As well, trucks, equipment, and materials may be stored onsite during the construction process, which could have negative environmental impacts if not properly stored, monitored, and maintained. The pre-construction potential environmental impacts associated with these activities include;

- Contamination of watercourses,
- Contamination of wetlands,
- Contamination of groundwater,
- Debris pollution, and;
- Contamination of undisturbed lands, and neighbouring properties

These direct environmental impacts would in turn have indirect impacts on other aspects of the environment including, wildlife and other species. In order to protect the natural environment during the pre-construction phase the following environmental measures are proposed in the table below and their effectiveness is discussed.

Table 3.1 Pre-Construction Proposed Environmental Measures, and Their Effectiveness at Mitigating Potential Environmental Impacts

Environmental Measures	Effectiveness at Mitigating Potential Environmental Impacts
Erosion & Sedimentation Control Plan (ESCP)	Part of the Stormwater Management Plan includes temporary measures taken during construction. These are designed and implemented via an Erosion and Sedimentation Control Plan (ESCP), and the minimum requirements are outlined by Halifax Regional Water Commission (HRWC). An ESCP shall be developed and implemented prior to the commencement of construction to ensure the least amount of soil erosion occurs and emergency measures are in place. This will be effective at protecting the site and undisturbed lands from erosion, and the protecting neighbouring properties, and watercourse from indirect effects such as siltation, and habitat contamination.
Gravel Pad	During construction soils become disturbed, and have the potential to travel offsite by machines, and transport coming and going from the site. A gravel pad shall be constructed and maintained at the entrance point of the site. This will be effective at controlling dust, and debris from leaving the site, and protect undisturbed lands, neighbouring properties, and watercourses from dust and debris contamination.
Temporary Settling Pond	A settling pond is part of an ESCP, and is designed to retain surface/storm water from the construction site, allow removal of silt/sediments, and controls the rate the water is released. This will be effective at protecting undisturbed lands, neighbouring properties, and watercourses from silt in surface/storm water during construction.
Filter Fabric Barrier (Geotextile)	Filter fabric barriers shall be included in the ESCP and installed to protect undisturbed lands, neighbouring properties, and watercourses from potential erosion and sedimentation. The proper installation, monitoring, and maintenance are effective by providing a barrier to stop the movement of soils.
Diversion Ditch	Diversion ditches shall be included in the ESCP and installed to protect undisturbed lands, neighbouring properties, and watercourses from potential erosion and sedimentation. Proper installation, monitoring, and maintenance are effective by redirecting, and controlling surface flow from the site.
Check Dams	Check dams shall be included in the ESCP and installed to protect undisturbed lands, neighbouring properties, and watercourses from potential erosion and sedimentation. Proper installation, monitoring, and maintenance are effective by trapping silt from soil erosion.

Straw Barriers	Straw barriers shall be included in the ESCP and installed to protect undisturbed lands, neighbouring properties, and watercourses from potential erosion and sedimentation. They can be used in the construction of erosion control measures and shall be kept onsite by for emergencies as outlined in the ESCP. Proper installation, monitoring, and maintenance are effective by filtering sediment out of surface/stormwater runoff.
Watercourse Buffer	A watercourse buffer of 196.8 ft is a requirement outlined in the Land Use By-Law, and By-Law L-200. It shall be included in the design of the C&D processing facility to protect watercourses from potential erosion and sedimentation, and will be identified on all plans. The buffer also provides a travel corridor for wildlife habitat and species. It is effective by providing an additional safeguard to prevent eroded soils and silt from entering a watercourse and sensitive areas. As well as providing time to respond to a breach in the buffer if other control measures fail or are inadequate.
Grading Practices	Grading shall be included in the ESCP to ensure surface stabilization and minimize the amount of erosion due to stormwater during construction. Site grading design shall prevent and minimize surface water flows across or from the construction site. Geotextile filter fabric shall be used to cover surfaces prior to sodding and seeding. It is effective at protecting undisturbed lands, neighbouring properties, and watercourses by limiting length and steepness of slopes and directing surface/storm water in a controlled manner.

All environmental measures are to be designed, constructed, operated, and maintained in accordance with all current Federal, Provincial, and Municipal bylaws, codes, regulations, and polices. The *Erosion and Sedimentation Control Handbook for Construction Sites* by the Nova Scotia Department of Environment shall also be followed.

4.2 Post-Construction

During the operation of the C&D Processing Facility C&D materials are transported to the site where they are weighed, sorted, processed, stockpiled short term, loaded and then transferred offsite (post-construction). C&D materials received onsite are defined by the Halifax By-Law L-200 as follows;

“materials which are normally used in the construction of buildings, structures, roadways, walls and landscaping features, and includes, but is not limited to, soil, asphalt, brick, concrete, ceramics, porcelain, window glass, mortar, drywall, plaster, cellulose, fiberglass fibres, lumber, wood, asphalt shingles and metals.”

The C&D materials will be sorted and handled via excavators and loaders, and processed with Grinders and Processers. The various stages of handling, processing, and storing materials can have negative environmental impacts on the natural environment. These impacts are;

- Contamination of groundwater,
- Contamination of watercourses,
- Contamination of wetlands,
- Contamination of undisturbed land & neighbouring properties,
- Noise disturbance,
- Odour pollution,
- Air pollution, and;
- Dust & debris pollution

These direct environmental impacts would in turn have indirect impacts on other aspects of the environment including, wildlife and other species. In order to protect the natural environment during the post-construction phase the following environmental measures are proposed to mitigate the identified impacts in the table below and their effectiveness is discussed.

Table 3.2 Post-Construction Proposed Environmental Measures, and Their Effectiveness at Mitigating Potential Environmental Impacts

Environmental Measures	Effectiveness at Mitigating Potential Environmental Impacts
Stormwater Management Plan (SWMP)	The planning and design of stormwater management is required to mitigate the potential negative impacts on the natural environment. The minimum design standards are outlined by the Halifax Regional Water Commission (HRWC). The SWMP will be designed and conform to all requirements of the HRWC and water quality will meet Nova Scotia Environment (NSE) requirements. Pre and Post stormwater flows from the site are required to be balanced. This will be achieved via the minor and major drainage systems consisting of, <ul style="list-style-type: none"> (a) the lot grades, ditches, and culverts, and; (b) swales, driveway, and pond, respectively. Site design will also be incorporated into the SWMP, which will include minimizing cut/fill operations, and diverting runoff

	<p>away from working areas. This will ensure stormwater does not cause flooding, erosion, or sedimentation of the site, undisturbed lands, watercourse, wetlands, and neighbouring properties, and ensure it is free of contaminants and excessive sediments. It will protect water quality of wetlands, and watercourses, and prevent erosion and habitat destruction.</p>
Grading Practices/ Design	<p>Grading shall be included in the SWMP and site design of the C&D processing facility to facilitate proper drainage, and avoid damage due to erosion and surface/storm water. It shall make the best use of the natural topography, vegetation, and minimize cut/fill activities. It is effective at protecting undisturbed lands, neighbouring properties, and watercourses by limiting length and steepness of slopes and directing surface/storm water in a controlled manner.</p>
Drainage Ditches/Swales with Check Dams	<p>Drainage ditches and swales shall be included in the SWMP as required to convey stormwater and runoff in a controlled manner. Check dams shall be along the ditches as required to decrease velocity of water, and remove sediment. They will be effective at preventing erosion and sedimentation due to uncontrolled runoff, and in turn protect the undisturbed lands, neighbouring properties, watercourses, and wetlands.</p>
Berms	<p>Berms shall be included in the SWMP as required, and designed to retain stormwater and runoff from the site, allow solids to settle out of the water prior to being released at a controlled rate to balance pre and post stormwater flows. It will ensure contaminants are removed, prevent erosion, and sedimentation, and be effective at protecting undisturbed lands, neighbouring properties, wetlands, and watercourses.</p>
Dust Control	<p>The 32.8 ft (10m) vegetative buffer will prevent dust from leaving the site. Dust measures and systems shall be included in the design and operation of the site as required, and are to be monitored and maintained. This will ensure requirements are met for dust control.</p>
Debris Controls	<p>Debris controls shall be implemented to ensure cleanup conducted regularly on and around the site. All C&D waste being transported to and from the site is to be covered by a tarpaulin to prevent loss of waste. The site is also to be surrounded by a fence and a gate provided at the entrance to ensure safety, prevent vandalism and also stop debris from moving offsite uncontrolled. This will ensure the site remains clean, and prevent debris from moving offsite, and contaminating undisturbed land, watercourses, and neighbouring properties.</p>
Sorting Pad	<p>When C&D materials are brought onsite, they are to be sorted on a sorting pad, which shall be designed to prohibit materials and liquids</p>

	<p>from entering the groundwater table or watercourse. Any spilled contaminants shall be remediated with a spill kit as required by the Operational Plan. This will ensure contaminants/hazards are identified and removed from the site immediately, and will be effective at protecting undisturbed lands, groundwater, watercourses, and neighbouring properties.</p>
<p>Surface Monitoring</p>	<p>A surface water monitoring program shall be established to measure baseline waters upstream of the site, and water samples downstream. If any contamination is detected remedial actions are to be taken immediately. This will provide detection if operational procedures/plans fail and protect of undisturbed lands, watercourses, and neighbouring properties.</p>
<p>Groundwater Monitoring</p>	<p>A groundwater monitoring program shall be established as required during the detailed design to meet all requirements and guidelines. This will ensure protection of the groundwater, and in turn protect the natural environment (ie. neighbouring properties).</p>
<p>Leachate Treatment & Control</p>	<p>Any C&D material which has the potential to produce leachate when wet is to be stored in covered areas, and remain dry. The site shall be monitored for leachate, and if discovered immediate remedial actions are to be taken to ensure compliance and may include the design and installation of leachate collection and treatment separate from surface/stormwater systems. This will provide detection if operational procedures/plans fail and protect of undisturbed lands, watercourses, and neighbouring properties.</p>
<p>Odour Management</p>	<p>C&D waste materials which emit odours when they become wet are to be stored in covered areas, and remain dry. If there are odour complaints, an odour management program is to be implemented. This will provide detection if operational procedures/plans fail and protect of undisturbed lands, watercourses, and neighbouring properties.</p>
<p>Watercourse Buffer</p>	<p>A watercourse buffer of at least 196.8 ft from any watercourses shall be included in the design of the C&D processing facility to protect watercourses from potential erosion and sedimentation. The buffer also provides a travel corridor for wildlife habitat and species. It is effective by providing an additional safeguard to prevent eroded soils and silt from entering a watercourse and sensitive areas. As well as providing time to respond to a breach in the buffer if other control measures fail or are inadequate.</p>
<p>1:100 Year Floodplain Buffer</p>	<p>The calculation of the 1:100 Year Floodplain determines the area which would become flooded by a rainfall event, which has a 1% chance of occurring in a given year. It was calculated initially to ensure there is limited risk to flooding of the site, and is shown on the</p>

	Rezoning Plan drawing (RZ-1). The area proposed for rezoning is outside the 1:100 Year Floodplain.
--	--

All environmental measures are to be designed, constructed, operated, and maintained in accordance with all current Federal, Provincial, and Municipal bylaws, codes, regulations, and polices.

5.0 CONCLUSION & FINAL REMARKS

It is in our opinion that the Concept Plan that illustrates the proposed rezoned area can accommodate a sustainable C&D processing facility, and the environmental measures proposed can adequately mitigate the environmental impacts identified.

We have not identified any potential environmental impact, which could not be mitigated via environmental measures effectively.

The location and size of the proposed rezoned area is its largest advantage for meeting all requirements and guidelines for protection of the natural environment. It is essential that all identified environmental impacts, and their subsequent measures for mitigation are incorporated during the detailed design phase, and will ensure the development has the least impact on the natural environment.

The operation and maintenance of environmental measures will be included in an Operational Plan, which will also include methods of processing, materials to be recycled and safety procedures for the facility.

It is not anticipated that any unforeseen site conditions will be found during the detailed design phase. A benefit of rezoning this large an area is that it will accommodate design changes and additional environmental protection measures to meet all regulations while maintaining all required setbacks/buffers to protect the natural environment.