



Subject: *Elmsdale Lumber Company Limited Municipal Planning Strategy Amendments and Development Agreement Consideration for a Biochar Production Facility*
To: CAO for Planning Advisory Committee, February 16, 2021
Date Prepared: February 10, 2021
Related Motions: PAC20(52), PAC20(53) and C20(253)
Prepared by: Debbie Uloth, Project Planner
Approved by: John Woodford, Director of Planning and Development

Summary

The Municipality has received an application from Elmsdale Lumber Company Limited to amend the Municipal Planning Strategy and Land Use Bylaw and to amend an existing development agreement for a biochar production facility. The biochar production facility would be added to the existing sawmill site and would process sawmill chips from the existing operation as well as bringing in feedstock from other suppliers.

A public information meeting was held on December 1, 2020 for the proposal. Notes from the meeting have been attached as Appendix C.

Planning staff are requesting first reading of the proposed MPS and LUB amendments, which will permit staff to mail questionnaires to property owners within 500 m of the subject site.

Financial Impact Statement

There is no immediate financial impact from the recommendations in this report. A financial impact analysis will be completed as part of the review for this application.

Recommendation

That first reading be given to the amendments and initial consideration be given to substantially amending the existing development agreement.

Recommended Motion

Planning Advisory Committee recommend that Council:

- *give first reading to an application from Elmsdale Lumber Company Limited to amend the MPS and LUB by changing the designation and zone of a portion of PID 45342938 to Industrial Commercial (IC); and*
- *to give initial consideration to substantially amending an existing development agreement for the existing lumber mill (PID 45082773) to permit a biochar production facility.*

Background

Planning staff received an application from Elmsdale Lumber Company Limited in August 2020. The application proposes to change a portion of the Generalized Future Land Use Designation of land identified as PID 45342938 from Established Residential Neighbourhood (ER) Designation to Industrial Commercial (IC) and to rezone the same from Two Dwelling Unit Residential (R2) Zone to the Industrial Commercial (IC) Zone. The IC Zone would enable Municipal Council to consider substantially amending an existing development agreement for the lumber mill, to allow for a biochar production facility.

Biochar is a heterogeneous substance rich in aromatic carbon and minerals. It is produced by pyrolysis of sustainably obtained biomass under controlled conditions with clean technology and is used for any purpose that does not involve its rapid mineralisation to CO₂ and may eventually become a soil amendment.

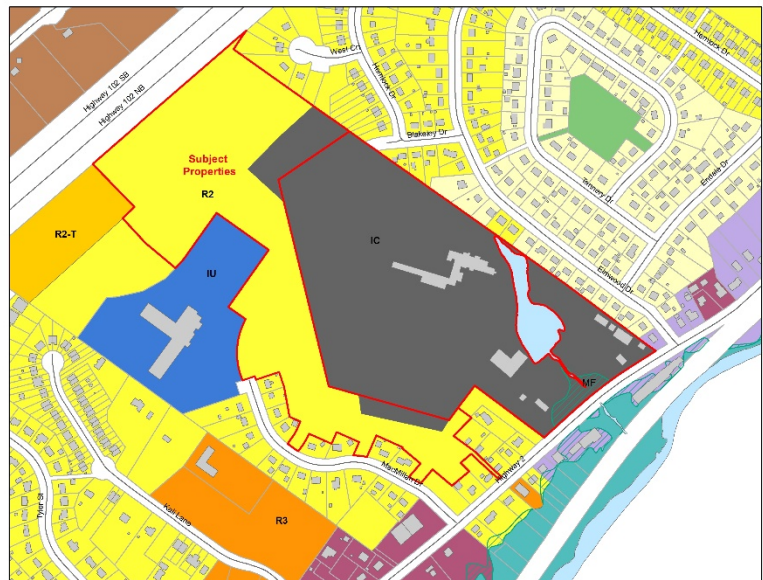
Source: EBC (2012) 'European Biochar Certificate - Guidelines for a Sustainable Production of Biochar.'

According to the information provided by Elmsdale Lumber Company Limited, feedstocks for the facility would be supplied by Elmsdale Lumber and other suppliers, thereby complimenting the existing lumber mill. The facility is proposed to use European technology utilizing four high temperature pyrolysis reactors and would produce approximately 7920 tonnes/year of biochar for Canadian and export markets. Attached as Appendix A is additional information about biochar including market uses and photos.

Subject Site

The subject properties are shown on the map to the right and are identified as PID 45342938 and PID 45082773 (604 Highway 2, Elmsdale). The total area of the subject properties is approximately 23 ha.

Property identified as PID 45342938 is currently split zoned Two Dwelling Unit Residential (R2) Zone and Industrial Commercial (IC) Zone, with the majority of the property being zoned R2. PID 45082773 is zoned Industrial Commercial (IC) Zone with a small portion of it being Moderate Risk Floodplain Overlay (MF) Zone, and this property is where the existing lumber mill is located.

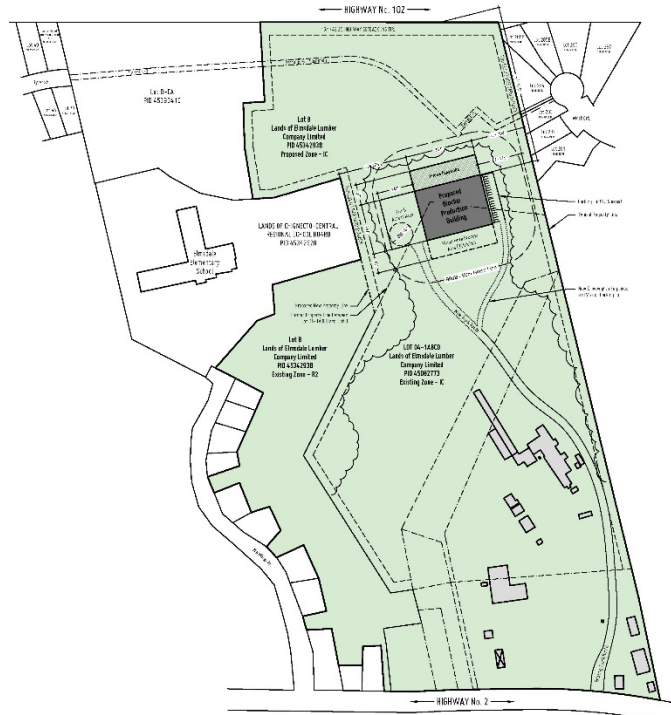


Adjacent property uses and zones include residential zoned lands to the north and south, Village Core (VC) Zone commercial uses across the street, and Highway 102 borders the rear of the subject lands. The Elmsdale District School, zoned Institutional Use (IU) Zone is also adjacent to the subject lands.

Elmsdale Lumber has been located in Elmsdale for more than 80 years and it has been located at the existing site for over 50 years.

Development Proposal

The purpose of this application is to amend the Municipal Planning Strategy and Land Use Bylaw and to substantially amend an existing development agreement to enable the addition of a biochar production facility to the Elmsdale Lumber Company Limited sawmill business. A site plan of the proposed development is on the following page and attached as Appendix B.



Jarsky Architects Inc. | 506-750-1111 | 506-750-1111 | 506-750-1111



Project: ELCO + RDA Biochar Plant
 Subject: Re-Zoning Application Site Plan [Draft]

Seal
**NOT FOR
 CONSTRUCTION**

6		Date:	AUGUST 18, 2020
5		Scale:	N.T.S.
4		Drawn:	NEL
3	AUG 19 2020	Client Project N°:	JAL Project N°: 2020024
2	AUG 13 2020		
1	AUG 8 2020		

3001

The biochar facility is proposed to be located to the north of the existing sawmill, on Elmsdale Lumber Company owned land. Part of this area is already zoned Industrial Commercial (IC) Zone. Shown on the site plan is the location of the building, a wood fiber storage area, a truck access area, parking area for employees, and an area for future expansion of the biochar facility. Also, shown on the site plan is the location of an easement in favour of the Municipality for the water transmission line, which is not shown to be impacted by the proposed development.

Information received from the applicant indicates that the maximum noise level at 50 m from the facility will be 90 dB. This 50 m setback from the facility has been shown on the site plan. The impact from noise on the surrounding residential development and the elementary school is one of the major concerns expressed by members of the public. Planning staff have measured noise levels at certain points around the existing lumber mill to get an idea of the background noise level. In order to consider noise further, the applicant has been asked to provide additional information on how noise levels are expected to impact the surrounding community. The proposed facility is shown to be setback +/- 81 m from the Elmsdale District School and +/- 63 m from residential development in Elmwood Subdivision.

Policy Analysis

Staff will be requesting comments from internal departments and external agencies, including but not limited to: Nova Scotia Transportation and Infrastructure Renewal; Nova Scotia Environment; and the Municipal Department of Infrastructure and Operations.

As identified in the MPS, Council’s goal for the IC Zone is for *“the Industrial Commercial (IC) Designation to reduce any potential conflicts which may arise between industrial-based development and less intensive land use...”*, which Council shall consider as part of this application. Council also shall consider Policy ED42, which

states that “Council shall establish the Industrial Commercial (IC) Designation for the purpose of grouping industrial related uses such as manufacturing, process, and related heavy commercial uses, which are generally of a regional commercial nature, to reasonably allow for the development of such uses and to facilitate a desirable growth pattern for communities.” The major issue needing considerable evaluation is whether an industrial use that has been in operation at the same place for 50 plus years, and has had residential development grow up around it, should be permitted to expand their industrial use, even though the expansion may create a land use conflict with the neighbouring residential development, and adjacent school property.

Other items Council will have to take into consideration, are the importance of connectivity through the residential development between Highway 2 and Highway 102, including the Corridor Connector Trail, and the importance of an increased commercial tax base and the fiscal impact of the biochar production facility. Additionally, the impact of noise levels and airborne emissions on an elementary school and residential development will need to be considered. These items, and additional issues, will continue to be evaluated by Planning staff as the application process moves forward.

Policy IM10, permits Council to consider private applications to amend the MPS where the proposed amendments are in the best interest of the Municipality. Therefore, Council may consider the application for the biochar production facility, if they feel the proposal is in the best interest of the Municipality. Council will have to weigh the commercial assessment benefit and the benefit of approximately 25 permanent jobs with any potential negative impact to the surrounding community.

Strum Consulting, Engineers for the applicant, have submitted their project description to Nova Scotia Environment to determine if an Environmental Assessment is required. Documents submitted to Nova Scotia Environment suggest that the proposed biochar production facility does not meet the criteria to trigger an Environmental Assessment. Even if an Environmental Assessment is not required, there are other approvals, such as an Industrial Approval, which may be required for the operation of the biochar production facility. Planning staff are in contact with Nova Scotia Environment and further information will be provided in staff’s next report.

Nova Scotia Transportation and Infrastructure Renewal has reviewed information submitted by Elmsdale Lumber Company Limited and have indicated that “...increased truck traffic is not expected, and a negative traffic impact is not anticipated.” Further to this, the applicant anticipates that the current rates of truck traffic will be reduced, as “for every 5.5 truckloads of wood fibre, one truckload of biochar is produced...”, which is a ratio 1:5.5.

Elmsdale Fire and Emergency Services has requested that the new facility be sprinklered and they have requested that a fire hydrant be installed in close proximity, and at an accessible location, to the proposed building. According to the applicant, the building will have a sprinkler system. In addition, the applicant has indicated that there will be a least one accessible hydrant near the proposed building.

Planning staff have requested comments from Herb Steeves, Director of Operational Services for the Chignecto Central Regional Centre for Education and from the Principal at Elmsdale District Elementary School, but no comments have been received to date.

Citizen Engagement

Planning staff will comply with the Citizen Engagement Policies of the Municipal Planning Strategy when processing this application. An advertisement outlining the application and indicating that it had been received and was under review by staff was placed in the *Chronicle Herald* on September 4, 2020. A well attended digital public information meeting for the proposal was held on December 1, 2020. Questions and comments from the meeting have been attached as Appendix C and a recording of the meeting is available on the East Hants YouTube channel.

Concerns raised by residents that are still to be addressed include:

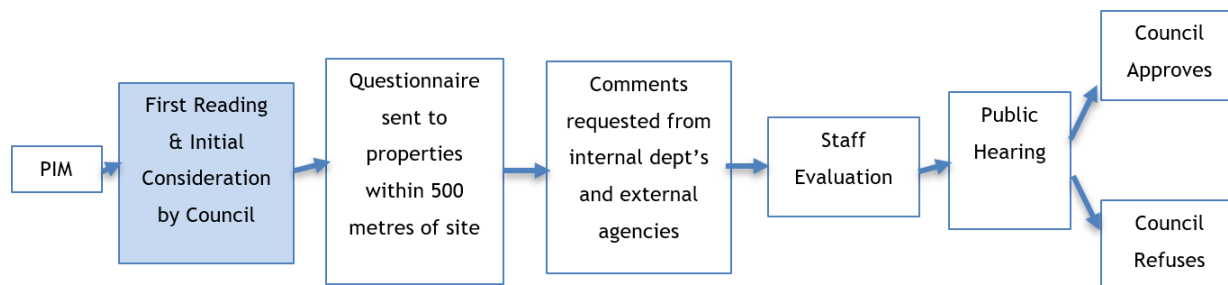
1. Is an Environmental Assessment required?
2. How will noise from the biochar production facility impact the surrounding residential neighbourhood and the neighbouring elementary school?
3. What is the impact of the air emissions from the proposed biochar production facility? How do they compare to the existing lumber mill?

In addition to the public information meeting, staff have received public comments on the biochar proposal, which have been posted to Council Chambers Online for PAC members to review.

Planning staff are requesting first reading of the MPS and LUB mapping amendments and initial consideration of the substantial development agreement amendment, which would allow staff to continue with the community consultation by mailing questionnaires to property owners withing 500 m of the application site.

Conclusion

Planning staff will continue to review the application by Elmsdale Lumber Company Limited for a biochar production facility on lands located at 604 Highway 2, Elmsdale and identified as PID 45342938 and PID 45082773. Comments received to date from reviewing agencies have been included in the staff report. Planning staff are in communication with Nova Scotia Environment and the applicant, and the final staff report will indicate impact from noise and emissions and whether an Environmental Assessment is required.



Recommendation

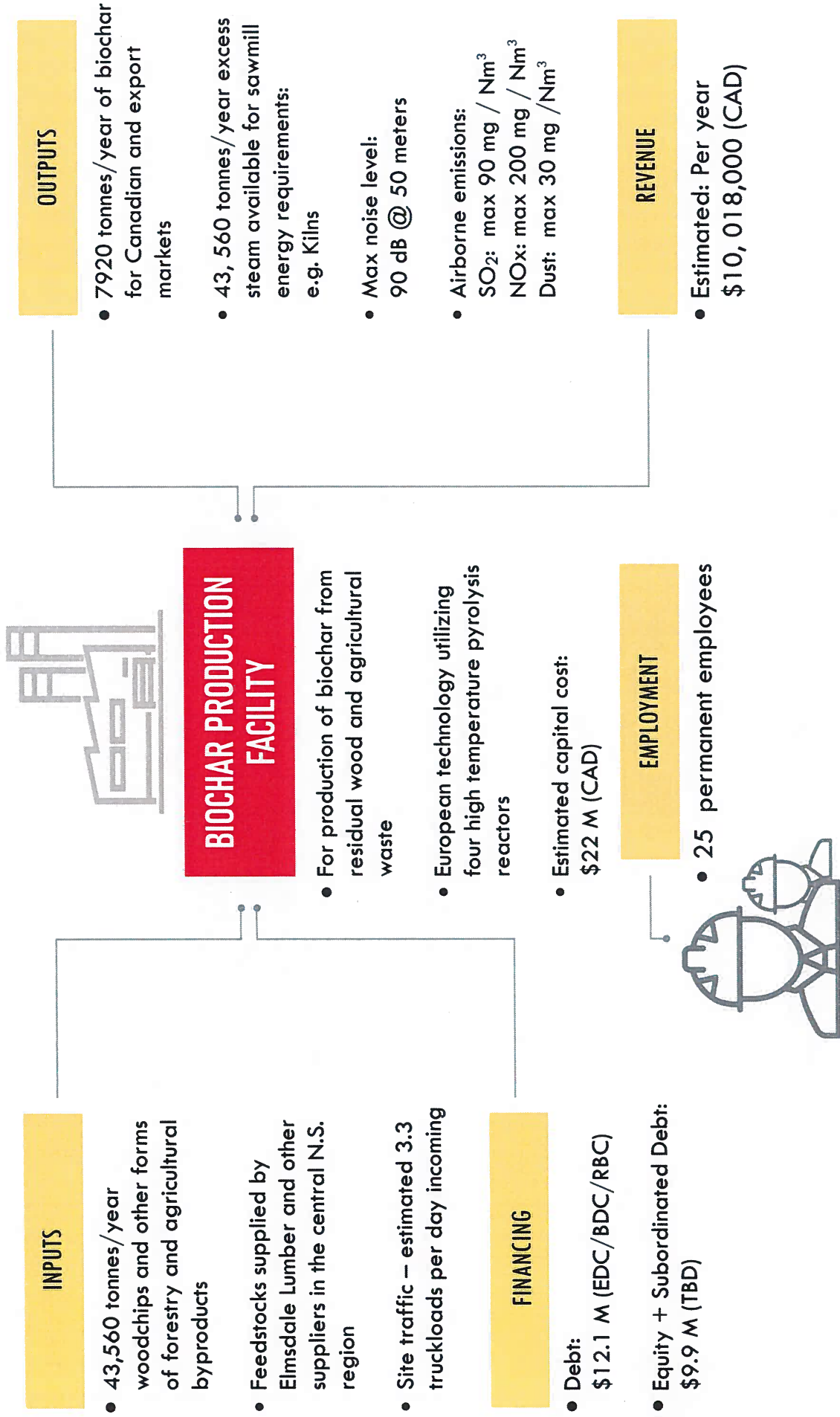
That first reading be given to the amendments and initial consideration be given to substantially amending the existing development agreement.

Appendix A - Biochar Production Facility Information

RDA Atlantic Inc. / Elmsdale Lumber Company Ltd.

BIOCHAR PROJECT

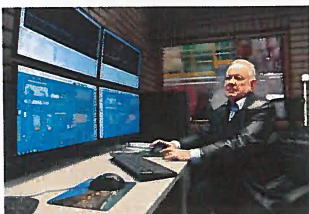
Location: Elmsdale, N.S. Canada



BIOCHAR TECHNOLOGY



- **Scalable and Repeatable** : modular design allows plant to scale up by adding reactors
 - Ex: four reactors:
 - Input: 50,000 GMT/yr (moist biomass)
 - Production: 8500 - 9000 DT/yr (dry biochar)
- **Adaptable**: ability to adjust temperatures and feedstock to alter characteristics of biochar
- **Feedstock**: woody biomass – woodchips
- **Economic Benefit to Sawmills**: Sawmill chips processing provide excess steam/heat for kiln in addition to biochar product.
 - Ex: possibility to power neighboring small-scale greenhouse
- **Adds Value**: This increases the value of sawmill residues



BIOCHAR FACILITY: Photos

Exterior of facility:



Interior of facility:





BIOCHAR MARKETS

Soil Amendment

Biochar used for the improved of plant growth is best if used in pre-combination with quality mulch or compost, but it can be added to the soil by itself. Incorporating biochar stores carbon in the soil while enhancing fertilizers, microbial activity, water/nutrient retention and increases root strength.

- Added directly to the soil:
 - field application for agriculture /gardening
 - cannabis market/green houses
- Mixed with compost or fertilizer to boost product

Decontamination

Biochar is a low-cost and renewable adsorbent made using readily available biomaterials. It can be a cost-effective sorbent to treat metal-contaminated waters. Soil application -The purpose is to decontaminate soil returning the land to a more natural state.

- Water: used to replace activated charcoal
- Soil: applied similarly to agricultural or crop applications. Used for storm water treatment / management.

Animal Applications

Absorbs moisture, odors and nitrogen compounds, reducing toxic emissions of ammonia and footpad disease decreases. Animal bedding also becomes easier to handle. In animal feed biochar can positively influence animal growth rates and methane emissions from cattle.

- Animal litter / bedding
 - Poultry / Equine / Domestic Pets
- Animal Feed
 - Cattle
 - Fish
 - Poultry

Industrial Fuel

Biochar has the approximate energy density of coal and can be used as a direct substitute in electricity or heat production plants

Barbecuing

Biochar's advantage is that it comes from a renewable source and free of volatiles compared to existing products.

- Lump charcoal
- Briquettes

Carbon Black

Ability to replace Carbon Black as an environmentally friendly alternative. CB used in the production of tires, conveyor belts, hoses, footwear, weather stripping, car bumpers. It is also used as a color pigment for inks and has found uses in films, adhesives, magnetic tapes, garbage bags, and agricultural plastics.

Textiles

Ability to absorb odors and moisture.

Building Materials

Insulation that regulates humidity while absorbing moisture.

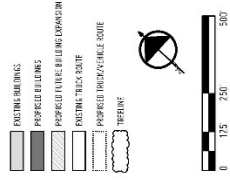
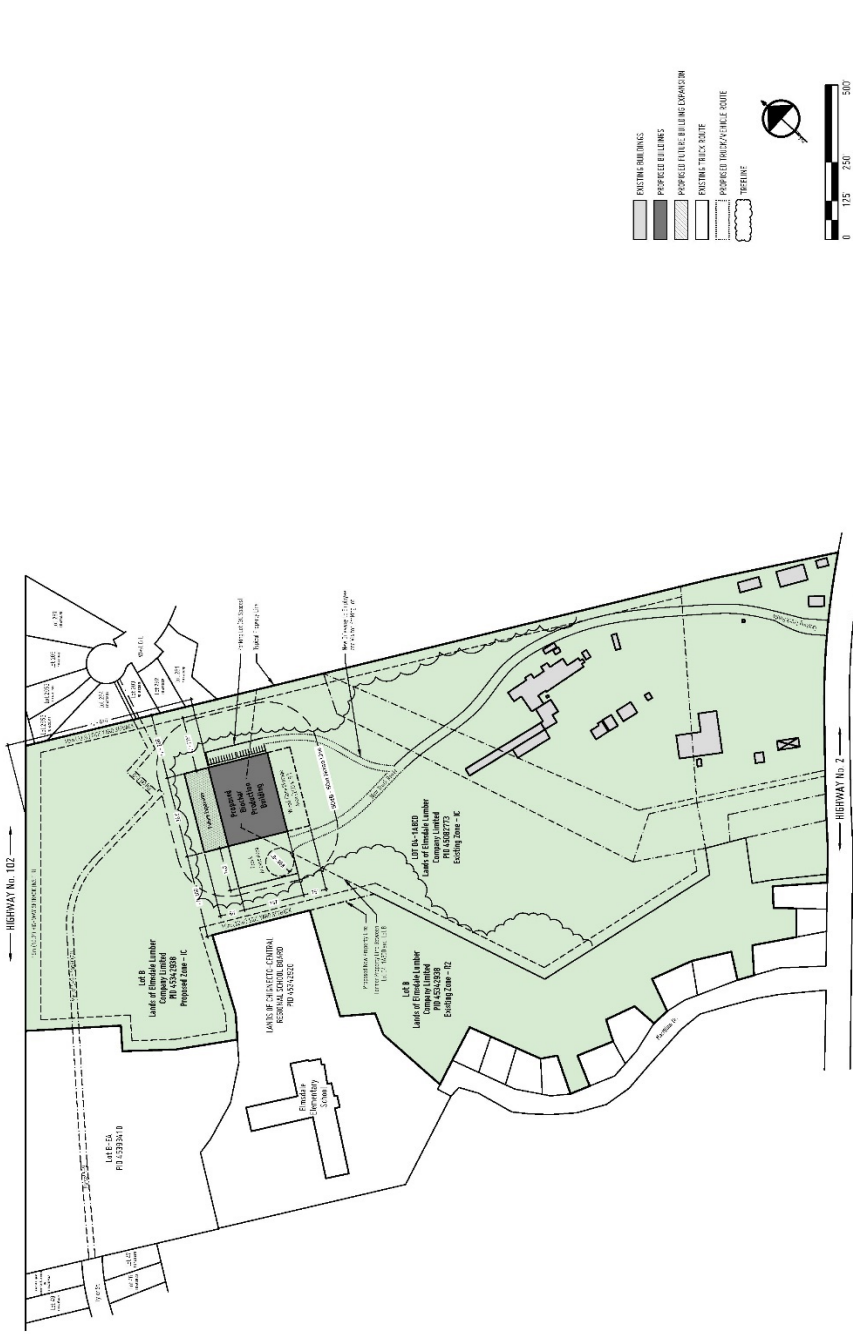
Activated Carbon

- Filtration - water, respirators
- Cosmetics – dental, shampoos/soaps.

Graphene



Appendix B - Elmsdale Lumber Company Limited Site Plan



6	Date:	AUGUST 18, 2020
5	Scale:	N.T.S.
4	Drawn:	NEL
3	Client Project No.:	2020024
2	JAL Project No.:	3001
1	Issued for Client Review	

Seal
NOT FOR CONSTRUCTION

Jarsky
 Project: ELCO + RDA Biochar Plant
 Subject: Re-Zoning Application Site Plan [Draft]

Digital Public Information Meeting - Elmsdale Lumber Company Limited

(December 1, 2020)

- Staff: Mr. John Woodford, Director of Planning & Development
Ms. Debbie Uloth, Project Planner
Ms. Jody MacArthur, Communications Officer
Ms. Sheralee Mitchell-MacEwan, Assistant Municipal Clerk
- Applicant: Mr. Robin Wilbur, President, Elmsdale Lumber Company Limited
Ms. Anneke Santilli, RDA Atlantic Inc.
Mr. Nic Strum, Strum Consulting
Mr. Don Leblanc, RDA Atlantic Inc.
- Call to Order: Mr. John Woodford, Director of Planning & Development
- Presentation: Staff Presentation: Ms. Debbie Uloth, Project Planner
Applicant Presentation: Mr. Robin Wilbur, Elmsdale Lumber Company Limited
Ms. Anneke Santilli, RDA Atlantic Inc.
- Applicant: Mr. Nic Strum, Strum Consulting
Mr. Don Leblanc, RDA Atlantic Inc.
- Public:
- What type of smells will be produced by the facility? Response: Smell would be similar to the lumber mill.
 - Concerned about the proximity of the biochar facility to the elementary school.
 - Concern that the development will impact property values in the neighbourhood.
 - Will woodchips and sawmill by-products be the only feedstock used in the facility? Response: Yes.
 - Is the operation 24 hours? Response: Yes.
 - Discussion over the types of jobs that could be created by the facility.
 - Discussed the biochar production facility in Poland.
 - Discussed that the school board will be consulted as part of the application.
 - Questions asked regarding an Environmental Assessment. Applicant responded that they had hired Strum Consulting to help determine if an EA is required and to work with Nova Scotia Environment.
 - Discussed some of the technical aspects of the proposed biochar facility.
 - Questions regarding sound that would be produced from the proposed facility.
 - Discussion around the amount of truck traffic generated by the facility.
 - Discussion over the location of the proposed biochar facility.
 - Talked about the uses of biochar and there was a question of whether there were any disadvantages.
 - Questions were asked and answered about the feedstock and where it would come from.
 - Discussed the design of the proposed facility.

Draft Amendment Sheet

The Municipality of East Hants
Official Community Plan
Municipal Planning Strategy

Generalized Future Land Use Map 1: South Corridor & Commercial Growth Management Area

The GFLUM designation of a portion of PID 45342938, Elmsdale, shown on the Generalized Future Land Use Map 1: South Corridor & Commercial Growth Management Area, has been changed from the Walkable Comprehensive Development District (WCDD) Designation to the Industrial Commercial (IC) Designation.



Draft Amendment Sheet

The Municipality of East Hants
Official Community Plan
Land Use Bylaw

Land Use Bylaw Map 1: South Corridor & Commercial Growth Management Area

The LUB zone of a portion of PID 45342938, Elmsdale, shown on Land Use Bylaw Map 1: South Corridor & Commercial Growth Management Area, has been rezoned from Two Dwelling Unit Residential (R2) Zone to the Industrial Commercial (IC) Zone.

