



Subject: *Elmsdale Lumber Company Limited Municipal Planning Strategy Amendments and Development Agreement Consideration for a Biochar Production Facility*
To: CAO for Planning Advisory Committee, September 15, 2020
Date Prepared: September 9, 2020
Related Motions: None
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 enter into a 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.

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 Planning Advisory Committee recommend that Council authorize staff to schedule a public information meeting to consider 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 consider substantially amending an existing development agreement for the existing lumber mill (PID 45082773) to permit a biochar production facility.

Recommended Motion

Planning Advisory Committee recommend that Council:

- *authorize staff to schedule a public information meeting to consider 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 consider 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), with the majority of the property being zoned R2. PID 45082773 is zoned Industrial Commercial (IC) with a small portion of it being Moderate Risk Floodplain Overlay (MF) Zone, and this property is where the existing lumber mill is located.

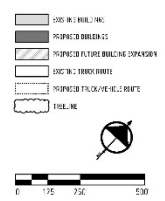
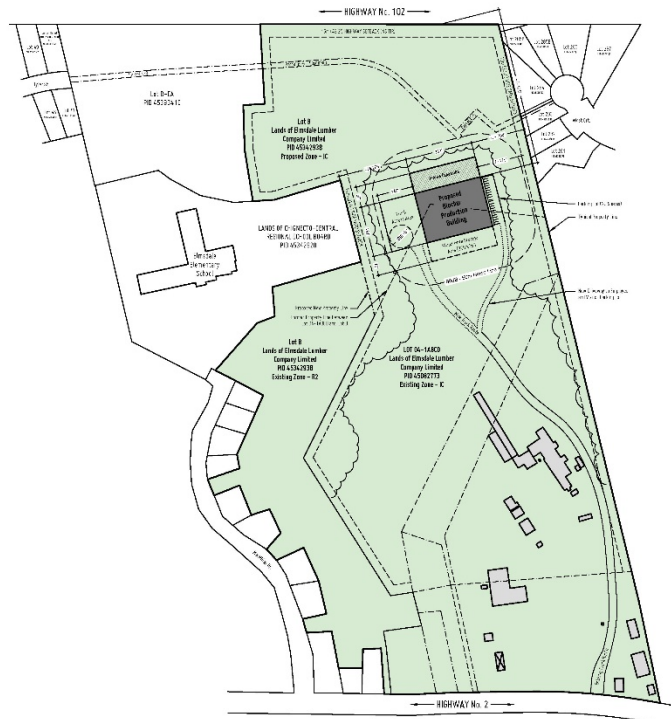
Adjacent property uses and zones include residential zoned lands to the north and south, Village Core (VC) Zone commercial uses across the street, and Highway 102 borders the rear of the subject lands. The Elmsdale District School, zoned Institutional Use (IU) Zone is also adjacent to the subject lands.

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.





 Project: ELCO + RDA Biochar Plant

 Subject: Re-Zoning Application Site Plan [Draft]

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3	AUG 19 2020	Issued for Client Review
2	AUG 13 2020	Issued for Client Review
1	AUG 8 2020	Issued for Client Review

Date: AUGUST 18, 2020
 Scale: N.T.S.
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The biochar facility is proposed to be located to the north of the existing sawmill use 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 and emissions from the proposed facility have yet to be determined. The proposed facility is shown to be setback +/- 81 m from the Elmsdale District School and +/- 63 m from residential development in Elmswood Subdivision.

Elmsdale Lumber Company Limited has hired Strum Engineering to determine if an environmental assessment is required for the proposed use. The environmental assessment process is administered by the Provincial government.

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.

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

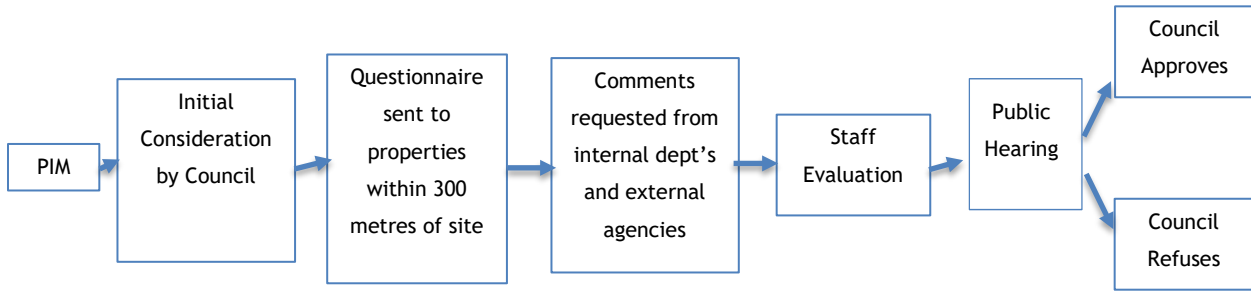
Policy IM10, permits Council to consider private applications to amend the MPS where the proposed amendments are in the best interest of the Municipality. Therefore, Council may consider the application for the biochar production facility, if they feel the proposal is in the best interest of the Municipality. 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.

Public Participation

Planning staff will comply with Public Participation 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 Public Information Meeting (PIM) is required for all amendments to the Municipal Planning Strategy unless they are housekeeping in nature. Due to Covid-19 restrictions, the public information meeting will be held as a digital meeting that residents can join digitally or call and listen to the presentation. Residents will have an opportunity to ask questions at the PIM whether they join digitally or call into the meeting. A letter indicating the time and date of the PIM will be mailed to all property owners within a 300 m of the subject properties indicating the time and date of the meeting.

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. This initial report simply outlines the development proposal, further reports will consider traffic, noise, design and other planning matters. Changes to the site plan may be required as the application proceeds. Staff are recommending that a public information meeting (PIM) be held as the next step in the planning application process. Comments from the public as part of the PIM will be included in the next staff report.



Recommendation

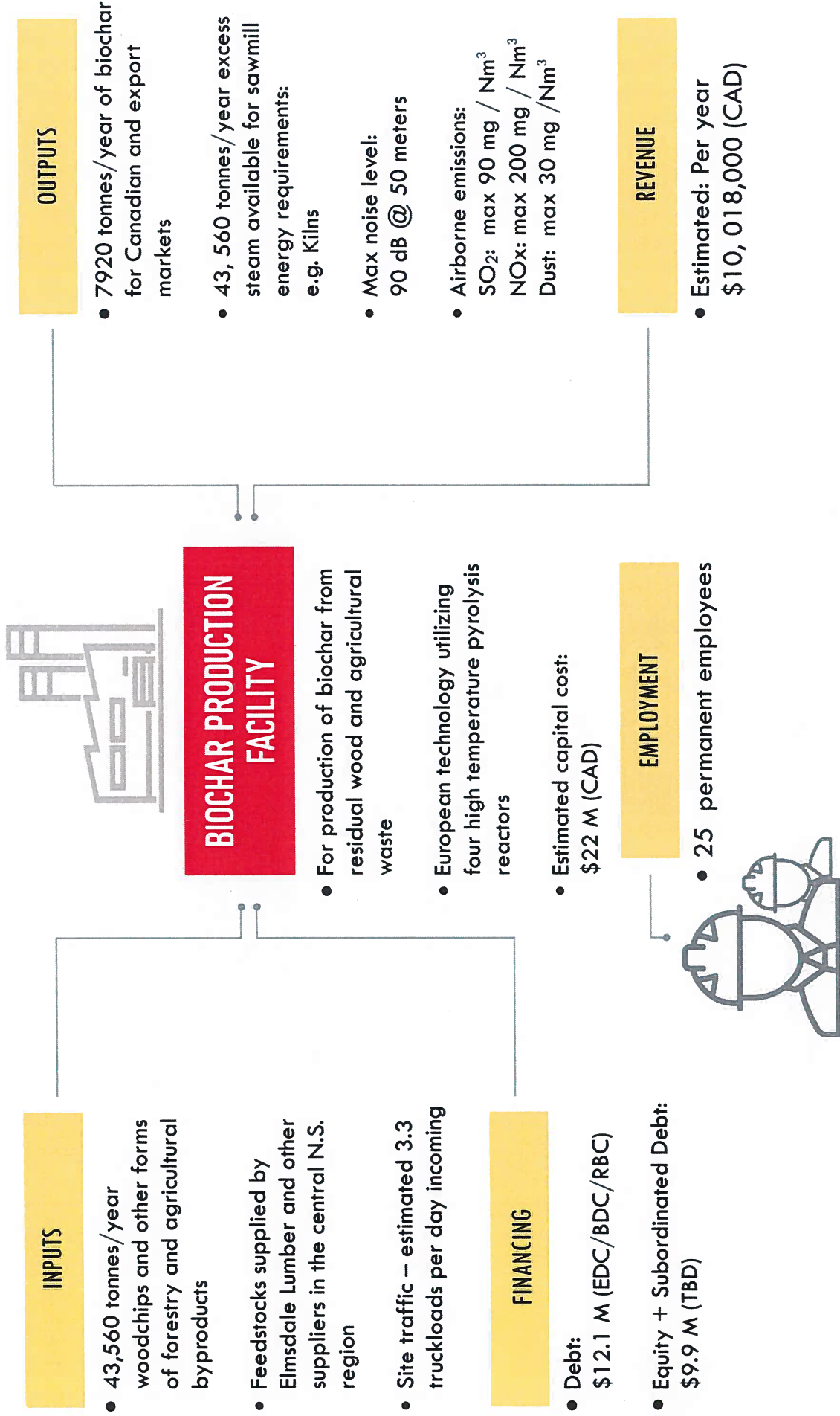
That Planning Advisory Committee recommend that Council authorize staff to schedule a public information meeting to consider an application from Elmsdale Lumber Company Limited to amend the MPS and LUB by changing the designation and zone of a portion of PID 45342938 to Industrial Commercial (IC), and to consider substantially amending an existing development agreement for the existing lumber mill (PID 45082773) to permit a biochar production facility.

Appendix A - Biochar Production Facility Information

RDA Atlantic Inc. / Elmsdale Lumber Company Ltd.

BIOCHAR PROJECT

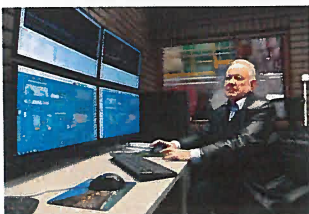
Location: Elmsdale, N.S. Canada



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.

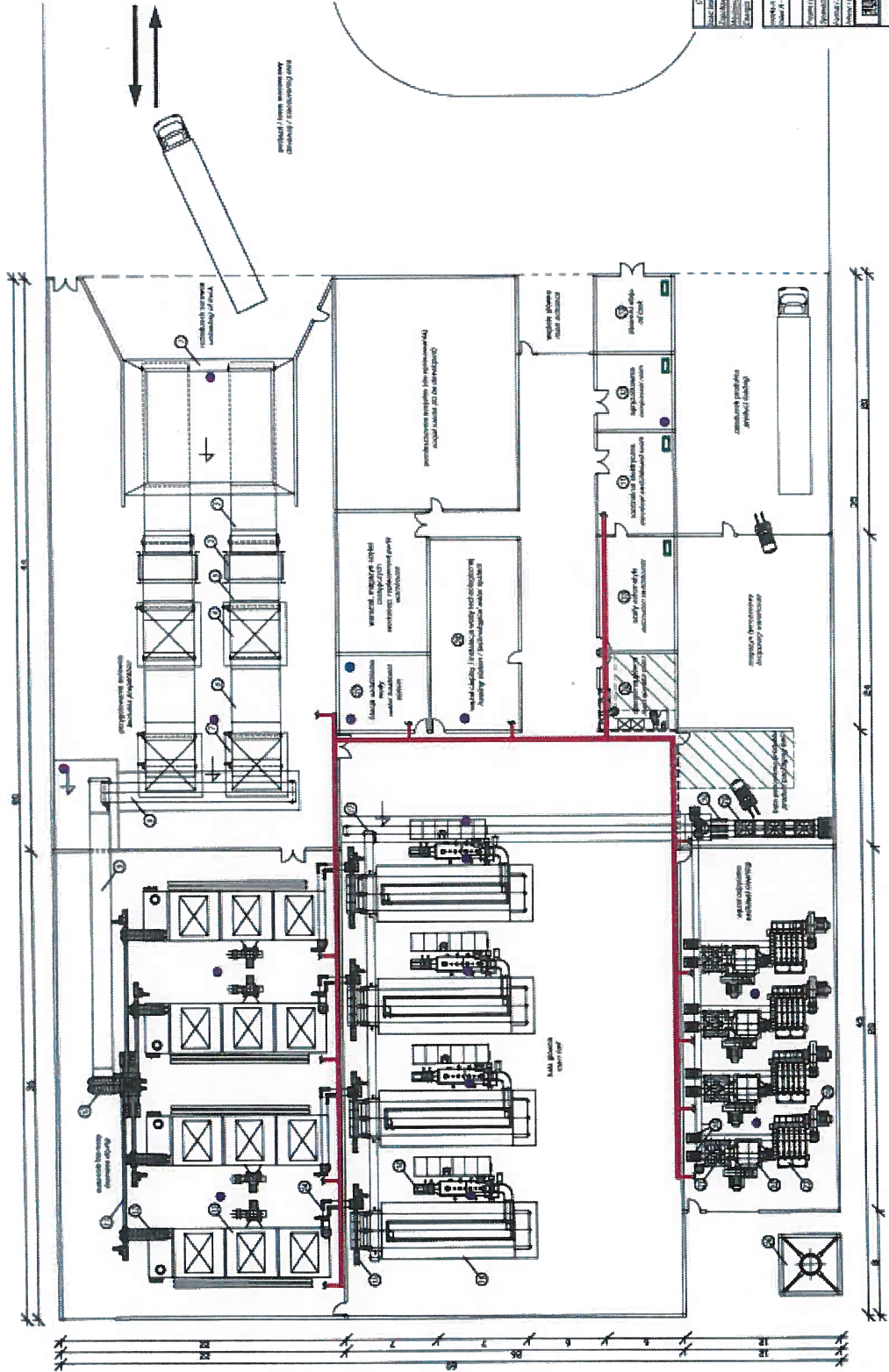
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PROTECTED BUSINESS INFORMATION

APPENDIX 1 - SUMMARY OF THE CONTENT OF DRAWINGS

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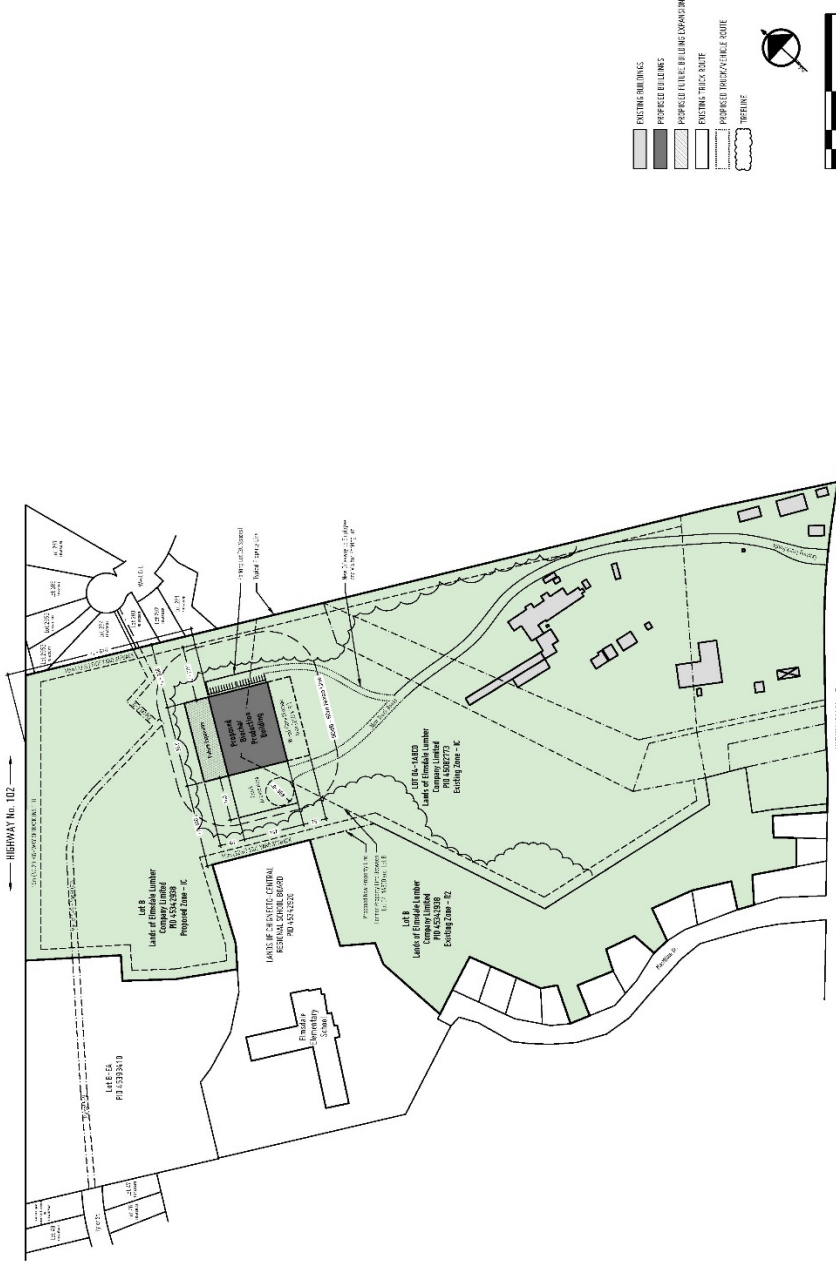
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Appendix B - Elmsdale Lumber Company Limited Site Plan



EXISTING BUILDINGS
 PROPOSED BUILDINGS
 PROPOSED VALUE-BUILDING LAYOUT/DIR
 EXISTING TRUCK DRIVE
 PROPOSED INTERCHANGE SIDE
 TRAILING

6	Date:	AUGUST 18, 2020
5	Scale:	N.T.S.
4	Drawn:	NEL
3	Client Project N°:	2020024
2	JAL Project N°:	3001
1	Issued for Client Review	
	Issued for Client Review	

Seal
NOT FOR CONSTRUCTION


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